

# Novell ZENworks® Desktop Management

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INSTALLATION GUIDE

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# About This Guide

This *Novell ZENworks 7 Desktop Management Installation Guide* includes information about the planning, installing, setting up, and testing processes that Novell® ZENworks® 7 Desktop Management customers typically encounter while implementing this product.

The information in this guide is organized in several parts:

- ♦ Part I, “Overview,” on page 19
- ♦ Part II, “Preparation,” on page 37
- ♦ Part III, “Windows-Based Installation,” on page 75
- ♦ Part IV, “Installing ZENworks Desktop Management Services on Linux,” on page 297
- ♦ Part V, “Post-Installation,” on page 339
- ♦ Part VI, “Upgrade,” on page 353
- ♦ Part VII, “Interoperability,” on page 471
- ♦ Part VIII, “Uninstall/Reinstall,” on page 497
- ♦ Part IX, “Appendixes,” on page 521

## Audience

This guide is intended for system administrators installing ZENworks 7 Desktop Management software (or ZENworks 7 Desktop Management with Support Pack 1 software) on NetWare®, Windows\*, or Linux\* servers. These users should be familiar with their own networks, including the server hardware where they intend to install this product and the Windows desktops where they intend to distribute policies and applications, remotely manage workstations, or collect asset information from workstations. A working knowledge of Novell eDirectory® and Novell ConsoleOne® is required.

## Feedback

We want to hear your comments and suggestions about this manual and the other documentation included with this product. Please use the User Comments feature at the bottom of each page of the online documentation, or go to [www.novell.com/documentation/feedback.html](http://www.novell.com/documentation/feedback.html) and enter your comments there.

## Documentation Updates

For the most recent, updated version of the *ZENworks 7 Desktop Management Installation Guide*, visit the [Novell ZENworks 7 documentation Web site \(http://www.novell.com/documentation/zenworks7\)](http://www.novell.com/documentation/zenworks7).

## Documentation Conventions

In Novell documentation, a greater-than symbol (>) is used to separate actions within a step and items in a cross-reference path.

A trademark symbol (®, ™, etc.) denotes a Novell trademark. An asterisk (\*) denotes a third-party trademark.

When a single pathname can be written with a backslash for some platforms or a forward slash for other platforms, the pathname is presented with a backslash. Users of platforms that require a forward slash, such as Linux or UNIX\*, should use forward slashes as required by your software.

## **Additional Documentation**

ZENworks 7 includes other manuals that can help you administer your ZENworks system:

- ♦ *Novell ZENworks 7 Desktop Management Administration Guide*
- ♦ *Novell ZENworks 7 Server Management Installation Guide*
- ♦ *Novell ZENworks 7 Server Management Administration Guide*
- ♦ *Novell ZENworks 7 Linux Management Installation Guide*
- ♦ *Novell ZENworks 7 Linux Management Administration Guide*
- ♦ *Novell ZENworks 7 Handheld Management Installation Guide*
- ♦ *Novell ZENworks 7 Handheld Management Administration Guide*

# Overview



The information in this section includes the following:

- ♦ Chapter 1, “What Is ZENworks Desktop Management?,” on page 21
- ♦ Chapter 2, “Platform Support for the Desktop Management Infrastructure,” on page 27





# What Is ZENworks Desktop Management?

# 1

Novell® ZENworks® 7 Desktop Management is one of the core components of the ZENworks 7 Suite. It uses policy-driven automation to reduce and in some cases eliminate desktop management tasks such as software distribution, software repair, desktop configuration, workstation imaging, remote management, and workstation inventory throughout the life cycle of the device.

- ♦ [Section 1.1, “Automatic Workstation Import and Removal,” on page 21](#)
- ♦ [Section 1.2, “Workstation Management,” on page 21](#)
- ♦ [Section 1.3, “Application Management,” on page 22](#)
- ♦ [Section 1.4, “Workstation Imaging,” on page 23](#)
- ♦ [Section 1.5, “Remote Management,” on page 23](#)
- ♦ [Section 1.6, “Workstation Inventory,” on page 24](#)
- ♦ [Section 1.7, “Sybase,” on page 25](#)

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**NOTE:** The information in this section also applies to ZENworks 7 Desktop Management with Support Pack 1.

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## 1.1 Automatic Workstation Import and Removal

The Automatic Workstation Import service and the Automatic Workstation Removal service provide simplified, hands-off management of users’ workstations.

Automatic Workstation Import imports workstations into eDirectory™ and integrates them automatically. The Workstation objects created by Automatic Workstation Import provide you with a way to push software and computer settings down to the workstations by using the Novell Application Launcher™ (NAL) and ZENworks Desktop Management policies.

Automatic Workstation Removal removes obsolete workstation data from the directory and from the Inventory database.

## 1.2 Workstation Management

Workstation Management helps you reduce the overall cost and complexity of configuring and maintaining workstation desktops in your network. ZENworks policies provide you with automatic management of server, user, and workstation configurations, processes, and behaviors, which means that you do not need to visit each workstation in your site to configure user settings and workstations. Using Workstation Management, you can:

- ♦ Enable roaming profiles and set default desktop preferences for users
- ♦ Use extensible policies to control any application function that is configured in the Windows registry
- ♦ Set group policies for Windows 2000/XP workstations and users and Windows 2000/2003 Terminal Server users

- ♦ Set parameters for remotely managing users' workstations, including remote control, remote view, diagnostics, file transfer, remote execute, and Wake-on-LAN
- ♦ Set parameters for imaging workstations
- ♦ Set parameters to specify what inventory information to collect
- ♦ Set parameters to automatically import new workstations into the eDirectory tree
- ♦ Set parameters for using Novell iPrint, which facilitates the distribution of the iPrint client and printers, in addition to providing users with a Web browser interface for installing printers on their workstations

## 1.3 Application Management

Application Management helps you manage the distribution of applications to users on Windows workstations. Using Application Management, you can:

- ♦ Distribute traditional Windows applications and Microsoft\* Windows Installer applications. Traditional Windows applications include their own installation programs. Windows Installer applications utilize the Windows Installer and an `.msi` file for installation.
- ♦ Distribute Web applications. Web applications run on a Web server, so the distribution typically involves making the URL available to the user.
- ♦ Distribute applications from the network (while connected to eDirectory) or from removable media, such as a CD, Jaz\* drive, or Zip\* drive (even while disconnected from eDirectory).
- ♦ Determine which users an application is distributed to. You must associate an application with a user through eDirectory before the application is available for distribution to the user. You can also associate applications with workstations so that they are available on the workstation regardless of which user is logged in.
- ♦ Create application dependencies. Through application dependencies, you can require that Application B is installed and running before Application A can be launched.
- ♦ Determine how distributed applications are presented to users on their workstations.

For a user to receive applications you've configured in eDirectory and associated with him or her, Novell Application Launcher must be running on the user's workstation. Application Launcher accesses eDirectory to know which applications are associated with the user and performs all distribution processes (including installing and uninstalling) for the applications.

Application Launcher provides three views through which applications can be presented: 1) the Application Window, a standalone window that displays icons for the distributed applications, 2) Application Explorer, a component that includes a standalone window like the Application Window and also includes Windows Explorer integration so distributed application icons can be displayed on the Windows desktop, the Start menu, the system tray, and the Quick Launch bar, and 3) the Application Browser, a Web browser view that displays icons for the distributed applications. All three views are made available to users when Application Launcher is installed.

- ♦ Distribute applications to newly imaged workstations as part of the imaging process.
- ♦ Control which non-distributed applications can be run on a workstation. For example, if you don't want users to be able to launch the Microsoft Calculator because you want them to use a calculator application you've distributed to them, you can disable their ability to launch Calculator even though it was not distributed through Application Launcher.

- ♦ Uninstall any distributed applications. The uninstall includes the deletion of all non-shared files, `.ini` entries, and registry entries associated with the distribution of the application.

## 1.4 Workstation Imaging

Using Workstation Imaging, you can perform the following imaging operations:

- ♦ Take an image of a workstation and store it on the same workstation (locally) or on an imaging (proxy) server.
- ♦ Create an “add-on” image of selected files.
- ♦ Customize an image.
- ♦ Compress an image to minimize storage space.
- ♦ Retrieve an image that has been saved to a workstation (locally) or an imaging (proxy) server, and restore it to a workstation. You can do this manually at each workstation or automatically from ConsoleOne®.
- ♦ Use a workstation or server policy to define imaging operations.
- ♦ Create a script to customize and automate how you perform imaging operations.
- ♦ Restore an image to many workstations simultaneously in a multicast session.
- ♦ View information about the partitions and storage devices on a workstation.
- ♦ Create, delete, and activate partitions.

## 1.5 Remote Management

Remote Management lets you remotely manage workstations (called managed workstations) from the remote management console. Remote Management lets you do the following:

- ♦ Remotely wake up a powered-off managed workstation
- ♦ Remotely control the managed workstation
- ♦ Remotely view the managed workstation
- ♦ Remotely run executables found on the managed workstation with system rights, even if the logged-in user is not a member of the local Administrators Group
- ♦ Transfer files between the remote management console and the managed workstation
- ♦ Display information to diagnose problems on the managed workstation
- ♦ Log audit record information about the Remote Management sessions that are performed on the managed workstation
- ♦ Blank the managed workstation screen during a Remote Control session
- ♦ Lock the keyboard and mouse controls at the managed workstation during a Remote Control session

---

**IMPORTANT:** You cannot use ZENworks 7 Desktop Management to obtain Remote Management functionality on the servers. The Remote Management functionality of ZENworks Server Management can be used to remotely manage Windows 2000/2003 servers. For more information, see the [ZENworks Server Management documentation \(http://www.novell.com/documentation\)](http://www.novell.com/documentation).

---

## 1.6 Workstation Inventory

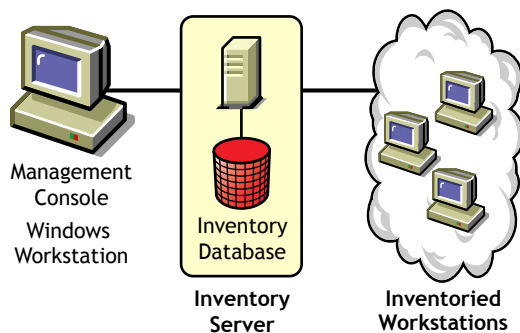
ZENworks Desktop Management lets you gather and administer complete hardware and software information for all workstations connected to your network. From ConsoleOne, you can view the complete hardware and software inventory of the workstations. You can also query the centralized database of the workstations and generate reports. Desktop Management also provides roll-up of inventory information across servers, firewall, and eDirectory trees for large networks.

The following brief glossary provides basic definitions of Workstation Inventory terms:

- ♦ **Inventoried workstation:** A Windows workstation whose hardware and software data you want to scan and maintain in a central repository. To gather complete hardware and software inventory for a workstation, you must install the Inventory Agent (part of the ZENworks Desktop Management Agent) on that workstation.
- ♦ **Inventory server:** A NetWare<sup>®</sup>, Windows, or Linux server where you run the Inventory service. This server can also run any other Desktop Management services. The Inventory server collects the inventory data from associated inventoried workstations and stores it in the Inventory.
- ♦ **Inventory database:** A repository of inventory information of all the inventoried workstations. The Inventory database can be Sybase\*, Oracle\*, or MS SQL.
- ♦ **Database server:** A NetWare, Windows, or Linux (the Open Enterprise Server (OES) version of the Linux or the SUSE\* Linux Enterprise Server (SLES) version of Linux) server running the Inventory database.
- ♦ **Management console:** A Windows workstation or server running Novell ConsoleOne with Desktop Management Workstation Inventory ConsoleOne snap-ins installed. The management console provides the interface to administer the inventory system.

The focus of the *Installation Guide* is to set up a pilot system so that you can better understand Workstation Inventory. The pilot system consists of a management console, an Inventory server, an Inventory database running Sybase, and one or more inventoried workstations, as shown below.

**Figure 1-1** Workstation Inventory Pilot System



This setup has the following features:

- ♦ The Inventory server and the inventoried workstations reside on the same Novell eDirectory tree.
- ♦ The Inventory server has inventoried workstations attached to it.
- ♦ The Inventory server has an Inventory database attached to it.

The Inventory scanning cycle is as follows:

1. The Inventory scanner sends hardware and software information from the inventoried workstations to the Inventory server as per the scan schedule.
2. The Inventory server stores the inventory information in the Inventory database.
3. At the management console, you can view and retrieve the inventory information from the Inventory database using Inventory tools such as Reporting and Summary.

To install Workstation Inventory in your production environment, you must plan and decide the Inventory server tree hierarchy for your company. Also, you should organize your inventory deployment based on your network and information requirements. For detailed information, see “*Workstation Inventory*” in the *Novell ZENworks 7 Desktop Management Administration Guide*.

## 1.7 Sybase

Sybase Adaptive Server\* Anywhere (ASA) is a network database server bundled with ZENworks Desktop Management. Desktop Management lets you install Sybase ASA as the database platform for mounting Workstation Inventory and Novell Application Launcher databases on NetWare, Windows, and Linux.



# Platform Support for the Desktop Management Infrastructure

# 2

Novell® ZENworks® 7 Desktop Management has been tested on NetWare® 6, NetWare 6.5, Windows 2000 Advanced server, Windows Server 2003, Novell Open Enterprise Server (OES) Linux 1.0, and SUSE® Linux Enterprise Server (SLES) 9 Support Pack 1 (SP1) or later.

This section includes details about the ZENworks 7 server configurations that have been tested and are supported:

- ♦ [Section 2.1, “Tested Windows and NetWare Server Platform Combinations,” on page 27](#)
- ♦ [Section 2.2, “Tested Linux and Other Server Platform Combinations for ZENworks 7,” on page 32](#)
- ♦ [Section 2.3, “Additional Linux and Other Server Platform Combinations Tested for SP1,” on page 34](#)

The section also includes information about the workstations and devices that are supported with ZENworks 7 Desktop Management and ZENworks 7 Desktop Management with Support Pack 1:

- ♦ [Section 2.4, “Supported Workstation Platforms and Devices,” on page 36](#)

## 2.1 Tested Windows and NetWare Server Platform Combinations

The following tables show the ZENworks Desktop Management combinations (that is, the ZENworks Middle Tier Server platform connecting to the Desktop Management Server platform) of the Windows and NetWare servers that have been fully tested and are fully supported by Novell ZENworks 7 Desktop Management and ZENworks 7 Desktop Management with SP1:

- ♦ [Section 2.1.1, “Tested Platforms for ZENworks 7 Desktop Management,” on page 28](#)
- ♦ [Section 2.1.2, “Additional Platform Combinations Tested for ZENworks 7 Desktop Management with SP1,” on page 31](#)

## 2.1.1 Tested Platforms for ZENworks 7 Desktop Management

**Table 2-1** *Tested Windows and NetWare Server Platform Combinations for ZENworks 7 Desktop Management*

Middle Tier Server Platform	Desktop Management Server Platform	Notes for this Scenario
Windows 2000 Advanced Server SP4	Windows 2000 Advanced Server SP4	<p>Both of these servers must be members of the same Microsoft domain.</p> <p>If you want to install the Middle Tier Server software on the same machine with the Novell Client™, the client must be installed first.</p> <p>The ZENworks Middle Tier Server must have Microsoft Internet Information Server (IIS) installed (the version shipping with Windows 2000 Advanced Server).</p> <p>The Desktop Management Server on Windows 2000 must have the following:</p> <ul style="list-style-type: none"><li>♦ Novell ConsoleOne® 1.3.6 and Novell eDirectory™ 8.7.1 (minimum) or 8.7.3 (recommended) installed</li><li>♦ Novell Client 4.9 SP1a installed and configured to use the IP protocol, not IPX™</li><li>♦ The current location of eDirectory (usually <code>c:\novell</code>) shared using the name SYS</li></ul> <p>This configuration is supported only when both the Middle Tier Server and the Desktop Management Server are installed on the same machine.</p>
Windows Server 2003 Standard Edition or Enterprise Edition	Windows 2000 Advanced Server SP4	<p>Both of these servers must be members of the same Microsoft domain.</p> <p>If you want to install the Middle Tier Server software on the same machine with the Novell Client, the client must be installed first.</p> <p>The ZENworks Middle Tier Server must have Microsoft Internet Information Server (IIS) installed (the version shipping with Windows Server 2003).</p> <p>The Desktop Management Server on Windows 2000 must have the following:</p> <ul style="list-style-type: none"><li>♦ Novell ConsoleOne 1.3.6 and Novell eDirectory 8.7.1 (minimum) , 8.7.3, or 8.8x (now supported) installed</li><li>♦ Novell Client 4.9 SP1a installed and configured to use the IP protocol, not IPX</li><li>♦ The current location of eDirectory (usually <code>c:\novell</code>) shared using the name SYS</li></ul>



Middle Tier Server Platform	Desktop Management Server Platform	Notes for this Scenario
Windows Server 2003 Standard Edition	Windows Server 2003 Standard Edition	<p>Both of these servers must be members of the same Microsoft domain.</p> <p>If you want to install the Middle Tier Server software on the same machine with the Novell Client, the client must be installed first.</p> <p>The ZENworks Middle Tier Server must have Microsoft Internet Information Server (IIS) installed (the version shipping with Windows Server 2003).</p> <p>The Desktop Management Server on Windows Server 2003 must have the following:</p> <ul style="list-style-type: none"> <li>♦ Novell ConsoleOne 1.3.6 and Novell eDirectory 8.7.3 (minimum) or 8.8x (also supported) installed</li> <li>♦ Novell Client 4.9 SP1a (or later) installed and configured to use the IP protocol, not IPX</li> <li>♦ The current location of eDirectory (usually <code>c:\novell</code>) shared using the name SYS</li> </ul> <p>This configuration is also supported when both the Middle Tier Server and the Desktop Management Server are installed on the same machine.</p>
Windows Server 2003 Enterprise Edition	Windows Server 2003 Enterprise Edition	<p>Both of these servers must be members of the same Microsoft domain.</p> <p>If you want to install the Middle Tier Server software on the same machine with the Novell Client, the client must be installed first.</p> <p>The ZENworks Middle Tier Server must have Microsoft Internet Information Server (IIS) installed (the version shipping with Windows Server 2003).</p> <p>The Desktop Management Server on Windows Server 2003 must have the following:</p> <ul style="list-style-type: none"> <li>♦ Novell ConsoleOne 1.3.6 and Novell eDirectory 8.7.3 (minimum) or 8.8x (also supported) installed</li> <li>♦ Novell Client 4.9 SP1a (or later) installed and configured to use the IP protocol, not IPX</li> <li>♦ The current location of eDirectory (usually <code>c:\novell</code>) shared using the name SYS</li> </ul> <p>This configuration is also supported when both the Middle Tier Server and the Desktop Management Server are installed on the same machine.</p>

Middle Tier Server Platform	Desktop Management Server Platform	Notes for this Scenario
Windows Server 2003 Standard Edition or Enterprise Edition	NetWare 6 SP4	<p>If you want to install the Middle Tier Server software on the same machine with the Novell Client, the client must be installed first.</p> <p>The ZENworks Middle Tier Server must have Microsoft Internet Information Server (IIS) installed (the version shipping with Windows Server 2003).</p> <p>The Desktop Management Server must have the latest versions of the JVM*, ConsoleOne, and eDirectory installed.</p>
Windows Server 2003 Enterprise Edition or Standard Edition	OES (NetWare) 1.0/NetWare 6.5 Support Pack 3	<p>If you want to install the Middle Tier Server software on the same machine with the Novell Client, the client must be installed first.</p> <p>The ZENworks Middle Tier Server must have Microsoft Internet Information Server (IIS) installed (the version shipping with Windows Server 2003).</p> <p>The Desktop Management Server must have the latest versions of the JVM, ConsoleOne, and eDirectory installed.</p>
NetWare 6 SP4	NetWare 6 SP4	<p>The Desktop Management Server must have the latest versions of the JVM, ConsoleOne, and eDirectory installed.</p> <p>This configuration is also supported when both the Middle Tier Server and the Desktop Management Server are installed on the same machine.</p>
OES (NetWare) 1.0/NetWare 6.5 Support Pack 3	NetWare 6 SP4	<p>The Desktop Management Server must have the latest versions of the JVM, ConsoleOne, and eDirectory installed.</p>
OES (NetWare) 1.0/NetWare 6.5 Support Pack 3	OES (NetWare) 1.0/NetWare 6.5 Support Pack 3	<p>The Desktop Management Server must have the latest versions of the JVM, ConsoleOne, and eDirectory installed.</p> <p>This configuration is also supported when both the Middle Tier Server and the Desktop Management Server are installed on the same machine.</p>

Novell ConsoleOne 1.3.6 and Novell eDirectory 8.7.3 are included on the *Novell ZENworks 7 Companion 1* CD. You can obtain the files necessary to create an eDirectory 8.7.x evaluation license diskette from the [Novell eDirectory 8.7.x Evaluation License Download \(http://www.novell.com/products/edirectory/licenses/eval\\_87.html\)](http://www.novell.com/products/edirectory/licenses/eval_87.html) Web site.

Novell ConsoleOne 1.3.6e and Novell eDirectory 8.8.1 are included on the *Novell ZENworks 7 with Support Pack 1 Companion 1* CD. No license is necessary for eDirectory 8.8.1 if you purchase ZENworks 7 with Support Pack 1.

The most current Novell Client (version 4.9 SP2 or later) is available for download from the [Novell Product Downloads \(http://download.novell.com/index.jsp\)](http://download.novell.com/index.jsp) Web site.

Support Pack files for NetWare are available from the [Minimum Patch List \(http://support.novell.com/produpdate/patchlist.html\)](http://support.novell.com/produpdate/patchlist.html) at the Novell Support Connection Web site.

The ZENworks Middle Tier Server and the ZENworks Desktop Management Server can be installed on the same machine.

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**IMPORTANT:** The following items are of particular importance as you consider platform support:

- ♦ If NetWare 6.5 SP2 or later is installed on the server where you authenticate workstations for ZENworks functionality, you cannot administer the eDirectory tree or a server with ConsoleOne 1.3.6 until you upgrade the version of the Novell Client installed on the machine to 4.9 SP2.
  - ♦ If you plan to install ZENworks Patch Management (PatchLink), you should plan the use of your network resources. Patch Management requires the following Windows server configuration for installation:
    - ♦ New and unmodified Windows XP, 2000, or Server 2003 with IIS and asp.net installed
    - ♦ Windows 2000 Advanced server updated with Service Pack 2 (other upgrades applied after PatchLink application)
    - ♦ No other application software installed on the system
  - ♦ ZENworks Patch Management must be installed on a dedicated machine.
- 

## 2.1.2 Additional Platform Combinations Tested for ZENworks 7 Desktop Management with SP1

In addition to the platforms tested in ZENworks 7 Desktop Management, ZENworks 7 Desktop Management with Support Pack 1 has been tested with the platform combinations listed in the table below.

**Table 2-2** *Tested Windows and NetWare Server Platform Combinations for ZENworks 7 Desktop Management with SP1*

Middle Tier Server Platform	Desktop Management Server Platform	Notes
Windows 2000 Advanced Server SP4	OES (NetWare) 1.0 SP2	
Windows 2000 Advanced Server SP4	NetWare 6.5 SP4	
Windows 2000 Advanced Server SP4	Windows 2000 Advanced Server SP4	Middle Tier Server and Desktop Management Server installed on the same machine.
Windows Server 2003 Enterprise Edition or Standard Edition, R2	Windows Server 2003 Enterprise Edition or Standard Edition, R2	Middle Tier Server and Desktop Management Server NOT installed on the same machine.
Windows Server 2003 Enterprise Edition or Standard Edition, R2	Windows Server 2003 Enterprise Edition or Standard Edition, SP1	
Windows Server 2003 Enterprise Edition or Standard Edition, R2	NetWare 6.5 SP5	

<b>Middle Tier Server Platform</b>	<b>Desktop Management Server Platform</b>	<b>Notes</b>
Windows Server 2003 Enterprise Edition or Standard Edition, SP1	Windows Server 2003 Enterprise Edition or Standard Edition, SP1	Middle Tier Server and Desktop Management Server installed on the same machine.
Windows Server 2003 Enterprise Edition or Standard Edition, SP1	Windows Server 2003 Enterprise Edition or Standard Edition, R2	
Windows Server 2003 Enterprise Edition or Standard Edition, SP1	OES (NetWare) 1.0 SP2	
Windows Server 2003 Enterprise Edition, SP1	NetWare 6 SP5	
NetWare 6 SP5	OES (NetWare) 1.0 SP2	
NetWare 6 SP5	NetWare 6 SP5	Middle Tier Server and Desktop Management Server NOT installed on the same machine.
NetWare 6.5 SP4	NetWare 6.5 SP4	Middle Tier Server and Desktop Management Server NOT installed on the same machine.
NetWare 6.5 SP4	NetWare 6.5 SP4	Middle Tier Server and Desktop Management Server installed on the same machine.
NetWare 6.5 SP5	NetWare 6 SP5	
NetWare 6.5 SP5	NetWare 6.5 SP5	Middle Tier Server and Desktop Management Server NOT installed on the same machine.
NetWare 6.5 SP5	NetWare 6.5 SP5	Middle Tier Server and Desktop Management Server installed on the same machine.
NetWare 6.5 SP5	Windows Server 2003 Enterprise Edition, SP1	

## 2.2 Tested Linux and Other Server Platform Combinations for ZENworks 7

The following tables show the Desktop Management combinations (that is, the ZENworks Middle Tier Server platform connecting to the Desktop Management Server platform) that have been fully tested and that are fully supported by Novell ZENworks 7 Desktop Management.

- ♦ [Section 2.2.1, “No Network Firewall,” on page 33](#)
- ♦ [Section 2.2.2, “Network Firewall In Place,” on page 34](#)

For information about the tested Linux and other platform combinations for ZENworks 7 Desktop Management with SP1, see

## 2.2.1 No Network Firewall

**Table 2-3** ZENworks 7: Tested Linux and Other Server Platform Combinations with No NetWork Firewall Installed

Middle Tier Server Platform	Desktop Management Server Platform	Comments
SLES 9 SP1	SLES 9 SP1	<ul style="list-style-type: none"> <li>♦ Middle Tier and Desktop Management Servers operating on the same Linux machine</li> <li>♦ ZENworks for Desktops 4.0.1 Desktop Management Agent does not work (does not copy files)<sup>1</sup></li> </ul>
SLES 9 SP1	SLES 9 SP1	<ul style="list-style-type: none"> <li>♦ Middle Tier and Desktop Management Servers operating on <b>different</b> Linux machines</li> <li>♦ ZENworks for Desktops 4.0.1 Desktop Management Agent does not work (does not copy files)<sup>1</sup></li> </ul>
SLES 9 SP1	OES (Linux) 1.0	
OES (Linux) 1.0	SLES 9 SP1	ZENworks for Desktops 4.0.1 Desktop Management Agent does not work (does not copy files) <sup>1</sup>
OES (Linux) 1.0	Windows 2000 Advanced Server SP4	ZENworks for Desktops 4.0.1 Desktop Management Agent does not work (does not copy files) <sup>1</sup>
OES (Linux) 1.0	OES (Linux) 1.0	Middle Tier and Desktop Management Servers operating on the same Linux machine
OES (Linux) 1.0	OES (Linux) 1.0	Middle Tier and Desktop Management Servers operating on different Linux machines
OES (Linux) 1.0	NetWare 6 Support Pack 5	
OES (Linux) 1.0	OES (NetWare) 1.0/NetWare 6.5 Support Pack 3	Desktop Management Server operating in a Novell Cluster Services™ environment
Windows Server 2003	SLES 9 SP1	
Windows Server 2003	OES (Linux) 1.0	
OES (NetWare) 1.0/NetWare 6.5 Support Pack 3	OES (Linux) 1.0	

<sup>1</sup>To work around this issue, see the steps in TID 10099065 in the [Novell Support Knowledgebase](http://support.novell.com/search/kb_index.jsp) ([http://support.novell.com/search/kb\\_index.jsp](http://support.novell.com/search/kb_index.jsp)).

## 2.2.2 Network Firewall In Place

**Table 2-4** ZENworks 7: Tested Linux and Other Server Platform Combinations with a Network Firewall Installed

Middle Tier Server Platform	Desktop Management Server Platform	Comments
Windows Server 2003	OES (Linux) 1.0	
Windows Server 2003	SLES 9 SP1	
OES (Linux) 1.0	OES (Linux) 1.0	Middle Tier and Desktop Management Servers operating on the same Linux machine
OES (NetWare) 1.0/ NetWare 6.5 Support Pack 3	OES (Linux) 1.0	
OES (Linux) 1.0	OES (NetWare) 1.0/NetWare 6.5 Support Pack 3	

## 2.3 Additional Linux and Other Server Platform Combinations Tested for SP1

The following table shows the Desktop Management combinations (that is, the ZENworks Middle Tier Server platform connecting to the Desktop Management Server platform) that have been fully tested and that are fully supported by Novell ZENworks 7 Desktop Management with SP1.

**Table 2-5** ZENworks 7 with SP1: Tested Linux and Other Server Platform Combinations with No NetWork Firewall Installed

Middle Tier Server Platform	Desktop Management Server Platform	Comment
Windows 2000 Advanced Server SP4	SLES 9 SP3 x86	
Windows 2000 Advanced Server SP4	SLES 9 SP3 x64	
Windows 2000 Advanced Server SP4	OES (Linux) 1.0 SP2	
Windows 2000 Advanced Server SP4	SLES 10 <sup>1</sup>	
Windows Server 2003 Enterprise Edition or Standard Edition, SP1/R2	SLES 9 SP3 x64	
Windows Server 2003 Enterprise Edition or Standard Edition, SP1/R2	OES (Linux) 1.0 SP2	
Windows Server 2003 Enterprise Edition or Standard Edition, SP1/R2	SLES 10 <sup>1</sup>	

Middle Tier Server Platform	Desktop Management Server Platform	Comment
Windows Server 2003 Enterprise Edition or Standard Edition, SP1	SLES 9 SP2	
NetWare 6 SP5	OES (Linux) 1.0 SP2	
NetWare 6 SP5	SLES 9 SP3 x64	
NetWare 6.5 SP4	OES (Linux) 1.0 SP2	
OES (NetWare) 1.0 SP2/NetWare 6.5 SP5	OES (Linux) 1.0 SP2	
OES (NetWare) 1.0 SP2/NetWare 6.5 SP5	SLES 9 SP3 x64	
SLES 9 SP2	OES (Linux) 1.0 SP1	
SLES 9 SP2	Netware 6.5 SP4	
SLES 9 SP2	SLES 9 SP2	Middle Tier Server and Desktop Management Server installed on the same machine.
SLES 9 SP3 x86	Windows Server 2003 Enterprise Edition or Standard Edition, SP1	
SLES 9 SP3 x86	Windows Server 2003 Enterprise Edition or Standard Edition, SP1/R2	
SLES 9 SP3 x86	OES (NetWare) 1.0 SP2	
SLES 9 SP3 x86	SLES 9 SP3 x86	
OES (Linux) 1.0 SP2	OES (NetWare) 1.0 SP2	
OES (Linux) 1.0 SP2	NetWare 6.5 SP4	
OES (Linux) 1.0 SP2	OES (Linux) 1.0 SP2	Middle Tier Server and Desktop Management Server installed on the same machine.
OES (Linux) 1.0 SP2	SLES 9 SP3 x64	
OES (Linux) 1.0 SP2	Windows 2000 Advanced Server SP4	
OES (Linux) 1.0 SP2	Windows Server 2003 Enterprise Edition or Standard Edition, SP1/R2	
OES (Linux) 1.0 SP2	OES (Linux) 1.0 SP2	
OES (Linux) 1.0 SP2	SLES 10 <sup>1</sup>	

<sup>1</sup>If you plan to install ZENworks 7 Desktop Management with Support Pack 1 on a SLES 10 server where Novell eDirectory 8.8.1 is installed, you need to make sure that, at a minimum, ports TCP 427 and TCP 524 are opened on the server.

If these ports are not opened, the SLES 10 server cannot be added to the eDirectory tree where you plan to install ZENworks.

## 2.4 Supported Workstation Platforms and Devices

ZENworks 7 Desktop Management has been extensively tested to manage the following desktop platforms:

- ♦ Windows 2000 Professional, with Service Pack 4 applied
- ♦ Windows NT 4 SP6a (for more information, see [Section 36.3, “Interoperability with Windows NT 4 Workstations,” on page 475](#)).
- ♦ Windows XP Professional, with Service Pack 1 (minimum) or Service Pack 2 applied
- ♦ Windows 98 SE
- ♦ Windows XP Tablet PC Edition

ZENworks 7 Desktop Management also supports distribution of policies and applications to the following terminal server platforms:

- ♦ Citrix Presentation Server\* 3
- ♦ Windows 2000 Terminal Server
- ♦ Windows 2003 Terminal Server

### 2.4.1 Added Workstation Platform and Device Support for SP1

ZENworks 7 Desktop Management with Support Pack 1 supports distribution of policies and applications to Tablet PCs running the Windows XP Tablet PC 2005 Edition. It also supports distributions using Citrix Presentation Server 4.



# Preparation



This section includes important information you need before installation and while you are using the installation programs for the major components of Novell® ZENworks® 7 Desktop Management, including:

- ♦ Chapter 3, “Prerequisites for the Workstation Running the Installation,” on page 39
- ♦ Chapter 4, “Prerequisites for Installing the ZENworks Desktop Management Server,” on page 41
- ♦ Chapter 5, “Preparing a Linux Server for ZENworks Functions,” on page 51
- ♦ Chapter 6, “Prerequisites for Installing the ZENworks Middle Tier Server,” on page 61
- ♦ Chapter 7, “User Workstation Requirements,” on page 69
- ♦ Chapter 8, “Preparing the Administration Workstation or Server,” on page 71



# Prerequisites for the Workstation Running the Installation

# 3

The following table lists the software requirements for the workstation you use as you install Desktop Management Services and Middle Tier Server software on Windows or NetWare® servers using a Windows machine.

Installing these services on a Linux server can be accomplished from a Linux server only.

**Table 3-1** *Software Requirements for the Installing Workstation*

ZENworks Component to Install	Software Requirement for the Installing Workstation
Desktop Management Services	<ul style="list-style-type: none"> <li>Windows 2000 Professional SP4 (or later) workstation, Windows XP SP1 (or later) workstation, Windows 2000 Server SP4 (or later), or Windows Server 2003 (or later), Standard Edition or Enterprise Edition</li> <li>Novell Client™ 4.9 SP1a (or later) installed</li> <li>Internet Explorer 5.5 SP2 (or later) installed</li> <li>If you intend to install ZENworks snap-ins to the local workstation, ConsoleOne® 1.3.6 must already be installed on this workstation. For more information, see <a href="#">Step 8</a> in the section entitled <a href="#">Section 9.1.2, "Performing the Full Installation (Including Schema Extension),"</a> on <a href="#">page 81</a>.</li> </ul> <p><b>Not Supported:</b> The following software configurations are not supported for Desktop Management Server software installation:</p> <ul style="list-style-type: none"> <li>Installing from a Windows 95/98/ME/NT 4 workstation.</li> <li>Installing the product from one side of a firewall, such as a Network Address Translation (NAT) configuration, to the other side of a firewall.</li> </ul>
Middle Tier Server	<ul style="list-style-type: none"> <li>Windows 2000 (or later) workstation, Windows XP SP1 (or later) workstation, or Windows 2000/2003 (or later) server</li> <li>Novell Client 4.9 SP1a (or later) installed</li> </ul> <p><b>Not Supported:</b> The following software configurations are not supported for ZENworks Middle Tier Server software installation:</p> <ul style="list-style-type: none"> <li>Installing from a Windows 95/98/ME/NT 4 workstation.</li> <li>Installing from a network where Network Address Translation (NAT) has been configured.</li> </ul>

The login session at the installing workstation must meet these requirements:

- You must be logged in as Admin or an Admin equivalent if the server you are installing to is a NetWare® server. This enables the installation program to extend the eDirectory™ schema and to browse for eDirectory trees and NetWare servers.

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**NOTE:** Both the Desktop Management Server installation program and the Middle Tier Server installation program allow you to select servers from only one eDirectory tree. If you run either of these installation programs from a Windows server and if that server is not part of the tree you have selected, you cannot install the Desktop Management Server locally.

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- ♦ If you are installing to a Windows 2000 server or Windows Server 2003, you must be logged in as Administrator (or equivalent) in order to authenticate to the server you are installing to.

The Novell Client must be installed on the workstation or server where you will be running ConsoleOne for administering ZENworks 7 Desktop Management. This is because ConsoleOne is dependent on the client's NetWare libraries.

For more information about installing the Desktop Management Server, see [“Installing the ZENworks Desktop Management Server” on page 77](#).

# Prerequisites for Installing the ZENworks Desktop Management Server

This section includes the following information:

- ♦ [Section 4.1, “Desktop Management Server Hardware Requirements,” on page 41](#)
- ♦ [Section 4.2, “Desktop Management Server Software Requirements,” on page 44](#)
- ♦ [Section 4.3, “Desktop Management Server Installation Prerequisites,” on page 49](#)

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**NOTE:** The information in this section also applies to ZENworks 7 Desktop Management with Support Pack 1 (SP1). For more details about the tested platforms for SP1, see [Chapter 2, “Platform Support for the Desktop Management Infrastructure,” on page 27](#).

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## 4.1 Desktop Management Server Hardware Requirements

Although Novell® ZENworks® 7 Desktop Management Services can all be installed on one machine, your network resources or design might require you to install some components on different servers. This section lists the hardware requirements for those servers.

- ♦ [Section 4.1.1, “Consolidated Component Installation Hardware Requirements,” on page 41](#)
- ♦ [Section 4.1.2, “Preboot Services Subinstallation Hardware Requirements,” on page 42](#)
- ♦ [Section 4.1.3, “Workstation Inventory Subinstallation Hardware Requirements,” on page 43](#)
- ♦ [Section 4.1.4, “Database Subinstallation Hardware Requirements,” on page 43](#)

### 4.1.1 Consolidated Component Installation Hardware Requirements

For full functionality and performance, the Desktop Management Services require the following minimum amounts of processing power, disk space, and RAM on servers where they will be installed:

**Table 4-1** ZENworks Desktop Management Server Hardware Requirements

Resource	Minimum Disk Space	Minimum Hardware Requirement
NetWare® 6 SPx server	290 MB	Pentium® III (minimum) processor, 512 MB RAM; if scaled to 200 concurrent users, use Pentium III, 1 GB RAM. Scale thereafter as appropriate.

Resource	Minimum Disk Space	Minimum Hardware Requirement
NetWare 6.5 SPx server	290 MB	Pentium III (minimum) processor, 512 MB RAM; if scaled to 200 concurrent users, use Pentium III, 1 GB RAM. Scale thereafter as appropriate.
Windows 2000x server	290 MB	Pentium III (minimum) processor, 512 MB RAM; if scaled to 200 concurrent users, use Pentium III, 1 GB RAM. Scale thereafter as appropriate.
Windows Server 2003x (32-bit only)	290 MB	Pentium III (minimum) processor, 512 MB RAM; if scaled to 200 concurrent users, use Pentium III, 1 GB RAM. Scale thereafter as appropriate.
SLES 9x 32-bit or 64-bit	<ul style="list-style-type: none"> <li>♦ less than 100 users = 190 MB</li> <li>♦ 100 - 500 users = 290 MB</li> </ul>	Pentium III (minimum) processor running at 1 GHz, 512 MB RAM; if scaled to 200 concurrent users, use Pentium III, 1 GB RAM. Scale thereafter as appropriate.
SLES 10 32-bit or 64 bit	<ul style="list-style-type: none"> <li>♦ less than 100 users = 190 MB</li> <li>♦ 100 - 500 users = 290 MB</li> </ul>	Pentium III (minimum) processor running at 1 GHz, 512 MB RAM; if scaled to 200 concurrent users, use Pentium III, 4 GB RAM. Scale thereafter as appropriate.
OES (Linux) 1.0 SPx	<ul style="list-style-type: none"> <li>♦ less than 100 users = 190 MB</li> <li>♦ 100 - 500 users = 290 MB</li> </ul>	Pentium III (minimum) processor running at 1 GHz, 512 MB RAM; if scaled to 200 concurrent users, use Pentium III, 1 GB RAM. Scale thereafter as appropriate.

**IMPORTANT:** Windows servers reserve disk space for operating system use. To install ZENworks Desktop Management, make sure you have sufficient space above the amount reserved for the server.

Of the four pre-built software “sets” available for the SLES 9x installation (that is, *Minimum System*, *Minimum Graphical System*, *Full*, and *Default System* installations) only the *Default System* installation mode for SLES 9x supports ZENworks 7 Desktop Management. All other modes used for SLES 9x installation cause a subsequent ZENworks 7 Desktop Management installation failure.

## 4.1.2 Preboot Services Subinstallation Hardware Requirements

To function correctly, Desktop Management Preboot Services requires a local area network (LAN) with IP layer support. The following are also required:

**Table 4-2** Desktop Management Preboot Services Server Hardware Requirements

Specification	Minimum Requirement
Processor	Pentium II, 350 MHz or faster
Available Disk Space	10 MB
RAM	128 MB

Specification	Minimum Requirement
LAN Connection	Ethernet

For Preboot Services hardware requirements for workstations, see [Section 7.2, “User Workstation Hardware Requirements,” on page 69](#).

### 4.1.3 Workstation Inventory Subinstallation Hardware Requirements

If you choose to install the Workstation Inventory component of Desktop Management Services, you can install it on a separate NetWare 6, NetWare 6.5, Windows 2000, or Windows Server 2003 machine that has one of the following hardware configurations:

**Table 4-3** *Workstation Inventory Server Hardware Requirements*

Resource	Minimum Disk Space	Minimum Hardware Requirement
NetWare 6 SPx server	100 MB free space for inventory with database; 35 MB for inventory alone	Pentium II (minimum) processor, 512 MB RAM; if scaled to 200 concurrent users, use Pentium III, 1 GB RAM. Scale thereafter as appropriate.
NetWare 6.5x server	100 MB free space for inventory with database; 35 MB for inventory alone	Pentium II (minimum) processor, 512 MB RAM; if scaled to 200 concurrent users, use Pentium III, 1 GB RAM. Scale thereafter as appropriate.
Windows 2000 server SPx	100 MB free space for inventory with database; 25 MB for inventory alone	See <a href="#">“Consolidated Component Installation Hardware Requirements” on page 41</a> .
Windows Server 2003x	100 MB free space for inventory with database; 25 MB for inventory alone	See <a href="#">“Consolidated Component Installation Hardware Requirements” on page 41</a> .
SLES 9x	100 MB free space for inventory with database; 25 MB for inventory alone	See <a href="#">“Consolidated Component Installation Hardware Requirements” on page 41</a> .
SLES 10	100 MB free space for inventory with database; 25 MB for inventory alone	See <a href="#">“Consolidated Component Installation Hardware Requirements” on page 41</a> .
OES (Linux) 1.0 SPx	100 MB free space for inventory with database; 25 MB for inventory alone	See <a href="#">“Consolidated Component Installation Hardware Requirements” on page 41</a> .

### 4.1.4 Database Subinstallation Hardware Requirements

If you choose to install the Inventory Database component of Desktop Management Services, you can install it on a separate NetWare 6, NetWare 6.5, Windows 2000, or Windows Server 2003 machine that has the following hardware:

**Table 4-4** Workstation Inventory Database Server Hardware Requirements

Component	Minimum Hardware and Software Requirements
RAM	<ul style="list-style-type: none"><li>♦ Recommended minimum memory for the database is 512 MB with a minimum cache size of 128 MB. 768 MB is minimum and 1 GB or higher is recommended at the Root Server level with a cache size of 256 MB.</li></ul>
Hard Disk	<ul style="list-style-type: none"><li>♦ Recommended minimum hard disk space for the lowest level server with 10,000 workstations is 5 GB.</li><li>♦ The minimum hard disk space on the topmost level server (Root Server) is 20 GB.</li><li>♦ Depending on the number of workstations attached, the hard disk size might vary from 1 GB to 25 GB.</li></ul>

## 4.2 Desktop Management Server Software Requirements

Although all of the Desktop Management services can be installed on one machine, your network resources or design might require you to install some components on different servers. This section lists the software requirements for those servers.

- ♦ [Section 4.2.1, “Software Requirements for Installing All Components,” on page 44](#)
- ♦ [Section 4.2.2, “Software Requirements for Installing Workstation Inventory Only,” on page 47](#)
- ♦ [Section 4.2.3, “Software Requirements for Installing the ZENworks Database Only,” on page 48](#)

### 4.2.1 Software Requirements for Installing All Components

The following table lists the software configurations that are required on the machine where you install the Desktop Management Server software.

**Table 4-5** Server Software Requirements for Installing all ZENworks Desktop Management Components

Platform	Minimum Software Requirement
NetWare 6	<ul style="list-style-type: none"><li>♦ Support Pack 4 (minimum)</li><li>♦ Novell eDirectory™ 8.6.2 (minimum), 8.7.1, 8.7.3, or 8.8x (recommended)</li><li>♦ JVM 1.4.1 for NetWare (minimum)</li><li>♦ LDAP configured and running</li><li>♦ IP protocol stack bound and available on the server</li></ul> <p><b>IMPORTANT:</b> We strongly recommend that you download and install the version of the NetWare 6 Support Pack that ships in the current Consolidated Support Pack, along with the version of the JVM shipping in the current Consolidated Support Pack. They are designed to work together.</p> <p>If this NetWare 6 server will also be running the ZENworks 7 Middle Tier Server, you must upgrade eDirectory on the server to version 8.7.3 (or later).</p>



Platform	Minimum Software Requirement
NetWare 6.5	<ul style="list-style-type: none"> <li>♦ Support Pack 1.1 (minimum)</li> <li>♦ eDirectory 8.7.3 (minimum)</li> <li>♦ LDAP configured and running</li> <li>♦ IP protocol stack bound and available on the server</li> </ul> <p><b>IMPORTANT:</b> If NetWare 6.5 SP2 is installed on the server where you authenticate workstations for ZENworks functionality, you cannot administer the eDirectory tree or a server with ConsoleOne® 1.3.6 until you upgrade the version of the Novell Client™ installed on the machine to 4.9 SP2.</p>
Windows 2000	<ul style="list-style-type: none"> <li>♦ Windows Service Pack 4 (minimum)</li> <li>♦ Novell Client 4.9 SP1a installed and configured to use IP only, not IPX™</li> <li>♦ eDirectory 8.6.2 (minimum); 8.7.1, 8.7.3, or 8.8x (recommended)</li> <li>♦ LDAP configured and running</li> <li>♦ The current location of eDirectory should be shared with the name of SYS Installing eDirectory to any drive other than c : in combination with the ZENworks 7 Imaging components is not supported.</li> <li>♦ IP Protocol Stack must be bound and available on the server</li> <li>♦ If connecting to a ZENworks Middle Tier Server on Windows 2000, both Windows 2000 servers must be members of the Microsoft domain that is running Active Directory*</li> <li>♦ If the Windows 2000 server is functioning as a Windows Terminal Server, it must be run in Remote Admin mode. Application mode is not supported.</li> </ul>
Windows Server 2003	<ul style="list-style-type: none"> <li>♦ Novell Client 4.9 SP1a (or later) installed and configured to use IP only, not IPX Automatic Workstation Import and Removal (AWI) uses the Novell Client to work properly. Versions of eDirectory after 8.7.3 do not install the client, so make sure that the client is installed if you want to use AWI.</li> <li>♦ eDirectory 8.7.3 (minimum)</li> <li>♦ LDAP configured and running</li> <li>♦ The current location of eDirectory should be shared with the name of SYS Installing eDirectory to any drive other than C: in combination with the ZENworks 7 Imaging components is not supported.</li> <li>♦ IP Protocol Stack must be bound and available on the server</li> <li>♦ If connecting to a ZENworks Middle Tier Server on Windows Server 2003, both Windows Server 2003 machines must be members of the Microsoft domain that is running Active Directory</li> <li>♦ If the Windows Server 2003 is functioning as a Windows Terminal Server, it must be run in Remote Admin mode. Application mode is not supported.</li> </ul>

Platform	Minimum Software Requirement
SLES 9	<ul style="list-style-type: none"> <li>◆ SUSE® Linux Enterprise Server 9 Support Pack 1 (minimum) installed</li> <li>◆ Novell eDirectory 8.7.3 (minimum) installed on the Desktop Management Server</li> <li>◆ LDAP for eDirectory configured and running</li> <li>◆ IP Protocol Stack must be bound and available on the server</li> <li>◆ Ensure that Samba 3.0.9-2.6 (Samba Server, not Samba Client) is installed, or install or upgrade it to the recommended version using YaST Online Update.</li> </ul> <p><b>IMPORTANT:</b> Of the four pre-built software “sets” available for the SLES 9 installation (that is, <i>Minimum System</i>, <i>Minimum Graphical System</i>, <i>Full</i>, and <i>Default System</i> installations) only the <i>Default System</i> installation mode for SLES 9 supports ZENworks 7 Desktop Management. All other modes used for SLES 9 installation cause a subsequent ZENworks 7 Desktop Management installation failure.</p>
SLES 10	<ul style="list-style-type: none"> <li>◆ SUSE Linux Enterprise Server 10</li> <li>◆ Novell eDirectory 8.8.1 (minimum) installed on the Desktop Management Server</li> <li>◆ LDAP for eDirectory configured and running</li> <li>◆ IP Protocol Stack must be bound and available on the server</li> <li>◆ Ensure that Samba 3.0.9-2.6 (Samba Server, not Samba Client) is installed, or install or upgrade it to the recommended version using YaST Online Update.</li> </ul> <p><b>IMPORTANT:</b> Of the four pre-built software “sets” available for the SLES 10 installation (that is, <i>Minimum System</i>, <i>Minimum Graphical System</i>, <i>Full</i>, and <i>Default System</i> installations) only the <i>Default System</i> installation mode for SLES 10 supports ZENworks 7 Desktop Management. All other modes used for SLES 10 installation cause a subsequent ZENworks 7 Desktop Management installation failure.</p>
OES (Linux)	<ul style="list-style-type: none"> <li>◆ Novell Open Enterprise Server (Linux) 1.0 (minimum) installed</li> <li>◆ Novell eDirectory 8.7.3 (minimum) installed on the Desktop Management Server</li> <li>◆ IP Protocol Stack must be bound and available on the server</li> <li>◆ Ensure that Samba 3.0.9-2.6 (Samba Server, not Samba Client) is installed, or install or upgrade it to the recommended version using Red Carpet®.</li> </ul>

Novell ConsoleOne 1.3.6 and Novell eDirectory 8.7.3 are included on the *Novell ZENworks 7 Companion 1* CD. You can obtain the files necessary to create an eDirectory 8.7.x evaluation license diskette from the [Novell eDirectory 8.7.x Evaluation License Download \(http://www.novell.com/products/edirectory/licenses/eval\\_87.html\)](http://www.novell.com/products/edirectory/licenses/eval_87.html) Web site.

Novell ConsoleOne 1.3.6e and Novell eDirectory 8.8.1 are included on the *Novell ZENworks 7 with Support Pack 1 Companion 1* CD. No eDirectory 8.8.1 license is needed if you purchase ZENworks 7 Desktop Management with Support Pack 1.

The most current Novell Client (version 4.91 SP2 or later) is available for download from the [Novell Product Downloads \(http://download.novell.com/index.jsp\)](http://download.novell.com/index.jsp) Web site.

Support Pack files for NetWare are available from the [Minimum Patch List \(http://support.novell.com/produpdate/patchlist.html\)](http://support.novell.com/produpdate/patchlist.html) at the Novell Support Connection Web site.

The download for JVM version 1.4.1 for NetWare 6 is available in the latest [Consolidated Support Pack download \(http://support.novell.com/tools/csp/csplist.html\)](http://support.novell.com/tools/csp/csplist.html) at the Novell Support Connection Web site.

ConsoleOne 1.3.6 (or later), must be installed after any NetWare Support Packs are applied.

---

**IMPORTANT:** The Desktop Management Server does not function in an IP-to-IP gateway or in an IPX-to-IP gateway environment.

---

## 4.2.2 Software Requirements for Installing Workstation Inventory Only

If you choose to install Workstation Inventory component of Desktop Management Services, you can install the back-end services for this component on the server platforms listed in the following table:

**Table 4-6** *Server Software Requirements for Workstation Inventory Installation*

Platform	Minimum Software Requirement
NetWare 6 server	<ul style="list-style-type: none"><li>♦ See <a href="#">Section 4.2.1, “Software Requirements for Installing All Components,” on page 44</a></li><li>♦ Long name space installed</li></ul> <hr/> <p><b>IMPORTANT:</b> If this NetWare 6 server will also be running the ZENworks 7 Middle Tier Server, you must upgrade eDirectory to version 8.7.3 (required minimum).</p> <hr/>
NetWare 6.5 server	<ul style="list-style-type: none"><li>♦ See <a href="#">Section 4.2.1, “Software Requirements for Installing All Components,” on page 44</a></li><li>♦ Long name space installed</li></ul> <hr/>
Windows 2000 server	<ul style="list-style-type: none"><li>♦ See <a href="#">Section 4.2.1, “Software Requirements for Installing All Components,” on page 44</a></li><li>♦ Novell Client 4.9 SP1a installed with the patch available with TID 2967860 and configured to use IP only, not IPX. For more information on TID 2967860, see the <a href="http://support.novell.com/search/kb_index.jsp">Novell Support Knowledgebase (http://support.novell.com/search/kb_index.jsp)</a>.</li><li>♦ If the Windows 2000 server is functioning as a Windows Terminal Server, it must be run in Remote Admin mode. Application mode is not supported.</li></ul> <hr/>
Windows Server 2003	<ul style="list-style-type: none"><li>♦ See <a href="#">Section 4.2.1, “Software Requirements for Installing All Components,” on page 44</a></li><li>♦ Novell Client 4.9 SP1a installed with the patch available with TID 2967860 and configured to use IP only, not IPX. For more information on TID 2967860, see the <a href="http://support.novell.com/search/kb_index.jsp">Novell Support Knowledgebase (http://support.novell.com/search/kb_index.jsp)</a>.</li><li>♦ If the Windows Server 2003 is functioning as a Windows Terminal Server, it must be run in Remote Admin mode. Application mode is not supported.</li></ul> <hr/>

Platform	Minimum Software Requirement
SLES 9 SP1	<ul style="list-style-type: none"> <li>♦ See <a href="#">Section 4.2.1, “Software Requirements for Installing All Components,” on page 44</a></li> <li>♦ Novell eDirectory 8.7.3 (or later) installed on the Desktop Management Server</li> <li>♦ At least one replica of every partition containing ZENworks objects must be hosted on a server running eDirectory 8.5 or above</li> </ul>
OES (Linux) 1.0	<ul style="list-style-type: none"> <li>♦ See <a href="#">Section 4.2.1, “Software Requirements for Installing All Components,” on page 44.</a></li> <li>♦ Novell eDirectory 8.7.3 (or later) installed on the Desktop Management Server</li> <li>♦ At least one replica of every partition containing ZENworks objects must be hosted on a server running eDirectory 8.5 or above.</li> </ul>

**IMPORTANT:** For Windows servers, the server’s DNS short name must be the same as the server’s name. Either rename Windows servers where the server’s name does not match its DNS short name before running the installation, or do not select these servers for installing Workstation Inventory.

### 4.2.3 Software Requirements for Installing the ZENworks Database Only

If you choose to install the database component of the Desktop Management Server software, you can install it on a separate NetWare, Windows, or Linux machine.

**Table 4-7** *Server Software Requirements for Installing the ZENworks Database*

Component	Minimum Hardware and Software Requirements
Database	<ul style="list-style-type: none"> <li>♦ Sybase ASA 8.0.2 is installed automatically when you choose to install the inventory database on: <ul style="list-style-type: none"> <li>♦ NetWare 6 SP3</li> <li>♦ NetWare 6.5</li> <li>♦ Windows 2000 Server SP4</li> <li>♦ Windows 2003 Standard Edition</li> <li>♦ Windows 2003 Enterprise Edition</li> <li>♦ SLES 9 SP1 or OES (Linux) 1.0</li> </ul> </li> <li>♦ Oracle can be used as an alternative to Sybase. Oracle 9.2.0.6 or Oracle 10g R1 on: <ul style="list-style-type: none"> <li>♦ Windows 2000 Server SP4</li> <li>♦ Windows 2003 Standard Edition</li> <li>♦ Windows 2003 Enterprise Edition</li> <li>♦ SLES 9 SP1 or Solaris versions supported by Oracle</li> </ul> </li> <li>♦ MS SQL can be used as an alternative to Sybase: <ul style="list-style-type: none"> <li>♦ (Recommended) MS SQL version 2000 SP3a</li> </ul> </li> </ul>

## 4.3 Desktop Management Server Installation Prerequisites

Before you can install Desktop Management Services, there are several prerequisites that must be met. This section contains the prerequisite information you need.

- ☐ Make sure that you have made and archived a reliable backup of the server.
- ☐ Make sure that the recommended version of ConsoleOne is installed on the server where you will install the Desktop Management Server software.
- ☐ Make sure that you have Admin or equivalent rights to eDirectory on all servers where you will install the Desktop Management Server software.
- ☐ Make sure that you have Admin or equivalent rights to extend the directory schema.
- ☐ If you will be installing to a NetWare server, unload `java.nlm` (at the Server Console, type `java -killall`, then type `java -exit`). Make sure you do this when Java\* is not being used by another process and the proper Java components have already been installed.
- ☐ Exit any program that uses files in the `sys:public` directory on any server where you will be installing Desktop Management Server software.
- ☐ The display on the workstation you use to install or administer the Desktop Management Server software must be set at a resolution of 1024 x 768. Installing with the display set at 800 x 600 makes the resolution of the installation and ConsoleOne screens too large for displaying important information.
- ☐ If you choose to install Desktop Management Server software on a Windows server, make sure that you first close the Service Control Manager window.
- ☐ If you choose to install Desktop Management Server software from a Windows 2000 workstation or a Windows 2000 XP SP1 workstation to a Windows 2000/2003 server, the workstation should be authenticated to both eDirectory and as the local or domain administrator of the Windows server you will be installing to.
- ☐ If you will be installing the Inventory Server component, make sure that the name of the server where you will install the Inventory server and the tree where the server resides does not contain “#”.

The Desktop Management Server installation program lets you install any of the Desktop Management components individually (or in a grouping of your choice) on the servers you select. For more information about these components, see [Chapter 1, “What Is ZENworks Desktop Management?”](#) on page 21.

---

**NOTE:** Both the Desktop Management Server installation program and the Middle Tier Server installation program allow you to select servers from only one eDirectory tree. If you run either of these installation program from a Windows server and if that server is not part of the tree you have selected, you cannot install the Desktop Management Server locally.

---

If you know that you want to use only certain Desktop Management components, this can save time and server space. The following components can be individually selected:

### Desktop Management Services

- ◆ Application Management
- ◆ Workstation Management Common Components

- ♦ Remote Management

### Additional Options

- ♦ Desktop Management Database
- ♦ Inventory Database
- ♦ Inventory Server
- ♦ Inventory Proxy Server
- ♦ Imaging Server
- ♦ PXE Server
- ♦ Workstation Import/Removal Server
- ♦ Desktop Management Services Snap-ins

If you choose to install Remote Management:

- ☐ Make sure you have administrator rights to install the Remote Management Agent.

If you choose to install Workstation Inventory:

- ☐ Stop Sybase Adaptive Server Anywhere.

**On NetWare:** Enter `Q` at the Sybase console prompt.

**On Windows 2000:** In the Control Panel, double-click *Administrative Tools > Services*, select *Novell Database - Sybase*, then click *Stop*.

**On Linux:** Enter `/etc/init.d/novell-zdm-sybase stop` at the Sybase console prompt.

- ☐ Use top-down deployment for Inventory installation. Always begin the installation at the topmost-level server and proceed with the next lower-level servers. For example, in an inventory setup with a Root Server and a Leaf Server, complete the inventory installation at the Root Server, and then run the installation for the Leaf Server.
- ☐ Make sure that the servers where you want to install the Desktop Management Inventory server and the Database components have a valid DNS name configured. Also, make sure that the workstation you will use for installing Desktop Management Server software is properly configured to perform DNS lookup.

If the servers do not have a DNS name, you must select an IP address for the server during Desktop Management Inventory policy configuration. For more information about configuring a server IP address or DNS name, see [Section 27.1, “Configuring the Inventory Database Object on a NetWare Server,”](#) on page 341.

- ☐ If the selected servers have the Server Inventory component of ZENworks for Servers 3.0.2 or earlier installed, you must upgrade the component to ZENworks 7 Server Management before installing ZENworks 7 Desktop Management. For more information on how to upgrade to ZENworks 7 Server Management, see “[Upgrading from ZENworks for Servers 3.x](#)” in “[Upgrade](#)” in the *Novell ZENworks 7 Server Management Installation Guide*.

# Preparing a Linux Server for ZENworks Functions

# 5

When you install Novell® ZENworks® 7 Desktop Management on a Linux server, it might be necessary to further configure that Linux server to accommodate ZENworks functions. This section includes information to help you make those configurations. The following content is included in this section:

- ♦ [Section 5.1, “Configuring a Linux Server for ZENworks File Access,” on page 51](#)
- ♦ [Section 5.2, “Preparing the Linux Inventory Server,” on page 59](#)

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**NOTE:** The information in this section also applies to ZENworks 7 Desktop Management with Support Pack 1.

---

## 5.1 Configuring a Linux Server for ZENworks File Access

When you use a Linux server as the “back end” for ZENworks file storage and access, you need to configure it (either prior to installing the ZENworks Desktop Management Server or after that installation is complete) so that ZENworks can later access the files stored there.

---

**NOTE:** Setting up the Linux server for file access is optional; you can set up NetWare® or Windows servers to provide file access while still using your Linux back end server.

---

This section includes information about configuring SUSE® Linux Enterprise Server (SLES) servers for ZENworks file access rather than configuring Novell Open Enterprise Server (OES) servers for that purpose. OES Linux already includes Novell eDirectory™ and provides Novell Storage Services (NSS) access to its file system. Therefore, policy or application files stored on the OES Linux server can simply use the UNC-style path (that is, `\\OES_server_name/sys/public/...`), making further configuration for ZENworks file access unnecessary.

Configuring a SLES server to enable file access requires that you configure Samba server software to obtain authentication information either from the Active Directory\* domain or the eDirectory tree, and then create one or more Samba shares on the server. This allows the share to be managed by the directory.

The intent of this section is to present a basic method showing how to accomplish the required authentication. There are many ways to configure Samba; for more information, see the [Samba Documentation Collection](http://samba.org/samba/docs/man/) (<http://samba.org/samba/docs/man/>).

The following information is included in this section:

- ♦ [Section 5.1.1, “Configuring a Linux Server in an Active Directory Environment,” on page 52](#)
- ♦ [Section 5.1.2, “Configuring a Linux Server in an eDirectory Environment,” on page 54](#)

## 5.1.1 Configuring a Linux Server in an Active Directory Environment

If you plan to use Active Directory on the SLES 9 or SLES 10 server where you want to install the ZENworks Management Server, you need to enable directory-based CIFS access to the applications and other files you want to store on that server for use by ZENworks.

---

**IMPORTANT:** Although it is not recommended, users can access an OES server/Samba share from a Windows workstation where the Novell Client™ is installed, but you need to configure Samba to provide a netBIOS name that is not the same as the OES server name.

---

This section includes the following information.

- ♦ “Configuring Samba to Use Kerberos” on page 52
- ♦ “Setting Up a Samba Share” on page 53

### Configuring Samba to Use Kerberos

Use the following steps to configure the SLES 9 server to use Kerberos\* for authentication:

- 1 Edit the Kerberos (heimdal-lib version 0.6 or later) configuration file to indicate the name of the Active Directory domain you want to join.

**1a** Using a text editor, open `/etc/krb5.conf` on the Linux server.

**1b** Find the following lines in the file:

```
[libdefaults]
    default_realm = YOUR.KERBEROS.REALM

[realms]
    YOUR.KERBEROS.REALMS = {
        kdc = your.kerberos.server
    }
```

**1c** Revise these lines as follows:

```
[libdefaults]
    default_realm = DOMAIN_NAME

[realms]
    DOMAIN_NAME = {
        kdc = wins_name
        admin_server = wins_name
        kpasswd_server = wins_name
    }
```

The `DOMAIN_NAME` value shown in the sample is the fully qualified name of the Active Directory domain you want to join (for example, `RESEARCH.MYLOCATION.DIGITALAIRLINES.COM`). Make sure you enter this name using uppercase characters.

The `wins_name` value shown in the revised `kdc` line, and in the newly added `admin_server` and `kpasswd_server` lines is the primary domain controller or any domain controller in the domain (for example, `DC1`).



- 2** Edit the Samba server configuration file to indicate that Kerberos will be used to authenticate users to the Active Directory domain.

- 2a** Using a text editor, open `/etc/samba/smb.conf` on the Linux server.

- 2b** Find the following line in the Global section of the file:

```
security = user
```

- 2c** Revise this line and add more lines as follows:

```
security = ADS
realm = YOUR.KERBEROS.REALM
encrypt passwords = yes
netbios name = advertised_name
```

The `YOUR.KERBEROS.REALM` value shown in the sample is the domain name specified in the `krb5.conf` file (see [Step 1c on page 52](#)).

The `advertised_name` value shown in the `netbios name` line is the advertised network name of your Samba server, as well as its name in Active Directory (for example, `myserver_smb`).

- 3** Put the name of the server into an Active Directory container:

- 3a** At the Linux server command line, type the following command:

```
kinit administrator@YOUR.KERBEROS.REALM
```

The `YOUR.KERBEROS.REALM` value shown in this example is the domain name specified in the `krb5.conf` file.

- 3b** At the Linux server command line, enter the following command:

```
net ads join
```

## Setting Up a Samba Share

It is necessary to create a Samba share in order for Windows workstations to access files on the SLES 9 or SLES 10 server.

- 1** Using a text editor, open `/etc/samba/smb.conf` on the Linux server then add the following lines to the file:

```
[sharename]
path = local_directory
guest ok = no
read only = no
```

The `sharename` value shown in the first line is the advertised network name of the Samba share (for example, `zenfiles`).

The `local_directory` value shown in the second line is the local directory on the server where you want the share to reside.

- 2** Map all users who will access the share to a single Linux account.

- 2a** At the Linux server command line, type the following command:

```
/usr/sbin/useradd new_account_name
```

The `new_account_name` parameter is the Linux account you are creating (for example, `smbuser`).

- 2b** Find the `/etc/samba/smbusers` file on the Linux server.

- 2c** Add the following line to the file:

```
new_account_name = *
```

The *new\_account\_name* value in this line is the account name you created in [Step 2a on page 53](#).

- 3 At the Linux server command line, type the following commands to change the ownership of the path to the share:

```
mkdir -p directory_name  
chown -R Linux_account_name directory_name  
chmod 755 directory_name
```

The *directory\_name* value is the path to the local directory that you specified in [Step 1 on page 53](#).

The *Linux\_account\_name* value is the “new account name” you assigned in [Step 2a on page 53](#).

- 4 At the Linux server command line, enter the following command to restart the Samba server so that the configuration file is executed with its new parameters:

```
/etc/init.d/smb restart
```

## 5.1.2 Configuring a Linux Server in an eDirectory Environment

If you plan to use eDirectory on the SLES 9 SLES 10 server where you want to install the ZENworks Management Server, you need to enable directory-based CIFS access to the applications and other files you want to store on that server for use by ZENworks.

This section includes information that you need to know for configuring the SLES 9 or SLES 10 server for use with ZENworks Desktop Management in an eDirectory environment:

- ♦ “Configuring Linux to Authenticate to eDirectory Using LDAP” on page 54
- ♦ “Creating Samba Credentials for Any User” on page 57
- ♦ “Setting Up a Samba Share” on page 58
- ♦ “Accessing Workstation-Associated ZENworks Files on a SLES 9 Server (Option A)” on page 58
- ♦ “Accessing Workstation Associated ZENworks Files on a SLES 9 or SLES 10 Server (Option B)” on page 59
- ♦ “Defining Restricted Users” on page 59

### Configuring Linux to Authenticate to eDirectory Using LDAP

This section describes the steps necessary to configure a SLES 9 or SLES 10 server (which acts as the LDAP client) and Novell eDirectory (which acts as the LDAP server) to provide authentication redirection over LDAP to Novell eDirectory. The content assumes that Novell eDirectory 8.7.3 (or later) has already been installed on the SLES 9 or SLES 10 server.

When the server is configured, any user can log in to a SLES 9 or SLES 10 server using his or her eDirectory credentials.

Use the following procedures in the order listed below:

1. “Extending the eDirectory Schema for Linux Account Authentication” on page 55
2. “Extending the eDirectory Schema for Samba” on page 55

3. “Creating a Proxy User for Anonymous Binds” on page 56
4. “Configuring the SLES 9 or SLES 10 Server (LDAP Client)” on page 56
5. “Configuring eDirectory Accounts for Linux Authentication” on page 57

## Extending the eDirectory Schema for Linux Account Authentication

Configuring the SLES 9 or SLES 10 server for eDirectory authentication requires extension of the existing eDirectory schema (the schema on an OES server is already extended by the ZENworks installation).

Extending the schema can be accomplished using either the `ndsschema` utility or the `ICE` utility. Both of these utilities reside on the SLES 9 or SLES 10 server. Command line syntax for both utilities is provided in this section.

---

**IMPORTANT:** Prior to using the `ICE` utility, you need to make sure to use `ConsoleOne` to check the properties of the LDAP Group object in the eDirectory tree you will be using.

Right-click the LDAP Group object, click *Properties*, click *General*, then deselect *Require TLS For Simple Binds With Password*.

---

The schema defined for Linux account authentication is defined in [RFC 2307](http://www.faqs.org/rfcs/rfc2307.html) (<http://www.faqs.org/rfcs/rfc2307.html>). Novell offers schema import files in traditional eDirectory schema format and in Lightweight Data Interchange Format (LDIF) to be used for extending the Novell eDirectory schema.

Use the following steps to extend the eDirectory schema in your environment:

- 1 Log in to the Linux server running Novell eDirectory as the root user.
- 2 At the bash prompt, enter `cd /usr/lib/nds-schema`.
- 3 Run a utility to extend the schema.
  - ♦ **ndsschema method:** At the bash prompt, enter the following command to extend the schema:  

```
ndssch cn=admin_name.o=admin_container_name rfc2307-usergroup.sch
```
  - ♦ **ICE method:** At the bash prompt, enter the following command to extend the schema:  

```
ice -S LDIF -f rfc2307-usergroup.ldif -D LDAP -s localhost -d cn=admin_name,o=admin_container_name -W
```

## Extending the eDirectory Schema for Samba

- 1 At the bash prompt, enter the following command:  

```
cd /usr/share/doc/packages/samba/examples/LDAP
```

This location is provided by the `samba-doc` RPM package. Alternatively, you can use the following command to find the schema file in the `samba-client` RPM package:  

```
cd /usr/share/samba/LDAP
```
- 2 Enter the following command to use the `ICE` utility to extend the eDirectory schema for Samba:  

```
ice -S LDIF -f samba-nds.schema -D LDAP -s localhost -d cn=admin_name,o=admin_container_name -W
```

## Creating a Proxy User for Anonymous Binds

Use the following steps to set up a proxy user in eDirectory for anonymous binds:

- 1 In ConsoleOne, create a new user account and set the password to null. Do not click *Cancel* when prompted; instead, click *OK* so that Public/Private keys are generated.
- 2 Right-click the new User object, click *Properties*, click *Password Restrictions*, then deselect *Allow User to Change Password*.
- 3 At the Root object of the tree, right-click the object, select *Trustees of this Object*, grant the new user Browse entry rights, then grant the new user Read and Compare property rights on the following attributes:

*CN*  
*Description*  
*O*  
*OU*  
*Object Class*  
*dc*  
*gecos*  
*gidNumber*  
*homeDirectory*  
*loginShell*  
*memberUid*  
*uidNumber*  
*uniqueID*

Make sure that *Inheritable* is selected for each of these attributes as you configure them.

- 4 Remove *[All Attributes Rights]* from the list of attributes for this User object.
- 5 Right-click the LDAP Group object, click *Properties*, click *General*, then select this new user as the proxy user.

---

**TIP:** You cannot access the *General* tab from the version of ConsoleOne included on the *ZENworks 7 Companion 1* CD. To use ZENworks Desktop Management properly, you need to download the [ZENworks 7 Desktop Management snap-ins for ConsoleOne 1.3.6](http://download.novell.com/Download?buildid=6kuY0YcDGdc~) (<http://download.novell.com/Download?buildid=6kuY0YcDGdc~>) from the Novell Downloads Web site.

Follow the instructions at the download site to install the snap-ins.

---

- 6 Right-click the LDAP Server object, click *Properties*, click *General*, then select *Refresh NLDAP Server Now*.

## Configuring the SLES 9 or SLES 10 Server (LDAP Client)

- 1 Start the YaST2 Control Center.
  - 1a Run `/sbin/yast2`
  - 1b Enter menu.
- 2 From the menu, select *Network Services*, select *LDAP Client*, then select *Use LDAP*.

As an alternative to Steps 1 and 2 above, you can simply run `/sbin/yast2 ldap` from the command line to open the LDAP client configuration window.

- 3 Add the LDAP server in the server field and the search base of where users are located. For example:

**Base DN:** `ou=users, ou=novell`

**Addresses of LDAP Servers:** `127.0.0.1`

- 4 Select *LDAP TLS/SSL*, then click *Finish* to save your changes.

## Configuring eDirectory Accounts for Linux Authentication

Use the following steps to add the `posixAccount` auxiliary class to a user account and set the required fields:

- 1 In ConsoleOne, select and right-click a User account.
- 2 Select *Extensions of this Object*.
- 3 Click *Add Extension*.
- 4 In the list, select *posixAccount*, then click *OK*.
- 5 In the Generic Editing dialog box, click *OK*.
- 6 In the New `posixAccount` dialog box, fill in the fields. The following table shows the field names, their purpose, and an example of the data you would fill in.

Field Name	Purpose	Example
<i>Name</i>	The name of this extension	<code>posixAccount</code>
<i>homeDirectory</i>	The user home directory	<code>/home/tjones</code>
<i>uniqueID</i>	The unique ID of the user	<code>tjones</code>
<i>Common Name</i>	The Linux <code>gecos</code> field	<code>Trevor Jones</code>
<i>gidNumber</i>	The GID in Linux	<code>515</code>
<i>uidNumber</i>	The GID in Linux	<code>515</code>

Other attributes that are required and that can be added on the Other page of the User object include the following:

Field Name	Purpose	Example
<i>loginShell</i>	Sets the user's shell. The <code>loginShell</code> attribute is required by SUSE Linux for proper X login.	<code>/bin/bash</code>

- 7 Click *OK* to save the changes.

## Creating Samba Credentials for Any User

The Samba credentials for any managed user are maintained separately from standard Linux credentials. Use the following steps to add Samba credentials for any user account.

- 1 Log in as `root` at the SLES 9 or SLES 10 server, then enter the following command at the bash prompt:  

```
smbpasswd -a username
```

This configuration prompts users who are logging in to the server for the Samba password for the server. In this syntax, *username* is the user's eDirectory user name. Users need to be in the context specified as the base DN when they configure to an LDAP client. For more information, see “[Configuring the SLES 9 or SLES 10 Server \(LDAP Client\)](#)” on page 56.

---

**NOTE:** This is a basic method for Samba account creation. There are many utilities and methods you can use for maintaining both the Linux and Samba passwords with one command. For more information, see the [Samba Documentation Collection \(http://samba.org/samba/docs/man/\)](http://samba.org/samba/docs/man/).

---

## Setting Up a Samba Share

It is necessary to create a Samba share in order for Windows workstations to access files on the SLES 9 or SLES 10 server.

- 1 Using a text editor, open `/etc/samba/smb.conf` on the Linux server, then add the following lines to the file:

```
[sharename]
path = local_directory
guest ok = no
read only = no
```

The *sharename* value shown in the first line is the advertised network name of the Samba share (for example, *zenfiles*).

The *local\_directory* value shown in the second line is the local directory on the server where you want the share to reside.

- 2 At the Linux server command line, enter the following commands to change the ownership of the path to the share:

```
mkdir -p directory_name
chown -R admin_user_name
chmod 755 directory_name
```

The *admin\_user\_name* value is the username that you use when you create policies and applications in ZENworks. This username is used to access the Samba share.

The *directory\_name* value represents the path to the local directory that you specified in [Step 1 on page 58](#).

- 3 At the Linux server command line, enter the following command to restart the Samba server so that the configuration file is executed with its new parameters:

```
/etc/init.d/smb restart
```

## Accessing Workstation-Associated ZENworks Files on a SLES 9 Server (Option A)

If you need to access workstation-associated policy and application files on a SLES 9 server using the eDirectory method, the Samba share must be marked to allow Guest access. Use the following steps to mark the Samba share:

- 1 Using a text editor, open `/etc/samba/smb.conf` on the server.
- 2 Find the following line in the `[sharename]` section of the file:

```
guest ok = no
```

The *sharename* value is the advertised network name of the Samba share (for example, *zenfiles*).

**3** Modify the line as follows:

```
guest ok = yes
```

### Accessing Workstation Associated ZENworks Files on a SLES 9 or SLES 10 Server (Option B)

If you using a Windows Middle Tier Server to access workstation-associated policy and application files on a SLES 9 or SLES 10 server using the eDirectory method, the Samba share does not need to be marked “World-read” (see [Step 3](#) above) to allow Guest access. Use the following steps to allow access to the files:

- 1** Ensure that the Windows Middle Tier Server (share credentials) are entered when you create the Middle tier during the installation. These could also be configured on the Middle Tier using the NSAdmin utility (LMAUTH credentials).
- 2** Make sure that the Middle Tier Server has the same credentials locally.

Even if you have a firewall, the Middle Tier can access the ZENworks files on behalf of the workstation.

### Defining Restricted Users

You can modify the `smb.conf` file to allow you to define the users for whom you want to restrict file modification rights. Use the following steps to define restricted users.

- 1** Using a text editor, open `/etc/samba/smb.conf` on the server.
- 2** Find the following line in the `[sharename]` section of the file:

```
read only = no
```

The *sharename* value is the advertised network name of the Samba share (for example, *zenfiles*).

**3** Modify the line as follows:

```
read only = yes
```

**4** At the bash prompt, enter the following command:

```
write list = admin_user_name
```

---

**NOTE:** The *admin\_user\_name* value is the username (or a comma-delimited list of usernames) that has only Read rights to the files on the Samba share.

---

## 5.2 Preparing the Linux Inventory Server

If you want to install the Workstation Inventory component of ZENworks 7 Desktop Management on a Linux server, perform the following tasks before the installation:

- ☐ Ensure that the Samba server is up and running.
- ☐ If workstations that do not have Novell Client installed send scans to an OES Linux Inventory server, then ensure that the OES server name is same as the DNS name.

- ❑ If you want LDAP access to use a secure connection between the ZENworks 7 Inventory server and Novell eDirectory, you need to enable a Secure Socket Layer (SSL) during the ZENworks 7 Desktop Management installation.

Before you enable SSL during installation, you must export the Trusted Root Certificate. Use the following steps to export the certificate:

- 1 In ConsoleOne, browse the eDirectory tree to find the container of the NCP™ server object for the Linux server where you want to install the ZENworks Inventory Server, right-click the *SSL Certificate* object (SSLCertificateDNS-server\_name), then click *Properties*.
- 2 Click the *Certificates* tab, click the *Trusted Root Certificate* suboption, then click *Export*.  
The Export a Certificate dialog box is displayed.
- 3 Click *Export* to select the default settings.  
The default path and the filename of the certificate is `c:\rootcert.der`. You can change the path and the filename of the certificate.
- 4 Click *Apply*, then click *Close*.
- 5 Copy the certificate to the Linux server (any location) where you will be installing the ZENworks 7 Inventory Server.
- 6 Note the location of the certificate on the Linux server because you need to specify the location during the ZENworks 7 Desktop Management Server installation.

For more information about enabling SSL during the installation, see [Installing All ZENworks Features on a Linux Server](#), [Installing Only the Desktop Management Server on a Linux Server](#), or [Customizing the ZENworks Desktop Management Installation on a Linux Server](#) in Part IV, “Installing ZENworks Desktop Management Services on Linux,” on page 297.



# Prerequisites for Installing the ZENworks Middle Tier Server

# 6

You must be logged in as Admin or an Admin equivalent if the server you are installing to is a NetWare® server. This enables the installation program to browse for eDirectory™ trees and NetWare servers.

If you are installing to a Windows 2000 server, you must be logged in as Administrator (or equivalent).

This section includes the following information:

- ♦ [Section 6.1, “ZENworks Middle Tier Server Limitations,” on page 61](#)
- ♦ [Section 6.2, “ZENworks Middle Tier Server Hardware Requirements,” on page 63](#)
- ♦ [Section 6.3, “ZENworks Middle Tier Server Software Requirements,” on page 64](#)
- ♦ [Section 6.4, “Configuring Ports for the Middle Tier Web Server and the Desktop Management Agent,” on page 65](#)
- ♦ [Section 6.5, “Optimizing the Apache Web Server for the Middle Tier Server,” on page 68](#)

## 6.1 ZENworks Middle Tier Server Limitations

You should be aware of the following limitations before installing the ZENworks® Middle Tier Server:

- ♦ ZENworks 7 Desktop Management does not support the installation of the ZENworks Middle Tier Server on Windows NT\* 4 servers.
- ♦ ZENworks 7 Desktop Management does not support the installation of the ZENworks Middle Tier Server on Windows Terminal Servers running in Application mode. For a Windows Terminal Server to function as a ZENworks Middle Tier Server, it must be run in Remote Admin mode.
- ♦ ZENworks 7 Desktop Management does not support the installation of the ZENworks Middle Tier Server in a Novell Clustering Services™ environment. For more information, see [Appendix B, “Installing in a Novell Cluster Services Environment,” on page 533](#).
- ♦ By default, the Apache Web Server is configured to communicate on ports 80 (HTTP) and 443 (HTTPS), but if other NetWare 6 components, such as Novell iFolder® and iPrint, were also initially installed on NetWare 6, it is possible that the NetWare Port Resolver has assigned ports 80 and 443 to an HTTP stack other than Apache.

Novell iFolder also uses Apache for its operations. If the Apache server in iFolder 1.3 is loaded into protected memory space, not kernel memory, it creates a different instance of the HTTP stack. The Desktop Management Agent communicates with the ZENworks Middle Tier Server using the ports configured for both Apache and the Desktop Management Agent. For more information about configuring ports, see [Section 6.4, “Configuring Ports for the Middle Tier Web Server and the Desktop Management Agent,” on page 65](#).

- ♦ The ZENworks 7 Middle Tier Server does not support the multiprocessor-enabled version of the Apache Web Server on NetWare 6. Installing the ZENworks Middle Tier Server on a NetWare 6 server with the multiprocessor-enabled version of Apache abends the server.  
There is no such limitation for installing the Middle Tier on NetWare 6.5 or later.
- ♦ Novell NetStorage is not supported on ZENworks 7 Middle Tier Servers installed on NetWare 6. If you intend to use NetStorage beyond its Desktop Management functions, we recommend that you install NetStorage on a separate server.
- ♦ Novell NetStorage is installed with the ZENworks 7 Middle Tier Server. If you intend to use the ZENworks Middle Tier frequently, and if you intend to use NetStorage beyond its Desktop Management functions, we recommend that you also install NetStorage on a separate server to avoid Middle Tier performance degradation.
- ♦ ZENworks 7 Desktop Management with Support Pack 1 downgrades the Middle Tier RPMs on OES Linux servers. Because of this downgrade, NetStorage stops working. We therefore strongly recommend that you do not install ZENworks 7 Desktop Management with SP1 on the same server where Novell NetStorage is installed. For more information see [Section 39.5, “Interoperability with Novell NetStorage,” on page 496](#).
- ♦ If you install the Novell Client™ on a Windows 2000/2003 server, then install the Middle Tier Server on the same machine, then uninstall the Novell Client from this server, the Middle Tier Server fails. The client uninstall program removes important files needed by the ZENworks Middle Tier Server.

In this same software combination scenario, if you subsequently upgrade the client to 4.9 SP2, a different version of `nicm.sys` is installed. If you do not use the `nicm.sys` included in ZENworks 7 Middle Tier Server, the Middle Tier Server fails.

To work around this issue, you have two options:

- 1) Save the `nicm.sys` file included in the ZENworks 7 Middle Tier Server installation prior to the client upgrade and then recopy after the client upgrade (this could also be accomplished by reinstalling the Middle Tier Server after the client upgrade).
  - 2) After the client upgrade, download `nicm.sys` from TID 10093371 in the [Novell Support Knowledgebase](#) ([http://support.novell.com/search/kb\\_index.jsp](http://support.novell.com/search/kb_index.jsp)) and copy it to overwrite the updated client version of `nicm.sys`.
- ♦ If you try to authenticate through the ZENworks Middle Tier Server to a Desktop Management Server installed on a Windows 2000/2003 machine that already has Active Directory (installed because the Desktop Management Server acts as the Primary Domain Controller) and eDirectory (installed to accommodate ZENworks Desktop Management) both installed, the authentication fails unless the user logs in with a full context.

The reason for this failure is a contention for the default LDAP port between the Active Directory and eDirectory LDAP listeners. To work around this port conflict, during the installation of eDirectory, choose an LDAP port other than the default, then use the NSAdmin utility in ZENworks Middle Tier Server to configure the ZENworks Middle Tier Server to communicate over that port.

To configure the LDAP port using NSAdmin:

- 1 In the Address box of Internet Explorer, type the URL for the NSADMIN utility. For example:

```
http://Middle_Tier_IP_address/oneNet/nsadmin
```

- 2 In the *Value* field of the LDAP Port configuration parameter, specify the LDAP Port number you already set in eDirectory and that the ZENworks Middle Tier Server should use to communicate with the Desktop Management Server, then click *Submit*.

## 6.2 ZENworks Middle Tier Server Hardware Requirements

The network server where you install ZENworks Middle Tier Server software requires the following hardware configuration:

**Table 6-1** Hardware Requirements for the ZENworks Middle Tier Server

Resource	Minimum Free Disk Space	Minimum Hardware Requirement
NetWare 6 server	160 MB	Pentium III (minimum) processor, 256 MB RAM; if scaled to 200 concurrent users, use Pentium III, 1 GB RAM. Scale thereafter as appropriate.
NetWare 6.5 server	160 MB	Pentium III (minimum) processor, 256 MB RAM; if scaled to 200 concurrent users, use Pentium III, 1 GB RAM. Scale thereafter as appropriate.
Windows 2000 server	160 MB	Pentium III (minimum) processor, 256 MB RAM; if scaled to 200 concurrent users, use Pentium III, 1 GB RAM. Scale thereafter as appropriate.
Windows Server 2003	160 MB	Pentium III (minimum) processor, 256 MB RAM; if scaled to 200 concurrent users, use Pentium III, 1 GB RAM. Scale thereafter as appropriate.
SLES 9 SP1	<ul style="list-style-type: none"><li>♦ less than 100 users = 10 GB</li><li>♦ 100 - 500 users = 25 GB</li></ul>	Pentium III (minimum) processor running at 1 GHz, 512 MB RAM; if scaled to 200 concurrent users, use Pentium III, 1 GB RAM. Scale thereafter as appropriate.
OES (Linux) 1.0	<ul style="list-style-type: none"><li>♦ less than 100 users = 10 GB</li><li>♦ 100 - 500 users = 25 GB</li></ul>	Pentium III (minimum) processor running at 1 GHz, 512 MB RAM; if scaled to 200 concurrent users, use Pentium III, 1 GB RAM. Scale thereafter as appropriate.

**NOTE:** ZENworks Middle Tier Server software is not supported on Windows NT 4 servers. It is also not supported on Windows 2000 Professional workstations that have IIS installed.

Of the four pre-built software “sets” available for the SUSE® Linux Enterprise Server (SLES) 9 installation (that is, *Minimum System*, *Minimum Graphical System*, *Full*, and *Default System* installations) only the *Default System* installation mode for SLES 9 supports ZENworks 7 Desktop Management. All other modes used for SLES 9 installation cause a subsequent ZENworks 7 Desktop Management installation failure.

## 6.3 ZENworks Middle Tier Server Software Requirements

The network server where you install the ZENworks Middle Tier Server software requires the following software configuration:

**Table 6-2** *Software Requirements for the ZENworks Middle Tier Server*

Platform	Minimum Software Requirement
NetWare 6 server	<ul style="list-style-type: none"><li>◆ Support Pack 4 (minimum)</li><li>◆ Novell International Cryptographic Infrastructure (NICI) client 2.4.0 installed if SSL connections will be used. NICI is available from the <a href="http://download.novell.com">Novell Product Download Web site (http://download.novell.com)</a>.</li><li>◆ eDirectory 8.7.3 (required minimum)</li></ul>
NetWare 6.5 server	<ul style="list-style-type: none"><li>◆ Support Pack 1 (minimum)</li><li>◆ Novell International Cryptographic Infrastructure (NICI) client 2.4.0 installed if SSL connections will be used. NICI is available from the <a href="http://download.novell.com">Novell Product Download Web site (http://download.novell.com)</a>.</li></ul>
Windows 2000 server	<ul style="list-style-type: none"><li>◆ IIS installed (version shipping with Windows 2000 server)</li><li>◆ Windows 2000 Server Service Pack 4 (minimum)</li><li>◆ IP Protocol Stack must be bound and available on the server</li><li>◆ If connecting to a Windows 2000 Desktop Management Server, both Windows 2000 servers must be members of the same Active Directory domain or a trust relationship must exist between the domains they belong to. The workstation logging in does not need to be a member of that domain unless the Desktop Management Server is delivering MSI applications. A server designated as the Domain Controller must be present in the domain; either the ZENworks Middle Tier Server or the Desktop Management Server can be designated as a Domain Controller.</li><li>◆ Novell International Cryptographic Infrastructure (NICI) client 2.4.0 installed if SSL connections will be used. NICI is available from the <a href="http://download.novell.com">Novell Product Download Web site (http://download.novell.com)</a>.</li></ul>
Windows Server 2003	<ul style="list-style-type: none"><li>◆ IIS installed (version shipping with Windows Server 2003)</li><li>◆ IP Protocol Stack must be bound and available on the server</li><li>◆ If connecting to a Windows Server 2003 Desktop Management Server, both Windows Server 2003 machines must be members of the same Active Directory domain or a trust relationship must exist between the domains they belong to. The workstation logging in does not need to be a member of that domain unless the Desktop Management Server is delivering MSI applications. A server designated as the Domain Controller must be present in the domain; either the ZENworks Middle Tier Server or the Desktop Management Server can be designated as a Domain Controller.</li><li>◆ Novell International Cryptographic Infrastructure (NICI) client 2.4.0 installed if SSL connections will be used. NICI is available from the <a href="http://download.novell.com">Novell Product Download Web site (http://download.novell.com)</a>.</li></ul>

Platform	Minimum Software Requirement
SLES 9	<ul style="list-style-type: none"> <li>♦ SUSE Linux Enterprise Server (SLES) 9 Support Pack 1 (minimum)</li> <li>♦ IP Protocol Stack must be bound and available on the server</li> </ul> <p><b>IMPORTANT:</b> Of the four pre-built software “sets” available for the SLES 9 installation (that is, <i>Minimum System</i>, <i>Minimum Graphical System</i>, <i>Full</i>, and <i>Default System</i> installations) only the <i>Default System</i> installation mode for SLES 9 supports ZENworks 7 Desktop Management. All other modes used for SLES 9 installation cause a subsequent ZENworks 7 Desktop Management installation failure.</p>
OES 1.0	<ul style="list-style-type: none"> <li>♦ Novell Open Enterprise Server (Linux) 1.0</li> <li>♦ IP Protocol Stack must be bound and available on the server</li> </ul>

**IMPORTANT:** If the IIS Web Server is not configured correctly for logging, Web site logging files (C:\windows\system32\logfiles\w3svc1\yymmdd.log) used by IIS in conjunction with the Middle Tier Server might grow to a very large size and use an unacceptable amount of disk space on the Windows server.

For information about how to configure Web site logging for Windows Server 2003, see the [Microsoft Knowledgebase Article 324279](http://support.microsoft.com/default.aspx?scid=kb;en-us;324279) (<http://support.microsoft.com/default.aspx?scid=kb;en-us;324279>) at the Microsoft Knowledgebase Web site.

The Middle Tier Server is also used to host applications available through the Web browser view of Novell Application Explorer, called `myapps.html`. For more information about installing `myapps.html`, see [Chapter 13, “Installing the Novell Application Launcher Plug-In,” on page 163](#). For information about configuring and using `myapps.html`, see “Customizing the Application Browser View” in “Novell Application Launcher: Customizing Views” in the *Novell ZENworks 7 Desktop Management Administration Guide*.

## 6.4 Configuring Ports for the Middle Tier Web Server and the Desktop Management Agent

The Desktop Management Agent can communicate with the ZENworks Middle Tier Server when the workstation is located either inside or outside the corporate firewall, provided that the Desktop Management Agent and the Web server software installed on the ZENworks Middle Tier Server machine (Apache HTTP Server on NetWare and Internet Information Server (IIS) on Windows) are set up to communicate on the same port.

You need to know how to configure the communication ports if the installation of the Web server changes the default port assignment from 80 and 443, if you want to either change or assign an additional port other than the default, or if you want to change the Desktop Management Agent port to match the Web server port.

**NOTE:** For a list of configurable ports, see the *Port Number Assignments* Appendix in *Getting Results with Novell Web Servers and Tools* in *Managing Web Servers and Other Web Tools* at the [NetWare 6 documentation Web site](http://www.novell.com/documentation/lg/nw6p/index.html) (<http://www.novell.com/documentation/lg/nw6p/index.html>).

This section includes the following information:

- ◆ Section 6.4.1, “Configuring Ports for the Apache Web Server on NetWare 6.x,” on page 66
- ◆ Section 6.4.2, “Configuring Ports for the Apache Web Server on Linux,” on page 66
- ◆ Section 6.4.3, “Configuring Ports for IIS on Windows,” on page 67
- ◆ Section 6.4.4, “Changing the DHost Port Assignment On a Windows 2000 Server with eDirectory 8.7.3 Installed,” on page 67
- ◆ Section 6.4.5, “Configuring the Port for the Desktop Management Agent,” on page 67

## 6.4.1 Configuring Ports for the Apache Web Server on NetWare 6.x

To configure ports for the Apache Web Server on NetWare 6.x, open and edit `adminserv.conf` found in the `sys:\apache\conf` directory. Search for the line with the current port assignment. You can either change the port number or add additional port numbers. You can also designate whether the port is a secure port used for listening. Use the existing port configuration lines as templates if you create a new port assignment for a non-secure port. When you designate a secure (HTTPS) port, you must use port 443. For additional information about configuring ports in Apache 2 on NetWare 6.5, see [Managing Listening Ports \(http://www.novell.com/documentation/nw65/web\\_apache/data/aichue2.html#aichue2\)](http://www.novell.com/documentation/nw65/web_apache/data/aichue2.html#aichue2) in the *Apache Web Server Administration Guide for NetWare 6.5*.

If you plan to use the Web browser view of the Novell Application Launcher<sup>®</sup>, `myapps.html`, you also need to edit its port number to match the port on the Apache Web server. On a NetWare 6.x server, `myapps.html` is located in the `sys:\apache\nwdocs` directory.

## 6.4.2 Configuring Ports for the Apache Web Server on Linux

To configure ports for the Apache Web Server on an OES Linux server, open and edit `httpd.conf` found in the `/etc/init.d/apache2` directory. Search for the line with the current port assignment. You can either change the port number or add additional port numbers. You can also designate whether the port is a secure port used for listening. Use the existing port configuration lines as templates if you create a new port assignment for a non-secure port. When you designate a secure (HTTPS) port, you must use port 443.

To configure ports for the Apache Web Server on a SLES 9 SP1 server, open and edit `listen.conf` found in the `/etc/init.d/apache2` directory. Search for the line with the current port assignment. You can either change the port number or add additional port numbers. You can also designate whether the port is a secure port used for listening. Use the existing port configuration lines as templates if you create a new port assignment for a non-secure port. When you designate a secure (HTTPS) port, you must use port 443.

If you plan to use the Web browser view of the Novell Application Launcher, `myapps.html`, you also need to edit its port number to match the port on the Apache2 Web server on Linux. You can find `myapps.html` in the DocumentRoot (for example in the `/srv/www/htdocs` directory). The `myapps.html` file is not installed if Apache2 is not installed on the Middle Tier Server.

### 6.4.3 Configuring Ports for IIS on Windows

- 1 At the server's desktop, click *Programs > Administrative Tools > Internet Services Manager > Internet Information Services* to open to Internet Information Services window.
- 2 Click the + symbol on the ZENworks Middle Tier Server icon to expand its hierarchy.
- 3 Right-click *Default Web Site* > click *Properties* to open the Default Web Site Properties dialog box.
- 4 On the Web Site page (the page opened by default) of the dialog box, change the port number in the *TCP Port* field. If you are designating a secure (HTTPS) port, you must use port 443.  
or  
On the Web Site page, click *Advanced* and follow the on-screen instructions to add multiple port numbers.

If you plan to use the Web browser view of the Novell Application Launcher, `myapps.html`, you also need to edit its port number to match the port on IIS. On a Windows server, `myapps.html` is located in the `c:\inetpub\wwwroot` directory.

### 6.4.4 Changing the DHost Port Assignment On a Windows 2000 Server with eDirectory 8.7.3 Installed

If you install eDirectory 8.7.3 on a Windows 2000 server, its DHost service is set to port 80 and starts running there. If you subsequently install the ZENworks Middle Tier Server to the same Windows 2000 server, the IIS Web server also tries to use port 80. This results in a port contention with the following message displayed:

Address already in use.

The ZENworks Middle Tier Server cannot start until you change the DHost port assignment to a port other than port 80. Use the following steps to change the DHost port assignment:

- 1 Open ConsoleOne<sup>®</sup>, then double-click the root container where you installed eDirectory.
- 2 Open the properties of `Http Server-server_name`, then click the *Other* tab.
- 3 On the *Other* page, double-click `httpDefaultClearPort`, double-click `80`, then change the port number to a port other than 80.
- 4 Click OK, close ConsoleOne, then reboot the Windows server.

### 6.4.5 Configuring the Port for the Desktop Management Agent

Port 80 is assigned by default to the Desktop Management Agent during installation. You might want to change this assignment if the Web server port (either on Apache or IIS) has changed, or if you want to select an alternate port for the Desktop Management Agent that has already been configured for the Web server. For details about how to assign a port number for the Desktop Management Agent, see [Step 8 on page 141](#).

Even when the port has been assigned to the Desktop Management Agent after installation, users can designate a different port to connect with. For more information, see [“Customizing the Agent Login” on page 186](#).

## 6.5 Optimizing the Apache Web Server for the Middle Tier Server

For optimal performance of the ZENworks Middle Tier Server on NetWare, you must change the Apache Web Server `ThreadsPerChild` configuration parameter from the default of 50 to 512.

To optimize the Apache Web Server on NetWare 6.x, you need to edit the `ThreadsPerChild` parameter in `adminserv.conf`. You can find the file in the `sys:\apache\conf` folder. The first few configuration parameters in the file look like this:

```
ServerType standalone
ServerRoot "sys:/apache"
PidFile logs/httpd.pid
ScoreBoardFile logs/apache_status
Timeout 300
KeepAlive On
MaxKeepAliveRequests 100
KeepAliveTimeout 15
ThreadsPerChild 50
```

Change the value in the `ThreadsPerChild` parameter from 50 to 512.



# User Workstation Requirements

# 7

Novell® ZENworks® Desktop Management is designed to work in a “clientless” environment; that is, the end user's workstation does not need to rely solely on the Novell Client™ to communicate with the Desktop Management Server software.

This does not mean that the Novell Client cannot be present. In fact, users can continue to use the Novell Client (versions 3.34/4.9 or later) even when the newer workstation functionality of ZENworks Desktop Management is installed with the Desktop Management Agent.

This section includes the following information:

- ♦ [Section 7.1, “Supported Workstation Platforms and Devices,” on page 69](#)
- ♦ [Section 7.2, “User Workstation Hardware Requirements,” on page 69](#)
- ♦ [Section 7.3, “User Workstation Software Requirements,” on page 70](#)

For more information about installing the Desktop Management Agent software on desktop machines, see [“Installing and Configuring the Desktop Management Agent” on page 137](#).

## 7.1 Supported Workstation Platforms and Devices

ZENworks Desktop Management has been extensively tested to manage the following desktop platforms:

- ♦ Windows 2000 Professional, with Service Pack 4 applied
- ♦ Windows XP Professional, with Service Pack 1 (minimum) applied
- ♦ Windows 98 SE

In addition to these platforms, ZENworks 7 Desktop Management supports distribution of policies and applications to Tablet PCs running the Windows XP Tablet PC Edition.

## 7.2 User Workstation Hardware Requirements

For full functionality and performance, the workstations to be managed by ZENworks Desktop Management require the following minimum amounts of processing power, disk space, and RAM on the desktop machines where the Desktop Management Agent will be installed:

**Table 7-1** *User Workstation Hardware Requirements*

Resource	Minimum Free Disk Space	Minimum Hardware Requirement
User workstation; complete Desktop Management Agent installation	20 MB	Pentium-compatible processor (32-bit only), 200 MHz; 128 MB of RAM

---

**IMPORTANT:** ZENworks Desktop Management is not supported on the NEC\* 9800 (also known as PC98) series of personal computers.

---

Workstations where Preboot Services will be installed require the following:

**Table 7-2** *Hardware Requirements for User Workstations Where ZENworks Preboot Services Will Be Installed*

Specification	Minimum Requirement
Processor	Pentium, 75 MHz or faster.
Network Card	PXE-enabled. (If the network card cannot be PXE-enabled, the workstation can be booted with a PXE-on-Disk boot diskette.)
Available Disk Space	None required.
RAM	16 MB; 128 MB recommended if Workstation Imaging is to be used on the workstation.
Graphics Display	VGA; 16-bit color.

A standard DHCP server must already be installed, either on the same server where you are installing Preboot Services or on another server in the network, before you install Preboot Services.

If the standard DHCP server is on the same server where you are installing Preboot Services (specifically, the Proxy DHCP component), you must set option tag 60 in DHCP services. For more information, see “[NetWare 6.x DHCP Server](#)” and “[Windows 2000 Advanced Server](#)” in the *Novell ZENworks 7 Desktop Management Administration Guide*.

## 7.3 User Workstation Software Requirements

Some software must be installed on the user workstation so that the Desktop Management Agent works properly. The requirements for that software are listed in the table below.

**Table 7-3** *User Workstation Software Requirements*

Required Software	Configuration Details
Internet Explorer	The minimum required version is 5.5 SP2 with high security (128-bit or higher) encryption. The Desktop Management Agent utilizes security and Internet access controls that are included with Internet Explorer.
Microsoft Windows Installer (MSI)	The minimum required version is MSI 1.11, which ships with Windows 2000. The Desktop Management Agent installation program automatically installs MSI 1.2. MSI 2.0 is available in the \microsoft windows installer folder of the <i>Novell ZENworks 7 Companion 2 CD</i> .

---

**NOTE:** If you choose to use the Novell Client on machines where the ZENworks Desktop Management Agent is installed, you should know that version 4.9 SP1a (or higher) of the client has been tested with ZENworks 7 Desktop Management.

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# Preparing the Administration Workstation or Server

# 8

To view, manage, or create a Novell® ZENworks® Desktop Management object in Novell eDirectory™, you need to use ConsoleOne®, a Java-based, graphical-interface management tool that can be installed and run either on a Windows or NetWare® server you are authenticated to or to a local Windows workstation that can be mapped to the server that is running eDirectory. ConsoleOne can view eDirectory objects of ZENworks (for example, workstation objects, application objects, policies, and database objects) and network resources (for example, schema, partitions, replicas) in trees to which you are authenticated.

When you install the Desktop Management Server, you can extend the eDirectory schema to include several directory objects unique to Desktop Management, including workstations, applications, databases, and policy packages. These objects are installed as .jar files to the \consoleone directory of the server or servers you select.

If you want to configure any component of ZENworks 7 Desktop Management, you need to use ConsoleOne to identify the object with which that component is associated and use the ConsoleOne “snap-ins,” (displayed as tabs or configuration pages in the object properties) to make the adjustments you want.

The information in this section describes the programs you need to install on the machine (Windows server or workstation) where you will administer ZENworks 7 Desktop Management.

- ♦ [Section 8.1, “Installing the Novell Client,” on page 71](#)
- ♦ [Section 8.2, “Installing ConsoleOne,” on page 72](#)
- ♦ [Section 8.3, “Installing the ConsoleOne Snap-ins,” on page 73](#)

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**NOTE:** Both the Desktop Management Server installation program and the Middle Tier Server installation program allow you to select servers from only one eDirectory tree. If you run either of these installation programs from a Windows server and if that server is not part of the tree you have selected, you cannot install the Desktop Management Server locally.

---

## 8.1 Installing the Novell Client

The Novell Client™ must be installed on the Windows workstation or server where you will be running ConsoleOne to administer ZENworks. This is because ConsoleOne is dependent on the client's NetWare libraries. For more information, see the [ConsoleOne 1.3x User Guide \(http://www.novell.com/documentation/lg/consol13/index.html?page=/documentation/lg/consol13/c1\\_enu/data/hk42s9ot.html\)](http://www.novell.com/documentation/lg/consol13/index.html?page=/documentation/lg/consol13/c1_enu/data/hk42s9ot.html) at the Novell Product Documentation Web site.

If you are using ZENworks 7 Desktop Management, you can find the Novell Client installation program on the *ZENworks 7 Companion 1* CD. For more information about the installation procedure and capabilities of the Novell Client, see the [Novell Product Documentation Web site \(http://www.novell.com/documentation/a-z.html\)](http://www.novell.com/documentation/a-z.html).

If you are using ZENworks 7 Desktop Management with Support Pack 1, you need to download the Novell Client from the Novell downloads Web site.

## 8.2 Installing ConsoleOne

ConsoleOne 1.3.6 is required for administering ZENworks 7 components. The ConsoleOne installation program on the *ZENworks 7 Companion 1* CD lets you install ConsoleOne files to the local hard drive of a Windows workstation or to the Windows or NetWare server of your choice (provided these servers meet the minimum requirements).

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**NOTE:** ZENworks 7 Desktop Management has not been tested on ConsoleOne 1.3.6d installed to a Linux server or desktop. ZENworks snap-ins are designed to be used with Windows.

No issues have been identified for scenarios where you install ZENworks 7 Desktop Management to a Windows server and administer it from the same server.

---

ConsoleOne 1.3.6e is recommended for administering ZENworks 7 with Support Pack 1 components. The ConsoleOne installation program on the *ZENworks 7 with Support Pack 1 Companion 1* CD lets you install ConsoleOne files to the local hard drive of a Windows workstation or to the Windows or NetWare server of your choice (provided these servers meet the minimum requirements).

This section includes the following information:

- ♦ [Section 8.2.1, “Things to Know When Installing ConsoleOne on a NetWare Server,” on page 72](#)
- ♦ [Section 8.2.2, “Things to Know When Installing ConsoleOne to a Local Workstation Hard Drive,” on page 73](#)

### 8.2.1 Things to Know When Installing ConsoleOne on a NetWare Server

If you intend to install ConsoleOne 1.3.6 (or 1.3.6e) on a NetWare server, you should be aware of the following:

- ♦ Make sure that you specify the install path with a mapped drive letter rather than with a UNC path.
- ♦ If you install or update ConsoleOne on a NetWare server volume, the installation program automatically installs the ConsoleOne files to the `public\mgmt\consoleone\1.2` directory on that volume because it assumes the drive is mapped to the root of the volume.
- ♦ Although the installation directory for ConsoleOne is named 1.2, this is misleading. There is no relationship between the installation directory name and the ConsoleOne version, which is version 1.3.6 for ZENworks 7 Desktop Management.
- ♦ If you map-root the drive to a subfolder under the volume, the installation program creates the default path and appends it to the map-rooted path. This causes subsequently installed snap-ins (such as those for Desktop Management) to be ignored by ConsoleOne because they are not installed to the path from which ConsoleOne is running.
- ♦ ZENworks snap-ins do not load properly on the NetWare server console. We recommend that you do not use the server console to run ConsoleOne for administering Desktop Management snap-ins. Instead, install and run ConsoleOne at a local Windows workstation or use a shortcut on the administration workstation (a Windows workstation) to launch it from the network server where you installed it.

## 8.2.2 Things to Know When Installing ConsoleOne to a Local Workstation Hard Drive

Although the ConsoleOne installation program lets you install ConsoleOne files to the hard drive of a local Windows workstation, this installation does not include the ZENworks 7 Desktop Management (or SP1) snap-ins. To administer ZENworks on a local administration workstation, you need to install the snap-ins after you install ConsoleOne. For more information, see [Section 8.3, “Installing the ConsoleOne Snap-ins,” on page 73](#).

## 8.3 Installing the ConsoleOne Snap-ins

If you install the ZENworks Desktop Management Server to a NetWare or Windows server, the ZENworks Desktop Management snap-ins are installed to the appropriate location by default. If you installed the Desktop Management Server to a Linux server (that is, an OES or SLES 9 server), neither ConsoleOne nor the ZENworks snap-ins are installed to the server. You need to install ConsoleOne to the hard drive of the local Windows workstation where you will be administering ZENworks Desktop Management.

After you install ConsoleOne, you can obtain the snap-ins from the *ZENworks 7 Companion 2 CD* or from the [Novell Download Web page \(http://download.novell.com\)](http://download.novell.com). This section includes the following information:

- ♦ [Section 8.3.1, “Downloading the Snap-Ins,” on page 73](#)
- ♦ [Section 8.3.2, “Copying the Snap-Ins,” on page 74](#)
- ♦ [Section 8.3.3, “Installing the Snap-Ins,” on page 74](#)

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**NOTE:** The information in this section also applies to ZENworks 7 Desktop Management with Support Pack 1.

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### 8.3.1 Downloading the Snap-Ins

Use the following instructions to download the ZENworks 7 Desktop Management snap-ins from the [Novell Download Web page \(http://download.novell.com\)](http://download.novell.com) as you prepare to install them to ConsoleOne on your local Windows workstation.

- 1 Read [Section 8.3.3, “Installing the Snap-Ins,” on page 74](#) before you download the ZENworks 7 Desktop Management snap-in .zip file.
- 2 Create a temporary directory on the local workstation for downloading the .zip file.
- 3 On the Novell ZENworks 7 Desktop Management snap-ins download page, click *Proceed to Download*.
- 4 Follow the prompts to download the desired .zip files and copy them into your temporary directory.

You are now ready to install the ZENworks 7 Desktop Management snap-ins to ConsoleOne. Continue with [Section 8.3.3, “Installing the Snap-Ins,” on page 74](#).

## 8.3.2 Copying the Snap-Ins

Use the following instructions to copy the ZENworks 7 Desktop Management snap-ins from the *ZENworks 7 Companion 2* CD as you prepare to install them to ConsoleOne.

- 1 Read [Section 8.3.3, “Installing the Snap-Ins,” on page 74](#) before you copy the ZENworks 7 Desktop Management snap-in .zip file.
- 2 Create a temporary directory on the local workstation for downloading the .zip file.
- 3 Copy the snap-in .zip file to the temporary directory.

You are now ready to install the ZENworks 7 Desktop Management snap-ins to ConsoleOne. Continue with [Section 8.3.3, “Installing the Snap-Ins,” on page 74](#).

## 8.3.3 Installing the Snap-Ins

Use the following instructions to install the ZENworks 7 Desktop Management snap-ins from the temporary directory where you either downloaded or copied the snap-in .zip file.

- 1 Complete [Section 8.3.1, “Downloading the Snap-Ins,” on page 73](#) or [Section 8.3.2, “Copying the Snap-Ins,” on page 74](#).
- 2 Make sure the instance of ConsoleOne that you want to update is not running.
- 3 Open the snap-in .zip file in WinZip and browse for the directory where ConsoleOne is installed on the workstation and unzip the file into that directory.

By default, ConsoleOne is installed in the `...\consoleone\1.2` directory. Do not omit the `\1.2` part of the path when you specify where to extract the .zip file.

---

**IMPORTANT:** You must extract the snap-in .zip file to the *ConsoleOne\_installation* directory, or the snap-ins will be copied to the wrong directory structure and will not work. For example, you might have installed ConsoleOne to a different directory path than `...\consoleone\1.2`.

---

- 4 If you are prompted to overwrite existing files of the same name in the destination directories, choose *Yes to All*, regardless of differences in file dates.
- 5 Repeat Steps 2 through 4 for each instance of ConsoleOne that you want to update.

# Windows-Based Installation



Novell® ZENworks® 7 Desktop Management can be installed on Windows servers, Novell NetWare® servers, and Novell Open Enterprise Server (OES) or SUSE® Open Enterprise Server (SLES) 9 (Linux) servers. When you install on Windows or NetWare servers, you use a Windows-based installation program. This section includes information about the following Windows-based installation programs:

- ♦ **Desktop Management Server:** This software lets you centrally create and manage policies and profiles for users and workstations on a Windows network, a NetWare network, or a mixed network. These policies and profiles enable you to distribute, manage, and update applications, perform advanced inventory and remote management functions, and automatically install operating systems on the Windows workstations in your network.
- ♦ **ZENworks Middle Tier Server:** This software works with Web Server software installed on a NetWare or Windows server to set up authentication and communication between the Desktop Management Server inside the corporate firewall and workstations outside the corporate firewall. This communication makes it possible for mobile users to get Desktop Management services when they are traveling. It also allows communication for workstations that do not have the Novell Client™.
- ♦ **Desktop Management Agent:** This software includes the functionality needed to remotely manage a workstation, to receive applications, or to push policies to the workstation. It also enables a workstation to authenticate to the Desktop Management Server through the ZENworks Middle Tier Server without using the traditional Novell Client.

The workstation functionality afforded by ZENworks Desktop Management components is available only if you install the Desktop Management Agent. This is true even if you currently have the Novell Client installed on that workstation. The Desktop Management Agent installation removes the Desktop Management features that were previously installed by the Novell Client and replaces them with selected ZENworks workstation features.

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**NOTE:** ZENworks 7 Desktop Management software manages Windows workstations only. For information about managing Linux workstations, see the *Novell ZENworks 7 Linux Management Installation Guide* or the *Novell ZENworks 7 Linux Management Administration Guide*.

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- ♦ **Novell Application Launcher Plug-In:** (Optional) This software is a simplified version of Novell Application Launcher™ (which is installed with the Desktop Management Agent) that can be installed from the Middle Tier Server to enable distribution of applications to users.
- ♦ **ZENworks Launch Gadget:** (Optional) This software enables users to launch applications from a Novell exteNd Director™ 4.1 SE portal.

The information in the following sections will help you install these components in your Windows or NetWare or mixed Windows/NetWare network environment.

- ♦ Chapter 9, “Installing the ZENworks Desktop Management Server,” on page 77
- ♦ Chapter 10, “Installing the ZENworks Middle Tier Server,” on page 107
- ♦ Chapter 11, “Installing the Desktop Management Server and the Middle Tier Server on the Same Machine,” on page 131
- ♦ Chapter 12, “Installing and Configuring the Desktop Management Agent,” on page 137

- ♦ Chapter 13, “Installing the Novell Application Launcher Plug-In,” on page 163
- ♦ Chapter 14, “Installing the ZENworks Launch Gadget,” on page 169
- ♦ Chapter 15, “Setting Up Terminal Server Application Support,” on page 173
- ♦ Chapter 16, “Setting Up Authentication,” on page 183
- ♦ Chapter 17, “Setting Up Security Measures on Windows or NetWare Middle Tier Servers,” on page 191
- ♦ Chapter 18, “Installing in a Windows Network Environment,” on page 201

These sections also contain information about installing ZENworks 7 Desktop Management with Support Pack 1 (SP1). For more information about preparing for SP1, see [Chapter 33, “Upgrade Considerations for ZENworks 7 Desktop Management with SP1,”](#) on page 441 or [Chapter 34, “Upgrading to Support Pack 1 Using Server Software Packages,”](#) on page 443. For more information you should consider for upgrading other versions of ZENworks Desktop Management to ZENworks 7 Desktop Management with SP1, see [Part VI, “Upgrade,”](#) on page 353.

For information about installing ZENworks 7 Desktop Management Services on a Linux server, see [Part IV, “Installing ZENworks Desktop Management Services on Linux,”](#) on page 297.

For information about installing ZENworks 7 Desktop Management with Support Pack 1 on an OES Linux cluster, see [Section B.11, “Installing ZENworks 7 Desktop Management with SP1 in an OES Linux Cluster Environment,”](#) on page 555.



# Installing the ZENworks Desktop Management Server

# 9

This section includes the following information:

- ♦ [Section 9.1, “Desktop Management Server Installation Procedure,” on page 77](#)
- ♦ [Section 9.2, “SP1 Desktop Management Server Installation,” on page 91](#)
- ♦ [Section 9.3, “Checking the Installation,” on page 106](#)

## 9.1 Desktop Management Server Installation Procedure

When you have met the hardware and software requirements and prerequisites for installation (see [Part II, “Preparation,” on page 37](#)), use the following steps to get the Novell® ZENworks® Desktop Management Server up and running on a NetWare® or Windows server.

---

**IMPORTANT:** When you complete the installation of the Desktop Management Server, make sure you complete the post-installation tasks that are required for Windows, NetWare, and Linux servers. For more information, see [Part V, “Post-Installation,” on page 339](#).

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- 1 Select a Windows 2000/XP workstation (or a Windows 2000/2003 server) to run the Desktop Management Server installation program. The workstation or server must meet the requirements for an installing workstation. For details, see [“Prerequisites for the Workstation Running the Installation” on page 39](#).

- 2 At a Windows workstation, insert the *Novell ZENworks 7 Desktop Management* CD.

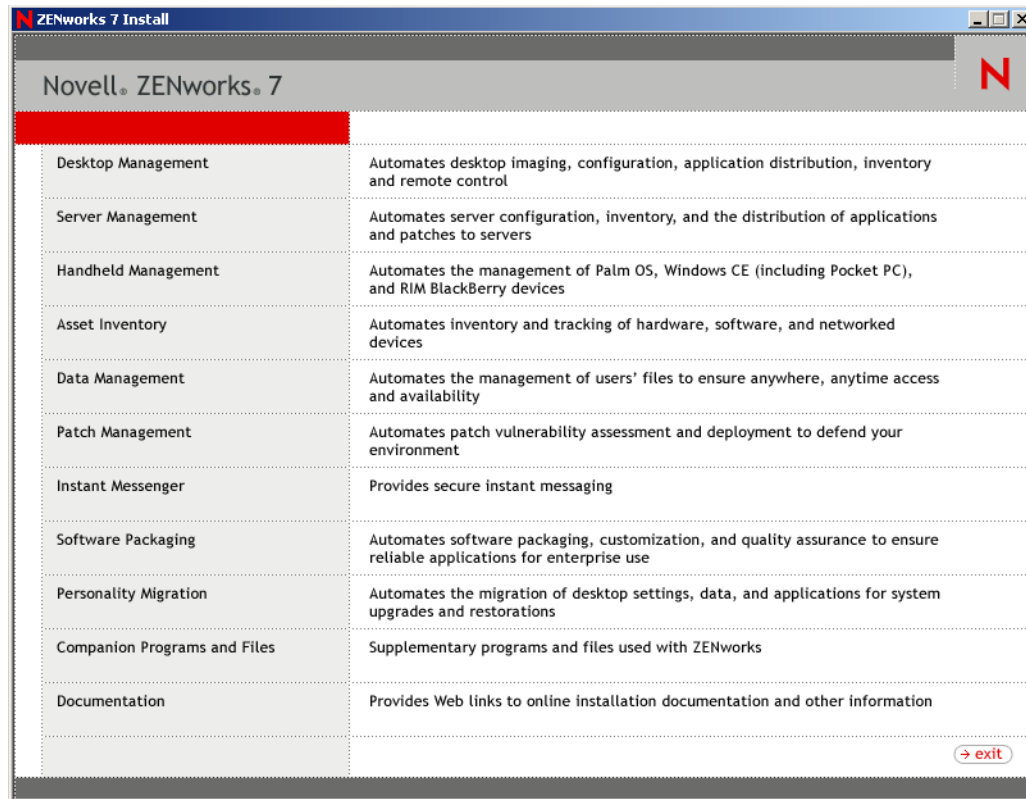
The `winsetup.exe` program autoruns. If it does not autorun, launch the program from the root of the CD.

If you run the installation from a directory location where you have copied the ZENworks Desktop Management ISO files, make sure that all of these files are copied to the same location from which you are running `winsetup.exe`.

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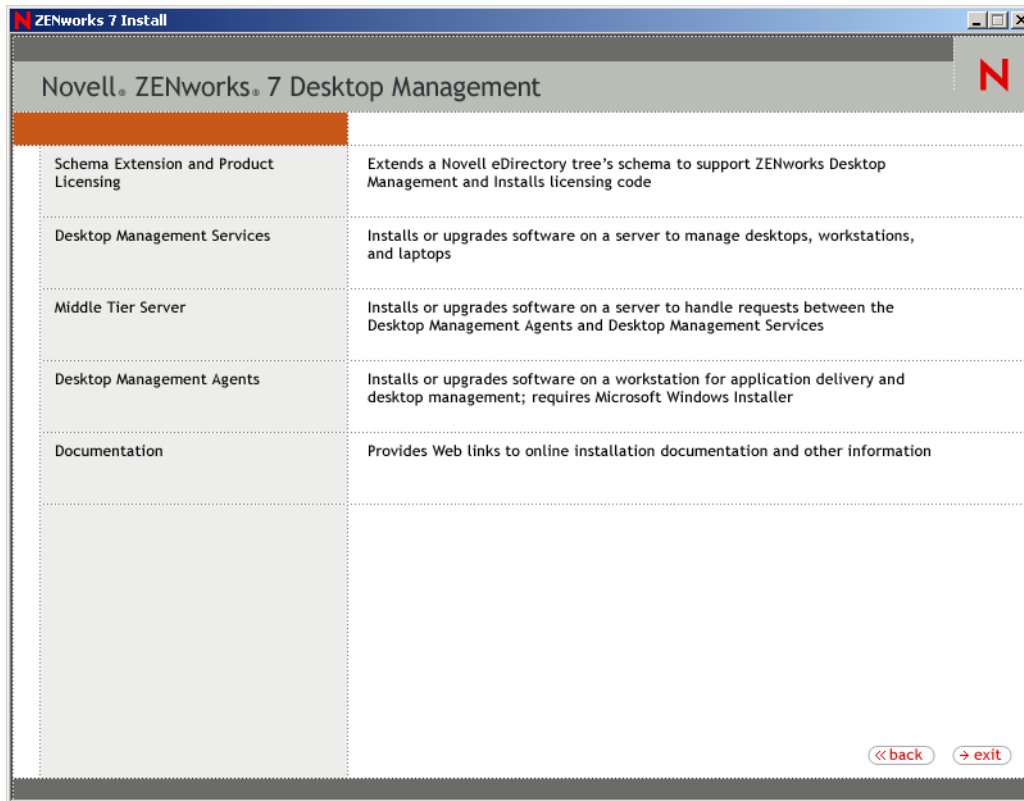
**IMPORTANT:** If you remove the *Novell ZENworks 7 Desktop Management* CD from the CD drive during the installation, or if you lose your connection to the server you are installing to, the installation program stops and does not proceed. To terminate the installation process, open the Windows Task Manager, click *Processes*, select `javaw.exe`, then click *End Process*.

---



**3** Click *Desktop Management* to display a page with options to install in various languages.

4 Click *English* to display a page with Desktop Management installation options.



From this page, you can choose to either extend the schema before you actually install the new Desktop management product, or you can choose to extend the schema as part of the installation procedure.

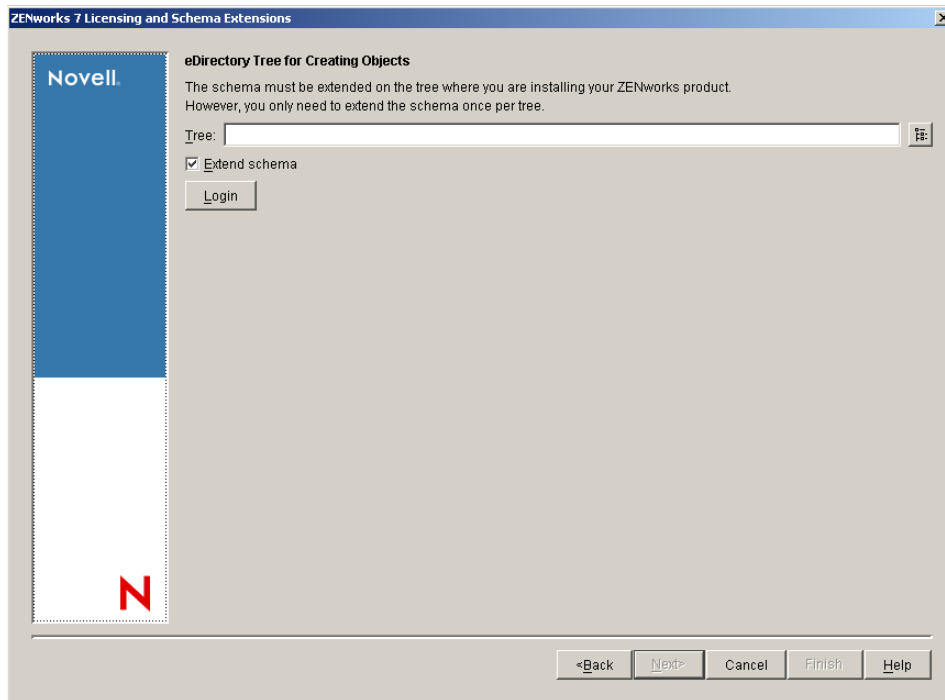
- ♦ [Section 9.1.1, “Extending the Schema Before the Installation,” on page 79](#)
- ♦ [Section 9.1.2, “Performing the Full Installation \(Including Schema Extension\),” on page 81](#)

### 9.1.1 Extending the Schema Before the Installation

If the network environment where you want to install the Desktop Management Server is a large tree, you might want to extend the schema and let the Novell eDirectory™ tree stabilize before you actually install the new Desktop Management product. To extend the schema first:

- 1 Select *Schema Extension and Product Licensing* to launch the ZENworks Desktop Management Schema Extension and Product Licensing Wizard.
- 2 After you accept the terms of the license agreement and click *Next*, complete the eDirectory Tree for Creating Objects page of the wizard by browsing to or entering the name of an

eDirectory tree where you want to add ZENworks Desktop Management schema extensions, select *Extend Schema*, then click *Next*.



You need to extend the schema on a tree only once. You can authenticate to a tree by clicking the *Login* button and entering a user ID and password with the appropriate rights.

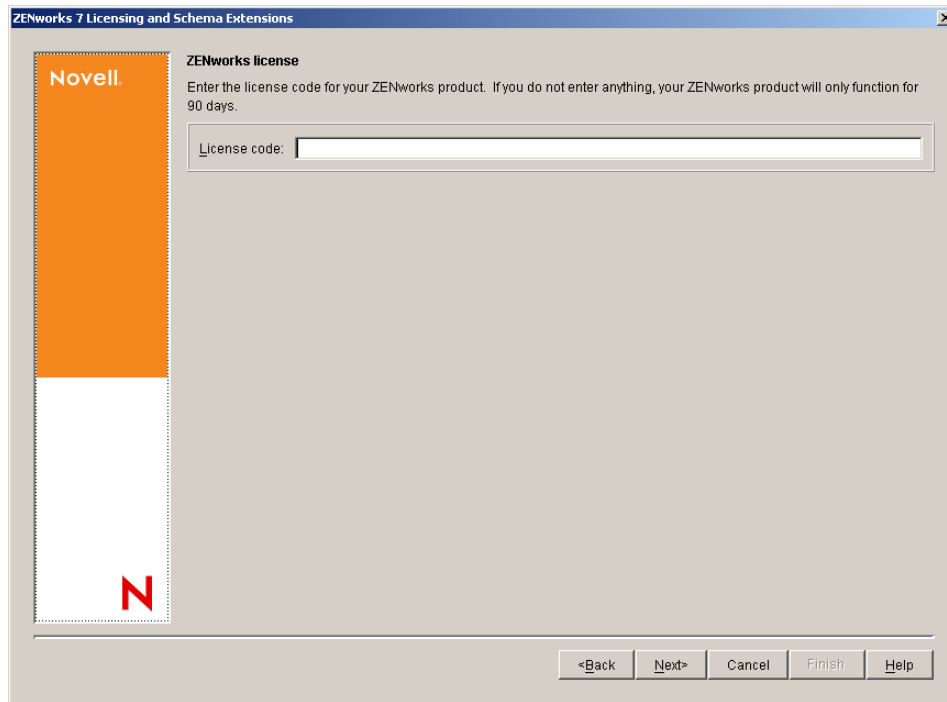
The duration of the schema extension operation depends on the size and complexity of your tree.

Both the Desktop Management Server installation program and the Middle Tier Server installation program allow you to select servers from only one eDirectory tree. If you run either of these installation program from a Windows server and if that server is not part of the tree you have selected, you cannot install the Desktop Management Server locally.

- 3 On the ZENworks License page, enter the license code that was e-mailed to you as part of the SmartCert product registration package, then click *Next*.

If you do not enter a license code on this page, the wizard considers this installation of ZENworks Desktop Management to be an evaluation version. If you install for an evaluation,

you are periodically reminded to license the product. After 90 days, the product evaluation no longer functions.



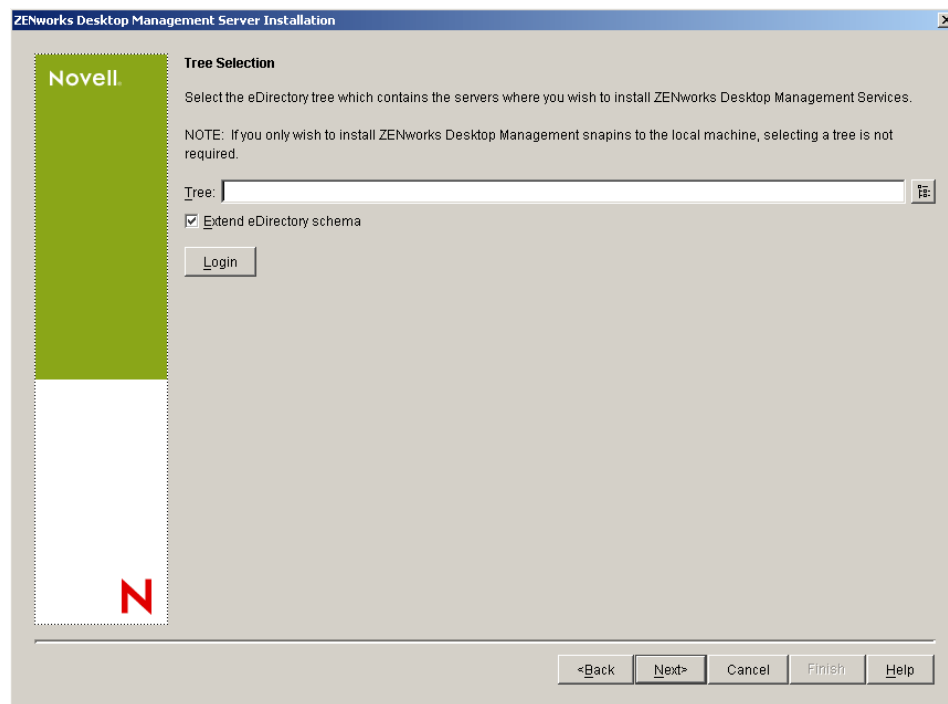
When the schema extension operation is complete, you can view a log file that is stored in `c:\novell\zfdtemp\zwextsch.log`.

### 9.1.2 Performing the Full Installation (Including Schema Extension)

If you want to install the Desktop Management Server software after extending the schema, or if you want to extend the schema of the tree as part of the installation, use the following steps:

- 1 Click *Desktop Management Services* to launch the Desktop Management Server installation wizard.
- 2 On the first Installation page, read the details about running the installation program, then click *Next*.
- 3 Read the License agreement, then click *Accept* if you agree with the terms of the License Agreement.  
If you do not agree with the terms of the license agreement, do not install the software.
- 4 On the Installation Requirements page, read the requirements for installing the Desktop Management Server software, make sure that the server where you plan to install meets the listed requirements, then click *Next*.
- 5 On the Tree Selection page, type or browse to the name of the Novell eDirectory tree where you want to install the Desktop Management Server. If you have not already extended the schema for this installation (see [Section 9.1.1, “Extending the Schema Before the Installation,” on page 79](#)), select *Extend Schema* to extend the schema on the tree where you will be installing Desktop Management Server software, then click *Next*.

You cannot install Desktop Management Server software on multiple trees at the same time.



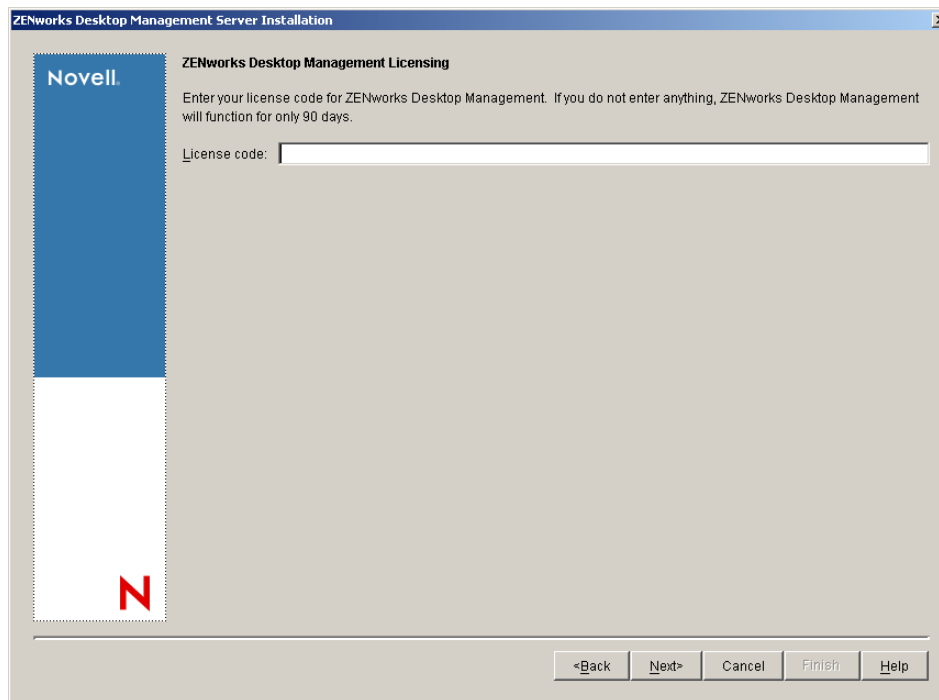
You need to extend the schema on a tree only once. You can authenticate to a tree by clicking the *Login* button and entering a user ID and password with the appropriate rights.

Both the Desktop Management Server installation program and the Middle Tier Server installation program allow you to select servers from only one eDirectory tree. If you run either of these installation program from a Windows server and if that server is not part of the tree you have selected, you cannot install the Desktop Management Server locally.

- 6** On the ZENworks Desktop Management Licensing page, specify the license code that was e-mailed to you as part of the SmartCert product registration package.

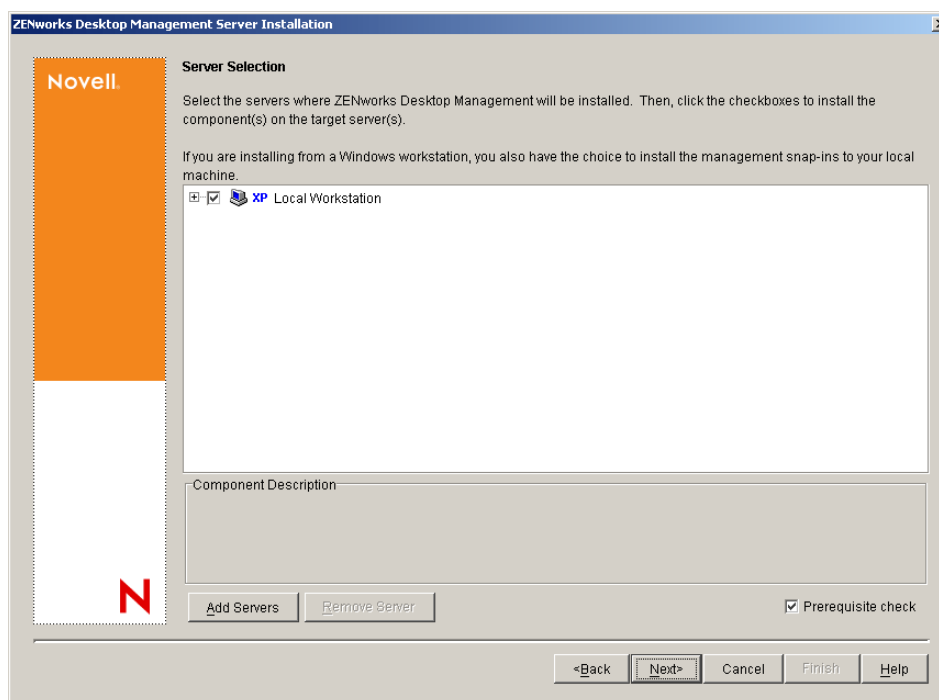
If you do not specify a license code on this page, the wizard considers this installation of ZENworks Desktop Management to be an evaluation version. If you install for an evaluation,

you are periodically reminded to license the product. After 90 days, the product evaluation version no longer functions.



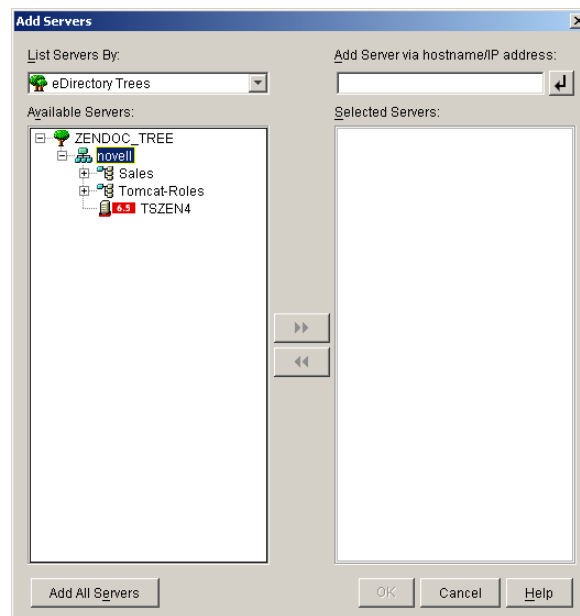
- 7 On the Server Selection page, click *Add Servers* to browse to the names of the servers where you want to install Desktop Management Server software.


You can select servers only from the tree you selected in **Step 5**. You can install to up to 7 servers at a time.



- 7a** (Optional) In the Add Servers dialog box, you can list servers by their eDirectory tree names. To install to a server, select *eDirectory Trees*, browse to and click the name of the server you want to install to; or click *Add All Servers* to select all of the servers in a container, click the right-arrow button to move your selected servers to the Selected Servers pane, then click OK.

If you want to add a Windows server that you might not be authenticated to, you can double-click the server icon to display a dialog box where you can enter credentials to allow for Windows authentication.



- 7b** (Optional) In the Add Servers dialog box, you can specify the hostname or IP address of a server in the *Add Server Via hostname/IP address* field. The value that you provide must be resolvable to the name of a server.
- Click  to begin the name resolution process and add the server to the *Selected Servers* list.
- 8** On the now-populated Server Selection page, you can further specify the services you want to install for the Desktop Management components you previously selected, then click *Next* to save your settings.

The list of settings includes the following:

**Local Workstation:** Even though the ConsoleOne® 1.3.6 installation program lets you install ConsoleOne files to a local hard drive (minor performance enhancements can be achieved by doing so) such an installation does not include the Desktop Management Services snap-ins.

You have the option of installing Desktop Management Services snap-ins to your local workstation by selecting *Desktop Management Service Snap-ins* under the *Local Workstation* option. ConsoleOne must be installed on the workstation before the snap-ins can be added.

**Desktop Management Services:** Desktop Management Services (collectively referred to as the “Desktop Management Server”) are commonly used files and programs that enable the configuration and distribution of workstation applications and policies. These services provide



automatic management of Windows applications, user and workstation configurations, processes, and behaviors.

- ♦ **Application Management:** Select this option to install software that enables the automated distribution, healing, and tracking of applications, updates, and patches.
- ♦ **Workstation Management Common Components:** Select this option to install workstation-resident modules that are used to authenticate the user to the workstation and network, and used to transfer configuration information to and from eDirectory.
- ♦ **Remote Management:** Select this component to install files and programs that enable the remote management of workstations from a central console. Make sure that the selected servers do not have the ZENworks for Servers 3.0.2 (or earlier) Remote Management component already installed.

**Additional Options:** If you want to customize your deployment of Desktop Management Services, there are a number of services to choose from, each with a specialized purpose.

- ♦ **Desktop Management Database:** Select this option if you want to install a network database to be used by the Novell Application Launcher™ as a repository for data about application events (install, launch, cache, and so forth) that have occurred.
- ♦ **Inventory Database:** Select this option if you want to install a network database to be used by Workstation Inventory as a repository for hardware and software inventory information collected from inventoried workstations.

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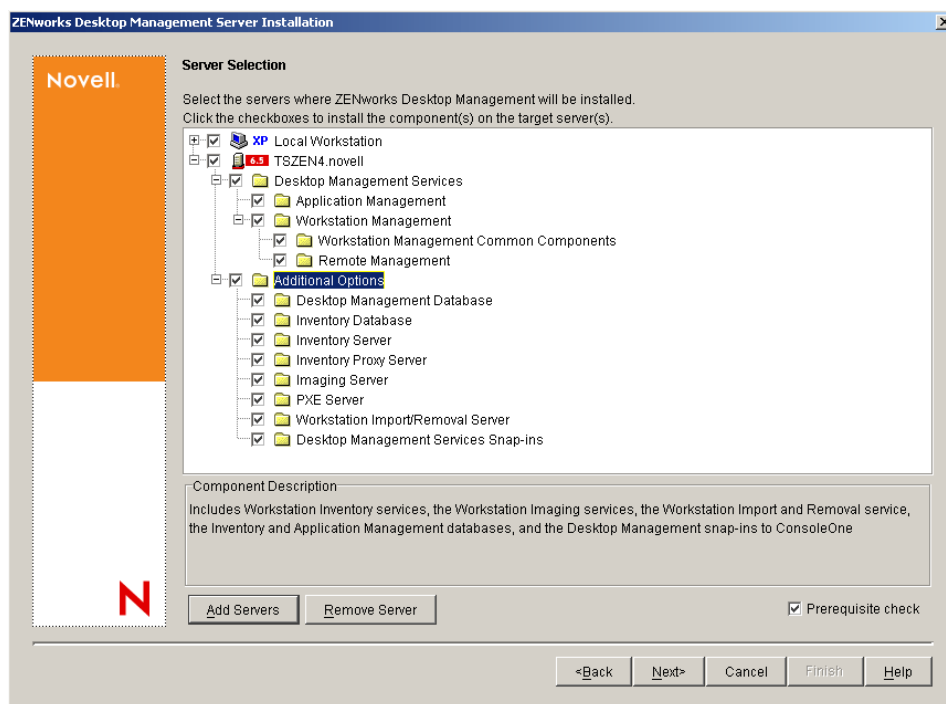
**IMPORTANT:** If you want to use the Inventory database with an existing Oracle or MS SQL setup, do not select this option during the Server Inventory installation. Follow the steps in “[Setting Up the Inventory Database](#)” in the *Novell ZENworks 7 Desktop Management Administration Guide*.

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- ♦ **Inventory Server:** Select this option if you want to install files and programs to enable the gathering and viewing of hardware and software inventory information for managed workstations.  
  
If the selected servers have the Server Inventory component of ZENworks for Servers 3.0.2 or earlier installed, you must upgrade the component to ZENworks 7 Server Management.
- ♦ **Inventory Proxy Server:** Select this option if you want to install a proxy service that enables the roll-up of inventory scan data to an Inventory server located across a network firewall. Make sure that the selected servers do not have the ZENworks for Servers 3.0.2 (or earlier) Inventory component already installed.
- ♦ **Imaging Server:** Select this option if you want to install a Linux imaging environment to be used to create, store, send, or restore workstation image files to a workstation.  
  
You should install the Imaging Server service and the PXE Server service on the same server; do not install the PXE Server service separately.
- ♦ **PXE Server:** Select this option if you want to install Preboot Execution Environment (PXE) protocols and programs to be used by the server to communicate with a PXE-enabled workstation and to enable sending imaging tasks to that workstation.  
  
When you install Preboot Services, one of the components that is installed is the Proxy DHCP server. If the standard DHCP server is on the same server where you are installing the Proxy DHCP server, you must set option tag 60 in DHCP services.  
  
You should install the Imaging Server service and the PXE Server service on the same server; do not install the PXE Server service separately.

- ♦ **Workstation Import/Removal Server:** Select this option if you want to install files and programs that add workstation objects into eDirectory (or remove those already added), where they can be managed to receive applications or computer settings.
- ♦ **Desktop Management Services Snap-Ins:** Select this option if you want to install additions to ConsoleOne to enable you to launch Desktop Management tools and utilities, to view Desktop Management object property pages in eDirectory, and to browse and configure those objects.

You can perform a “custom selection” by selecting one or more servers and right-clicking to display a pop-up menu with options to add Database Services, Inventory Services, or Imaging Services to all of the servers you have selected. The *Default* option returns the selections to their initial state. The *Custom* selection launches another dialog box that you can use to select specific components for all of the selected servers. This selection overrides any other selections you might have made.

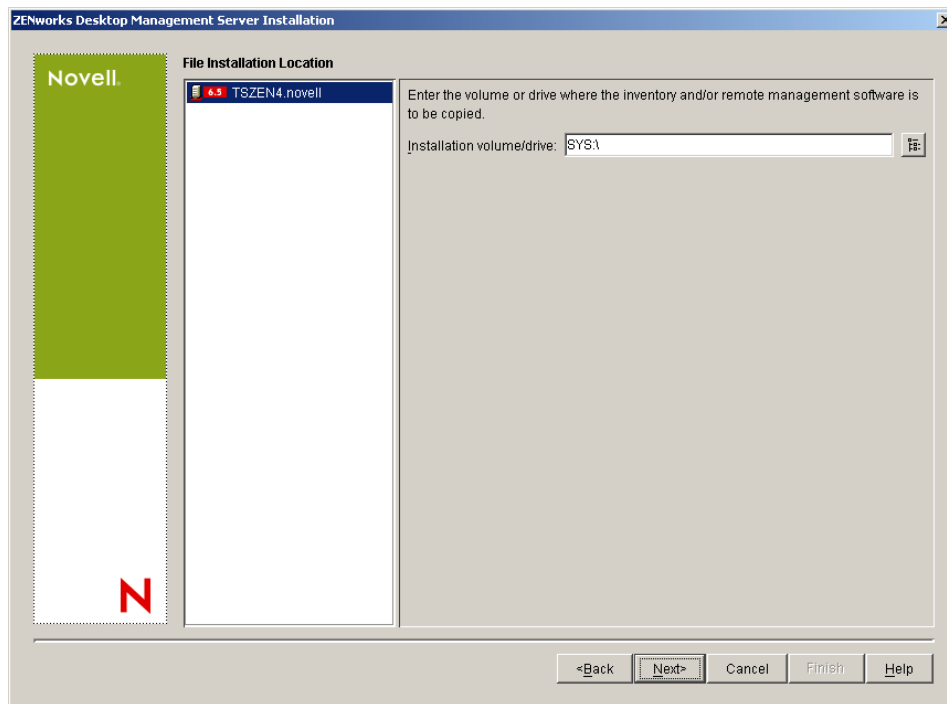


- 9 (Optional) The *Prerequisite Check* check box is selected by default. Retain the selection if you want the installation program to verify that the server or servers meet the installation requirements for ZENworks Desktop Management Services. The installation program checks the version of the server's network operating system (including any required service or support packs), the presence and version of the Novell Client (4.9 SP1a) on Windows servers and on the installing workstation, and the presence and version of ConsoleOne (1.3.6).

If the server operating system and support/service packs are not the correct version, the installation displays a warning message and does not continue until the required software is installed and detected or until you deselect the check box.

- 10 (Optional if Workstation Inventory or Remote Management is selected.) On the File Installation Location page, select one or more target servers in the *Selected Servers* list, then browse for or enter the volume or drive where you want the Workstation Inventory or Remote Management files to be installed. The default is `SYS :` for Novell NetWare and `C :` for Windows servers.

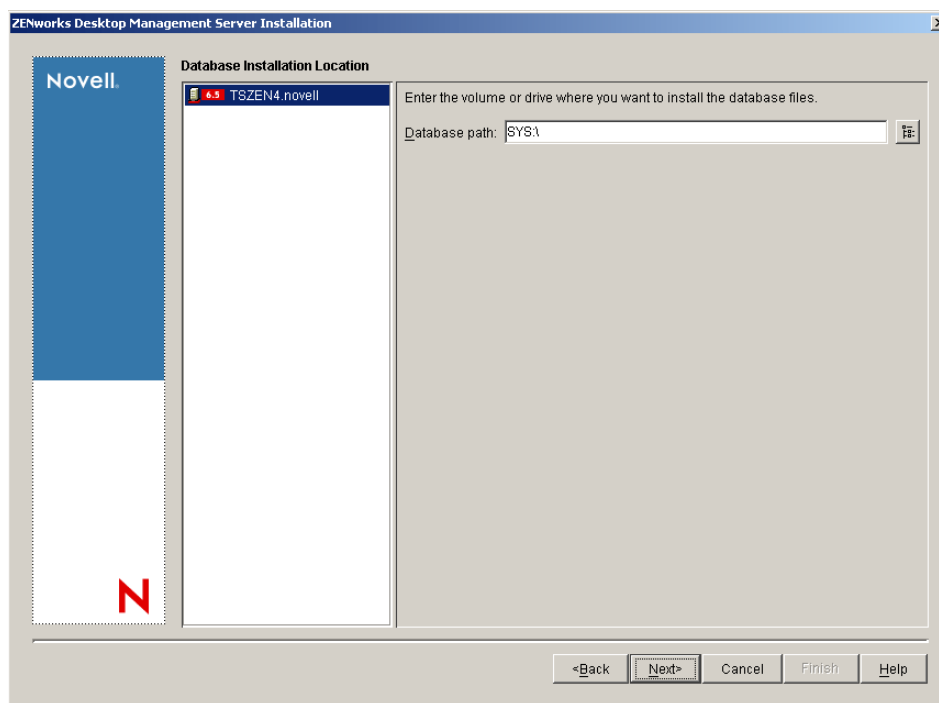
If a previous installation of ZENworks 7 Workstation Inventory or Remote Management component is detected on the machine, the existing path is displayed and dimmed. The current installation installs all the files in the same path.



- 11 (Optional) The Database Location Installation page is displayed if you choose to install the Inventory database or the Desktop Management database. Select a previously designated server in the left pane, then in the *Database Path* field, browse for or type in the name of the volume or drive where the database file will be installed, then click *Next*.

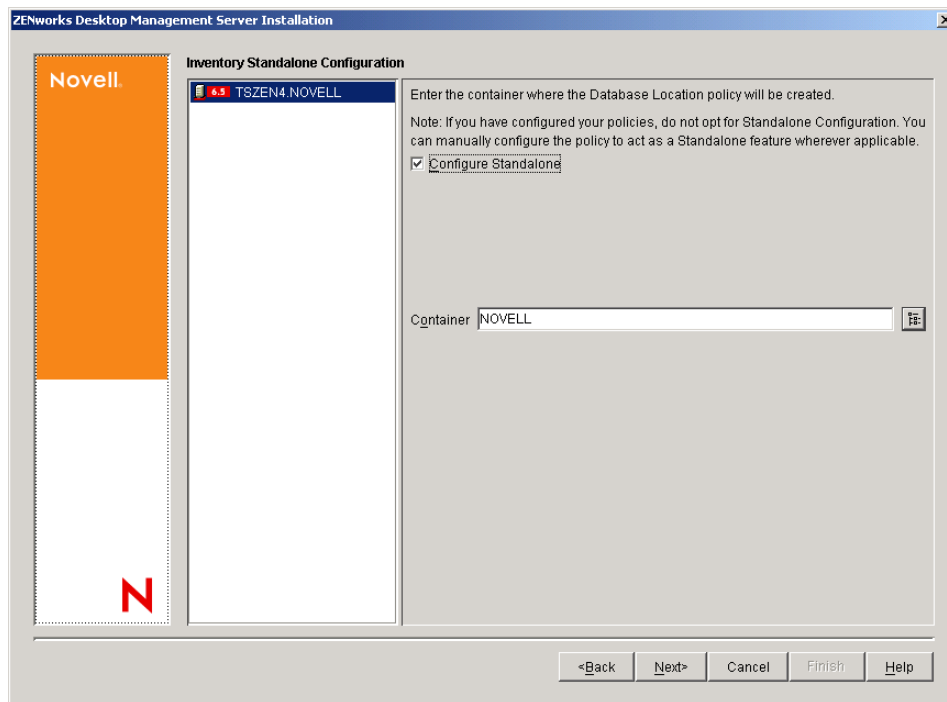
You can provide a different volume or drive for each database server. For example, the volume names might be different on your various NetWare servers. However, you cannot have multiple instances of the database files on the same server, because you can run only one instance of the database engine per server. For NetWare servers, this path cannot include extended or double-byte characters.

SYS: is the default for NetWare servers. We recommend that you do not select SYS: on NetWare servers, because the database file can become large.



- 12** (Optional) The Inventory Standalone Configuration page is displayed if you choose to install the Inventory Server and the Inventory Database on the same server. If you want the installation program to automatically create the Server Package and the Database Location policy within the Server Package, and to start the Inventory Service on the server, configure the settings on the Inventory Standalone Configuration page.

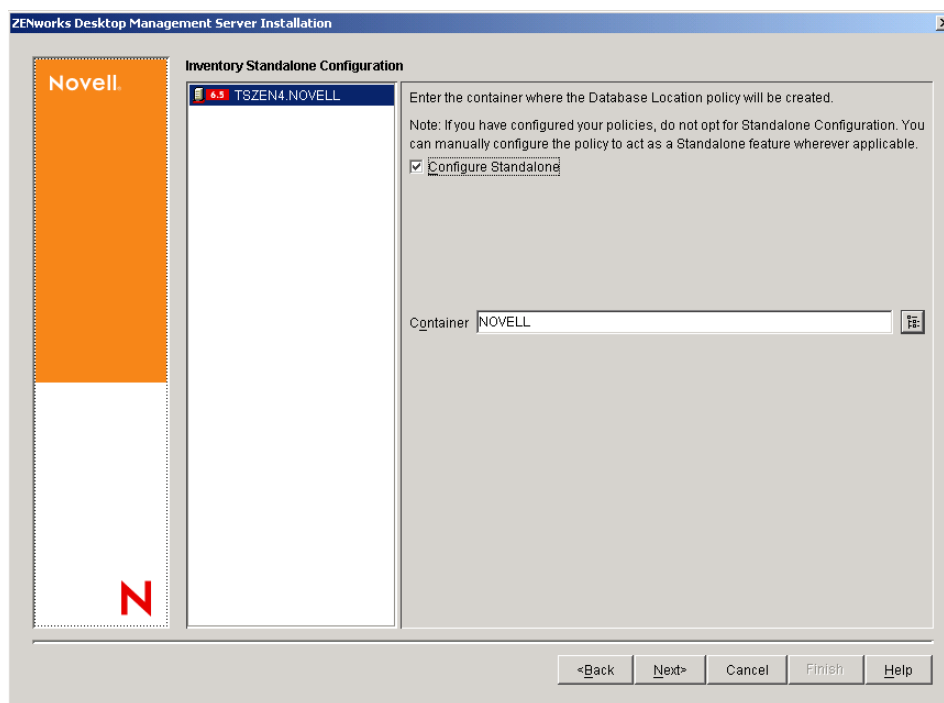
Select *Configure Standalone*, select the server or servers that you want to point to a common Database Location Search Policy, type in the name or browse to the tree container where you want to create and configure the Server Package containing this policy, then click *Next*.



- 13** (Optional) On the Inventory Proxy Service Configuration page, select the server or servers with a port you want to designate as one to allow XMLRPC requests pass through to the Inventory Proxy service, then in the *Proxy Port* field, designate the port you want to use.

You can configure the same port number for all servers by selecting all of them, or you can define the values individually by selecting the servers one at a time. If you want to change the

Port 65000 default, specify a value between 0 and 65535. Ensure that the port number is not used by other services on the server.



- 14 On the Summary page, review the list of components and their parts that are to be installed. If the summary is correct, click *Finish* to launch the installation program.

You can click *Back* as many times as necessary to make changes.

If you click *Cancel*, no installation information is saved.

You can review the installation log file after the installation has completed. The log file name is `datestamp_timestamp_zdmserver_install.log` (for example: `20040304_024034_zdmserver_install.log`). It is located in the `\novell\zfdtemp` directory on the machine you are installing from. This log file indicates whether any component failed to install.

You can also review the installation summary to review the selections you made. The summary is saved in a log file named

`datestamp_timestamp_zdmserver_installsummary.log` (for example: `20040304_024034_zdmserver_installsummary.log`). It is also located in `c:\novell\zfdtemp`.

- 15 In ConsoleOne, select the tree and container where you installed the Desktop Management Server software, then right-click the *LDAP Group* > click *Properties* > *LDAP Group General*.

Make sure that the *Require TLS For Simple Binds With Password* option has been deselected for each server acting as the Authentication Domain for a ZENworks Middle Tier Server. If you need to set this parameter after you have installed the Desktop Management Server, make sure you reboot the ZENworks Middle Tier Server after you change the setting.

If you are installing to Windows servers in an Active Directory domain, configure the LDAP group object for servers that are to be used as Authentication Domains to use an alternate port number, because Active Directory uses ports 389 and 636.

## 9.2 SP1 Desktop Management Server Installation

When you have met the hardware and software requirements and prerequisites for installation (see [Part II, “Preparation,” on page 37](#)), use the following steps to get the ZENworks 7 Desktop Management Server with Support Pack 1 (SP1) up and running on a NetWare or Windows server.

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**IMPORTANT:** When you complete the installation of the Desktop Management Server, make sure you complete the post-installation tasks that are required for Windows, NetWare, and Linux servers. For more information, see [Part V, “Post-Installation,” on page 339](#).

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- 1 Select a Windows 2000/XP workstation (or a Windows 2000/2003 server) to run the Desktop Management Server installation program. The workstation or server must meet the requirements for an installing workstation. For details, see [“Prerequisites for the Workstation Running the Installation” on page 39](#).
- 2 At a Windows workstation, insert the *Novell ZENworks 7 Desktop Management with Support Pack 1* Program CD.

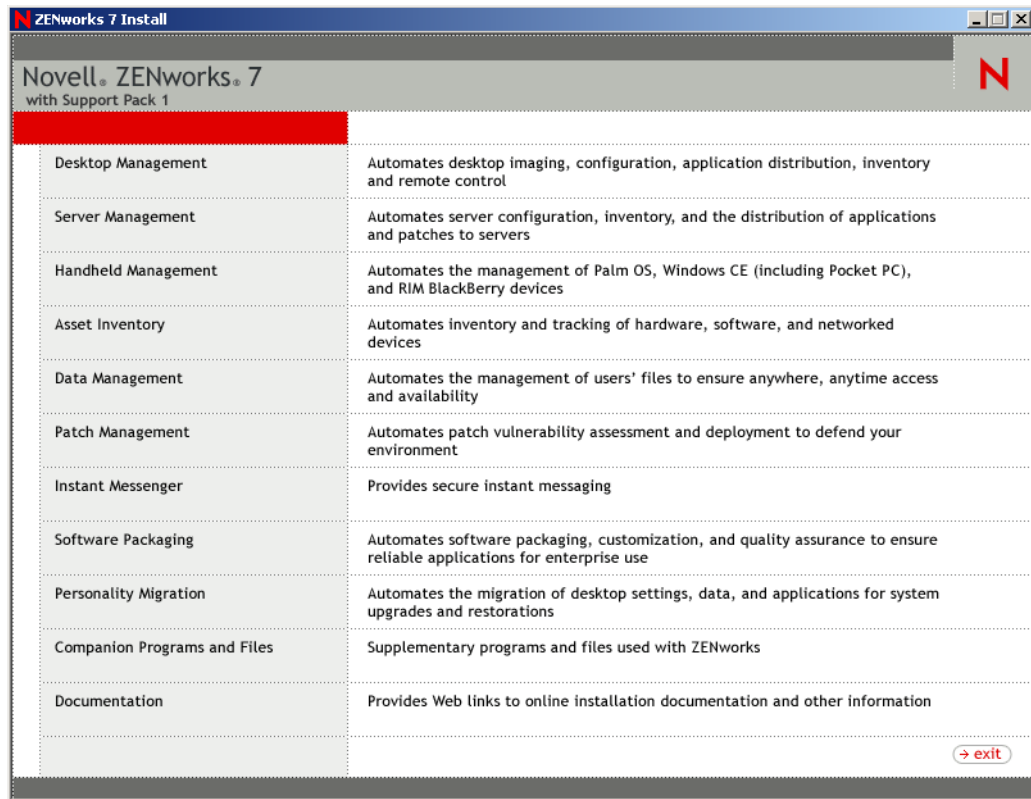
The `winsetup.exe` program autoruns. If it does not autorun, launch the program from the root of the CD.

If you run the installation from a directory location where you have copied the ZENworks Desktop Management ISO files, make sure that all of these files are copied to the same location from which you are running `winsetup.exe`.

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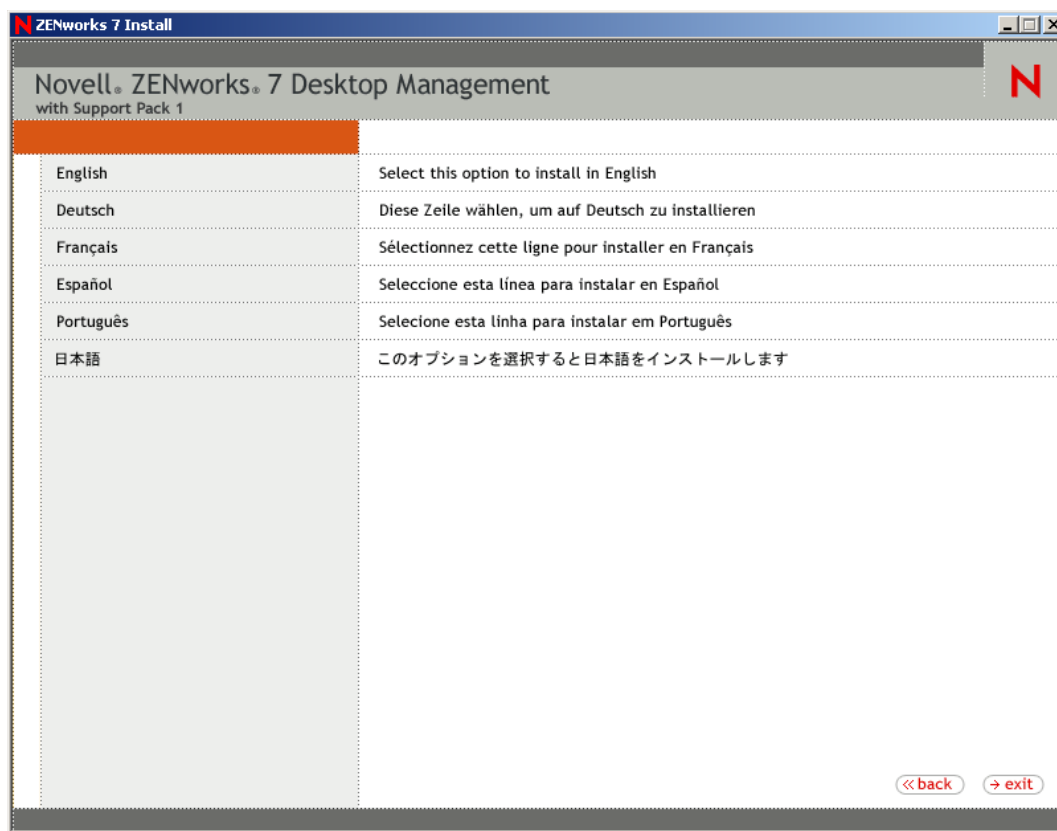
**IMPORTANT:** If you remove the *Novell ZENworks 7 Desktop Management with Support Pack 1* Program CD from the CD drive during the installation, or if you lose your connection to the server you are installing to, the installation program stops and does not proceed. To terminate the installation process, open the Windows Task Manager, click *Processes*, select `javaw.exe`, then click *End Process*.

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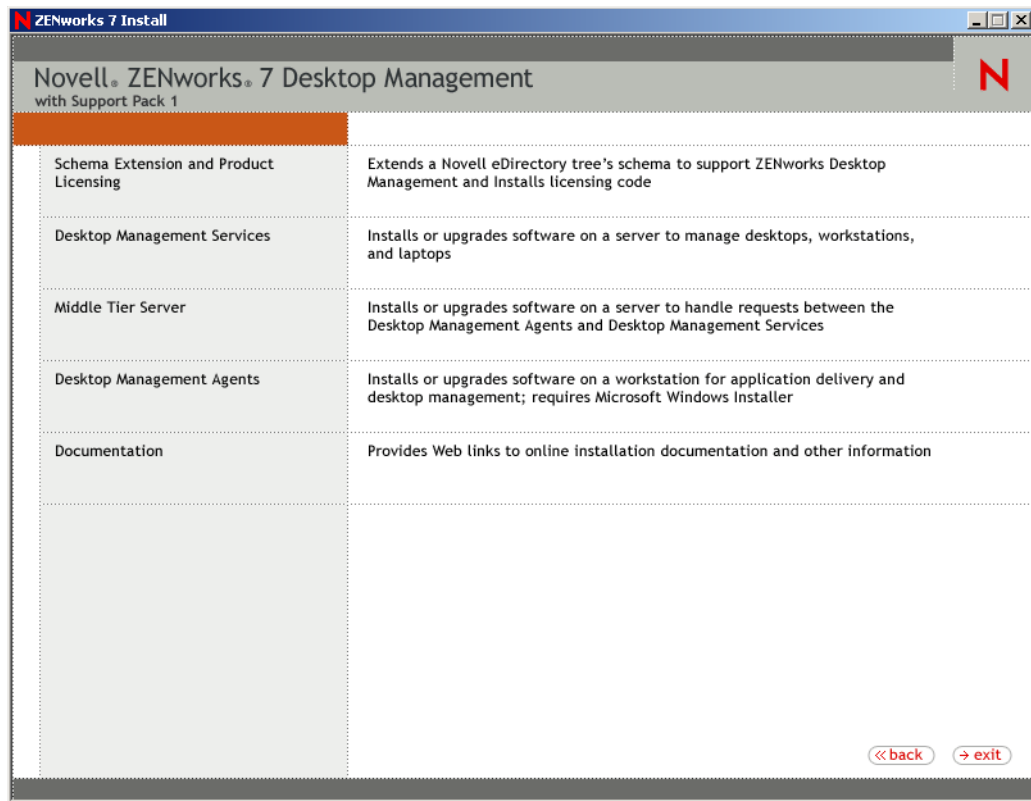




- 3 Click *Desktop Management* to display a page with options to install in various languages.



- 4 Click *English* to display a page with Desktop Management installation options.



From this page, you can choose to either extend the schema before you actually install the new Desktop management product, or you can choose to extend the schema as part of the installation procedure.

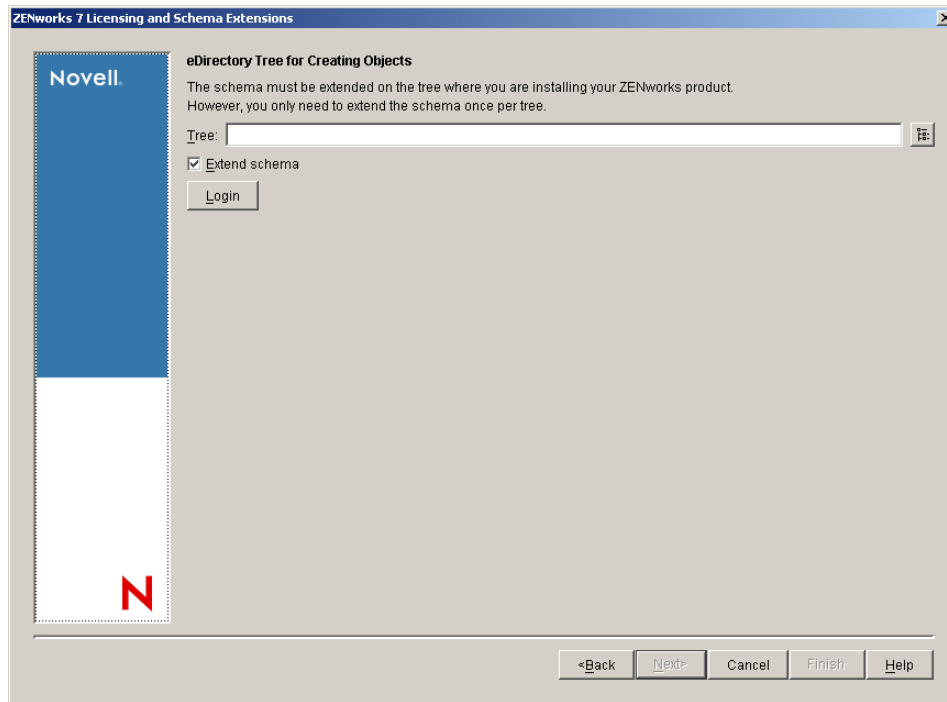
- ♦ [Section 9.2.1, “Extending the Schema Before the Installation,” on page 94](#)
- ♦ [Section 9.2.2, “Performing the Full Installation \(Including Schema Extension\),” on page 96](#)

## 9.2.1 Extending the Schema Before the Installation

If the network environment where you want to install the Desktop Management Server is a large tree, you might want to extend the schema and let the Novell eDirectory™ tree stabilize before you actually install the new SP1 product. To extend the schema first:

- 1 Select *Schema Extension and Product Licensing* to launch the ZENworks Desktop Management Schema Extension and Product Licensing Wizard.
- 2 After you accept the terms of the license agreement and click *Next*, complete the eDirectory Tree for Creating Objects page of the wizard by browsing to or entering the name of an

eDirectory tree where you want to add ZENworks Desktop Management schema extensions, select *Extend Schema*, then click *Next*.



You need to extend the schema on a tree only once. You can authenticate to a tree by clicking the *Login* button and entering a user ID and password with the appropriate rights.

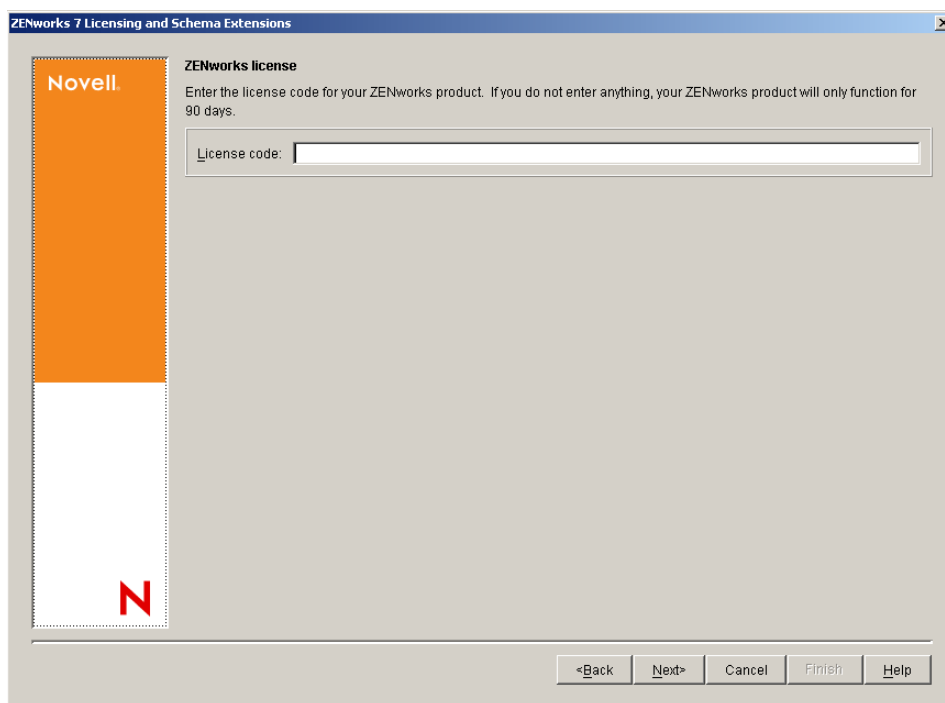
The duration of the schema extension operation depends on the size and complexity of your tree.

Both the Desktop Management Server installation program and the Middle Tier Server installation program allow you to select servers from only one eDirectory tree. If you run either of these installation programs from a Windows server and if that server is not part of the tree you have selected, you cannot install the Desktop Management Server locally.

- 3 On the ZENworks License page, enter the license code that was e-mailed to you as part of the SmartCert product registration package, then click *Next*.

If you do not enter a license code on this page, the wizard considers this installation of ZENworks Desktop Management to be an evaluation version. If you install for an evaluation,

you are periodically reminded to license the product. After 90 days, the product evaluation no longer functions.



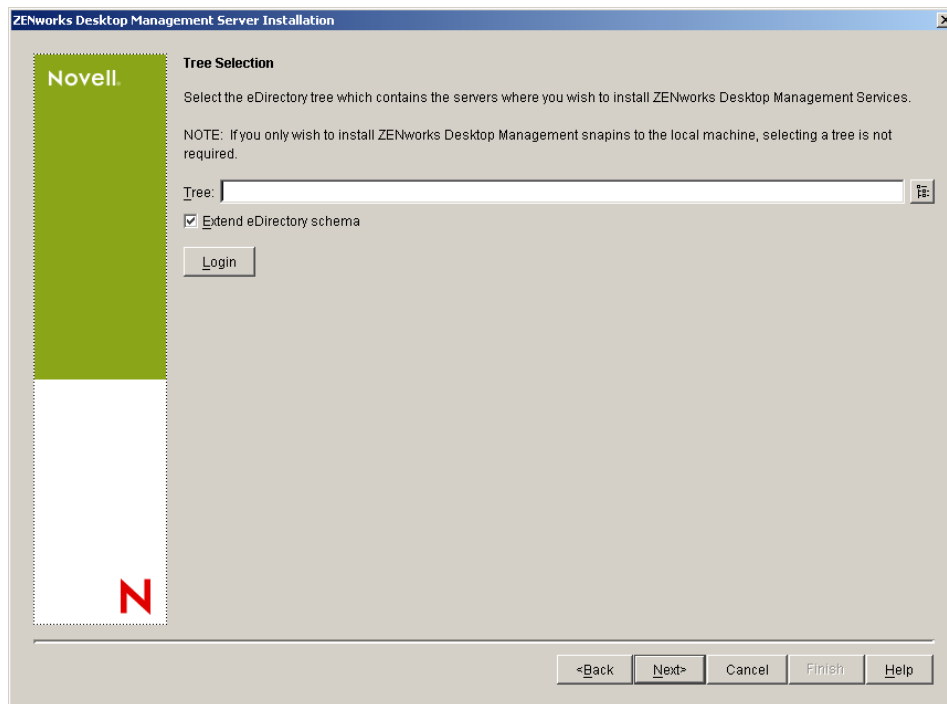
When the schema extension operation is complete, you can view a log file that is stored in `c:\novell\zfdtemp\zwextsch.log`.

## 9.2.2 Performing the Full Installation (Including Schema Extension)

If you want to install the Desktop Management Server software after extending the schema, or if you want to extend the schema of the tree as part of the installation, use the following steps:

- 1 Click *Desktop Management Services* to launch the Desktop Management Server installation wizard.
- 2 On the first Installation page, read the details about running the installation program, then click *Next*.
- 3 Read the License agreement, then click *Accept* if you agree with the terms of the License Agreement.  
If you do not agree with the terms of the license agreement, do not install the software.
- 4 On the Installation Requirements page, read the requirements for installing the Desktop Management Server software, make sure that the server where you plan to install meets the listed requirements, then click *Next*.
- 5 On the Tree Selection page, type or browse to the name of the Novell eDirectory tree where you want to install the Desktop Management Server. If you have not already extended the schema for this installation (see [Section 9.2.1, “Extending the Schema Before the Installation,” on page 94](#)), select *Extend Schema* to extend the schema on the tree where you will be installing Desktop Management Server software, then click *Next*.

You cannot install Desktop Management Server software on multiple trees at the same time.



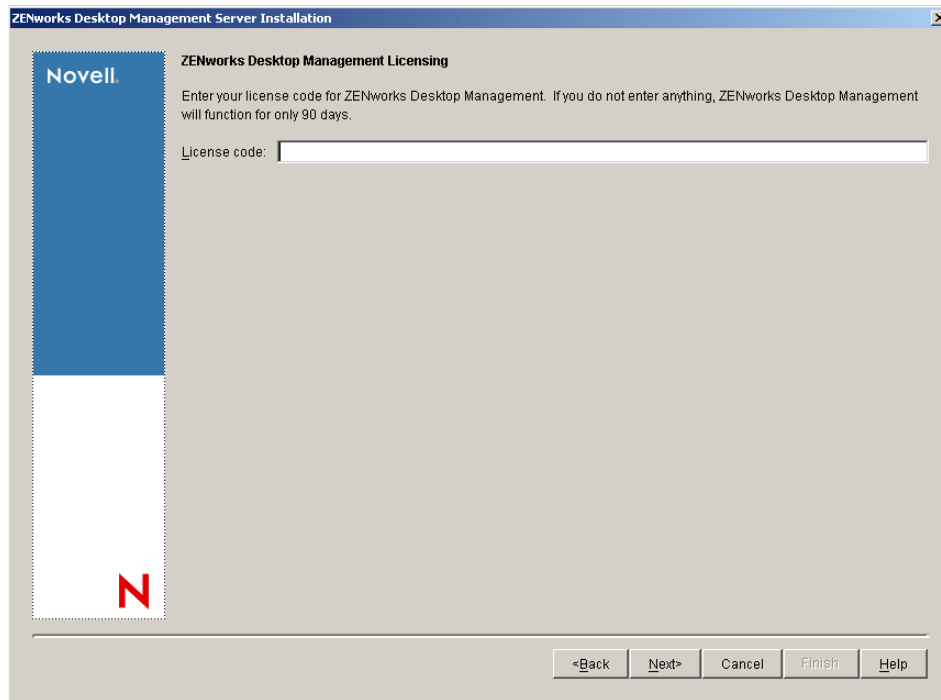
You need to extend the schema on a tree only once. You can authenticate to a tree by clicking the *Login* button and entering a user ID and password with the appropriate rights.

Both the Desktop Management Server installation program and the Middle Tier Server installation program allow you to select servers from only one eDirectory tree. If you run either of these installation programs from a Windows server and if that server is not part of the tree you have selected, you cannot install the Desktop Management Server locally.

- 6** On the ZENworks Desktop Management Licensing page, specify the license code that was e-mailed to you as part of the SmartCert product registration package.

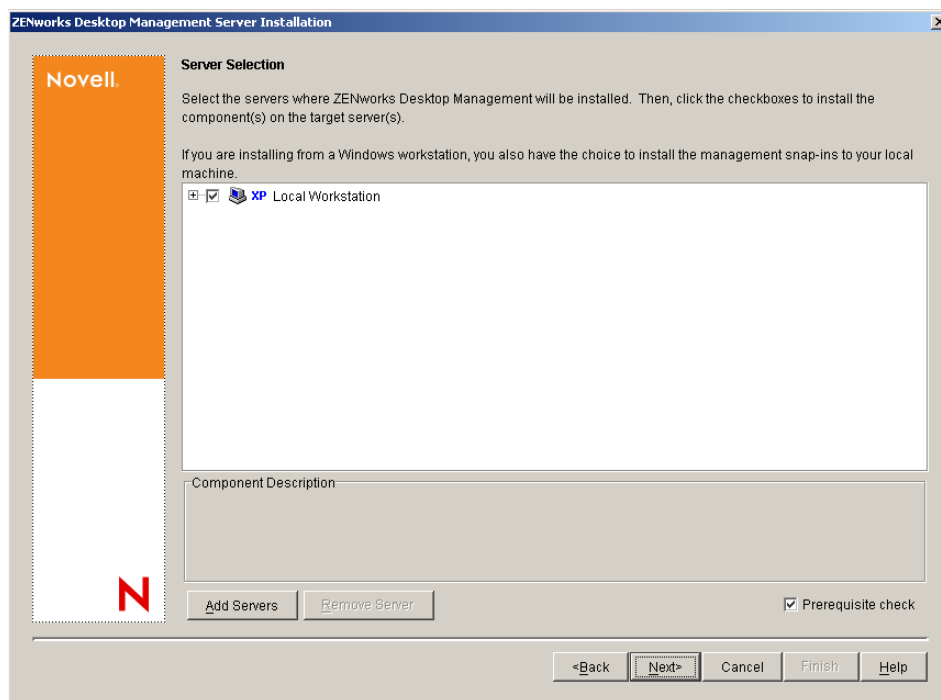
If you do not specify a license code on this page, the wizard considers this installation of ZENworks Desktop Management to be an evaluation version. If you install for an evaluation,

you are periodically reminded to license the product. After 90 days, the product evaluation version no longer functions.



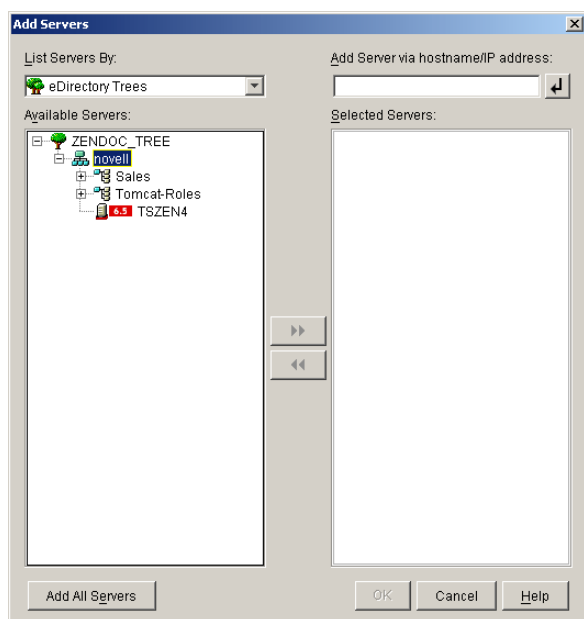
- 7 On the Server Selection page, click *Add Servers* to browse to the names of the servers where you want to install Desktop Management Server software.


You can select servers only from the tree you selected in **Step 5**. You can install to up to 7 servers at a time.



- 7a** (Optional) In the Add Servers dialog box, you can list servers by their eDirectory tree names. To install to a server, select *eDirectory Trees*, browse to and click the name of the server you want to install to; or click *Add All Servers* to select all of the servers in a container, click the right-arrow button to move your selected servers to the Selected Servers pane, then click OK.

If you want to add a Windows server that you might not be authenticated to, you can double-click the server icon to display a dialog box where you can enter credentials to allow for Windows authentication.



- 7b** (Optional) In the Add Servers dialog box, you can specify the hostname or IP address of a server in the *Add Server Via hostname/IP address* field. The value that you provide must be resolvable to the name of a server.
- Click  to begin the name resolution process and add the server to the *Selected Servers* list.
- 8** On the now-populated Server Selection page, you can further specify the services you want to install for the Desktop Management components you previously selected, then click *Next* to save your settings.

The list of settings includes the following:

**Local Workstation:** Even though the ConsoleOne 1.3.6 installation program lets you install ConsoleOne files to a local hard drive (minor performance enhancements can be achieved by doing so) such an installation does not include the Desktop Management Services snap-ins.

You have the option of installing Desktop Management Services snap-ins to your local workstation by selecting *Desktop Management Service Snap-ins* under the *Local Workstation* option. ConsoleOne must be installed on the workstation before the snap-ins can be added.

**Desktop Management Services:** Desktop Management Services (collectively referred to as the “Desktop Management Server”) are commonly used files and programs that enable the configuration and distribution of workstation applications and policies. These services provide

automatic management of Windows applications, user and workstation configurations, processes, and behaviors.

- ♦ **Application Management:** Select this option to install software that enables the automated distribution, healing, and tracking of applications, updates, and patches.
- ♦ **Workstation Management Common Components:** Select this option to install workstation-resident modules that are used to authenticate the user to the workstation and network, and used to transfer configuration information to and from eDirectory.
- ♦ **Remote Management:** Select this component to install files and programs that enable the remote management of workstations from a central console. Make sure that the selected servers do not have the ZENworks for Servers 3.0.2 (or earlier) Remote Management component already installed.

**Additional Options:** If you want to customize your deployment of Desktop Management Services, there are a number of services to choose from, each with a specialized purpose.

- ♦ **Desktop Management Database:** Select this option if you want to install a network database to be used by the Novell Application Launcher as a repository for data about application events (install, launch, cache, and so forth) that have occurred.
- ♦ **Inventory Database:** Select this option if you want to install a network database to be used by Workstation Inventory as a repository for hardware and software inventory information collected from inventoried workstations.

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**IMPORTANT:** If you want to use the Inventory database with an existing Oracle or MS SQL setup, do not select this option during the Server Inventory installation. Follow the steps in “[Setting Up the Inventory Database](#)” in the *Novell ZENworks 7 Desktop Management Administration Guide*.

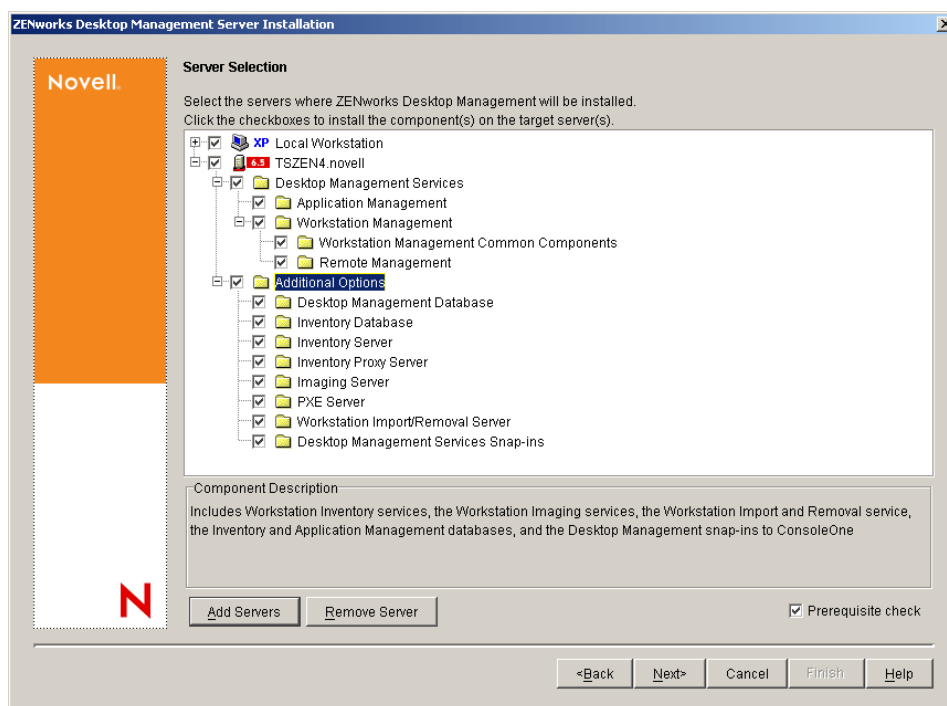
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- ♦ **Inventory Server:** Select this option if you want to install files and programs to enable the gathering and viewing of hardware and software inventory information for managed workstations.  
  
If the selected servers have the Server Inventory component of ZENworks for Servers 3.0.2 or earlier installed, you must upgrade the component to ZENworks 7 Server Management.
- ♦ **Inventory Proxy Server:** Select this option if you want to install a proxy service that enables the roll-up of inventory scan data to an Inventory server located across a network firewall. Make sure that the selected servers do not have the ZENworks for Servers 3.0.2 (or earlier) Inventory component already installed.
- ♦ **Imaging Server:** Select this option if you want to install a Linux imaging environment to be used to create, store, send, or restore workstation image files to a workstation.  
  
You should install the Imaging Server service and the PXE Server service on the same server; do not install the PXE Server service separately.
- ♦ **PXE Server:** Select this option if you want to install Preboot Execution Environment (PXE) protocols and programs to be used by the server to communicate with a PXE-enabled workstation and to enable sending imaging tasks to that workstation.  
  
When you install Preboot Services, one of the components that is installed is the Proxy DHCP server. If the standard DHCP server is on the same server where you are installing the Proxy DHCP server, you must set option tag 60 in DHCP services.  
  
You should install the Imaging Server service and the PXE Server service on the same server; do not install the PXE Server service separately.



- ♦ **Workstation Import/Removal Server:** Select this option if you want to install files and programs that add workstation objects into eDirectory (or remove those already added), where they can be managed to receive applications or computer settings.
- ♦ **Desktop Management Services Snap-Ins:** Select this option if you want to install additions to ConsoleOne to enable you to launch Desktop Management tools and utilities, to view Desktop Management object property pages in eDirectory, and to browse and configure those objects.

You can perform a “custom selection” by selecting one or more servers and right-clicking to display a pop-up menu with options to add Database Services, Inventory Services, or Imaging Services to all of the servers you have selected. The *Default* option returns the selections to their initial state. The *Custom* selection launches another dialog box that you can use to select specific components for all of the selected servers. This selection overrides any other selections you might have made.



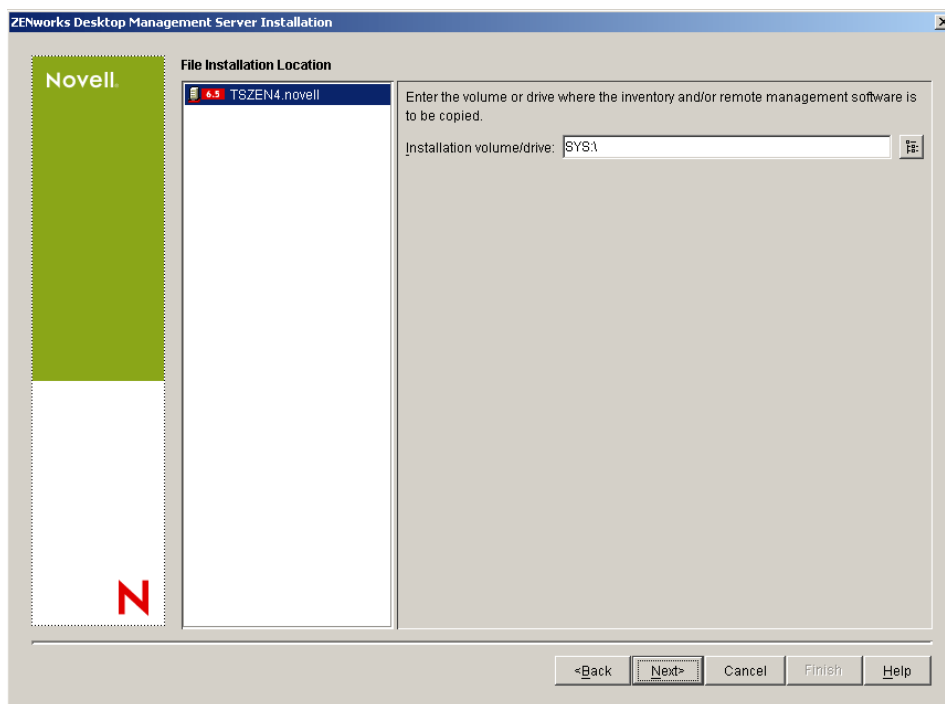
- 9 (Optional) The *Prerequisite Check* check box is selected by default. Retain the selection if you want the installation program to verify that the server or servers meet the installation requirements for ZENworks Desktop Management Services. The installation program checks the version of the server's network operating system (including any required service or support packs), the presence and version of the Novell Client (4.9 SP1a) on Windows servers and on the installing workstation, and the presence and version of ConsoleOne (1.3.6).

If the server operating system and support/service packs are not the correct version, the installation displays a warning message and does not continue. The installation displays a warning and will not continue until the required software is installed and detected or until you deselect the check box.

- 10 (Optional if Workstation Inventory or Remote Management is selected.) On the File Installation Location page, select one or more target servers in the *Selected Servers* list, then browse for or enter the volume or drive where you want the Workstation Inventory or Remote

Management files to be installed. The default is `SYS :` for Novell NetWare and `C :` for Windows servers.

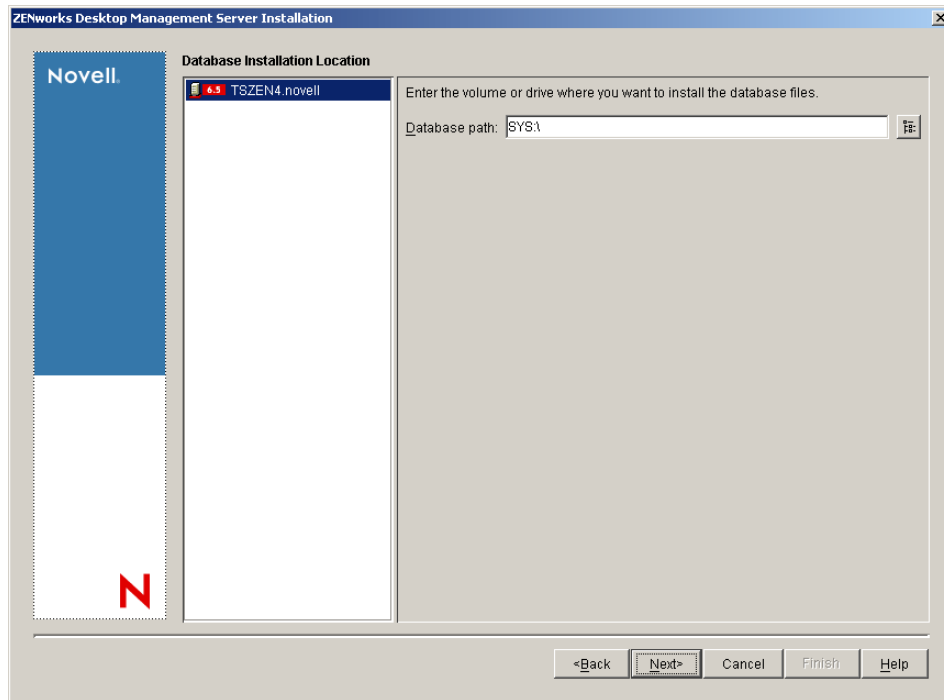
If a previous installation of ZENworks 7 Workstation Inventory or Remote Management component is detected on the machine, the existing path is displayed and dimmed. The current installation installs all the files in the same path.



- 11 (Optional) The Database Location Installation page is displayed if you choose to install the Inventory database or the Desktop Management database. Select a previously designated server in the left pane, then in the *Database Path* field, browse for or type in the name of the volume or drive where the database file will be installed, then click *Next*.

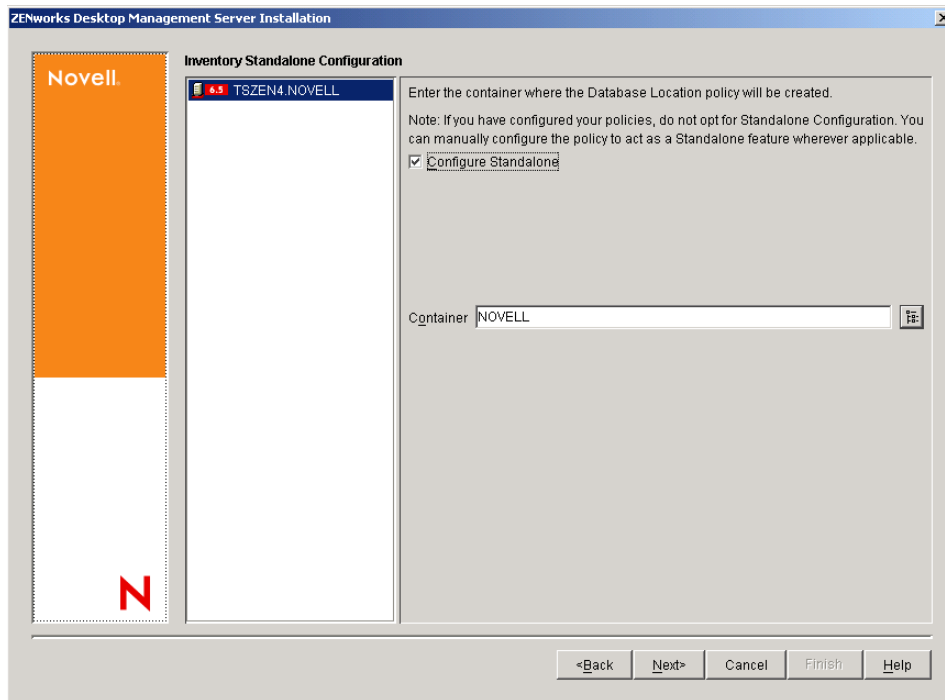
You can provide a different volume or drive for each database server. For example, the volume names might be different on your various NetWare servers. However, you cannot have multiple instances of the database files on the same server, because you can run only one instance of the database engine per server. For NetWare servers, this path cannot include extended or double-byte characters.

SYS: is the default for NetWare servers. We recommend that you do not select SYS: on NetWare servers, because the database file can become large.



- 12** (Optional) The Inventory Standalone Configuration page is displayed if you choose to install the Inventory Server and the Inventory Database on the same server. If you want the installation program to automatically create the Server Package and the Database Location policy within the Server Package, and to start the Inventory Service on the server, configure the settings on the Inventory Standalone Configuration page.

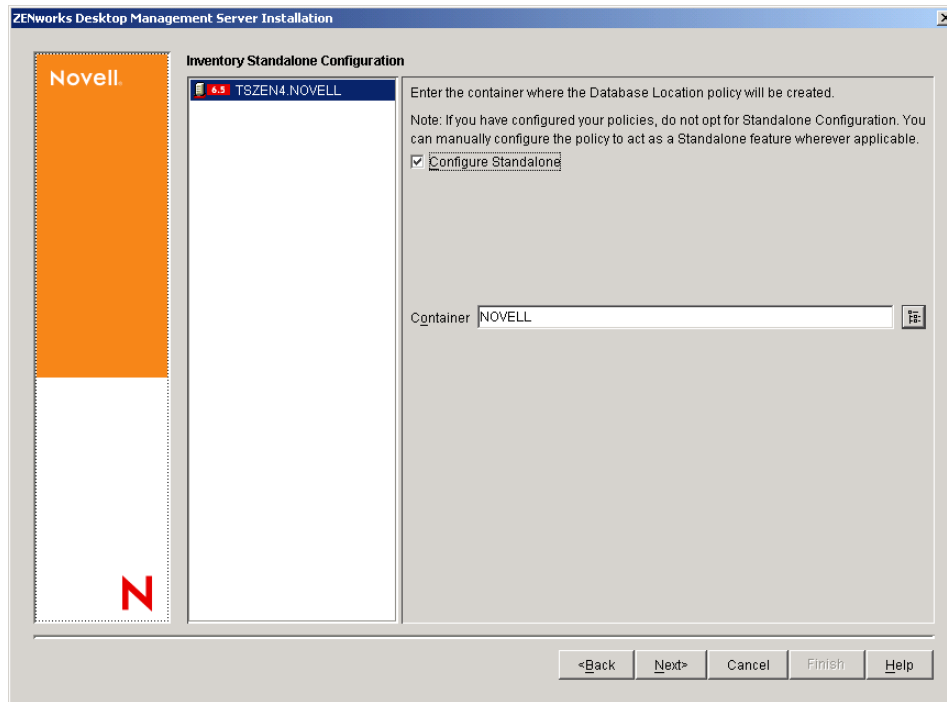
Select *Configure Standalone*, select the server or servers that you want to point to a common Database Location Search Policy, type in the name or browse to the tree container where you want to create and configure the Server Package containing this policy, then click *Next*.



- 13** (Optional) On the Inventory Proxy Service Configuration page, select the server or servers with a port you want to designate as one to allow XMLRPC requests pass through to the Inventory Proxy service, then in the *Proxy Port* field, designate the port you want to use.

You can configure the same port number for all servers by selecting all of them, or you can define the values individually by selecting the servers one at a time. If you want to change the

Port 65000 default, specify a value between 0 and 65535. Ensure that the port number is not used by other services on the server.



- 14 On the Summary page, review the list of components and their parts that are to be installed. If the summary is correct, click *Finish* to launch the installation program.

You can click *Back* as many times as necessary to make changes.

If you click *Cancel*, no installation information is saved.

You can review the installation log file after the installation has completed. The log file name is `datestamp_timestamp_zdmserver_install.log` (for example: `20040304_024034_zdmserver_install.log`). It is located in the `\novell\zfdtemp` directory on the machine you are installing from. This log file indicates whether any component failed to install.

You can also review the installation summary to review the selections you made. The summary is saved in a log file named

`datestamp_timestamp_zdmserver_installsummary.log` (for example: `20040304_024034_zdmserver_installsummary.log`). It is also located in `c:\novell\zfdtemp`.

- 15 In ConsoleOne, select the tree and container where you installed the Desktop Management Server software, then right-click the *LDAP Group* > click *Properties* > *LDAP Group General*.

Make sure that the *Require TLS For Simple Binds With Password* option has been deselected for each server acting as the Authentication Domain for a ZENworks Middle Tier Server. If you need to set this parameter after you have installed the Desktop Management Server, make sure you reboot the ZENworks Middle Tier Server after you change the setting.

If you are installing to Windows servers in an Active Directory domain, configure the LDAP group object for servers that are to be used as Authentication Domains to use an alternate port number, because Active Directory will use ports 389 and 636.

## 9.3 Checking the Installation

When the Desktop Management Server installation is complete, you can check the installation to see if it was successful, check component versions, or initiate and check debug logs. If you want to perform any of these tasks, see “[Checking the Installation of Desktop Management Components on Servers](#)” in “[Checking the ZENworks Desktop Management Installation](#)” in the *Novell ZENworks 7 Desktop Management Administration Guide* for more information.

# Installing the ZENworks Middle Tier Server

# 10

This section includes the following information:

- ♦ [Section 10.1, “ZENworks Middle Tier Server Installation Procedure,” on page 107](#)
- ♦ [Section 10.2, “SP1 Middle Tier Server Installation Procedure,” on page 117](#)
- ♦ [Section 10.3, “Required Rights for the Middle Tier Proxy User Account and the NSAdmin Utility,” on page 127](#)
- ♦ [Section 10.4, “Editing Autoexec.ncf on a NetWare 6 ZENworks Middle Tier Server,” on page 129](#)
- ♦ [Section 10.5, “Checking the Installation,” on page 129](#)

## 10.1 ZENworks Middle Tier Server Installation Procedure

When you have met the hardware and software requirements and prerequisites for installation (see [“Prerequisites for Installing the ZENworks Middle Tier Server” on page 61](#)), use the following steps to get the ZENworks® Middle Tier Server up and running on a NetWare® or Windows server.

- 1 Select a Windows 2000/XP workstation (or a Windows 2000/2003 server) to run the Middle Tier Server installation program. The workstation or server must meet the requirements for an installing workstation. For details, see [“Prerequisites for the Workstation Running the Installation” on page 39](#).
- 2 At a Windows workstation, insert the *Novell ZENworks 7 Desktop Management* CD.

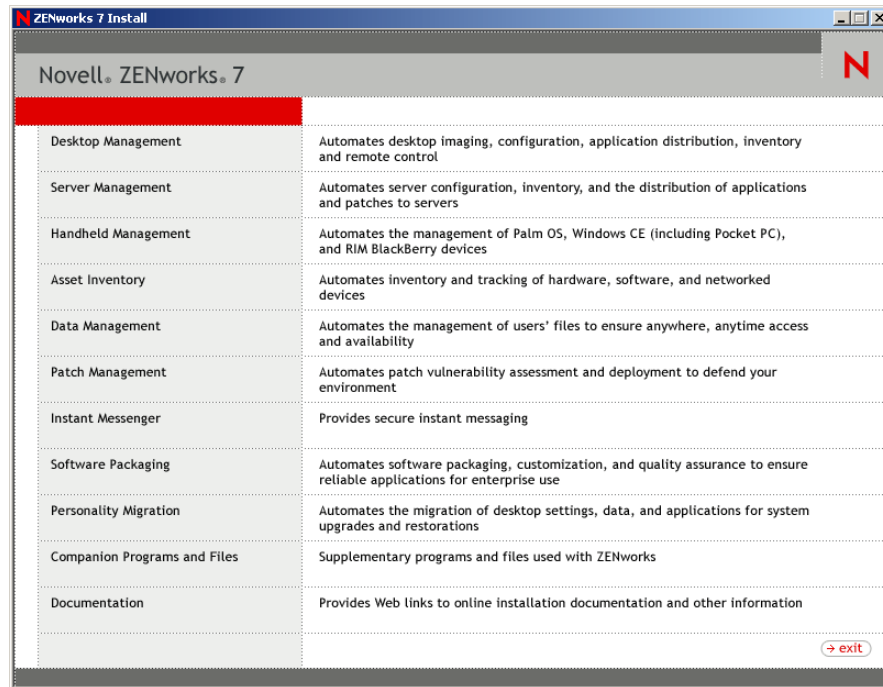
If you run the installation from a directory location where you have copied the ZENworks Desktop Management ISO files, make sure that all of these files are copied to the same location from which you are running `winsetup.exe`.

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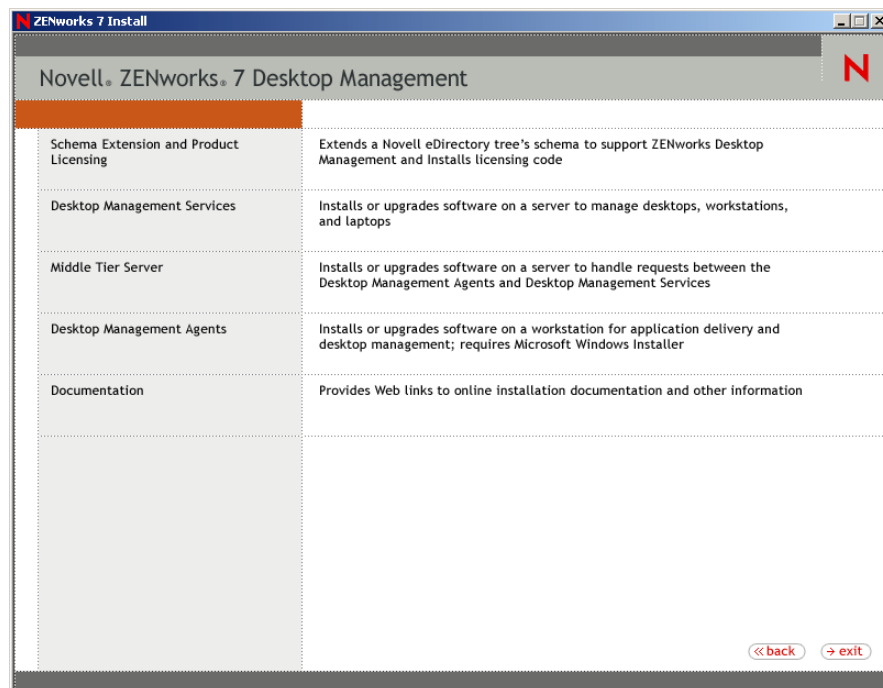
**IMPORTANT:** If you remove the *Novell ZENworks 7 Desktop Management* CD from the CD drive during the installation, or if you lose your connection to the server you are installing to, the installation program stops and does not proceed. To terminate the installation process, open the Windows Task Manager, click *Processes*, select `javaw.exe`, then click *End Process*.

---

The `winsetup.exe` program autoruns. If it does not autorun, launch the program from the root of the CD.



- 3 Click *Desktop Management* to display a page with options to install in various languages.
- 4 Click *English* to display a page with Desktop Management installation options.



- 5 Click *Middle Tier Server* to launch the Middle Tier Server installation program.



6 On the first Installation page, read the details about running the installation program, then click *Next*.

7 Read the License agreement, then click *Accept* if you agree with the terms of the License Agreement.

If you do not agree with the terms of the license agreement, do not install the software.

8 On the Installation Requirements page, read the requirements for installing the Middle Tier Server software, make sure that the server where you plan to install meets the listed requirements, then click *Next*.

9 On the eDirectory Location and Credentials page, select whether your Middle Tier Servers have been previously configured or not, then fill in the fields:

**DNS/IP Address:** Specify the DNS name or IP address of the server where eDirectory is installed.

**Username (full DN):** Specify the fully-qualified distinguished username of the Middle Tier proxy user account (for example, midtier-proxy.org-unit.org). To ensure that these credentials remain secure, you can set up an arbitrary user with specific administrative rights.

For a description of the required rights, see [Section 10.3, “Required Rights for the Middle Tier Proxy User Account and the NSAdmin Utility,”](#) on page 127.

**Password:** Specify the eDirectory™ password for the Middle Tier proxy user.

The screenshot shows the 'eDirectory Location and Credentials' window from the ZENworks Middle Tier Server Installation. On the left is a Novell logo. The main area has two radio buttons: 'My Middle Tier Servers have been previously configured with this information.' (unselected) and 'My Middle Tier Servers have no configuration, or I wish to re-configure.' (selected). Below this is explanatory text about eDirectory access. Then, it asks for 'Provide the name or IP address and administrative credentials for an eDirectory server.' with a note that the server must already have eDirectory installed. There are three input fields: 'DNS / IP Address:', 'Username (full DN):', and 'Password:'. At the bottom are buttons for '<Back', 'Next>', 'Cancel', 'Finish', and 'Help'.

10 (Conditional if you have no previous Middle Tier configuration) On the ZENworks User Context page (User Context field), specify the eDirectory context where the Middle Tier Server can look for user objects that will be used by Desktop Management.

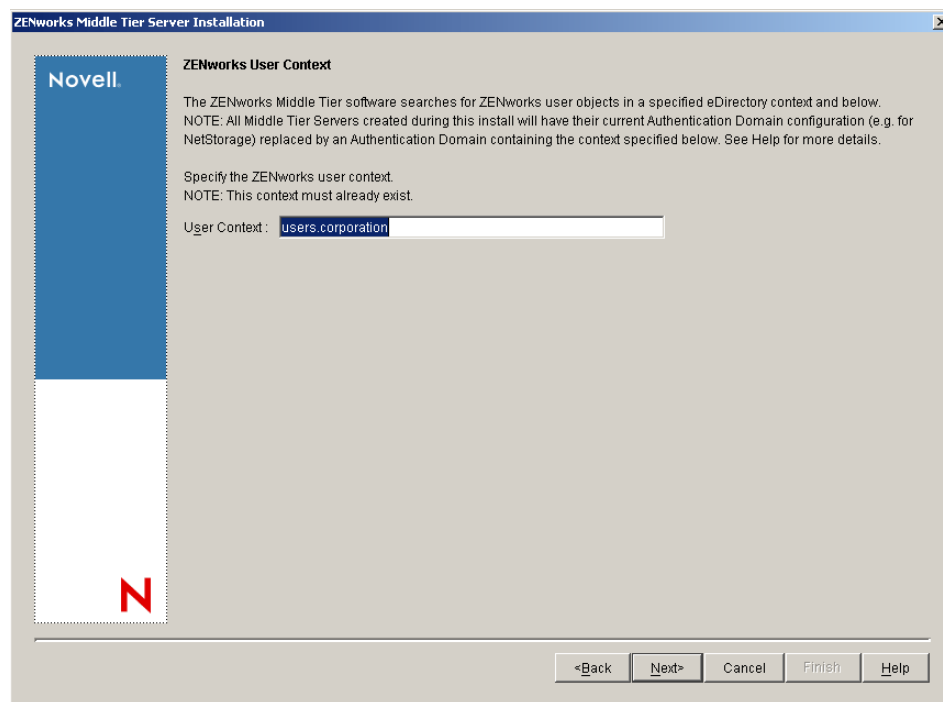
You should use the context of the highest-level container where user objects reside. This value is passed to the ZENworks Middle Tier Server, which uses it as a starting point in searching for a user.

For example, if users exist in many subcontainers, specify the context of the container that holds all of those subcontainers. When a user logs in through the ZENworks Middle Tier Server, the server begins searching for a user in the designated eDirectory container, then searches subcontainers in that container until the correct user is found.

For any Middle Tier Server you designate during this installation, currently configured authentication domains (for example, the authentication domain configured for NetStorage) are replaced by a single authentication domain having the context that you specify here.

After the installation, you can reconfigure this authentication domain context using the NSAdmin utility. You can open the utility in a Web browser ([http://middle\\_tier\\_server\\_name/oneNet/nsadmin](http://middle_tier_server_name/oneNet/nsadmin)).

The installation program verifies the existence of the context (that is, the container) before continuing.



- 11** (Conditional if you have no previous Middle Tier configuration) On the ZENworks Files Location page, select the network location where you will access application and policy files managed by ZENworks.

The ZENworks Middle Tier Server requires access to ZENworks files installed elsewhere on your network. As the ZENworks Administrator, you define the location of these files when you create policies or applications for distribution. The information you provide on this page is used to help the Middle Tier Server determine how to access different file systems. This decision is necessary for the installation now, even if you have not yet created any ZENworks files.

- ♦ Select the first option button if your ZENworks-managed application and policy files will be located on NetWare servers only.
- ♦ Select the second option button if some or all of your ZENworks-managed application and policy files will be located on Microsoft Windows servers.

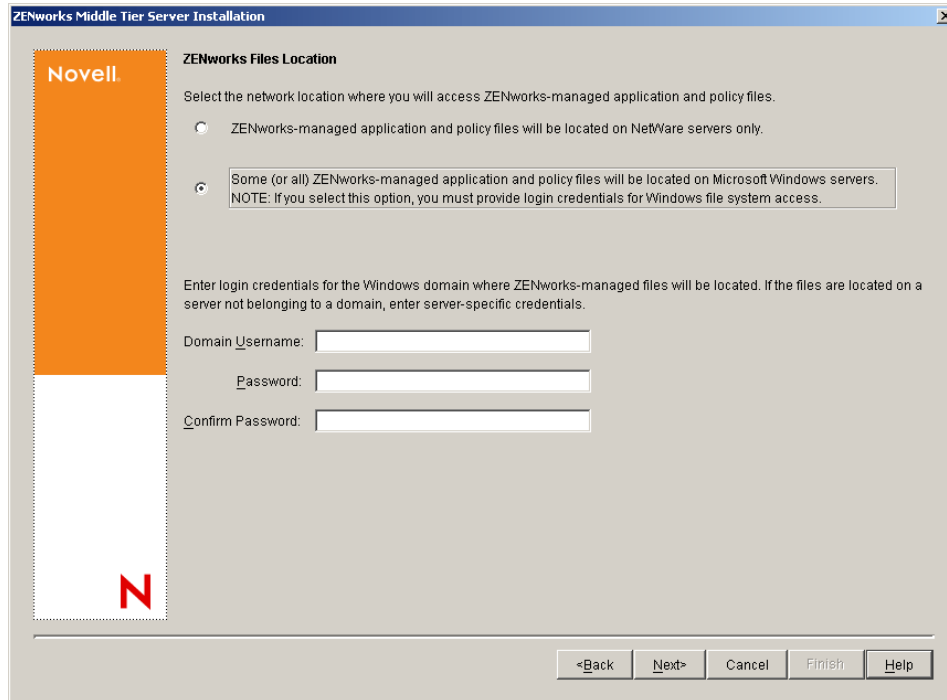
If your ZENworks files are located in a Windows file system, the Middle Tier Server might not be able to access them using a username and password for Novell eDirectory; instead, it requires Windows domain credentials to access the files.

If the files are located on a server not belonging to a domain, enter server-specific credentials.

**Domain Username:** Specify the username of any user in the Microsoft domain who has Windows file system rights to the ZENworks file locations.

**Password:** Specify the password for the user in the Microsoft domain who has file system rights to ZENworks files.

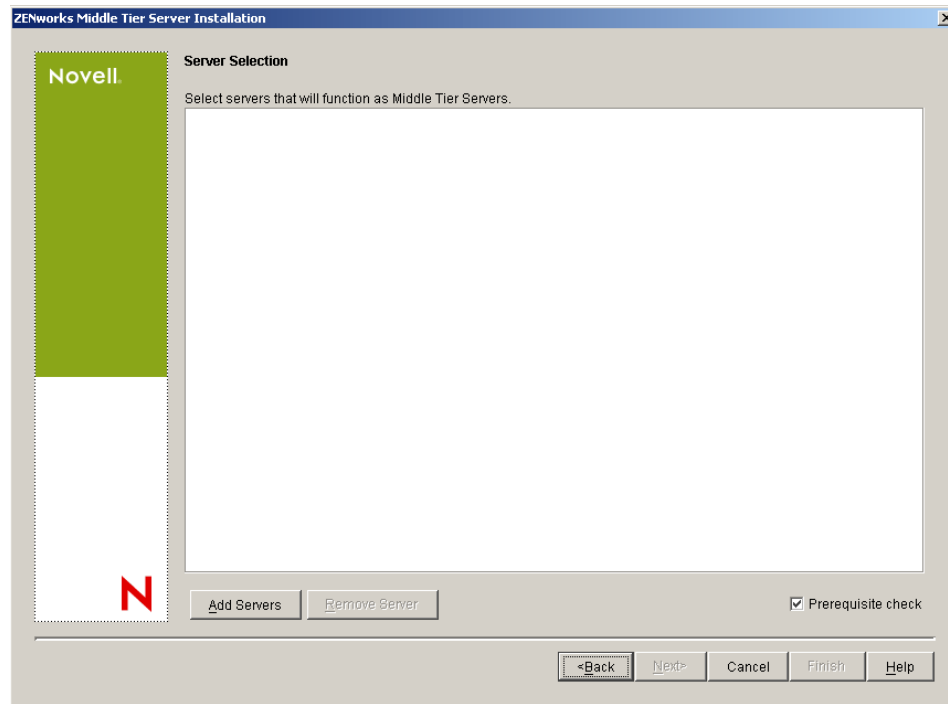
**Confirm Password:** Specify the same password to confirm that it was entered correctly.



The image shows a screenshot of the 'ZENworks Middle Tier Server Installation' window, specifically the 'ZENworks Files Location' step. The window has a blue title bar and a grey background. On the left, there is a vertical orange bar with the 'Novell.' logo at the top and a red 'N' logo at the bottom. The main content area is titled 'ZENworks Files Location' and contains the following text: 'Select the network location where you will access ZENworks-managed application and policy files.' Below this, there are two radio button options. The first option is 'ZENworks-managed application and policy files will be located on NetWare servers only.' The second option is 'Some (or all) ZENworks-managed application and policy files will be located on Microsoft Windows servers.' The second option is selected. Below the second option, there is a note: 'NOTE: If you select this option, you must provide login credentials for Windows file system access.' Further down, there is a text box for 'Domain Username:' followed by a text box for 'Password:' and a text box for 'Confirm Password:'. At the bottom right, there are five buttons: '<Back', 'Next>', 'Cancel', 'Finish', and 'Help'.

- 12 On the Server Selection page, you need to build a list of target servers that you want to function as Middle Tier Servers. The *Add Servers* button calls a dialog box that is used to find and add

servers to the list. The Remove Servers button lets you delete servers from the target list after they are added. Click *Add Servers*.



- 13** (Optional) *Prerequisite Check* is selected by default. Retain this selection if you want the installation program to verify that the server or servers meet the installation requirements for ZENworks Middle Tier Servers.

The installation program checks the version of any previously installed Middle Tier Server software, the server's network operating system (including any required service or support packs), the presence and version of the IIS Web server on Windows servers, the presence and version of the appropriate Web server on NetWare servers, and the presence and version of NetStorage (2.6.0) on target servers.

If the server operating system and support/service packs are not the correct version, the installation displays a warning message, but can continue. If other requirements are not met, the installation displays a warning and does not continue until the required software is installed and detected.

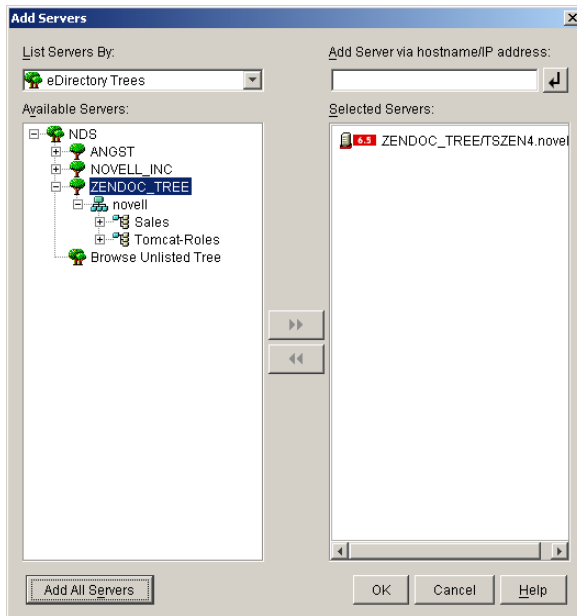
- 14** On the Add Servers dialog box, open the *List Servers By* drop-down list to show the options of listing the servers according to their location in Novell eDirectory trees, in Microsoft Windows Network structures, or in Microsoft Active Directory trees.

You can install the ZENworks Middle Tier Server software to several servers during the installation. When you have finished adding servers to the list, click *OK*.


Both the Desktop Management Server installation program and the Middle Tier Server installation program allow you to select servers from only one eDirectory tree. If you run either of these installation programs from a Windows server and if that server is not part of the tree you have selected, you cannot install the Desktop Management Server locally.

- 14a** (Conditional if you want to list servers in eDirectory trees.) In the *List Servers By* drop-down box, select *eDirectory Trees* to list all of the eDirectory Trees to which you are

currently authenticated, then browse the tree to the server of your choice, then click the double right-arrow to move it to the *Selected Servers* list box.

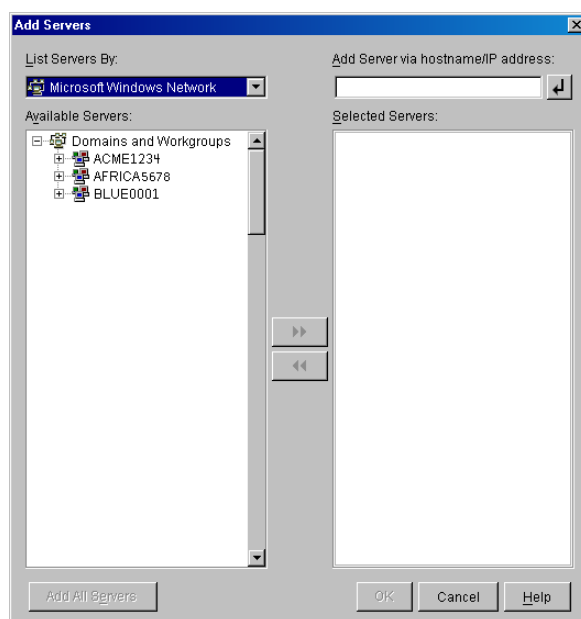


Other options in this dialog box include the following:

- ♦ You can click *Browse Unlisted Tree* to open a dialog box listing all of the trees in your network. Double-clicking any one of these trees moves it to the *Available Servers* list, even though you are not authenticated to that tree.
- ♦ You can specify the hostname or IP address of a server in the *Add Server Via Hostname/IP Address* field. The value that you enter must be resolvable to the name of a server.  
Click  to begin the name resolution process and add the server to the *Selected Servers* list.
- ♦ If you select a server to which you are not authenticated, you are prompted to provide eDirectory credentials for that tree.
- ♦ Click *Add All Servers* to add all of the servers in a selected tree or container when authentication is complete. Selecting a high-level container selects all of the servers in that container and in all of its subordinate containers.
- ♦ To remove a server from the *Selected Servers* list and return it to the *Available Servers* list box, click the server name in the *Selected Servers* box, then click the double left-arrow. You can remove multiple servers from the *Selected Servers* list by selecting them with the Shift and Ctrl keys.


**14b** (Conditional if you want to list servers in Microsoft Windows Network structure.) In the *List Servers By* drop-down list, select *Microsoft Windows Network* to list all of the Windows Workgroups and Microsoft Domains to which you are currently authenticated,

browse the structure to the server of your choice, then click the double-right arrow to move it to the *Selected Servers* list.



Other options in this dialog box include the following:

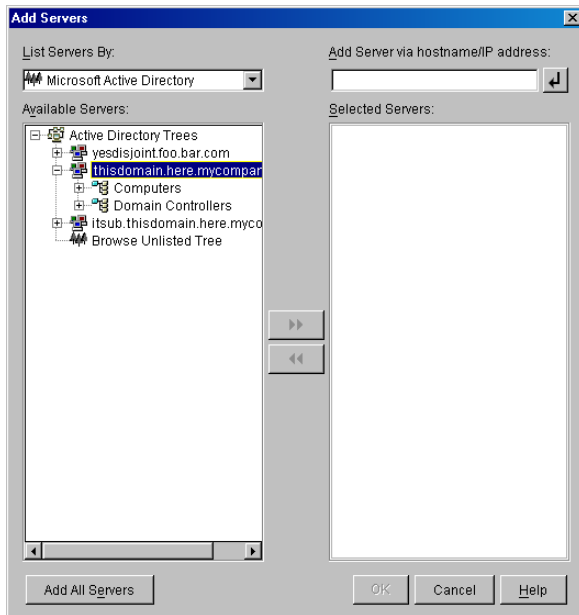
- You must be an administrative user for a server in order to add it to the *Selected Servers* list. If you are not authenticated to a server, the object is designated by a question mark. You can double-click the question mark to authenticate to the server, then click the double-right arrow to move the server to the *Selected Servers* list, if it is a supported server platform for ZENworks 7 Desktop Management.
- When you list servers in Microsoft domains, NetWare servers are not listed for browsing because ZENworks files that are located on a Windows server cannot be obtained through a Middle Tier Server installed on NetWare.
- You can specify the hostname or IP Address of a server in the *Add Server via hostname/IP address* field. The value that you enter must be resolvable to the name of a server located in the designated operating environment.

Click  to begin the name resolution process and add the server to the *Selected Servers* list.

If you are using multiple hostname aliases for a Windows server, the first alias must be the physical name of your Windows server.

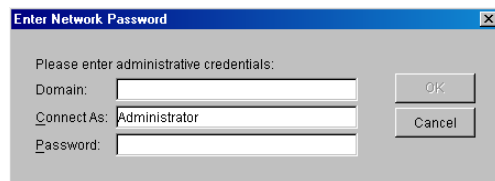
- If the credentials you provided for authentication to the server (see [Step 11](#)) are not administrative credentials, you can add it as a target server, but you are re-prompted for Administrative credentials when you close the Add Servers dialog box.
- Click *Add All Servers* to add all of the servers in a selected domain or workgroup. Selecting a domain or workgroup selects all of the authenticated servers in that domain or workgroup.
- To remove a server from the *Selected Servers* list and return it to the *Available Servers* list, click the server name in the *Selected Servers* list, then click the double left-arrow. You can remove multiple servers from the *Selected Servers* list by selecting them with the Shift and Ctrl keys.

- 14c** (Conditional, if you want to list servers in a Microsoft Active Directory.) In the *List Servers By* drop-down list, select *Microsoft Active Directory*. If your workstation is a member of an Active Directory, the domains in the Active Directory trees are displayed. You can browse to all of the servers listed in Active Directory (on a per domain basis), browse the structure to the server of your choice, then click the double right-arrow to move it to the *Selected Servers* list.




Other options in this dialog box include the following:

- You can also click *Browse Unlisted Tree* to open a dialog box where you can specify the name of the domain you want to add, then authenticate to it with the proper credentials prior to displaying its servers in the *List Servers By* drop-down list.



- You can specify the hostname or IP address of a server in the *Add Server Via Hostname/IP Address* field. The value that you enter must be resolvable to the name of a server located in the designated operating environment.

Click  to begin the name resolution process and add the server to the *Selected Servers* list.

- Right-click a domain object to select one of three search methods:

**Search Standard Locations:** Lists the computers and domain controllers at the root of the domain. This is the default search method.

**Search Entire Directory:** Lists all directory containers where computers are located.

**Browse Directory Hierarchy:** Lists all of the containers in the directory, which you can expand and browse one at a time to find the computer you want. This search method might be useful if you have computers in a non-standard location of a large directory.

- ♦ Click *Add All Servers* to add all of the servers in a selected domain or container. Selecting a domain or container selects all of the servers in that domain or container.
- ♦ To remove a server from the *Selected Servers* box and return it to the *Available Servers* list box, click the server name in the *Selected Servers* box, then click the double left-arrow. You can remove multiple servers from the *Selected Servers* box by selecting them with the Shift and Ctrl keys.

- 15** On the Summary page, review the location where you have chosen to install the ZENworks Middle Tier Server software and the Desktop Management Server to which it is associated, then click *Finish* to begin the installation process if the summary is correct.

The Middle Tier Server Installation Wizard launches another installation program. Wait until this program is completed.

---

**IMPORTANT:** You can review the installation log file after the installation has completed. The log file name is `datestamp_timestamp_zdmmidtier_install.log` (for example: `20040304_024034_zdmmidtier_install.log`). It is located in the `\novell\zfdtemp` directory on the machine you are installing from. This log file indicates whether any component failed to install.

You can also review the installation summary to review the selections you made. The summary is saved in a log file named

`datestamp_timestamp_zdmmidtier_installsinstallsummary.log` (for example: `20040304_024034_zdmmidtier_installsinstallsummary.log`). It is also located in `c:\novell\zfdtemp`.

- 
- 16** In ConsoleOne pointing to eDirectory on the Desktop Management Server, make sure you have set up the Desktop Management Server to allow clear text passwords. See [Step 15 on page 90](#) for more information.
- 17** (NetWare 6 Installation only.) Edit the `autoexec.ncf` file on the NetWare 6 ZENworks Middle Tier Server so that the Apache Web Server can load and bind properly. For more information, see [Section 10.4, “Editing Autoexec.ncf on a NetWare 6 ZENworks Middle Tier Server,” on page 129](#).
- 18** Reboot the server where you installed the ZENworks Middle Tier Server software.
- 19** Verify that the ZENworks Middle Tier Server is installed and running by entering one of the following URLs at a browser on the workstation:

`http://Middle_Tier_Server_DNS_or_IP/oneNet/xtier-stats`

`http://Middle_Tier_Server_IP_address/oneNet/zen`

If the ZENworks Middle Tier Server is running, the first URL opens a Web page where server statistics are displayed. You should be able to see where the request count increases by clicking the Refresh button on your browser.

If you are not authenticated, the second URL launches a dialog box that prompts for user credentials. If you are authenticated, the URL launches a Web page where a message is displayed stating that XZEN (the Xtier module in the Middle Tier Server) is running.



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**IMPORTANT:** If you previously installed the ZENworks 7 Middle Tier Server on an OES NetWare server, and then you subsequently upgrade the NetWare server to OES Support Pack 1, the support pack installation program overwrites the ZENworks 7 Middle Tier Server (version 2.0x) with a newer version of XTier (version 3.01). This version of XTier is not compatible with other ZENworks 7 Middle Tier components and effectively disables the Middle Tier.

If you must upgrade your OES server with OES Support Pack 1, you can work around the problem by reinstalling the ZENworks 7 Middle Tier Server after the OES upgrade.

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## 10.2 SP1 Middle Tier Server Installation Procedure

When you have met the hardware and software requirements and prerequisites for installation (see [“Prerequisites for Installing the ZENworks Middle Tier Server” on page 61](#)), use the following steps to get the ZENworks® 7 Middle Tier Server with Support Pack 1 up and running on a NetWare® or Windows server.

- 1 Select a Windows 2000/XP workstation (or a Windows 2000/2003 server) to run the Middle Tier Server installation program. The workstation or server must meet the requirements for an installing workstation. For details, see [“Prerequisites for the Workstation Running the Installation” on page 39](#).
- 2 At a Windows workstation, insert the *Novell ZENworks 7 Desktop Management with Support Pack 1* CD.

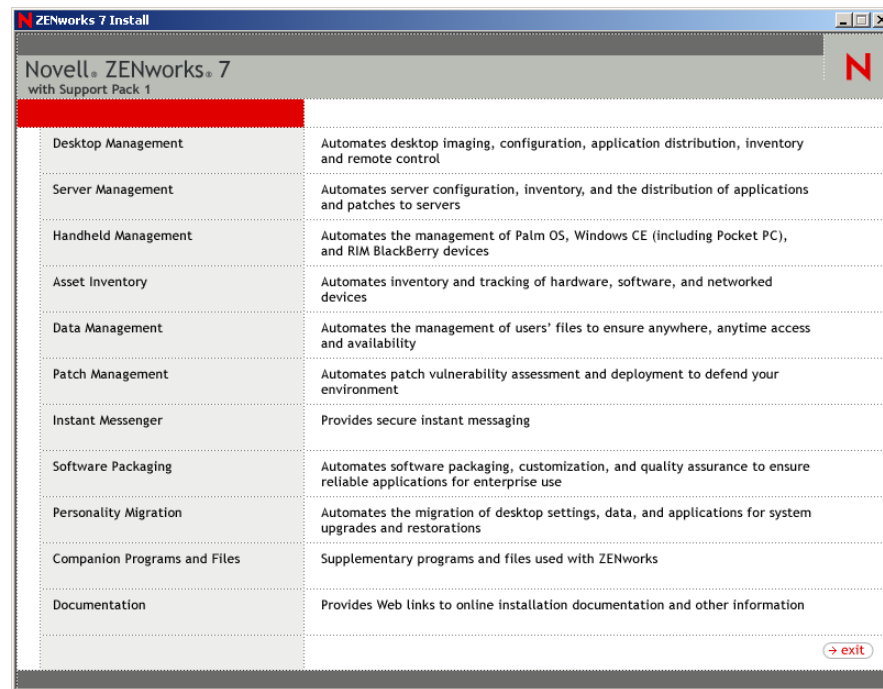
If you run the installation from a directory location where you have copied the ZENworks Desktop Management ISO files, make sure that all of these files are copied to the same location from which you are running `winsetup.exe`.

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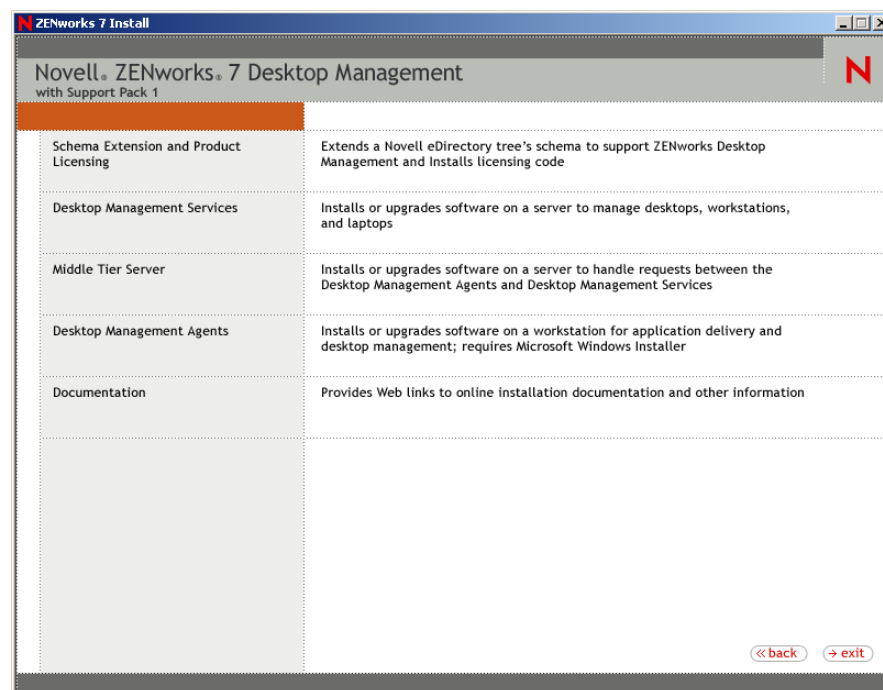
**IMPORTANT:** If you remove the *Novell ZENworks 7 Desktop Management with Support Pack 1* CD from the CD drive during the installation, or if you lose your connection to the server you are installing to, the installation program stops and does not proceed. To terminate the installation process, open the Windows Task Manager, click *Processes*, select `javaw.exe`, then click *End Process*.

---

The `winsetup.exe` program autoruns. If it does not autorun, launch the program from the root of the CD.



- 3 Click *Desktop Management* to display a page with options to install in various languages.
- 4 Click *English* to display a page with Desktop Management installation options.



- 5 Click *Middle Tier Server* to launch the Middle Tier Server installation program.

6 On the first Installation page, read the details about running the installation program, then click *Next*.

7 Read the License agreement, then click *Accept* if you agree with the terms of the License Agreement.

If you do not agree with the terms of the license agreement, do not install the software.

8 On the Installation Requirements page, read the requirements for installing the Middle Tier Server software, make sure that the server where you plan to install meets the listed requirements, then click *Next*.

9 On the eDirectory Location and Credentials page, select whether your Middle Tier Servers have been previously configured or not, then fill in the fields:

**DNS/IP Address:** Specify the DNS name or IP address of the server where eDirectory is installed.

**Username (full DN):** Specify the fully-qualified distinguished username of the Middle Tier proxy user account (for example, midtier-proxy.org-unit.org). To ensure that these credentials remain secure, you can set up an arbitrary user with specific administrative rights.

For a description of the required rights, see [Section 10.3, “Required Rights for the Middle Tier Proxy User Account and the NSAdmin Utility,”](#) on page 127.

**Password:** Specify the eDirectory™ password for the Middle Tier proxy user.

The screenshot shows the 'eDirectory Location and Credentials' window of the ZENworks Middle Tier Server Installation. On the left is a Novell logo. The main area has two radio buttons: 'My Middle Tier Servers have been previously configured with this information.' (unselected) and 'My Middle Tier Servers have no configuration, or I wish to re-configure.' (selected). Below this is a paragraph explaining that the servers will access an eDirectory server for authentication and configuration. It then asks for the name or IP address and administrative credentials for an eDirectory server, with a note that the server must already have eDirectory installed. There are three input fields: 'DNS / IP Address:', 'Username (full DN):', and 'Password:'. At the bottom are buttons for '<Back', 'Next>', 'Cancel', 'Finish', and 'Help'.

10 (Conditional if you have no previous Middle Tier configuration) On the ZENworks User Context page (User Context field), specify the eDirectory context where the Middle Tier Server can look for user objects that will be used by Desktop Management.

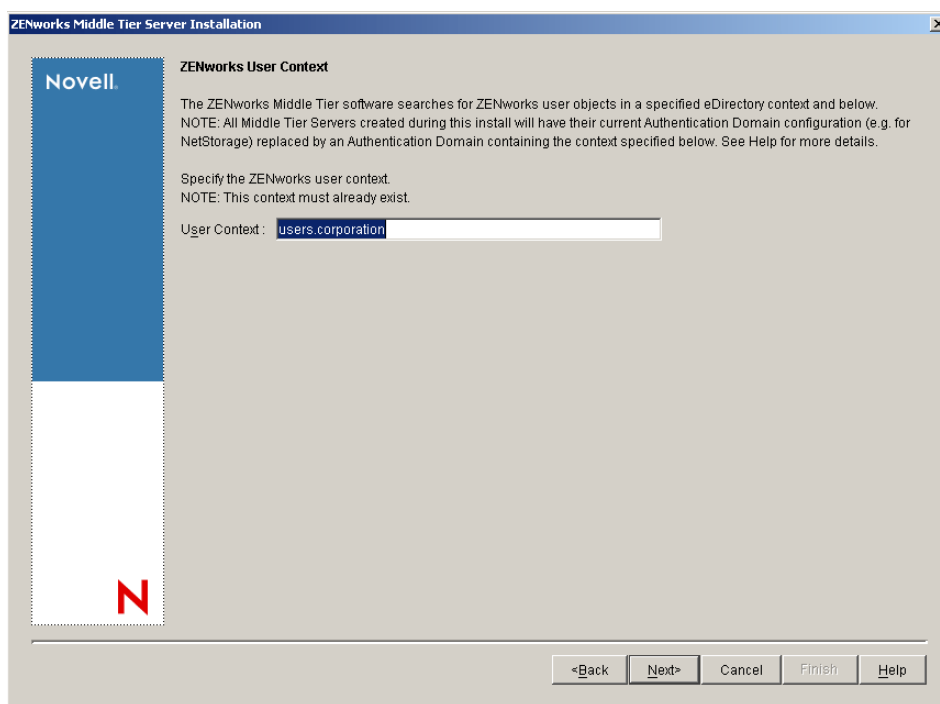
You should use the context of the highest-level container where user objects reside. This value is passed to the ZENworks Middle Tier Server, which uses it as a starting point in searching for a user.

For example, if users exist in many subcontainers, specify the context of the container that holds all of those subcontainers. When a user logs in through the ZENworks Middle Tier Server, the server begins searching for a user in the designated eDirectory container, then searches subcontainers in that container until the correct user is found.

For any Middle Tier Server you designate during this installation, currently configured authentication domains (for example, the authentication domain configured for NetStorage) are replaced by a single authentication domain having the context that you specify here.

After the installation, you can reconfigure this authentication domain context using the NSAdmin utility. You can open the utility in a Web browser ([http://middle\\_tier\\_server\\_name/oneNet/nsadmin](http://middle_tier_server_name/oneNet/nsadmin)).

The installation program verifies the existence of the context (that is, the container) before continuing.



- 11 (Conditional if you have no previous Middle Tier configuration) On the ZENworks Files Location page, select the network location where you will access application and policy files managed by ZENworks.

The ZENworks Middle Tier Server requires access to ZENworks files installed elsewhere on your network. As the ZENworks Administrator, you define the location of these files when you create policies or applications for distribution. The information you provide on this page is used to help the Middle Tier Server determine how to access different file systems. This decision is necessary for the installation now, even if you have not yet created any ZENworks files.

- ♦ Select the first option button if your ZENworks-managed application and policy files will be located on NetWare servers only.
- ♦ Select the second option button if some or all of your ZENworks-managed application and policy files will be located on Microsoft Windows servers.

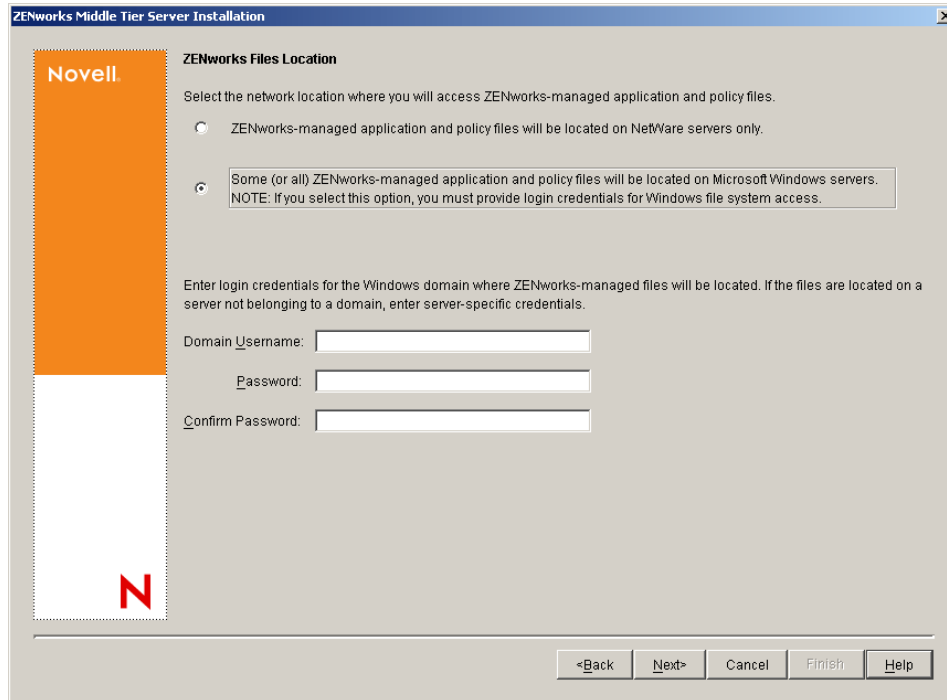
If your ZENworks files are located in a Windows file system, the Middle Tier Server might not be able to access them using a username and password for Novell eDirectory; instead, it requires Windows domain credentials to access the files.

If the files are located on a server not belonging to a domain, enter server-specific credentials.

**Domain Username:** Specify the username of any user in the Microsoft domain who has Windows file system rights to the ZENworks file locations.

**Password:** Specify the password for the user in the Microsoft domain who has file system rights to ZENworks files.

**Confirm Password:** Specify the same password to confirm that it was entered correctly.

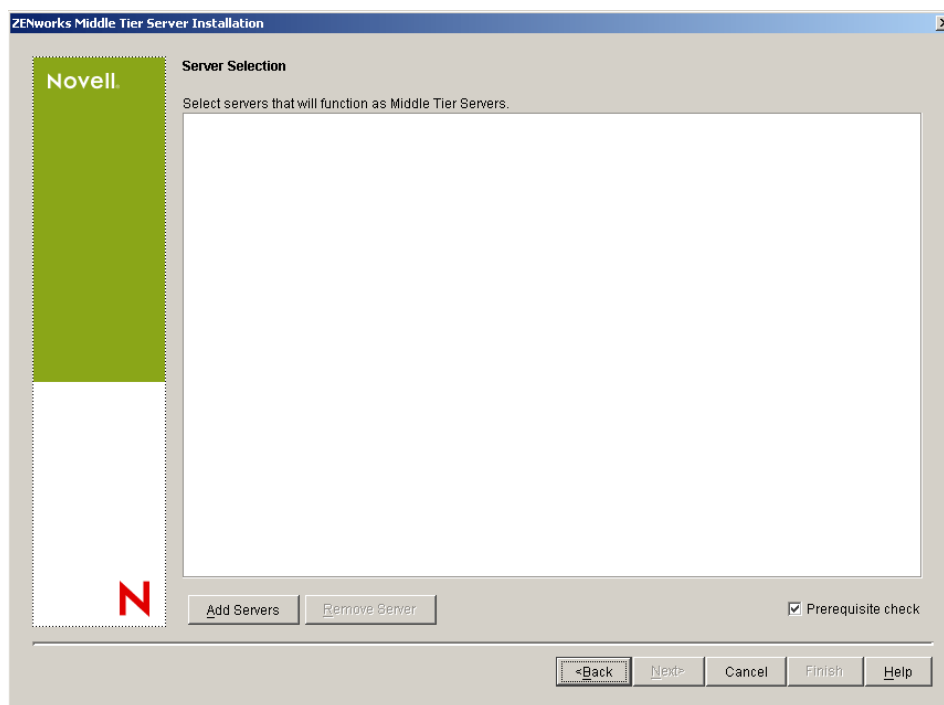


The image shows a screenshot of the 'ZENworks Middle Tier Server Installation' window, specifically the 'ZENworks Files Location' step. The window has a blue title bar and a grey background. On the left, there is a vertical orange bar with the 'Novell.' logo at the top and a red 'N' logo at the bottom. The main area contains the following text and controls:

- ZENworks Files Location**
- Select the network location where you will access ZENworks-managed application and policy files.
- Two radio buttons:
  - The first is unselected and labeled: 'ZENworks-managed application and policy files will be located on NetWare servers only.'
  - The second is selected and labeled: 'Some (or all) ZENworks-managed application and policy files will be located on Microsoft Windows servers. NOTE: If you select this option, you must provide login credentials for Windows file system access.'
- Text: 'Enter login credentials for the Windows domain where ZENworks-managed files will be located. If the files are located on a server not belonging to a domain, enter server-specific credentials.'
- Three text input fields:
  - 'Domain Username:'
  - 'Password:'
  - 'Confirm Password:'
- At the bottom right, there are five buttons: '<Back', 'Next>', 'Cancel', 'Finish', and 'Help'.

- 12 On the Server Selection page, you need to build a list of target servers that you want to function as Middle Tier Servers. The *Add Servers* button calls a dialog box that is used to find and add

servers to the list. The Remove Servers button lets you delete servers from the target list after they are added. Click *Add Servers*.



- 13** (Optional) *Prerequisite Check* is selected by default. Retain this selection if you want the installation program to verify that the server or servers meet the installation requirements for ZENworks Middle Tier Servers.

The installation program checks the version of any previously installed Middle Tier Server software, the server's network operating system (including any required service or support packs), the presence and version of the IIS Web server on Windows servers, the presence and version of the appropriate Web server on NetWare servers, and the presence and version of NetStorage (2.6.0) on target servers.

If the server operating system and support/service packs are not the correct version, the installation displays a warning message, but can continue. If other requirements are not met, the installation displays a warning and does not continue until the required software is installed and detected.

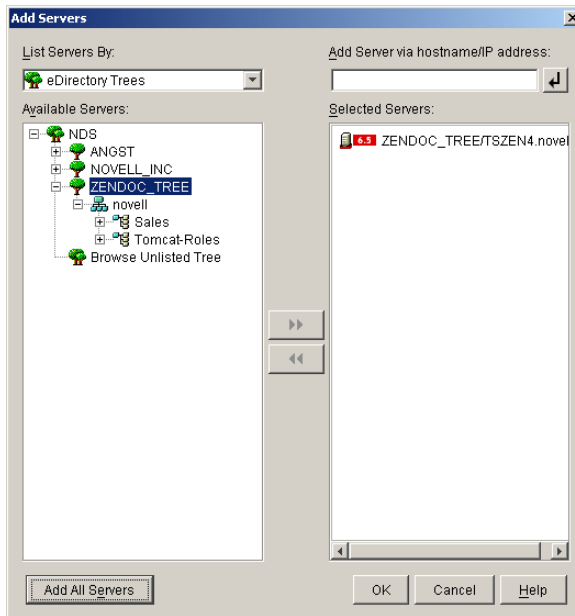
- 14** On the Add Servers dialog box, open the *List Servers By* drop-down list to show the options of listing the servers according to their location in Novell eDirectory trees, in Microsoft Windows Network structures, or in Microsoft Active Directory trees.

You can install the ZENworks Middle Tier Server software to several servers during the installation. When you have finished adding servers to the list, click *OK*.


Both the Desktop Management Server installation program and the Middle Tier Server installation program allow you to select servers from only one eDirectory tree. If you run either of these installation programs from a Windows server and if that server is not part of the tree you have selected, you cannot install the Desktop Management Server locally.

- 14a** (Conditional if you want to list servers in eDirectory trees.) In the *List Servers By* drop-down box, select *eDirectory Trees* to list all of the eDirectory Trees to which you are

currently authenticated, then browse the tree to the server of your choice, then click the double right-arrow to move it to the *Selected Servers* list box.

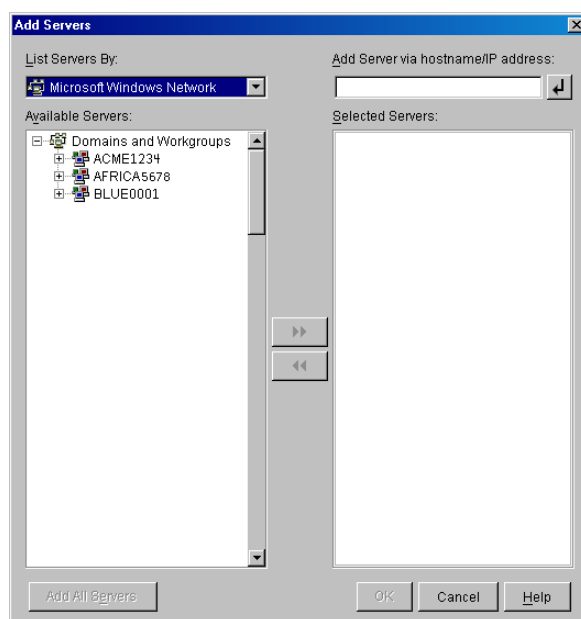


Other options in this dialog box include the following:

- ♦ You can click *Browse Unlisted Tree* to open a dialog box listing all of the trees in your network. Double-clicking any one of these trees moves it to the *Available Servers* list, even though you are not authenticated to that tree.
- ♦ You can specify the hostname or IP address of a server in the *Add Server Via Hostname/IP Address* field. The value that you enter must be resolvable to the name of a server.  
Click  to begin the name resolution process and add the server to the *Selected Servers* list.
- ♦ If you select a server to which you are not authenticated, you are prompted to provide eDirectory credentials for that tree.
- ♦ Click *Add All Servers* to add all of the servers in a selected tree or container when authentication is complete. Selecting a high-level container selects all of the servers in that container and in all of its subordinate containers.
- ♦ To remove a server from the *Selected Servers* list and return it to the *Available Servers* list box, click the server name in the *Selected Servers* box, then click the double left-arrow. You can remove multiple servers from the *Selected Servers* list by selecting them with the Shift and Ctrl keys.


**14b** (Conditional if you want to list servers in Microsoft Windows Network structure.) In the *List Servers By* drop-down list, select *Microsoft Windows Network* to list all of the Windows Workgroups and Microsoft Domains to which you are currently authenticated,

browse the structure to the server of your choice, then click the double-right arrow to move it to the *Selected Servers* list.



Other options in this dialog box include the following:

- You must be an administrative user for a server in order to add it to the *Selected Servers* list. If you are not authenticated to a server, the object is designated by a question mark. You can double-click the question mark to authenticate to the server, then click the double-right arrow to move the server to the *Selected Servers* list, if it is a supported server platform for ZENworks 7 Desktop Management.
- When you list servers in Microsoft domains, NetWare servers are not listed for browsing because ZENworks files that are located on a Windows server cannot be obtained through a Middle Tier Server installed on NetWare.
- You can specify the hostname or IP Address of a server in the *Add Server via hostname/IP address* field. The value that you enter must be resolvable to the name of a server located in the designated operating environment.

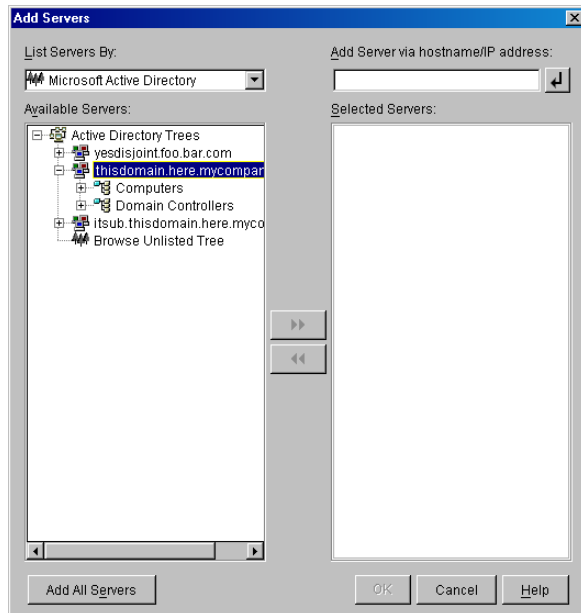
Click  to begin the name resolution process and add the server to the *Selected Servers* list.

If you are using multiple hostname aliases for a Windows server, the first alias must be the physical name of your Windows server.

- If the credentials you provided for authentication to the server (see [Step 11](#)) are not administrative credentials, you can add it as a target server, but you are re-prompted for Administrative credentials when you close the Add Servers dialog box.
- Click *Add All Servers* to add all of the servers in a selected domain or workgroup. Selecting a domain or workgroup selects all of the authenticated servers in that domain or workgroup.
- To remove a server from the *Selected Servers* list and return it to the *Available Servers* list, click the server name in the *Selected Servers* list, then click the double left-arrow. You can remove multiple servers from the *Selected Servers* list by selecting them with the Shift and Ctrl keys.

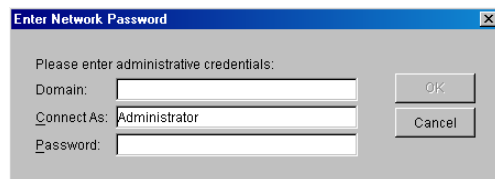



- 14c** (Conditional, if you want to list servers in a Microsoft Active Directory.) In the *List Servers By* drop-down list, select *Microsoft Active Directory*. If your workstation is a member of an Active Directory, the domains in the Active Directory trees are displayed. You can browse to all of the servers listed in Active Directory (on a per domain basis), browse the structure to the server of your choice, then click the double right-arrow to move it to the *Selected Servers* list.



Other options in this dialog box include the following:

- You can also click *Browse Unlisted Tree* to open a dialog box where you can specify the name of the domain you want to add, then authenticate to it with the proper credentials prior to displaying its servers in the *List Servers By* drop-down list.



- You can specify the hostname or IP address of a server in the *Add Server Via Hostname/IP Address* field. The value that you enter must be resolvable to the name of a server located in the designated operating environment.  
Click  to begin the name resolution process and add the server to the *Selected Servers* list.
- Right-click a domain object to select one of three search methods:  
**Search Standard Locations:** Lists the computers and domain controllers at the root of the domain. This is the default search method.  
**Search Entire Directory:** Lists all directory containers where computers are located.

**Browse Directory Hierarchy:** Lists all of the containers in the directory, which you can expand and browse one at a time to find the computer you want. This search method might be useful if you have computers in a non-standard location of a large directory.

- ♦ Click *Add All Servers* to add all of the servers in a selected domain or container. Selecting a domain or container selects all of the servers in that domain or container.
- ♦ To remove a server from the *Selected Servers* box and return it to the *Available Servers* list box, click the server name in the *Selected Servers* box, then click the double left-arrow. You can remove multiple servers from the *Selected Servers* box by selecting them with the Shift and Ctrl keys.

- 15** On the Summary page, review the location where you have chosen to install the ZENworks Middle Tier Server software and the Desktop Management Server to which it is associated, then click *Finish* to begin the installation process if the summary is correct.

The Middle Tier Server Installation Wizard launches another installation program. Wait until this program is completed.

---

**IMPORTANT:** You can review the installation log file after the installation has completed. The log file name is `datestamp_timestamp_zdmmidtier_install.log` (for example: `20040304_024034_zdmmidtier_install.log`). It is located in the `\novell\zfdtemp` directory on the machine you are installing from. This log file indicates whether any component failed to install.

You can also review the installation summary to review the selections you made. The summary is saved in a log file named

`datestamp_timestamp_zdmmidtier_installsinstallsummary.log` (for example: `20040304_024034_zdmmidtier_installsinstallsummary.log`). It is also located in `c:\novell\zfdtemp`.

- 
- 16** In ConsoleOne pointing to eDirectory on the Desktop Management Server, make sure you have set up the Desktop Management Server to allow clear text passwords. See [Step 15 on page 90](#) for more information.
- 17** (NetWare 6 Installation only.) Edit the `autoexec.ncf` file on the NetWare 6 ZENworks Middle Tier Server so that the Apache Web Server will load and bind properly. For more information, see [Section 10.4, “Editing Autoexec.ncf on a NetWare 6 ZENworks Middle Tier Server,” on page 129](#).
- 18** Reboot the server where you installed the ZENworks Middle Tier Server software.
- 19** Verify that the ZENworks Middle Tier Server is installed and running by entering one of the following URLs at a browser on the workstation:

`http://Middle_Tier_Server_DNS_or_IP/oneNet/xtier-stats`

`http://Middle_Tier_Server_IP_address/oneNet/zen`

If the ZENworks Middle Tier Server is running, the first URL opens a Web page where server statistics are displayed. You should be able to see where the request count increases by clicking the Refresh button on your browser.

If you are not authenticated, the second URL launches a dialog box that prompts for user credentials. If you are authenticated, the URL launches a Web page where a message is displayed stating that XZEN (the Xtier module in the Middle Tier Server) is running.

---

**IMPORTANT:** If you previously installed the ZENworks 7 Middle Tier Server on an OES NetWare server, and then you subsequently upgrade the NetWare server to OES Support Pack 1, the support pack installation program overwrites the ZENworks 7 Middle Tier Server (version 2.0x) with a newer version of XTier (version 3.01). This version of XTier is not compatible with other ZENworks 7 Middle Tier components and effectively disables the Middle Tier.

If you must upgrade your OES server with OES Support Pack 1, you can work around the problem by reinstalling the ZENworks 7 Middle Tier Server after the OES upgrade.

---

## 10.3 Required Rights for the Middle Tier Proxy User Account and the NSAdmin Utility

Because you might create an administrator account for the Middle Tier Server installation and login and also for the administration of the Middle Tier Server after it is installed (using the NSAdmin utility) at the same time, this section contains the following content:

- ♦ [Section 10.3.1, “Proxy User Rights Required for Middle Tier Installation and Login,” on page 127](#)
- ♦ [Section 10.3.2, “Required Rights for NSAdmin Access,” on page 128](#)

---

**NOTE:** For the purpose of this example, we have already created a proxy user, *zenpxyuser*, in the *CN=zenpxyuser.OU=zen.OU=Users.O=Company* context, with *test* as its password.

---

### 10.3.1 Proxy User Rights Required for Middle Tier Installation and Login

Because it already has all of the required access rights, you can use an administrator account as the Middle Tier Proxy User Account, but this poses significant security risks. Alternatively, you can create a user account in ConsoleOne and assign it only the rights required for a ZENworks Middle Tier proxy user.

Use the following steps to assign rights to the proxy user:

- 1** Make *zenpxyuser* a Trustee of *OU=Users.O=Company*.
  - 1a** Select the OU, then click *Properties*.
  - 1b** Select the *NDS Rights* tab.
  - 1c** Click *Add Trustee*, then add the proxy user as a trustee of the OU.
  - 1d** (Conditional) If the Rights Assigned dialog box is not displayed, click *Assigned Rights*.
  - 1e** Click *Add Property*, select *Show All Properties*, then select all of the properties listed in [Table 10-1 on page 128](#) and assign the appropriate rights (also shown in the same table.)

After these rights are assigned, you can enter this proxy user's context and password during the ZENworks Middle Tier Server installation. Using the preceding example, you would enter *zenpxyuser.zen.users.company* as the proxy user and *test* as the proxy user password.

**Table 10-1** Summary of Proxy User Rights

Trustees of Which Object	Add Trustee	Add Property	Rights	Inheritable?
User's or User Container	zenpxyuser	Entry Rights	B[rowse] C[reate]	Yes
User's or User Container	zenpxyuser	All Attributes	C[ompare] R[ead]	Yes
User's or User Container	zenpxyuser	CN	C[ompare] R[ead]	Yes
User's or User Container	zenpxyuser	zendmWSNetworkAddress	C[ompare] R[ead] W[rite]	Yes

### 10.3.2 Required Rights for NSAdmin Access

To administer the ZENworks Middle Tier Server using the NSAdmin utility, the administrator account you use needs to be equivalent to the proxy user account. The administrative user also needs the *Write* right to the *Equivalent to Me* attribute on the proxy user account.

By default, a newly created user does not have the *Write* right to the *Equivalent to Me* attribute on its own account. Therefore, as you create an arbitrary user for the proxy account, you need to grant this account the *Write* right to its own *Equivalent to Me* attribute. Doing so will let you use NSAdmin to manage the Middle Tier Server.

For more information about NSAdmin, see “[Configuring the ZENworks Middle Tier Server with NSAdmin](#)” in the *Novell ZENworks 7 Desktop Management Administration Guide*.

Use the following steps to assign rights to the proxy user:

- 1** Make *zenpxyuser* a Trustee of *CN=zenpxyuser.OU=zen.OU=Users.O=Company* with the following rights:
  - 1a** Select the *zenpxyuser* User object, click *Properties*.
  - 1b** Select the *NDS Rights* tab.
  - 1c** Click *Add Trustee*, then add the User object that needs rights to log in to NSAdmin as a trustee of the *zenpxyuser* User object.
  - 1d** (Conditional) If the Rights Assigned dialog box is not displayed, click *Assigned Rights*.
  - 1e** Click *Add Property*, select *Show All Properties*, then select the *Equivalent to Me* property.
  - 1f** Assign the [C]ompare, [R]ead, and [W]rite rights to this property. See [Table 10-2, “Summary of Proxy User Rights for NSAdmin,”](#) on page 129 for more information.

After these rights are assigned, you can enter this proxy user's name and password during the login to NSAdmin. Using the preceding example, you would enter *zenpxyuser* as the proxy user and *test* as the password.

**Table 10-2** Summary of Proxy User Rights for NSAdmin

Trustees of Which Object	Add Trustee	Add Property	Rights	Inheritable?
zenpxyuser	Users who want to log in to NSAdmin (including zenpxyuser)	Equivalent to Me	C[ompare] R[ead] W[rite]	No

## 10.4 Editing Autoexec.ncf on a NetWare 6 ZENworks Middle Tier Server

When you installed NetWare 6, you had the option to run Apache (and other NetWare services) on an IP address that differs from the NetWare server's primary IP address. For more information see Configuring IP-Based Services (Conditional) in the *NetWare 6 Overview and Installation Guide* (<http://www.novell.com/documentation/nw6p/setupenu/data/hz8pck9v.html>).

If you chose to install the Apache Web Server using this option, one or more lines were added to your server's `autoexec.ncf` file to identify the Apache IP address as a secondary address. These IP address lines were placed above the load lines for the various NetWare components, including Apache. This configuration works because the Apache servers that load are properly bound to the secondary address.

However, if you subsequently install the ZENworks Middle Tier Server components (that is, `istorage.zip` and `storage.zip`), the Apache load commands are transferred to the bottom of the `autoexec.ncf` file. This sequence causes Apache to load but not bind properly because the secondary address lines haven't been executed yet.

We suggest that after you install ZENworks Middle Tier Server, you edit `autoexec.ncf` to place the `add secondary IP address` command near the top of the file, then restart the server.

## 10.5 Checking the Installation

When the ZENworks Middle Tier Server installation is complete, you can check the installation to see if it was successful, check component versions, or initiate and check debug logs. If you want to perform any of these tasks, see “[Checking the Installation of Desktop Management Components on Servers](#)” in “[Checking the ZENworks Desktop Management Installation](#)” in the *Novell ZENworks 7 Desktop Management Administration Guide* for more information.



# Installing the Desktop Management Server and the Middle Tier Server on the Same Machine

If you have a small to medium-sized enterprise, you might want to install the Novell® ZENworks® Middle Tier Server and the Desktop Management Server on the same network server.

This section contains the following information:

- ♦ [Section 11.1, “Installing Desktop Management Services to a Single NetWare Server,” on page 131](#)
- ♦ [Section 11.2, “Installing the Components to a Single Windows 2000 Server,” on page 132](#)
- ♦ [Section 11.3, “Checking the Installation,” on page 135](#)

The information in this section also applies to the installation of ZENworks 7 Desktop Management with Support Pack 1 components.

For information about installing the Desktop Management Server and the Middle Tier Server on a single Linux server, see [Chapter 19, “Installing All ZENworks Features on a Linux Server,” on page 299](#).

## 11.1 Installing Desktop Management Services to a Single NetWare Server

Use the following high-level procedure for installing the necessary components to run ZENworks Desktop Management on a single NetWare® 6 or NetWare 6.5 server:

- 1 Install the ZENworks Middle Tier Server software. For information, see [Section 10.1, “ZENworks Middle Tier Server Installation Procedure,” on page 107](#) or [Section 10.2, “SP1 Middle Tier Server Installation Procedure,” on page 117](#).
- 2 Install the Desktop Management Server software. For information, see [Section 9.1, “Desktop Management Server Installation Procedure,” on page 77](#) or [Section 9.2, “SP1 Desktop Management Server Installation,” on page 91](#).
- 3 Restart the server.

---

**IMPORTANT:** If you install NetWare 6 SP4 after you install ZENworks Middle Tier Server software, you need to install ZENworks Middle Tier Server software again. Some NetWare 6 SP1 and SP2 files incorrectly overwrite some newer files of the same name on the ZENworks Middle Tier Server.

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## 11.2 Installing the Components to a Single Windows 2000 Server

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**NOTE:** The information in this section also applies to ZENworks 7 Desktop Management with Support Pack 1.

---

Use the following high-level procedure for installing the necessary components to run ZENworks Desktop Management on a single Windows 2000/2003 server:

- 1 Install Novell eDirectory™. This also requires the following complementary software:
  - ♦ If you are using the original version of ZENworks 7 Desktop Management, you must license eDirectory 8.7. You can download the files you need for the eDirectory 8.7.x evaluation license from the [Novell eDirectory 8.7.x Evaluation License Download Web site \(http://www.novell.com/products/edirectory/licenses/eval\\_87.html\)](http://www.novell.com/products/edirectory/licenses/eval_87.html). Novell eDirectory 8.7.3 on the *Novell ZENworks 7 Companion 1* CD includes a licensing wizard that prompts for these files during eDirectory installation.

If you are using ZENworks 7 Desktop Management with Support Pack 1, you can use eDirectory 8.8.1 by purchasing a license for ZENworks. Novell eDirectory 8.8.1 is available on the *Novell ZENworks 7 with Support Pack 1 Companion 1* CD.

- ♦ Novell Client™ 4.9 Support Pack 1a (or later) installed. The most current Novell Client (version 4.91 SP2 or later) is available for download from the [Novell Downloads Web site \(http://download.novell.com/index.jsp\)](http://download.novell.com/index.jsp).

---

**IMPORTANT:** If you install the Novell Client on a Windows 2000/2003 server, then install the Middle Tier Server on the same machine, then uninstall the Novell Client from this server, the Middle Tier Server fails. The client uninstall program removes important files needed by the ZENworks Middle Tier Server.

In this same software combination scenario, if you subsequently upgrade the client to 4.9 SP2, a different version of `nicm.sys` is installed. If you do not use the `nicm.sys` included in ZENworks 7 Middle Tier Server, the Middle Tier Server fails.

To work around this issue, you have two options:

- 1) Save the `nicm.sys` file included in the ZENworks 7 Middle Tier Server installation prior to the client upgrade and then recopy it after the client upgrade (this could also be accomplished by reinstalling the Middle Tier after the client upgrade).
- 2) After the client upgrade, download `nicm.sys` from TID 10093371 in the [Novell Support Knowledgebase \(http://support.novell.com/search/kb\\_index.jsp\)](http://support.novell.com/search/kb_index.jsp) and copy it to overwrite the updated client version of `nicm.sys`.

- 
- ♦ If you are using the original version of ZENworks 7 Desktop Management, install ConsoleOne® 1.3.6

If you are using ZENworks 7 Desktop Management with SP1, install ConsoleOne 1.3.6e, available on the *ZENworks 7 with Support Pack 1 Companion 1* CD.

- 2 If Active Directory is also installed on this server (that is, the server is a Primary Domain Controller), make sure that eDirectory LDAP is configured to listen on ports other than the defaults (389: non-secure, and 636: secure).
  - 2a From the Novell Client, log in to eDirectory as Admin (or equivalent) so that you have sufficient rights to modify the LDAP Server object.



- 2b** In ConsoleOne, right-click the LDAP Server object > select *Properties* > *General*.
- 2c** In the *TCP Port* field, change the TCP port to some other port than the default (port 388 might be a good choice).  
This action varies slightly in older versions of eDirectory. You might need to open the Other page of the LDAP Server to find the TCP Port property and change the value.
- 2d** Click the *SSL Configuration* tab to open the SSL Configuration page.
- 2e** In the *SSL Port* field, change the port number value to something other than 636, then click *Apply*.  
If an error is displayed after you apply the port changes, you can ignore it and close the error dialog box.
- 2f** Click the *Refresh NLDAP Server Now* button.  
If an error is displayed after you refresh the NLDAP server, you can ignore it and close the error dialog box.
- 2g** At the Windows desktop, click *Start* > *Settings* > *Control Panel* > double-click *NDS Services*.
- 2h** In the NDS Services window, select *nldap.dlm*, then click *Start* to accept the changes to the TCP port.  
You can confirm the port that the LDAP Server is listening on by entering the following command at a command prompt:  

```
netstat -a -n
```
- 3** If iMonitor is also installed on this server, configure it to run on a port other than 80:
  - 3a** At the Windows desktop, click *Start* > *Programs* > *Administrative Tools* > *Internet Services Manager*.
  - 3b** In the Internet Information Services window, click the plus sign (+) to expand the server node in the console tree.
  - 3c** At the *Default Web Site* icon, check for the (Stopped) description.  
If the Web site is running, proceed to **Step 3d**.  
If the Web site is stopped, proceed to **Step 3e**.
  - 3d** (Conditional) Stop the IIS Web Server by entering the following command at the command prompt:  

```
iisreset /stop
```
  - 3e** From the desktop, click *Start* > *Settings* > *Control Panel* > *NDS Services* > select *NDS iMonitor* > click *Stop* to stop the iMonitor service.  
The screen might not refresh to show that the service has stopped. You might need to close NDS<sup>®</sup> services and open them again to verify that the service has stopped.  
You can confirm that no service is listening on port 80 by entering the following command at a command prompt:  

```
netstat -a -n
```
  - 3f** Change the conflicting port settings. From ConsoleOne, in the same container as the eDirectory server, right-click the Http Server-Servername object > click *Properties*.
  - 3g** Expand the *httpDefaultClearPort* and the *httpDefaultTLSPort* attributes.
  - 3h** Select the value under each attribute, click *Modify*, then enter an unassigned port to use for DHost Console and ndsimon.

For example, if the *httpDefaultClearPort* default value were set to 80, you could change it to 9000 and if the *httpDefaultTLSPort* value were set to 43, you should change it to 443, assuming that ports 9000 and 443 were not used by other applications.

- 3i** Shut down and restart eDirectory so that the new port numbers take effect.
- 3j** Start iMonitor. From the desktop, click *Start > Settings > Control Panel > NDS Services*, select *NDS iMonitor*, then click *Start*.

Confirm that iMonitor is listening on the configured port by entering the following command at a command prompt:

```
netstat -a -n
```

- 3k** From a command prompt, enter the following command to start IIS:

```
iisreset /start
```

- 4** Install the Desktop Management Server software. For information, see [Chapter 9, “Installing the ZENworks Desktop Management Server,” on page 77](#) or [Section 9.2, “SP1 Desktop Management Server Installation,” on page 91](#).
- 5** Install ZENworks Middle Tier Server software on the server. For information, see [Chapter 10, “Installing the ZENworks Middle Tier Server,” on page 107](#) or [Section 10.2, “SP1 Middle Tier Server Installation Procedure,” on page 117](#).
- 6** If the server has Active Directory and is the Primary Domain Controller, grant IIS rights to modify Middle Tier registry entries:
  - 6a** From the Windows Desktop, click *Start > Run > enter regedt32*.
  - 6b** In the Windows Registry Editor, open `HKEY_LOCAL_MACHINE\SOFTWARE\Novell\Xtier` > click *Security > Permissions*.
  - 6c** In the Permissions for Xtier dialog box, click *Advanced*.
  - 6d** In the Access Control for Xtier dialog box, click *Add*.
  - 6e** In the *Look In* field of the Select Users, Computers, or Groups dialog box, make sure that the domain is selected where you installed the ZENworks Middle Tier Server software > select the `IUSR_server_name` user object from the list, then click *OK*.
  - 6f** In the Permission Entry for Xtier dialog box, select *Allow* for each of the following permissions:
    - ♦ Query Value
    - ♦ Set Value
    - ♦ Create Subkey
    - ♦ Enumerate Subkeys
    - ♦ Notify
    - ♦ Delete
    - ♦ Read Control
  - 6g** Click *OK*.
  - 6h** In the Access Control for Xtier dialog box, select *Reset Permissions on All Child Objects*, then click *Apply*.
  - 6i** In the Security warning dialog box, click *Yes*.
  - 6j** In the Access Control for Xtier dialog box, click *OK*.

- 6k** In the Permissions for Xtier dialog box, click *OK*.
- 6l** Close the Windows Registry Editor.
- 7** Open a browser, enter the address of the NSAdmin utility ([http://server\\_IP\\_address/oneNet/nsadmin](http://server_IP_address/oneNet/nsadmin)), then modify the LDAP Port configuration for the ZENworks Middle Tier Server.

## 11.3 Checking the Installation

When the installation is complete, you can verify whether it was successful, check component versions, or initiate and check debug logs. If you want to perform any of these tasks, see “[Checking the Installation of Desktop Management Components on Servers](#)” in “[Checking the ZENworks Desktop Management Installation](#)” in the *Novell ZENworks 7 Desktop Management Administration Guide* for more information.



# Installing and Configuring the Desktop Management Agent

# 12

The workstation functionality afforded by Novell® ZENworks® 7 Desktop Management components is available only if you install the Desktop Management Agent. This is true even if you currently have the Novell Client™ installed on that workstation. The Desktop Management Agent installation removes the ZENworks features that were previously installed by the Novell Client and replaces them with selected ZENworks workstation features.

The Desktop Management Agent installation lets you install various ZENworks features on a one-time basis; that is, if you want to add or delete any of the features installed by the Desktop Management Agent in an earlier installation, you can use the Modify option that is available in the maintenance dialog box of the Desktop Management Agent setup. For more information, see [Section 12.8, “Modifying the Desktop Management Agent Settings,” on page 161](#).

The installation program utilizes Microsoft Windows Installer functionality. For detailed information about Microsoft Windows Installer, see the [MSI Web site \(http://www.microsoft.com/windows2000/techinfo/administration/management/wininstaller.asp\)](http://www.microsoft.com/windows2000/techinfo/administration/management/wininstaller.asp).

This section includes the following:

- ♦ [Section 12.1, “Installation Prerequisites,” on page 137](#)
- ♦ [Section 12.2, “Manually Installing the Desktop Management Agent,” on page 138](#)
- ♦ [Section 12.3, “Using the Novell Application Launcher to Distribute and Install the Desktop Management Agent,” on page 144](#)
- ♦ [Section 12.4, “Distributing the Agent Using the Application Launcher Plug-In,” on page 148](#)
- ♦ [Section 12.5, “Using the Desktop Management Agent Distributor to Deploy the Agent to Workstations in a Microsoft Domain,” on page 149](#)
- ♦ [Section 12.6, “Using the Desktop Management Agent Distributor to Deploy the Agent to Workstations in a Windows Workgroup,” on page 156](#)
- ♦ [Section 12.7, “Checking the Installation,” on page 160](#)
- ♦ [Section 12.8, “Modifying the Desktop Management Agent Settings,” on page 161](#)

The information in this section also applies to the Desktop Management Agent in ZENworks 7 Desktop Management with Support Pack 1.

## 12.1 Installation Prerequisites

The Desktop Management Agent installation program, `zfdagent.msi`, requires a minimum of Microsoft Windows Installer (MSI) version 1.11 on each workstation during the installation process.

If you are installing the Desktop Management Agent on a workstation that already has MSI 1.11 (or later) installed (such as a Windows 2000 or Windows XP system), the Agent MSI installation program runs normally.

## 12.2 Manually Installing the Desktop Management Agent

This section includes information about installing the Desktop Management Agent using the *Novell ZENworks 7 Desktop Management* CD or images you create yourself from a downloaded copy of `zfdagent.msi`. The following sections are included:

- [Section 12.2.1, “Manual Installation Procedure,” on page 138](#)
- [Section 12.2.2, “Adding Features in a Manual Installation,” on page 144](#)

### 12.2.1 Manual Installation Procedure

Use the following steps if you want to manually install the Desktop Management Agent to individual workstations from the *Novell ZENworks 7 Desktop Management* CD.

- 1 At a Windows workstation, insert the *Novell ZENworks 7 Desktop Management* CD (or the *Novell ZENworks 7 Desktop Management with Support Pack 1* CD).

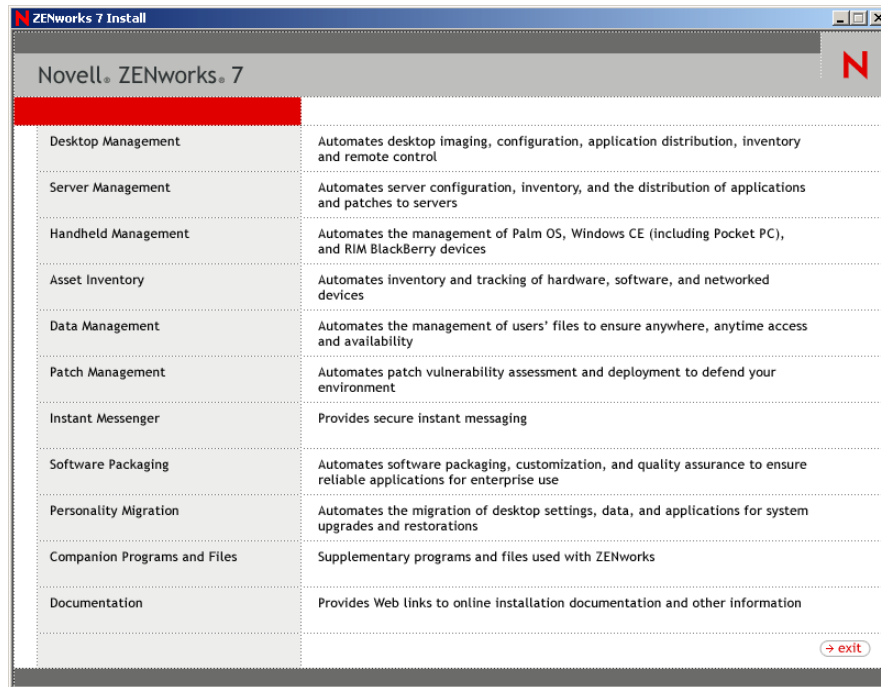
If you run the installation from a directory location where you have copied the ZENworks Desktop Management ISO files, make sure that all of the ISO files are copied to the location from which you are running `winsetup.exe`.

---

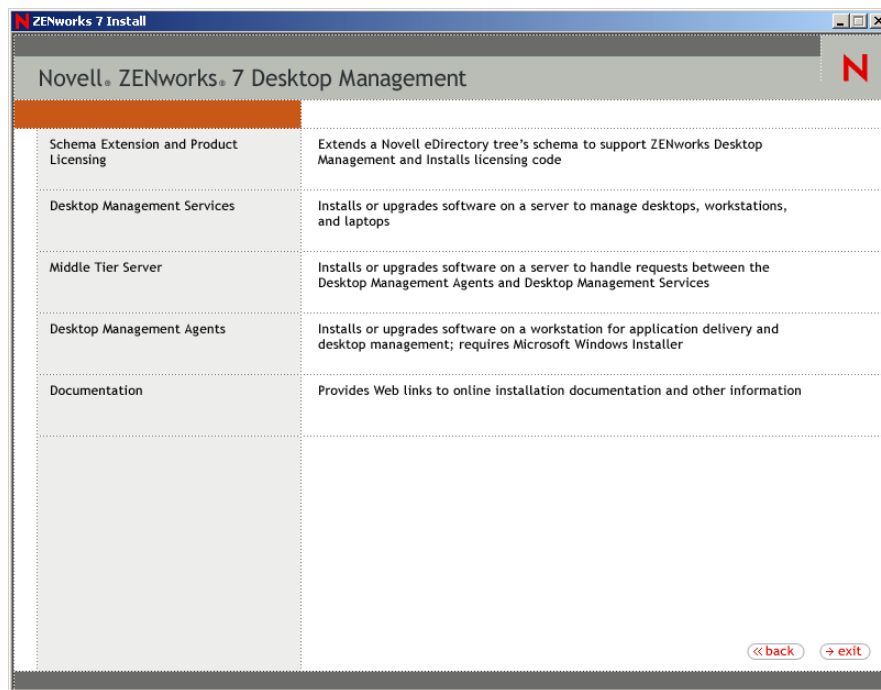
**IMPORTANT:** If you remove the *Novell ZENworks 7 Desktop Management* CD (or the *Novell ZENworks 7 Desktop Management with Support Pack 1* CD) from the CD drive during the installation, or if you lose your connection to the server you are installing to, the installation program stops and does not proceed. To terminate the installation process, open the Windows Task Manager, click *Processes* > select *javaw.exe* > click *End Process*.

---

The `winsetup.exe` program autoruns. If it does not autorun, launch the program from the root of the CD.

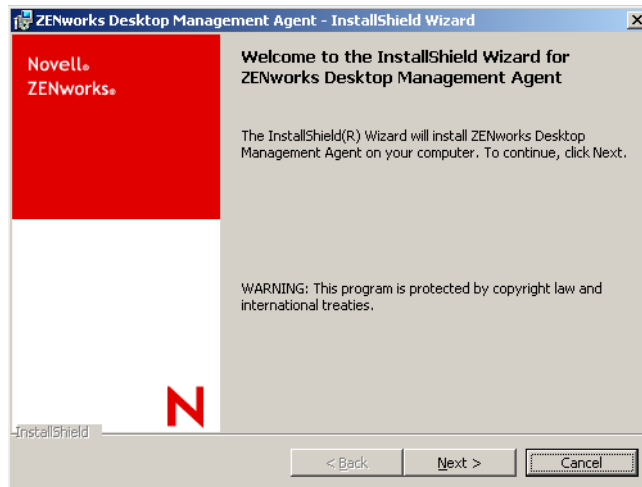


- 2 Click *Desktop Management* to display a page with options to install in various languages.
- 3 Click *English* to display a page with Desktop Management installation options.



- 4 Click *Desktop Management Agents* to launch the ZENworks Desktop Management Agent Installation Wizard.

- 5 On the first Installation page, read the details about running the installation program, then click *Next*.

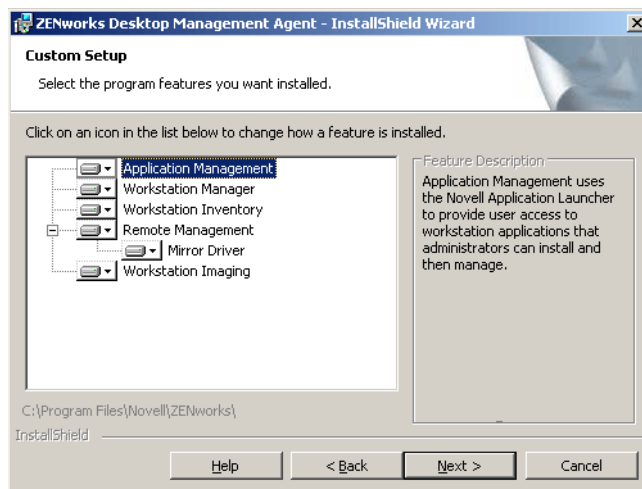


- 6 Read the License Agreement. If you agree to the terms of the license, click *I Accept the Terms in the License Agreement*.

or

Click *I Do Not Accept the Terms in the License Agreement* if you do not agree to the licensing terms. This closes the installation program.

- 7 On the Custom Setup page, select the features that you want to install to the workstation, then click *Next*.



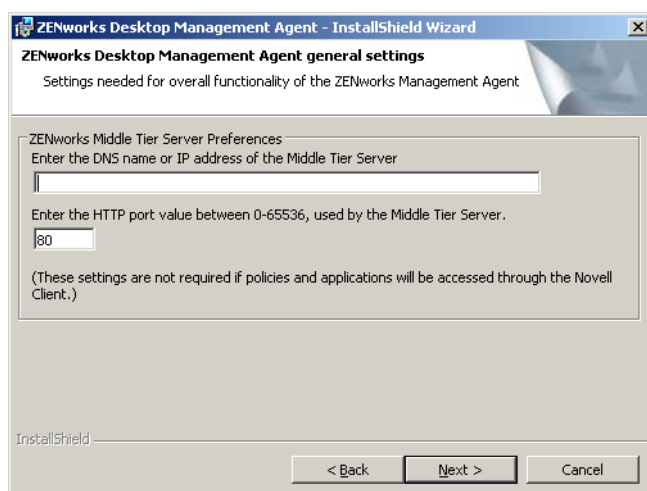
The features you can install include the following:

- ♦ **Application Management:** Uses the Novell Application Launcher™ to provide users access to workstation applications that the administrator can install and then manage. Application Management is installed by default, even if it is not selected, to accommodate future updates to the Desktop Management Agent.
- ♦ **Workstation Manager:** Lets administrators configure and manage workstations by using Novell eDirectory™.



- ♦ **Workstation Inventory:** Helps administrators collect hardware and software inventory information from scanned workstations.
- ♦ **Remote Management:** Lets an administrator manage remote workstations from a management console.
- ♦ **Mirror Driver:** This feature provides video adapter independence and co-existence with other remote control solutions. If this feature is selected, the MSI installation overrides video driver checks and suppresses any Windows messages. If you do not want this driver, you can deselect it (optimization will be disabled).  
The Mirror Driver is not yet signed by Microsoft.
- ♦ **Workstation Imaging:** Lets an administrator take an image of a workstation's hard drive and put it on other workstations over the network.

8 On the General Settings page, fill in the fields, then click *Next*.



**Enter the DNS Name or IP Address of the Middle Tier Server:** Specify the DNS name or IP address of the ZENworks Middle Tier Server that the agent will be connecting to.

---

**IMPORTANT:** Entering a protocol (such as http: or https:) along with the IP address does not allow the Desktop Management Agent to connect to the ZENworks Middle Tier Server.

---

**Enter the Port Value Used by the Middle Tier Server:** Specify the HTTP or HTTPS port number that the Apache Web Server (NetWare) or the IIS Web Server (Windows) will use to listen for the Agent login.

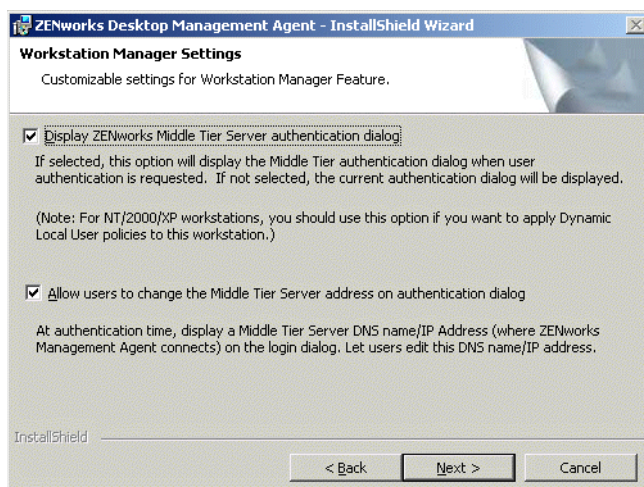
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**IMPORTANT:** When designating a secure (HTTPS) port, you must use port 443.

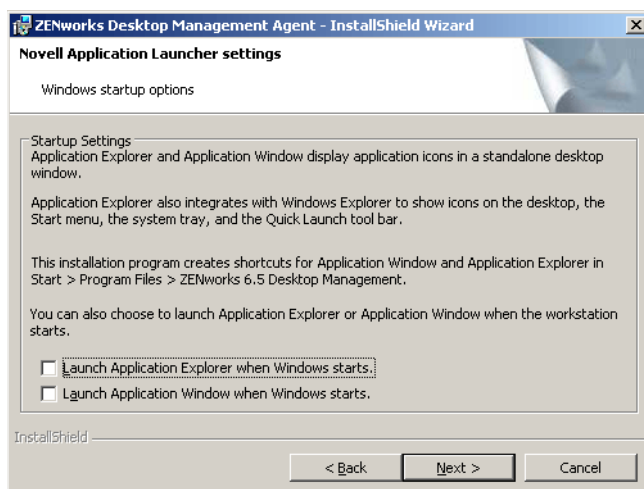
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The IP address or DNS name and the port number let the workstation access the Apache Web server running alongside the Middle Tier, which passes the authentication credentials to the Desktop Management Server. The IP address or DNS name is optional if the Novell Client is installed.

- 9 (Conditional. If you are installing to a workstation that does not have a Novell Client installed, the Workstation Manager Settings page is displayed).

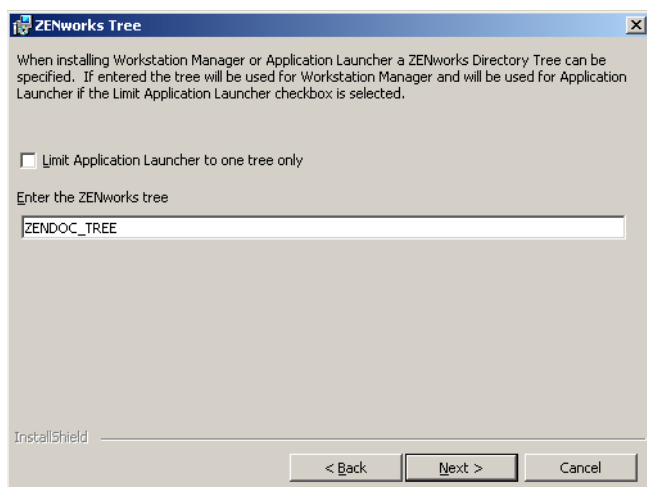


Customize the settings for the Workstation Manager feature by selecting either *Display ZENworks Middle Tier Server Authentication Dialog* or *Allow Users to Change Middle Tier Server Address*, or both, click *Next*, then click *Next* again to display the Novell Application Launcher/Windows Startup Options page.



- 10 Choose to launch either the Application Explorer or Application Window (or neither) on startup, then click *Next*.

- 11 (Conditional. If you are installing the Workstation Manager or the Application Launcher, the ZENworks Tree page is displayed.)

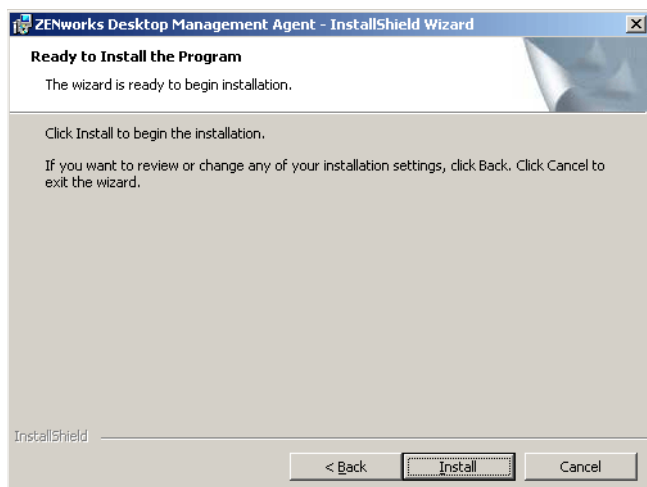


Select *Limit Application Launcher to One Tree Only* if you want to limit the user of that workstation to accessing applications available on the eDirectory tree you designate in the field.

If you want to limit the user to receiving applications on one tree, specify the name of that eDirectory tree in the *ZENworks Directory Tree* field, then click *Next* to display the Ready to Install the Program page.

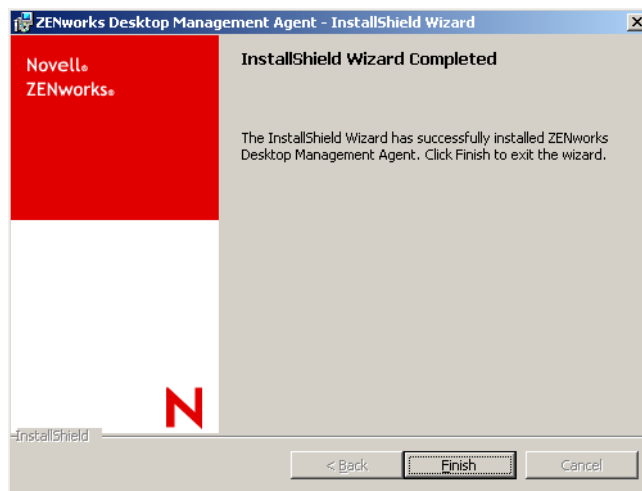
or

If you did not select *Limit Application Launcher to One Tree Only*, you can still specify the name of a tree in the *ZENworks Tree* field. This tree is recognized by the Workstation Manager as the tree where policies are accessed and applied to workstations. Click *Next* to display the Ready to Install the Program page.



- 12 Click *Back* if you want review the settings you have selected for the Desktop Management Agent installation. If the settings are correct, click *Install* to launch the installation program.

**13** On the InstallShield Wizard Completed page, click *Finish*.



## 12.2.2 Adding Features in a Manual Installation

You can add features to individual workstations by selecting the *Modify* option when you run the installation program after the initial installation. This procedure requires that the installation program has access to the full `zfdagent.msi` (that is, from a network drive, from the local workstation, or from the *Novell ZENworks 7 Desktop Management CD* or from the *Novell ZENworks 7 Desktop Management with Support Pack 1 CD*).

## 12.3 Using the Novell Application Launcher to Distribute and Install the Desktop Management Agent

The `zfdagent.msi` package is a complex application that installs many files and makes many configuration changes to the workstation. The most efficient method for installing the Desktop Management Agent is to distribute it to workstations as an MSI application using the Novell Application Launcher. The Novell Application Launcher not only distributes the Agent MSI package, it also calls the Windows Installer to perform the installation on the workstation.

This section provides the steps for configuring the MSI package for distribution with the Application Launcher, including:

- [Section 12.3.1, “Saving the Agent MSI Package,” on page 144](#)
- [Section 12.3.2, “Creating and Configuring the MSI Application Object,” on page 145](#)
- [Section 12.3.3, “Modifying Installed Features in the MSI Application Object,” on page 145](#)
- [Section 12.3.4, “Adding Properties to the MSI Application Object,” on page 146](#)

### 12.3.1 Saving the Agent MSI Package

When you browse the `\agentinstall` directory of the *Novell ZENworks 7 Desktop Management CD*, you will see the following language folders and files:

`english\zfdagent.msi` (English installation file)

portugue\zfdagent.msi (Portuguese installation)  
francais\zfdagent.msi (French installation)  
deutsch\zfdagent.msi (German installation)  
espanol\zfdagent.msi (Spanish installation)  
nihongo\zfdagent.msi (Japanese installation)

You should copy the `zfdagent.msi` file of your choice to a network server location that will be accessible later to the Novell Application Launcher.

### 12.3.2 Creating and Configuring the MSI Application Object

- 1 In ConsoleOne®, right-click the container where you want to create the Application object > click *New* > click *Object* to display the New Object dialog box.
- 2 In the New Object dialog box, click *Application*, then click *OK* to display the New Application Object dialog box.
- 3 In the New Application Object dialog box, select the *Application That Has an .MSI File* option, then click *Next*.
- 4 Specify the path to the network location where you copied the `.msi` file.
- 5 Click *Next*, then modify the fields as necessary to customize the Application object.
- 6 Click *Next*, then define the system requirements that a workstation must meet before the Agent MSI will be distributed to it.
- 7 Click *Next*, then associate the Agent MSI Application object with the users to whom you want to distribute it.
- 8 Click *Next*, then review the Application object settings, then click *Finish* to create the Application object.

---

**IMPORTANT:** Before you distribute the Agent MSI (or any MSI package) using the Novell Application Launcher, make sure that the Agent MSI application object is set to *Force Cache* and that the user credentials on the local workstation, in eDirectory, and in Active Directory (if used) are synchronized.

---

### 12.3.3 Modifying Installed Features in the MSI Application Object

By default, all of the following features are installed by the Desktop Management Agents:

- ♦ **Application Management:** Uses the Novell Application Launcher to provide users access to workstation applications that the administrator can install and then manage.
- ♦ **Workstation Manager:** Lets administrators configure and manage workstations by using eDirectory.
- ♦ **Workstation Inventory:** Helps administrators collect hardware and software inventory information from scanned workstations.
- ♦ **Remote Management:** Lets an administrator manage remote workstations from a management console.
- ♦ **Mirror Driver:** Provides video adapter independence and co-existence with other remote control solutions. If this feature is selected, the MSI installation overrides video driver checks

and suppresses any Windows messages. If you do not want this driver, you can deselect it (optimization will be disabled).

The Mirror Driver is not yet signed by Microsoft.

- ♦ **Workstation Imaging:** Lets an administrator take an image of a workstation's hard drive and put it on other workstations over the network.

If you want to modify this default install, you can add MSI features as public properties of the `zfdagent.msi` Application object. Use the following steps to modify the list of installed features:

- 1 Double-click the *MSI* tab of the Application Object, click *Properties*, then click *Add* to display the Select Property to Add dialog box.
- 2 In the *Value Name* field, enter `ADDLOCAL` as the property name, then specify the property's value in the Value Data field. Use one or more of the following feature names as a property value:
  - ♦ `ApplicationLauncher`
  - ♦ `WorkstationManager`
  - ♦ `RemoteManagement`
  - ♦ `MirrorDriver` (this property does not work unless you also add the `RemoteManagement` property)
  - ♦ `Imaging`
  - ♦ `Inventory`

You can add more than one of these values to the list by separating them with a comma (no spaces). For example, if you wanted to add Application Launcher and Workstation Manager as features, you would type `ADDLOCAL` as the property and `ApplicationLauncher,WorkstationManager` as the values for that property.

- 3 Click *OK* to add the property to the Properties list.

### 12.3.4 Adding Properties to the MSI Application Object

The properties you can add to the MSI Application object and their values (including definitions for the values) are listed in the table below. If one of these properties is listed without a value, it uses the default value.

**Table 12-1** *Properties Available to Add to the MSI Application Object*

Property	Value	Meaning
ADDLOCAL	<ul style="list-style-type: none"><li>♦ <code>WorkstationManager</code></li><li>♦ <code>ApplicationLauncher</code></li><li>♦ <code>RemoteManagement</code></li><li>♦ <code>MirrorDriver</code></li><li>♦ <code>Inventory</code></li><li>♦ <code>Imaging</code></li></ul>	Comma-delimited list of features to install.

Property	Value	Meaning
LOGIN_PASSIVE_MODE	0	Displays a Novell login at user login time.
	1	Default. Displays the standard Microsoft login at user login time.
	<b>NOTE:</b> If you want to use Dynamic Local User, you must assign a value of zero (0) to this property.	
EDITABLE_MT_ADDRESS	1	Allows the user to change the ZENworks Middle Tier IP address where authentication takes place. This is available only if the Novell Client is not installed.
	0	Default. Do not allow the user to specify the Middle Tier address.
	<p>The values for this property are effective only if the Novell Client is not installed on the workstation. If the Novell Client is already installed, the settings have no effect after the <code>zfdagent.msi</code> installation.</p> <p>If the Novell Client is removed after <code>zfdagent.msi</code> is installed, these settings take effect.</p>	
STARTUP_APPEXPLORER	1	Launch Application Explorer on Windows startup.
	0	Default. Do not launch Application Explorer on Windows startup.
STARTUP_APPWINDOW	1	Launch Application Window on Windows startup.
	0	Default. Do not launch the Application Window on Windows startup.
MT_SERVER_ADDRESS	This property specifies the ZENworks Middle Tier Server IP address or DNS name. It is not necessary to specify this property if you are not using a Middle Tier Server.	
HTTP_PORT	0-65536	This property specifies the HTTP port to be used by the Desktop Management Agent when communicating with the Middle Tier Server. This property must be added and its value defined if you are using a Middle Tier Server.
	80	Default HTTP port.
NAL_SINGLE_TREE	1	Limit access of the Novell Application Launcher to applications in one tree only.
	0	Default. Do not limit the Application Launcher to one tree for access to applications.

Property	Value	Meaning
ZENWORKS_TREE	<i>any tree name</i>	<p>Specify the eDirectory tree to be used as the ZENworks tree.</p> <ul style="list-style-type: none"> <li>♦ If Workstation Manager is installed, this tree becomes the tree where Workstation Manager looks for policies.</li> <li>♦ If the NAL_SINGLE_TREE property is configured and the Novell Application Launcher is installed, this tree becomes the only tree where the Application Launcher looks for applications.</li> </ul> <p>For more information, see “<a href="#">Using a ZENworks Tree</a>” in the <i>Novell ZENworks 7 Desktop Management Administration Guide</i>.</p>
IGNORE_3RDPARTY_GINA	1	When installing in silent mode, ignore any detected third-party GINA and continue installing the Desktop Management Agent.
	0	Default. When installing in silent mode, do not install if a third-party GINA is detected.
		<p>When the installation program is not executed in silent mode, an installation dialog box displays a caution explaining that the detected third-party GINA will be replaced if the installation continues. Users can cancel or proceed with the installation.</p> <p>Proceeding with the installation (either when this property value is set to 1 in silent mode, or when users click <i>Continue</i> in non-silent mode) might cause applications dependent on the third-party GINA to quit working.</p>
WM_LOGIN_EVENTS	1	Enables Novell Client login event notifications to be sent to Workstation Manager
	0	Default. Disables Novell Client login event notifications to be sent to Workstation Manager
		<p>Event notifications allow the ZENworks Policy Scheduler to launch policies scheduled for these event types. If you have disabled the Initial Novell Login or if users log in to eDirectory from the red N menu, enable this setting so that login events are forwarded to Workstation Manager.</p> <p>This property was added for the ZENworks 7 Desktop Management with Support Pack 1 installation.</p>

## 12.4 Distributing the Agent Using the Application Launcher Plug-In

The Novell Application Launcher plug-in is a simplified version of Novell Application Launcher that is installed via the Web and enables launching of user-associated applications. Installation of the Application Launcher plug-in occurs when users access a Web page (`myapps.html`) from a workstation that does not have the Desktop Management Agent (or previous versions of the agent or the Novell Client) installed. After the Application Launcher plug-in is installed on a workstation, you can use it to distribute the Desktop Management Agent to the workstation.



For information about installing the Application Launcher plug-in, see [Chapter 13, “Installing the Novell Application Launcher Plug-In,” on page 163](#).

After installation of the Application Launcher plug-in to a user's workstation, the user has access to user-associated applications. You can configure an MSI Application object to distribute the Desktop Management Agent (`zfdagent.msi`). Make sure that the security level for the MSI Application object is configured to *Run Normal*. Users must also have Administrator rights to run `zfdagent.msi`. For information about creating an MSI Application object, see “[Distribution: Simple Applications](#)” in “[Application Management](#)” in the *Novell ZENworks 7 Desktop Management Administration Guide*.

## 12.5 Using the Desktop Management Agent Distributor to Deploy the Agent to Workstations in a Microsoft Domain

The Desktop Management Agent Distributor can facilitate the initial deployment and future upgrades of the ZENworks Desktop Management Agent through the use of Microsoft domains and Microsoft Active Directory. By default, the Agent Distributor uses Microsoft domains and Active Directory when selecting target workstations and during deployment of the Desktop Management Agent to those same target workstations.

This section includes the following information:

- ♦ [Section 12.5.1, “Prerequisites for Using the Agent Distributor,” on page 149](#)
- ♦ [Section 12.5.2, “Deploying the Desktop Management Agent,” on page 150](#)

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**NOTE:** The information in this section also applies to ZENworks 7 Desktop Management with Support Pack 1.

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### 12.5.1 Prerequisites for Using the Agent Distributor

Before you use the Agent Distributor to deploy the Desktop Management Agent in a Microsoft domain environment, make sure the following prerequisites are satisfied:

- ♦ The Agent Distributor is installed with ConsoleOne and can be run from any workstation that has access to ConsoleOne and is part of a Microsoft domain and Active Directory. The `agentdistributor.exe` is a standalone utility that can be copied from the `\sys\public\mgmt\consoleone\1.2\bin` directory to the local distributing workstation. The Agent Distributor is executed locally.
- ♦ The user who is logged in at the Windows workstation must be a member of the domain Administrator group.
- ♦ The ZENworks Desktop Management Agent MSI installation file (`zfdagent.msi`) is located on the Windows workstation or a network location available to the workstation. The `zfdagent.msi` file is located in the `\agentinstall\english` directory on the *Novell ZENworks 7 Desktop Management* CD (or the *ZENworks 7 Desktop Management with SPI* CD).
- ♦ Each workstation where the Desktop Management Agent will be deployed must have the Microsoft Windows Installer installed. The installer is preconfigured on Windows 2000 and Windows XP workstations.

- ♦ The Agent Distributor cannot deploy the Desktop Management Agent to a targeted Windows XP SP2 workstation where the Windows firewall is enabled unless the firewall is disabled or the *File and Printer Sharing* option is selected in the Windows Firewall configuration dialog box.

## Enabling Administrative Shares

If administrative shares (displayed as *Admin\$* on mapped drives) are not enabled on the target workstation, you will be unable to install the Agent on targeted workstations. Windows 2000 workstations enable administrative shares by default. On Windows XP workstations, you need to disable simple file sharing to enable the share.

You can configure a Windows Group Policy to disable simple file sharing on Windows XP workstations. For information about setting up Windows Group Policies, see “[Windows Group Policy \(User and Workstation Packages\)](#)” in the *Novell ZENworks 7 Desktop Management Administration Guide*.

The following steps summarize how to configure the policy:

- 1 In ConsoleOne, open an existing Windows Group Policy package, then, using the policy editor, launch the Microsoft Group Policy management utility (`gpedit.msc`).
- 2 In the Group Policy management utility, click *Local Computer > Computer Configuration > Windows Settings > Security Settings > Local Policies > Security Options*.
- 3 In the Security Options dialog box, change *Network access: Sharing and security model for local accounts* security setting to *Classic - local users authenticated as themselves*.

This disables simple file sharing on the XP workstation.

## What Happens if the Shares Are Not Enabled?

If administrative shares are not enabled, you might see the following error:

Failed - Unable to map Admin\$ share drive.

The items in the list below are some reasons to explain why you might see the error:

- ♦ A network workstation typically receives its clock time from a network server at login time. The clock time for all of the servers in your network environment should be synchronized. In order to distribute the Agent using the Agent Distributor utility, you should verify that server clock times are within a 10-minute range. If clock times do not fall within this range, the `zfdagent.msi` cannot be distributed and the error message is displayed.
- ♦ On Windows 2000 workstations, if the registry entry `HKLM\System\currentcontrolset\services\lanmanserver\parameters\AutoShareWrks` is set to 0 (disabled), Admin\$ share is not accessible and the error is displayed.

In some Windows 2000 machines, this registry entry is not present, but the *Admin\$* share is available. Testing has shown that to avoid the error, either the `AutoShareWrks` parameter should not be present in the registry or you need to enable it if it is present.

## 12.5.2 Deploying the Desktop Management Agent

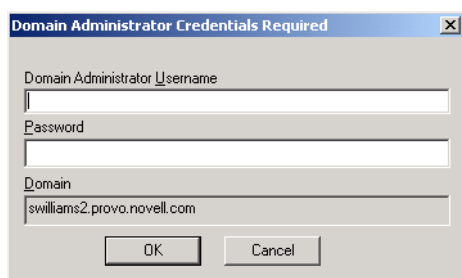
To deploy the Desktop Management Agent to workstations that are members of a Microsoft domain or Active Directory:

- 1 At the Windows workstation, log in to the domain as a user who is a member of the domain Administrator group.
- 2 Launch ConsoleOne on the Windows workstation, then click Tools > ZENworks Utilities > Install Agents.

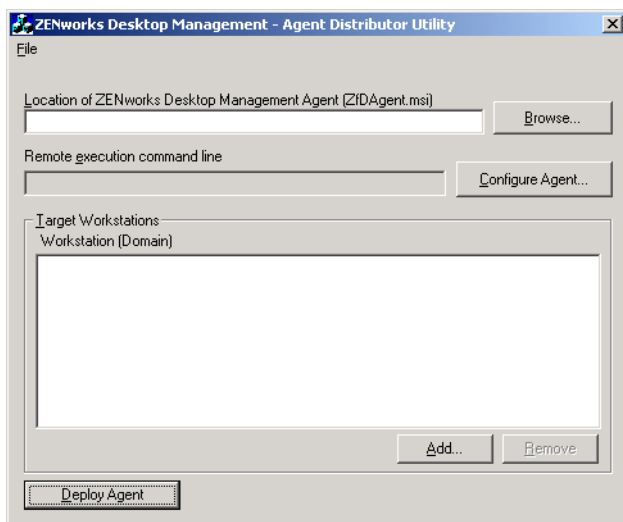
or

Copy the `agentdistributor.exe` file to the distributing workstation from the `sys\public\mgmt\ConsoleOne\1.2\bin` directory and execute it on the local workstation.

If you are not a member of the domain Administrator group, or if the workstation is not a member of the domain, the main dialog box of the Agent Distributor waits for input (this allows for the possibility of distributing the agent to Windows workgroups; see [Section 12.6, “Using the Desktop Management Agent Distributor to Deploy the Agent to Workstations in a Windows Workgroup,”](#) on page 156). Otherwise, the following dialog box is displayed:



- 3 Enter your domain administrator username and password, then click *OK* to display the following dialog box.

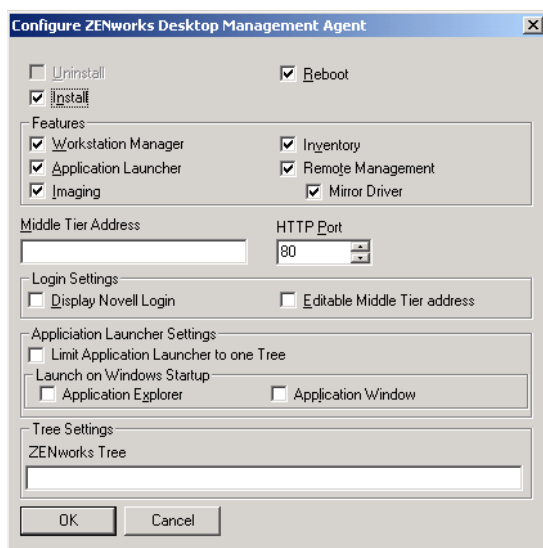


- 4 In the *Location of ZENworks Desktop Management Agent (zfdagent.msi)* field, browse to and select the `zfdagent.msi` file.

If the `zfdagent.msi` file is not already on the workstation's local drive or an available network drive, copy it from the `\agentinstall\english` directory located on the *Novell ZENworks 7 Desktop Management* CD.

- 5 Configure the Management Agent options. To do so:

- 5a** Click *Configure Agent* to display the Configure ZENworks Desktop Management Agent dialog box.



Use this dialog box to configure the Desktop Management Agent options. The options you select (such as *Install* or *Uninstall*) determine the availability of other options. A description of each option is listed below.

**Uninstall/Install/Reboot:** Select whether you want the Desktop Management Agent installed or uninstalled. Select *Reboot* if you want the workstation to reboot after the operation is complete.

**Features:** Select the features you want installed or uninstalled. If you select *Uninstall* and select all of the features, the ZENworks Desktop Management Agent is uninstalled.

**Middle Tier Address and HTTP Port:** If you are using a ZENworks Middle Tier Server, specify the DNS name or IP address of the ZENworks Middle Tier Server that the Desktop Management Agent will be connecting to, then specify the HTTP or HTTPS port number that the Apache Web Server (NetWare) or the IIS Web Server (Windows) will use to listen for the Agent login.

If you are using the Novell Client, no Middle Tier address is required.

If no Middle Tier address is specified, the Agent Distributor verifies at installation time that a Novell Client is installed. The Agent Distributor does not install the Agent if the Middle Tier has not been specified.

**Login Settings:** These settings determine the ZENworks Middle Tier Server login options that are available in Workstation Manager.

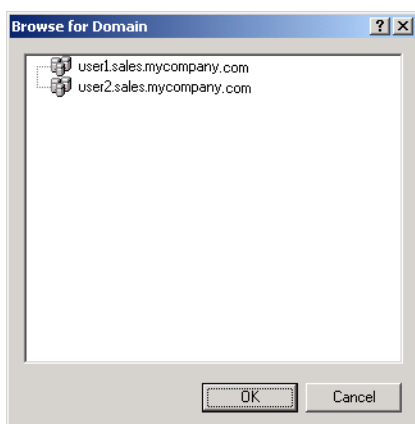
- ♦ **Display Novell Login:** Select this option to enable the Middle Tier Server login to be displayed by the Workstation Manager.
- ♦ **Editable Middle Tier Address:** Select this option to enable users to edit the Middle Tier Server address during login.

**Application Launcher Settings:** These settings apply to the Novell Application Launcher.

- ♦ **Limit Application Launcher to One Tree:** Select this option to limit the Novell Application Launcher access to applications in one tree only. Specify the tree in the *ZENworks for Desktops Tree* field.
- ♦ **Launch on Windows Startup:** Select the Novell Application Launcher view (*Application Explorer* or *Application Window*) that is added to the Windows Startup folder and launched when Windows starts. If you don't want to use the Windows Startup folder to start Novell Application Launcher, don't select either view.

**Tree Settings:** Use this field to specify the eDirectory tree to be used as the ZENworks tree. If Workstation Manager is installed, this tree becomes the tree where it looks for policies. If *Limit Application Launcher to One Tree* has been selected and Application Launcher is installed, this tree becomes the tree where it looks for applications.

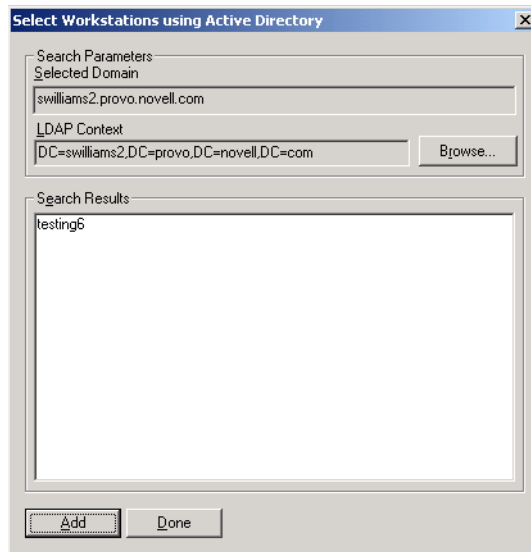
- 5b** When you are finished configuring the Desktop Management Agent options, click *OK* to save the settings and return to the ZENworks Desktop Management - Agent Distributor Utility dialog box.
- 6** Add the workstations where you want to deploy the Desktop Management Agent. To do so:
- 6a** In the Target Workstations box, click *Add* to display the Browse for Domain dialog box.



This dialog box lists the domain that you are authenticated to as an administrator. If your workstation is attached to a domain that has trusts with other domains, those domains are also listed.

- 6b** Select the domain that includes the workstations you want to add, then click *OK* to display the Select Workstation Using Active Directory dialog box.

If you select a trusted domain, you are prompted to enter the domain administrator credentials.



The *Search Results* list displays all workstations that are located in the context displayed in the *LDAP Context* field. You can use the *Browse* button to change contexts. Changing contexts displays workstations contained in the selected context.

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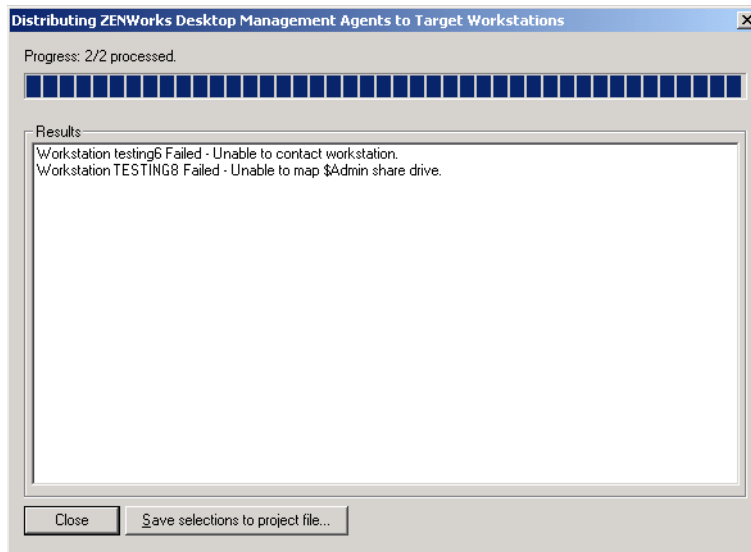
**IMPORTANT:** The data in *Search Results* list of the Agent Distributor is obtained from Active Directory. If you remove a workstation from the domain or directory but you do not remove the workstation from Active Directory using the Active Directory management tool, the *Search Results* list is inaccurate.

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- 6c In the *Search Results* list, select the workstations you want to add, then click *Add*.
- 6d Repeat **Step 6a** through **Step 6c** to add all the workstations where you want to deploy the Desktop Management Agent.
- 7 If you want to save your settings to a project (.pad) file for reuse another time, select *File > Save As*, specify the filename, then click *OK*.

The project file is saved in readable .ini format.

- 8 Click *Deploy Agent* to deploy the Management Agent to the selected workstations and display the Distributing ZENworks Desktop Management Agents to Target Workstations dialog box.



The dialog box displays deployment successes and failures. You can save a failure event to a project file (.pad) and open it from the File menu after you have corrected the problems with the failed workstations.

The Agent Distributor also keeps a log file (lastrun.log) that includes the list of successes and failures of each distribution attempt. The log file includes the same output that the deployment window displays, but it also includes start and end times. The file is saved in the same directory as agentdistributor.exe. A sample lastrun.log file is shown below.

```
===== Start time Thursday, April 01, 2004 11:32 AM =====
Workstation SWILLIAMSDELL Successful
Workstation SWDESKPRO-W98 Successful
===== End time Tuesday, April 06, 2004 11:34 PM =====
===== Start time Friday, April 09, 2004 12:49 PM =====
Workstation testing6 Failed - Unable to contact workstation.
Workstation WILLIAMS2KSP3 Failed - Unable to map $Admin share drive.
===== End time Friday, April 09, 2004 12:49 PM =====
```

The Agent Distributor also copies an MSI debug file from each workstation and stores it at the root of the Windows drive under a \workstationlogs directory. This directory contains only the most recent log files; all files are deleted on the next attempt to distribute the ZENworks Desktop Management Agent. This debug file can help you to troubleshoot a deployment failure on a particular workstation. The name of the file is the workstation name with a .log extension (for example, c:\workstationlogs\williams2ksp3.log).

## 12.6 Using the Desktop Management Agent Distributor to Deploy the Agent to Workstations in a Windows Workgroup

If the workstation where the Agent Distributor is executed is not a member of a Microsoft domain, the Agent Distributor can be used to distribute the Desktop Management Agent to target workstations that are members of its Windows workgroup.

- ♦ [Section 12.6.1, “Prerequisites for Using the Agent Distributor,” on page 156](#)
- ♦ [Section 12.6.2, “Distributing the Desktop Management Agent to Windows Workgroup Members,” on page 157](#)

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**NOTE:** The information in this section also applies to ZENworks 7 Desktop Management with Support Pack 1.

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### 12.6.1 Prerequisites for Using the Agent Distributor

Before you use the Agent Distributor to distribute the Desktop Management Agent to target workstations in a Windows workgroup, make sure the following prerequisites are satisfied:

- ♦ The Agent Distributor is installed as part of ConsoleOne and can be run from any workstation that has access to ConsoleOne and is a member of a Windows workgroup. The `agentdistributor.exe` is a standalone utility that can be copied from the `\sys\public\mgmt\consoleone\1.2\bin` directory to the local distributing workstation. The Agent Distributor is executed locally.
- ♦ The ZENworks Desktop Management Agent MSI installation file (`zfdagent.msi`) is located on the Windows workstation or a network location available to the distributing workstation. The `zfdagent.msi` file is located in the `\agentinstall\english` directory on the *Novell ZENworks 7 Desktop Management* CD (or the *Novell ZENworks 7 Desktop Management with Support Pack 1* CD).
- ♦ Each workstation where the Desktop Management Agent will be deployed must have the Microsoft Windows Installer installed. The installer is preconfigured on Windows 2000 and Windows XP workstations.

#### Avoiding Admin\$ Share Errors

If administrative shares are not enabled on the target workstation, you will be unable to install the Agent Distributor. The information in the list below describes some reasons you will see the following error as the Agent Distributor attempts to map to Admin\$:

Failed - Unable to map Admin\$ share drive.

- ♦ A network workstation typically receives its clock time from a network server at login time. The clock time for all of the servers in your network environment should be synchronized. In order to distribute the Agent using the Agent Distributor utility, you should verify that server clock times are within a 10-minute range. If clock times do not fall within this range, the `zfdagent.msi` cannot be distributed and the error message is displayed.
- ♦ On Windows 2000 workstations, if the registry entry `HKLM\System\currentcontrolset\services\lanmanserver\parameters\`



AutoShareWrks is set to 0 (disabled), Admin\$ share is not accessible and the error is displayed.

In some Windows 2000 machines, this registry entry is not present, but Admin\$ share is available. Testing has shown that to avoid the error, either the AutoShareWrks parameter should not be present in the registry or you need to enable it if it is present.

- ♦ On Windows XP workstations, you can avoid the error by disabling the simple file sharing feature.

## 12.6.2 Distributing the Desktop Management Agent to Windows Workgroup Members

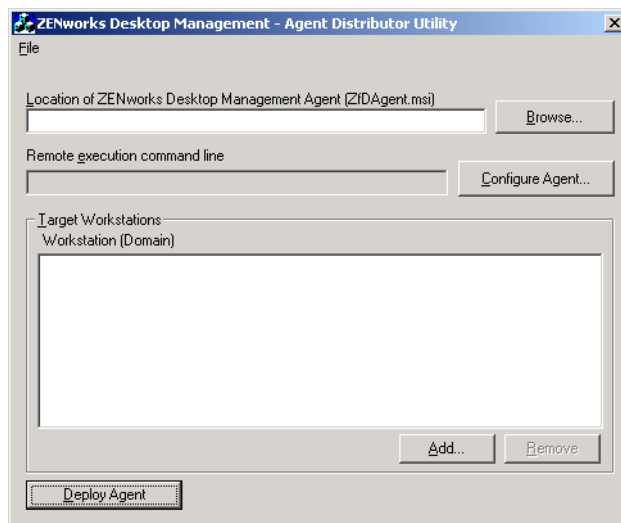
As part of ZENworks 7 Desktop Management, you can deploy the Desktop Management Agent to workstations that are members of the same Windows workgroup:

- 1 At the Windows workstation, log in locally as the administrator of the Windows workgroup.
- 2 Launch ConsoleOne on the Windows workstation, then click *Tools > ZENworks Utilities > Install Agents*.

or

Copy the `agentdistributor.exe` file to the distributing workstation from the `sys\public\mgmt\ConsoleOne\1.2\bin` directory and execute it on the local workstation.

The Agent Distributor Utility dialog box is displayed.

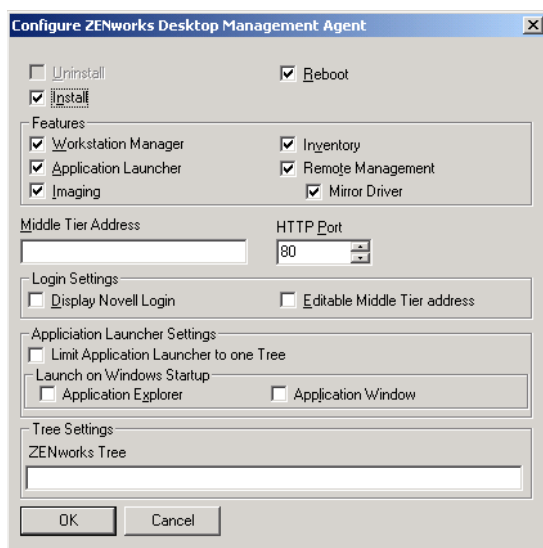


- 3 In the *Location of ZENworks Desktop Management Agent (zfdagent.msi)* field, browse to and select the `zfdagent.msi` file.

If the `zfdagent.msi` file is not already located on the workstation's local drive or an available network drive, copy it from the `\agentinstall\english` directory located on the *Novell ZENworks 7 Desktop Management* CD.

- 4 Configure the Management Agent options. To do so:

- 4a** Click *Configure Agent* to display the Configure ZENworks Desktop Management Agent dialog box.



Use this dialog box to configure the Desktop Management Agent options. The options you select (such as *Install* or *Uninstall*) determine the availability of other options. A description of each option is listed below.

**Uninstall/Install/Reboot:** Select whether you want the Desktop Management Agent installed or uninstalled. Select *Reboot* if you want the workstation to reboot after the operation is complete.

**Features:** Select the features you want installed or uninstalled. If you select *Uninstall* and all of the features, the ZENworks Desktop Management Agent is uninstalled.

**Middle Tier Address and HTTP Port:** If you are using a ZENworks Middle Tier Server, specify the DNS name or IP address of the ZENworks Middle Tier Server that the Desktop Management Agent will be connecting to, then specify the HTTP or HTTPS port number that the Apache Web Server (NetWare) or the IIS Web Server (Windows) will use to listen for the Agent login.

If you are using the Novell Client, no Middle Tier address is required.

If no Middle Tier address is specified, the Agent Distributor verifies at installation time that a Novell Client is installed. The Agent Distributor does not install the Agent if the Middle Tier has not been specified.

**Login Settings:** These settings determine the ZENworks Middle Tier Server login options that are available in Workstation Manager.

- ♦ **Display Novell Login:** Select this option to enable Middle Tier Server login to be displayed by the Workstation Manager.
- ♦ **Editable Middle Tier Address:** Select this option to enable users to edit the Middle Tier Server address during login.

**Application Launcher Settings:** These settings apply to the Novell Application Launcher.

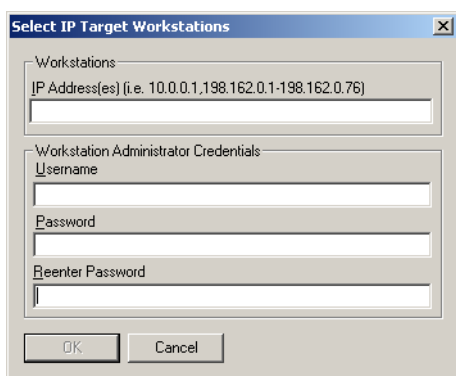
- ♦ **Limit Application Launcher to One Tree:** Select this option to limit the Novell Application Launcher access to applications in one tree only. Specify the tree in the *ZENworks for Desktops Tree* field.
- ♦ **Launch on Windows Startup:** Select the Novell Application Launcher view (*Application Explorer* or *Application Window*) that is added to the Windows Startup folder and launched when Windows starts. If you don't want to use the Windows Startup folder to start Novell Application Launcher, don't select either view.

**Tree Settings:** Use this field to specify the eDirectory tree to be used as the ZENworks tree. If Workstation Manager is installed, this tree becomes the tree where it looks for policies. If *Limit Application Launcher to One Tree* has been selected and Application Launcher is installed, this tree becomes the tree where it looks for applications.

**4b** When you are finished configuring the Desktop Management Agent options, click *OK* to save the settings and return to the ZENworks Desktop Management - Agent Distributor Utility dialog box.

**5** Add the workstations where you want to deploy the Desktop Management Agent. To do so:

**5a** Click *Add* to display the Select IP Target Workstations dialog box.

The image shows a Windows-style dialog box titled "Select IP Target Workstations". It has a close button (X) in the top right corner. The dialog is divided into two main sections. The first section, labeled "Workstations", contains a text field with the placeholder text "IP Address(es) (i.e. 10.0.0.1,198.162.0.1-198.162.0.76)". The second section, labeled "Workstation Administrator Credentials", contains three text fields: "Username", "Password", and "Reenter Password". At the bottom of the dialog are two buttons: "OK" and "Cancel".

**5b** Fill in the fields:

### Workstations

**IP Addresses:** Specify the IP Address for each target workstation where you want to deploy the Desktop Management Agent. You can delimit this list with commas. You can also specify a range of IP addresses as a single item in the list.

### Workstation Administrator Credentials

**Username:** Enter the username of the workgroup administrator.

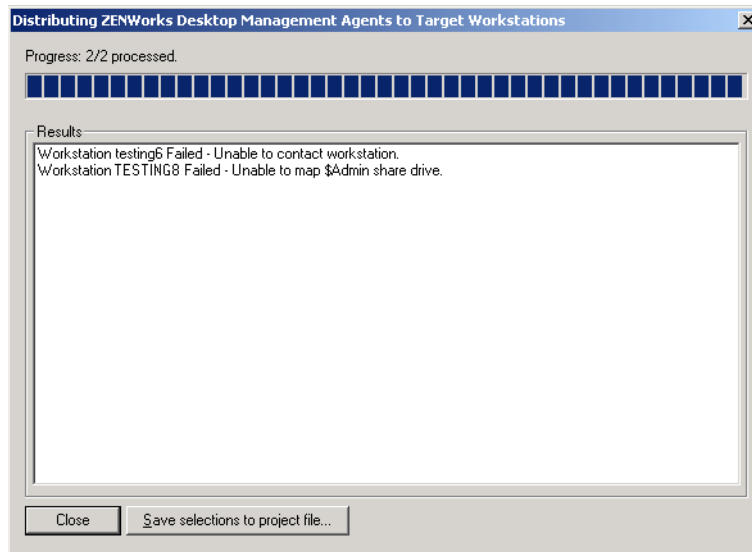
**Password:** Enter the password of the workgroup administrator.

**Reenter Password:** Re-enter the password to verify it as the workgroup administrator's password.

Any target workstation you specify in the *IP Addresses* field must use the same credentials (that is, username and password).

**5c** Click *OK* to save the list of target workstations.

- 6 Click *Deploy Agent* to deploy the Management Agent to the selected workstations and display the Distributing ZENworks Desktop Management Agents to Target Workstations dialog box.



The dialog box displays deployment successes and failures. You can save a failure event to a project file (.pad) and open it from the *File* menu after you have corrected the problems with the failed workstations.

The Agent Distributor also keeps a log file (lastrun.log) that includes the list of successes and failures of each distribution attempt. The log file includes the same output that the deployment window displays, but it also includes start and end times. The file is saved in the same directory as agentdistributor.exe. A sample lastrun.log file is shown below.

```
===== Start time Thursday, April 01, 2004 11:32 AM =====
Workstation USER2DELL Successful
Workstation USER3DESKPRO-W98 Successful
===== End time Tuesday, April 06, 2004 11:34 PM =====
===== Start time Friday, April 09, 2004 12:49 PM =====
Workstation testing6 Failed - Unable to contact workstation.
Workstation TESTING8 Failed - Unable to map $Admin share drive.
===== End time Friday, April 09, 2004 12:49 PM =====
```

The Agent Distributor also copies an MSI debug file from each workstation and stores it at the root of the Windows drive under a \workstationlogs directory. This directory contains only the most recent log files; all files are deleted on the next attempt to distribute the ZENworks Desktop Management Agent. This debug file can help you to troubleshoot a deployment failure on a particular workstation. The name of the file is the workstation name with a .log extension (for example, c:\workstationlogs\testing8.log).

## 12.7 Checking the Installation

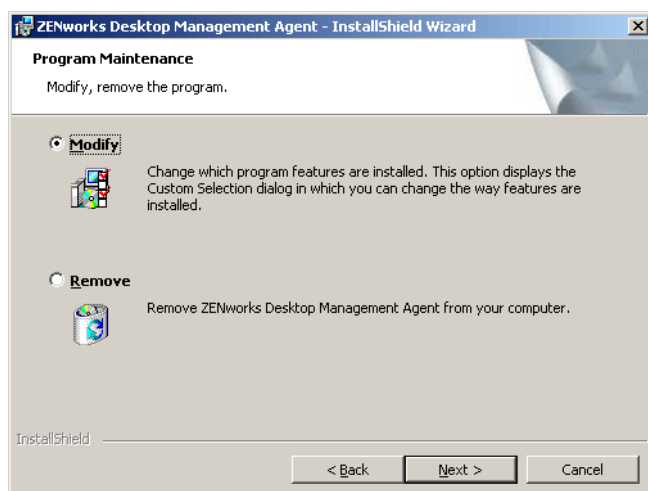
When the installation of the Desktop Management Agent is complete, you can check the installation to see if it was successful, check component versions, or initiate and check debug logs. If you want to perform any of these tasks, see “[Checking the Installation of Desktop Management Components](#)”

on Servers” in “Checking the ZENworks Desktop Management Installation” in the *Novell ZENworks 7 Desktop Management Administration Guide* for more information.

## 12.8 Modifying the Desktop Management Agent Settings

If you need to make a change to the Desktop Management Agent on a user workstation, you can do so locally by running the Desktop Management Agent installation program again. When you start another installation, the Desktop Management Agent maintenance dialog box is displayed.

**Figure 12-1** Desktop Management Agent Maintenance Dialog Box



**Modify:** Select this option to open the Select Features page. On this page, you can add or delete the features you want to include with the Desktop Management Agent installation.

**Remove:** Select this option to remove (uninstall) the Desktop Management Agent files from the workstation.

### 12.8.1 Using the Novell Application Launcher to Add Features

If you want to add features to the Desktop Management Agent after its initial distribution, you need to increment its MSI Application object so that the Novell Application Launcher recognizes it as a new application. You can then modify the ADDLOCAL property in the MSI application object and redistribute the object. For more information about the available ADDLOCAL properties, see [Step 2 on page 146](#).



# Installing the Novell Application Launcher Plug-In

# 13

The Novell® Application Launcher™ plug-in is a simplified version of Novell Application Launcher that can be used in place of the ZENworks® Desktop Management Agent on workstations that only require distribution of user-associated applications. Or, it can be used to provide a Web-based rollout of the Management Agent to workstations.

The Novell Application Launcher plug-in includes only the Application Explorer and Application Browser views. It does not include the Application Window view, Novell Application Launcher Service for Windows (`nalntsrv.exe`), or Application Launcher Workstation Helper (`zenappws.dll`).

The Novell Application Launcher plug-in also does not include any other ZENworks Desktop Management Agent components, such as Workstation Manager, Workstation Inventory, Remote Management, or Workstation Imaging.

The following sections explain why you might want to use the Novell Application Launcher plug-in and how you install it:

- ♦ [Section 13.1, “Why Use the Novell Application Launcher Plug-In?” on page 163](#)
- ♦ [Section 13.2, “How the Novell Application Launcher Plug-In Installation Works,” on page 164](#)
- ♦ [Section 13.3, “Installing the Novell Application Launcher Plug-In,” on page 164](#)
- ♦ [Section 13.4, “Reinstalling the Novell Application Launcher Plug-In,” on page 168](#)

The information in this section also applies to ZENworks 7 Desktop Management with Support Pack 1.

## 13.1 Why Use the Novell Application Launcher Plug-In?

The primary purpose of the Novell Application Launcher plug-in is to provide the basic Application Launcher files required for launching user-associated applications, and to do so through a Web-based installation program. You should be aware of the following restrictions associated with the Novell Application Launcher plug-in:

- ♦ Windows 2000/XP users must have sufficient file access rights to install and launch applications. Without these rights, the plug-in's installation manager cannot install the plug-in files and the plug-in (once installed) cannot launch applications. The Novell Application Launcher plug-in is not designed for locked-down workstations.
- ♦ The Novell Application Launcher plug-in displays only user-associated applications. Workstation-associated applications are not displayed because Workstation Manager and the Application Launcher Workstation Helper are not installed.
- ♦ Workstation Manager is not installed, which means that policies are not applied.
- ♦ Database reporting is not supported. The Novell Application Launcher plug-in cannot write events to a database because the ODBC drivers required to do so are not included with the plug-in.

- ♦ The Novell Application Launcher plug-in does not support launching of terminal server applications. For this support, users must install the ZENworks Desktop Management Agent.

If users do not require any Desktop Management Agent functionality other than the launching of user-associated applications, you can have them install the Novell Application Launcher plug-in to the workstation and continue to use it. If users requires full Desktop Management Agent functionality, after the Novell Application Launcher plug-in is installed, you can distribute the Desktop Management Agent to workstations via an Application object.

## 13.2 How the Novell Application Launcher Plug-In Installation Works

The Novell Application Launcher plug-in is installed by the Novell Application Launcher plug-in installation manager. The Novell Application Launcher plug-in installation manager, the Novell Application Launcher plug-in, and the Novell Application Launcher plug-in support files are copied to a Web server during installation of the ZENworks Middle Tier Server. On a NetWare® Middle Tier Server, the `web_server_root\nwdocs` directory is the target installation directory. On a Windows Middle Tier Server, it is the `inetpub\wwwroot` directory. The files are packaged in the following `.cab` files:

- ♦ **zfdinstallmgr.cab:** Contains the Novell Application Launcher plug-in installation manager DLL used to manage installation and update of the Novell Application Launcher plug-in files.
- ♦ **zfdplugin.cab:** Contains the Novell Application Launcher plug-in files.
- ♦ **netidentity.cab:** Contains the files required to manage identities and securely authenticate Novell Application Launcher plug-in users to the ZENworks Middle Tier Server.
- ♦ **instmsi.cab, instmsi9x.cab, instmsint.cab:** Contain the Microsoft Windows Installer, version 2, required to install the NetIdentity files. These `.cab` files are installed only if the user does not have version 2 or higher of the Windows Installer.

The `myapps.html` page, which is installed to the same directory, references the Novell Application Launcher plug-in installation manager `.cab` file (`zfdinstallmgr.cab`). When a user accesses the `myapps.html` page, if Application Launcher or the Novell Application Launcher plug-in is not already installed on his or her workstation, the Novell Application Launcher plug-in installation manager `.dll` file (`zfdwebinstallmgr.dll`) is extracted from the installation manager `.cab` file to the `Windows\system` directory and then registered. After the `myapps.html` file is completely loaded, the installation manager begins installing the Novell Application Launcher plug-in and its support files.

## 13.3 Installing the Novell Application Launcher Plug-In

To install the Novell Application Launcher plug-in on a workstation:

- 1 Make sure you've run the ZENworks Middle Tier Server installation program so that the Novell Application Launcher plug-in installation manager, Novell Application Launcher plug-in files, and `myapps.html` file have been copied to a Web server. If necessary, see [Chapter 10, "Installing the ZENworks Middle Tier Server,"](#) on page 107.
- 2 (Optional) Modify the `myapps.html` page



In addition to launching the Novell Application Launcher plug-in installation manager, the `myapps.html` page contains parameters that determine the functionality and look of the Application Browser view used with the Novell Application Launcher plug-in and Application Launcher. You might want to use these parameters to customize the Application Browser view before it is distributed to users.

---

**IMPORTANT:** When you install the Middle Tier Server, the Middle Tier Server's private (internal) address is added to the `myapps.html` file. If users will run the Application Browser outside your firewall, you need to ensure that the `myapps.html` file lists the Middle Tier Server's public (external) IP address, if the two addresses are different. The `myapps.html` file's `MiddleTierAddress` parameter is used to specify the IP address.

---

The `myapps.html` file loads an ActiveX\* control (`axnalsrv.dll`) that is used to generate the Application Browser view. You customize the Application Browser view by modifying the parameters that are passed to the ActiveX control. There are nine parameters, shown below.

```
<!--param name="SingleTree" value="ZENWORKS_TREE"-->
<!--param name="PortalView" value="false"-->
<!--param name="BannerURL" value="http://www.company.com/
banner.html"-->
<!--param name="BannerHeight" value="80"-->
<!--param name="ShowTree" value="true"-->
<!--param name="ShowTasks" value="false"-->
<!--param name="AppDisplayType" value="0"-->
<!--param name="ShowAppFrameNavigation" value="true"-->
<!--param name="ShowIEToolbarButton" value="true"-->
```

In addition, when you use the Novell Application Launcher plug-in installation manager to download the `myapps.html` file from a Middle Tier Server, you can customize two additional parameters that are used by the installation manager:

```
<!--param name="MiddleTierAddress" value="$$IPADDR$$"-->
<!--param name="Nt4PluginVersion" value="4,0,1,0"-->
```

By default, the parameters are commented out, which results in the ActiveX control using its preset internal values. To modify a parameter:

- 2a** Remove the `!--` (beginning comment) and the `--` (ending comment) to activate the parameter. For example:

```
<param name="SingleTree" value="novell_tree"
```

- 2b** Modify the parameter's value. Each parameter is described below.

**SingleTree:** This parameter lets you specify a single Novell eDirectory™ tree from which to read application information. If this parameter is used, Application Launcher ignores any other trees to which the user authenticates.

This parameter applies only at installation time. After installation, changes to this parameter have no affect.

**PortalView:** This parameter lets you better support portals by removing the banner section of the Application Browser view. The value settings are True or False. True removes the banner section.

**BannerURL:** This parameter applies only if the `PortalView` parameter is set to False.

You can use this parameter to specify an alternate banner. For example, you could use a banner that contains your company's logo instead of the Novell logo. The value setting must be a URL to an HTML page or graphics file (`.gif`, `.jpg`, etc.). If you specify an

HTML page, the page is cropped to the height specified by the BannerHeight parameter. If you specify a graphics file, the banner section scrolls to fit the entire graphics file. Unless you want the banner section to be scrollable, you should ensure that the graphic's height is not greater than the height specified in the BannerHeight parameter.

**BannerHeight:** This parameter applies only if PortalView parameter is set to False and the default Novell banner is being overridden by the BannerView parameter.

You can use this parameter to determine the height of the banner section. The value setting must be from 5 to 200. Any number less than 5 is rounded up to 5. Any number greater than 200 is rounded down to 200.

**ShowTree:** This parameter determines whether or not the Application Browser view includes the left pane (referred to as the folder view). The value settings are True and False. True causes the folder view to display, and False causes it to be removed.

**ShowTasks:** This parameter determines whether or not the folder view (left pane) includes the Work Online/Work Offline, MiddleTier Log In/Middle Tier Log Out, Refresh Applications, and Help options. The VALUE settings are True and False. True causes the options to display, and False causes them to be removed.

**AppDisplayType:** This parameter determines how the applications are displayed in the right pane of the Application Browser view. The value settings are 0 and 1. The default setting, 0, causes the application icons to display as large icons, similar to the Large Icons view in Windows Explorer. The 1 setting causes the applications to be listed in table format, similar to the List view in Windows Explorer.

**ShowAppFrameNavigation:** This parameter determines whether or not the right pane of the Application Browser view includes navigation. The VALUE settings are True and False. True causes the right pane to include navigation. The type of navigation depends on the setting for the AppDisplayType parameter:

- ♦ When the AppDisplayType parameter is set to 0 (large icons), navigation is displayed as a breadcrumb trail (for example, ZENworks Tree > Application Folder > Application A).
- ♦ When the AppDisplayType parameter is set to 1 (small icons), navigation is displayed as an Up arrow at the top of the applications list.

Setting this parameter's value to False causes the Application Browser view to start with the All folder open, meaning that all application icons are displayed in the right pane. If the All folder is disabled in the user's Launcher Configuration settings in ConsoleOne®, this parameter is ignored (in other words, the default value of True is used).

**ShowIEToolbarButton:** This parameter determines whether or not the Application Browser button is added to the Internet Explorer toolbar. The Application Browser button launches the local version of the myapps.html file. The VALUE settings are True and False. The True setting is the default setting and causes the Application Browser button to be added to the toolbar. The False setting causes the Application Browser button to be removed from the toolbar. Whenever this setting is changed, the user must close Internet Explorer and then reopen it for the change to take affect.

**MiddleTierAddress:** This parameter applies only if you've configured a ZENworks Middle Tier Server for access to eDirectory.

The MiddleTierAddress parameter lets you specify the IP address of the Middle Tier Server that the user authenticates to. It is used only if a Middle Tier Server address is not included in the Windows registry; the registry includes the address if the user entered it when running the ZENworks Desktop Management Agent installation program.

**Nt4PluginVersion:** This parameter applies only when upgrading from ZENworks for Desktops 4.0.1. It applies only to Windows NT 4 workstations and specifies the minimum version of the ZENworks for Desktops 4.0.1 Novell Application Launcher plug-in that must be running on the workstation. For example, if the workstation has version 4,0,1,0 and this parameter specifies 4,0,1,3, the Application Browser view runs only if the Novell Application Launcher plug-in installation manager can download version 4,0,1,3 or higher of the Novell Application Launcher plug-in .cab file (zfd40.cab) from the ZENworks Middle Tier Server. On the other hand, if the workstation has 4,0,1,3 and this parameter specifies 4,0,1,0, the installation manager does download the Novell Application Launcher plug-in from the Middle Tier Server even if the plug-in is a newer version (such as 4,0,1,4).

**2c** Save the file.

**3** Test the setup by accessing the `myapps.html` page.

- If you access the `myapps.html` page from a workstation where Novell Application Launcher or the Novell Application Launcher plug-in is already installed, the Application Browser view is displayed in the Web browser. No files are downloaded.
- If you access the `myapps.html` page from a workstation where Novell Application Launcher and the Novell Application Launcher plug-in are not installed, the Novell Application Launcher plug-in installation manager is installed and registered. It then begins installing the Novell Application Launcher plug-in files.

Each .cab file used during the installation process includes a Novell signed certificate. You are prompted to accept the certificate before the installation can proceed. You can accept each certificate individually, or you can select the *Always Trust Content From Novell, Inc.* option displayed with the first certificate to accept all subsequent Novell signed certificates.

When installation is complete, you can access your user-associated applications through both the Application Browser view (by accessing the `myapps.html` page again) and the Application Explorer view (by launching it from the Start menu).

- If you access the `myapps.html` page from a workstation where a previous version of Application Launcher is already installed (or was previously installed), the following error message might be displayed by the installation program:

```
Error: Install Error
An installation error has prevented you from obtaining the
ZENworks
for Desktops plugin. Please contact your system administrator
for
help. You must first uninstall any previous versions of
ZENworks for
Desktops.
```

To resolve this problem, delete `naldesk.exe` from the workstation's Windows \system32 directory (typically `c:\winnt\system32` or `c:\windows\system32`), make sure that the workstation does not have a search drive mapped to a server or directory where `naldesk.exe` resides, and then access the `myapps.html` page again.

**4** Provide users with the URL for the `myapps.html` page.

## 13.4 Reinstalling the Novell Application Launcher Plug-In

If you need to reinstall the Novell Application Launcher plug-in on a workstation:

- 1** At a command prompt, unregister the `zfdwebinstallmgr.dll` and `axnalserver.dll` by entering the following commands:  

```
regsvr32 -u zfdwebinstallmgr.dll  
regsvr32 -u axnalserver.dll
```
- 2** Delete the `zfdwebinstallmgr.dll`, located in the Windows system directory (for example, `c:\winnt\system32`).
- 3** (Conditional) If you are reinstalling the plug-in to a Windows NT workstation, delete the following value from the workstation's registry:  
`HKey_Local_Machine\software\novell\zenworks\installpath`
- 4** In the Web browser, access the `myapps.html` page.

# Installing the ZENworks Launch Gadget

# 14

Novell® ZENworks® Desktop Management includes the ZENworks Launch gadget that can be used to launch user-associated applications from within a Novell exteNd Director™ 4.1 SE portal. The Desktop Management Agent is not required on the user's workstation. The following sections provide instructions:

- Section 14.1, “Installing the ZENworks Launch Gadget to Your Portal,” on page 169
- Section 14.2, “Copying Citrix Files to Your Portal,” on page 170
- Section 14.3, “Installing the Citrix ICA and Microsoft RDP Clients to Workstations,” on page 171

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**NOTE:** The information in this section also applies to ZENworks 7 Desktop Management with Support Pack 1.

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## 14.1 Installing the ZENworks Launch Gadget to Your Portal

- 1 Make sure you have Novell exteNd Director 4.1 Standard Edition installed and running on a NetWare® 6.x or Windows 2000/2003 Server.

For installation information, see the [Novell exteNd Director 4.1 Standard Edition Installation Guide](http://www.novell.com/documentation/lg/nedse41) (<http://www.novell.com/documentation/lg/nedse41>).

- 2 At a Windows workstation from which you can administer your exteNd Director 4.1 portal, insert the *Novell ZENworks 7 Companion 2 CD* (or the *Novell ZENworks 7 with Support Pack 1 Companion 2 CD*) into the CD drive.

The *Novell ZENworks 7 Companion 2 CD* (or the *Novell ZENworks 7 with Support Pack 1 Companion 2 CD*) contains the portal module file, `zenworks.npm`, that includes the ZENworks Launch gadget that you will install to the portal. The file is located in the `\zenworks launch gadget` directory.

- 3 Log in to your portal as an administrator.
- 4 Click *Portal Administration > Administer the Portal* to display the Portal Administration page.
- 5 Click *Modules* to display the Modules page.
- 6 Click *Install* to display the Install a New Module page.
- 7 In the *Path to Module File Package* field, click *Browse*, then browse to and select the `zenworks.npm` file.

The `.npm` file is in the `\zenworks launch gadget` directory on the *Novell ZENworks 7 Companion 2 CD* (or the *Novell ZENworks 7 with Support Pack 1 Companion 2 CD*).

- 8 Click *Install* to display the Thin Client Support options, select *ICA & RDP* if you want support for both ICA and RDP clients, or select *RDP* if you want support for RDP clients only, then click *Next*.

- 9 (Conditional) If you selected *ICA & RDP* for thin client support, fill in the following fields, then click *Next*.

**Citrix XML Service Address:** Specify the DNS name or IP address of the server where the Citrix\* IMA database resides. If you have multiple Citrix farms, enter the addresses of each server where an IMA database resides, separated by a comma.

**Citrix XML Service Port:** Specify the port number being used by the Citrix XML Service. Typically, this is port 80. To check the port number in MMC, click *Servers > Server Properties > MetaFrame XP Settings*, then check the *TCP/IP Port* field.

- 10 When installation is complete, exit the portal.  
11 If the portal is on a NetWare 6.x server, restart the server.

or

If the portal is on a Windows 2000 server, either restart the server or restart Tomcat.

For information about changing ZENworks Launch gadget settings such as the terminal servers accessed by the gadget, see “[ZENworks Launch Gadget: Configuring Settings](#)” in “[Application Management](#)” in the *Novell ZENworks 7 Desktop Management Administration Guide*.

## 14.2 Copying Citrix Files to Your Portal

If you are using Citrix servers for your terminal server environment, you must copy several Citrix files to the exteNd Director portal. These files are used by the Launch gadget when launching an ICA client session.

- 1 Using the *Citrix MetaFrame XP Presentation Server* CD, copy the entire `\metaframe\w2k\program files\citrix\application\nfuse` directory to the following portal directory:

```
tomcat\webapps\nps\portal\gadgets\com.novell.ondemand.gadgets.zenlaunchgadget
```

The resulting directory is:

```
tomcat\webapps\nps\portal\gadgets\com.novell.ondemand.gadgets.zenlaunchgadget\nfuse
```

- 2 Move the \*.properties files from the `com.novell.ondemand.gadgets.zenlaunchgadget\nfuse` directory to the following portal directory:

```
tomcat\webapps\nps\portal\web-inf\classes
```

If any of the files already exist in the directory, keep the files with the newest dates.

- 3 Move the \*.jar files from the `com.novell.ondemand.gadgets.zenlaunchgadget\nfuse` directory to the following portal directory:

```
tomcat\webapps\nps\portal\web-inf\lib
```

If any of the files already exist in the directory, keep the files with the newest dates.

## 14.3 Installing the Citrix ICA and Microsoft RDP Clients to Workstations

In order for the ZENworks Launch gadget to launch terminal server applications, the workstation must have the Citrix ICA client and Microsoft RDP client installed.

### ICA Client

The ZENworks Launch gadget requires the workstation to have either the ICA Program Neighborhood (PN) client or the ICA Web client installed. If the PN client or Web client is not already installed on your users' workstations:

- 1** Download the PN client or the Web client files from the [Citrix Download Clients site \(http://www.citrix.com/site/SS/downloads/downloads.asp?dID=2755\)](http://www.citrix.com/site/SS/downloads/downloads.asp?dID=2755).
  - 2** Distribute the client files to each workstation. To do so:
    - 2a** For the Web client, copy the `wficat.cab` file to the following location on your portal server:  

```
tomcat\webapps\nps\portal\gadgets\com.novell.ondemand.gadgets.zenlaunchgadget\bin
```

When a user launches a terminal server application that you've configured to run in an ICA client session, the Launch gadget uses the `.cab` file to install the Web client.
    - 2b** For the PN client, follow the installation instructions in the *Citrix Administrator's Guide*, or use Novell Application Launcher to distribute the client files.
- or
- Rename the PN client file to `wficat.cab` and copy it to the following location on your portal server:
- ```
tomcat\webapps\nps\portal\gadgets\com.novell.ondemand.gadgets.zenlaunchgadget\bin
```

### RDP Client

The Microsoft RDP 5.1 client (`msrdp.ocx`) is included with the ZENworks Launch gadget. When a user launches a terminal server application that you've configured to run in an RDP client session, the Launch gadget installs the `msrdp.ocx` file to the `c:\program files\novell\zenworks` directory on the user's workstation and registers the `.ocx` file.





# Setting Up Terminal Server Application Support

# 15

The Application Management functionality in Novell® ZENworks® Desktop Management provides the ability to launch applications from a Citrix MetaFrame® Server or Microsoft Windows terminal server through an ICA or RDP client session. To support terminal server applications, you need to review the requirements and complete the tasks in the following sections:

- ♦ Section 15.1, “Terminal Server Requirements,” on page 173
- ♦ Section 15.2, “Using ZENworks Workstation Manager to Manage Local User Accounts,” on page 174
- ♦ Section 15.3, “Using Non-ZENworks Methods to Manage Local User Accounts,” on page 181
- ♦ Section 15.4, “Installing the Citrix ICA and Microsoft RDP Client to Workstations,” on page 182

The information in this section also applies to ZENworks 7 Desktop Management with Support Pack 1.

After you’ve completed the above tasks, you can configure terminal server applications for distribution to users through Novell Application Launcher™. For information, see “**Distribution: Simple Applications**” in “**Application Management**” in the *Novell ZENworks 7 Desktop Management Administration Guide*.

## 15.1 Terminal Server Requirements

The following table lists the minimum requirements for a Windows terminal server or Citrix MetaFrame Server.

**Table 15-1** Minimum Requirements for Windows Terminal Server or Citrix MetaFrame Server

| Item                                    | Minimum Requirement                                                                                                                                                                                                                                                                                |
|-----------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Operating System                        | Windows 2000 Server with Service Pack 4 (latest service pack recommended).<br><br>Windows Server 2003 (latest service pack recommended)                                                                                                                                                            |
| Windows Terminal Services               | Version supported by the Windows 2000/2003 Server operating system.                                                                                                                                                                                                                                |
| Citrix Presentation Server (Optional)   | Citrix Presentation Server 3.0 (formerly MetaFrame XP Feature Release 3).<br><br>Citrix Presentation Server 4 for Windows.<br><br>The latest service pack and hotfixes are recommended. You can download them at the <a href="http://www.citrix.com">Citrix Web site (http://www.citrix.com)</a> . |
| Citrix Secure Access Manager (Optional) | Citrix Secure Access Manager 2.2.                                                                                                                                                                                                                                                                  |

| Item                     | Minimum Requirement                                                                                                                                                                                                                                                                                                                                                      |
|--------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Desktop Management Agent | <p>ZENworks 7 version.</p> <p>The Desktop Management Agent is required only if you want to dynamically create local user accounts on the terminal server.</p> <p>You can install all Desktop Management Agent components, but terminal server support requires only the Application Management and Workstation Management components.</p>                                |
| Novell Client            | <p>Novell Client™ 4.91 SP1 for Windows 2000/XP.</p> <p>The Novell Client is required only if you install the Desktop Management Agent. The Management Agent uses the Novell Client to authenticate to Novell eDirectory and access the Dynamic Local User policy.</p>                                                                                                    |
| Internet Explorer        | <p>Internet Explorer 5.5 with Service Pack 2 with high security (128-bit or higher) encryption.</p> <p>Internet Explorer is required only if you install the Desktop Management Agent.</p> <p>If you install Internet Explorer 6.0, make sure that the privacy settings are configured to accept cookies. By default, Internet Explorer 6.0 does not accept cookies.</p> |

## 15.2 Using ZENworks Workstation Manager to Manage Local User Accounts

To run applications on a terminal server, users need to have local user accounts on the terminal server. You can use Workstation Manager (installed with the Desktop Management Agent) and user policies to dynamically manage terminal server user accounts. If you plan to use Workstation Manager, complete the tasks in the following sections. If you don't plan to use Workstation Manager, see [Section 15.3, "Using Non-ZENworks Methods to Manage Local User Accounts,"](#) on [page 181](#) for other user management possibilities.

- ♦ [Section 15.2.1, "Installing the Novell Client and Desktop Management Agent,"](#) on [page 174](#)
- ♦ [Section 15.2.2, "Setting Up Workstation Manager,"](#) on [page 175](#)
- ♦ [Section 15.2.3, "Configuring Passthrough Authentication,"](#) on [page 175](#)
- ♦ [Section 15.2.4, "Setting Up Dynamic Local User Accounts,"](#) on [page 176](#)

### 15.2.1 Installing the Novell Client and Desktop Management Agent

You must install the Novell Client and the Desktop Management Agent on each terminal server where you want ZENworks to dynamically manage terminal server accounts.

The Desktop Management Agent includes the Workstation Manager component that dynamically creates local user accounts on the terminal server. The Management Agent uses the Novell Client to authenticate to Novell eDirectory™ and access the Dynamic Local User policy.

- 1 Download the Novell Client 4.91 SP1 (or later) from the [Novell Download Web site \(http://download.novell.com\)](http://download.novell.com) and install the client on the terminal server.

- 2 Install the Desktop Management Agent, making sure to install the Workstation Manager and Application Management components; the other components are optional.

For information about installing the Desktop Management Agent, see [Chapter 12, “Installing and Configuring the Desktop Management Agent,”](#) on page 137.

## 15.2.2 Setting Up Workstation Manager

ZENworks Desktop Management includes eDirectory user policies that enable you to easily manage local user accounts and profiles on terminal servers. Workstation Manager, running on the terminal server, applies the policies when a user logs into the terminal server. This section helps you ensure that Workstation Manager is installed and configured correctly. Information about creating and using user policies is provided in [Section 15.2.4, “Setting Up Dynamic Local User Accounts,”](#) on page 176.

Workstation Manager is installed as part of the Desktop Management Agent installation. You can verify that Workstation Manager is installed and running on the terminal server by checking for the Workstation Manager service in the Services window.

If you have multiple eDirectory trees, you should also make sure that Workstation Manager is configured to read the eDirectory tree where your User objects reside. To do so:

- 1 Click the *Start* menu > *Settings* > *Control Panel* > *ZENworks Agent Options*.
- 2 In the ZENworks Agent Options dialog box, click *Settings*.
- 3 Verify that Enable Workstation Manager is selected and that the tree is set correctly.
- 4 (Optional) Verify the Tree value in the Windows registry, underneath the `HKEY_LOCAL_MACHINE/SOFTWARE/NOVELL/Workstation Manager/Identification` key.

## 15.2.3 Configuring Passthrough Authentication

To simplify the process of launching terminal server applications, ZENworks Desktop Management provides passthrough authentication. With passthrough authentication, a user is not prompted for a username and password when he or she launches a terminal server application as long as the user's eDirectory account and Windows user account have the same username and password.

By default, passthrough authentication is configured automatically during installation of the Desktop Management Agent to the terminal server. However, to verify that configuration occurred correctly, we recommend you do the following:

- 1 Turn on the terminal server's *Use Client Provided Logon Information* setting and turn off the *Always Prompt for Password* setting:
  - 1a At the terminal server, click *Start* > *Programs* > *Administrative Tools* > *Terminal Services Configuration*.
  - 1b Double-click a connection type (the default is *RDP-Tcp*) to enter the properties.
  - 1c In the *Logon Settings* tab, select the *Use Client Provided Logon Information* setting and deselect the *Always Prompt for Password* setting.
  - 1d Repeat [Step 1b](#) and [Step 1c](#) for each connection type.
- 2 Verify the default profile configuration for the terminal server's Novell Client:

- 2a** At the terminal server, right-click the Novell icon (N icon) in the status area of the taskbar, then click *Novell Client Properties*.
- 2b** Click the *Location Profiles* tab.
- 2c** In the *Location Profiles* list, select *Default*, then click *Properties* to display the Location Profiles Properties dialog box.
- 2d** Select *Login Service* in the *Service* list, select *Default* in the *Service Instance* list, then click *Properties* to display the Novell Login dialog box.
- 2e** Deselect (turn off) the *Save Profile After Successful Login* option.
- 2f** Click the *NDS* tab.
- 2g** In the *Tree* field, select the eDirectory tree where the terminal server applications are configured as Application objects.
- 2h** Delete any information from the *Context* and *Server* fields.
- 2i** To save the configuration settings, click *OK* until you've closed all dialog boxes.

## 15.2.4 Setting Up Dynamic Local User Accounts

After you installed and configured Workstation Manager on your terminal servers, you need to enable and configure the policies that control local user accounts. The following sections provide instructions:

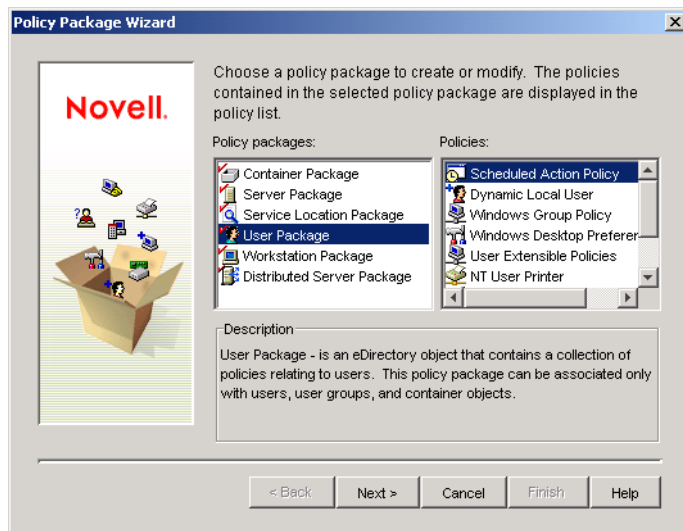
- ♦ “Creating a User Policy Package” on page 176
- ♦ “Configuring Dynamic Local User Accounts” on page 180
- ♦ “Associating the User Package with Users” on page 181

### Creating a User Policy Package

You use the Windows 2000-2003 Terminal Server policies, available in a User Policy package, to manage dynamic local user accounts. You can use an existing User Policy package, or you can create a new User Policy package specifically for Windows 2000-2003 Terminal Server policies. If you already have a User Policy package that you want to use, skip to “Configuring Dynamic Local

User Accounts” on page 180. Otherwise, complete the following steps to create a User Policy package:

- 1 In ConsoleOne, right-click the container where you want to create the User Policy Package object, click *New*, then click *Policy Package* to display the Policy Package Wizard.



- 2 In the *Policy Packages* list, select *User Package*, then click *Next*.

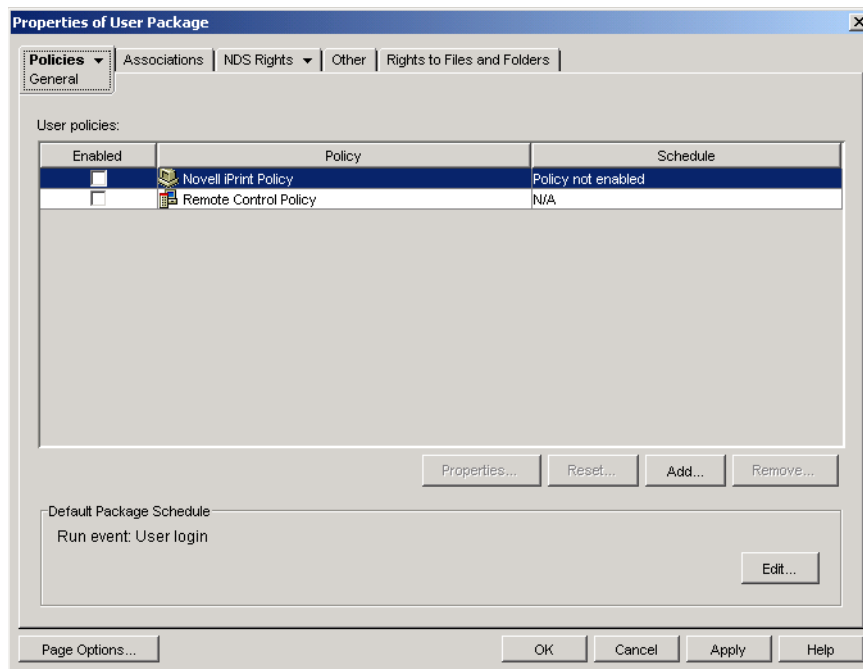


The package object’s name must be unique within the container where it will be created. If you plan to create multiple User Policy packages, you might want to use a more descriptive name, such as Win2000-2003 TS User Package. Or, you might want to create the policy in the same container where the policy’s users reside.

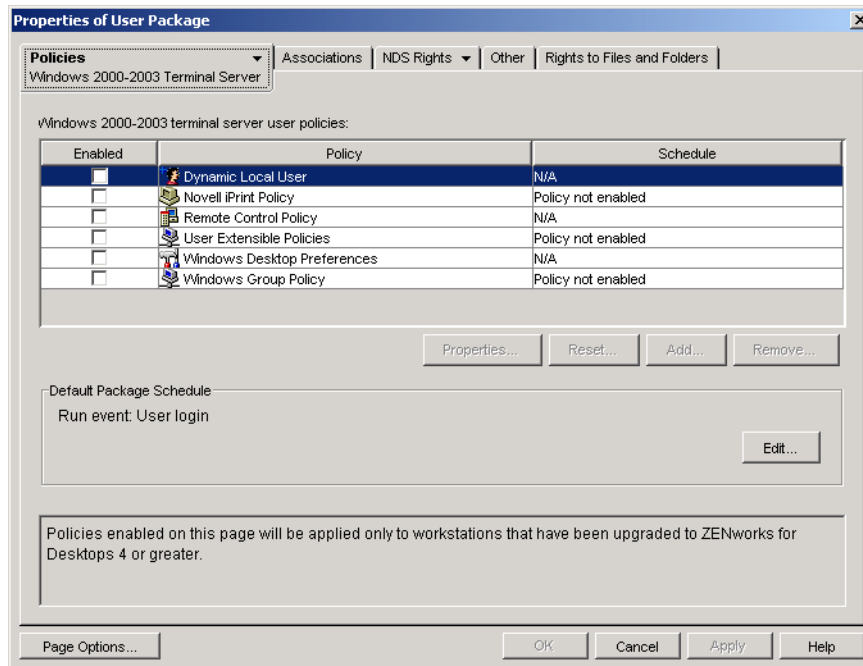
- 3 If necessary, change the package's object name and the container where it will be created, then click *Next*.



- 4 In the Summary page, select *Define Additional Properties*, then click *Finish* to create the User Package object and display the object's property pages.



- 5 Click the *Policies* tab, then click Windows 2000-2003 Terminal Server to display the Windows 2000-2003 Terminal Server policies page.

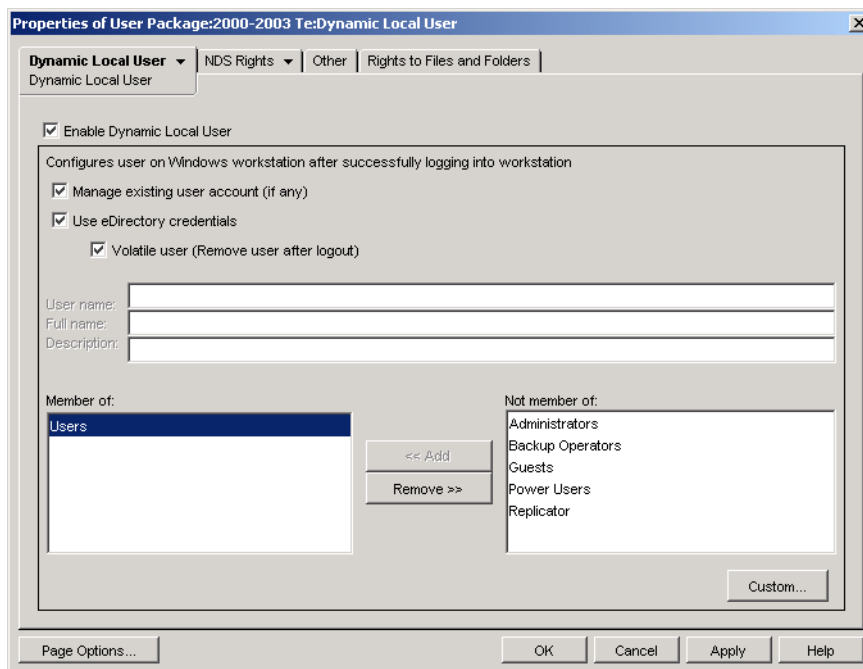


- 6 Continue with the next section, [Configuring Dynamic Local User Accounts](#).

## Configuring Dynamic Local User Accounts

You use the Dynamic Local User (DLU) policy to configure how Workstation Manager creates user accounts on the terminal server.

- 1 On the Windows 2000-2003 Terminal Server platform page, select the check box to the left of the *Dynamic Local User Policy* to enable the policy, then click *Properties* to display the Dynamic Local Users property page.



- 2 Configure the following fields:

**Enable Dynamic Local User:** Select this option to enable Workstation Manager to dynamically create user accounts.

**Manage Existing User Account (if any):** If you want Workstation Manager to apply the DLU policy to existing user accounts, select this option. Otherwise, the DLU policy applies only to new user accounts.

**Use eDirectory Credentials:** Select this option to use eDirectory user names and passwords for the local user accounts. With the user's eDirectory and Windows credentials synchronized and passthrough authentication configured (see [Section 15.2.3, "Configuring Passthrough Authentication," on page 175](#)), the user is not prompted for any credentials when launching an application from a terminal server.

**Volatile User (Remove User after Logout):** Select this option if you want a user's account removed after the user exits the application and the session is closed. All user account information is removed. If you want to retain user profiles, you can configure roaming profiles. Instructions are provided in "[Windows Desktop Preferences Policy \(User Package\)](#)" in "[Workstation Management](#)" in the *Novell ZENworks 7 Desktop Management Administration Guide*.

**Member Of/Not Member Of:** In the *Not Member Of* list, select the group (or groups) that you want users made members of, then click *Add*. Group membership determines a user's access rights on the terminal server. If none of the groups listed provides the exact file system rights



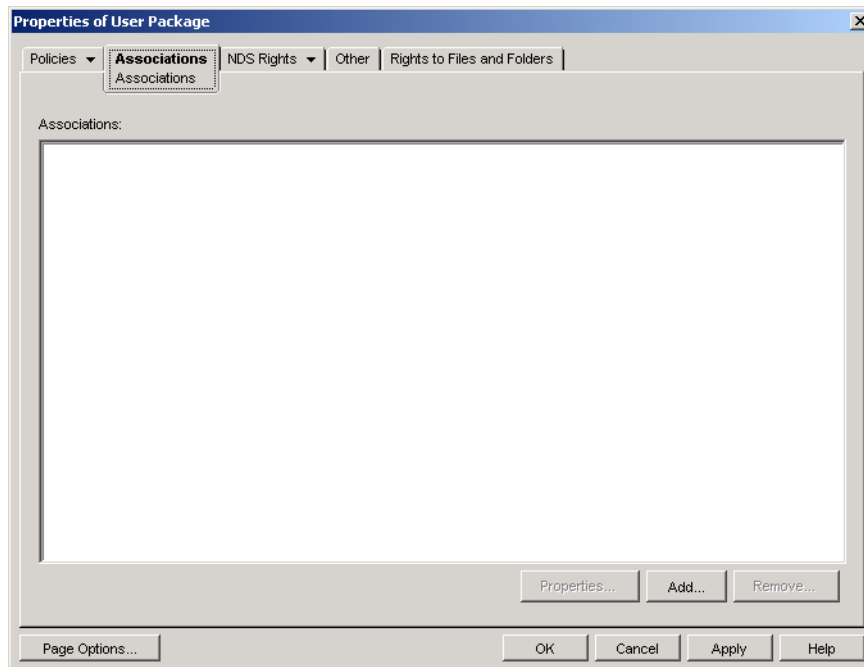
you want assigned to user accounts, you can use the File Rights page (*Dynamic Local User* tab > File Rights page).

- 3 Click *OK* to save your changes and close the Dynamic Local Users property page.
- 4 Continue with the next section, **Associating the User Package with Users**.

### Associating the User Package with Users

You must associate the User Policy package with users before it can take effect.

- 1 If the User Package object's property page is not open, right-click the *User Package*, then click *Properties*.
- 2 Click the *Associations* tab to display the Associations page.



- 3 Click *Add*, then browse to and select the users you want the policy package applied to. You can add users, user groups, or containers.
- 4 When you've finished adding users, click *OK* to save your information.

## 15.3 Using Non-ZENworks Methods to Manage Local User Accounts

If you do not use Workstation Manager and user policies to dynamically create user accounts on terminal servers, you need to create the accounts some other way (for example, manually create static accounts on each terminal server or use Microsoft Active Directory to create them). For information about creating user accounts, see your Windows documentation. As you create user accounts, keep in mind the following:

- ♦ For passthrough authentication to work for RDP applications, a user's Windows account must have the same username and password as his or her eDirectory account.

- Passthrough authentication does not work for ICA applications; users are always prompted for their login credentials when launching an ICA application. If you want passthrough authentication for ICA applications to work, you must use Workstation Manager and user policies.
- The user account must be given adequate file system access to run applications from the terminal server, either through group memberships or individual user permissions.

## 15.4 Installing the Citrix ICA and Microsoft RDP Client to Workstations

Whenever Novell Application Launcher™, the Novell Application Launcher plug-in, or the ZENworks Launch gadget launches a terminal server application, it uses the Citrix ICA or Microsoft RDP client to create the client session with the terminal server. This requires that the ICA and RDP client be installed on each user's workstation.

### ICA Client

The workstation must have either the ICA Program Neighborhood (PN) client or the ICA Web client installed. If the PN client or Web client is not already installed on your users' workstations:

- 1 Download the PN client or the Web client files from the [Citrix Download Clients site \(http://www.citrix.com/site/SS/downloads/downloads.asp?dID=2755\)](http://www.citrix.com/site/SS/downloads/downloads.asp?dID=2755).
- 2 Distribute the client files to each workstation. To do so:
  - 2a Follow the installation instructions in the *Citrix Administrator's Guide*, or use Novell Application Launcher to distribute the client files.
  - 2b (Conditional) If you are using the ZENworks Launch gadget, copy the Web client (`wficat.cab`) file to the following location on your portal server:

```
tomcat\webapps\nps\portal\gadgets\com.novell.ondemand.gadget
s.zenlaunchgadget\bin
```

or

For the PN client, rename the file to `wficat.cab` and copy it to the location listed above.

When a user launches a terminal server application that you've configured to run in an ICA client session, the Launch gadget uses the `.cab` file to install the Web client. After that occurs, users can launch ICA applications from Novell Application Launcher, the Novell Application Launcher plug-in, and the ZENworks Launch gadget.

For information about using the ZENworks Launch gadget, see [Chapter 14, "Installing the ZENworks Launch Gadget," on page 169](#)

### RDP Client

The Microsoft RDP 5.1 client (`msrdp.ocx`) is included with the ZENworks Desktop Management Agent and the ZENworks Launch gadget. During installation of the Desktop Management Agent, `msrdp.ocx` is installed to the `c:\program files\novell\zenworks` directory. With the ZENworks Launch gadget, when a user launches a terminal server application that you've configured to run in an RDP client session, the Launch gadget installs the `msrdp.ocx` file to the `c:\program files\novell\zenworks` directory.

# Setting Up Authentication

# 16

When a user provides an authorized user ID and password (also called “credentials”) at a workstation login dialog box, a secure network connection can be established between that workstation and Novell® ZENworks® Desktop Management components that are located on the network and managed by Novell eDirectory™. This connection (also called “authentication”), can occur in various configuration circumstances.

This section contains information about how authentication takes place in the following circumstances:

- ♦ [Section 16.1, “Using the Novell Client for Authentication,” on page 183](#)
- ♦ [Section 16.2, “Using the Desktop Management Agent and the ZENworks Middle Tier Server for Authentication,” on page 184](#)

The information in this section also applies to ZENworks 7 Desktop Management with Support Pack 1.

## 16.1 Using the Novell Client for Authentication

If the Novell Client™ was previously installed on the workstation where the Desktop Management Agent is installed, the Novell Client continues to launch at login time. By leaving the Client in place, it is assumed that the workstation is located inside the firewall and that it has no need to authenticate through the ZENworks Middle Tier Server. When you install the Desktop Management Agent, however, the workstation is upgraded with new ZENworks 7 Desktop Management functionality, which includes the updated features.

For more information about how the Novell Client is used by ZENworks Desktop Management, see the [Novell ZENworks 7 Desktop Management Administration Guide](#).

This section lists the credentials (that is, the user ID and password) that are required in order for ZENworks User and Workstation Policies to authenticate to eDirectory when the user's workstation has the traditional Novell Client installed, whether or not the Desktop Management Agent is also installed.

This information should help you understand why you supply these credential sets during the installation. The sections include:

- ♦ [Section 16.1.1, “Credentials Required for User Policies,” on page 183](#)
- ♦ [Section 16.1.2, “Credentials Required for Workstation Policies,” on page 184](#)

### 16.1.1 Credentials Required for User Policies

The following table shows the credentials needed by ZENworks Desktop Management User policies that use the Novell Client to authenticate to eDirectory.

**Table 16-1** *Credentials Needed by Desktop Management User Policies That Use the Novell Client to Authenticate*

| Workstation Platform | Server's File System to Access | Required Credentials                   | Comments                                                           |
|----------------------|--------------------------------|----------------------------------------|--------------------------------------------------------------------|
| Windows 98 SE        | NetWare®                       | eDirectory Workstation ID and password |                                                                    |
| Windows 98 SE        | Windows 2000/2003              | Domain Workstation ID and password     | The Microsoft SMB client is used to access the Windows file system |
| Windows 2000/XP      | NetWare                        | eDirectory User ID and password        |                                                                    |
| Windows 2000/XP      | Windows 2000/2003              | Domain User ID and password            | The Microsoft SMB client is used to access the Windows file system |

### 16.1.2 Credentials Required for Workstation Policies

The following table shows the credentials needed by ZENworks Desktop Management Workstation policies that use the Novell Client to authenticate to eDirectory.

**Table 16-2** *Credentials Needed by Desktop Management Workstation Policies That Use the Novell Client to Authenticate*

| Workstation Platform | Server's File System to Access | Required Credentials                   | Comments                                                           |
|----------------------|--------------------------------|----------------------------------------|--------------------------------------------------------------------|
| Windows 98 SE        | NetWare                        | eDirectory Workstation ID and password |                                                                    |
| Windows 98 SE        | Windows 2000/2003              | Domain Workstation ID and password     | The Microsoft SMB client is used to access the Windows file system |
| Windows 2000/XP      | NetWare                        | eDirectory Workstation ID and password |                                                                    |
| Windows 2000/XP      | Windows 2000/2003              | Domain Workstation ID and password     | The Microsoft SMB client is used to access the Windows file system |

## 16.2 Using the Desktop Management Agent and the ZENworks Middle Tier Server for Authentication

If you want your users to log in to the network through the Desktop Management Agent login dialog box, you need to understand how the Desktop Management Agent can be customized, and understand the other preparations that you must make to customize the login experience you want the users to have.

This section contains the following information:

- ♦ [Section 16.2.1, “Credentials Required by Desktop Management Policies,” on page 185](#)
- ♦ [Section 16.2.2, “Customizing the Agent Login,” on page 186](#)

- ♦ [Section 16.2.3, “Synchronized Passthrough Login,” on page 188](#)
- ♦ [Section 16.2.4, “Logging In to a Windows Network Environment,” on page 188](#)

## 16.2.1 Credentials Required by Desktop Management Policies

This section lists the credentials that are required in order for Desktop Management User and Workstation policies to authenticate to eDirectory when the user's workstation has the Desktop Management Agent installed and is communicating through the ZENworks Middle Tier Server.

This information should help you understand why you supply these credential sets during the installation. The sections include:

- ♦ [“Credentials Required for User Policies” on page 185](#)
- ♦ [“Credentials Required for Workstation Policies” on page 185](#)

### Credentials Required for User Policies

The following table shows the credentials needed by Desktop Management User policies that use the Desktop Management Agent and the ZENworks Middle Tier Server to authenticate to eDirectory. It is assumed that the user's workstation has the Desktop Management Agent installed.

**Table 16-3** *Credentials Needed by Desktop Management User Policies that Use the Desktop Management Agent and the ZENworks Middle Tier Server to Authenticate*

| Workstation Platform | eDirectory Server's File System | Required Credentials                            | Comments                                                                                                                                                                                                                                                                                                                                       |
|----------------------|---------------------------------|-------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Windows 98 SE        | NetWare                         | eDirectory Workstation ID and password          |                                                                                                                                                                                                                                                                                                                                                |
| Windows 98 SE        | Windows 2000/2003               | eDirectory User and Domain User ID and password | Proxy credentials are entered during the ZENworks Middle Tier Server installation and are stored in the registry of the ZENworks Middle Tier Server.                                                                                                                                                                                           |
| Windows 2000/XP      | NetWare                         | eDirectory User ID and password                 |                                                                                                                                                                                                                                                                                                                                                |
| Windows 2000/XP      | Windows 2000/2003               | eDirectory User and Domain User ID and password | If users do not log in to a domain, (but do log in to the local workstation and eDirectory) the Middle Tier Server uses the eDirectory credentials to authenticate to the domain. This means that the eDirectory credentials must match the domain credentials.<br><br>If users are logging in to a domain, their domain credentials are used. |

### Credentials Required for Workstation Policies

The following table shows the credentials needed by Desktop Management Workstation policies that use the Desktop Management Agent and the ZENworks Middle Tier Server to authenticate to eDirectory. It is assumed that the user's workstation has the Desktop Management Agent installed.

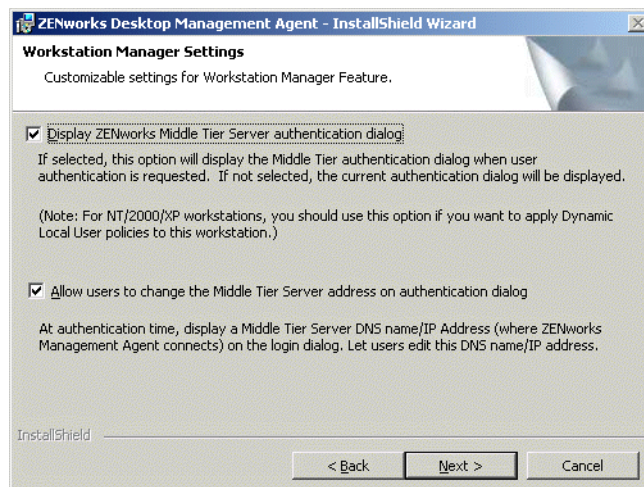
**Table 16-4** *Credentials Needed by Desktop Management Workstation Policies that Use the Desktop Management Agent and the ZENworks Middle Tier Server to Authenticate*

| Workstation Platform | eDirectory Server's File System | Required Credentials                            | Comments                                                                                                                                             |
|----------------------|---------------------------------|-------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------|
| Windows 98 SE        | NetWare                         | eDirectory Workstation ID and password          |                                                                                                                                                      |
| Windows 98 SE        | Windows 2000/2003               | eDirectory User and Domain User ID and password | Proxy credentials are entered during the ZENworks Middle Tier Server installation and are stored in the registry of the ZENworks Middle Tier Server. |
| Windows 2000/XP      | NetWare                         | eDirectory Workstation ID and password          |                                                                                                                                                      |
| Windows 2000/XP      | Windows 2000/2003               | Proxy ID and password                           | Proxy credentials are entered during the ZENworks Middle Tier Server installation and are stored in the registry of the ZENworks Middle Tier Server. |

## 16.2.2 Customizing the Agent Login

If the Novell Client is not present on the workstation when the Desktop Management Agent is installed, the installation program displays the Workstation Manager Settings page. This page lets you customize what the user sees at login time.

**Figure 16-1** *Workstation Manager Settings Page of the Agent Installation Wizard*



If you select *Display ZENworks Middle Tier Server Authentication Dialog*, a customized Novell login dialog box is always displayed to the user.

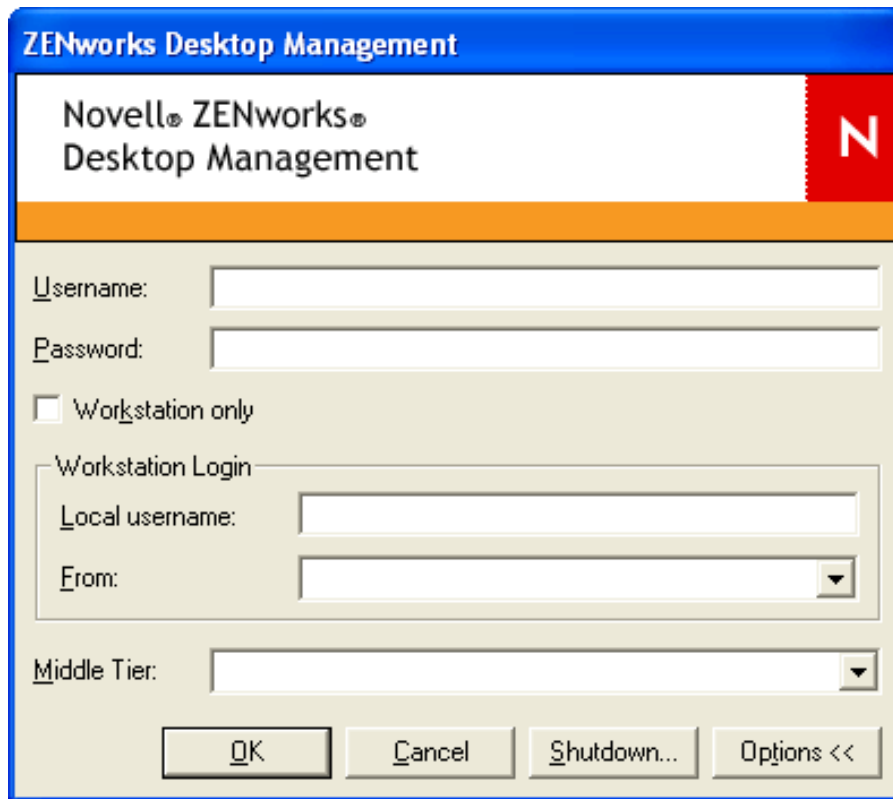
You might want to select this option if you plan to have more than one Middle Tier Server available in the network that the users can use for authentication to the Desktop Management Server.

---

**NOTE:** If the user workstation is a Windows 2000/XP platform, you should use this option if you want to apply Dynamic Local User policies to the workstation.

---

**Figure 16-2** *The ZENworks Middle Tier Server Authentication Dialog Box*

The image shows a Windows-style dialog box titled "ZENworks Desktop Management". The title bar is blue with the text "ZENworks Desktop Management" in white. Below the title bar, there is a white area with the "Novell ZENworks Desktop Management" logo and a red square with a white "N". The main area of the dialog box is light gray and contains several input fields and controls. At the top, there are two text boxes labeled "Username:" and "Password:". Below these is a checkbox labeled "Workstation only". Underneath the checkbox is a section titled "Workstation Login" which contains two more text boxes: "Local username:" and "From:". Below the "Workstation Login" section is a text box labeled "Middle Tier:". At the bottom of the dialog box, there are four buttons: "OK", "Cancel", "Shutdown...", and "Options <<".

This login dialog box requires the user to enter a User ID and password (that is, the “authentication credentials”) for the Desktop Management Server. These are the same credentials that the user is accustomed to using for connecting to the network (that is, connecting to eDirectory).

During the installation program, if you selected *Allow Users to Change the ZENworks Middle Tier Server Address on Authentication Dialog*, the users on this workstation can edit the DNS name/IP address of the ZENworks Middle Tier Server that is used for authenticating to eDirectory. They can also specify an alternate port for authenticating to the Apache Web server (NetWare®) or the IIS Web server (Windows). Users can do this by clicking the *Options* button on the Desktop Management Agent login dialog box.

Users specify an alternate port by entering a colon and the port number at the end of the IP Address or DNS name. For example:

151.155.155.000:5080

---

**IMPORTANT:** Entering a protocol (such as http: or https:) along with the IP address does not allow the Desktop Management Agent to connect to the ZENworks Middle Tier Server.

---

### 16.2.3 Synchronized Passthrough Login

If you want the user to never see a Novell login dialog box, or in other words, to “pass through” the Desktop Management Agent and authenticate to the location of ZENworks files, you should first make sure that the user's local workstation credentials are the same as the eDirectory credentials. This is also called “passive mode” login.

If this synchronization is ready, then the authentication happens like this:

1. The user enters his or her local Windows logon credentials at the Windows login dialog box.
2. The Desktop Management Agent, although not visible, passes the Windows workstation credentials to the Middle Tier Server,
3. The Middle Tier Server checks the credentials against eDirectory users, and authenticates to eDirectory if there is a match.
4. The user is authenticated to eDirectory, which points to policy files that can be passed to the workstation where the user is logged in.

To configure the Desktop Management Agent for passthrough authentication, simply accept the default settings in the Workstation Manager Settings dialog box. For more information, see [“Customizing the Agent Login” on page 186](#).

If the user logs in to Windows with credentials that are not valid in eDirectory, a Novell Desktop Management Agent login dialog box is displayed.

### 16.2.4 Logging In to a Windows Network Environment

If the server where you want to install ZENworks Desktop Management is part of a Windows network environment (that is, a network with no Novell NetWare servers), that network probably has Microsoft Active Directory installed and the users are members of Microsoft domains. As mentioned in [Section 4.2, “Desktop Management Server Software Requirements,” on page 44](#), the installation of Novell eDirectory 8.7.3 or later (recommended) is also a prerequisite in the network (in this case the Microsoft domain) where you will install ZENworks Desktop Management.

The following scenarios provide information about the way ZENworks Desktop Management authenticates after logging in to a Windows network environment:

- ♦ [“Synchronized Login to eDirectory” on page 188](#)
- ♦ [“Microsoft Domain Login” on page 189](#)
- ♦ [“Lights-Out Workstation Authentication” on page 189](#)

#### Synchronized Login to eDirectory

If you want users to log in using the Desktop Management Agent login dialog box and local machine credentials, you must synchronize the local workstation credentials with the eDirectory credentials. If this synchronization is ready, then the authentication happens like this:

1. At workstation startup time, the Windows 2000/XP operating system opens the Desktop Management Agent login dialog box.
2. In the dialog box, the user clicks the *Options* button to display optional login fields.
3. The user enters his or her eDirectory username and password in the *Username* and *Password* fields.



4. In the *From* drop-down list, the user chooses the Windows workstation name to log in to the Windows network.
5. The Desktop Management Agent passes the eDirectory credential set to the ZENworks Middle Tier Server.
6. The ZENworks Middle Tier Server checks the credentials against eDirectory users and authenticates to eDirectory if there is a match.
7. The user is authenticated to eDirectory, which points to policy files that can be passed to the workstation where the user is logged in.

## Microsoft Domain Login

If you want users to log in using the Desktop Management Agent login dialog box and Microsoft domain credentials, the Windows 2000/2003 server where ZENworks Middle Tier Server software is installed and the Windows 2000/2003 server where Desktop Management Server software is installed must be part of the same Microsoft domain or trust relationship. The user's workstation doesn't log on to the domain unless the Desktop Management Server will be delivering MSI applications to it.

The authentication happens like this:

1. At workstation startup time, the Windows 2000 operating system opens the Desktop Management Agent login dialog box.
2. In the dialog box, the user clicks the *Options* button to display optional login fields.
3. In the *From* drop-down list, the user chooses the option to log in from the Microsoft Domain.
4. The user enters his or her domain credentials in the *Username* and *Password* fields. These credentials don't need to be synchronized with eDirectory credentials.
5. The Desktop Management Agent passes the credential set to the ZENworks Middle Tier Server.
6. The ZENworks Middle Tier Server checks the credentials against Domain users and authenticates to the domain.
7. The user is authenticated to the domain and has access to the policy files, which are stored and are accessible through the domain and can be passed to the workstation where the user is logged in.

## Lights-Out Workstation Authentication

If you have already installed the Desktop Management Agent on a workstation, and if the Workstation Manager on that workstation has been scheduled to receive a workstation group policy, the workstation can still be authenticated to a Windows network and receive the policy files when the time for the group policy execution arrives, even if the user is not logged in. This is sometimes called "lights-out" authentication. The authentication happens like this:

1. When the policy execution time arrives, the Desktop Management Agent connects to the ZENworks Middle Tier Server by using the DNS name or IP address supplied during the Desktop Management Agent installation. This information is stored in the Windows registry at the workstation.
2. The ZENworks Middle Tier Server uses the domain user credentials stored in its registry program (supplied by the ZENworks Middle Tier Installation program) to authenticate as a domain user with file rights to the appropriate files.

3. The policy files are copied to the user's workstation through the ZENworks Middle Tier Server.

# Setting Up Security Measures on Windows or NetWare Middle Tier Servers

# 17

The information in this section details the steps involved in obtaining certificates and configuring SSL for a Web server on a Microsoft Windows or Novell® NetWare® server where the Novell ZENworks® Middle Tier Server is installed.

The following sections are included:

- ♦ [Section 17.1, “Setting Up SSL and Certificates on a Windows Middle Tier Server,” on page 191](#)
- ♦ [Section 17.2, “Setting Up SSL and Certificates on a NetWare Middle Tier Server,” on page 194](#)
- ♦ [Section 17.3, “Setting Up Windows Workstations to Use SSL and Certificates,” on page 195](#)
- ♦ [Section 17.4, “Setting Up NetIdentity Authentication,” on page 198](#)

## 17.1 Setting Up SSL and Certificates on a Windows Middle Tier Server

When you set up SSL for a Middle Tier Server on a Windows 2000 machine, all of the administration will be done with the Internet Services Manager and ConsoleOne®. The major procedures in the setup include the following:

- ♦ [Section 17.1.1, “Generating a Certificate Signing Request,” on page 191](#)
- ♦ [Section 17.1.2, “Using the eDirectory Root CA to Issue a Certificate,” on page 192](#)
- ♦ [Section 17.1.3, “Installing the Root CA on the Middle Tier Server,” on page 193](#)
- ♦ [Section 17.1.4, “Processing a Pending Certificate Request on IIS,” on page 193](#)

### 17.1.1 Generating a Certificate Signing Request

To generate a certificate request on a Middle Tier Server installed on a Windows 2000 server:

- 1 At the server's desktop, click *Programs > Administrative Tools > Internet Services Manager > Internet Information Services* to open the Internet Information Services window.
- 2 Click the + sign on the Middle Tier Server icon to expand its hierarchy.
- 3 Right-click *Default Web Site > click Properties* to open the Default Web Site Properties dialog box.

If an SSL certificate has not been configured yet, the SSL Port field is dimmed.

- 4 Click *Directory Security* to open the Directory Security page.
- 5 Click *Server Certificate* to start the Web Services Certificate Wizard.
  - 5a On the wizard's Welcome page, click *Next* to open the Server Certificate page.
  - 5b On the Server Certificate page, select *Create a New Certificate*, then click *Next*.

- 5c** On the wizard's Delayed or Immediate page, select *Prepare the Request Now, But Send it Later*, then click *Next*.
- 5d** On the Name and Security Setting page, specify a certificate name such as DaveMiddleTier Web Site, change the bit length to 1024, then click *Next*.
- 5e** On the wizard's Organization Information page, specify the names of your organization and organizational unit in the *Organization* and *Organizational Unit* fields, then click *Next*.
- 5f** On the wizard's Your Site's Common Name page, specify your full DNS name, such as `zztop1.zenworks.provo.novell.com` if you are in the DNS tables, then click *Next*.  

You can also specify your IP address if it is static and if all access is through IP addresses.

If your servers are behind a firewall, specify the DNS name by which the server is known to the outside world.
- 5g** On the wizard's Geographical Information page, enter the correct information in the *Country*, *State*, and *City* fields, then click *Next*.
- 5h** On the wizard's Certificate Request File Name page, save the certificate request in an accessible location, then click *Next*.  

This request is a file to be submitted to a trusted Certificate Authority (CA) for signing.
- 5i** On the wizard's Request File Summary page, review all of the information. If necessary, you can use the *Back* button to make changes on appropriate pages. Click *Next*.
- 5j** On the wizard's Completing the Web Services Certificate Wizard page, click *Finish*.
- 6** Submit the certificate request to an appropriate trusted Certificate Authority. When the trusted CA issues the certificate, proceed with the steps outlined in **“Processing a Pending Certificate Request on IIS” on page 193**.

### 17.1.2 Using the eDirectory Root CA to Issue a Certificate

The eDirectory Root CA can be used to issue a certificate for a valid Certificate Signing Request (CSR). If you use this method, the root is not a trusted root. For more information, see **Step 4 on page 192**.

This machine should have Novell Client™ 4.83 or later, ConsoleOne 1.3.3 or later, and the Novell International Cryptographic Infrastructure (NICI) client 2.4.0 or later installed.

- 1** On the server's desktop, start ConsoleOne.
- 2** Select the container in the tree where the server objects reside.
- 3** Select *Tools > Issue Certificate* to start the Issue Certificate Wizard.
  - 3a** In the *Filename* field, specify the name of the file that contains the certificate request, then click *Next*.
  - 3b** On the Organizational Certificate Authority page, click *Next*.
  - 3c** On the SSL or TLS page, click *Next*.
  - 3d** On the next page of the wizard, accept the defaults by clicking *Next*.
  - 3e** On the Save Certificate page, save the file as the default (that is, in `.der` format).
- 4** Export the self-signed certificate from the Certificate Authority.

Because the root is not a trusted root, you need to import the self-signed certificate from the Root CA into all workstations that will connect to the Middle Tier Server. If this self-signed certificate is not imported, certificate verification fails for all certificates issued by this CA.

- 4a** In ConsoleOne, browse to the Security container in the tree. The Security container is identified with a padlock icon.
- 4b** Right-click *Server Name Organizational CA* > select *Properties*.
- 4c** Click *Certificates* > select *Self Signed Certificate*.
- 4d** Click *Export*.
- 4e** Accept the defaults on succeeding pages until you need to save to a location.

### 17.1.3 Installing the Root CA on the Middle Tier Server

If a non-trusted CA (for example, the eDirectory Root CA) signed the certificate request, you need to install the self-signed certificate from the CA on the Middle Tier Server:

- 1** Locate and double-click the file containing the self-signed certificate from the CA.
- 2** On the Certificate page, click *Install Certificate* to start the wizard.
  - 2a** On the first page of the wizard, click *Next*.
  - 2b** On the second page of the wizard, when you see a message reading “Automatically select the certificate store,” click *Next*.
  - 2c** On the third page of the wizard, click *Finish*.
  - 2d** In the Root Certificate Store message box, select *Yes*.
  - 2e** In the Successful Import dialog box, click *OK*.

A message reading “The import was successful” is displayed.

### 17.1.4 Processing a Pending Certificate Request on IIS

When a trusted CA has issued a certificate, you can use the Internet Services Manager to process that request.

- 1** At the server's desktop, click *Programs > Administrative Tools > Internet Services Manager > Internet Information Services* to open the Internet Information Services window.
- 2** Click the + sign on the Middle Tier Server icon to expand its hierarchy.
- 3** Right-click *Default Web Site*, then click *Properties* to open the Default Web Site Properties dialog box.
- 4** Click *Directory Security* to open the Directory Security page.
- 5** Click *Server Certificate* to start the Web Services Certificate Wizard.
- 6** Use the Web Services Certificate Wizard to process the Certificate Request:
  - 6a** On the Welcome page, click *Next*.
  - 6b** On the Server Certificate page, select *Process the Pending Request and Install the Certificate*, then click *Next*.
  - 6c** On the next page, enter the full path of the signed certificate as received from the Certificate Authority.

This can be a `.der` or a `.cer` file, or a file with some other extension, depending on the naming convention used by the Certificate Authority.

- 6d** On the next wizard page, click *Next*.
- 6e** On the last wizard page, click *Finish*.
- 7** Close the Properties page.
- 8** Right-click the server icon in the tree, then select *Restart IIS*.
- 9** When IIS restarts, open the properties of the default Web site to verify that the SSL port is available.

## 17.2 Setting Up SSL and Certificates on a NetWare Middle Tier Server

When you set up SSL for a Middle Tier Server on a NetWare machine, all of the administration is done with ConsoleOne. Remember that the NetWare server must have the NICI client 2.4.0 (or later) installed.

Use the following steps to set up SSL on the NetWare server:

- 1** In ConsoleOne, browse to the tree where you installed the Middle Tier Server software > right-click the highest container (usually the Organization) > click *New > Object* to open the New Object dialog box.
- 2** Click the *NDSPKI:Key Material* object to start the creation wizard.
  - 2a** Specify a Certification Name (this is the key-pair name for the certificate and the associated public and private keys), select the *Custom* install, then click *Next*.
  - 2b** Select *External Certificate Authority*, then click *Next*.
  - 2c** Change the Key Size to 1024, keep the defaults on all the other fields, then click *Next*.  
The default Key Size is 2048, but 1024 is sufficient.
  - 2d** In the *Subject Name* field, change CN= to your fully distinguished name, keep the defaults on all of the other fields, then click *Next*.
  - 2e** Click *Finish* to create the Certificate Signing Request (CSR).
  - 2f** Save as Base64, then specify a path and file name that can be accessed later.
- 3** Have a trusted CA create a server certificate from the CSR you generated in **Step 2**.  
If you want, you can use the eDirectory Root CA to issue the certificate. For more information, see [“Using the eDirectory Root CA to Issue a Certificate” on page 192](#).
- 4** When the certificate is issued, open ConsoleOne, then open the tree where Middle Tier Server software is installed.
- 5** Open the *NDSPKI:Key Material* object (KMO) you created, click *Certificates*, click *Trusted Root Cert*, then click *Import* to start the Import Wizard and import the certificate.
  - 5a** On the Trusted Root Certificate page, click *Read from File*, select the *Trusted Root Cert*, then click *Next*.
  - 5b** On the Server Certificate page, click *Read from File*, select the certificate you created in **Step 3**, click *Next*, then click *Finish*.
- 6** (Conditional) Modify the Apache configuration files in NetWare 6 to reflect the name of the certificate created in ConsoleOne:

**6a** Open and edit `adminserv.conf`, which is found in the `sys:\apache\conf` directory.

**6b** Search for the line with the current port assignment. The line might look similar to this:  
`SecureListen 10.0.1.1:443 "SSL CertificateDNS"`

**6c** Replace “SSL CertificateDNS” with the name of the certificate you just created in ConsoleOne. For example:

```
SecureListen 10.0.1.1:443 "Dave Cert"
```

When the wizard creates a server certificate, it adds - *server\_name* to the end of the name (for example, Dave Cert - DaveServer). Do not add this section to the `.conf` file.

You can also edit the Web Manager section of the `.conf` file with the name of the new certificate.

**7** Restart the NetWare server.

## 17.3 Setting Up Windows Workstations to Use SSL and Certificates

This section includes information about setting up a Windows 98/NT/2000/XP workstation to use SSL and security certificates. The following sections are included:

- ♦ [Section 17.3.1, “Importing a Certificate on the Windows Workstation,” on page 195](#)
- ♦ [Section 17.3.2, “Configuring the Desktop Management Agent to Query for the Certificate,” on page 197](#)

### 17.3.1 Importing a Certificate on the Windows Workstation

If the SSL certificate you want to use was issued by a CA that is not in the trusted root list, you need to install the self-signed certificate from the CA on the workstation. This enables the workstation to trust any certificate issued by the CA. You can do this either before or after you install the Desktop Management Agent.

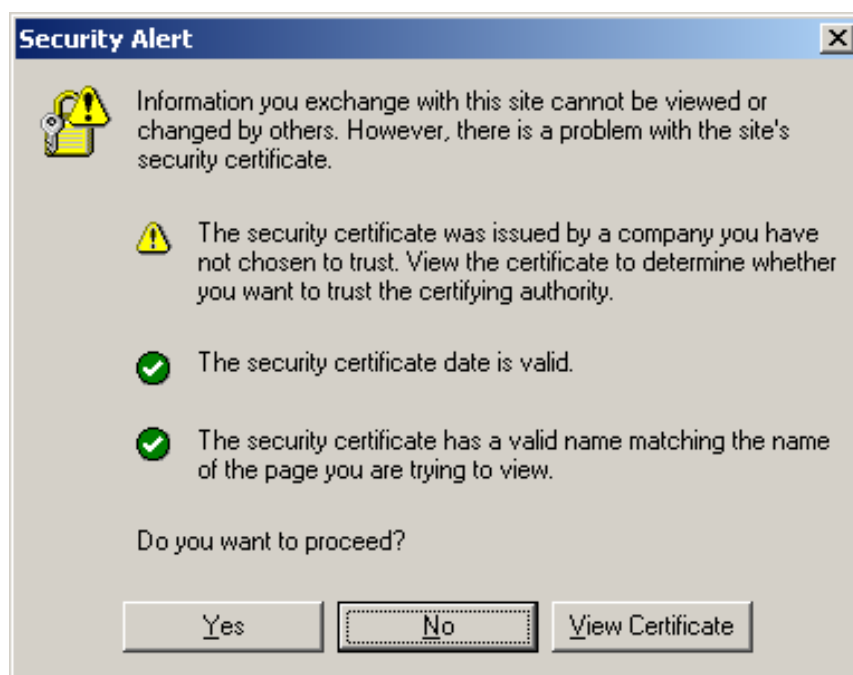
You can import a certificate on the Windows workstation in a User Account, in a Computer Account or in a Service Account. For additional information about importing a certificate, see “To Import a Certificate” at the [Windows XP Professional Product Documentation Web site \(http://www.microsoft.com/resources/documentation/windows/xp/all/proddocs/en-us/sag\\_cmprocsimport.mspx\)](http://www.microsoft.com/resources/documentation/windows/xp/all/proddocs/en-us/sag_cmprocsimport.mspx).

#### Sample SSL Setup

Use the following steps as an example of how to import a certificate to a workstation:

- 1** Verify that SSL is working on the Web server where the ZENworks Middle Tier Server is installed.
  - 1a** Open an HTML browser on the workstation where the ZENworks Desktop Management Agent is installed.
  - 1b** In the browser, use the https protocol to access a secure Web site (`https://Middle_Tier_Server_DNS_Name`).

Depending on previous workstation configuration and access to this site, a Security Alert dialog box might display:



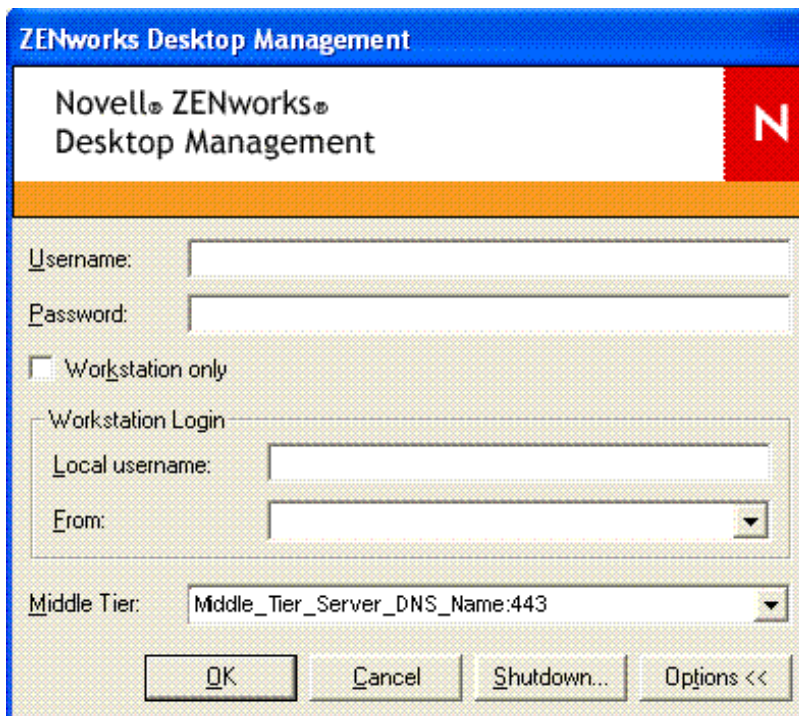
- 1c** Do one of the following, depending on whether you have previously accessed this site:
  - ♦ If you have not previously accessed the site, the security alert notes three security checks that the browser conducts prior to allowing access to the secure site. The status of the first item should show a warning, and the status of other two items should show a green check mark. If the alert does not match this status, resolve the problem with the certificate before proceeding to **Step 2**.
  - ♦ If you previously accepted the server's security certificate (that is, you have validated the date and the name of the certificate and you have indicated that you trust the certificate authority), this security alert does not display. This does not mean that the workstation is correctly configured for the Desktop Management Agent. If the agent does not authenticate through the Middle Tier Server (see **Step 5**), you need to delete the root certificate already on the workstation and then proceed to **Step 2**.
- 2** Verify that the Desktop Management Agent authenticates and is connected through port 80. (The agent login defaults to port 80, so only the DNS name is needed for the Middle Tier Address.)
- 3** Import the third-party root certificate to the workstation as a Computer Account.

Importing the Root Certificate through the browser to the default location is not sufficient for the Desktop Management Agent to find the certificate. The following substeps show an example of how to import a third-party root certificate from a NetWare 6.5 Middle Tier Server to a location where the agent can access it.

  - 3a** As in **Step 1**, use the https protocol to access a secure Web site (`https://Middle_Tier_Server_DNS_Name`) to display the Security Alert dialog box.
  - 3b** In the dialog box, click *View Certificate*, click *Certification Path*, select *Organization CA*, then click *View Certificate*.



- 3c** Select *Install Certificate* to launch the Certificate Import Wizard.
- 3d** In the Certificate Import Wizard, click *Next*, click *Place all certificates in the following store*, click *Browse*, then select the *Show physical stores* check box.
- 3e** Scroll to the top of the window and expand the *Trusted Root Certification Authorities* list item.
- 3f** Select *Local Computer*, click *OK*, click *Next*, and then click *Finish*.
- 4** Test the import by closing and reopening the browser and going to the `https://Middle_Tier_Server_DNS_Name` Web site.  
No Security Alert dialog box should display. If the security alert does display, you might have a problem with the Web server and SSL.
- 5** Configure the Desktop Management for SSL and verify that the agent is able to authenticate the user.
- 5a** Add :443 to the Middle Tier Server's DNS name. For example:  
You might need to use `regedit.exe` to change the settings for the Middle Tier Server if the Desktop Management Agent is configured to not allow Middle Tier address changes.



- 5b** Reboot the workstation as needed.

## 17.3.2 Configuring the Desktop Management Agent to Query for the Certificate

When the Desktop Management Agent installation program requires an entry for the IP address or DNS name of the Middle Tier Server, you need to enter the common name you used when you created the Certificate Request. For more information, see [Step 5f on page 192](#).

## 17.4 Setting Up NetIdentity Authentication

Authentication to a Middle Tier Server from a Desktop Management Agent is based on a challenge-response mechanism. When a Middle Tier Server challenges an agent for authentication, it sends an X.509 certificate. The agent verifies the integrity and trust of the certificate, and secrets are exchanged using public-key/private-key and session-key encryption techniques.

During installation, a NetIdentity certificate is installed on the Middle Tier Server. On NetWare, this certificate is signed by the Certificate Authority (CA) of the tree where the server belongs. On Windows 2000, this is a self-signed dummy certificate. Although they are cryptographically valid, these certificates are not signed by trusted root authorities, and should not be trusted outside of a controlled environment. By default, the Desktop Management Agent installation accepts such self-signed certificates, but this is a configurable installation parameter. When deployed outside a controlled network, Middle Tier Servers must be configured with a certificate that is signed by a trusted Root Certificate authority. They must also be configured to enforce strict trust checking.

### 17.4.1 Configuring Middle Tier Servers with a Valid NetIdentity Certificate

If a valid SSL certificate (that is, one signed by a trusted root authority) already exists for the server, the NetIdentity authentication process can use the same certificate.

- 1 If the server is a NetWare server, make a note of the key-pair name for the SSL certificate (this is the name of the certificate object as visible in ConsoleOne). For a Windows 2000 server, make a note of the friendly name of the certificate.
- 2 Using a browser, bring up the NSAdmin page for the Middle Tier Server (<http://ip-address/oneNet/nsadmin>).
- 3 In the General configuration page, set the value for the Certificate Name to the name from [Step 1](#).
- 4 Submit the change.
- 5 Restart the Middle Tier Server.

If a valid SSL certificate is not present for the server, a valid X.509 certificate (that is, a certificate signed by a trusted root CA) needs to be configured for the server.

- 1 Obtain a certificate signed by a trusted root CA. Follow the steps outlined in [“Generating a Certificate Signing Request” on page 191](#) and [“Installing the Root CA on the Middle Tier Server” on page 193](#) for the appropriate platform.
- 2 If the key-pair name, or friendly name (depending on the platform) is different from “NetIdentity,” configure the Middle Tier Server with the appropriate name. See [Step 1](#) through [Step 4](#) in the procedure above.
- 3 Restart the Middle Tier Server.

---

**NOTE:** In either case, if the certificate was signed by a CA that is not in the list of trusted root CAs, the self-signed certificate of the CA must be imported on each workstation. For more information, see [“Importing a Certificate on the Windows Workstation” on page 195](#).

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## 17.4.2 Configuring the Desktop Management Agents to Enforce Strict Trust Verification

After the Middle Tier Server has been configured with a certificate that is signed by a trusted root CA, Desktop Management Agents can be configured to enforce strict trust verification for NetIdentity certificates. Modify the following registry key setting:

```
HKEY_LOCAL_MACHINE\Software\Novell\Client\Policies\NetIdentity  
"Strict Trust"= dword:0x00000001
```

By default, the Strict Trust value is 0 (zero). Absence of the value, or setting it to 0x0 (zero) allows all certificates to be accepted. Setting it to 0x1 configures the Desktop Management Agents to reject certificates whose trust cannot be fully verified.



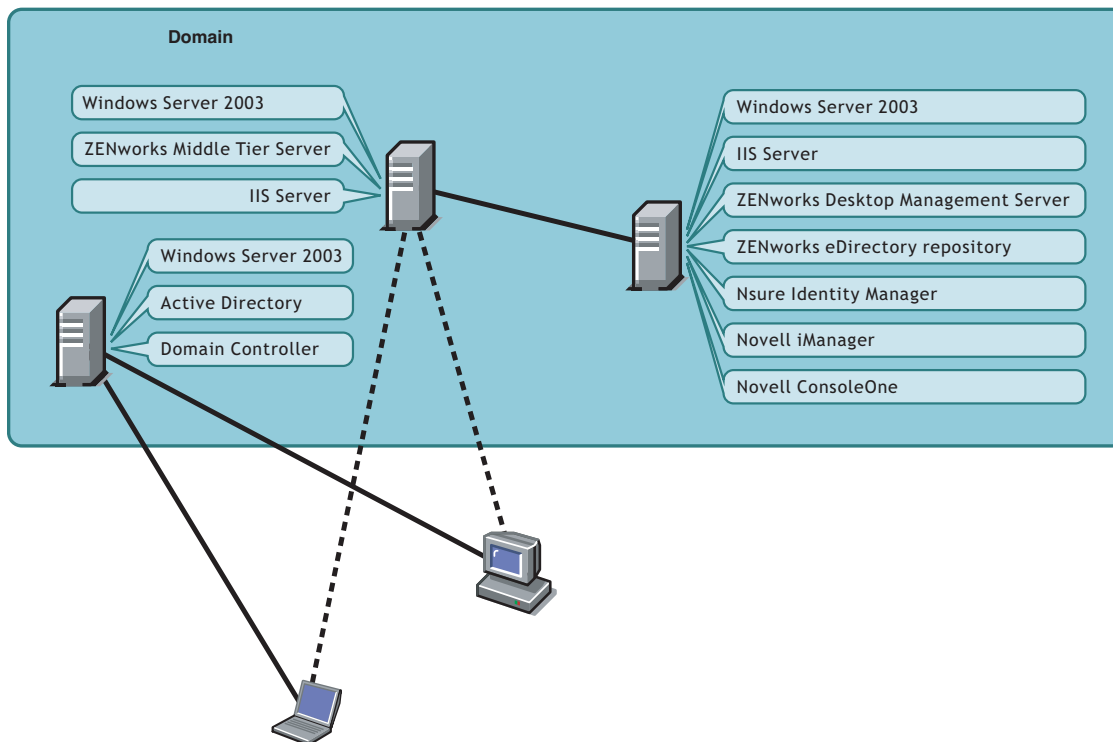
# Installing in a Windows Network Environment

# 18

Novell® ZENworks® operates on Windows workstations regardless of the server environment in your network. Desktop Management functions in any IP network running Novell eDirectory™, including networks with Windows 2000/2003 servers, or with NetWare® 6.x servers, or a combination of both of these.

Traditionally, ZENworks has been deployed in a NetWare or in a mixed NetWare and Windows environment. Early versions of ZENworks were dependent on many of the features and capabilities that existed only in a LAN based on NetWare. As the product has matured, however, features have evolved that allow ZENworks 7 to provide significant functionality in a non-mixed Windows network environment.

**Figure 18-1** ZENworks Desktop Management Components Deployed in an Active Directory Domain



As shown in the illustration above, ZENworks can be deployed into an Active Directory domain, providing ZENworks services through Windows 2003 servers and an IIS Web server. You can continue to administer user accounts through the domain while you administer applications, desktops, and policies using eDirectory as a repository independent of Active Directory.

ZENworks 7 ships other Novell products that let you synchronize your users and passwords between Active Directory (or NT Domains) and the eDirectory ZENworks repository. ZENworks is agent-based and does not require the Novell Client™ to be installed on user workstations or laptops.

ZENworks authenticates to eDirectory and retrieves applications and policies, delivering them to user desktops using a browser, the Windows Start Menu, an application window, or desktop icons.

Significant differences exist in the installation of ZENworks 7 Desktop Management for a Windows environment and the installation of ZENworks 7 Desktop Management with SP1 for a Windows environment. The following sections are included for your use as you install either of these versions:

- ♦ [Section 18.1, “Installing ZENworks 7 Desktop Management in a Windows Environment,” on page 202](#)
- ♦ [Section 18.2, “Installing ZENworks 7 Desktop Management with SP1 in a Windows Environment,” on page 249](#)

## 18.1 Installing ZENworks 7 Desktop Management in a Windows Environment

This section provides an example of how ZENworks 7 Desktop Management can be deployed in a sample Windows network environment. It also discusses the installation and significant ZENworks features that can benefit Windows network users. The following information is included:

- ♦ [Section 18.1.1, “Preparing ZENworks 7 Desktop Management for Installation in a Windows Network Environment,” on page 202](#)
- ♦ [Section 18.1.2, “Installing ZENworks 7 Desktop Management in a Windows Network Environment,” on page 205](#)

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**NOTE:** For information about installing ZENworks 7 Desktop Management with SP1 in a Windows Environment, see [Section 18.2, “Installing ZENworks 7 Desktop Management with SP1 in a Windows Environment,” on page 249](#).

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### 18.1.1 Preparing ZENworks 7 Desktop Management for Installation in a Windows Network Environment

- ♦ [“Minimum Network Requirements” on page 202](#)
- ♦ [“Expected Network Setup” on page 203](#)
- ♦ [“Creating an eDirectory Evaluation License Diskette” on page 204](#)
- ♦ [“Nsure Identity Manager DirXML Engine and Drivers” on page 204](#)

#### Minimum Network Requirements

ZENworks requires the following additional software in this sample Windows network:

- ♦ Microsoft IIS Web Server installed on one Windows Server 2003 in the domain
- ♦ eDirectory (version 8.7.3 or higher) for use on a second Windows Server 2003 (this installation places a Novell Client on the server that you will need for installing ZENworks on a Windows 2003 server).

The *Novell ZENworks 7 Companion 1* CD includes eDirectory 8.7.3.

---

**WARNING:** Do not install the version of the Novell Client (4.90.0 SP1a) that ships with eDirectory 8.7.3. This version requires additional patches in order to work with Windows Server 2003. Instead, we recommend that you install the *Novell Client for Windows 4.91*, which

is available for download from the [Novell Product Download web site \(http://download.novell.com/Download?buildid=2ss2JIYshRc~\)](http://download.novell.com/Download?buildid=2ss2JIYshRc~). For information about installing this client, see [“Installing the Novell Client” on page 207](#).

---

- ♦ Novell Nsure™ Identity Manager 2.0.1 Bundle Edition to synchronize eDirectory resources with Active Directory.

The *Novell ZENworks 7 Companion 2* CD includes Nsure Identity Manager 2.02 Bundle Edition. For more information about the bundle, see the [Identity Management Services \(http://www.novell.com/documentation/oes/implgde/data/idm2.html\)](http://www.novell.com/documentation/oes/implgde/data/idm2.html) section of the Novell Open Enterprise Server documentation.

- ♦ Novell iManager 2.5 for configuring and administering the Nsure Identity Manager DirXML® drivers.

The *Novell ZENworks 7 Companion 1* CD includes Novell iManager 2.5.

- ♦ Novell ConsoleOne® 1.3.6 for managing ZENworks resources in eDirectory.

The *Novell ZENworks 7 Companion 1* CD includes Novell ConsoleOne 1.3.6.

## Expected Network Setup

The following Windows network setup is assumed for this sample Windows environment:

- ♦ An Active Directory domain.
- ♦ The ZENworks 7 Desktop Management Server installed on a Windows Server 2003 with Novell eDirectory, Nsure Identity Manager 2 Bundle Edition, and Novell iManager 2.5 installed. This server must be in the same domain as the Active Directory Domain Controller, but it is not the domain controller.
- ♦ The ZENworks 7 Middle Tier Server installed on a Windows Server 2003 server where Microsoft IIS is installed. This server must be in the same domain as the Active Directory Domain Controller. It can be the same server that has ZENworks software installed, but you should consider keeping the IIS server independent to minimize performance issues. You must also keep it on a separate server from the Password Synchronization Module in Nsure Identity Manager.

For information about how workstations can be set up in a Windows network using ZENworks, see [“ZENworks Desktop Management User Workstation Configuration Options” on page 203](#).

## ZENworks Desktop Management User Workstation Configuration Options

ZENworks Desktop Management can run on user workstations using either the Novell Client or by using two other non-client modes:

- ♦ [Application Browser View Mode](#)
- ♦ [Full Desktop Management Agent Mode](#)

It is assumed that in a Windows network environment, the Novell Client is not used; therefore, you need to decide on the features you need in your network and configure ZENworks Desktop Management for your users in one of the non-client modes.

## Application Browser View Mode

In this mode, a single Application Browser View is delivered when a user connects to IIS and opens the application page (`myapps.html`) provided by ZENworks Desktop Management. The Web view is automatically installed on the workstation if the user has rights to install applications locally.

The Application Browser mode can deliver applications to the workstation only when the user connects to a personalized application Web page. Dynamic local user account creation, hardware and software inventory, automated imaging services, and remote management capabilities are not included in this mode.

## Full Desktop Management Agent Mode

In Full Desktop Management Agent mode, all of the Desktop Management components are installed on the workstation by an administrator, as part of an image, or by the user. By including all of the Desktop Management components in the Desktop Management Agent installation, you provide your users all of the capabilities that ZENworks Desktop Management offers.

If you want to create a Dynamic Local User account on the workstation, you can configure the Desktop Management Agent to prompt the user to log in to eDirectory prior to the local login to Windows. When the agent has this configuration, the user is prompted for an eDirectory user name and password (which should be the same as the Active Directory account, because the two accounts are being synchronized by DirXML), then ZENworks Desktop Management creates a local account on the workstation if one is not present and logs the user into Windows with the provided username and password.

If you do not require Dynamic Local User account creation, ZENworks silently passes Novell user credentials to Windows when the user logs into the workstation if that user already has an account on the workstation (the user does not need an account on the workstation if he or she is logging in to Active Directory and the workstation is part of the Active Directory domain). The Desktop Management Agent then connects to eDirectory using the provided username and password in order to distribute applications to the user.

---

**NOTE:** Even with the Desktop Management Agent installed on the workstation, you can still choose to deliver applications through the browser view only.

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## Creating an eDirectory Evaluation License Diskette

ZENworks provides a one-for-one license of eDirectory for Windows. You can obtain an eDirectory 8.7.x evaluation license from the [Novell eDirectory 8.7.x Evaluation License Download Web site](http://www.novell.com/products/edirectory/licenses/eval_87.html) ([http://www.novell.com/products/edirectory/licenses/eval\\_87.html](http://www.novell.com/products/edirectory/licenses/eval_87.html)). You are required to complete some contact information to enable Novell to send you an e-mail with two files attached: an `.nfk` file and an `.nlf` file.

Although not required, we recommend that you format a diskette, create a `\license` directory off the root of this diskette, and save the two files in this directory. You are prompted for this diskette file during the product installation.

## Nsure Identity Manager DirXML Engine and Drivers

The Nsure Identity Manager (IDM) engine provides the ability to synchronize eDirectory data with any outside data service. The IDM engine has several DirXML drivers that describe how output and input should be sent between data sources.



The DirXML driver for Active Directory is specifically designed to synchronize data between Novell eDirectory and Microsoft Active Directory. The synchronization is bidirectional; you determine whether information should flow to and from both directories, or whether information should flow only from one directory to the other.

Many Nsure Identity Manager DirXML drivers are available for installation on Windows Server 2003 for synchronization with other data sources such as PeopleSoft\*, JDBC\*, any LDAP directory, Lotus Notes\*, SAP\* HR, and WebSphere\* MQ. For information about other drivers, see the [Novell Nsure Identity Manager web site \(http://www.novell.com/products/nsureidentitymanager/\)](http://www.novell.com/products/nsureidentitymanager/).

IDM architecture uses a publisher/subscriber model. In this model, the publisher's responsibility is to place information into eDirectory while the subscriber places changes from eDirectory into the external, synchronized data source. The behavior of the publisher and subscriber and the attribute mapping are determined by a set of rules that are part of the DirXML driver. DirXML drivers can be customized through XML rules to deliver nearly any data configuration you want.

For more details about how IDM can be configured, see the [Novell Nsure Identity Manager 2.0.1 Powered by DirXML documentation Web site \(http://www.novell.com/documentation/dirxml20/index.html\)](http://www.novell.com/documentation/dirxml20/index.html).

For more details about how IDM is licensed, see “[Licensing the NSure Identity Manager 2 Bundle Edition](#)” on page 205.

### Licensing the NSure Identity Manager 2 Bundle Edition

The *Novell ZENworks 7 Companion 2* CD includes the Nsure Identity Manager (IDM) 2.02 Bundle Edition. For more information about the bundle, see the [Identity Management Services \(http://www.novell.com/documentation/oes/implgde/data/idm2.html\)](http://www.novell.com/documentation/oes/implgde/data/idm2.html) section of the Novell Open Enterprise Server documentation.

To license IDM 2:

- 1 From an Internet browser, go to the [Novell Registration page for IDM 2 on ZENworks \(http://www.novell.com/reg/zenworks7.jsp\)](http://www.novell.com/reg/zenworks7.jsp).
- 2 Enter your ZENworks 7 Desktop Management license code, then click *Submit* to open the Product Registration and Access for IDM 2.02.
- 3 Click *Download Associated Files* to license IDM 2.02.

## 18.1.2 Installing ZENworks 7 Desktop Management in a Windows Network Environment

When you install ZENworks in a Windows network environment/Active Directory test environment, you need perform the following tasks in order:

1. “[Configuring a Test Lab](#)” on page 206
2. “[Accessing Software on the ZENworks 7 Companion CDs](#)” on page 206
3. “[Installing the Novell Client](#)” on page 207
4. “[Installing eDirectory](#)” on page 207
5. “[Installing and Setting Up iManager 2.5](#)” on page 210
6. “[Verifying the Viability of the Directory Tree](#)” on page 212
7. “[Installing Nsure Identity Manager 2.02 Bundle Edition](#)” on page 213

8. “Configuring DirXML Drivers” on page 216
9. “Installing Password Synchronization and Enabling Universal Password” on page 225
10. “Finalizing DirXML Driver Configuration” on page 229
11. “Verifying that eDirectory, DirXML, and Universal Password Are Working Properly” on page 233
12. “Installing the Desktop Management Server” on page 233
13. “Installing the ZENworks Middle Tier Server” on page 240
14. “Installing ODBC Drivers for Sybase” on page 249
15. “Deploying the Desktop Management Agent to User Workstations” on page 249

## Configuring a Test Lab

An actual enterprise environment might include many servers used for a variety of things, such as application execution, terminal services, and so on. This section uses the following small-scale Windows network configuration as a sample test lab environment:

- ♦ A Windows Server 2003, to serve as the Active Directory Domain Controller of the ZENDEMO domain. This server is designated as SRV-01.
- ♦ A Windows Server 2003 with the IIS Web Server also installed. The server also needs Novell eDirectory, the ZENworks Desktop Management Server, Novell iManager, and Nsure Identity Manager 2 Bundle Edition (including Password Synchronization) installed. This server is a member of the ZENDEMO domain. It is designated as SRV-02.
- ♦ A Windows Server 2003, where the ZENworks Middle Tier Server is installed. It is designated as SRV-03.
- ♦ A Windows XP Professional SP1a (or later) workstation, which will operate in the Desktop Management Agent mode (that is, where all components of the Desktop Management Agent are installed). This workstation is designated as WKS-01.
- ♦ A Windows XP Professional SP1a (or later) workstation where the Application Browser View of the Novell Application Launcher™ is installed. This workstation is designated as WKS-02.

---

**NOTE:** This is a sample configuration only to be used as a test environment. For information about the server platforms and user workstations that are supported, see [Chapter 2, “Platform Support for the Desktop Management Infrastructure,”](#) on page 27 and [Chapter 7, “User Workstation Requirements,”](#) on page 69.

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## Accessing Software on the ZENworks 7 Companion CDs

As you set up ZENworks 7 in a Windows network environment, you need to access both of the *Novell ZENworks 7 Companion CDs*.

You can access the contents of the *Companion CDs* through the installation program. To do so, insert any *Novell ZENworks 7 CD* into the CD drive of a Windows workstation. The installation program should run automatically. If it does not, run `winsetup.exe` from the root of the CD. Click *Companion Programs and Files*, insert the CD you are prompted for (if needed), then browse for the component you need on one of the two menu pages.

You need the following components from the *Companion* CDs:

- ♦ Novell Nsure Identity Manager 2.02 Bundle Edition, available on the *Novell ZENworks 7 Companion 2* CD.
- ♦ Novell eDirectory 8.7.3 SP6 for Windows Server 2003. eDirectory 8.7.3 SP6 (edir8736.exe) is available on the *Novell ZENworks 7 Companion 1* CD in the \novell\edirectory\for windows 2k directory.
- ♦ Novell iManager 2.5, available on the *Novell ZENworks 7 Companion 1* CD in the \novell\imanager\program files\installs\win directory.

## Installing the Novell Client

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**WARNING:** We recommend that you do not install the version of the Novell Client (4.90.0 SP1a) that ships with eDirectory 8.7.3. This version requires additional patches in order to work with Windows Server 2003. Instead, we recommend that you install the *Novell Client for Windows 4.91*, which is available for download from the [Novell Product Download web site \(http://download.novell.com/Download?buildid=2ss2JIYshRc~\)](http://download.novell.com/Download?buildid=2ss2JIYshRc~).

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To download the client:

- 1 Download the client self-extracting file to a temporary directory.
- 2 In the temporary directory, double-click the file and specify the path where you want the files to be extracted.  
A specific directory structure will be created in the path you specify.
- 3 Click *Unzip* and follow the on-screen instructions

To install the client, follow these instructions:

- 1 Double-click `setupnw.exe` in the `download_location\winnt\I386` directory.
- 2 In the Novell Client license agreement dialog box, click *Yes*.  
(Conditional) If you do not agree with the terms of the license agreement, do not install the software. Click *Cancel*.
- 3 Select *Custom Installation*, then click *Next*.
- 4 Verify that only the client is selected on the modules list, then click *Next*.
- 5 Verify that *NMAS* and *NICI* are selected and that *NetIdentity* is deselected, then click *Next*.
- 6 Select *IP Only* and *Remove IPX* (if present), then click *Next*.
- 7 Select *NDS* to instruct the client to default to using NDS<sup>®</sup> connections, click *Next*, then click *Finish*.
- 8 When the installation is finished, select *Reboot*.

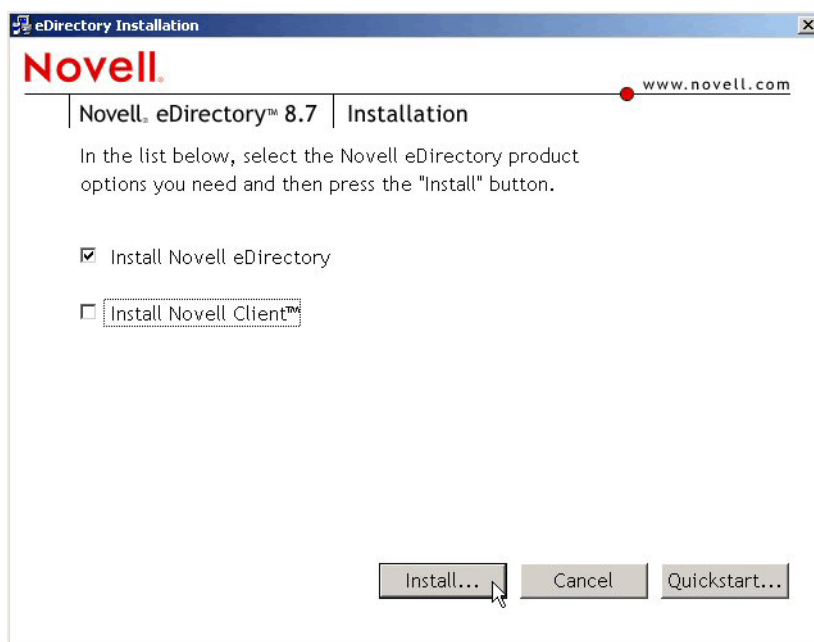
## Installing eDirectory

To start the eDirectory installation program for the SVR-02 server in your Windows network environment test system:

- 1 Log onto the SVR-02 Windows Server 2003 as administrator and launch the eDirectory installation program from the *Novell ZENworks 7 Companion 1* CD (see “[Accessing Software](#)”

on the ZENworks 7 Companion CDs” on page 206). The CD should autorun. If not, run `winsetup.exe` located at the root of the CD.

- 2 Select *Companion Programs and Files*, select *Novell eDirectory* to launch a program that unpacks the eDirectory installation files into a specified directory, specify the `c:\edir873` directory to unzip the files, then click *Close* when the files are extracted.
- 3 Browse to the `c:\edir873\nt` directory and launch `setup.exe`. Select *Install Novell eDirectory*, then click *Install*.



After the main installation program is launched, several subinstallations are executed:

- ♦ “The eDirectory License Subinstallation” on page 208
- ♦ “The eDirectory Subinstallation” on page 209
- ♦ “The ConsoleOne Subinstallation” on page 210

### The eDirectory License Subinstallation

When the Novell Client has been installed, the Novell eDirectory License Installation Wizard helps you install the server license for eDirectory.

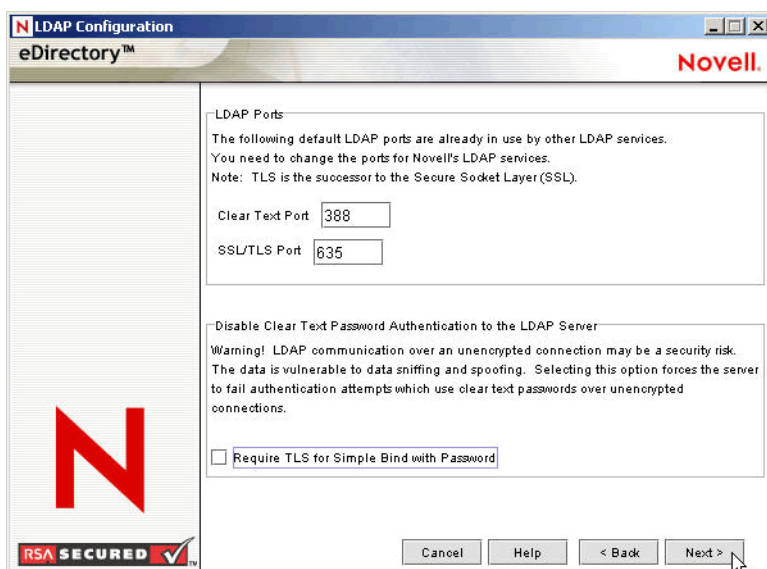
- 1 On the Welcome Page of the License Installation Wizard, click *Next* to view the license agreement.
- 2 Read the License agreement, then click *I Accept* if you agree with the terms of the license agreement.  
(Conditional) If you do not agree with the terms of the license agreement, do not install the software. Click *Cancel*.
- 3 In drive A:, insert the license diskette you created in “Creating an eDirectory Evaluation License Diskette” on page 204.
- 4 Select *Specify Path to License File*, browse to and select the `.nflk` license file in the directory you created on the diskette, then click *Next*.

- 5 In the Licensing Success dialog box, click *Close*.

## The eDirectory Subinstallation

When the Novell Client, the eDirectory License, and NCI are installed, the eDirectory installation continues.

- 1 At the eDirectory Installation Welcome dialog box, click *Next*.
- 2 Read the license agreement, then click *I Accept* if you agree with the terms of the license agreement.  
(Conditional) If you do not agree with the terms of the license agreement, do not install the software. Click *Cancel*.
- 3 Select a language for the installation, then click *Next*.
- 4 Click *Next* to accept the default installation path.
- 5 Click *Yes* to create a new directory that does not exist.
- 6 Select *Create a New eDirectory Tree*, then click *Next*.
- 7 Set up the access to the new tree and server.
  - 7a Specify a name for the new tree, such as ZENTREE.
  - 7b Specify a Server object context, such as SVR-02.SERVICES.ZEN.  
This document assumes that you are creating an Organization container in eDirectory named ZEN, an Organizational Unit container named SERVICES where SVR-02 will reside, and an Organizational Unit container named USERS where the Admin user object will reside.
  - 7c Specify the name of the Admin user object, such as Admin.
  - 7d Specify the password of the Admin user object, such as Novell, then click *Next*.
- 8 On the HTTP Server Port Configuration page, accept the HTTP Stack Ports as default, because there will be no conflicting ports on this server, then click *Next*.
- 9 On the LDAP Configuration page, specify which LDAP ports to use.



When Active Directory and eDirectory are installed on the same Windows server, you need to choose other LDAP ports, because eDirectory must not interfere with default Active Directory ports 389 and 636.

**9a** Change the *Clear Text Port* number to 388, then change the *SSL Port* to 635.

**9b** Deselect *Require TLS for Simple Bind with Password* to allow password synchronization to function, then click *Next*.

**10** Click *Next* to accept the default NMAST<sup>™</sup> login method.

**11** Click *Finish* to complete the eDirectory installation.

The eDirectory installation program performs the installation on the SRV-02 server. For information about accessing the software from *Companion 1* CD, see “[Accessing Software on the ZENworks 7 Companion CDs](#)” on page 206. When the program completes successfully, click *Close* in the Success dialog box.

### The ConsoleOne Subinstallation

When the eDirectory installation is complete, you need to manually install ConsoleOne on SRV-02.

**1** Insert the *Novell ZENworks 7 Companion 1* CD into the CD drive of SRV-02. If the CD does not autorun, run `winsetup.exe` from the root of the CD.

**2** Select *Companion Programs and Files*, then select *Novell ConsoleOne*.

**3** In the WinZip self-extractor dialog box, click *Setup* to launch the extraction and to start the ConsoleOne installation program.

**4** On the ConsoleOne Installation Wizard welcome page, click *Next*.

**5** Read the License agreement, then click *I Accept* if you agree with the terms of the License Agreement.

(Conditional) If you do not agree with the terms of the license agreement, do not install the software. Click *Cancel*.

**6** Accept the default installation path, then click *Next*.

**7** Accept the default components for installation, then click *Next*.

**8** On the Additional Languages page, select any additional languages you want to install, then click *Next*.

**9** Read the JInfoNet Licensing Agreement page, then click *I Accept* if you agree with the terms of the license agreement.

(Conditional) If you do not agree with the terms of the license agreement, do not install the software. Click *Cancel*.

**10** On the ConsoleOne Installation Summary page, click *Finish* to install ConsoleOne on the SRV-02 server.

**11** On the ConsoleOne Installation Success page, click *Close*.

### Installing and Setting Up iManager 2.5

The iManager tool is required for configuring NSure Identity Manager DirXML drivers, which are used to synchronize Active Directory and eDirectory.

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**NOTE:** We recommend that you install Novell iManager on a server where the Microsoft IIS Web server has already been installed. Although iManager can run on Windows 2003 servers without IIS installed, the absence of IIS requires that you install the Apache Web server with the Tomcat servlet.

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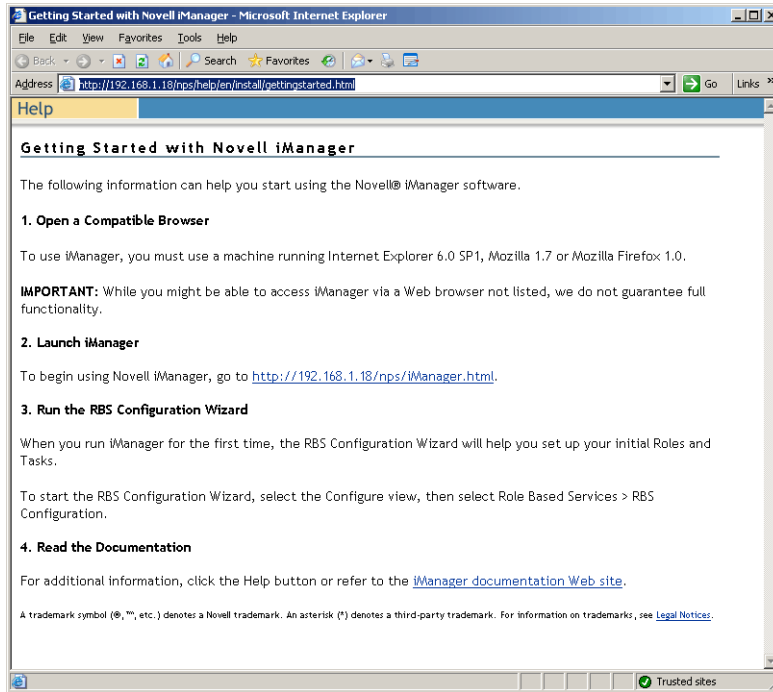
When the eDirectory installation is complete, you need to manually install and set up Novell iManager 2.5 on SRV-02.

- 1 Insert the *Novell ZENworks 7 Companion 1* CD into the CD drive of SRV-02. If the CD does not autorun, run `winsetup.exe` from the root of the CD.
- 2 Select *Companion Programs and Files*, then select *Novell iManager*.
- 3 On the Novell iManager Installation Wizard welcome page, click *OK*.
- 4 On the iManager Introduction page, click *Next*.
- 5 Read the License agreement, click *I Accept* if you agree with the terms of the License Agreement, then click *Next*.  
(Conditional) If you do not agree with the terms of the license agreement, do not install the software. Click *Cancel*.
- 6 On the Detection Summary page, make sure that the IIS Web server is already installed (version 6 on Windows Server 2003), visually check the other default values, then click *Next*.  
If the IIS Web server is not already installed, the iManager installation program installs the Apache Web server with the Tomcat servlet.
- 7 On the Choose Install Folder page, accept the default on the installation path, then click *Next*.
- 8 On the Get User and Tree Names page, fill in the fields:  
**Username:** Specify the username and context (for example, `admin.users.novell`) of the administrative account with which you will configure iManager and its modules.  
**Tree Name:** Specify the name of the eDirectory Tree that iManager will primarily manage, for example ZENTREE.
- 9 On the Pre-Installation Summary page, click *Install*.
- 10 On the Install Complete page, click *Done* to finish the iManager installation on the SRV-02 server.

## Setting Up iManager for Launch

Use the following steps to complete the setup of iManager for launching:

- 1 From the Windows desktop, double-click the Novell iManager shortcut to launch Internet Explorer and display the Getting Started with Novell iManager help page.



- 2 In Internet Explorer, click *Tools > Internet Options* to open the Internet Options dialog box.
- 3 From the Internet Options dialog box, click *Security*, click *Trusted Sites*, then click *Sites* to open the Trusted Sites dialog box.
- 4 In the *Add This Web Site to the Zone* field of the Trusted Sites dialog box, specify the URL of SRV-02 (for example, [http://server\\_IP\\_address](http://server_IP_address)), click *Add*, click *Close*, then click *OK* to open the iManager Login page.
- 5 From the iManager Login page, make sure the *Username*, *Tree Name* or *IP* is supplied, then enter the user password to launch iManager.
- 6 From the iManager Home page, click the View Objects icon, then click the *Browse* tab in the left pane to locate the tree (ZENTREE) and to verify that the Admin object and the server are present.

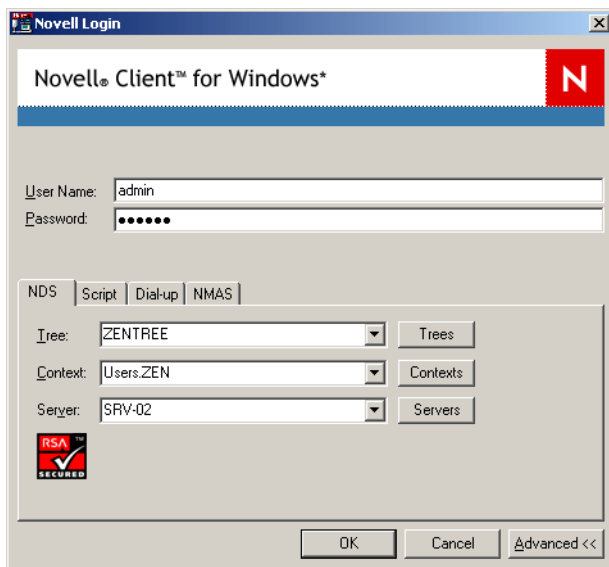
## Verifying the Viability of the Directory Tree

When the installation of eDirectory and iManager is complete, verify that the tree is viable:

- 1 Log in to eDirectory.
  - 1a From the Windows server desktop, right-click the red N in the taskbar and select *NetWare Login*.
  - 1b Type Admin in the *Username* field.
  - 1c Type novell in the *Password* field.



- 1d** Click Advanced to open the NDS page of the login dialog box.
- 1e** Type ZENTREE in the *Tree* field.
- 1f** Type USERS . ZEN in the *Context* field.
- 1g** Type SRV-02 in the *Server* field, then click *OK* to log in to eDirectory.



- 2** To verify that you are logged into the tree as Admin, right-click the red N in the taskbar, select *NetWare Connections*, verify that a resource is listed for ZENTREE and for the username (CN=Admin).

The authentication state for this connection should be listed as *Directory Services*.

- 3** Click *Close* to close the NetWare Connections dialog box.
- 4** Create a shortcut on your server for `c : \novell\nds\ndscons.exe`.  
NDSConsole is a utility that lets you view the state of the eDirectory tree and the services that are running.
- 5** Click the NDSConsole shortcut, then verify that at least `ds.dlm` and `nldap.dlm` are running.

You now have an eDirectory tree running on your Windows Server 2003.

## Installing Nsure Identity Manager 2.02 Bundle Edition

When eDirectory is running and stable, you need to install Nsure Identity Manager 2.02 Bundle Edition (IDM 2) with the proper drivers so that users can be synchronized between your Active Directory Domain and eDirectory.

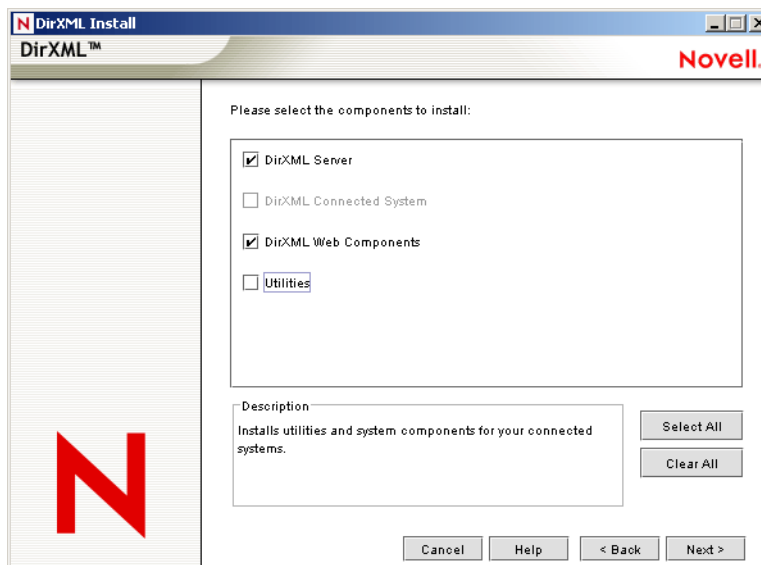
Before you install IDM 2, make sure you read and understand the information included in [Appendix C, “Using the Identity Manager Bundle 2 Edition for ZENworks 7 Desktop Management,”](#) on page 569.

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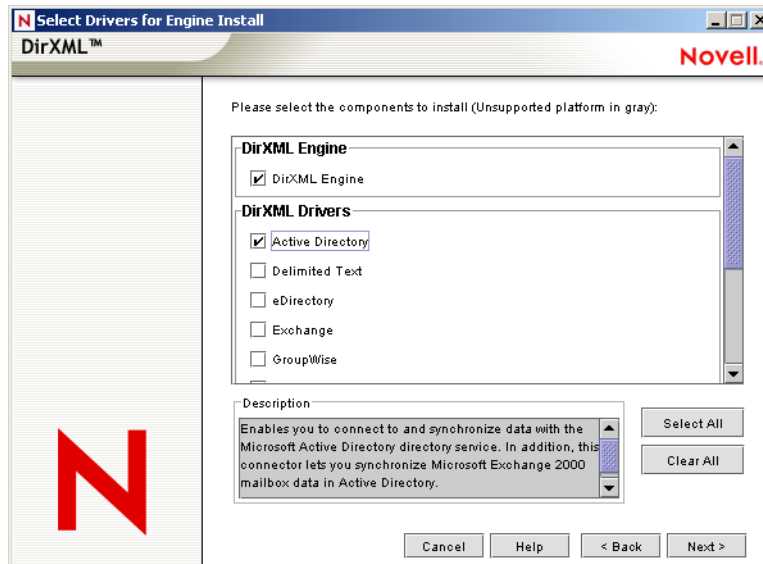
**IMPORTANT:** Make sure that no ZENworks services are running on the Windows server when you install IDM 2.

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- 1 Log on to the SRV-02 Windows Server 2003 as administrator and into eDirectory as admin.
- 2 Insert the *Novell ZENworks 7 Companion 2* CD into the CD drive of SRV-02, then use Windows Explorer to browse to the *Nsure Identity Manager 2 Bundle Edition* folder.
- 3 Double-click `setup.bat` to launch the IDM2 installation program.
- 4 On the DirXML Welcome page, click *Next*.
- 5 Read the License agreement, then click *I Accept* if you agree with the terms of the license agreement.  
(Conditional) If you do not agree with the terms of the license agreement, do not install the software. Click *Cancel*.
- 6 On the DirXML Overview page, click *Next* twice.
- 7 On the component selection page, select *DirXML Server*, select *DirXML Web Components*, deselect *Utilities*, then click *Next*.



- 8 On the Select Drivers for Engine Install page, click *Clear All*, select *DirXML Engine*, select *Active Directory* (in the *DirXML Drivers* list), then click *Next*.

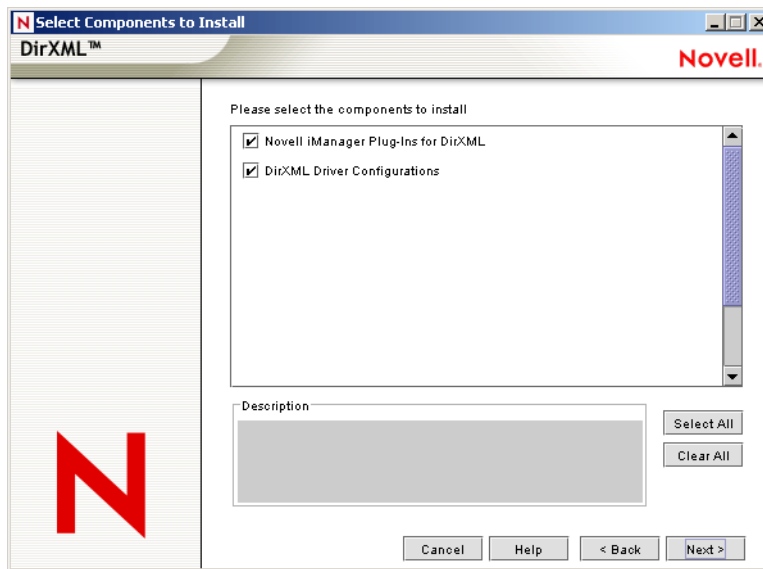


- 9 (Conditional) In the DirXML Warning: Activation Notice dialog box, you are reminded to license DirXML. Click *Next*.

If you continue without activating the license, these components function only for a 90-day evaluation period. A license for the DirXML engine and Active Directory driver is included as part of the overall ZENworks 7 license. You can return and activate the license later if you want to skip it now.

- 10 (Conditional) In the Password Synchronization Upgrade Warning dialog box, you are informed that older versions of Password Synch need to be upgraded. Read the information in the dialog box if applicable, then click *OK*.
- 11 On the Schema Extension page, verify that the tree is appropriate (ZENTREE), type or browse to and select the fully distinguished name (DN) of the admin user and the user's password (admin user name is CN=admin,OU=Users,O=ZEN), then click *Next*.

- 12** On the Select Components to Install page, retain the selected defaults, then click *Next*.



- 13** Read the Summary page, then click *Finish*.
- 14** In the Installation Complete dialog box, click *Close* for DirXML to finish the installation.
- 15** Reboot the server to allow the drivers to be properly registered.

When you have finished installing Nsure Identity Manager 2.02 Bundle Edition, you must configure the DirXML drivers before synchronization can occur. For more information, see [“Configuring DirXML Drivers” on page 216](#).

### Configuring DirXML Drivers

When you have finished installing eDirectory and DirXML on the SRV-02 server, you need to configure the DirXML drivers to begin synchronization between Active Directory Domain and eDirectory.

- 1** Log on to the SRV-01 server as the Active Directory administrator.
- 2** Insert the *ZENworks 7 Companion 2* CD into the server's CD drive, browse to the `nsure identity manager 2 bundle edition\nt\dirxml\utilities\ad_disc`

folder, then double-click `admanager.exe` to run the Active Directory Driver Preparation Tool.

The screenshot shows the 'Novell DirXML Active Directory Driver Preparation Tool' window. It contains several input sections and a status area. Four green circles with numbers 1, 2, 3, and 4 are positioned above specific fields: 1 is above the 'Account DN' field in the 'Proposed DirXML Driver Account' section; 2 is above the 'Password' field in the same section; 3 is above the 'Domain Controller' field in the 'Domain Information' section; and 4 is above the 'Domain' field in the 'Alternate Account' section. The status area at the bottom displays the message: 'Unable to locate language file NLS\ENU\ADManagerRes.dll'.

**2a** Click *Discover*.

The tool runs and discovers data for the fields on the tool window.

**2b** In the *Proposed DirXML Driver Account* grouping of the tool window, locate the *Password* field, type the password, locate the *Re-enter Password* field, type the password again, then click *Update*.

**2c** In the Create Account Notification dialog box, click *OK*.


**2d** Copy and paste the *Domain*, *Domain DN*, *Domain Controller*, and *Account DN* into a text file, then save the file to the desktop so that you can have access to the data later.

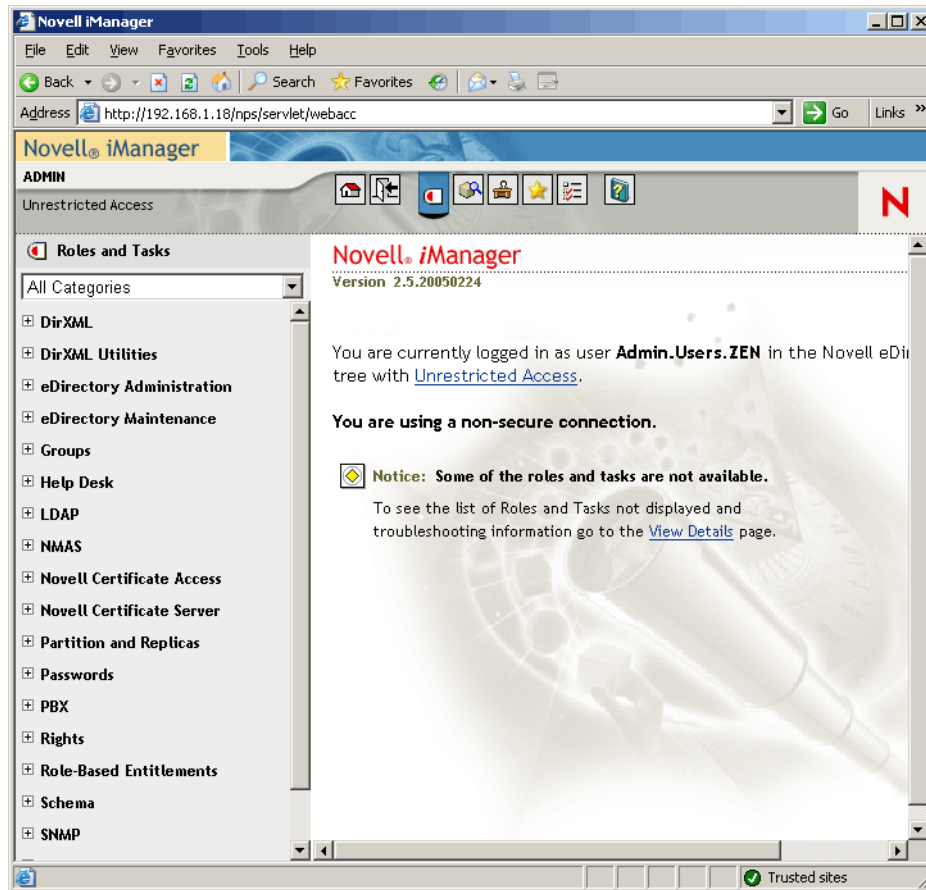
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**TIP:** If you prefer, you can leave the tool running. You will then be able to retrieve (copy) this data directly from the tool one field at a time for pasting into the fields of another configuration tool. See [Step 12 on page 222](#) for more information.

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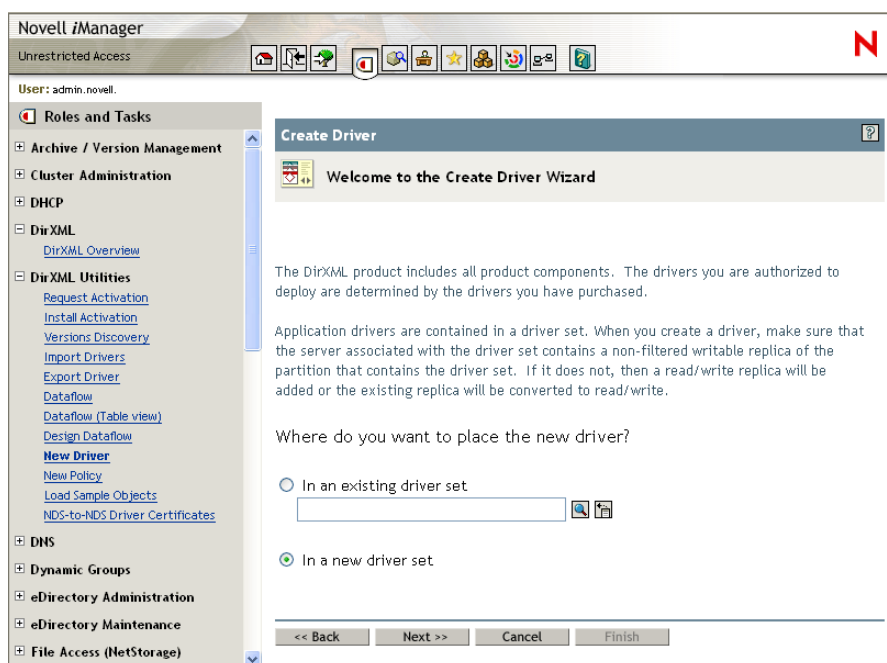
- 2e** Click *Done* to close the Preparation tool.
- 3** Complete the security setup for the DirXML account user.
  - 3a** From the Windows desktop, click *Start > Programs > Administrative Tools*, then select *Domain Controller Security Policy*.
  - 3b** In the Tree view, click *Security Settings > Local Policies > User Rights Assignment*.
  - 3c** Double-click *Log On As a Service > click Security > Add User or Group > Browse > Advance > Find Now*.
  - 3d** Select the user you created (ADDriver\_zendemo), click *OK*, then click *OK* again in the three succeeding dialog boxes.
  - 3e** Close the *Domain Controller Security Policy*.
- 4** At SRV-02, extend the eDirectory schema to accommodate the new Active Directory driver.
  - 4a** In the Windows Control Panel, double-click *Novell eDirectory Services*.
  - 4b** In the Novell eDirectory Services dialog box, select *install.dlm*, then click *Start*.
  - 4c** Click *Install Additional Schema Files*, then click *Next*.
  - 4d** Type the eDirectory admin login name (admin), type the context (ZEN\Users), type the password (novell), then click *OK*.
  - 4e** Browse to and select *c:\novell\nds\dvr\_ext.sch*, then click *Open*.
  - 4f** Click *Finish* to apply the schema.
  - 4g** Click the close (X) button in the Novell eDirectory Services dialog box.

- 5 At SRV-02, launch iManager, then click the Roles and Tasks icon  to open the iManager Roles and Tasks pane of the main iManager page.

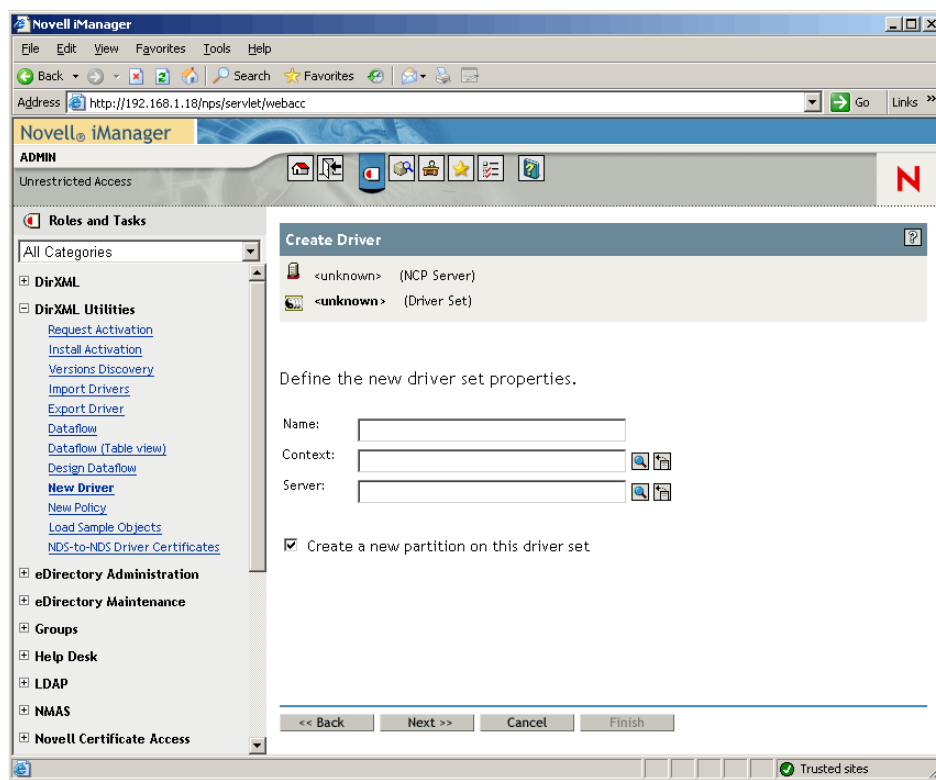


- 6 From iManager, create a new organizational unit (OU) container under the ZEN organizational container, then name this OU container DIRXML.

- 7 In the Roles and Tasks pane, click *DirXML Utilities*, then click *New Driver* to open the Create New Driver Wizard.



- 8 On the Create Driver Wizard opening page, click *In a New Driver Set*, then click *Next* to open the Create Driver page.





9 On the Create Driver page, fill in the fields:

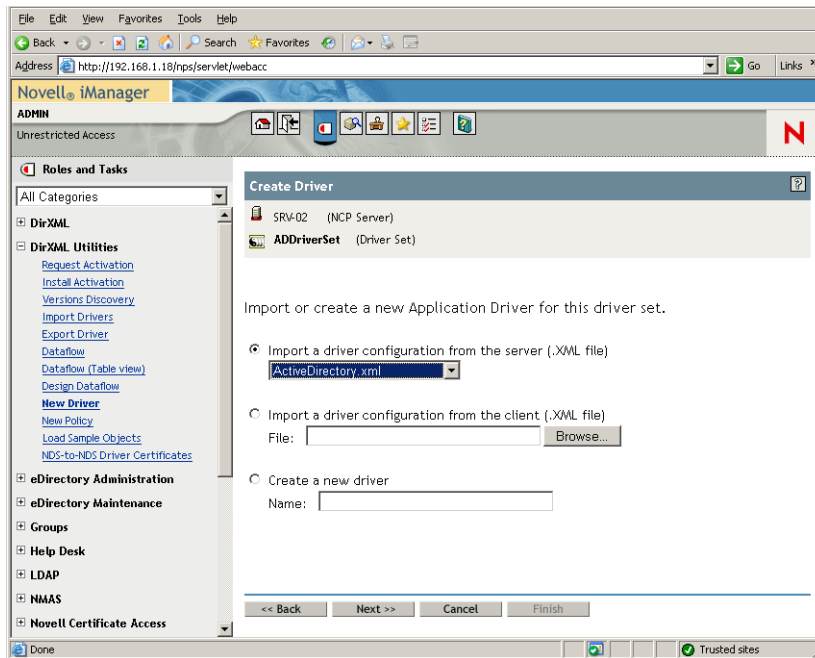
**Name:** Type a driver set name, for example ADDriverSet.

**Context:** Browse to and select the DirXML container.

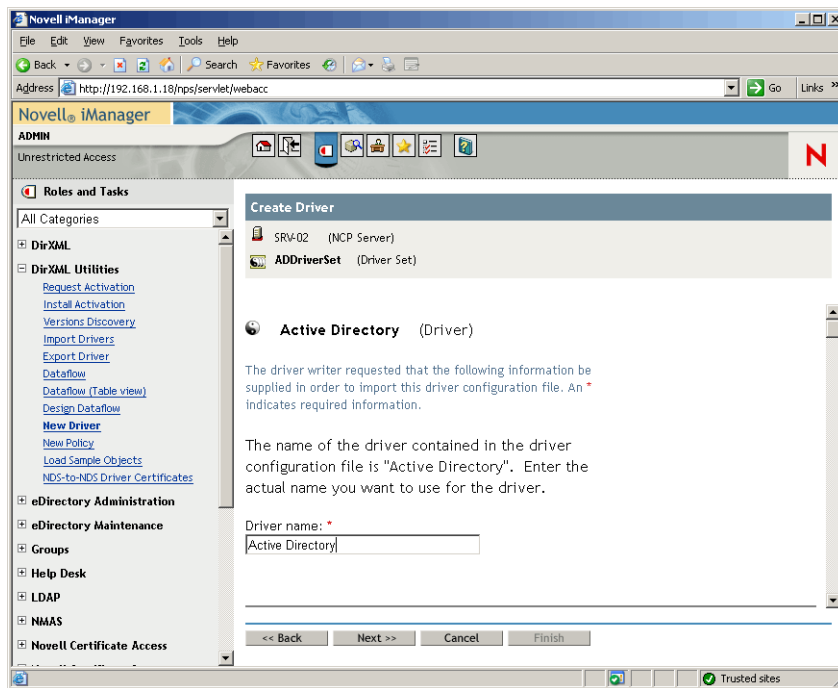
**Server:** Browse to and select the SRV-02 server.

10 Click *Next*.

The wizard creates the objects for the driver set, then displays the ADDriver Set page.



- 11 Select *Import a Driver Configuration From the Server (.XML File)*, browse to and select *Active Directory* from the drop-down menu, then click *Next* to display the Active Directory Driver Set page of the Create Driver Wizard.



- 12 Configure the driver parameters that are listed (visible by scrolling) on the Create Driver Wizard by filling in the fields:

**Driver Name:** Leave the name of the driver as the default.

**Authentication Method:** Use the default value (Negotiate).

**Authentication ID:** Type the AD Domain Name (NetBios) followed by a forward slash and the Driver Account User that was created (see [Step 2b on page 217](#)). You can obtain the Driver Account User from the Account DN name you copied in [Step 2d on page 217](#). (Also see item 1 in the graphic referenced in [Step 2d on page 217](#)).

For example, enter ZENDEMO/ADDriver\_zendemo on this line.

**Authentication Password:** Use the same password used to create the Proposed DirXML Driver Account in the `admanager.exe` tool (see [Step 2b on page 217](#)).

**Reenter the Password:** Re-enter the password you used in the field above.

**Authentication Server:** Copy and paste the Domain Controller name from the line items that you saved in a text file as you used `admanager.exe` (see [Step 2d on page 217](#) and item 2 shown on the screen shot referred to in this step).

**Domain Name:** Copy and paste the Domain DN name from the line items that you saved in a text file as you used `admanager.exe` (see [Step 2d on page 217](#) and item 3 shown on the screen shot referred to in this step).

**Domain DNS Name:** Copy and paste the Domain name from the line items that you saved in a text file as you used `admanager.exe` (see [Step 2d on page 217](#) and item 4 shown on the screen shot referred to in this step).

**Driver Polling Interval:** Specify the polling interval you want. In a lab environment, the interval should be set at approximately one minute. In a production environment, you should set the interval at approximately 15 minutes.

**Password Sync Timeout (minutes):** Retain the default value (5 minutes).

**Base Container in eDirectory:** Specify the container where you want your users to be created and synchronized with Active Directory (for example, users.zen). You can browse for this container by clicking *Browse*. If you are going to mirror the Active Directory containers, this would be the top container in eDirectory.

**Base Container in Active Directory:** Type the name of the base container in Active Directory. This is the container where you want users to be synchronized with eDirectory (for example, CN=Users,DC=zendemo,DC=com).

**Configure Data Flow:** Retain the default value (Bi-directional).

**Publisher Placement:** Select *Flat* or *Mirror*. If you choose *Flat*, all user objects coming from Active Directory are placed in the same container. If you choose *Mirror*, all user objects and containers are re-created in eDirectory.

**Subscriber Placement:** See the Publisher Placement field to choose your placement.

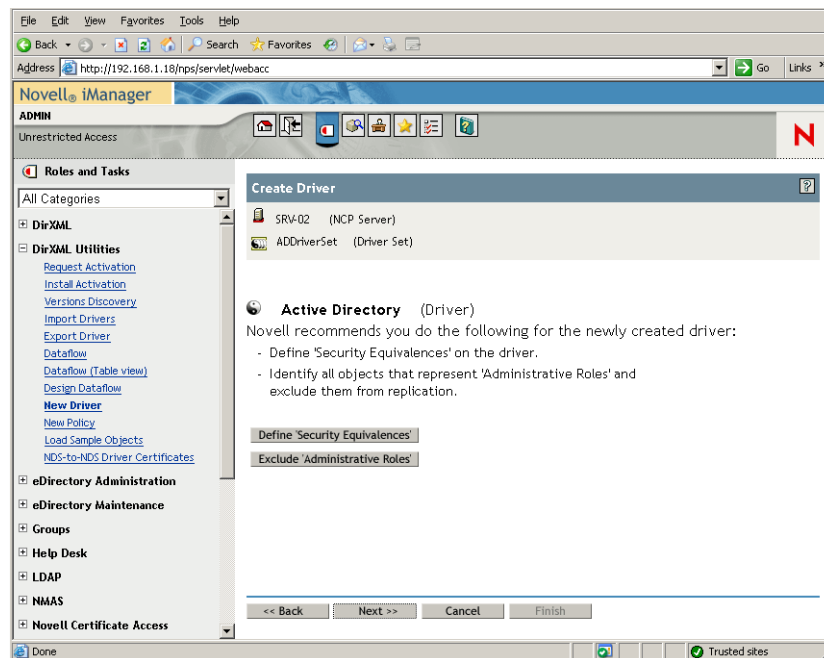
**Password Failure Notification User:** Leave the field blank.

**Support Exchange 2000/2003:** Retain the default value (No).

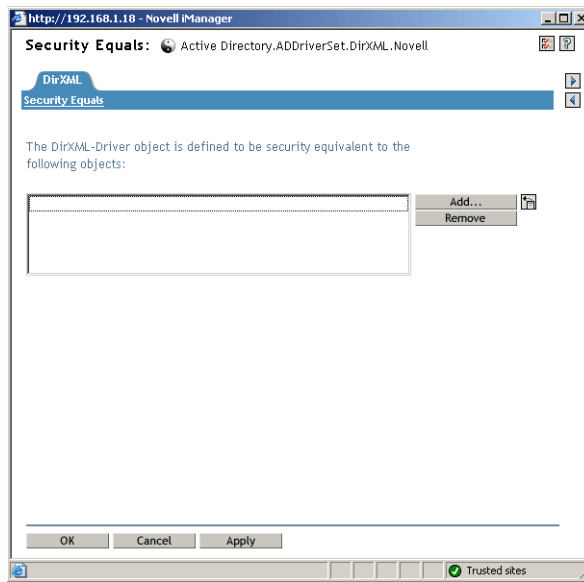
**Enable Entitlements:** Retain the default value (No.)

**Driver is Local/Remote:** Retain the default value (Local).

**13** Click *Next* to launch the Security Equivalences page of the Create Driver Wizard.



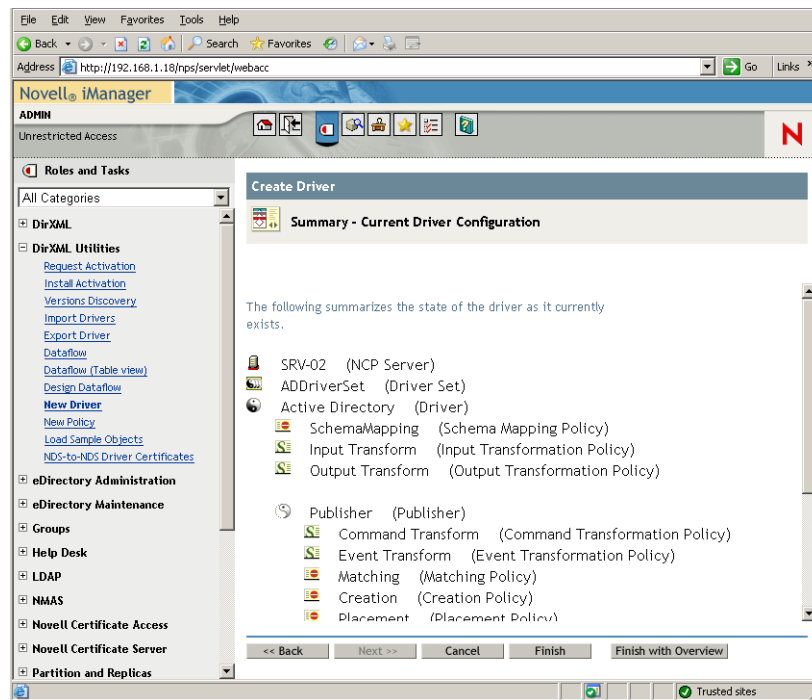
- 14** Click *Define Security Equivalences* to launch the Security Equals window.



- 15** Click *Add* to launch the browser window, browse to and select the Admin.Users.ZEN user, add this user to the *Selected Objects* list, click *OK*, then click *OK* again.
- 16** On the Security Equivalences page of the Create Driver Wizard, click *Exclude Administrative Roles*.
- 17** In the Security Equals window, click *Add*, browse to and select all users that are administrators of eDirectory, then click *OK*.

This prevents the users from being created in the Active Directory domain and synchronized later.

The Summary - Current Driver Configuration page of the wizard is displayed.



## 18 Click *Finish*.

Before the DirXML driver can run, you need to install the Password Synchronization software. For more information, see [“Installing Password Synchronization and Enabling Universal Password” on page 225](#).

## Installing Password Synchronization and Enabling Universal Password

Password Synchronization allows each user object automatically created in DirXML to have the same password as the corresponding user you created in Active Directory. This is necessary to allow for single login to both Active Directory and eDirectory when users log into their workstations.

Password Synchronization requires that platform-specific password policies are not in conflict with each other. Password policies that are in conflict prevents successful password synchronization. For example, if eDirectory passwords are required to be at least eight characters in length and Windows passwords have no length requirements, users could create shorter Windows passwords that would not be accepted by eDirectory. Password Synchronization does not override platform policies.

DirXML lets you generate an initial password for an account based on the account's attributes or other information available through Java services. For instance, you can generate a password based on a user's surname plus a four-digit number. Generating an initial password requires driver customization, but it is a good way for you to manage passwords when you provision an account through an existing personnel management toolset.


iManager lets you set an initial password when you create a user account if you select *Assign NDS Password*, then select *Prompt During Creation*. In this case, iManager sets the password before an account is associated in NT or Active Directory accounts. This prevents the initial password from

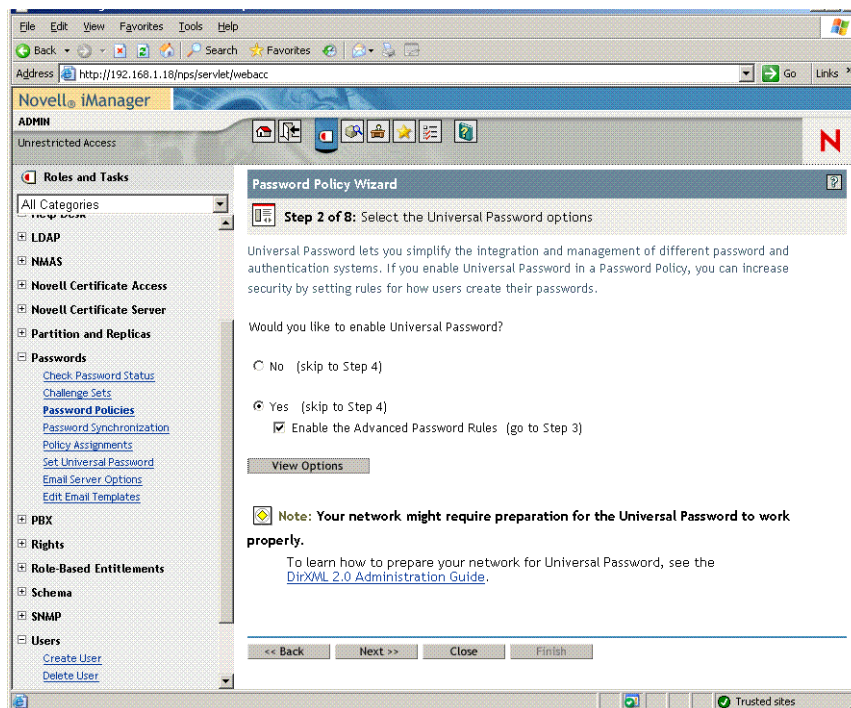
being synchronized. Passwords are synchronized only after the first password change. To avoid this delay, you can do one of the following things:

- ♦ Deselect *Assign NDS Password During User Creation* and assign the password later. A brief delay allows account associations to be completed.
- ♦ Select *Prompt User on First Login* so that password setting is delayed until the account is actually used.

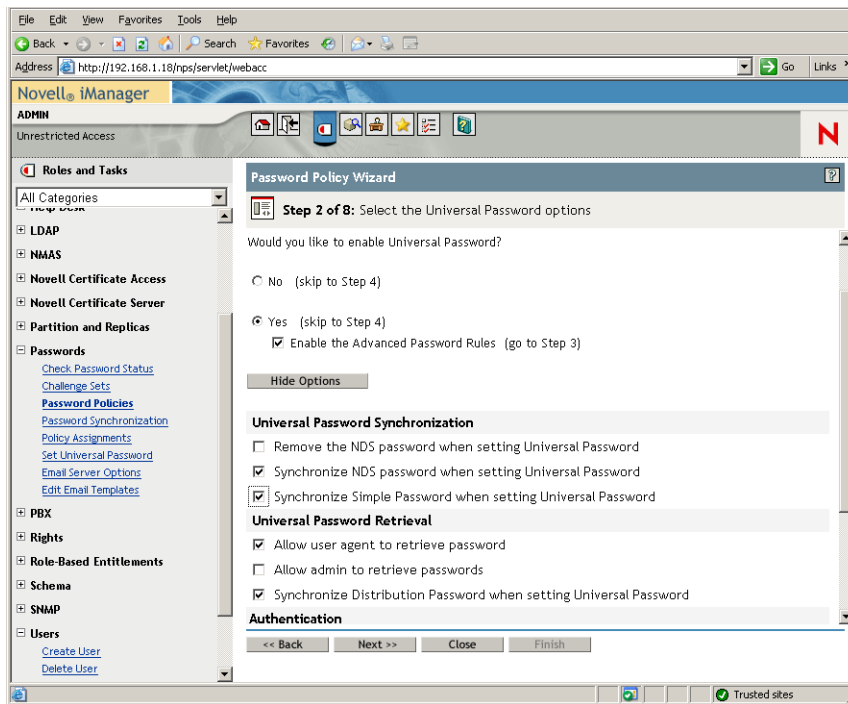
The Microsoft Management Console (MMC) lets you set an initial password on a user account by typing the password when you create the account. The password is set before Password Synchronization is able to associate an eDirectory account with the Active Directory account, so the Password Synchronization service is not able to update the eDirectory account immediately. However, the service will retry the password update and the account will be properly updated within several minutes.

To install Password Synchronization on your servers:

- 1 Log in to the SRV-02 server as administrator, then log in to eDirectory as Admin.
- 2 In iManager, click the Roles and Tasks icon , then in the left pane, click *Passwords*, click *Password Policies*, then click *New* to open the Password Policy Wizard.
- 3 Configure the Password Policy.
  - 3a In the *Policy Name* field, enter a name for the policy (such as DirXML UnivPassword), then click *Next* to display the Step 2 page of the wizard.

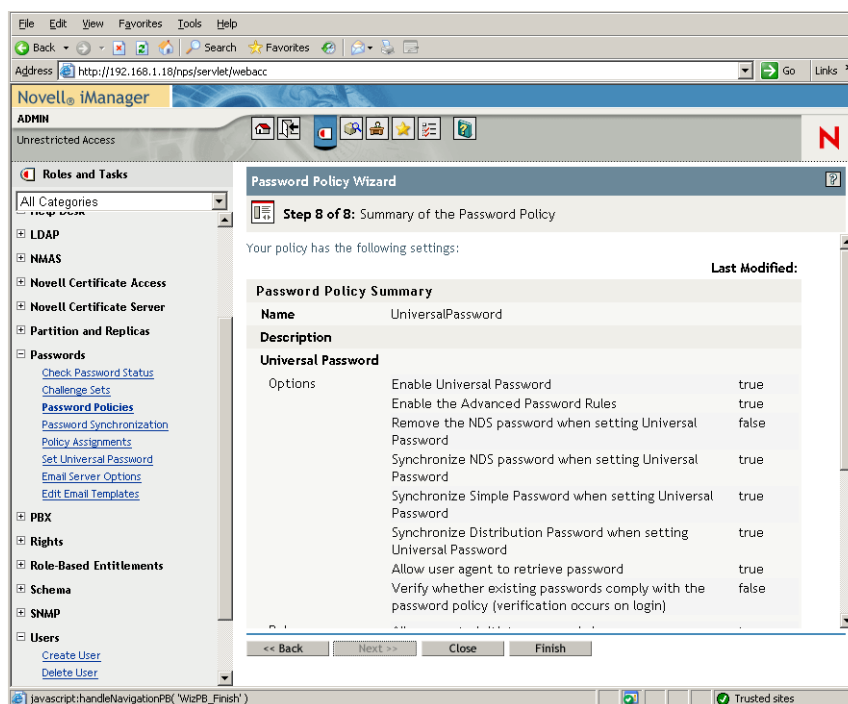


- 3b** On the Step 2 page of the wizard, click *View Options* to open the password synchronization options.



- 3c** Select *Synchronize Simple Password When Setting Universal Password*, then click *Next*.
- 3d** On the Advanced Password Rules page, click *Next*.
- 3e** On the Step 4 page of the wizard (Enable Forgotten Password Feature), retain the default (No), then click *Next*.
- 3f** Click *Next* to skip the Step 5 and Step 6 pages of the wizard.

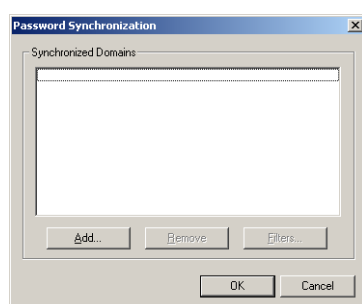
- 3g** On the Step 7 page of the wizard (Assign the Password Policy), select *Browse* to open the browse window, select the Users.ZEN container, click *OK*, then click *Next* to display the Step 8 page of the wizard (Summary of the Password Policy).



- 3h** Click *Finish*, then click *Close*.

- 4** From the Windows desktop, click *Start > Settings > Control Panel*, then double-click *DirXML PassSync*.
- 5** In the PassSynchConfig dialog box, click *Yes* in response to the question “Is this machine where the DirXML Driver is configured to run?”

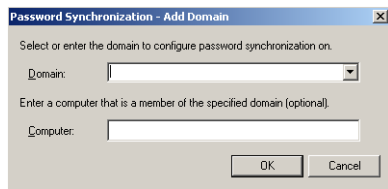
The Password Synchronization dialog box is displayed.



- 6** In the Password Synchronization dialog box, click *Add*.



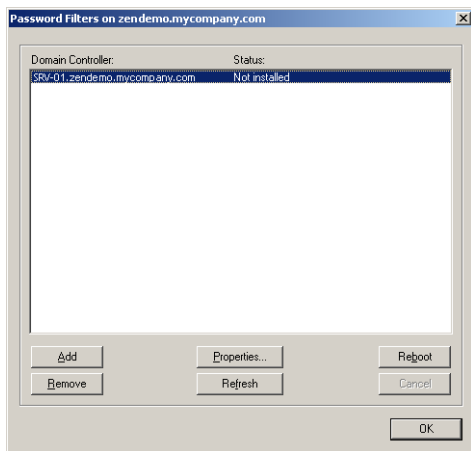
The Password Synchronization - Add Domain dialog box is displayed.



- 7 In the Password Synchronization - Add Domain dialog box, open the drop-down list in the Domain field, select ZENDEMO from the list, then click *OK*.

Do not add information to the Computer field.

- 8 In the PassSyncConfig dialog box, click *Yes*.
- 9 Select the Domain DNS Name, then click *Filters* to display the Password Filters dialog box.



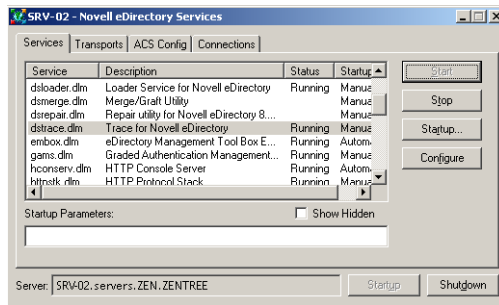
- 10 In the Password Filters dialog box, select the Domain Controller name, then click *Add*.  
This option copies files to the Domain Controller. After the copy is complete, the status changes to “Installed - Needs Reboot.”
- 11 Click *Reboot*, then wait until the server reboots and the dialog box shows that it is running, then click *Refresh* after SRV-01 restarts (if the status has not changed).
- 12 Click *OK*, then click *OK* again.
- 13 Reboot the SRV-02 server to complete the installation.

## Finalizing DirXML Driver Configuration

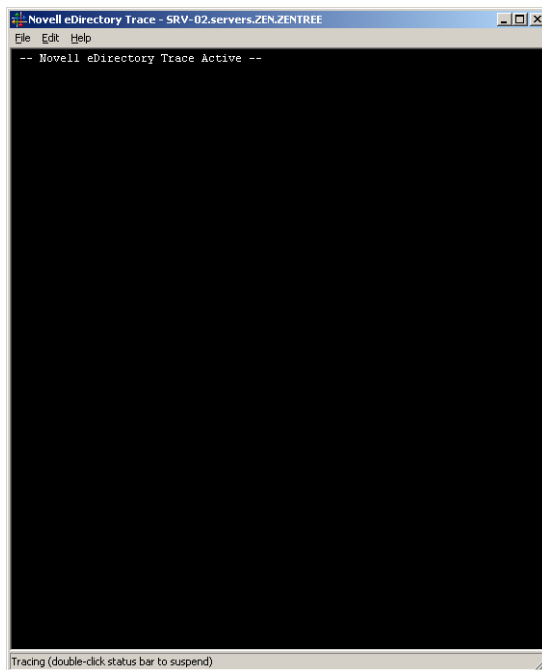
When you have installed and configured both the DirXML drivers and the PasswordSync driver, you need finalize the configuration so that these drivers start automatically and function properly. Use the following steps to finalize the configuration:

- 1 Log on to the SRV-02 server as administrator.

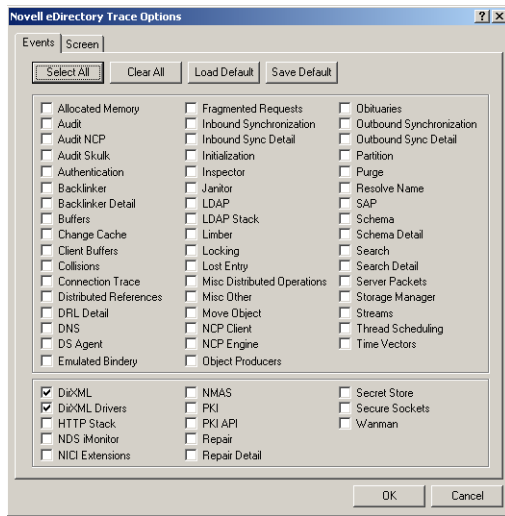
- 2 From the Windows Server 2003 desktop, click *Start > Settings > Control Panel > Novell eDirectory Services* to open the Novell eDirectory Services dialog box.



- 3 Click *Services*, select the *dstrace.dlm* service, then click *Start* to display the Novell eDirectory Trace window.




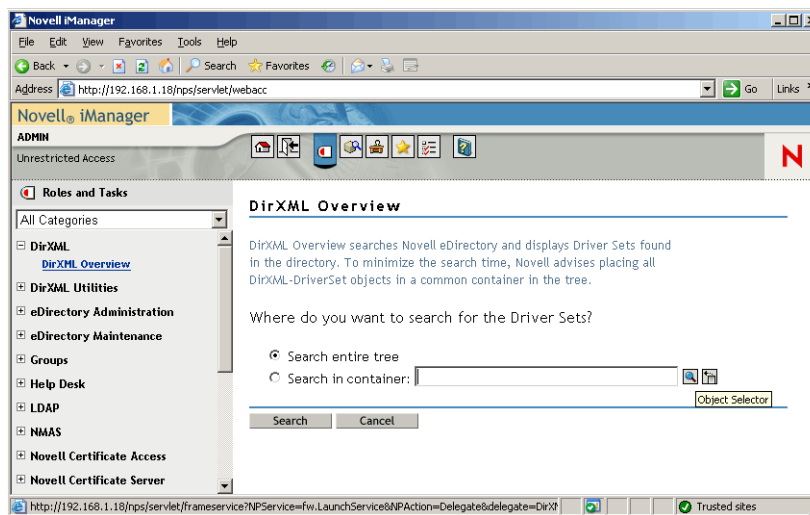
- 4 In the Novell eDirectory Trace window, click *Edit > Options* to open the Novell eDirectory Trace Options dialog box.



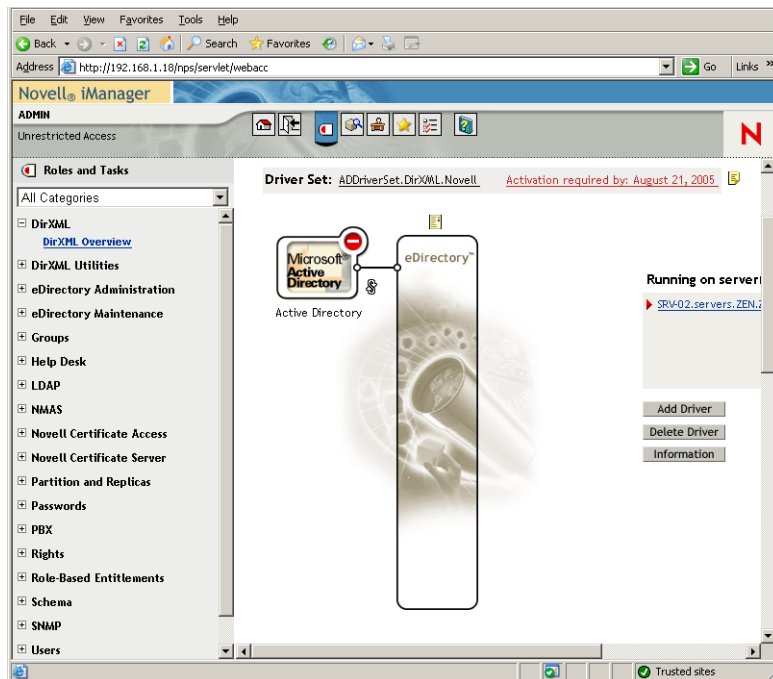
- 5 On the Events page of the dialog box, click *Clear All*, select *DirXML*, select *DirXML Drivers*, then click *OK*.


Make sure you leave the Novell EDirectory Trace window open.

- 6 Launch iManager, then click the server link to log in as Admin.
- 7 In iManager, click the Roles and Tasks icon  to open the Roles and Tasks left pane, click *DirXML*, then click *DirXML Overview* to open the DirXML Overview utility in the right pane.





- 8 In the DirXML Overview utility, select *Search Entire Tree*, then click *Search* to open the Active Directory- eDirectory configuration page.

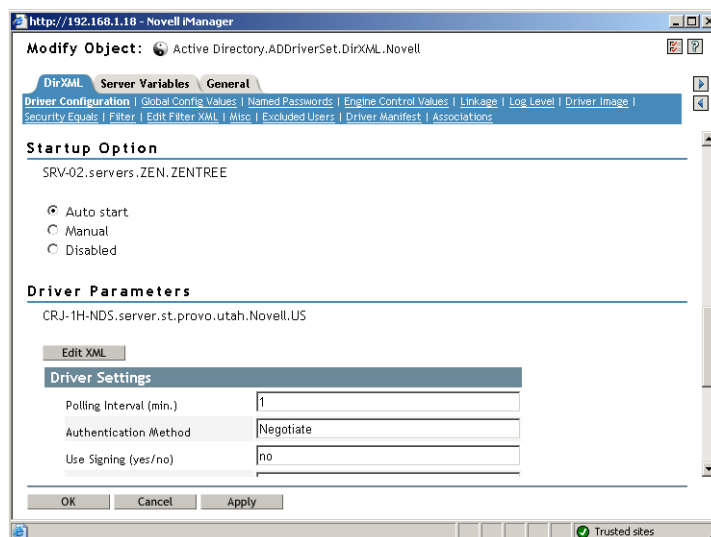



- 9 Click the  icon to open a menu options list, then select *Start Driver*.

When you start the driver, the Novell eDirectory Trace window displays red messages as errors, yellow messages as warnings, and green messages as successful processes. Although there might be initial errors and warnings, the final message should be green and the status shown as *Success* for the Active Directory DirXML log event.

When the driver is running successfully, the  icon changes to the  icon.

- 10 Click the  icon, then select *Edit Properties* to open the Modify Object window.



- 11 In the Modify Object window, select the *DirXML* tab, click *Driver Configuration*, scroll to the *Startup Option* section of the window, select *Auto Start*, then click *OK*.  
A message dialog box displays the question, “Do you want to restart the driver to put your changes into effect?”
- 12 Click *OK* in the message dialog box to restart the driver.
- 13 Roll your mouse pointer over the  icon to reveal the status message: “Driver is Running.”
- 14 (Conditional) If it is not already open (see [Step 2 on page 230](#)), open the Novell eDirectory Services dialog box, then verify that `dirxml.dlm` is running.

## Verifying that eDirectory, DirXML, and Universal Password Are Working Properly

To verify that eDirectory, DirXML, and Password Synchronization are working properly in your environment, you need to create a few users in Active Directory to verify that they are automatically created in eDirectory with the proper passwords.

- 1 Log on to server SRV-01 as the administrator of the Active Directory Domain.
- 2 Launch the Active Directory administration tool and create a test user in Active Directory  
**Example:** TestUser1@zendemo.com
- 3 Log in to SRV-02 as the administrator of the domain and as admin in eDirectory.
- 4 Open iManager, then verify that TestUser1 has been created in the administered container.  
You might need to wait for a synchronization cycle to complete before the user is listed in eDirectory.
- 5 Log in to eDirectory as TestUser1, verify that the password is the same as the one given in Active Directory, then verify that you successfully authenticated to eDirectory.  
Another synchronization cycle might be necessary before the password is updated.
- 6 For completeness, create a user in eDirectory (using iManager while logged in as Admin), then verify that the user is now in the domain and that you can log in to the domain as that user using the password you specified in eDirectory.

The default synchronization rules do not create an Active Directory user until the full name attribute field is populated in eDirectory. Check this in iManager > *Roles and Tasks* > *Users* > *Modify* > *User\_object* > *General* > *Identification* > *Full Name*.

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**IMPORTANT:** If the password fails to work for an eDirectory user being synchronized to Active Directory, see TID 10092646 and TID 10092822 in the [Novell Knowledgebase \(http://support.novell.com/search/kb\\_index.jsp\)](http://support.novell.com/search/kb_index.jsp) for information on how to correct the issue.

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## Installing the Desktop Management Server

Although you might not choose to install all of these components, this section explains the installation procedure for each of them.

Use the following steps to install the Desktop Management Server onto SRV-02 server, where you previously installed eDirectory.

- 1 Log on to the SRV-02 server as administrator, then log in to eDirectory as Admin.
- 2 At a Windows workstation, insert the *Novell ZENworks 7 Desktop Management* CD.

The `winsetup.exe` program will autorun. If it does not autorun, launch it from the root of the CD.

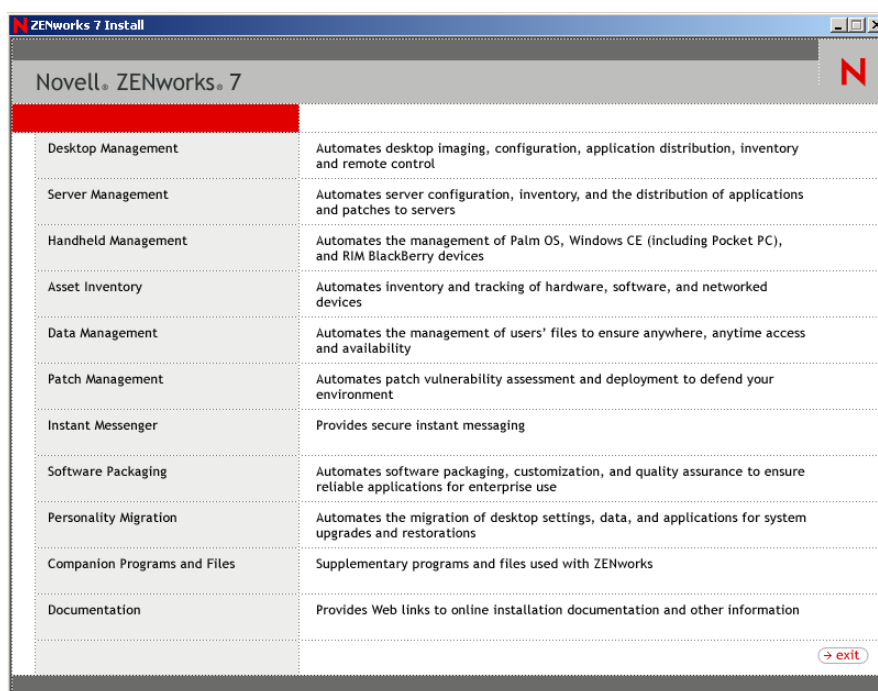
If you run the installation from a directory location where you have copied the ZENworks Desktop Management ISO files, make sure that all of these files are copied to the same location from which you are running `winsetup.exe`.

In this situation, the installation program notifies you that it might not run properly. This is because the options you choose during the installation might require a CD swap.

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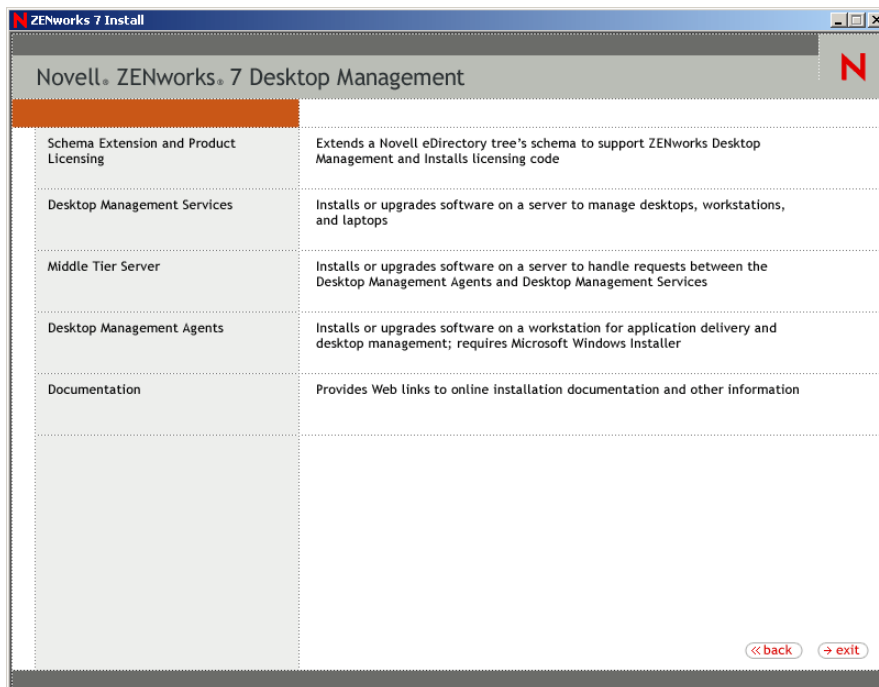
**IMPORTANT:** If you remove the *Novell ZENworks 7 Desktop Management* CD from the CD drive during the installation, or if you lose your connection to the server you are installing to, the installation program stops and does not proceed. To terminate the installation process, open the Windows Task Manager click Processes, select `javaw.exe`, then click *End Process*.

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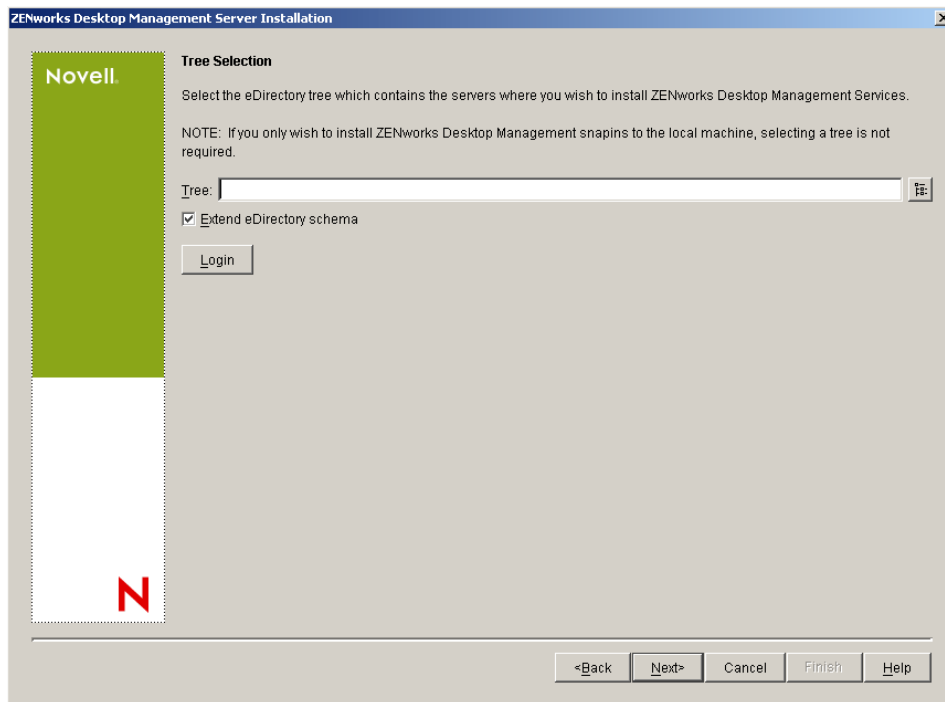
- 3 Click *Desktop Management* to display a page with options to install in various languages.

- 4 Click *English* to display a page with Desktop Management installation options.



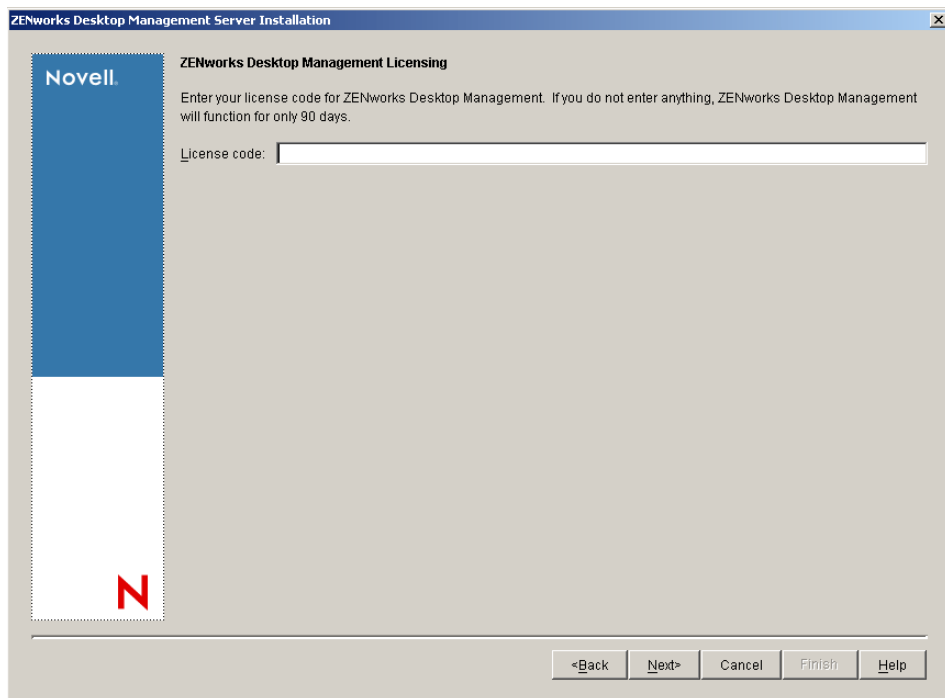
- 5 Click *Desktop Management Services* to launch the Desktop Management Server installation wizard.
- 6 On the first Installation page, read the details about running the installation program, then click *Next*.
- 7 Read the License agreement, then click *Accept* if you agree with the terms of the License Agreement.  
(Conditional) If you do not agree with the terms of the license agreement, do not install the software.
- 8 On the Installation Requirements page, read the requirements for installing the Desktop Management Server software, make sure that the server where you plan to install meets the listed requirements, then click *Next*.
- 9 On the Tree Selection page, type or browse to the name of the Novell eDirectory tree on the SRV-02 server (ZENTREE). If you have not already extended the schema for this installation (see [Section 9.1.1, “Extending the Schema Before the Installation,” on page 79](#)), select *Extend Schema* to extend the schema on the tree where you will be installing Desktop Management Server software, then click *Next*.

You cannot install Desktop Management Server software on multiple trees at the same time.



You need to extend the schema on a tree only once. You can authenticate to a tree by clicking the *Login* button and entering a user ID and password with the appropriate rights.

- 10 On the ZENworks Desktop Management Licensing page, specify the license code that was e-mailed to you as part of the SmartCert product registration package.





If you do not specify a license code on this page, the wizard considers this installation of ZENworks Desktop Management to be an evaluation version. If you install for an evaluation, you are periodically reminded to license the product. After 90 days, the product evaluation version no longer functions.


- 11** On the Server Selection page, click *Add Servers* to browse to the SRV-02 server.

You can select servers only from the ZENTREE tree. You can install up to 7 servers at a time.

- 11a** (Optional) In the Add Servers dialog box, you can list servers by their eDirectory tree names. To install to a server, select *eDirectory Trees*, browse to and click the name of the SRV-02 server, click the right-arrow button to move your selected servers to the *Selected Servers* list, then click OK.

If you want to add a Windows server that you might not be authenticated to, you can double-click the server icon to display a dialog box where you can enter credentials to allow for Windows authentication.

- 11b** (Optional) In the Add Servers dialog box, you can specify the hostname or IP Address of a server in the *Add Server Via Hostname/IP Address* field. The value that you provide must be resolvable to the name of a server.

Click  to begin the name resolution process and add the server to the *Selected Servers* list.

- 12** On the now-populated Server Selection page, you can further specify the services you want to install for the Desktop Management components you previously selected, then click *Next* to save your settings.

The list of settings includes the following:

**Local Workstation:** Even though the ConsoleOne 1.3.6 installation program lets you install ConsoleOne files to a local hard drive (minor performance enhancements can be achieved by doing so) such an installation does not include the Desktop Management Services snap-ins.

You have the option of installing Desktop Management Services snap-ins to your local workstation by selecting Desktop Management Service Snap-ins under the Local Workstation option. ConsoleOne must be installed on the workstation before the snap-ins can be added.

**Desktop Management Services:** Desktop Management Services (collectively referred to as the “Desktop Management Server”) are commonly used files and programs that enable the configuration and distribution of workstation applications and policies. These services provide automatic management of Windows applications, user and workstation configurations, processes, and behaviors.

- ♦ **Application Management:** Select this option to install software that enables the automated distribution, healing, and tracking of applications, updates, and patches.
- ♦ **Workstation Management Common Components:** Select this option to install workstation-resident modules that are used to authenticate the user to the workstation and network, and used to transfer configuration information to and from eDirectory.
- ♦ **Remote Management:** Select this component to install files and programs that enable the remote management of workstations from a central console. Make sure that the selected servers do not have the ZENworks for Servers 3.0.2 (or earlier) Remote Management component already installed.

**Additional Options:** If you want to customize your deployment of Desktop Management Services, there are a number of services to choose from, each with a specialized purpose.

- ♦ **Desktop Management Database:** Select this option if you want to install a network database to be used by the Novell Application Launcher as a repository for data about application events (install, launch, cache, and so forth) that have occurred.
- ♦ **Inventory Database:** Select this option if you want to install a network database to be used by Workstation Inventory as a repository for hardware and software inventory information collected from inventoried workstations.

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**IMPORTANT:** If you want to use the Inventory database with an existing Oracle or MS SQL setup, do not select this option during the Server Inventory installation. Follow the steps in “[Setting Up the Inventory Database](#)” in the *Novell ZENworks 7 Desktop Management Administration Guide*.

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- ♦ **Inventory Server:** Select this option if you want to install files and programs to enable the gathering and viewing of hardware and software inventory information for managed workstations.

If the selected servers have the Server Inventory component of ZENworks for Servers 3.0.2 or earlier installed, you must upgrade the component to ZENworks 7 Server Management.

- ♦ **Inventory Proxy Server:** Select this option if you want to install a proxy service that enables the roll-up of inventory scan data to an Inventory server located across a network firewall. Make sure that the selected servers do not have the ZENworks for Servers 3.0.2 (or earlier) Inventory component already installed.
- ♦ **Imaging Server:** Select this option if you want to install a Linux imaging environment to be used to create, store, send, or restore workstation image files to a workstation.

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**IMPORTANT:** You should install the Imaging Server service and the PXE Server service on the same server; do not install the PXE Server service separately.

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- ♦ **PXE Server:** Select this option if you want to install Preboot Execution Environment (PXE) protocols and programs to be used by the server to communicate with a PXE-enabled workstation and to enable sending imaging tasks to that workstation.

When you install Preboot Services, one of the components that is installed is the Proxy DHCP server. If the standard DHCP server is on the same server where you are installing the Proxy DHCP server, you must set option tag 60 in DHCP services.

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**IMPORTANT:** You should install the Imaging Server service and the PXE Server service on the same server; do not install the PXE Server service separately.

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- ♦ **Workstation Import/Removal Server:** Select this option if you want to install files and programs that add workstation objects into eDirectory (or remove those already added), where they can be managed to receive applications or computer settings.
- ♦ **Desktop Management Services Snap-Ins:** Select this option if you want to install additions to ConsoleOne to enable you to launch Desktop Management tools and utilities, to view Desktop Management object property pages in eDirectory, and to browse and configure those objects.

You can perform a “custom selection” by selecting one or more servers and right-clicking to display a pop-up menu with options to add *Database Services*, *Inventory Services*, or *Imaging Services* to all of the servers you have selected. The *Default* option returns the selections to

their initial state. The *Custom* selection launches another dialog box that you can use to select specific components for all of the selected servers. This selection overrides any other selections you have made.

- 13** (Optional) *Prerequisite Check* is selected by default. Retain the selection if you want the installation program to verify that the server or servers meet the installation requirements for ZENworks Desktop Management Services. The installation program checks the version of the server's network operating system (including any required service or support packs), the presence and version of the Novell Client (4.9 SP1a) on Windows servers and on the installing workstation, and the presence and version of ConsoleOne (1.3.6).

If the server operating system and support/service packs are not the correct version, the installation displays a warning message, and does not continue. The installation displays a warning and does not continue until the required software is installed and detected or until you deselect the check box.

- 14** (Optional if *Workstation Inventory* or *Remote Management* is selected.) On the File Installation Location page, select one or more target servers in the *Selected Servers* list, then browse for or type the volume or drive where you want the Workstation Inventory or Remote Management files to be installed. The default is C : for Windows servers.

If a previous installation of ZENworks 7 Workstation Inventory or Remote Management component is detected on the machine, the existing path is displayed and dimmed. The current installation installs all the files in the same path.

- 15** (Optional) The Database Location Installation page is displayed if you choose to install the Inventory database or the Desktop Management database. Select a previously designated server in the left pane, then in the *Database Path* field, browse for or type in the name of the volume or drive where the database file will be installed, then click *Next*.

You can provide a different drive for each database server. However, you cannot have multiple instances of the database files on the same server because you can run only one instance of the database engine per server.

- 16** (Optional) The Inventory Standalone Configuration page is displayed if you choose to install the Inventory Server and the Inventory Database on the same server. If you want the installation program to automatically create the Server Package and to start the Inventory Service on the server, configure the settings on the Inventory Standalone Configuration page.

Select *Configure Standalone*, select the server or servers that you want to point to a common Database Location Search Policy, type the name or browse to the tree container where you want to create and configure the Server Package containing this policy, then click *Next*.

- 17** (Optional) On the Inventory Proxy Service Configuration page, select the server or servers with a port you want to designate as one to allow XMLRPC requests pass through to the Inventory Proxy service, then in the *Proxy Port* field, designate the port you want to use.

You can configure the same port number for all servers by selecting all of them, or you can define the values individually by selecting the servers one at a time. If you want to change the Port 65000 default, specify a value between 0 and 65535. Ensure that the port number is not used by other services on the server.

- 18** On the Summary page, review the list of components and their parts that are to be installed. If the summary is correct, click *Finish* to launch the installation program.

You can click *Back* as many times as necessary to make changes.

If you click *Cancel*, no installation information is saved.

You can review the installation log file after the installation has completed. The log file name is `datestamp_timestamp_zdmserver_install.log` (for example: `20040304_024034_zdmserver_install.log`). It is located in the `\novell\zfdtemp` directory on the machine you are installing from. This log file indicates whether any component failed to install.

You can also review the installation summary to review the selections you made. The summary is saved in a log file named `datestamp_timestamp_zdmserver_installsample.log` (for example: `20040304_024034_zdmserver_installsample.log`). It is also located in `c:\novell\zfdtemp`.

- 19** In ConsoleOne, select the tree where you installed the Desktop Management Server software, then right-click the *LDAP Group* > click *Properties* > *General* > select *Allow Clear Text Passwords*.

If you use ConsoleOne 1.3.6, *Require TLS For Simple Binds With Password* must be deselected in the LDAP Group object for each server acting as the Authentication Domain for a ZENworks Middle Tier Server. If you need to set this parameter after you have installed the Desktop Management Server, make sure you reboot the ZENworks Middle Tier Server after you change the setting.

If you are installing to Windows servers in an Active Directory domain, configure the LDAP Group object for servers that are to be used as Authentication Domains to use an alternate port number, because Active Directory will use ports 389 and 636.

If you have already installed the ZENworks Middle Tier Server, you need to reboot the ZENworks Middle Tier Server so that it recognizes the change to LDAP clear text passwords at the Desktop Management Server.

## Installing the ZENworks Middle Tier Server

To deliver Desktop Management features through an Internet browser, you must install the ZENworks Middle Tier Server. In this deployment scenario, you install the software on SRV-02, where the Microsoft IIS Web server has already been installed. The Middle Tier Server installation program requires the presence of the Novell Client on the installing workstation or server, so you must first install the Novell Client on the SRV-03 server and then install the ZENworks 7 Middle Tier Server on the same server. You can download the Novell Client (version 4.90 SP1a or later) from the [Novell downloads Web site \(http://download.novell.com\)](http://download.novell.com).

When the client has been installed, you can use the following procedure to install the Middle Tier Server:

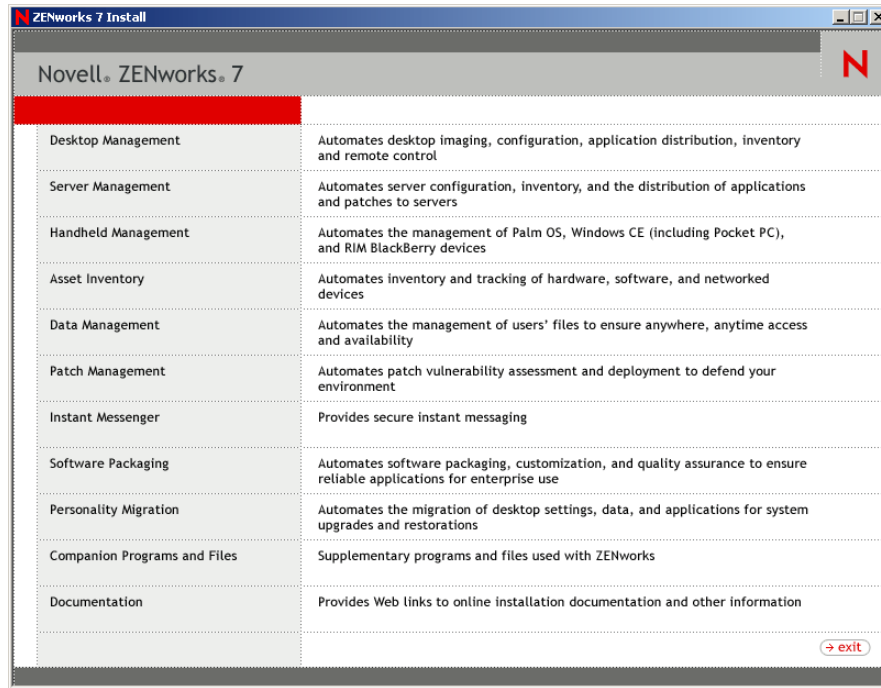
- 1** Log on to SRV-03 as local workstation administrator of the server.
- 2** Insert the *Novell ZENworks 7 Desktop Management CD*.

The `winsetup.exe` program autoruns. If it does not autorun, launch the program from the root of the CD.

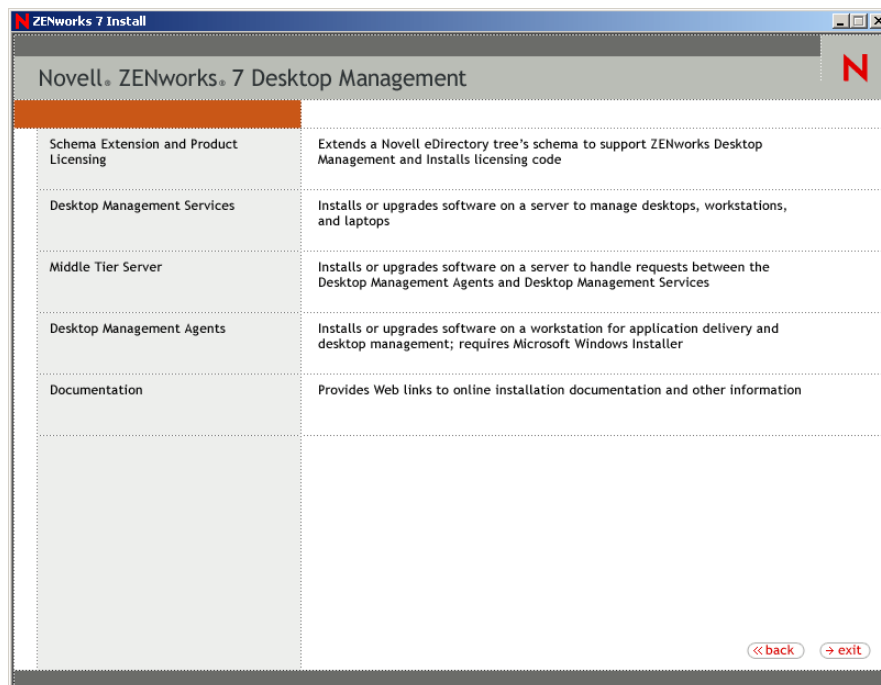
If you run the installation from a directory location where you have copied the ZENworks Desktop Management ISO files, make sure that all of these files are copied to the same location from which you are running `winsetup.exe`.

In this situation, the installation program notifies you that it might not run properly. This is because the options you choose during the installation might require a CD swap.

**IMPORTANT:** If you remove the *Novell ZENworks 7 Desktop Management* CD from the CD drive during the installation, or if you lose your connection to the server you are installing to, the installation program stops and does not proceed. To terminate the installation process, open the Windows Task Manager, click *Processes*, select `javaw.exe`, then click *End Process*.



- 3 Click *Desktop Management* to display a page with options to install in various languages.
- 4 Click *English* to display a page with Desktop Management installation options.



- 5 Click *Middle Tier Server* to launch the Middle Tier Server installation program.
- 6 On the first Installation page, read the details about running the installation program, then click *Next*.
- 7 Read the License agreement, then click *Accept* if you agree with the terms of the License Agreement.  
(Conditional) If you do not agree with the terms of the license agreement, do not install the software.
- 8 On the Installation Requirements page, read the requirements for installing the Middle Tier Server software, make sure that the server where you plan to install meets the listed requirements, then click *Next*.
- 9 On the eDirectory Location and Credentials page, fill in the fields:

**DNS/IP Address:** Specify the DNS name or IP address of the SRV-02 server, where eDirectory is installed.

**Username (full DN):** Specify the fully-qualified distinguished username of the Middle Tier proxy user account (for example, admin.users.zen). To ensure that these credentials remain secure, you can set up an arbitrary user with specific administrative rights.

For a description of the required rights, see [Section 10.3, “Required Rights for the Middle Tier Proxy User Account and the NSAdmin Utility,”](#) on page 127.

**Password:** Specify the eDirectory password for the Middle Tier proxy user.

- 10 On the ZENworks User Context page (*Users Context* field), specify the eDirectory context where the Middle Tier Server can look for user objects to be used by Desktop Management. For this example, the context is Users.

You should use the context of the highest-level container where user objects reside. This value is passed to the ZENworks Middle Tier Server, which uses it as a starting point in searching for a user.

For any Middle Tier Server you designate during this installation, currently configured authentication domains (for example, the authentication domain configured for NetStorage) are replaced by a single authentication domain with the context that you specify here.

After the installation, you can reconfigure this authentication domain context using the NSAdmin utility. You can open the utility in a Web browser (<http://srv-02/oneNet/nsadmin>).

The installation program verifies the existence of the context (that is, the container) before continuing.

- 11** On the ZENworks Files Location page, select the network location where you will access application and policy files managed by ZENworks.

The ZENworks Middle Tier Server requires access to ZENworks files installed elsewhere on your network. As the ZENworks Administrator, you define the location of these files when you create policies or applications for distribution. The information you provide on this page is used to help the Middle Tier Server determine how to access different file systems. This decision is necessary for the installation now, even if you have not yet created any ZENworks files.

- ♦ Select the first option button if your ZENworks-managed application and policy files will be located on NetWare servers only.
- ♦ Select the second option button if some or all of your ZENworks-managed application and policy files will be located on Microsoft Windows servers.

If your ZENworks files will be located in a Windows file system, the Middle Tier Server might not be able to access them using a username and password for Novell eDirectory; instead, it requires Windows domain credentials to access the files.

If the files are located on a server not belonging to a domain, enter server-specific credentials.

### **Domain Username**

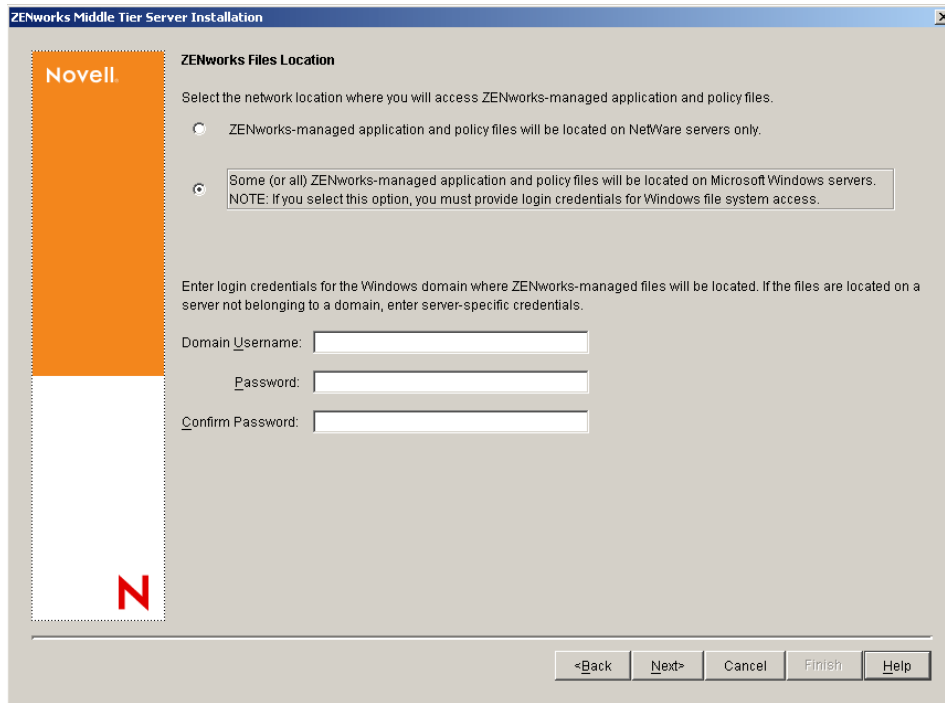
Specify the username of any user in the Microsoft domain who has Windows file system rights to the ZENworks file locations.

### **Password**

Specify the password for the user in the Microsoft domain who has file system rights to ZENworks files.

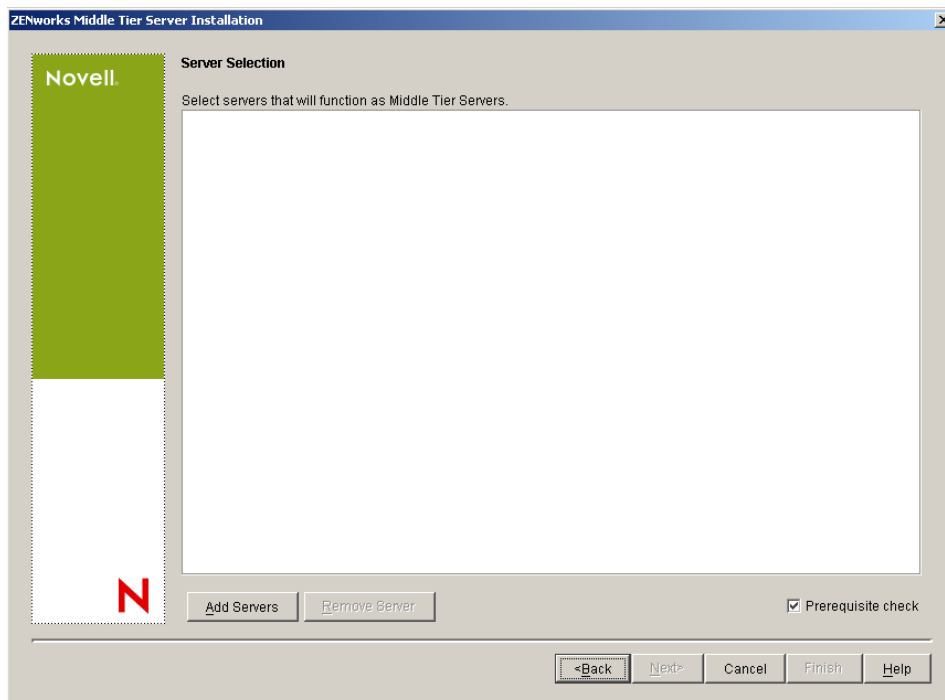
## Confirm Password

Specify the same password to confirm that it was entered correctly.



The screenshot shows the 'ZENworks Middle Tier Server Installation' window, specifically the 'ZENworks Files Location' step. On the left is a vertical Novell logo bar with an orange top half and a white bottom half containing a red 'N'. The main area has the title 'ZENworks Files Location' and instructions: 'Select the network location where you will access ZENworks-managed application and policy files.' There are two radio buttons. The first is 'ZENworks-managed application and policy files will be located on NetWare servers only.' The second is selected: 'Some (or all) ZENworks-managed application and policy files will be located on Microsoft Windows servers. NOTE: If you select this option, you must provide login credentials for Windows file system access.' Below this, it says 'Enter login credentials for the Windows domain where ZENworks-managed files will be located. If the files are located on a server not belonging to a domain, enter server-specific credentials.' There are three input fields: 'Domain Username:', 'Password:', and 'Confirm Password:'. At the bottom right are buttons: '<Back', 'Next>', 'Cancel', 'Finish', and 'Help'.

- 12** On the Server Selection page, you need to build a list of target servers that you want to function as Middle Tier Servers. The *Add Servers* button calls a dialog box that is used to find and add servers to the list. The *Remove Servers* button lets you delete servers from the target list after they are added. Click *Add Servers*.



The screenshot shows the 'ZENworks Middle Tier Server Installation' window, specifically the 'Server Selection' step. On the left is a vertical Novell logo bar with a green top half and a white bottom half containing a red 'N'. The main area has the title 'Server Selection' and instructions: 'Select servers that will function as Middle Tier Servers.' Below this is a large empty rectangular box for server selection. At the bottom left of the main area are two buttons: 'Add Servers' and 'Remove Server'. At the bottom right is a checkbox labeled 'Prerequisite check' which is checked. At the very bottom right are buttons: '<Back', 'Next>', 'Cancel', 'Finish', and 'Help'.



- 13** (Optional) *Prerequisite Check* is selected by default. Retain this selection if you want the installation program to verify that the server or servers meet the installation requirements for ZENworks Middle Tier Servers.

The installation program checks the version of any previously installed Middle Tier Server software, the server's network operating system (including any required service or support packs), the presence and version of the IIS Web server on Windows servers, the presence and version of the appropriate Web server on NetWare servers, and the presence and version of NetStorage (2.6.0) on target servers.

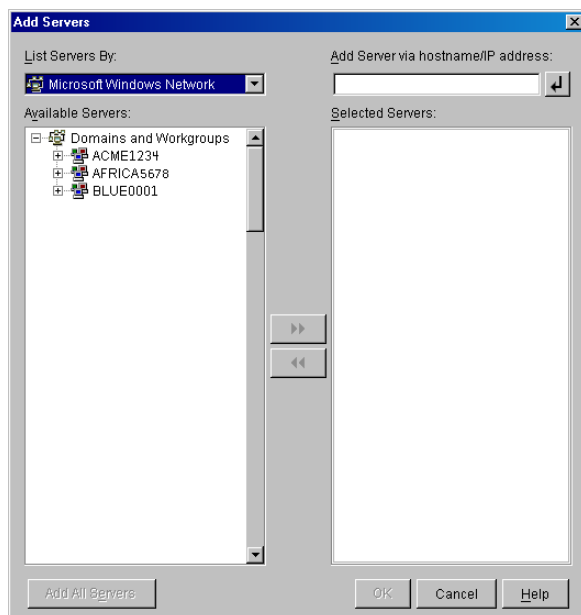
If the server operating system and support/service packs are not the correct version, the installation displays a warning message, but can continue. If other requirements are not met, the installation displays a warning and does not continue until the required software is installed and detected.

- 14** In the Add Servers dialog box, open the *List Servers By* drop-down list to show the options of listing the servers according to their location in Novell eDirectory trees, in Microsoft Windows Network structures, or in Microsoft Active Directory trees.


You can install the ZENworks Middle Tier Server software to several servers during the installation. When you have finished adding servers to the list, click *OK*.

Both the Desktop Management Server installation program and the Middle Tier Server installation program allow you to select servers from only one eDirectory tree. If you run either of these installation program from a Windows server and if that server is not part of the tree you have selected, you cannot install the Desktop Management Server locally.

- 14a** (Conditional if you want to list servers in Microsoft Windows Network structure.) In the *List Servers By* drop-down list, select *Microsoft Windows Network* to list all of the Windows Workgroups and Microsoft Domains to which you are currently authenticated, browse the structure to the server of your choice, then click the double right-arrow to move it to the *Selected Servers* list box.

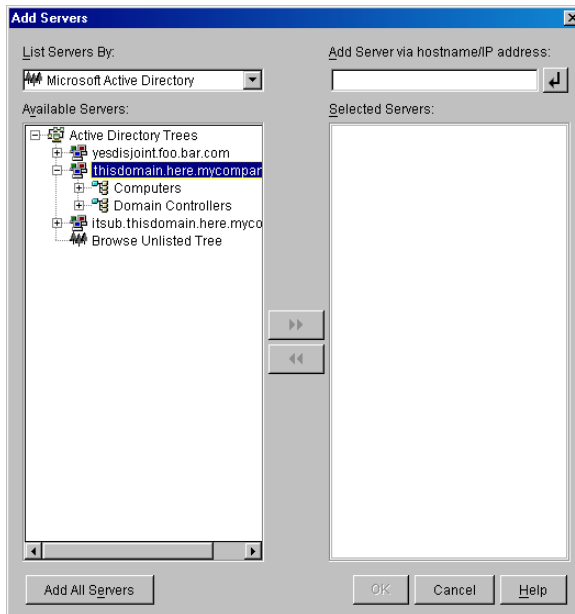


Other options in this dialog box include the following:

- ♦ You must be an administrative user for a server in order to add it to the *Selected Servers* list. If you are not authenticated to a server, the object is designated by a question mark. You can double-click the question mark to authenticate to the server, then click the double-right arrow to move the server to the *Selected Servers* list, provided it is a supported server platform for ZENworks 7 Desktop Management.
- ♦ When you list servers in Microsoft domains, NetWare servers are not listed for browsing because ZENworks files that are located on a Windows server cannot be obtained through a Middle Tier Server installed on NetWare.
- ♦ You can specify the hostname or IP Address of a server in the Add Server Via Hostname/IP Address field. The value that you enter must be resolvable to the name of a server located in the designated operating environment.  
Click  to begin the name resolution process and add the server to the Selected Servers list.  
If you are using multiple hostname aliases for a Windows server, the first alias must be the physical name of your Windows server.
- ♦ If the credentials you provided for authentication to the server (see [Step 11](#)) are not administrative credentials, you can add it as a target server, but you are re-prompted for Administrative credentials when you close the Add Servers dialog box.
- ♦ Click *Add All Servers* to add all of the servers in a selected domain or workgroup. Selecting a domain or workgroup selects all of the authenticated servers in that domain or workgroup.
- ♦ To remove a server from the *Selected Servers* list and return it to the *Available Servers* list, click the server name in the *Selected Servers* list, then click the double left-arrow. You can remove multiple servers from the *Selected Servers* list by selecting them with the Shift and Ctrl keys.

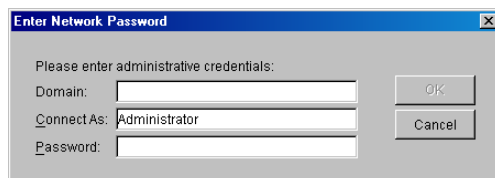
**14b** (Conditional if you want to list servers in a Microsoft Active Directory.) In the *List Servers By* drop-down list, select *Microsoft Active Directory*. If your workstation is a member of an Active Directory, the domains in the Active Directory trees are displayed. You can browse to all of the servers listed in Active Directory (on a per domain basis),

browse the structure to the server of your choice, then click the double right-arrow to move it to the *Selected Servers* list box.




Other options in this dialog box include the following:

- You can also click *Browse Unlisted Tree* to open a dialog box where you can specify the name of the domain you want to add, then authenticate to it with the proper credentials prior to displaying its servers in the *List Servers By* drop-down list.



- You can specify the hostname or IP address of a server in the *Add Server Via Hostname/IP Address* field. The value that you enter must be resolvable to the name of a server located in the designated operating environment.

Click  to begin the name resolution process and add the server to the *Selected Servers* list.

- Right-click a domain object to select one of three search methods:

**Search Standard Locations:** Lists the computers and domain controllers at the root of the domain. This is the default search method.

**Search Entire Directory:** Lists all directory containers where computers are located.

**Browse Directory Hierarchy:** Lists all of the containers in the directory, which you can expand and browse one at a time to find the computer you want. This search method might be useful if you have computers in a non-standard location of a large directory.

- Click *Add All Servers* to add all of the servers in a selected domain or container. Selecting a domain or container selects all of the servers in that domain or container.
- To remove a server from the *Selected Servers* list and return it to the *Available Servers* list, click the server name in the *Selected Servers* box, then click the double left-arrow. You can remove multiple servers from the *Selected Servers* list by selecting them with the Shift and Ctrl keys.

- 15** On the Summary page, review the location where you have chosen to install the ZENworks Middle Tier Server software and the Desktop Management Server to which it is associated, then click *Finish* to begin the installation process if the summary is correct.

The Middle Tier Server Installation Wizard launches another installation program. Wait until this program is completed.

---

**IMPORTANT:** You can review the installation log file after the installation has completed. The log file name is `datestamp_timestamp_zdmmidtier_install.log` (for example: `20040304_024034_zdmmidtier_install.log`). It is located in the `\novell\zfdtemp` directory on the machine you are installing from. This log file indicates whether any component failed to install.

You can also review the installation summary to review the selections you made. The summary is saved in a log file named `datestamp_timestamp_zdmmidtier_installsinstallsummary.log` (for example: `20040304_024034_zdmmidtier_installsinstallsummary.log`). It is also located in `c:\novell\zfdtemp`.

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- 16** In ConsoleOne pointing to eDirectory on the Desktop Management Server, make sure you have set up the Desktop Management Server to allow clear text passwords.
- 17** Reboot the server where you installed the ZENworks Middle Tier Server software.
- 18** Verify that the ZENworks Middle Tier Server is installed and running by entering one of the following URLs at a browser on the workstation:

`http://srv-02/oneNet/xtier-stats`

`http://srv-02/oneNet/zen`

If the ZENworks Middle Tier Server is running, the first URL opens a Web page where server statistics are displayed. You should be able to see where the request count increases by clicking the Refresh button on your browser.

The second URL launches a dialog box that prompts for user credentials.

- 19** At a network browser, enter `http://srv-02/oneNet/nsadmin` and log in as the Admin user to eDirectory to change the LDAP ports to match those you changed in **Step 9a** of the “**The eDirectory Subinstallation**” on page 209.

Because eDirectory and Active Directory are installed on the same network server, you might not be able to log in to eDirectory. If this is the case, go to the registry of the server where the ZENworks Middle Tier is installed, then change the LDAP Port DWord value of the `HKLM\Software\Novell\Xtier\Configuration\Xsrv` registry key to the port you specified in **Step 9a** of the “**The eDirectory Subinstallation**” on page 209.

## Installing ODBC Drivers for Sybase

Before running the inventory reports, review the following:

- ❑ Make sure that the appropriate ODBC client for Sybase, Oracle, or MS SQL is installed on the machine running ConsoleOne. The ODBC driver is automatically configured on the machine when you invoke the Inventory report.

To install the ODBC driver for the Sybase database:

1. In the *Novell ZENworks 7 Companion 2 CD*, open the `\database drivers` directory.
2. Follow the instructions in the `odbcreadme.txt` file in the `\database drivers` directory. The information helps you to set up the address of the Sybase database and verify that you can make a connection.

For Oracle, you must install the appropriate client for ODBC. For example, for Oracle9i Inventory database, install the Oracle9i client because Inventory reports are not compatible with either the older or the later version of the client.

For MS SQL, the client is available on all Microsoft Windows operating systems.

- ❑ Make sure that at least MDAC 2.6 SP1 (Microsoft Data Access Component) is installed particularly on a Windows NT machine for running Crystal Reports\*. To check the version of MDAC on your box: select *Control Panel > ODBC Data sources > the About* tab pane. The minimum version required is 3.520.7326.0. If the version you have does not match the minimum requirement, you need to upgrade the ODBC core components by downloading them from the [Microsoft Data Access and Storage Downloads Web site \(http://microsoft.com/data/download.htm\)](http://microsoft.com/data/download.htm)

## Deploying the Desktop Management Agent to User Workstations

When ZENworks 7 Desktop Management is running in a Windows server environment, you need to install the Desktop Management Agent onto user workstations and begin to use the Desktop Management features to manage those workstations.

The Desktop Management Agent Distributor facilitates the initial deployment and future upgrades of the ZENworks Desktop Management Agent through the use of Microsoft domains and Microsoft Active Directory. The Agent Distributor uses Microsoft domains and Active Directory when selecting target workstations and during deployment of the Desktop Management Agent to those same target workstations.

For more information about using the Desktop Management Agent Distributor to deploy the Desktop Management Agent to workstations in your Windows network, see [Section 12.5, “Using the Desktop Management Agent Distributor to Deploy the Agent to Workstations in a Microsoft Domain,” on page 149.](#)

## 18.2 Installing ZENworks 7 Desktop Management with SP1 in a Windows Environment

Use the following information if you are performing a new installation of ZENworks 7 Desktop Management with Support Pack 1 in a Windows environment:

- ♦ [Section 18.2.1, “Preparing ZENworks 7 Desktop Management with SP1 for Installation in a Windows Network Environment,” on page 250](#)

- ♦ [Section 18.2.2, “Installing ZENworks 7 Desktop Management with SP1 in a Windows Network Environment,” on page 252](#)

## 18.2.1 Preparing ZENworks 7 Desktop Management with SP1 for Installation in a Windows Network Environment

- ♦ [“Expected Network Setup” on page 250](#)
- ♦ [“Minimum Software Requirements” on page 251](#)
- ♦ [“Identity Manager Engine and Drivers” on page 252](#)

### Expected Network Setup

The following Windows network setup is assumed for the back end of this sample Windows environment:

- ♦ A Windows Server 2003 (SRV-01), to serve as the Active Directory Domain Controller of an Active Directory domain.
- ♦ The ZENworks 7 Middle Tier Server with SP1 installed on a Windows Server 2003 server (SRV-02) where Microsoft IIS is installed. This server must be in the same domain as the Active Directory Domain Controller. It can be the same server that has ZENworks software installed, but you should consider keeping the IIS server independent to minimize performance issues. You must also keep it on a separate server from the Password Synchronization Module in Identity Manager.
- ♦ The ZENworks 7 Desktop Management Server with SP1 installed on a Windows Server 2003 (SRV-03) with Novell eDirectory, the Novell Client, Novell ConsoleOne, Identity Manager 3 Bundle Edition, and Novell iManager 2.6 installed. This server must be in the same domain as the Active Directory Domain Controller, but it is not the domain controller.

For information about the user workstation configuration options for ZENworks in a Windows environment, see [“ZENworks Desktop Management User Workstation Configuration Options” on page 250](#).

### ZENworks Desktop Management User Workstation Configuration Options

ZENworks Desktop Management can run on user workstations using either the Novell Client or by using two other non-client modes:

- ♦ [Application Browser View Mode](#)
- ♦ [Full Desktop Management Agent Mode](#)

It is assumed that in a Windows network environment, the Novell Client is not used on user workstations; therefore, you need to decide on the features you need in your network and configure ZENworks Desktop Management for your users in one of the non-client modes.

#### Application Browser View Mode

In this mode, a single Application Browser View is delivered when a user connects to IIS and opens the application page (`myapps.html`) provided by ZENworks Desktop Management. The Web view is automatically installed on the workstation if the user has rights to install applications locally.

The Application Browser mode can deliver applications to the workstation only when the user connects to a personalized application Web page. Dynamic local user account creation, hardware and software inventory, automated imaging services, and remote management capabilities are not included in this mode.

## Full Desktop Management Agent Mode

In Full Desktop Management Agent mode, all of the Desktop Management components are installed on the workstation by an administrator, as part of an image, or by the user. By including all of the Desktop Management components in the Desktop Management Agent installation, you provide your users all of the capabilities that ZENworks Desktop Management has to offer.

If you want to create a Dynamic Local User account on the workstation, you can configure the Desktop Management Agent to prompt the user to log in to eDirectory prior to the local login to Windows. When the agent has this configuration, the user is prompted for an eDirectory user name and password (which should be the same as the Active Directory account, because the two accounts are being synchronized by Identity Manager 3), then ZENworks Desktop Management creates a local account on the workstation if one is not present and logs the user into Windows with the provided username and password.

If you do not require Dynamic Local User account creation, ZENworks silently passes Novell user credentials to Windows when the user logs into the workstation if that user already has an account on the workstation (the user does not need an account on the workstation if he or she is logging in to Active Directory and the workstation is part of the Active Directory domain). The Desktop Management Agent then connects to eDirectory using the provided username and password in order to distribute applications to the user.

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**NOTE:** With the Desktop Management Agent installed on the workstation, you might still choose to deliver applications through the browser view only.

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## Minimum Software Requirements

ZENworks 7 Desktop Management with Support Pack 1 requires the following software in this sample Windows network:

- ♦ Installed on one Windows Server 2003 (SRV-02) in a Windows domain:
  - ♦ Microsoft IIS Web Server
- ♦ Installed on a second Windows Server 2003 (SRV-03):
  - ♦ Novell Client 4.91 SP2 (or higher) for Windows 2000/XP/2003, necessary for installing ZENworks (not otherwise installed in a Windows network)  
You can download the client from the [Novell Download Web site \(http://download.novell.com/index.jsp\)](http://download.novell.com/index.jsp).
  - ♦ The following software is available on The *Novell ZENworks 7 with Support Pack 1 Companion 1* CD:
    - ♦ eDirectory 8.8 (or later)
    - ♦ Novell ConsoleOne 1.3.6e (or later) for managing ZENworks resources in eDirectory
    - ♦ Novell iManager 2.6 for configuring and administering the Identity Manager drivers.

- ♦ The following software available on The *Novell ZENworks 7 with Support Pack 1 Companion 2 CD*
  - ♦ Novell Identity Manager 3 Bundle Edition to synchronize eDirectory resources with Active Directory

## Identity Manager Engine and Drivers

The Identity Manager (IDM) engine provides the ability to synchronize eDirectory data with any outside data service. The IDM engine has several drivers that describe how output and input should be sent between data sources.

The driver for Active Directory is specifically designed to synchronize data between Novell eDirectory and Microsoft Active Directory. The synchronization is bidirectional; you determine whether information should flow to and from both directories, or whether information should flow only from one directory to the other.

Many Identity Manager drivers are available for installation on Windows Server 2003 for synchronization with other data sources such as PeopleSoft, JDBC, any LDAP directory, Lotus Notes, SAP HR, and WebSphere MQ. For information about other drivers, see the [Novell Identity Manager Web site \(http://www.novell.com/products/identitymanager/drivers/\)](http://www.novell.com/products/identitymanager/drivers/) or the [Identity Manager Drivers Guides \(http://www.novell.com/documentation/idmdrivers/index.html\)](http://www.novell.com/documentation/idmdrivers/index.html).

IDM architecture uses a publisher/subscriber model. In this model, the publisher's responsibility is to place information into eDirectory while the subscriber places changes from eDirectory into the external, synchronized data source. The behavior of the publisher and subscriber and the attribute mapping are determined by a set of rules that are part of the driver. Drivers can be customized through XML rules to deliver nearly any data configuration you want.

For more details about how IDM can be configured, see the [Novell Identity Manager 3 documentation Web site \(http://www.novell.com/documentation/idm/\)](http://www.novell.com/documentation/idm/).

For information about licensing IDM 3, see “[Activating the Identity Manager 3 Bundle Edition](#)” on [page 252](#).

### Activating the Identity Manager 3 Bundle Edition

The *Novell ZENworks 7 with Support Pack 1 Companion 2 CD* includes Novell Identity Manager 3 Bundle Edition. For more information about activating the bundle, see [Appendix D, “Using Identity Manager 3 Bundle Edition for ZENworks 7 with SP1,” on page 573](#).

## 18.2.2 Installing ZENworks 7 Desktop Management with SP1 in a Windows Network Environment

When you install ZENworks in a Windows network environment/Active Directory test environment, you need perform the following tasks in order:

1. “[Configuring a Test Lab](#)” on [page 253](#)
2. “[Accessing Software on the ZENworks 7 with SP1 Companion CDs](#)” on [page 253](#)
3. “[Installing the Novell Client](#)” on [page 254](#)
4. “[Installing eDirectory](#)” on [page 255](#)
5. “[Installing ConsoleOne](#)” on [page 257](#)



6. “Installing and Setting Up iManager 2.6” on page 257
7. “Verifying the Viability of the Directory Tree” on page 259
8. “Installing Identity Manager 3 Bundle Edition” on page 260
9. “Configuring DirXML Drivers” on page 216
10. “Installing Password Synchronization and Enabling Universal Password” on page 225
11. “Finalizing DirXML Driver Configuration” on page 229
12. “Verifying that eDirectory, DirXML, and Universal Password Are Working Properly” on page 233
13. “Installing the Desktop Management Server” on page 233
14. “Installing the ZENworks Middle Tier Server” on page 240
15. “Installing ODBC Drivers for Sybase” on page 249
16. “Deploying the Desktop Management Agent to User Workstations” on page 249

## Configuring a Test Lab

An actual enterprise environment might include many servers used for a variety of things, such as application execution, terminal services, and so on. This section uses the following small-scale Windows network configuration as a sample test lab environment:

- ♦ A Windows Server 2003, to serve as the Active Directory Domain Controller of the ZENDEMO domain. This server is designated as SRV-01.
- ♦ A Windows Server 2003 with the IIS Web Server also installed. The server also needs Novell eDirectory, the ZENworks Desktop Management Server, Novell iManager, and Identity Manager 3 Bundle Edition (including Password Synchronization) installed. This server is a member of the ZENDEMO domain. It is designated as SRV-02.
- ♦ A Windows Server 2003, where the ZENworks Middle Tier Server is installed. It is designated as SRV-03.
- ♦ A Windows XP Professional SP1a (or later) workstation, which will operate in the Desktop Management Agent mode (that is, where all components of the Desktop Management Agent are installed). This workstation is designated as WKS-01.
- ♦ A Windows XP Professional SP1a (or later) workstation where the Application Browser View of the Novell Application Launcher is installed. This workstation is designated as WKS-02.

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**NOTE:** This is a sample configuration only to be used as a test environment. For information about the server platforms and user workstations that are supported, see [Chapter 2, “Platform Support for the Desktop Management Infrastructure,”](#) on page 27 and [Chapter 7, “User Workstation Requirements,”](#) on page 69.

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## Accessing Software on the ZENworks 7 with SP1 Companion CDs

As you set up ZENworks 7 with SP1 in a Windows network environment, you need to access the first two *Novell ZENworks 7 with Support Pack 1 Companion* CDs.

You can access the contents of the *Companion* CDs through the installation program. To do so, insert any *Novell ZENworks 7 with Support Pack 1* CD into the CD drive of a Windows workstation. The installation program should run automatically. If it does not, run `winsetup.exe` from the

root of the CD. Click *Companion Programs and Files*, insert the CD you are prompted for (if needed), then browse for the component you need on one of the two menu pages.

You need the following components from the *Companion* CDs:

- ♦ Novell Identity Manager 3 Bundle Edition, available on the *Novell ZENworks 7 with Support Pack 1 Companion 2* CD. The IDM 3 installation program (`install.exe`) is available on the *Novell ZENworks 7 with Support Pack 1 Companion 2* CD in the `\nsure identity manager 3 bundle edition\nt` directory.
- ♦ Novell eDirectory 8.8.1 for Windows Server 2003. The self-extracting .zip file (`edir_88_win.exe`) containing the eDirectory 8.8.1 installation program is available on the *Novell ZENworks 7 with Support Pack 1 Companion 1* CD in the `\novell edirectory for windows 2k` directory.
- ♦ Novell ConsoleOne 1.3.6e. The ConsoleOne installation program (`c1.exe`) is available on the *Novell ZENworks 7 with Support Pack 1 Companion 1* CD in the `\novell consoleone` directory.
- ♦ Novell iManager 2.6. The .zip file (`iman_26_nw65_standalone.zip`) containing the iManager 2.6 installation program is available on the *Novell ZENworks 7 with Support Pack 1 Companion 1* CD in the `\novell imanager\program files\installs\win` directory.

## Installing the Novell Client

We recommend that you install the latest *Novell Client for Windows*, which is available for download from the [Novell Product Download web site \(http://download.novell.com/index.jsp\)](http://download.novell.com/index.jsp)

To download the client:

- 1 Download the client self-extracting file to a temporary directory.
- 2 In the temporary directory, double-click the file and specify the path where you want the files to be extracted.

A specific directory structure will be created in the path you specify.

- 3 Click *Unzip* and follow the on-screen instructions

To install the client, follow these instructions:

- 1 Double-click `setupnw.exe` in the `download_location\winnt\I386` directory.
- 2 In the Novell Client license agreement dialog box, click *Yes*.  
(Conditional) If you do not agree with the terms of the license agreement, do not install the software. Click *Cancel*.
- 3 Select *Custom Installation*, then click *Next*.
- 4 Verify that only the client is selected on the modules list, then click *Next*.
- 5 Verify that *NMAS* and *NICI* are selected and that *NetIdentity* is deselected, then click *Next*.
- 6 Select *IP Only* and *Remove IPX* (if present), then click *Next*.
- 7 Select *NDS* to instruct the client to default to using NDS connections, click *Next*, then click *Finish*.
- 8 When the installation is finished, select *Reboot*.

## Installing eDirectory

**NOTE:** The bundling of eDirectory 8.8.1 with ZENworks Suite 7 with Support Pack 1 constitutes a valid license; that is, when you license ZENworks, you also license eDirectory.

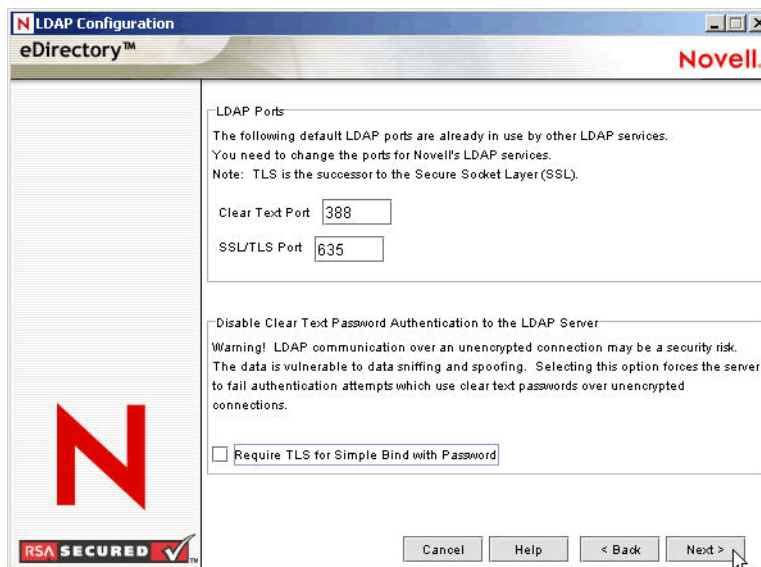
To start the eDirectory installation program for the SVR-02 server in your Windows network environment test system:

- 1 Log onto the SVR-02 Windows Server 2003 as administrator and launch the eDirectory installation program from the *Novell ZENworks 7 with SP1 Companion 1* CD (see “[Accessing Software on the ZENworks 7 with SP1 Companion CDs](#)” on page 253). The CD should autorun. If not, run `winsetup.exe` located at the root of the CD.
- 2 Select *Companion Programs and Files*, select *Novell eDirectory* to launch a program that unpacks the eDirectory installation files into a specified directory, specify the `c:\edir88` directory to unzip the files, then click *Close* when the files are extracted.
- 3 Browse to the `c:\edir88\nt` directory and launch `setup.exe`, then click *Install*.



- 4 At the eDirectory Installation Welcome dialog box, click *Next*.
- 5 Read the license agreement, then click *I Accept* if you agree with the terms of the license agreement.  
(Conditional) If you do not agree with the terms of the license agreement, do not install the software. Click *Cancel*.
- 6 Select a language for the installation, then click *Next*.
- 7 Click *Next* to accept the default installation path. If the path has not been created previously, the installation program prompts you for authorization to do so.
- 8 Click *Yes* to create the new directory.

- 9 Click *Next* to accept the default installation path for the location of a new Directory Information Base (DIB). If the path has not been created previously, the installation program prompts you for authorization to do so.
- 10 Click *Yes* to create the new directory.
- 11 Select *Create a New eDirectory Tree*, then click *Next*.
- 12 Set up the access to the new tree and server.
  - 12a Specify a name for the new tree, such as ZENTREE.
  - 12b Specify a Server object context, such as SVR-02.SERVICES.ZEN.  
 This document assumes that you are creating an Organization container in eDirectory named ZEN, an Organizational Unit container named SERVICES where SVR-02 will reside, and an Organizational Unit container named USERS where the Admin user object will reside.
  - 12c Specify the name of the Admin user object, such as Admin.
  - 12d Specify the password of the Admin user object, such as Novell, then click *Next*.
- 13 On the HTTP Server Port Configuration page, accept the HTTP Stack Ports as default, because there will be no conflicting ports on this server, then click *Next*.
- 14 On the LDAP Configuration page, specify which LDAP ports to use.



When Active Directory and eDirectory are installed on the same Windows server, you need to choose other LDAP ports, because eDirectory must not interfere with default Active Directory ports 389 and 636.

- 14a Change the *Clear Text Port* number to 388, then change the *SSL Port* to 635.
- 14b Deselect *Require TLS for Simple Bind with Password* to allow password synchronization to function, then click *Next*.
- 15 Click *Next* to accept the default NMAS login method.
- 16 Click *Finish* to complete the eDirectory installation.  
 The eDirectory installation program performs the installation on the SRV-02 server. When the program completes successfully, click *Close* in the Success dialog box.

## Installing ConsoleOne

When the eDirectory installation is complete, you need to manually install ConsoleOne on SRV-02.

- 1 Insert the *Novell ZENworks 7 with Support Pack 1 Companion 1* CD into the CD drive of SRV-02 (see “[Accessing Software on the ZENworks 7 with SP1 Companion CDs](#)” on page 253). If the CD does not autorun, run `winsetup.exe` from the root of the CD.
- 2 Select *Companion Programs and Files*, then select *Novell ConsoleOne*.
- 3 In the WinZip self-extractor dialog box, click *Setup* to launch the extraction and to start the ConsoleOne installation program.
- 4 On the ConsoleOne Installation Wizard welcome page, click *Next*.
- 5 Read the License agreement, then click *I Accept* if you agree with the terms of the License Agreement.  
(Conditional) If you do not agree with the terms of the license agreement, do not install the software. Click *Cancel*.
- 6 Accept the default installation path, then click *Next*.
- 7 Accept the default components for installation, then click *Next*.
- 8 On the Additional Languages page, select any additional languages you want to install, then click *Next*.
- 9 Read the JInfoNet Licensing Agreement page, then click *I Accept* if you agree with the terms of the license agreement.  
(Conditional) If you do not agree with the terms of the license agreement, do not install the software. Click *Cancel*.
- 10 On the ConsoleOne Installation Summary page, click *Finish* to install ConsoleOne 1.3.6e on the SRV-02 server.
- 11 On the ConsoleOne Installation Success page, click *Close*.

## Installing and Setting Up iManager 2.6

The iManager 2.6 tool is required for configuring Identity Manager 3 drivers, which are used to synchronize Active Directory and eDirectory.

---

**NOTE:** We recommend that you install Novell iManager on a server where the Microsoft IIS Web server has already been installed. Although iManager can run on Windows 2003 servers without IIS installed, the absence of IIS requires that you install the Apache Web server with the Tomcat servlet.

---

When the eDirectory installation is complete, you can manually install and set up Novell iManager 2.6 on SRV-02.

- 1 Insert the *Novell ZENworks 7 with Support Pack 1 Companion 1* CD into the CD drive of SRV-02. If the CD does not autorun, run `winsetup.exe` from the root of the CD.
- 2 Select *Companion Programs and Files*, then select *Novell iManager*.
- 3 On the Novell iManager Installation Wizard welcome page, click *OK*.
- 4 On the iManager Introduction page, click *Next*.
- 5 Read the License agreement, click *I Accept* if you agree with the terms of the License Agreement, then click *Next*.

(Conditional) If you do not agree with the terms of the license agreement, do not install the software. Click *Cancel*.

- 6 On the Detection Summary page, make sure that the IIS Web server is already installed (version 6 on Windows Server 2003), visually check the other default values, then click *Next*.

If the IIS Web server is not already installed, the iManager installation program installs the Apache Web server with the Tomcat servlet.

- 7 On the Choose Install Folder page, accept the default on the installation path, then click *Next*.
- 8 On the Get User and Tree Names page, fill in the fields:

**Username:** Specify the username and context (for example, admin.users.novell) of the administrative account with which you will configure iManager and its modules.

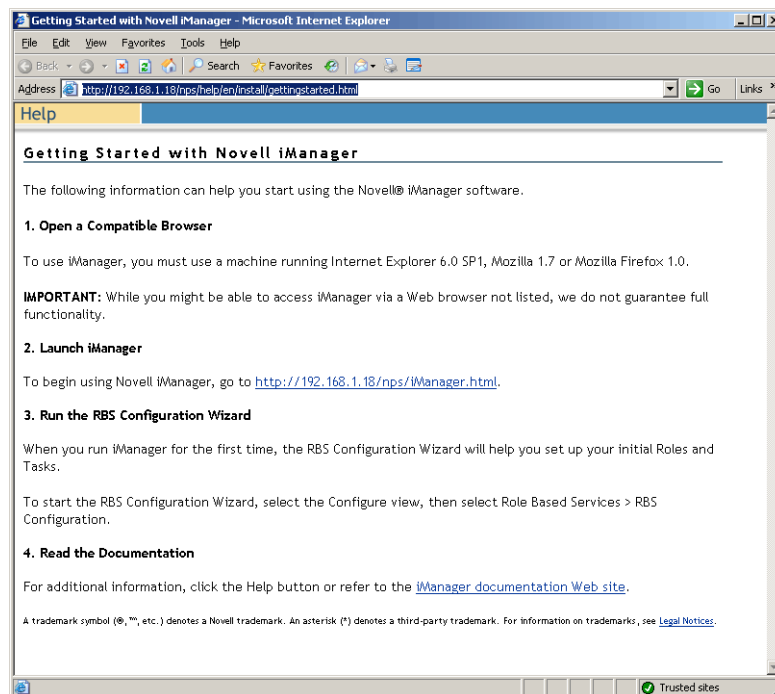
**Tree Name:** Specify the name of the eDirectory Tree that iManager will primarily manage, for example ZENTREE.

- 9 On the Pre-Installation Summary page, click *Install*.
- 10 On the Install Complete page, click *Done* to finish the iManager installation on the SRV-02 server.

## Setting Up iManager for Launch

Use the following steps to complete the setup of iManager for launching:

- 1 From the Windows desktop, double-click the Novell iManager shortcut to launch Internet Explorer and display the Getting Started with Novell iManager help page.



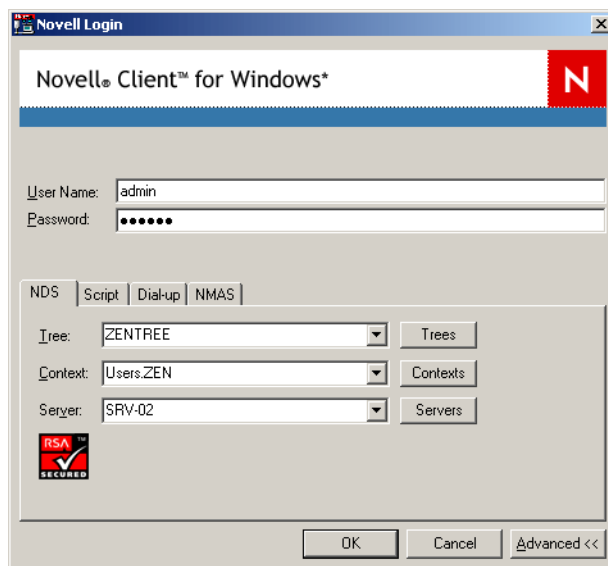
- 2 In Internet Explorer, click *Tools* > *Internet Options* to open the Internet Options dialog box.
- 3 From the Internet Options dialog box, click *Security*, click *Trusted Sites*, then click *Sites* to open the Trusted Sites dialog box.

- 4 In the *Add This Web Site to the Zone* field of the Trusted Sites dialog box, specify the URL of SRV-02 (for example, `http://server_IP_address`), click *Add*, click *Close*, then click *OK* to open the iManager Login page.
- 5 From the iManager Login page, make sure the *Username*, *Tree Name* or *IP* is supplied, then enter the user password to launch iManager.
- 6 From the iManager Home page, click the View Objects icon, then click the *Browse* tab in the left pane to locate the tree (ZENTREE) and to verify that the Admin object and the server are present.

## Verifying the Viability of the Directory Tree

When the installation of eDirectory and iManager is complete, verify that the tree is viable:

- 1 Log in to eDirectory.
  - 1a From the Windows server desktop, right-click the red N in the taskbar and select *NetWare Login*.
  - 1b Type Admin in the *Username* field.
  - 1c Type novell in the *Password* field.
  - 1d Click Advanced to open the NDS page of the login dialog box.
  - 1e Type ZENTREE in the *Tree* field.
  - 1f Type USERS . ZEN in the *Context* field.
  - 1g Type SRV-02 in the *Server* field, then click *OK* to log in to eDirectory.



- 2 To verify that you are logged into the tree as Admin, right-click the red N in the taskbar, select *NetWare Connections*, verify that a resource is listed for ZENTREE and for the username (CN=Admin).  
The authentication state for this connection should be listed as *Directory Services*.
- 3 Click *Close* to close the NetWare Connections dialog box.
- 4 Create a shortcut on your server for `c:\novell\nds\ndscons.exe`.

NDSConsole is a utility that lets you view the state of the eDirectory tree and the services that are running.

- 5 Click the NDSConsole shortcut, then verify that at least `ds.dlm` and `nldap.dlm` are running.

You now have an eDirectory tree running on your Windows Server 2003.

### Installing Identity Manager 3 Bundle Edition

When eDirectory is running and stable, you need to install Novell Identity Manager 3 Bundle Edition (IDM 3) with the proper drivers so that users can be synchronized between your Active Directory Domain and eDirectory.

Before you install IDM 3, make sure you read and understand the information included in [Appendix C, “Using the Identity Manager Bundle 2 Edition for ZENworks 7 Desktop Management,” on page 569](#).

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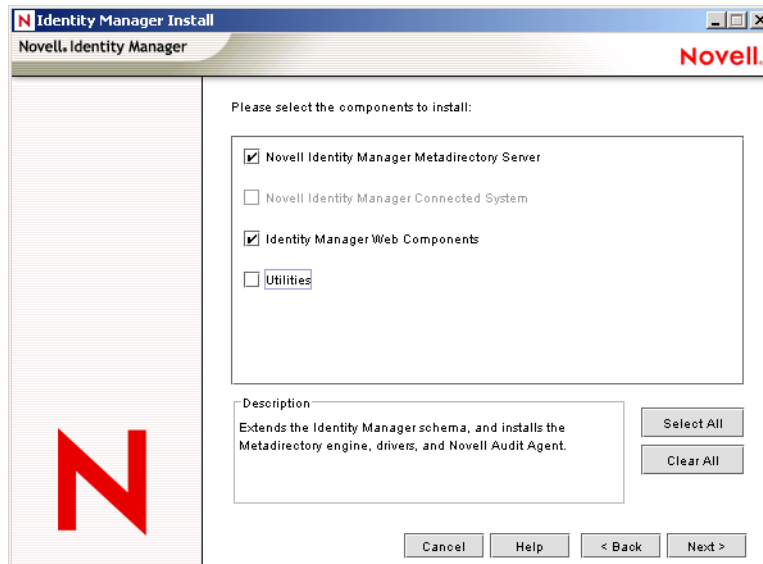
**IMPORTANT:** Make sure that no ZENworks services are running on the Windows server when you install IDM 3.

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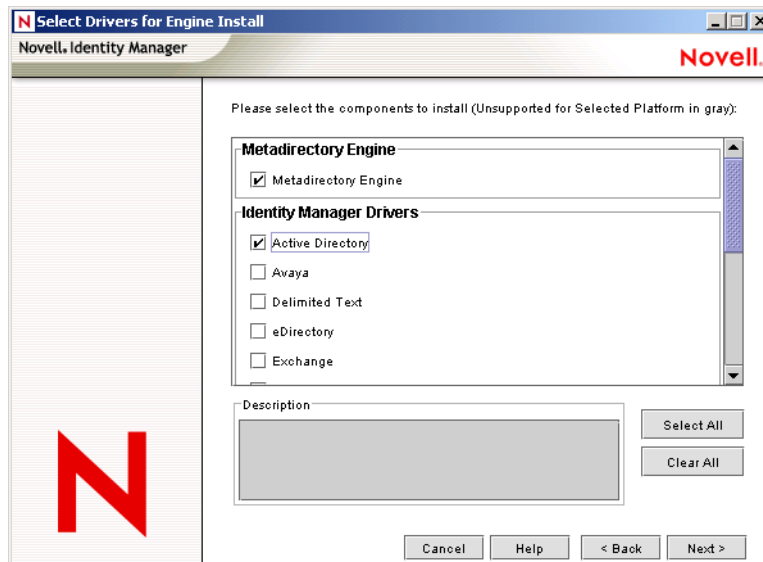
- 1 Log on to the SRV-02 Windows Server 2003 as administrator and into eDirectory as admin.
- 2 Insert the *Novell ZENworks 7 with Support Pack 1 Companion 2* CD into the CD drive of SRV-02, then use Windows Explorer to browse to the `\nsure identity manager 3 bundle edition` folder.
- 3 Double-click `setup.bat` to launch the IDM 3 installation program.
- 4 On the Identity Manager Welcome page, click *Next*.
- 5 Read the License agreement, then click *I Accept* if you agree with the terms of the license agreement.  
(Conditional) If you do not agree with the terms of the license agreement, do not install the software. Click *Cancel*.
- 6 On the Identity Manager Overview page, click *Next* twice.



- 7 On the component selection page, select *Novell Identity Manager Metadirectory Server*, select *Identity Manager Web Components*, deselect *Utilities*, then click *Next*.



- 8 On the *Select Drivers for Engine Install* page, click *Clear All*, select *Metadirectory Engine*, select *Active Directory* (in the *Identity Manager Drivers* list), then click *Next*.

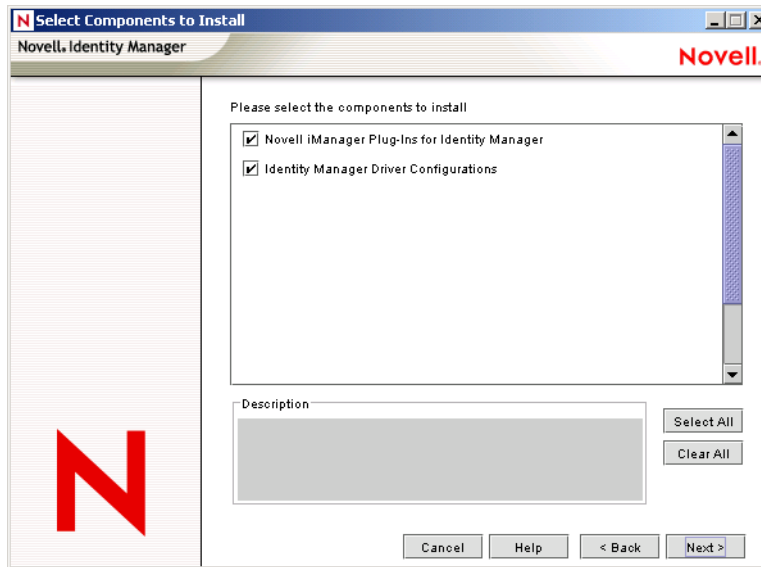


- 9 (Conditional) On the Identity Manager Warning: Activation Notice dialog box, you are reminded to license Novell Identity Manager. Click *Next*.

If you continue without activating the license, these components function only for a 90-day evaluation period. A license for the Metadirectory engine and Active Directory driver is included as part of the overall ZENworks 7 with SP1 license. If you choose not to activate the license, you can return and do so later.

- 10 (Conditional) In the Password Synchronization Upgrade Warning dialog box, you are informed that older versions of Password Synch need to be upgraded. Read the information in the dialog box if applicable, then click *OK*.

- 11 On the Schema Extension page, verify that the tree is appropriate (ZENTREE), type or browse to and select the fully distinguished name (DN) of the admin user and the user's password (admin user name is CN=admin,OU=Users,O=ZEN), then click *Next*.
- 12 On the *Select Components to Install* page, retain the selected defaults, then click *Next*.



- 13 Read the Summary page, then click *Finish*.
- 14 In the Installation Complete dialog box, click *Close* for DirXML to finish the installation.
- 15 Reboot the server to allow the drivers to be properly registered.

When you have finished installing the Novell Identity Manager 3 Bundle Edition, you must configure the Identity Manager drivers before synchronization can occur. For more information, see [“Configuring Identity Manager Drivers” on page 262](#).

## Configuring Identity Manager Drivers

When you have finished installing eDirectory and Identity Manager on the SRV-02 server, you need to configure the Identity Manager drivers to begin synchronization between Active Directory Domain and eDirectory.

- 1 Log on to the SRV-01 server as the Active Directory administrator.
- 2 Insert the *ZENworks 7 with Support Pack 1 Companion 2* CD into the server's CD drive, browse to the `nsure identity manager 3 bundle`

edition\nt\dirxml\utilities\ad\_disc folder, then double-click `admanager.exe` to run the Active Directory Driver Preparation Tool.

The screenshot shows the 'Novell DirXML Active Directory Driver Preparation Tool' window. It contains several input sections and a status area. The 'Alternate Account' section has fields for Domain, User, and Password. The 'Domain Information' section has fields for Domain DN, Domain GUID, and Domain Controller. The 'Proposed DirXML Driver Account' section has fields for Account DN, Logon name, Password, and Re-enter Password, along with checkboxes for 'Create account if necessary' and 'Add to Administrators group'. The 'Exchange Home MDBs' section is a large empty text box. The 'Status' section displays the message 'Unable to locate language file NLS\ENU\ADManagerRes.dll'. On the right side, there are buttons for 'Done', 'Discover', 'Update', 'Copy', and 'Help'. Four green numbered circles (1, 2, 3, 4) are placed above the fields: 1 points to the Account DN field, 2 points to the Domain Controller field, 3 points to the Domain DN field, and 4 points to the Domain field in the Alternate Account section.

**2a** Click *Discover*.

The tool runs and discovers data for the fields on the tool window.

**2b** In the *Proposed DirXML Driver Account* grouping of the tool window, locate the *Password* field, type the password, locate the *Re-enter Password* field, type the password again, then click *Update*.

**2c** In the Create Account Notification dialog box, click *OK*.


**2d** Copy and paste the *Domain*, *Domain DN*, *Domain Controller*, and *Account DN* into a text file, then save the file to the desktop so that you can have access to the data later.

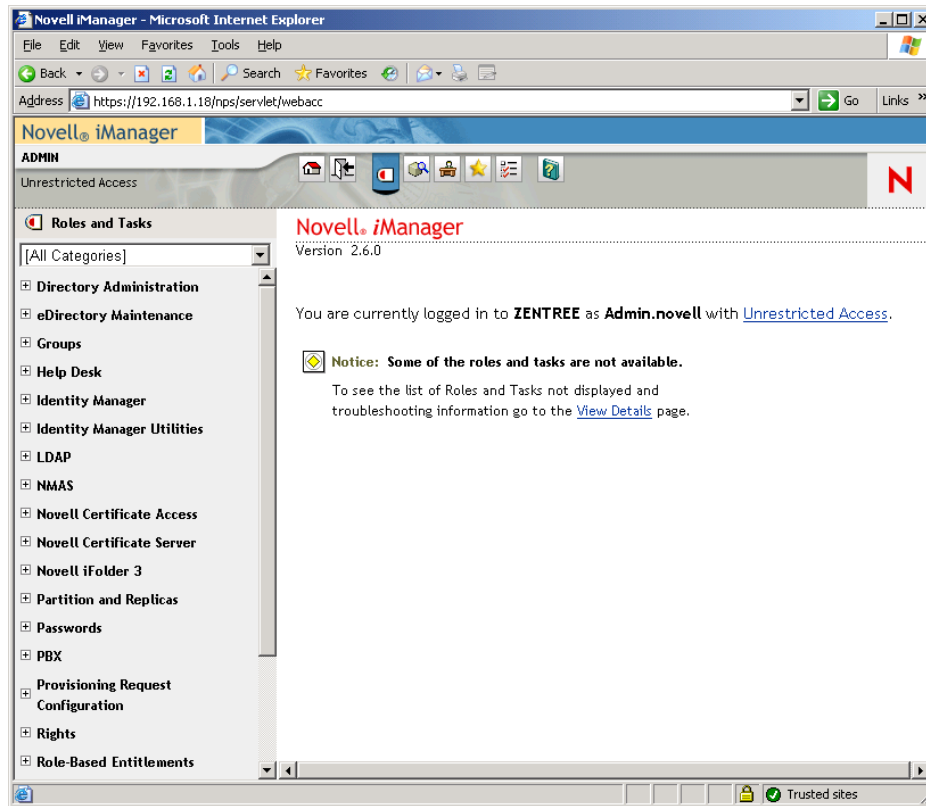
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**TIP:** If you prefer, you can leave the tool running. You will then be able to retrieve (copy) this data directly from the tool one field at a time for pasting into the fields of another configuration tool. See [Step 12 on page 222](#) for more information.

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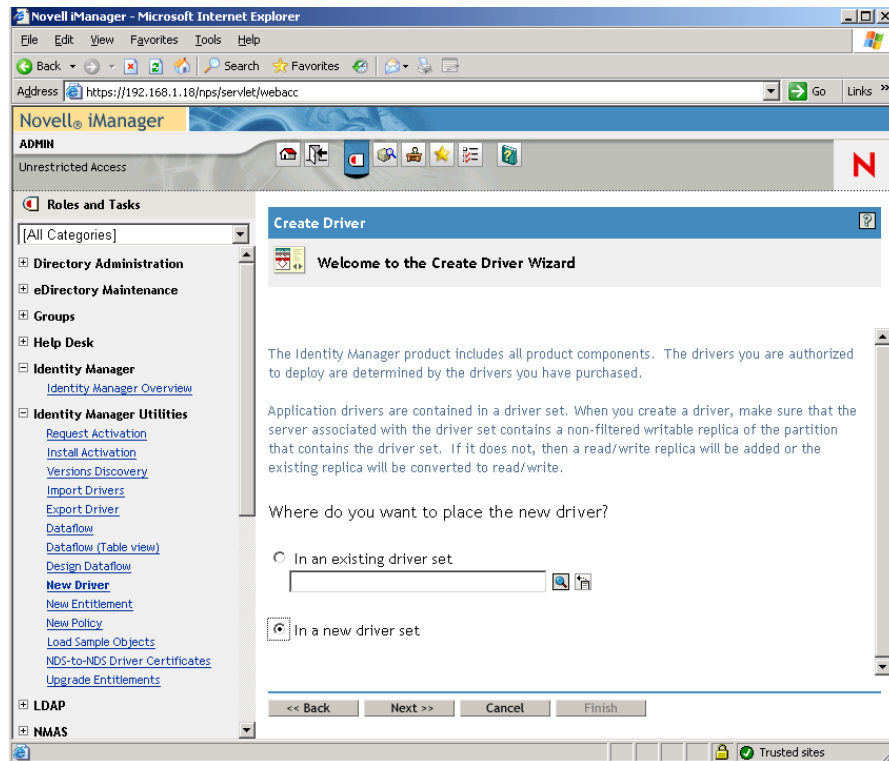
- 2e** Click *Done* to close the Preparation tool.
- 3** Complete the security setup for the DirXML account user.
  - 3a** From the Windows desktop, click *Start > Programs > Administrative Tools*, then select *Domain Controller Security Policy*.
  - 3b** In the Tree view, click *Security Settings > Local Policies > User Rights Assignment*.
  - 3c** Double-click *Log On As a Service > click Security > Add User or Group > Browse > Advance > Find Now*.
  - 3d** Select the user you created (ADDriver\_zendemo), click *OK*, then click *OK* again in the three succeeding dialog boxes.
  - 3e** Close the *Domain Controller Security Policy*.
- 4** At SRV-02, extend the eDirectory schema to accommodate the new Active Directory driver.
  - 4a** In the Windows Control Panel, double-click *Novell eDirectory Services*.
  - 4b** In the Novell eDirectory Services dialog box, select *install.dlm*, then click *Start*.
  - 4c** Click *Install Additional Schema Files*, then click *Next*.
  - 4d** Type the eDirectory admin login name (admin), type the context (ZEN\Users), type the password (novell), then click *OK*.
  - 4e** Browse to and select *c:\novell\nds\dvr\_ext.sch*, then click *Open*.
  - 4f** Click *Finish* to apply the schema.
  - 4g** Click the close (X) button in the Novell eDirectory Services dialog box.

- 5 At SRV-02, launch iManager, then click the Roles and Tasks icon  to open the iManager Roles and Tasks pane of the main iManager page.

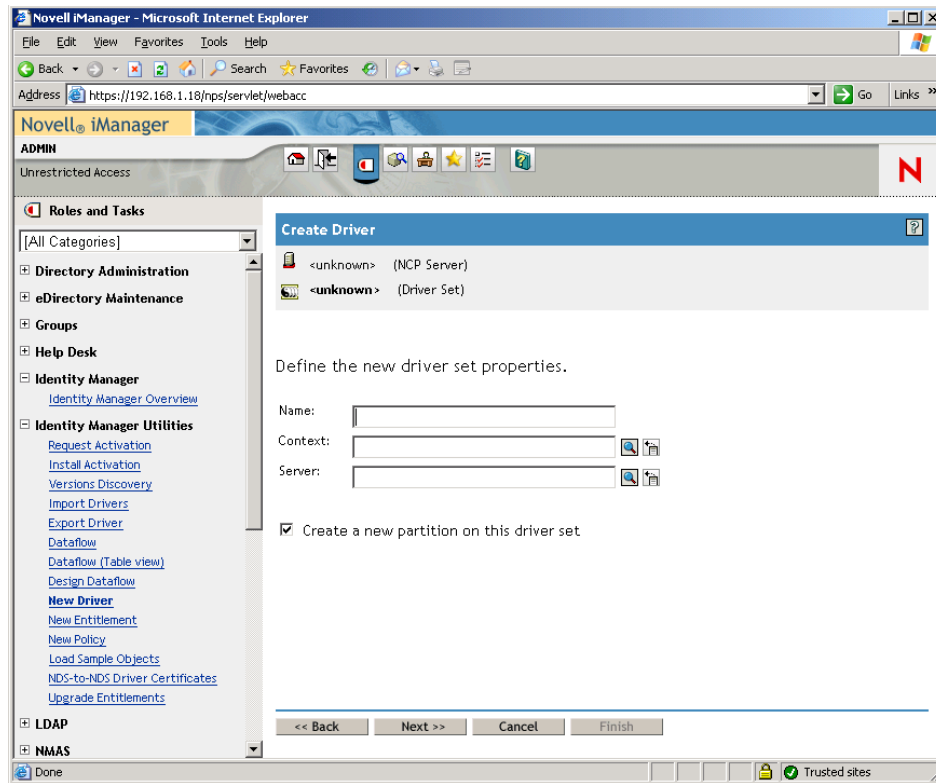


- 6 From iManager, create a new organizational unit (OU) container under the ZEN organizational container, then name this OU container IDM3.

- 7 In the Roles and Tasks pane, click *Identity Manager Utilities*, then click *New Driver* to open the Create New Driver Wizard.

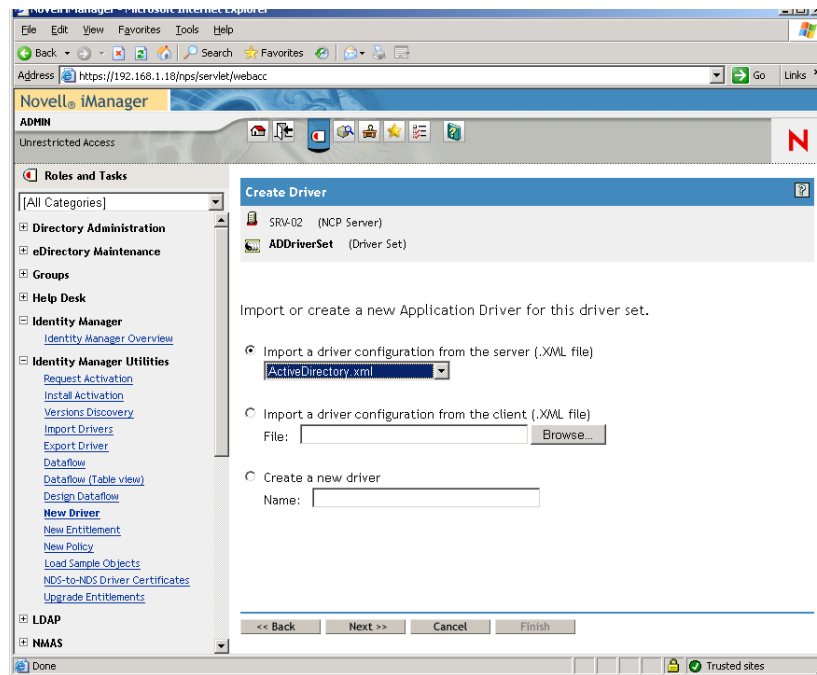


- 8 On the Create Driver Wizard opening page, click *In a New Driver Set*, then click *Next* to open the Create Driver page.

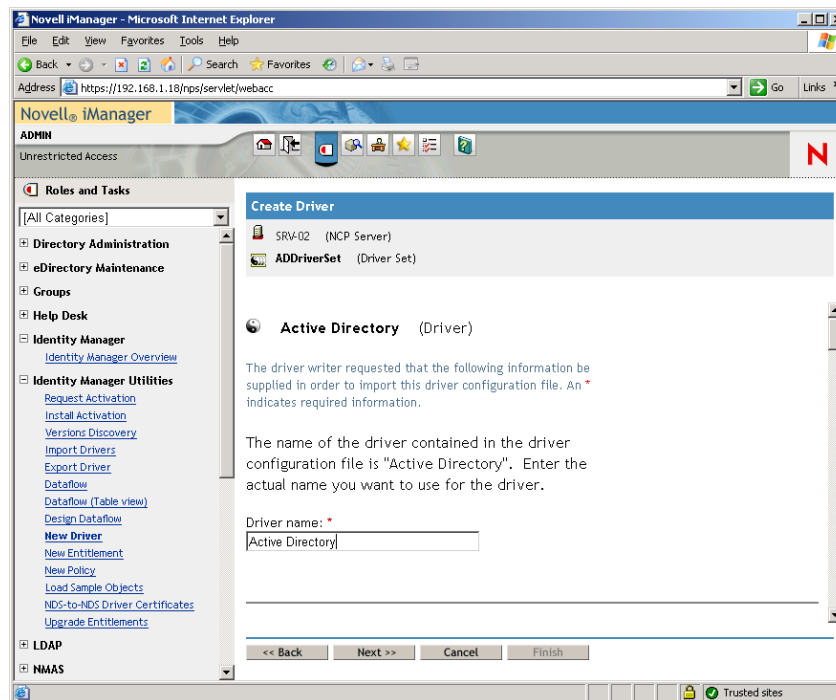


- 9 On the Create Driver page, fill in the fields:
- Name:** Type a driver set name, for example ADDriverSet.
  - Context:** Browse to and select the IDM3 container.
  - Server:** Browse to and select the SRV-02 server.
- 10 Click *Next*.

The wizard creates the objects for the driver set, then displays the ADDriver Set page.



- 11 Select *Import a driver configuration from the server (.XML File)*, browse to and select *Active Directory* from the drop-down menu, then click *Next* to display the Page 1 of the Active Directory Driver Set in the Create Driver Wizard.



- 12 Configure the driver parameters in the Create Driver Wizard:



**12a** On Page 1 of the Create Driver Wizard, fill in the fields that are listed (visible by scrolling):

**Driver Name:** Leave the name of the driver as the default.

**Authentication Method:** Use the default value (Negotiate).

**Authentication ID:** Type the AD Domain Name (NetBios) followed by a forward slash and the Driver Account User that was created (see [Step 2b on page 263](#)). You can obtain the Driver Account User from the Account DN name you copied in [Step 2d on page 263](#). (Also see item 1 in the graphic referenced in [Step 2d on page 263](#)).

For example, enter ZENDEMO/ADDriver\_zendemo on this line.

**Authentication Password:** Use the same password used to create the Proposed DirXML Driver Account in the `admanager.exe` tool (see [Step 2b on page 263](#)).

**Reenter the Password:** Re-enter the password you used in the field above.

**Authentication Context:** Copy and paste the Domain Controller name from the line items that you saved in a text file as you used `admanager.exe` (see [Step 2d on page 263](#) and item 2 shown on the screen shot referred to in this step).

**Domain Name:** Copy and paste the Domain DN name from the line items that you saved in a text file as you used `admanager.exe` (see [Step 2d on page 263](#) and item 3 shown on the screen shot referred to in this step).

**Domain DNS Name:** Copy and paste the Domain name from the line items that you saved in a text file as you used `admanager.exe` (see [Step 2d on page 263](#) and item 4 shown on the screen shot referred to in this step).

**Driver Polling Interval:** Specify the polling interval you want. In a lab environment, the interval should be set at approximately one minute. In a production environment, you should set the interval at approximately 15 minutes.

**Password Sync Timeout (minutes):** Retain the default value (5 minutes).

**Driver is Local/Remote:** Retain the default value (Local).

Click *Next* to continue to Page 2 of the Create Driver Wizard.



**12b** On Page 2 of the Create Driver Wizard, fill in the fields that are listed (visible by scrolling):

**Base Container in eDirectory:** Specify the container where you want your users to be created and synchronized with Active Directory (for example, users.zen). You can browse for this container by clicking *Browse*. If you are going to mirror the Active Directory containers, this would be the top container in eDirectory.

**Publisher Placement:** Select *Flat* or *Mirror*. If you choose *Flat*, all user objects coming from Active Directory are placed in the same container. If you choose *Mirror*, all user objects and containers are re-created in eDirectory.

**Base Container in Active Directory:** Type the name of the base container in Active Directory. This is the container where you want users to be synchronized with eDirectory (for example, CN=Users,DC=zendemo,DC=com).

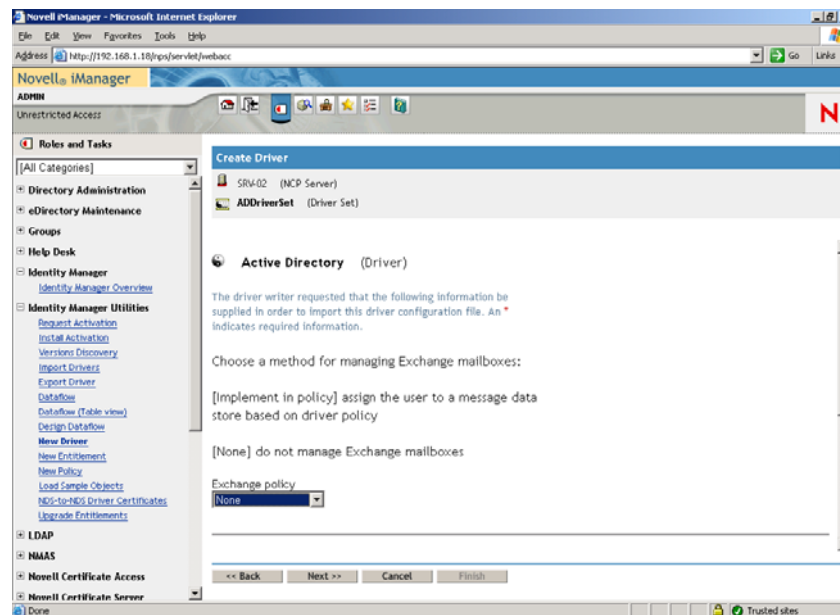
**Active Directory Placement:** See the Publisher Placement field to choose your placement.

**Configure Data Flow:** Retain the default value (Bi-directional).

**Password Failure Notification User:** Leave the field blank.

**Configure Entitlements:** Select *No* from the drop down list.

Click *Next* to continue to Page 3 of the Create Driver Wizard.



**12c** On Page 3 of the Create Driver Wizard, fill in the fields that are listed (visible by scrolling):

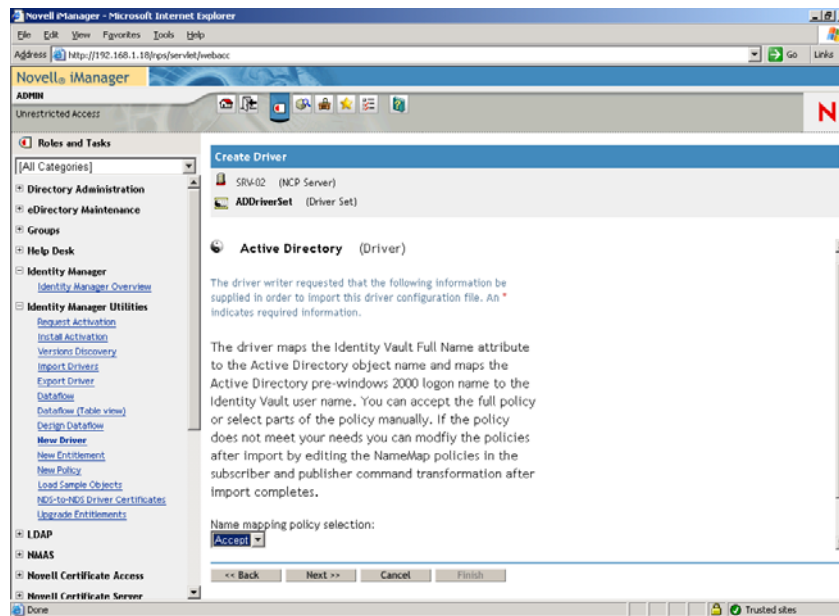
**Exchange Policy:** Retain the default value (No).

**Group Membership Policy:** Choose a method for assigning group membership in Active Directory. Set to *None* for the purpose of this lab.

For more information, see the Group Membership Policy field in [Configuration Parameters](http://www.novell.com/documentation/idmdrivers/ad/data/bv0tdqp.html) (<http://www.novell.com/documentation/idmdrivers/ad/data/bv0tdqp.html>) in [Configuring the Active Directory Driver](http://www.novell.com/documentation/) (<http://www.novell.com/documentation/>)

[idmdrivers/ad/data/bv0tbi5.html](http://idmdrivers/ad/data/bv0tbi5.html)) in the *Novell Identity Manager Driver for Active Directory Implementation Guide*.

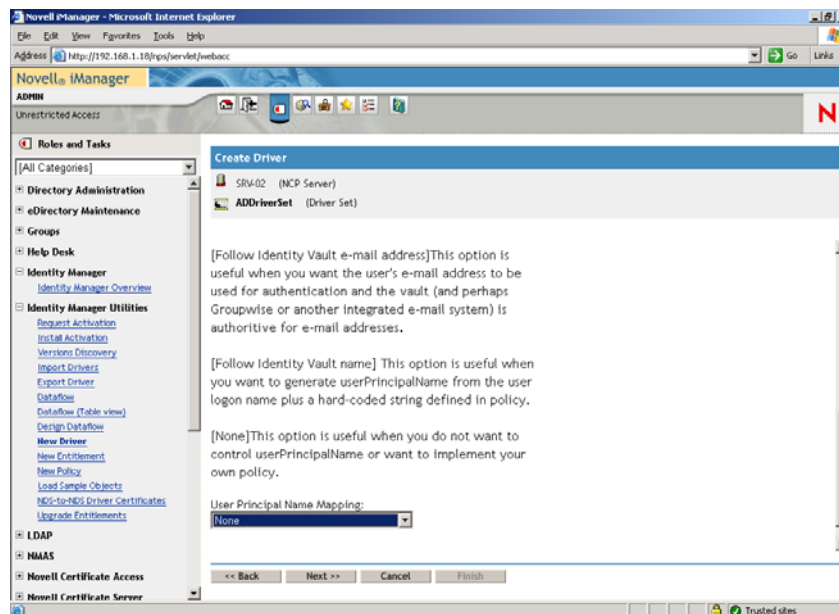
Click *Next* to continue to Page 4 of the Create Driver Wizard.



**12d** On Page 4 of the Create Driver Wizard, fill in the fields that are listed:

**Name Mapping Policy Selection:** Retain the default (*Accept*) displayed in the drop down list.

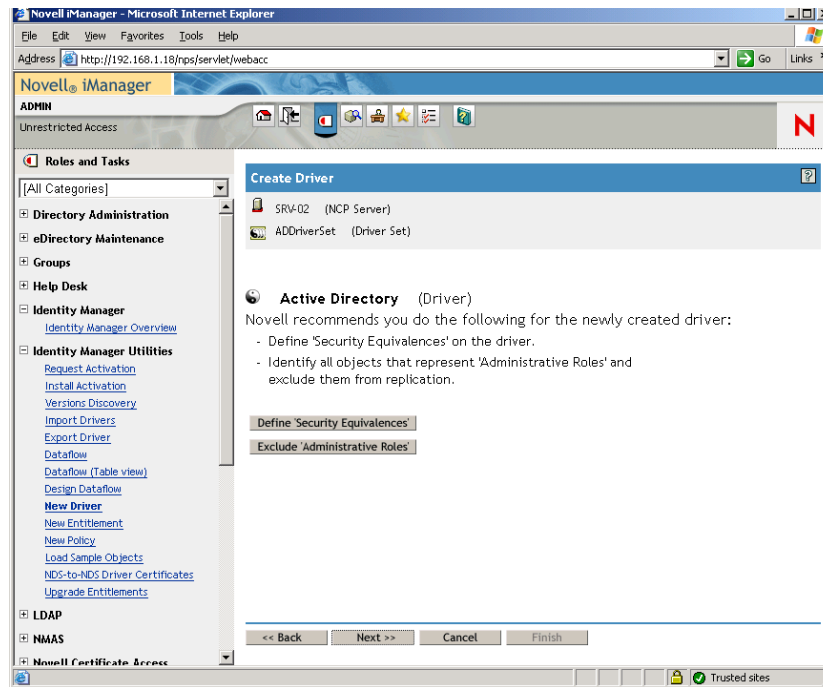
Click *Next* to continue to Page 5 of the Create Driver Wizard.



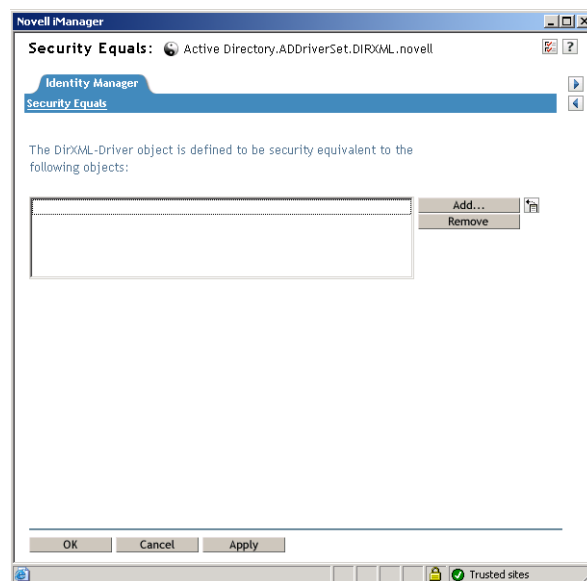
**12e** On Page 5 of the Create Driver Wizard, fill in the fields that are listed:

**User Principal Name Mapping:** Retain the default (*None*) displayed in the drop down list.

- 13 Click *Next* to launch the Security Equivalences page of the Create Driver Wizard.



- 14 Click *Define Security Equivalences* to launch the Security Equals window.

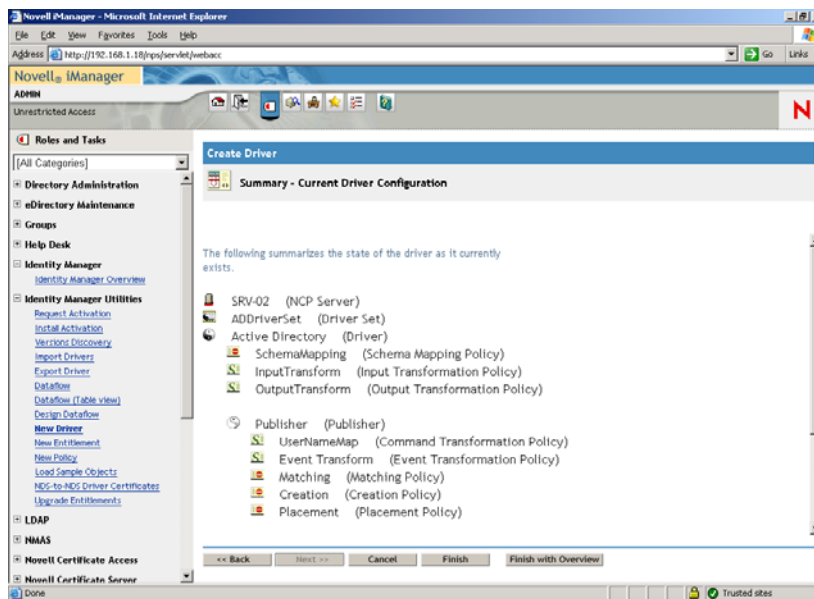


- 15 Click *Add* to launch the browser window, browse to and select the Admin.Users.ZEN user, add this user to the *Selected Objects* list, click *OK*, then click *OK* again.
- 16 On the Security Equivalences page of the Create Driver Wizard, click *Exclude Administrative Roles*.

- 17 In the Synchronization Exclusion window, click *Add*, browse to and select all users that are administrators of eDirectory, then click *OK*.

This prevents the users from being created in the Active Directory domain and synchronized later.

The Summary - Current Driver Configuration page of the wizard is displayed.



- 18 Click *Finish*.

Before the Identity Manager driver can run, you need to install the Password Synchronization software. For more information, see [“Installing Password Synchronization and Enabling Universal Password” on page 273](#).

## Installing Password Synchronization and Enabling Universal Password

Password Synchronization allows each user object automatically created in Identity Manager to have the same password as the corresponding user you created in Active Directory. This is necessary to allow for single login to both Active Directory and eDirectory when users log into their workstations.

Password Synchronization requires that platform-specific password policies are not in conflict with each other. Password policies that are in conflict prevents successful password synchronization. For example, if eDirectory passwords are required to be at least eight characters in length and Windows passwords have no length requirements, users could create shorter Windows passwords that would not be accepted by eDirectory. Password Synchronization does not override platform policies.

Identity Manager lets you generate an initial password for an account based on the account's attributes or other information available through Java services. For instance, you can generate a password based on a user's surname plus a four-digit number. Generating an initial password requires driver customization, but it is a good way for you to manage passwords when you provision an account through an existing personnel management toolset.


iManager lets you set an initial password when you create a user account if you select *Assign NDS Password*, then select *Prompt During Creation*. In this case, iManager sets the password before an

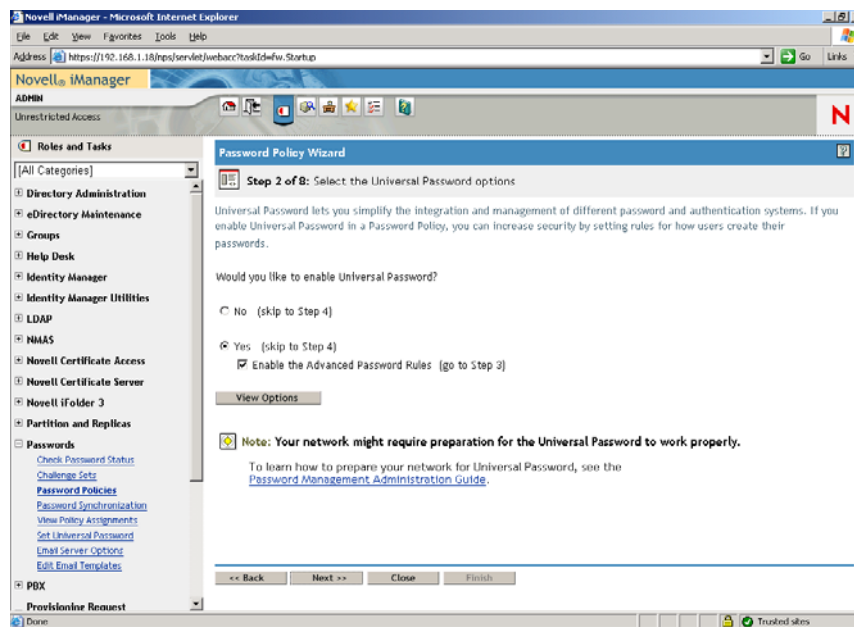
account is associated in NT or Active Directory accounts. This prevents the initial password from being synchronized. Passwords are synchronized only after the first password change. To avoid this delay, you can do one of the following things:

- ♦ Deselect *Assign NDS Password During User Creation* and assign the password later. A brief delay allows account associations to be completed.
- ♦ Select *Prompt User on First Login* so that password setting is delayed until the account is actually used.

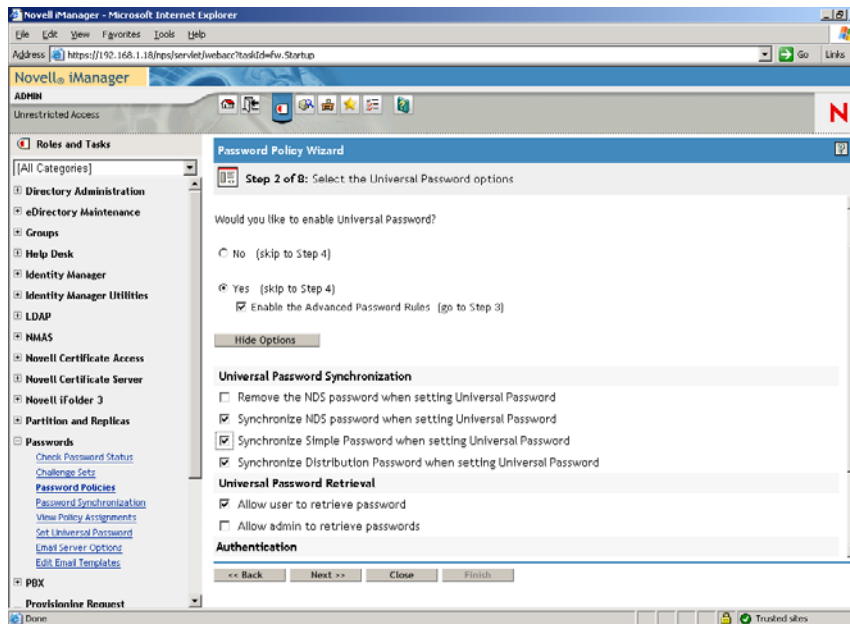
The Microsoft Management Console (MMC) lets you set an initial password on a user account by typing the password when you create the account. The password is set before Password Synchronization is able to associate an eDirectory account with the Active Directory account, so the Password Synchronization service is not able to update the eDirectory account immediately. However, the service will retry the password update and the account will be properly updated within several minutes.

To install Password Synchronization on your servers:

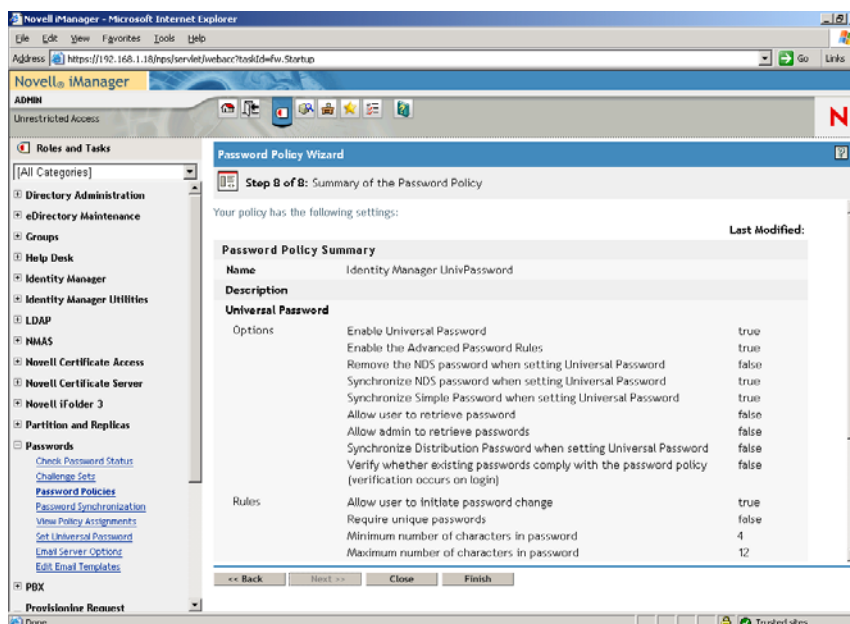
- 1 Log in to the SRV-02 server as administrator, then log in to eDirectory as Admin.
- 2 In iManager, click the Roles and Tasks icon , then in the left pane, click *Passwords*, click *Password Policies*, then click *New* to open the Password Policy Wizard.
- 3 Configure the Password Policy.
  - 3a In the *Policy Name* field, enter a name for the policy (such as IDM UnivPassword), then click *Next* to display the Step 2 page of the wizard.



- 3b** On the Step 2 page of the wizard, click *View Options* to open the password synchronization options.



- 3c** Select *Synchronize Simple Password When Setting Universal Password*, then click *Next*.
- 3d** On the Advanced Password Rules page, click *Next*.
- 3e** On the Step 4 page of the wizard (Enable Forgotten Password Feature), retain the default (No), then click *Next*.
- 3f** Click *Next* twice to skip the Step 5 page and the Step 6 page of the wizard.
- 3g** On the Step 7 page of the wizard (Assign the Password Policy), select *Browse* to open the browse window, select the Users.ZEN container, click *OK*, then click *Next* to display the Step 8 page of the wizard (Summary of the Password Policy).



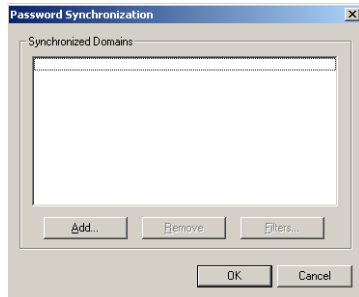


**3h** Click *Finish*, then click *Close*.

**4** From the Windows desktop, click *Start > Settings > Control Panel*, then double-click *DirXML PassSync*.

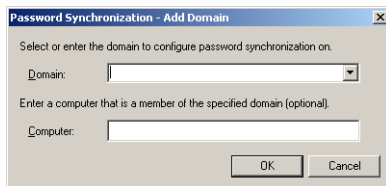
**5** In the PassSynchConfig dialog box, click *Yes* for the question “Is this machine where the DirXML Driver is configured to run?”

The Password Synchronization dialog box is displayed.



**6** In the Password Synchronization dialog box, click *Add*.

The Password Synchronization - Add Domain dialog box is displayed.

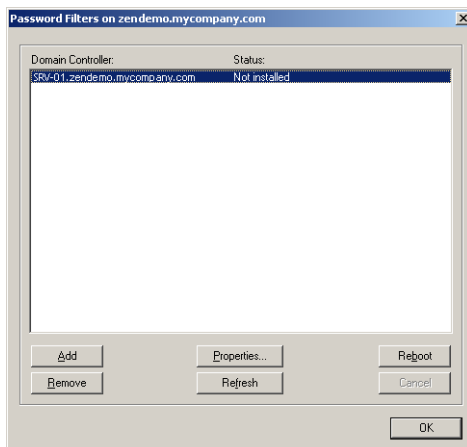


**7** In the Password Synchronization - Add Domain dialog box, open the drop-down list in the Domain field, select ZENDEMO from the list, then click *OK*.

Do not add information to the *Computer* field.

**8** In the PassSyncConfig dialog box, click *Yes*.

**9** Select the Domain DNS Name, then click *Filters* to display the Password Filters dialog box.



**10** In the Password Filters dialog box, select the Domain Controller name, then click *Add*.



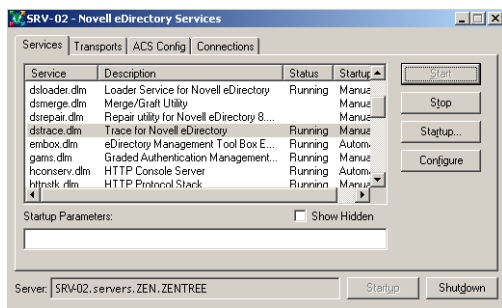
This option copies files to the Domain Controller. After the copy is complete, the status changes to “Installed - Needs Reboot.”

- 11 Click *Reboot*, then wait until the server reboots and the dialog box shows that it is running, then click *Refresh* after SRV-01 restarts (if the status has not changed).
- 12 Click *OK*, then click *OK* again.
- 13 Reboot the SRV-02 server to complete the installation.

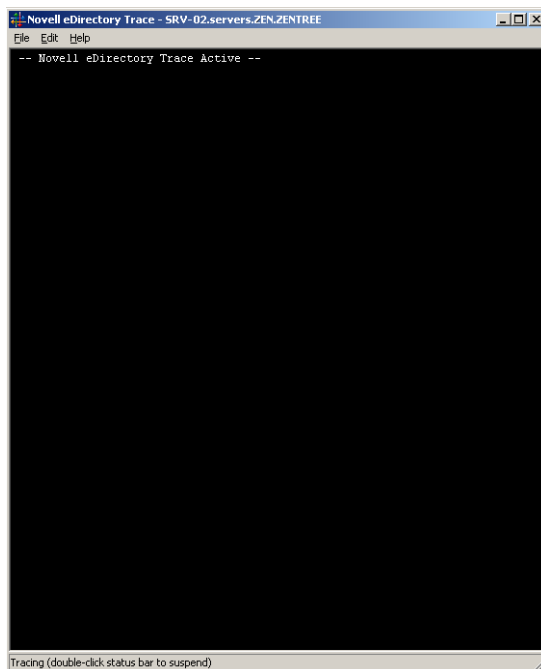
## Finalizing DirXML Driver Configuration

When you have installed and configured both the DirXML drivers and the PasswordSync driver, you need finalize the configuration so that these drivers start automatically and function properly. Use the following steps to finalize the configuration:

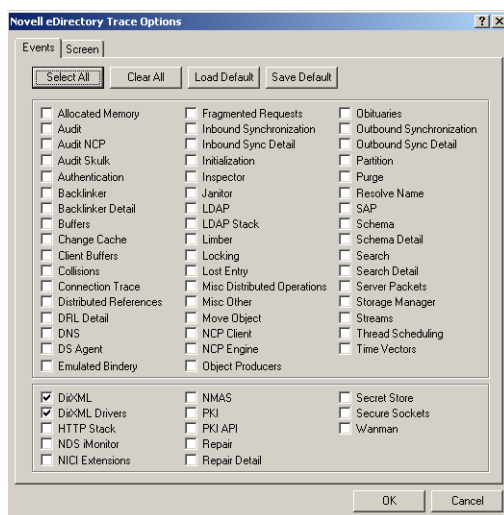
- 1 Log on to the SRV-02 server as administrator.
- 2 From the Windows Server 2003 desktop, click *Start > Settings > Control Panel > Novell eDirectory Services* to open the Novell eDirectory Services dialog box.



- 3 Click *Services*, select the `dstrace.dlm` service, then click *Start* to display the Novell eDirectory Trace window.




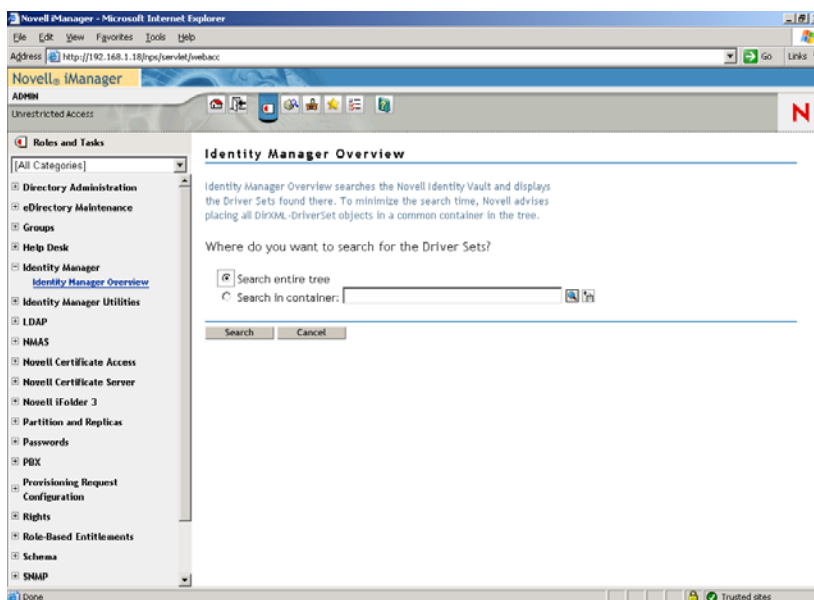
- 4 In the Novell eDirectory Trace window, click *Edit > Options* to open the Novell eDirectory Trace Options dialog box.



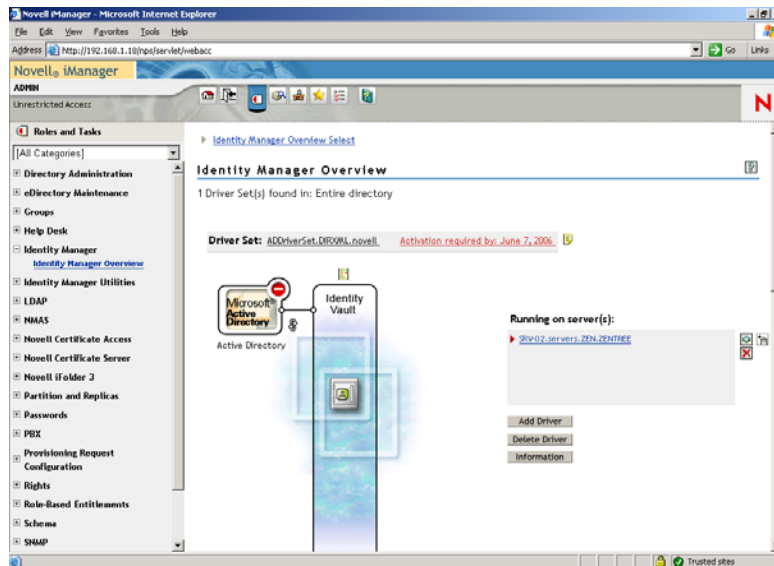
- 5 On the Events page of the dialog box, click *Clear All*, select *DirXML*, select *DirXML Drivers*, then click *OK*.


Make sure you leave the Novell eDirectory Trace window open.

- 6 Launch iManager, then click the server link to log in as Admin.
- 7 In iManager, click the *Roles and Tasks* icon  to open the Roles and Tasks left pane, click *Identity Manager*, then click *Identity Manager Overview* to open the Identity Manager Overview utility in the right pane.




- 8 In the Identity Manager Overview utility, select *Search Entire Tree*, then click *Search* to open the Active Directory- eDirectory configuration page.

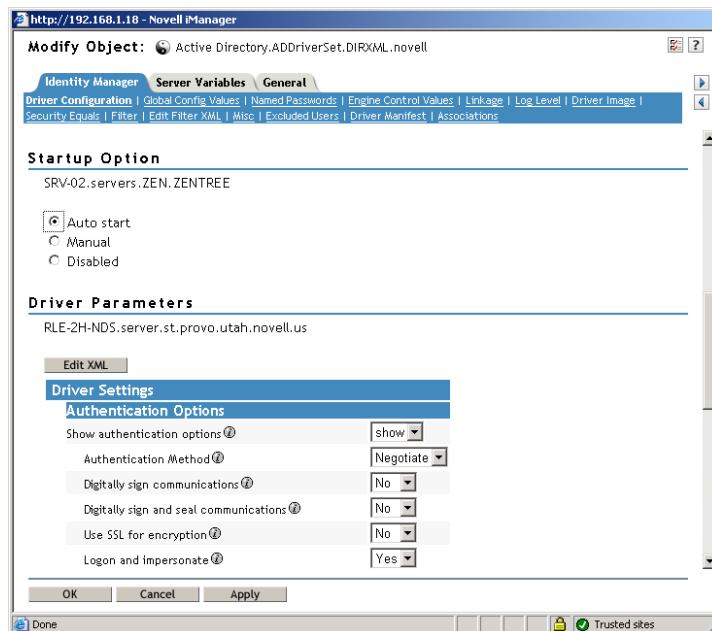


- 9 Click the  icon to open a menu options list, then select *Start Driver*.

When you start the driver, the Novell eDirectory Trace window displays red messages as errors, yellow messages as warnings, and green messages as successful processes. Although there might be initial errors and warnings, the final message should be green and the status shown as *Success* for the Active Directory DirXML log event.

When the driver is running successfully, the  icon changes to the .

- 10 Click the , then select *Edit Properties* to open the Modify Object window.




- 11 (Conditional, if a Certificate Authority has not been installed on your network). In the Modify Object Window, select the *Identity Manager* tab, click *Driver Configuration*, scroll to the *Authentication Options* section of the window, then, in the *Use SSL for encryption* field, select *Yes* in the drop-down menu.

A certificate must be enabled in Active Directory for SSL configuration to work in the driver.

- 12 In the Modify Object window, select the *Identity Manager* tab, click *Driver Configuration*, scroll to the *Startup Option* section of the window, select *Auto Start*, then click *OK*.

A message dialog box displays the question, “Do you want to restart the driver to put your changes into effect?”

- 13 Click *OK* in the message dialog box to restart the driver.

- 14 Roll your mouse pointer over the  icon to reveal the status message: “Driver is Running.”

- 15 (Conditional) If it is not already open (see [Step 2 on page 230](#)), open the Novell eDirectory Services dialog box, then verify that `dirxml.dlm` is running.

### Verifying that eDirectory, DirXML, and Universal Password Are Working Properly

To verify that eDirectory, DirXML, and Password Synchronization are working properly in your environment, you need to create a few users in Active Directory to verify that they are automatically created in eDirectory with the proper passwords.

- 1 Log on to server SRV-01 as the administrator of the Active Directory Domain.

- 2 Launch the Active Directory administration tool and create a test user in Active Directory

**Example:** TestUser1@zendemo.com

- 3 Log in to SRV-02 as the administrator of the domain and as admin in eDirectory.

- 4 Open iManager, then verify that TestUser1 has been created in the administered container.

You might need to wait for a synchronization cycle to complete before the user is listed in eDirectory.

- 5 Log in to eDirectory as TestUser1, verify that the password is the same as the one given in Active Directory, then verify that you successfully authenticated to eDirectory.

Another synchronization cycle might be necessary before the password is updated.

- 6 For completeness, create a user in eDirectory (using iManager while logged in as Admin), then verify that the user is now in the domain and that you can log in to the domain as that user using the password you specified in eDirectory.

The default synchronization rules do not create an Active Directory user until the full name attribute field is populated in eDirectory. Check this in iManager > *Roles and Tasks* > *Users* > *Modify* > *User\_object* > *General* > *Identification* > *Full Name*.

---

**IMPORTANT:** If the password still fails to work for an eDirectory user being synchronized to Active Directory, see TID 10092646 and TID 10092822 in the [Novell Knowledgebase \(http://support.novell.com/search/kb\\_index.jsp\)](http://support.novell.com/search/kb_index.jsp) for information on how to correct the issue.

---

### Installing the Desktop Management Server

Although you might not choose to install all of these components, this section explains the installation procedure for each of them.

Use the following steps to install the Desktop Management Server onto SRV-02 server, where you previously installed eDirectory.

- 1 Log on to the SRV-02 server as administrator, then log in to eDirectory as Admin.
- 2 At a Windows workstation, insert the *Novell ZENworks 7 Desktop Management* CD.

The `winsetup.exe` program will autorun. If it does not autorun, launch it from the root of the CD.

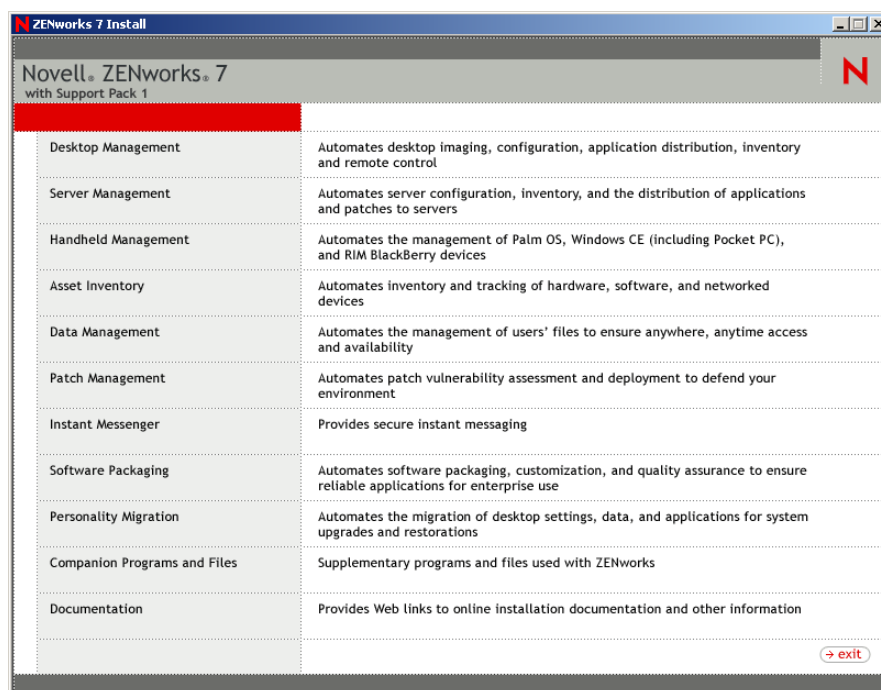
If you run the installation from a directory location where you have copied the ZENworks Desktop Management ISO files, make sure that all of these files are copied to the same location from which you are running `winsetup.exe`.

In this situation, the installation program notifies you that it might not run properly. This is because the options you choose during the installation might require a CD swap.

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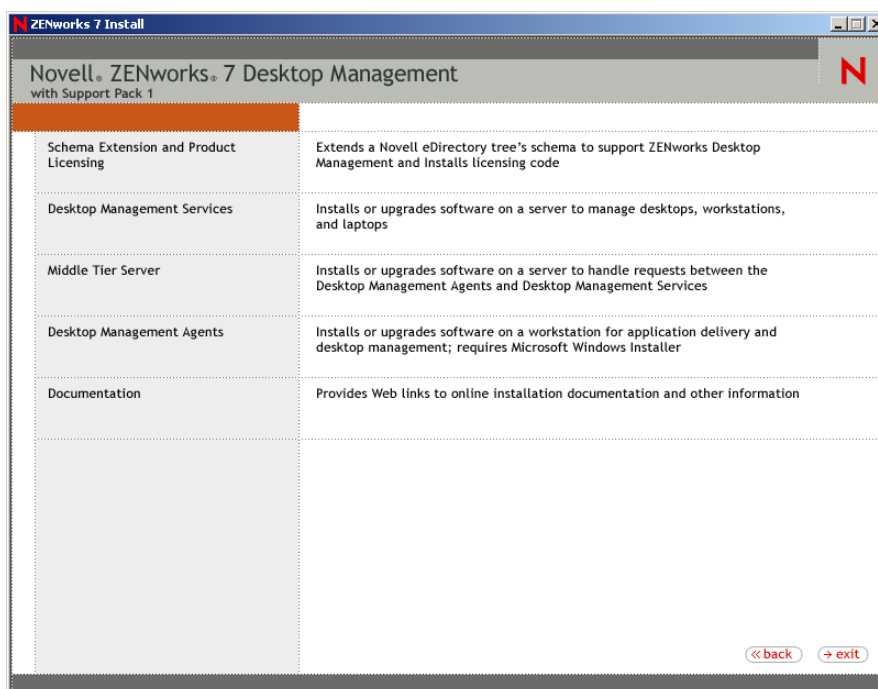
**IMPORTANT:** If you remove the *Novell ZENworks 7 Desktop Management* CD from the CD drive during the installation, or if you lose your connection to the server you are installing to, the installation program stops and does not proceed. To terminate the installation process, open the Windows Task Manager click Processes, select `javaw.exe`, then click *End Process*.

---



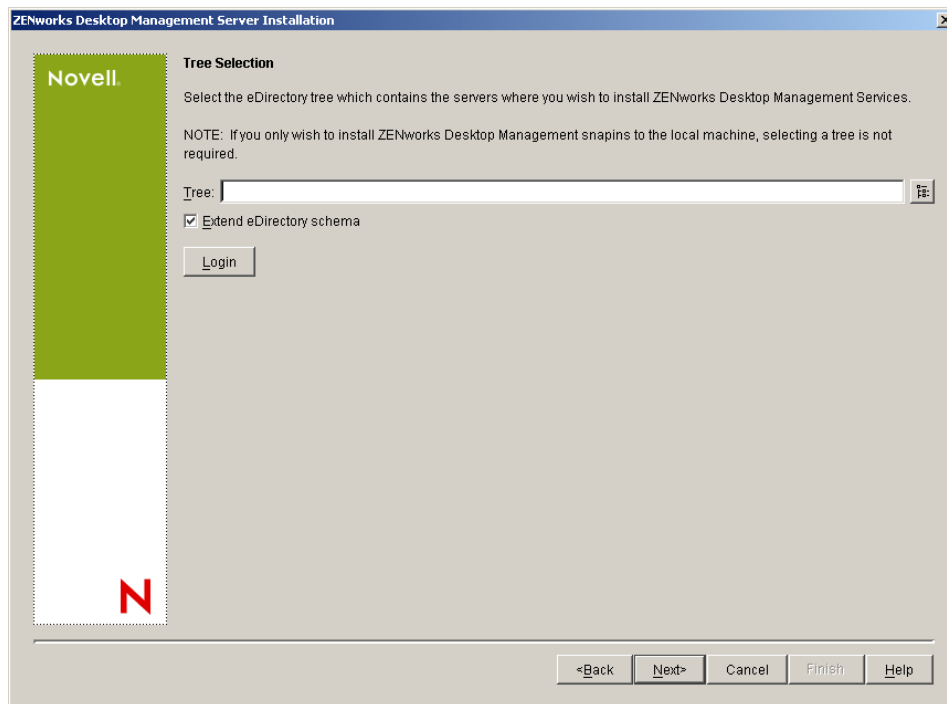
- 3 Click *Desktop Management* to display a page with options to install in various languages.

- 4 Click *English* to display a page with Desktop Management installation options.



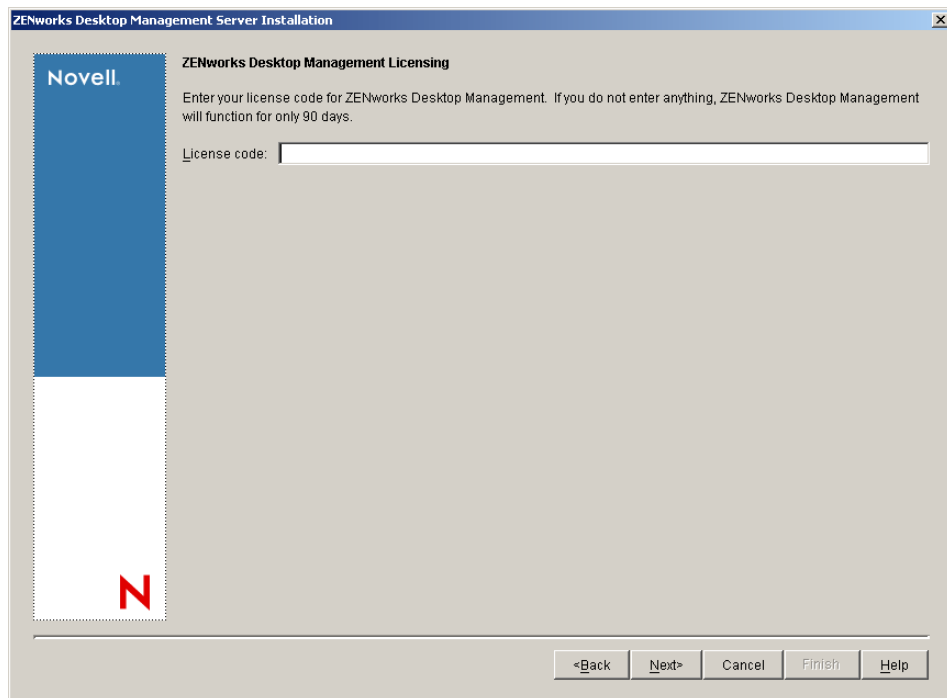
- 5 Click *Desktop Management Services* to launch the Desktop Management Server installation wizard.
- 6 On the first Installation page, read the details about running the installation program, then click *Next*.
- 7 Read the License agreement, then click *Accept* if you agree with the terms of the License Agreement.  
(Conditional) If you do not agree with the terms of the license agreement, do not install the software.
- 8 On the Installation Requirements page, read the requirements for installing the Desktop Management Server software, make sure that the server where you plan to install meets the listed requirements, then click *Next*.
- 9 On the Tree Selection page, type or browse to the name of the Novell eDirectory tree on the SRV-02 server (ZENTREE). If you have not already extended the schema for this installation (see [Section 9.1.1, “Extending the Schema Before the Installation,” on page 79](#)), select *Extend Schema* to extend the schema on the tree where you will be installing Desktop Management Server software, then click *Next*.

You cannot install Desktop Management Server software on multiple trees at the same time.



You need to extend the schema on a tree only once. You can authenticate to a tree by clicking the *Login* button and entering a user ID and password with the appropriate rights.

- 10 On the ZENworks Desktop Management Licensing page, specify the license code that was e-mailed to you as part of the SmartCert product registration package.



If you do not specify a license code on this page, the wizard considers this installation of ZENworks Desktop Management to be an evaluation version. If you install for an evaluation, you are periodically reminded to license the product. After 90 days, the product evaluation version no longer functions.


- 11** On the Server Selection page, click *Add Servers* to browse to the SRV-02 server.

You can select servers only from the ZENTREE tree. You can install up to 7 servers at a time.

- 11a** (Optional) In the Add Servers dialog box, you can list servers by their eDirectory tree names. To install to a server, select *eDirectory Trees*, browse to and click the name of the SRV-02 server, click the right-arrow button to move your selected servers to the *Selected Servers* list, then click OK.

If you want to add a Windows server that you might not be authenticated to, you can double-click the server icon to display a dialog box where you can enter credentials to allow for Windows authentication.

- 11b** (Optional) In the Add Servers dialog box, you can specify the hostname or IP Address of a server in the *Add Server Via Hostname/IP Address* field. The value that you provide must be resolvable to the name of a server.

Click  to begin the name resolution process and add the server to the *Selected Servers* list.

- 12** On the now-populated Server Selection page, you can further specify the services you want to install for the Desktop Management components you previously selected, then click *Next* to save your settings.

The list of settings includes the following:

**Local Workstation:** Even though the ConsoleOne 1.3.6 installation program lets you install ConsoleOne files to a local hard drive (minor performance enhancements can be achieved by doing so) such an installation does not include the Desktop Management Services snap-ins.

You have the option of installing Desktop Management Services snap-ins to your local workstation by selecting Desktop Management Service Snap-ins under the Local Workstation option. ConsoleOne must be installed on the workstation before the snap-ins can be added.

**Desktop Management Services:** Desktop Management Services (collectively referred to as the “Desktop Management Server”) are commonly used files and programs that enable the configuration and distribution of workstation applications and policies. These services provide automatic management of Windows applications, user and workstation configurations, processes, and behaviors.

- ♦ **Application Management:** Select this option to install software that enables the automated distribution, healing, and tracking of applications, updates, and patches.
- ♦ **Workstation Management Common Components:** Select this option to install workstation-resident modules that are used to authenticate the user to the workstation and network, and used to transfer configuration information to and from eDirectory.
- ♦ **Remote Management:** Select this component to install files and programs that enable the remote management of workstations from a central console. Make sure that the selected servers do not have the ZENworks for Servers 3.0.2 (or earlier) Remote Management component already installed.



**Additional Options:** If you want to customize your deployment of Desktop Management Services, there are a number of services to choose from, each with a specialized purpose.

- ♦ **Desktop Management Database:** Select this option if you want to install a network database to be used by the Novell Application Launcher as a repository for data about application events (install, launch, cache, and so forth) that have occurred.
- ♦ **Inventory Database:** Select this option if you want to install a network database to be used by Workstation Inventory as a repository for hardware and software inventory information collected from inventoried workstations.

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**IMPORTANT:** If you want to use the Inventory database with an existing Oracle or MS SQL setup, do not select this option during the Server Inventory installation. Follow the steps in “[Setting Up the Inventory Database](#)” in the *Novell ZENworks 7 Desktop Management Administration Guide*.

---

- ♦ **Inventory Server:** Select this option if you want to install files and programs to enable the gathering and viewing of hardware and software inventory information for managed workstations.

If the selected servers have the Server Inventory component of ZENworks for Servers 3.0.2 or earlier installed, you must upgrade the component to ZENworks 7 Server Management.

- ♦ **Inventory Proxy Server:** Select this option if you want to install a proxy service that enables the roll-up of inventory scan data to an Inventory server located across a network firewall. Make sure that the selected servers do not have the ZENworks for Servers 3.0.2 (or earlier) Inventory component already installed.
- ♦ **Imaging Server:** Select this option if you want to install a Linux imaging environment to be used to create, store, send, or restore workstation image files to a workstation.

---

**IMPORTANT:** You should install the Imaging Server service and the PXE Server service on the same server; do not install the PXE Server service separately.

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- ♦ **PXE Server:** Select this option if you want to install Preboot Execution Environment (PXE) protocols and programs to be used by the server to communicate with a PXE-enabled workstation and to enable sending imaging tasks to that workstation.

When you install Preboot Services, one of the components that is installed is the Proxy DHCP server. If the standard DHCP server is on the same server where you are installing the Proxy DHCP server, you must set option tag 60 in DHCP services.

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**IMPORTANT:** You should install the Imaging Server service and the PXE Server service on the same server; do not install the PXE Server service separately.

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- ♦ **Workstation Import/Removal Server:** Select this option if you want to install files and programs that add workstation objects into eDirectory (or remove those already added), where they can be managed to receive applications or computer settings.
- ♦ **Desktop Management Services Snap-Ins:** Select this option if you want to install additions to ConsoleOne to enable you to launch Desktop Management tools and utilities, to view Desktop Management object property pages in eDirectory, and to browse and configure those objects.

You can perform a “custom selection” by selecting one or more servers and right-clicking to display a pop-up menu with options to add *Database Services*, *Inventory Services*, or *Imaging Services* to all of the servers you have selected. The *Default* option returns the selections to

their initial state. The *Custom* selection launches another dialog box that you can use to select specific components for all of the selected servers. This selection overrides any other selections you have made.

- 13** (Optional) *Prerequisite Check* is selected by default. Retain the selection if you want the installation program to verify that the server or servers meet the installation requirements for ZENworks Desktop Management Services. The installation program checks the version of the server's network operating system (including any required service or support packs), the presence and version of the Novell Client (4.9 SP1a) on Windows servers and on the installing workstation, and the presence and version of ConsoleOne (1.3.6).

If the server operating system and support/service packs are not the correct version, the installation displays a warning message, and does not continue. The installation displays a warning and does not continue until the required software is installed and detected or until you deselect the check box.

- 14** (Optional if *Workstation Inventory* or *Remote Management* is selected.) On the File Installation Location page, select one or more target servers in the *Selected Servers* list, then browse for or type the volume or drive where you want the Workstation Inventory or Remote Management files to be installed. The default is C : for Windows servers.

If a previous installation of ZENworks 7 Workstation Inventory or Remote Management component is detected on the machine, the existing path is displayed and dimmed. The current installation installs all the files in the same path.

- 15** (Optional) The Database Location Installation page is displayed if you choose to install the Inventory database or the Desktop Management database. Select a previously designated server in the left pane, then in the *Database Path* field, browse for or type in the name of the volume or drive where the database file will be installed, then click *Next*.

You can provide a different drive for each database server. However, you cannot have multiple instances of the database files on the same server because you can run only one instance of the database engine per server.

- 16** (Optional) The Inventory Standalone Configuration page is displayed if you choose to install the Inventory Server and the Inventory Database on the same server. If you want the installation program to automatically create the Server Package and to start the Inventory Service on the server, configure the settings on the Inventory Standalone Configuration page.

Select *Configure Standalone*, select the server or servers that you want to point to a common Database Location Search Policy, type in the name or browse to the tree container where you want to create and configure the Server Package containing this policy, then click *Next*.

- 17** (Optional) On the Inventory Proxy Service Configuration page, select the server or servers with a port you want to designate as one to allow XMLRPC requests pass through to the Inventory Proxy service, then in the *Proxy Port* field, designate the port you want to use.

You can configure the same port number for all servers by selecting all of them, or you can define the values individually by selecting the servers one at a time. If you want to change the Port 65000 default, specify a value between 0 and 65535. Ensure that the port number is not used by other services on the server.

- 18** On the Summary page, review the list of components and their parts that are to be installed. If the summary is correct, click *Finish* to launch the installation program.

You can click *Back* as many times as necessary to make changes.

If you click *Cancel*, no installation information is saved.

You can review the installation log file after the installation has completed. The log file name is `datestamp_timestamp_zdmserver_install.log` (for example: `20040304_024034_zdmserver_install.log`). It is located in the `\novell\zfdtemp` directory on the machine you are installing from. This log file indicates whether any component failed to install.

You can also review the installation summary to review the selections you made. The summary is saved in a log file named `datestamp_timestamp_zdmserver_installsample.log` (for example: `20040304_024034_zdmserver_installsample.log`). It is also located in `c:\novell\zfdtemp`.

- 19** In ConsoleOne, select the tree where you installed the Desktop Management Server software, then right-click the *LDAP Group* > click *Properties* > *General* > select *Allow Clear Text Passwords*.

If you use ConsoleOne 1.3.6e, *Require TLS For Simple Binds With Password* must be deselected in the LDAP Group object for each server acting as the Authentication Domain for a ZENworks Middle Tier Server. If you need to set this parameter after you have installed the Desktop Management Server, make sure you reboot the ZENworks Middle Tier Server after you change the setting.

If you are installing to Windows servers in an Active Directory domain, configure the LDAP Group object for servers that are to be used as Authentication Domains to use an alternate port number, because Active Directory will use ports 389 and 636.

If you have already installed the ZENworks Middle Tier Server, you need to reboot the ZENworks Middle Tier Server so that it recognizes the change to LDAP clear text passwords at the Desktop Management Server.

## Installing the ZENworks Middle Tier Server

To deliver Desktop Management features through an Internet browser, you must install the ZENworks Middle Tier Server. In this deployment scenario, you install the software on SRV-02, where the Microsoft IIS Web server has already been installed. The Middle Tier Server installation program requires the presence of the Novell Client on the installing workstation or server, so you must first install the Novell Client on the SRV-03 server and then install the ZENworks 7 Middle Tier Server on the same server. You can download the Novell Client (version 4.90 SP1a or later) from the [Novell downloads Web site \(http://download.novell.com\)](http://download.novell.com).

When the client has been installed, you can use the following procedure to install the Middle Tier Server:

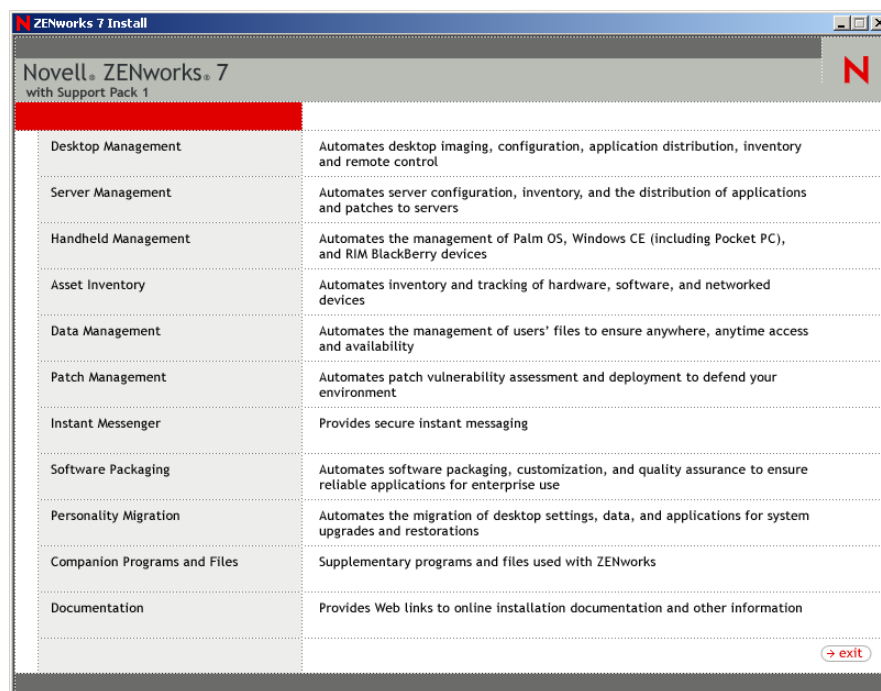
- 1** Log on to SRV-03 as local workstation administrator of the server.
- 2** Insert the *Novell ZENworks 7 Desktop Management CD*.

The `winsetup.exe` program autoruns. If it does not autorun, launch the program from the root of the CD.

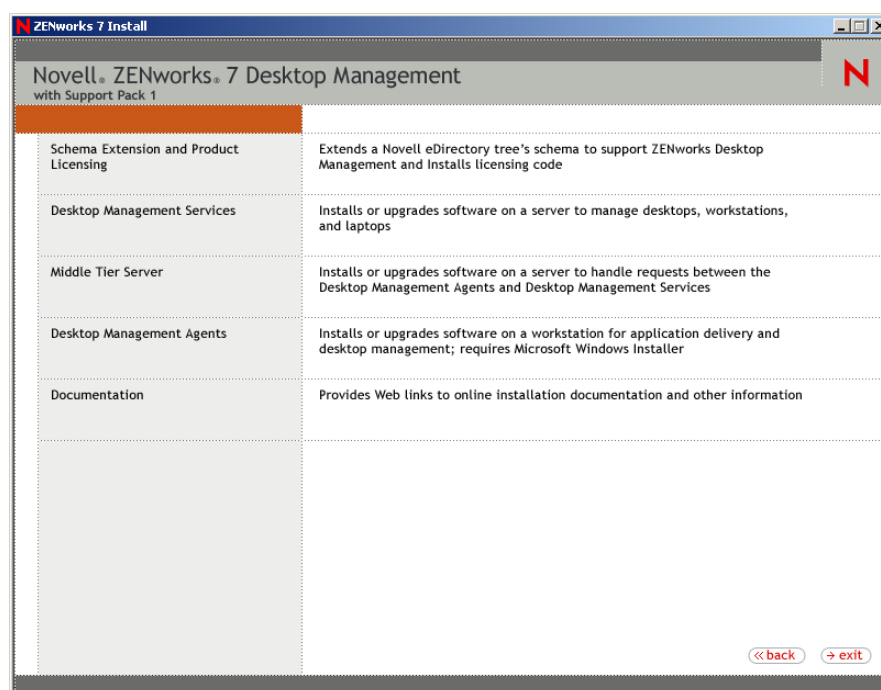
If you run the installation from a directory location where you have copied the ZENworks Desktop Management ISO files, make sure that all of these files are copied to the same location from which you are running `winsetup.exe`.

In this situation, the installation program notifies you that it might not run properly. This is because the options you choose during the installation might require a CD swap.

**IMPORTANT:** If you remove the *Novell ZENworks 7 Desktop Management* CD from the CD drive during the installation, or if you lose your connection to the server you are installing to, the installation program stops and does not proceed. To terminate the installation process, open the Windows Task Manager, click *Processes*, select `javaw.exe`, then click *End Process*.



- 3 Click *Desktop Management* to display a page with options to install in various languages.
- 4 Click *English* to display a page with Desktop Management installation options.



- 5 Click *Middle Tier Server* to launch the Middle Tier Server installation program.
- 6 On the first Installation page, read the details about running the installation program, then click *Next*.
- 7 Read the License agreement, then click *Accept* if you agree with the terms of the License Agreement.  
(Conditional) If you do not agree with the terms of the license agreement, do not install the software.
- 8 On the Installation Requirements page, read the requirements for installing the Middle Tier Server software, make sure that the server where you plan to install meets the listed requirements, then click *Next*.
- 9 On the eDirectory Location and Credentials page, fill in the fields:

**DNS/IP Address:** Specify the DNS name or IP address of the SRV-02 server, where eDirectory is installed.

**Username (full DN):** Specify the fully-qualified distinguished username of the Middle Tier proxy user account (for example, admin.users.zen). To ensure that these credentials remain secure, you can set up an arbitrary user with specific administrative rights.

For a description of the required rights, see [Section 10.3, “Required Rights for the Middle Tier Proxy User Account and the NSAdmin Utility,”](#) on page 127.

**Password:** Specify the eDirectory password for the Middle Tier proxy user.

- 10 On the ZENworks User Context page (*Users Context* field), specify the eDirectory context where the Middle Tier Server can look for user objects to be used by Desktop Management. For this example, the context is Users.

You should use the context of the highest-level container where user objects reside. This value is passed to the ZENworks Middle Tier Server, which uses it as a starting point in searching for a user.

For any Middle Tier Server you designate during this installation, currently configured authentication domains (for example, the authentication domain configured for NetStorage) are replaced by a single authentication domain with the context that you specify here.

After the installation, you can reconfigure this authentication domain context using the NSAdmin utility. You can open the utility in a Web browser (<http://srv-02/oneNet/nsadmin>).

The installation program verifies the existence of the context (that is, the container) before continuing.

- 11** On the ZENworks Files Location page, select the network location where you will access application and policy files managed by ZENworks.

The ZENworks Middle Tier Server requires access to ZENworks files installed elsewhere on your network. As the ZENworks Administrator, you define the location of these files when you create policies or applications for distribution. The information you provide on this page is used to help the Middle Tier Server determine how to access different file systems. This decision is necessary for the installation now, even if you have not yet created any ZENworks files.

- ♦ Select the first option button if your ZENworks-managed application and policy files will be located on NetWare servers only.
- ♦ Select the second option button if some or all of your ZENworks-managed application and policy files will be located on Microsoft Windows servers.

If your ZENworks files will be located in a Windows file system, the Middle Tier Server might not be able to access them using a username and password for Novell eDirectory; instead, it requires Windows domain credentials to access the files.

If the files are located on a server not belonging to a domain, enter server-specific credentials.

### **Domain Username**

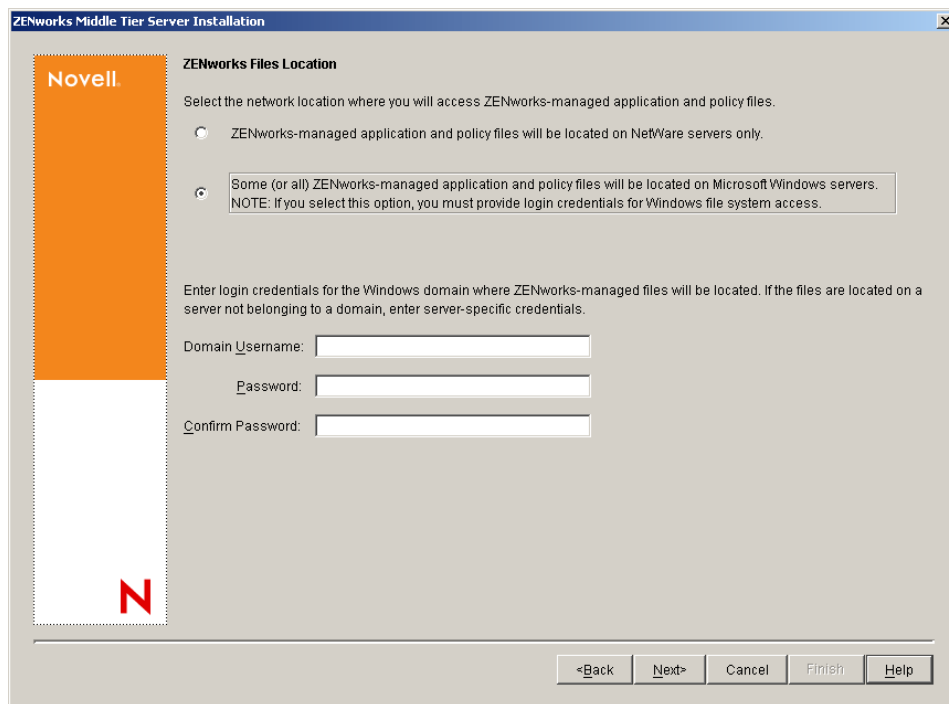
Specify the username of any user in the Microsoft domain who has Windows file system rights to the ZENworks file locations.

### **Password**

Specify the password for the user in the Microsoft domain who has file system rights to ZENworks files.

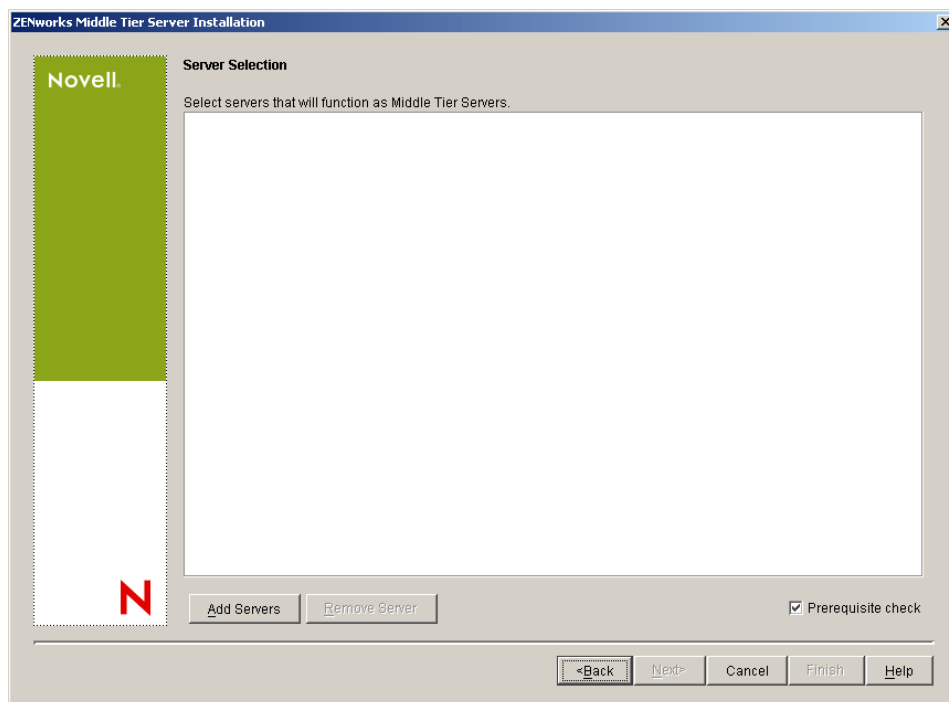
## Confirm Password

Specify the same password to confirm that it was entered correctly.



The screenshot shows the 'ZENworks Middle Tier Server Installation' window, specifically the 'ZENworks Files Location' step. On the left is a vertical sidebar with an orange top section labeled 'Novell' and a white bottom section with a red 'N' logo. The main area has the title 'ZENworks Files Location' and instructions: 'Select the network location where you will access ZENworks-managed application and policy files.' There are two radio buttons: the first is 'ZENworks-managed application and policy files will be located on NetWare servers only.' and the second is 'Some (or all) ZENworks-managed application and policy files will be located on Microsoft Windows servers.' The second option is selected. Below this is a note: 'NOTE: If you select this option, you must provide login credentials for Windows file system access.' Further down, it says: 'Enter login credentials for the Windows domain where ZENworks-managed files will be located. If the files are located on a server not belonging to a domain, enter server-specific credentials.' There are three input fields: 'Domain Username:', 'Password:', and 'Confirm Password:'. At the bottom right are buttons: '<Back', 'Next>', 'Cancel', 'Finish', and 'Help'.

- 12** On the Server Selection page, you need to build a list of target servers that you want to function as Middle Tier Servers. The *Add Servers* button calls a dialog box that is used to find and add servers to the list. The *Remove Servers* button lets you delete servers from the target list after they are added. Click *Add Servers*.



The screenshot shows the 'ZENworks Middle Tier Server Installation' window, specifically the 'Server Selection' step. The sidebar is the same as in the previous screenshot, but the top section is green and labeled 'Novell'. The main area has the title 'Server Selection' and instructions: 'Select servers that will function as Middle Tier Servers.' Below this is a large empty rectangular box for server selection. At the bottom left of the main area are two buttons: 'Add Servers' and 'Remove Server'. At the bottom right is a checkbox labeled 'Prerequisite check' which is checked. At the very bottom are buttons: '<Back', 'Next>', 'Cancel', 'Finish', and 'Help'.

- 13** (Optional) *Prerequisite Check* is selected by default. Retain this selection if you want the installation program to verify that the server or servers meet the installation requirements for ZENworks Middle Tier Servers.

The installation program checks the version of any previously installed Middle Tier Server software, the server's network operating system (including any required service or support packs), the presence and version of the IIS Web server on Windows servers, the presence and version of the appropriate Web server on NetWare servers, and the presence and version of NetStorage (2.6.0) on target servers.

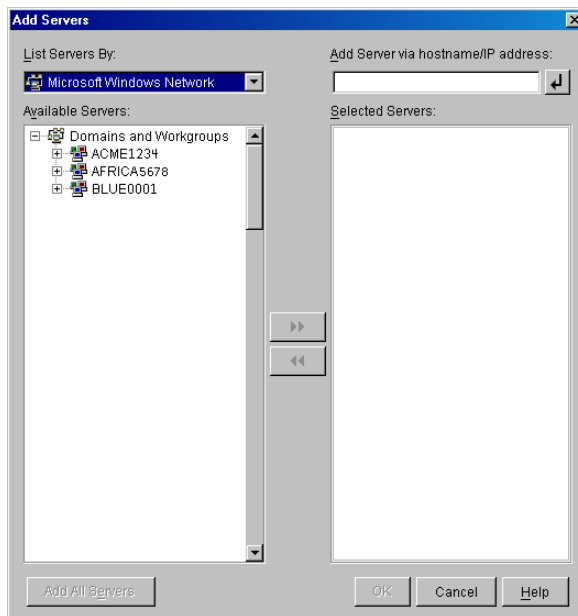
If the server operating system and support/service packs are not the correct version, the installation displays a warning message, but can continue. If other requirements are not met, the installation displays a warning and does not continue until the required software is installed and detected.

- 14** In the Add Servers dialog box, open the *List Servers By* drop-down list to show the options of listing the servers according to their location in Novell eDirectory trees, in Microsoft Windows Network structures, or in Microsoft Active Directory trees.

You can install the ZENworks Middle Tier Server software to several servers during the installation. When you have finished adding servers to the list, click *OK*.

Both the Desktop Management Server installation program and the Middle Tier Server installation program allow you to select servers from only one eDirectory tree. If you run either of these installation program from a Windows server and if that server is not part of the tree you have selected, you cannot install the Desktop Management Server locally.


- 14a** (Conditional if you want to list servers in Microsoft Windows Network structure.) In the *List Servers By* drop-down list, select *Microsoft Windows Network* to list all of the Windows Workgroups and Microsoft Domains to which you are currently authenticated, browse the structure to the server of your choice, then click the double right-arrow to move it to the *Selected Servers* list box.





Other options in this dialog box include the following:

- ♦ You must be an administrative user for a server in order to add it to the *Selected Servers* list. If you are not authenticated to a server, the object is designated by a question mark. You can double-click the question mark to authenticate to the server, then click the double-right arrow to move the server to the *Selected Servers* list, provided it is a supported server platform for ZENworks 7 Desktop Management.
- ♦ When you list servers in Microsoft domains, NetWare servers are not listed for browsing because ZENworks files that are located on a Windows server cannot be obtained through a Middle Tier Server installed on NetWare.
- ♦ You can specify the hostname or IP Address of a server in the Add Server Via Hostname/IP Address field. The value that you enter must be resolvable to the name of a server located in the designated operating environment.

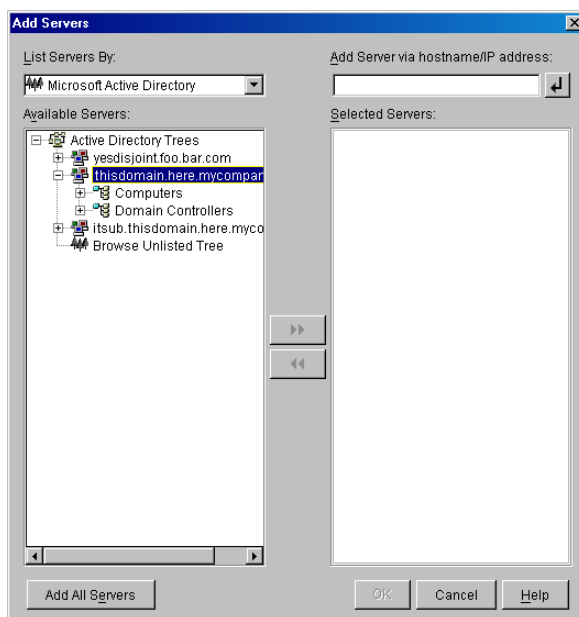
Click  to begin the name resolution process and add the server to the Selected Servers list.

If you are using multiple hostname aliases for a Windows server, the first alias must be the physical name of your Windows server.

- ♦ If the credentials you provided for authentication to the server (see [Step 11](#)) are not administrative credentials, you can add it as a target server, but you are re-prompted for Administrative credentials when you close the Add Servers dialog box.
- ♦ Click *Add All Servers* to add all of the servers in a selected domain or workgroup. Selecting a domain or workgroup selects all of the authenticated servers in that domain or workgroup.
- ♦ To remove a server from the *Selected Servers* list and return it to the *Available Servers* list, click the server name in the *Selected Servers* list, then click the double left-arrow. You can remove multiple servers from the *Selected Servers* list by selecting them with the Shift and Ctrl keys.

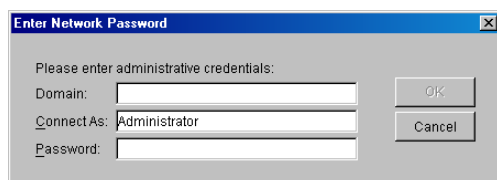
**14b** (Conditional if you want to list servers in a Microsoft Active Directory.) In the *List Servers By* drop-down list, select *Microsoft Active Directory*. If your workstation is a member of an Active Directory, the domains in the Active Directory trees are displayed. You can browse to all of the servers listed in Active Directory (on a per domain basis),

browse the structure to the server of your choice, then click the double right-arrow to move it to the *Selected Servers* list box.




Other options in this dialog box include the following:

- You can also click *Browse Unlisted Tree* to open a dialog box where you can specify the name of the domain you want to add, then authenticate to it with the proper credentials prior to displaying its servers in the *List Servers By* drop-down list.



- You can specify the hostname or IP address of a server in the *Add Server Via Hostname/IP Address* field. The value that you enter must be resolvable to the name of a server located in the designated operating environment.

Click  to begin the name resolution process and add the server to the *Selected Servers* list.

- Right-click a domain object to select one of three search methods:

**Search Standard Locations:** Lists the computers and domain controllers at the root of the domain. This is the default search method.

**Search Entire Directory:** Lists all directory containers where computers are located.

**Browse Directory Hierarchy:** Lists all of the containers in the directory, which you can expand and browse one at a time to find the computer you want. This search method might be useful if you have computers in a non-standard location of a large directory.

- Click *Add All Servers* to add all of the servers in a selected domain or container. Selecting a domain or container selects all of the servers in that domain or container.
- To remove a server from the *Selected Servers* list and return it to the *Available Servers* list, click the server name in the *Selected Servers* box, then click the double left-arrow. You can remove multiple servers from the *Selected Servers* list by selecting them with the Shift and Ctrl keys.

- 15** On the Summary page, review the location where you have chosen to install the ZENworks Middle Tier Server software and the Desktop Management Server to which it is associated, then click *Finish* to begin the installation process if the summary is correct.

The Middle Tier Server Installation Wizard launches another installation program. Wait until this program is completed.

---

**IMPORTANT:** You can review the installation log file after the installation has completed. The log file name is `datestamp_timestamp_zdmmidtier_install.log` (for example: `20040304_024034_zdmmidtier_install.log`). It is located in the `\novell\zfdtemp` directory on the machine you are installing from. This log file indicates whether any component failed to install.

You can also review the installation summary to review the selections you made. The summary is saved in a log file named `datestamp_timestamp_zdmmidtier_installsinstallsummary.log` (for example: `20040304_024034_zdmmidtier_installsinstallsummary.log`). It is also located in `c:\novell\zfdtemp`.

---

- 16** In ConsoleOne pointing to eDirectory on the Desktop Management Server, make sure you have set up the Desktop Management Server to allow clear text passwords.
- 17** Reboot the server where you installed the ZENworks Middle Tier Server software.
- 18** Verify that the ZENworks Middle Tier Server is installed and running by entering one of the following URLs at a browser on the workstation:

`http://srv-02/oneNet/xtier-stats`

`http://srv-02/oneNet/zen`

If the ZENworks Middle Tier Server is running, the first URL opens a Web page where server statistics are displayed. You should be able to see where the request count increases by clicking the Refresh button on your browser.

The second URL launches a dialog box that prompts for user credentials.

- 19** At a network browser, enter `http://srv-02/oneNet/nsadmin` and log in as the Admin user to eDirectory to change the LDAP ports to match those you changed in **Step 14a** in “Installing eDirectory” on page 255.

Because eDirectory and Active Directory are installed on the same network server, you might not be able to log in to eDirectory. If this is the case, go to the registry of the server where the ZENworks Middle Tier is installed, then change the LDAP Port DWord value of the `HKLM\Software\Novell\Xtier\Configuration\Xsrv` registry key to the port you specified in **Step 14a** in “Installing eDirectory” on page 255.

## Installing ODBC Drivers for Sybase

Before running the inventory reports, review the following:

- ❑ Make sure that the appropriate ODBC client for Sybase, Oracle, or MS SQL is installed on the machine running ConsoleOne. The ODBC driver is automatically configured on the machine when you invoke the Inventory report.

To install the ODBC driver for the Sybase database,

1. In the *Novell ZENworks 7 with Support Pack 1 Companion 2 CD*, open the `\database drivers` directory
2. Follow the instructions in the `odbcreadme.txt` file in the `\database drivers` directory. The information helps you to set up the address of the Sybase database and verify that you can make a connection

For Oracle, you must install the appropriate client for ODBC. For example, for Oracle9i Inventory database, install the Oracle9i client because Inventory reports are not compatible with either the older or the later version of the client.

For MS SQL, the client is available on all Microsoft Windows operating systems.

- ❑ Make sure that at least MDAC 2.6 SP1 (Microsoft Data Access Component) is installed particularly on a Windows NT machine for running Crystal Reports. Check the version of MDAC on your box, select *Control Panel > ODBC Data sources > the About* tab pane. The minimum version required is 3.520.7326.0. If the version you have does not match the minimum requirement, you need to upgrade the ODBC core components by downloading them from the [Microsoft site \(http://microsoft.com/data/download.htm\)](http://microsoft.com/data/download.htm)

## Deploying the Desktop Management Agent to User Workstations

When ZENworks 7 Desktop Management with SP1 is running in a Windows server environment, you need to install the Desktop Management Agent onto user workstations and begin to use the Desktop Management features to manage those workstations.

The Desktop Management Agent Distributor facilitates the initial deployment and future upgrades of the ZENworks Desktop Management Agent through the use of Microsoft domains and Microsoft Active Directory. The Agent Distributor uses Microsoft domains and Active Directory when selecting target workstations and during deployment of the Desktop Management Agent to those same target workstations.

For more information about using the Desktop Management Agent Distributor to deploy the Desktop Management Agent to workstations in your Windows network, see [Section 12.5, “Using the Desktop Management Agent Distributor to Deploy the Agent to Workstations in a Microsoft Domain,”](#) on page 149.

# Installing ZENworks Desktop Management Services on Linux

# IV

Novell® ZENworks® 7 Desktop Management includes the capability of installing the following key elements on SUSE® Linux Enterprise Server (SLES) 9 Support Pack 1, SLES 10 server (ZENworks 7 Desktop Management with SP1 only), or Novell Open Enterprise Server (OES Linux) 1.0:

- ♦ **Desktop Management Server:** This software lets you centrally create and manage policies and profiles for users and workstations on a network that includes Linux servers. These policies and profiles enable you to distribute, manage, and update applications, perform advanced inventory and remote management functions, and automatically install operating systems on the Windows workstations in your network.
- ♦ **ZENworks Middle Tier Server:** This software works with Web Server software installed on a Linux server to set up authentication and communication between the Desktop Management Server inside the corporate firewall and workstations outside the corporate firewall. This communication makes it possible for mobile users to get Desktop Management services when they are traveling. It also allows communication for workstations that do not have the Novell Client™.

---

**NOTE:** Installing the ZENworks 7 Middle Tier Server is not supported on a SLES 10 server.

---

---

**NOTE:** Of the four prebuilt software “sets” available for the SLES 9 installation (that is, *Minimum System*, *Minimum Graphical System*, *Full*, and *Default System* installations) only the *Default System* installation mode for SLES 9 supports ZENworks 7 Desktop Management. All other modes used for SLES 9 installation cause a subsequent ZENworks 7 Desktop Management installation failure.

---

---

**IMPORTANT:** If you plan to install ZENworks 7 Desktop Management with Support Pack 1 (Desktop Management Server only) on a SLES 10 server where Novell eDirectory™ 8.8.1 is installed, you need to make sure that, at a minimum, ports TCP 427 and TCP 524 are opened on the server.

If these ports are not opened, the SLES 10 server cannot be added to the eDirectory tree where you plan to install ZENworks.

---

The ZENworks 7 Desktop Management Services on Linux installation program lets you choose between these two elements as organized in various combinations called “install sets.” The following sections reflect the organization of these install sets:

- ♦ Chapter 19, “Installing All ZENworks Features on a Linux Server,” on page 299
- ♦ Chapter 20, “Installing Only the Desktop Management Server on a Linux Server,” on page 305
- ♦ Chapter 21, “Installing Only the ZENworks Middle Tier Server on a Linux Server,” on page 311
- ♦ Chapter 22, “Customizing the ZENworks Desktop Management Installation on a Linux Server,” on page 315
- ♦ Chapter 23, “Silent Installation,” on page 323

- ♦ Chapter 24, “Installing RPMs and Changing Configuration Values,” on page 329
- ♦ Chapter 25, “Setting Up Security Measures on Linux Middle Tier Servers,” on page 333
- ♦ Chapter 26, “Where Do I Go From Here?,” on page 337

For information about installing ZENworks 7 Desktop Management with Support Pack 1 Services on Linux, go to [Installing in a Novell Cluster Services Environment](#) and reference [Section B.11](#), “Installing ZENworks 7 Desktop Management with SP1 in an OES Linux Cluster Environment,” on page 555.

# Installing All ZENworks Features on a Linux Server

# 19

The information in this section includes a procedure for installing all Novell® ZENworks® Desktop Management features on a SUSE® Linux Enterprise Server (SLES) 9 or Novell Open Enterprise Server (OES) Linux server.

For information about the server platform combinations (Middle Tier Server and ZENworks Management Server) that have been tested, see [Chapter 2, “Platform Support for the Desktop Management Infrastructure,”](#) on page 27. For information about the hardware and software prerequisites for the Linux installation, see [Chapter 4, “Prerequisites for Installing the ZENworks Desktop Management Server,”](#) on page 41 and [Chapter 6, “Prerequisites for Installing the ZENworks Middle Tier Server,”](#) on page 61.

Use the following steps to install all of the ZENworks 7 Desktop Management features on a SLES 9 or OES Linux server:

- 1 From the terminal console, use the `su` command to switch to the `root` user.
- 2 Run `mount /CD_mount_point` to mount the *ZENworks 7 Desktop Management Installation* program CD or CD recorder.
- 3 Change to the CD mount directory, and run `./setup` to display the first screen of the installation program.

```
=====
Introduction
-----
```

```
InstallAnywhere will guide you through the installation of ZENworks
Desktop Management.
```

```
It is strongly recommended that you quit all programs before
continuing with this installation.
```

```
Respond to each prompt to proceed to the next step in the
installation. If you want to change something on a previous step,
type 'back'.
```

```
You may cancel this installation at any time by typing 'quit'.
```

```
PRESS <ENTER> TO CONTINUE:
```

- 4 Read the introduction, then press Enter to display the Installation Prerequisites screen.
- 5 Read the prerequisites, pressing Enter to page down as you read. At the end of the prerequisites, press Enter to display the License Agreement screen.
- 6 Read the terms of the license, pressing Enter to page down as you read. At the end of license agreement, enter Y if you accept the terms of the license.

---

**TIP:** Enter `back` on any screen of the installation program to go back to the previous screen.

Enter quit on any screen to cancel the installation program.

---

The first screen of the installation is displayed.

```
=====
Choose Install Set
-----
Please choose the Install Set to be installed by this installer.
->1- All Features
    2- ZENworks Desktop Management Server
    3- ZENworks Middle Tier Server

    4- Customize...ENTER THE NUMBER FOR THE INSTALL SET, OR PRESS
<ENTER> TO ACCEPT THE DEFAULT
:
```

- 7** Enter 1 or press Enter to accept the default.

```
=====
Tree information
-----
Please enter authentication information for the tree where you want
to configure ZENworks.

Tree (zentree):
```

- 8** On the Tree Information screen, enter the name of the local host (that is, this server's) tree where you want to configure ZENworks. This field is not case sensitive.
- 9** Enter the eDirectory distinguished name (DN) for the Administrative User. This field is not case sensitive.
- 10** Enter the password for the Administrative User. This field is case sensitive.

---

**TIP:** Pressing Enter at any prompt causes the installation program to accept the default, which is the value shown in parentheses.

---

After your credentials are validated, the ZENworks License Key screen is displayed.

```
=====
ZENworks License Key Information
-----
Please enter a valid ZENworks license code. (90 Day Trial):
```

- 11** Enter the license code that you received in an e-mail from Novell after you purchased Novell ZENworks. You are periodically reminded to license the product until you provide this license code. If you don't enter an appropriate code, ZENworks Desktop Management functions for only 90 days.

The Middle Tier Server Configuration Information screen is displayed.

```
=====
Middle Tier Server Configuration Information
-----
The Middle Tier Server you configure with this program will access
```



an eDirectory server in order to authenticate users and workstations and to obtain ZENworks configuration and policy information.

Please provide the name or IP address and administrative credentials for an eDirectory server.

Server Name/IP Address (zenmid):

- 12** Enter the DNS name or IP address of the server where eDirectory is installed.

Enter Administrative Credentials:  
Proxy User (admin.myCompany):

- 13** Enter the full distinguished username of the Middle Tier proxy user account (for example, admin.mycompany).

To ensure that these credentials remain secure, you can set up an arbitrary user with specific administrative rights. For more information, see [Section 10.3, “Required Rights for the Middle Tier Proxy User Account and the NSAdmin Utility,” on page 127.](#)

Password() :

- 14** Enter the eDirectory password for the Middle Tier proxy user.

The ZENworks Middle Tier software searches for ZENworks user objects in a specified eDirectory context and below.

Please Specify the ZENworks user context.  
NOTE: This context must already exist.

Users Context (users.novell):

- 15** Enter the eDirectory context where the Middle Tier Server can look for user objects that will be using Desktop Management.

The installation program verifies the existence of the context (that is, the directory container) before continuing.

The Inventory Standalone Configuration screen is displayed.

```
=====
Inventory Standalone Configuration
-----
```

Do you want to configure as a Standalone? (Y/N) (Y):

- 16** (Optional) The Inventory Standalone Configuration screen is displayed if you choose to install the Inventory Server and the Inventory Database on the same server. If you want the installation program to automatically create the Server Package and the Database Location policy within the Server Package, and to start the Inventory Service on the server, configure the settings on the Inventory Standalone Configuration screen.

Enter Y to select Inventory Standalone configuration.

```
Inventory Server Context (novell):
```

- 17** Enter the context for the standalone inventory server.

The Inventory Proxy Configuration screen is displayed.

```
=====
Inventory Proxy Configuration
-----
```

```
XML Proxy port (65000):
```

- 18** Enter the port number you want to designate to allow XMLRPC requests to pass through to the Inventory Proxy service.

If you want to change the Port 65000 default, specify a value between 0 and 65535. Ensure that the port number is not used by other services on the server.

The SSL Configuration screen is displayed.

```
=====
SSL Configuration
-----
```

```
Do you want to configure SSL? (Y):
```

- 19** (Optional) If you want the ZENworks 7 Inventory server to establish a secure connection with eDirectory using LDAP, enter Y, then enter the complete path and the filename of the SSL certificate.

The NetBIOS Configuration screen is displayed

```
=====
NetBIOS Configuration
-----
```

```
NetBIOS Name (NetBIOS_name):
```

- 20** (Conditional). The NetBIOS Configuration screen is displayed only if the NetBIOS name is not present in `/etc/samba/smb.conf`, and the Linux server name where you run the ZENworks installation is more than 13 characters.

If the NetBIOS name is not present in `/etc/samba/smb.conf` and the Linux server name is more than 13 characters, the installation program generates a NetBIOS name using the first 13 characters of the Linux server name where you run the installation. This name is displayed as the default value during the ZENworks Linux installation.

```
=====
NetBIOS Configuration
-----
```

```
NetBIOS Name
```

```
(NetBIOS_name_generated_by_the_ZENworks_installation_program):
```

You can either accept the default value or enter a new value, but make sure that the NetBIOS name is unique.

**21** The Pre-Installation Summary screen is displayed.

```
Pre-Installation Summary
-----
We are ready to install ZENworks to your server. Press <Enter> to
continue, type "back" to change your choices or "quit" to exit this
install.

Product Name:
  ZENworks Desktop Management

Product Components:
  Inventory Server,
  Remote Management,
  Application Management,
  Inventory Proxy,
  Inventory Database,
  NAL Database,
  Autoworkstation Import/Removal,
  PXE,
  Imaging,
  Middle Tier,
  ZENworks Desktop Agent Installer

ZENworks License Key:
  90 Day Trial

Schema Extensions:
  Schema extensions will be applied.

PRESS <ENTER> TO CONTINUE:
```

**22** Press Enter to begin the installation.

When the installation process is complete, InstallAnywhere creates an installation log file.  
Press Ctrl+C to abort the creation of the log file.

If the installation is successful, the View Readme screen is displayed.

```
=====
View Readme
-----

Do you want to view the readme file?

->1- YES
   2- NO

ENTER THE NUMBER FOR YOUR CHOICE, OR PRESS <ENTER> TO ACCEPT THE
DEFAULT:
:
```

**23** (Optional) Enter 1 to open the Readme file. Read the file, pressing Enter to screen down as you read. At the end of the Readme, press Enter to display the Installation Complete screen.

**24** (Optional) Enter 2 to display the Installation Complete screen.

```
=====
Installation Complete
-----
```

```
Congratulations. ZENworks Desktop Management has been successfully
installed to:
```

```
/opt/novell/zenworks/
```

```
All installed ZENworks services have been started.
```

```
Please see the log file (/var/log/
ZENworks_Desktop_Management_InstallLog.log)
for more details.
```

```
PRESS <ENTER> TO EXIT THE INSTALLER:
```

Although the Installation Complete message states that all installed ZENworks services have been started, the proxydhcp service is not started after the installation is completed, nor is it started after a reboot. To start the service, run `/etc/init.d/novell-proxydhcp start`. If you want the service to be started after a reboot, you can use a runlevel editor and add the daemon to the required runlevel. For more information, see [Appendix L, “Configuring Desktop Management Services for Startup on a Linux Server,”](#) on page 631.

**25** Press Enter to exit the installation program.

---

**IMPORTANT:** When you complete the installation of the Desktop Management Server, make sure you complete the post-installation tasks that are required for Windows, NetWare<sup>®</sup>, and Linux servers. For more information, see [Part V, “Post-Installation,”](#) on page 339.

---

# Installing Only the Desktop Management Server on a Linux Server

# 20

The information in this section includes a procedure for installing the Novell® ZENworks® Desktop Management Server on a SUSE® Linux Enterprise Server (SLES) 9 or Novell Open Enterprise Server (OES) Linux server.

For information about the server platform combinations (Middle Tier Server and ZENworks Management Server) that have been tested, see [Chapter 2, “Platform Support for the Desktop Management Infrastructure,” on page 27](#). For information about the hardware and software prerequisites for the Linux installation, see [Chapter 4, “Prerequisites for Installing the ZENworks Desktop Management Server,” on page 41](#) and [Chapter 6, “Prerequisites for Installing the ZENworks Middle Tier Server,” on page 61](#).

Use the following steps to install only the ZENworks 7 Desktop Management Server on the Linux server:

- 1 From the terminal console, use the `su` command to switch to the `root` user.
- 2 Run `mount /CD_mount_point` to mount the *ZENworks 7 Desktop Management Installation* CD.
- 3 Change to the CD mount directory, and run `./setup` to display the first screen of the installation program.

```
=====
Introduction
-----
```

```
InstallAnywhere will guide you through the installation of ZENworks
Desktop Management.
```

```
It is strongly recommended that you quit all programs before
continuing with this installation.
```

```
Respond to each prompt to proceed to the next step in the
installation. If you want to change something on a previous step,
type 'back'.
```

```
You may cancel this installation at any time by typing 'quit'.
```

```
PRESS <ENTER> TO CONTINUE:
```

- 4 Read the terms of the license, pressing Enter several times to page down and read the contents, then at the end of license agreement, enter Y to accept the terms.

---

**TIP:** Enter `back` on any screen of the installation program to go back to the previous screen.  
Enter `quit` on any screen to cancel the installation program.

---

The first screen of the installation is displayed.

```
=====
Choose Install Set
-----
Please choose the Install Set to be installed by this installer.
->1- All Features
    2- ZENworks Desktop Management Server
    3- ZENworks Middle Tier Server

    4- Customize...ENTER THE NUMBER FOR THE INSTALL SET, OR PRESS
<ENTER> TO ACCEPT THE DEFAULT
:
```

- 5** Enter 2 or press Enter to accept the default.

```
=====
=====
Tree information
-----
Please enter authentication information for the tree where you want
to configure ZENworks.

Tree (zentree):
```

- 6** On the Tree Information screen, enter the name of the local host (that is, this server's) tree where you want to configure ZENworks. This field is not case sensitive.
- 7** Enter the eDirectory distinguished name (DN) for the Administrative User. This field is not case sensitive.
- 8** Enter the password for the Administrative User. This field is not case sensitive.
- After your credentials are validated, the ZENworks License Key screen is displayed.

```
=====
ZENworks License Key Information
-----
Please enter a valid ZENworks license code. (90 Day Trial):
```

- 9** Enter the license code that you received in an e-mail from Novell after you purchased Novell ZENworks. You are periodically reminded to license the product until you provide this license code. If you don't enter an appropriate code, ZENworks Desktop Management functions for only 90 days.

The Inventory Standalone Configuration screen is displayed.

```
=====
Inventory Standalone Configuration
-----

Do you want to configure as a Standalone? (Y/N) (Y):
```

- 10** (Optional) The Inventory Standalone Configuration screen is displayed if you choose to install the Inventory Server and the Inventory Database on the same server. If you want the installation program to automatically create the Server Package and the Database Location policy within the Server Package, and to start the Inventory Service on the server, configure the settings on the Inventory Standalone Configuration screen.

Enter Y to select Inventory Standalone configuration.

```
Inventory Server Context (novell):
```

- 11** Enter the context for the standalone inventory server.  
The Inventory Proxy Configuration screen is displayed.

```
=====
Inventory Proxy Configuration
-----
```

```
XML Proxy port (65000):
```

- 12** Enter the port number you want to designate as one to allow XMLRPC requests pass through to the Inventory Proxy service.

If you want to change the Port 65000 default, specify a value between 0 and 65535. Ensure that the port number is not used by other services on the server.

The SSL Configuration screen is displayed.

```
=====
SSL Configuration
-----
```

```
Do you want to configure SSL? (Y):
```

- 13** (Optional) If you want ZENworks 7 Inventory server to establish a secure connection with eDirectory using LDAP, enter Y, then enter the complete path and the filename of the SSL certificate.

The NetBIOS Configuration screen is displayed

```
=====
NetBIOS Configuration
-----
```

```
NetBIOS Name (NetBIOS_name):
```

- 14** (Conditional). The NetBIOS Configuration screen is displayed only if the NetBIOS name is not present in `/etc/samba/smb.conf`, and the Linux server name on which you run the ZENworks installation is more than 13 characters.

If the NetBIOS name is not present in `/etc/samba/smb.conf` and the Linux server name is more than 13 characters, then the installation program generates a NetBIOS name using the first 13 characters of the Linux server name on which you run the installation. This name is displayed as the default value during the ZENworks Linux installation.

```
=====
```

NetBIOS Configuration

-----

NetBIOS Name

(NetBIOS\_name\_generated\_by\_the\_ZENworks\_installation\_program):

You can either accept the default value or enter a new value, but make sure that the NetBIOS name is unique.

**15** The Pre-Installation Summary screen is displayed.

Pre-Installation Summary

-----

We are ready to install ZENworks to your server. Press <Enter> to continue,  
type "back" to change your choices or "quit" to exit this install.

Product Name:

ZENworks Desktop Management

Product Components:

Inventory Server,  
Remote Management,  
Application Management,  
Inventory Proxy,  
Inventory Database,  
NAL Database,  
Autoworkstation Import/Removal,  
PXE,  
Imaging,  
ZENworks Desktop Agent Installer

ZENworks License Key:

90 Day Trial

Schema Extensions:

Schema extensions will be applied.

PRESS <ENTER> TO CONTINUE:

**16** Press Enter to begin the installation.

When the installation process is complete, InstallAnywhere creates an installation log file.  
Press Ctrl+C to abort the creation of the log file.

If the installation is successful, the View Readme screen is displayed.

=====

View Readme

-----

Do you want to view the readme file?



->1- YES  
2- NO

ENTER THE NUMBER FOR YOUR CHOICE, OR PRESS <ENTER> TO ACCEPT THE  
DEFAULT:

:

- 17** (Optional) Enter 1 to open the Readme file. Read the file, pressing Enter to page down as you read. At the end of the Readme, press Enter to display the Installation Complete screen.
- 18** (Optional) Enter 2 to display the Installation Complete screen.

```
=====
Installation Complete
-----
```

Congratulations. ZENworks Desktop Management has been successfully  
installed  
to:

/opt/novell/zenworks/

All installed ZENworks services have been started.

Please see the log file (/var/log/  
ZENworks\_Desktop\_Management\_InstallLog.log)  
for more details.

PRESS <ENTER> TO EXIT THE INSTALLER:

Although the Installation Complete message states that all installed ZENworks services have been started, the proxydhcp service is not started after the installation is completed, nor is it started after a reboot. To start the service, run `/etc/init.d/novell-proxydhcp start`. If you want the service to be started after a reboot, you can use a runlevel editor and add the daemon to the required runlevel. For more information, see [Appendix L, “Configuring Desktop Management Services for Startup on a Linux Server,”](#) on page 631.

- 19** Press Enter to exit the installation program.

---

**IMPORTANT:** When you complete the installation of the Desktop Management Server, make sure you complete the post-installation tasks that are required for Windows, NetWare®, and Linux servers. For more information, see [Part V, “Post-Installation,”](#) on page 339.

---



# Installing Only the ZENworks Middle Tier Server on a Linux Server

# 21

The information in this section includes a procedure for installing only the Novell® ZENworks® Middle Tier Server on a SUSE® Linux Enterprise Server (SLES) 9 or Novell Open Enterprise Server (OES) Linux server.

For information about the server platform combinations (Middle Tier Server and ZENworks Management Server) that have been tested, see [Chapter 2, “Platform Support for the Desktop Management Infrastructure,” on page 27](#). For information about the hardware and software prerequisites for the Linux installation, see [Chapter 4, “Prerequisites for Installing the ZENworks Desktop Management Server,” on page 41](#) and [Chapter 6, “Prerequisites for Installing the ZENworks Middle Tier Server,” on page 61](#).

Use the following steps to install only the ZENworks 7 Middle Tier Server on a Linux server:

- 1 From the terminal console, use the `su` command to switch to the `root` user.
- 2 Run `mount /CD_mount_point` to mount the *ZENworks 7 Desktop Management Installation CD*.
- 3 Change to the CD mount directory, and run `./setup` to display the first screen of the installation program.

```
=====
Introduction
-----

InstallAnywhere will guide you through the installation of ZENworks
Desktop Management.

It is strongly recommended that you quit all programs before
continuing with this installation.

Respond to each prompt to proceed to the next step in the
installation.  If you want to change something on a previous step,
type 'back'.

You may cancel this installation at any time by typing 'quit'.

PRESS <ENTER> TO CONTINUE:
```

- 4 Read the terms of the license, pressing Enter several times to page down and read the contents, then at the end of license agreement, enter Y to accept the terms.

---

**TIP:** Enter `back` on any screen of the installation program to go back to the previous screen.  
Enter `quit` on any screen to cancel the installation program.

---

The first screen of the installation is displayed.

```

=====
Choose Install Set
-----
Please choose the Install Set to be installed by this installer.
->1- All Features
    2- ZENworks Desktop Management Server
    3- ZENworks Middle Tier Server

    4- Customize...ENTER THE NUMBER FOR THE INSTALL SET, OR PRESS
<ENTER> TO ACCEPT THE DEFAULT
:

```

- 5** Enter 3 or press Enter to accept the default.

```

=====
Tree information
-----
Please enter authentication information for the tree where you want
to configure ZENworks.

Tree (zentree):

```

- 6** On the Tree Information screen, enter the name of the local host (that is, this server's) tree where you want to configure ZENworks. This field is not case sensitive.
- 7** Enter the eDirectory distinguished name (DN) for the Administrative User. This field is not case sensitive.
- 8** Enter the password for the Administrative User. This field is not case sensitive.  
After your credentials are validated, the ZENworks License Key screen is displayed.

```

=====
ZENworks License Key Information
-----
Please enter a valid ZENworks license code. (90 Day Trial):

```

- 9** Enter the license code that you received in an e-mail from Novell after you purchased Novell ZENworks. You are periodically reminded to license the product until you provide this license code. If you don't enter an appropriate code, ZENworks Desktop Management functions for only 90 days.  
The Middle Tier Server Configuration Information screen is displayed.

```

=====
Middle Tier Server Configuration Information
-----
The Middle Tier Server you configure with this program will access
an eDirectory server in order to authenticate users and
workstations and to obtain ZENworks configuration and policy
information.

```

Please provide the name or IP address and administrative credentials for an eDirectory server.

Server Name/IP Address (zenmid):

- 10** Enter the DNS name or IP address of the server where eDirectory is installed.

Enter Administrative Credentials:

Proxy User (admin.myCompany):

- 11** Enter the fully qualified distinguished username of the Middle Tier proxy user account (for example, midtier-proxy.org-unit.org). To ensure that these credentials remain secure, you can set up an arbitrary user with specific administrative rights. For more information, see [Section 10.3, “Required Rights for the Middle Tier Proxy User Account and the NSAdmin Utility,” on page 127.](#)

Password():

- 12** Enter the eDirectory password for the Middle Tier proxy user.

The ZENworks Middle Tier software searches for ZENworks user objects in a specified eDirectory context and below.

Please Specify the ZENworks user context.

NOTE: This context must already exist.

Users Context (users.novell):

- 13** Enter the eDirectory context where the Middle Tier Server can look for user objects that will be using Desktop Management.

The installation program verifies the existence of the context (that is, the directory container) before continuing.

- 14** The Pre-Installation Summary screen is displayed.

Pre-Installation Summary

-----

We are ready to install ZENworks to your server. Press <Enter> to continue, type "back" to change your choices or "quit" to exit this install.

Product Name:

ZENworks Desktop Management

Product Components:

Middle Tier,

ZENworks License Key:

90 Day Trial

Schema Extensions:

Schema extensions will be applied.

PRESS <ENTER> TO CONTINUE:

**15** Press Enter to begin the installation.

When the installation process is complete, InstallAnywhere creates an installation log file.  
Press Ctrl+C to abort the creation of the log file.

If the installation is successful, the View Readme screen is displayed.

```
=====
View Readme
-----
```

Do you want to view the readme file?

```
->1- YES
    2- NO
```

ENTER THE NUMBER FOR YOUR CHOICE, OR PRESS <ENTER> TO ACCEPT THE  
DEFAULT:  
:

**16** (Optional) Enter 1 to open the Readme file. Read the file, pressing Enter to page down as you read. At the end of the Readme, press Enter to display the Installation Complete screen.

**17** (Optional) Enter 2 to display the Installation Complete screen.

```
=====
=====
Installation Complete
-----
```

Congratulations. ZENworks Desktop Management has been successfully  
installed to:

/opt/novell/zenworks/

All installed ZENworks services have been started.

Please see the log file (/var/log/  
ZENworks\_Desktop\_Management\_InstallLog.log)  
for more details.

PRESS <ENTER> TO EXIT THE INSTALLER:

Although the Installation Complete message states that all installed ZENworks services have been started, the proxydhcp service is not started after the installation is completed, nor is it started after a reboot. To start the service, run `/etc/init.d/novell-proxydhcp start`. If you want the service to be started after a reboot, you can use a runlevel editor and add the daemon to the required runlevel. For more information, see [Appendix L, “Configuring Desktop Management Services for Startup on a Linux Server,” on page 631](#).

**18** Press Enter to exit the installation program.

# Customizing the ZENworks Desktop Management Installation on a Linux Server

# 22

The information in this section includes a procedure for customizing the installation of all Novell® ZENworks® Desktop Management features on a SUSE® Linux Enterprise Server (SLES) 9 or Novell Open Enterprise Server (OES) Linux server.

For information about the server platform combinations (Middle Tier Server and ZENworks Management Server) that have been tested, see [Chapter 2, “Platform Support for the Desktop Management Infrastructure,” on page 27](#). For information about the hardware and software prerequisites for the Linux installation, see [Chapter 4, “Prerequisites for Installing the ZENworks Desktop Management Server,” on page 41](#) and [Chapter 6, “Prerequisites for Installing the ZENworks Middle Tier Server,” on page 61](#).

Use the following steps to install only the ZENworks 7 Desktop Management features that you want on the Linux server:

- 1 From the terminal console, use the `su` command to switch to the `root` user.
- 2 Run `mount /CD_mount_point` to mount the *ZENworks 7 Desktop Management Services on Linux* CD.
- 3 Change to the CD mount directory, and run `./setup` to display the first screen of the installation program.

```
=====
Introduction
-----
```

```
InstallAnywhere will guide you through the installation of ZENworks
Desktop Management.
```

```
It is strongly recommended that you quit all programs before
continuing with this installation.
```

```
Respond to each prompt to proceed to the next step in the
installation. If you want to change something on a previous step,
type 'back'.
```

```
You may cancel this installation at any time by typing 'quit'.
```

```
PRESS <ENTER> TO CONTINUE:
```

- 4 Read the terms of the license, pressing `Enter` several times to page down and read the contents, then at the end of license agreement, enter `Y` to accept the terms.

---

**TIP:** Enter `back` on any screen of the installation program to go back to the previous screen.  
Enter `quit` on any screen to cancel the installation program.

---

The first screen of the installation is displayed.

```
=====
Choose Install Set
-----
Please choose the Install Set to be installed by this installer.
->1- All Features
    2- ZENworks Desktop Management Server
    3- ZENworks Middle Tier Server

    4- Customize...ENTER THE NUMBER FOR THE INSTALL SET, OR PRESS
<ENTER> TO ACCEPT THE DEFAULT
:
```

**5** Enter 4 to choose the Customize option.

The Choose Product Features screen is displayed.

```
=====
Choose Product Features
-----

ENTER A COMMA_SEPARATED LIST OF NUMBERS REPRESENTING THE FEATURES
YOU WOULD
LIKE TO SELECT, OR DESELECT. TO VIEW A FEATURE'S DESCRIPTION, ENTER
'?<NUMBER>'. PRESS <RETURN> WHEN YOU ARE DONE:

1- [X] Application Management
2- [X] Remote Management
3- [X] Middle Tier
4- [X] Inventory Server
5- [X] Inventory Proxy
6- [X] Inventory Database
7- [X] NAL Database
8- [X] Imaging
9- [X] PXE
10- [X] Autoworkstation Import/Removal
11- [X] ZENworks Desktop Agent Installer
```

```
Please choose the Features to be installed by this installer.
:
```

**6** Enter the listed number of the feature or features you want to select or deselect for installation on the Linux server. An [X] next to the feature name means that the feature will be installed. All of the features are selected by default.

If you want to select or deselect more than one feature, use a comma to separate the numbers.

If you need a description of a feature, type a question mark (?) followed by the feature number, then press Enter.

**7** Press Enter when your feature list is ready for installation.

After being selected for installation, many of the ZENworks features require no further configuration. You are not prompted for further information about these features.



No matter which of the features you select, however, you will always be prompted for configuration information about the ZENworks Desktop Management Server. The first screen to be displayed is the Tree Information screen that is required for configuring the Desktop Management Server.

```
=====
Tree information
-----
Please enter authentication information for the tree where you want
to configure ZENworks.

Tree (zentree):
```

- 8** On the Tree Information screen, enter the name of the local host (that is, this server's) tree where you want to configure ZENworks. This field is not case sensitive.
- 9** Enter the eDirectory distinguished name (DN) for the Administrative User. This field is not case sensitive.
- 10** Enter the password for the Administrative User. This field is not case sensitive.  
After your credentials are validated, the ZENworks License Key screen is displayed.

```
=====
ZENworks License Key Information
-----
Please enter a valid ZENworks license code. (90 Day Trial):
```

- 11** Enter the license code that you received in an e-mail from Novell after you purchased Novell ZENworks. You are periodically reminded to license the product until you provide this license code. If you don't enter an appropriate code, ZENworks Desktop Management functions for only 90 days.  
(Conditional) If you chose to install the Middle Tier, the Middle Tier Server Configuration Information screen is displayed.

```
=====
Middle Tier Server Configuration Information
-----
The Middle Tier Server you configure with this program will access
an eDirectory server in order to authenticate users and
workstations and to obtain ZENworks configuration and policy
information.
```

Please provide the name or IP address and administrative credentials for an eDirectory server.

Server Name/IP Address (zenmidt):

- 12** (Conditional, if you selected the Middle Tier option) Enter the DNS name or IP address of the server where eDirectory is installed.

Enter Administrative Credentials:

Proxy User (admin.myCompany):

- 13** (Conditional, if you selected the Middle Tier option) Enter the fully qualified distinguished username of the Middle Tier proxy user account (for example, midtier-proxy.org-unit.org).  
To ensure that these credentials remain secure, you can set up an arbitrary user with specific administrative rights. For more information, see [Section 10.3, “Required Rights for the Middle Tier Proxy User Account and the NSAdmin Utility,”](#) on page 127.

Password() :

- 14** (Conditional, if you selected the Middle Tier option) Enter the eDirectory password for the Middle Tier proxy user.

The ZENworks Middle Tier software searches for ZENworks user objects in a specified eDirectory context and below.

Please Specify the ZENworks user context.

NOTE: This context must already exist.

Users Context (users.novell):

- 15** (Conditional, if you selected the Middle Tier option) Enter the eDirectory context where the Middle Tier Server can look for user objects that will be using Desktop Management.  
The installation program verifies the existence of the context (that is, the directory container) before continuing.  
(Conditional) If you chose to install the Inventory Server and the Inventory Database on the same server, the Inventory Standalone Configuration screen is displayed.

```
=====
Inventory Standalone Configuration
-----
```

Inventory Server Context (novell):

- 16** (Conditional, if you selected the Inventory Server option) Enter the context for the standalone inventory server.  
If you chose to install the Inventory Proxy feature, the Inventory Proxy Configuration screen is displayed.

```
=====
Inventory Proxy Configuration
-----
```

XML Proxy port (65000):

- 17** (Conditional, if you selected the Inventory Proxy option) Enter the port number you want to designate to allow XMLRPC requests pass through to the Inventory Proxy service.  
If you want to change the Port 65000 default, specify a value between 0 and 65535. Ensure that the port number is not used by other services on the server.  
The SSL Configuration screen is displayed.

```
=====
SSL Configuration
-----
Do you want to configure SSL? (Y):
```

- 18** (Optional) If you want the ZENworks 7 Inventory Server to establish a secure connection with eDirectory using LDAP, enter Y, then enter the complete path and the filename of the SSL certificate.

The NetBIOS Configuration screen is displayed

```
=====
NetBIOS Configuration
-----
NetBIOS Name (NetBIOS_name):
```

- 19** (Conditional) The NetBIOS Configuration screen is displayed only if the NetBIOS name is not present in `/etc/samba/smb.conf`, and the Linux server name on which you run the ZENworks installation is more than 13 characters.

If the NetBIOS name is not present in `/etc/samba/smb.conf` and the Linux server name is more than 13 characters, then the installation program generates a NetBIOS name using the first 13 characters of the Linux server name on which you run the installation. This name is displayed as the default value during the ZENworks Linux installation.

```
=====
NetBIOS Configuration
-----
NetBIOS Name
(NetBIOS_name_generated_by_the_ZENworks_installation_program):
```

You can either accept the default value or enter a new value, but make sure that the NetBIOS name is unique.

- 20** The Pre-Installation Summary screen is displayed.

```
Pre-Installation Summary
-----
We are ready to install ZENworks to your server. Press <Enter> to
continue,
type "back" to change your choices or "quit" to exit this install.
```

```
Product Name:
  ZENworks Desktop Management
```

```
Product Components:
  Inventory Server,
  Remote Management,
  Application Management,
  Inventory Proxy,
  Inventory Database,
  NAL Database,
```

```
Autoworkstation Import/Removal,  
PXE,  
Imaging,  
Middle Tier,  
ZENworks Desktop Agent Installer
```

```
ZENworks License Key:  
90 Day Trial
```

```
Schema Extensions:  
Schema extensions will be applied.
```

```
PRESS <ENTER> TO CONTINUE:
```

**21** Press Enter to begin the installation.

When the installation process is complete, InstallAnywhere creates an installation log file.  
Press Ctrl+C to abort the creation of the log file.

If the installation is successful, the View Readme screen is displayed.

```
=====  
View Readme  
-----
```

```
Do you want to view the readme file?
```

```
->1- YES  
2- NO
```

```
ENTER THE NUMBER FOR YOUR CHOICE, OR PRESS <ENTER> TO ACCEPT THE  
DEFAULT:
```

```
:
```

**22** (Optional) Enter 1 to open the Readme file. Read the file, pressing Enter to page down as you read. At the end of the Readme, press Enter to display the Installation Complete screen.

**23** (Optional) Enter 2 to display the Installation Complete screen.

```
=====  
Installation Complete  
-----
```

```
Congratulations. ZENworks Desktop Management has been successfully  
installed  
to:
```

```
/opt/novell/zenworks/
```

```
All installed ZENworks services have been started.
```

```
Please see the log file (/var/log/  
ZENworks_Desktop_Management_InstallLog.log)  
for more details.
```

PRESS <ENTER> TO EXIT THE INSTALLER:

Although the Installation Complete message states that all installed ZENworks services have been started, the proxydhcp service is not started after the installation is completed, nor is it started after a reboot. To start the service, run `/etc/init.d/novell-proxydhcp start`. If you want the service to be started after a reboot, you can use a runlevel editor and add the daemon to the required runlevel. For more information, see [Appendix L, “Configuring Desktop Management Services for Startup on a Linux Server,”](#) on page 631.

**24** Press Enter to exit the installation program.

---

**IMPORTANT:** When you complete the installation of the Desktop Management Server, make sure you complete the post-installation tasks that are required for Windows, NetWare®, and Linux servers. For more information, see [Part V, “Post-Installation,”](#) on page 339.

---



You can automate the installation of Novell® ZENworks® Desktop Management Services on Linux by preselecting installation options prior to actually running the installation program. This “silent installation” is accomplished by editing and then running the `silent.properties` file included on the CD.

This section contains the following information:

- ♦ [Section 23.1, “Preparing for Silent Installation,” on page 323](#)
- ♦ [Section 23.2, “Running the Silent Installation,” on page 325](#)
- ♦ [Section 23.3, “Making the Silent Installation More Secure,” on page 326](#)

## 23.1 Preparing for Silent Installation

Use the following steps to prepare for a silent installation:

- 1 Locate the `silent.properties` file at the root of the *ZENworks 7 Desktop Management Services on Linux* CD, then copy the file to `/root` on your Linux server.
- 2 Edit `/root/silent.properties` as needed.

The content of `silent.properties` for ZENworks 7 Desktop Management Services on Linux is shown below.

```
INSTALLER_UI=silent
#-----
# Install Sets
#-----
##CHOSEN_INSTALL_SET=(All|Server|Midtier) [default: All]
#CHOSEN_INSTALL_SET=Midtier
#CHOSEN_INSTALL_SET=Server
#-----
# Installable Features
#-----
INSTALL_REMOTE_MANGEMENT=true
INSTALL_MIDDLE_TIER=true
INSTALL_INVENTORY_SERVER=true
INSTALL_INVENTORY_PROXY=true
INSTALL_INVENTORY_DATABASE=true
INSTALL_APPLICATION_MANAGEMENT_DATABASE=true
INSTALL_IMAGING_SERVER=true
INSTALL_PXE_SERVER=true
INSTALL_WORKSTATION_IMPORT_SERVER=true
INSTALL_ZDM_AGENT=true
#-----
# Pre-file-copy verification
#-----
#-----
# Authentication
#-----
TREE_USER_NAME=
```

```

TREE_PASSWORD=
TREE_NAME=
#-----
# ExtendSchemaConfigureAction
#-----
##SHOULD_EXTEND_SCHEMA=(true|false) [default: false]
SHOULD_EXTEND_SCHEMA=true
#-----
# LicensingConfigureAction
#-----
##USER_SUPPLIED_SERIAL_NUMBER= [default: 90 Day Trial]
USER_SUPPLIED_SERIAL_NUMBER=

#-----
# Post-file-copy verification
#-----
#-----
# Force Re-Configuration
#-----
##ConfigureAction.ZDM_FORCE_CONFIGURE=(true|false) [default: false]
#ConfigureAction.ZDM_FORCE_CONFIGURE=true

#-----
# Imaging
#-----
##NDS_CONF_PATH= [default: /etc/nds.conf]
#NDS_CONF_PATH=/etc/nds.conf

#-----
# Middle Tier
#-----
XTierConfigureAction.AUTH_DOMAIN=myDomain
XTierConfigureAction.AUTH_CONTEXT=myZENworksUserSearchContext
XTierConfigureAction.PROXY_USER=myProxyUser
XTierConfigureAction.PROXY_PASSWORD=myProxyPassword

#-----
# Inventory Server Standalone Mode
#-----
##StandaloneConfigureAction.INV_STANDALONE=(Y|N) [default: N]
#StandaloneConfigureAction.INV_STANDALONE=Y
#StandaloneConfigureAction.INV_SERVER_CONTEXT=myContext.myCompany

#-----
# XML Proxy
#
# value placed in /etc/opt/novell/zenworks/zws.properties as port2
#-----
##XMLProxyConfigureAction.XML_PROXY_PORT= [default: 8080]
#XMLProxyConfigureAction.XML_PROXY_PORT=myPortNumber

#-----
# SSL for Inventory
#-----

```



```
##SSLConfigureAction.SSL_CONFIGURE=(Y|N) [default: N]
#SSLConfigureAction.SSL_CONFIGURE=Y
#SSLConfigureAction.INV_CERT_PATH=/my.dir/my.cer

#-----
# NETBIOS Name
#
# value placed in /etc/samba/smb.conf as netbios name
# iff there is no existing value
#-----
##NETBIOS_NAME= [default: <hostname>-w]
#NETBIOS_NAME=myNetBiosName
```

By default, all Desktop Management components are selected for installation in `silent.properties`. As you edit this file, you can deselect components for installation by commenting that component name in the Installable Features section of the file. This creates a customized install set that you can apply when you run the installation program.

Instead of creating this customized install set, you can also choose to uncomment a consolidated install set in the Install Sets section of the file.

The `silent.properties` file also contains specific parameters that you need to configure for the components that you install. Make sure that you uncomment these parameters and provide the required values.

If you plan to run the silent installation in an insecure environment, you might want to take measures to hide passwords. For more information, see [Section 23.3, “Making the Silent Installation More Secure,” on page 326](#).

## 23.2 Running the Silent Installation

When you have edited the `silent.properties` file to include the installation of all of the components and the accompanying configuration values for those components, you are ready to run the installation program.

Use the following steps to complete the installation:

- 1 Copy the edited `silent.properties` file to the `/root` directory of the server where you intend to run the silent installation.
- 2 Insert the *ZENworks 7 Desktop Management Services on Linux* CD in the CD drive of the Linux server where you want to install ZENworks.
- 3 From the terminal console, use the `su` command to switch to the root user.
- 4 Run `mount /CD_mount_point` to mount the *ZENworks 7 Desktop Management Services on Linux* CD.
- 5 Change to the CD mount point, then enter the following command:  
`./setup -f /root/silent.properties`

---

**NOTE:** The path to the `silent.properties` file must be a complete path, beginning with a forward slash (`/`).

---

The installation program runs, copying the appropriate files and configuring the ZENworks components according to the information you have provided in `silent.properties`. The Pre-file-

copy Verification section of `silent.properties` checks each of the values you provided for validity. The installation stops if any value is invalid.

The program checks the Post-file-copy verification section of `silent.properties` for validity after the files are copied. If there is an incorrect value in this section, an error is logged to the InstallAnywhere log file located at `/var/log/ZENworks_Desktop_Management_InstallLog.log`, but the installation continues.

You can use the `novell-zdm-configure` utility to correct any errors than are encountered. For more information, see [Section 24.2, “Configuring or Reconfiguring Installed ZENworks Processes Running on Linux,”](#) on page 330.

## 23.3 Making the Silent Installation More Secure

If you want to keep your tree and Middle Tier passwords secure by not including them directly in the `silent.properties` file, you can define environment variables to keep them hidden. Use the following steps to set up environment variables for the passwords:

- 1 Open and prepare to edit `silent.properties` from the server location where you copied it earlier.
- 2 Locate the `TREE_PASSWORD=` configuration value in the Authentication section of the file.
- 3 Rather than explicitly entering your tree password, enter the following information as an environment variable for the value:

```
$lax.nl.env.tree_password_environment_variable_name$
```

**Example:** `TREE_PASSWORD=$lax.nl.env.TREE_PASSWORD$`

The environment variable name (shown as `tree_password_environment_variable_name` above) you choose need not be the configuration value name listed in `silent.properties`; you can choose any name you want.

- 4 Locate the `XTierConfigureAction.PROXY_PASSWORD=` configuration value in the Middle Tier section of the file.
- 5 Rather than explicitly entering your proxy password, enter the following information as an environment variable for the value:

```
$lax.nl.env.proxy_password_environment_variable_name$
```

**Example:**

```
XTierConfigureAction.PROXY_PASSWORD=$lax.nl.env.PROXY_PASSWORD$
```

The environment variable name (shown as `proxy_password_environment_variable_name` above) you choose need not be the configuration value name listed in `silent.properties`; you can choose any name you want.

Because your proxy password might be the same as your tree password, you can use the same environment variable for both passwords if you want to.

For more information about setting up environment variables in this situation, see [Section 23.3.1, “Setting an Environment Variable,”](#) on page 327.

### 23.3.1 Setting an Environment Variable

Use the following procedure to set an environment variable when you don't want to reveal the password while defining the variable:

- 1 Start a new command shell by entering the following command:

```
/bin/bash
```

- 2 At the bash (#) prompt, enter the following command to prevent future commands from being recorded in the command buffer and saved in your `.bash_history` file.

```
HISTSIZE=0
```

- 3 (Optional) To turn off the screen display of your password information, enter the following command:

```
stty -echo
```

- 4 To set up the environment variable for the tree password, enter the following command:

```
export tree_password_environment_variable_name=edirectory_password
```

- 5 To set up the environment variable for the Middle Tier proxy password, enter the following command:

```
export proxy_password_environment_variable_name=proxy_password
```

- 6 (Optional) To turn on the screen display for keyboard input, enter the following command:

```
stty echo
```

If you don't want to use the `stty` command to turn off the screen display, you can make sure that passwords are removed from the screen by entering `clear` after you define each environment variable.

- 7 Enter the following command to return to the original command shell after running the silent installation:

```
exec /CD_mount_point/setup -f /root/silent.properties
```



# Installing RPMs and Changing Configuration Values

# 24

If you are a Red Carpet® administrator or a Linux administrator accustomed to installing RPMs, you can install the RPMs located on the *Novell® ZENworks® 7 Desktop Management Services on Linux* CD, and then configure the services installation. This section includes the following information:

- [Section 24.1, “Running an RPM Installation or Upgrade,” on page 329](#)
- [Section 24.2, “Configuring or Reconfiguring Installed ZENworks Processes Running on Linux,” on page 330](#)

## 24.1 Running an RPM Installation or Upgrade

The RPMs you need for installing ZENworks 7 Desktop Management are located on the *ZENworks 7 Desktop Management Services on Linux* CD in the `/CD_mount_location/Disk1/InstData/VM/RPMS` directory.

To execute an RPM installation,

- 1 Copy the all the appropriate RPMs from the CD to a temporary directory, for example `/usr/temp/RPMS`.
- 2 Run the following command at the bash prompt:  

```
#!/bin/bash rpm -Uvh --nosignature location_of_RPMS/*.rpm
```
- 3 Run the following command to restart:  

```
#!/bin/sh  
/opt/novell/zenworks/bin/ZDMstart restart cold
```
- 4 Run the following command to update the uninstall directory:  

```
#!/bin/bash  
sed -i.bak s@-7\.0\.0-\.@@ /opt/novell/zenworks/Uninstall\  
ZENworks\ Desktop\ Management\.com.zerog.registry.xml
```

If you want to upgrade to SP1, use the steps above and change the command in [Step 2](#) to the following:

```
#!/bin/bash rpm -Uvh --freshen --nosignature location_of_RPMS/*.rpm
```

### 24.1.1 Upgrading to SP1 with CPKs

ZENworks 7 Desktop Management with SP1 provides a new alternative for upgrading from previous versions of ZENworks for Desktops or ZENworks Desktop Management using Server Software Packages or “CPKs.”

For detailed information about upgrading with CPKs including the names and contents of the program CDs, see [Chapter 34, “Upgrading to Support Pack 1 Using Server Software Packages,”](#) on page 443.

## 24.2 Configuring or Reconfiguring Installed ZENworks Processes Running on Linux

When you install ZENworks Desktop Management Services on Linux, you answer certain questions with information that is used to configure these services. It is possible to change the configuration of an individual process after the installation is complete using the ZENworks 7 Linux Configuration utility (`novell-zdm-configure`) found in the `/opt/novell/zenworks/bin` directory.

---

**NOTE:** This utility can be used to modify the configuration of installed components, no matter how you installed them originally.

---

For a list of the available parameters you can use with the configuration utility, enter the following command:

```
./novell-zdm-configure -h[elp]
```

The help for this utility lists the following:

ZENworks Desktop Management 7 Linux Configuration Utility

USAGE:

```
novell-zdm-configure [<option> [<arg>]]...
```

where <options> are:

```
-p = <arg> specifies path to a properties file.
    (default /etc/opt/novell/zenworks/zdm/novell-zdm-configure.properties)
-l = <arg> is the pathname of the logfile to create.
    (default /var/log/novell/zenworks/zdm/novell-zdm-configure.log)
-c = <arg> is a list of ConfigureAction class names (e.g.
    "name1,name2").
    (default "")
-f = <arg> is a file (one per line list of ConfigureAction class
    names).
    (default /etc/opt/novell/zenworks/zdm/novell-zdm-configure-
    actions.conf)
-a = allow internal list of ConfigureActions if not otherwise
    specified.
    (default false)
-e = attempt subsequent ConfigureActions if an error occurs.
    (default false)
-z = force the ConfigureActions to ignore previous configurations.
    (default false)
-n = use color display.
    (default false)
-h = display this message.
```

The default location of the `novell-zdm-configure-actions.conf` file is shown as `/etc/opt/novell/zenworks/zdm/novell-zdm-configure.properties`. The `.conf` file is a comprehensive list of all of the `ConfigureActions` you want to run.

By default, the `novell-zdm-configure` utility automatically detects the ZENworks services you have installed on your Linux server and runs only the associated `ConfigureActions`.

A sample of the `novell-zdm-configure.conf` file is shown below:

```
#####
#               novell-zdm-configure.conf               #
#   #
#       ZENworks configuration ConfigureAction list      #
#   #
#   Supply the class name of the ConfigureActions that you #
#   want novell-zdm-configure to run, one class name per line.#
#   Classes will be called in the order specified in this #
#   file.   #
#   #
#   Note: You must supply a complete class name unless the #
#   class exists in the following package:                #
#   #
#   com.novell.application.zenworks.install.configure    #
#   #
#####
ExtendSchemaConfigureAction
ImagingConfigureAction
LicensingConfigureAction
XTierConfigureAction
NetBiosNameConfigureAction
SSLConfigureAction
InventoryServerConfigureAction
SybaseConfigureAction
StandaloneConfigureAction
RMSServerConfigureAction
XMLProxyConfigureAction
```

The configuration file does not run any installation (file copy) process, it merely configures or reconfigures the features that have already been installed.

You can edit this file to change the components that are reconfigured, but it might be a better idea to make a copy of the file and use the `-f` parameter to point to it. If you want to reconfigure only one component, you can use the `-c` parameter to list a single class name (such as `XTierConfigureAction`) and change its original setting. For more information, see [Section 24.2.1, “Reconfiguration Example,” on page 332](#).

The configuration files for the Workstation Inventory components cannot be executed individually using the `-c` option. The following constraints apply:

- ♦ You must execute the `InventoryServerConfigureAction` file along with `NetBiosNameConfigureAction` as shown below:  
`./novell-zdm-configure -c NetBiosNameConfigureAction, InventoryServerConfigureAction`
- ♦ You must execute the `SSLConfigureAction` file along with `NetBiosNameConfigureAction` and `InventoryServerConfigureAction` as shown below:  
`./novell-zdm-configure -c NetBiosNameConfigureAction, InventoryServerConfigureAction, SSLConfigureAction`

- ♦ You must execute the StandaloneConfigureAction file along with NetBiosNameConfigureAction, InventoryServerConfigureAction, and SybaseConfigureAction as shown below:  

```
./novell-zdm-configure -c  
NetBiosNameConfigureAction,InventoryServerConfigureAction,SybaseConfigureAction,StandaloneConfigureAction
```

---

**NOTE:** You can execute other configuration files along with the combinations mentioned above.

---

## 24.2.1 Reconfiguration Example

It is likely that you can use the configuration file if you originally installed a 90-day evaluation version of the product, then you decide to purchase the product: you need to update the license code. Use the steps in the following example to reconfigure the license:

- 1 Navigate to the /opt/novell/zenworks/bin directory.
- 2 Enter the following command at the bash prompt:  

```
./novell-zdm-configure -c LicensingConfigureAction
```

The installation program runs, first prompting you for authentication credentials. When the credentials have been verified, the program prompts for the licensing code.

- 3 Enter the licensing code you received when you purchased the product.

---

**NOTE:** You can use the -c option to specify any ConfigureAction that you want on the command line. A list of the ConfigureActions is included in the novell-zdm-configure.conf file and in the silent.properties file. For more information about silent.properties, see [Section 23.1, “Preparing for Silent Installation,” on page 323](#).

---



# Setting Up Security Measures on Linux Middle Tier Servers

# 25

The information in this section details the steps involved in obtaining certificates and configuring SSL for a Web server on SUSE® Linux Enterprise Server 9 Support Pack 1 or Novell® Open Enterprise Server (OES Linux) 1.0 where the Novell ZENworks® Middle Tier Server is installed.

The following sections are included:

- ♦ [Section 25.1, “Setting Up SSL and Certificates on a Linux Middle Tier Server,” on page 333](#)
- ♦ [Section 25.2, “Preparing the Linux Middle Tier Server to Export the Trusted Root Certificate,” on page 334](#)
- ♦ [Section 25.3, “Setting Up Windows Workstations to Use SSL and Certificates,” on page 335](#)
- ♦ [Section 25.4, “Setting Up NetIdentity Authentication,” on page 335](#)

## 25.1 Setting Up SSL and Certificates on a Linux Middle Tier Server

This section includes the following information:

- ♦ [Section 25.1.1, “Configuring Apache 2 Web Server for SSL on an OES Linux Middle Tier Server,” on page 333](#)
- ♦ [Section 25.1.2, “Configuring Apache 2 Web Server for SSL on a SLES 9 SP1 Middle Tier Server,” on page 333](#)

### 25.1.1 Configuring Apache 2 Web Server for SSL on an OES Linux Middle Tier Server

OES Linux configures Apache 2 by default with the SLES 9 Certificate Authority (CA) server certificates and enables Apache 2 for SSL use. If you require third-party certificates, you must configure Apache 2 for SSL according to directions given in [Apache HTTP Server Version 2.0 Documentation. documentation \(http://httpd.apache.org/docs/2.0/\)](http://httpd.apache.org/docs/2.0/).

### 25.1.2 Configuring Apache 2 Web Server for SSL on a SLES 9 SP1 Middle Tier Server

By default, the SLES 9 SP1 installation program does not install Apache web services. The following steps are based on the default SLES 9 SP1 installation options. If you change these default options, your results might be different.

---

**NOTE:** Certificates that require passphrases are not supported by the ZENworks Middle Tier Server.

---

Use the following steps to set up Web services on a SLES 9 SP1 server after the initial server installation:

- 1** In YaST, select *Network Services > HTTP Server*.

The HTTP server installation requires the source CD or installation location.

- 2** Configure the HTTP server for SSL.

- 2a** In YaST, select *Network Services > HTTP Server* to configure the HTTP server for SSL.

- 2b** Select *Enable for the HTTP Services*.

- 2c** In the *Settings* list, select *Default Host*, then click *Edit*.

- 2d** In the *Options* list, select *SSL*, then click *Edit*.

- 2e** On the SSL Configuration screen, click *Edit*, select *SSL Allowed*, click *OK*, click *Certificates*, then select *Use common server certificate*.

Two new items (*SSLCertificateFile* and *SSLCertificateKeyFile*) are added in the *SSL Enabled* list. These options configure the location for the SSL certificate and key files.

- 2f** Click *OK*, click *OK* again, then click *Finish* to save the configuration changes and exit YaST.

- 3** In a text editor, open the `/etc/sysconfig/apache2` file, then set the `APACHE_SERVER_FLAGS` variable to "SSL". For example:  
`APACHE_SERVER_FLAGS="SSL"`

- 4** Save the file.

- 5** Use the `rcapache2 restart` command to restart the Apache2 Web server.

SSL is now configured on the Apache Web server. If the server has loading problems, use `apache2ctl configtest` to help you identify errors.

## 25.2 Preparing the Linux Middle Tier Server to Export the Trusted Root Certificate

After the Apache Web server is configured with SSL for use on Linux servers (OES Linux or SLES 9 SP1 or later), the Desktop Management Agent still requires importing the trusted root certificate.

Use the following steps to export the trusted root certificate for the default Linux CA:

- 1** In YaST, select *Security and Users > CA Management*, select *YaST\_Default\_CA*, select *Enter CA*, then enter the root password at the prompt.
- 2** Click *Advanced*, then select the *Export to File* option.
- 3** Select *Only the Certificate in PEM format*.
- 4** In the *File Name* field, enter the full path where you want to save the root certificate with a `.crt` extension, for example, `/root/ca_root_cert.crt`.

The trusted root certificate is created and ready to import to Windows workstations.

## 25.3 Setting Up Windows Workstations to Use SSL and Certificates

This section includes information about setting up a Windows 98/NT/2000/XP workstation to use SSL and security certificates. The following sections are included:

- ♦ [Section 25.3.1, “Importing a Certificate on the Windows Workstation,” on page 335](#)
- ♦ [Section 25.3.2, “Configuring the Desktop Management Agent to Query for the Certificate,” on page 335](#)

### 25.3.1 Importing a Certificate on the Windows Workstation

If the SSL certificate you want to use was issued by a CA that is not in the trusted root list, you need to install the self-signed certificate from the CA on the workstation. This enables the workstation to trust any certificate issued by the CA. You can do this either before or after you install the Desktop Management Agent.

It is possible to import a certificate on the Windows workstation in a User Account, in a Computer Account and in a Service Account. For additional information about importing a certificate, see “To Import a Certificate” at the [Windows XP Professional Product Documentation Web site \(http://www.microsoft.com/resources/documentation/windows/xp/all/proddocs/en-us/sag\\_cmprocsimport.mspx\)](http://www.microsoft.com/resources/documentation/windows/xp/all/proddocs/en-us/sag_cmprocsimport.mspx).

### 25.3.2 Configuring the Desktop Management Agent to Query for the Certificate

When the Desktop Management Agent installation program requires an entry for the IP address or DNS name of the Middle Tier Server, you need to enter the common name you used when you created the Certificate Request. For more information, see [Step 5f on page 192](#).

## 25.4 Setting Up NetIdentity Authentication

Authentication to a Middle Tier Server from a Desktop Management Agent is based on a challenge-response mechanism. When a Middle Tier Server challenges an agent for authentication, it sends an X.509 certificate. The agent verifies the integrity and trust of the certificate, and secrets are exchanged using public-key/private-key and session-key encryption techniques.

During installation, a NetIdentity certificate is installed on the Middle Tier Server. On Linux, this certificate is signed by the Certificate Authority (CA) of the tree where the server belongs. This certificate, though cryptographically valid, is not signed by trusted root authorities, and should not be trusted outside of a controlled environment. By default, the Desktop Management Agent installation accepts such a self-signed certificate, but this is a configurable installation parameter. When deployed outside a controlled network, Middle Tier Servers must be configured with a certificate that is signed by a trusted Root Certificate authority. They must also be configured to enforce strict trust checking.

## 25.4.1 Configuring Middle Tier Servers with a Valid NetIdentity Certificate

If a valid SSL certificate (that is, one signed by a trusted root authority) already exists for the server, the NetIdentity authentication process can use the same certificate.

- 1 If the server is a Linux server, make a note of the key-pair name for the SSL certificate (this is the name of the certificate object as visible in ConsoleOne).
- 2 Using a browser, bring up the NSAdmin page for the Middle Tier Server ([http://ip\\_address/oneNet/nsadmin](http://ip_address/oneNet/nsadmin)).
- 3 In the General configuration page, set the value for the Certificate Name to the name from [Step 1](#).
- 4 Submit the change.
- 5 Restart the Middle Tier Server.

If a valid SSL certificate is not present for the server, a valid X.509 certificate (that is, a certificate signed by a trusted root CA) needs to be configured for the server.

- 1 Obtain a certificate signed by a trusted root CA. Follow the steps outlined in [“Generating a Certificate Signing Request” on page 191](#) and [“Installing the Root CA on the Middle Tier Server” on page 193](#) for the appropriate platform.
- 2 If the key-pair name, or friendly name (depending on the platform) is different from “NetIdentity,” configure the Middle Tier Server with the appropriate name. See [Step 1](#) through [Step 4](#) in the procedure above.
- 3 Restart the Middle Tier Server.

---

**NOTE:** In either case, if the certificate was signed by a CA that is not in the list of trusted root CAs, the self-signed certificate of the CA must be imported on each workstation. For more information, see [“Importing a Certificate on the Windows Workstation” on page 195](#).

---

## 25.4.2 Configuring the Desktop Management Agents to Enforce Strict Trust Verification

After the Middle Tier Server has been configured with a certificate that is signed by a trusted root CA, Desktop Management Agents can be configured to enforce strict trust verification for NetIdentity certificates. Modify the following registry key setting:

```
HKEY_LOCAL_MACHINE\Software\Novell\Client\Policies\NetIdentity  
"Strict Trust"= dword:0x00000001
```

By default, the Strict Trust value is 0 (zero). Absence of the value, or setting it to 0x0 (zero) allows all certificates to be accepted. Setting it to 0x1 configures the Desktop Management Agents to reject certificates whose trust cannot be fully verified.

# Where Do I Go From Here?

# 26

After you have installed Novell® ZENworks® Desktop Management Services on Linux, you need to be aware of the other tasks that you can perform on the Linux back end.

Although application and policy files to be used on user workstations can be stored on a Linux server, you must use Novell ConsoleOne® to configure them from your administrative Windows workstation.

Most of the administrative tasks you need to perform in ConsoleOne after installing ZENworks 7 Desktop Management Services on Linux are documented in [Chapter 27, “Post-Installation Tasks,” on page 341](#). When the installation is complete, you might want to check the installation to see if it was successful, check component versions, or initiate and check debug logs. If you want to perform any of these tasks, see “[Checking the Installation of Desktop Management Components on Servers](#)” in “[Checking the ZENworks Desktop Management Installation](#)” in the *Novell ZENworks 7 Desktop Management Administration Guide* for more information.

If you want to uninstall ZENworks Desktop Management Services on Linux, see [Chapter 42, “Uninstalling ZENworks Components on a Linux Server,” on page 517](#) for more information.



# Post-Installation



Whether you install the Novell® ZENworks® 7 Desktop Management Server on a NetWare®, Windows, or Linux server, there are some tasks you should perform in order for ZENworks to operate properly. The following section includes that information.

- ♦ [Chapter 27, “Post-Installation Tasks,” on page 341](#)





After you install the Novell® ZENworks® 7 Desktop Management Server on a Windows, NetWare®, or Linux server, there are some tasks that you need to accomplish in order for ZENworks to operate properly. The following sections provide the information you need to perform these post-installation procedures.

- ♦ [Section 27.1, “Configuring the Inventory Database Object on a NetWare Server,” on page 341](#)
- ♦ [Section 27.2, “Determining Whether the Directory Schema Has Been Extended,” on page 341](#)
- ♦ [Section 27.3, “Setting Up Required Desktop Policies,” on page 342](#)
- ♦ [Section 27.4, “Setting Up Automatic Workstation Import,” on page 350](#)
- ♦ [Section 27.5, “Installing the ODBC Drivers,” on page 351](#)
- ♦ [Section 27.6, “Gathering Troubleshooting Information,” on page 351](#)

---

**NOTE:** Information in this section also applies to ZENworks 7 Desktop Management with Support Pack 1.

---

## 27.1 Configuring the Inventory Database Object on a NetWare Server

If you install Sybase on a NetWare server that has CIFS as a default component, the server IP address or DNS name of the Inventory database *\_server\_name* object might not be configured correctly after the Sybase installation. To configure the database object correctly:

- 1 Open ConsoleOne®, then double-click the inventory database object.
- 2 On the ZENworks Database page of the database object, enter the server IP address or DNS name of the server where the inventory database is installed.

## 27.2 Determining Whether the Directory Schema Has Been Extended

After you install Desktop Management Services, you can use the ConsoleOne Schema Manager tool to determine whether your directory schema has been extended by the installation program. When the schema has been extended for Desktop Management Services, attributes are added to the list.

- 1 In ConsoleOne, click *Tools > Schema Manager*.
- 2 Click *Attributes* to open the list of schema attributes.

You should see the following attribute if the ZENworks 7 Desktop Management Server is installed:  
`zenlocZFD70Installed`

You should see the following attribute if the ZENworks 7 Desktop Management Server with SP1 is installed:  
`zenlocZFD701Installed`

## 27.3 Setting Up Required Desktop Policies

ZENworks Desktop Management requires policy packages in the eDirectory™ tree to hold the desktop policies that you can later configure and enable.

This section includes the information you need for setting up desktop policies, including:

- ♦ [Section 27.3.1, “Creating the Policy Packages,” on page 343](#)
- ♦ [Section 27.3.2, “Setting Up a Workstation Import Policy,” on page 344](#)

In a production environment after the ZENworks test installation, you can add the policies that the individual components need to function correctly.

If you have installed Workstation Inventory you need to configure some Desktop Management policies, as explained in the following sections:

- ♦ [Section 27.3.3, “Configuring the Database Location Policy,” on page 344](#)
- ♦ [Section 27.3.4, “Configuring the Workstation Inventory Policy,” on page 346](#)

---

**IMPORTANT:** If you choose to install Sybase during the Desktop Management Server installation, the Inventory Standalone Configuration dialog box is displayed. If you select Configure Standalone in this dialog box, the installation automatically creates the Server package, creates and configures the Database Location Policy, and starts the Inventory Service. When the Desktop Management Server installation is complete, you need to create and configure the Workstation Inventory Policy. For more information, see [Section 27.3.4, “Configuring the Workstation Inventory Policy,” on page 346](#).

If you configured the options on the Inventory Standalone Configuration page in [Step 11 on page 87](#), the installation program already created the Server package in the same OU as the server. If you try to create another Server package while completing the steps in this section, a message is displayed stating that the Server package conflicts with another Server package in the same OU.

---

If you install Workstation Inventory in a production environment, see the “[Workstation Inventory](#)” section in the *Novell ZENworks 7 Desktop Management Administration Guide* for the policies to be configured.

After configuring the required policies, do the following:

- ♦ Manually start the Inventory service. For more information, see [Section 27.3.5, “Starting and Stopping the Inventory Service,” on page 348](#)
- ♦ If the Inventory server component is installed on a Linux machine, ensure that the Samba service is up and running by entering `/etc/init.d/smb status` at the Linux Inventory server console prompt.

If the service is not running, you must manually start the Samba service after the installation to enable the Inventory server to receive the inventory scans from the inventoried workstations. To manually start the Samba service, enter `/etc/init.d/smb start` at the Linux Inventory server console prompt.

## 27.3.1 Creating the Policy Packages

A policy package holds the individual Windows desktop policies that dictate the rules of use or configuration for users or their workstations. You should create an Organizational Unit (OU) for holding the policy packages. Consider the following when determining where to place this OU:

- ♦ Whether you have partitions in your tree
- ♦ The 256-character limit in eDirectory for the full distinguished name
- ♦ How the Search policy is used to locate the policy package

To minimize tree walking, it is best to create this policy package OU at the root of the partition that contains the objects with which the policy package will be associated. In doing so, the following benefits are realized:

- ♦ Tree walking is minimized when the root of the partition and the Search policy are being used
- ♦ Placing the OU at the partition's root maximizes the number of characters that are available for naming plural policies

(Optional) You might want to create an Organizational Unit (OU) to hold your policies.

- 1 In ConsoleOne, right-click the container where you want the OU placed > click *New* > click *Object* > click *Organizational Unit* > click *OK*, then give the container a short name, for example, Desktop Policies.

To create a policy package:

- 1 Right-click the container in which you want the policy package placed > click *New* > click *Policy Packages*.
- 2 Select one of the following policy packages:
  - Container Package
  - Server Package
  - Service Location Package
  - User Package
  - Workstation Package
- 3 Click *Next*, give the package a short name, click *Next*, click *Create Another Policy Package* (unless this is the last one being created), then click *Finish*.

Short package name suggestions include:

- Container
- Server
- Location
- User
- Workstation

- 4 Repeat **Step 1** through **Step 3** for each policy package to be created.

### 27.3.2 Setting Up a Workstation Import Policy

Desktop Management requires a Workstation Import Policy so that workstations can be imported to server where Desktop Management is installed. You need to enable this policy and associate it to the Desktop Management Server.

- 1 In ConsoleOne, right-click the Server Package > then click *Properties*.
- 2 Select the check box under the *Enabled* column for the Import policy. This both selects and enables the policy.
- 3 Click *Properties* to display the Containers page.
- 4 Click the down-arrow on the *Platforms* tab, then select *General*.
- 5 Select an option in the *Create Workstation Objects In* drop-down list, then specify the container in which you want to store Workstation objects.
- 6 Click *OK*.
- 7 Click the *Associations* tab, click *Add*, browse to the server where Desktop Management is installed, then click *OK* to list the server in the *Associations* list.
- 8 In the *Associations* list, select the server where you want to associate the Import policy, click *Apply*, then click *Close*.

### 27.3.3 Configuring the Database Location Policy

The Database Location policy contains the location of the Inventory database. You can associate the Database object with a container under which the Inventory Service object is located through using the Service Location Package or with an Inventory server through using the Server Package.

---

**NOTE:** If you configure both the Service Location Package and the Server Package, the Server Package settings overrides the Service Location Package settings.

---

To associate the Database object with a container under which the Inventory Service object is located:

- 1 In ConsoleOne, right-click the *Service Location Package*, click *Properties* to display the Policies page.
- 2 Select the check box under the *Enabled* column for the ZENworks Database policy.
- 3 Click *Properties* to display the Inventory Management page.
- 4 Browse to the DN of the Inventory Database object (Inventory database\_server\_name), then click *OK*.

For a Sybase database, the database object is automatically created during the Workstation Inventory installation unless you are installing on a Windows 2000 server without eDirectory installed. To manually create the database object, see “[Setting Up the Inventory Database](#)” in the *Novell ZENworks 7 Desktop Management Administration Guide*.

For an Oracle database, you must create the database object and configure the object. For more information, see “[Setting Up the Inventory Database](#)” in the *Novell ZENworks 7 Desktop Management Administration Guide*.

For an MS SQL database, you must configure the database object. For more information, see “[Setting Up the Inventory Database](#)” in the *Novell ZENworks 7 Desktop Management Administration Guide*.

---

**IMPORTANT:** Ensure that the DNS name of the database server configured for the database object is valid. If the DNS name is invalid, you must select an appropriate database server IP address in the Database object property page.

---

To select the IP address of the database server:

- 4a** In ConsoleOne, right-click the database object, then click *Properties* to display the ZENworks Database page.
- 4b** In the *Server IP Address or DNS Name* field, select an appropriate IP address.
- 4c** Click *Apply*, then click *Close*.
- 5** Click *OK*.
- 6** Click the *Associations* tab, then click *Add*.
- 7** Browse to select the container under which the Inventory Service object is located, then click *OK*.
- 8** Click *Apply*, then click *Close*.

To associate the Database object with an Inventory server:

- 1** In ConsoleOne, right-click the *Server Package*, then click *Properties* to display the Policies page.
- 2** Select the check box under the *Enabled* column for the ZENworks Database policy.
- 3** Click *Properties* to display the Inventory Management page.
- 4** Browse to the DN of the Inventory Database object (Inventory database\_server\_name), then click *OK*.

For a Sybase database, the database object is automatically created during the Workstation Inventory installation unless you are installing on a Windows 2000 server without eDirectory installed. To manually create the database object, see “[Setting Up the Inventory Database](#)” in the *Novell ZENworks 7 Desktop Management Administration Guide*.

For an Oracle database, you must create the database object and configure the object. For more information, see “[Setting Up the Inventory Database](#)” in the *Novell ZENworks 7 Desktop Management Administration Guide*.

For an MS SQL database, you must configure the database object. For more information, see “[Setting Up the Inventory Database](#)” in the *Novell ZENworks 7 Desktop Management Administration Guide*.

---

**IMPORTANT:** Ensure that the DNS name of the database server configured for the database object is valid. If the DNS name is invalid, you must select an appropriate database server IP address in the Database object property page.

---

To select the IP address of the database server:

- 4a** In ConsoleOne, right-click the database object, then click *Properties* to display the ZENworks Database page.
- 4b** In the *Server IP Address or DNS Name* field, select an appropriate IP address.
- 4c** Click *Apply*, then click *Close*.
- 5** Click *OK*.
- 6** Click the *Associations* tab, then click *Add*.
- 7** Browse to select an Inventory server object, then click *OK*.

- 8 Click *Apply*, then click *Close*.

---

**NOTE:** If you are modifying the Inventory policies or configuring the objects, always stop the Inventory services. Configure the policies and properties of the objects. Restart the Inventory services again. For more information, see [Section 27.3.5, “Starting and Stopping the Inventory Service,” on page 348](#).

---

## 27.3.4 Configuring the Workstation Inventory Policy

- 1 In ConsoleOne, right-click the Workstation package, then click *Properties* to display the Policies page.
- 2 Click the *Policies* tab, then select a specific platform from the drop-down list to configure and enable the policy for that platform. The available platforms include: Windows 9x, WinNT-2000-XP, Windows NT, Windows 2000, or Windows XP.
- 3 Select the check box under the *Enabled* column for the Workstation Inventory Policy.
- 4 Click *Properties* to display the Workstation Inventory Policy page.
- 5 In the General page, configure the following settings:
  - 5a Browse to and select the DN of the Inventory Service object.
  - 5b Specify the number of delta scans after which a full scan is required.
- 6 (Optional) Customize the Inventory scan.
  - 6a Click the *Hardware Scan* tab to specify the following settings:

**Enable DMI Scan:** Select this option to include scanning of hardware data from Desktop Management Interface (DMI) on the inventoried workstations.

**Enable WMI Scan:** Select this option to include WMI scanning of hardware data from Microsoft's Windows Management Instrumentation (WMI) on the inventoried workstations.

**Enable Custom Scanning:** Select this option to include Custom scanning of the inventoried workstations. You need to enter the name of the Custom Scan executable to run for custom scanning.

**Custom Attribute Editor:** Click this button to specify the list of custom attributes. Modify the list if necessary.
  - 6b To customize the software scan settings for the Windows inventoried workstations where ZENworks for Desktops 4 or ZENworks for Desktops 4.0.1 is installed, click the *Software Scan* tab and configure the following settings:

---

**IMPORTANT:** Do not configure the settings for the inventoried workstations that have ZENworks 7 Desktop Management installed.

---

**Enable Software Scan:** Enables software scanning for the inventoried workstations associated with the Inventory policy. The scan program collects software information for the inventoried workstations and stores it in the Inventory database.

**Custom Scan Editor:** Enables you to customize the list of application details to scan for at the inventoried workstations. The Inventory scanner scans for the details of the applications listed in the Custom Scan Editor.

For example, specify the following details in the Custom Scan Editor: Vendor Name=Microsoft; Product Name=Microsoft Office; Product Version=10.0;

FileName=winword.exe; File Size=1 MB. The Inventory scanner scans for the winword.exe file having a size of 1 MB on the inventoried workstations. If the file is found, the scanner stores “Microsoft;Microsoft Office;10.0” for “winword.exe;1 MB” in the Inventory database.

**Product Identification Number:** Enables you to scan for the product identification number of the Microsoft applications installed on the inventoried workstations.

**Product Location:** Enables you to scan for the full path of the applications installed on the inventoried workstations.

**Perform only Custom Scanning:** Enables you to scan only the customized software applications that are selected in the Custom Scan Editor.

**6c** Click the Configuration Editor tab. If required, modify the settings of the following .ini files.

- ♦ **SWRules:** Configure the `SWRules` file for the Windows inventoried workstations on which ZENworks for Desktops 4 or ZENworks for Desktops 4.0.1 is installed. Do not configure the file for the inventoried workstations that have ZENworks7 Desktop Management installed.

Use the `SWRules` file to customize the software scanning information of vendors and products. For more information on how to configure this file, see “[Customizing the Software Inventory Information To Be Scanned For ZENworks for Desktops 4.x and Earlier Versions of Inventoried Workstations](#)” in the *Novell ZENworks 7 Desktop Management Administration Guide*.

- ♦ **Asset Information:** Use this file to scan for vendor-specific information from the Desktop Management Interface (DMI). For more information on how to configure this file, see “[Scanning for Vendor-Specific Asset Information from DMI](#)” in the *Novell ZENworks 7 Desktop Management Administration Guide*.
- ♦ **Zipped Names:** Use this file to customize the hardware scanning of Jaz and Zip drives. For more information on how to configure this file, see “[Customizing the Hardware Scanning Information of Jaz, Zip, and Floppy Drive Vendors](#)” in the *Novell ZENworks 7 Desktop Management Administration Guide*.
- ♦ **IBM Names:** Use this file to scan for the IBM\* computer models. For more information how to configure this file, see “[Scanning for IBM Computer Models](#)” in the *Novell ZENworks 7 Desktop Management Administration Guide*.
- ♦ **HWRules:** Use this file to customize the nominal size of monitors. For more information on how to configure this file, see “[Customizing the Hardware Information for Monitor Size](#)” in the *Novell ZENworks 7 Desktop Management Administration Guide*.

**7** Click *Apply*.

**8** Click the *Policy Schedule* tab.

**9** Modify the settings for scheduling the scan of the inventoried workstations, click *Apply*, then click *Close*.

**10** Click the *Associations* tab, then click *Add*.

**11** Browse to and select the container object where the inventoried workstations are registered, then click *OK*.

**12** Click *Apply*, then click *Close*.

- 13 In ConsoleOne, right-click the Inventory Service object (Inventory Service\_*server\_name*), click *Properties*, then click the Inventory Service object tab.
- 14 Make sure *Enable Scan of Machines* is selected, then click *OK*.

## 27.3.5 Starting and Stopping the Inventory Service

This section provides information on the following topics:

- ♦ “Starting the Inventory Service” on page 348
- ♦ “Stopping the Inventory Service” on page 349
- ♦ “Checking the Status of the Workstation Inventory Components Installed on Linux” on page 349

### Starting the Inventory Service

#### On a NetWare Inventory Server

To start all Inventory services:

- 1 At the server console prompt, enter `startinv`.

To start a specific Inventory service:

- 1 At the server console prompt, enter `startser Inventory_service`.

#### On a Windows 2000/2003 Inventory Server

To start all Inventory services:

- 1 In the Control Panel, double-click *Administrative Tools*, then double-click *Services*.
- 2 Select *Novell Inventory Service*, then click *Start*.

To start a specific Inventory service:

- 1 At the server console prompt, go to  
`ZENworks_installation_directory\zenworks\inv\server\wminv\bin.`
- 2 Enter `startser Inventory_service`

#### On a Linux Inventory Server

To start all Inventory services:

- 1 At the Linux server prompt, go to `/etc/init.d`.
- 2 Enter `./novell-zdm-inv start`.

To start a specific Inventory service:

- 1 At the Linux server prompt, go to `/opt/novell/bin`.
- 2 Enter `StartSer Inventory_service`.

After starting the Inventory service, make sure that the Inventory services are up and running. To list all services, enter `ListSer "*"` at the Inventory server console prompt. If the services are not up and running, check the Server Status log. For more information on the Server Status log, see



“Monitoring Workstation Inventory Using Status Logs” in the *Novell ZENworks 7 Desktop Management Administration Guide*.

## Stopping the Inventory Service

### On a NetWare Inventory Server

To stop all Inventory services:

- 1 At the server console prompt, enter `stopser *`.

To stop a specific Inventory service:

- 1 At the server console prompt, enter `stopser Inventory_service`.

### On a Windows 2000 Inventory Server

To stop all Inventory services:

- 1 In the Control Panel, double-click *Administrative Tools*, then double-click *Services*.
- 2 Select *Novell Inventory Service*, then click *Stop*.

To stop a specific Inventory service:

- 1 At the server console prompt, enter `stopser Inventory_service`.

### On a Linux Inventory Server

To stop all Inventory services:

- 1 At the Linux server prompt, go to `/etc/init.d`.
- 2 Enter `./novell-zdm-inv stop`.

To stop a specific Inventory service:

- 1 At the Linux server prompt, go to `/opt/novell/bin`.
- 2 Enter `StopSer Inventory_service`.

## Checking the Status of the Workstation Inventory Components Installed on Linux

The following table lists the Workstation Inventory components installed on Linux whose status you can check by executing commands at the Linux console prompt.

**Table 27-1** *Workstation Inventory Components Installed on Linux*

| Workstation Inventory Component | Command To Be Entered at the Linux Console Prompt |
|---------------------------------|---------------------------------------------------|
| Inventory server daemon         | <code>/etc/init.d/novell-zdm-inv status</code>    |
| Sybase daemon                   | <code>/etc/init.d/novell-zdm-sybase status</code> |
| Inventory Proxy daemon          | <code>/etc/init.d/novell-zen-zws status</code>    |

## 27.4 Setting Up Automatic Workstation Import

The following steps assume that you selected the Import or Import/Removal option as part of Automatic Workstation Import installation.

- 1 Set up a DNS name for Automatic Workstation Import to use.

This can be either a DNS entry or an entry in a local hosts file. An example of a DNS name is `www.novell.com`.

The following is an example of the text you would add in a hosts file for Automatic Workstation Import:

```
151.155.155.55 zenwsimport
```

In this example, the TCP/IP address is for the server where you are running the Automatic Workstation Import service. “zenwsimport” is not the name of a server, but a DNS name that resolves to this TCP/IP address. In other words, zenwsimport is a label to identify the server as the one running the Automatic Workstation Import service.

For Windows 98 workstations, the `hosts` file location should be:

```
Win98_drive:\Win98_directory\hosts
```

---

**IMPORTANT:** The default hosts file in Windows is named `hosts.sam`. Do not use the `.sam` extension with your hosts filename. Rename `hosts.sam` to `hosts`, or make a copy and rename the copy. Remember that by default, Windows 98 hides filename extensions that are of a known type. Therefore, make sure filename extensions are being displayed so that you can correctly rename the `hosts.sam` file to `hosts`.

---

For Windows NT/2000 workstations, the `hosts` file location should be:

```
WinNT-2K_drive:\WinNT-2K_directory\system32\drivers\etc\hosts
```

Note that `hosts` as shown above is a filename, not a folder name.

- 2 To verify the DNS name or TCP/IP address: at the workstation command prompt, enter  

```
ping zenwsimport
```
- 3 Update each workstation that you want to import with the latest Novell Client™ or Desktop Management Agent.

This is required to place Workstation Manager on the workstations.

When the Workstation Manager is installed on the workstation, the scheduler portion of Workstation Manager should begin working and workstation registration occurs automatically at Scheduler service startup (98/NT/2000/XP) or User login (98/NT/2000/XP).

- 4 Verify that Automatic Workstation Import is running.
  - 4a (Conditional) On a NetWare server, press Ctrl+Esc and look for a ZENworks Workstation Import screen.
  - 4b (Conditional) On a Windows NT/2000 server, check services for the following listing:  

```
ZENworks Workstation Import
```
  - 4c (Conditional) On a SLES 9 SP1 or OES Linux server, run `/etc/init.d/novell-zdm-aws status` at the bash prompt. The import service returns a message indicating whether it is currently running.

- 5 If Automatic Workstation Import is not running on Windows or NetWare, restart the server. If it is not running on Linux, restart the service.

For more information on starting the service, see “[Verifying that Automatic Workstation Import and Removal are Working](#)” in the *Novell ZENworks 7 Desktop Management Administration Guide*.

## 27.5 Installing the ODBC Drivers

Before running the inventory reports, review the following:

- ❑ Make sure that the appropriate ODBC client for Sybase, Oracle, or MS SQL is installed on the machine running ConsoleOne. The ODBC driver is automatically configured on the machine when you invoke the Inventory report.

To install the ODBC driver for the Sybase database,

1. In the *Novell ZENworks 7 Companion 2 CD* (or the *Novell ZENworks 7 with Support Pack 1 Companion 2 CD*), open the `\database drivers` directory
2. Follow the instructions in the `odbcreadme.txt` file in the `\database drivers` directory. The information helps you to set up the address of the Sybase database and verify that you can make a connection

For Oracle, you must install the appropriate client for ODBC. For example, for Oracle9i Inventory database, install the Oracle9i client because Inventory reports are not compatible with either the older or the later version of the client.

For MS SQL, the client is available on all Microsoft Windows operating systems.

- ❑ Make sure that at least MDAC 2.6 SP1 (Microsoft Data Access Component) is installed particularly on a Windows NT machine for running Crystal Reports. Check the version of MDAC on your box: select *Control Panel > ODBC Data sources > the About* tab pane. The minimum version required is 3.520.7326.0. If the version you have does not match the minimum requirement, you need to upgrade the ODBC core components by downloading them from the [MSDN Data Access and Storage Downloads Web site \(http://microsoft.com/data/download.htm\)](http://microsoft.com/data/download.htm)

## 27.6 Gathering Troubleshooting Information

When the ZENworks Desktop Management installation is complete, you can check the installation to see if it was successful, check component versions, or initiate and check debug logs. If you want to perform any of these tasks, see “[Checking the ZENworks Desktop Management Installation](#)” in the *Novell ZENworks 7 Desktop Management Administration Guide* for more information.



# Upgrade

# VI

This section includes information about new enhancements in Novell® ZENworks® 7 Desktop Management and information about how to upgrade from ZENworks for Desktops 3.2 SP3, ZENworks for Desktops 4.x, or ZENworks 6.5x Desktop Management to ZENworks 7 Desktop Management.

- ♦ Chapter 28, “What's New In ZENworks 7 Desktop Management,” on page 355
- ♦ Chapter 29, “Upgrading from ZENworks for Desktops 3.2 SP3,” on page 363
- ♦ Chapter 30, “Upgrading from ZENworks for Desktops 4.x,” on page 397
- ♦ Chapter 31, “Upgrading to the ZENworks 7 Launch Gadget,” on page 427
- ♦ Chapter 32, “Upgrading from ZENworks 6.5x Desktop Management,” on page 431
- ♦ Chapter 33, “Upgrade Considerations for ZENworks 7 Desktop Management with SP1,” on page 441
- ♦ Chapter 34, “Upgrading to Support Pack 1 Using Server Software Packages,” on page 443
- ♦ Chapter 35, “Upgrading to Support Pack 1 by Running an RPM,” on page 469

As you upgrade, you should consider the information included in “[Caution](#)” on page 353.

The information in this section also applies to ZENworks 7 Desktop Management with Support Pack 1. For more information, see [Chapter 33, “Upgrade Considerations for ZENworks 7 Desktop Management with SP1,” on page 441](#)

## Caution

During the life cycle of your ZENworks 7 Desktop Management installation, you might choose to download and apply maintenance patches, interim releases, or support packs. As a general rule, these ZENworks product maintenance installation programs overwrite every file previously installed, including configuration files (for example, `.conf` or `.ini` files). This might have consequences if you manually modified a file during a debugging process and you want to preserve its settings.

In a few cases, if the installation detects that a configuration file has already been upgraded (for example, a reinstall) and is the same version, the file is not overwritten and its settings are preserved. In the installation program for ZENworks Desktop Management Services on Linux, the RPM handles files marked as `.config` files and then either keeps user modifications or saves them as `filename.rpmsave`.

Some files, such as some of those used for ZENworks Imaging or for the ZENworks Inventory Database, are always overwritten. In cases where these files should be preserved manually, the documentation provides the necessary precautionary steps you need to follow in order to avoid overwriting the files or to preserve a backup copy.



# What's New In ZENworks 7 Desktop Management

# 28

The following sections describe what's new in Novell® ZENworks® 7 Desktop Management since the release of ZENworks 6.5 Desktop Management Support Pack 1:

- ♦ [Section 28.1, “General Changes,” on page 355](#)
- ♦ [Section 28.2, “Application Management,” on page 356](#)
- ♦ [Section 28.3, “Workstation Imaging,” on page 357](#)
- ♦ [Section 28.4, “Workstation Inventory,” on page 357](#)

The following section describes additional changes made in ZENworks 7 Desktop Management Support Pack 1 (SP1):

- ♦ [Section 28.5, “What’s New in ZENworks 7 Desktop Management with Support Pack 1,” on page 358](#)

## 28.1 General Changes

The following sections describe the general changes to ZENworks Desktop Management functionality in ZENworks 7:

- ♦ [Section 28.1.1, “Support for Linux Servers,” on page 355](#)
- ♦ [Section 28.1.2, “Support for Tablet PCs,” on page 355](#)
- ♦ [Section 28.1.3, “New Products and Updated Products Bundled with Desktop Management,” on page 356](#)

### 28.1.1 Support for Linux Servers

With the release of ZENworks 7 Desktop Management, all desktop management components can be installed on SUSE® Linux Enterprise Server (SLES 9 SP1), and Novell Open Enterprise Server (OES 1.0) Linux servers. For more information, see [Part IV, “Installing ZENworks Desktop Management Services on Linux,” on page 297](#).

### 28.1.2 Support for Tablet PCs

ZENworks now supports distribution of policies and applications to Tablet PCs running the Windows XP Tablet PC Edition.

### 28.1.3 New Products and Updated Products Bundled with Desktop Management

Even if you license only the ZENworks 7 Desktop Management portion of the ZENworks 7 Suite, the license includes the use of other products included in the suite, including the following:

- ♦ The ZENworks Asset Inventory component ZENworks 7 Asset Management. This component is included as Asset Inventory includes hardware and software inventory, network discovery, Web reporting, and workstation inventory history. For more information, see the [ZENworks 7 Asset Management documentation \(http://www.novell.com/documentation/zam7/index.html\)](http://www.novell.com/documentation/zam7/index.html).
- ♦ Instant Messenger, powered by GroupWise® Instant Messenger 2.0, is an instant messaging solution that delivers:
  - ♦ Secure communications among employees to protect sensitive information.
  - ♦ Policy-based management through eDirectory™ to simplify administration.
  - ♦ Business-class functionality designed especially for the enterprise environment.
- ♦ Identity Manager 2.02 Bundle Edition, to enable you to install ZENworks 7 Desktop Management in an all-Windows environment, synchronizing data between Novell eDirectory and Microsoft Active Directory.
- ♦ Novell iManager 2.5, to help you administer ZENworks 7 Desktop Management in an all-windows environment.
- ♦ Updated products included with ZENworks 7 Desktop Management include:
  - ♦ ZENworks Data Management, powered by Novell iFolder® 2.1.5
  - ♦ ZENworks Patch Management, powered by PatchLink\* Update version 6.2.
  - ♦ ZENworks Software Packaging, powered by InstallShield\* AdminStudio ZENworks Edition.
  - ♦ ZENworks Personality Migration, powered by Unicenter\* Desktop DNA\* from Computer Associates.

## 28.2 Application Management

The following sections describe the changes to ZENworks Application Management functionality in ZENworks 7:

- ♦ [Section 28.2.1, “Support Added for Recognition of the Fourth Component of an OS Version,” on page 356](#)
- ♦ [Section 28.2.2, “Support Added for Deploying the Desktop Management Agent to Workstations in a Windows Workgroup,” on page 357](#)

### 28.2.1 Support Added for Recognition of the Fourth Component of an OS Version

Windows XP SP2 adds a fourth component to a Windows Operating System version (for example 5.1.1287.1120). ZENworks 7 Application Management now supports this fourth component.

For older applications with only three components in an Operating System version, ZENworks Desktop Management adds a zero (0) in the fourth component position. When the legacy requirement setting is imported into the distribution rules, ZENworks changes the fourth number



from a 0 (zero) to a wildcard value, or “x.” This functionality creates a potential issue if you want to perform an Equal to: = compare operation in an Operating System version distribution rule, when the wildcard value does not exactly match the specified value in the fourth component.

## 28.2.2 Support Added for Deploying the Desktop Management Agent to Workstations in a Windows Workgroup

If the workstation where the Agent Distributor is executed is not a member of a Microsoft domain, the Agent Distributor can now be used to distribute the Desktop Management Agent to target workstations that are members of its Windows workgroup. For more information, see [Section 12.6, “Using the Desktop Management Agent Distributor to Deploy the Agent to Workstations in a Windows Workgroup,” on page 156.](#)

## 28.3 Workstation Imaging

The Linux kernel in the imaging engine has been upgraded to version 2.6, providing a wider array of hardware and network card support.

## 28.4 Workstation Inventory

Workstation Inventory in Novell ZENworks 7 Desktop Management provides the following new features:

- ◆ [Section 28.4.1, “Upgrading Workstation Inventory from Previous Versions of ZENworks Desktop Management to ZENworks 7 Desktop Management,” on page 357](#)
- ◆ [Section 28.4.2, “Setting Up the Oracle9i Inventory Database on a UNIX Server,” on page 357](#)
- ◆ [Section 28.4.3, “Setting Up the Oracle10g R1 Inventory Database on Windows or UNIX Servers,” on page 358](#)
- ◆ [Section 28.4.4, “Quickly and Easily Viewing the Inventory Data,” on page 358](#)
- ◆ [Section 28.4.5, “Improving the Throughput of the ZENworks 7 Inventory Storer,” on page 358](#)
- ◆ [Section 28.4.6, “Connecting the Linux Inventory Server and ConsoleOne to the MS SQL 2000 Inventory Database,” on page 358](#)

### 28.4.1 Upgrading Workstation Inventory from Previous Versions of ZENworks Desktop Management to ZENworks 7 Desktop Management

Upgrading Workstation Inventory from ZENworks for Desktops 4.x, or ZENworks 6.5x Desktop Management to ZENworks 7 Desktop Management is supported.

### 28.4.2 Setting Up the Oracle9i Inventory Database on a UNIX Server

You can now set up the Oracle9i Inventory database on a UNIX server. For detailed information, see [“Creating the Oracle9i Inventory Database on a UNIX Server”](#) in [“Workstation Inventory”](#) in the *Novell ZENworks 7 Desktop Management Administration Guide*.

### 28.4.3 Setting Up the Oracle10g R1 Inventory Database on Windows or UNIX Servers

You can now set up the Oracle10g R1 Inventory database on Windows or UNIX servers.

For detailed information, see “[Setting Up the Oracle Inventory Database](#)” in “[Workstation Inventory](#)” in the *Novell ZENworks 7 Desktop Management Administration Guide*.

### 28.4.4 Quickly and Easily Viewing the Inventory Data

Workstation Inventory provides a new tool known as Quick Reports to easily retrieve and view the data from the ZENworks Inventory database. Each Quick Report contains a list of inventory components and a query that you define using the Quick Report Wizard.

For detailed information, see “[Quickly and Easily Viewing the Inventory Data Using Quick Reports](#)” in “[Workstation Inventory](#)” in the *Novell ZENworks 7 Desktop Management Administration Guide*.

### 28.4.5 Improving the Throughput of the ZENworks 7 Inventory Storer

You can now improve the throughput of the ZENworks 7 Inventory Storer by deploying multiple Root Servers to directly store the inventory data to the Oracle 9.2.0.6 Inventory database.

For detailed information, see “[Performance Tips](#)” in “[Workstation Inventory](#)” in the *Novell ZENworks 7 Desktop Management Administration Guide*.

### 28.4.6 Connecting the Linux Inventory Server and ConsoleOne to the MS SQL 2000 Inventory Database

To set up the Inventory database for MS SQL Server 2000, you must perform the following steps:

1. Configure the Inventory Database for MS SQL Server 2000.
2. Connect the Inventory Server and ConsoleOne to the Inventory Database running MS SQL 2000.

For detailed information, see “[Setting Up the MS SQL Server 2000 or MS SQL Server 2005 Inventory Database](#)” in “[Workstation Inventory](#)” in the *Novell ZENworks 7 Desktop Management Administration Guide*.

## 28.5 What’s New in ZENworks 7 Desktop Management with Support Pack 1

In addition to the code fixes that are part of any ZENworks Support Pack, ZENworks 7 Desktop Management with SP1 includes the following new or enhanced items:

- ♦ [Section 28.5.1, “New Network Operating System Support,”](#) on page 359
- ♦ [Section 28.5.2, “New Managed Device Platform Support,”](#) on page 359
- ♦ [Section 28.5.3, “Updated Novell and Third-Party Products,”](#) on page 359

- ♦ [Section 28.5.4, “Application Management Enhancements,” on page 360](#)
- ♦ [Section 28.5.5, “Workstation Inventory Enhancements,” on page 360](#)
- ♦ [Section 28.5.6, “Clustering Support,” on page 360](#)
- ♦ [Section 28.5.7, “New Alternative for Upgrading,” on page 361](#)

## 28.5.1 New Network Operating System Support

ZENworks 7 Desktop Management with SP1 has added support for the following network operating systems:

- ♦ SLES 9 SP3 x86
- ♦ SLES 10 x86
- ♦ SLES 10 x86\_64
- ♦ OES NetWare SP2
- ♦ OES Linux SP2 x86\_64
- ♦ Windows Server 2003 SP1/R2 Standard Edition x86
- ♦ Windows Server 2003 SP1/R2 Enterprise Edition x86

## 28.5.2 New Managed Device Platform Support

ZENworks 7 Desktop Management with SP1 has added support for the following managed device platforms:

- ♦ Windows XP Professional SP2
- ♦ Windows XP Tablet PC 2005

## 28.5.3 Updated Novell and Third-Party Products

ZENworks 7 Desktop Management also ships with the following complementary products, which have been updated since the last release:

- ♦ Identity Manager 3 Bundle Edition, to enable you to install ZENworks 7 Desktop Management with SP1 in an all-Windows environment, synchronizing data between Novell eDirectory and Microsoft Active Directory.
- ♦ Novell eDirectory 8.8, to enable improved performance for managing network resources.
- ♦ Novell iManager 2.6, to help you administer ZENworks 7 Desktop Management in an all-Windows environment.
- ♦ Novell ConsoleOne 1.3.6e, to configure and manage ZENworks objects and snap-ins in eDirectory.
- ♦ Instant Messenger, powered by GroupWise Instant Messenger 2.0.1
- ♦ Novell XTier 3.1.4, updated to increase performance and stability in the Middle Tier.
- ♦ The ZENworks Asset Inventory component of ZENworks 7 Asset Management with SP1. For more information, see [“What’s New in Support Pack 1” \(http://www.novell.com/documentation/zam7/readme/readme\\_assetmgt\\_7sp1.html#sp1\)](http://www.novell.com/documentation/zam7/readme/readme_assetmgt_7sp1.html#sp1) at the ZENworks 7 Asset Management documentation Web site.

- ♦ Updated products included with ZENworks 7 Desktop Management with SP1 include:
  - ♦ ZENworks Data Management, powered by Novell iFolder 2.1.7
  - ♦ ZENworks Patch Management, powered by PatchLink Update version 6.2.2.
  - ♦ ZENworks Software Packaging, powered by InstallShield AdminStudio version 7.5, ZENworks Edition.
  - ♦ ZENworks Personality Migration version 11.0.4.6, powered by Unicenter Desktop DNA from Computer Associates.

## 28.5.4 Application Management Enhancements

Application Management in ZENworks 7 Desktop Management with SP1 provides the following new features or enhancements:

- ♦ [“BITS Support” on page 360](#)
- ♦ [“Citrix Presentation Server 4 Support” on page 360](#)

### BITS Support

Novell Application Launcher can now use Microsoft Background Intelligent Transfer Services (BITS) 2.0 to transfer application files to workstations. BITS uses idle network bandwidth to transfer files, increasing or decreasing the rate at which files are transferred based on the amount of idle network bandwidth available.

For detailed information, see [“Advanced Distribution: Transferring Applications Using BITS”](#) in [“Application Management”](#) in the *Novell ZENworks 7 Desktop Management Administration Guide*.

### Citrix Presentation Server 4 Support

ZENworks now supports Citrix Presentation Server 4 for Windows.

For detailed information, see [Chapter 15, “Setting Up Terminal Server Application Support,” on page 173](#).

## 28.5.5 Workstation Inventory Enhancements

Workstation Inventory in ZENworks 7 Desktop Management with SP1 now supports the following third-party database management systems for setting up an Inventory database:

- ♦ Oracle10g R2 on Windows, UNIX, or Linux servers.
- ♦ Microsoft SQL Server 2005 on Windows Server 2003.

## 28.5.6 Clustering Support

ZENworks 7 Desktop Management with SP1 has broadened its support for Novell Cluster Services by being “cluster safe” when installed in a cluster on an OES Linux SP2 server. For more information, see [Section B.11, “Installing ZENworks 7 Desktop Management with SP1 in an OES Linux Cluster Environment,” on page 555](#).

## 28.5.7 New Alternative for Upgrading

ZENworks 7 Desktop Management with SP1 provides a new alternative for upgrading from previous versions of ZENworks for Desktops or ZENworks Desktop Management. For detailed information, see [Chapter 34, “Upgrading to Support Pack 1 Using Server Software Packages,” on page 443](#).



# Upgrading from ZENworks for Desktops 3.2 SP3

# 29

The following sections outline the procedures that you should follow to ensure a successful upgrade from Novell® ZENworks® for Desktops 3.2 SP3 to ZENworks 7 Desktop Management. You should perform them in the following order:

1. [Section 29.1, “Meeting the ZENworks 7 Installation Prerequisites,” on page 363](#)
2. [Section 29.2, “Checking eDirectory,” on page 363](#)
3. [Section 29.3, “Extending the eDirectory Schema,” on page 363](#)
4. [Section 29.4, “Upgrading ConsoleOne,” on page 365](#)
5. [Section 29.5, “Upgrading ZENworks for Desktops 3.2 SP3 Servers,” on page 367](#)
6. [Section 29.6, “Installing the ZENworks 7 Middle Tier Server,” on page 386](#)
7. [Section 29.7, “Upgrading Managed Workstations,” on page 386](#)
8. [Section 29.8, “Upgrading Clustered Workstation Inventory from ZENworks for Desktops 3.2 SP3 to ZENworks 7 Desktop Management with SP1,” on page 395](#)

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**NOTE:** You can also use the contents of this section to help you upgrade from ZENworks for Desktops 3.2 SP3 to ZENworks 7 Desktop Management with Support Pack 1.

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## 29.1 Meeting the ZENworks 7 Installation Prerequisites

Ensure that the workstations and servers on your network meet the necessary prerequisites. For more information, see [Part II, “Preparation,” on page 37](#).

## 29.2 Checking eDirectory

You need to check the health of your Novell eDirectory® tree both before and after you install ZENworks 7 Desktop Management and extend the directory schema with Desktop Management attributes. The following resources provide the information required to perform the health check:

- ♦ Directory Health Check Procedures - Cross Platform, TID 10060600, available in the [Novell Support Knowledgebase \(http://support.novell.com/search/kb\\_index.jsp\)](#).
- ♦ Checking the OS and DS Health for Inconsistent ZENworks behavior, TID 10062741 in the [Novell Support Knowledgebase \(http://support.novell.com/search/kb\\_index.jsp\)](#).
- ♦ [eDirectory Cool Solutions \(http://www.novell.com/coolsolutions/nds\)](#)

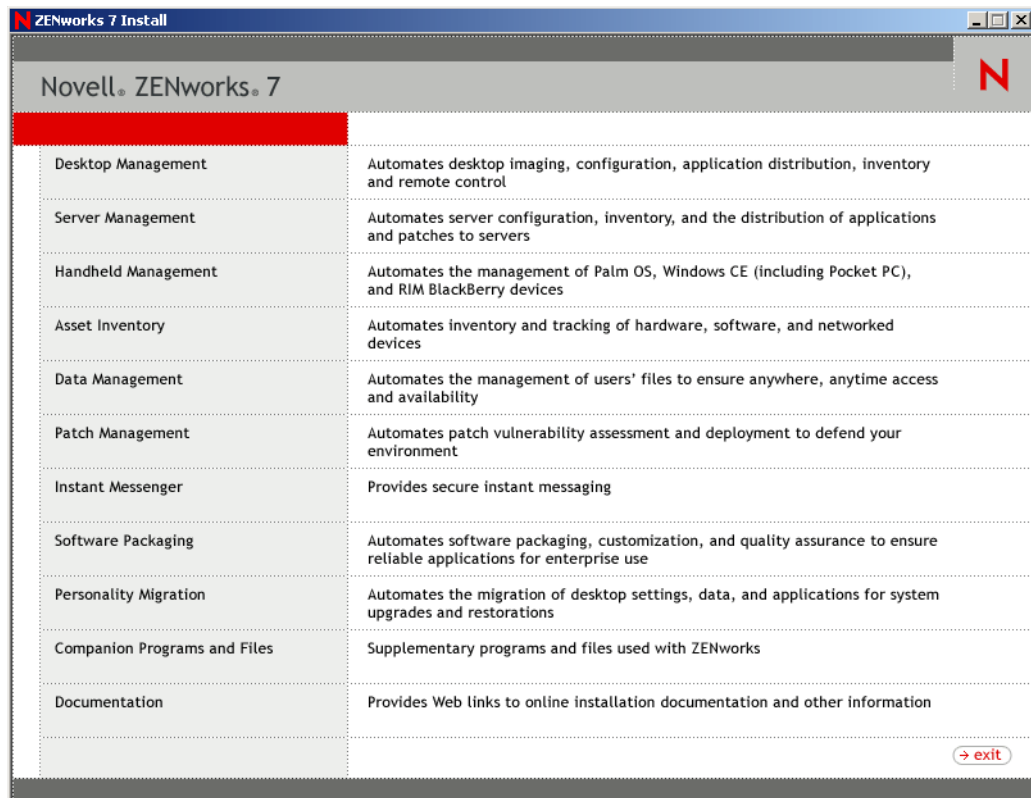
## 29.3 Extending the eDirectory Schema

The ZENworks 7 Desktop Management installation program extends the eDirectory schema to allow the creation of new types of directory objects. Schema extension is not a reversible process.

You must run the ZENworks 7 Desktop Management installation on a workstation that has a supported version of Windows and the Novell Client™ (see [Chapter 8, “Preparing the Administration Workstation or Server,”](#) on page 71).

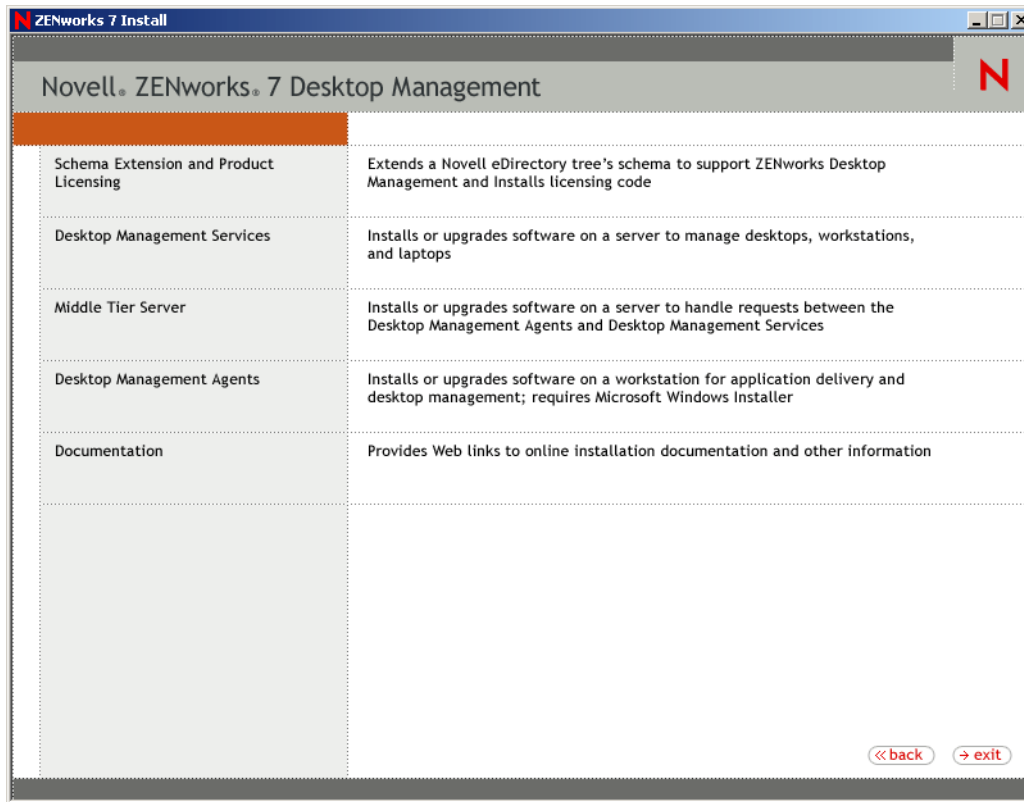
- 1 From the installing workstation, authenticate to eDirectory as a user with administrative rights to the eDirectory tree whose schema will be extended.
- 2 Insert the *Novell ZENworks 7 Desktop Management* CD into the CD drive of the workstation to autorun the ZENworks 7 installation program.

If the installation program does not autorun, launch `winsetup.exe` from the root of the CD.





- 3 Select *Desktop Management*, then select *English* to display the ZENworks 7 Desktop Management page.



- 4 Select *Schema Extensions and Product Licensing* to launch the schema extension program.
- 5 In the Software License Agreement dialog box, select *Accept*, then click *Next*.
- 6 In the eDirectory Tree for Creating Objects dialog box, select the tree whose schema you want to extend, then click *Next*.
- 7 In the ZENworks License dialog box, enter the license code provided with your ZENworks software, then click *Next*.

If you do not have a license code, you can still install the ZENworks software. The full software is installed and you can use it for a 90-day evaluation period. At any time during or after the evaluation period, you can run the installation program again and use the *Schema Extensions and Product Licensing* option to enter a license code.
- 8 In the Installation Summary dialog box, click *Finish* to extend the schema.
- 9 (Optional) When the ZENworks Schema Extension completion dialog box appears, click *View Log File* to see the extensions that were applied.
- 10 In the ZENworks Schema Extension completion dialog box, click *OK*.
- 11 Perform an eDirectory health check (see [Section 30.3, “Checking eDirectory,”](#) on page 398).

## 29.4 Upgrading ConsoleOne

ZENworks 7 Desktop Management requires ConsoleOne® version 1.3.6 or later.

ZENworks for Desktops 3.2 SP3 required that ConsoleOne be installed on the ZENworks for Desktops 3.2 SP3 Server in order to install the ZENworks for Desktops 3.2 SP3 snap-ins to the server. If desired, you could then copy the ConsoleOne directory from the server to a workstation in order to run ConsoleOne from the workstation.

ZENworks 7 lets you install the Desktop Management snap-ins to both a ConsoleOne directory on the Desktop Management Server and a ConsoleOne directory on a local workstation. By default, the snap-ins are installed to the server when you upgrade it from 3.2 SP3 to version 7.

As you upgrade ConsoleOne to version 1.3.6, you need to ensure that:

- ♦ You install it to all locations from which you want to administer ZENworks 7 Desktop Management.
- ♦ You keep at least one copy of a ConsoleOne installation that includes the ZENworks for Desktops 3.2 SP3 snap-ins. This enables you to continue to manage ZENworks for Desktops 3.2 SP3 during the upgrade process.

To perform a ConsoleOne upgrade:

- 1** (Optional) Make a copy of at least one ConsoleOne installation that includes the ZENworks for Desktops 3.2 SP3 snap-in.

ConsoleOne 1.3.6 supports the ZENworks for Desktops 3.2 SP3 snap-ins. You have the option of making a copy of your current ConsoleOne with the snap-ins, waiting to make a copy of the ConsoleOne 1.3.6 installation with the snap-ins (see [Step 3](#)), or doing both.

For example, if you have a ZENworks for Desktops 3.2 SP3 Server with ConsoleOne 1.3.2 and the ZENworks for Desktops 3.2 SP3 snap-ins located in the `sys:\public\mgmt\consoleone\1.2` directory and you want to ensure that you retain a copy of that installation, create a `sys:\public\mgmt\consoleone\zfd32` directory and copy all files and subdirectories from the `1.2` directory to the `zfd32` directory.

- 2** Install ConsoleOne 1.3.6 to a local workstation or to a ZENworks for Desktops 3.2 SP3 Server. To do so:

- 2a** Insert the *Novell ZENworks 7 Companion 1* CD (or the *Novell ZENworks 7 with Support Pack 1 Companion 1* CD) into the CD drive of the workstation to autorun the ZENworks 7 installation program.

If the installation program does not autorun, launch `winsetup.exe` from the root of the CD.

- 2b** Select *Companion Programs and Files*.

- 2c** Select *Novell ConsoleOne* to launch the ConsoleOne 1.3.6 (or 1.3.6e) installation program.

- 2d** Follow the prompts to install ConsoleOne to the `...\consoleone\1.2` directory.

When installation is complete, the `...\consoleone\1.2` directory contains ConsoleOne 1.3.6 (in SP1, 1.3.6e). If you installed ConsoleOne to a location that contains the ZENworks for Desktops 3.2 SP3 snap-ins, the 3.2 SP3 snap-ins still function.

- 3** (Optional) If you want to retain a copy of ConsoleOne 1.3.6 (or 1.3.6e) with the ZENworks for Desktops 3.2 SP3 snap-ins, copy the installation you created in [Step 2](#) to another location.

## 29.5 Upgrading ZENworks for Desktops 3.2 SP3 Servers

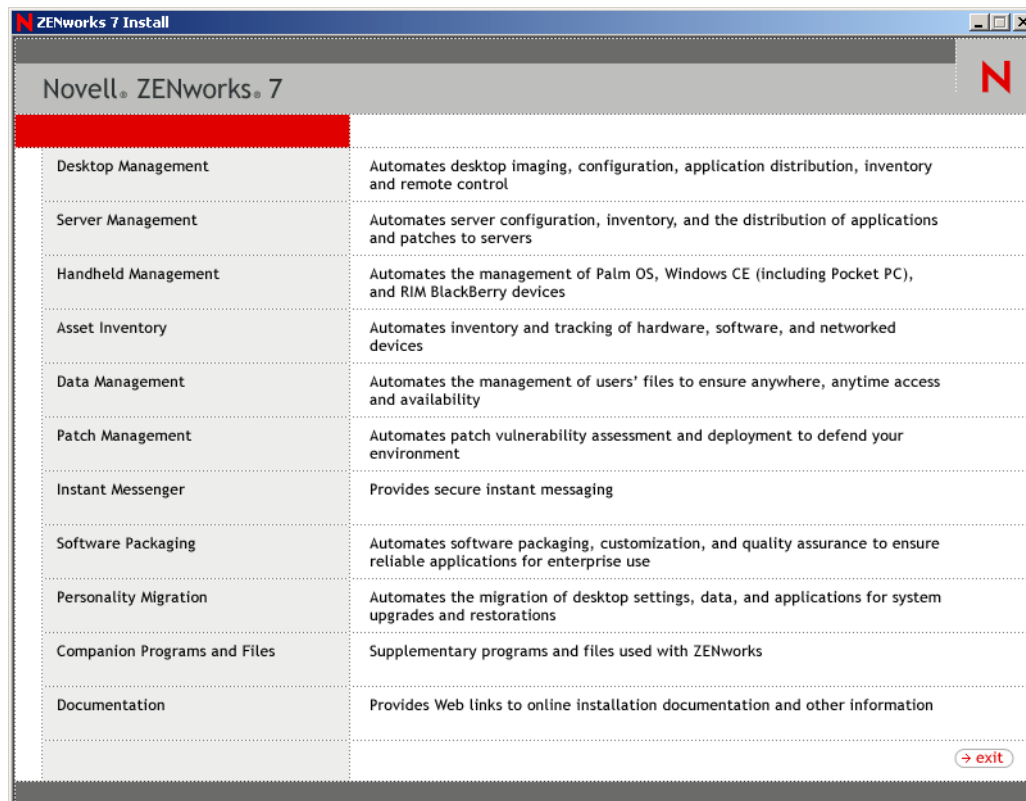
You upgrade your ZENworks for Desktops 3.2 SP3 servers by using the ZENworks 7 Desktop Management Server installation program.

The upgrade process for the Application Management, Workstation Management, Workstation Imaging, Remote Management, and Workstation Inventory components is fairly simple and includes few issues you need to plan for as you upgrade.

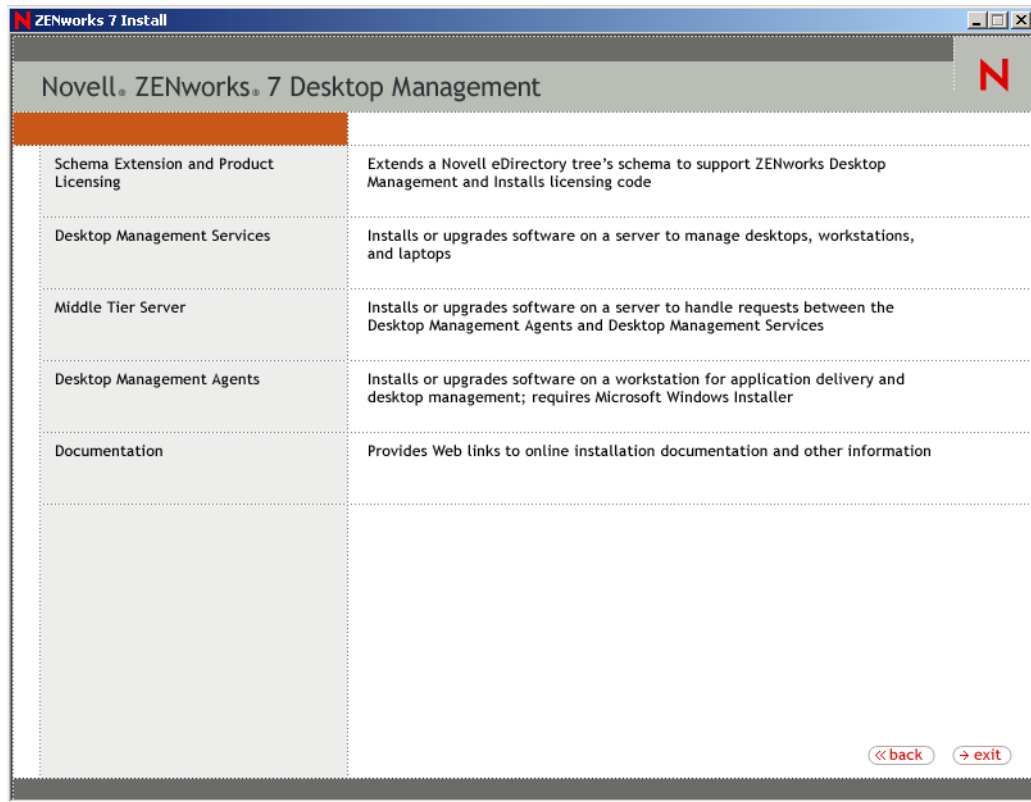
An upgrade installation is identical to a new installation. The following steps provide only the information you need to launch the installation program and make choices specific to upgrading. For more detailed installation information, see [Chapter 9, “Installing the ZENworks Desktop Management Server,”](#) on page 77.

- 1 From the installing workstation, authenticate to eDirectory as a user with administrative rights to the eDirectory tree whose schema you extended for ZENworks 7 (see [Section 9.1.1, “Extending the Schema Before the Installation,”](#) on page 79).
- 2 Insert the *Novell ZENworks 7 Desktop Management CD* (or the *Novell ZENworks 7 Desktop Management with Support Pack 1 CD*) into the CD drive of the workstation to autorun the ZENworks 7 installation program.

If the installation program does not autorun, launch `winsetup.exe` from the root of the CD.

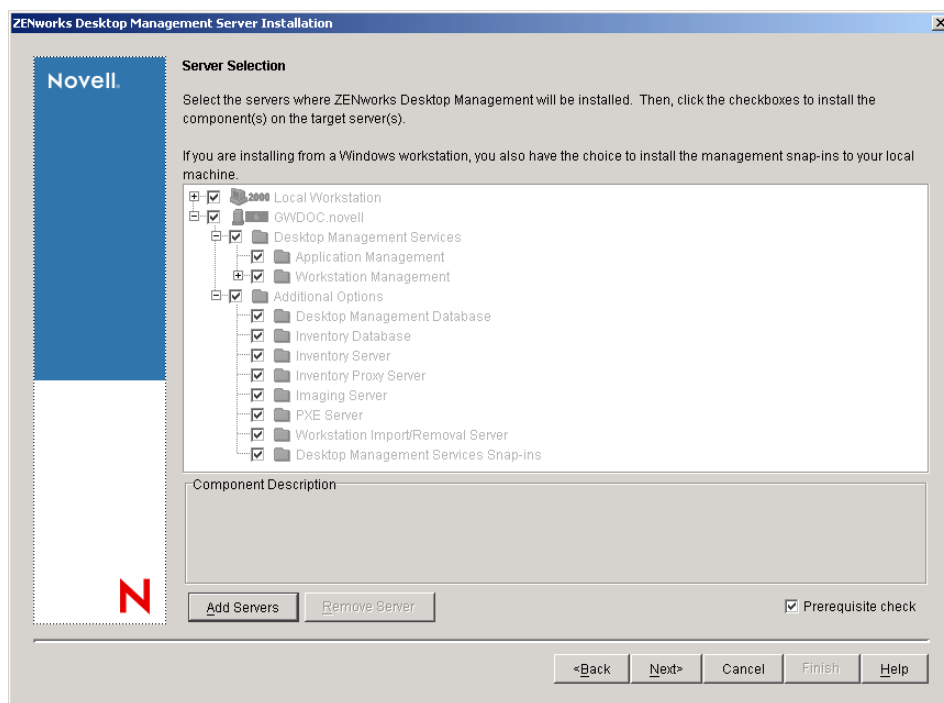


- 3 Select *Desktop Management*, then select *English* to display the ZENworks 7 Desktop Management page.



- 4 Select *Desktop Management Services* to launch the ZENworks Desktop Management Server installation program.

- 5 Follow the prompts until you've added the servers you want to upgrade and the Server Selection page is still displayed, as shown below.



- 6 Deselect any components you don't want installed to the server.
- For example, because you are not upgrading Workstation Inventory, deselect *Inventory Database*, *Inventory Server*, and *Inventory Proxy Server*. Select a component to display a description in the *Component Description* box.
- 7 (Optional) If you don't want the installation program to check the target servers to ensure that they meet the ZENworks 7 prerequisites, deselect the *Prerequisite Check* option.
- With the *Prerequisite Check* option selected, if a target server does not meet the prerequisites, installation does not occur on that server until you upgrade the server or rerun the installation program with the option deselected.
- 8 Click *Next*, then follow the remaining prompts to install the software.
- 9 Review the information in the following sections to complete the upgrade process:
- ♦ [Section 29.5.1, “Completing the Application Management Upgrade,” on page 369](#)
  - ♦ [Section 29.5.2, “Completing the Workstation Management Upgrade,” on page 373](#)
  - ♦ [Section 29.5.3, “Completing the Workstation Imaging Upgrade,” on page 376](#)
  - ♦ [Section 29.5.4, “Completing the Remote Management Upgrade,” on page 377](#)
  - ♦ [Section 29.5.5, “Completing the Workstation Inventory Upgrade,” on page 377](#)

## 29.5.1 Completing the Application Management Upgrade

The following sections provide information to help you complete your upgrade of the Application Management component of ZENworks Desktop Management:

- ♦ [“Updating the Application Launcher Startup Method” on page 370](#)

- ♦ “Updating Applications” on page 371
- ♦ “Transitioning from System Requirements to Distribution Rules” on page 372

## Updating the Application Launcher Startup Method

When you upgrade the ZENworks 3.2 Server to the ZENworks 7 Desktop Management Server, `naexpld.exe` and `nal.exe` are updated to launch `naldesk` or `nalwin32` from the local directory where the ZENworks 7 Desktop Management Agent will be installed. This change affects ZENworks for Desktops 3.2 SP3 workstations using the Novell Client that have not been updated with the ZENworks 7 Desktop Management Agent.

Until you can update the ZENworks for Desktops 3.2 SP3 workstations, you need to make sure that users are able to access the old Application Launcher. There are solutions for two scenarios:

- ♦ “If Users Access the Application Launcher When Connected to the Network” on page 370
- ♦ “If Users Access the Application Launcher When Disconnected from the Network” on page 371

### If Users Access the Application Launcher When Connected to the Network

If your users primarily access the Novell Application Launcher™ while connected to the network, you might want to continue using the client login script to start the Application Launcher. One way of checking the workstation for updated ZENworks 7 Desktop Management files is to use the `exist.exe` tool to check `c:\program_files\novell\zenworks` for the existence of `nalwin32.exe` or `naldesk.exe`.

---

**NOTE:** The `exist.exe` tool can be downloaded from the Novell [ZENworks Cool Solutions page](http://www.novell.com/cool solutions/tools/1067.html) (<http://www.novell.com/cool solutions/tools/1067.html>). Run this tool from a login or application startup script to check for the presence of any file you specify. If the specified file is detected, the `.exe` returns `ERROR_LEVEL` of zero (0).

---

When you have downloaded `exist.exe`, edit your login scripts to put in a check to run ZENworks for Desktops 3.2 Novell Application Launcher locally, from the server, or to let the ZENworks 7 version run. These lines must be after the `sys:\public` directory is added to the search path or the `exist.exe` must have the full path specified. You need to modify the following (or an equivalent) line:

```
@z:\nalwin32.exe
```

This is how you need to modify the line:

```
; First check to see if the ZENworks 7 agent is present. If so, then
; you don't need to do anything; it will be launched automatically on
; the desktop.
#exist %<windir>\..\Program Files\Novell\Zenworks\naldesk.exe
; If the ZENworks 7 agent is NOT present, then keep checking
if "%ERRORLEVEL"!="0" then
; Check now to see if the ZfD 3.x App Launcher has been placed on the
; workstation
#exist %<windir>\system32\nalwin32.exe
; If the ZfD 3.x App Launcher has NOT been placed on the workstation
; then go and launch the App Launcher from the server.
if "%ERRORLEVEL"!="0" then
; Check our Windows 95 friends
```

```
#exist %<windir>\..\novell\client32\nalwin32.exe
if "%ERRORLEVEL"!="0" then
@z:\Zfd32NAL\nalwin32.exe
else
@%<windir>\..\novell\client32\nalwin32.exe
end
else
@%<windir>\system32\nalwin32.exe
end
end
```

This script change launches Application Launcher in one of three ways:

- ♦ From the workstation copy of the ZENworks 7 Desktop Management Agent (it will automatically start, so it does not need to be launched from the login script)
- ♦ From a local copy of the ZENworks for Desktops 3.2 Application Launcher code, if it is present
- ♦ From the server if the ZENworks 7 Desktop Management Agent and the local ZENworks for Desktops 3.2 Application Launcher code are not on the workstation.

The only difference in launching the ZENworks for Desktops 3.2 files locally rather than from the server is that if you start the Application Launcher locally, updated ZENworks for Desktops 3.2 Application Launcher files on the server are not pushed to the workstation. During a migration period, this is usually not necessary, but if it does become necessary, you can use an Application Launcher /i command line switch in a Policy package to update the local ZENworks for Desktops 3.2 Application Launcher files. For more information, see the *ZENworks for Desktops 3.2 Administration Guide* in [ZENworks for Desktops 3.2 archived documentation \(http://www.novell.com/documentation/lg/zdfs/index.html\)](http://www.novell.com/documentation/lg/zdfs/index.html).

---

**NOTE:** If your network environment contains shared workstations, you should edit all of the login scripts at the same time, regardless of when the container, partition, or site is upgraded to ZENworks 7. This prevents shared workstations from having old Application Launcher files distributed to them.

---

### If Users Access the Application Launcher When Disconnected from the Network

If your users are often disconnected from the network, you can start the Application Launcher by specifying in the ZENworks 7 Desktop Management Agent installation that the Application Launcher or the Application Explorer should be launched from the Startup Folder. Although this is the simplest method, command line parameters cannot be added to the shortcut and users sometimes remove items from the Startup folder.

If you want to specify command line parameters, you can start the Application Launcher by editing the Windows registry and adding NALWIN32 or NALDESK to the HKLM\Software\Microsoft\Windows\CurrentVersion\Run key.

### Updating Applications

You should prepare your applications to move to ZENworks 7 Desktop Management. With ZENworks 7 Desktop management you need to decide if you are going to continue to have the Novell Client installed on your workstations or if you are moving to Desktop Management feature delivery through the ZENworks Middle Tier Server.



If you are going to continue to use the Novell Client, application objects require no changes in order to function in the new Desktop Management environment. You will, however, be required to install the Desktop Management Agent in order to update the ZENworks functionality of the Novell Client.

If you plan to deploy the Desktop Management Agent without the Novell Client on the workstation, see [Chapter 12, “Installing and Configuring the Desktop Management Agent,”](#) on page 137.

Any MSI applications to be delivered outside the corporate firewall must be marked Forced Cache. The Microsoft MSI installer is not aware of the ZENworks Middle Tier Server and cannot properly request applications through the browser; consequently, all of the files must be cached on the local workstation prior to installation.

## Transitioning from System Requirements to Distribution Rules

The System Requirements configuration option used to help define ZENworks for Desktops 3.2 SP3 application distribution has been renamed to Distribution Rules to better reflect the enhanced functionality and to differentiate it from the old system requirements. ZENworks 7 Distribution Rules support more flexible distribution conditions through the use of AND/OR Boolean operators and groupings of requirements. In ZENworks for Desktops 3.2 SP3, the AND operator was used for all system requirements and there was no ability to group requirements.

Only ZENworks 6.5 (or later) versions of Novell Application Launcher have the ability to process the new operator logic and groupings used with the distribution rules. Therefore, to maintain backwards compatibility with the ZENworks for Desktops 3.2 SP3 Application Launcher, existing system requirements are retained as legacy system requirements during upgrading of your eDirectory tree's schema. Both the ZENworks for Desktops 3.2 SP3 Application Launcher and the ZENworks 7 Application Launcher can process the legacy system requirements, which means that applications with legacy system requirements continue to be available to users regardless of which Application Launcher version they are using.

As you transition from using legacy system requirements to using distribution rules, you need to be aware of the following:

- Distribution rules are defined on the Application object's Distribution Rules page (*Application object* > *Availability* tab > Distribution Rules page).
- Legacy system requirements are available from the Distribution Rules page by clicking the *Legacy* button, then clicking *Edit Legacy Settings*. You can use this option to edit existing legacy system requirements or add new system legacy requirements (for example, if you create a new Application object that you want available on workstations running the ZENworks for Desktops 3.2 SP3 Application Launcher).
- When you access the Distribution Rules page for an application that has legacy system requirements but no distribution rules, you are prompted to import the requirements into the distribution rules. If you choose not to import them, you can import them later by using the *Import Legacy Settings* option on the Distribution Rules page.
- After you import legacy system requirements into distribution rules or manually define distribution rules, the ZENworks 7 Application Launcher processes only the distribution rules. It ignores the legacy system requirements. The ZENworks for Desktops 3.2 SP3 Application Launcher, however, continues to process the legacy system requirements because it does not know about the new distribution rules. Therefore, if you want to use distribution rules but still have workstations running the ZENworks for Desktops 3.2 SP3 Application Launcher, you need to maintain both a distribution rules list and a legacy system requirements list.



- ◆ Changes you make to distribution rules are not added to the legacy system requirements. Likewise, changes you make to legacy system requirements are not added to the distribution rules.
- ◆ If you define distribution rules and then import legacy system rules, your existing distribution rules are overwritten by the legacy system rules.
- ◆ The requirement for an operating system to be defined before an application is available has been removed. In ZENworks for Desktops 3.2 SP3, an OS platform had to be defined in System Requirements before an application would be available for distribution and launching. This requirement has been removed. The new behavior uses the following logic: If an application runs only on a specific operating system, define an operating system distribution rule. If an application does not require a specific operating system, there is no need to define a distribution rule. By default, applications without a defined operating system distribution rule are available on all supported platforms (Windows 98, Windows 2000, and Windows XP).

Keeping the above listed details in mind, we recommend the following process to ensure a smooth transition from system requirements to distribution rules:

- 1 For each Application object, import the legacy system rules into distribution rules. Modify the rules as desired.
- 2 Retain the legacy system requirements to support workstations using ZENworks for Desktops 3.2 SP3 Application Launcher.
- 3 If an application's distribution conditions change, modify both the distribution rules and the legacy system requirements to ensure that both the ZENworks 7 and ZENworks for Desktops 3.2 SP3 Application Launcher enforce the distribution condition.
- 4 After all workstations are upgraded to the ZENworks 7 Application Launcher (see [Section 30.8, “Upgrading Workstations,” on page 424](#)), remove the legacy system requirements.

or

If you are supporting Windows NT 4.0 workstations in your environment by continuing to run the ZENworks for Desktops 3.2 SP3 Desktop Management Agent on the workstations, do not remove the legacy system requirements. You need to keep both the legacy system requirements and distribution rules.

For more information about distribution rules and legacy system requirements, see [“Distribution Rules Page”](#) in [“Application Management”](#) in the *Novell ZENworks 7 Desktop Management Administration Guide*.

## 29.5.2 Completing the Workstation Management Upgrade

When you first install ZENworks 7 Desktop Management into your eDirectory tree, additional ZENworks 7 Desktop Management policy schemas are placed there. Existing ZENworks for Desktops 3.2 SP3 policies are automatically migrated into your tree when new ZENworks 7 Desktop Management policies are created.

The following sections provide information to help you complete your upgrade of the Workstation Management component of ZENworks Desktop Management:

- ◆ [“Updating Search Policies” on page 374](#)
- ◆ [“Additional Information about Upgrading Policies” on page 375](#)

## Updating Search Policies

Examine eDirectory to see if there are any Search policies in the tree. Search policies, part of the Container Package, are very important because they keep ZENworks agents from walking to the root to find policies and configuration information.

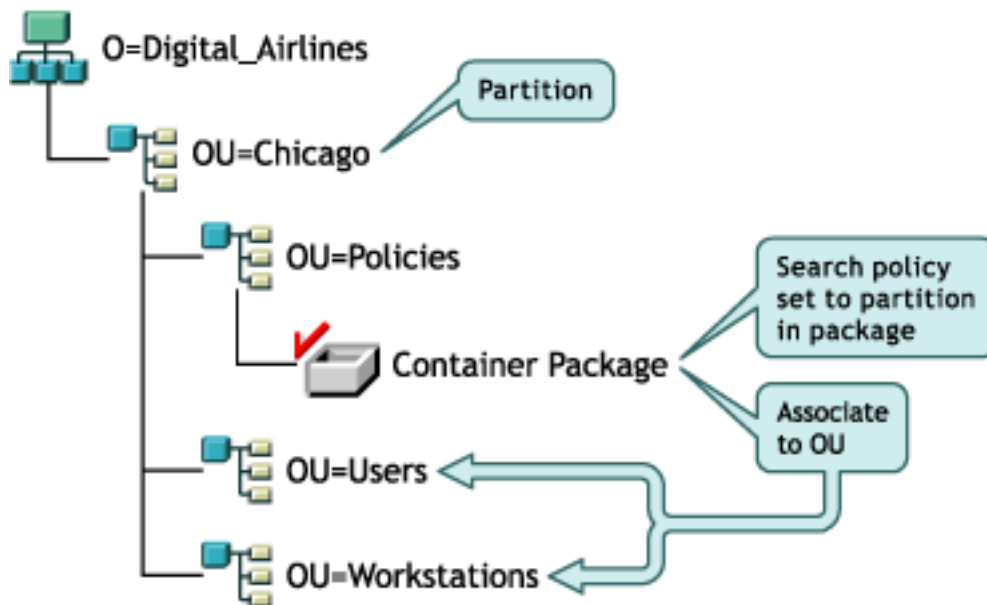
If the tree does not have a Search policy, you need to create a new ZENworks 7 Desktop Management Search policy to ensure optimal performance of the ZENworks agents. There are some policy behaviors that you need to consider:

- If you plan to authenticate using only the Novell Client in your network environment, the search policy functions the same way as a ZENworks for Desktops 3.2 SP3 Search policy.
- If you plan to use the ZENworks Middle Tier Server and run the Desktop Management Agent on workstations without the Novell Client, the behavior of the search policies might change when you upgrade the network.

Unlike ZENworks for Desktops 3.2 agents, ZENworks 7 agents do not recognize the partition boundary of a container. Consequently, if you have any existing Search policies that are based on the partition boundary, the ZENworks 7 agents search to the container where the Container Package is associated, regardless of whether the agents cross any partition boundaries in search of policies.

For example, assume that you have the following tree:

**Figure 29-1** An eDirectory Tree with a ZENworks for Desktops 3.2 Search Policy Set to Search to the Partition Boundary.



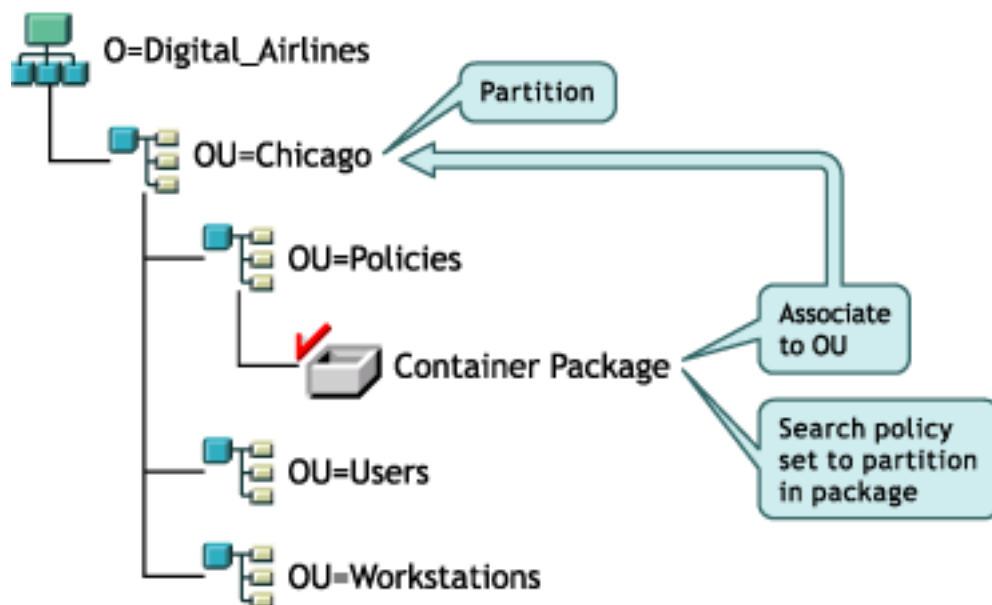
With ZENworks for Desktops 3.2 SP3, the agents for the users or workstations first walk to their parent container and find the associated Search policy that states that the agents should look only to the partition boundary for their policies. When the agents look for policies, they walk the tree only to the Chicago container (partition boundary).

With ZENworks 7 Desktop Management, the *Partition* option is not available in the Search Policy. It has been replaced with the *Associated Container* option. This means that any earlier Search

Policies that were upgraded to ZENworks 7 with the *Partition* option are now replaced with the *Associated Container* option. If you do not plan for this change, a different policy retrieval could result.

If you want to continue receive the same search results as when you used the *Partition* option as the search boundary, you need to associate the container package (that is, the policy package where the configured Search policy resides) to the eDirectory container that represents the partition boundary where you want user and workstation objects to end their search for policies.

**Figure 29-2** An eDirectory Tree with a ZENworks for Desktops 3.2 Search Policy Upgraded to ZENworks 7. The Policy is Set to Search to the Associated Container.



When the ZENworks 7 agents search the tree now, they find the Container Package with the Search Policy at Chicago, and then search for policies up to Chicago, because it is the associated container.

---

**NOTE:** The container that is associated with the package determines where the agents will stop walking the tree. It is not based on where the package is actually stored in the directory. The search level in the Search policy will now apply to the associated container rather than the partition boundary.

---

### Additional Information about Upgrading Policies

- ♦ If a workstation with ZENworks for Desktops 3.2 SP3 and the Novell Client installed is upgraded to the new ZENworks 7 agent, and the client remains, the workstation continues to use the policies that were created in the directory prior to the ZENworks 7 upgrade.
- ♦ If a workstation with ZENworks for Desktops 3.2 SP3 and the Novell Client is upgraded to the new ZENworks 7 agent and the client is removed, the workstation uses only those policies that are valid in ZENworks 7 (for example, the RAS configuration policy would not be enforced).
- ♦ If a new workstation has only the ZENworks 7 agent installed (no client or ZENworks for Desktops 3.2 SP3), the workstation uses only those policies that are valid in ZENworks 7.

- ♦ If you install ZENworks 7 without upgrading an existing ZENworks for Desktops 3.2 SP3 installation, only the valid ZENworks 7 policies are present. The original ZENworks for Desktops 3.2 SP3 policies are present only if an upgrade is performed.

For a comparison of ZENworks for Desktops 3.2 policies and ZENworks 7 Desktop Management policies, see [Appendix A, “Differences in ZENworks for Desktops 3.2 and ZENworks 7 Policy Packages,”](#) on page 523.

### 29.5.3 Completing the Workstation Imaging Upgrade

When you install ZENworks 7 Desktop Management, you should upgrade your ZENworks for Desktops 3.2 SP3 Workstation Imaging to benefit from the new ZENworks 7 Desktop Management image compression features.

- ♦ [“Upgrading the Imaging Server”](#) on page 376
- ♦ [“Upgrading Imaging When the Linux Partition Resides on Workstations”](#) on page 376
- ♦ [“Upgrading to ZENworks 7 Preboot Services”](#) on page 376

#### Upgrading the Imaging Server

To upgrade to the ZENworks 7 Workstation Imaging server, insert the *Novell ZENworks 7 Desktop Management* CD (or the *Novell ZENworks 7 Desktop Management with Support Pack 1* CD), then run the ZENworks 7 Desktop Management installation program to install Workstation Imaging. This upgrades the ZENworks for Desktops 3.2 SP3 Imaging engine.

#### Upgrading Imaging When the Linux Partition Resides on Workstations

Because ZENworks 7 uses a new Linux distribution for Workstation Imaging, when you upgrade from ZENworks for Desktops 3.2 to ZENworks 7 Desktop Management, you need to either remove the old Linux partition and then install the ZENworks 7 Linux partition, or discontinue the use of a local partition in favor of using ZENworks 7 Preboot Services.

#### Upgrading to ZENworks 7 Preboot Services

If you decide to move to ZENworks 7 Preboot Services (PXE) to eliminate the Linux partitions on your workstations, use the following steps:

- 1 Install ZENworks 7 Preboot Services on a network server.

For installation and setup instructions, see [Section 9.1, “Desktop Management Server Installation Procedure,”](#) on page 77 in this guide and [“Using ZENworks Desktop Management Preboot Services”](#) in the *Novell ZENworks 7 Desktop Management Administration Guide*.

You might need to make some configuration changes to the DHCP server.

- 2 Verify that ZENworks 7 Preboot Services is working either through the PXE supplied on your network cards, or through a PXE bootable floppy you generate with `pxebuilder.exe`.
- 3 In ConsoleOne, right-click the *ZENworks Imaging Policy* in the *Server Policy Package* > click *Properties* > *General* > *Imaging Partition*.
- 4 Disable the ZENworks imaging partition.

This procedure makes the Linux partition non-bootable on the workstation hard drive. It does not eliminate the Linux partition.

If you want to eliminate the Linux partition, you need to restore a base image on the workstation and select the option to delete the existing Linux partition in the Image object, which you can reference in the Server Policy package or the Workstation Policy package.

## 29.5.4 Completing the Remote Management Upgrade

The ZENworks 7 Desktop Management console can remotely control both the ZENworks for Desktops 3.2 agent workstations and the ZENworks 7 agent workstations. However, ZENworks 7 Desktop Management does not provide migration for any 3.2 features that were discontinued in later releases, and the ZENworks for Desktops 3.2 agents do not support any enhancements provided in ZENworks 7 Desktop Management.

---

**NOTE:** It is no longer necessary to use Remote Management Application objects to control the Remote Management Agents on workstations. The Remote Management Agents are now installed on the workstation as part of the Desktop Management Agent installation.

---

## 29.5.5 Completing the Workstation Inventory Upgrade

To upgrade Workstation Inventory from ZENworks for Desktops 3.2 SP3 to ZENworks 7, perform the following tasks in the order listed:

1. Review the information in [“Pre-Upgrade Considerations” on page 377](#).
2. Perform the tasks explained in [“Tasks To Be Performed Before Upgrading and Database Migration” on page 380](#).
3. Perform the tasks explained in [“Upgrading the ZENworks for Desktops 3.2 SP3 Inventory Database” on page 381](#).
4. Perform the tasks explained in [“Upgrading the ZENworks for Desktops 3.2 SP3 Inventory Server” on page 383](#).
5. Perform the tasks explained in [“Manually Migrating ZENworks for Desktops 3.2 SP3 Inventory Policies” on page 384](#).
6. Perform the tasks explained in [“Tasks to Perform after Database Migration” on page 385](#).

### Pre-Upgrade Considerations

Before you upgrade ZENworks for Desktops 3.2 SP3 Inventory components, review the following sections:

- ♦ [“Inventory Server” on page 377](#)
- ♦ [“Inventory Agent” on page 379](#)
- ♦ [“Management Console” on page 379](#)

### Inventory Server

- ♦ ZENworks for Desktops 3 or ZENworks for Desktops 3.2 SP1 is not backward compatible with ZENworks 7 Desktop Management. You must upgrade all ZENworks for Desktops 3, ZENworks for Desktops 3 SP1, ZENworks for Desktops 3.2, ZENworks for Desktops 3.2 SP1, or ZENworks for Desktops 3.2 SP2 Inventory servers in your Inventory tree to ZENworks for Desktops 3.2 SP3 before upgrading to ZENworks 7 Desktop Management.

In order for your network to support both ZENworks for Desktops 3.2 and ZENworks 7 Desktop Management, you must first install ZENworks for Desktops 3.2 SP3 into your network. Installing ZENworks 7 Desktop Management without first installing ZENworks for Desktops 3.2 SP3 does not provide the Novell eDirectory schema or ConsoleOne plug-in support for ZENworks for Desktops 3.2 policies. On the other hand, installing ZENworks for Desktops 3.2 SP3 first places the ZENworks for Desktops 3.2 schema and the plug-ins into ConsoleOne. When you install ZENworks 7 Desktop Management after ZENworks for Desktops 3.2 SP3, the ZENworks for Desktops 3.2 schema and plug-ins remain.

If the Inventory server is running ZENworks for Desktops 3, you must install ZENworks for Desktops 3.2 and ZENworks for Desktops 3.2 SP3, and start the Inventory service and the database at least once prior to upgrading the server to ZENworks 7 Desktop Management. For more information on how to install ZENworks for Desktops 3.2, see the [Novell Support Web site \(http://support.novell.com\)](http://support.novell.com).

- ◆ After you install ZENworks 7 Desktop Management, ZENworks 7 Desktop Management Workstation Inventory and ZENworks for Desktops 3.2 SP3 agents and policies coexist in the following ways:
  - ◆ Inventory data from ZENworks 7 Desktop Management agents cannot be sent to a ZENworks for Desktops 3.2 SP3 Inventory server and placed in a ZENworks for Desktops 3.2 SP3 database. A ZENworks for Desktops 3.2 SP3 Inventory Agent cannot send its inventory data to a new ZENworks 7 Desktop Management Inventory server. It can send its inventory data only to a ZENworks for Desktops 3.2 SP3 Inventory server or to a ZENworks 7 Desktop Management Inventory server that has been upgraded from ZENworks for Desktops 3.2 SP3.
  - ◆ ZENworks for Desktops 3.2 SP3 Inventory servers can roll up their inventory data to a ZENworks 7 Desktop Management Inventory server, but a ZENworks 7 Desktop Management Inventory server cannot roll up its inventory data to a ZENworks for Desktops 3.2 SP3 server.
  - ◆ ZENworks for Desktops 3.2 SP3 Inventory servers can roll up their databases to a ZENworks 7 Desktop Management Inventory server, but a ZENworks 7 Desktop Management Inventory server cannot roll up its database to a ZENworks for Desktops 3.2 SP3 server.
  - ◆ Any ZENworks for Desktops 3.2 SP3 Inventory servers that roll up their data to a ZENworks 7 Desktop Management Inventory server must be patched in order to function properly.
  - ◆ A ZENworks for Desktops 3.2 SP3 inventory server cannot roll up its data to a ZENworks for Desktops 3.2 SP3 or ZENworks 7 Desktop Management Inventory server in another eDirectory tree.
- ◆ ZENworks for Desktops 3.2 SP3 Inventory servers must be upgraded to ZENworks 7 Desktop Management in a top-down order. If you perform roll-up of your inventory data, the root server must be upgraded first, then the intermediate servers, and lastly the leaf servers.
- ◆ A ZENworks 7 Desktop Management Inventory server cannot send its inventory data to a ZENworks for Desktops 3.2 SP3 Inventory server.
- ◆ Do not attach a ZENworks 7 Desktop Management Inventory database directly to a ZENworks for Desktops 3.2 SP3 Inventory server.
- ◆ A ZENworks 7 Desktop Management Inventory server can process the `.str` files of the ZENworks for Desktops 3.2 SP3 inventoried workstations.



- ◆ A ZENworks for Desktops 3.2 SP3 Inventory server can roll up its database information to ZENworks for Desktops 3.2 SP3 or ZENworks 7 Desktop Management Inventory server.
- ◆ A ZENworks 7 Desktop Management Inventory server can process the .zip files of the ZENworks for Desktops 3.2 SP3 Inventory servers.
- ◆ Do not delete the ZENworks for Desktops 3.2 SP3 .str and .zip files in SCANDIR and its subdirectories of a ZENworks for Desktops 3.2 SP3 Inventory server that has been migrated to ZENworks 7 Desktop Management.
- ◆ Do not have a ZENworks for Desktops 3.2 SP3 Inventory server and a ZENworks 7 Desktop Management Inventory server store the inventory data directly to the same Inventory database.
- ◆ Do not specify an Inventory server residing in another eDirectory tree as the next-level server in the Roll-Up policy of a ZENworks for Desktops 3.2 SP3 Inventory server.
- ◆ Do not associate a ZENworks for Desktops 3.2 SP3 Roll-up policy to a ZENworks 7 Desktop Management Inventory server.
- ◆ The ZENworks for Desktops 3.2 SP3 Inventory server and a ZENworks 7 Desktop Management Inventory server can use a ZENworks for Desktops 3.2 SP3 Roll-Up policy that has been migrated to ZENworks 7 Desktop Management.
- ◆ Upgrading a ZENworks for Desktops 3.2 SP3 Inventory server to ZENworks 7 Desktop Management does not change the role of the Inventory server.
- ◆ If the ZENworks for Desktops 3.2 SP3 Inventory server rolls up the scan data to another ZENworks for Desktops 3.2 SP3 Inventory server or to a ZENworks 7 Desktop Management Inventory server, it must have the required authentication patch installed. For more information on the authentication patch, see [Step 2](#) in “Upgrading the ZENworks for Desktops 3.2 SP3 Inventory Server” on page 383.

## Inventory Agent

- ◆ A ZENworks for Desktops 3.2 SP3 Inventory Agent cannot send its inventory data to a new ZENworks 7 Desktop Management Inventory server. It can send its inventory data only to a ZENworks for Desktops 3.2 SP3 Inventory server or to a ZENworks 7 Desktop Management Inventory server that has been upgraded from ZENworks for Desktops 3.2 SP3.
- ◆ A ZENworks for Desktops 3.2 SP3 or ZENworks 7 Desktop Management Inventory Agent can use a ZENworks for Desktops 3.2 SP3 Inventory policy that has been migrated to ZENworks 7 Desktop Management, or it can use a newly created ZENworks 7 Desktop Management Inventory policy.
- ◆ A ZENworks 7 Desktop Management Inventory Agent cannot send its inventory data to a ZENworks for Desktops 3.2 SP3 Inventory server.
- ◆ If you want to install or upgrade the ZENworks for Desktops 3.x agents through Workstation Imaging, ensure that the image is taken on a ZENworks 7 Desktop Management workstation that is unregistered.

## Management Console

- ◆ Do not use both ZENworks for Desktops 3.2 SP3 and ZENworks 7 management consoles to configure the same ZENworks for Desktops 3.2 SP3 Inventory objects.
- ◆ You cannot use a ZENworks for Desktops 3.2 SP3 management console to administer ZENworks 7 Desktop Management inventory data and inventory objects.
- ◆ You can use ZENworks 7 Desktop Management ConsoleOne snap-ins to administer both ZENworks for Desktops 3.2 SP3 and ZENworks 7 Desktop Management inventory data and

inventory objects (such as Inventory Service object, database objects, Workstation Inventory policy, Roll-Up policy, Dictionary Updated policy, and Database Location policy).

## Tasks To Be Performed Before Upgrading and Database Migration

After reviewing the facts mentioned in “[Pre-Upgrade Considerations](#)” on page 377, you must perform the following tasks before you upgrade from ZENworks for Desktops 3.2 SP3 to ZENworks 7 Desktop Management:

- 1 Stop the Inventory service.
  - ♦ On a NetWare Inventory server: At the server console prompt, enter `stopser *`.  
If you do not want the Sybase database to be stopped automatically when you stop the Inventory services, comment the `Unload dbsrv8.nlm` line in the `sys:\system\invstop.ncf` file.
  - ♦ On a Windows 2000 Inventory server: In the Control Panel, double-click *Administrative Tools* > *Services*, select *ZENworks Inventory Service*, then click *Stop*.
- 2 Stop the Sybase Inventory database:
  - ♦ On NetWare: At the Sybase console prompt, press the Q key.
  - ♦ On Windows 2000: In the Control Panel, double-click *Administrative Tools* > *Services*, then select *Adaptive Server Anywhere - Zenworks for Desktops 3*, then click *Stop*.
- 3 If Java has not been unloaded on the target NetWare servers, unload `java.nlm` (at the server console, enter `java -exit`).

---

**IMPORTANT:** This command stops all Java processes running on the server. Verify that all Java processes can be stopped while you are installing Desktop Management.

---

- 4 On the target Windows servers, close the Services window.
- 5 Make sure that you have made and archived a reliable backup of the ZENworks for Desktops 3.2 SP3 database.
- 6 Make sure that the ZENworks for Desktops 3.2 SP3 database is not accessed from ConsoleOne.
- 7 Make sure that the recommended ZENworks 7 Workstation Inventory requirements are met. For more information, see [Part II, “Preparation,”](#) on page 37.
- 8 If you have a ZENworks for Desktops 3.2 SP3 database running Oracle, you must perform the following tasks before the migration:
  - 8a In `inventory_database_installation_path\init.ora_path\init.ora`, set the value of `db_block_buffers` to obtain a net value of approximately 128 MB for the database buffer cache.  
  
If the `db_block_size` is 4096 then the minimum value must be 32768. This allocates 128 MB of database cache for the Inventory database. If the existing value of `db_block_buffers` is greater than 128 MB, do not change the value.  
  
We recommend that you set the Oracle's Shared Global (SGA) memory to 30-40 % or above during the database migration.
  - 8b Ensure that the Inventory database is up and running.
  - 8c You must have a bigger rollback segment because the database migration and the storage of further data cannot succeed because of ORA-01555 and other rollback segment issues.



To increase the value of the rollback segment, execute the following sql script to add an additional data file to the rollback segment (rbs) and to add a Redo log group.

```
connect internal;
alter tablespace rbs add datafile
'Inventory_database_installation_path\rbs2.ora' size 40M
autoextend on next 50K maxsize 60M;
alter rollback segment rb0 storage (maxextents unlimited);
alter rollback segment rb1 storage (maxextents unlimited);
ALTER DATABASE ADD LOGFILE GROUP 3
('Inventory_database_installation_path\log3.ora') SIZE 50M;
```

## Upgrading the ZENworks for Desktops 3.2 SP3 Inventory Database

During the ZENworks 7 Desktop Management Server installation, if you choose to install Sybase and you do not choose to overwrite the database files, the server installation program automatically upgrades only the existing ZENworks for Desktops 3.2 SP3 database engine. During the Sybase database upgrade, a message indicating that the existing database can be migrated is displayed. If you choose *Yes*, then the existing database is overwritten by the new ZENworks 7 Desktop Management database files. If you choose *No*, the database is migrated when the Inventory service starts for the first time.

---

**IMPORTANT:** You can upgrade multiple Inventory servers and database servers at the same time by running the ZENworks 7 Desktop Management Server installation program.

However, you must manually migrate the existing ZENworks for Desktops 3.2 Workstation Inventory policy, Database Location policy, and Roll-up policy. If you have manually created the database object, you must also migrate the database object. For more information on how to manually migrate the policies, see [“Manually Migrating the Database Objects” on page 382](#).

---

You must perform the following tasks to upgrade the Inventory database:

- ♦ [“Changing the Database Cache Size” on page 381](#)
- ♦ [“Manually Migrating the Database Objects” on page 382](#)

### Changing the Database Cache Size

If you have a ZENworks for Desktops 3.2 SP3 database running Sybase, ensure that the value of Sybase cache (“-c” parameter) is set to 25% or above of the server's memory.

To change the database cache size on a NetWare database server:

- 1 Close all connections to the Inventory database.
- 2 Quit the Sybase server.
- 3 Open the `mgmt dbs.ncf` file in the `sys:\system` directory.
- 4 Modify the `-c` parameter. For example, `-c 128M` sets the cache size to 128 MB.
- 5 Save the file.
- 6 On the server console, load the inventory database. Enter `MGMTDBS`.

To change the database cache size on a Windows database server:

- 1 Stop the Sybase service.

On Windows NT, in the Control Panel, double-click *Services*, select *Novell Database - Sybase*, then click *Stop*.

On Windows 2000, in the Control Panel, double-click *Administrative Tools* > double-click *Services*, select *Novell Database - Sybase*, then click *Stop*.

- 2** On the database server, run the `ntdbconfig.exe` file from the `\dbengine` directory.  
`Ntdbconfig.exe` is a ZENworks database configuration utility for the ZENworks database using Sybase on Windows NT/2000 servers. This utility enables you to reconfigure the Sybase service.
- 3** Modify the `-c` parameter.
- 4** Click *OK*.
- 5** Restart the Sybase service. On Windows NT, in the Control Panel, double-click *Services*, select *Novell Database - Sybase*, then click *Start*. On Windows 2000, in the Control Panel, double-click *Administrative Tools* > double-click *Services*, select *Novell Database - Sybase*, then click *Start*.

### Manually Migrating the Database Objects

If you have a ZENworks for Desktops 3.2 SP3 Oracle database object, or if you have manually created Sybase database objects, you must manually migrate the database object using the Inventory Migration tool. For more information, see [“Manually Migrating the Database Objects” on page 382](#).

- 1** In ConsoleOne with ZENworks 7 Desktop Management Workstation Inventory snap-ins installed, click *Tools*, click *ZENworks Inventory*, then click *Inventory Migration*.
- 2** Click *Browse* to browse for and select the database object to be migrated or the container that has the database object.
- 3** If you selected a container in [Step 2](#), do the following:
  - 3a** If you want to search for the database object in all the subcontainers within the selected container, select the *Search SubContainers* check box.  
The *Search SubContainers* check box is available only if you select a container in Search Context.
  - 3b** Select the *Search for Database Objects* check box to search for the database objects within the selected container to be migrated.  
This option is available only if you select a container in Search Context. By default, this option is selected.
  - 3c** Click *Find*.  
All the ZENworks for Desktops 3.2 database objects that are found within the specified context are displayed in the Report panel.
- 4** Click *Migrate*.
- 5** Click *Close*.
- 6** In ConsoleOne, right-click the database object, click *Properties*, then click the *ZENworks Database* tab.
- 7** Ensure that the following database object options have the specified values mentioned depending on the Inventory database:

| Database Object Options         | Value for the Sybase Inventory Database Object | Value for the Oracle8i Inventory Database Object |
|---------------------------------|------------------------------------------------|--------------------------------------------------|
| Database (Read-Write) User Name | <i>MW_DBA</i>                                  | <i>MW_DBA</i>                                    |
| Database (Read-Write) Password  | <i>novell</i>                                  | <i>novell</i>                                    |
| Database (Read Only) User Name  | <i>MW_READER</i>                               | <i>MWO_READER</i>                                |
| Database (Read Only) Password   | <i>novell</i>                                  | <i>novell</i>                                    |
| Database (Write Only) User Name | <i>MW_UPDATER</i>                              | <i>MWO_UPDATER</i>                               |
| Database (Write Only) Password  | <i>novell</i>                                  | <i>novell</i>                                    |

8 Click *Apply*, then click *Close*.

## Upgrading the ZENworks for Desktops 3.2 SP3 Inventory Server

Before you upgrade a ZENworks for Desktops 3.2 SP3 Inventory server, make sure that you have upgraded the associated database server.

You can upgrade the ZENworks for Desktops 3.2 SP3 Inventory server by installing ZENworks 7 Desktop Management Inventory server if the server where you want to install the ZENworks 7 Desktop Management Inventory server meets the installation requirements. For more information on how to install the ZENworks 7 Desktop Management Inventory server, see [Section 9.1, “Desktop Management Server Installation Procedure,” on page 77](#). The ZENworks 7 Desktop Management Inventory server supports the same set of roles as ZENworks for Desktops 3.2 SP 3. Therefore, when you upgrade from ZENworks for Desktops 3.2 SP3 to ZENworks 7 Desktop Management, the role of the Inventory server is retained.

**IMPORTANT:** If you have a ZENworks for Desktops 3.2 SP3 Inventory server attached to a ZENworks for Desktops 3.2 SP3 database and if you upgrade either the Inventory server or the database to ZENworks 7 Desktop Management, you must upgrade the associated component to ZENworks 7 Desktop Management (the ZENworks for Desktops 3.2 SP3 Inventory services should not interact with ZENworks 7 Desktop Management-compliant database and vice versa).

If you have multiple ZENworks for Desktops 3.2 SP3 Inventory servers connected to a ZENworks for Desktops 3.2 SP3 database server and if you upgrade the database server to ZENworks 7 Desktop Management, you must also upgrade all the associated ZENworks for Desktops 3.2 SP3 Inventory servers.

The ZENworks 7 Desktop Management installation program automatically migrates only the ZENworks for Desktops 3.2 SP3 Inventory Service object to ZENworks 7 Desktop Management. Before starting the Inventory service, you must manually migrate the existing ZENworks for Desktops 3.2 SP 3 policies to ZENworks 7 Desktop Management policies using the ZENworks for Desktops Inventory Migration tool. For more information, see [“Manually Migrating ZENworks for Desktops 3.2 SP3 Inventory Policies” on page 384](#).

After migrating the policies, do the following:

- 1 If a ZENworks for Desktops 3.2 SP3 Inventory server is rolling up its information to a ZENworks 7 Desktop Management Inventory server, you must apply the following

authentication patches that are bundled with the *ZENworks 7 Desktop Management Companion 2 CD* (or in the *Novell ZENworks 7 with Support Pack 1 Companion 2 CD*):

| Server          | Source file                                                                         | Target destination on Inventory server                                   |
|-----------------|-------------------------------------------------------------------------------------|--------------------------------------------------------------------------|
| NetWare         | all files in the<br>\invzfd3xpatch\zfd32\common\public\zenworks\wminv\lib directory | <i>Inventory_server_installation_path</i> \zenworks\inv\server\wminv\lib |
|                 | \invzfd3xpatch\zfd32\nw\java\bin\zenws.nlm                                          | sys:\java\bin                                                            |
|                 | all files in the<br>\invzfd3xpatch\zfd32\nw\java\lib directory                      | sys:\java\lib                                                            |
| Windows NT/2000 | all files in the<br>\invzfd3xpatch\zfd32\common\public\zenworks\wminv\lib directory | <i>Inventory_server_installation_path</i> \zenworks\inv\server\wminv\lib |
|                 | \invzfd3xpatch\zfd32\nt\zenworks\jre\1.2\bin\ zenws.dll                             | sys_share\zenworks\jre\1.2\bin                                           |
|                 | all files in the<br>\invzfd3xpatch\zfd32\nt\zenworks\jre\1.2\lib directory          | sys_share\zenworks\jre\1.2\lib                                           |

- 2 In the Workstation Inventory policy, select the *Enable Scan of Machine* option to reactivate the inventory scanning for all the inventoried workstations that send the inventory data directly to this Inventory server.
- 3 If the inventory data is rolled up, start the Sender service running on all lower-level Inventory servers that roll up the inventory data to this Inventory server.

## Manually Migrating ZENworks for Desktops 3.2 SP3 Inventory Policies

- 1 In ConsoleOne with ZENworks 7 Desktop Management Workstation Inventory snap-ins installed, click *Tools > ZENworks Inventory > Inventory Migration*.
- 2 Click *Browse* to browse for and select the Inventory Service object or the container that has the Inventory Service object.
- 3 If you selected a container in **Step 2**, do the following:
  - 3a If you want to search for the Inventory Service object in all the subcontainers within the selected container, select the *Search SubContainers* check box.  
The *Search SubContainers* check box is available only if you select a container in Search Context.
  - 3b Select the *Search for Policies* check box to search for the Inventory policies associated with the Inventory Service object within the selected container.  
This option is available only if you select a container in Search Context. By default, this option is selected.
  - 3c Click *Find*.  
All the ZENworks for Desktops 3.2 SP3 Inventory policies that are associated with the Inventory Service object and are found within the specified context are displayed in the Report panel.

4 Click *Migrate*.

5 Click *Close*.

After migrating the policies, perform the following tasks:

1 Start the ZENworks 7 Desktop Management Inventory services.

When you start the Inventory service, the Upgrade Service automatically migrates the ZENworks for Desktops 3.2 database schema and the inventory data to a ZENworks 7 Desktop Management database. The data migration process might take a significant amount of time. On the Inventory server screen, messages indicating that the database has been successfully migrated and initialized are displayed.

After the database is migrated, the Inventory ConsoleOne utilities (Query, Summary, Inventory Report, and Database Export) and the Storer can access the database

2 Create and configure the Dictionary Update policy to get the latest version of the dictionary for ZENworks 7 Inventory Agent. For more information on how to create the Dictionary Update policy, see “[Workstation Inventory](#)” in the *Novell ZENworks 7 Desktop Management Administration Guide*.

## Tasks to Perform after Database Migration

You must perform the following tasks after upgrading the Inventory server and migrating the Inventory database:

1 Stop the Inventory service.

2 If your Inventory database is running Oracle, do the following to improve the database performance:

2a In the `inventory_database_installation_path\_start.sql` file, delete the existing entries and add the following entries:

```
SET ECHO ON
CONNECT INTERNAL
SET ECHO OFF
STARTUP PFILE=
inventory_database_installation_path\path_to_init.ora\init.ora
SET NUMWIDTH 20
SET CHARWIDTH 40
SET ECHO ON
connect mw_dba;
SET ECHO OFF
alter table cim.t$product cache;
SET ECHO ON
connect internal
SET ECHO OFF
@<path to oracle home directory>/rdbms/admin/dbmspool
call sys.dbms_shared_pool.keep('zenworks.zenpin','P');
EXIT
```

2b Extract `atlasperf_alterfreelist.sql` from `ZENworks_installation_directory\zenworks\inv\server\wminv\properties\sql.zip` and execute at the SQLPLUS prompt.

- 2c** Execute the `oracle\common\oracle_perf.sql` and `oracle\common\oracle_perf2.sql` files from the `Inventory_server_installation_path\zenworks\inv\server\wminv\properties\sql.zip` to add performance enhancing indexes to the database.
- 2d** Execute `oracle_dbexport_perf.sql` from the *Novell ZENworks 7 Companion 2 CD* (or in the *Novell ZENworks 7 Companion 2 CD*) `\database\oracle8i\common` directory.
- 3** (Optional) If the Inventory database is running MS SQL, execute the following scripts from `Inventory_server_installation_path\zenworks\inv\server\wminv\properties\sql.zip` with appropriate user logins as explained below from the MS SQL Query Analyzer:
  - 3a** Log in as CIM, and execute `mssql_perf_cim.sql`.
  - 3b** Log in as mw\_dba and execute `mssql_perf_mw_dba.sql`.
  - 3c** Log in as zenworks and execute `mssql_perf_zenworks.sql`.  
This enhances the performance of the Inventory database.  
For more information on how to improve the performance of the Inventory database, see “**Performance Tips**” in “**Workstation Inventory**” in the *Novell ZENworks 7 Desktop Management Administration Guide*.
- 4** Start the Inventory services.

## 29.6 Installing the ZENworks 7 Middle Tier Server

Although not mandatory, the ZENworks Middle Tier Server allows access to Novell eDirectory and the Windows or NetWare file system for the users and workstations inside or outside the corporate firewall.

For a discussion of the role and benefits of the ZENworks Middle Tier Server, see “**What Is the ZENworks Middle Tier Server?**” in the *Novell ZENworks 7 Desktop Management Administration Guide*.

For instructions on installing the ZENworks Middle Tier Server, see **Chapter 10, “Installing the ZENworks Middle Tier Server,”** on page 107 or **Chapter 11, “Installing the Desktop Management Server and the Middle Tier Server on the Same Machine,”** on page 131.

For instructions on installing the ZENworks 7 Middle Tier Server with SP1, see **Section 10.2, “SP1 Middle Tier Server Installation Procedure,”** on page 117.

## 29.7 Upgrading Managed Workstations

Before you upgrade workstations to ZENworks 7, you must either upgrade the Novell Client or install the ZENworks 7 Desktop Management Agent. One of these will be used to authenticate to eDirectory. For more information about upgrading the Novell Client, see the *Novell Client for Windows Installation and Administration Guide* (<http://www.novell.com/documentation/noclienu/noclienu/data/h4rudg93.html#h4rudg93>).

## 29.7.1 Installing the Desktop Management Agent

When you have upgraded the Novell Client and the ZENworks Server (called the “Desktop Management Server in ZENworks 7), you need to install the Desktop Management Agent on the user workstations. This installation updates the Novell Application Launcher, Workstation Manager, and Remote Management software on the user workstation. It also installs the Workstation Inventory agent and the Image Safe Data service.

You can uninstall the Novell Client from user workstations after you deploy the Desktop Management Agent as the exclusive means for users to authenticate to eDirectory. In this sense, ZENworks 7 Desktop Management can be “clientless;” that is, ZENworks 7 Desktop Management does not require the Novell Client if users log in with the Desktop Management Agent. For more information, see “[Using the Novell Client in a ZENworks 7 Environment](#)” in the *Novell ZENworks 7 Desktop Management Administration Guide*.

The workstation functionality afforded by ZENworks 7 Desktop Management components is available only if you install the Desktop Management Agent. This is true even if you currently have the Novell Client installed on that workstation. The Desktop Management Agent installation removes the Desktop Management features that were previously installed by the Novell Client and replaces them with selected ZENworks 7 Desktop Management workstation features.

The following tasks must be performed if you want to install the Desktop Management Agent on workstations that are currently using ZENworks for Desktops 3.2 SP3:

1. “[Deploying the Windows Installer \(MSI\) Engine](#)” on page 387
2. “[Using the Novell Application Launcher to Distribute and Install the Desktop Management Agent](#)” on page 389
3. “[Pre-installation Considerations](#)” on page 393
4. “[Manually Installing the Desktop Management Agent](#)” on page 393

Some issues might occur if you do not upgrade to the ZENworks 7 Desktop Management Agent in an upgrade from ZENworks for Desktops 3.2. They are detailed in the following section:

- ♦ “[Agent Issues Occurring in the SP1 Upgrade](#)” on page 394

### Deploying the Windows Installer (MSI) Engine

The Desktop Management Agent installation program, `zfdagent.msi`, requires a minimum of Microsoft Windows Installer (MSI) 1.1 during the installation process. You can upgrade Windows 98 workstations by manually installing version MSI 1.11 (or later) on every workstation prior to the installation.

The following table lists the versions of the MSI that should already be installed on Windows workstations.

**Table 29-1** MSI Versions Pre-installed on Windows Workstations

| Windows Version            | Version of MSI Engine Included                               |
|----------------------------|--------------------------------------------------------------|
| Windows 98 SE Workstations | MSI is not included unless another application installed it. |
| Windows 2000 Workstations  | MSI 1.1 is included with the OS.                             |



| Windows Version         | Version of MSI Engine Included   |
|-------------------------|----------------------------------|
| Windows XP Workstations | MSI 2.0 is included with the OS. |

**NOTE:** You should consider whether to upgrade all of the user workstations to use the same version of the MSI engine.

For your convenience, MSI 2.0 for Windows 2000/XP or Windows 98 is available in the `\windows installer` folder of the *Novell ZENworks 7 Companion 2 CD* or in the `\microsoft windows installer` folder of the *Novell ZENworks 7 with Support Pack 1 Companion 2 CD*.

For detailed information about Microsoft Windows Installer, see the [MSI Web site \(http://www.microsoft.com/windows2000/techinfo/administration/management/wininstaller.asp\)](http://www.microsoft.com/windows2000/techinfo/administration/management/wininstaller.asp).

If the MSI engine needs to be installed, you can use the Novell Application Launcher in ZENworks for Desktops 3.2 to install it with a Simple Application distribution.

- 1 Copy the appropriate MSI engine installer utility to your ZENworks Server.
  - 1a (Conditional) From the *Novell ZENworks 7 Companion 2 CD*, copy the appropriate MSI engine installer utility to your ZENworks Server.
    - ♦ `\windows installer\98\instmsia.exe` installs the MSI 2.0 engine on Windows 98 machines.
    - ♦ `\windows installer\nt\instmsiw.exe` installs the MSI 2.0 engine on Windows 2000/XP machines.
  - 1b (Conditional) From the *Novell ZENworks 7 with Support Pack 1 Companion 2 CD*, copy the appropriate MSI engine installer utility to your ZENworks Server.
    - ♦ `\microsoft windows installer\98\instmsia.exe` installs the MSI 2.0 engine on Windows 98 machines.
- 2 Using the newly installed ZENworks 7 Desktop Management (or SP1) snap-ins in ConsoleOne, create a Simple Application object for the version of the MSI engine you want to install.
 

If you want to install both versions, you must create a Simple Application object for each version.

  - 2a After you name the simple application, enter the path to the location from which the application's executable file will run. Include the executable file in the path. Because the Application Launcher will copy the file to a target directory on the workstation, specify the path as it will exist after the file is copied to the target directory.
 

**Example:** `c:\temp\instmsiw.exe`
  - 2b Define the system requirements that a workstation must meet before the MSI engine application will be distributed to it.
 

For more information, see “[Configuring the Application in eDirectory](#)” in the *Novell ZENworks 7 Desktop Management Administration Guide*.
  - 2c Associate the application object to users or imported workstations, then select the characteristics you want to apply to the association.
 

We recommend that you select the *Force Run* characteristic for the association so that the Application object runs as soon as the Application Launcher or Workstation Helper starts and the Application object is available.



For more information, see “[Configuring the Application in eDirectory](#)” in the *Novell ZENworks 7 Desktop Management Administration Guide*.

### 3 Configure the Simple Application object.

#### 3a In the Application object Properties page, click the *Distribution Options* tab > *Application Files*.

You need to add the file to the Application Files list so that the Application Launcher copies it to the workstation. For more information, see the online help in ConsoleOne.

#### 3b Click *Add*, click *File*, then fill in the following fields:

**Source File:** Select the MSI engine installer utility you want copied to the workstation (for example, `q:\public\zenworks\instmsiw.exe`).

**Target File:** Enter the full path, including the file name, where you want the file copied (for example, `c:\temp\instmsiw.exe`).

#### 3c Click *OK* to add the file to the list, then click *OK* to save the Application Object information.

#### 3d If you are installing to Windows 2000 or Windows XP, in the Application object Properties page, click the *Run Options* tab > *Environment* > select the *Run Normal* option, set the *Executable Security Level* to *Run as Unsecure System User*, then click *OK* to save the Application object information.

If you selected *Force Run* on the *Associations* tab, the MSI Engine is installed as soon as the Application Launcher starts and the Application object is available.

The MSI engine installs an executable that is used later for installing the Desktop Management Agent MSI. The MSI engine installer utility installs this file, called `msiexec.exe`, in the `windows_drive:windows_directory\system` directory of the workstation.

## Using the Novell Application Launcher to Distribute and Install the Desktop Management Agent

The `zfdagent.msi` package is a complex application that installs many files and makes many configuration changes to the workstation. The most efficient method for installing the Desktop Management Agent is to distribute it to workstations as an MSI application using the Novell Application Launcher. The Novell Application Launcher not only distributes the Agent MSI package, it also calls the Windows Installer to perform the installation on the workstation.

This section provides the steps for configuring the MSI package for distribution with the Application Launcher, including:

- ♦ “[Creating and Configuring the MSI Application Object](#)” on page 145
- ♦ “[Modifying Installed Features in the MSI Application Object](#)” on page 145
- ♦ “[Adding Properties to the MSI Application Object](#)” on page 146

### Creating and Configuring the MSI Application Object

- 1 In ConsoleOne, right-click the container where you want to create the Application object, click *New* > click *Object* to display the New Object dialog box.
- 2 In the New Object dialog box, click *App:Application* to display the New Application dialog box.

- 3 In the New Application dialog box, select the *Application That Has an .MSI File* option, then click *Next*.
- 4 Specify the path to the network location where you copied the .msi file.
- 5 Click *Next*, then modify the fields as necessary to customize the Application object.
- 6 Click *Next*, then define the distribution rules that a workstation must meet before the Agent MSI will be distributed to it.
- 7 Click *Next*, then associate the Agent MSI Application object with the users or workstations to where you want to distribute it.
- 8 Click *Next*, review the Application object settings, then click *Finish* to create the Application object.

---

**IMPORTANT:** Before you distribute the Agent MSI (or any MSI package) using the Novell Application Launcher, you should make sure the Agent MSI application object is set to *Force Cache* and that the user credentials on the local workstation, in eDirectory, and in Active Directory (if used) are synchronized.

---

For more information about creating an MSI Application object, see “[Creating the Application Object from a Windows Installer \(.MSI\) File](#)” in the *Novell ZENworks 7 Desktop Management Administration Guide*.

### Modifying Installed Features in the MSI Application Object

By default, all of the following features are installed by the ZENworks 7 Desktop Management Agent MSI package:

- ♦ **Application Management:** Uses the Novell Application Launcher to provide users access to workstation applications that the administrator can install and then manage.
- ♦ **Workstation Manager:** Lets administrators configure and manage workstations by using eDirectory.
- ♦ **Workstation Inventory:** Helps administrators collect hardware and software inventory information from scanned workstations. Workstation Manager is selected by default when you select this feature.
- ♦ **Remote Management:** Lets an administrator manage remote workstations from a management console.
- ♦ **Mirror Driver:** Provides video adapter independence and co-existence with other Remote Control Solutions. If this feature is selected, the MSI installation overrides video driver checks and suppresses any Windows messages. If you do not want this driver, you can deselect it (optimization will be disabled).  
The Mirror Driver is not yet signed by Microsoft.
- ♦ **Workstation Imaging:** Lets an administrator take an image of a workstation's hard drive and put it on other workstations over the network.

If you want to modify this default install, you can add MSI features as public properties of the `zfdagent.msi` Application object. Use the following steps to modify the list of installed features:

- 1 On the Properties page of the *MSI* tab of the Application Object, click *Add* to display the Select Property to Add dialog box.

**2** In the *Value Name* field, enter ADDLOCAL (this is case sensitive) as the property name, then specify the property's value in the *Value Data* field. Use one or more of the following feature names as a property value:

- ♦ ApplicationLauncher
- ♦ WorkstationManager
- ♦ RemoteManagement
- ♦ MirrorDriver (this property does not work unless you add the RemoteManagement property)
- ♦ Imaging
- ♦ Inventory

You can add more than one of these values to the list by separating them with a comma (no spaces). For example, if you wanted to add Application Launcher and Workstation Manager as features, you would type ADDLOCAL as the property and ApplicationLauncher,WorkstationManager as the values for that property.

**3** Click *OK* to add the property to the *Properties* list.

### Adding Properties to the Agent MSI Application Object

Other properties you can modify and their values (including definitions for the values) are listed in the table below. If one of these properties is listed without a value, the MSI package uses the default value.

**Table 29-2** *Properties and Values Available for the Desktop Management Agent MSI Application Object*

| Property                                                                                                     | Value                | Meaning                                                            |
|--------------------------------------------------------------------------------------------------------------|----------------------|--------------------------------------------------------------------|
| ADDLOCAL                                                                                                     | ♦ WorkstationManager | Comma-delimited list of features to install.                       |
|                                                                                                              | ♦ RemoteManagement   |                                                                    |
|                                                                                                              | ♦ MirrorDriver       |                                                                    |
|                                                                                                              | ♦ Inventory          |                                                                    |
|                                                                                                              | ♦ Imaging            |                                                                    |
| LOGIN_PASSIVE_MODE                                                                                           | 0                    | Displays a Novell login at user login time.                        |
|                                                                                                              | 1                    | Default. Displays the standard Microsoft login at user login time. |
| <b>NOTE:</b> If you want to use Dynamic Local User, you need to assign a value of zero (0) to this property. |                      |                                                                    |

| Property            | Value                                                                                                                                                                                                                                                                                                                                                      | Meaning                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
|---------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| EDITABLE_MT_ADDRESS | 1                                                                                                                                                                                                                                                                                                                                                          | Allows the user to change the ZENworks Middle Tier IP address where authentication will take place. This is available only if the Novell Client is not installed.                                                                                                                                                                                                                                                                                       |
|                     | 0                                                                                                                                                                                                                                                                                                                                                          | Default. Do not allow the user to specify the Middle Tier address.                                                                                                                                                                                                                                                                                                                                                                                      |
|                     | <p>The values for this property are effective only if the Novell Client is not installed on the workstation. If the Novell Client is already installed, the settings have no effect after the <code>zfdagent.msi</code> installation.</p> <p>If the Novell Client is removed after <code>zfdagent.msi</code> is installed, these settings take effect.</p> |                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| STARTUP_APEXPLOER   | 1                                                                                                                                                                                                                                                                                                                                                          | Launch Application Explorer on Windows startup.                                                                                                                                                                                                                                                                                                                                                                                                         |
|                     | 0                                                                                                                                                                                                                                                                                                                                                          | Default. Do not launch Application Explorer on Windows startup.                                                                                                                                                                                                                                                                                                                                                                                         |
| STARTUP_APPWINDOW   | 1                                                                                                                                                                                                                                                                                                                                                          | Launch Application Window on Windows startup.                                                                                                                                                                                                                                                                                                                                                                                                           |
|                     | 0                                                                                                                                                                                                                                                                                                                                                          | Default. Do not launch the Application Window on Windows startup.                                                                                                                                                                                                                                                                                                                                                                                       |
| MT_SERVER_ADDRESS   | This property specifies the ZENworks Middle Tier Server IP address or DNS name. It is not necessary to specify this property if you are not using a Middle Tier Server.                                                                                                                                                                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| HTTP_PORT           | 0-65536                                                                                                                                                                                                                                                                                                                                                    | This property specifies the HTTP port to be used by the Desktop Management Agent when communicating with the Middle Tier Server. This property must be added and its value defined if you are using a Middle Tier Server.                                                                                                                                                                                                                               |
|                     | 80                                                                                                                                                                                                                                                                                                                                                         | Default HTTP port.                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| NAL_SINGLE_TREE     | 1                                                                                                                                                                                                                                                                                                                                                          | Limit access of the Novell Application Launcher to applications in one tree only.                                                                                                                                                                                                                                                                                                                                                                       |
|                     | 0                                                                                                                                                                                                                                                                                                                                                          | Default. Do not limit the Application Launcher to one tree for access to applications.                                                                                                                                                                                                                                                                                                                                                                  |
| ZENWORKS_TREE       | <i>any tree name</i>                                                                                                                                                                                                                                                                                                                                       | <p>This property specifies the eDirectory tree to be used as the ZENworks tree.</p> <ul style="list-style-type: none"> <li>♦ If Workstation Manager is installed, this tree becomes the tree where Workstation Manager looks for policies.</li> <li>♦ If the NAL_SINGLE_TREE property is configured and the Novell Application Launcher is installed, this tree becomes the only tree where the Application Launcher looks for applications.</li> </ul> |

## Pre-installation Considerations

If Symantec PCAnywhere\* 10.x (or an earlier version) is installed on the managed device, and if you are upgrading the Remote Management Agent, you need to know the following information:

- ♦ “Installing the Desktop Management Agent and Selecting the Mirror Driver Option (Recommended)” on page 393
- ♦ “Installing the Desktop Management Agent without Selecting the Mirror Driver Option” on page 393

### Installing the Desktop Management Agent and Selecting the Mirror Driver Option (Recommended)

Selecting the *Mirror Driver* option during the Desktop Management Agent installation might cause the managed device to shift into low resolution or VGA mode. This occurs because PCAnywhere does not support coexistence with Remote Control solutions that are based on hook driver technology. The Remote Management hook driver that shipped with ZENworks 6.5 (and later) has been deprecated and is not installed on the managed device during upgrade.

---

**NOTE:** You need to execute these steps only once. Because subsequent upgrades do not require these steps, we recommend that you select the *Mirror Driver* option during installation.

---

To resolve this issue:

- 1 Reinstall the system video driver on the managed device.
- 2 Reinstall PCAnywhere on the managed device.
- 3 Install the ZENworks Management Agent with the *Mirror Driver* option selected.

### Installing the Desktop Management Agent without Selecting the Mirror Driver Option

If you choose not to select the *Mirror Driver* option, you do not encounter the low resolution or VGA screen problem. However, the remote sessions are not optimized for performance without Mirror Driver selected. For this reason, you need to launch `rmsetdrv.exe` to enable the hook driver, which was deprecated beginning with ZENworks 6.5.

- 1 Install the ZENworks Management Agent without selecting the *Mirror Driver* option.
- 2 Run `rmsetdrv.exe /hook`.

---

**NOTE:** Because you must launch `rmsetdrv.exe` every time you upgrade the agent without selecting the *Mirror Driver* option, and because the hook driver was deprecated beginning with ZENworks 6.5, we recommend that you select the *Mirror Driver* option during the agent upgrade.

---

For more information on `rmsetdrv.exe`, see TID 10089810 in the [Novell Support Knowledgebase](http://support.novell.com/search/kb_index.jsp) ([http://support.novell.com/search/kb\\_index.jsp](http://support.novell.com/search/kb_index.jsp)).

### Manually Installing the Desktop Management Agent

If you want to install to a single workstation at a time, you can install `zfdagent.msi` manually. For more information, see [Section 12.2, “Manually Installing the Desktop Management Agent,”](#) on page 138.

When completed with both manual command line parameters and MSI installation properties, the parameter field might look like this:

```
/i zfdagent.msi /qb STARTUP_APEXPLORER=1
```

Because the *Parameters* field of the Application object has a line length limitation, you might not be able to add a large number of MSI Installation properties. To work around this limitation, you can do one of two things:

- ♦ Use the InstallShield AdminStudio ZENworks Edition to create an .mst file.

For more information about using InstallShield AdminStudio, see the [AdminStudio 8 ZENworks Edition Installation Guide](http://www.novell.com/documentation/zenworks7/pdfdoc/spinstall/AS8ZENWorksInstallGuide.pdf) (<http://www.novell.com/documentation/zenworks7/pdfdoc/spinstall/AS8ZENWorksInstallGuide.pdf>).

- ♦ Use the Microsoft MSI editor, `orca.exe`, to edit the property table of the `zfdagent.msi` file and add all of the Desktop Management Agent MSI installation properties you want. You can then install the edited MSI with all of the newly-added properties included.

For information about how to install and use `orca.exe`, see the [Microsoft Knowledgebase Article 255905](http://support.microsoft.com/default.aspx?scid=KB;en-us;255905&) (<http://support.microsoft.com/default.aspx?scid=KB;en-us;255905&>) at the [Microsoft Support Web site](http://support.microsoft.com) (<http://support.microsoft.com>).

## Agent Issues Occurring in the SP1 Upgrade

The following issues might occur if you do not install the ZENworks 7 Desktop Management Agent on workstations when upgrading from ZENworks for Desktops 3.2:

- ♦ “Workstation Associated Applications Fail to Display after Upgrade” on page 394
- ♦ “Application Launcher Fails to Run on Windows 98 Workstation after Upgrade” on page 394

### Workstation Associated Applications Fail to Display after Upgrade

If you upgrade a ZENworks Desktop Management Server from ZENworks for Desktops (ZfD) 3.2 SP3 to ZENworks 7 and then you subsequently reimage the workstations in the environment with a ZfD 3.2 image, or if you remove the Novell Client from the existing ZfD 3.2 workstations and then reinstall it, workstation associated applications might not display on these workstations.

If you need to reimage a ZfD 3.2 workstation or remove the ZfD 3.2 client from a workstation prior to it being upgraded to ZENworks 7.x Desktop Management, you should subsequently install the ZENworks 7 Desktop Management Agent on that workstation. Doing so causes the workstation associated applications to reappear.

### Application Launcher Fails to Run on Windows 98 Workstation after Upgrade

If you upgrade a ZENworks Desktop Management Server from ZENworks for Desktops (ZfD) 3.2 SP3 to ZENworks 7.x and then you subsequently reimage a Windows 98 workstation in this environment with a ZfD 3.2 image, or if you remove the Novell Client from the Windows 98 workstations in this environment (where ZfD 3.2 is installed) and then reinstall the client, the Novell Application Launcher fails to run on the workstation.

The issue occurs because the application file storage location that used in ZfD 3.2 Application Management (on the server) differs from the file storage location used in ZENworks 7 Application Management (on the workstation).

If you need to reimage a ZfD 3.2 Windows 98 workstation or remove the ZfD 3.2 client from a Windows 98 workstation prior to it being upgraded to ZENworks 7.x Desktop Management, you

should subsequently install the ZENworks 7.x Desktop Management Agent on that workstation. The newer version of the Desktop Management Agent recognizes the current location of the application files that have been distributed to the workstation.

## **29.8 Upgrading Clustered Workstation Inventory from ZENworks for Desktops 3.2 SP3 to ZENworks 7 Desktop Management with SP1**

When you upgrade from ZENworks for Desktops 3.2 SP3 Workstation Inventory in a clustering environment to ZENworks 7 Desktop Management with Support Pack 1, you need to reconfigure inventory policies. Perform the following tasks to reconfigure the policies:

- ♦ Reconfigure the Inventory Rollup policies that use the cluster as the target server to point to the Inventory Service object of the cluster service (that is, change `virtual_server_name` as the target to `Inventory Service_virtual_server_name` as the target).
- ♦ In ZENworks for Desktops 3.2 SP3, the Inventory Rollup policies are associated to the NCP server object of any cluster node. But after upgrading to ZENworks 7 with SP1, you need to manually associate the Inventory Rollup policies to the NCP server object of the virtual server.
- ♦ Associate all Inventory Rollup policies associated to the NCP server object a cluster node must be associated to the NCP server object for the virtual server.
- ♦ Reconfigure all workstation inventory policies to point to the virtual server's ISO.
- ♦ If you manually created DB objects, reconfigure the server DN to point to the virtual server's NCP server object





# Upgrading from ZENworks for Desktops 4.x

# 30

The following sections provide information to help you upgrade from Novell® ZENworks® for Desktops 4 SP1b or ZENworks for Desktops 4.0.1 (both of which will be referred to as ZENworks for Desktops 4.x hereafter) to ZENworks 7 Desktop Management.

---

**NOTE:** The information in this section also applies to ZENworks 7 Desktop Management with Support Pack 1.

---

The first section of this part of the guide includes information for administrators who plan to upgrade from 4.x to 7 on a gradual basis:

- ♦ [Section 30.1, “ZENworks for Desktops 4.x Component Compatibility with ZENworks 7 Desktop Management,” on page 397](#)

To ensure a successful result, perform the upgrade tasks in the following order:

1. [Section 30.2, “Meeting the ZENworks 7 Installation Prerequisites,” on page 398](#)
- 2.
3. [Section 30.4, “Extending the eDirectory Schema,” on page 398](#)
4. [Section 30.5, “Upgrading ConsoleOne,” on page 400](#)
5. [Section 30.6, “Upgrading ZENworks for Desktop 4.x Servers,” on page 402](#)
6. [Section 30.7, “Upgrading the Middle Tier Server,” on page 420](#)
7. [Section 30.8, “Upgrading Workstations,” on page 424](#)

## 30.1 ZENworks for Desktops 4.x Component Compatibility with ZENworks 7 Desktop Management

The following table illustrates the major components ZENworks for Desktops 4.x and ZENworks 7 Desktop Management that work together while an upgrade from 4.x to 7 (or 7 SP1) occurs. Read across each row to determine version/component compatibility.

**Table 30-1** *Compatibility of ZENworks for Desktops 4.x and ZENworks 7 Desktop Management Components*

| Desktop Management Agent Version | ZENworks Middle Tier Version | Desktop Management Server Version |
|----------------------------------|------------------------------|-----------------------------------|
| 4.x                              | 4.x                          | 4.x                               |
| 4.x                              | 4.x                          | 7                                 |
| 4.x                              | 7                            | 7                                 |
| 7                                | 7                            | 7                                 |

## 30.2 Meeting the ZENworks 7 Installation Prerequisites

Ensure that the workstations and servers on your network meet the necessary prerequisites. For more information, see **Part II, “Preparation,”** on page 37.

You need to check the health of your eDirectory™ tree both before and after you extend the directory schema with ZENworks 7 attributes. The following resources provide the information required to perform the health check:

- ♦ Directory Health Check Procedures - Cross Platform: TID 10060600 available in the [Novell Knowledgebase](http://www.novell.com/support/) (<http://www.novell.com/support/>).
- ♦ Checking the OS and DS Health for Inconsistent ZENworks behavior: TID 3197766 available in the [Novell Knowledgebase](http://www.novell.com/support/) (<http://www.novell.com/support/>).
- ♦ eDirectory Cool Solutions (<http://www.novell.com/cool solutions/nds>)

## 30.3 Checking eDirectory

You need to check the health of your eDirectory™ tree both before and after you extend the directory schema with ZENworks 7 attributes. The following resources provide the information required to perform the health check:

- ♦ Directory Health Check Procedures - Cross Platform: TID 10060600 available in the [Novell Knowledgebase](http://www.novell.com/support/supportcentral/supportcentral.do?id=m1) (<http://www.novell.com/support/supportcentral/supportcentral.do?id=m1>).
- ♦ Checking the OS and DS Health for Inconsistent ZENworks behavior: TID 10062741 available in the [Novell Knowledgebase](http://www.novell.com/support/supportcentral/supportcentral.do?id=m1) (<http://www.novell.com/support/supportcentral/supportcentral.do?id=m1>).
- ♦ eDirectory Cool Solutions (<http://www.novell.com/cool solutions/edirectory/index.html>)

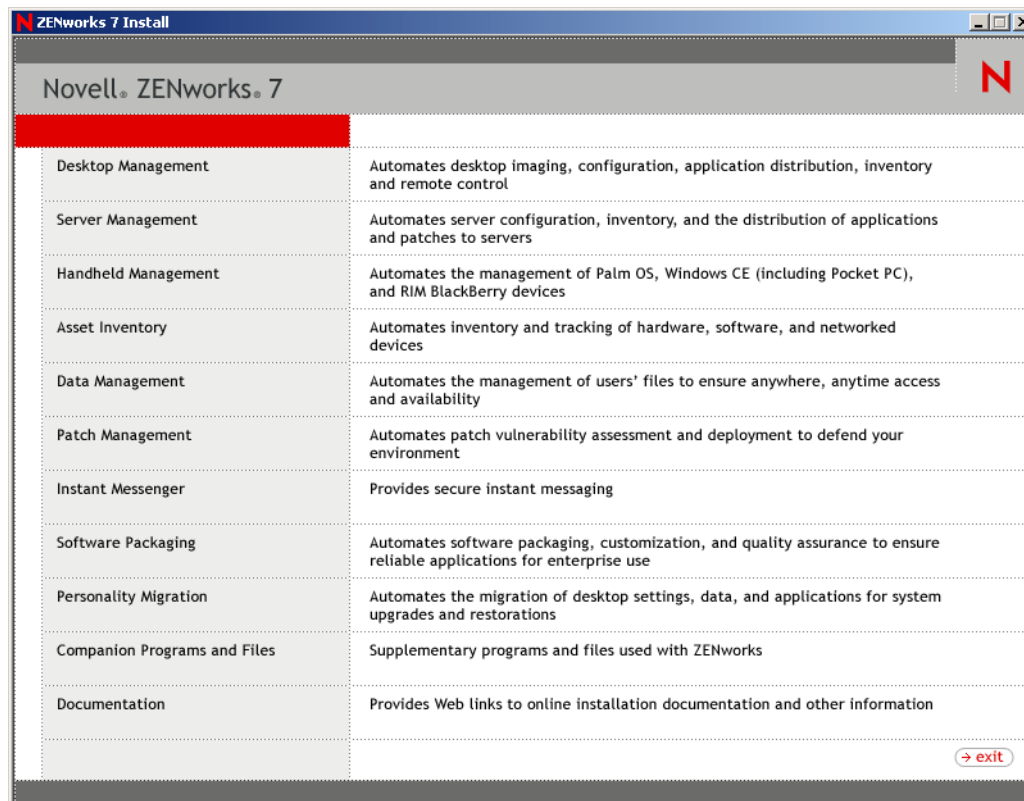
## 30.4 Extending the eDirectory Schema

The ZENworks 7 Desktop Management installation program extends the eDirectory schema to accommodate new ZENworks 7 attributes. The schema extensions are additive, meaning that no ZENworks for Desktops 4.x extensions are removed. Schema extension is not a reversible process.

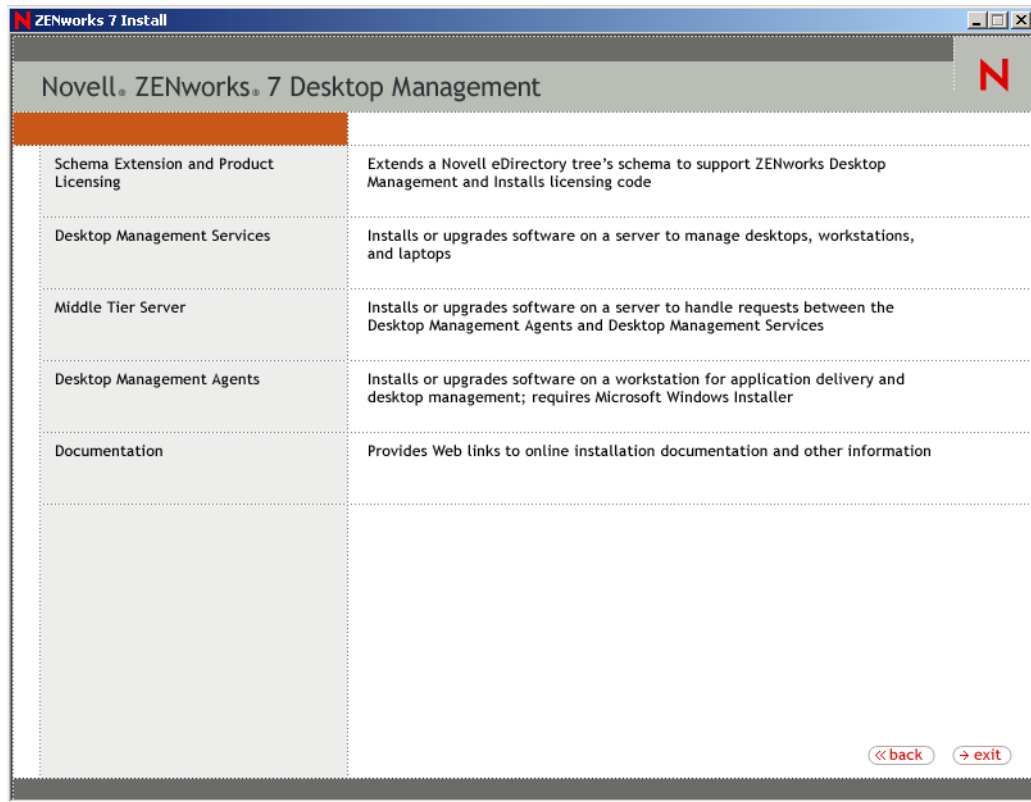
You must run the ZENworks 7 Desktop Management installation on a workstation that has a supported version of Windows and the Novell Client™ (see **Chapter 3, “Prerequisites for the Workstation Running the Installation,”** on page 39).

- 1 From the installing workstation, authenticate to eDirectory as a user with administrative rights to the eDirectory tree whose schema will be extended.
- 2 Insert the *Novell ZENworks 7 Desktop Management* CD into the CD drive of the workstation to autorun the ZENworks 7 installation program.

If the installation program does not autorun, launch `winsetup.exe` from the root of the CD.



- 3 Select *Desktop Management*, then select *English* to display the ZENworks 7 Desktop Management page.



- 4 Select *Schema Extensions and Product Licensing* to launch the schema extension program.
- 5 In the Software License Agreement dialog box, select *Accept*, then click *Next*.
- 6 In the eDirectory Tree for Creating Objects dialog box, select the tree whose schema you want to extend, then click *Next*.
- 7 In the ZENworks License dialog box, type the license code provided with your ZENworks software, then click *Next*.

If you do not have a license code, you can still install the ZENworks software. The full software is installed and you can use it for a 90-day evaluation period. At any time during or after the evaluation period, you can run the installation program again and use the *Schema Extensions and Product Licensing* option to enter a license code.
- 8 In the Installation Summary dialog box, click *Finish* to extend the schema.
- 9 (Optional) When the ZENworks Schema Extension completion dialog box appears, click *View Log File* to see the extensions that were applied.
- 10 In the ZENworks Schema Extension completion dialog box, click *OK*.
- 11 Perform an eDirectory health check (see [Section 30.3, “Checking eDirectory,”](#) on page 398).

## 30.5 Upgrading ConsoleOne

ZENworks 7 Desktop Management requires ConsoleOne® version 1.3.6.

You can also use the information in this section to upgrade to ConsoleOne 1.3.6e, available on the *ZENworks 7 with Support Pack 1 Companion 1 CD*.

ZENworks for Desktops 4.x required that ConsoleOne be installed on the ZENworks for Desktops 4.x Server in order to install the ZENworks for Desktops 4.x snap-ins to the server. If desired, you could then copy the ConsoleOne directory from the server to a workstation in order to run ConsoleOne from the workstation.

ZENworks 7 enables you to install the Desktop Management snap-ins to both a ConsoleOne directory on the Desktop Management Server and a ConsoleOne directory on a local workstation. By default, the snap-ins are installed to the server when you upgrade it from 4.x to 7 or from 4.x to 7SP1.

As you upgrade ConsoleOne to version 1.3.6 (or 1.3.6e), you need to ensure that:

- ♦ You install it to all locations from which you want to administer ZENworks 7 Desktop Management.
- ♦ You keep at least one copy of a ConsoleOne installation that includes the ZENworks for Desktops 4.x snap-ins. This enables you to continue to manage ZENworks for Desktops 4.x during the upgrade process.

To perform a ConsoleOne upgrade:

- 1** (Optional) Make a copy of at least one ConsoleOne installation that includes the ZENworks for Desktops 4.x snap-in.

ConsoleOne 1.3.6 and 1.3.6e supports the ZENworks for Desktops 4.x snap-ins. You have the option of making a copy of your current ConsoleOne with the snap-ins, waiting to make a copy of the ConsoleOne 1.3.6 installation with the snap-ins (see [Step 3](#)), or doing both.

For example, if you have a ZENworks for Desktops 4.x Server with ConsoleOne 1.3.5 and the ZENworks for Desktops 4.x snap-ins located in the `sys:\public\mgmt\consoleone\1.2` directory and you want to ensure that you retain a copy of that installation, create a `sys:\public\mgmt\consoleone\zfd4` directory and copy all files and subdirectories from the `1.2` directory to the `zfd4` directory.

- 2** Install ConsoleOne 1.3.6 (or 1.3.6e) to a local workstation or to a ZENworks for Desktops 4.x Server. To do so:

- 2a** Insert the *Novell ZENworks 7 Companion 1 CD* (or the *Novell ZENworks 7 with Support Pack 1 Companion 1 CD*) into the CD drive of the workstation to autorun the ZENworks 7 installation program.

If the installation program does not autorun, launch `winsetup.exe` from the root of the CD.

- 2b** Select *Companion Programs and Files*.

- 2c** Select *Novell ConsoleOne* to launch the ConsoleOne 1.3.6 installation program.

- 2d** Follow the prompts to install ConsoleOne to the `...\consoleone\1.2` directory.

When installation is complete, the `...\consoleone\1.2` directory contains ConsoleOne 1.3.6. If you installed ConsoleOne to a location that contains the ZENworks for Desktops 4.x snap-ins, the 4.x snap-ins still function.

- 3** (Optional) If you want to retain a copy of ConsoleOne 1.3.6 with the ZENworks for Desktops 4.x snap-ins, copy the installation you created in [Step 2](#) to another location.

---

**IMPORTANT:** If you want to administer an eDirectory tree where ZENworks for Desktops 4.x has been installed, you must use ConsoleOne with the ZENworks for Desktops 4.x snap-ins. If you want to administer an eDirectory tree where ZENworks 7 Desktop Management has been installed, you must use ConsoleOne with the ZENworks 7 snap-ins.

If you try to administer a ZENworks 4.x object using the 7 snap-ins, you are prompted to install the 7 license, even if you have already installed it, and you cannot administer ZENworks property pages.

---

## 30.6 Upgrading ZENworks for Desktop 4.x Servers

You upgrade your ZENworks for Desktops 4.x Servers by using the ZENworks 7 Desktop Management Server installation program.

The upgrade process for the Application Management, Workstation Management, Remote Management, and Workstation Imaging components is fairly simple and includes a few issues you need to plan for as you upgrade.

The upgrade process for Workstation Inventory can be more complex, depending on how many servers you have with Inventory software and databases.

We recommend that you plan your Inventory upgrade separately from the rest of your upgrade, using the information in the following two sections:

- ♦ [Section 30.6.1, “Upgrading Application Management, Workstation Management, Remote Management, and Workstation Imaging,” on page 402](#)
- ♦ [Section 30.6.2, “Upgrading Workstation Inventory,” on page 411](#)

### 30.6.1 Upgrading Application Management, Workstation Management, Remote Management, and Workstation Imaging

Complete the tasks in the following sections to upgrade your ZENworks for Desktops 4.x Servers with the ZENworks 7 (or SP1) Application Management, Workstation Management, Remote Management, and Workstation Imaging software:

- ♦ [“Installing the Software” on page 402](#)
- ♦ [“Completing the Application Management Upgrade” on page 405](#)
- ♦ [“Completing the Workstation Management Upgrade” on page 409](#)
- ♦ [“Completing the Remote Management Upgrade” on page 409](#)
- ♦ [“Completing the Workstation Imaging Upgrade” on page 410](#)

For information about upgrading your ZENworks for Desktops 4.x Servers with the ZENworks 7 Workstation Inventory software, see [Section 30.6.2, “Upgrading Workstation Inventory,” on page 411](#).

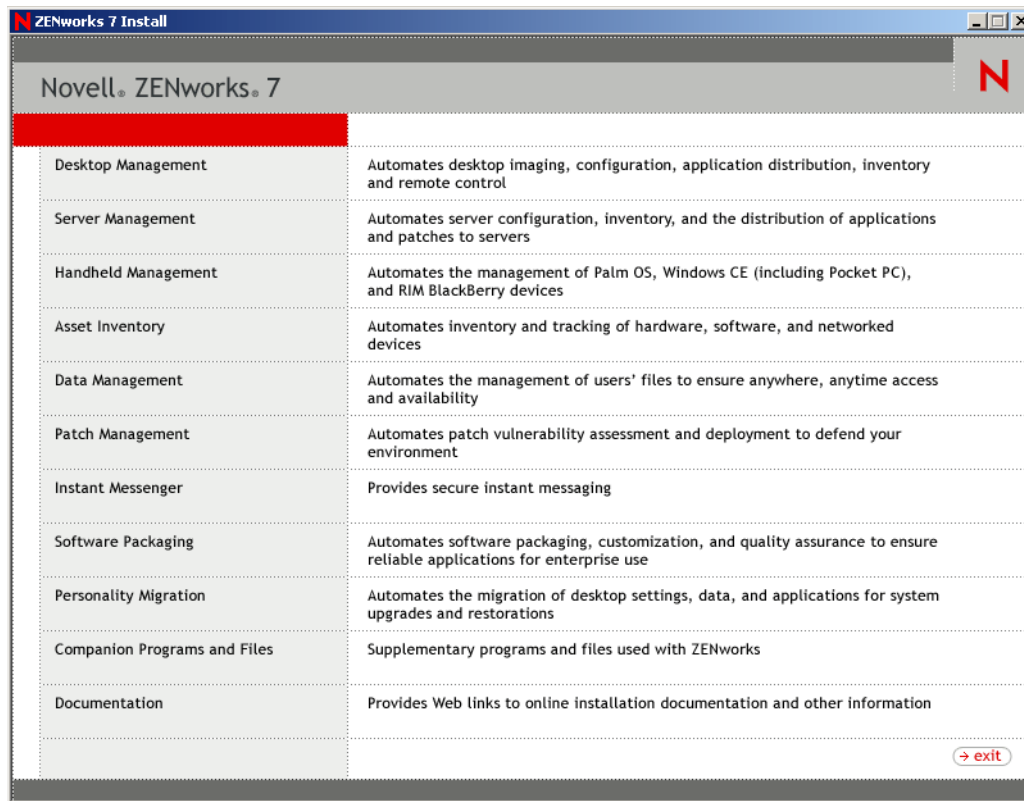
#### Installing the Software

An upgrade installation is identical to a new installation. The following steps provide only the information you need to launch the installation program and make choices specific to upgrading. For

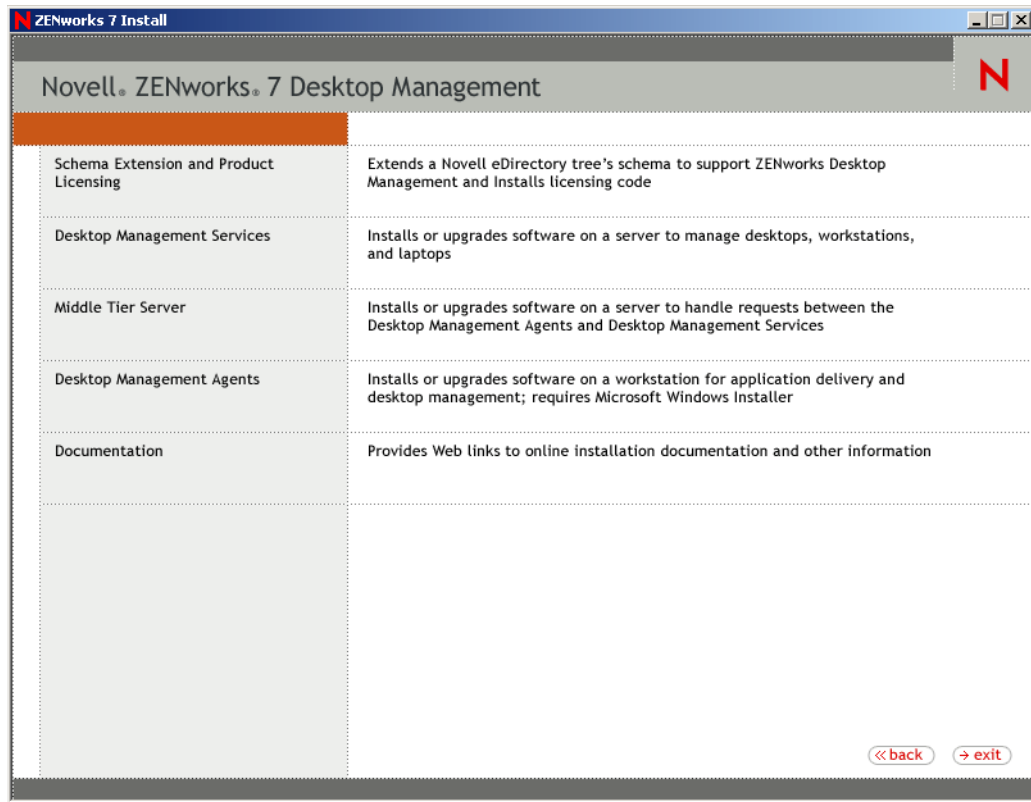
more detailed installation information, see [Chapter 9, “Installing the ZENworks Desktop Management Server,”](#) on page 77.

- 1 From the installing workstation, authenticate to eDirectory as a user with administrative rights to the eDirectory tree whose schema you extended for ZENworks 7 (see [Section 30.4, “Extending the eDirectory Schema,”](#) on page 398).
- 2 Insert the *Novell ZENworks 7 Desktop Management* CD (or the or the *Novell ZENworks 7 Desktop Management with Support Pack 1* CD) into the CD drive of the workstation to autorun the ZENworks 7 installation program.

If the installation program does not autorun, launch `winsetup.exe` from the root of the CD.



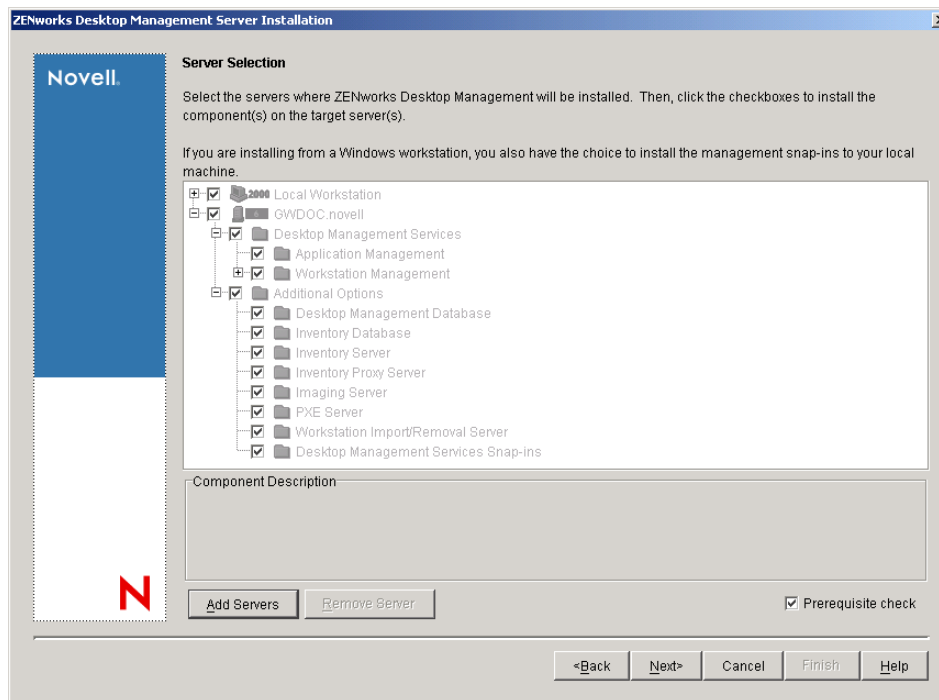
- 3 Select *Desktop Management*, then select *English* to display the ZENworks 7 Desktop Management page.



- 4 Select *Desktop Management Services* to launch the ZENworks Desktop Management Server installation program.



- 5 Follow the prompts until you've added the servers you want to upgrade and the Server Selection page is still displayed, as shown below.



- 6 Deselect any components you don't want installed to the server.

For example, if you are not yet upgrading Workstation Inventory, deselect *Inventory Database*, *Inventory Server*, and *Inventory Proxy Server*. Select a component to display a description in the *Component Description* box.

- 7 (Optional) If you don't want the installation program to check the target servers to ensure that they meet the ZENworks 7 prerequisites, deselect the *Prerequisite Check* option.

With the *Prerequisite Check* option selected, if a target server does not meet the prerequisites, installation does not occur on that server until you upgrade the server or rerun the installation program with the option deselected.

- 8 Click *Next*, then follow the remaining prompts to install the software.

- 9 Review the information in the following sections to complete the upgrade process:

- ♦ “Completing the Application Management Upgrade” on page 405
- ♦ “Completing the Workstation Management Upgrade” on page 409
- ♦ “Completing the Remote Management Upgrade” on page 409
- ♦ “Completing the Workstation Imaging Upgrade” on page 410

## Completing the Application Management Upgrade

The following sections provide information to help you complete your upgrade of the Application Management component of ZENworks Desktop Management:

- ♦ “Managing Terminal Server Applications” on page 406
- ♦ “Transitioning from System Requirements to Distribution Rules” on page 407

For information about new Application Management features in ZENworks 7 Desktop Management, see [Chapter 28, “What's New In ZENworks 7 Desktop Management,” on page 355](#).

## Managing Terminal Server Applications

In ZENworks 7, several features that were available for ZENworks for Desktops 4.x terminal server applications have been removed and several new features have been added, as shown in the list below.

**Table 30-2** *Differences in ZENworks for Desktops 4.x Terminal Server Applications and ZENworks 7 Terminal Server Applications*

| Removed Features                                                                           | Added Features                                                                                                                                                                                                                                                                           |
|--------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| RDP Application:                                                                           | RDP Application:                                                                                                                                                                                                                                                                         |
| <ul style="list-style-type: none"> <li>◆ Compression</li> <li>◆ Seamless Window</li> </ul> | <ul style="list-style-type: none"> <li>◆ Defines colors (256 Color, High Color 15-bit, High Color 16-bit, and High Color 24-bit)</li> <li>◆ Defines remote desktop size (resolution settings)</li> <li>◆ Defines the server's RDP port</li> <li>◆ Defines the server's domain</li> </ul> |
|                                                                                            | ICA Application:                                                                                                                                                                                                                                                                         |
|                                                                                            | <ul style="list-style-type: none"> <li>◆ Full Citrix feature support with all settings read from Citrix, not from the terminal server Application object</li> </ul>                                                                                                                      |
|                                                                                            | RDP and ICA Applications:                                                                                                                                                                                                                                                                |
|                                                                                            | <ul style="list-style-type: none"> <li>◆ Support for ZENworks Dynamic Local User policy</li> </ul>                                                                                                                                                                                       |

**IMPORTANT:** This information does not apply to ZENworks 6 DeFrame™. If you were using ZENworks 6 DeFrame as your terminal server application solution, there is no upgrade path in ZENworks 7.

As a result of these changes, you need to consider the following when upgrading:

- ◆ **Desktop Management Agent:** The Desktop Management Agent support is as follows:
  - ◆ The ZENworks for Desktops 4.x Management Agent works only with ZENworks for Desktops 4.x terminal server applications. It does not work with ZENworks 7 terminal server applications (in other words, terminal server Application objects created with the ZENworks 7 snap-ins to ConsoleOne).
  - ◆ The ZENworks 7 Desktop Management Agent works with terminal server applications created in both ZENworks for Desktops 4.x and ZENworks 7 Desktop Management.
- ◆ **ConsoleOne:** ConsoleOne support is as follows:
  - ◆ ZENworks for Desktops 4.x terminal server Application objects cannot be maintained using the ZENworks 7 snap-ins to ConsoleOne. Although the ZENworks for Desktops 4.x terminal server properties still exist in eDirectory, they are not displayed in the ZENworks 7 Desktop Management snap-ins. To maintain a ZENworks for Desktops 4.x terminal server Application object, you must use the ZENworks for Desktops 4.x snap-ins to ConsoleOne.

- ♦ ZENworks 7 terminal server Application objects cannot be maintained using the ZENworks for Desktops 4.x snap-ins to ConsoleOne. The ZENworks for Desktops 4.x snap-ins do not display the ZENworks 7 Desktop Management terminal server properties.

Based on the details listed above, we recommend the following process to ensure a smooth transition:

- 1** Until all workstations have been upgraded to the ZENworks 7 Desktop Management Agent (see [Section 30.8, “Upgrading Workstations,” on page 424](#)), retain all existing ZENworks for Desktops 4.x terminal server applications and use the ZENworks for Desktops 4.x snap-ins to ConsoleOne to create new terminal server applications. This ensures that all users continue to have access to the terminal server applications regardless of the Desktop Management Agent version installed on their workstations.
- 2** After all workstations have been upgraded to the ZENworks 7 Desktop Management Agent, manually re-create the ZENworks for Desktops 4.x terminal server applications using the ZENworks 7 Desktop Management snap-ins to ConsoleOne.

There is no automatic migration process available to move information from a ZENworks for Desktops 4.x terminal server Application object to a ZENworks 7 Desktop Management terminal server Application object. To manually re-create the ZENworks for Desktops 4.x Application object as a ZENworks 7 Desktop Management Application object:

- 2a** In ConsoleOne, right-click the container where you want to create the Application object, click *New*, then click *Application*.
- 2b** In the New Application Object dialog box, select the *Terminal Server Application* option, then click *Next*.
- 2c** Follow the prompts provided to finish creating the Application object.

If you need detailed information about creating a terminal server Application object, see “[Configuring the Application in eDirectory](#)” in “[Distribution: Terminal Server Applications](#)” in “[Application Management](#)” in the *Novell ZENworks 7 Desktop Management Administration Guide*.

- 3** After creating the new ZENworks 7 terminal server application, delete the old ZENworks for Desktops 4.x terminal server applications.

or

If you are supporting Windows NT 4.0 workstations in your environment by continuing to run the ZENworks for Desktops 4.x Desktop Management Agent on the workstations, do not delete the ZENworks for Desktops 4.x terminal server applications. You need to keep both ZENworks for Desktops 4.x and a ZENworks 7 Desktop Management versions and manage each version using the corresponding ZENworks snap-ins to ConsoleOne.

## Transitioning from System Requirements to Distribution Rules

The ZENworks for Desktops 4.x *System Requirements* configuration option has been renamed to *Distribution Rules* to better reflect the enhanced functionality and to differentiate it from the old system requirements. ZENworks 7 Distribution Rules support more flexible distribution conditions through the use of AND/OR Boolean operators and groupings of requirements. In ZENworks for Desktops 4.x, the AND operator was used for all system requirements and there was no ability to group requirements.

Only ZENworks 7 (or later) versions of Novell Application Launcher™ have the ability to process the new operator logic and groupings used with the distribution rules. Therefore, to maintain backwards compatibility with the ZENworks for Desktops 4.x Application Launcher, existing

system requirements are retained as legacy system requirements during upgrading of your eDirectory tree's schema. Both the ZENworks for Desktops 4.x Application Launcher and the ZENworks 7 Application Launcher can process the legacy system requirements, which means that applications with legacy system requirements continue to be available to users regardless of which Application Launcher version they are using.

As you transition from using legacy system requirements to using distribution rules, you need to be aware of the following:

- ◆ Distribution rules are defined on the Application object's Distribution Rules page (Application object > *Availability* tab > Distribution Rules page).
- ◆ Legacy system requirements are available from the Distribution Rules page by clicking the *Legacy* button, then clicking *Edit Legacy* Settings. You can use this option to edit existing legacy system requirements or add new system legacy requirements (for example, if you create a new Application object that you want available on workstations running the ZENworks for Desktops 4.x Application Launcher).
- ◆ When you access the Distribution Rules page for an application that has legacy system requirements but no distribution rules, you are prompted to import the requirements into the distribution rules. If you choose not to import them, you can import them later by using the *Import Legacy Settings* option on the Distribution Rules page.
- ◆ After you import legacy system requirements into distribution rules or manually define distribution rules, the ZENworks 7 Application Launcher processes only the distribution rules. It ignores the legacy system requirements. The ZENworks for Desktops 4.x Application Launcher, however, continues to process the legacy system requirements because it does not know about the new distribution rules. Therefore, if you want to use distribution rules but still have workstations running the ZENworks for Desktops 4.x Application Launcher, you need to maintain both a distribution rules list and a legacy system requirements list.
- ◆ Changes you make to distribution rules are not added to the legacy system requirements. Likewise, changes you make to legacy system requirements are not added to the distribution rules.
- ◆ If you define distribution rules and then import legacy system rules, your existing distribution rules are overwritten by the legacy system rules.
- ◆ The requirement for an operating system to be defined before an application is available has been removed. In ZENworks for Desktops 4.x, an OS platform had to be defined in *System Requirements* before an application would be available for distribution and launching. This requirement has been removed. The new behavior uses the following logic: If an application runs only on a specific operating system, define an operating system distribution rule. If an application does not require a specific operating system, there is no need to define a distribution rule. By default, applications without a defined operating system distribution rule are available on all supported platforms (Windows 98, Windows 2000, and Windows XP).

Keeping the above listed details in mind, we recommend the following process to ensure a smooth transition from system requirements to distribution rules:

- 1** For each Application object, import the legacy system rules into distribution rules. Modify the rules as desired.
- 2** Retain the legacy system requirements to support workstations using ZENworks for Desktops 4.x Application Launcher.

- 3 If an application's distribution conditions change, modify both the distribution rules and the legacy system requirements to ensure that both the ZENworks 7 Desktop Management and ZENworks for Desktops 4.x Application Launcher enforce the distribution condition.
- 4 After all workstations are upgraded to the ZENworks 7 Application Launcher (see [Section 30.8, “Upgrading Workstations,” on page 424](#)), remove the legacy system requirements.

or

If you are supporting Windows NT 4.0 workstations in your environment by continuing to run the ZENworks for Desktops 4.x Desktop Management Agent on the workstations, do not remove the legacy system requirements. You need to keep both the legacy system requirements and distribution rules.

For more information about distribution rules and legacy system requirements, see “[Distribution Rules Page](#)” in “[Application Management](#)” in the *Novell ZENworks 7 Desktop Management Administration Guide*.

## Completing the Workstation Management Upgrade

When you extended your eDirectory tree to accommodate the ZENworks 7 Desktop Management schema (see [Section 30.4, “Extending the eDirectory Schema,” on page 398](#)), new ZENworks 7 policy attributes were added. Your existing ZENworks for Desktops 4.x policies are migrated to ZENworks 7 policies and can be administered with the ZENworks 7 snap-ins. No additional actions are required to upgrade policies.

The ZENworks for Desktops 4.x Workstation Manager continues to apply the ZENworks 7 policies. However, new policy features are not available on a workstation until the workstation is upgraded with the ZENworks 7 Workstation Manager. This upgrade is done as part of installing the ZENworks 7 Desktop Management Agent. See [Section 30.8, “Upgrading Workstations,” on page 424](#).

---

**NOTE:** The default behavior for processing Group Policies in ZENworks for Desktops 4.x is not used in ZENworks 7 Desktop Management. The change implemented for version 7 might cause longer delays in processing the policies. For more information, see TID 3186764 in the [Novell Support Knowledgebase \(http://www.novell.com/support\)](#).

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For information about new features in Workstation Management, see [Chapter 28, “What's New In ZENworks 7 Desktop Management,” on page 355](#).

For more information about managing and using ZENworks 7 policies, see “[Workstation Management](#)” in the *Novell ZENworks 7 Desktop Management Administration Guide*.

## Completing the Remote Management Upgrade

After extending your eDirectory tree schema for ZENworks 7 and installing ConsoleOne 1.3.6 (or 1.3.6e) and the ZENworks 7 Desktop Management snap-ins, you can use the Remote Management features in ConsoleOne 1.3.6 to perform remote operations on any workstation that has the ZENworks for Desktops 4.x or ZENworks 7 Remote Management Agent installed.

If you are using the standalone Remote Management Console, you can continue to use the ZENworks for Desktops 4.x Remote Management Console or you can upgrade to the ZENworks 7 Remote Management console. The Remote Management Console is included on the *Novell ZENworks 7 Companion 2 CD* (or the *Novell ZENworks 7 with Support Pack 1 Companion 2 CD*)

and can be installed by launching `winsetup.exe` on that CD, selecting *Companion Programs and Files*, clicking the *More* button, and then selecting *Inventory and Remote Management Console*.

No additional actions are required to upgrade Remote Management.

For information about new features in Remote Management, see [Chapter 28, “What's New In ZENworks 7 Desktop Management,”](#) on page 355.

For more information about using Remote Management, see “[Remote Management](#)” in the *Novell ZENworks 7 Desktop Management Administration Guide*.

## Completing the Workstation Imaging Upgrade

After upgrading your ZENworks for Desktops 4.x Servers to ZENworks 7 Desktop Management Servers, complete the following tasks to finish upgrading Workstation Imaging:

- ♦ “[Upgrading Standalone Imaging Servers](#)” on page 410
- ♦ “[Upgrading the Workstation Imaging Engine](#)” on page 410
- ♦ “[Moving from a Linux Partition to Preboot Services](#)” on page 411

For information about new features in Workstation Management, see [Chapter 28, “What's New In ZENworks 7 Desktop Management,”](#) on page 355.

For more information about managing and using ZENworks 7 policies, see “[Workstation Management](#)” in the *Novell ZENworks 7 Desktop Management Administration Guide*.

## Upgrading Standalone Imaging Servers

If you have standalone Imaging servers, you need to run the installation program to upgrade the Imaging software on those servers. To do so, follow the instructions in “[Installing the Software](#)” on [page 402](#). When you reach the Software Selection page, deselect all options except for *Imaging Server* and *PXE Server*.

## Upgrading the Workstation Imaging Engine

The ZENworks for Desktops 4.x Imaging engine cannot communicate with the ZENworks 7 Imaging server. How you upgrade the Imaging engine on a workstation depends on the Imaging boot method being used:

- ♦ **Preboot Services (PXE):** The workstation's Imaging engine is updated from ZENworks for Desktops 4.x to ZENworks 7 on the Desktop Management Server when the server is upgraded. Preboot Services downloads the ZENworks 7 Imaging engine from the ZENworks 7 Desktop Management Server when it is launched at the workstation.
- ♦ **Linux Partition:** No action required. The workstation's Imaging engine is updated from ZENworks for Desktops 4.x to ZENworks 7 the next time the Imaging engine contacts the ZENworks 7 Imaging server.

In ZENworks 7, the Linux partition must be at least 50 MB. If a workstation's Linux partition is not that large, you must change the partition size or use Preboot Services instead. For information about changing from using a Linux partition to Preboot Services, see “[Moving from a Linux Partition to Preboot Services](#)” on page 411.

- ♦ **Boot CD or Disk:** Create a new boot CD or disk using the ZENworks 7 software. For instructions, see “[Preparing an Imaging Boot Method](#)” in “[Workstation and Server Imaging](#)” in the *Novell ZENworks 7 Desktop Management Administration Guide*.

## Moving from a Linux Partition to Preboot Services

If you decide to move to Preboot Services (PXE) to eliminate the Linux partitions on your workstations:

- 1 Make sure ZENworks 7 Preboot Services is installed on a network server.

For detailed installation instructions, see “[Preparing a ZENworks Imaging Server](#)” in “[Workstation and Server Imaging](#)” in the *Novell ZENworks 7 Desktop Management Administration Guide*.

- 2 Verify that Preboot Services is working either through the PXE supplied on your network cards, or through a PXE bootable floppy you generate with `psetupn.exe`.
- 3 In ConsoleOne, disable the Linux partition:
  - 3a Right-click the Server Policy Package object, then click `Properties` to display the Server Policy Package properties.
  - 3b On the General page (*Policies* tab > General page), select *ZENworks Imaging Policy*, then click *Properties*.
  - 3c Click the *Work to Do* tab > *Imaging Partition* to display the Imaging Partition page.
  - 3d Select the *Disable the ZENworks Imaging Partition, If It Exists* option to turn on the option.
  - 3e Click *OK* to close the Imaging Partition page.
- 4 Click *OK* to save your changes.

The Linux partition becomes a non-bootable partition on the workstation hard drive. If you want to remove the Linux partition, you need to restore a base image on the workstation and select the option to delete the existing Linux partition in the Image object, which you can reference in the Server Policy package or the Workstation Policy package.

## 30.6.2 Upgrading Workstation Inventory

To upgrade Workstation Inventory from ZENworks for Desktops 4.x to ZENworks 7, perform the following tasks in the order listed:

1. Review the information in “[Pre-Upgrade Considerations](#)” on page 412.
2. Perform the tasks explained in “[Tasks To Be Performed Before Upgrading and Database Migration](#)” on page 413.
3. Perform the tasks explained in “[Upgrading the ZENworks for Desktops 4.x Inventory Database](#)” on page 415.
4. Perform the tasks explained in “[Upgrading the ZENworks for Desktops 4.x Inventory Server](#)” on page 417.
5. Perform the tasks explained in “[Manually Migrating ZENworks for Desktops 4.x Inventory Policies](#)” on page 418.
6. Perform the tasks explained in “[Tasks to Perform after Database Migration](#)” on page 418.



## Pre-Upgrade Considerations

Before you upgrade ZENworks for Desktops 4.x Inventory components to ZENworks 7, review the following sections:

- ♦ “Inventory Server” on page 412
- ♦ “Inventory Agent” on page 412
- ♦ “Management Console” on page 413

### Inventory Server

- ♦ Both ZENworks 7 Inventory servers and ZENworks for Desktops 4.x Inventory servers can reside in the same eDirectory tree.
- ♦ ZENworks for Desktops 4.x Inventory servers can roll up inventory data to a ZENworks 7 Inventory server, but a ZENworks 7 Inventory server cannot roll up inventory data to a ZENworks for Desktops 4.x Inventory server.

If you roll up your inventory data, ZENworks for Desktops 4.x Inventory servers must be upgraded to ZENworks 7 in a top-down order. Upgrade the root server first, then the intermediate servers, and finally the leaf servers.

- ♦ Both ZENworks for Desktops 4.x Inventory servers and ZENworks 7 Inventory servers can use ZENworks for Desktops 4.x Roll-Up policies that have been upgraded to ZENworks 7.
- ♦ Do not attach a ZENworks 7 Inventory database directly to a ZENworks for Desktops 4.x Inventory server; likewise, do not attach a ZENworks for Desktops 4.x Inventory database directly to a ZENworks 7 Inventory server. Upgrade the Inventory server and its database in unison. Although you can migrate all the supported databases (Sybase, Oracle, and MS SQL), the ZENworks 7 Desktop Management installation automatically upgrades only the Sybase database.
- ♦ Do not have a ZENworks for Desktops 4.x Inventory server and a ZENworks 7 Inventory server store inventory data directly to the same Inventory database.
- ♦ A ZENworks 7 Inventory server can process .zip files from ZENworks for Desktops 4.x Inventory servers.
- ♦ Do not delete the ZENworks for Desktops 4.x .str and .zip files in a ZENworks for Desktops 4.x Inventory server's SCANDIR directories after you've upgraded the Inventory server to ZENworks 7.
- ♦ Upgrading a ZENworks for Desktops 4.x Inventory server to ZENworks 7 does not change the role of the Inventory server.

### Inventory Agent

- ♦ The ZENworks for Desktops 4.x Inventory agent can send inventory data to a ZENworks 7 Inventory server, which means the data can be stored in a ZENworks 7 Inventory database.

The ZENworks 7 Inventory agent cannot send inventory data to a ZENworks for Desktops 4.x Inventory server, which means the data cannot be stored in a ZENworks for Desktops 4.x Inventory database.

Do not upgrade to the ZENworks 7 Inventory Agent until you've upgraded your Inventory servers and databases.



- ♦ Both the ZENworks for Desktops 4.x and ZENworks 7 Inventory agent can use a ZENworks for Desktops 4.x Inventory policy that has been upgraded to ZENworks 7, or they can use a ZENworks 7 Inventory policy created with the ZENworks 7 Desktop Management snap-ins.
- ♦ If you want to install or upgrade the ZENworks for Desktops 4.x agents through Workstation Imaging, ensure that the image is taken on a ZENworks 7 Desktop Management workstation that is unregistered.

## Management Console

- ♦ You can use ZENworks 7 Desktop Management snap-ins to ConsoleOne to administer both ZENworks for Desktops 4.x and ZENworks 7 inventory data and inventory objects (such as Inventory Service object, database objects, Workstation Inventory policy, Roll-Up policy, Dictionary Update policy, and Database Location policy).
- ♦ You cannot use the ZENworks for Desktops 4.x ConsoleOne snap-ins to administer ZENworks 7 Desktop Management inventory data and inventory objects.
- ♦ Do not use both ZENworks for Desktops 4.x and ZENworks 7 Desktop Management consoles to configure the same ZENworks for Desktops 4.x Inventory objects.

## Tasks To Be Performed Before Upgrading and Database Migration

After reviewing the facts mentioned in “**Pre-Upgrade Considerations**” on page 412, you must perform the following tasks in order before you upgrade from ZENworks for Desktops 4.x to ZENworks 7 Desktop Management:

### 1 Stop the Inventory service.

- ♦ On a NetWare Inventory server: At the server console prompt, enter `sys:\system\invstop.ncf`.  
If you do not want the Sybase database to be stopped automatically when you stop the Inventory services, comment the `Unload dbsrv8.nlm` line in the `sys:\system\invstop.ncf` file.
- ♦ On a Windows 2000 Inventory server: In the Control Panel, double-click *Administrative Tools*, double-click *Services*, select *Novell Inventory Service*, then click *Stop*.

### 2 Stop the Sybase Inventory database.

- ♦ On NetWare: At the Sybase console prompt, press the Q key.
- ♦ On Windows 2000: In the Control Panel, double-click *Administrative Tools*, double-click *Services*, select *Novell Database - Sybase*, then click *Stop*.

### 3 Stop the ZENworks Web server on Windows 2000. In the Control Panel, double-click *Administrative Tools*, double-click *Services*, select *Novell ZFS Web Server*, then click *Stop*.

### 4 If Java has not been unloaded on the target NetWare servers, unload `java.nlm` (at the server console, enter `java -exit`).

---

**IMPORTANT:** This command stops all Java processes running on the server. Verify that all Java processes are stopped while you are installing ZENworks 7 Desktop Management.

---

### 5 On the target Windows servers, close the Services window.

### 6 Make sure that you have made and archived a reliable backup of the ZENworks for Desktops 4.x database.

### 7 Make sure that the ZENworks for Desktops 4.x database is not accessed from ConsoleOne.

- 8 Make sure that the recommended ZENworks 7 Workstation Inventory requirements are met. For more information, see [Part II, “Preparation,” on page 37](#).
- 9 If `ZENworks_installation_path\zenworks\inv\server\wminv\properties\inventoryremoval.properties` has been modified after the ZENworks for Desktops 4.x installation, take a reliable backup of `inventoryremoval.properties`.
- 10 Before upgrading the Inventory server, make sure that you have upgraded its associated database server.
- 11 Make sure that the schema has been migrated to ZENworks 7. You can migrate the schema by using the ZENworks 7 Desktop Management installation program. For more information on how to migrate the schema, see [Section 9.1.1, “Extending the Schema Before the Installation,” on page 79](#).
- 12 If you have a ZENworks for Desktops 4.x database running Oracle, you must perform the following tasks before the migration:
  - 12a Ensure that the Oracle's version is 9.2.0.6 or later.
  - 12b In `inventory_database_installation_path\init.ora_path\init.ora`, set the value the following parameters as shown below:
 

```
db_cache_size=192M
sort_area_size=10000000
shared_pool_size = 157286400
open_cursors = 2048
log_buffer = 1024000
session_cached_cursors=2048
compatible=9.2.0
```

You could increase the cache size and shared pool to have Shared Global Area (SGA) to 30-40% physical RAM size.
  - 12c Ensure that the Inventory database is up and running.
 

You must have a larger rollback segment because the database migration and the storage of further data cannot succeed because of ORA-01555 and other rollback segment-related issues.
  - 12d Increase the value of the rollback segment, by executing the following sql script to add an additional data file to the rollback segment (rbs) and to add a Redo log group:
 

```
connect / as sysdba;
alter tablespace rbs add datafile
'Inventory_database_installation_path\rbs2.ora' size 40M
autoextend on next 50K maxsize 60M;
alter rollback segment rb0 storage (maxextents unlimited);
alter rollback segment rb1 storage (maxextents unlimited);
ALTER DATABASE ADD LOGFILE GROUP 3
('Inventory_database_installation_path\log3.ora') SIZE 50M;
```
  - 12e Stop the Inventory database.
  - 12f Ensure that the value of the compatible parameter in `inventory_database_installation_path\path_to_init.ora\init.ora` is set to 9.1.3.0.0 or later.

- 12g** If the size of any data file is about to exceed 4096 MB, you must add extra data files to the corresponding tablespace.
- 12h** Extract the appropriate, platform-specific `atlasperf_altertablespace.sql` from  
`ZENworks_installation_directory\zenworks\inv\server\wminv\properties\sql.zip` to `C:.`
- If Oracle is running on Windows, extract `atlasperf_altertablespace.sql` from the `oracle\winntspecific` directory within `sql.zip`.
- If Oracle is running on UNIX, extract `atlasperf_altertablespace.sql` from the `oracle\unixspecific` directory within `sql.zip`.
- 12i** Edit `atlasperf_altertablespace.sql` to set the value of `maxsize` for all data files to nearest multiple of 4 GB.
- For example, if the size of `cim8.ora` is 5 GB, then set the value of `MAXSIZE` to 8192 MB.
- 12j** Ensure that the file path of all data files listed in `atlasperf_altertablespace.sql` is correct.
- 12k** Restart the Inventory database.
- 12l** Execute `atlasperf_altertablespace.sql`.

## Upgrading the ZENworks for Desktops 4.x Inventory Database

During the ZENworks 7 Desktop Management Server installation, if you choose to install Sybase and you do not choose to overwrite the database files, the server installation program automatically upgrades the existing ZENworks for Desktops 4.x database engine only. During the Sybase database upgrade, a message indicating that the existing database can be migrated is displayed. If you choose *Yes*, then the existing database is overwritten by the new ZENworks 7 Desktop Management database files. If you choose *No*, the database is migrated when the Inventory service starts for the first time.

---

**IMPORTANT:** You can upgrade multiple Inventory servers and database servers at the same time by running the Desktop Management Server installation program.

However, you must manually migrate the existing ZENworks for Desktops 4.x Workstation Inventory policy, Database Location policy, and Roll-up policy. If you have manually created the database object, you must also migrate the database object. For more information on how to manually migrate the policies, see [“Manually Migrating the Database Objects” on page 416](#).

---

## Changing the Database Cache Size

If you have a ZENworks for Desktops 4.x database running Sybase, ensure that the value of Sybase cache (“-c” parameter) is set to 25% or above of the server's memory.

To change the database cache size on a NetWare database server:

- 1 Close all connections to the Inventory database.
- 2 Quit the Sybase server.
- 3 Open the `mgmt dbs.ncf` file in the `sys:\system` directory.
- 4 Modify the -c parameter. For example, `-c 128M` sets the cache size to 128 MB.

- 5 Save the file.
- 6 On the server console, load the Inventory database. Enter `MGMTDBS`.
- 7 If you have a ZENworks for Desktops 4.x database running MS SQL, ensure that the value of fixed memory is 25% or above of the server memory.

To change the database cache size on a Windows database server:

- 1 Stop the Sybase service. On Windows 2000, in the Control Panel, double-click *Administrative Tools* > double-click *Services*, select *Novell Database - Sybase*, then click *Stop*.
- 2 On the database server, run the `ntdbconfig.exe` file from the `dbengine` directory. `Ntdbconfig.exe` is a ZENworks database configuration utility for the ZENworks database using Sybase on Windows 2000 servers. This utility enables you to reconfigure the Sybase service.
- 3 Modify the `-c` parameter.
- 4 Click *OK*.
- 5 Restart the Sybase service. On Windows 2000, in the Control Panel, double-click *Administrative Tools* > double-click *Services*, select *Novell Database - Sybase*, then click *Start*.
- 6 If you have a ZENworks for Desktops 4.x database running MS SQL, ensure that the value of fixed memory is 25% or above of the server memory.

### Manually Migrating the Database Objects

If you have a ZENworks for Desktops 4.x Oracle database object, or if you have manually created Sybase database objects, you must manually migrate the database object using the Inventory Migration tool. For more information, see [“Manually Migrating the Database Objects” on page 416](#).

- 1 In ConsoleOne with ZENworks 7 Desktop Management Workstation Inventory snap-ins installed, click *Tools* > *ZENworks Inventory* > *Inventory Migration*.
- 2 Click *Browse* to browse for and select the database object to be migrated or the container that has the database object.
- 3 If you selected a container in Step 2, do the following:
  - 3a If you want to search for the database object in all the subcontainers within the selected container, select the *Search SubContainers* check box.  
The *Search SubContainers* check box is available only if you select a container in *Search Context*.
  - 3b Select the *Search for Database Objects* check box to search for the database objects within the selected container to be migrated.  
This option is available only if you select a container in *Search Context*. By default, this option is selected.
  - 3c Click *Find*.  
All the ZENworks for Desktops 4.x database objects that are found within the specified context are displayed in the Report panel.
- 4 Click *Migrate*.
- 5 Click *Close*.
- 6 In ConsoleOne, right-click the database object, click *Properties*, then click the *ZENworks Database* tab.

- 7 Ensure that the following database object options have the specified values mentioned depending on the Inventory database:

| Database Object Options         | Value for the Sybase Inventory Database Object | Value for the Oracle Inventory Database Object | Value for the MS SQLServer 2000 Inventory Database Object |
|---------------------------------|------------------------------------------------|------------------------------------------------|-----------------------------------------------------------|
| Database (Read-Write) User Name | <i>MW_DBA</i>                                  | <i>MW_DBA</i>                                  | <i>MW_DBA</i>                                             |
| Database (Read-Write) Password  | <i>novell</i>                                  | <i>novell</i>                                  | <i>novell</i>                                             |
| Database (Read Only) User Name  | <i>MW_READER</i>                               | <i>MWO_READER</i>                              | <i>MWM_READER</i>                                         |
| Database (Read Only) Password   | <i>novell</i>                                  | <i>novell</i>                                  | <i>novell</i>                                             |
| Database (Write Only) User Name | <i>MW_UPDATER</i>                              | <i>MWO_UPDATER</i>                             | <i>MWM_UPDATER</i>                                        |
| Database (Write Only) Password  | <i>novell</i>                                  | <i>novell</i>                                  | <i>novell</i>                                             |

- 8 Click *Apply*, then click *Close*.

## Upgrading the ZENworks for Desktops 4.x Inventory Server

Before you upgrade a ZENworks for Desktops 4.x Inventory server, ensure that you have stopped the Inventory services and have upgraded the associated database server.

You can upgrade the ZENworks for Desktops 4.x Inventory server by installing ZENworks 7 Desktop Management Inventory server if the server where you want to install the ZENworks 7 Desktop Management Inventory server meets the installation requirements.

The ZENworks 7 Desktop Management Inventory server supports the same set of roles as ZENworks for Desktops 4.x. Therefore, when you upgrade from ZENworks for Desktops 4.x to ZENworks 7 Desktop Management, the role of the Inventory server is retained.

**IMPORTANT:** If you have a ZENworks for Desktops 4.x Inventory server attached to a ZENworks for Desktops 4.x database and if you upgrade either the Inventory server or the database to ZENworks 7 Desktop Management, you must upgrade the associated component to ZENworks 7 Desktop Management (the ZENworks for Desktops 4.x Inventory services should not interact with ZENworks 7 Desktop Management compliant database and vice versa).

If you have multiple ZENworks for Desktops 4.x Inventory servers connected to a ZENworks for Desktops 4.x database server and if you upgrade the database server to ZENworks 7 Desktop Management, you must also upgrade all the associated ZENworks for Desktops 4.x Inventory servers.

The ZENworks 7 Desktop Management installation program automatically migrates only the ZENworks for Desktops 4.x Inventory Service object to ZENworks 7 Desktop Management. Before starting the Inventory service, you must manually migrate the existing ZENworks for Desktops 4.x policies to ZENworks 7 Desktop Management policies using the ZENworks Inventory Migration tool. For more information, see [“Manually Migrating ZENworks for Desktops 4.x Inventory Policies” on page 418](#).

## Manually Migrating ZENworks for Desktops 4.x Inventory Policies

- 1** In ConsoleOne with ZENworks 7 Desktop Management Workstation Inventory snap-ins installed, click *Tools > ZENworks Inventory > Inventory Migration*.
- 2** Click *Browse* to browse for and select the Inventory Service object or the container that has the Inventory Service object.
- 3** If you selected a container in Step 2, do the following:
  - 3a** If you want to search for the Inventory Service object in all the subcontainers within the selected container, select the *Search SubContainers* check box.

The *Search SubContainers* check box is available only if you select a container in *Search Context*.
  - 3b** Select the *Search for Policies* check box to search for the Inventory policies associated with the Inventory Service object within the selected container.

This option is available only if you select a container in *Search Context*. By default, this option is selected.
  - 3c** Click *Find*.

All the ZENworks for Desktops 4.x Inventory policies that are associated with the Inventory Service object and are found within the specified context are displayed in the Report panel.
- 4** Click *Migrate*.
- 5** Click *Close*.

The ZENworks 7 Inventory agents obtain the software scan configuration rules from the private dictionary and the general dictionary, instead of from the Workstation Inventory policy. But the ZENworks for Desktops 4.x Inventory agents continue to use the Workstation Inventory policy for software configuration.

After migrating the policies, perform the following tasks:

- 1** Start the ZENworks 7 Desktop Management Inventory services.

When you start the Inventory service, the Upgrade Service automatically migrates the ZENworks for Desktops 4.x database schema and the inventory data to a ZENworks 7 Desktop Management database. The data migration process might take a significant amount of time. On the Inventory server screen, messages indicating that the database has been successfully migrated and initialized are displayed.

After the database is migrated, the Inventory ConsoleOne utilities (Query, Summary, Inventory Report, and Database Export) and the Storer can access the database.
- 2** Create and configure the Dictionary Update policy to get the latest version of the dictionary for ZENworks 7 Inventory Agent. For more information on how to configure the Dictionary Update policy, see “[Configuring the Dictionary Update Policy](#)” in “[Workstation Inventory](#)” in the *Novell ZENworks 7 Desktop Management Administration Guide*.

## Tasks to Perform after Database Migration

You must perform the following tasks after upgrading the Inventory server and migrating the Inventory database is complete:

- 1** Stop the Inventory service.

- 2** If your Inventory database is running Oracle, do the following to improve the database performance:

- 2a** In the *inventory\_database\_installation\_path\\_start.sql* file, delete the existing entries and add the following entries:

```
SET ECHO ON
CONNECT INTERNAL
SET ECHO OFF
STARTUP PFILE=
inventory_database_installation_path\path_to_init.ora\init.ora
SET NUMWIDTH 20
SET CHARWIDTH 40
SET ECHO ON
connect mw_dba;
SET ECHO OFF
alter table cim.t$product cache;
SET ECHO ON
connect internal
SET ECHO OFF
@<path to oracle home directory>/rdbms/admin/dbmspool
call sys.dbms_shared_pool.keep('zenworks.zenpin','P');
EXIT
```

- 2b** Extract *atlasperf\_alterfreelist.sql* from *ZENworks\_installation\_directory\zenworks\inv\server\wminv\properties\sql.zip* and execute at the SQLPLUS prompt.

- 2c** Execute the *oracle\common\oracle\_perf.sql* and *oracle\common\oracle\_perf2.sql* files from *Inventory\_server\_installation\_path\zenworks\inv\server\wminv\properties\sql.zip* to add performance enhancing indexes to the database.

- 2d** Execute *oracle\_dbexport\_perf.sql* from the *Novell ZENworks 7 Companion 2 CD \database\oracle9i\common* directory or from the *Novell ZENworks 7 with Support Pack1 Companion 2 CD \database\oracle\_x\common* directory.

For more information on how to improve the performance of the Inventory database, see “**Performance Tips**” in “**Workstation Inventory**” in the *Novell ZENworks 7 Desktop Management Administration Guide*.

- 3** (Optional) If the Inventory database is running MS SQL, execute the following scripts from *Inventory\_server\_installation\_path\zenworks\inv\server\wminv\properties\sql.zip* with appropriate user logins as explained below from the MS SQL Query Analyzer:

- 3a** Log in as CIM, and execute *mssql\_perf\_cim.sql*.

- 3b** Log in as mw\_dba and execute *mssql\_perf\_mw\_dba.sql*.

- 3c** Log in as zenworks and execute *mssql\_perf\_zenworks.sql*.

This enhances the performance of the Inventory database.

For more information on how to improve the performance of the Inventory database, see “**Performance Tips**” in “**Workstation Inventory**” in the *Novell ZENworks 7 Desktop Management Administration Guide*.



- 4 Start the Inventory services.

## 30.7 Upgrading the Middle Tier Server

After you've extended your eDirectory tree's schema to accommodate the ZENworks 7 attributes (see [Section 30.4, “Extending the eDirectory Schema,” on page 398](#)), you can upgrade your ZENworks for Desktops 4.x Middle Tier Servers to ZENworks 7. Complete the tasks in the following sections to do so:

- ♦ [Section 30.7.1, “Installing the Software,” on page 420](#)
- ♦ [Section 30.7.2, “Modifying the Myapps.html Page,” on page 422](#)
- ♦ [Section 30.7.1, “Installing the Software,” on page 420](#)
- ♦ [Section 30.7.2, “Modifying the Myapps.html Page,” on page 422](#)

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**NOTE:** The information in this section also applies to ZENworks 7 Desktop Management with Support Pack 1.

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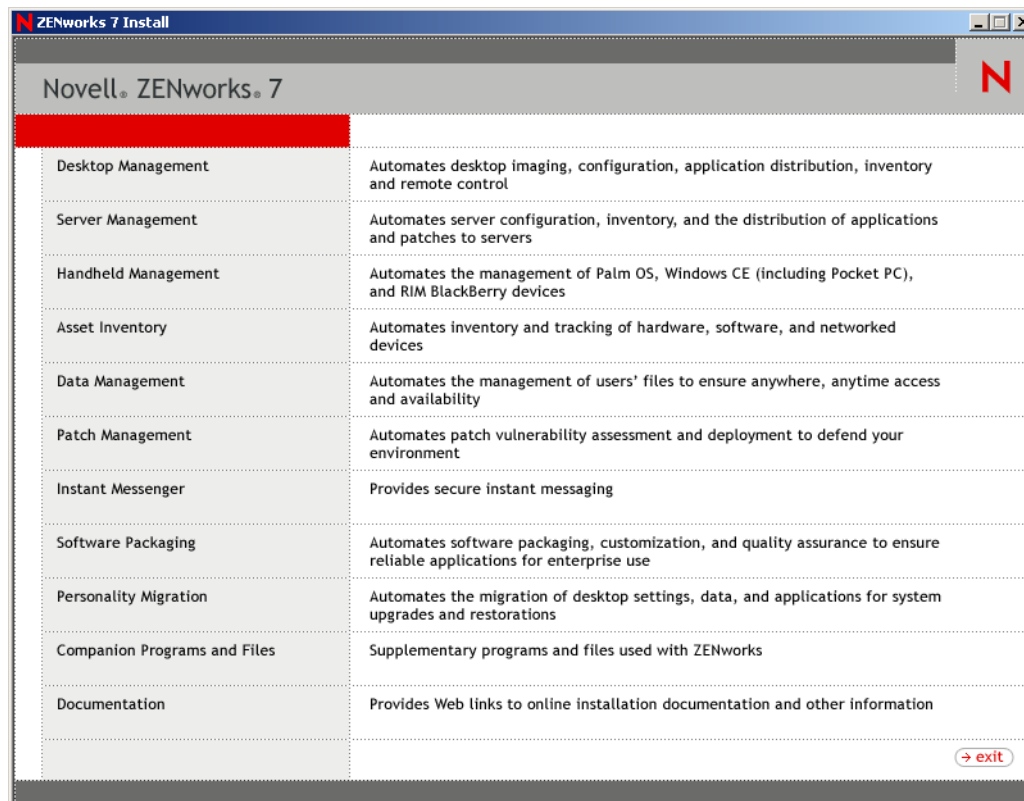
### 30.7.1 Installing the Software

To upgrade a ZENworks for Desktops 4.x Middle Tier Server, you use the ZENworks 7 Middle Tier Server installation program to install the ZENworks 7 files over the existing Middle Tier Server files.

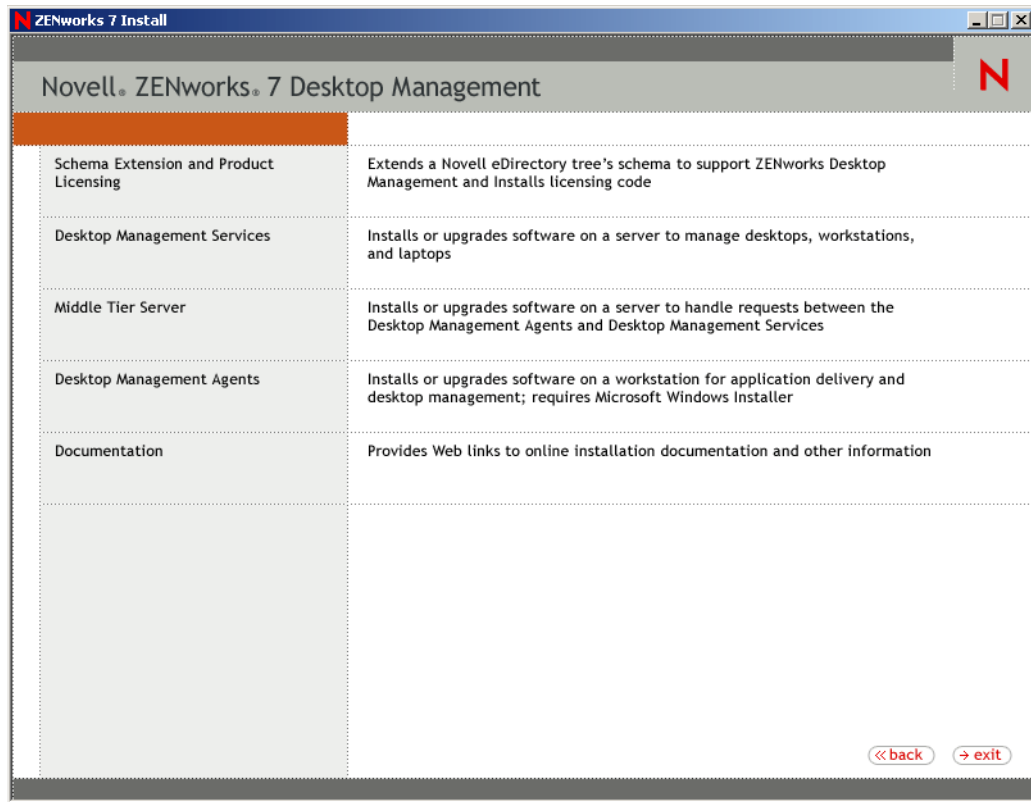
- 1 At a workstation that meets the installation requirements (see [Chapter 3, “Prerequisites for the Workstation Running the Installation,” on page 39](#)), insert the *Novell ZENworks 7 Desktop Management* CD (or the *Novell ZENworks 7 with Support Pack 1 Companion 2* CD) into the CD drive to autorun the ZENworks 7 (or the SP1) installation program.



If the installation program does not autorun, launch `winsetup.exe` from the root of the CD.



- 2 Select *Desktop Management*, then select *English* to display the ZENworks 7 Desktop Management page.



- 3 Select *Middle Tier Server* to launch the ZENworks Middle Tier Server installation program.
- 4 Follow the prompts to complete the installation.

Indicate that your servers have already been configured.

For detailed installation steps, see [Chapter 10, “Installing the ZENworks Middle Tier Server,”](#) on page 107.

### 30.7.2 Modifying the Myapps.html Page

This section applies only if you have users who access the `myapps.html` page on the Web server to download the Novell Application Launcher plug-in.

During the Middle Tier Server upgrade, a `myapps.html.template` file is copied to the `web_server_root\nwdocs` directory (NetWare) or the `inetpub\wwwroot` directory (Windows). In order for the ZENworks 7 Novell Application Launcher plug-in to be distributed to workstations when users access the `myapps.html` page, you need to modify the `myapps.html.template` file and rename it to `myapps.html`. To do so:

- 1 Make a backup copy of your ZENworks for Desktops 4.x `myapps.html` file.

On a NetWare server, the `myapps.html` file is in the `web_server_root\nwdocs` directory. On a Windows server, it is in the `inetpub\wwwroot` directory.

- 2 (Conditional) If you customized your ZENworks for Desktops 4.x `myapps.html` file, make the same customizations to the ZENworks 7 `myapps.html.template` file.

Three new parameters have been added for ZENworks 7: ShowAppFrameNavigation, ShowIEToolBarButton, and NT4PluginVersion. Each of these parameters is described below.

**SingleTree:** This parameter lets you specify a single Novell eDirectory tree from which to read application information. If this parameter is used, Application Launcher ignores any other trees to which the user authenticates.

This parameter applies only at installation time. After installation, changes to this parameter have no affect.

**PortalView:** This parameter lets you better support portals by removing the banner section of the Application Browser view. The value settings are True or False. True removes the banner section.

**BannerURL:** This parameter applies only if the PortalView parameter is set to False.

You can use this parameter to specify an alternate banner. For example, you could use a banner that contains your company's logo instead of the Novell logo. The value setting must be a URL to an HTML page or graphics file (.gif, .jpg, etc.). If you specify an HTML page, the page is cropped to the height specified by the BannerHeight parameter. If you specify a graphics file, the banner section scrolls to fit the entire graphics file. Unless you want the banner section to be scrollable, you should ensure that the graphic's height is not greater than the height specified in the BannerHeight parameter.

**BannerHeight:** This parameter applies only if PortalView parameter is set to False and the default Novell banner is being overridden by the BannerView parameter.

You can use this parameter to determine the height of the banner section. The value setting must be from 5 to 200. Any number less than 5 is rounded up to 5. Any number greater than 200 is rounded down to 200.

**ShowTree:** This parameter determines whether or not the Application Browser view includes the left pane (referred to as the folder view). The value settings are True and False. True causes the folder view to display, and False causes it to be removed.

**ShowTasks:** This parameter determines whether or not the folder view (left pane) includes the Work Online/Work Offline, MiddleTier Log In/Middle Tier Log Out, Refresh Applications, and Help options. The VALUE settings are True and False. True causes the options to display, and False causes them to be removed.

**AppDisplayType:** This parameter determines how the applications are displayed in the right pane of the Application Browser view. The value settings are 0 and 1. The default setting, 0, causes the application icons to display as large icons, similar to the Large Icons view in Windows Explorer. The 1 setting causes the applications to be listed in table format, similar to the List view in Windows Explorer.

**ShowAppFrameNavigation:** This parameter determines whether or not the right pane of the Application Browser view includes navigation. The VALUE settings are True and False. True causes the right pane to include navigation. The type of navigation depends on the setting for the AppDisplayType parameter:

- ♦ When the AppDisplayType parameter is set to 0 (large icons), navigation is displayed as a breadcrumb trail (for example, ZENworks Tree > Application Folder > Application A).
- ♦ When the AppDisplayType parameter is set to 1 (small icons), navigation is displayed as an up-arrow at the top of the applications list.

Setting this parameter's value to False causes the Application Browser view to start with the All folder open, meaning that all application icons are displayed in the right pane. If the All folder

is disabled in the user's Launcher Configuration settings in ConsoleOne, this parameter is ignored (in other words, the default value of True is used).

**ShowIEToolbarButton:** This parameter determines whether or not the Application Browser button is added to the Internet Explorer toolbar. The Application Browser button launches the local version of the myapps.html file. The VALUE settings are True and False. The True setting is the default setting and causes the Application Browser button to be added to the toolbar. The False setting causes the Application Browser button to be removed from the toolbar. Whenever this setting is changed, the user must close Internet Explorer and then reopen it for the change to take affect.

**MiddleTierAddress:** This parameter applies only if you've configured a ZENworks Middle Tier Server for access to eDirectory.

The MiddleTierAddress parameter lets you specify the IP address of the Middle Tier Server that the user authenticates to. It is used only if a Middle Tier Server address is not included in the Windows registry; the registry includes the address if the user entered it when running the ZENworks Desktop Management Agent installation program.

**Nt4PluginVersion:** This parameter applies only when upgrading from ZENworks for Desktops 4.0.1.

The ZENworks 7 Novell Application Launcher plug-in is not supported on Windows NT 4 workstations (see [Section 36.3, "Interoperability with Windows NT 4 Workstations,"](#) on [page 475](#) for more information about Windows NT 4 support). You can, however, continue to use the ZENworks for Desktops 4.0.1 Novell Application Launcher plug-in on those workstations. This parameter specifies the minimum version of the ZENworks for Desktops 4.0.1 Novell Application Launcher plug-in that will run on Windows NT workstations.

For example, the default parameter setting (4,0,1,0) requires only that the original ZENworks for Desktops 4.0.1 Novell Application Launcher plug-in be installed on the workstation. If you place an updated ZENworks for Desktops 4.0.1 Novell Application Launcher plug-in (zfd40.cab) with a version number higher than 4,0,1,0 (for example, 4,0,1,1 or 4,0,1,2) on the Middle Tier Server, workstations that have the 4.0.1.0 Novell Application Launcher plug-in are upgraded to the new version only if you change this parameter to the new version. In other words, upgrades do not happen automatically when you place a newer Novell Application Launcher plug-in version on the Middle Tier Server; if you want workstations upgraded, you must force the upgrade by incrementing the version number specified in this parameter.

### 3 Test the setup by accessing the myapps.html page.

When Windows 98/2000/XP users access the myapps.html page, the new ZENworks 7 Novell Application Launcher plug-in (zfdplugin.cab) is installed to their workstations. If you have Windows NT users who access the myapps.html page, the ZENworks for Desktops 4.0.1 Novell Application Launcher plug-in (zfd40.cab) is used.

## 30.8 Upgrading Workstations

After you have updated the ZENworks Desktop Management Server and the ZENworks Middle Tier Server, you need to upgrade your workstations.

Listed below are upgrade procedures and software behaviors that you need to know about:

- On workstations that are using the Novell Client, upgrade the Novell Client to version 4.91. This uninstalls the older Novell Client and installs the 4.91 version.

- ♦ On workstations that have the ZENworks for Desktops 4.x Agent installed, install the ZENworks 7 Desktop Management Agent. This uninstalls the ZENworks for Desktops 4.x Agent and installs the ZENworks 7 Desktop Management Agent.

For installation methods and detailed installation steps, see [Chapter 12, “Installing and Configuring the Desktop Management Agent,”](#) on page 137.

- ♦ The version of the agent that shipped with ZENworks for Desktops 4.0 (`setup.exe`) is no longer supported. Prior to upgrading a ZENworks for Desktops 4.0 Agent to the ZENworks 7 Desktop Management Agent (or the ZENworks 7 with SP1 Desktop Management Agent), you should replace this older version of the agent with the version of the agent shipping with the ZENworks 6 Suite (ZENworks for Desktops 4.0.1/SP1b) or later.
- ♦ When configuring the upgrade Application object for the Desktop Management Agent (for use by the Novell Application Launcher), we recommend that you set the application to *Run Once* so that after the agent is installed the user can no longer see the application in Novell Application Launcher. You should also make sure that uninstall is not enabled for the Application object.

Administrator rights are not needed to upgrade the Desktop Management Agent. The user's privileges are elevated temporarily by the Desktop Management Agent during the installation.

- ♦ If you upgrade the ZENworks for Desktops 4.x Agent (excluding ZENworks for Desktops 4.0.1 Interim Release 4, Interim Release 5, Interim Release 6, or Interim Release 7) to ZENworks 7 Desktop Management (or ZENworks 7 Desktop Management with SP1), and if you use a workstation-associated Application object to perform the upgrade, users are not prompted to reboot their workstations.

If you perform the upgrade with a user-associated Application object, the reboot prompt is displayed.

- ♦ If you want to set the `NAL_SINGLE_TREE` MSI property when you upgrade the ZENworks for Desktops 4.0.1 Agent (or later, except for Interim Release 4) to ZENworks 7 Desktop Management (or ZENworks 7 Desktop Management with SP1), you must also set the `ZENWORKS_TREE` property and specify the tree from which the workstation will receive ZENworks files.

If you are upgrading the ZENworks for Desktops 4.0.1 Agent from ZENworks for Desktops 4.0.1 Interim Release 5 or Interim Release 6 to ZENworks 7 Desktop Management (or ZENworks 7 Desktop Management with SP1), you need to set the tree value to the tree where the workstation is imported. If the workstation has not been imported, the setting is ignored.

### 30.8.1 Rolling Back to the ZENworks for Desktops 4.x Agent

We strongly recommend against rolling back to the ZENworks for Desktops 4.x Agent after you have upgraded to the ZENworks 7 Desktop Management Agent. Rolling back (that is, installing the ZENworks for Desktops 4.0.1 Agent or a subsequent patch or interim release while the ZENworks 7 Management Agent is still installed) causes the Agent to stop working.

If you need to revert to an older version of the Agent, we recommend that you uninstall the ZENworks 7 Desktop Management Agent first, then install the ZENworks for Desktops 4.0.1 Agent.



# Upgrading to the ZENworks 7 Launch Gadget

# 31

Novell® ZENworks® 6 Web Self-Service (also known as ZENworks OnDemand Services™ in previous releases) has been discontinued and is not included in ZENworks 7. Depending on how extensively you used the Web Self-Service functionality, you can either maintain full ZENworks 6 Web Self-Service functionality or you can upgrade and use only the launching capability provided by the ZENworks 7 Launch gadget.

- ♦ **Coexistence:** ZENworks 6 Web Self-Service can coexist with ZENworks 7 Desktop Management. The ZENworks 6 Launch Item gadget displays 7 applications (those applications whose Application objects are created with the ZENworks 7 snap-ins for ConsoleOne®) and pre-7 applications, but it can only successfully launch pre-7 applications. This means that you need to maintain your pre-7 applications by managing them with the pre-7 snap-ins. For DeFrame™ terminal server applications, you must also maintain your ZENworks DeFrame terminal servers.
- ♦ **Upgrade:** To maintain the ability to launch ZENworks applications from within a Novell exteNd™ Director™ 4.1 SE portal, the Launch Item gadget (renamed to the ZENworks Launch gadget in ZENworks 7) is included as part of ZENworks 7 Desktop Management. The ZENworks Launch gadget provides launching of applications whose Application objects are created using the ZENworks 7 snap-ins for ConsoleOne. It does not display applications whose Application objects were created with pre-ZENworks 7 snap-ins.

The following sections provide instructions for upgrading to the ZENworks Launch gadget:

- ♦ Section 31.1, “Installing the ZENworks Launch Gadget to Your Portal,” on page 427
- ♦ Section 31.2, “Copying Citrix Files to Your Portal,” on page 428
- ♦ Section 31.3, “Installing the Citrix ICA and Microsoft RDP Clients to Workstations,” on page 429
- ♦ Section 31.4, “Upgrading Application Objects,” on page 430
- ♦ Section 31.5, “Removing ZENworks 6 Web Self-Service Components,” on page 430

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**NOTE:** The information in this section also applies to ZENworks 7 Desktop Management with Support Pack 1.

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## 31.1 Installing the ZENworks Launch Gadget to Your Portal

- 1 Make sure you have Novell exteNd Director 4.1 Standard Edition installed and running on a NetWare 6.x or Windows 2000/2003 server.

For installation information, see the [Novell exteNd Director 4.1 Standard Edition Installation Guide](http://www.novell.com/documentation/lg/nedse41) (<http://www.novell.com/documentation/lg/nedse41>).

- 2 At a Windows workstation from which you can administer your exteNd Director 4.1 portal, insert the *Novell ZENworks 7 Companion 2 CD* (or the *Novell ZENworks 7 with Support Pack 1 Companion 2 CD*) into the CD drive.

The *Novell ZENworks 7 Companion 2 CD* (or the SP1 CD) contains the portal module file, `zenworks.npm`, which includes the ZENworks Launch gadget that you install to the portal. The file is located in the `\zenworks launch gadget` directory.

- 3 Log in to your portal as an administrator.
- 4 Click *Portal Administration > Administer the Portal* to display the Portal Administration page.
- 5 Click *Modules* to display the Modules page.
- 6 Click *Install* to display the Install a New Module page.
- 7 In the *Path to Module File Package* field, click *Browse*, then browse to and select the `zenworks.npm` file.

The `.npm` file is in the `\zenworks launch gadget` directory on the *Novell ZENworks 7 Companion 2 CD* (or the SP1 CD).

- 8 Click *Install* to display the Thin Client Support options, select *ICA & RDP* if you want support for both ICA and RDP clients or select *RDP* if you want support for RDP clients only, then click *Next*.
- 9 (Conditional) If you selected *ICA & RDP* for thin-client support, fill in the following fields, then click *Next*:

**Citrix XML Service Address:** Specify the DNS name or IP address of the server where the Citrix IMA database resides. If you have multiple Citrix farms, enter the addresses of each server where an IMA database resides, separated by a comma.

**Citrix XML Service Port:** Specify the port number being used by the Citrix XML Service. Typically, this is port 80. To check the port number in MMC, click *Servers > Server Properties > MetaFrame XP Settings*, then check the *TCP/IP Port* field.

- 10 When installation is complete, exit the portal.
- 11 If the portal is on a NetWare® 6.x server, restart the server.

or

If the portal is on a Windows 2000/2003 server, either restart the server or restart Tomcat.

## 31.2 Copying Citrix Files to Your Portal

If you are using Citrix servers for your terminal server environment, you must copy several Citrix files to the exteNd Director portal. These files are used by the Launch gadget when launching an ICA client session.

- 1 Using the *Citrix MetaFrame XP Presentation Server CD*, copy the entire `\metaframe\w2k\program files\citrix\application\nfuse` directory to the following portal directory:

```
tomcat\webapps\nps\portal\gadgets\com.novell.ondemand.gadgets.z  
enlaunchgadget
```

The resulting directory is:

```
tomcat\webapps\nps\portal\gadgets\com.novell.ondemand.gadgets.z  
enlaunchgadget\nfuse
```



- 2 Move the \*.properties files from the com.novell.ondemand.gadgets.zenlaunchgadget\nfuse directory to the following portal directory:

tomcat\webapps\nps\portal\web-inf\classes

If any of the files already exist in the directory, keep the files with the newest dates.

- 3 Move the \*.jar files from the com.novell.ondemand.gadgets.zenlaunchgadget\nfuse directory to the following portal directory:

tomcat\webapps\nps\portal\web-inf\lib

If any of the files already exist in the directory, keep the files with the newest dates.

## 31.3 Installing the Citrix ICA and Microsoft RDP Clients to Workstations

In order for the ZENworks Launch gadget to launch thin-client applications, the workstation must have the Citrix ICA client and Microsoft RDP client installed.

The following sections contain additional information:

- ♦ Section 31.3.1, “ICA Client,” on page 429
- ♦ Section 31.3.2, “RDP Client,” on page 430

### 31.3.1 ICA Client

The ZENworks Launch gadget requires the workstation to have either the ICA Program Neighborhood (PN) client or the ICA Web client installed. To install the PN client or Web client:

- 1 Download the PN client or the Web client files from the [Citrix Download Clients site \(http://www.citrix.com/site/SS/downloads/downloads.asp?dID=2755\)](http://www.citrix.com/site/SS/downloads/downloads.asp?dID=2755).

- 2 Distribute the client files to each workstation:

- 2a For the Web client, copy the wficat.cab file to the following location on your portal server:

tomcat\webapps\nps\portal\gadgets\com.novell.ondemand.gadgets.zenlaunchgadget\bin

When a user launches a terminal server application that you've configured to run in an ICA client session, the Launch gadget uses the .cab file to install the Web client.

- 2b For the PN client, follow the installation instructions in the *Citrix Administrator's Guide*, or use Novell Application Launcher™ to distribute the client files.

or

Rename the PN client file to wficat.cab and copy it to the following location on your portal server:

tomcat\webapps\nps\portal\gadgets\com.novell.ondemand.gadgets.zenlaunchgadget\bin

### 31.3.2 RDP Client

The Microsoft RDP 5.1 client (`msrdp.ocx`) is included with the ZENworks Launch gadget. When a user launches a terminal server application that you've configured to run in an RDP client session, the Launch gadget installs the `msrdp.ocx` file to the `c:\program files\novell\zenworks` directory on the user's workstation and registers the `.ocx` file.

## 31.4 Upgrading Application Objects

The ZENworks Launch gadget only displays applications whose Application objects are created with the ZENworks 7 snap-ins for ConsoleOne. If you have pre-7 applications that you want displayed in the Launch gadget, you need to re-create them using the 7 (or 7 SP1) snap-ins.

## 31.5 Removing ZENworks 6 Web Self-Service Components

After you've upgraded to the ZENworks 7 Launch gadget, you should remove the portal assignments that gave users access to the ZENworks 6 Web Self-Service gadgets. If desired, you can also remove the pages and gadgets from your portal, as well as the Web Self-Service objects from Novell eDirectory™.

# Upgrading from ZENworks 6.5x Desktop Management

# 32

Upgrading Novell® ZENworks® 6.5 Desktop Management (or 6.5 SP1 or SP2 Desktop Management, both of which are referred to as ZENworks 6.5x Desktop Management hereafter) to ZENworks 7 Desktop Management is as simple as installing the new product. The installation program automatically upgrades the Desktop Management components including the Desktop Management Server, the ZENworks Middle Tier Server, and the Desktop Management Agent.

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**NOTE:** We recommend that you upgrade from ZENworks 6.5 Desktop Management to ZENworks 7 Desktop Management in this order: Desktop Management Server, ZENworks Middle Tier Server, Desktop Management Agent.

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The first section of this part of the guide includes information for administrators who plan to upgrade from ZENworks Desktop Management 6.5x to ZENworks Desktop Management 7 on a gradual basis:

- ♦ [Section 32.1, “ZENworks 6.5x Desktop Management Component Compatibility with ZENworks 7 Desktop Management,” on page 431](#)

An exception to this upgrade procedure concerns a change to how `ziswin.exe` works for Desktop Imaging in ZENworks 7. To prevent image-safe data loss, proceed with the instructions in:

- ♦ [Section 32.2, “Preserving Image-Safe Data,” on page 432](#)

Another exception to this upgrade procedure is the Workstation Inventory component. You need to perform certain tasks to prepare ZENworks 6.5x Workstation Inventory to be upgraded to ZENworks 7 Workstation Inventory. The second section of this part of the guide provides the information you need to help you with the upgrade:

- ♦ [Section 32.3, “Preserving Preboot Services Settings During Upgrade,” on page 433](#)
- ♦ [Section 32.4, “Upgrading the Wake-On-LAN Service,” on page 434](#)
- ♦ [Section 32.5, “Upgrading Workstation Inventory,” on page 434](#)

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**NOTE:** The information in this section also applies to the upgrade from ZENworks 6.5x Desktop Management to ZENworks 7 Desktop Management with SP1.

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## 32.1 ZENworks 6.5x Desktop Management Component Compatibility with ZENworks 7 Desktop Management

The following table illustrates the major components ZENworks 6.5x Desktop Management and ZENworks 7 Desktop Management that work together while an upgrade from 6.5x to 7 occurs. Read across each row to determine version/component compatibility.

**Table 32-1** ZENworks 6.5 Desktop Management and ZENworks 7 Desktop Management Component Compatibility

| Desktop Management Agent Version | ZENworks Middle Tier Version | Desktop Management Server Version |
|----------------------------------|------------------------------|-----------------------------------|
| 6.5x                             | 6.5x                         | 6.5x                              |
| 6.5x                             | 6.5x                         | 7                                 |
| 6.5x                             | 7                            | 7                                 |
| 7                                | 7                            | 7                                 |

## 32.2 Preserving Image-Safe Data

How the `ziswin.exe` imaging component works has been changed in ZENworks 7 Desktop Management. This means that images created and laid down on workstations using previous versions of ZENworks Desktop Imaging contain the older version of `ziswin.exe` within their images.

When using ZENworks 7 Desktop Imaging to re-image these workstations, the image-safe data for the workstations is cleared if `ziswin.exe` is run in the Service Mode, which contains a Restoration Submode that automatically does the image-safe data removal.

To preserve the image-safe data on your imaged workstations, in the images on each applicable workstation, you must replace the older version of `ziswin.exe` with the version from ZENworks 7. There are two ways to do this:

- [Section 32.2.1, “Updating Ziswin.exe Using an Add-on Image,” on page 432](#)
- [Section 32.2.2, “Updating Ziswin.exe Using Image Explorer,” on page 433](#)

For more information on `ziswin.exe`, see “ZENworks Imaging Windows Agent (Ziswin.exe)” in the *Novell ZENworks 7 Desktop Management Administration Guide*.

### 32.2.1 Updating Ziswin.exe Using an Add-on Image

- 1 Create an add-on image containing the new `ziswin.exe` from ZENworks 7.

The newer version of `ziswin.exe` is located in the `sys:public\zenworks\imaging` directory on your Imaging server.

The older version of `ziswin.exe` to be replaced is located at:

|                 |                                             |
|-----------------|---------------------------------------------|
| Windows 98      | <code>c:\windows\system\ziswin.exe</code>   |
| Windows 2000/XP | <code>c:\windows\system32\ziswin.exe</code> |

For information on how to create an add-on image, see “[Creating an Add-On Image](#)” in the *Novell ZENworks 7 Desktop Management Administration Guide*.

- 2 Associate the add-on image with the base image that contains the older version of `ziswin.exe`.

For information on how to associate an add-on image, see “[Associating an Add-On Image with a Base Image](#)” in the *Novell ZENworks 7 Desktop Management Administration Guide*.

### 3 Apply the add-on image to the workstation.

For information on how to apply an add-on image, see “[Performing an Automatic Imaging Creation or Restoration](#)” or “[Manually Putting an Image on a Workstation](#)” in the *Novell ZENworks 7 Desktop Management Administration Guide*.

This causes the older `ziswin.exe` to be replaced with the newer ZENworks 7 version, which preserves the image-safe data for the workstation.

From this point on, the workstation's image can be used to re-image other workstations without losing their image-safe data.

## 32.2.2 Updating Ziswin.exe Using Image Explorer

### 1 Open Image Explorer (in the `sys:\public\zenworks\imaging` directory of your Imaging server.

or

In ConsoleOne, click *Tools > ZENworks Utilities > Imaging > Image Explorer*).

### 2 Use Image Explorer to replace the older `ziswin.exe` with the version from ZENworks 7.

The newer version of `ziswin.exe` is located in the `sys:public\zenworks\imaging` directory on your Imaging server.

The older version of `ziswin.exe` to be replaced is located at:

|                 |                                             |
|-----------------|---------------------------------------------|
| Windows 98      | <code>c:\windows\system\ziswin.exe</code>   |
| Windows 2000/XP | <code>c:\windows\system32\ziswin.exe</code> |

For information on how to edit an image, see “[Image Explorer \(imgexp.exe\)](#)” in the *Novell ZENworks 7 Desktop Management Administration Guide*.

From this point on, the workstation's image can be used to re-image other workstations without losing their image-safe data.

## 32.3 Preserving Preboot Services Settings During Upgrade

As previously noted in “[Caution](#)” on [page 353](#), some of the files used by ZENworks Imaging are always overwritten when the product is reinstalled or upgraded. This is true if you have previously installed ZENworks Preboot Services. If you are upgrading from a legacy PXE server (for example, ZENworks for Desktops 3.2 or 4.0.1, the `.ini` files (in particular, the `dtb.ini` file, the `tftp.ini` file, and the `pdhcp.ini` file) for Preboot Services are overwritten because the format of the files changed in version ZENworks 6.5 Desktop Management and ZENworks 7 Desktop Management. In such cases, you need to reconfigure these `.ini` files after the upgrade. For this reason it is a good idea to have a backup of the `.ini` files on hand so that you have a record of the file settings.

Similarly, if you previously installed ZENworks 6.5 Preboot Services in a clustering environment, the upgrade installation program creates several configuration settings in the `pdhcp.ini`, `tftp.ini`, and `pdhcp.ini` files for the virtual server. The same settings are re-created by the upgrade installation program during an upgrade, so it is good practice to make a backup copy of

these .ini files to preserve a record of the configuration settings that you can manually transfer to the new .ini files after the upgrade, if necessary.

## 32.4 Upgrading the Wake-On-LAN Service

On Windows servers, while upgrading the Wake-On-LAN service from ZENworks 6.5 Desktop Management to ZENworks 7 Desktop Management, be sure to close the Service Control Manager window.

## 32.5 Upgrading Workstation Inventory

To upgrade Workstation Inventory from ZENworks 6.5x Desktop Management to ZENworks 7, perform the following tasks in the order listed:

1. Review the information in [Section 32.5.1, “Pre-Upgrade Considerations,” on page 434](#).
2. Perform the tasks explained in [Section 32.5.2, “Tasks To Be Performed Before Upgrade and Database Migration,” on page 436](#).
3. Perform the tasks explained in [Section 32.5.3, “Upgrading the ZENworks 6.5x Workstation Inventory Components,” on page 438](#).
4. Perform the tasks explained in [Section 32.5.4, “Tasks to Perform after Database Migration,” on page 438](#).

### 32.5.1 Pre-Upgrade Considerations

Before you upgrade the Inventory components from ZENworks 6.5x Desktop Management to ZENworks 7, review the facts in the following sections:

- ♦ [“Inventory Server” on page 434](#)
- ♦ [“Inventory Agent” on page 435](#)
- ♦ [“Management Console” on page 435](#)

#### Inventory Server

- ♦ Both ZENworks 7 Inventory servers and ZENworks 6.5x Desktop Management Inventory servers can reside in the same eDirectory™ tree.
- ♦ ZENworks 6.5x Desktop Management Inventory servers can roll up inventory data to a ZENworks 7 Inventory server, but a ZENworks 7 Inventory server cannot roll up inventory data to a ZENworks 6.5x Desktop Management Inventory server.

If you perform roll-up of your inventory data, ZENworks 6.5x Desktop Management Inventory servers must be upgraded to ZENworks 7 in a top-down order. Upgrade the root server first, then the intermediate servers, and finally the leaf servers.

- ♦ Both ZENworks 6.5x Desktop Management Inventory servers and ZENworks 7 Inventory servers can use ZENworks 6.5x Desktop Management Roll-Up policies that have been upgraded to ZENworks 7.
- ♦ Do not attach a ZENworks 7 Inventory database directly to a ZENworks 6.5x Desktop Management Inventory server; likewise, do not attach a ZENworks 6.5x Desktop Management Inventory database directly to a ZENworks 7 Inventory server. Upgrade the Inventory server and its database in unison. Although you can migrate all the supported databases (Sybase,

Oracle, and MS SQL), the ZENworks 7 Desktop Management installation automatically upgrades only the Sybase database.

- ♦ Do not have a ZENworks 6.5x Desktop Management Inventory server and a ZENworks 7 Inventory server store inventory data directly to the same Inventory database.
- ♦ A ZENworks 7 Inventory server can process .zip files from ZENworks 6.5x Desktop Management Inventory servers.
- ♦ Do not delete the ZENworks 6.5x Desktop Management .str and .zip files in a ZENworks 6.5x Desktop Management Inventory server's SCANDIR directories after you've upgraded the Inventory server to ZENworks 7.
- ♦ Upgrading a ZENworks 6.5x Desktop Management Inventory server to ZENworks 7 does not change the role of the Inventory server.

## Inventory Agent

- ♦ The ZENworks 6.5x Desktop Management Inventory agent can send inventory data to a ZENworks 7 Inventory server, which means the data can be stored in a ZENworks 7 Inventory database.

The ZENworks 7 Inventory agent cannot send inventory data to a ZENworks 6.5x Desktop Management Inventory server, which means the data cannot be stored in a ZENworks 6.5x Desktop Management Inventory database.

Do not upgrade to the ZENworks 7 Inventory Agent until you've upgraded your Inventory servers and databases.

- ♦ The ZENworks 6.5x Desktop Management Inventory agent, and the ZENworks 7 Inventory agent can all use a ZENworks 6.5x Desktop Management Inventory policy that has been upgraded to ZENworks 7, or they can use a ZENworks 7 Inventory policy created with the ZENworks 7 Desktop Management snap-ins.
- ♦ If you want to install or upgrade the ZENworks 6.5x Desktop Management agents through Workstation Imaging, ensure that the image is taken on a ZENworks 7 Desktop Management workstation that is unregistered.

## Management Console

- ♦ You can use ZENworks 7 Desktop Management snap-ins to ConsoleOne to administer the inventory data and inventory objects for ZENworks 6.5x Desktop Management and ZENworks 7 (such as Inventory Service object, database objects, Workstation Inventory policy, Roll-Up policy, Dictionary Update policy, and Database Location policy).
- ♦ You cannot use the ConsoleOne snap-ins for ZENworks 6.5x Desktop Management to administer ZENworks 7 Desktop Management inventory data and inventory objects.
- ♦ Do not use the management consoles of ZENworks 6.5x Desktop Management or ZENworks 7 Desktop Management to configure the same ZENworks for Desktops 4.x Inventory objects.

## 32.5.2 Tasks To Be Performed Before Upgrade and Database Migration

After reviewing the facts mentioned in [Section 32.5.1, “Pre-Upgrade Considerations,” on page 434](#), you must perform the following tasks in order before you upgrade from ZENworks 6.5x Desktop Management to ZENworks 7 Desktop Management:

**1** Stop the Inventory service.

- 1a** On a NetWare® Inventory server: At the server console prompt, enter  
`sys:\system\invstop.ncf`.

If you do not want the Sybase database to be stopped automatically when you stop the Inventory services, comment the `Unload dbsrv8.nlm` line in the `sys:\system\invstop.ncf` file.

- 1b** On a Windows 2000/2003 Inventory server: In the Control Panel, double-click *Administrative Tools*, double-click *Services*, select *Novell Inventory Service*, then click *Stop*.

**2** Stop the Inventory database.

- 2a** On NetWare: At the Sybase console prompt, press the Q key.

- 2b** On Windows 2000/2003: In the Control Panel, double-click *Administrative Tools*, double-click *Services*, select *Novell Database - Sybase*, then click *Stop*.

**3** Stop the ZENworks Web server.

On Windows 2000/2003: In the Control Panel, double-click *Administrative Tools*, double-click *Services*, select *Novell ZFS Web Server*, then click *Stop*.

**4** If Java has not been unloaded on the target NetWare servers, unload `java.nlm` (at the server console, enter `java -exit`).

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**IMPORTANT:** This command stops all Java processes running on the server. Verify that all Java processes are stopped while you are installing ZENworks 7 Desktop Management.

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**5** On the target Windows servers, close the Services window.

**6** Make sure that you have made and archived a reliable backup of the database for ZENworks 6.5x Desktop Management

**7** Make sure that the database for ZENworks 6.5x Desktop Management is not accessed from ConsoleOne.

**8** Make sure that the recommended ZENworks 7 Workstation Inventory requirements are met. For more information, see [Part II, “Preparation,” on page 37](#).

**9** If `ZENworks_installation_path\zenworks\inv\server\wminv\properties\inventoryremoval.properties` has been modified after the ZENworks 6.5x Desktop Management installation, take a reliable backup of `inventoryremoval.properties`.

**10** Make sure that the schema has been migrated to ZENworks 7. You can migrate the schema by using the ZENworks 7 Desktop Management installation program. For more information on how to migrate the schema, see [Section 9.1.1, “Extending the Schema Before the Installation,” on page 79](#).

**11** Before upgrading the Inventory server, make sure that you have upgraded its associated database server.



**12** If you have a ZENworks 6.5x Desktop Management database running Oracle, you must perform the following tasks before the migration:

**12a** Ensure that the Oracle's version is 9.2.0.6 or later.

**12b** In

*inventory\_database\_installation\_path\init.ora\_path\init.ora*,  
set the value the following parameters as shown below:

```
db_cache_size=192M
sort_area_size=10000000
shared_pool_size = 157286400
open_cursors = 2048
log_buffer = 1024000
session_cached_cursors=2048
compatible=9.2.0
```

You could increase the cache size and shared pool to have Shared Global Area (SGA) to 30-40% physical RAM size.

**12c** Ensure that the Inventory database is up and running.

You must have a larger rollback segment because the database migration and the storage of further data cannot succeed because of ORA-01555 and other rollback segment-related issues.

**12d** Increase the value of the rollback segment by executing the following sql script to add an additional data file to the rollback segment (rbs) and to add a Redo log group:

```
connect / as sysdba;
alter tablespace rbs add datafile
'Inventory_database_installation_path\rbs2.ora' size 40M
autoextend on next 50K maxsize 60M;
alter rollback segment rb0 storage (maxextents unlimited);
alter rollback segment rb1 storage (maxextents unlimited);
ALTER DATABASE ADD LOGFILE GROUP 3
('Inventory_database_installation_path\log3.ora') SIZE 50M;
```

**12e** Stop the Inventory database.

**12f** Ensure that the value of the compatible parameter in

*inventory\_database\_installation\_path\path\_to\_init.ora\init.ora* is set to 9.2.0 or later.

**12g** If the size of any data file is about to exceed 4096 MB, you must add extra data files to the corresponding tablespace.

**12h** Extract the appropriate, platform-specific *atlasperf\_altertablespace.sql* from

*zenworks\_installation\_directory\zenworks\inv\server\wminv\properties\sql.zip* to C:.

If Oracle is running on Windows, extract *atlasperf\_altertablespace.sql* from the *oracle\winntspecific* directory within *sql.zip*.

If Oracle is running on UNIX, extract *atlasperf\_altertablespace.sql* from the *oracle\unixspecific* directory within *sql.zip*.

**12i** Edit *atlasperf\_altertablespace.sql* to set the value of maxsize for all data files to nearest multiple of 4 GB.

For example, if the size of `CIM8.ora` is 5 GB, then set the value of `MAXSIZE` to 8192 MB.

**12j** Ensure that the file path of all data files listed in `atlasperf_altertablespace.sql` is correct.

**12k** Restart the Inventory database.

**12l** Execute `atlasperf_altertablespace.sql`.

### 32.5.3 Upgrading the ZENworks 6.5x Workstation Inventory Components

You can upgrade the ZENworks 6.5x Desktop Management Workstation Inventory components by installing ZENworks 7 Desktop Management (or SP1), if the machine where you want to install the ZENworks 7 Desktop Management meets the installation requirements. For more information about the installation requirements, see [Part II, “Preparation,” on page 37](#).

The ZENworks 7 Desktop Management Inventory server supports the same set of roles as ZENworks 6.5x Desktop Management. Therefore, when you upgrade from ZENworks 6.5x Desktop Management to ZENworks 7 Desktop Management, the role of the Inventory server is retained.

The ZENworks 7 Desktop Management installation program (or the SP1 installation program) automatically migrates all the ZENworks 6.5x Desktop Management policies to ZENworks 7 Desktop Management (or to ZENworks 7 Desktop Management with SP1).

### 32.5.4 Tasks to Perform after Database Migration

You must perform the following tasks after upgrading the Inventory server and migrating the Inventory database is complete:

- 1** Stop the Inventory service.
- 2** If your Inventory database is running Oracle, do the following to improve the database performance:
  - 2a** Extract `atlasperf_alterfreelist.sql` from `zenworks_installation_directory\zenworks\inv\server\wminv\properties\sql.zip` and execute at the SQLPLUS prompt.
  - 2b** Execute the `oracle\common\oracle_perf.sql` and `oracle\common\oracle_perf2.sql` files from `inventory_server_installation_path\zenworks\inv\server\wminv\properties\sql.zip` to add performance enhancing indexes to the database.
  - 2c** Execute `oracle_dbexport_perf.sql` from the *Novell ZENworks 7 Companion 2 CD \database\oracle8i\common* directory or from the *Novell ZENworks 7 Companion with Support Pack 1 Companion 2 CD \database\oracle\_x\common* directory.
  - 2d** (Conditional) If you are migrating from ZENworks 6.5 Desktop Management SP1 Hot Patch 1 or Hot Patch 2, or ZENworks 6.5 Desktop Management SP2, extract `\oracle\common\zfd65sp1hp1_65sp2_70.sql` from `zenworks_installation_directory\zenworks\inv\server\wminv\properties\sql.zip` and execute it at the SQLPLUS prompt.

For more information on how to improve the performance of the Inventory database, see “Performance Tips” in “Workstation Inventory” in the *Novell ZENworks 7 Desktop Management Administration Guide*.

- 3** (Optional) If the Inventory database is running MS SQL, execute the following scripts from `inventory_server_installation_path\zenworks\inv\server\wminv\properties\sql.zip` with appropriate user logins as explained below from the MS SQL Query Analyzer:

- 3a** Login as CIM, and execute `mssql_perf_cim.sql`.

- 3b** Login as mw\_dba and execute `mssql_perf_mw_dba.sql`.

- 3c** Login as zenworks and execute `msswl_perf_zenworks.sql`.

- 3d** (Conditional) If you are migrating from ZENworks 6.5 Desktop Management SP1 Hot Patch 1 or Hot Patch 2, or ZENworks 6.5 Desktop Management SP2, log in as CIM and execute `\mssql\zfd65sp1hp1_65sp2_70.sql`.

This enhances the performance of the Inventory database.

For more information on how to improve the performance of the Inventory database, see “Performance Tips” in “Workstation Inventory” in the *Novell ZENworks 7 Desktop Management Administration Guide*.

- 4** Start the Inventory services.



# Upgrade Considerations for ZENworks 7 Desktop Management with SP1

# 33

This section includes procedural information necessary for upgrading from earlier versions of Novell® ZENworks® for Desktops or ZENworks Desktop Management to ZENworks 7 Desktop Management with Support Pack 1 (SP1) using the GUI upgrade method. For information on upgrading using Server Software Packages, see [Chapter 34, “Upgrading to Support Pack 1 Using Server Software Packages,”](#) on page 443.

The following information is included in this section:

- ♦ [Section 33.1, “Overview,”](#) on page 441

## 33.1 Overview

Review the following information to understand the functions of the SP1 upgrade.

- ♦ [Section 33.1.1, “What to Expect from the SP1 Installation,”](#) on page 441
- ♦ [Section 33.1.2, “What the SP1 Installation Program Does Not Do,”](#) on page 442
- ♦ [Section 33.1.3, “Incrementally Upgrading Your Network Servers,”](#) on page 442

For information about the changes in SP1, see [Section 28.5, “What’s New in ZENworks 7 Desktop Management with Support Pack 1,”](#) on page 358.

### 33.1.1 What to Expect from the SP1 Installation

- ♦ The SP1 installation program uses the original ZENworks 7 Desktop Management installation paths to discover and upgrade the ZENworks 7 Desktop Management software.
- ♦ The SP1 installation program automatically stops and restarts services (except for the Inventory service) if they are running on a server.
- ♦ SP1 files are always copied, replacing both older and newer files with the upgraded files. Files copied to other locations outside of the ZENworks directories are replaced only if they are older.
- ♦ The SP1 installation upgrades the ConsoleOne® snap-ins to ZENworks 7 Desktop Management with SP1 on both the installation workstation and on any target servers found by the upgrade wizard. For the ConsoleOne check box to show as selected, the version of the snap-ins previously installed must be version 7.
- ♦ The installation program upgrades an installation of ZENworks for Desktops 3.2 Support Pack 3, ZENworks for Desktops 4.x, ZENworks 6.5x Desktop Management, and ZENwork 7 Desktop Management to ZENworks 7 Desktop Management with Support Pack 1.

### 33.1.2 What the SP1 Installation Program Does Not Do

- ♦ The installation program does not allow you to deselect any feature check boxes in the installation program. Their status is determined by the installation program when you select the servers for upgrading.
- ♦ If you are upgrading the Inventory server, the installation program does not automatically start the Inventory service. You must manually start the service after the SP1 upgrade.
- ♦ When you upgrade from ZENworks for Desktops 3.2 SP3 to ZENworks 7 Desktop Management with SP1, the SP1 installation program lists components, such as Remote Management Wake-On-LAN and Inventory Proxy, that were not available for the 3.2x release. If you want these newer components to be included in your upgrade, select them for installation when you see them displayed.
- ♦ When you upgrade to ZENworks 7 Desktop Management with Support Pack 1 Services on Linux, the installation program does not detect components that were previously installed. All components are selected for installation by default.

### 33.1.3 Incrementally Upgrading Your Network Servers

You can upgrade all ZENworks servers (in a single eDirectory tree) to ZENworks 7 Desktop Management with SP1 in one pass, or incrementally (such as geographical locations).

The SP1 installation program updates servers one at a time. If you have several servers, consider the time that it might take to upgrade all of them in one installation session. If that single session might take too long, select target servers in groups so that you can upgrade one group at a time.

# Upgrading to Support Pack 1 Using Server Software Packages

# 34

This section provides procedures for using Server Software Packages to upgrade older versions of Novell® ZENworks® Desktop Management to ZENworks 7 Desktop Management with Support Pack 1 (SP1).

The following information is included in this section:

- ♦ [Section 34.1, “Understanding the Upgrade Components,” on page 443](#)
- ♦ [Section 34.2, “Testing the Upgrade CPKs,” on page 445](#)
- ♦ [Section 34.3, “Upgrade Prerequisites Checklist,” on page 449](#)
- ♦ [Section 34.4, “Upgrading Using a Server Software Package,” on page 450](#)
- ♦ [Section 34.5, “Determining if the Upgrade Was Successful,” on page 465](#)

## 34.1 Understanding the Upgrade Components

When you upgrade using a Server Software Package, you use a .cpk upgrade file, which is a compiled Server Software Package (CPK). You have two options:

- ♦ Create a [Software Package Distribution](#) for each CPK, then send this Distribution to all of the Subscriber servers that you want to upgrade with that particular CPK’s content.
- ♦ Individually upgrade each server’s Desktop Management software with the applicable CPKs using the [Standalone Package Processor](#) executable.

This option is useful when you do not have ZENworks Server Management installed on a server, because Server Management is required for sending, receiving, and installing CPK Distributions.

For detailed information on Server Software Packages, see “[Server Software Packages](#)” in the *Novell ZENworks 7 Server Management Administration Guide*.

The following CPKs are provided for upgrading to ZENworks 7 Desktop Management with SP1:

**Table 34-1** ZENworks Desktop Management Upgrade CPKs

| CPK File         | Description                                                                                                                                                                                                     |
|------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| c1-zen7-snap.cpk | The ZENworks 7 Desktop Management with SP1 snap-ins for updating ConsoleOne®.<br><br>This is useful for automatically installing the snap-ins to the different instances of ConsoleOne running on many servers. |

| CPK File                  | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
|---------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <i>language-agent.cpk</i> | <p>The Language Agent MSI files (one for each supported language) for all supported platforms:</p> <p>ChineseS-agent.cpk<br/> ChineseT-agent.cpk<br/> Deutsch-agent.cpk<br/> English-agent.cpk<br/> Espanol-agent.cpk<br/> Francais-agent.cpk<br/> NihongoS-agent.cpk<br/> Portugue-agent.cpk</p> <p>These CPKs only copy the MSI files so that they are accessible when needed. The CPKs do not run the Windows Installer.</p> <p>If you group these individual agent CPKs into one Distribution, you can automate a mass file copy of the agent MSI files for each language to designated servers. This is useful when rolling out the language agents of your choice to your workstations.</p> |
| <i>startinv.cpk</i>       | <p>Starts Inventory services after upgrading, including restarting the Sybase database.</p> <p>This is a helper CPK for <i>zdn7bksp1.cpk</i> and <i>zdnc7bksp1.cpk</i>.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| <i>startwol.cpk</i>       | <p>Starts the Wake-on-LAN service after upgrading the service.</p> <p>This is a helper CPK for <i>zdn7bksp1.cpk</i> and <i>zdnc7bksp1.cpk</i>.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| <i>stopinv.cpk</i>        | <p>Stops Inventory services before upgrading, including stopping the Sybase database without prompting.</p> <p>This is a helper CPK for <i>zdn7bksp1.cpk</i> and <i>zdnc7bksp1.cpk</i>.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| <i>stopwol.cpk</i>        | <p>Stops the Wake-on-LAN service before upgrading the service.</p> <p>This is a helper CPK for <i>zdn7bksp1.cpk</i> and <i>zdnc7bksp1.cpk</i>.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| <i>zdl7mbcksp1.cpk</i>    | <p>Automatically upgrades the Desktop Management Server and Middle Tier components installed on Novell Open Enterprise Server (OES) Linux servers.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| <i>zdn7bksp1.cpk</i>      | <p>Upgrades the Desktop Management Server component installed on NetWare® servers (including OES NetWare).</p> <p>The Software Package Distributions for <i>stopinv.cpk</i>, <i>startinv.cpk</i>, <i>stopwol.cpk</i>, and <i>startwol.cpk</i> must be used in conjunction with this CPK's Software Package Distribution in order to automatically stop and start the processes so that the upgrade is allowed to finish unattended.</p>                                                                                                                                                                                                                                                           |
| <i>zdn7midsp1.cpk</i>     | <p>Upgrades the Middle Tier component installed on NetWare servers (including OES NetWare).</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |



| CPK File       | Description                                                                                                                                                                                                                                                                                                                                                                                                  |
|----------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| zduc7bksp1.cpk | Upgrades the Desktop Management Server component installed on a NetWare server cluster (including OES NetWare).<br><br>The Software Package Distributions for stopinv.cpk, startinv.cpk, stopwol.cpk, and startwol.cpk must be used in conjunction with this CPK's Software Package Distribution in order to automatically stop and start the processes so that the upgrade is allowed to finish unattended. |
| zdw7bksp1.cpk  | Upgrades the Desktop Management Server component installed on Windows servers.                                                                                                                                                                                                                                                                                                                               |
| zdw7midsp1.cpk | Upgrades the Middle Tier component installed on Windows servers.                                                                                                                                                                                                                                                                                                                                             |

Continue with [Section 34.2, “Testing the Upgrade CPKs,” on page 445](#).

## 34.2 Testing the Upgrade CPKs

For the CPKs that you want to use to upgrade your servers, you should test the CPKs first in order to determine whether the variables required by the CPKs are working correctly, how long it takes for each CPK's Distribution to complete, and to confirm that the Desktop Management software is being upgraded correctly.

Plan to configure test servers for the platforms in your network where you will be upgrading ZENworks Desktop Management. To test all of the .cpk files, you need to test servers that are properly configured for NetWare, Windows, and OES Linux. All information in this section pertaining to the NetWare platform applies also to OES NetWare.

- ♦ [Section 34.2.1, “Testing Prerequisites Checklist,” on page 445](#)
- ♦ [Section 34.2.2, “Testing the CPKs,” on page 446](#)

### 34.2.1 Testing Prerequisites Checklist

- ❑ **Test Machines:** Select test machines that are similar to your production servers so that the timing notes you take in [Step 9 on page 448](#) are accurate.
- ❑ **eDirectory:** For Windows test servers, eDirectory™ 8.7 must be installed to the C : drive as specified in [Section 4.2.1, “Software Requirements for Installing All Components,” on page 44](#).  
  
ZENworks 7 did not support eDirectory 8.8, so the ZENworks 7 software that you will install on a Windows test server will not work with eDirectory 8.8, and it can compromise your CPK upgrade testing.
- ❑ **Desktop Management Server software:** Install the version you want to test. The software must be in a configured and working state.
- ❑ **Middle Tier software:** Install the version you want to test. The software must be in a configured and working state.
- ❑ **Subscriber and Policy/Package Agent software:** ZENworks 6.5 (or later) Server Management must be running on your test servers in order to execute the CPKs.

A Distributor server is not needed because you are only testing the CPKs by running them individually; you are not distributing them.

- ❑ **ConsoleOne:** This must be the minimum version required for the version of ZENworks Desktop Management installed on your test server. ConsoleOne must not be in use when testing the CPK upgrade for the ConsoleOne snap-ins.
- ❑ **Schema Extensions:** Make sure the tree where these test servers are located has its schema extended to ZENworks 7 Desktop Management with SP1.  
For information on extending the schema, see [Section 29.3, “Extending the eDirectory Schema,” on page 363](#).

## 34.2.2 Testing the CPKs

- 1 To have the CPKs available on your test server for local upgrade testing, copy the .cpk files that you want to test to your applicable test servers. Use the following list to determine which files to copy (be sure to note the full path to where you copied the files).

### For upgrading NetWare and OES NetWare test servers

---

#### Located on the *Novell ZENworks 7 with Support Pack 1 Companion 4 CD*

---

|              |                    |
|--------------|--------------------|
| stopinv.cpk  | zdn7bksp1.cpk      |
| stopwol.cpk  | zdn7midsp1.cpk     |
| startinv.cpk | c1-zen7-snap.cpk   |
| startwol.cpk | language-agent.cpk |

---

### For upgrading clustered NetWare and OES NetWare test servers

---

#### Located on the *Novell ZENworks 7 with Support Pack 1 Companion 4 CD*

---

|              |                    |
|--------------|--------------------|
| stopinv.cpk  | zdnc7bksp1.cpk     |
| stopwol.cpk  | c1-zen7-snap.cpk   |
| startinv.cpk | language-agent.cpk |
| startwol.cpk |                    |

---

### For upgrading Windows test servers

---

#### Located on the *Novell ZENworks 7 with Support Pack 1 Companion 4 CD*

---

|                |                    |
|----------------|--------------------|
| zdw7bksp1.cpk  | c1-zen7-snap.cpk   |
| zdw7midsp1.cpk | language-agent.cpk |

---

### For upgrading OES Linux test servers

---

#### Located on the *Novell ZENworks 7 with Support Pack 1 Companion 3 CD*

---

|                  |                    |
|------------------|--------------------|
| zdl7mbcksp1.cpk  | language-agent.cpk |
| c1-zen7-snap.cpk |                    |

---

For your convenience, the *language-agent.cpk* and *cl-zen7-snap.cpk* files have been duplicated on the two *Companion* CDs because they are used by both the OES Linux and NetWare/Windows upgrades. These CPKs only copy the MSI files so that they are accessible when needed.

- 2 To have the CPKs available in ConsoleOne for viewing their descriptions:

- 2a On a workstation running ConsoleOne, right-click the *Server Software Packages* namespace, then select *Insert Software Package*.

- 2b Browse for and select a *.cpk* file from where you copied them in [Step 1](#), then click *Open*.  
In the *Files of Type* field, you might need to select *All Files* to see the *.cpk* files.

- 3 Repeat [Step 2](#) until all of the *.cpk* files you want to test have been inserted under the *Server Software Packages* namespace.

- 4 To view the description of a CPK, click the CPK name and view the information in the right pane.

You can also click the plus symbol to expand the CPK to view its components, then click the individual components to view the descriptions for each of them.

- 5 In the test Subscriber server's ConsoleOne properties, select the *Variables* tab and define the variables that are applicable to the Distributions you are testing.

See [“Defining Subscriber Variables” on page 452](#) for a listing.

- 6 (Windows only) To make sure that eDirectory is not in a state where it cannot be brought down and back up by the CPKs when the Desktop Management Server component is upgraded, enter the following commands on one of the servers:

```
net stop "nds server0"  
net start "nds server0"
```

- 7 (Windows only) Because the IIS Admin Service must be fully functional and in a healthy state when the Middle Tier component is upgraded, check this service's state before upgrading by manually stopping and starting it, or by restarting the server.

The IIS Admin Service must be running before applying the CPK so that the CPK can stop the service; otherwise, the CPK will fail to complete.

- 8 To test a NetWare or Windows CPK where the Subscriber software is installed (as required in [Section 34.2.1, “Testing Prerequisites Checklist,” on page 445](#)):

- ♦ **NetWare:** On the NetWare test server's console, enter  
`package process volume_name:\path_to_file\filename.cpk`  
where *filename* is one of the *.cpk* filenames.

This command can be used because on your test server.

- ♦ **Windows:** Do the following:
  - a. Open the `c:\zenworks\pds\bin\zfsservice.cfg` file in a text editor.
  - b. Change the `DosBox=Off` line to be `DosBox=On`.
  - c. Save and exit the file.
  - d. On the DOS command line, enter  
`package process drive_letter:\path_to_file\filename.cpk`  
where *filename* is one of the *.cpk* filenames.

See [Step 11](#) for Linux CPK testing instructions.

For each platform you are testing, run the CPKs in the following order:

#### **NetWare Server**

1. stopinv.cpk
2. stopwol.cpk
3. zdn7bksp1.cpk
4. startinv.cpk
5. startwol.cpk
6. zdn7midsp1.cpk
7. c1-zen7-snap.cpk
8. *language-agent.cpk*

#### **NetWare Server Cluster**

1. stopinv.cpk
2. stopwol.cpk
3. zdnc7bksp1.cpk
4. startinv.cpk
5. startwol.cpk
6. c1-zen7-snap.cpk
7. *language-agent.cpk*

---

**IMPORTANT:** This must be performed on the clustered resource. Then each node must be made the resource, and the process repeated until all nodes have been upgraded.

---

#### **Windows Server**

1. zdw7bksp1.cpk
2. zdw7midsp1.cpk
3. c1-zen7-snap.cpk
4. *language-agent.cpk*

- 9** As a NetWare CPK is running, note how long it takes for each CPK to complete.

You will need this information to properly configure the schedules when creating and sending the Distributions.

When sending multiple Distributions to one server, especially if the Distributions include the helper CPKs for your NetWare servers, the distribution processes for each CPK should occur sequentially.

- 10** Repeat [Step 8](#) and [Step 9](#) for each NetWare or Windows CPK you want to test.

- 11** To test the OES Linux CPKs, follow the instructions in [Section 34.4.1, “Upgrading with a Distribution,” on page 450](#), but send the Distributions to only one server, preferably a test server.

Timing and variable issues do not apply to the OES Linux CPK (*zdl7mbcksp1.cpk*), so to test it you only need to send the Distributions to one server.

- 12** To verify that the CPKs upgraded properly, follow the instructions in [Section 34.5.2, “Verifying That the Servers Have Been Upgraded,” on page 467](#), then return to [Step 13](#).

- 13 Continue with [Section 34.3, “Upgrade Prerequisites Checklist,” on page 449](#) for your production servers.

## 34.3 Upgrade Prerequisites Checklist

Make sure you have done the following to prepare the ZENworks 6.5 or 7 servers that you have targeted for upgrading to version 7 with SP1:

- ❑ Review the *ZENworks 7 Desktop Management with Support Pack 1 Readme* on the [ZENworks 7 Documentation Web site](http://www.novell.com/documentation/beta/zenworks7/index.html) (<http://www.novell.com/documentation/beta/zenworks7/index.html>) for any last-minute information concerning upgrading.
- ❑ Make sure you have fulfilled all of the upgrade requirements listed in [Part II, “Preparation,” on page 37](#).
- ❑ Extend the schema to ZENworks 7 Desktop Management with SP1 in the tree where objects for the servers you are upgrading reside.

For information on extending the schema, see [Section 29.3, “Extending the eDirectory Schema,” on page 363](#).

- ❑ Determine the variables that are used by the CPKs so that you can define them on your target Subscriber servers.

See [Step 4 on page 447](#) for instructions on how to gather this information.

- ❑ To prepare for upgrading by [using Distributions](#), do the following:
  - ♦ **SP1 Distributor:** Make sure you have a ZENworks 7 Server Management with SP1 Distributor server because the Distributor is used to distribute the Software Package Distributions that contain the CPKs. For information on upgrading Server Management components, see “[Upgrade](#)” in the *Novell ZENworks 7 Server Management Installation Guide*.
  - ♦ **SP1 Subscribers:** The Subscriber software is required in order to extract and install the Software Package Distributions that contain your upgrade CPK content. Therefore, make sure that you have the ZENworks 7 Server Management with SP1 Subscriber software installed and running on the ZENworks 6.5 SP1 or 7 Desktop Management servers that you want to upgrade.

However, if you already have ZENworks 6.5 or 7 Server Management on NetWare and Windows servers, a best practice is to upgrade them to version 7 with SP1. For information on upgrading Server Management components, see “[Upgrade](#)” in the *Novell ZENworks 7 Server Management Installation Guide*.

- ♦ **Functioning Tiered Electronic Distribution System:** Make sure the ZENworks services are running on the Distributor and Subscriber servers so that they can send, receive, and extract the Software Package Distributions containing the .cpk files that are used to upgrade the server.

The ZENworks services are automatically stopped during the upgrade and restarted after the upgrade has finished.

- ❑ To prepare for upgrading by using the [Standalone Package Processor](#), if JRE 1.4.2 is not installed on the target Windows server, download the JRE from [Sun\\*](http://java.sun.com/j2se/1.4.2/download.html) (<http://java.sun.com/j2se/1.4.2/download.html>) and install it.

Continue with [Section 34.4, “Upgrading Using a Server Software Package,” on page 450](#).

## 34.4 Upgrading Using a Server Software Package

You can upgrade the ZENworks Desktop Management components on the various supported platforms to ZENworks 7 Desktop Management with SP1 using the available CPKs. See the information in the following sections:

- ♦ [Section 34.4.1, “Upgrading with a Distribution,” on page 450](#)

Using the Tiered Electronic Distribution component of ZENworks 7 Server Management with SP1, you can distribute and automatically install the CPKs to all Subscriber servers that are running the Subscriber and Policy/Package Agent software.

- ♦ [Section 34.4.2, “Upgrading with the Standalone Package Processor,” on page 462](#)

Using the Standalone Package Processor, you can upgrade to ZENworks 7 Server Management with SP1 by using the CPKs on any server where the Desktop Management software to be upgraded exists. The Server Management Tiered Electronic Distribution software is not required, and you must upgrade each server individually.

### 34.4.1 Upgrading with a Distribution

To upgrade the ZENworks Desktop Management components to SP1 by using Software Package Distributions to send the CPKs, complete the steps in the following sections in the order listed:

1. [“Determining the Distributions” on page 450](#)
2. [“Defining Subscriber Variables” on page 452](#)
3. [“Creating the Distributions” on page 455](#)
4. [“Setting Up the Distribution Channels” on page 458](#)
5. [“Setting Up the Schedules” on page 459](#)
6. [“Sending the Distributions” on page 461](#)

---

**IMPORTANT:** Make sure you have fulfilled the prerequisites outlined in [Section 34.3, “Upgrade Prerequisites Checklist,” on page 449](#).

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#### Determining the Distributions

- 1 Select a ZENworks 7 Server Management with SP1 Distributor server and copy all of the .cpk files to the Distributor’s file system.

This Distributor server can be used to send all of the CPKs to Subscriber servers of different platforms.

See [Step 1 on page 446](#) for the locations of the CPK files.

- 2 Make a note of where you copied the CPK files so that you have the information when you create the related Software Package Distributions.
- 3 For each of your Desktop Management servers, determine which software components need to be updated using the second column in the following table:

**Table 34-2** CPK Upgrade Distribution Matrix

| Example Software Package Distribution Name | ZENworks Desktop Management Component to Be Upgraded | CPK Filenames Used in the Software Package Distribution | Platforms for the Server Software Package |
|--------------------------------------------|------------------------------------------------------|---------------------------------------------------------|-------------------------------------------|
| ZDM7SP1upgr_stopinv_NW65 <sup>1</sup>      | Desktop Management Server                            | stopinv.cpk                                             | NetWare only                              |
| ZDM7SP1upgr_stopwol_NW65 <sup>1</sup>      | Desktop Management Server                            | stopwol.cpk                                             | NetWare only                              |
| ZDM7SP1upgr_DMS_NW65                       | Desktop Management Server                            | zdn7bksp1.cpk                                           | NetWare only                              |
| ZDM7SP1upgr_DMS_NW65_Cluster               | Desktop Management Server                            | zdnc7bksp1.cpk                                          | NetWare cluster only                      |
| ZDM7SP1upgr_startinv_NW65 <sup>1</sup>     | Desktop Management Server                            | startinv.cpk                                            | NetWare only                              |
| ZDM7SP1upgr_startwol_NW65 <sup>1</sup>     | Desktop Management Server                            | startwol.cpk                                            | NetWare only                              |
| ZDM7SP1upgr_MTS_NW65                       | Middle Tier Server                                   | zdn7midsp1.cpk                                          | NetWare only                              |
| ZDM7SP1upgr_DMS_Win                        | Desktop Management Server                            | zdw7bksp1.cpk                                           | Windows only                              |
| ZDM7SP1upgr_MTS_Win                        | Middle Tier Server                                   | zdw7midsp1.cpk                                          | Windows only                              |
| ZDM7SP1upgr_OES-Linux                      | Desktop Management Server and Middle Tier Server     | zdl7mbcksp1.cpk                                         | OES Linux only                            |
| ZDM7SP1upgr_C1snapins                      | ConsoleOne snap-ins                                  | c1-zen7-snap.cpk                                        | NetWare, Windows, and OES Linux           |
| ZDM7SP1upgr_LangAgentMSI                   | Language Agent MSI file                              | language-agent.cpk                                      | NetWare, Windows, and OES Linux           |

For each CPK to be installed on a server, that server needs to have a separate Software Package Distribution sent and extracted on it (except as noted in footnote 1 below). Use the preceding table to determine which Distributions you need to create (which CPKs to upgrade with), determine their Software Package Distribution names (examples in column one), then determine which Subscribers need which Distributions.

If the Subscriber is a parent that is sending the Distribution to subordinate Subscribers, it is in the process of sending the Distribution when the software package tries to unload Java. However, the Distributions continue from where they left off after Java is started again.

<sup>1</sup> You can combine the two start CPKs into one Distribution, and the two stop CPKs into another Distribution. It doesn't matter which is executed first between the Inventory and Wake-on-LAN CPKs. Examples: ZDM7SP1upgr\_stop\_NW65 and ZDM7SP1upgr\_start\_NW65.

- 4 Continue with “[Defining Subscriber Variables](#)” on page 452.

## Defining Subscriber Variables

Each Subscriber server being upgraded must have the applicable variables defined in its ConsoleOne properties in order to receive its Distributions and install the CPKs.

- 1 If you are upgrading servers that have Inventory Service objects associated with them, use ConsoleOne to create an admin-equivalent user specifically for this CPK upgrade.

This provides password security by not having your Administrator's DN and password viewable in each Subscriber object's *Variables* tab properties. A later step instructs you to disable or remove this admin-equivalent user, or the variable definitions that expose the administrator's DN and password.

- 2 In ConsoleOne, select a Subscriber object.

To save time, you can do one of the following:

- ♦ Select multiple Subscriber objects and make the same *Variables* tab entries for all of them.
- ♦ Create a Service Location Package, add the variables, then associate the package with the eDirectory container where your Subscriber objects reside. This causes the Include Policy option to be displayed on the Subscriber object's *Variables* tab.

For more information, see “[Creating a Policy Package](#)” and “[Tiered Electronic Distribution](#)” in the *Novell ZENworks 7 Server Management Administration Guide*.

If only some Subscriber servers have the Inventory Service object associated with them, you can define their variables (see [Step 3](#)) separately from the other Subscribers. However, it doesn't matter if you define those Inventory Service-specific variables on the other Subscriber servers.

- 3 Select the *Variables* tab and fill in the fields for the following variables:

**Include policy:** If it is displayed, select this option to use the Service Location Package variables that you defined in [Step 2](#).

**Assigned Variables:** Define the necessary variables (*Description* is optional) for the applicable platforms as listed in the following tables.

**IMPORTANT:** Where actual values are given in the following tables, these are the ZENworks defaults. Otherwise, the *Value* column displays placeholders in italics for the values that are needed. Make sure that the values you enter are correct for your installation.

**Table 34-3** NetWare and OES NetWare Variables

| Variable   | Value                                   | Description                                                              | CPK <sup>1</sup>          |
|------------|-----------------------------------------|--------------------------------------------------------------------------|---------------------------|
| DEST_AGENT | <i>language_agent_files_path</i>        | Full path to where the language agent files are installed                | <i>language-agent.cpk</i> |
| DEST_C1    | <i>sys:\novell\mgmt\console one\1.2</i> | Location of the ConsoleOne files on the NetWare server                   | <i>c1-zen7-snap.cpk</i>   |
| DEST_INV   | <i>Inventory_installation_volume</i>    | Volume designation where Workstation Inventory is installed <sup>2</sup> | <i>zdn7bksp1.cpk</i>      |
| DEST_WOL   | <i>Wake-on-LAN_installation_volume</i>  | Volume designation where Wake-on-LAN is installed <sup>2</sup>           | <i>zdn7bksp1.cpk</i>      |



| Variable               | Value                                 | Description                                                                                                                | CPK <sup>1</sup>     |
|------------------------|---------------------------------------|----------------------------------------------------------------------------------------------------------------------------|----------------------|
| DEST_XML               | <i>XML_server_installation_volume</i> | Volume designation where XML is installed <sup>2</sup>                                                                     | <i>zdn7bksp1.cpk</i> |
| DN_ADMIN <sup>3</sup>  | <i>administrator_DN</i>               | Distinguished name of the administrator (or admin-equivalent), such as <i>admin.novell</i> (but not <i>.admin.novell</i> ) | <i>zdn7bksp1.cpk</i> |
| PASSWD <sup>3</sup>    | <i>administrator_password</i>         | Password for user specified in DN_ADMIN                                                                                    | <i>zdn7bksp1.cpk</i> |
| TREE_NAME <sup>3</sup> | <i>tree_name</i>                      | Name of the tree where the Inventory Service object resides                                                                | <i>zdn7bksp1.cpk</i> |

<sup>1</sup> The other NetWare CPKs do not require variable definitions.

<sup>2</sup> Include the colon and backslash. For example, *sys:\*.

<sup>3</sup> These variables are only required for Subscriber servers that have an Inventory Service object associated with them.

**Table 34-4** *NetWare Cluster Variables*

| Variable               | Value                                   | Description                                                                                                                | CPK <sup>1</sup>          |
|------------------------|-----------------------------------------|----------------------------------------------------------------------------------------------------------------------------|---------------------------|
| DEST_AGENT             | <i>Language_agent_files_path</i>        | Full path to where the language agent files are installed                                                                  | <i>language-agent.cpk</i> |
| DEST_C1                | <i>sys:\novell\mgmt\console one\1.2</i> | Location of the ConsoleOne files on the NetWare server                                                                     | <i>c1-zen7-snap.cpk</i>   |
| DN_ADMIN <sup>3</sup>  | <i>administrator_DN</i>                 | Distinguished name of the administrator (or admin-equivalent), such as <i>admin.novell</i> (but not <i>.admin.novell</i> ) | <i>zdnc7bksp1.cpk</i>     |
| PASSWD <sup>3</sup>    | <i>administrator_password</i>           | Password for user specified in DN_ADMIN                                                                                    | <i>zdnc7bksp1.cpk</i>     |
| TREE_NAME <sup>3</sup> | <i>tree_name</i>                        | Name of the tree where the Inventory Service object resides                                                                | <i>zdnc7bksp1.cpk</i>     |
| ZDM_Clust_VOL          | <i>Cluster_installation_volume</i>      | Volume designation where the cluster is installed <sup>2</sup>                                                             | <i>zdnc7bksp1.cpk</i>     |

<sup>1</sup> The other NetWare CPKs do not require variable definitions.

<sup>2</sup> Include the colon and backslash. For example, *cluster\_vol:\*.

<sup>3</sup> These variables are only required for Subscriber servers that have an Inventory Service object associated with them.

**Table 34-5** *Windows Variables*

| Variable                  | Value                                 | Description                                                                                                 | CPK                       |
|---------------------------|---------------------------------------|-------------------------------------------------------------------------------------------------------------|---------------------------|
| DEST_AGENT                | <i>Language_agent_files_path</i>      | Full path to where the language agent files are installed                                                   | <i>language-agent.cpk</i> |
| DEST_C1                   | <i>c:\novell\consoleone\1.2</i>       | Location of the ConsoleOne files on the Windows server                                                      | <i>c1-zen7-snap.cpk</i>   |
| DEST_IIS                  | <i>IIS_installation_drive</i>         | Drive letter for where IIS is installed. C:\ or D:\ are the only valid entries <sup>1</sup>                 | <i>zdw7midsp1.cpk</i>     |
| DEST_INV                  | <i>Inventory_installation_drive</i>   | Drive letter for where Inventory is installed <sup>1</sup>                                                  | <i>zdw7bksp1.cpk</i>      |
| DEST_WOL                  | <i>Wake-on-LAN_installation_drive</i> | Drive letter for where Wake-on-LAN is installed <sup>1</sup>                                                | <i>zdw7bksp1.cpk</i>      |
| DEST_XML                  | <i>XML_server_installation_drive</i>  | Drive letter for where XML is installed <sup>1</sup>                                                        | <i>zdw7bksp1.cpk</i>      |
| DN_ADMIN <sup>2</sup>     | <i>administrator_DN</i>               | Distinguished name of the administrator (or admin-equivalent), such as admin.novell (but not .admin.novell) | <i>zdw7bksp1.cpk</i>      |
| DN_OF_SERVER <sup>2</sup> | <i>server_DN</i>                      | Distinguished name of the server, such as server1.servers.novell                                            | <i>zdw7bksp1.cpk</i>      |
| PASSWD <sup>2</sup>       | <i>administrator_password</i>         | Password for user specified in DN_ADMIN                                                                     | <i>zdw7bksp1.cpk</i>      |
| TREE_NAME <sup>2</sup>    | <i>tree_name</i>                      | Name of the tree where the Inventory Service object resides                                                 | <i>zdw7bksp1.cpk</i>      |

<sup>1</sup> Include the colon and backslash. For example, C: \.

<sup>2</sup> These variables are only required for Subscriber servers that have an Inventory Service object associated with them.

**Table 34-6** *OES Linux Variables*

| Variable   | Value                                | Description                                                | CPK <sup>1</sup>          |
|------------|--------------------------------------|------------------------------------------------------------|---------------------------|
| DEST_AGENT | <i>Language_agent_files_path</i>     | Full path to where the language agent files are installed. | <i>language-agent.cpk</i> |
| DEST_C1    | <i>/usr/ConsoleOne/ <sup>2</sup></i> | Location of the ConsoleOne files on the Linux server.      | <i>c1-zen7-snap.cpk</i>   |

<sup>1</sup> *zdl7mbcksp1.cpk* does not require variable definitions.

<sup>2</sup> This instance of ConsoleOne must be run from a Windows workstation that has a drive mapped to this path because ConsoleOne uses Windows DLLs.

- 4 Repeat **Step 3** until all of the applicable variables are defined in the Subscriber properties of the NetWare and Windows servers.
- 5 Click *OK* to accept the changes and close the Subscriber's properties.
- 6 Repeat **Step 2** through **Step 5** as necessary until all of the Subscriber servers that are to receive the Distributions have had the necessary variables defined.
- 7 Continue with "**Creating the Distributions**" on page 455.

## Creating the Distributions

For more information on creating Distributions, see "**Distributions**" in the *Novell ZENworks 7 Server Management Administration Guide*.

- 1 To create a Software Package Distribution, in ConsoleOne, select the container where you want the Distribution to be created, click *File > New > Object*, select the *Distribution* type, then click *OK*.
- 2 Specify a Distribution name (see **Table 34-2 on page 451** for examples).

This is only the object name for the Distribution. The Distribution's files are automatically generated by ZENworks.

If you combine the two start CPKs into one Distribution, or the two stop CPKs into another Distribution, specify an applicable Distribution name, such as ZDM7SP1upgr\_stop\_NW65 and ZDM7SP1upgr\_start\_NW65. It doesn't matter which is executed first or second between the Inventory and Wake-on-LAN CPKs.

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**IMPORTANT:** Periods (.) are not allowed in Distribution names. Instead, use dashes (-) or underscores (\_) as word separators. If you use a period in the Distribution name, the Distribution is not sent, and the Distributor is not reloaded after it has been exited.

---

- 3 To assign the Distribution to a Distributor, browse for and select the Distributor object, select *Define Additional Properties*, then click *OK*.

The Distribution object's properties are displayed.

- 4 Click *General > Settings* and fill in the following fields (for all other fields, accept the defaults):

**Active:** Required. In order to make a Distribution available to Subscribers, it must be active.

**Description:** Provide useful details about the Distribution, such as the name of the CPK, the purpose of the CPK, the variables used by the CPK, and so on. (You need to use the scroll bar to access the *Description* field.)

- 5 Click *General > Restrictions* and select a platform restriction.

**Platform restrictions:** To select specific operating system versions as a prerequisite to receiving this Distribution, deselect *No Restrictions* and select the desired operating system version. You can select from the following options:

- No Restrictions
- NetWare All
- NetWare 4.x (earlier versions of ZfS supported these platforms)
- NetWare 5.0 (earlier versions of ZfS supported this platform)
- NetWare 5.1

NetWare 5.x (earlier versions of ZfS supported these platforms)  
NetWare 6.x  
Windows Server  
Solaris  
Linux

---

**IMPORTANT:** For updating ZENworks Desktop Management, if the target server requires a platform-specific CPK, make sure you restrict this Distribution to that platform.

---

Selecting the *No Restrictions* check box means that the Distribution can be sent to any platform.

If you select *NetWare All*, you do not need to select any of the individual NetWare platforms.

**6** Select the *Type* tab and use the drop-down list to choose the *Software Package* type in the *Select Type* field.

**7** Click *Add*, browse for and select a .cpk file, then click *Open*.

You might need to change the file viewing selection to *All Files*, because .spk is the default.

The CPK is inserted in the *Selected Software Packages* list box on the *Type* tab. Select from the following CPKs:

**Table 34-7** NetWare and OES NetWare Servers

|                           |                    |
|---------------------------|--------------------|
| stopinv.cpk <sup>1</sup>  | zdn7bksp1.cpk      |
| stopwol.cpk <sup>1</sup>  | zdn7midsp1.cpk     |
| startinv.cpk <sup>1</sup> | cl-zen7-snap.cpk   |
| startwol.cpk <sup>1</sup> | language-agent.cpk |

<sup>1</sup> You can combine the two start CPKs into one Distribution, and the two stop CPKs into another Distribution. It doesn't matter which is executed first between the Inventory and Wake-on-LAN CPKs.

**Table 34-8** Clustered NetWare and OES NetWare Servers

|                           |                    |
|---------------------------|--------------------|
| stopinv.cpk <sup>1</sup>  | zdnc7bksp1.cpk     |
| stopwol.cpk <sup>1</sup>  | cl-zen7-snap.cpk   |
| startinv.cpk <sup>1</sup> | language-agent.cpk |
| startwol.cpk <sup>1</sup> |                    |

<sup>1</sup> You can combine the two start CPKs into one Distribution, and the two stop CPKs into another Distribution. It doesn't matter which is executed first between the Inventory and Wake-on-LAN CPKs.

**Table 34-9** Windows Servers

|               |                  |
|---------------|------------------|
| zdw7bksp1.cpk | cl-zen7-snap.cpk |
|---------------|------------------|

zdw7midsp1.cpk

language-agent.cpk

**Table 34-10** OES Linux Servers

zdl7mbcksp1.cpk

language-agent.cpk

cl-zen7-snap.cpk

When you are creating Distributions for the *language-agent.cpk* files, if you will use the same path for the different languages, you can include multiple language CPKs in one Distribution. Also, these language CPKs only copy the MSI files so that they are accessible when needed.

**8** Click *Apply*.

**9** If you are creating a Distribution for the *zdw7midsp1.cpk* file, if any of the ZENworks services are disabled on a Windows target server, you must enable those services.

The CPK that upgrades a ZENworks service requires that it is enabled in order to upgrade it. Otherwise, the CPK fails to complete.

**10** If you are creating a Distribution for the *zdl7mbcksp1.cpk* file and at least one of the servers you are upgrading is a ZENworks imaging server, the *novell-tftp*, *novell-zmgprebootpolicy*, and *novell-proxydhcp* daemons must not be running on it during upgrading; therefore, do the following so that the CPK upgrade can complete successfully on an imaging server:

**10a** Click the *Pre/Post Actions* tab and select *Pre-Distribution Actions*.

**10b** In the field next to the *Add* button, click the list arrow, select *Script*, then click *Add*.

**10c** Rename the default Script to something like *PXEstop*.

**10d** Enter the following script text in the *Script* field:

```
#!/bin/bash

if [ -x /etc/init.d/novell-tftp ]; then
/etc/init.d/novell-tftp stop
fi

if [ -x /etc/init.d/novell-zmgprebootpolicy ]; then
/etc/init.d/novell-zmgprebootpolicy stop
fi

if [ -x /etc/init.d/novell-proxydhcp ]; then
/etc/init.d/novell-proxydhcp stop
fi
```

**10e** Click *Apply*.

**11** Click the *Schedule* tab and select *Never*.

This is a temporary setting. In “[Setting Up the Schedules](#)” on page 459, you can configure all of the schedules.

- 12 If this is the first time for resolving certificates, click *OK*, then select *Yes* to resolve the certificates; otherwise, it is optional whether you resolve certificates at this time.

For NetWare and Windows servers, this copies the security certificates from the Distributor to Subscriber subscribed to the Channel. For Linux servers (if you do not have drives mapped to them), you might need to resolve the certificates manually.

For more information, see “[Resolving Certificates](#)” in the *Novell ZENworks 7 Server Management Administration Guide*.

- 13 Repeat [Step 1](#) through [Step 12](#) for each CPK that needs a Distribution created for it.
- 14 Continue with “[Setting Up the Distribution Channels](#)” on page 458.

## Setting Up the Distribution Channels

- 1 In ConsoleOne, right-click a Channels OU, then select *New > Object*.
- 2 Select *TED Channel*, then click *OK*.
- 3 Specify a Channel name, click *Define Additional Properties*, then click *OK*.

Channels need to be created for each of the following Distributions that you intend to use. Following are suggested Channel names:

### NetWare Server

1. Chnl\_ZDM7SP1upgr\_stopinv\_NW65 (stopinv.cpk)
2. Chnl\_ZDM7SP1upgr\_stopwol\_NW65 (stopwol.cpk)
3. Chnl\_ZDM7SP1upgr\_DMS\_NW65 (zdn7bksp1.cpk)
4. Chnl\_ZDM7SP1upgr\_startinv\_NW65 (startinv.cpk)
5. Chnl\_ZDM7SP1upgr\_startwol\_NW65 (startwol.cpk)
6. Chnl\_ZDM7SP1upgr\_MTS\_NW65 (zdn7midsp1.cpk)
7. Chnl\_ZDM7SP1upgr\_Clsnap (c1-zen7-snap.cpk)
8. Chnl\_ZDM7SP1upgr\_LangAgentMSI (language-agent.cpk)

### NetWare Server Cluster

1. Chnl\_ZDM7SP1upgr\_stopinv\_NW65 (stopinv.cpk)
2. Chnl\_ZDM7SP1upgr\_stopwol\_NW65 (stopwol.cpk)
3. Chnl\_ZDM7SP1upgr\_DMS\_NW65\_Cluster (zdnc7bksp1.cpk)
4. Chnl\_ZDM7SP1upgr\_startinv\_NW65 (startinv.cpk)
5. Chnl\_ZDM7SP1upgr\_startwol\_NW65 (startwol.cpk)
6. Chnl\_ZDM7SP1upgr\_Clsnap (c1-zen7-snap.cpk)
7. Chnl\_ZDM7SP1upgr\_LangAgentMSI (language-agent.cpk)

### Windows Server

1. Chnl\_ZDM7SP1upgr\_DMS\_Win (zdw7bksp1.cpk)
2. Chnl\_ZDM7SP1upgr\_MTS\_Win (zdw7midsp1.cpk)
3. Chnl\_ZDM7SP1upgr\_Clsnap (c1-zen7-snap.cpk)
4. Chnl\_ZDM7SP1upgr\_LangAgentMSI (language-agent.cpk)

### OES Linux Server

1. Chnl\_ZDM7SP1upgr\_OES-Linux (zdl7mbcksp1.cpk)

2. Chnl\_ZDM7SP1upgr\_C1snap (c1-zen7-snap.cpk)
3. Chnl\_ZDM7SP1upgr\_LangAgentMSI (language-agent.cpk)
- 4 (Optional) In the *Description* field, enter useful information.
- 5 Click the *Distributions* tab, click *Add*, browse for and select the appropriate Distribution, then click *OK* to add it into the *Distributions* list box.
- 6 To associate the Subscribers that you identified in [Step 3 on page 450](#) with the current Channel, click the *Subscribers* tab, click *Add*, browse for and select all of the Subscribers that are applicable to this Channel's Distribution (upgrade CPK), then click *OK* to add them to the *Subscribers Subscribed to This Channel* list.

---

**IMPORTANT:** If you want to test the Distributions on your test servers before sending them into your production environment, select only your test Subscriber servers at this time.

---

- 7 Click the *Schedule* tab and select *Never*.  
This is a temporary setting. In [“Setting Up the Schedules” on page 459](#), you can configure all of the schedules.
- 8 Click *OK* to close and save your changes to the new Channel object.
- 9 Repeat [Step 1](#) through [Step 8](#) for each Channel that you need to create.
- 10 Continue with [“Setting Up the Schedules” on page 459](#).

## Setting Up the Schedules

- 1 Use the timing information that you gathered in [Step 9 on page 448](#) (test server steps) with the following CPK information (example Distribution names with CPK filenames) to determine the best schedules for building, sending, and extracting each of the Distributions. Be sure to write down these decisions; you will implement these schedules later in this procedure.

You need to set up your Build, Send, and Extract schedules to send and extract the Distributions in the following order, and to have the Subscriber servers extract them at a time most convenient for their workload.

### NetWare Server

1. ZDM7SP1upgr\_stopinv\_NW65 (stopinv.cpk)
2. ZDM7SP1upgr\_stopwol\_NW65 (stopwol.cpk)
3. ZDM7SP1upgr\_DMS\_NW65 (zdn7bksp1.cpk)
4. ZDM7SP1upgr\_startinv\_NW65 (startinv.cpk)
5. ZDM7SP1upgr\_startwol\_NW65 (startwol.cpk)
6. ZDM7SP1upgr\_MTS\_NW65 (zdn7midsp1.cpk)
7. ZDM7SP1upgr\_C1snap (c1-zen7-snap.cpk)
8. ZDM7SP1upgr\_LangAgentMSI (language-agent.cpk)

---

**IMPORTANT:** For the zdn7bksp1.cpk file, the two stop-process helper Distributions (stopinv.cpk and stopwol.cpk) should be sent and extracted immediately. The zdn7bksp1.cpk can be extracted when you can accommodate a service disruption on the NetWare servers (you noted the length of time in [Step 9 on page 448](#)). After that time has

elapsed, send and immediately extract the two start-process helper Distributions (startinv.cpk and startwol.cpk).

---

#### NetWare Server Cluster

1. ZDM7SP1upgr\_stopinv\_NW65 (stopinv.cpk)
2. ZDM7SP1upgr\_stopwol\_NW65 (stopwol.cpk)
3. ZDM7SP1upgr\_DMS\_NW65\_Cluster (zdnc7bksp1.cpk)
4. ZDM7SP1upgr\_startinv\_NW65 (startinv.cpk)
5. ZDM7SP1upgr\_startwol\_NW65 (startwol.cpk)
6. ZDM7SP1upgr\_C1snap (c1-zen7-snap.cpk)
7. ZDM7SP1upgr\_LangAgentMSI (language-agent.cpk)

---

**IMPORTANT:** For the zdnc7bksp1.cpk file, the two stop-process helper Distributions (stopinv.cpk and stopwol.cpk) should be sent and extracted immediately. The zdnc7bksp1.cpk can be extracted when you can accommodate a service disruption on the NetWare servers (you noted the length of time in [Step 9 on page 448](#)). After that time has elapsed, send and immediately extract the two start-process helper Distributions (startinv.cpk and startwol.cpk).

---

#### Windows Server

1. ZDM7SP1upgr\_DMS\_Win (zdw7bksp1.cpk)
2. ZDM7SP1upgr\_MTS\_Win (zdw7midsp1.cpk)
3. ZDM7SP1upgr\_C1snap (c1-zen7-snap.cpk)
4. ZDM7SP1upgr\_LangAgentMSI (language-agent.cpk)

#### OES Linux Server

1. ZDM7SP1upgr\_OES-Linux (zd17mbcksp1.cpk)
2. ZDM7SP1upgr\_C1snap (c1-zen7-snap.cpk)
3. ZDM7SP1upgr\_LangAgentMSI (language-agent.cpk)

- 2 In ConsoleOne, select a Software Package Distribution object, select the *Schedule* tab, then select a type for the Build schedule.

**Build schedule for Software Package Distributions:** The Build schedule determines how often the Distributor builds a new version of the Distribution.

This type builds new versions of the Distribution each time the Build schedule starts, regardless of whether the Distribution has changed. It sends this new version to the Subscribers.

When sending a Distribution, the sender retries every 2 minutes for 30 minutes, then stops. It does not begin sending again until the Channel schedule starts again.

The following options allow you to override the Channel's Send and Subscriber's Extract schedules:

- ♦ **Send Distribution immediately after building:** Overrides the Channel's Send schedule, allowing you to immediately send the Distribution, rather than wait for the Channel's Send schedule to start. However, the Subscriber's Extract schedule determines when it is actually extracted for use.



- ♦ **Extract Distribution immediately after receiving:** Overrides the Subscriber's Extract schedule, allowing the Distribution to be immediately extracted, rather than wait for the Subscriber's Extract schedule to start. This is useful for Distributions that need to be extracted immediately, such as your Desktop Management upgrade Distributions.
- 3 Repeat **Step 2** for each upgrade Distribution object.
  - 4 For each target Subscriber object, select the *Extract* tab and select a type for the Extract schedule.  
  
Use care in setting the Subscriber Extract schedules. If the schedule is set to *Run Immediate* and the Subscriber is a parent and is forwarding the Distribution to subordinate Subscribers, you might interrupt the sending of the Distribution to Subscribers because the update process involves unloading Java. With Java unloaded, Distributions are temporarily halted until Java is reloaded and the Channel's Send schedule starts.  
  
If the Subscriber is a parent that is sending the Distribution to subordinate Subscribers, it is in the process of sending the Distribution when the software package tries to unload Java. However, the Distributions continue from where they left off after Java is started again.  
  
For more information on the Tiered Electronic Distribution processes, see "**Tiered Electronic Distribution**" in the *Novell ZENworks 7 Server Management Administration Guide*.
  - 5 For each Channel object, click the *Schedule* tab and select *Immediate*.
  - 6 Continue with "**Sending the Distributions**" on page 461.

## Sending the Distributions

- 1 To send the Distributions, do one of the following:
  - ♦ **Refresh the Distributor Manually:** To refresh the Distributor manually, go to ConsoleOne, right-click the Distributor object, then select *Refresh Distributor*. This causes the Distribution to be automatically built.
  - ♦ **Wait for the Distributor's Schedule to Start:** The Distribution is automatically built when the Distributor's Refresh schedule starts, which triggers the Build schedule.

The Distribution is automatically sent when the Channel's Send schedule starts, and is extracted according to the Subscriber server's Extract schedule, unless you chose to override those schedules when creating the Distribution object. In that case, the Distribution is sent and extracted immediately after it is built.

At that point, the Subscriber servers should be upgraded to ZENworks 7 with SP1 for that CPK's Desktop Management component.

---

**IMPORTANT:** For the Software Package type of Distributions, if a target file is found to be locked during extraction, the Subscriber throws an exception stating that the file could not be copied. The Distributor receives this information from the Subscriber and logs the failure in the reporting database.

---

For detailed instructions on sending Distributions, see "**Sending the Distributions**" in the *Novell ZENworks 7 Server Management Administration Guide*.

- 2 After the Distribution has been sent and received by the Subscriber servers (it doesn't need to be extracted yet), set the Channel used to send the upgrade software package to *Inactive* so that this upgrade won't be sent again to these Subscribers.
- 3 For each Distribution to be sent, repeat **Step 1** and **Step 2**.

- 4 For a NetWare cluster, make another node the resource and repeat [Step 1](#) through [Step 3](#).
- 5 Repeat [Step 2](#) until all nodes have been upgraded.
- 6 If you previously disabled any ZENworks services, then enabled them so they could be upgraded (see [Step 9 on page 457](#)), disable those services again.
- 7 Do one of the following:
  - ♦ If you used the administrator DN and password, remove those definitions from each Subscriber objects' properties.  
For information on which Subscribers this applies to, see [Step 2 on page 452](#).
  - ♦ If you created an admin-equivalent user for this upgrade (see [Step 1 on page 452](#)), either disable or remove the user object.  
This secures the DN and password of this temporary admin-equivalent object.
- 8 Continue with [Section 34.5, "Determining if the Upgrade Was Successful," on page 465](#).

## 34.4.2 Upgrading with the Standalone Package Processor

To use the Standalone Package Processor to upgrade the ZENworks Desktop Management components to SP1 on individual servers, repeat the following tasks for each server:

1. ["Copying the CPK and ZIP Files" on page 462](#)
2. ["Determining Which CPKs to Use" on page 463](#)
3. ["Upgrading the Server" on page 464](#)
4. ["Repeating the Upgrade Process" on page 465](#)

---

**IMPORTANT:** Make sure you have fulfilled the prerequisites outlined in [Section 34.3, "Upgrade Prerequisites Checklist," on page 449](#).

---

### Copying the CPK and ZIP Files

To provide access to the necessary files for upgrading with the Standalone Package Processor:

- 1 Select a network location for copying the .cpk and .zip files.

If you copy these files to the following locations, you do not need to edit their paths in the .ncf, .bat, or .sh files:

```
sys:\temp\cpk\  
c:\temp\cpk\  
/usr/temp/
```

- 2 Copy all of the .cpk and the .zip or .tar.gz files from the *Novell ZENworks 7 with Support Pack 1 Companion 3 CD* (OES Linux CPKs) and the *Novell ZENworks 7 with Support Pack 1 Companion 4 CD* (NetWare and Windows CPKs) to the location determined in [Step 1](#).

Do not copy any files from the \ZENworks Server Management - Software Pkgs directory on the *Companion 3 CD*; those are only for Server Management use.

If you know the specific components that you want to upgrade and their platforms, you can copy just those .cpk files, including the .zip file from the CD.

- 3 To unzip or untar the files:

**NetWare/Windows CPKs:** Unzip `standalone_zdm7sp1_n-w.zip` to the root of the server (`sys:\` volume or `C:\` drive).

This creates or uses an existing `\temp` directory for the files contained in the ZIP file. The files are placed into subdirectories named `\cpk\zdm7sp1\java`, `\cpk\zdm7sp1\netware`, and `\cpk\zdm7sp1\windows`.

**OES Linux CPKs:** Untar `standalone_zdm7sp1_linux.tar.gz` to the root of the server (`/`).

This creates or uses an existing `/usr/tmp` directory for the files contained in the ZIP file. The files are placed into subdirectories named `zdm7sp1/java` and `zdm7sp1/linux`.

- 4 Continue with “**Determining Which CPKs to Use**” on page 463.

## Determining Which CPKs to Use

- 1 To determine which CPKs you need, use the following table to identify a Desktop Management software component that needs to be upgraded, along with the server’s platform:

| ZENworks Desktop Management Component to Be Upgraded | CPK Filenames Used with the Standalone Package Processor | Platforms for the CPK           |
|------------------------------------------------------|----------------------------------------------------------|---------------------------------|
| Desktop Management Server                            | <code>stopinv.cpk</code>                                 | NetWare only                    |
| Desktop Management Server                            | <code>stopwol.cpk</code>                                 | NetWare only                    |
| Desktop Management Server                            | <code>zdn7bksp1.cpk</code>                               | NetWare only                    |
| Desktop Management Server                            | <code>zdc7bksp1.cpk</code>                               | NetWare cluster only            |
| Desktop Management Server                            | <code>startinv.cpk</code>                                | NetWare only                    |
| Desktop Management Server                            | <code>startwol.cpk</code>                                | NetWare only                    |
| Middle Tier Server                                   | <code>zdn7midsp1.cpk</code>                              | NetWare only                    |
| Desktop Management Server                            | <code>zdw7bksp1.cpk</code>                               | Windows only                    |
| Middle Tier Server                                   | <code>zdw7midsp1.cpk</code>                              | Windows only                    |
| Desktop Management Server and Middle Tier Server     | <code>zdl7mbcksp1.cpk</code>                             | OES Linux only                  |
| ConsoleOne snap-ins                                  | <code>cl-zen7-snap.cpk</code>                            | NetWare, Windows, and OES Linux |
| Language Agent MSI file                              | <code>language-agent.cpk</code>                          | NetWare, Windows, and OES Linux |

- 2 Copy the necessary `.cpk` file to the `\temp\cpk` directory on the Windows or NetWare server or to the `/usr/tmp/zdm7sp1` directory on the Linux server.
- 3 Edit the following files as necessary:
  - ♦ **NetWare or NetWare Cluster:** In a NetWare or Windows-based text editor, open the `.ncf` file contained in the `\temp\cpk\zdm7sp1\netware` directory that corresponds to the CPK you want to use and follow instructions in the `.bat` file concerning values for the variables that need to be defined.

- ♦ **Windows:** In a Windows-based text editor, open the .bat file contained in the `\temp\cpk\zdm7sp1\windows` directory that corresponds to the CPK you want to use and do the following:
  - ♦ Change the existing JREROOT variable path to `JRE_installation_path\jre\bin`.  
where `JRE_installation_path` matches the path where JRE 1.4.2 is installed (see [Section 34.3, “Upgrade Prerequisites Checklist,” on page 449](#)).
  - ♦ Follow instructions in the .bat file concerning values for other variables that need to be defined.
- ♦ **OES Linux:** In a Linux-based text editor, open the scripts contained in the `/usr/tmp/zdm7sp1/linux` directory that correspond to the CPKs you want to use and follow the instructions concerning values for the variables that need to be defined.

You can also edit the Linux scripts in a Windows-based text editor:

- a. In a terminal console, enter the following command for each script to be edited:  
`dos2unix script_filename`  
where `script_filename` is the full name of the script to be edited.
- b. If necessary, copy the scripts to your Windows workstation.
- c. Open the scripts in your Windows-based text editor and perform the necessary edits, saving the edited files.
- d. If necessary, copy the edited scripts back to the Linux server.
- e. In a terminal console, enter the following command for each script that you edited:  
`chmod +RWX script_filename`  
where `script_filename` is the script that was edited in the Windows environment.  
This is necessary to make the scripts executable in a Linux environment.

**4** Save the .ncf, .bat, or .sh file and exit the editor.

**5** Repeat [Step 1](#) through [Step 4](#) for each server that is to be individually upgraded.

**6** Continue with [“Upgrading the Server” on page 464](#).

## Upgrading the Server

- 1** If you are upgrading with the `zdw7midsp1.cpk` file and if any of the ZENworks services are disabled on a target Windows server, you must enable those services.

The CPK that upgrades a ZENworks service requires that it is enabled in order to upgrade it. Otherwise, the CPK fails to complete.

- 2** On the server to be upgraded:

- ♦ **NetWare server:** At the server’s command prompt, enter  
`sys:\temp\zdm7sp1\netware\CPK_batchfile_name.ncf`  
where `CPK_batchfile_name` corresponds to the NCF file for the CPK being used to upgrade the server.  
Repeat this command for each NetWare CPK to be run (for the order, see [“Setting Up the Schedules” on page 459](#)).
- ♦ **NetWare cluster:** At the resource server’s command prompt, enter  
`sys:\temp\zdm7sp1\netware\CPK_batchfile_name.ncf`

where *CPK\_batchfile\_name* corresponds to the NCF file for the CPK being used to upgrade the server.

Repeat this command for each NetWare CPK to be run (for the order, see “[Setting Up the Schedules](#)” on page 459).

Reset the resource to another node, then repeat this step, doing so until all nodes have been upgraded.

- ♦ **Windows server:** Open a command prompt window and enter

```
sys:\temp\zdm7sp1\windows\CPK_batchfile_name.bat
```

where *CPK\_batchfile\_name* corresponds to the BAT file for the CPK being used to upgrade the server.

Repeat this command for each NetWare CPK to be run (for the order, see “[Setting Up the Schedules](#)” on page 459).

- ♦ **OES Linux server:** In a terminal console, stop the following daemons, which must not be running while upgrading, by entering the following commands:

```
/etc/init.d/novell-tftp stop
```

```
/etc/init.d/novell-zmgprebootpolicy stop
```

```
/etc/init.d/novell-proxydhcp stop
```

To upgrade the Desktop Management Server and Middle Tier Server, enter:

```
/usr/temp/zdm7sp1/linux/sadmlbkmd.sh
```

(The stopped daemons must not be running while upgrading.)

(Optional) To upgrade the ConsoleOne snap-ins, enter:

```
/usr/temp/zdm7sp1/linux/saclsnap.sh
```

(Optional) To copy the language MSI files, enter:

```
/usr/temp/zdm7sp1/linux/sadmagnet.sh
```

After the upgrade process has finished, run the following script to restart the imaging server:

```
/usr/temp/zdm7sp1/linux/sadmlimage.sh
```

(Optional) To restart the Proxy DHCP service, run the following script where applicable:

```
/usr/temp/zdm7sp1/linux/sadmlproxy.sh
```

- 3 If you previously disabled any ZENworks services, then enabled them so they could be upgraded (see [Step 1](#)), disable those services again.
- 4 Continue with [Section , “Repeating the Upgrade Process,”](#) on page 465.

## Repeating the Upgrade Process

For each Desktop Management component that you want to upgrade on a particular server using the Standalone Package Processor, repeat all of the steps in “[Determining Which CPKs to Use](#)” on page 463 and “[Upgrading the Server](#)” on page 464.

After upgrading all servers, continue with [Section 34.5, “Determining if the Upgrade Was Successful,”](#) on page 465.

## 34.5 Determining if the Upgrade Was Successful

---

### IMPORTANT:

---

Complete the following tasks to verify whether the upgrade was successful:

- ♦ [Section 34.5.1, “Determining If the Software Package Was Installed Successfully,” on page 466](#)
- ♦ [Section 34.5.2, “Verifying That the Servers Have Been Upgraded,” on page 467](#)

### 34.5.1 Determining If the Software Package Was Installed Successfully

- 1 For the Software Package Distribution method, determine which components of the software package are installed successfully by using one of the following methods:

- ♦ **iManager:** Use the Tiered Electronic Distribution view in iManager to see information for every software package that was installed.
- ♦ **Reports:** If you use Tiered Electronic Distribution for installation, use Server Management reporting to verify the success or failure of individual components of a software package.
- ♦ **Log files:** For NetWare and Windows, use the `ted.log` file to verify the success or failure.
- ♦ **Linux:** Enter the following command in an XTerm window:

```
rpm -qa |grep novell-z
```

Review each entry that is listed to verify the string “7.0.1” is listed for the running process. This is the correct version for ZENworks 7 Desktop Management with SP1.

You can also review the log file at `/usr/tmp/zsm71_polydist/zdmup.log`.

- 2 For the Standalone Package Processor method, determine which components of the software package are installed successfully by reviewing the following log files:

- ♦ **Linux:** `/usr/tmp/standalone.log`
- ♦ **NetWare:** `sys:\temp\standalone.log`
- ♦ **Windows:** `c:\temp\standalone.log`

- 3 When using the `package process cpk_name` command to process each CPK, determine which components of the software package are installed successfully by reviewing the following log files:

- ♦ **Linux:** `/var/opt/novell/log/zenworks/zfsstartup.log`
- ♦ **NetWare:** `installation_volume\zenworks\zfsstartup.log`
- ♦ **Windows:** `installation_drive\zenworks\zfsstartup.log`

- 4 If a component fails to be upgraded, resolve why it failed and reapply the CPK.

Each software package can consist of several components. It is possible that some of these components can be successfully installed and others fail. For example, on servers that do not meet a particular CPK’s installation requirements, these servers are not properly upgraded by that CPK.

- 5 Continue with [Section 34.5.2, “Verifying That the Servers Have Been Upgraded,” on page 467](#).

## 34.5.2 Verifying That the Servers Have Been Upgraded

Complete the tasks in each of the following sections for the platforms where you upgraded ZENworks Desktop Management:

- ♦ “On a NetWare Server (Including Clusters)” on page 467
- ♦ “On a Windows Server” on page 467
- ♦ “On an OES Linux Server” on page 467

### On a NetWare Server (Including Clusters)

- 1 At the NetWare server’s main console prompt, enter the following command:

```
ZENworks_installation_volume:zenworks/zfdversion
```

The zfdversion command also writes the listing of ZENworks .jar files and their dates to *volume:\zenworks\zfdversion.log*

- 2 View the current ZENworks Desktop Management version information.

If the upgrade to version 7 was successful, it should read:

```
ZENworks Desktop Management - 7
```

- 3 Repeat **Step 1** and **Step 2** for each upgraded server.
- 4 If the version is not correct, reapply the upgrade CPK; otherwise, you are finished with this platform.

### On a Windows Server

- 1 On the Windows server, run `\zenworks\zfdversion.bat`.

This creates a `zfdversion.log` file in the `\zenworks` directory.

- 2 Open the log file to view the current ZENworks Desktop Management version information.
- 3 Repeat **Step 1** and **Step 2** for each upgraded server.
- 4 If the version is not correct, reapply the upgrade CPK; otherwise, you are finished with this platform.

### On an OES Linux Server

- 1 On a Linux server in an XTerm window, enter the following command:

```
/opt/novell/zenworks/bin/ZDMstart status
```

- 2 Review the listing to verify that the ZENworks Desktop Management services are listed and that their daemons are running.
- 3 Repeat **Step 1** and **Step 2** for each upgraded server.
- 4 If the version is not correct, reapply the upgrade CPK; otherwise, you are finished with this platform.





# Upgrading to Support Pack 1 by Running an RPM

# 35

If you are a Red Carpet® administrator or a Linux administrator accustomed to upgrading RPMs, you can run RPMs to upgrade to Novell® ZENworks® 7 Desktop Management with SP1.

The RPMs are located on the *ZENworks 7 Desktop Management Services on Linux* CD in the `/CD_mount_location/Disk1/InstData/VM/RPMS` directory.

You can execute an RPM upgrade from the bash prompt or a script:

- ♦ [Section 35.1, “Executing an RPM Upgrade from the Bash Prompt,” on page 469](#)
- ♦ [Section 35.2, “Executing an RPM Upgrade from a Script,” on page 470](#)

## 35.1 Executing an RPM Upgrade from the Bash Prompt

- 1 Copy the the appropriate RPMs from the CD to a temporary directory, for example `/usr/temp/RPMS`.

- 2 Run the following command at the bash prompt:

```
rpm -Uvh --freshen --nosignature `ls your_temporary_directory/*.rpm`
```

This command upgrades the ZENworks Desktop Management software to SP1. It uses the RPMs contained in the temporary `/RPMS` directory that are known to the RPM database as being installed.

- 3 Run the following scripts matching the components you are upgrading to restore the shell scripts that were replaced by the `rpm` command in [Step 2](#):

- ♦ Inventory server:  
`/opt/novell/zenworks/bin/novell-zenworks-inv-restore.sh`
- ♦ Database Engine server:  
`/opt/novell/zenworks/bin/novell-zenworks-sybase-restore.sh`
- ♦ Inventory Database:  
`/opt/novell/zenworks/bin/novell-zenworks-invdb-restore.sh`
- ♦ NAL Database:  
`/opt/novell/zenworks/bin/novell-zenworks-naldb-restore.sh`
- ♦ Remote Management:  
`/opt/novell/zenworks/bin/novell-zenworks-wol-restore.sh`

- 4 Run the following command to update the uninstall directory:

```
sed -i.bak s@-7\.0\.0-\.@@ /opt/novell/zenworks/Uninstall\ZENworks\ Desktop\ Management\.com.zerog.registry.xml
```

- 5 Run the following command to restart the services:

```
/opt/novell/zenworks/bin/ZDMstart restart cold
```

- 6 If you need to reconfigure any of the updated RPMs, see [Chapter 24, “Installing RPMs and Changing Configuration Values,”](#) on page 329.

## 35.2 Executing an RPM Upgrade from a Script

- 1 Copy the the appropriate RPMs from the CD to a temporary directory, for example `/usr/temp/RPMS`.

- 2 Create a script containing the following lines:

```
#!/bin/bash
rpm -Uvh --freshen --nosignature `ls your_temporary_directory/
*.rpm` >>your_temporary_directory/zdmup.log.$$
/opt/novell/zenworks/bin/novell-zenworks-inv-restore.sh
/opt/novell/zenworks/bin/novell-zenworks-sybase-restore.sh
/opt/novell/zenworks/bin/novell-zenworks-invdb-restore.sh
/opt/novell/zenworks/bin/novell-zenworks-naldb-restore.sh
/opt/novell/zenworks/bin/novell-zenworks-wol-restore.sh
sed -i.bak s@-7\.0\.0-\.@@ /opt/novell/zenworks/Uninstall\
ZENworks\ Desktop\ Management\.com.zerog.registry.xml
/opt/novell/zenworks/bin/ZDMstart restart cold
```

Include only the restore script command lines (ending in `-restore.sh`) that are applicable to the components that you are upgrading.

Notes concerning the lines in this script:

- ♦ The `rpm` command line upgrades the ZENworks Desktop Management software to SP1 using each RPM contained in the temporary `/RPMS` directory
  - ♦ The quoted RPM line is used to list the RPMs for the `rpm` command and the output is sent to the `zdmup.log.$$` file for viewing later
  - ♦ The `sed` line sets up future uninstalling capability
  - ♦ The `ZDMstart` command line is used to do a completely clean restart of ZENworks Desktop Management
- 3 Run the script from the bash prompt.
- 4 If you need to reconfigure any of the updated RPMs, see [Chapter 24, “Installing RPMs and Changing Configuration Values,”](#) on page 329.

# Interoperability

# VII

Interoperability is defined as two or more products that interact one with another in the same network environment (for example, the same tree, the same server, and so on).

The topics in this section include:

- ♦ Chapter 36, “Interoperability with ZENworks for Desktops 4.x,” on page 473
- ♦ Chapter 37, “Interoperability in Inventory,” on page 481
- ♦ Chapter 38, “Interoperability in Remote Management,” on page 493
- ♦ Chapter 39, “Interoperability with Other Novell Products,” on page 495



# Interoperability with ZENworks for Desktops 4.x

# 36

As you upgrade Novell® ZENworks® for Desktops 4.x to ZENworks 7 Desktop Management, there are several things you need to know about compatibility, component differences, and how to make similar components work together. This section includes the following information:

- ♦ [Section 36.1, “Workstation and Server Compatibility in a 4.x/7 Interoperating Environment,” on page 473](#)
- ♦ [Section 36.2, “Component Differences in Versions 4.x and 7,” on page 474](#)
- ♦ [Section 36.3, “Interoperability with Windows NT 4 Workstations,” on page 475](#)

---

**NOTE:** The information in this section also applies to ZENworks 7 Desktop Management with Support Pack 1.

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## 36.1 Workstation and Server Compatibility in a 4.x/7 Interoperating Environment

If you have previously installed ZENworks for Desktops 4 Support Pack 1b (SP1b), ZENworks for Desktops 4.0.1, or ZENworks for Desktops 4 with Interim Release 2 or Interim Release 4 (collectively referred to as ZENworks for Desktops 4.x), you will probably be upgrading gradually to ZENworks 7 Desktop Management. For this reason, you should understand the ability of different ZENworks components to interoperate when two versions of the product are installed on various workstations and servers.

Each row of the tables below lists the ZENworks workstation and server compatibility combinations of ZENworks Desktop Management components.

The first table lists the version compatibility for Application Management, Workstation Policy Management, and Workstation Imaging.

**Table 36-1** *Version Compatibility of Various ZENworks Desktop Management Components*

| Desktop Agent Version | Middle Tier Server Version | Desktop Management Server Version |
|-----------------------|----------------------------|-----------------------------------|
| 4.x                   | 4.x                        | 7                                 |
| 4.x                   | 7                          | 7                                 |
| 7                     | 7                          | 7                                 |

The next table lists the version compatibility for Workstation Inventory.

**Table 36-2** *Version Compatibility of the Workstation Inventory Component in ZENworks Desktop Management*

| Desktop Agent Version | Workstation Inventory Server Version |
|-----------------------|--------------------------------------|
| 4.x                   | 7                                    |

The next table lists the version compatibility for Remote Management.

**Table 36-3** *Version Compatibility of the Remote Management Component in ZENworks Desktop Management*

| Desktop Agent Version | Remote Console Version |
|-----------------------|------------------------|
| 4.x                   | 7                      |

## 36.2 Component Differences in Versions 4.x and 7

Businesses with large networks might not be able to perform a wholesale upgrade of their workstations, policies, applications, or other ZENworks functionality from ZENworks for Desktops 4.x to ZENworks 7. This section includes information to help you understand the differences in how the two versions behave while co-existing prior to an upgrade.

With a few exceptions, ZENworks 7 Desktop Management is backward compatible with ZENworks for Desktops 4.x features. However, there is a difference in the way ZENworks 7 handles some functionality. The following sections explain the similarities and differences that you need to be aware of.

- ♦ [Section 36.2.1, “Workstation Import,” on page 474](#)
- ♦ [Section 36.2.2, “Policy Management,” on page 474](#)
- ♦ [Section 36.2.3, “Application Management,” on page 475](#)
- ♦ [Section 36.2.4, “Workstation Imaging,” on page 475](#)
- ♦ [Section 36.2.5, “Remote Management,” on page 475](#)
- ♦ [Section 36.2.6, “Workstation Inventory,” on page 475](#)

### 36.2.1 Workstation Import

If the Import Service is upgraded to ZENworks 7 on a server, the ZENworks 4.x workstations register in the same way and the 7 Import Service imports them. Both ZENworks 4.x and ZENworks 7 workstations can be imported by a ZENworks 7 Import Server.

### 36.2.2 Policy Management

ZENworks 7 Desktop Management does not support Windows NT 4 workstations, Windows 95 workstations, Windows 98 workstations without the SE upgrade, Novell eDirectory™ versions before NDS® 8, NetWare® 4.x, NetWare 5.0, or NetWare 5.1.

There are almost no differences between ZENworks for Desktops 4.x and ZENworks 7 policies, so the policies co-exist without a problem. The Windows Terminal Server policy has been removed in ZENworks 7.

### **36.2.3 Application Management**

If you import ZENworks for Desktops 4.x Application Management system requirements into the new ZENworks 7 system requirements, make sure that the legacy system requirements still exist. If the older application requirements are left intact, the ZENworks 4.x application still works.

### **36.2.4 Workstation Imaging**

When you upgrade Workstation Imaging from ZENworks for Desktops 4.x, make sure to use the same boot disk version as the version on the Desktop Management Server. For example, if you upgrade the Imaging server to ZENworks 7, make sure to use a ZENworks 7 boot CD when you manually invoke imaging.

### **36.2.5 Remote Management**

The Remote Management component of ZENworks 7 Desktop Management can co-exist with other vendor products offering Remote Management functionality, if you install the mirror driver on Windows 2000/XP workstations during the Remote Management installation. This enables you to use other vendor products offering Remote Management functionality along with the Remote Management component of ZENworks 7 Desktop Management.

The Remote Management console of ZENworks 7 Desktop Management is interoperable with the Remote Management Agent bundled with ZENworks for Desktops 3.2 SP3, ZENworks for Desktops 4.x, ZENworks 6.5 Desktop Management, ZENworks for Servers 3.x, ZENworks 6.5 Server Management, and ZENworks 7 Server Management.

### **36.2.6 Workstation Inventory**

In ZENworks 7 Desktop Management, the Inventory Agent reads the software scan configuration from the dictionary file. In ZENworks for Desktops 4.x, the Inventory Agents read the software scan configuration from the Workstation Inventory policy.

## **36.3 Interoperability with Windows NT 4 Workstations**

Although ZENworks 7 Desktop Management does not officially support Windows NT 4 workstations, if you have Windows NT 4 workstations with the ZENworks for Desktops 4.0.1 Management Agent installed, you can still manage those workstations (that is, they can communicate with the ZENworks 7 Management Server), with ZENworks 7 Desktop Management, given some limitations.

This section explains the extent of ZENworks 7 support for Windows NT workstations. The information is organized into the following sections:

- ♦ [Section 36.3.1, “Desktop Management Agent,” on page 476](#)
- ♦ [Section 36.3.2, “Policies and Policy Packages,” on page 476](#)

- ♦ Section 36.3.3, “Automatic Workstation Import and Removal,” on page 477
- ♦ Section 36.3.4, “Application Management,” on page 477
- ♦ Section 36.3.5, “Workstation Imaging,” on page 478
- ♦ Section 36.3.6, “Remote Management,” on page 478
- ♦ Section 36.3.7, “Workstation Inventory,” on page 478

### 36.3.1 Desktop Management Agent

The ZENworks 7 Desktop Management Agent MSI (`zfdagent.msi`) does not install on a Windows NT 4 workstation.

We recommend that you use the latest patched version of the ZENworks for Desktops 4.x Agent on Windows NT 4 workstations. You can obtain the public release of this agent at the [ZENworks for Desktops 4.0.1 Product Updates Web site \(http://support.novell.com/filefinder/17511/index.html\)](http://support.novell.com/filefinder/17511/index.html).

### 36.3.2 Policies and Policy Packages

The following list explains how the features and functionality of ZENworks 7 Desktop Management policies and policy packages can be applied to Windows NT 4 workstations.

- ♦ The NT only property page for policies and packages is retained. It remains functional for NT workstation management, even after you upgrade to ZENworks 7.
- ♦ The NT/2000/XP property page for policies and policy packages is retained. It remains functional for NT workstation management, even after you upgrade to ZENworks 7.
- ♦ The property pages of Policy and Policy Package objects include a note explaining that Windows NT 4 workstations must use the ZENworks for Desktops 4.0.1 Management Agent in order to read policies with NT only or NT/2000/XP property pages.
- ♦ Any miscellaneous references to Windows NT 4 workstations remain on Policy property pages.
- ♦ The local redirector file copy feature known as the ZENworks Multiple UNC Provider or ZEN MUP is not supported on Windows NT 4 workstations. For more information, see “[Understanding the ZENworks Multiple UNC Provider](#)” in the *Novell ZENworks 7 Desktop Management Administration Guide*.
- ♦ Policy error logging is not supported for NT workstations.
- ♦ DHCP delivery of the Middle Tier IP address is not supported on Windows NT 4 workstations. For more information, see “[Implementing a DHCP Option for Delivering the Middle Tier Server Address](#)” in the *Novell ZENworks 7 Desktop Management Administration Guide*.
- ♦ The ZENworks Tree is not supported on Windows NT 4 workstations. For more information, see “[Using a ZENworks Tree](#)” in the *Novell ZENworks 7 Desktop Management Administration Guide*.
- ♦ The following table lists the Workstation Management settings that are unavailable or that are ignored in ConsoleOne® for Windows NT workstations:



**Table 36-4** *Windows NT 4 Workstation Management Settings Not Accepted in ConsoleOne*

| Steps to Locate in ConsoleOne                                      | Ignored Settings                                                                         |
|--------------------------------------------------------------------|------------------------------------------------------------------------------------------|
| Workstation or User package > Novell iPrint policy > Settings page | <i>Remove Any Installed iPrint Printer That is Not Included in This List of Printers</i> |
| Server package > Workstation Import policy > Limits page           | <i>Disable User History</i>                                                              |
| Workstation object > User History page                             | <i>Do Not Add to History</i>                                                             |

### 36.3.3 Automatic Workstation Import and Removal

You can add or remove Windows NT 4 Workstation objects to an eDirectory tree where ZENworks 7 exists, regardless of whether ZENworks was installed there for the first time or upgraded from ZENworks for Desktops 4.x.

### 36.3.4 Application Management

The following list explains how the features and functionality of ZENworks 7 Application Management can be applied to Windows NT 4 workstations:

- ♦ Application Management property pages in ConsoleOne retain references to Windows NT 4 workstations.
- ♦ Application objects created in ZENworks 7 using the legacy system requirements apply to Windows NT 4/2000/XP and Windows 98 SE workstations.
- ♦ The install manager of the Web Browser view of the Novell Application Launcher™ detects the workstation operating system and requests the appropriate .cab file for that workstation. The `zfd40.cab` file is used on Windows NT 4 workstations, and `zfdplugin.cab` is used for Windows 98/2000/XP workstations. The `zfd40.cab` file remains on the server's local drive after it has been upgraded to ZENworks 7 Desktop Management.
- ♦ The following table lists the Application Management features that are unavailable or that are ignored in ConsoleOne for Windows NT workstations:

**Table 36-5** *Windows NT 4 Application Management Features Not Accepted in ConsoleOne*

| Steps to Locate in ConsoleOne                                                                    | Feature                                                                                |
|--------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------|
| MSI Application object > <i>Identification</i> tab > Package Information page                    | Administration Package Path                                                            |
| Application object > <i>Distribution Options</i> tab > Pre-Distribution Process Termination page | All settings                                                                           |
| Application object > <i>Distribution Options</i> tab > Options page                              | <i>Distribute in the Workstation Security Space if Workstation Associated</i>          |
| Application object > <i>Availability</i> tab > Distribution Rules page                           | All Distribution Rules features are ignored; only legacy system requirements are read. |
| Application object > <i>Common</i> tab > Uninstall Scripts page                                  | All settings                                                                           |

### 36.3.5 Workstation Imaging

The following list explains how the features and functionality of ZENworks 7 Workstation Imaging can be applied to Windows NT 4 workstations:

- ♦ Windows NT 4 Workstation objects in eDirectory are still valid for ZENworks 7 imaging policies.
- ♦ The version of the ZENworks Imaging Windows Agent (`ziswin.exe`) shipping with ZENworks for Desktops 4.0.1 can create image-safe data that can be used by the ZENworks 7 Imaging Server.

### 36.3.6 Remote Management

The following list explains how the features and functionality of ZENworks 7 Remote Management can be applied to Windows NT 4 workstations:

- ♦ Windows NT 4 workstations running the Remote Management Agent installed by ZENworks for Desktops 4.0.1 can be managed by the ZENworks 7 Remote Control Console.
- ♦ The following ZENworks 7 Remote Management features are not available or do not work for Windows NT 4 workstations:
  - ♦ Agent Initiated Connection
  - ♦ Session Encryption
  - ♦ Force 256 Color Palette

### 36.3.7 Workstation Inventory

The following list explains how the features and functionality of ZENworks 7 Workstation Inventory can be applied to Windows NT 4 workstations.

- ♦ The ZENworks for Desktops 4.0.1 Management Agent installed on Windows NT 4 workstations sends a scan directly to the ZENworks 7 Inventory Server. The received data is stored in the ZENworks 7 inventory database.
- ♦ The ZENworks 7 console can be used for viewing data present on the Windows NT 4 workstation and for configuring inventory policies.
- ♦ Some information is either not available or is limited on Windows NT 4 workstations:

**Hardware:** The following hardware information is either not available or is limited on scanned Windows NT 4 workstations:

- ♦ Monitor information is not available.
- ♦ System chassis information is not available.
- ♦ System information new attributes is not shown.

**Software Related Enhancements:** The following software-related enhancements are either not available or are limited on scanned Windows NT 4 workstations:

- ♦ Only the product name, vendor, version, the identifying number, and the location are scanned using ZENworks for Desktops 4.0.1 methodology.
- ♦ Scanning and viewing of information generated using the software dictionary is not available.

- ♦ Scanning and viewing of information for product suites, products, anti-virus information, and so on, is not available.
- ♦ File information is not available.
- ♦ Disk usage data is not available.



If you are planning to run the Workstation Inventory component of Novell® ZENworks® 7 Desktop Management in the same environment as the Server Inventory component of ZENworks 7 Server Management, you must first understand and plan for the compatibility issues described in this section before upgrading or installing these products.

The following prerequisites are especially applicable to Inventory interoperability:

- ♦ Follow top-down deployment approach to upgrade the Inventory servers in the Inventory tree. Always begin at the topmost level server (Root Server) and proceed with the next lower-level servers.
- ♦ ZENworks 7 Desktop Management and ZENworks 7 Server Management can use the same Inventory database (Sybase, Oracle, or MS SQL). If you have installed the Inventory database as a part of the ZENworks 7 Server Management installation, you do not need to install an Inventory database as a part of the ZENworks 7 Desktop Management installation, or vice versa.
- ♦ To administer Server Inventory and Workstation Inventory, you must install the Novell ConsoleOne® Inventory snap-ins for both ZENworks 7 Server Management and ZENworks 7 Desktop Management.
- ♦ If an Inventory server receives Server Inventory scans either directly from inventoried servers or through roll-up, you must install ZENworks 7 Server Management on this server.
- ♦ If an Inventory server should receive Workstation Inventory scans either directly from inventoried workstations or through roll-up, you must install ZENworks 7 Desktop Management on this server.
- ♦ The following objects and policies apply to Inventory in both ZENworks 7 Server Management and ZENworks 7 Desktop Management:

- Database object
- Inventory Service object
- Dictionary Update policy
- Roll-Up policy
- ZENworks Database policy

You should make sure that each of the above prerequisites are met in order to ensure Inventory interoperability.

To set up Inventory interoperability, review the following sections:

- ♦ [Section 37.1, “Interoperability Between ZENworks 7 Desktop Management and ZENworks 7 Server Management,” on page 482](#)
- ♦ [Section 37.2, “Interoperability Between ZENworks 7 Desktop Management and Earlier Versions of ZENworks Desktop Management Installed on Multiple Servers,” on page 488](#)
- ♦ [Section 37.3, “Interoperability Among ZENworks 7 Desktop Management, ZENworks 7 Server Management, and Earlier ZENworks Versions,” on page 489](#)

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**NOTE:** The information in this section also applies to ZENworks 7 Desktop Management with Support Pack 1.

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## **37.1 Interoperability Between ZENworks 7 Desktop Management and ZENworks 7 Server Management**

- ♦ [Section 37.1.1, “Interoperability Between ZENworks 7 Desktop Management and ZENworks 7 Server Management Installed on the Same Server,” on page 482](#)
- ♦ [Section 37.1.2, “Interoperability Between ZENworks 7 Desktop Management and ZENworks 7 Server Management Installed on Multiple Servers,” on page 482](#)

### **37.1.1 Interoperability Between ZENworks 7 Desktop Management and ZENworks 7 Server Management Installed on the Same Server**

On the same server, the Workstation Inventory component of ZENworks 7 Desktop Management is interoperable only with the Server Inventory component of ZENworks 7 Server Management, and vice versa.

You must install ZENworks 7 Desktop Management on the same file system location where you install ZENworks 7 Server Management, and vice versa.

### **37.1.2 Interoperability Between ZENworks 7 Desktop Management and ZENworks 7 Server Management Installed on Multiple Servers**

This section includes installation scenarios that demonstrate interoperability between ZENworks 7 Desktop Management and ZENworks 7 Server Management when these two capabilities are installed on different servers in the same network.

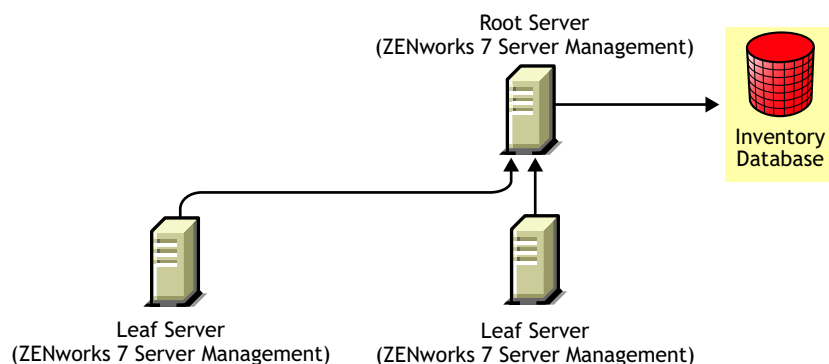
- ♦ [“Scenario 1: Installing Desktop Management in a Server Management Environment” on page 482](#)
- ♦ [“Scenario 2: Installing Server Management in a Desktop Management Environment” on page 484](#)
- ♦ [“Scenario 3: Rolling Up Inventory Across Trees” on page 486](#)

#### **Scenario 1: Installing Desktop Management in a Server Management Environment**

In this scenario, all the servers in your Inventory tree initially have only ZENworks 7 Server Management installed.

This scenario is depicted in the following figure:

**Figure 37-1** Scenario: Installing Desktop Management in a Server Management Environment

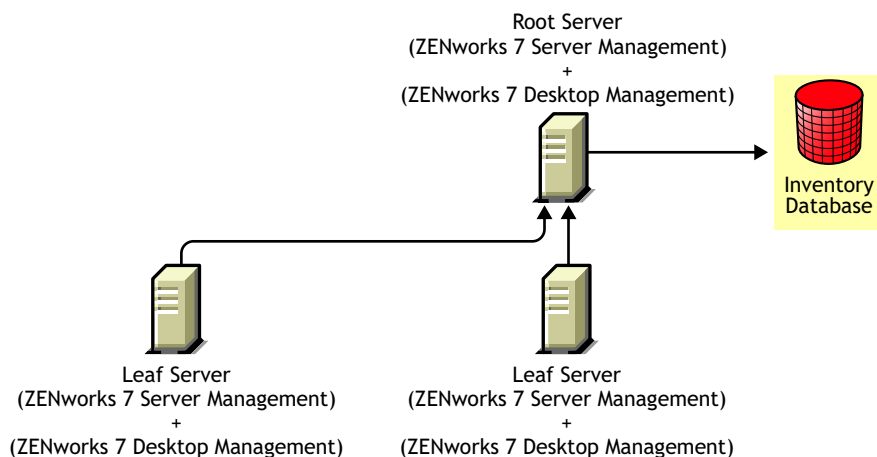


You can install ZENworks 7 Desktop Management in this ZENworks 7 Server Management environment using either of two methods:

- ♦ **Method 1:** Install ZENworks 7 Desktop Management on all the ZENworks 7 Server Management servers in a top-down installation method. Always begin the installation at the topmost-level server and proceed with the next lower-level servers. In the sample scenario, install ZENworks 7 Desktop Management first on the Root Server and then on the Leaf Servers. For more information, see [Chapter 9, “Installing the ZENworks Desktop Management Server,”](#) on page 77.

This scenario is depicted in the following figure:

**Figure 37-2** Top-down Method for Installing ZENworks Desktop Management on ZENworks Server Management Servers



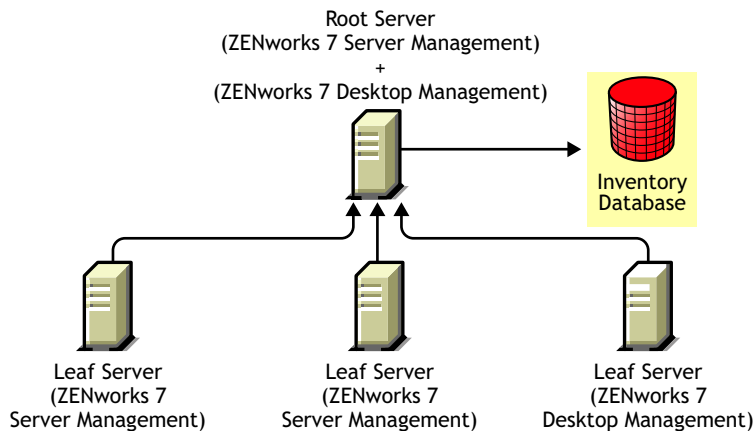
- ♦ **Method 2:** Perform the following tasks in the order listed:
  1. Install ZENworks 7 Desktop Management on the Root Server. For more information, see [Chapter 9, “Installing the ZENworks Desktop Management Server,”](#) on page 77.
  2. Add another Leaf server with ZENworks 7 Desktop Management installed, and configure it to roll up to the Root Server. For more information, see [Chapter 9, “Installing the ZENworks Desktop Management Server,”](#) on page 77.

The ZENworks 7 Server Management Leaf Servers receive the `.str` files from the inventoried servers attached to them and the ZENworks 7 Desktop Management Leaf Server receives the

.str files from the inventoried workstations attached to it. The ZENworks 7 Server Management and the ZENworks 7 Desktop Management Leaf Servers roll up the inventory information to the Root Server.

This scenario is depicted in the following figure:

**Figure 37-3** *Installing Desktop Management on a Server Management Root Server Followed by Installation on Leaf Servers*

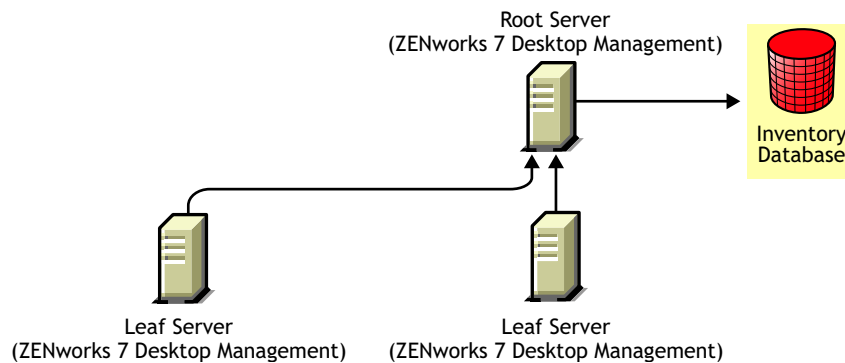


## Scenario 2: Installing Server Management in a Desktop Management Environment

In this scenario, all the servers in your Inventory tree have only ZENworks 7 Desktop Management installed.

This scenario is depicted in the following figure:

**Figure 37-4** *Scenario: Installing ZENworks Server Management in a Desktop Management Environment*



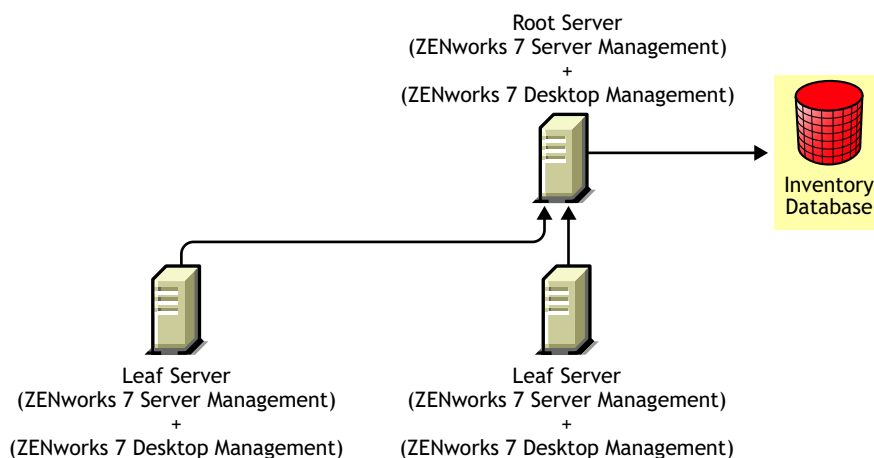
You can install ZENworks 7 Server Management in this ZENworks 7 Desktop Management environment using either of two methods:

- ♦ **Method 1:** Install ZENworks 7 Server Management on all of the ZENworks 7 Desktop Management servers in a top-down installation method. Always begin the installation at the topmost-level server and proceed with the next lower-level servers. In the sample scenario, install ZENworks 7 Server Management first on the Root Server and then on the Leaf Servers. To install ZENworks 7 Server Management, see “[Policy-Enabled Server Management Installation](#)” in the *Novell ZENworks 7 Server Management Installation Guide*.

This scenario is depicted in the following figure:



**Figure 37-5** Top-down Method for Installing ZENworks Server Management in a Desktop Management Environment



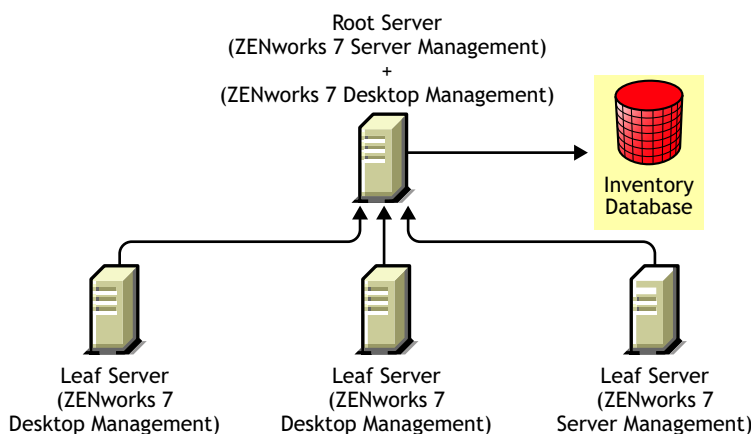
♦ **Method 2:** Perform the following tasks in the order listed:

1. Install ZENworks 7 Server Management on the Root Server. To install ZENworks 7 Server Management, see “**Policy-Enabled Server Management Installation**” in the *Novell ZENworks 7 Server Management Installation Guide*.
2. Add another Leaf Server with ZENworks 7 Server Management installed, and configure the Leaf Server to roll up to the Root Server. To install ZENworks 7 Server Management, see “**Policy-Enabled Server Management Installation**” in the *Novell ZENworks 7 Server Management Installation Guide*.

The ZENworks 7 Server Management Leaf Server receives the .str files from the inventoried servers attached to it and the ZENworks 7 Desktop Management Leaf Servers receive the .str files from the inventoried workstations attached to them. The ZENworks 7 Server Management and the ZENworks 7 Desktop Management Leaf Servers roll up the inventory information to the Root Server.

This scenario is depicted in the following figure:

**Figure 37-6** Installing Server Management on a Desktop Management Root Server Followed by Installation on Leaf Servers

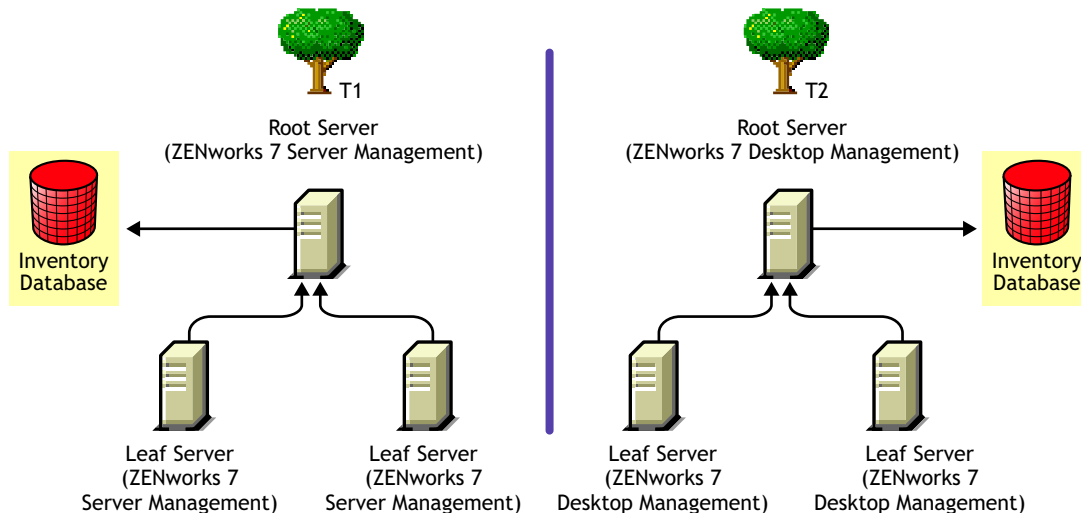


### Scenario 3: Rolling Up Inventory Across Trees

In this scenario, there are two eDirectory™ trees: T1 and T2. ZENworks 7 Server Management is installed on T1 and ZENworks 7 Desktop Management is installed on T2. The Inventory trees in T1 and T2 must be merged to have one Root Server to receive both server and workstation inventory information.

This scenario is illustrated in the following figure:

**Figure 37-7** Scenario: Rolling Up Inventory Across Trees



T1 and T2 can be merged using either of two methods:

- ♦ “Merge Method 1” on page 486
- ♦ “Merge Method 2” on page 487

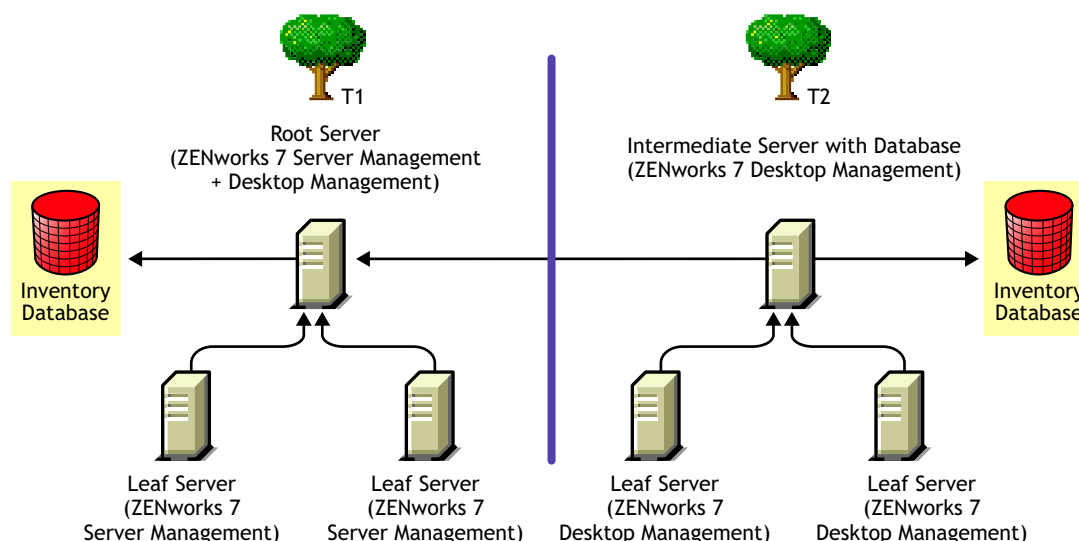
#### Merge Method 1

Use the following general steps to merge the inventory data in T2 with the inventory data in T1:

1. Install ZENworks 7 Desktop Management on the Root Server in T1. For more information, see [Chapter 9, “Installing the ZENworks Desktop Management Server,” on page 77](#).
2. Change the role of the Root Server in T2 to Intermediate Server with Database and configure it to roll up to the Root Server in T1. For more information, see “[Changing the Role of the Inventory Server](#)” in the *Novell ZENworks 7 Desktop Management Administration Guide*.

This scenario is illustrated in the following figure:

**Figure 37-8** Merging Inventory Data in Tree1 with Inventory Data in Tree2: Root Server on Tree 1



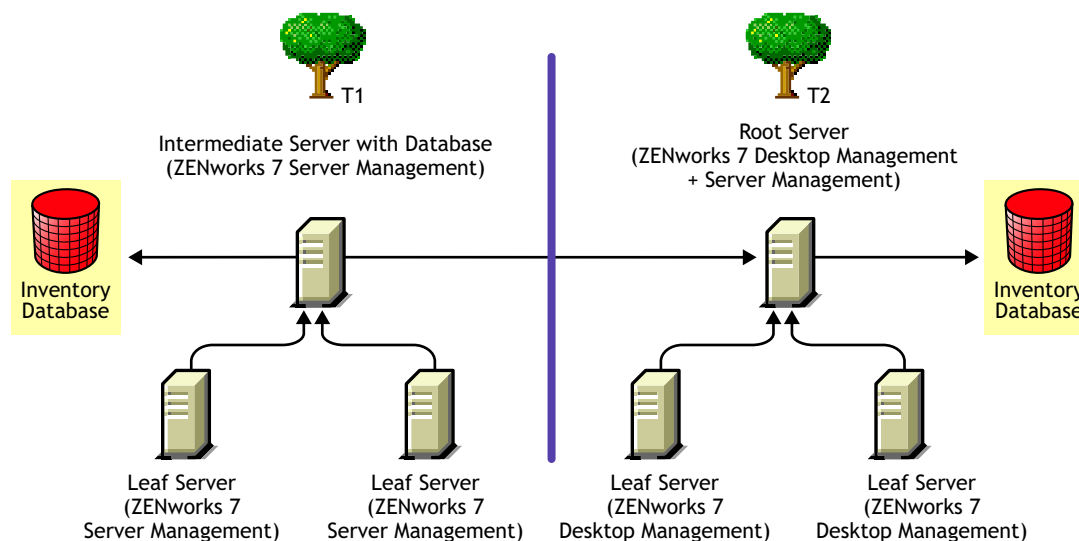
## Merge Method 2

Use the following general steps to merge the inventory data in T1 with the inventory data in T2:

1. Install ZENworks 7 Server Management on the Root Server in T2. For more information, see [“Policy-Enabled Server Management Installation”](#) in the *Novell ZENworks 7 Server Management Installation Guide*.
2. Change the role of the Root Server in T1 to Intermediate Server with Database and configure it to roll up to the Root Server in T2. For more information, see [“Changing the Role of the Inventory Server”](#) in the *Novell ZENworks 7 Server Management Administration Guide*.

This is illustrated in the following figure:

**Figure 37-9** Merging Inventory Data in Tree 1 with Inventory Data in Tree2: Root Server on Tree2

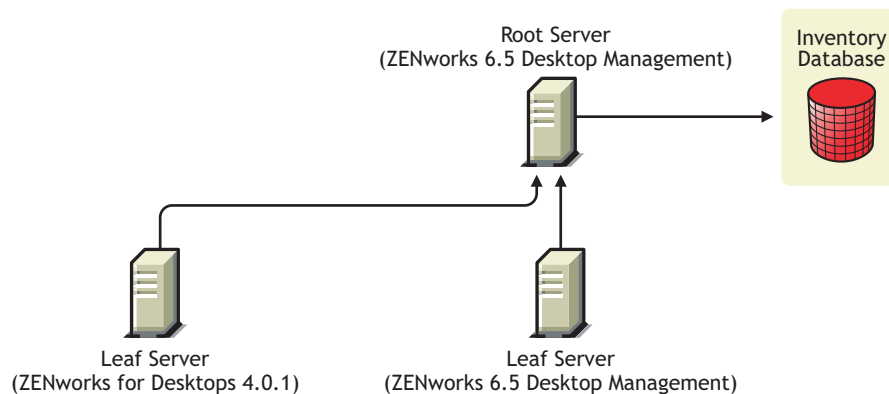


## 37.2 Interoperability Between ZENworks 7 Desktop Management and Earlier Versions of ZENworks Desktop Management Installed on Multiple Servers

In this scenario, there are two Leaf Servers with ZENworks for Desktops 4.0.1 and ZENworks 6.5 Desktop Management installed respectively. The Leaf Servers roll up the inventory information to a Root Server with ZENworks 6.5 Desktop Management installed.

This scenario is depicted in the following figure:

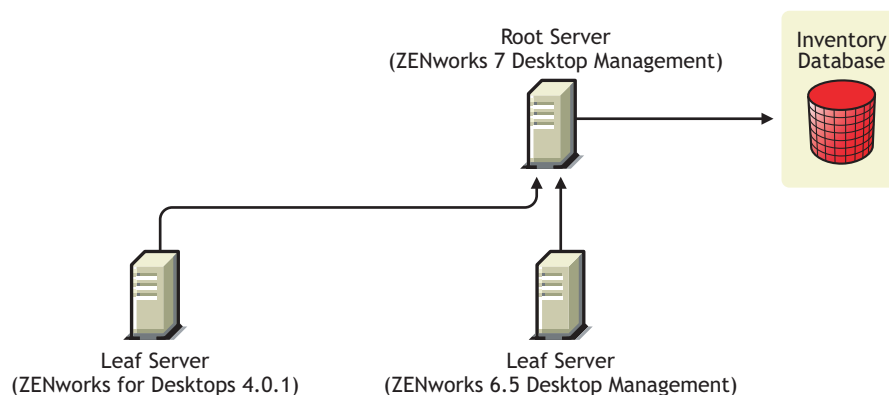
**Figure 37-10** Rolling Up Inventory Data from ZENworks 4.x and 6.5 Leaf Servers to a ZENworks 6.5 Root Server



To achieve interoperability among ZENworks 7 Desktop Management, ZENworks 6.5 Desktop Management, and ZENworks for Desktops 4.0.1, you must upgrade the Root Server to ZENworks 7 Desktop Management. For more information about upgrading to ZENworks 7 Desktop Management, see [Part VI, “Upgrade,” on page 353](#).

This is illustrated in the following figure:

**Figure 37-11** Rolling Up Inventory Data from ZENworks 4.x and 6.5 Leaf Servers to an Upgraded ZENworks 7 Root Server



## 37.3 Interoperability Among ZENworks 7 Desktop Management, ZENworks 7 Server Management, and Earlier ZENworks Versions

- ♦ [Section 37.3.1, “Interoperability Among ZENworks 7 Desktop Management, ZENworks 7 Server Management, and the Earlier ZENworks Versions Installed on a Single Server,” on page 489](#)
- ♦ [Section 37.3.2, “Interoperability Among ZENworks 7 Desktop Management, ZENworks 7 Server Management, and Earlier ZENworks Versions Installed on Multiple Servers,” on page 490](#)

### 37.3.1 Interoperability Among ZENworks 7 Desktop Management, ZENworks 7 Server Management, and the Earlier ZENworks Versions Installed on a Single Server

The following ZENworks versions or combinations of ZENworks versions might exist on a particular server where you want Inventory for both ZENworks 7 Server Management and ZENworks 7 Desktop Management to be running on the same server:

ZENworks for Desktops 4.0.1  
ZENworks for Desktops 4.0 SP1b  
ZENworks for Servers 3.0.2  
ZENworks for Servers 3.0 SP2  
ZENworks for Desktops 4.0.1 and ZENworks for Servers 3.0.2  
ZENworks for Desktops 4.0.1 and ZENworks for Servers 3.0 SP2  
ZENworks for Desktops 4.0 SP1b and ZENworks for Servers 3.0.2  
ZENworks for Desktops 4.0 SP1b and ZENworks for Servers 3.0 SP2  
ZENworks 6.5 Server Management  
ZENworks 6.5 Server Management SP1  
ZENworks 6.5 Desktop Management  
ZENworks 6.5 Desktop Management SP1  
ZENworks 6.5 Server Management and ZENworks 6.5 Desktop Management  
ZENworks 6.5 Server Management SP1 and ZENworks 6.5 Desktop Management SP1

You can first upgrade or install either ZENworks 7 Server Management or ZENworks 7 Desktop Management, then later upgrade or install the other. Then Inventory will be interoperable between ZENworks 7 Server Management and ZENworks 7 Desktop Management.

For more information about:

- ♦ Installing ZENworks 7 Desktop Management, see [Part III, “Windows-Based Installation,” on page 75](#).
- ♦ Upgrading ZENworks 7 Desktop Management, see [Part VI, “Upgrade,” on page 353](#).
- ♦ Installing ZENworks 7 Server Management, see [Novell ZENworks 7 Server Management Installation Guide](#).
- ♦ Upgrading ZENworks 7 Server Management, see [“Upgrade” in the Novell ZENworks 7 Server Management Installation Guide](#).

### 37.3.2 Interoperability Among ZENworks 7 Desktop Management, ZENworks 7 Server Management, and Earlier ZENworks Versions Installed on Multiple Servers

In this scenario, there are five Leaf Servers: A, B, C, D, and E, on which the following versions of ZENworks are installed:

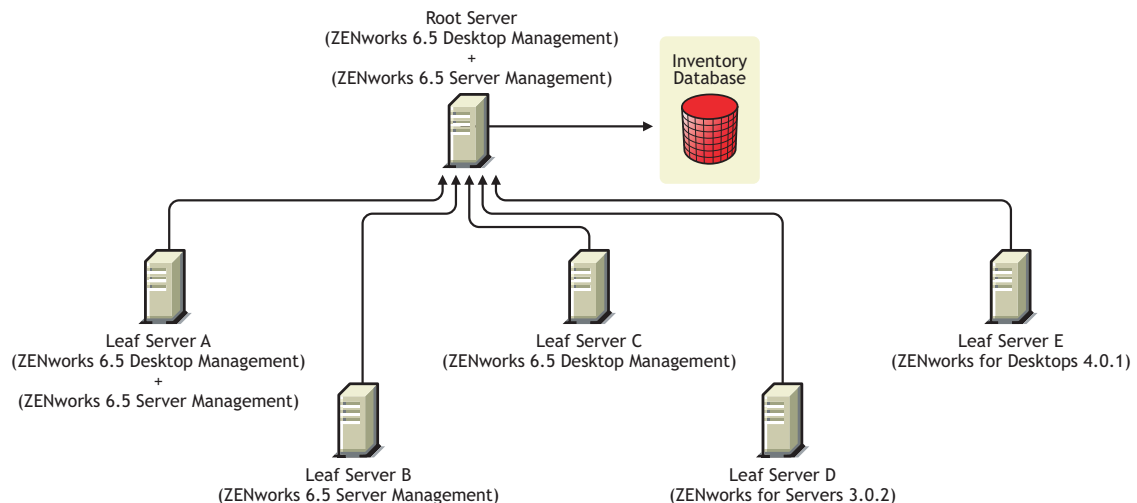
**Table 37-1** Scenario Data: Summary of ZENworks Installations and Versions on Various Servers

| Leaf Server   | Installed ZENworks Version                                         |
|---------------|--------------------------------------------------------------------|
| Leaf Server A | ZENworks 6.5 Desktop Management and ZENworks 6.5 Server Management |
| Leaf Server B | ZENworks 6.5 Server Management                                     |
| Leaf Server C | ZENworks 6.5 Desktop Management                                    |
| Leaf Server D | ZENworks for Servers 3.0.2                                         |
| Leaf Server E | ZENworks for Desktops 4.0.1                                        |

The Leaf Servers roll up the inventory information to a Root Server with ZENworks 6.5 Desktop Management and ZENworks 6.5 Server Management installed.

This scenario is depicted in the following figure;

**Figure 37-12** Interoperability Among ZENworks 7 Desktop Management, ZENworks 7 Server Management, and Earlier ZENworks Versions Installed on Multiple Servers

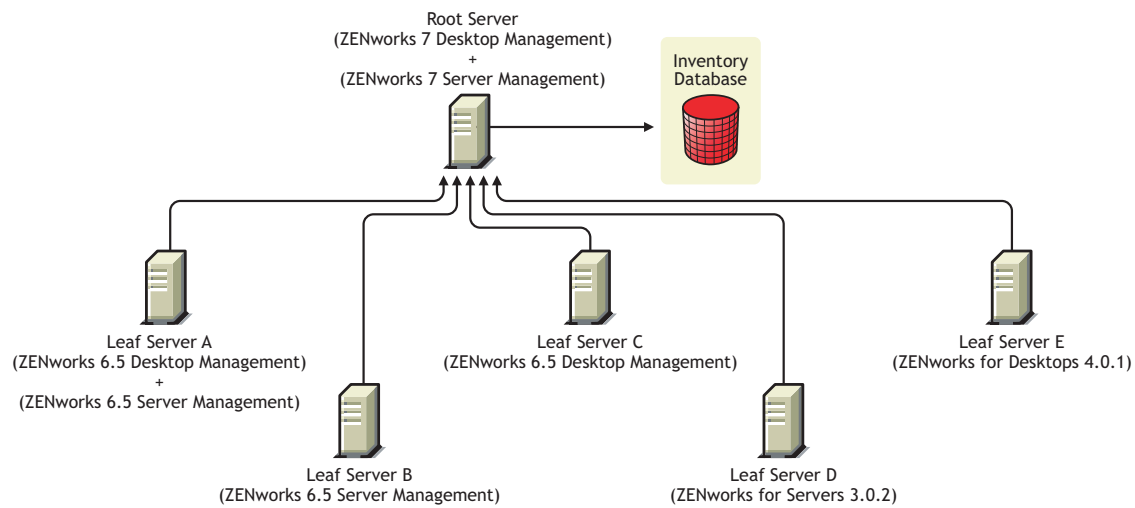


To achieve interoperability Among ZENworks 7 Server Management, ZENworks Desktop 7 Management, and the earlier versions of ZENworks installed on multiple Inventory servers, you must install ZENworks 7 Desktop Management and ZENworks 7 Server Management on the Root Server.

For more information about installing ZENworks 7 Desktop Management, see [Part III, “Windows-Based Installation,” on page 75](#). For more information about installing ZENworks 7 Server Management, see the [Novell ZENworks 7 Server Management Installation Guide](#).

This is illustrated in the following figure:

**Figure 37-13** *Root Server Upgraded from ZENworks 6.5 to ZENworks 7*







# Interoperability in Remote Management

# 38

The Remote Management console of Novell® ZENworks® 7 Desktop Management is interoperable with the following versions of the Remote Management Agent:

ZENworks for Desktops 4.x

ZENworks 6.5 Desktop Management

ZENworks for Servers 3.x

ZENworks 6.5 Server Management

ZENworks 7 Server Management



# Interoperability with Other Novell Products

# 39

Novell® ZENworks® 7 Desktop Management interoperates with and complements several other Novell products. This section includes more information and links to other information about that interoperation.

The following information is included in this section:

- ♦ [Section 39.1, “Interoperability with Third-Party Remote Management Products,” on page 495](#)
- ♦ [Section 39.2, “Interoperability with Novell iChain,” on page 495](#)
- ♦ [Section 39.3, “Interoperability with Novell Cluster Services,” on page 495](#)
- ♦ [Section 39.4, “Interoperability with the Novell GroupWise Client,” on page 496](#)
- ♦ [Section 39.5, “Interoperability with Novell NetStorage,” on page 496](#)
- ♦ [Section 39.6, “Interoperability with Novell Nterprise Branch Office,” on page 496](#)

---

**NOTE:** The information in this section also applies to ZENworks 7 Desktop Management with Support Pack 1.

---

## 39.1 Interoperability with Third-Party Remote Management Products

If you choose to install Mirror Driver on a Windows 2000/XP workstation when installing the Remote Management component of Novell ZENworks 7 Desktop Management, it can coexist with other vendor products offering remote management functionality.

This enables you to use other vendor products offering remote management functionality in the same environment with the Remote Management component of ZENworks 7 Desktop Management.

## 39.2 Interoperability with Novell iChain

Some useful interoperability is supported between ZENworks 7 Desktop Management and Novell iChain® 2.3 Support Pack 1. For more information, see TID 3287432 in the [Novell Support Knowledgebase](#) ([http://support.novell.com/search/kb\\_index.jsp](http://support.novell.com/search/kb_index.jsp)).

## 39.3 Interoperability with Novell Cluster Services

ZENworks 7 Desktop Management can be installed in an existing Novell Cluster Services™ environment. For more information, see [Appendix B, “Installing in a Novell Cluster Services Environment,” on page 533](#).

## 39.4 Interoperability with the Novell GroupWise Client

You can easily deploy the Novell GroupWise® client by using ZENworks Application Management. For details about using Application Management to accomplish the deployment, see “[Using ZENworks for Desktops to Deploy the GroupWise Client](http://www.novell.com/documentation/lg/gw65/gw65_admin/data/a2iiss.html)” ([http://www.novell.com/documentation/lg/gw65/gw65\\_admin/data/a2iiss.html](http://www.novell.com/documentation/lg/gw65/gw65_admin/data/a2iiss.html)) in the *GroupWise 7 Administration Guide*.

## 39.5 Interoperability with Novell NetStorage

Novell NetStorage is not supported on ZENworks 7 Middle Tier Servers installed on NetWare 6. If you intend to use NetStorage beyond its Desktop Management functions, we recommend that you install NetStorage on a separate server.

When you install the ZENworks 7 with SP1 Middle Tier Server to an OES Linux server, the existing Xtier component used by other Novell products (such as NetStorage) is forcibly upgraded to work with ZENworks 7 Desktop Management with SP1.

The following table lists the Xtier RPMs that are installed by NetStorage and the Xtier RPMs installed by the ZENworks Middle Tier Server. The RPM list was obtained by using the `rpm -qa |grep novell- x` command.

| NetStorage RPMs (installed by NetStorage in OES Linux SP2) | ZENworks RPMs (installed by Desktop Management 7 with SP1 Middle Tier Server) |
|------------------------------------------------------------|-------------------------------------------------------------------------------|
| novell- xtier- web- 3.1.3- 12.sles9                        | novell- xtier- web- 3.1.4- 4.sles9                                            |
| novell- xtier- core- 3.1.3- 12.sles9                       | novell- xtier- core- 3.1.4- 4.sles9                                           |
| novell- xtier- base- 3.1.3- 12.sles9                       | novell- xtier- base- 3.1.4- 4.sles9                                           |

**IMPORTANT:** Do not install the ZENworks 7 with SP1 Middle Tier Server to a server where NetStorage is already installed. Doing so alters the `/var/opt/xtier` directories, making them incompatible with NetStorage.

If upgrading the Xtier component might create a problem for your users, you can use the `novell-zdm-configure` utility to configure the existing version of Xtier to work with the ZENworks 7 with SP1 Middle Tier Server. For more information, see “[Configuring or Reconfiguring Installed ZENworks Processes Running on Linux](#)” in the *Novell ZENworks 7 Desktop Management Installation Guide*.

## 39.6 Interoperability with Novell Nterprise Branch Office

ZENworks Desktop Management can be integrated with Novell Nterprise Branch Office™ 2.0 using a centralized architecture to let you manage ZENworks centrally while using the branch office server as a repository for application files.

For more information about using these two Novell products together, see “[Integrating ZENworks for Desktops with Nterprise Branch Office](http://www.novell.com/documentation/lg/nbo2/setupguide/data/boj4ly3.html)” (<http://www.novell.com/documentation/lg/nbo2/setupguide/data/boj4ly3.html>) in the *Novell Nterprise Branch Office Setup Guide*.

# Uninstall/Reinstall

# VIII

Circumstances might occasionally make it necessary for you to either uninstall or reinstall a Novell® ZENworks® Desktop Management component. This section contains information about both uninstalling and reinstalling the following Desktop Management components:

- ♦ Chapter 40, “Uninstalling Remote Management,” on page 499
- ♦ Chapter 41, “Uninstalling or Reinstalling Workstation Inventory,” on page 503
- ♦ Chapter 42, “Uninstalling ZENworks Components on a Linux Server,” on page 517



# Uninstalling Remote Management

# 40

The information in this section details the steps to uninstall Novell® ZENworks® Remote Management from Windows or Novell NetWare® servers and Windows workstations.

- ♦ [Section 40.1, “Uninstalling Remote Management Agent Components,” on page 499](#)
- ♦ [Section 40.2, “Uninstalling Remote Management Server Components,” on page 499](#)

---

**NOTE:** The information in this section also applies to ZENworks 7 Desktop Management with Support Pack 1.

---

## 40.1 Uninstalling Remote Management Agent Components

To remove the Remote Management Agent files from user workstations:

- 1 From the Control Panel, double-click *Add/Remove Programs*.
- 2 Select *ZENworks Desktops Management Agent*.
- 3 Click *Change*.  
The ZENworks 7 Desktop Management Agent InstallShield Wizard is launched.
- 4 Click *Next*.
- 5 In the Custom Setup window, deselect *Remote Management*, click *Next*, then click *Finish*.

## 40.2 Uninstalling Remote Management Server Components

This section provides information about removing the Wake-on-LAN files and the ConsoleOne® files.

- ♦ [“Removing the ConsoleOne Files” on page 499](#)
- ♦ [“Removing the Wake-on-LAN Files” on page 501](#)

### 40.2.1 Removing the ConsoleOne Files

Removing the ConsoleOne files uninstalls the Remote Management Agent and the server-side Remote Management components.

- 1 Close ConsoleOne, if it is running.  
If ConsoleOne is invoked directly from the Remote Management server on multiple workstations, you must close ConsoleOne on all these workstations.
- 2 In the `consoleone_installation_directory\1.2` directory on your server or workstation, do the following:
  - 2a Delete the following files:

```

\bin\directoryrights.dll
\bin\ntgroups.ini
\bin\userreports.ini
\lib\zen\classes12.zip
\lib\zen\dataexportsnapins3x.jar
\lib\zen\dbexport.jar
\lib\zen\dbexport3x.jar
\lib\zen\dbexportres.jar
\lib\zen\jconn2.jar
\lib\zen\jdbcdrv.zip
\lib\zen\smanager.jar
\lib\zen\zenutility.jar
\reporting\export\invxml.dtd
\snapins\zen\dataexportsnapins.jar
\snapins\zen\inventorysnapins.jar
\snapins\zen\inventorysnapins3x.jar
\snapins\zen\jgl3.1.0.jar
\snapins\zen\policymigration.jar
\snapins\zen\swdictionarysnapins.jar
\snapins\zen\tableutilities.jar
\snapins\zen\tracer.jar
\snapins\zen\workstationsnapins.jar

```

**2b** Delete the following subdirectories from the \reporting\canned\novell reporting\zeninventory directory:

```

zeninventory
zeninventory3x
zeninventory4x
zeninventory30
zeninventory32

```

**3** If you have not installed the Remote Management ConsoleOne snap-ins on the same workstation or server, do the following:

**3a** Delete the following files:

```

\bin\desktop4.exe
\bin\desktop4.ini
\bin\mssql.ini
\bin\ndsaccess.dll
\bin\oracle.ini
\bin\remagent.ini
\bin\sybase.ini
\help\njha.jar
\help\novellzeninven.hs
\help\novellzenrmgt.hs
\help\novhlp.css

```



```

\lib\zen\desktop.jar
\lib\zen\desktop3x.jar
\lib\zen\desktopcommonutility.jar
\lib\zen\statuslog.jar
\lib\zen\zeninvmages.jar\bin\desktop4.exe

```

**3b** Delete the following directories:

```

\bin\zen\sybaseproxy
\help\en\novell_zfd_inventory
\help\en\novell_zfd_remotemgmt

```

- 4** Repeat Step 1 through Step 3 for each workstation or server where Inventory ConsoleOne snap-ins are installed.

## 40.2.2 Removing the Wake-on-LAN Files

**1** Stop the Wake-on-LAN service.

- ♦ On NetWare: At the server console, enter `stopWol`.
- ♦ On a Windows 2000/2003 server: In the Control Panel, double-click *Administrative Tools* > *Services*, select *Novell ZENworks Wake on LAN Service*, then click *Stop*.

**2** Delete the directories where the Remote Management components are installed.

- ♦ On a NetWare server, delete the following directories:

```

install_path\remmgmt\server\logs
install_path\remmgmt\server\lib
install_path\remmgmt\server\properties
sys:\system

```

Delete the following files:

```

wolenv.ncf
wolsetenv.ncf
startwol.ncf
stopwol.ncf
wolstatus.log

```

- ♦ On a Windows server, delete the following directories:

```

install_path\remmgmt\server\lib
install_path\remmgmt\server\logs
install_path\remmgmt\server\properties
install_path\remmgmt\server\bin

```

**3** On the Windows server, remove the following registry entry:

```

HKEY_LOCAL_MACHINE\SYSTEM\CURRENTCONTROLSET\SERVICES\PROMETHEUS
WAKE ON LAN SERVICE

```

**4** Delete the Wake-on-LAN service object (SERVERNAME\_WOLSERVICE) from Novell eDirectory™.

**5** Use ConsoleOne to delete all instances of the Wake-on-LAN policy from eDirectory.



# Uninstalling or Reinstalling Workstation Inventory

# 41

This section includes information that will help you to uninstall or reinstall the Workstation Inventory component of Novell® ZENworks® 7 Desktop Management.

- ♦ [Section 41.1, “Uninstalling Workstation Inventory,” on page 503](#)
- ♦ [Section 41.2, “Reinstalling Workstation Inventory,” on page 513](#)

---

**NOTE:** The information in this section also applies to ZENworks 7 Desktop Management with Support Pack 1.

---

## 41.1 Uninstalling Workstation Inventory

Workstation Inventory cannot be automatically uninstalled from ZENworks Desktop Management. You must manually remove the Inventory server, the Inventory database running on Sybase, the Novell eDirectory™ objects, and the ConsoleOne® files.

---

**NOTE:** If your Inventory database is mounted on Oracle or MS SQL, follow the uninstall procedure recommended by Oracle or MS SQL.

---

You must remove the objects and the files from every server and workstation where the Workstation Inventory components are installed.

In an enterprise deployment of Workstation Inventory, uninstall all Leaf Servers first, then uninstall Intermediate Servers, and finally uninstall the Root Server.

Before uninstalling Workstation Inventory, make sure you have made and archived a reliable backup of the Inventory database residing at the Root Server.

To manually uninstall Workstation Inventory, proceed in this sequence:

1. [“Uninstalling the Workstation Inventory eDirectory Objects” on page 504](#)
2. [“Uninstalling the Database eDirectory Object” on page 505](#)
3. [“Uninstalling the Sybase Inventory Database” on page 505](#)
4. [“Uninstalling the Sybase Engine” on page 506](#)
5. [“Uninstalling the Inventory Server Software” on page 508](#)
6. [“Uninstalling the XML Proxy Server” on page 510](#)
7. [“Uninstalling the Workstation Inventory Snap-Ins from ConsoleOne” on page 511](#)
8. [“Uninstalling the Desktop Management Inventory Agent” on page 512](#)

### 41.1.1 Uninstalling the Workstation Inventory eDirectory Objects

- 1 On the Inventory server, stop the Inventory services.
  - ♦ On a NetWare<sup>®</sup> server: At the server console prompt, enter `StopSer *`.
  - ♦ On a Windows 2000/2003 server: In the Control Panel, double-click *Administrative Tools*, double-click *Services*, select *Novell Inventory Service*, then click *Stop*.
  - ♦ On a Linux server: At the server prompt, enter `/etc/init.d/novell-zdm-inv stop`.
- 2 If the ZENworks Database policy is enabled, disable it.
  - 2a In ConsoleOne, right-click the Service Location Package object, click *Properties*, then click *Policies*.
  - 2b Select the ZENworks Database policy, click *Properties*, then click the *Inventory Management* tab.
  - 2c Delete the specified Inventory Database entry, then click *OK*.

---

**IMPORTANT:** If the ZENworks Database policy is used by more than one Inventory server, you must uninstall those Inventory servers before performing this step. See [“Uninstalling the Inventory Server Software” on page 508](#) for information.

---

- 3 Disable the Workstation Inventory policy.
  - 3a In ConsoleOne, right-click the Workstation Package object, then click *Properties*.
  - 3b Click *Policies*, then select the appropriate operating system suboption.
  - 3c If the Workstation Inventory policy is enabled, select the policy, click the *Reset* button, then click *Yes*.
  - 3d Deselect the Workstation Inventory policy.
  - 3e Click *Apply*, then click *Close*.

---

**IMPORTANT:** If you have configured the Workstation Inventory policy for more than one operating system, select the appropriate operating system suboption from the Policies tab and repeat this step.

---

- 4 Disable the Roll-Up policy and the Dictionary Update policy, if the policies are configured.
  - 4a In ConsoleOne, locate the container holding the Server Package, right-click the Server Package, click *Properties*, click *Policies*, then click the *NetWare* or *Windows* suboption.
  - 4b Select the Roll-Up policy, click the *Reset* button, then click *Yes*.
  - 4c Deselect the Roll-Up policy.
  - 4d Select the Dictionary Update policy, click the *Reset* button, then click *Yes*.
  - 4e Deselect the Dictionary Update policy.
  - 4f Click *Apply*, then click *Close*.
- 5 In ConsoleOne, locate the container holding the Inventory Service object and delete the Inventory Service object.

## 41.1.2 Uninstalling the Database eDirectory Object

In ConsoleOne, locate the container holding the Inventory database object and delete the Inventory database object.

## 41.1.3 Uninstalling the Sybase Inventory Database

This section includes the following information:

- ♦ “Uninstalling on NetWare Servers” on page 505
- ♦ “Uninstalling on Windows Servers” on page 505
- ♦ “Uninstalling on Linux Servers” on page 506

### Uninstalling on NetWare Servers

- 1 Stop Sybase by entering `q` at the Sybase console prompt.
- 2 Delete the `database_path\mgmtdb.db` entry from `sys:\system\mgmt dbs.ncf`.
- 3 Note the value of the `INVDBPATH` key from `sys:\system\zenworks.properties`.
- 4 If you want to use the inventory information stored in the database files, make a reliable backup of the database files (`mgmtdb*.db`) that are located in `INVDBPATH`.
- 5 From the value identified in the `INVDBPATH` key, delete the Inventory database files (`mgmtdb*.db`), including `mgmtdb.log`.
- 6 Delete the `INVDBPATH` key from `sys:\system\zenworks.properties`.
- 7 Delete the `ZFD_INVENTORY_DATABASE_SERVER` key.  
Delete the following section from `sys:\system\zenworks.properties`:  
`[Zfd_Inventory_Database_Server]Version = 7.0 Desktop Management  
product build date  
Installed_From = Product CD  
Support_Pack = 0`
- 8 Start Sybase if it is not uninstalled and if it is used by other ZENworks products.  
To start Sybase, enter `mgmt dbs.ncf` at the NetWare server console prompt.

### Uninstalling on Windows Servers

- 1 Note the value of the `DBENGINEPATH` key from the `HKEY_LOCAL_MACHINE\SOFTWARE\NOVELL\ZENWORKS` registry entry.
- 2 Stop Sybase.
  - 2a In the Windows Control Panel, double-click *Administrative Tools*, then double-click *Services*.
  - 2b Select *Novell Database - Sybase*, then click *Stop*.
- 3 Delete the `mgmt db.db` entry.
  - 3a Run `dbengine_installation_directory\ntdbconfig.exe`.
  - 3b In the NTDBConfig dialog box, remove the path to `mgmt db.db`, then click *OK*.
  - 3c If there are no other `.db` entries, remove the Sybase engine before proceeding to Step 4.

For information on how to remove the Sybase engine, see “[Uninstalling the Sybase Engine](#)” on page 506.

- 4 Note the value of the INVDBPATH key from the HKEY\_LOCAL\_MACHINE\SOFTWARE\NOVELL\ZENWORKS registry entry.
- 5 If you want to use the inventory information stored in the database files, make a reliable backup of the database files (mgmtdb\*.db) that are located in INVDBPATH.
- 6 From the value identified in the INVDBPATH key, delete the Inventory database files (mgmtdb\*.db), including mgmtdb.log.
- 7 Delete the INVDBPATH key from the HKEY\_LOCAL\_MACHINE\SOFTWARE\NOVELL\ZENWORKS registry entry.
- 8 Delete the Inventory database server key from the HKEY\_LOCAL\_MACHINE\SOFTWARE\NOVELL\ZENWORKS\ZFD registry entry.
- 9 Start Sybase if it is not uninstalled and if it is used by other ZENworks products.
  - 9a In the Windows Control Panel, double-click *Administrative Tools*, then double-click *Services*.
  - 9b Select *Novell Database - Sybase*, then click *Start*.

## Uninstalling on Linux Servers

- 1 At the Linux server prompt, enter `/etc/init.d/novell-zdm-sybase stop`.
- 2 At the server prompt, enter `rpm -e novell-zenworks-invdb`.
- 3 If you want to use the inventory information stored in the database files, make a reliable backup of the database files (mgmtdb\*.db) that are located in INVDBPATH.
- 4 Delete the INVDBPATH key from `/etc/opt/novell/zenworks/zenworks.properties`.
- 5 Delete the ZFD\_INVENTORY\_DATABASE\_SERVER key.  
Delete the following section from `/etc/opt/novell/zenworks/zenworks.properties`:

```
[ZfD_Inventory_Database_Server]Version = 7.0 Desktop Management  
product build date  
Installed_From = Product CD  
Support_Pack = 0
```
- 6 Start Sybase if it is not uninstalled and if it is used by other ZENworks products.  
To start Sybase, enter `/etc/init.d/novell-zdm-sybase start` at the server prompt.

### 41.1.4 Uninstalling the Sybase Engine

You can remove the Sybase engine only if it is not used by other ZENworks products.

- ♦ “[Uninstalling on NetWare Servers](#)” on page 507
- ♦ “[Uninstalling on Windows Servers](#)” on page 507
- ♦ “[Uninstalling on Linux Servers](#)” on page 507

## Uninstalling on NetWare Servers

If Sybase is used by other ZENworks products, you must uninstall the database before proceeding to uninstall the Sybase engine. For information, see [“Uninstalling the Sybase Inventory Database” on page 505](#).

- 1 Stop Sybase by entering `q` at the Sybase console prompt.
- 2 Note the value of the DBENGINEPATH key from `sys:\system\zenworks.properties`.
- 3 Verify whether the database is mounted on the database server by checking `sys:\system\mgmt dbs.ncf` has the `.db` entry.  
If the file does not contain the `.db` entry, delete `mgmt dbs.ncf`. If the file contains the `.db` entry, do not continue to remove the Sybase engine.
- 4 Delete the `mgmt dbs.ncf` entry from `sys:\system\autoexec.ncf`.
- 5 Delete the directory specified in DBENGINEPATH (identified in Step 3).
- 6 Delete the DBENGINEPATH key from `sys:\system\zenworks.properties`.

## Uninstalling on Windows Servers

If Sybase is used by other ZENworks products, you must uninstall the database before proceeding to uninstall the Sybase engine. For information, see [“Uninstalling the Sybase Inventory Database” on page 505](#).

- 1 Stop Sybase.
  - 1a In the Windows Control Panel, double-click *Administrative Tools*, then double-click *Services*.
  - 1b Select *Novell Database - Sybase*.
  - 1c Click *Stop*.
- 2 Note the value of the DBENGINEPATH key from the `HKEY_LOCAL_MACHINE\SOFTWARE\NOVELL\ZENWORKS` registry entry.
- 3 Verify whether the database is mounted on the database server.
  - 3a Run `dbengine_installaton_directory\ntdbconfig.exe` to find if it has a `.db` entry.
  - 3b The `ntdbconfig.exe` file has the `.db` entry if the database is mounted on the database server. If `ntdbconfig.exe` has the `.db` entry, do not continue to remove the Sybase engine.  
If the `.db` entry does not exist, delete the `ASANY_S_ZENWORKS` key from the `HKEY_LOCAL_MACHINE\SYSTEM\CURRENTCONTROLSET\SERVICES` registry entry.
- 4 Delete the directory specified in DBENGINEPATH.

## Uninstalling on Linux Servers

If Sybase is used by other ZENworks products, you must uninstall the database first before proceeding to uninstall the Sybase engine. For information, see [“Uninstalling the Sybase Inventory Database” on page 505](#).

- 1 At the Linux server prompt, enter `/etc/init.d/novell-zdm-sybase stop`.

- 2 Verify if the database is mounted on the database server by checking that `/etc/opt/novell/zenworks/bin/mgmt dbs . sh` has the `.db` entry.  
If the file does not contain the `.db` entry, delete `mgmt dbs . sh`. If the file contains the `.db` entry, do not continue to remove the Sybase engine.
- 3 Delete the `DBENGINEPATH` key from `/etc/opt/novell/zenworks/zenworks.properties`.
- 4 At the server prompt, enter `rpm -e novell-zenworks-sybase`.

## 41.1.5 Uninstalling the Inventory Server Software

This section includes the following information:

- “Uninstalling on NetWare Servers” on page 508
- “Uninstalling on Windows Servers” on page 509
- “Uninstalling on Linux Servers” on page 509

### Uninstalling on NetWare Servers

- 1 On the Inventory server, stop the Inventory Service by entering `StopSer *` at the server console prompt.
- 2 Unload the `java.nlm`: At the server console, type `java -exit`.
- 3 Note the values of `INVSrvPATH` and `ZWSPATH` keys from `sys:\system\zenworks.properties`.
- 4 Delete the `ZFD_INVENTORY_SERVER` key:  
Delete the following section from `sys:\system\zenworks.properties`:  

```
[ZfD_Inventory_Server]Version = 7.0 Desktop Management product
build date
Installed_From = Product CD
Support_Pack = 0
```
- 5 Delete the `invsrvpath\scandir` directory.
- 6 Delete the `invsrvpath\server` directory.
- 7 Delete the following entries from `sys:\system\autoexec.ncf`:  

```
; ZENworks Inventory Settings
StartInv.ncf
```
- 8 Delete the following files from `sys:\system` directory:  

```
inenv.ncf
inenvset.ncf
listser.ncf
startinv.ncf
startser.ncf
startzws.ncf
stopser.ncf
dbexport.ncf
debug.properties
```



stopdb.ncf

- 9 If Policy and Distribution Services and the XML Proxy server are not installed on the Inventory server, remove the ZENworks Web Server components by deleting the directory specified by ZWSPATH.
  - 9a Delete the following entries from `sys:\system\autoexec.ncf`:
    - ; ZENworks Inventory Settings
    - ZFS.ncf
  - 9b Delete the `zwsstart.ncf` file from the `sys:\system` directory.
  - 9c Delete the ZWSPATH key from `sys:\system\zenworks.properties`.
  - 9d Delete `zws_volume:\zfs-startup.xml`.
  - 9e Delete `zws_volume:\zenworks\zfs.ncf`.
- 10 Delete the INVSrvPATH key from `sys:\system\zenworks.properties`.

## Uninstalling on Windows Servers

- 1 On the Inventory server, stop the Inventory Service.
  - 1a In the Windows Control Panel, double-click *Administrative Tools*, then double-click *Services*
  - 1b Select *Novell Inventory Service*, then click *Stop*.
  - 1c Select *Novell ZENworks Service Manager*, then click *Stop*.
- 2 Note the values of INVSrvPATH and ZWSPATH keys from the `HKEY_LOCAL_MACHINE\SOFTWARE\NOVELL\ZENWORKS` registry entry.
- 3 Delete the `invsrvpath\scandir` directory.
- 4 Delete the `invsrvpath\server` directory.
- 5 Delete the ZENINVENTORY key from the `HKEY_LOCAL_MACHINE\SYSTEM\CURRENTCONTROLSET\SERVICES` registry entry.
- 6 Delete the Inventory server key from the `HKEY_LOCAL_MACHINE\SOFTWARE\NOVELL\ZENWORKS\ZFD` registry entry.
- 7 If Policy and Distribution Services and the XML Proxy server are not installed on the Inventory server, remove the ZENworks Web Server components.
  - 7a Delete the `zwspath` directory.
  - 7b Delete the ZWSPATH key from the `HKEY_LOCAL_MACHINE\SOFTWARE\NOVELL\ZENWORKS` registry entry.
  - 7c Delete the ZWSSRV key from the `HKEY_LOCAL_MACHINE\SYSTEM\CURRENTCONTROLSET\SERVICES` registry entry.
- 8 Delete the INVSrvPATH key from `HKEY_LOCAL_MACHINE\SOFTWARE\NOVELL\ZENWORKS` registry entry.
- 9 Reboot the machine for the changes to take effect.

## Uninstalling on Linux Servers

- 1 Stop the Inventory service by entering `/etc/init.d/novell-zdm-inv stop`.

- 2 Delete the INVSrvPATH and ZWSPATH keys from `/etc/opt/novell/zenworks/zenworks.properties`.
- 3 Delete the ZFD\_Inventory\_Server key:  
Delete the following section from `/etc/opt/novell/zenworks/zenworks.properties`.  

```
[ZfD_Inventory_Server]Version = 7.0 Desktop Management product
build date
Installed_From = Product CD
Support_Pack = 0
```
- 4 At the server prompt, enter `rpm -e novell-zenworks-invserver`.
- 5 At the server prompt, enter `rpm -e novell-zen-zws`.
- 6 (Optional) If the debug log files are not required, delete the `/var/opt/novell/log/zenworks/inv` directory.
- 7 If the Remote Management component or any other Workstation Inventory component of ZENworks 7 Desktop Management has not been installed, delete the following files:  

```
/etc/opt/novell/zenworks/zenworks.properties
/etc/opt/novell/zenworks/password.txt
/etc/opt/novell/zenworks/zfs-startup.xml.rpmsave
/etc/opt/novell/zenworks/zws.properties.rpmsave
```
- 8 Delete `/etc/samba/smb.conf.timestamp`.

## 41.1.6 Uninstalling the XML Proxy Server

To uninstall the Inventory XML Proxy Server files from the server if Policy and Distribution Services or Inventory is not installed on the server:

- “Uninstalling on NetWare Servers” on page 510
- “Uninstalling on Windows Servers” on page 511
- “Uninstalling on Linux Servers” on page 511

### Uninstalling on NetWare Servers

- 1 Unload the `java.nlm` by entering `java -killzfsexit` at the server console prompt.
- 2 Note the value of the ZWSPATH from `sys:\system\zenworks.properties`.
- 3 Delete the following section from `sys:\system\zenworks.properties`:  

```
[ZfD_XML_Proxy_Server]
Version=7.0 Desktop Management product build date
Installed_From = Product CD
Support_Pack = 0
```
- 4 Delete the following entries from `sys:\system\autoexec.ncf`:  

```
; ZENworks Inventory Settings

ZFS.ncf
```
- 5 Delete the `zwsstart.ncf` file from `sys:\system` directory.

- 6 Delete the ZWSPATH directory and the ZWSPATH entry from `sys:\system\zenworks.properties`.
- 7 Delete `zfs-startup.xml` and `zfs.ncf` from the `zws_volume:\zenworks` directory.

## Uninstalling on Windows Servers

- 1 Stop ZENworks Web Server.

In the Control Panel, double-click *Administrative Tools*, double-click *Services*, select *Novell ZENworks Service Manager*, then click *Stop*.

- 2 Note the value of the ZWSPATH key from the `HKEY_LOCAL_MACHINE\SOFTWARE\NOVELL\ZENWORKS` registry entry. The value indicates the `zwspath` directory.
- 3 Delete the `zwspath` directory.
- 4 Delete the Inventory Proxy XML server key from the `HKEY_LOCAL_MACHINE\SOFTWARE\NOVELL\ZENWORKS\ZFD` registry entry.
- 5 Delete the ZWSSRV key from the `HKEY_LOCAL_MACHINE\SYSTEM\CURRENTCONTROLSET\SERVICES` registry entry.
- 6 Delete the ZWSPATH key from the `HKEY_LOCAL_MACHINE\SOFTWARE\NOVELL\ZENWORKS\` registry entry.
- 7 Delete `zws_volume:\zenworks\zfs-startup.xml`.

## Uninstalling on Linux Servers

- 1 Delete the ZWSPATH key from `/etc/opt/novell/zenworks/zenworks.properties`.
- 2 At the server prompt, enter `rpm -e novell-zen-zws`.

### 41.1.7 Uninstalling the Workstation Inventory Snap-Ins from ConsoleOne

Do not uninstall ConsoleOne itself if you are using it to manage other products.

To remove only the Workstation Inventory snap-ins from ConsoleOne:

- 1 Close ConsoleOne, if it is running.

If ConsoleOne is invoked directly from the Inventory server on multiple workstations, you must close ConsoleOne on all these workstations.

- 2 In the `consoleone_installation_directory\1.2` directory on your server or workstation, do the following:

- 2a Delete the following files:

```
\lib\zen\dbexport.jar
\lib\zen\desktop.jar
\lib\zen\zeninvimages.jar
\lib\zen\zenutility.jar
\lib\zen\statuslog.jar
```

```

\lib\zen\classes12.zip\lib\zen\vbjapp.jar\lib\zen\vbjorb.jar
\lib\zen\jdbcdrv.zip
\snapins\zen\inventorysnapins.jar
\snapins\zen\inventorysnapins3x.jar\snapins\zen\dataexportsn
apins.jar\snapins\zen\policymigration.jar\snapins\zen\work
stationsnapins.jar\snapins\zen\tracer.jar\help\novellserve
rinv.hs\bin\directoryrights.dll\bin\displayrules.properties
s\bin\schemarules.properties

```

**2b** Delete the following directories:

```

\reporting\canned\novellreporting\zeninventory
\reporting\canned\novellreporting\zeninventory30
\reporting\canned\novellreporting\zeninventory32
\reporting\canned\novellreporting\zeninventory3x
\reporting\canned\novellreporting\zeninventory4x

```

**3** If you have not installed the Remote Management ConsoleOne snap-ins on the same workstation or server, delete the following files:

```

\bin\desktop4.exe
\bin\mssql.ini
\bin\msvp60.dll
\bin\ndsaccess.dll
\bin\oracle.ini
\bin\remagent.ini
\bin\sybase.ini
\help\novellzeninven.hs
\help\novellzenrmgt.hs \help\en\novell_zfd_inventory
\help\en\novell_zfd_remotemgmt
\lib\zen\desktop.jar
\lib\zen\desktop3x.jar\lib\zen\desktopcommonutility.jar
\resources\resources.jar
\snapins\zen\commonsnapins.jar

```

## 41.1.8 Uninstalling the Desktop Management Inventory Agent

If you need to uninstall the Desktop Management Inventory Agent on a user workstation, you can do so by running Add/Delete Programs in Windows. Any application icons created on the desktop by the Novell Application Launcher™ are not deleted.

---

**NOTE:** Any user can try to execute the Add/Remove Programs in Windows to uninstall the Desktop Management Inventory Agent. Unless that user has local administrative rights to the workstation, the agent uninstall is not successful.

---

## 41.2 Reinstalling Workstation Inventory

You might need to reinstall the Workstation Inventory component of Desktop Management Services because it failed to install properly or because data corruption, such as an inadvertent file deletion, has occurred and the data can only be fixed by reinstalling.

The following sections provide more information:

- ♦ [Section 41.2.1, “Reinstalling Workstation Inventory on NetWare and Windows Servers,” on page 513](#)
- ♦ [Section 41.2.2, “Reinstalling the Inventory Server or Inventory Database on Linux,” on page 515](#)
- ♦ [Section 41.2.3, “Reinstalling the Desktop Management Inventory Agent,” on page 515](#)

### 41.2.1 Reinstalling Workstation Inventory on NetWare and Windows Servers

This section includes information that focuses on reinstalling the Workstation Inventory component.

- ♦ [“Preparing to Reinstall Workstation Inventory” on page 513](#)
- ♦ [“Reinstalling Workstation Inventory” on page 514](#)
- ♦ [“Determining if Reinstalling Workstation Inventory Was Successful” on page 515](#)

---

**IMPORTANT:** A reinstallation does not require the schema to be extended again.

---

#### Preparing to Reinstall Workstation Inventory

- 1 Identify the servers that need Workstation Inventory reinstalled.
  - 2 Stop the Inventory service.
    - ♦ On a NetWare Inventory server: At the server console prompt, enter `sys:\system\invstop.ncf`.

---

**NOTE:** If you do not want the Sybase database to be stopped automatically when you stop the Inventory services, comment the `Unload dbsrv8.nlm` line in the `sys:\system\invstop.ncf` file.

---

  - ♦ On a Windows 2000/2003 Inventory server: In the Control Panel, double-click *Administrative Tools* > double-click *Services* > select *Novell Inventory Service* > click *Stop*.
- 3 Stop the Inventory database.
    - ♦ On NetWare: At the Sybase console prompt, press the Q key.
    - ♦ On Windows 2000/2003: In the Control Panel, double-click *Administrative Tools* > double-click *Services* > select *Novell Database - Sybase* > click *Stop*.
    - ♦ On Linux: At the Sybase console prompt, enter `/etc/init.d/novell-zdm-sybase stop`.
  - 4 If Java has not been unloaded on the target NetWare servers, unload `java.nlm` (at the server console, enter `java -exit`).

---

**IMPORTANT:** This command stops all Java processes running on the server. Verify that all Java processes can be stopped while you are installing Desktop Management.

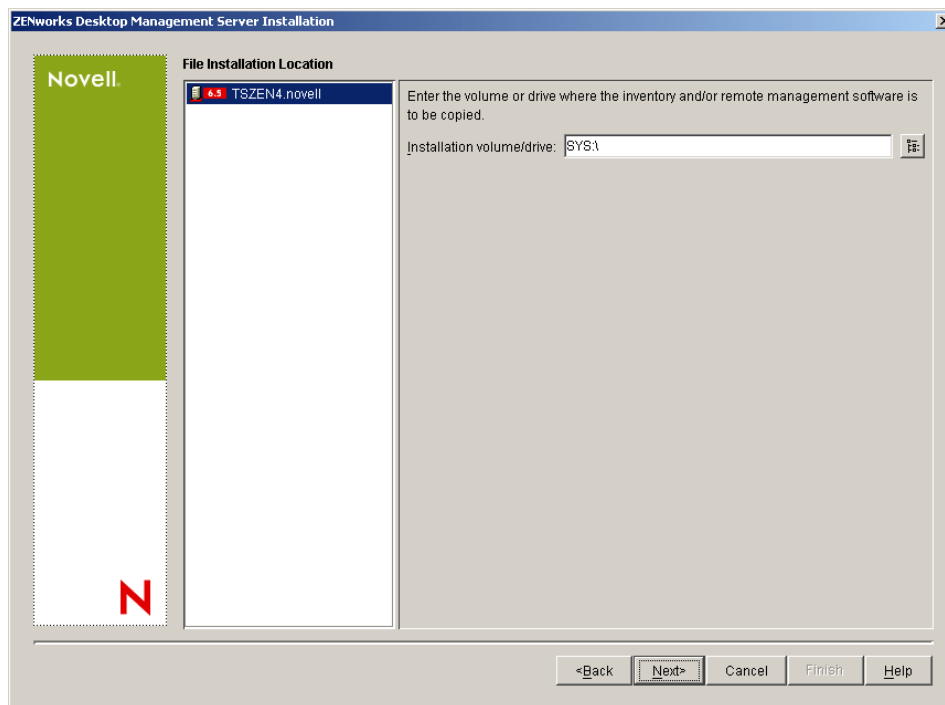
---

- 5 On the target Windows servers, close the Services window.
- 6 Log into the Novell eDirectory tree that has the servers where you want to reinstall.  
If you are reinstalling to a Windows 2000 server, you must be logged in as Administrator (or equivalent) in order to authenticate to the server you are reinstalling to.
- 7 Continue with **“Installing the ZENworks Desktop Management Server”** on page 77.

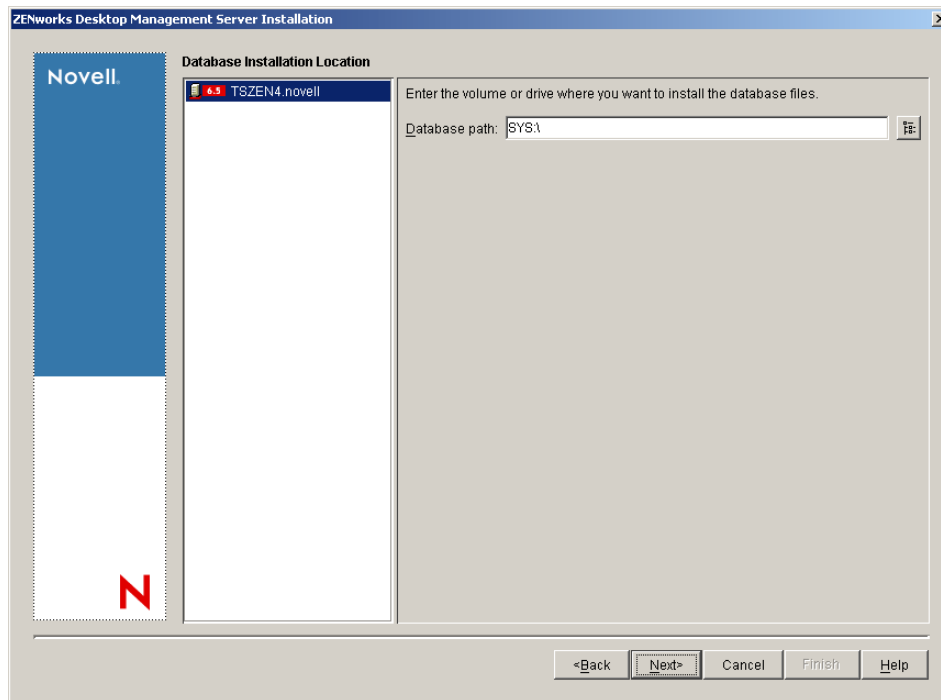
## Reinstalling Workstation Inventory

If you reinstall Workstation Inventory over a prior installation, the ZENworks 7 Desktop Management Workstation Inventory uses the existing configured policies and the scandir directory.

On the File Installation Location page during reinstallation, the installation program searches for the previous installation path. If detected, the Workstation Inventory or Remote Management files are installed to the same path.



On the Database Installation Location page during a reinstallation, the Installation program searches for the previous installation path. If detected, the database is installed to the same path.



### Determining if Reinstalling Workstation Inventory Was Successful

- 1 After the installation has finished, review the installation log file to determine whether any components failed to install.
- 2 If you reinstalled to fix a file missing or file corruption problem, check to see if the problem has been fixed.

## 41.2.2 Reinstalling the Inventory Server or Inventory Database on Linux

To reinstall the Inventory server or Inventory database on Linux:

1. Uninstall the component you want to reinstall. For example, if you want to reinstall the Inventory server, you must first uninstall it.

For more information on how to uninstall the Inventory server or Inventory database, see [Section 41.1, “Uninstalling Workstation Inventory,”](#) on page 503.

2. Install the component that you uninstalled in the previous step.

For more information on how to install, see [Chapter 22, “Customizing the ZENworks Desktop Management Installation on a Linux Server,”](#) on page 315.

## 41.2.3 Reinstalling the Desktop Management Inventory Agent

To reinstall the Desktop Management Inventory Agent on the workstation, see [Section 12.2, “Manually Installing the Desktop Management Agent,”](#) on page 138.





# Uninstalling ZENworks Components on a Linux Server

# 42

The Novell® ZENworks® 7 Desktop Management Services on Linux includes a script for uninstalling Desktop Management components. This section includes instructions that explain the uninstall procedure.

---

**NOTE:** The information in this section also applies to ZENworks 7 Desktop Management Services on Linux with Support Pack 1.

---

---

**IMPORTANT:** If you want to uninstall the Workstation Inventory components, see [Chapter 41, “Uninstalling or Reinstalling Workstation Inventory,”](#) on page 503.

---

Use the following steps to uninstall ZENworks from a Linux server:

- 1 From the terminal console, use the `su` command to switch to the root user.
- 2 Change the directory to `/opt/novell/zenworks/Uninstall\ ZENworks\Desktop\ Management`.
- 3 Run `./Uninstall_ZENworks\Desktop\ Management` to display the first screen of the ZENworks 7 Desktop Management Services on Linux uninstall program.

```
=====
Uninstall ZENworks Desktop Management
-----
```

```
About to uninstall...
```

```
ZENworks Desktop Management
```

```
This will remove features installed by InstallAnywhere. It will
not remove files and folders created after the installation.
```

```
PRESS <ENTER> TO CONTINUE:
```

- 4 Press Enter to continue the uninstall process.

The Uninstall Options screen is displayed.

```
=====
Uninstall Options
-----
```

```
ENTER THE NUMBER FOR YOUR CHOICE, OR PRESS <ENTER> TO ACCEPT THE
DEFAULT: ->1- Completely remove all features and components.    2-
Choose specific features that were installed by InstallAnywhere.
```

```
Please choose one of the following options:
```

- 5 (Optional) Enter 1 to completely remove all features and components without further input.

- 6** (Optional) Enter 2 to choose specific features that were previously installed.

Choosing option 2 displays the Choose Product Feature screen.

```
=====
Choose Product Features
-----
```

```
ENTER A COMMA_SEPARATED LIST OF NUMBERS REPRESENTING THE FEATURES
YOU WOULD
LIKE TO SELECT, OR DESELECT. TO VIEW A FEATURE'S DESCRIPTION, ENTER
'?<NUMBER>'. PRESS <RETURN> WHEN YOU ARE DONE:
```

```
1- [ ] Inventory Server
2- [ ] Remote Management
3- [ ] Application Management
4- [ ] Inventory Proxy
5- [ ] Inventory Database
6- [ ] NAL Database
7- [ ] Autoworkstation Import/Removal
8- [ ] Imaging
9- [ ] PXE
```

```
Check the features that you want to uninstall. Unchecked features
will remain installed.:
```

- 7** Enter the number or numbers in a comma-separated list representing the feature or features that you would like to select or deselect for uninstalling.

An X in the feature list indicates the feature is selected for uninstall. If the feature is not selected, it remains installed.

- 8** Press Enter when you have finished selecting the features you want.

The uninstall Summary screen is displayed. For example, the following screen is displayed if you selected Application Management feature for uninstallation:

```
=====
Summary
-----
```

```
Uninstall Application Management
```

```
->1- Continue
```

```
ENTER THE NUMBER FOR YOUR CHOICE, OR PRESS <ENTER> TO ACCEPT THE
DEFAULT:
```

```
:
```

- 9** Press Enter to accept the default.

The features you selected are uninstalled from the Linux server.

---

**IMPORTANT:** If you want to completely remove ZENworks7 Desktop Management services from your Linux cluster, you need to perform the following steps:

1. Remove all files under the \zdm directory on the cluster shared disk/volume.
2. Remove the zdmstart command from the cluster resource load script.

3. Remove the `zdmstop` command from the cluster resource unload script.
-



# Appendixes

# IX

This part of the *Installation Guide* includes sections with additional information that might help you as you install ZENworks Desktop Management.

- ♦ [Appendix A, “Differences in ZENworks for Desktops 3.2 and ZENworks 7 Policy Packages,” on page 523](#)
- ♦ [Appendix B, “Installing in a Novell Cluster Services Environment,” on page 533](#)
- ♦ [Appendix C, “Using the Identity Manager Bundle 2 Edition for ZENworks 7 Desktop Management,” on page 569](#)
- ♦ [Appendix D, “Using Identity Manager 3 Bundle Edition for ZENworks 7 with SP1,” on page 573](#)
- ♦ [Appendix E, “Interoperating with the Novell BorderManager VPN Client,” on page 579](#)
- ♦ [Appendix F, “Installation Error Messages,” on page 583](#)
- ♦ [Appendix G, “License Agreements for XMLRPC,” on page 619](#)
- ♦ [Appendix H, “License Agreement for Xerces XML Parser,” on page 623](#)
- ♦ [Appendix I, “License Agreement for Expat XML Parser,” on page 625](#)
- ♦ [Appendix J, “License Agreement for Boost Regular Expression Parser,” on page 627](#)
- ♦ [Appendix K, “License Agreement for XML Pull Parser,” on page 629](#)
- ♦ [Appendix L, “Configuring Desktop Management Services for Startup on a Linux Server,” on page 631](#)
- ♦ [Appendix M, “Documentation Updates,” on page 633](#)



# Differences in ZENworks for Desktops 3.2 and ZENworks 7 Policy Packages

The following tables include information to help you understand how these policies are organized in an updated Novell® ZENworks™ 7 Desktop Management system:

- ♦ [Section A.1, “Organization of the Container Policy Package,” on page 523](#)
- ♦ [Section A.2, “Organization of the Server Policy Package,” on page 523](#)
- ♦ [Section A.3, “Organization of the Service Location Policy Package,” on page 525](#)
- ♦ [Section A.4, “Organization of the User Policy Package,” on page 526](#)
- ♦ [Section A.5, “Organization of the Workstation Policy Package,” on page 529](#)

**NOTE:** The information in this section also applies to ZENworks 7 Desktop Management with Support Pack 1.

## A.1 Organization of the Container Policy Package

**Table A-1** *The Container Policy Package*

| Tab Name in the Policy Package | ZENworks for Desktops 3.2 SP3 Policies Included | ZENworks 7 Policies Included | Differences in ZENworks 7 |
|--------------------------------|-------------------------------------------------|------------------------------|---------------------------|
| <i>General</i>                 | Search Policy                                   | Search Policy                | Partition option removed. |

## A.2 Organization of the Server Policy Package

**Table A-2** *The Server Policy Package*

| Tab Name in the Policy Package | ZENworks for Desktops 3.2 SP3 Policies Included | ZENworks 7 Policies Included | Differences in ZENworks 7                                                                         |
|--------------------------------|-------------------------------------------------|------------------------------|---------------------------------------------------------------------------------------------------|
| <i>General</i>                 | Imaging Server Policy                           | Imaging Server Policy        | Added named servers and a DNS domain suffix to the policy to push as part of the image-safe data. |
| <i>General</i>                 | Workstation Import                              | Workstation Import           | No changes.                                                                                       |
| <i>General</i>                 | Workstation Removal                             | Workstation Removal          | No changes.                                                                                       |

| Tab Name in the Policy Package | ZENworks for Desktops 3.2 SP3 Policies Included | ZENworks 7 Policies Included | Differences in ZENworks 7                                                                                                                                                                                                           |
|--------------------------------|-------------------------------------------------|------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <i>General</i>                 | zeninvRollupPolicy                              | Roll-Up Policy               | Renamed. Added an IP/DNS entry for server to cross trees. Also added the Proxy server configuration.                                                                                                                                |
| <i>General</i>                 | n/a                                             | ZENworks Database            | Allows configuration of the database type and URL.<br><br>If Workstation Inventory is installed, you can specify the inventory database location on the server. This setting overrides the setting in the Service Location Package. |
| <i>General</i>                 | n/a                                             | Dictionary Update Policy     | Allows configuration of the distribution of the software dictionaries to different Inventory servers.<br><br>This is a new policy.                                                                                                  |
| <i>Windows</i>                 | Imaging Server Policy                           | Imaging Server Policy        | Added named servers and DNS domain suffixes to the policy to push as part of the image-safe data.                                                                                                                                   |
| <i>Windows</i>                 | Workstation Import                              | Workstation Import           | No changes.                                                                                                                                                                                                                         |
| <i>Windows</i>                 | Workstation Removal                             | Workstation Removal          | No changes.                                                                                                                                                                                                                         |
| <i>Windows</i>                 | zeninvRollupPolicy                              | Roll-Up Policy               | Renamed. Added an IP/DNS entry for server to cross trees. Also added the Proxy server configuration.                                                                                                                                |
| <i>Windows</i>                 | n/a                                             | ZENworks Database            | Allows configuration of the database type and URL.<br><br>If Workstation Inventory is installed, you can specify the inventory database location on the server. This setting overrides the setting in the Service Location Package. |
| <i>Windows</i>                 | n/a                                             | Dictionary Update Policy     | Allows configuration of the distribution of the software dictionaries to different Inventory servers.<br><br>This is a new policy.                                                                                                  |
| <i>NetWare</i>                 | Imaging Server Policy                           | Imaging Server Policy        | Added named servers and a DNS domain suffix to the policy to push as part of the image-safe data.                                                                                                                                   |
| <i>NetWare</i>                 | Workstation Import                              | Workstation Import           | No changes.                                                                                                                                                                                                                         |
| <i>NetWare</i>                 | Workstation Removal                             | Workstation Removal          | No changes.                                                                                                                                                                                                                         |



| Tab Name in the Policy Package | ZENworks for Desktops 3.2 SP3 Policies Included | ZENworks 7 Policies Included | Differences in ZENworks 7                                                                                                                                                                                                           |
|--------------------------------|-------------------------------------------------|------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| NetWare                        | zeninvRollupPolicy                              | Roll-Up Policy               | Renamed. Added an IP/DNS entry for the server to cross trees. Also added the Proxy server configuration.                                                                                                                            |
| NetWare                        | n/a                                             | ZENworks Database            | Allows configuration of the database type and URL.<br><br>If Workstation Inventory is installed, you can specify the inventory database location on the server. This setting overrides the setting in the Service Location Package. |
| NetWare                        | n/a                                             | Dictionary Update Policy     | Allows configuration of the distribution of the software dictionaries to different Inventory servers.<br><br>This is a new policy.                                                                                                  |

## A.3 Organization of the Service Location Policy Package

**Table A-3** *The Service Location Policy Package*

| Tab Name in the Policy Package | ZENworks for Desktops 3.2 SP3 Policies Included | ZENworks 7 Policies Included | Differences in ZENworks 7                              |
|--------------------------------|-------------------------------------------------|------------------------------|--------------------------------------------------------|
| General                        | SMTP Host                                       | SMTP Host                    | No changes.                                            |
| General                        | SNMP Trap Targets                               | SNMP Trap Targets            | No changes.                                            |
| General                        | n/a                                             | XML Targets                  | New policy. Provides URL targets for XML logging data. |
| General                        | ZENworks Database                               | ZENworks Database            | Allows configuration of the database type and URL.     |

## A.4 Organization of the User Policy Package

**Table A-4** *The User Policy Package*

| Tab Name in the Policy Package                                      | ZENworks for Desktops 3.2 SP3 Policies Included | ZENworks 7 Policies Included | Differences in ZENworks 7                                                                                                                                                                                           |
|---------------------------------------------------------------------|-------------------------------------------------|------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <i>General</i>                                                      | Help Desk Policy                                | Removed                      | Still enabled, but not configurable or visible using the ZENworks 7 ConsoleOne snap-ins. If you want to change this policy's configuration, you must use the ZENworks for Desktops 3.2 or 4.x ConsoleOne® snap-ins. |
| <i>General</i>                                                      | Remote Control Policy                           | Remote Control Policy        | Chat removed. Enhanced for password-based remote control, NAT, Session Encryption, and Agent Initiated Connection.                                                                                                  |
| <i>General</i>                                                      | n/a                                             | Novell iPrint Policy         | New policy. Allows configuration of the iPrint agent.                                                                                                                                                               |
| <i>WinNT-2000</i><br>renamed to<br><i>WinNT-2000-XP</i> in<br>ZfD 4 | Dynamic Local User                              | Dynamic Local User           | No changes.                                                                                                                                                                                                         |
| <i>WinNT-2000</i><br>renamed to<br><i>WinNT-2000-XP</i> in<br>ZfD 4 | n/a                                             | Novell iPrint Policy         | New policy. Allows configuration of the iPrint agent.                                                                                                                                                               |
| <i>WinNT-2000</i><br>renamed to<br><i>WinNT-2000-XP</i> in<br>ZfD 4 | Help Desk Policy                                | Removed                      | Still enabled, but not configurable or visible using the ZENworks 7 ConsoleOne snap-ins. If you want to change this policy's configuration, you must use the ZENworks for Desktops 3.2 or 4.x ConsoleOne snap-ins.  |
| <i>WinNT-2000</i><br>renamed to<br><i>WinNT-2000-XP</i> in<br>ZfD 4 | NT Desktop Preferences                          | Windows Desktop Preferences  | Renamed.                                                                                                                                                                                                            |
| <i>WinNT-2000</i><br>renamed to<br><i>WinNT-2000-XP</i> in<br>ZfD 4 | NT User Printer                                 | Removed                      | Still enabled, but not configurable or visible using the ZENworks 7 ConsoleOne snap-ins. If you want to change this policy's configuration, you must use the ZENworks for Desktops 3.2 or 4.x ConsoleOne snap-ins.  |
| <i>WinNT-2000</i><br>renamed to<br><i>WinNT-2000-XP</i> in<br>ZfD 4 | NT User System Policies                         | Removed                      | Present only if upgraded.                                                                                                                                                                                           |

| Tab Name in the Policy Package                                      | ZENworks for Desktops 3.2 SP3 Policies Included | ZENworks 7 Policies Included | Differences in ZENworks 7                                                                                                                                                                                          |
|---------------------------------------------------------------------|-------------------------------------------------|------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <i>WinNT-2000</i><br>renamed to<br><i>WinNT-2000-XP</i> in<br>ZfD 4 | Remote Control Policy                           | Remote Control Policy        | Chat removed. Enhanced for password-based remote control, NAT, Session Encryption, and Agent Initiated Connection.                                                                                                 |
| <i>WinNT-2000</i><br>renamed to<br><i>WinNT-2000-XP</i> in<br>ZfD 4 | User Extensible Policies                        | User Extensible Policies     | No changes.                                                                                                                                                                                                        |
| <i>WinNT-2000</i><br>renamed to<br><i>WinNT-2000-XP</i> in<br>ZfD 4 | Windows 2000 Group Policy                       | Windows 2000 Group Policy    | Renamed.                                                                                                                                                                                                           |
| <i>Win 9x</i>                                                       | 95 Desktop Preferences                          | Windows Desktop Preferences  | Renamed.                                                                                                                                                                                                           |
| <i>Win 9x</i>                                                       | 95 User System Policies                         | Removed                      | Still enabled, but not configurable or visible using the ZENworks 7 ConsoleOne snap-ins. If you want to change this policy's configuration, you must use the ZENworks for Desktops 3.2 or 4.x ConsoleOne snap-ins. |
| <i>Win 9x</i>                                                       | Help Desk Policy                                | Removed                      | Still enabled, but not configurable or visible using the ZENworks 7 ConsoleOne snap-ins. If you want to change this policy's configuration, you must use the ZENworks for Desktops 3.2 or 4.x ConsoleOne snap-ins. |
| <i>Win 9x</i>                                                       | Remote Control Policy                           | Removed                      | Chat removed. Enhanced for password-based remote control, NAT, Session Encryption, and Agent Initiated Connection.                                                                                                 |
| <i>Win 9x</i>                                                       | User Extensible Policies                        | User Extensible Policies     | No changes.                                                                                                                                                                                                        |
| <i>Win 9x</i>                                                       | n/a                                             | Novell iPrint Policy         | New policy. Allows configuration of the iPrint agent.                                                                                                                                                              |
| <i>WinNT</i> (new tab)                                              | n/a                                             | Dynamic Local User           | No changes; new category.                                                                                                                                                                                          |
| <i>WinNT</i> (new tab)                                              | n/a                                             | Novell iPrint Policy         | New policy. Allows configuration of the iPrint agent.                                                                                                                                                              |
| <i>WinNT</i> (new tab)                                              | n/a                                             | Remote Control Policy        | Chat removed. Enhanced for password-based remote control and NAT.                                                                                                                                                  |
| <i>WinNT</i> (new tab)                                              | n/a                                             | User Extensible Policies     | No changes.                                                                                                                                                                                                        |

| Tab Name in the Policy Package           | ZENworks for Desktops 3.2 SP3 Policies Included | ZENworks 7 Policies Included | Differences in ZENworks 7                                                                                          |
|------------------------------------------|-------------------------------------------------|------------------------------|--------------------------------------------------------------------------------------------------------------------|
| <i>WinNT</i> (new tab)                   | n/a                                             | Windows Desktop Preferences  | No changes.                                                                                                        |
| <i>Win2000</i> (new tab)                 | n/a                                             | Dynamic Local User           | No changes; new category.                                                                                          |
| <i>Win2000</i> (new tab)                 | n/a                                             | Novell iPrint Policy         | New policy. Allows configuration of the iPrint agent.                                                              |
| <i>Win2000</i> (new tab)                 | n/a                                             | Remote Control Policy        | Chat removed. Enhanced for password-based remote control, NAT, Session Encryption, and Agent Initiated Connection. |
| <i>Win2000</i> (new tab)                 | n/a                                             | User Extensible Policies     | No changes.                                                                                                        |
| <i>Win2000</i> (new tab)                 | n/a                                             | Windows Desktop Preferences  | No changes.                                                                                                        |
| <i>Win2000</i> (new tab)                 | n/a                                             | Windows Group Policy         | No changes.                                                                                                        |
| <i>WinXP</i> (new tab)                   | n/a                                             | Dynamic Local User           | No changes; new category.                                                                                          |
| <i>WinXP</i> (new tab)                   | n/a                                             | Novell iPrint Policy         | New policy. Allows configuration of the iPrint agent.                                                              |
| <i>WinXP</i> (new tab)                   | n/a                                             | Remote Control Policy        | Chat removed. Enhanced for password-based remote control, NAT, Session Encryption, and Agent Initiated Connection. |
| <i>WinXP</i> (new tab)                   | n/a                                             | User Extensible Policies     | No changes.                                                                                                        |
| <i>WinXP</i> (new tab)                   | n/a                                             | Windows Desktop Preferences  | No changes.                                                                                                        |
| <i>Win2000 Terminal Server</i> (new tab) | n/a                                             | Novell iPrint Policy         | New policy. Allows configuration of the iPrint agent.                                                              |
| <i>Win2000 Terminal Server</i> (new tab) | n/a                                             | Remote Control Policy        | Chat removed. Enhanced for password-based remote control, NAT, Session Encryption, and Agent Initiated Connection. |
| <i>Win2000 Terminal Server</i> (new tab) | n/a                                             | User Extensible Policies     | No changes.                                                                                                        |
| <i>Win2000 Terminal Server</i> (new tab) | n/a                                             | Windows Desktop Preferences  | No changes.                                                                                                        |
| <i>Win2000 Terminal Server</i> (new tab) | n/a                                             | Windows Group Policy         | No changes.                                                                                                        |
| Windows 2003 Terminal Server (new tab)   | n/a                                             | Novell iPrint Policy         | New policy. Allows configuration of the iPrint agent.                                                              |

| Tab Name in the Policy Package                | ZENworks for Desktops 3.2 SP3 Policies Included | ZENworks 7 Policies Included | Differences in ZENworks 7                                                                                          |
|-----------------------------------------------|-------------------------------------------------|------------------------------|--------------------------------------------------------------------------------------------------------------------|
| <i>Windows 2003 Terminal Server</i> (new tab) | n/a                                             | Remote Control Policy        | Chat removed. Enhanced for password-based remote control, NAT, Session Encryption, and Agent Initiated Connection. |
| <i>Windows 2003 Terminal Server</i> (new tab) | n/a                                             | User Extensible Policies     | No changes.                                                                                                        |
| <i>Windows 2003 Terminal Server</i> (new tab) | n/a                                             | Windows Desktop Preferences  | No changes.                                                                                                        |
| <i>Windows 2003 Terminal Server</i> (new tab) | n/a                                             | Windows Group Policy         | No changes.                                                                                                        |

## A.5 Organization of the Workstation Policy Package

**Table A-5** *The Workstation Policy Package*

| Tab Name in the Policy Package                                   | ZENworks for Desktops 3.2 SP3 Policies Included | ZENworks 7 Policies Included                  | Differences in ZENworks 7                                                                                          |
|------------------------------------------------------------------|-------------------------------------------------|-----------------------------------------------|--------------------------------------------------------------------------------------------------------------------|
| <i>General</i>                                                   | Remote Control Policy                           | Remote Control Policy                         | Chat removed. Enhanced for password-based remote control, NAT, Session Encryption, and Agent Initiated Connection. |
| <i>General</i>                                                   | Workstation Imaging Policy                      | Workstation Imaging Policy                    | No changes.                                                                                                        |
| <i>General</i>                                                   | n/a                                             | Novell iPrint Policy                          | New policy. Allows configuration of the iPrint agent.                                                              |
| <i>General</i>                                                   | n/a                                             | ZENworks for Desktops Management Agent Policy | New policy. Provides configuration for management agents.                                                          |
| <i>WinNT-2000</i> (tab renamed to <i>WinNT-2000-XP</i> in ZfD 4) | Computer Extensible Policies                    | Computer Extensible Policies                  | No changes.                                                                                                        |
| <i>WinNT-2000</i> (tab renamed to <i>WinNT-2000-XP</i> in ZfD 4) | NT Client Configuration                         | Removed                                       | Present only if upgraded.                                                                                          |

| Tab Name in the Policy Package                                   | ZENworks for Desktops 3.2 SP3 Policies Included | ZENworks 7 Policies Included                  | Differences in ZENworks 7                                                                                                                                                                                          |
|------------------------------------------------------------------|-------------------------------------------------|-----------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <i>WinNT-2000</i> (tab renamed to <i>WinNT-2000-XP</i> in ZfD 4) | NT Computer Printer                             | Removed                                       | Present only if upgraded.                                                                                                                                                                                          |
| <i>WinNT-2000</i> (tab renamed to <i>WinNT-2000-XP</i> in ZfD 4) | NT RAS Configuration                            | Removed                                       | Still enabled, but not configurable or visible using the ZENworks 7 ConsoleOne snap-ins. If you want to change this policy's configuration, you must use the ZENworks for Desktops 3.2 or 4.x ConsoleOne snap-ins. |
| <i>WinNT-2000</i> (tab renamed to <i>WinNT-2000-XP</i> in ZfD 4) | Remote Control Policy                           | Remote Control Policy                         | Chat removed. Enhanced for password-based remote control, NAT, Session Encryption, and Agent Initiated Connection.                                                                                                 |
| <i>WinNT-2000</i> (tab renamed to <i>WinNT-2000-XP</i> in ZfD 4) | Restrict Login                                  | Removed                                       | Present only if upgraded.                                                                                                                                                                                          |
| <i>WinNT-2000</i> (tab renamed to <i>WinNT-2000-XP</i> in ZfD 4) | Windows 2000 Group Policy                       | Windows Group Policy                          | Renamed. Warning message added regarding the validity of the policy for the local platform only.                                                                                                                   |
| <i>WinNT-2000</i> (tab renamed to <i>WinNT-2000-XP</i> in ZfD 4) | Workstation Imaging Policy                      | Relocated                                     | Removed from this category. Available only under the General tab.                                                                                                                                                  |
| <i>WinNT-2000</i> (tab renamed to <i>WinNT-2000-XP</i> in ZfD 4) | Workstation Inventory                           | Workstation Inventory Policy                  | Added configuration for Hardware and Software scan and customized software scan features.                                                                                                                          |
| <i>WinNT-2000</i> (tab renamed to <i>WinNT-2000-XP</i> in ZfD 4) | n/a                                             | Novell iPrint Policy                          | New policy. Allows configuration of the iPrint agent.                                                                                                                                                              |
| <i>WinNT-2000</i> (tab renamed to <i>WinNT-2000-XP</i> in ZfD 4) | n/a                                             | ZENworks for Desktops Management Agent Policy | New policy. Provides configuration for the management agents.                                                                                                                                                      |
| <i>Win 9x</i>                                                    | 95 Client Configuration                         | Removed                                       | Present only if upgraded.                                                                                                                                                                                          |
| <i>Win 9x</i>                                                    | 95 Computer Printer                             | Removed                                       | Present only if upgraded.                                                                                                                                                                                          |

| Tab Name in the Policy Package | ZENworks for Desktops 3.2 SP3 Policies Included | ZENworks 7 Policies Included                  | Differences in ZENworks 7                                                                                                                                                                                          |
|--------------------------------|-------------------------------------------------|-----------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Win 9x                         | 95 Computer System Policies                     | Removed                                       | Still enabled, but not configurable or visible using the ZENworks 7 ConsoleOne snap-ins. If you want to change this policy's configuration, you must use the ZENworks for Desktops 3.2 or 4.x ConsoleOne snap-ins. |
| Win 9x                         | 95 RAS Configuration                            | Removed                                       | Still enabled, but not configurable or visible using the ZENworks 7 ConsoleOne snap-ins. If you want to change this policy's configuration, you must use the ZENworks for Desktops 3.2 or 4.x ConsoleOne snap-ins. |
| Win 9x                         | Computer Extensible Policies                    | Computer Extensible Policies                  | No changes.                                                                                                                                                                                                        |
| Win 9x                         | Remote Control Policy                           | Remote Control Policy                         | Chat removed. Enhanced for password-based remote control, NAT, Session Encryption, and Agent Initiated Connection.                                                                                                 |
| Win 9x                         | Restrict Login                                  | Removed                                       | Present only if upgraded.                                                                                                                                                                                          |
| Win 9x                         | Workstation Imaging Policy                      | Relocated                                     | Removed from this category. Available only under the General tab.                                                                                                                                                  |
| Win 9x                         | Workstation Inventory                           | Workstation Inventory Policy                  | Added configuration for Hardware and Software scan and customized software scan features.                                                                                                                          |
| Win 9x                         | n/a                                             | Novell iPrint Policy                          | New policy. Allows configuration of the iPrint agent.                                                                                                                                                              |
| Win 9x                         | n/a                                             | ZENworks for Desktops Management Agent Policy | New policy. Provides configuration for management agents.                                                                                                                                                          |
| WinNT (new tab)                | n/a                                             | Computer Extensible Policies                  | No changes.                                                                                                                                                                                                        |
| WinNT (new tab)                | n/a                                             | Remote Control Policy                         | Chat removed. Enhanced for password-based remote control and NAT.                                                                                                                                                  |
| WinNT (new tab)                | n/a                                             | Workstation Inventory Policy                  | Added configuration for Hardware and Software scan and customized software scan features.                                                                                                                          |
| WinNT (new tab)                | n/a                                             | ZENworks for Desktops Management Agent Policy | New policy. Provides configuration for management agents.                                                                                                                                                          |
| WinNT (new tab)                | n/a                                             | Novell iPrint Policy                          | New policy. Allows configuration of the iPrint agent.                                                                                                                                                              |

| Tab Name in the Policy Package | ZENworks for Desktops 3.2 SP3 Policies Included | ZENworks 7 Policies Included                  | Differences in ZENworks 7                                                                                          |
|--------------------------------|-------------------------------------------------|-----------------------------------------------|--------------------------------------------------------------------------------------------------------------------|
| <i>Win2000</i> (new tab)       | n/a                                             | Computer Extensible Policies                  | No changes.                                                                                                        |
| <i>Win2000</i> (new tab)       | n/a                                             | Remote Control Policy                         | Chat removed. Enhanced for password-based remote control, NAT, Session Encryption, and Agent Initiated Connection. |
| <i>Win2000</i> (new tab)       | n/a                                             | Workstation Inventory Policy                  | Added configuration for Hardware and Software scan and customized software scan features.                          |
| <i>Win2000</i> (new tab)       | n/a                                             | ZENworks for Desktops Management Agent Policy | New policy. Provides configuration for management agents.                                                          |
| <i>Win2000</i> (new tab)       | n/a                                             | Novell iPrint Policy                          | New policy. Allows configuration of the iPrint agent.                                                              |
| <i>Win2000</i> (new tab)       | n/a                                             | Windows Group Policy                          | Renamed. Warning message added regarding the validity of the policy for the local platform only.                   |
| <i>WinXP</i> (new tab)         | n/a                                             | Computer Extensible Policies                  | No changes.                                                                                                        |
| <i>WinXP</i> (new tab)         | n/a                                             | Remote Control Policy                         | Chat removed. Enhanced for password-based remote control, NAT, Session Encryption, and Agent Initiated Connection. |
| <i>WinXP</i> (new tab)         | n/a                                             | Workstation Inventory Policy                  | Added configuration for Hardware and Software scan and customized software scan features.                          |
| <i>WinXP</i> (new tab)         | n/a                                             | ZENworks for Desktops Management Agent Policy | New policy. Provides configuration for management agents.                                                          |
| <i>WinXP</i> (new tab)         | n/a                                             | Novell iPrint Policy                          | New policy. Allows configuration of the iPrint agent.                                                              |



# Installing in a Novell Cluster Services Environment

# B

This section contains information that helps you understand the tasks necessary for successfully installing and configuring Novell® ZENworks® 7 Desktop Management components in a Novell Cluster Services™ or a Novell Cluster Services for Linux environment. The topics include:

- ♦ [Section B.1, “Overview,” on page 533](#)
- ♦ [Section B.2, “Installation Prerequisites,” on page 534](#)
- ♦ [Section B.3, “Preparing the Clustering Environment,” on page 534](#)
- ♦ [Section B.4, “Installing Desktop Management Components,” on page 535](#)
- ♦ [Section B.5, “Configuring Workstation Imaging,” on page 544](#)
- ♦ [Section B.6, “Configuring Workstation Inventory,” on page 546](#)
- ♦ [Section B.7, “Upgrading Clustered Workstation Inventory from ZENworks for Desktops 3.2 SP3 to ZENworks 7.x Desktop Management,” on page 547](#)
- ♦ [Section B.8, “Uninstalling Workstation Inventory in a Clustering Environment,” on page 547](#)
- ♦ [Section B.9, “Reinstalling Workstation Inventory in a Clustering Environment,” on page 553](#)
- ♦ [Section B.10, “Configuring ZENworks 7 Workstation Imaging for a Novell Cluster Services Environment,” on page 554](#)
- ♦ [Section B.11, “Installing ZENworks 7 Desktop Management with SP1 in an OES Linux Cluster Environment,” on page 555](#)

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**NOTE:** The information in this section is also applicable to ZENworks 7 Desktop Management with Support Pack 1.

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## B.1 Overview

Most of the ZENworks 7 Desktop Management components are considered “cluster-safe,” which means that you can install the ZENworks 7 Desktop Management services in a Novell Cluster Services environment, but if the cluster volume goes down, there is an interruption in services while the cluster fails over.

When failover occurs, most of the Desktop Management services are restored, but Application Management and some group policies that rely on a single resource (that is, a server where the policy files are copied) might time out waiting for the resource to become available. The policies are not applied until the next login or scheduled event occurs and the file resource becomes available again.

Installing the ZENworks 7 Middle Tier Server in a Novell Cluster Services environment is not supported.

ZENworks 7 Desktop Management does not support clustering on Windows servers.

---

**NOTE:** ZENworks 7 Desktop Management with Support Pack 1 supports clustering on a Novell Open Enterprise Server (OES) Linux server. For more information, see [Section B.11, “Installing ZENworks 7 Desktop Management with SPI in an OES Linux Cluster Environment,”](#) on page 555.

ZENworks 7 Desktop Management with Support Pack 1 does not support a mixed environment of Novell Cluster Services on NetWare with Novell Cluster Services on OES Linux.

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For more information about Novell Cluster Services, see the [Novell Cluster Services documentation for NetWare 6](http://www.novell.com/documentation/ncs6p/index.html) (<http://www.novell.com/documentation/ncs6p/index.html>) or the [Novell Cluster Services documentation for NetWare 6.5](http://www.novell.com/documentation/ncs65/index.html) (<http://www.novell.com/documentation/ncs65/index.html>).

For more information about Novell Cluster Services for Linux, see the [OES Novell Cluster Services 1.8.2 Administration Guide for Linux](http://www.novell.com/documentation/oes/cluster_admin_lx/data/h4hgu4hs.html) ([http://www.novell.com/documentation/oes/cluster\\_admin\\_lx/data/h4hgu4hs.html](http://www.novell.com/documentation/oes/cluster_admin_lx/data/h4hgu4hs.html)).

## B.2 Installation Prerequisites

Before you install and configure Novell ZENworks 7 Desktop Management to run with Novell Cluster Services, make sure that all of the hardware and software requirements for the respective products are met, including:

- ☐ At least two NetWare 6 or NetWare 6.5 servers (also called “nodes”) where Novell Cluster Services can be installed
  - ☐ Novell Cluster Services 1.6 installed and running on the NetWare 6 servers that will be part of the cluster
  - ☐ Novell Cluster Services 1.7 installed and running on the NetWare 6.5 servers that will be part of the cluster
  - ☐ A cluster volume created and cluster-enabled (this is called a virtual server or a cluster server)
- For more information on clustering, see the [Novell Cluster Services documentation](http://www.novell.com/documentation) (<http://www.novell.com/documentation>).

## B.3 Preparing the Clustering Environment

To prepare cluster nodes for Desktop Management:

- 1 Upgrade each node to ConsoleOne® 1.3.6 or later.

ConsoleOne 1.3.6 (or later), included on the *Novell ZENworks 7 Companion 1* CD (or on the *Novell ZENworks 7 with Support Pack 1 Companion 1* CD), must be installed on each cluster node for Desktop Management to work properly. For more information, see [Section 8.2, “Installing ConsoleOne,”](#) on page 72.

- 2 Unload Java on each node.

To avoid an error message displayed by the Desktop Management installation program if Java is running on the server (that is, the cluster node), you should unload Java before you begin the Desktop Management installation there. To do this, you need to have System console access to each servicing node. At the system console for each node, enter the following command:

```
unload java
```

- 3 Install the Novell Client™ on the workstation. For more information about installing the appropriate client, see “[Understanding the Novell Client](#)” in the *Novell ZENworks 7 Desktop Management Administration Guide*.

## B.4 Installing Desktop Management Components

To install ZENworks Desktop Management in a network configured with Novell Cluster Services:

- 1 From a network workstation configured with the proper Novell Client, log in as Admin to the directory tree where your cluster resides.

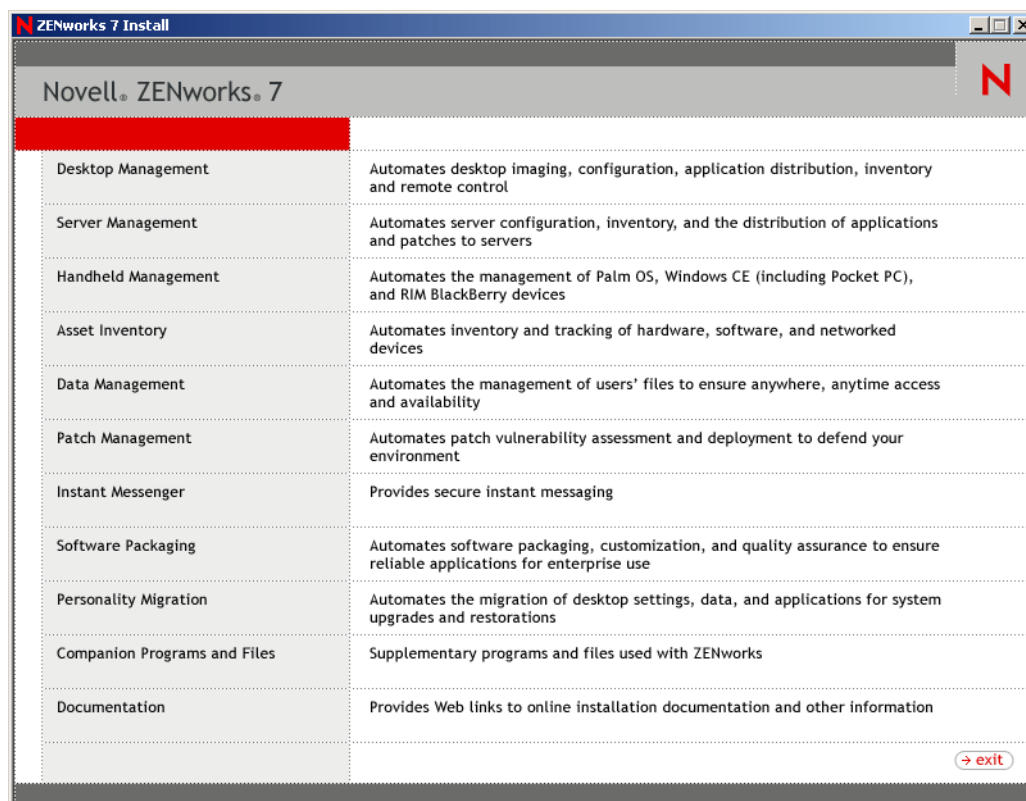
---

**IMPORTANT:** Make sure that this workstation and all other administrative workstations are not running ConsoleOne while the ZENworks Desktop Management installation is running.

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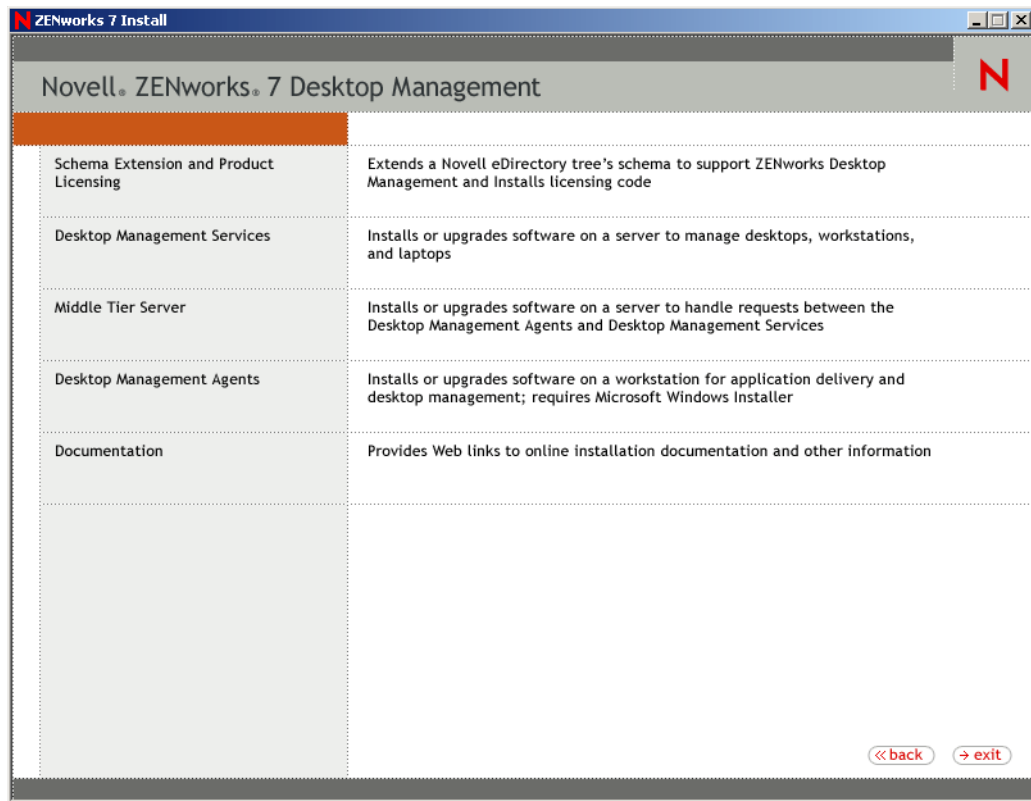
- 2 Select a Windows 2000/XP workstation (or a Windows 2000/2003 server) to run the Desktop Management Server installation program. The workstation or server must meet the requirements for an installing workstation. For details, see “[Prerequisites for the Workstation Running the Installation](#)” on page 39.
- 3 At the installing workstation, insert the *Novell ZENworks 7 Desktop Management* CD.

The `winsetup.exe` program autoruns. If it does not autorun, launch it from the root of the CD.



- 4 Click *Desktop Management* to display a page with options to install in various languages.

- 5 Click *English* to display a page with Desktop Management installation options.

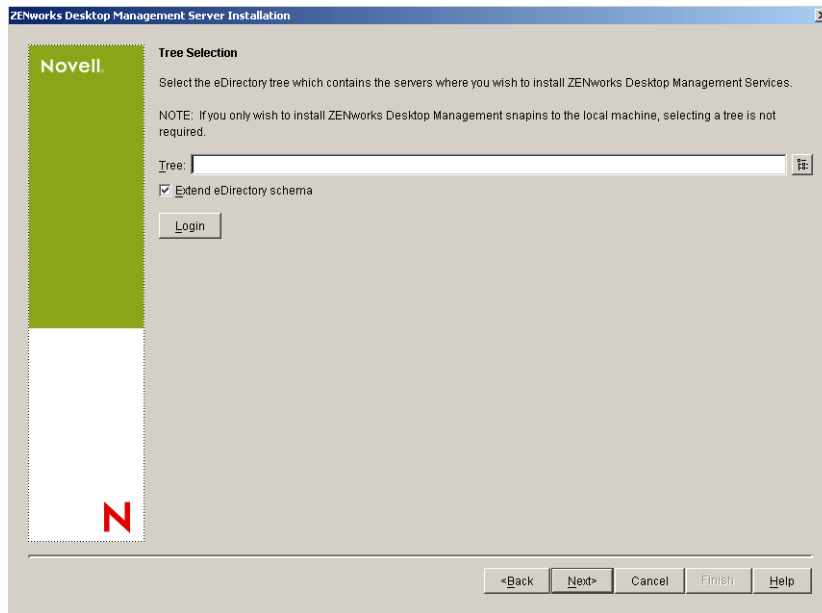


- 6 On the first Installation page, read the details about running the installation program, then click *Next*.
- 7 Read the License agreement, then click *Accept* if you agree with the terms of the License Agreement.
- If you do not agree with the terms of the license agreement, do not install the software.
- 8 On the Installation Requirements page, read the requirements for installing the Desktop Management Server, make sure that the server where you plan to install meets the listed requirements, then click *Next*.
- 9 On the Tree Selection page, type or browse to the name of the Novell eDirectory™ tree where you want to install the Desktop Management Server. If you have not already extended the schema for this installation (see **Step 1 on page 79**), select *Extend eDirectory Schema* to extend the schema on the tree where you will be installing the ZENworks Desktop Management Server, then click *Next*.

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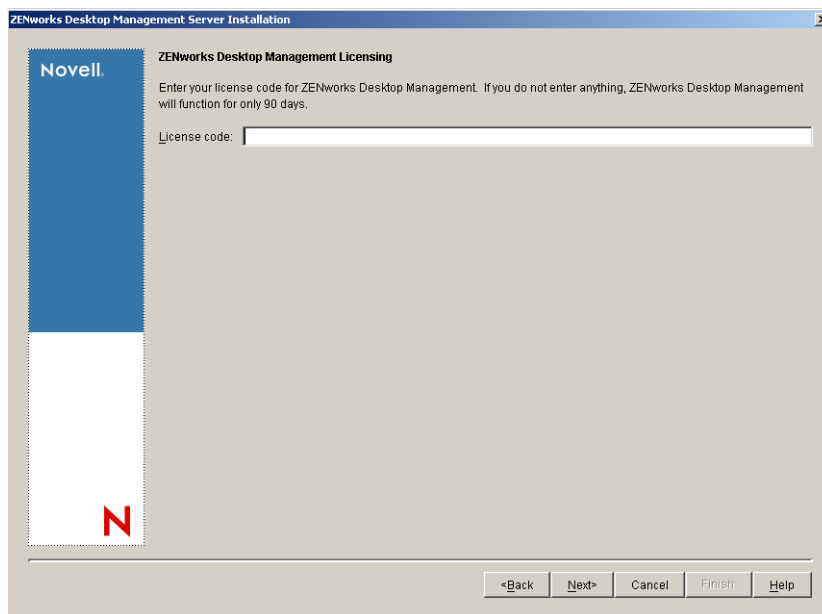
**NOTE:** You cannot install the ZENworks Desktop Management Server on multiple trees at the same time.

---



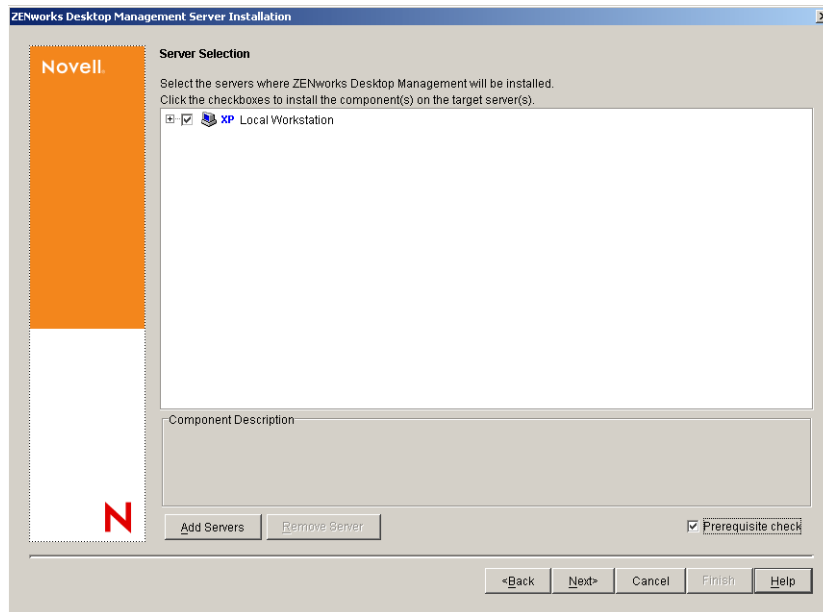
You need to extend the schema on a tree only once. You can authenticate to a tree by clicking the *Login* button and entering a user ID and password with the appropriate rights.

- 10 On the ZENworks Desktop Management Licensing page, specify the license code that was e-mailed to you as part of the SmartCert product registration package, then click *Finish*.

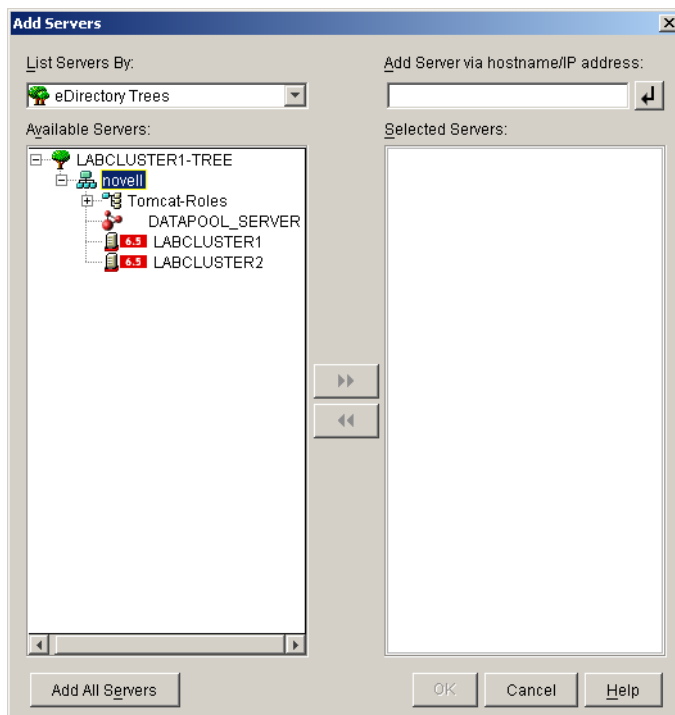


If you do not enter a license code on this page, the wizard considers this installation of ZENworks Desktop Management to be an evaluation version. If you install for an evaluation, you are periodically reminded to license the product. After 90 days, the product evaluation version no longer functions.

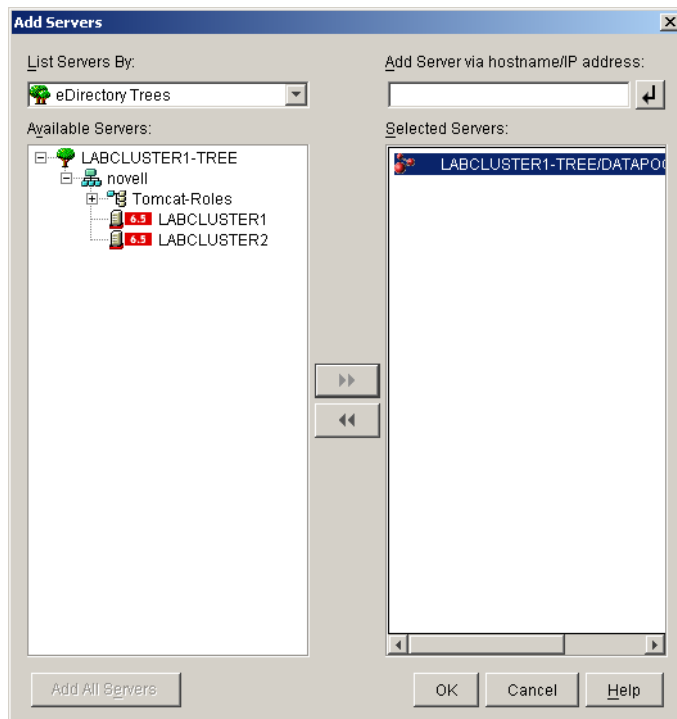
- 11 On the Server Selection page, click *Add Servers* to browse to the Virtual Server object where you want to install Desktop Management Server software.



- 12 In the Add Servers dialog box, you can list the virtual servers by their eDirectory tree names. You can select virtual servers only from the tree you selected previously.



To install to a Virtual Server object, choose *eDirectory Trees*, browse to and click the name of the Virtual Server object that you want to install to, click the right-arrow button to move the selected Virtual Server object to the *Selected Servers* list, then click *OK*.

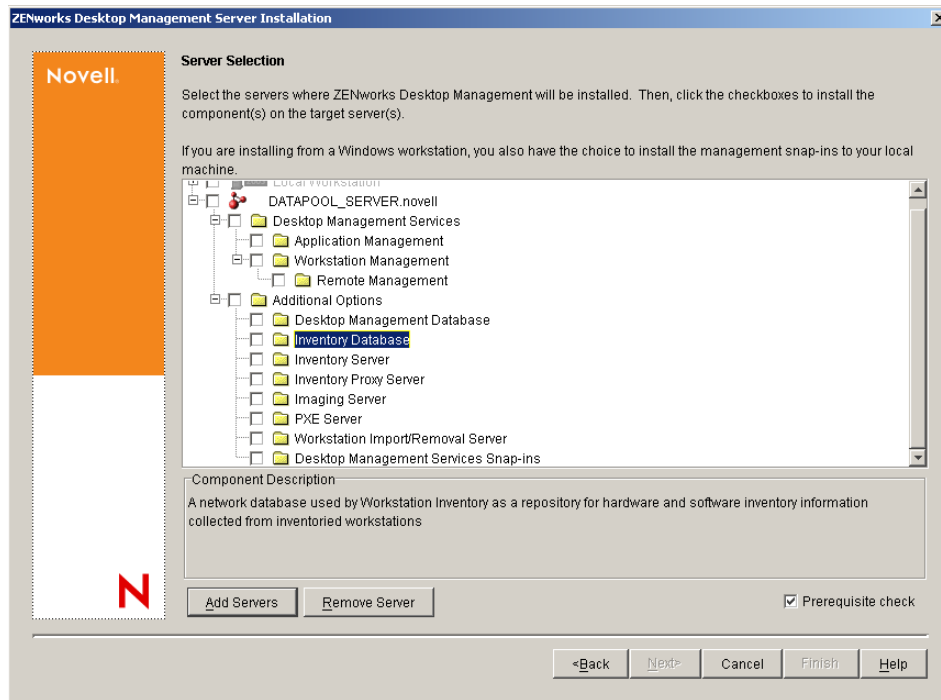


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**IMPORTANT:** When you select the Virtual Server object, do not select an individual cluster node server that an object belongs to. The installation program detects the Virtual Server objects for you. You can also select non-clustered servers when you are installing to a cluster.

---

- 13 On the now-populated Server Selection page, you can further specify the Desktop Management services you want to install on the cluster, then click *Next* to save your settings.



The list of services includes the following:

**Local Workstation:** Even though the ConsoleOne 1.3.6 installation program lets you install ConsoleOne files to a local hard drive, that installation does not include the Desktop Management Services snap-ins.

If you want, you can install Desktop Management Services snap-ins to your local workstation by selecting the Desktop Management Service Snap-ins option under the Local Workstation name. ConsoleOne must be installed on the workstation before the snap-ins can be added.

**Desktop Management Services:** Desktop Management Services (collectively referred to as the “Desktop Management Server”) are commonly used files and programs that enable the configuration and distribution of workstation applications and policies. These services provide automatic management of Windows applications, user and workstation configurations, processes, and behaviors.

- ♦ **Application Management:** Select this option to install software that enables the automated distribution, healing, and tracking of applications, updates, and patches.
- ♦ **Workstation Management Common Components:** Select this option to install workstation-resident modules that are used to authenticate the user to the workstation and network, and used to transfer configuration information to and from eDirectory.
- ♦ **Remote Management:** ZENworks 7 Desktop Management does not support this component for installation on a Virtual Server object.

**Additional Options:** If you want to customize your deployment of Desktop Management Services, there are a number of services to choose from, each with specialized purpose.

- ♦ **Desktop Management Database:** Select this option if you want to install a network database to be used by the Novell Application Launcher™ as a repository for data about application events (install, launch, cache, and so forth) that have occurred.



- ♦ **Inventory Database:** Select this option if you want to install a network database to be used by Workstation Inventory as a repository for hardware and software inventory information collected from inventoried workstations.

---

**IMPORTANT:** If you want to use the Inventory database with an existing Oracle or MS SQL setup, do not select this option during the Server Inventory installation. Follow the steps in the *Novell ZENworks 7 Desktop Management Administration Guide*.

---

- ♦ **Inventory Server:** Select this option if you want to install files and programs to enable the gathering and viewing of hardware and software inventory information for managed workstations.

If the selected servers have the Server Inventory component of ZENworks for Servers 3.0.2 or earlier installed, you must upgrade the component to ZENworks 7 Server Management. For more information about upgrading to Server Management, see “**Server Inventory**” in “**Upgrade**” in the *Novell ZENworks 7 Server Management Installation Guide*.

- ♦ **Inventory Proxy Server:** Select this option if you want to install a proxy service that enables the roll-up of inventory scan data to an Inventory server located across a network firewall. Make sure that the selected servers do not have the ZENworks for Servers 3.0.2 (or earlier) Inventory component already installed.
- ♦ **Imaging Server:** Select this option if you want to install a Linux imaging environment to be used to create, store, send, or restore workstation image files to a workstation.
- ♦ **PXE Server:** Select this option if you want to install Preboot Execution Environment (PXE) protocols and programs to be used by the server to communicate with a PXE-enabled workstation and to enable sending imaging tasks to that workstation.

---

**NOTE:** When you install Preboot Services, one of the components that is installed is the Proxy DHCP server. If the standard DHCP server is on the same server where you are installing the Proxy DHCP server, you must set option tag 60 in DHCP services.

---

- ♦ **Workstation Import/Removal Server:** Select this option if you want to install files and programs that add workstation objects into eDirectory (or remove those already added), where they can be managed to receive applications or computer settings.
- ♦ **Desktop Management Services Snap-Ins:** Select this option if you want to install additions to ConsoleOne to enable you to launch Desktop Management tools and utilities, to view Desktop Management object property pages in eDirectory, and to browse and configure those objects.

If you run the installation program again after the initial installation (for example, during an upgrade or when you add additional ZENworks components), some check boxes in the list might have a grey background, even though the check box is selected. This indicates that a component in this general category was not selected in a prior installation and can be installed now. You can expand the structure to display the list of components in a category, then you can select the check box of the component you want to install.

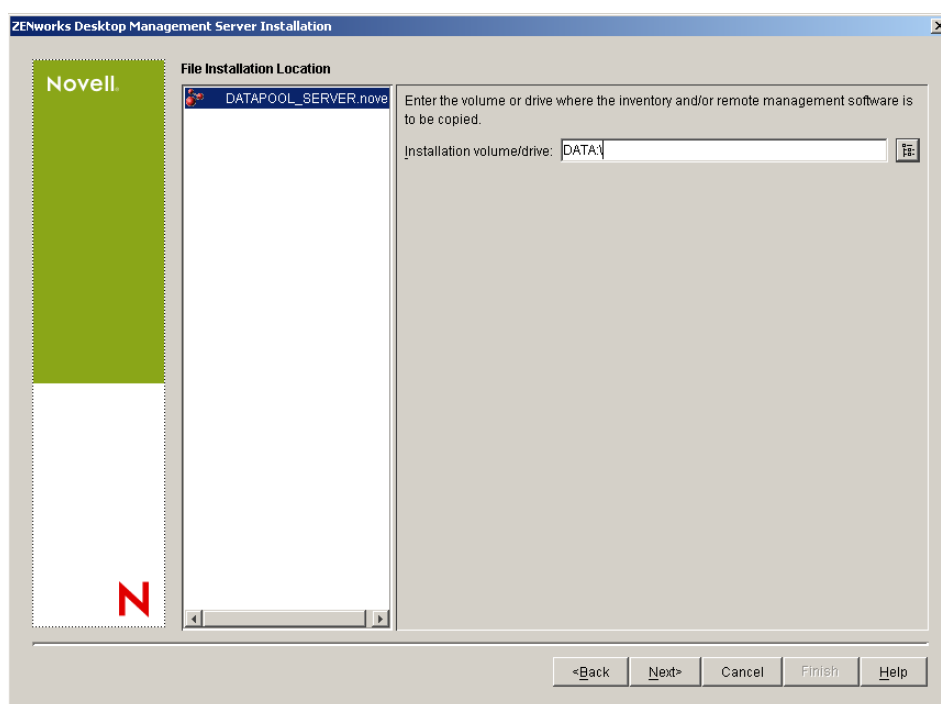
Also during a subsequent installation, you might see a grey-shaded item and label text in the component structure. This indicates that the component was previously installed. You need to double-click an item to deselect it as a component to reinstall. Deselecting does not mean that the item will be uninstalled. When a check box is selected, the installation program overwrites the old component.

- 14 (Optional) The Prerequisites Check check box is selected by default. Retain the selection if you want the installation program to verify that the Virtual Server object meets the installation

requirements for ZENworks Desktop Management Services. The installation program checks the version of the object's network operating system (including any required service or support packs), the presence and version of the Novell Client (4.9 SP1) on the installing workstation, the presence and version of ConsoleOne (1.3.6), and the version of the JVM (1.4.1) on the Virtual Server object.

If the server operating system and support/service packs are not the correct version, the installation displays a warning message, but can continue. If other requirements are not met, the installation displays a warning and does not continue until the required software is installed and detected.

- 15** Click *Next*.
- 16** (Optional) The File Installation Location page is displayed if you choose to install Workstation Inventory or Remote Management.



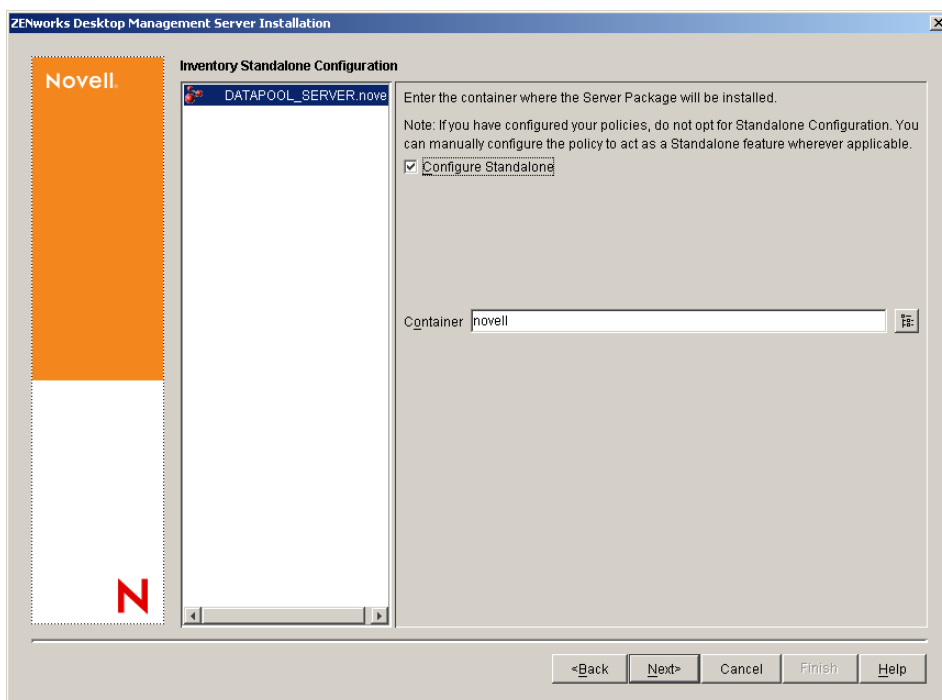
- 16a** Select one or more target servers in the *Selected Servers* list, then browse for or enter the cluster-shared volume where you want the Workstation Inventory or Remote Management files to be installed.  

If a previous installation of ZENworks 7 Workstation Inventory or Remote Management component is detected on the machine, the existing path is displayed and dimmed. The current installation installs all the files in the same path.
- 16b** Click *Next*.
- 17** (Optional) The Database Location Installation page is displayed if you choose to install the Inventory database or the Desktop Management database.
  - 17a** Select a previously designated NetWare cluster server in the left pane.
  - 17b** In the *Database Path field*, browse for or type in the name of the cluster-shared volume where the database file will be installed.

You can provide a different volume for each database server. For example, the volume names might be different on your various NetWare cluster servers. However, you cannot have multiple instances of the database files on the same server, because you can run only one instance of the database engine per server. For NetWare cluster servers, this path cannot include extended or double-byte characters.

**17c** Click *Next*.

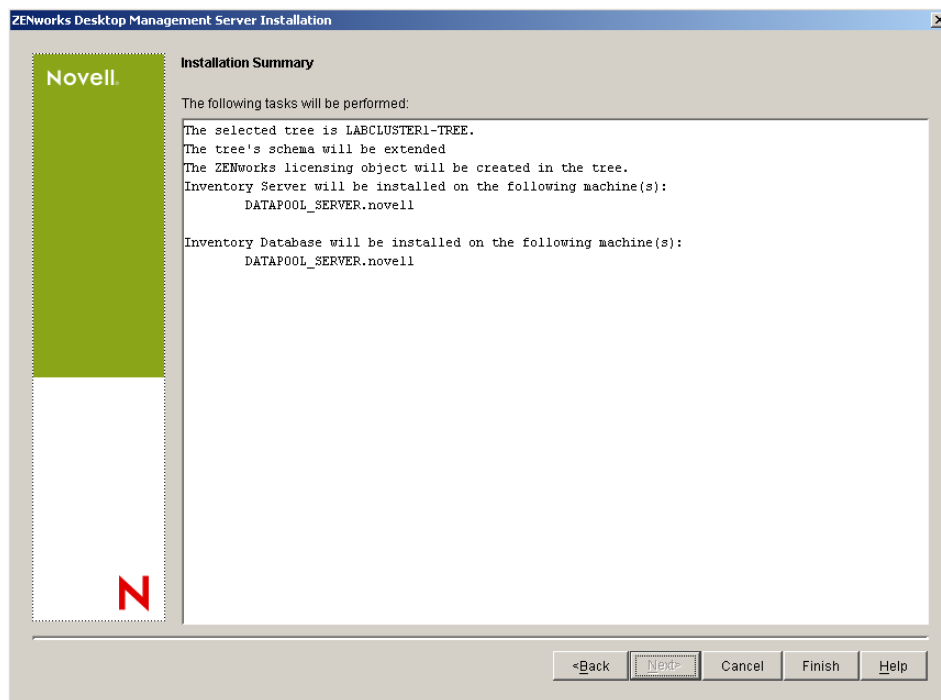
- 18** (Optional) The Inventory Standalone Configuration page is displayed if you choose to install the Inventory Server and the Inventory Database on the same NetWare cluster server.



If you want the installation program to automatically create the Server Package and the Database Location policy within the Server Package, and to start the Inventory Service on the server, configure the following settings on the Inventory Standalone Configuration page:

- 18a** Select the Configure Standalone check box.
- 18b** Select the server or servers that you want to point to a common Database Location Search Policy.
- 18c** Type the name or browse to the tree container where you want to create and configure the Server Package containing this policy.
- 18d** Click *Next*.
- 19** (Optional) On the Inventory Proxy Service Configuration page, select the NetWare cluster server or servers with a port you want to designate to allow XMLRPC requests to pass through to the Inventory Proxy service; then, in the *Proxy Port* field, designate the port you want to use.
- You can configure the same port number for all servers by selecting all of them, or you can define the values individually by selecting the servers one at a time. If you want to change the Port 65000 default, specify a value between 0 and 65535. Ensure that the port number is not used by other services on the server.

- 20 Click *Next* to display the Summary page.



- 21 On the Summary page, review the list of components and their parts that are to be installed. If the summary is correct, click *Finish* to launch the installation program.
- 22 In ConsoleOne, select the tree where you installed the Desktop Management Server software, then right-click the LDAP Group > click *Properties* > *General* > select *Allow Clear Text Passwords*.

If you use ConsoleOne 1.3.6, *Require TLS For Simple Binds With Password* must be deselected in the LDAP Group Object for each server acting as the Authentication Domain for a ZENworks Middle Tier Server. If you need to set this parameter after you have installed the Desktop Management Server, make sure you reboot the ZENworks Middle Tier Server after you change the setting.

If you are installing to Windows servers in an Active Directory domain, configure the LDAP group object for servers that are to be used as Authentication Domains to use an alternate port number, because Active Directory will use ports 389 and 636.

If you have already installed the ZENworks Middle Tier Server, you need to reset it so that it recognizes the change to LDAP clear text passwords at the Desktop Management Server. You can do this by rebooting the server.

## B.5 Configuring Workstation Imaging

This section contains the following information:

- ♦ Section B.5.1, "Configuring Workstation Imaging for a Novell Cluster Services Environment," on page 545
- ♦ Section B.5.2, "Multicast Issue in a Novell Cluster Services Environment," on page 545

- ♦ [Section B.5.3, “Configuring Workstation Imaging Preboot Services for a Novell Cluster Services Environment,” on page 545](#)

## B.5.1 Configuring Workstation Imaging for a Novell Cluster Services Environment

The following steps provide the configuration information you need to configure Workstation Imaging to work in the clustering environment after installation.

- 1 Modify the Virtual Server object in the unload script.
  - 1a In ConsoleOne, open the Cluster object, right-click the NWCS volume resource, then click *Properties*.
  - 1b On the Unload page, type `unload imgserv <<y` in the Script text box, then click *Apply*.
  - 1c On the Cluster State page, select the resource volume you want to offline, click *Offline*, reselect the same resource volume, then click *Online*.

This step restarts the imaging server from scratch.

- 2 Edit the `zfdstop.ncf` file in `shared_cluster_volume:\system`, then comment the following line:

```
Unload imgserv
```

## B.5.2 Multicast Issue in a Novell Cluster Services Environment

Imaging multicast sessions that you set manually at the Image Server console (`imgserv.nlm`) are lost when the virtual server hosting `imgserv.nlm` fails over. The only workaround is to re-create those multicast sessions and restart the process manually.

## B.5.3 Configuring Workstation Imaging Preboot Services for a Novell Cluster Services Environment

Previously, ZENworks Desktop Management did not fully support the Workstation Imaging component in Novell Cluster Services (NCS) environment, particularly if used in conjunction with ZENworks Preboot Services (PXE). With the release of ZENworks 7 Desktop Management, however, using Preboot Services for Workstation Imaging is now supported in a Novell Cluster Services 1.7.2 (or later) environment

Use the following steps to install and use ZENworks 7 Workstation Imaging with PXE in a Novell Cluster Service 1.7.2 (or later) environment:

- 1 Make sure that you have met all of the prerequisites for installing ZENworks 7. For more information, see [Part II, “Preparation,” on page 37](#).
- 2 Install ZENworks 7 Desktop Management in the Novell Cluster Services environment. In an upgrade situation (ZENworks 6.5 upgrading to ZENworks 7), the ZENworks 7 Desktop Management installation program allows the selection and installation of new components that were not previously installed.
- 3 Install ZENworks 7 Desktop Management in the same servers where you installed the original version of ZENworks 7 Desktop Management.

- 4 In the virtual server system directory, locate the `dtc.ini` file. For example:  
`cvol:system/dtc.ini`.
- 5 Open `dtc.ini` in a file editor, then change the IP setting in the following line:  
`TransactionServerClusterIP=IP_Address`  
The IP address must point to the IP Address of the virtual server in the cluster. If this line is not present in the file, you need to add it.
- 6 Save the edited `dtc.ini` file.
- 7 Locate the `tftp.ini` file located in the same system directory.
- 8 Open `tftp.ini` in a file editor, then change the IP setting in the following line:  
`IPADDRESS=IP_Address`  
The IP address must point to the IP Address of the virtual server in the cluster.
- 9 Save the edited `tftp.ini` file.
- 10 Locate the `pdhcp.ini` file located in the same system directory.
- 11 Open the `pdhcp.ini` file in a file editor, then change the IP setting in the following lines:  
`TRANSACTION_SERVER_IP=IP_Address`  
`PDHCP_Server_IP=IP_Address`  
The IP address in both lines must point to the IP Address of the virtual server in the cluster.  
In Novell Cluster Services 1.7.2, the following line is also included in the `pdhcp.ini` file:  
`TFTP_SERVER_IP=IP_Address`  
This IP variable must also point to the IP Address of the virtual server in the cluster.
- 12 Save the edited `pdhcp.ini` file.
- 13 Copy `dtc.ini`, `tftp.ini`, and `pdhcp.ini` to `/sys:system` in each of the nodes (that is, servers) in the cluster.
- 14 Take the resource offline, then bring it back online to reload ZENworks services.

## B.6 Configuring Workstation Inventory

After you have completed the ZENworks 7 SP1 Desktop Management Services installation, you need to configure Workstation Inventory to work in the clustering environment. The following steps provide the configuration information you need:

- 1 Configure the Inventory database object. If you have selected Sybase during Desktop Management installation, the installation program creates the Database object (Inventory database\_server\_name) and configures the properties of this object. Skip **Step 1a** and **Step 1b**. If you are using Oracle or MS SQL, continue with **Step 1a**.
  - 1a If you are maintaining the Inventory database in Oracle or MS SQL, ensure that you have created the Database object and configured the properties. For more information, see **Section 27.1, "Configuring the Inventory Database Object on a NetWare Server," on page 341**.
  - 1b To configure the Database object for a cluster environment: In ConsoleOne, right-click the Database object, click *Properties*, click *ZENworks Database*, Browse for the DN (NCP™ server object) of the virtual server or specify the IP address of the virtual server, and then click *OK*.

- 2 If you did not select the standalone configuration during installation, you must set the inventory database to `Inventory database_virtual_server_name` when you create the database location policy.
- 3 While creating the Workstation Inventory policy, set the inventory service object DN to `Inventory Service_virtual_server_name`.
- 4 To configure all roll-up policies, select the Inventory service object of the cluster service (`Inventory Service_virtual_server_name`).

## B.7 Upgrading Clustered Workstation Inventory from ZENworks for Desktops 3.2 SP3 to ZENworks 7.x Desktop Management

When you upgrade from ZENworks for Desktops 3.2 SP 3 Workstation Inventory in a clustering environment to ZENworks 7.x Desktop Management, you need to reconfigure inventory policies. Perform the following tasks to reconfigure the policies:

- ☐ Reconfigure the Inventory Rollup policies that use the cluster as the target server to point to the Inventory Service object of the cluster service (that is, change `virtual_server_name` as the target to `Inventory Service_virtual_server_name` as the target).
- ☐ In ZENworks for Desktops 3.2 SP3, the Inventory Rollup policies are associated to the NCP server object of any cluster node. But after upgrading to ZENworks 7.x, you must manually associate the Inventory Rollup policies to the NCP server object of the virtual server.
- ☐ Associate all Inventory Rollup policies associated to the NCP server object a cluster node must be associated to the NCP server object for the virtual server.
- ☐ Reconfigure all workstation inventory policies to point to the virtual server's ISO.
- ☐ If you manually created DB objects, reconfigure the server DN to point to the virtual server's NCP server object.

## B.8 Uninstalling Workstation Inventory in a Clustering Environment

The Workstation Inventory component of ZENworks 7 Desktop Management SP1 cannot be automatically uninstalled. You must manually remove the Inventory server, the Inventory database running on Sybase, the Novell eDirectory objects, and the ConsoleOne files.

---

**NOTE:** If your Inventory database is mounted on Oracle or MS SQL, follow the uninstall procedure recommended by Oracle or MS SQL.

---

You must remove the objects and the files from every server and workstation where the Workstation Inventory components are installed.

In an enterprise deployment of Inventory, uninstall all Leaf Servers first, then uninstall Intermediate Servers, and finally uninstall the Root Server.

Before uninstalling Workstation Inventory, make sure you have made and archived a reliable backup of the Inventory database residing at the Root Server.

To manually uninstall Workstation Inventory, proceed in this sequence:

1. [Section B.8.1, “Uninstalling the Workstation Inventory eDirectory Objects,” on page 548](#)
2. [Section B.8.2, “Uninstalling the Database eDirectory Object,” on page 549](#)
3. [Section B.8.3, “Uninstalling the Sybase Inventory Database,” on page 549](#)
4. [Section B.8.4, “Uninstalling the Sybase Engine,” on page 549](#)
5. [Section B.8.5, “Uninstalling the Inventory Server Software,” on page 550](#)
6. [Section B.8.6, “Uninstalling the XML Proxy Server,” on page 551](#)
7. [Section B.8.7, “Uninstalling the Workstation Inventory Snap-Ins from ConsoleOne,” on page 551](#)
8. [Section B.8.8, “Applying Changes to the Cluster Scripts,” on page 552](#)

## B.8.1 Uninstalling the Workstation Inventory eDirectory Objects

- 1 On the Netware Inventory server, stop the Inventory services by entering `StopSer *` at the server console prompt:
- 2 If the ZENworks Database policy is enabled, disable it.
  - 2a In ConsoleOne, right-click the Service Location Package object, click *Properties*, then click *Policies*.
  - 2b Select the ZENworks Database policy, click *Properties*, then click the *Inventory Management* tab.
  - 2c Delete the specified Inventory Database entry, then click *OK*.

---

**IMPORTANT:** If the ZENworks Database policy is used by more than one Inventory server, you must uninstall those Inventory servers before performing this step.

---

- 3 Disable the Workstation Inventory policy.
  - 3a In ConsoleOne, right-click the Workstation Package object, then click *Properties*.
  - 3b Click *Policies*, then select the appropriate operating system suboption.
  - 3c If the Workstation Inventory policy is enabled, select the policy, click the *Reset* button, then click *Yes*.
  - 3d Deselect the Workstation Inventory policy.
  - 3e Click *Apply*, then click *Close*.

---

**IMPORTANT:** If you have configured the Workstation Inventory policy for more than one operating system, select the appropriate operating system suboption from the Policies tab and repeat this step.

---

- 4 Disable the Roll-Up policy and the Dictionary Update policy, if the policies are configured.
  - 4a In ConsoleOne, locate the container holding the Server Package, right-click the Server Package, click *Properties*, click *Policies*, then click the *NetWare* suboption.
  - 4b Select the Roll-Up policy, click the *Reset* button, then click *Yes*.
  - 4c Deselect the Roll-Up policy.
  - 4d Select the Dictionary Update policy, click the *Reset* button, then click *Yes*.



- 4e Deselect the Dictionary Update policy.
- 4f Click *Apply*, then click *Close*.
- 5 In ConsoleOne, locate the container holding the Inventory Service object and delete the Inventory Service object.

## B.8.2 Uninstalling the Database eDirectory Object

In ConsoleOne, locate the container holding the Inventory database object and delete the Inventory database object.

## B.8.3 Uninstalling the Sybase Inventory Database

- 1 Stop Sybase by entering `q` at the Sybase console prompt.
- 2 Delete the *database\_path*\mgmt`db`.db entry from `sys:\system\mgmtdbs.ncf` on all cluster nodes.

---

**IMPORTANT:** Do not delete other database paths.

---

- 3 Note the value of the INVDBPATH key in `sys:\system\zenworks.properties` on any of the cluster nodes.
- 4 From the value identified in the INVDBPATH key, delete the Inventory database files (mgmt`db`\*.db), including mgmt`db`.log on all cluster nodes.

---

**IMPORTANT:** Before deleting the database files, make sure that you have made a reliable backup of the database files if you want to use the inventory information stored in them.

---

- 5 Delete the INVDBPATH key from `sys:\system\zenworks.properties` on all cluster nodes.
- 6 Delete the ZFD\_INVENTORY\_DATABASE\_SERVER key on all cluster nodes.

Delete the following section from `sys:\system\zenworks.properties` on all cluster nodes:

```
[ZfD_Inventory_Database_Server]Version = 7.0 Desktop Management
product build date
Installed_From = Product CD
Support_Pack = 0
```

- 7 Start Sybase if it is not uninstalled and if it is used by other ZENworks products.  
At the Sybase console prompt, enter `mgmtdbs.ncf`.

## B.8.4 Uninstalling the Sybase Engine

If Sybase is used by other ZENworks products, you must uninstall the database first before proceeding to uninstall the Sybase engine. For information, see [Section B.8.3, “Uninstalling the Sybase Inventory Database,” on page 549](#).

- 1 Stop Sybase by entering `q` at the Sybase console prompt.
- 2 Note the value of the DBENGINEPATH key in `sys:\system\zenworks.properties` on any of the cluster nodes.
- 3 Verify whether the database is mounted on the database server.

The `sys:\system\mgmt dbs.ncf` file on any cluster node has the `.db` entry if the database is mounted on the database server

If the file does not contain the `.db` entry, delete `mgmt dbs.ncf` from all cluster nodes. If the file contains the `.db` entry, do not continue to remove the Sybase engine.

- 4 Delete the `mgmt dbs.ncf` entry from cluster load script on all cluster nodes.
- 5 Delete `dbsrv8.nlm` from the unload script.
- 6 Delete the directory specified in `DBENGINEPATH` (identified in Step 3).
- 7 Delete the `DBENGINEPATH` key from `sys:\system\zenworks.properties` on all cluster nodes.

## B.8.5 Uninstalling the Inventory Server Software

- 1 On the NetWare Inventory server, stop the Inventory service by entering `StopSer *` at the console prompt.
- 2 Unload the `java.nlm` by entering `java -exit` at the NetWare Inventory server console prompt.
- 3 Note the values of `INVSrvPATH` and `ZWSPATH` keys in `sys:\system\zenworks.properties` on any of the cluster nodes.
- 4 Delete the `ZFD_INVENTORY_SERVER` key.  
Delete the following section from `sys:\system\zenworks.properties` on all cluster nodes:  

```
[ZfD_Inventory_Server]Version = 7.0 Desktop Management product  
build date  
Installed_From = Product CD  
Support_Pack = 0
```
- 5 Delete the `invsrvpath\scandir` directory on all cluster nodes.
- 6 Delete the `invsrvpath\server` directory on all cluster nodes.
- 7 Delete the following entries from the cluster load script on all cluster nodes:  

```
; ZENworks Inventory Settings  
StartInv.ncf
```
- 8 Delete the following entries from the unload script:  

```
java -killzenwsinv  
java -killzwexit
```
- 9 Delete the following files from `sys:\system` directory on all cluster nodes:

```
inenv.ncf  
inenvset.ncf  
listser.ncf  
startinv.ncf  
startser.ncf  
startzws.ncf  
stopser.ncf  
dbexport.ncf  
debug.properties
```

stopdb.ncf

- 10** If Policy and Distribution Services and the XML Proxy server are not installed on the Inventory server, remove the ZENworks Web Server components by deleting the directory specified by ZWSPATH.

- 10a** Delete the following entries from the cluster load script on all cluster nodes:

```
; ZENworks Inventory Settings
ZFS.ncf
```

- 10b** Delete zwsstart.ncf from the sys:\system directory on all cluster nodes.

- 10c** Delete the ZWSPATH key from sys:\system\zenworks.properties on all cluster nodes.

- 10d** Delete zws\_volume:\zfs-startup.xml.

- 10e** Delete zws\_volume:\zenworks\zfs.ncf.

- 11** Delete the INVSrvPATH key from the sys:\system\zenworks.properties file on all cluster nodes.

## B.8.6 Uninstalling the XML Proxy Server

- 1** Unload java.nlm by entering `java -killzfsexit` at the server console prompt.
- 2** Note the value of the ZWSPATH in sys:\system\zenworks.properties on any of the cluster nodes.
- 3** Delete the following section from sys:\system\zenworks.properties on all cluster nodes:

```
[ZfD_XML_Proxy_Server]
Version=7.0 Desktop Management product build date
Installed_From = Product CD
Support_Pack = 0
```

- 4** Delete the following entries from the cluster load script on all cluster nodes:

```
; ZENworks Inventory Settings
ZFS.ncf
```

- 5** Delete zwsstart.ncf from the sys:\system directory on all cluster nodes.

- 6** Delete the ZWSPATH directory and the ZWSPATH entry from sys:\system\zenworks.properties on all cluster nodes.

- 7** Delete zfs-startup.xml and zfs.ncf from the zws\_volume:\zenworks\zfs-startup.xml directory.

## B.8.7 Uninstalling the Workstation Inventory Snap-Ins from ConsoleOne

Do not uninstall ConsoleOne itself if you are using it to manage other products.

To remove only the Workstation Inventory snap-ins from ConsoleOne:

- 1** Close ConsoleOne, if it is running.

If ConsoleOne is invoked directly from the Inventory server on multiple workstations, you must close ConsoleOne on all these workstations.

- 2** In the *consoleone\_installation\_directory\1.2* directory on your server or workstation, do the following:

**2a** Delete the following files:

```
\lib\zen\dbexport.jar
\lib\zen\desktop.jar
\lib\zen\zeninvimages.jar
\lib\zen\zenutility.jar
\lib\zen\statuslog.jar
\lib\zen\classes12.zip\lib\zen\vbjapp.jar\lib\zen\vbjorb.jar
\lib\zen\jdbcdrv.zip
\snapins\zen\inventorysnapins.jar
\snapins\zen\inventorysnapins3x.jar\snapins\zen\dataexportsnapins.jar\snapins\zen\policymigration.jar\snapins\zen\workstationsnapins.jar\snapins\zen\tracer.jar\help\novellserverinv.hs\bin\directoryrights.dll\bin\displayrules.properties
s\bin\schemarules.properties
```

**2b** Delete the following directories:

```
\reporting\canned\novellreporting\zeninventory
\reporting\canned\novellreporting\zeninventory30
\reporting\canned\novellreporting\zeninventory32
\reporting\canned\novellreporting\zeninventory3x
\reporting\canned\novellreporting\zeninventory4x
```

- 3** If you have not installed the Remote Management ConsoleOne snap-ins on the same workstation or server, delete the following files:

```
\bin\desktop4.exe
\bin\mssql.ini
\bin\msvp60.dll
\bin\ndsaccess.dll
\bin\oracle.ini
\bin\remagent.ini
\bin\sybase.ini
\help\novellzeninven.hs
\help\novellzenrmgt.hs \help\en\novell_zfd_inventory
\help\en\novell_zfd_remotemgmt
\lib\zen\desktop.jar
\lib\zen\desktop3x.jar\lib\zen\desktopcommonutility.jar
\resources\resources.jar
\snapins\zen\commonsnapins.jar
```

## B.8.8 Applying Changes to the Cluster Scripts

To apply the uninstall changes you made by following the instructions in [Uninstalling Workstation Inventory in a Clustering Environment](#) to the cluster scripts, you must offline the cluster and then online it again.

## B.9 Reinstalling Workstation Inventory in a Clustering Environment

You might need to reinstall the Workstation Inventory component of Desktop Management Services (ZENworks 7 Desktop Management SP1) in a cluster environment because it failed to install properly or because data corruption, such as an inadvertent file deletion, has occurred and the data can only be fixed by reinstalling.

---

**IMPORTANT:** A reinstallation does not require the schema to be extended again.

---

- ♦ [Section B.9.1, “Preparing to Reinstall Workstation Inventory,” on page 553](#)
- ♦ [Section B.9.2, “Reinstalling Workstation Inventory,” on page 553](#)
- ♦ [Section B.9.3, “Determining if Reinstalling Workstation Inventory Was Successful,” on page 554](#)

### B.9.1 Preparing to Reinstall Workstation Inventory

- 1 Identify the servers that need Workstation Inventory reinstalled.
- 2 Stop the Inventory service by entering `sys:\system\invstop.ncf` at the NetWare server console prompt.

---

**NOTE:** If you do not want the Sybase database to be stopped automatically when you stop the Inventory services, comment the `Unload dbsrv8.nlm` line in the `sys:\system\invstop.ncf` file.

---

- 3 Stop the Inventory database by pressing the Q key at the NetWare Sybase console prompt.
- 4 If Java has not been unloaded on the target NetWare servers, unload `java.nlm` (at the server console, enter `java -exit`).

---

**IMPORTANT:** This command stops all Java processes running on the server. Verify that all Java processes can be stopped while you are installing Desktop Management.

---

- 5 Log into the Novell eDirectory tree that has the servers where you want to reinstall.
- 6 Continue with [Section B.4, “Installing Desktop Management Components,” on page 535](#).

### B.9.2 Reinstalling Workstation Inventory

If you reinstall Workstation Inventory over a prior installation, the ZENworks 7 Desktop Management Workstation Inventory uses the existing configured policies and the `\scandir` directory.

- ♦ On the File Installation Location page during reinstallation, the installation program searches for the previous installation path. If it is detected, the Workstation Inventory or Remote Management files are installed to the same path.
- ♦ On the Database Installation Location page during a reinstallation, the Installation program searches for the previous installation path. If it is detected, the database is installed to the same path.

### B.9.3 Determining if Reinstalling Workstation Inventory Was Successful

- 1 After the installation has finished, review the installation log file to determine whether any components failed to install.
- 2 If you reinstalled to fix a file missing or file corruption problem, check to see if the problem has been fixed.

## B.10 Configuring ZENworks 7 Workstation Imaging for a Novell Cluster Services Environment

Previously, ZENworks Desktop Management did not fully support the Workstation Imaging component in Novell Cluster Services (NCS) environment, particularly if used in conjunction with ZENworks Preboot Services (PXE). With the release of ZENworks 7 Desktop Management, however, using Preboot Services for Workstation Imaging is now supported in a Novell Cluster Services 1.7.2 (or later) environment

Use the following steps to install and use ZENworks 7 Workstation Imaging with PXE in a Novell Cluster Service 1.7.2 (or later) environment:

- 1 Make sure that you have met all of the prerequisites for installing ZENworks 7. For more information, see [Part II, “Preparation,” on page 37](#).
- 2 Install ZENworks 7 Desktop Management in the Novell Cluster Services environment. In an upgrade situation (ZENworks 6.5 upgrading to ZENworks 7), the ZENworks 7 Desktop Management installation program allows the selection and installation of new components that were not previously installed.
- 3 Install ZENworks 7 Desktop Management in the same servers where you installed the original version of ZENworks 7 Desktop Management.
- 4 In the virtual server system directory, locate the `dto.ini` file. For example:  
`cvol:system/dto.ini`
- 5 Open `dto.ini` in a file editor, then change the IP setting in the following line:  
`TransactionServerClusterIP=IP_Address`  
The IP address must point to the IP Address of the virtual server in the cluster. If this line is not present in the file, you need to add it.
- 6 Save the edited `dto.ini` file.
- 7 Locate the `tftp.ini` file located in the same system directory.
- 8 Open `tftp.ini` in a file editor, then change the IP setting in the following line:  
`IPADDRESS=IP_Address`  
The IP address must point to the IP Address of the virtual server in the cluster.
- 9 Save the edited `tftp.ini` file.
- 10 Locate the `pdhcp.ini` file located in the same system directory.
- 11 Open the `pdhcp.ini` file in a file editor, then change the IP setting in the following lines:  
`TRANSACTION_SERVER_IP=IP_Address`  
`PDHCP_Server_IP=IP_Address`

The IP address in both lines must point to the IP Address of the virtual server in the cluster.

In Novell Cluster Services 1.7.2, the following line is also included in the `pdhcp.ini` file:

```
TFTP_SERVER_IP=IP_Address
```

This IP variable must also point to the IP Address of the virtual server in the cluster.

- 12 Save the edited `pdhcp.ini` file.
- 13 Copy `dtls.ini`, `tftp.ini`, and `pdhcp.ini` to `/sys:system` in each of the nodes (that is, servers) in the cluster.
- 14 Take the resource offline, then bring it back online to reload ZENworks services.

## B.11 Installing ZENworks 7 Desktop Management with SP1 in an OES Linux Cluster Environment

Novell ZENworks 7 Desktop Management with SP1 includes the capability of installing the following key elements on SUSE® Linux Enterprise Server (SLES) 9 Support Pack 2 or Novell Open Enterprise Server (OES Linux) 1.0 SP2:

- ♦ **Desktop Management Server:** This software lets you centrally create and manage policies and profiles for users and workstations on a network that includes Linux servers. These policies and profiles enable you to distribute, manage, and update applications, perform advanced inventory and remote management functions, and automatically install operating systems on the Windows workstations in your network.

Although ZENworks 7 Desktop Management was not originally supported in a Novell Cluster Services (NCS) environment running on OES Linux, ZENworks 7 Desktop Management with Support Pack 1 includes a set of RPMs (`novell-zenworks-zdm-cluster`) with files that configure some ZENworks services to run safely in a Novell Cluster Services™ for OES Linux Support Pack 2 environment.

- ♦ **ZENworks Middle Tier Server:** This software works with Web Server software installed on a Linux server to set up authentication and communication between the Desktop Management Server inside the corporate firewall and workstations outside the corporate firewall. This communication makes it possible for mobile users to get Desktop Management services when they are traveling. It also allows communication for workstations that do not have the Novell Client.

---

**IMPORTANT:** The Middle Tier Server is not cluster-enabled. You need to install it to a single node.

---

The installation program for ZENworks 7 with SP1 Desktop Management Services on Linux lets you choose between these two elements as organized in various combinations called “install sets.” For more information about these sets, see [Part IV, “Installing ZENworks Desktop Management Services on Linux,” on page 297](#).

---

**NOTE:** Of the four pre-built software “sets” available for the SLES 9 installation (that is, *Minimum System*, *Minimum Graphical System*, *Full*, and *Default System* installations) only the *Default System* installation mode for SLES 9 supports ZENworks 7 Desktop Management. All other modes used for SLES 9 installation cause a subsequent ZENworks 7 Desktop Management installation failure.

---

You can use the information in this section as a general guide for installing ZENworks 7 with SP1 Desktop Management Services on Linux, it also includes the following information about installing some of these services on an OES Linux SP2 cluster:

- ♦ [Section B.11.1, “ZENworks Services in OES Linux Cluster Environment,” on page 556](#)
- ♦ [Section B.11.2, “Prerequisites for Clustering ZENworks 7 Desktop Management Services with SP1 in an OES Linux Cluster,” on page 556](#)
- ♦ [Section B.11.3, “Installing on an OES Linux Cluster,” on page 556](#)
- ♦ [Section B.11.4, “Preparing for Silent Installation on a Cluster,” on page 563](#)
- ♦ [Section B.11.5, “Running the Silent Installation on an OES Linux Cluster,” on page 566](#)
- ♦ [Section B.11.6, “Configuring Workstation Inventory on an OES Linux Cluster,” on page 567](#)

## B.11.1 ZENworks Services in OES Linux Cluster Environment

Most of the ZENworks 7 Desktop Management components are considered “cluster-safe,” which means that you can install the ZENworks 7 Desktop Management services in an environment where Novell Cluster Services for Linux is installed, but if the cluster volume goes down, there is an interruption in services while the cluster fails over.

When failover occurs, most of the Desktop Management services are restored, but Application Management and some group policies that rely on a single resource (that is, a server where the policy files are copied) might time-out waiting for the resource to become available. The policies are not applied until the next login or scheduled event occurs and the file resource becomes available again.

The ZENworks Middle Tier Server is not cluster-enabled, but it can be installed on a single cluster node on Linux. For information, see [Chapter 21, “Installing Only the ZENworks Middle Tier Server on a Linux Server,” on page 311](#).

## B.11.2 Prerequisites for Clustering ZENworks 7 Desktop Management Services with SP1 in an OES Linux Cluster

Before you can run the installation for ZENworks 7 with Support Pack 1 Desktop Management Services on Linux, you need to make sure that the environment where you will install the product has met all of the necessary prerequisites:

- ♦ Meet the general requirements for installing ZENworks 7 Desktop Management Services with SP1. For details, see [Part II, “Preparation,” on page 37](#).
- ♦ Make sure that Novell Cluster Services 1.8 is installed and running on the OES Linux 1.0 SP2 server where you will install ZENworks 7 with Support Pack 1 Desktop Management Services on Linux. For more information about installing Novell Cluster Services, see the [OES Novell Cluster Services 1.8.2 Administration Guide for Linux](#) ([http://www.novell.com/documentation/oes/cluster\\_admin\\_lx/data/h4hgu4hs.html#h4hgu4hs](http://www.novell.com/documentation/oes/cluster_admin_lx/data/h4hgu4hs.html#h4hgu4hs)).

## B.11.3 Installing on an OES Linux Cluster

Use the following steps to installing ZENworks 7 Desktop Management Services with Support Pack 1 Services on Linux in an OES Linux SP2 cluster environment:

- 1 From the terminal console, enter `su` to switch to the root user.



- 2 Run `mount /CD_mount_point` to mount the *ZENworks 7 with Support Pack 1 Desktop Management Services on Linux CD*.
- 3 Change to the CD mount directory, and run `./setup` to display the first screen of the installation program.

```
=====
Introduction
-----
```

InstallAnywhere will guide you through the installation of ZENworks Desktop Management.

It is strongly recommended that you quit all programs before continuing with this installation.

Respond to each prompt to proceed to the next step in the installation. If you want to change something on a previous step, type 'back'.

You may cancel this installation at any time by typing 'quit'.

PRESS <ENTER> TO CONTINUE:

- 4 Read the terms of the license, pressing Enter several times to screen down and read the contents, then at the end of license agreement, enter Y to accept the terms.

---

**TIP:** You can enter `back` on any screen of the installation program to go back to the previous screen. You can enter `quit` on any screen to cancel the installation program.

---

- 5 (Conditional, if the installation detects cluster services on the server) When you accept the terms of the license agreement, if Novell Cluster Services is installed on the server where you are installing ZENworks 7 with SP1 Desktop Management Services on Linux, the installation detects it and displays this screen:

```
=====
Novell Cluster Services Detected
-----
```

It appears that you have Novell Cluster Services installed on this server. Do you wish to install ZENworks services into the cluster?  
Install (Y/N): (DEFAULT: Y):

Even though the installation program detects that Novell Cluster Services was previously installed, it might not necessarily be configured or you might want to install on the cluster at a later time. If you do not want to install ZENworks services on the cluster, enter N.

Enter Y or press Enter (Y is the default) to install configureable services for running ZENworks 7 Desktop Management with SP1 in your Novell Cluster Services for Linux environment.

Whether you enter Y or N for this question or if you don't see the cluster installation screen at all after the license agreement, the next screen of the installation is displayed:

```
=====
Choose Install Set
-----
```

```

Please choose the Install Set to be installed by this installer.
->1- All Features
    2- ZENworks Desktop Management Server
    3- ZENworks Middle Tier Server

    4- Customize...ENTER THE NUMBER FOR THE INSTALL SET, OR PRESS
<ENTER> TO ACCEPT THE DEFAULT
:
```

**6** Enter 4 to choose the Customize option.

The Choose Product Features screen is displayed.

```

=====
Choose Product Features
-----
```

```

ENTER A COMMA_SEPARATED LIST OF NUMBERS REPRESENTING THE FEATURES
YOU WOULD
LIKE TO SELECT, OR DESELECT. TO VIEW A FEATURE'S DESCRIPTION, ENTER
'?<NUMBER>'. PRESS <RETURN> WHEN YOU ARE DONE:
```

```

1- [X] Application Management
2- [X] Remote Management
3- [X] Middle Tier
4- [X] Inventory Server
5- [X] Inventory Proxy
6- [X] Inventory Database
7- [X] NAL Database
8- [X] Imaging
9- [X] PXE
10- [X] Autoworkstation Import/Removal
11- [X] ZENworks Desktop Agent Installer
```

```

Please choose the Features to be installed by this installer.
:
```

**7** Enter the listed number of the feature or features you want to select or deselect for installation on the Linux server. An [X] next to the feature name means that the feature will be installed. All of the features are selected by default.

If you want to select or deselect more than one feature, use a comma to separate the numbers.

If you need a description of a feature, type a question mark (?) followed by the feature number, then press Enter.

**8** Press Enter when your feature list is ready for installation.

After being selected for installation, many of the ZENworks features require no further configuration. You are not prompted for further information about these features.

No matter which of the features you select, however, you are always prompted for configuration information about the ZENworks Desktop Management Server. The first screen to be displayed is the Tree Information screen that is required for configuring the Desktop Management Server.

```
=====
Tree information
-----
```

Please enter authentication information for the tree where you want to configure ZENworks.

Tree (zentree):

- 9 On the Tree Information screen, enter the name of the local host (that is, this server's) tree where you want to configure ZENworks. This field is not case sensitive.
- 10 Enter the eDirectory distinguished name (DN) for the Administrative User. This field is not case sensitive.

- 11 Enter the password for the Administrative User. This field is not case sensitive.

After your credentials are validated, the Cluster Support Information screen is displayed (if the installation program previously detected the presence of clustering services on the server, see [Step 5 on page 557](#)):

```
=====
ZENworks Cluster Support Information
-----
```

Specify the DN of the cluster resource object that should host the ZENworks

services (MYCLUSTER\_Resource.MYCLUSTER.Servers.mycompany):

- 12 (Conditional, if the installation has detected cluster services on the server) Enter the fully distinguished name of the Cluster Resource object that should host the ZENworks services you are installing.

**Example:** bs9\_server.bs9cluster.novell

- 13 (Conditional, if the installation has detected cluster services on the server) Enter the mount point for the cluster shared volume.

**Example:** /media/nss/BS9VOL

After your credentials are validated, or after you enter the mount point for the cluster shared volume, the ZENworks License Key screen is displayed.

```
=====
ZENworks License Key Information
-----
```

Please enter a valid ZENworks license code. (90 Day Trial):

- 14 Enter the license code that you received in an e-mail from Novell after you purchased Novell ZENworks. You are periodically reminded to license the product until you provide this license code. If you don't enter an appropriate code, ZENworks Desktop Management functions for only 90 days.

- 15** (Conditional) If you chose to install the Middle Tier, the Middle Tier Server Configuration Information screen is displayed.

```
=====
Middle Tier Server Configuration Information
-----

The Middle Tier Server you configure with this program will access
an eDirectory server in order to authenticate users and
workstations and to obtain ZENworks configuration and policy
information.

Please provide the name or IP address and administrative
credentials for an eDirectory server.

Server Name/IP Address (zenmid):
```

- 16** (Conditional, if you selected the Middle Tier option) Enter the DNS name or IP address of the server where eDirectory is installed.

```
Enter Administrative Credentials:
Proxy User (admin.myCompany):
```

- 17** (Conditional, if you selected the Middle Tier option) Enter the fully-qualified distinguished username of the Middle Tier proxy user account (for example, midtier-proxy.org-unit.org).  
To ensure that these credentials remain secure, you can set up an arbitrary user with specific administrative rights. For more information, see [Section 10.3, “Required Rights for the Middle Tier Proxy User Account and the NSAdmin Utility,” on page 127.](#)

```
Password():
```

- 18** (Conditional, if you selected the Middle Tier option) Enter the eDirectory password for the Middle Tier proxy user.

```
The ZENworks Middle Tier software searches for ZENworks user
objects in a specified eDirectory context and below.
```

```
Please Specify the ZENworks user context.
NOTE: This context must already exist.
```

```
Users Context (users.novell):
```

- 19** (Conditional, if you selected the Middle Tier option) Enter the eDirectory context where the Middle Tier Server can look for user objects that will be using Desktop Management.  
The installation program verifies the existence of the context (that is, the directory container) before continuing.  
(Conditional) If you chose to install the Inventory Server and the Inventory Database on the same server, the Inventory Standalone Configuration screen is displayed.

```
=====
Inventory Standalone Configuration
-----
```

Note: ZENworks Inventory Standalone settings must be configured only on one cluster node.

Do you want to configure as a Standalone? (Y/N) (Y):

- 20** (Conditional, if you selected the Inventory Server option) Enter the context for the standalone inventory server.

Inventory Server Context (myCompany):

If you chose to install the Inventory Proxy feature, the Inventory Proxy Configuration screen is displayed.

```
=====
Inventory Proxy Configuration
-----
```

XML Proxy port (65000):

- 21** (Conditional, if you selected the Inventory Proxy option) Enter the port number you want to designate as one to allow XMLRPC requests pass through to the Inventory Proxy service.

If you want to change the Port 65000 default, specify a value between 0 and 65535. Ensure that the port number is not used by other services on the server.

The SSL Configuration screen is displayed.

```
=====
SSL Configuration
-----
```

Do you want to configure SSL? (Y):

- 22** (Optional) If you want the ZENworks 7 Inventory Server to establish a secure connection with eDirectory using LDAP, enter Y, then enter the complete path and the filename of the SSL certificate.

---

**IMPORTANT:** Enter the path for the SSL certificate at each cluster node.

---

The NetBIOS Configuration screen is displayed

```
=====
NetBIOS Configuration
-----
```

NetBIOS Name (*NetBIOS\_name*):

- 23** (Conditional) The NetBIOS Configuration screen is displayed only if the NetBIOS name is not present in `/etc/samba/smb.conf`, and the Linux server name on which you run the ZENworks installation is more than 13 characters.

If the NetBIOS name is not present in `/etc/samba/smb.conf` and the Linux server name is more than 13 characters, then the installation program generates a NetBIOS name using the first 13 characters of the Linux server name on which you run the installation. This name is displayed as the default value during the ZENworks Linux installation.

```
=====
```

NetBIOS Configuration

-----

NetBIOS Name

(NetBIOS\_name\_generated\_by\_the\_ZENworks\_installation\_program):

You can either accept the default value or enter a new value, but make sure that the NetBIOS name is unique.

**24** The Pre-Installation Summary screen is displayed.

Pre-Installation Summary

-----

We are ready to install ZENworks to your server. Press <Enter> to continue,  
type "back" to change your choices or "quit" to exit this install.

Product Name:

ZENworks Desktop Management

Product Components:

Inventory Server,  
Remote Management,  
Application Management,  
Inventory Proxy,  
Inventory Database,  
NAL Database,  
Autoworkstation Import/Removal,  
PXE,  
Imaging,  
Middle Tier,  
ZENworks Desktop Agent Installer

ZENworks License Key:

90 Day Trial

Schema Extensions:

Schema extensions will be applied.

ZENworks Cluster Support

Cluster support will be installed

PRESS <ENTER> TO CONTINUE:

**25** Press Enter to begin the installation.

When the installation process is complete, InstallAnywhere creates an installation log file.  
Press Ctrl+C to abort the creation of the log file.

If the installation is successful, the View Readme screen is displayed.

=====

View Readme

-----

Do you want to view the readme file?

```
->1- YES
    2- NO
```

ENTER THE NUMBER FOR YOUR CHOICE, OR PRESS <ENTER> TO ACCEPT THE  
DEFAULT:

:

- 26** (Optional) Enter 1 to open the Readme file. Read the file, pressing Enter to screen down as you read. At the end of the Readme, press Enter to display the Installation Complete screen.
- 27** (Optional) Enter 2 to display the Installation Complete screen.

```
=====
Installation Complete
-----
```

Congratulations. ZENworks Desktop Management has been successfully  
installed  
to:

/opt/novell/zenworks/

All installed ZENworks services have been started.

Please see the log file (/var/log/  
ZENworks\_Desktop\_Management\_InstallLog.log)  
for more details.

PRESS <ENTER> TO EXIT THE INSTALLER:

Although the Installation Complete message states that all installed ZENworks services have been started, the proxydhcp service is not started after the installation is completed, nor is it started after a reboot. To start the service, unload the Cluster Resource object in ConsoleOne or iManager to run the start script (opt/novell/zenworks/bin/ZDMstart). If you try to run the proxydhcp service from the run level, an error is generated on the server that is not hosting the clustered resource.

- 28** Press Enter to exit the installation program.
- 29** Offline and then online the cluster resource where ZENworks Desktop Management is installed.

## B.11.4 Preparing for Silent Installation on a Cluster

Use the following steps to prepare for a silent installation:

- 1** Locate the `silent.properties` file at the root of the *ZENworks 7 with Support Pack 1 Desktop Management Services on Linux* CD, then copy the file to `/root` on your Linux server.
- 2** Edit `/root/silent.properties` as needed.

A copy of `silent.properties` for ZENworks 7 with Support Pack 1 Desktop Management Services on Linux is shown below.

```

INSTALLER_UI=silent
#-----
# Install Sets
#-----
##CHOSEN_INSTALL_SET=(All|Server|Midtier) [default: All]
#CHOSEN_INSTALL_SET=Midtier
#CHOSEN_INSTALL_SET=Server
#-----
# Installable Features
#-----
INSTALL_REMOTE_MANAGEMENT=true
INSTALL_MIDDLE_TIER=true
INSTALL_INVENTORY_SERVER=true
INSTALL_INVENTORY_PROXY=true
INSTALL_INVENTORY_DATABASE=true
INSTALL_APPLICATION_MANAGEMENT=true
INSTALL_APPLICATION_MANAGEMENT_DATABASE=true
INSTALL_IMAGING_SERVER=true
INSTALL_PXE_SERVER=true
INSTALL_WORKSTATION_IMPORT_SERVER=true
INSTALL_ZDM_AGENT=true
#-----
# Pre-file-copy verification
#-----
#-----
# Authentication
#-----
#TREE_USER_NAME=admin.myCompany
#TREE_PASSWORD=myPassword
#TREE_NAME=MY-TREE
#-----
# ExtendSchemaConfigureAction
#-----
##SHOULD_EXTEND_SCHEMA=(true|false) [default: false]
#SHOULD_EXTEND_SCHEMA=true
#-----
# LicensingConfigureAction
#-----
##USER_SUPPLIED_SERIAL_NUMBER= [default: 90 Day Trial]
#USER_SUPPLIED_SERIAL_NUMBER=mySerialNumber
#-----
# Post-file-copy verification
#-----
#-----
# Force Re-Configuration
#-----
##ConfigureAction.ZDM_FORCE_CONFIGURE=(true|false) [default: false]
#ConfigureAction.ZDM_FORCE_CONFIGURE=true
#-----
# Imaging
#-----

```



```

##NDS_CONF_PATH= [default: /etc/nds.conf]
#NDS_CONF_PATH=/etc/nds.conf
#-----
# Middle Tier
#-----
#XTierConfigureAction.AUTH_DOMAIN=myServer
#XTierConfigureAction.AUTH_CONTEXT=myZENworksUserSearchContext
#XTierConfigureAction.PROXY_USER=myProxyUser
#XTierConfigureAction.PROXY_PASSWORD=myProxyPassword
#-----
# Inventory Server Standalone Mode
#-----
##StandaloneConfigureAction.INV_STANDALONE=(Y|N) [default: N]
#StandaloneConfigureAction.INV_STANDALONE=Y
#StandaloneConfigureAction.INV_SERVER_CONTEXT=myContext.myCompany
#-----
# XML Proxy
#
# value placed in /etc/opt/novell/zenworks/zws.properties as port2
#-----
##XMLProxyConfigureAction.XML_PROXY_PORT= [default: 8080]
#XMLProxyConfigureAction.XML_PROXY_PORT=myPortNumber
#-----
# SSL for Inventory
#-----
##SSLConfigureAction.SSL_CONFIGURE=(Y|N) [default: N]
#SSLConfigureAction.SSL_CONFIGURE=Y
#SSLConfigureAction.INV_CERT_PATH=/my.dir/my.cer
#-----
# NETBIOS Name
#
# value placed in /etc/samba/smb.conf as netbios name
# iff there is no existing value
#-----
##NETBIOS_NAME= [default: <hostname>-w]
#NETBIOS_NAME=myNetBiosName
#-----
# Novell Cluster Support
#-----
##INSTALL_ZENWORKS_CLUSTERING=(Y|N) [default: N]
#INSTALL_ZENWORKS_CLUSTERING=N
# Specify the Cluster resource object that will host the ZENworks
services.
ConfigureAction.CLUSTER_RESOURCE_DN=myResource.mycluster.mycompany
# Specify the mount point for the shared resource for the above named
cluster
# resource object
ConfigureAction.SHARED_VOLUME_PATH=/mnt/

# In general the following information can be derived from the Cluster
resource

```

```
# object but in the off chance that we can't determine this
information, you
# can set these variables.
# Specify the DN of the Virtual server object associated with the
# cluster resource object, and the IP address assigned to the resource
object
ConfigureAction.CLUSTER_NCP_SERVER=
ConfigureAction.CLUSTER_NCP_SERVER_IP=
```

By default, all Desktop Management components are selected for installation in `silent.properties`. As you edit this file, you can deselect components for installation by commenting that component name in the Installable Features section of the file. This creates a customized install set that you can apply when you run the installation program.

Instead of creating this customized install set, you can also choose to uncomment a consolidated install set in the Install Sets section of the file.

The `silent.properties` file also contains specific parameters that you need to configure for the components that you install. Make sure that you uncomment these parameters and provide the required values.

If you plan to run the silent installation in an insecure environment, you might want to take measures to hide passwords. For more information, see [Section 23.3, “Making the Silent Installation More Secure,” on page 326](#).

## B.11.5 Running the Silent Installation on an OES Linux Cluster

When you have edited the `silent.properties` file to include the installation of all of the components (including the services you want to install on the cluster) and the accompanying configuration values for those components, you are ready to run the installation program.

Use the following steps to complete the installation:

- 1 Copy the edited `silent.properties` file to the `/root` directory of the server where you intend to run the silent installation.
- 2 Insert the *ZENworks 7 with Support Pack 1 Desktop Management Services on Linux* CD in the CD drive of the Linux server where you want to install ZENworks.
- 3 From the terminal console, use the `su` command to switch to the root user.
- 4 Run `mount /CD_mount_point` to mount the *ZENworks 7 with Support Pack 1 Desktop Management Services on Linux* CD.
- 5 Change to the CD mount point, then enter the following command:  

```
./setup -f /root/silent.properties
```

---

**NOTE:** The path to the `silent.properties` file must be a complete path, beginning with a forward slash (`/`).

---

The installation program runs, copying the appropriate files and configuring the ZENworks components according to the information you have provided in `silent.properties`. The Pre-file-copy Verification section of `silent.properties` checks each of the values you provided for validity. The installation stops if any value is invalid.

The program checks the Post-file-copy verification section of `silent.properties` for validity after the files are copied. In case of an incorrect value in this section, an error is logged to the InstallAnywhere log file located at `/var/log/ZENworks_Desktop_Management_InstallLog.log`, but the installation continues.

You can use the `novell-zdm-configure` utility to correct any errors than are encountered. For more information, see [Section 24.2, “Configuring or Reconfiguring Installed ZENworks Processes Running on Linux,”](#) on page 330.

- 6 Offline and then online the cluster resource where ZENworks Desktop Management is installed.

## B.11.6 Configuring Workstation Inventory on an OES Linux Cluster

After you have completed the ZENworks 7 SP1 Desktop Management Services installation, you need to configure Workstation Inventory to work in the clustering environment. The following steps provide the configuration information you need:

- 1 Configure the Inventory database object. If you have selected Sybase during Desktop Management installation, the installation program creates the Database object (Inventory database\_ *server\_name*) and configures the properties of this object. Skip [Step 1a](#) and [Step 1b](#). If you are using Oracle or MS SQL, continue with [Step 1a](#).
  - 1a If you are maintaining the Inventory database in Oracle or MS SQL, ensure that you have created the Database object and configured the properties. For more information, see [Chapter 27, “Post-Installation Tasks,”](#) on page 341
  - 1b To configure the Database object for a cluster environment: In ConsoleOne, right-click the Database object, click *Properties*, click *ZENworks Database*, Browse for the DN (NCP server object) of the virtual server or specify the IP address of the virtual server, and then click *OK*.
- 2 If you did not select standalone configuration during installation, when you create the database location policy, you must set the inventory database to Inventory database\_ *virtual\_server\_name*.
- 3 While creating the Workstation Inventory policy, set the inventory service object DN to Inventory Service\_ *virtual\_server\_name*.
- 4 To configure all roll-up policies, select the Inventory service object of the cluster service (Inventory Service\_ *virtual\_server\_name*).



# Using the Identity Manager Bundle 2 Edition for ZENworks 7 Desktop Management

# C

Novell® Nsure™ Identity Manager is a data-sharing solution that leverages the Identity Vault to synchronize, transform, and distribute information across applications, databases, and directories.

The Identity Manager Bundle Edition provides licensed synchronization of information (including passwords) held in NT Domains, Active Directory Domains, and eDirectory™ trees. When data from one system changes, Identity Manager detects and propagates these changes to other connected systems based on the business policies you define.

In this document:

- ♦ [Section C.1, “What Am I Entitled to Use?,” on page 569](#)
- ♦ [Section C.2, “System Requirements,” on page 569](#)
- ♦ [Section C.3, “Installation Considerations,” on page 570](#)
- ♦ [Section C.4, “Getting Started,” on page 570](#)
- ♦ [Section C.5, “Activating the Bundle Edition,” on page 571](#)
- ♦ [Section C.6, “Known Issues,” on page 572](#)

## C.1 What Am I Entitled to Use?

The Bundle 2 Edition allows you to use the Identity Manager engine and the following Identity Manager drivers:

- ♦ Identity Manager Driver for eDirectory
- ♦ Identity Manager Driver for Active Directory
- ♦ Identity Manager Driver for NT

Other Identity Manager Integration Modules (drivers) are included in the software distribution. You can install and use these additional Integration Modules for 90 days, at which time you must purchase a license for the *Nsure Identity Manager Standard Edition* or *Professional Edition* and a license for the Integration Module you want to use.

The service drivers (Loopback, Manual Task, and Entitlements) are not included as part of the license agreement for the Bundle Edition. In order to use these drivers, you must purchase either the *Nsure Identity Manager Standard Edition* or *Professional Edition*.

## C.2 System Requirements

- ❑ Novell eDirectory 8.7.3
- ❑ iManager 2.0.2 or 2.5

If you want to use the Password Self-Service functionality provided by Identity Manager, you must use an iManager 2.0.2 server. (You can still use an iManager 2.5 server for administrative tasks, but you must have iManager 2.0.2 if you want Password Self-Service.)

- ❑ You can run the Identity Manager server on:
  - ♦ Windows NT, 2000, or 2003 with the latest Service Pack
  - ♦ NetWare® 6 or 6.5 with the latest Support Pack (you must obtain and install JVM 1.4.2 on NetWare)
  - ♦ Novell Open Enterprise Server 1.0 for Linux
  - ♦ Linux Red Hat\* AS or ES 2.1, or AS 3.0
  - ♦ SUSE® Linux Enterprise Server 8 or 9

The Bundle Edition does not include support for Solaris\* or AIX\*. If you want to run the DirXML® engine or Integration Modules on these platforms, you must purchase the *Nsure Identity Manager Standard* or *Professional Edition*.

## C.3 Installation Considerations

Novell Nsure Identity Manager Bundle Edition contains components that can be installed within your environment on multiple systems and platforms. Depending on your system configuration, you might need to run the installation program several times to install Identity Manager components on the appropriate systems.

In order for the product to be activated, you must apply the ZENworks license code within 90 days. For more information on activation issues, see [Section C.5.1, “Frequently Asked Questions about Activation,” on page 571](#).

## C.4 Getting Started

The following sections from the *Identity Manager Administration Guide* will help you plan, install, and configure your Identity Manager Bundle Edition.

- ♦ [Overview](http://www.novell.com/documentation/dirxml20/admin/data/alxkrnf.html) (<http://www.novell.com/documentation/dirxml20/admin/data/alxkrnf.html>)
- ♦ [Planning Your Implementation](http://www.novell.com/documentation/dirxml20/admin/data/anhomxn.html) (<http://www.novell.com/documentation/dirxml20/admin/data/anhomxn.html>)
- ♦ [Installing Identity Manager](http://www.novell.com/documentation/dirxml20/admin/data/a7c9ie0.html) (<http://www.novell.com/documentation/dirxml20/admin/data/a7c9ie0.html>)
- ♦ [Installing Active Directory, NT, and eDirectory Drivers](http://www.novell.com/documentation/dirxmldrivers/index.html) (<http://www.novell.com/documentation/dirxmldrivers/index.html>)
- ♦ [Setting Up a Connected System](http://www.novell.com/documentation/dirxml20/admin/data/bs35odr.html) (<http://www.novell.com/documentation/dirxml20/admin/data/bs35odr.html>)
- ♦ [Managing Passwords By Using Password Policies](http://www.novell.com/documentation/dirxml20/admin/data/ampxjj0.html) (<http://www.novell.com/documentation/dirxml20/admin/data/ampxjj0.html>)
- ♦ [Logging and Reporting Using Nsure Audit](http://www.novell.com/documentation/dirxml20/admin/data/botc9uj.html) (<http://www.novell.com/documentation/dirxml20/admin/data/botc9uj.html>)

For information about customizing your implementation:

- ♦ [Policy Builder and Driver Customization Guide \(http://www.novell.com/documentation/dirxml20/policies/data/front.html#bktitle\)](http://www.novell.com/documentation/dirxml20/policies/data/front.html#bktitle)

## C.5 Activating the Bundle Edition

When you apply the Novell ZENworks license key, the Identity Manager Bundle and Integration Modules (Active Directory, NT, and eDirectory drivers) are automatically activated.

If you choose to purchase additional Identity Manager Integration Modules, you need to install the activation credential for those Integration Modules *and* also the credential for the *Nsure Identity Manager Standard Edition* or *Professional Edition*. See [Activating Identity Manager Products Using a Generic Credential \(http://www.novell.com/documentation/dirxml20/admin/data/brph5hb.html\)](http://www.novell.com/documentation/dirxml20/admin/data/brph5hb.html) for more information on activating other Identity Manager products.

### C.5.1 Frequently Asked Questions about Activation

#### **Do I need to install Identity Manager on a specific server?**

Yes. As a Bundle Edition user, you must install Identity Manager on the server where you installed eDirectory. In order for activation to work properly, you must apply the ZENworks license key to that server.

#### **Can I run Identity Manager on a Solaris or AIX Server?**

Not with the Bundle Edition. However, you can still synchronize data held on a these platforms by using the Identity Manager Remote Loader service. The Remote Loader enables synchronization between the DirXML Engine and a remote driver (on the Solaris or AIX server.) See [Setting Up Remote Loaders \(http://www.novell.com/documentation/dirxml20/admin/data/bs35pip.html#bs35pip\)](http://www.novell.com/documentation/dirxml20/admin/data/bs35pip.html#bs35pip) for more information.

In order to run Identity Manager on Solaris or AIX, you need to purchase the *Nsure Identity Manager Standard Edition* or *Professional Edition*.

#### **I purchased an additional Integration Module. Why doesn't it work?**

With your ZENworks purchase, you are entitled to use the Bundle Edition products. If you want to add new Integration Modules, you also need to purchase the *Nsure Identity Manager Standard Edition* or the *Professional Edition*. The Integration Module cannot activate until you purchase and activate the standard or professional edition.

#### **If I purchase a license for *Nsure Identity Manager Standard* or *Professional* edition and a license for an additional Integration Module, do I need to re-install the software?**

No, you just need to install the activation credentials associated with your purchase.

#### **How do I know what's activated?**

For information about how to view currently activated products, see [Viewing Product Activations \(http://www.novell.com/documentation/dirxml20/admin/data/agfhtax.html#agfhtax\)](http://www.novell.com/documentation/dirxml20/admin/data/agfhtax.html#agfhtax).

## C.6 Known Issues

- ♦ In order to implement the End-User Password Self-Service functionality, you must use an iManager 2.0.2 server. For information about these services, see [Password Self-Service \(http://www.novell.com/documentation/dirxml20/admin/data/bqf5d1r.html\)](http://www.novell.com/documentation/dirxml20/admin/data/bqf5d1r.html) in the *Novell Nsure Identity Manager 2.0.1 Administration Guide*.
- ♦ iManager 2.5 task names are slightly different than in the Identity Manager documentation; the following table indicates the differences:

**Table C-1** Differences between iManager 2.0.2 and iManager 2.5 Task Names

| iManager 2.0.2 Task Name    | iManager 2.5 Task Name             |
|-----------------------------|------------------------------------|
| DirXML Management           | DirXML                             |
| Overview                    | DirXML Overview                    |
| DirXML Utilities            | DirXML Utilities                   |
| NDS2NDS Driver Certificates | NDS-to-NDS Driver Certificates     |
| Dataflow                    | Dataflow                           |
| Dataflow Table View         | Dataflow Table View                |
| Design Dataflow             | Design Dataflow                    |
| Version Discovery Tool      | Versions Discovery                 |
| Activation Request          | Request Activation                 |
| Activation Installation     | Install Activation                 |
| Create Driver               | New Driver                         |
| Export Driver               | Export Driver                      |
| Import Driver               | Import Driver                      |
| Create Policy               | New Policy                         |
| Load Sample Objects         | Load Sample Objects                |
| Nsure Audit                 | Auditing and Logging (Nsure Audit) |
| Queries                     | Queries                            |
| Verification                | Verification                       |
| Query Configuration         | Query Options                      |
| Server Configuration        | Logging Server Options             |
| Password Management         | Passwords                          |
| Check Password Status       | Check Password Status              |
| Manage Challenge Sets       | Challenge Sets                     |
| Manage Password Policies    | Password Policies                  |
| Password Synchronization    | Password Synchronization           |
| View Policy Assignment      | Policy Assignments                 |
| Set Universal Password      | Set Universal Password             |
| Configure Email Server      | Email Server Options               |
| Modify Email Templates      | Edit Email Templates               |
| UNIX Profile Management     | UNIX Profiles                      |



# Using Identity Manager 3 Bundle Edition for ZENworks 7 with SP1

# D

Novell® Identity Manager 3 is a data-sharing solution that leverages the Identity Vault to synchronize, transform, and distribute information across applications, databases, and directories.

The Identity Manager 3 Bundle Edition provides licensed synchronization of information (including passwords) held in NT Domains, Active Directory Domains, and eDirectory™ systems. When data from one system changes, Identity Manager detects and propagates these changes to other connected systems based on the business policies you define.

In this document:

- ♦ [Section D.1, “What Am I Entitled to Use?,” on page 573](#)
- ♦ [Section D.2, “System Requirements,” on page 573](#)
- ♦ [Section D.3, “Installation Considerations,” on page 574](#)
- ♦ [Section D.4, “Getting Started,” on page 574](#)
- ♦ [Section D.5, “Activating the Bundle Edition,” on page 575](#)

## D.1 What Am I Entitled to Use?

The Bundle Edition allows you to use the Identity Manager engine and the following Identity Manager drivers:

- ♦ Identity Manager Driver for eDirectory
- ♦ Identity Manager Driver for Active Directory
- ♦ Identity Manager Driver for NT

Other Identity Manager Integration Modules (drivers) are included in the software distribution. You can install and use these additional Integration Modules for 90 days, at which time you must purchase *Novell Identity Manager 3* and the Integration Module you want to use.

The service drivers (Loopback, Manual Task, and Entitlements), and the Identity Manager User Application are not included as part of the license agreement for the Bundle Edition. In order to use these drivers and the application, you must purchase *Identity Manager 3*.

## D.2 System Requirements

- ☐ Novell eDirectory 8.7.3 or 8.8
- ☐ iManager 2.5 or 2.6
- ☐ You can run the Identity Manager server on:
  - ♦ Windows NT (remote loader only)
  - ♦ Windows 2000 or 2003 with the latest Service Pack
  - ♦ NetWare® 6.5 SP3 or later

- ♦ Novell Open Enterprise Server—NetWare or Linux
- ♦ Linux Red Hat AS 3.0
- ♦ SUSE® Linux Enterprise Server 8 or 9

The Bundle Edition does not include support for Solaris or AIX. If you want to run the Identity Manager engine or Integration Modules on these platforms, you must purchase *Identity Manager 3*.

## D.3 Installation Considerations

Novell Identity Manager 3 Bundle Edition contains components that can be installed within your environment on multiple systems and platforms. Depending on your system configuration, you might need to run the installation program several times to install Identity Manager components on the appropriate systems.

In order for the product to be activated, you must apply the ZENworks license key within 90 days. For more information on activation issues, see [Section D.5, “Activating the Bundle Edition,” on page 575](#).

## D.4 Getting Started

The following sections are from the *Novell Identity Manager Administration Guide* and will help you plan, install, and configure your Identity Manager Bundle Edition.

- ♦ Overview (<http://www.novell.com/documentation/idm/install/data/b2m4ol7.html#b2m4ol7>)
- ♦ Planning Your Implementation (<http://www.novell.com/documentation/idm/install/data/anhomxn.html>)
- ♦ Installing Identity Manager (<http://www.novell.com/documentation/idm/install/data/a7c9ie0.html>)
- ♦ Installing Active Directory, NT, and eDirectory Drivers (<http://www.novell.com/documentation/idmdrivers/index.html>)
- ♦ Setting Up a Connected System (<http://www.novell.com/documentation/idm/admin/data/bs35odr.html>)
- ♦ Managing Passwords By Using Password Policies (<http://www.novell.com/documentation/idm/admin/data/an4bz0u.html>)
- ♦ Logging and Reporting Using Novell Audit (<http://www.novell.com/documentation/idm/admin/data/botc9uj.html>)

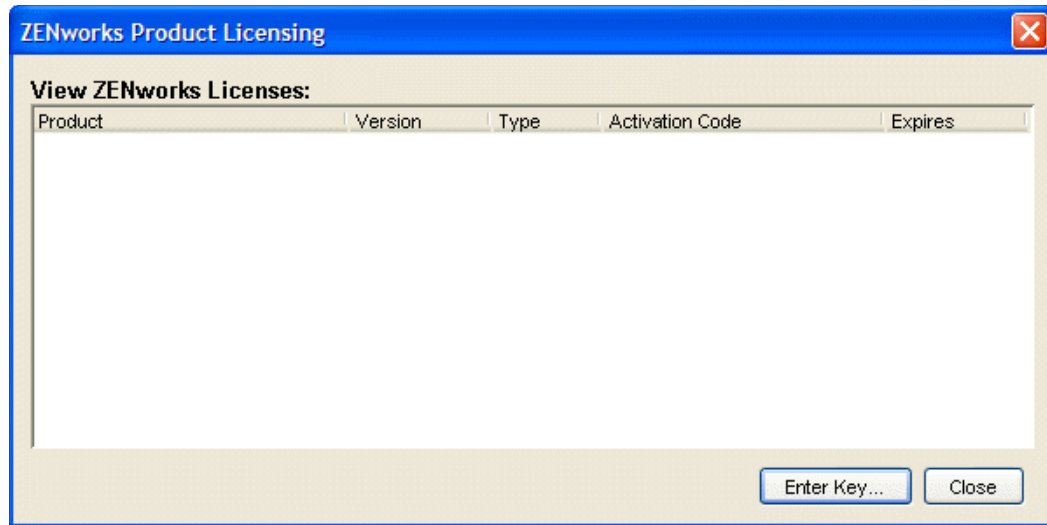
For information about customizing your implementation:

- ♦ Policy Builder and Driver Customization Guide (<http://www.novell.com/documentation/idm/policy/data/front.html>)

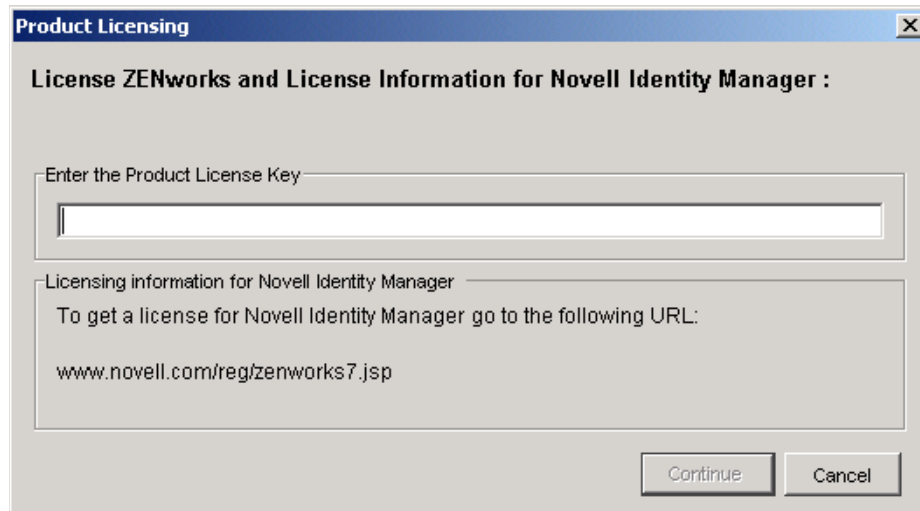
## D.5 Activating the Bundle Edition

In order to activate the Bundle Edition, you must first activate Novell ZENworks.

- 1 In ConsoleOne, click *Tools > Licensing*.



- 2 Select *Enter Key* to enter your ZENworks license key.
- 3 Enter a valid license key in the Product License dialog box, then click *Continue*.



- 4 Use an Internet browser, to go to the [Novell Registration page for IDM 3 on ZENworks \(http://www.novell.com/reg/zenworks7.jsp\)](http://www.novell.com/reg/zenworks7.jsp).
- 5 Log in to your Novell account.
- 6 Enter your ZENworks 7 Desktop Management with Support Pack 1 license key, then click *Submit* to open the Product Registration and Access for IDM 3.

- 7 Click the *License Download* link to download the necessary file for Identity Manager Bundle Edition activation. You can either save the Product Activation Credential file or open the file and copy the contents to your clipboard.

After the file is opened, its content should look similar to the content in the illustration shown below.

---

**IMPORTANT:** Do not edit the contents of the Product Activation Credential file.

---



- 8 Open iManager.
- 9 Choose *Identity Manager Utilities > Install Activation*.
- 10 Select the driver set or browse to a driver set, then click *Next*.
- 11 If the driver set is not associated with a server or is associated with multiple servers, select a server to associate with a driver set, then click *Next*.  
The installation dialog box appears.
- 12 Do one of these steps:
  - ♦ Specify where you saved the Identity Manager Activation Credential, then click *Next*.

or

- ♦ Paste the contents of the Identity Manager Activation Credential into the text area, then click *Next*.

### 13 Click *Finish*.

If you choose to purchase additional Identity Manager Integration Modules, you need to install the activation credential for those Integration Modules *and* also the credential for *Novell Identity Manager 3*. See [Activating Identity Manager Products Using a Generic Credential \(http://www.novell.com/documentation/idm/install/data/brph5hb.html#brph5hb\)](http://www.novell.com/documentation/idm/install/data/brph5hb.html#brph5hb) for more information on activating other Identity Manager products

## D.5.1 Frequently Asked Questions about Activation

### Do I need to Install Identity Manager on a specific server?

Yes. As a Bundle Edition user, you must install Identity Manager on the server where you installed eDirectory. In order for activation to work properly, you must apply the ZENworks license key to that server.

### What version of Identity Manager Bundle Edition can I activate?

With your ZENworks purchase, your activation credential allows you to use the Bundle Edition that shipped with ZENworks 7 (Identity Manager Bundle Edition 2.0.1) or the newer edition that ships with ZENworks 7 SP1 (Identity Manager Bundle Edition 3.0.) The activation credential you receive from the Web site activates both editions.

### Can I run Identity Manager on a Solaris or AIX Server?

Not with the Bundle Edition. However, you can still synchronize data held on a these platforms by using the Identity Manager Remote Loader service. The Remote Loader enables synchronization between the Metadirectory Engine and a remote driver (on the Solaris or AIX server.) See [Setting Up Remote Loaders \(http://www.novell.com/documentation/idm/admin/data/bs35pip.html#bs35pip\)](http://www.novell.com/documentation/idm/admin/data/bs35pip.html#bs35pip) for more information.

In order to run Identity Manager on Solaris or AIX, you need to purchase *Novell Identity Manager 3*.

### I purchased an additional Integration Module. Why doesn't it work?

With your ZENworks purchase, you are entitled to use the Bundle Edition products. If you want to add new Integration Modules, you also need to purchase *Novell Identity Manager 3*. The Integration Module cannot activate until you purchase *Novell Identity Manager 3*.

### If I purchase a license for *Novell Identity Manager* and a license for an additional Integration Module, do I need to re-install the software?

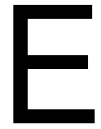
No, you just need to install the activation credentials associated with your purchase. See [Step 8 on page 576](#).

### How do I know what's activated?

For information about how to view currently activated products, see [Viewing Product Activations \(http://www.novell.com/documentation/idm/install/data/agfhtax.html#agfhtax\)](http://www.novell.com/documentation/idm/install/data/agfhtax.html#agfhtax).



# Interoperating with the Novell BorderManager VPN Client



The following sections include a summary of the limitations you can expect to see when you use Novell® ZENworks® 7 Desktop Management and the Novell BorderManager® 3.8 VPN client in the same network environment.

The information is organized into two scenarios:

- ♦ [Section E.1, “Scenario 1: Novell Client and Desktop Management Agent Installed on Workstations,” on page 579](#)
- ♦ [Section E.2, “Scenario 2: Desktop Management Agent Only Installed on Workstations,” on page 580](#)

---

**NOTE:** The information in this section also applies to ZENworks 7 Desktop Management with Support Pack 1.

---

## E.1 Scenario 1: Novell Client and Desktop Management Agent Installed on Workstations

The table below summarizes the limitations you can expect when using ZENworks 7 in the following environment:

- ♦ ZENworks 7 Desktop Management Server is installed in the same eDirectory® tree with BorderManager 3.8.
- ♦ Both the Novell Client™ and the ZENworks 7 Desktop Management Agent are installed on user workstations.

**Table E-1** *Limitations when Both the Client and the Agent Are Installed on Workstations*

| Tested Function                                                                               | ZENworks Behavior or Limitation                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
|-----------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Authentication: The user logs in to the VPN network and the eDirectory tree at the same time. | <ul style="list-style-type: none"><li>♦ All ZENworks policies are distributed to the workstation except those configured for distribution at system startup.</li><li>♦ If users log in to local workstation first and then log in to the VPN network, exhibited behaviors and limitations are identical to an agent-only environment. For more information, see <a href="#">Section E.2, “Scenario 2: Desktop Management Agent Only Installed on Workstations,” on page 580</a>.</li></ul> |

## E.2 Scenario 2: Desktop Management Agent Only Installed on Workstations

The table below summarizes the limitations you can expect when using ZENworks 7 in the following environment:

- ♦ ZENworks 7 Desktop Management Server is installed in the same eDirectory tree with BorderManager 3.8.
- ♦ The ZENworks 7 Desktop Management Agent (no Novell Client) is installed on user workstations.

**Table E-2** *Limitations when the Agent Only is Installed on Workstations*

| Tested Function              | ZENworks Behavior or Limitation                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
|------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Authentication               | <ul style="list-style-type: none"><li>♦ No integration with the VPN client (unlike a Novell Client environment, users must always log in to the desktop first)</li><li>♦ No integration with NetIdentity (the VPN client does not populate NetIdentity secure store with user credentials)</li></ul>                                                                                                                                                                                                                                   |
| Automatic Workstation Import | <ul style="list-style-type: none"><li>♦ Manual registration (<code>zwsreg.exe</code>) is required after the user has used the VPN client to authenticate.</li><li>♦ The <code>zenwsimport</code> DNS name can be configured at the ZENworks Middle Tier Server or in the DNS/hosts file, but the user must be authenticated to the Middle Tier Server in order to use the Middle Tier <code>zenwsimport</code> setting.</li><li>♦ Workstations can be registered on the LAN first and then connected through the VPN client.</li></ul> |



| Tested Function                                                                   | ZENworks Behavior or Limitation                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
|-----------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Distributing user associated policies                                             | <ul style="list-style-type: none"> <li>♦ The Dynamic Local User policy (DLU) fails because the user is required to log in to the workstation before starting the VPN client.</li> <li>♦ The iPrint policy is distributed normally if the policy distribution is configured as a login event or as a scheduled action.</li> <li>♦ The User Extensible policy is distributed normally if the policy distribution is configured as a login event or as a scheduled action. A workstation reboot might be required for some configuration changes to take effect.</li> <li>♦ The Windows Group policy is distributed normally if the policy distribution is configured as a login event or as a scheduled action. A workstation reboot might be required for some configuration changes to take effect.</li> <li>♦ The Remote Control policy is distributed normally.<br/>Remote control does not use the imported Workstation's IP address stored in the Workstation object. BorderManager 3.8 has a unique IP address for the VPN session, and that IP address must be used to remotely control the client. The Workstation object must also be logged in.</li> </ul> |
| Distributing workstation associated policies                                      | <ul style="list-style-type: none"> <li>♦ Agent policies that are configured to distribute with a scheduled action are distributed normally to workstations that must log in locally before authenticating through the VPN client. A workstation reboot might be required for some configuration changes to take effect.</li> <li>♦ The iPrint policy is distributed normally if the policy distribution is configured as a login event or as a scheduled action.</li> <li>♦ The Extensible policy configured to distribute with a scheduled action distributes normally to workstations that must log in locally before authenticating through the VPN client. A workstation reboot might be required for some configuration changes to take effect.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                     |
| Using the Novell Application Launcher™ to distribute user associated applications | <ul style="list-style-type: none"> <li>♦ Distribution requires selecting ZENworks Middle Tier Server Login for authentication, even when user has already successfully logged in using other Middle Tier applications (for example, NetStorage).</li> <li>♦ The Work Online/Offline toggle might not function correctly until authentication through the ZENworks Middle Tier Login function is accomplished.</li> <li>♦ After authentication, the applications are distributed normally.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |

| Tested Function                                                                                                                                                                                                                            | ZENworks Behavior or Limitation                                                                                                                                                                                                                                         |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Using the Novell Application Launcher to distribute workstation associated applications <ul style="list-style-type: none"> <li>◆ MSI applications</li> <li>◆ Simple applications</li> <li>◆ Web applications</li> <li>◆ AOT/AXT</li> </ul> | <ul style="list-style-type: none"> <li>◆ The workstation must be imported manually. (See "Using Zwsreg.exe " for more information.)</li> <li>◆ After Workstation Helper has authenticated, the workstation associated applications are distributed normally.</li> </ul> |

---

**NOTE:** For additional information about using ZENworks Desktop Management with a VPN connection, see TID 10096902 in the [Novell Knowledgebase \(http://support.novell.com/search/kb\\_index.jsp\)](http://support.novell.com/search/kb_index.jsp).

---

# Installation Error Messages

# F

During installation of Novell® ZENworks® 7 Desktop Management components, you might receive an error message if a ZENworks Desktop Management component cannot be installed successfully. This section provides information for resolving any error messages you might receive while installing ZENworks Desktop Management components.

Select the ZENworks Desktop Management component that you are trying to install:

- ♦ “Remote Management Installation Errors” on page 583
- ♦ “Workstation Inventory Installation Errors” on page 587

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**NOTE:** The information in this section also applies to ZENworks 7 Desktop Management with Support Pack 1.

---

## F.1 Remote Management Installation Errors

The following section contains detailed explanations of the error messages you might encounter while installing the Remote Management component:

1110: Unable to create the Wake-On-LAN Configuration property file on the server *server\_name*

1111: Unable to create the filename file on the server *server\_name*

1112: Unable to create WOLENVSET.NCF file on the server *server\_name*

1113: Unable to create Wake-on-Lan Service object for the server *server\_name*

1114: Unable to modify Wake-on-Lan Service object for the server *server\_name*

1116: The install path for Remote Management components on server *server\_name* is invalid

1117: Unable to create Wake-on-LAN as a service on Windows NT/ Windows 2000/ Windows Server 2003 *server\_name*

1118: Unable to create Query.properties on the server *server\_name*

1126: Unable to add startwol.ncf entry in file filename, on the server *server\_name*

1127: Unable to add stopwol.ncf entry in file filename, on the server *server\_name*

1134: Unable to set the Remote Management Server installation path on server *server\_name*

### **1110: Unable to create the Wake-On-LAN Configuration property file on the server *server\_name***

Source: ZENworks Desktop Management; Remote Management installation

Severity: Critical

Explanation: The Installation program creates the *RemoteManagement\_installationpath\zenworks\remmgmt\server\properties\wolconfig.properties* file with the following entries:

```
NDSTree=Novell_eDirectory_tree_name
SingletonPort=65434
LDAPServer=DNS_name_or_IPaddress_of
```

```
the_Wake_on_LAN_server
LDAPPort=LDAP_port_number
```

This error occurs if the Installation program is unable to create the `config.properties` file. Consequently, the Inventory services are not up and running.

Possible Cause: An input-output error occurred while creating the `wolconfig.properties` file.

Action: Follow these steps:

- 1 (Conditional) If `wolconfig.properties` does not exist, manually create the file in the `remotemanagement_installationpath\zenworks\remmgmt\server\properties` directory.

- 2 Add the following entries:

```
NDSTree=Novell_eDirectory_tree_name
SingletonPort=65434
LDAPServer=DNS_name_or_IPaddress_of
the_Wake_on_LAN_server
LDAPPort=LDAP_port_number
```

#### **1111: Unable to create the *filename* file on the server *server\_name***

Source: ZENworks Desktop Management; Remote Management Installation

Severity: Critical

Explanation: The installation program appends entries to the `install_path\zenworks\remmgmt\server\bin\wolsetenv.ini` file on the server.

Possible Cause: An input/output error occurred while copying the file.

Action: Contact [Novell Support \(http://support.novell.com/\)](http://support.novell.com/).

#### **1112: Unable to create WOLENVSET.NCF file on the server *server\_name***

Source: ZENworks Desktop Management; Remote Management Installation

Severity: Critical

Explanation: The installation program creates the `sys:\system\wolenvset.ncf` file on the NetWare<sup>®</sup> Remote Management server. The `envset` `wol_install_dir = Remotemanagement_server_install_path` is added. You can obtain the Remote Management server installation path from the `RMPATH` key in the `sys:\system\zenworks.properties` directory.

Possible Cause: An input/output error occurred while modifying the file.

Action: Follow these steps:

- 1 (Conditional) If the `wolenvset.ncf` file does not exist in the `sys:\system` directory, manually create the file.

- 2 Add the following entry:

```
envset wol_install_dir =  
Remotemanagement_server_installation_path
```

**1113: Unable to create Wake-on-Lan Service object for the server *server\_name***

Source: ZENworks Desktop Management; Remote Management Installation

Severity: Critical

Explanation: The installation program failed to create the Wake-On-LAN service object for the server.

Action: Reinstall the Remote Management component of ZENworks 7 Desktop Management. For more information, see [Chapter 9, "Installing the ZENworks Desktop Management Server,"](#) on page 77.

Action: If the problem persists, contact [Novell Support \(http://support.novell.com/\)](http://support.novell.com/).

**1114: Unable to modify Wake-on-Lan Service object for the server *server\_name***

Source: ZENworks Desktop Management; Remote Management Installation

Severity: Critical

Explanation: The installation program was unable to modify the Wake-on-Lan service object for the server.

Action: Reinstall the Remote Management component of ZENworks 7 Desktop Management. For more information, see [Chapter 9, "Installing the ZENworks Desktop Management Server,"](#) on page 77.

Action: If the problem persists, contact [Novell Support \(http://support.novell.com/\)](http://support.novell.com/).

**1116: The install path for Remote Management components on server *server\_name* is invalid**

Source: ZENworks Desktop Management; Remote Management Installation

Severity: Critical

Explanation: The installation program failed to obtain the path of the Remote Management installation directory.

Action: Check if you have logged in with the Administrator rights to the server from the console where you are running the Remote Management installation.

Action: Reinstall the Remote Management component of ZENworks 7 Desktop Management. For more information, see [Chapter 9, "Installing the ZENworks Desktop Management Server,"](#) on page 77.

Action: If the problem persists, contact [Novell Support \(http://support.novell.com/\)](http://support.novell.com/).

**1117: Unable to create Wake-on-LAN as a service on Windows NT/ Windows 2000/ Windows Server 2003 *server\_name***

Source: ZENworks Desktop Management; Remote Management Installation

Severity: Critical

Possible Cause: The installation program creates the Wake-On-LAN service on Windows 2000/2003 servers. This problem occurs if the Wake-On-LAN service is not created.

Action: Reinstall the Remote Management component of ZENworks 7 Desktop Management. For more information, see [Chapter 9, “Installing the ZENworks Desktop Management Server,” on page 77](#).

Action: If the problem persists, contact [Novell Support \(http://support.novell.com/\)](http://support.novell.com/).

#### **1118: Unable to create Query.properties on the server *server\_name***

Source: ZENworks Desktop Management; Remote Management Installation

Severity: Critical

Explanation: The installation program creates the query.properties file in the *consoleone\_path\bin* directory. If the file does not exist, the *rmver=both* entry is added for the Remote Management installation. The query.properties file already exists if you are installing the Remote Management component of ZENworks 7 Desktop Management over the Remote Management component of ZENworks 7 Server Management.

Possible Cause: An input/output error occurred while modifying the query.properties file.

Action: Modify the query.properties file to contain the *rmver=both* entry.

#### **1126: Unable to add startwol.ncf entry in file *filename*, on the server *server\_name***

Source: ZENworks Desktop Management; Remote Management Installation

Severity: Critical

Explanation: The installation program failed to write the following Wake-On-LAN entries to the *zfdstart.ncf* file:

```
;ZENWORKS WAKEONLAN SETTINGS
startwol.ncf
```

Possible Cause: An input/output error occurred while writing to the *zfdstart.ncf* file.

Action: Add the following entries to the *zfdstart.ncf* file in the *sys:\system* directory:

```
;ZENWORKS WAKEONLAN SETTINGS
startwol.ncf
```

#### **1127: Unable to add stopwol.ncf entry in file *filename*, on the server *server\_name***

Source: ZENworks Desktop Management; Remote Management Installation

Severity: Critical

Explanation: The installation program failed to write the following Wake-On-LAN entries to the *zfdstop.ncf* file:

```
;STOP ZENWORKS WAKEONLAN SERVICES
```

```
stopwol.ncf
```

Possible Cause: An input/output error occurred while writing to the `zfdstop.ncf` file.

Action: Add the following entries to the `zfdstop.ncf` file in the `sys:\system` directory:

```
;STOP ZENWORKS WAKEONLAN SETTINGS  
stopwol.ncf
```

### 1134: Unable to set the Remote Management Server installation path on server `server_name`

Source: ZENworks Desktop Management; Remote Management Installation

Severity: Critical

Explanation: The Remote Management installation updates the `HKEY_LOCAL_MACHINE\software\novell\zenworks\rm\path` registry key with the `RemoteManagement_install_path\remmgmt` value.

Action: Reinstall the Remote Management component of ZENworks 7 Desktop Management. For more information, see [Chapter 9, “Installing the ZENworks Desktop Management Server,”](#) on page 77.

Action: If the problem persists, contact [Novell Support \(http://support.novell.com/\)](http://support.novell.com/).

## F.2 Workstation Inventory Installation Errors

If the Workstation Inventory components installation is not successful, the Installation program logs one of the following error messages in the log files located at:

- ♦ **Installing on NetWare or Windows:** `c:\novell\zfdtemp\pldebuglogs.txt`
- ♦ **Installing on Linux:** `/var/log/InvRMDebug.log`

801: The installation program was unable to rename filename on the server `server_name`. filename may be in use

804: Unable to add the `Startinv.ncf` entry in the filename file on the server `server_name`

807: Unable to assign rights to the `SCANDIR` directory on server `server_name`

812: Unable to create the password for the Service object `Inventory_Service_object_name`

813: Unable to get the volumes on the server `server_name`

814: An internal error occurred while getting the volumes on the server `server_name`

817: An internal error occurred while creating rights for the `scandir` directory on the server `server_name`

819: Unable to create the configuration property file on the server `server_name`

826: Unable to load the `mgmtlbs.ncf` file on the server `server_name`

831: Unable to add the `mgmtlbs.ncf` entry in the `sys\system\autoexec.ncf` file on the server `server_name`

836: The installation program creates a new `mgmtlbs.ncf` file. The installation program was unable to rename the existing `mgmtlbs.ncf` file on the server `server_name`. Rename `mgmtlbs.ncf` before proceeding with the installation

837: Unable to create the `TracerMedia` property file on the server `server_name`

874: Unable to create the Service Manager as a service on Windows NT/ Windows 2000/ Windows Server 2003 server\_name

875: Unable to get the path for the shared directory where the database is installed on server server\_name

876: Unable to create the Sybase service on the Windows NT/ Windows 2000/ Windows Server 2003 server\_name

887: An internal error occurred while creating the database object object\_name on the server server\_name

1051: Unable to write the JRE path to javadir.bat on the server server\_name

1052: Unable to create the filename file on the server server\_name

1053: Unable to get the path for the Share share\_name on the server server\_name

1060: Unable to add the STOPSER \* entry in the filename file for the server server\_name

1061: Unable to add the UNLOAD DBSRV8.NLM entry in the filename on the server server\_name

1066: Unable to assign public rights to ODBC parameters of the Database object database\_object\_name

1071: Input-output error occurred while modifying the existing mgmtlbs.ncf for the server server\_name

1080: Unable to create the Inventory Service object for the server server\_name

1081: Unable to assign supervisor privileges to the Service object service\_object\_name

1082: Unable to assign the Inventory Service object as a trustee of the NCP server server\_name

1084: Unable to initialize zwinstal.dll

1087: Unable to detect the operating system of the workstation where install is running

1088: An internal error occurred while checking for entry in file filename on the server server\_name

1091: Unable to create the zwsenv.ncf file on the server server\_name

1092: Unable to append entries to the zwssrv.cfg file on the server server\_name

1093: Unable to append entries to the zws.properties file on the server server\_name

1094: Unable to modify the Inventory Service object for the server server\_name

1095: Unable to create the invenvset.ncf file on the server server\_name

1097: Failed to modify mgmtlbs.ncf on the server server\_name

1098: Failed to create mgmtlbs.ncf on the server server\_name

1102: Unable to set the Inventory installation path on the server server\_name

1104: Unable to set the ZENworks Web server installation path on the server server\_name

1105: An input-output error occurred while reading the zenworks.properties file, for the server server\_name. The previous installations of the Inventory server could not be detected

1106: Unable to detect a valid database installation on the server server\_name

1107: The install path for Inventory components on server server\_name is invalid

1118: Unable to create query.properties on the server server\_name

1121: Unable to rename the database object old\_database\_object\_name to new\_database\_object\_name, on the server server\_name

1122: Unable to modify the database object on the server server\_name

1123: Failed to update load and unload scripts on the server server\_name

1124: Unable to clean up old Inventory entries from the autoexec.ncf file on the server server\_name

1125: Unable to create the database object database\_object\_name on the server server\_name

1128: Unable to add the ZENworks Web Server entry in file filename, on the server server\_name

1129: Unable to set the ZENworks installation path on server server\_name

1130: Unable to set the Database Engine installation path on server server\_name



1131: Unable to set the Inventory database installation path on the server server\_name

1132: Unable to set the Novell Application Launcher database installation path on server server\_name

1135: The install path for XML Proxy components on the server server\_name is invalid

1137: Unable to add Inventory entries to the load script on the server server\_name

1138: Unable to add Inventory entries to the unload script on the server server\_name

1139: Unable to add database entries to the load script on the server server\_name

1140: Unable to add database entries to the unload script on the server server\_name

1143: Unable to retrieve the path where Inventory was installed for server server\_name

1148: Unable to create ZENworks Web Server as a service on Windows NT/2000 server server\_name

1149: Unable to add the ZENworks Web Server path to invenvset.bat on the server server\_name

1149: Unable to add the ZENworks Web Server path to invenvset.bat on the server server\_name

1150: Unable to add ZENworks Web Server entry to the load script on server\_name

1151: Unable to add ZENworks Web Server entry to the unload script on server\_name

1152: Unable to get the typed DN for the object Novell\_eDirectory\_object

1153: Unable to add Inventory entries to the password.txt file on the server server\_name

1154: Unable to add the password.txt file path entry to zws.properties file on the server server\_name

1159: Unable to add entry entry to file filename on the server server\_name

1160: Unable to replace entry1 with entry2 in the file filename

1161: A previous installation of Policy and Distribution service has been detected on server server\_name. Install cannot start Inventory service automatically. Start Policy and Distribution services and then the Inventory Service

1162: An incomplete installation of the Inventory server was detected on server server\_name. Please reinstall the Inventory server

1163: Unable to start the ZENworks Web Server on server server\_name. For more information, see the error message documentation

1164: Unable to start the Inventory service on server server\_name. For more information, see the error message documentation

1166: Unable to create zwssearch.ncf file on the server server\_name

1167: Unable to add a search path to the ZENworks Web Server on server server\_name

1168: Unable to write version information to the registry on the server server\_name

1169: Unable to remove the old Inventory entries from file filename, on server server\_name

1170: Unable to add entries to the zenworks.properties file, on server server\_name

1171: Unable to add the ZENworks Web Server entries to the file filename, on the server server\_name

2701: Unable to create the zwsstart.ncf file on server server\_name

2702: Unable to remove the entries from the load script on server server\_name

2703: Unable to remove the entries from the unload script on server server\_name

2704: Unable to append entries to zws.ncf file on the server server\_name

2707: Unable to create dbconfig.properties file on the server server\_name

2708: Unable to assign rights to the directory directory\_name on server server\_name

2717: The installation program creates a new mgmtddb.sh file. The installation program was unable to rename the existing mgmtddb.sh file on the server server\_name. Rename mgmtddb.sh before proceeding with the installation

2718: Input-output error occurred while modifying the existing mgmtlbs.sh for the server  
server\_name

The install path is too long

Failed to create share\_name share on server\_name at directory\_path

**801: The installation program was unable to rename *filename* on the server  
server\_name. *filename* may be in use**

Source: ZENworks Desktop Management; Workstation Inventory installation on  
NetWare or Windows servers

Severity: Informational

Explanation: If the Installation program detects a previous installation on the machine, it  
renames the files. This error occurs if the Installation program is unable to  
rename the files.

Action: None. The Installation program proceeds without renaming the files.

**804: Unable to add the Startinv.ncf entry in the *filename* file on the server  
server\_name**

Source: ZENworks Desktop Management; Workstation Inventory installation on  
NetWare servers

Severity: Critical

Explanation: On NetWare servers, the Installation program adds the following entries to  
sys:\system\autoexec.ncf file on the Inventory server:

```
SEARCH ADD ZEN_web_server_installation_path  
zws.ncf  
SEARCH ADD sys:\java\njclv2\bin  
;ZENworks Inventory Settings  
startinv.ncf
```

This error occurs if the Installation program is unable to add these entries in  
the autoexec.ncf file.

Possible Cause: The autoexec.ncf is in use or locked by some other application or does  
not exist.

Action: Follow these steps:

**1** (Conditional) If the autoexec.ncf file does not exist, manually create  
the file in the sys:\system directory.

**2** Add the following entries to the file:

```
SEARCH ADD ZEN_web_server_installation_path  
zws.ncf  
SEARCH ADD sys:\java\njclv2\bin  
;ZENworks Inventory Settings  
startinv.ncf
```

**807: Unable to assign rights to the SCANDIR directory on server *server\_name***

Source: ZENworks Desktop Management; Workstation Inventory installation on Windows servers

Severity: Critical

Explanation: The installation program was unable to assign rights to the \scandir directory.

Possible Cause: You have not logged into the Windows server as an administrator or with the equivalent administrator rights.

Action: Ensure that you have logged into to the Windows server as an administrator or with the equivalent administrator rights. For more information, see

Possible Cause: The installation program is not running from a Windows workstation or server.

Action: Ensure that the recommended installation workstation requirements for Windows workstation or server are met. For more information, see “[User Workstation Requirements](#)” on page 69.

Action: Ensure that the network is up and running.

Action: Reinstall Workstation Inventory. For more information, see [Section 41.2, “Reinstalling Workstation Inventory,”](#) on page 513.

Action: If the problem persists, contact [Novell Support \(http://support.novell.com\)](http://support.novell.com).

**812: Unable to create the password for the Service object  
*Inventory\_Service\_object\_name***

Source: ZENworks Desktop Management; Workstation Inventory installation on NetWare or Windows servers

Severity: Critical

Action: Reinstall the Inventory server. For more information, see [Section 41.2, “Reinstalling Workstation Inventory,”](#) on page 513.

Action: If the problem persists, contact [Novell Support \(http://support.novell.com\)](http://support.novell.com).

**813: Unable to get the volumes on the server *server\_name***

Source: ZENworks Desktop Management; Workstation Inventory installation on NetWare or Windows servers

Severity: Important

Explanation: If Sybase has already been installed on the server, the Installation program displays the volumes of the server that you specify. This error occurs if the Installation program is unable to display the volumes.

Action: None. The Installation program considers this to be a fresh installation and proceeds.

**814: An internal error occurred while getting the volumes on the server *server\_name***

Source: ZENworks Desktop Management; Workstation Inventory installation on NetWare or Windows servers

Severity: Important

Explanation: If Sybase has already been installed on the server, the installation program displays the volumes of the server that you specify. This error occurs if the installation program is unable to display the volumes.

Action: None. The Installation program considers this to be a fresh installation and proceeds.

**817: An internal error occurred while creating rights for the scandir directory on the server *server\_name***

Source: ZENworks Desktop Management; Workstation Inventory installation on NetWare servers

Severity: Critical

Explanation: The Installation program assigns the [Root] as a trustee of the \scandir directory with Create, Erase, and Write rights. This error occurs if the Installation program is unable to assign these rights to \scandir.

Action: Ensure that you have logged in to the server as an administrator or with the equivalent administrator rights.

Action: Reinstall Workstation Inventory. For more information, see [Section 41.2, “Reinstalling Workstation Inventory,”](#) on page 513.

Action: If the problem persists, contact [Novell Support \(http://support.novell.com\)](http://support.novell.com).

**819: Unable to create the configuration property file on the server *server\_name***

Source: ZENworks Desktop Management; Workstation Inventory installation on NetWare or Windows servers

Severity: Critical

Explanation: The Installation program creates the *Inventoryserver\_installationpath\zenworks\inv\server\wminv\properties\config.properties* file with the following entries:

```
NDSTree=Novell_eDirectory_tree_name
InventoryServiceDN=DN_of_Inventory_Service_object
SingletonPort=65433
StoreRolledupAuditData=false
LDAPServer=DNS_name_of_the_Inventory_server
LDAPPort=LDAP_port_number
```

This error occurs if the Installation program is unable to create the *config.properties* file. Consequently, the Inventory services will not be up.

Possible Cause: An input/output error occurred while creating the *config.properties* file.

Action: Follow these steps:

- 1 (Conditional) If *config.properties* does not exist, manually create the file in the

```
inventoryserver_installationpath\zenworks\inv\server\wminv\properties directory.
```

**2** Add the following entries:

```
NDSTree=Novell_eDirectory_tree_name
InventoryServiceDN=DN_of_Inventory_Service_object
SingletonPort=65433
StoreRolledupAuditData=false
LDAPServer=DNS_name_of_the_Inventory_server
LDAPPort=LDAP_port_number
```

**826: Unable to load the mgmt dbs.ncf file on the server *server\_name***

Source: ZENworks Desktop Management; Workstation Inventory installation on NetWare servers

Severity: Important

Explanation: The Installation program is unable to start Sybase after the installation.

Action: Manually load the mgmt dbs.ncf file by entering  
sys:\system\mgmt dbs.ncf at the NetWare console prompt.

**831: Unable to add the mgmt dbs.ncf entry in the sys\system\autoexec.ncf file on the server *server\_name***

Source: ZENworks Desktop Management; Workstation Inventory installation on NetWare servers

Severity: Critical

Possible Cause: The autoexec.ncf file is locked by some other application or does not exist.

Action: Follow these steps:

**1** (Conditional) If the autoexec.ncf file does not exist, create the file in  
sys:\system.

**2** Add the following entries to the file:

```
;ZENworks Database Settings
sys:\system\mgmt dbs.ncf
```

**836: The installation program creates a new mgmt dbs.ncf file. The installation program was unable to rename the existing mgmt dbs.ncf file on the server *server\_name*. Rename mgmt dbs.ncf before proceeding with the installation**

Source: ZENworks Desktop Management; Workstation Inventory installation on NetWare servers

Severity: Critical

Explanation: The Installation program tries to back up the mgmt dbs.ncf file before making changes to it. This error occurs if the backup fails.

Action: Reinstall the Inventory database. For more information, see [Section 41.2.1, "Reinstalling Workstation Inventory on NetWare and Windows Servers,"](#) on page 513.

**837: Unable to create the TracerMedia property file on the server *server\_name***

Source: ZENworks Desktop Management; Workstation Inventory installation on NetWare or Windows servers

Severity: Critical

Explanation: The Installation program creates `tracermedia.properties` in the `inventory_server_installaton_path\zenworks\inv\server\wminv\ properties` directory. This error occurs if the Installation program fails to create the file.

Possible Cause: An input-output error occurred while creating the `tracermedia.properties` file.

Action: Create the `tracermedia.properties` file in the `inventory_server_installaton_path\zenworks\inv\server\wminv\ properties` directory with the following contents:

```
com.novell.utility.trace.TraceMediumConsole = ON;
INFORMATION

com.novell.utility.trace.TraceMediumFile = ON; ALL;
Inventory_server_logs_path

com.novell.utility.trace.TraceMediumWindow = OFF;
VERBOSE
```

**874: Unable to create the Service Manager as a service on Windows NT/ Windows 2000/ Windows Server 2003 *server\_name***

Source: ZENworks Desktop Management; Workstation Inventory installation on Windows servers

Severity: Critical

Explanation: The Installation program creates the Service Manager as a service on the Windows Inventory server. This error occurs if the installation is not successful.

Action: Reinstall Workstation Inventory. For more information, see [Section 41.2, “Reinstalling Workstation Inventory,” on page 513](#).

Action: If the problem persists, contact [Novell Support \(http://support.novell.com\)](http://support.novell.com).

**875: Unable to get the path for the shared directory where the database is installed on server *server\_name***

Source: ZENworks Desktop Management; Workstation Inventory installation on Windows servers

Severity: Critical

Possible Cause: You have not logged into the Windows server as an administrator or with equivalent administrator rights.

Action: Ensure that you log into the Windows server as an administrator or with the equivalent administrator rights.

**876: Unable to create the Sybase service on the Windows NT/ Windows 2000/ Windows Server 2003 *server\_name***

Source: ZENworks Desktop Management; Workstation Inventory installation on Windows servers

Severity: Critical

Action: Reinstall the Inventory database. For more information, see [Section 41.2](#), “Reinstalling Workstation Inventory,” on page 513.

Action: If the problem persists, contact [Novell Support \(http://support.novell.com\)](http://support.novell.com).

**887: An internal error occurred while creating the database object *object\_name* on the server *server\_name***

Source: ZENworks Desktop Management; Workstation Inventory installation on NetWare or Windows servers

Severity: Critical

Explanation: The Installation program creates a database object for Sybase and configures the properties of the object. This error occurs if the Installation program is unable to create the object.

Action: Contact [Novell Support \(http://support.novell.com\)](http://support.novell.com).

**1051: Unable to write the JRE path to javadir.bat on the server *server\_name***

Source: ZENworks Desktop Management; Workstation Inventory installation on Windows servers

Severity: Critical

Explanation: The Installation program creates javadir.bat in *inventory\_server\_installation\_directory\zenworks\server\wminv\bin* directory with the following entry:

```
set java_dir=installation_path\Inv\jre
```

This error occurs if the Installation program fails to create javadir.bat file with the specified contents.

Action: Create javadir.bat in *inventory\_server\_installation\_directory\zenworks\server\wminv\bin* directory with the following entry:

```
set java_dir=installation_path\Inv\jre
```

**1052: Unable to create the *filename* file on the server *server\_name***

Source: ZENworks Desktop Management; Workstation Inventory installation on Windows servers

Severity: Critical

Explanation: The Installation program creates javadir.bat in the *inventory\_server\_installation\_path\zenworks\server\wminv\bin* directory with the following entry:

```
set java_dir=installation_path\Inv\jre
```

This error occurs if the Installation program is unable to create javadir.bat.

Possible Cause: An input/output error occurred while creating javadir.bat.

Action: Create javadir.bat in the  
inventory\_server\_installation\_path\zenworks\server\w  
minv\bin directory with the following entry:

```
set java_dir=installation_path\Inv\jre
```

### **1053: Unable to get the path for the Share *share\_name* on the server *server\_name***

Source: ZENworks Desktop Management; Workstation Inventory, Inventory Database, or Proxy Service installation on NetWare servers

Severity: Critical

Possible Cause: An error occurred while retrieving the path where the component is installed.

Action: Ensure that you have logged in to the server as an administrator or with the equivalent administrator rights.

Action: Reinstall Workstation Inventory. For more information, see [Section 41.2, "Reinstalling Workstation Inventory," on page 513.](#)

### **1060: Unable to add the STOPSER \* entry in the *filename* file for the server *server\_name***

Source: ZENworks Desktop Management; Workstation Inventory installation on NetWare servers

Severity: Critical

Explanation: The Installation program was unable to add entries in invstop.ncf to stop the Inventory services.

Possible Cause: An input-output error occurred while adding the entries to invstop.ncf.

Action: Follow these steps:

- 1** (Conditional) If invstop.ncf does not exist, create it in the sys:\system directory.

- 2** Add the following entries to the file:

```
;ZENworks Inventory Settings  
;-----Stop Inventory services and the Inventory  
database-----  
StopSer *
```

---

**IMPORTANT:** If invstop.ncf already exists, add the specified entries before the database entry, unload dbsrv8.nlm.

---



**1061: Unable to add the UNLOAD DBSRV8.NLM entry in the *filename* on the server *server\_name***

Source: ZENworks Desktop Management; Workstation Inventory installation on NetWare servers

Severity: Critical

Explanation: The Installation program is unable to add the entries in `invstop.ncf` to stop the Sybase database.

Possible Cause: An input-output error occurred while adding the entries to `invstop.ncf`.

Action: In the `sys:\system\invstop.ncf` file, add the following entries:

```
;ZENworks Database Settings
Unload dbsrv8.nlm
```

**1066: Unable to assign public rights to ODBC parameters of the Database object *database\_object\_name***

Source: ZENworks Desktop Management; Workstation Inventory installation on NetWare or Windows servers

Severity: Warning

Explanation: An internal error has occurred during the configuration of the Database object.

Action: Follow these steps:

- 1 In ConsoleOne®, right-click the database object, then click *Properties*.
- 2 Click *NDS Rights > Trustees of this object > Add Trustees*.
- 3 Select *Public*, then click *OK*.
- 4 Click *Add Property > zendbODBCConnectionParameters > OK*.
- 5 Click *Add Property > zendbODBCDriverFileName > OK*.
- 6 Click *Add Property > zendbODBCDataSourceName > OK*.
- 7 Click *OK*.
- 8 Click *Apply*, then click *Close*.

**1071: Input-output error occurred while modifying the existing `mgmt dbs.ncf` for the server *server\_name***

Source: ZENworks Desktop Management; Workstation Inventory installation on NetWare servers

Severity: Critical

Explanation: The Installation program is unable to modify the existing `mgmt dbs.ncf` file.

Possible Cause: An input-output error occurred while modifying the existing `mgmt dbs.ncf` file.

Action: Reinstall the Inventory database. For more information, see [Section 41.2, "Reinstalling Workstation Inventory," on page 513](#).

Action: If the problem persists, contact [Novell Support \(http://support.novell.com\)](http://support.novell.com).

**1080: Unable to create the Inventory Service object for the server *server\_name***

Source: ZENworks Desktop Management; Workstation Inventory installation on NetWare or Windows servers

Severity: Critical

Explanation: The Installation program is unable to create the Inventory Service object for the server.

Action: Reinstall the Inventory server. For more information, see [Section 41.2, “Reinstalling Workstation Inventory,”](#) on page 513.

Action: If the problem persists, contact [Novell Support \(http://support.novell.com\)](http://support.novell.com).

**1081: Unable to assign supervisor privileges to the Service object *service\_object\_name***

Source: ZENworks Desktop Management; Workstation Inventory installation on NetWare or Windows servers

Severity: Critical

Explanation: The Installation program is unable to assign the Inventory Service object entry rights to itself with supervisor privileges.

Action: Assign the supervisor rights to the Inventory Service object:

- 1 In ConsoleOne, right-click the Inventory Service object, then click *Trustees of this Object*.
- 2 Click the *Add Trustee* button, then select the Inventory Service object.
- 3 In the *Property* list, select *[Entry Rights]*.
- 4 In the *Rights* list, click the *Supervisor* check box.
- 5 Click *OK*.
- 6 Click *Apply > Close*.

**1082: Unable to assign the Inventory Service object as a trustee of the NCP server *server\_name***

Source: ZENworks Desktop Management; Workstation Inventory installation on NetWare or Windows servers

Severity: Critical

Explanation: The Inventory Service object is made a trustee of the NCP™ server with Read and Compare privileges given for *[All Attribute Rights]*.

Action: Assign the Inventory Service object as a trustee of the NCP server:

- 1 In ConsoleOne, right-click the NCP server object, then click *Trustees of this Object*.
- 2 Click the *Add Trustee* button.
- 3 Select the Inventory Service object.
- 4 From the *Property* list, select *[All Attributes Rights]*.
- 5 From the *Rights* list, click the *Read* and *Compare* check boxes.

- 6 Click *OK*.
- 7 Click *Apply*, then click *Close*.

#### **1084: Unable to initialize zwinstal.dll**

Source: ZENworks Desktop Management; Workstation Inventory installation on NetWare or Windows servers

Severity: Critical

Action: Reinstall Workstation Inventory. For more information, see [Section 41.2, “Reinstalling Workstation Inventory,”](#) on page 513.

Action: If the problem persists, contact [Novell Support \(http://support.novell.com\)](http://support.novell.com).

#### **1087: Unable to detect the operating system of the workstation where install is running**

Source: ZENworks Desktop Management; Workstation Inventory installation on Windows servers

Severity: Critical

Explanation: The ZENworks 7 Installation program is unable to detect the operating system of the workstation where the Installation program is running.

Action: Ensure that the recommended installation workstation requirements for Windows workstation are met. For more information, see [Chapter 7, “User Workstation Requirements,”](#) on page 69.

Action: Reinstall Workstation Inventory. For more information, see [Section 41.2, “Reinstalling Workstation Inventory,”](#) on page 513.

Action: If the problem persists, contact [Novell Support \(http://support.novell.com\)](http://support.novell.com).

#### **1088: An internal error occurred while checking for entry in file *filename* on the server *server\_name***

Source: ZENworks Desktop Management; Workstation Inventory installation on NetWare or Windows servers

Severity: Critical

Action: Reinstall Workstation Inventory. For more information, see [Section 41.2, “Reinstalling Workstation Inventory,”](#) on page 513.

Action: If the problem persists, contact [Novell Support \(http://support.novell.com\)](http://support.novell.com).

#### **1091: Unable to create the zwsenv.ncf file on the server *server\_name***

Source: ZENworks Desktop Management; Workstation Inventory installation on NetWare servers

Severity: Critical

Explanation: The Installation program creates `zwsenv.ncf` in the `\zws` directory with the following entry:

```
envset  
zwsinstallpath=ZENworks_Web_Server_installation_path
```

This error occurs if the Installation program fails to create the `zwsenv.ncf` in the `\zws` directory.

Action: Follow these steps:

- 1** To get the ZENworks Web Server installation path, note the value of the `ZWSPath` key in the `sys:\system\zenworks.properties` file.
- 2** Create `zwsenv.ncf` in the ZWS directory with the following entry:  
`envset`  
`zwsinstallpath=ZENworks_Web_Server_installation_path`

### **1092: Unable to append entries to the `zwssrv.cfg` file on the server `server_name`**

Source: ZENworks Desktop Management; Workstation Inventory installation on Windows servers

Severity: Critical

Explanation: The Installation program appends the following entries to the `zenworks_web_server_installation_directory\bin\zwssrv.cfg` file:

```
Computer=Windows_machine_name

CLASSPATH=ZWS_installation_directory\ZenWebServer.jar;
ZWS_installation_directory\xmlrpcext.jar;
ZWS_installation_directory\xmlrpcservlet.jar;
ZWS_installation_directory\jcert.jar;
ZWS_installation_directory\jnet.jar;
ZWS_installation_directory\jdom.jar;
ZWS_installation_directory\jsse.jar;
ZWS_installation_directory\xmlrpc.jar;
ZWS_installation_directory\servlet.jar;
ZWS_installation_directory\xerces.jar;

BinDirectory=ZWS_installation_directory\bin

WorkingDirectory=ZWS_installation_directory\bin
```

This error occurs if the installation program fails to append the entries.

Possible Cause: An input/output error occurred while appending to the file.

Action: Follow these steps:

- 1** Note the ZENworks Web Server installation path.
  - 1a** Invoke REGEDIT.
  - 1b** In `HKEY_LOCAL_MACHINE\SOFTWARE\NOVELL\ZENWORKS`, read the value of the `ZWSPath` attribute.
- 2** Add the following entries to `zenworks_web_server_installation_directory\bin\zwssrv.cfg`:  
`Computer=Windows_machine_name`

```

CLASSPATH=ZWS_installation_directory\ZenWebServer
.jar;
ZWS_installation_directory\xmlrpcext.jar;
ZWS_installation_directory\xmlrpcservlet.jar;
ZWS_installation_directory\jcert.jar;
ZWS_installation_directory\jnet.jar;
ZWS_installation_directory\jdom.jar;
ZWS_installation_directory\jsse.jar;
ZWS_installation_directory\xmlrpc.jar;
ZWS_installation_directory\servlet.jar;
ZWS_installation_directory\xerces.jar;

BinDirectory=ZWS_installation_directory\bin
WorkingDirectory=ZWS_installation_directory\bin

```

### **1093: Unable to append entries to the zws.properties file on the server *server\_name***

Source: ZENworks Desktop Management; Workstation Inventory installation on NetWare servers

Severity: Critical

Explanation: The Installation program is unable to edit the `zws.properties` file.

Possible Cause: An input/output error occurred while adding entries to the `zws.properties` file.

Action: Reinstall Workstation Inventory. For more information, see [Section 41.2, “Reinstalling Workstation Inventory,”](#) on page 513.

Action: If the problem persists, contact [Novell Support \(http://support.novell.com\)](http://support.novell.com).

### **1094: Unable to modify the Inventory Service object for the server *server\_name***

Source: ZENworks Desktop Management; Workstation Inventory installation on NetWare or Windows servers

Severity: Critical

Explanation: The Installation program is unable to modify the existing Inventory Service object.

Action: Reinstall Workstation Inventory. For more information, see [Section 41.2, “Reinstalling Workstation Inventory,”](#) on page 513.

Action: If the problem persists, contact [Novell Support \(http://support.novell.com\)](http://support.novell.com).

### **1095: Unable to create the invenvset.ncf file on the server *server\_name***

Source: ZENworks Desktop Management; Workstation Inventory installation on NetWare servers

Severity: Critical

Explanation: The Installation program creates the `invenvset.ncf` file in the `sys:\system` directory of a NetWare Inventory server with the following contents:

```
envset inv_install_dir=  
Inventory_server_installation_path  
  
envset zws_install_dir=ZWS_installation_path
```

Action: Follow these steps:

- 1** To get the Inventory server installation path, read the value of the `InvSrvpath` key in the `sys:\system\zenworks.properties` file.
- 2** To get the ZENworks Web Server installation path, read the value of the `ZWSPath` key in the `sys:\system\zenworks.properties` file.
- 3** Create `invenvset.ncf` in the `sys:\system` directory with the following entries:

```
envset inv_install_dir=  
Inventory_server_installation_path  
  
envset zws_install_dir=ZWS_installation_path
```

#### **1097: Failed to modify mgmt dbs.ncf on the server *server\_name***

Source: ZENworks Desktop Management; Workstation Inventory installation on NetWare servers

Severity: Critical

Possible Cause: An input/output error occurred while editing `mgmt dbs.ncf`.

Action: Reinstall the Inventory database. For more information, see [Section 41.2, “Reinstalling Workstation Inventory,” on page 513](#).

Action: If the problem persists, contact [Novell Support \(http://support.novell.com\)](http://support.novell.com).

#### **1098: Failed to create mgmt dbs.ncf on the server *server\_name***

Source: ZENworks Desktop Management; Workstation Inventory installation on NetWare servers

Severity: Critical

Possible Cause: An input/output error occurred while creating `mgmt dbs.ncf`.

Action: Reinstall the Inventory database. For more information, see [Section 41.2, “Reinstalling Workstation Inventory,” on page 513](#).

Action: If the problem persists, contact [Novell Support \(http://support.novell.com\)](http://support.novell.com).

#### **1102: Unable to set the Inventory installation path on the server *server\_name***

Source: ZENworks Desktop Management; Workstation Inventory installation on Windows servers

Severity: Critical

Possible Cause: The Installation program was unable to update the Inventory server install path in the registry.

Action: Reinstall the Inventory server. For more information, see [Section 41.2, “Reinstalling Workstation Inventory,” on page 513](#).

Action: If the problem persists, contact [Novell Support \(http://support.novell.com\)](http://support.novell.com).

**1104: Unable to set the ZENworks Web server installation path on the server `server_name`**

Source: ZENworks Desktop Management; Workstation Inventory installation on Windows servers

Severity: Critical

Possible Cause: The Installation program is unable to update the ZWS server installation path in the registry.

Action: Reinstall the Inventory server. For more information, see [Section 41.2, “Reinstalling Workstation Inventory,” on page 513](#).

Action: If the problem persists, contact [Novell Support \(http://support.novell.com\)](http://support.novell.com).

**1105: An input-output error occurred while reading the `zenworks.properties` file, for the server `server_name`. The previous installations of the Inventory server could not be detected**

Source: ZENworks Desktop Management; Workstation Inventory installation on NetWare or Linux servers

Severity: Informational

Explanation: On NetWare: The Installation program reads the `sys:\system\zenworks.properties` file to detect if Inventory has been previously installed.

On Linux: The Installation program reads the `/etc/opt/novell/zenworks/zenworks.properties` file to detect if Inventory has been previously installed

Action: None.

**1106: Unable to detect a valid database installation on the server `server_name`**

Source: ZENworks Desktop Management; Workstation Inventory installation on Windows servers

Severity: Informational

Possible Cause: Unable to detect the location of the database engine from the registry.

Action: None. The Installation program considers this to be a fresh installation and proceeds.

**1107: The install path for Inventory components on server `server_name` is invalid**

Source: ZENworks Desktop Management; Workstation Inventory installation on NetWare or Windows servers

Severity: Critical

Action: Reinstall the Inventory server. For more information, see [Section 41.2, “Reinstalling Workstation Inventory,” on page 513](#).

Action: If the problem persists, contact [Novell Support \(http://support.novell.com\)](http://support.novell.com).

### 1118: Unable to create query.properties on the server *server\_name*

Source: ZENworks Desktop Management; Workstation Inventory installation on NetWare or Windows servers

Severity: Critical

Explanation: The ZENworks 7 Desktop Management installation program creates `query.properties` file in `consoleone_installation_path\bin` with the entry, `insver=zfd`. If Workstation Inventory is installed over the Server Inventory component of ZENworks 7 Server Management, the value of `insver` is changed to “both.”

Possible Cause: An input/output error occurred while creating or updating the `query.properties` file

Action: If the `query.properties` file already exists, ensure that the value of `insver` is correct.

Action: If the `query.properties` file does not exist, manually create the file in `consoleone_installation_path\bin` directory with the following content:

- ♦ If you are installing Workstation Inventory on a fresh setup, enter `insver=zfd`.
- ♦ If you are installing Workstation Inventory over the Server Inventory component of ZENworks 7 Server Management, enter `insver=both`.

### 1121: Unable to rename the database object *old\_database\_object\_name* to *new\_database\_object\_name*, on the server *server\_name*

Source: ZENworks Desktop Management; Workstation Inventory installation on NetWare or Windows servers

Severity: Critical

Explanation: If you are installing the Workstation Inventory component of ZENworks 7 Desktop Management over ZENworks for Desktops 4.x Inventory, the Installation program renames the ZENworks for Desktops 4.x database object to `server_name_invDatabase`. This error occurs if the ZENworks 7 Desktop Management installation program is unable to rename the database object.

Action: Reinstall the Inventory database. For more information, see [Section 41.2, “Reinstalling Workstation Inventory,”](#) on page 513.

Action: If the problem persists, contact [Novell Support \(http://support.novell.com\)](http://support.novell.com).

### 1122: Unable to modify the database object on the server *server\_name*

Source: ZENworks Desktop Management; Workstation Inventory installation on NetWare or Windows servers

Severity: Critical

Explanation: The Installation program is unable to modify the existing database object on the server.

Action: Reinstall the Inventory database. For more information, see [Section 41.2, “Reinstalling Workstation Inventory,”](#) on page 513.



Action: If the problem persists, contact [Novell Support \(http://support.novell.com\)](http://support.novell.com).

**1123: Failed to update load and unload scripts on the server *server\_name***

Source: ZENworks Desktop Management; Workstation Inventory installation on NetWare servers

Severity: Critical

Explanation: The installation program adds entries in the load script and the unload script for the NetWare cluster server. This error occurs when the installation program is unable add the entries to these scripts.

Action: During installation, if you chose to install either the Inventory server or the Database, reinstall the selected component. If you chose to install both the Inventory server and the Database, reinstall both the components. For more information, see [Section 41.2, "Reinstalling Workstation Inventory," on page 513](#).

**1124: Unable to clean up old Inventory entries from the autoexec.ncf file on the server *server\_name***

Source: ZENworks Desktop Management; Workstation Inventory installation on NetWare servers

Severity: Important

Explanation: The Installation program deletes the following entries from `sys:\system\autoexec.ncf` file on the server: `sybase.ncf`, `mgmt dbs.ncf`, `gatherer.ncf`, `master.ncf`, and `storer.ncf`.

This error occurs if the Installation program is unable to delete the specified entries.

Action: Manually delete the following entries from `autoexec.ncf`: `sybase.ncf`, `mgmt dbs.ncf`, `gatherer.ncf`, `master.ncf`, and `storer.ncf`.

**1125: Unable to create the database object *database\_object\_name* on the server *server\_name***

Source: ZENworks Desktop Management; Workstation Inventory installation on NetWare or Windows servers

Severity: Critical

Action: Reinstall the Inventory database. For more information, see [Section 41.2, "Reinstalling Workstation Inventory," on page 513](#).

Action: If the problem persists, contact [Novell Support \(http://support.novell.com\)](http://support.novell.com).

**1128: Unable to add the ZENworks Web Server entry in file *filename*, on the server *server\_name***

Source: ZENworks Desktop Management; Workstation Inventory installation on NetWare servers

Severity: Important

Explanation: The Installation program was unable to add entries in the `sys:\system\autoexec.ncf` file to launch ZENworks Web Server.

Action: In the `sys:\system\autoexec.ncf` file, add the following entries:

```
SEARCH ADD zenworks_web_server_installation_path
zenworks_installation_volume\zenworks\zfs.ncf
```

#### **1129: Unable to set the ZENworks installation path on server *server\_name***

Source: ZENworks Desktop Management; Workstation Inventory installation on Windows servers

Severity: Critical

Explanation: The Installation program failed to set the ZENworks path in the registry.

Action: Reinstall Workstation Inventory. For more information, see [Section 41.2, “Reinstalling Workstation Inventory,” on page 513](#).

Action: If the problem persists, contact [Novell Support \(http://support.novell.com\)](http://support.novell.com).

#### **1130: Unable to set the Database Engine installation path on server *server\_name***

Source: ZENworks Desktop Management; Workstation Inventory installation on Windows servers

Severity: Critical

Action: Reinstall Workstation Inventory. For more information, see [Section 41.2, “Reinstalling Workstation Inventory,” on page 513](#).

Action: If the problem persists, contact [Novell Support \(http://support.novell.com\)](http://support.novell.com).

#### **1131: Unable to set the Inventory database installation path on the server *server\_name***

Source: ZENworks Desktop Management; Workstation Inventory installation on Windows servers

Severity: Critical

Explanation: The Installation program is unable to set the Inventory database installation path in the registry.

Action: Reinstall the Inventory database. For more information, see [Section 41.2, “Reinstalling Workstation Inventory,” on page 513](#).

Action: If the problem persists, contact [Novell Support \(http://support.novell.com\)](http://support.novell.com).

#### **1132: Unable to set the Novell Application Launcher database installation path on server *server\_name***

Source: ZENworks Desktop Management; Inventory database installation on Windows servers

Severity: Critical

Explanation: The ZENworks 7 Desktop Management installation program updates the `HKEY_LOCAL_MACHINE\software\novell\zenworks\naldbpath` registry key with the `database_installation_path\database` value.

Possible Cause: You have not logged into the Windows server as an administrator or with the equivalent administrator rights.

Action: Ensure that you have logged into to the Windows server as an administrator or with the equivalent administrator rights.

Action: Manually create the  
HKEY\_LOCAL\_MACHINE\software\novell\zenworks\  
naldbpath registry key with the *database\_installation\_path*\database value.

**1135: The install path for XML Proxy components on the server *server\_name* is invalid**

Source: ZENworks Desktop Management; Workstation Inventory installation on NetWare or Windows servers

Severity: Critical

Explanation: The Installation program failed to get a valid path to install XML Proxy Service.

Action: Reinstall the XML Proxy service. For more information, see [Section 41.2, “Reinstalling Workstation Inventory,” on page 513.](#)

Action: If the problem persists, contact [Novell Support \(http://support.novell.com\)](http://support.novell.com).

**1137: Unable to add Inventory entries to the load script on the server *server\_name***

Source: ZENworks Desktop Management; Workstation Inventory installation on NetWare servers

Severity: Critical

Explanation: The installation program makes the following entries in the load script after the database entries:

```
SEARCH ADD zws_installation_path

invc1st:\zenworks\zfs.ncf
SEARCH ADD SYS:\JAVA\NJCLV2\BIN
;ZENworks Inventory Settings
StartInv.ncf
```

This error occurs if the installation program is unable to add the specified entries in the load script.

Action: In the load script, add the following entries after the database entries:

```
SEARCH ADD zws_installation_path

invc1st:\zenworks\zfs.ncf
SEARCH ADD SYS:\JAVA\NJCLV2\BIN
;ZENworks Inventory Settings
StartInv.ncf
```

**1138: Unable to add Inventory entries to the unload script on the server *server\_name***

Source: ZENworks Desktop Management; Workstation Inventory installation on NetWare servers

Severity: Critical

Explanation: The installation program adds the following entries to unload scripts before the `del secondary ipaddress` line:

```
java -killzenWSInv  
delay 8  
java -killzfsexit
```

This error occurs if the installation program is unable to add the specified entries to the unload scripts.

Action: In the unload script, add the following entries after the Inventory entries (if any) but before the `"del secondary ipaddress"` entry:

```
java -killzenWSInv  
delay 8  
java -killzfsexit
```

### **1139: Unable to add database entries to the load script on the server *server\_name***

Source: ZENworks Desktop Management; Workstation Inventory installation on NetWare servers

Severity: Critical

Explanation: The installation program adds the following entries to the load script:

```
;ZENworks Database Settings  
sys:\system\mgmt dbs.ncf
```

This error occurs if the installation program is unable to add the specified entries to the load scripts.

Action: In the load script, add the following entries before the Inventory entries:

```
;ZENworks Database Settings  
sys:\system\mgmt dbs.ncf
```

### **1140: Unable to add database entries to the unload script on the server *server\_name***

Source: ZENworks Desktop Management; Workstation Inventory installation on NetWare servers

Severity: Critical

Explanation: The installation program adds the following entry to the unload scripts:

```
unload dbsrv8.nlm <<y
```

This error occurs if the installation program is unable to add the specified entry to the unload scripts.

Action: In the unload scripts, add the following entry after the Inventory entries and before the `"del secondary ipaddress"` entry:

```
unload dbsrv8.nlm <<y
```

**1143: Unable to retrieve the path where Inventory was installed for server  
*server\_name***

Source: ZENworks Desktop Management; Workstation Inventory installation on NetWare or Windows servers

Severity: Important

Explanation: The ZENworks 7 Desktop Management installation program is unable to detect the path where the earlier versions of ZENworks has been installed.

Action: Reinstall Workstation Inventory. For more information, see [Section 41.2, "Reinstalling Workstation Inventory,"](#) on page 513.

Action: If the problem persists, contact [Novell Support \(http://support.novell.com\)](http://support.novell.com).

**1148: Unable to create ZENworks Web Server as a service on Windows NT/2000  
*server server\_name***

Source: ZENworks Desktop Management; Workstation Inventory installation on Windows servers

Severity: Critical

Action: Reinstall Workstation Inventory. For more information, see [Section 41.2, "Reinstalling Workstation Inventory,"](#) on page 513.

Action: If the problem persists, contact [Novell Support \(http://support.novell.com\)](http://support.novell.com).

**1149: Unable to add the ZENworks Web Server path to invenvset.bat on the server  
*server\_name***

Source: ZENworks Desktop Management; Workstation Inventory installation on Windows servers

Severity: Critical

Explanation: The Installation program creates `invenvset.bat` in `inventory_server_installation_path\zenworks\inv\server\wminv\bin` directory with the following entry:

```
set zws_install_dir=ZWS_installation_path
```

This error occurs if the Installation program is unable to retrieve the ZWS installation path from the registry.

Action: In the `invenvset.bat` file, manually add the following entry:

```
set zws_install_dir=ZWS_installation_path
```

To get the zws installation path:

- 1 Invoke REGEDIT.
- 2 In `HKEY_LOCAL_MACHINE\software\novell\zenworks`, read the value of the `ZWSPath` attribute.

**1150: Unable to add ZENworks Web Server entry to the load script on *server\_name***

Source: ZENworks Desktop Management; Workstation Inventory installation on NetWare servers

Severity: Critical

Explanation: The Installation program adds the following entries to the load script:

```
SEARCH ADD ZWS_installation_path  
ZWS.ncf
```

This error occurs if the Installation program is unable to add the specified entries to the load script.

Action: Add the following entries to the load script:

```
SEARCH ADD ZWS_installation_path  
ZWS.ncf
```

### **1151: Unable to add ZENworks Web Server entry to the unload script on *server\_name***

Source: ZENworks Desktop Management; Workstation Inventory installation on NetWare servers

Severity: Critical

Explanation: The Installation program adds the following entry to the unload scripts:

```
java -killzwsexit
```

This error occurs if the Installation program is unable to add the specified entry to the unload scripts.

Action: Manually add the specified entry to the unload scripts before the `del secondary ipaddress` entry.

### **1152: Unable to get the typed DN for the object *Novell\_eDirectory\_object***

Source: ZENworks Desktop Management; Inventory server or Inventory database installation on Linux servers

Severity: Critical

Possible Cause: An internal error occurred while getting the typed DN for the Novell eDirectory™ object.

Action: Contact [Novell Support \(http://support.novell.com\)](http://support.novell.com).

### **1153: Unable to add Inventory entries to the password.txt file on the server *server\_name***

Source: ZENworks Desktop Management; Workstation Inventory installation NetWare or Windows servers

Severity: Critical

Explanation: During the XML Proxy service installation, the Installation program creates or updates the `password.txt` file in the ZWS installation directory with the following entry:

```
inventory=novell
```

Possible Cause: An input/output error occurred while creating or updating the `password.txt` file.

Action: Follow these steps:

- 1 (Conditional) If `password.txt` does not exist, create it in the ZENworks Web Server installation directory.
- 2 Add the following entry to the file:  
`inventory=novell`

**1154: Unable to add the password.txt file path entry to zws.properties file on the server *server\_name***

Source: ZENworks Desktop Management; Workstation Inventory installation on NetWare or Windows servers

Severity: Critical

Explanation: The installation adds the following entry in  
`zenworks_web_server_installation_directory\zws.properties`.  
`passwordfile=path_of_password.txt`

This error occurs if the Installation program is unable to create the `zws.properties` file with the specified entries.

Possible Cause: An input/output error occurred while creating the `zws.properties` file.

Action: Follow these steps:

- 1 (Conditional) If `zws.properties` does not exist, create it in the ZENworks Web Server installation directory.
- 2 Add the following entry to the file:  
`passwordFile=path_of_password.txt`

**1159: Unable to add entry entry to file filename on the server *server\_name***

Source: ZENworks Desktop Management; Workstation Inventory installation on NetWare or Windows servers

Severity: Critical

Possible Cause: An input/output error occurred while adding the `InvStop.ncf` entry in `sys:\system\zfdstop.ncf`.

Action: Manually add the `InvStop.ncf` entry in `sys:\system\zfdstop.ncf`, if the entry does not exist.

**1160: Unable to replace entry1 with entry2 in the file filename**

Source: ZENworks Desktop Management; Proxy Service installation on NetWare or Windows servers

Severity: Critical

Explanation: During the reinstallation of the Proxy Service, the installation program replaces the proxy port value in the `zws.properties` file with the new value. This error occurs if the Installation program is unable to replace the proxy port value with the new value.

Action: In the `zws_installation_directory\zws.properties` file, manually enter the new value of the proxy port.

**1161: A previous installation of Policy and Distribution service has been detected on server `server_name`. Install cannot start Inventory service automatically. Start Policy and Distribution services and then the Inventory Service**

Source: ZENworks Desktop Management; Standalone preconfiguration on NetWare and Windows servers

Severity: Informational

Explanation: If you choose the Standalone preconfiguration during the ZENworks 7 installation, the installation program configures for a Standalone server and automatically starts the Inventory and ZENworks Web Server services. But if Policy and Distribution services of ZENworks 7 Server Management has been already installed, the ZENworks 7 installation program does not automatically start the Inventory and the ZENworks Web Server services.

Action: You must manually start the Policy and Distribution services before starting the Inventory services. For more information on how to start the Policy and Distribution services, see [ZENworks 7 documentation Web site \(http://www.novell.com/documentation/beta/zenworks7/\)](http://www.novell.com/documentation/beta/zenworks7/).

**1162: An incomplete installation of the Inventory server was detected on server `server_name`. Please reinstall the Inventory server**

Source: ZENworks Desktop Management; Standalone preconfiguration on NetWare and Windows servers

Severity: Critical

Explanation: The ZENworks 7 installation program searches for the ZWS path in `zenworks.properties` before launching the ZWS service. This error occurs when the installation program fails to find this path.

Action: Reinstall Workstation Inventory. For more information, see [Section 41.2, "Reinstalling Workstation Inventory," on page 513](#).

**1163: Unable to start the ZENworks Web Server on server `server_name`. For more information, see the error message documentation**

Source: ZENworks Desktop Management; Standalone preconfiguration on NetWare servers

Severity: Critical

Explanation: The ZENworks 7 installation program failed to start ZENworks Web Server service.

Action: Manually run `sys:\system\zws.ncf` on the server.

**1164: Unable to start the Inventory service on server `server_name`. For more information, see the error message documentation**

Source: ZENworks Desktop Management; Standalone preconfiguration on NetWare servers



Severity: Important

Explanation: The ZENworks 7 installation program failed to start the Inventory services

Action: Manually run `sys:\system\startinv.ncf` on the server.

**1166: Unable to create zwssearch.ncf file on the server *server\_name***

Source: ZENworks Desktop Management; Standalone preconfiguration on NetWare servers

Severity: Important

Explanation: The ZENworks 7 installation program creates the `sys:\system\zwssearch.ncf` file on the server with the entry  
`SEARCH ADD ZENworks_Web_Server_installation_path.`

Action: Manually create the `sys:\system\zwssearch.ncf` file on the server.

**1167: Unable to add a search path to the ZENworks Web Server on server *server\_name***

Source: ZENworks Desktop Management; Workstation Inventory or Proxy Service installation on NetWare servers

Severity: Important

Explanation: The ZENworks 7 installation program is unable to launch `sys:\system\zwssearch.ncf` on the server.

Action: Manually run `sys:\system\zwssearch.ncf` on the server. This automatically adds the search path to the ZENworks Web Server.

**1168: Unable to write version information to the registry on the server *server\_name***

Source: ZENworks Desktop Management; Workstation Inventory installation on NetWare and Windows servers

Severity: Critical

Explanation: The ZENworks 7 installation program failed to write the version information to the registry.

Action: Reinstall Workstation Inventory. For more information, see [Section 41.2, "Reinstalling Workstation Inventory,"](#) on page 513.

Action: If the problem persists, contact [Novell Support \(http://support.novell.com\)](http://support.novell.com).

**1169: Unable to remove the old Inventory entries from file *filename*, on server *server\_name***

Source: ZENworks Desktop Management; Sybase Inventory database installation on NetWare servers

Severity: Important

Explanation: If you are upgrading from ZENworks for Desktops 4.x to ZENworks 7 Desktop Management, the ZENworks 7 installation program deletes ZENworks for Desktops 4.x Inventory entries.

This error occurs if the ZENworks 7 installation program fails to remove the ZENworks for Desktops 4.x Inventory entries.

Action: Reinstall Workstation Inventory. For more information, see [Section 41.2, “Reinstalling Workstation Inventory,” on page 513](#).

Action: If the problem persists, contact [Novell Support \(http://support.novell.com\)](http://support.novell.com).

**1170: Unable to add entries to the zenworks.properties file, on server *server\_name***

Source: ZENworks Desktop Management; Workstation Inventory installation on NetWare servers

Severity: Critical

Explanation: The ZENworks 7 installation program failed to write the version information and the installation path to the zenworks.properties file.

Action: Reinstall Workstation Inventory. For more information, see [Section 41.2, “Reinstalling Workstation Inventory,” on page 513](#).

Action: If the problem persists, contact [Novell Support \(http://support.novell.com\)](http://support.novell.com).

**1171: Unable to add the ZENworks Web Server entries to the file *filename*, on the server *server\_name***

Source: ZENworks Desktop Management; Workstation Inventory installation on NetWare and Windows

Severity: Critical

Explanation: This error occurs if the installation fails to add the ZENworks Web Server entries to the `invenv.ncf` file for NetWare and Windows.

Possible Cause: An input/output error has occurred while modifying the file.

Action: Do the following:

On NetWare; add the following entry, if it is not already present, in the `invenv.ncf` file:

```
envset  
tmppath=$tmppath;$zws_install_dir\xmlpcentRes.jar
```

On Windows; add the following entry, if it is not already present, in the `inventory_install_path\wminv\bin\invenv.bat` file:

```
tmppath=%tmppath%;%zws_install_dir%\xmlpcentRes.jar
```

**2701: Unable to create the zwsstart.ncf file on server *server\_name***

Source: ZENworks Desktop Management; Workstation Inventory or Proxy Service installation on NetWare servers

Severity: Critical

Explanation: The installation program creates the `sys:\system\zwsstart.ncf` file to launch the ZWS Web server. This error occurs if the installation program fails to create the `zwsstart.ncf` file.

Possible Cause: An input-output error occurred while creating the `zwsstart.ncf` file.

Action: Follow these steps:

- 1 Note the value of the ZWSPath key in the `sys:\system\zenworks.properties` file to get the ZENworks Web Server installation path.
- 2 (Conditional) If the `zwsstart.ncf` does not exist, create the file in the `sys:\system` directory.
- 3 Add the following entries to the file:  
`zenworks_web_server_installation_path\zwsenv.ncf`  
`zenworks_web_server_installation_path\zws\zws.ncf`

#### **2702: Unable to remove the entries from the load script on server *server\_name***

Source: ZENworks Desktop Management; Workstation Inventory database or Proxy Service installation on NetWare servers

Severity: Critical

Possible Cause: If you are installing ZENworks 7 Desktop Management over a previous version of ZENworks for Servers or ZENworks for Desktops, the installation program cleans up the entries from the load scripts. This error occurs if the installation fails to clean up the entries from the load script.

Action: Contact [Novell Support \(http://support.novell.com\)](http://support.novell.com).

#### **2703: Unable to remove the entries from the unload script on server *server\_name***

Source: ZENworks Desktop Management; Workstation Inventory database or Proxy Service installation on NetWare servers

Severity: Critical

Possible Cause: If you are installing ZENworks 7 Desktop Management over a previous version of ZENworks for Servers or ZENworks for Desktops, the installation program cleans up the entries from the unload scripts. This error occurs if the installation fails to clean up the entries from the unload scripts.

Action: Using ConsoleOne, remove the `dbsrv8.nlm` entry from the unload script.

#### **2704: Unable to append entries to `zws.ncf` file on the server *server\_name***

Source: ZENworks Desktop Management; Inventory Server or Proxy Service installation on NetWare or Windows servers

Severity: Critical

Explanation: This error occurs if the ZENworks 7 Desktop Management installation fails to add the ZEN loader entries to `zfs.ncf`.

Possible Cause: An input/output error has occurred while modifying `zfs.ncf`.

Action: Reinstall the Inventory server and the Inventory Proxy server (XML Proxy) components of ZENworks 7 Desktop Management. For more information, see [Chapter 9, "Installing the ZENworks Desktop Management Server," on page 77](#).

### 2707: Unable to create dbconfig.properties file on the server *server\_name*

Source: ZENworks Desktop Management; Inventory Server or Proxy Service installation on NetWare or Windows servers

Severity: Important

Explanation: This error occurs if the installation fails to add the ZENworks Web Server entries to the `invenv.ncf` file.

Possible Cause: An input/output error has occurred while modifying the file.

Action: Ensure that the following files exist:

- ♦ `invconfig.properties` in the `inventory_database_volume\zenworks\database\inventory` directory.
- ♦ `nalconfig.properties` in the `nal_database_volume\zenworks\database\nal` directory.

If the files are not present, manually create them.

- ♦ `invconfig.properties` with the following entry:  
`DBObjectDN=DN of the Inventory database object in eDirectory`
- ♦ `nalconfig.properties` with the following entry:  
`DBObjectDN=DN of the NAL database object in eDirectory`

### 2708: Unable to assign rights to the directory *directory\_name* on server *server\_name*

Source: ZENworks Desktop Management; Workstation Inventory installation on Windows servers

Severity: Critical

Explanation: The Installation program was unable to assign rights to `scandir` or `dictdir` directories.

Possible Cause: You have not logged into the Windows server as an administrator or with the equivalent administrator rights.

Action: Ensure that you have logged into to the Windows server as an administrator or with the equivalent administrator rights.

Possible Cause: The Installation program is not running from a Windows workstation or server.

Action: Ensure that the recommended installation workstation requirements for Windows workstation or server are met. For more information, see “[User Workstation Requirements](#)” on page 69.

Action: Ensure that the network is up and running.

Action: Do the following:

- 1 Stop the Inventory service.

**2** Assign rights to `scandir` or `dictdir` directories.

- ♦ **Scandir:** Share the `inventory_installation_drive\zenworks\inv\scandir` directory as “ScanDir” and assign the Create rights to everyone.
- ♦ **Dictdir:** Share the `inventory_installation_drive\zenworks\inv\dictdir` directory as “DictDir” and assign the Full rights to everyone.

**3** Start the Inventory service.

Action: If the problem persists, contact [Novell Support \(http://support.novell.com\)](http://support.novell.com).

**2717: The installation program creates a new mgmtlbs.sh file. The installation program was unable to rename the existing mgmtlbs.sh file on the server `server_name`. Rename mgmtlbs.sh before proceeding with the installation**

Source: ZENworks Desktop Management; Workstation Inventory installation on Linux servers

Severity: Critical

Explanation: The Installation program tries to back up the `mgmtlbs.sh` file before making changes to it. This error occurs if the backup fails.

Action: Reinstall the Inventory database. For more information, see [Section 41.2.2, “Reinstalling the Inventory Server or Inventory Database on Linux,” on page 515](#).

**2718: Input-output error occurred while modifying the existing mgmtlbs.sh for the server `server_name`**

Source: ZENworks Desktop Management; Workstation Inventory installation on Linux servers

Severity: Critical

Explanation: The Installation program is unable to modify the existing `mgmtlbs.sh` file.

Possible Cause: An input/output error occurred while modifying the existing `mgmtlbs.sh` file.

Action: Reinstall the Inventory database. For more information, see [Section 41.2.2, “Reinstalling the Inventory Server or Inventory Database on Linux,” on page 515](#).

Action: If the problem persists, contact [Novell Support \(http://support.novell.com\)](http://support.novell.com).

**The install path is too long**

Source: ZENworks Desktop Management; Workstation Inventory installation on NetWare and Windows servers

Severity: Critical

Action: Ensure that the characters specified for the installation path do not exceed 169 characters.

**Failed to create *share\_name* share on *server\_name* at *directory\_path***

Source: ZENworks Desktop Management; Workstation Inventory installation on Windows servers

Severity: Critical

Possible Cause: The machine where you want to create the share cannot be reached.

Action: Ensure that the machine can be reached. Ping the machine to check the connectivity.

Action: Try to access any other share on the machine through Windows Explorer.

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- ♦ [Section G.3, “Brett McLaughlin & Jason Hunter License,” on page 620](#)

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# Configuring Desktop Management Services for Startup on a Linux Server



After you install the Novell® ZENworks® 7 Desktop Management Server on a SUSE® Linux Enterprise Server (SLES) 9 Support Pack 1, SLES 10 server (ZENworks 7 Desktop Management with SP1 only), or Novell Open Enterprise Server (OES Linux) 1.0, several system services should be enabled and running.

You can determine installed Novell services by entering the following command at the bash prompt:

```
ls /etc/init.d/novell*
```

The command returns a list of the system services something like this:

```
/etc/init.d/novell-httpstk  
/etc/init.d/novell-tftp  
/etc/init.d/novell-zdm-inv  
/etc/init.d/novell-idsd  
/etc/init.d/novell-tomcat4  
/etc/init.d/novell-zdm-sybase  
/etc/init.d/novell-ipsmd  
/etc/init.d/novell-xregd  
/etc/init.d/novell-zdm-wol  
/etc/init.d/novell-proxydhcp  
/etc/init.d/novell-xsrvd  
/etc/init.d/novell-zfs  
/etc/init.d/novell-smrd  
/etc/init.d/novell-zdm-aws  
/etc/init.d/novell-zmgprebootpolicy
```

Linux operating systems utilize runlevels to determine the services that should be running and to allow specific work to be done on the system. For example, runlevel 1 is designated single-user mode without networking and is used for critical system maintenance and troubleshooting. Runlevel 3 is multi-user text mode. Runlevel 5 is multi-user graphical mode.

You can configure different runlevels to run a specific set of services. Each runlevel is configured to start its specified services when starting and to shut down its services when switching to a different runlevel.

---

**NOTE:** We recommend that you configure ZENworks Desktop Management services (daemons) to start at runlevels 3 and 5.

---

## chkconfig Commands

- ♦ To configure any service to automatically start when you boot the server, run the following command:

```
#chkconfig service_name on
```

- ♦ To make sure that a service does not start when you boot the server, run the following command:

```
# chkconfig service_name off
```

- ♦ To Check if a service is on in the current runlevel, run the following command:

```
# chkconfig service_name
```

- ♦ To check a service's configuration for every runlevel, run the following command:

```
#chkconfig -l service_name
```

- ♦ To turn on a service in runlevels three and five, run the following command:

```
# chkconfig service_name 35
```

## chkconfig Examples

The following example demonstrates the commands for turning off the novell-proxydhcp service and then determining its configuration for all runlevels:

```
chkconfig novell-proxydhcp off
chkconfig -l novell-proxydhcp
novell-proxydhcp      0:off  1:off  2:off  3:off  4:off  5:off  6:off
```

The next example demonstrates the commands for turning on the novell-proxydhcp service and then determining its configuration for all runlevels:

```
chkconfig novell-proxydhcp on
chkconfig -l novell-proxydhcp
novell-proxydhcp      0:off  1:off  2:off  3:on   4:off  5:on   6:off
```

## YaST Runlevel Editor

YaST offers a robust and easy to use runlevel service configuration tool. Access the tool at YaST > System > Runlevel Editor. Within the tool, turn services on or off by selecting the service and then selecting the Enable/Disable buttons.

Selecting expert mode lets you configure the state of a service in each runlevel.

For example, to use the YaST runlevel editor to configure the novell-proxydhcp service to start in runlevels three and five only, use the following steps:

- 1 Select YaST > System > Runlevel Editor.
- 2 Select the Expert Mode radio button.
- 3 In the services list, select novell-proxydhcp.
- 4 Use the check boxes to select runlevel 3 and runlevel 5. Deselect all other runlevels.
- 5 Save changes and exit.

---

**NOTE:** Some information in this section was borrowed from a Novell CoolSolutions article, “[Runlevels in SUSE Linux \(http://www.novell.com/coolsolutions/trench/14811.html\)](http://www.novell.com/coolsolutions/trench/14811.html),” by Aaron Gresko.

---

# Documentation Updates

# M

This section contains information on documentation content changes that have been made in the *Installation* guide since the initial release of Novell® ZENworks® 7 Desktop Management (August 26, 2005). The information will help you to keep current on updates to the documentation.

All changes that are noted in this section were also made in the documentation. The documentation is provided on the Web in two formats: HTML and PDF. The HTML and PDF documentation are both kept up-to-date with the documentation changes listed in this section.

The documentation update information is grouped according to the date the changes were published. Within a dated section, the changes are alphabetically listed by the names of the main table of contents sections for ZENworks 7 Desktop Management.

If you need to know whether a copy of the PDF documentation you are using is the most recent, the PDF document contains the date it was published on the front title page.

The documentation was updated on the following dates:

- ♦ Section M.1, “July 27, 2007,” on page 633
- ♦ Section M.2, “June 15, 2007,” on page 634
- ♦ Section M.3, “February 9, 2007,” on page 634
- ♦ Section M.4, “January 2, 2007,” on page 635
- ♦ Section M.5, “October 30, 2006,” on page 636
- ♦ Section M.6, “July 14, 2006 (Support Pack 1),” on page 638
- ♦ Section M.7, “February 28, 2006,” on page 645
- ♦ Section M.8, “February 6, 2006,” on page 647
- ♦ Section M.9, “December 23, 2005,” on page 648
- ♦ Section M.10, “December 9, 2005,” on page 649
- ♦ Section M.11, “October 25, 2005,” on page 649
- ♦ Section M.12, “September 30, 2005,” on page 650

## M.1 July 27, 2007

Updates were made to the following sections. The changes are explained below.

### M.1.1 Prerequisites for Installing the ZENworks Middle Tier Server

The following changes were made in this section:

| Location                                                                                  | Change                                                                                                                                                                                                                  |
|-------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Table 6-1 in Section 6.2, "ZENworks Middle Tier Server Hardware Requirements," on page 63 | Deleted the row in the table of supported server platforms that indicated support for SLES 10. This had been added accidentally; Novell does not support the ZENworks Middle Tier Server installed on a SLES 10 server. |

## M.2 June 15, 2007

Updates were made to the following sections. The changes are explained below.

- ♦ Section M.2.1, "Prerequisites for Installing the ZENworks Middle Tier Server," on page 634

### M.2.1 Prerequisites for Installing the ZENworks Middle Tier Server

The following changes were made in this section:

| Location                                                                     | Change                                                                                                                                                                                                                  |
|------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Section 6.3, "ZENworks Middle Tier Server Software Requirements," on page 64 | Deleted the row in the table of supported server platforms that indicated support for SLES 10. This had been added accidentally; Novell does not support the ZENworks Middle Tier Server installed on a SLES 10 server. |

## M.3 February 9, 2007

Updates were made to the following sections. The changes are explained below.

- ♦ Section M.3.1, "Installing and Configuring the Desktop Management Agent," on page 634
- ♦ Section M.3.2, "Installing the ZENworks Middle Tier Server," on page 634

### M.3.1 Installing and Configuring the Desktop Management Agent

The following changes were made in this section:

| Location                                                                     | Change                                                                                                                                                                             |
|------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Section 12.5.1, "Prerequisites for Using the Agent Distributor," on page 149 | Modified this section to clarify the prerequisites for a Windows XP workstation where the administrator wants to use the Agent Distributor to deploy the Desktop Management Agent. |

### M.3.2 Installing the ZENworks Middle Tier Server

The following changes were made in this section:

| Location                                                                                         | Change                                                                                                                                               |
|--------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------|
| Section 10.3.1, “Proxy User Rights Required for Middle Tier Installation and Login,” on page 127 | Added clarification to the steps and to the table to better explain how rights are granted for Middle Tier installation and login.                   |
| Section 10.3.2, “Required Rights for NSAdmin Access,” on page 128                                | Added this section to explain how rights are added for user access and login to the NSAdmin utility (used for administering the Middle Tier Server). |

## M.4 January 2, 2007

Updates were made to the following sections. The changes are explained below.

- ♦ Section M.4.1, “Interoperability with Other Novell Products,” on page 635
- ♦ Section M.4.2, “Prerequisites for Installing the ZENworks Middle Tier Server,” on page 635
- ♦ Section M.4.3, “Upgrading from ZENworks for Desktops 4.x,” on page 635

### M.4.1 Interoperability with Other Novell Products

The following changes were made in this section:

| Location                                                             | Change                                                                                    |
|----------------------------------------------------------------------|-------------------------------------------------------------------------------------------|
| Section 39.5, “Interoperability with Novell NetStorage,” on page 496 | Added this section to explain the limitations of interoperability with Novell NetStorage. |

### M.4.2 Prerequisites for Installing the ZENworks Middle Tier Server

The following changes were made in this section:

| Location                                                           | Change                                                                                                              |
|--------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------|
| Section 6.1, “ZENworks Middle Tier Server Limitations,” on page 61 | Added a bullet item explaining the incompatibility of ZENworks 7 Middle Tier Server with SP1 and Novell NetStorage. |

### M.4.3 Upgrading from ZENworks for Desktops 4.x

The following changes were made in this section:

| Location                                                                | Change                                                                                                                                           |
|-------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------|
| Section 30.6, “Upgrading ZENworks for Desktop 4.x Servers,” on page 402 | Added a note to “Completing the Workstation Management Upgrade” on page 409 to indicate a change of Group Policy behavior caused by the upgrade. |

## M.5 October 30, 2006

Updates were made to the following sections. The changes are explained below.

- ♦ Section M.5.1, “Appendix B: Installing in a Novell Cluster Services Environment,” on page 636
- ♦ Section M.5.2, “Appendix L: Configuring Desktop Management Services for Startup on a Linux Server,” on page 636
- ♦ Section M.5.3, “Installing RPMs and Changing Configuration Values,” on page 636
- ♦ Section M.5.4, “Interoperability with Other Novell Products,” on page 637
- ♦ Section M.5.5, “Reconfiguring Installed RPMs,” on page 637
- ♦ Section M.5.6, “Upgrading to Support Pack 1 Using Server Software Packages,” on page 637
- ♦ Section M.5.7, “What’s New in ZENworks 7 Desktop Management,” on page 637

### M.5.1 Appendix B: Installing in a Novell Cluster Services Environment

The following changes were made in this section:

| Location                             | Change                                                                                                                                                                                                                                                                                                                                             |
|--------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Section B.1, “Overview,” on page 533 | Added statements clarifying that Support Pack 1 supports installing Desktop Management Services on OES Linux clusters. Also added a statement that ZENworks 7 Desktop Management with SP1 does not support installing in a mixed clustering environment consisting of Novell Cluster Services on NetWare and Novell Cluster Services on OES Linux. |

### M.5.2 Appendix L: Configuring Desktop Management Services for Startup on a Linux Server

The following changes were made in this section:

| Location                                                                                         | Change                                                                                                           |
|--------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------|
| Appendix L, “Configuring Desktop Management Services for Startup on a Linux Server,” on page 631 | Added this section to explain how to change runlevels for ZENworks Desktop Management services on Linux servers. |

### M.5.3 Installing RPMs and Changing Configuration Values

The following changes were made in this section:

| Location                                                            | Change                            |
|---------------------------------------------------------------------|-----------------------------------|
| Section 24.1, “Running an RPM Installation or Upgrade,” on page 329 | Corrected an error in the syntax. |



## M.5.4 Interoperability with Other Novell Products

The following changes were made in this section:

| Location                                                         | Change                                                                                                                 |
|------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------|
| Section 39.2, "Interoperability with Novell iChain," on page 495 | Changed the TID reference (10092443 to 3287432) to accommodate a change in the Novell Support TID numbering reference. |

## M.5.5 Reconfiguring Installed RPMs

The following changes were made in this section:

| Location                                                                     | Change                                                                                                                                         |
|------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------|
| Chapter 24, "Installing RPMs and Changing Configuration Values," on page 329 | Renamed this section and moved the RPM installation information into Chapter 35, "Upgrading to Support Pack 1 by Running an RPM," on page 469. |

## M.5.6 Upgrading to Support Pack 1 Using Server Software Packages

The following changes were made in this section:

| Location                                                                 | Change                                                                                                                                                                                                                                                                                                             |
|--------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Section 34.4.1, "Upgrading with a Distribution," on page 450             | Because it doesn't matter which is executed first by the Distribution, the Inventory or Wake-on-LAN process, information has been added concerning combining the two start CPKs into one Distribution, and the two stop CPKs into another Distribution, instead of creating single Distributions for each of them. |
| Chapter 35, "Upgrading to Support Pack 1 by Running an RPM," on page 469 | This is a new section describing how to upgrade to SP1 using RPMs.                                                                                                                                                                                                                                                 |

## M.5.7 What's New in ZENworks 7 Desktop Management

The following changes were made in this section:

| Location                                                          | Change                                                                                                    |
|-------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------|
| Section 28.5.5, "Workstation Inventory Enhancements," on page 360 | Modified the paragraph describing the database management support for the Workstation Inventory database. |

## M.6 July 14, 2006 (Support Pack 1)

Updates were made to the following sections. The changes are explained below.

- ◆ Section M.6.1, “Appendix B: Installing in a Novell Cluster Services Environment,” on page 638
- ◆ Section M.6.2, “Appendix D: Using Identity Manager 3 Bundle Edition for ZENworks 7 with SP1,” on page 639
- ◆ Section M.6.3, “Appendix H: License Agreement for Xerces XML Parser,” on page 639
- ◆ Section M.6.4, “Appendix I: License Agreement for Expat XML Parser,” on page 639
- ◆ Section M.6.5, “Appendix J: License Agreement for Boost Regular Expression Parser,” on page 639
- ◆ Section M.6.6, “Appendix K: License Agreement for XML Pull Parser,” on page 640
- ◆ Section M.6.7, “Installing and Configuring the Desktop Management Agent,” on page 640
- ◆ Section M.6.8, “Installing in a Windows Network Environment,” on page 640
- ◆ Section M.6.9, “Installing RPMs and Changing Configuration Values,” on page 641
- ◆ Section M.6.10, “Installing the ZENworks Desktop Management Server,” on page 641
- ◆ Section M.6.11, “Installing the ZENworks Middle Tier Server,” on page 641
- ◆ Section M.6.12, “Platform Support for the Desktop Management Infrastructure,” on page 641
- ◆ Section M.6.13, “Preparing a Linux Server for ZENworks Functions,” on page 642
- ◆ Section M.6.14, “Preparing the Administration Workstation or Server,” on page 642
- ◆ Section M.6.15, “Prerequisites for Installing the ZENworks Desktop Management Server,” on page 642
- ◆ Section M.6.16, “Setting Up Security Measures on Windows or NetWare Middle Tier Servers,” on page 643
- ◆ Section M.6.17, “Uninstalling ZENworks Components on a Linux Server,” on page 643
- ◆ Section M.6.18, “Upgrade Considerations for ZENworks 7 Desktop Management with SP1,” on page 643
- ◆ Section M.6.19, “Upgrading from ZENworks for Desktops 3.2 SP3,” on page 643
- ◆ Section M.6.20, “Upgrading to Support Pack 1 Using Server Software Packages,” on page 644
- ◆ Section M.6.21, “User Workstation Requirements,” on page 644
- ◆ Section M.6.22, “What’s New in ZENworks 7 Desktop Management,” on page 644

### M.6.1 Appendix B: Installing in a Novell Cluster Services Environment

The following changes were made in this section:

| Location                                                                       | Change                                                                                                                                                      |
|--------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Appendix B, “Installing in a Novell Cluster Services Environment,” on page 533 | Added screen shots and corrected terms (“Cluster object” changed to “Virtual Server”) to clarify the installation in a Novell Cluster Services Environment. |

| Location                                                                                                                                    | Change                                                                                                                                                                                                         |
|---------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Section B.7, “Upgrading Clustered Workstation Inventory from ZENworks for Desktops 3.2 SP3 to ZENworks 7.x Desktop Management,” on page 547 | Added this section to help users upgrade Workstation Inventory from ZENworks for Desktops 3.2 SP3 to ZENworks 7x Desktop Management. The information was inadvertently omitted from this version of the guide. |
| Section B.11, “Installing ZENworks 7 Desktop Management with SP1 in an OES Linux Cluster Environment,” on page 555                          | This section was added to document this new feature, added in Support Pack 1. The contents of the entire section are new.                                                                                      |

## M.6.2 Appendix D: Using Identity Manager 3 Bundle Edition for ZENworks 7 with SP1

The following changes were made in this section:

| Location                                                                                   | Change                                                                         |
|--------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------|
| Appendix D, “Using Identity Manager 3 Bundle Edition for ZENworks 7 with SP1,” on page 573 | Added this appendix as new content for ZENworks 7 Desktop Management with SP1. |

## M.6.3 Appendix H: License Agreement for Xerces XML Parser

The following changes were made in this section:

| Location                                                           | Change                                                                         |
|--------------------------------------------------------------------|--------------------------------------------------------------------------------|
| Appendix H, “License Agreement for Xerces XML Parser,” on page 623 | Added this appendix as new content for ZENworks 7 Desktop Management with SP1. |

## M.6.4 Appendix I: License Agreement for Expat XML Parser

The following changes were made in this section:

| Location                                                          | Change                                                                         |
|-------------------------------------------------------------------|--------------------------------------------------------------------------------|
| Appendix I, “License Agreement for Expat XML Parser,” on page 625 | Added this appendix as new content for ZENworks 7 Desktop Management with SP1. |

## M.6.5 Appendix J: License Agreement for Boost Regular Expression Parser

The following changes were made in this section:

| Location                                                                         | Change                                                                         |
|----------------------------------------------------------------------------------|--------------------------------------------------------------------------------|
| Appendix J, "License Agreement for Boost Regular Expression Parser," on page 627 | Added this appendix as new content for ZENworks 7 Desktop Management with SP1. |

## M.6.6 Appendix K: License Agreement for XML Pull Parser

The following changes were made in this section:

| Location                                                         | Change                                                                         |
|------------------------------------------------------------------|--------------------------------------------------------------------------------|
| Appendix K, "License Agreement for XML Pull Parser," on page 629 | Added this appendix as new content for ZENworks 7 Desktop Management with SP1. |

## M.6.7 Installing and Configuring the Desktop Management Agent

The following changes were made in this section:

| Location                                                                       | Change                                                                                                                                                                                                |
|--------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Section 12.3.4, "Adding Properties to the MSI Application Object," on page 146 | Added a new MSI property (WM_LOGIN_EVENTS) because the ZENworks 7 with SP1 Desktop Management Agent installation program has added files that were removed from newer versions of the Novell Client™. |
| "Enabling Administrative Shares" on page 150                                   | Added this section to clarify other causes for the occurrence of the Admin\$ share error.                                                                                                             |
| "Avoiding Admin\$ Share Errors" on page 156                                    | Added this section to clarify other causes for the occurrence of the Admin\$ share error.                                                                                                             |

## M.6.8 Installing in a Windows Network Environment

The following changes were made in this section:

| Location                                                                                                | Change                                                                                                 |
|---------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------|
| Section 18.2, "Installing ZENworks 7 Desktop Management with SP1 in a Windows Environment," on page 249 | Added this section for Support Pack 1 (new Identity Manager version and new iManager version).         |
| "Configuring a Test Lab" on page 253                                                                    | Added a note to provide cross references to actual requirements for server platforms and workstations. |

## M.6.9 Installing RPMs and Changing Configuration Values

The following changes were made in this section:

| Location                                               | Change                                                                                                                                                                            |
|--------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Section 24.1, "Running an RPM Installation or Upgrade" | Modified the section to add a detailed procedure for installation. Also added a section (Section 24.1.1, "Upgrading to SP1 with CPKs") to provide a reference about CPK upgrades. |

## M.6.10 Installing the ZENworks Desktop Management Server

The following changes were made in this section:

| Location                                                                                   | Change                                                                                                                                                                                                                                    |
|--------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Section 9.1.1, "Extending the Schema Before the Installation," on page 79                  | Added a note to explain that if you install from a Windows server and if that server is not part of the eDirectory™ tree you select for installation, you cannot install the Desktop Management Server or the Middle Tier Server locally. |
| Section 9.1.2, "Performing the Full Installation (Including Schema Extension)," on page 81 | Added a note to explain that if you install from a Windows server and if that server is not part of the eDirectory tree you select for installation, you cannot install the Desktop Management Server or the Middle Tier Server locally.  |
| Section 9.2, "SP1 Desktop Management Server Installation," on page 91                      | Added this section for Support Pack 1.                                                                                                                                                                                                    |

## M.6.11 Installing the ZENworks Middle Tier Server

The following changes were made in this section:

| Location                                                                        | Change                                                                                                                                                                                                                                   |
|---------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Section 10.1, "ZENworks Middle Tier Server Installation Procedure," on page 107 | Added a note to explain that if you install from a Windows server and if that server is not part of the eDirectory tree you select for installation, you cannot install the Desktop Management Server or the Middle Tier Server locally. |
| Section 10.2, "SP1 Middle Tier Server Installation Procedure," on page 117      | Added this section for Support Pack 1.                                                                                                                                                                                                   |

## M.6.12 Platform Support for the Desktop Management Infrastructure

The following changes were made in this section:

| Location                                                                                                        | Change                                                                                                                                                                                                                                                                                                                   |
|-----------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Section 2.3, "Additional Linux and Other Server Platform Combinations Tested for SP1," on page 34               | Added this section for Support Pack 1.                                                                                                                                                                                                                                                                                   |
| Section 2.1.2, "Additional Platform Combinations Tested for ZENworks 7 Desktop Management with SP1," on page 31 | Added this section for Support Pack 1.                                                                                                                                                                                                                                                                                   |
| Section 2.4, "Supported Workstation Platforms and Devices," on page 36                                          | <ul style="list-style-type: none"> <li>♦ Modified the section to add information about Windows Tablet PC 2005 and Terminal Server support.</li> <li>♦ Added Windows XP Tablet PC as a fully supported desktop operating system.</li> <li>♦ Added Windows XP SP2 as a fully supported desktop operating system</li> </ul> |

## M.6.13 Preparing a Linux Server for ZENworks Functions

The following changes were made in this section:

| Location                                               | Change                                                                                                                                                                                                                                                                                                                |
|--------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| "Creating a Proxy User for Anonymous Binds" on page 56 | <p>Added a note to alert administrators that the shipping version of ConsoleOne needs to have the ZENworks 7 Desktop Management snap-ins applied when viewing ZENworks resources on a Linux Server.</p> <p>Corrected the names of the eDirectory objects in <a href="#">Step 5</a> and in <a href="#">Step 6</a>.</p> |

## M.6.14 Preparing the Administration Workstation or Server

The following changes were made in this section:

| Location                                                                    | Change                                                                                                                                                                                                                                   |
|-----------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Chapter 8, "Preparing the Administration Workstation or Server," on page 71 | Added a note to explain that if you install from a Windows server and if that server is not part of the eDirectory tree you select for installation, you cannot install the Desktop Management Server or the Middle Tier Server locally. |

## M.6.15 Prerequisites for Installing the ZENworks Desktop Management Server

The following changes were made in this section:

| Location                                                                            | Change                                                                                                                                                                                                                                   |
|-------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Section 4.3, “Desktop Management Server Installation Prerequisites,” on page 49     | Added a note to explain that if you install from a Windows server and if that server is not part of the eDirectory tree you select for installation, you cannot install the Desktop Management Server or the Middle Tier Server locally. |
| Chapter 3, “Prerequisites for the Workstation Running the Installation,” on page 39 | Added a note to explain that if you install from a Windows server and if that server is not part of the eDirectory tree you select for installation, you cannot install the Desktop Management Server or the Middle Tier Server locally. |

## M.6.16 Setting Up Security Measures on Windows or NetWare Middle Tier Servers

The following changes were made in this section:

| Location                                                                          | Change                                                                   |
|-----------------------------------------------------------------------------------|--------------------------------------------------------------------------|
| Section 17.3.1, “Importing a Certificate on the Windows Workstation,” on page 195 | Added a screen shot in <a href="#">Step 5a</a> to clarify the procedure. |

## M.6.17 Uninstalling ZENworks Components on a Linux Server

The following changes were made in this section:

| Location                                                                      | Change                                                                                                                                                      |
|-------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Chapter 42, “Uninstalling ZENworks Components on a Linux Server,” on page 517 | Added an Important Note at the end of <a href="#">Step 9</a> to explain the steps for removing ZENworks 7 Desktop Management services from a Linux cluster. |

## M.6.18 Upgrade Considerations for ZENworks 7 Desktop Management with SP1

The following changes were made in this section:

| Location                                                                                     | Change                                          |
|----------------------------------------------------------------------------------------------|-------------------------------------------------|
| Chapter 33, “Upgrade Considerations for ZENworks 7 Desktop Management with SP1,” on page 441 | Added this as a new section for Support Pack 1. |

## M.6.19 Upgrading from ZENworks for Desktops 3.2 SP3

The following changes were made in this section:

| Location                                                                                                                                            | Change                                          |
|-----------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------|
| "Agent Issues Occurring in the SP1 Upgrade" on page 394                                                                                             | Added this section for Support Pack 1.          |
| Section 29.8, "Upgrading Clustered Workstation Inventory from ZENworks for Desktops 3.2 SP3 to ZENworks 7 Desktop Management with SP1," on page 395 | Added this as a new section for Support Pack 1. |

## M.6.20 Upgrading to Support Pack 1 Using Server Software Packages

The following changes were made in this section:

| Location                                                                              | Change                                 |
|---------------------------------------------------------------------------------------|----------------------------------------|
| Chapter 34, "Upgrading to Support Pack 1 Using Server Software Packages," on page 443 | Added this section for Support Pack 1. |

## M.6.21 User Workstation Requirements

The following changes were made in this section:

| Location                                                          | Change                                                                                                                                                                                                                                                                                                                                    |
|-------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Section 7.2, "User Workstation Hardware Requirements," on page 69 | Changed the minimum requirement for RAM on the user workstation from 64 MB to 128 MB.                                                                                                                                                                                                                                                     |
| Section 7.3, "User Workstation Software Requirements," on page 70 | <p>Removed the following paragraph:</p> <p><i>If Internet Explorer 6.0 is installed on any workstation, make sure that the privacy settings are configured to accept cookies. By default, Internet Explorer 6.0 does not accept cookies.</i></p> <p>Testing has shown that the default settings for Internet Explorer are acceptable.</p> |

## M.6.22 What's New in ZENworks 7 Desktop Management

The following changes were made in this section:



| Location                                                                                     | Change                                 |
|----------------------------------------------------------------------------------------------|----------------------------------------|
| Section 28.5, “What’s New in ZENworks 7 Desktop Management with Support Pack 1,” on page 358 | Added this section for Support Pack 1. |

## M.7 February 28, 2006

Updates were made to the following sections. The changes are explained below.

- ♦ Section M.7.1, “Desktop Management Server Hardware Requirements,” on page 645
- ♦ Section M.7.2, “Desktop Management Server Software Requirements,” on page 645
- ♦ Section M.7.3, “Importing a Certificate on the Windows Workstation,” on page 645
- ♦ Section M.7.4, “Installing ZENworks Desktop Management Services on Linux,” on page 646
- ♦ Section M.7.5, “Upgrade,” on page 646
- ♦ Section M.7.6, “Windows-Based Installation,” on page 646
- ♦ Section M.7.7, “ZENworks Middle Tier Server Hardware Requirements,” on page 646
- ♦ Section M.7.8, “ZENworks Middle Tier Server Software Requirements,” on page 647

### M.7.1 Desktop Management Server Hardware Requirements

The following changes were made in this section:

| Location                                                                               | Change                                                                                                                                                                                                               |
|----------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Section 4.1.1, “Consolidated Component Installation Hardware Requirements,” on page 41 | Added a note to indicate that when a SUSE® Linux Enterprise Server (SLES) 9 server is to be used with ZENworks 7 Desktop Management, it should have been installed using only the <i>Default System</i> install set. |

### M.7.2 Desktop Management Server Software Requirements

The following changes were made in this section:

| Location                                                                         | Change                                                                                                                                                                               |
|----------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Section 4.2.1, “Software Requirements for Installing All Components,” on page 44 | Added a note to indicate that when a SLES 9 server is to be used with ZENworks 7 Desktop Management, it should have been installed using only the <i>Default System</i> install set. |

### M.7.3 Importing a Certificate on the Windows Workstation

The following changes were made in this section:

| Location                       | Change                                                                                                                          |
|--------------------------------|---------------------------------------------------------------------------------------------------------------------------------|
| "Sample SSL Setup" on page 195 | Added this section to provide an example of how to set up SSL on a workstation where the Desktop Management Agent is installed. |

## M.7.4 Installing ZENworks Desktop Management Services on Linux

The following changes were made in this section:

| Location                                                                         | Change                                                                                                                                                                               |
|----------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Part IV, "Installing ZENworks Desktop Management Services on Linux," on page 297 | Added a note to indicate that when a SLES 9 server is to be used with ZENworks 7 Desktop Management, it should have been installed using only the <i>Default System</i> install set. |

## M.7.5 Upgrade

The following changes were made in this section:

| Location                                                                         | Change                                                                                                                                                                                                                                                      |
|----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Section 32.3, "Preserving Preboot Services Settings During Upgrade," on page 433 | Added this section to let users know that some Preboot Services <code>.ini</code> files can be overwritten during an upgrade from ZENworks 6.5 Desktop Management to ZENworks 7 Desktop Management.                                                         |
| "Caution" on page 353                                                            | Added this section to inform administrators that some files (including <code>.conf</code> and <code>.ini</code> files) might be overwritten when ZENworks 7 Desktop Management is upgraded with a maintenance patch, an interim release, or a support pack. |

## M.7.6 Windows-Based Installation

The following changes were made in this section:

| Location                                           | Change                                                                                                                                                                                          |
|----------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Part III, "Windows-Based Installation," on page 75 | Added paragraphs to the introduction of this part to clarify that "Windows-Based Installation" refers to the installation programs, not to the operating system to which ZENworks is installed. |

## M.7.7 ZENworks Middle Tier Server Hardware Requirements

The following changes were made in this section:

| Location                                                                     | Change                                                                                                                                                                               |
|------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Section 6.2, “ZENworks Middle Tier Server Hardware Requirements,” on page 63 | Added a note to indicate that when a SLES 9 server is to be used with ZENworks 7 Desktop Management, it should have been installed using only the <i>Default System</i> install set. |

## M.7.8 ZENworks Middle Tier Server Software Requirements

The following changes were made in this section:

| Location                                                                     | Change                                                                                                                                                                               |
|------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Section 6.3, “ZENworks Middle Tier Server Software Requirements,” on page 64 | Added a note to indicate that when a SLES 9 server is to be used with ZENworks 7 Desktop Management, it should have been installed using only the <i>Default System</i> install set. |

## M.8 February 6, 2006

Updates were made to the following sections:

- ♦ Upgrade

### M.8.1 Upgrade

The following changes were made in this section:

| Location                                                                                                                                  | Change                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
|-------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Section 30.6, “Upgrading ZENworks for Desktop 4.x Servers,” on page 402 > Section 30.6.2, “Upgrading Workstation Inventory,” on page 411  | <p>In “Tasks To Be Performed Before Upgrading and Database Migration” on page 413, added the following point to the list of tasks to be performed before upgrade:</p> <p>“If <code>ZENworks_installation_path\zenworks\inv\server\wminv\properties\inventoryremoval.properties</code> has been modified after the ZENworks for Desktops 4.x installation, take a reliable backup of <code>inventoryremoval.properties</code>.”</p>                       |
| Chapter 32, “Upgrading from ZENworks 6.5x Desktop Management,” on page 431 > Section 32.5, “Upgrading Workstation Inventory,” on page 434 | <p>In Section 32.5.2, “Tasks To Be Performed Before Upgrade and Database Migration,” on page 436, added the following point to the list of tasks to be performed before upgrade:</p> <p>“If <code>ZENworks_installation_path\zenworks\inv\server\wminv\properties\inventoryremoval.properties</code> has been modified after the ZENworks 6.5x Desktop Management installation, take a reliable backup of <code>inventoryremoval.properties</code>.”</p> |

## M.9 December 23, 2005

Updates were made to the following sections:

- ♦ [Prerequisites for Installing the ZENworks Desktop Management Server](#)
- ♦ [Prerequisites for Installing the ZENworks Middle Tier Server](#)
- ♦ [Setting Up Security Measures on Linux Middle Tier Servers](#)

### M.9.1 Prerequisites for Installing the ZENworks Desktop Management Server

The following changes were made in this section:

| Location                                                                                                     | Change                                                                                                           |
|--------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------|
| <a href="#">Section 4.2.3, "Software Requirements for Installing the ZENworks Database Only," on page 48</a> | Added SLES 9 SP1 or OES (Linux) 1.0 to list of platforms on which you can install the Sybase Inventory database. |

### M.9.2 Prerequisites for Installing the ZENworks Middle Tier Server

The following changes were made in this section:

| Location                                                                                                                     | Change                                                                                                                                                                                                                                                                                                                                                                                                      |
|------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <a href="#">Section 6.4, "Configuring Ports for the Middle Tier Web Server and the Desktop Management Agent," on page 65</a> | <p>Modified the section <a href="#">Section 6.4.1, "Configuring Ports for the Apache Web Server on NetWare 6.x," on page 66</a> to make it generic for NetWare® 6.x platforms.</p> <p>Added <a href="#">Section 6.4.2, "Configuring Ports for the Apache Web Server on Linux," on page 66</a> to accommodate users of ZENworks Desktop Management Services on Linux (SLES 9 SP1 and OES Linux servers).</p> |

### M.9.3 Setting Up Security Measures on Linux Middle Tier Servers

The following changes were made in this section:

| Location                                                                                             | Change                                                                 |
|------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------|
| <a href="#">Chapter 25, "Setting Up Security Measures on Linux Middle Tier Servers," on page 333</a> | New section written for users of Desktop Management Services on Linux. |

## M.10 December 9, 2005

Page design was reformatted to comply with revised Novell documentation standards.

Other updates were made to the following sections:

- ♦ Platform Support for the Desktop Management Infrastructure

### M.10.1 Platform Support for the Desktop Management Infrastructure

The following changes were made in this section:

| Location                                                                            | Change                                                                                                                                  |
|-------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------|
| Chapter 2, "Platform Support for the Desktop Management Infrastructure," on page 27 | Removed paragraph referring to non-support for VMWare.* ZENworks 7 Desktop Management is now supported for use in a VMWare environment. |

## M.11 October 25, 2005

Updates were made to the following sections. The changes are explained below.

- ♦ Appendix A: Differences in ZENworks for Desktops 3.2 and ZENworks 7 Policy Packages
- ♦ Preparing the Administration Workstation or Server
- ♦ Upgrading from ZENworks 6.5x Desktop Management
- ♦ Upgrading from ZENworks for Desktops 3.2 SP3
- ♦ Upgrading from ZENworks for Desktops 4.x

### M.11.1 Appendix A: Differences in ZENworks for Desktops 3.2 and ZENworks 7 Policy Packages

The following changes were made in this section:

| Location                                                                                            | Change                                                                                                                        |
|-----------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------|
| Appendix A, "Differences in ZENworks for Desktops 3.2 and ZENworks 7 Policy Packages," on page 523. | New section added to complement another new section, Chapter 29, "Upgrading from ZENworks for Desktops 3.2 SP3," on page 363. |

### M.11.2 Preparing the Administration Workstation or Server

The following changes were made in this section:

| Location                                               | Change                                                                                                                                 |
|--------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------|
| Section 8.3.1, "Downloading the Snap-Ins," on page 73. | Corrected text to indicate that snap-ins are located on <i>ZENworks 7 Companion</i> CD 2 rather than <i>ZENworks 7 Companion</i> CD 1. |

## M.11.3 Upgrading from ZENworks 6.5x Desktop Management

Updates were made to the following sections:

| Location                                                                   | Change                                                                                                                                      |
|----------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------|
| Chapter 32, "Upgrading from ZENworks 6.5x Desktop Management," on page 431 | Changed the title and ongoing references inside the section to identify the collective versions of ZENworks 6.5 Desktop Management as 6.5x. |

## M.11.4 Upgrading from ZENworks for Desktops 3.2 SP3

Updates were made to the following sections:

| Location                                                                | Change                                                                                                           |
|-------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------|
| Chapter 29, "Upgrading from ZENworks for Desktops 3.2 SP3," on page 363 | New section added as a result of testing. This scenario is now fully supported in ZENworks 7 Desktop Management. |

## M.11.5 Upgrading from ZENworks for Desktops 4.x

Updates were made to the following sections:

| Location                                                       | Change                                                         |
|----------------------------------------------------------------|----------------------------------------------------------------|
| Section 30.6.2, "Upgrading Workstation Inventory," on page 411 | Modified Step 3c in Tasks to Perform after Database Migration. |

## M.12 September 30, 2005

Updates were made to the following sections:

- ♦ Appendix B: Installing in a Novell Cluster Services Environment
- ♦ Platform Support for the Desktop Management Infrastructure
- ♦ Upgrading from ZENworks 6.5x Desktop Management

### M.12.1 Appendix B: Installing in a Novell Cluster Services Environment

The following changes were made in this section:

| Location                                                                       | Change                                                                                                                                                                                                                                                                                                                     |
|--------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Appendix B, "Installing in a Novell Cluster Services Environment," on page 533 | Modified Step 14 in the section entitled Section B.10, "Configuring ZENworks 7 Workstation Imaging for a Novell Cluster Services Environment," on page 554 to avoid misleading the administrator that the entire cluster had to be taken down. Actually, only the resource must be taken offline and then put back online. |

## M.12.2 Platform Support for the Desktop Management Infrastructure

The following changes were made in this section:

| Location                                                                                      | Change                                                                                                                                                                                                                                                                                                        |
|-----------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Section 2.2, “Tested Linux and Other Server Platform Combinations for ZENworks 7,” on page 32 | Added information in the <b>No Network Firewall</b> table with regard to the SLES 9 SP1/SLES 9SP1 combination when the Middle Tier and Desktop Management Servers are operating on the same Linux machine:<br><br>“ZENworks for Desktops 4.0.1 Desktop Management Agent does not work (does not copy files).” |

## M.12.3 Upgrading from ZENworks 6.5x Desktop Management

The following changes were made in this section:

| Location                                                                 | Change                                                                                            |
|--------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------|
| Section 32.5.4, “Tasks to Perform after Database Migration,” on page 438 | Added the reference to ZENworks 6.5 Desktop Management SP2 in <b>Step 2d</b> and <b>Step 3d</b> . |

