

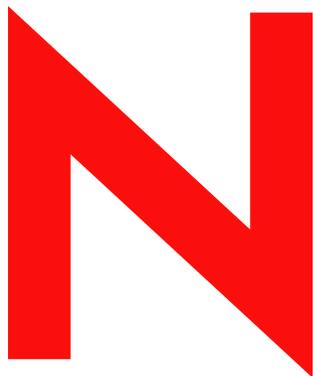
Novell iManager

2.6

February 26, 2007

ADMINISTRATION GUIDE

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Novell, Inc.
404 Wyman Street, Suite 500
Waltham, MA 02451
U.S.A.
www.novell.com

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About This Guide

This guide describes how to administer Novell® iManager 2.6. It is intended for network administrators and contains the following sections:

- ◆ Chapter 1, “Overview,” on page 11
- ◆ Chapter 2, “Accessing iManager,” on page 13
- ◆ Chapter 3, “Navigating the iManager Interface,” on page 17
- ◆ Chapter 4, “Roles and Tasks,” on page 21
- ◆ Chapter 5, “Configuring for iManager Auditing,” on page 35
- ◆ Chapter 6, “Configuring and Customizing iManager,” on page 37
- ◆ Chapter 7, “Preferences,” on page 65
- ◆ Chapter 8, “Troubleshooting,” on page 67
- ◆ Chapter 9, “Best Practices and Common Questions,” on page 79

Audience

This guide is intended for network administrators.

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Documentation Updates

For the most current version of the iManager 2.6 Installation guide, see the English version of the documentation at the [iManager 2.6 Web site \(http://www.novell.com/documentation/imanager26/index.html\)](http://www.novell.com/documentation/imanager26/index.html).

Additional Documentation

- ◆ *iManager 2.6 Administrator Guide* (<http://www.novell.com/documentation/imanager26>)
- ◆ Apache HTTP server (<http://httpd.apache.org>)
- ◆ Tomcat servlet container (<http://jakarta.apache.org/tomcat>)
- ◆ Java® Web site (<http://java.sun.com>)
- ◆ Microsoft® Internet Information Services (<http://www.microsoft.com/windowsserver2003/iis/default.msp>)
- ◆ eDirectory™ home page (<http://www.novell.com/products/edirectory>)
- ◆ eDirectory documentation (<http://www.novell.com/documentation/edir88/index.html>)
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In Novell documentation, a greater-than symbol (>) is used to separate actions within a step and items in a cross-reference path.

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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.

Overview

1

Novell® iManager is a Web-based administration console that provides secure, customized access to network administration utilities and content from virtually anywhere you have access to the Internet and a Web browser.

iManager provides the following:

- ◆ Single point of administration for Novell eDirectory™ objects, schema, partitions, and replicas
- ◆ Single point of administration for many other network resources
- ◆ Management of many other Novell products using iManager plug-ins
- ◆ Role-Based Services (RBS) for delegated administration

Because iManager is a Web-based tool, it enjoys several advantages over client-based administrative tools:

- ◆ Upgrade once, on the server, for all administrative users
- ◆ Changes to iManager look, feel, and functionality are immediately available to all administrative users
- ◆ Do not need to open additional administrative ports for remote access. iManager leverages standard HTTP ports (80/443)
- ◆ Not necessary to download and maintain an administrative client
- ◆ Not necessary to keep client software synchronized with changes to server software

1.1 What's New in Version 2.6

Novell iManager 2.6 contains the following new features:

- ◆ [“Downloading and Installing Plug-in Modules” on page 59](#)

1.2 Additional Resources

For more information on topics relevant to Novell iManager, refer to the following Web sites:

- ◆ [Apache HTTP server \(http://httpd.apache.org\)](http://httpd.apache.org)
- ◆ [Tomcat servlet container \(http://jakarta.apache.org/tomcat\)](http://jakarta.apache.org/tomcat)
- ◆ [How to setup Tomcat to use a proxy \(http://jakarta.apache.org/tomcat/tomcat-4.1-doc/proxy-howto.html\)](http://jakarta.apache.org/tomcat/tomcat-4.1-doc/proxy-howto.html)
- ◆ [Java* Web site \(http://java.sun.com\)](http://java.sun.com)
- ◆ [Microsoft* Windows* Web Services \(http://www.microsoft.com/technet/treeview/default.asp?url=/technet/prodtechnol/iis/default.asp\)](http://www.microsoft.com/technet/treeview/default.asp?url=/technet/prodtechnol/iis/default.asp)
- ◆ [Novell eDirectory product home page \(http://www.novell.com/products/edirectory\)](http://www.novell.com/products/edirectory)
- ◆ [Novell eDirectory documentation \(http://www.novell.com/documentation/edir873/index.html\)](http://www.novell.com/documentation/edir873/index.html)
- ◆ [Novell eDirectory Cool Solutions community \(http://www.novell.com/coolsolutions/nds\)](http://www.novell.com/coolsolutions/nds)

Accessing iManager

2

You access Novell® iManager via a Web browser. This section includes the following topics:

- ♦ [Using a Supported Web Browser \(page 13\)](#)
- ♦ [Accessing iManager \(page 13\)](#)
- ♦ [Access Modes \(page 14\)](#)
- ♦ [Authenticating \(page 14\)](#)
- ♦ [iManager Session Time-Outs \(page 16\)](#)

2.1 Using a Supported Web Browser

For iManager access and complete use of all its features, you must use a computer running one of the following Web browsers:

- ♦ Microsoft Internet Explorer 6.0 SP1
- ♦ Mozilla* 1.7.6
- ♦ Firefox* 1.0.7

WARNING: If you have configured your Web browser to not display Web site images, the iManager interface may become garbled and unusable. In Firefox v1.5, for example, users can disable image loading from *Tools > Options > Content*.

IMPORTANT: Although you might be able to access iManager via a Web browser not listed, we do not guarantee or support full functionality with any browser other than those listed above.

2.2 Accessing iManager

1 Enter the following in the Address (URL) field of a supported Web browser:

```
http://server_IP_address/iManager.html
```

IMPORTANT: URLs are case sensitive.

For example:

```
http://127.0.0.1/iManager.html
```

NOTE: Depending on your platform, you could be redirected to an HTTPS secure page.

If iManager is not running on a standard port, specify the port it is running on. For example, if you are using Linux without Apache, the URL is `http://server_IP:port/imanager.html` or `https://server_IP:port/iManager.html`.

2 Log in using your username and password.

You will have access only to those features you have rights to. To have full access to all Novell iManager features, you must log in as Supervisor/Administrator of the tree.

For some additional information on the iManager authentication process, see [“Authentication Issues” on page 67](#).

2.2.1 Pop-Ups Must be Enabled

In order for some iManager wizards and help to work, you must enable pop-up windows in your Web browser. If you use an application that blocks pop-up windows, disable the blocking feature while working in iManager or allow pop-ups from the iManager host.

2.3 Access Modes

When you start iManager, you are granted an *access mode* based on the rights you've been assigned. iManager has three access modes. The mode you are in is displayed in the upper left corner of the iManager interface.

Unrestricted Access: This is the default mode before RBS is configured. It displays all of the roles and tasks installed. Although all roles and tasks are visible, the authenticated user still needs the necessary rights to use the tasks.

There is a setting that you can add to the `config.xml` file which forces Unrestricted Access, even if Role-Based Services is installed. To force Unrestricted Access for all users, add the following setting to the `TOMCAT_HOME/webapps/nps/WEB-INF/config.xml` file and restart Tomcat:

```
<setting>
<name><![CDATA[RBS.forceUnrestricted]]></name>
<value><![CDATA[true]]></value>
</setting>
```

For information about restarting Tomcat, see [“Starting and Stopping Tomcat and Apache” on page 70](#).

NOTE: When using iManager in Unrestricted mode, you typically see the following message on the iManager Home Page: `Notice: Some of the roles and tasks are not available. Clicking View Details might display a Not supported by current authenticators message for several of the tasks, even though the tasks work correctly. This message is misleading, and iManager removes these messages after you configure RBS.`

Assigned Access: Displays only the roles and tasks assigned to the authenticated user. This mode takes full advantage of the Role-Based Services technology.

Collection Owner: Displays all of the roles and tasks installed in the collection. It allows you to use all of the roles and tasks in the collection, even if specific roles have not been assigned. Role-Based Services must be installed in order to use this mode.

NOTE: The collection owner sees all roles and tasks, regardless of role membership.

2.4 Authenticating

Be aware of the following issues related to iManager authentication:

- ◆ [Section 2.4.1, “Tree Name Field,” on page 15](#)
- ◆ [Section 2.4.2, “Logging In to a Server without a Replica,” on page 15](#)

- ◆ [Section 2.4.3, “Unsuccessful Authentication,” on page 15](#)
- ◆ [Section 2.4.4, “Expired Password Information,” on page 15](#)
- ◆ [Section 2.4.5, “Contextless Login Using Alternate Object Classes and/or Alternate Attributes,” on page 15](#)

2.4.1 Tree Name Field

If eDirectory™ is installed and running on another port besides the default port 524, you can use the IP address or DNS name of the eDirectory server to log in if you also specify the port (for example, 127.0.0.1: 1080). If you use the tree name to log in, you do not have to specify a port.

Possible values for the Tree Name field are the tree name, the server IP address, and the server DNS name.

For best results, use the IP address.

2.4.2 Logging In to a Server without a Replica

You can log in to a server without a replica if you have previously logged in to the tree using the tree name, or if you have logged in to the tree using a server that contains a replica.

2.4.3 Unsuccessful Authentication

Login failures occur for a variety of reasons. For more information, see [“Authentication Issues” on page 67](#).

NOTE: By default, iManager displays standard eDirectory error messages related to login problems. However, to increase login security, you can substitute a generic Login Failed message by adding the following setting to `config.xml`:

```
<setting>
  <name><![CDATA[Authenticate.Form.HideLoginFailReason]]></name>
  <value><![CDATA[true]]></value>
</setting>
```

2.4.4 Expired Password Information

If a password expires, the user sees a message to this effect. However, users might not be aware that grace logins can be quickly consumed, depending on certain operations such as modifying a dynamic group, simple find, and setting a simple password.

These operations consume additional grace logins each time a user performs a task. We highly recommend that you encourage users to change their passwords the first time they are prompted.

2.4.5 Contextless Login Using Alternate Object Classes and/or Alternate Attributes

To enable contextless authentication using an alternate object type:

- 1 Open iManager and browse to *Configure > iManager Server > Configure iManager > Authentication*.

If you do not see this task, you are not an authorized user. See [“Authorized Users” on page 55](#).

- 2 Set *Public Username* and *Password* to a user that has rights to read the desired attributes.
- 3 Modify `TOMCAT_HOME\webapps\nps\WEB-INF\config.xml` to include a `<Setting>` property that lists the attributes you want to add to the contextless search, and then restart Tomcat.

For information about restarting Tomcat, see [“Starting and Stopping Tomcat and Apache” on page 70](#).

For example, the following XML adds the Alias and User objects to the contextless search:

```
<setting>
<name><![CDATA[Authenticate.Form.ContextlessLoginClass.NDAP.treename]]></name>
  <value><![CDATA[User]]></value>
  <value><![CDATA[Alias]]></value>
</setting>
```

Similarly, the following XML allows users to log in with the CN or uniqueID attribute:

```
<setting>
<name><![CDATA[Authenticate.Form.ContextlessLoginSearchAttributes.NDAP.treename]]></name>
  <value><![CDATA[CN]]></value>
  <value><![CDATA[uniqueID]]></value>
</setting>
```

NOTE: In the sample code above, replace *treename* with the name of the appropriate directory tree.

2.5 iManager Session Time-Outs

iManager session time-outs are controlled by a time-out setting in `TOMCAT_HOME\webapps\nps\WEB-INF\web.xml`. Remove the comment tags to specify a time-out, in minutes, other than the default value of 30, as shown by the following example:

```
<session-config>
<session-timeout>10</session-timeout>
</session-config>
```

Navigating the iManager Interface

3

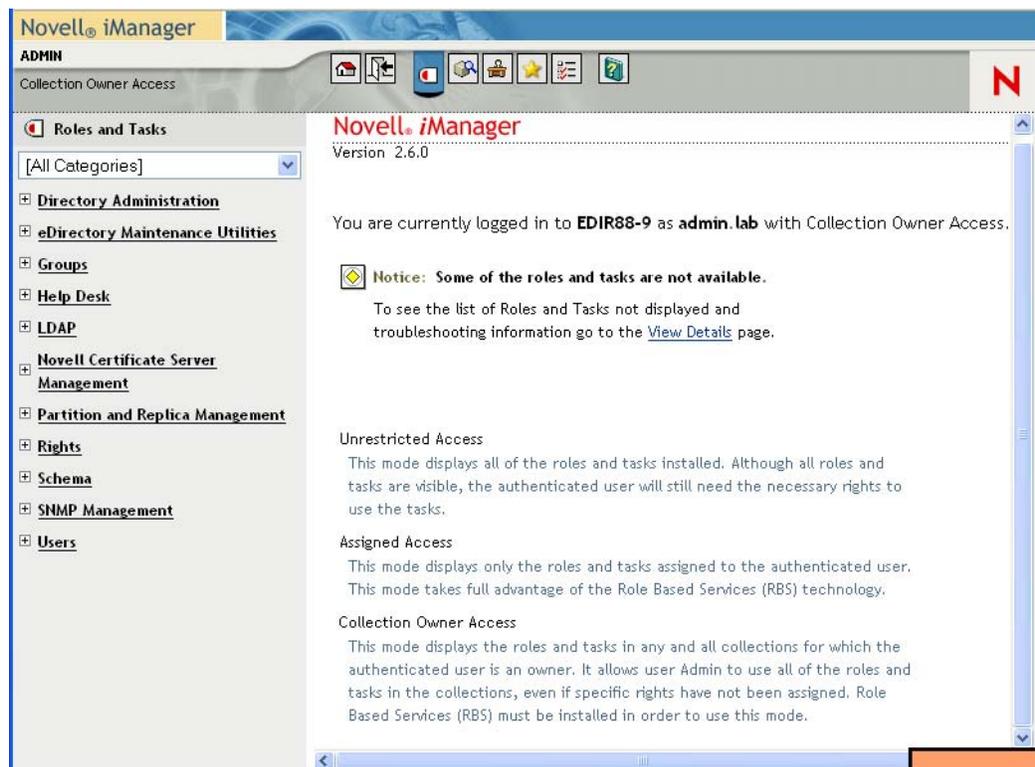
This section describes how to navigate through the Novell® iManager 2.6 interface.

- ◆ [Section 3.1, “iManager Interface,” on page 17](#)
- ◆ [Section 3.2, “Special Characters,” on page 18](#)
- ◆ [Section 3.3, “Using the Object Selector,” on page 18](#)

3.1 iManager Interface

Use only the buttons within the interface when you are navigating in iManager. The Web browser's toolbar buttons (Back, Next, etc.) are not supported.

Figure 3-1 iManager Default Interface: Roles and Tasks



To change the default view in Preferences, see [Section 7.4, “Set Initial View,” on page 66](#).

3.1.1 Views

iManager 2.6 has several views that you access by using the icons at the top of the iManager interface:

 Roles and Tasks: Contains all the tasks you are authorized to perform. The default view.

 View Objects: Contains browsing and searching functionality to find objects.

 **Configure:** Contains Role-Based Services, iManager Server, Object Creation List, Plug-in Installation, E-mail Notification, and Views, all of which you can configure as you want.

 **Favorites:** Displays your most frequent tasks, selected from the *Preferences > Favorites* page.

 **Preferences:** Sets your preferences according to your most frequent tasks, how the Object Selector displays, how your Object View displays, what view appears after logging in to iManager, and what language iManager displays in.

 **Help:** Displays applicable information related to the page you are on.

For information on how to change the default Roles and Tasks view, see [Chapter 6, “Configuring and Customizing iManager,” on page 37](#).

3.1.2 Navigation Frame

The Navigation frame is on the left side of the iManager user interface. It displays navigation options for the current view. For example, the Roles and Tasks view displays role and task options for the currently installed plug-ins:

The ordering of tasks within each category is determined by the author of the applicable iManager plug-in. Base plug-in tasks typically display before tasks from other plug-ins.

3.2 Special Characters

In iManager, some characters have special significance and must be escaped with the backslash (\) character:

NDAP (NDS):

- ◆ Period (.)
- ◆ Equal sign (=)
- ◆ Plus sign (+)
- ◆ Backslash (\)

LDAP:

- ◆ DNs and = + \ @; < >
- ◆ Leading #
- ◆ Leading or trailing spaces

For LDAP, any character can be specified with \xx. See [RFC 2253 \(http://www.faqs.org/rfcs/rfc2253.html\)](http://www.faqs.org/rfcs/rfc2253.html) for more information.

3.3 Using the Object Selector

Follow these guidelines when using iManager’s Object Selector search feature:

- ◆ In dotted NDS[®] names, you must escape the following characters with a backslash (\):
 - ◆ Period (.)
 - ◆ Equal sign (=)

- ◆ Plus sign (+)
- ◆ Backslash (\)
- ◆ You don't need escape characters in most values, but you do need them when the name is a distinguished name or relative distinguished name.
- ◆ In a search filter, you must escape the following characters with a backslash (\):
 - ◆ Asterisk (*)
 - ◆ Backslash (\)

For example:

To search for all objects containing a period, use = *. * in the search filter.

To search for all objects containing a plus, use = *+* in the search filter.

However, to search for all objects containing a backslash, use = ** in the search filter.

Roles and Tasks

4

The Roles and Tasks icon displays all of the roles and tasks that you have set up; some are part of the base iManager installation, and others are external plug-ins provided by other products. This section describes only those base roles and tasks included with iManager:

- ◆ Section 4.1, “Directory Administration,” on page 21
- ◆ Section 4.2, “Groups,” on page 23
- ◆ Section 4.3, “Help Desk,” on page 25
- ◆ Section 4.4, “Partitions and Replicas,” on page 26
- ◆ Section 4.5, “Rights,” on page 28
- ◆ Section 4.6, “Schema,” on page 30
- ◆ Section 4.7, “Users,” on page 32

iManager groups related Roles and Tasks into categories. However, you can create custom category groups and assign roles and tasks to them. For more information, see “The Category Tab” on page 47.

Additionally, iManager’s Favorites view displays the most frequently used tasks. For more information, see “Manage Favorites” on page 65.

4.1 Directory Administration

Directory administration involves the management of objects in your directory tree. You can create, edit, and organize objects.

- ◆ Section 4.1.1, “Copying an Object,” on page 21
- ◆ Section 4.1.2, “Creating an Object,” on page 22
- ◆ Section 4.1.3, “Deleting an Object,” on page 22
- ◆ Section 4.1.4, “Modifying an Object,” on page 22
- ◆ Section 4.1.5, “Moving an Object,” on page 23
- ◆ Section 4.1.6, “Renaming an Object,” on page 23

For more information about eDirectory™ objects, see the *eDirectory Administration guide* (<http://www.novell.com/documentation/edir88/index.html?page=/documentation/edir88/edir88/data/fbabihe.html#fbabihe>).

4.1.1 Copying an Object

You can either create a new object with the same attribute values as an existing object, or copy attribute values from one object to another.

- 1 In Roles and Tasks, click *Directory Administration > Copy Object*.

- 2 In the *Object to Copy From* field, type the name and context of the object or use the Object Selector to find it.
- 3 Select one of the following options:
 - ♦ *Create New Object and Copy Attribute Values*
 - ♦ *Copy Attribute Values to an Existing Object*
- 4 Select *Copy ACL Rights* if you want to copy access control list rights to this object.
This step might take additional processing time, depending on your system and networking environment.

NOTE: The copy object operation does not copy the following object attributes:

- ♦ ACL
 - ♦ CN
 - ♦ DirXML-Associations
 - ♦ Equivalent To Me
 - ♦ Group Membership
 - ♦ Member
 - ♦ Security Equals
 - ♦ Any naming attribute
 - ♦ Any Read Only attribute
 - ♦ Any RBS attribute
-

4.1.2 Creating an Object

- 1 In Roles and Tasks, click *Directory Administration > Create Object*.
- 2 Select the object class from the list that appears, then click *OK*.
- 3 Specify the requested information that appears according to the object class you selected, then click *OK*.
If you are using a Mozilla browser, click the + symbol to add information instead of typing directly in the field.
- 4 When the confirmation message appears, click *OK*, *Repeat Task*, or *Modify*.

4.1.3 Deleting an Object

- 1 In Roles and Tasks, click *Directory Administration > Delete Object*.
- 2 Type the name and context of the object, or use the Object Selector to find it, and click *OK*.
A confirmation message appears indicating the object was successfully deleted.

4.1.4 Modifying an Object

- 1 In Roles and Tasks, click *Directory Administration > Modify Object*.
- 2 Type the name and context of the object or use the Object Selector to find it, then click *OK*.

The Modify Object page displays pages with the selected object's attributes.

- 3 Modify the object as desired, then click *OK*.

If you are using a Mozilla browser, click the + symbol to add information instead of typing directly in the field.

4.1.5 Moving an Object

- 1 In Roles and Tasks, select *Directory Administration > Move Object*.

Type the name and context of the object or use the Object Selector to find it, then click *OK*.

- 2 In the *Move To* field, select the container to which you want to move the object.
- 3 Select *Create an Alias in Place of Moved Object* to create an alias in an old location for each object being moved.
- 4 Click *OK*.

A confirmation message appears indicating the move object operation was successful.

4.1.6 Renaming an Object

- 1 In Roles and Tasks, select *Directory Administration > Rename Object*.

- 2 Type the name and context of the object or use the search feature to find it.

Type only the name of the new object; do not include a context.

- 3 Select to save the old name, if you want to save it.

This saves the old name as an additional unofficial value of the Name property. Saving the old name lets users search for the object based on that name. After renaming the object, you can view the old name in the *Other Name* field on the object's *General Identification* tab.

- 4 Select *Create an Alias in Place of Renamed Object*, if you want to create an alias for the object being named.

This allows any operations that are dependent on the old object name to continue uninterrupted until you can update those operations to use the new object name.

- 5 Click *OK*.

A confirmation message appears indicating that the object renaming operation was successful.

4.2 Groups

Any user who creates a group automatically becomes the owner of the group. Available group operations include the following:

- ♦ [Section 4.2.1, "Creating a Group," on page 24](#)
- ♦ [Section 4.2.2, "Deleting a Group," on page 24](#)
- ♦ [Section 4.2.3, "Modifying a Group," on page 24](#)
- ♦ [Section 4.2.4, "Modifying Members of Group," on page 24](#)
- ♦ [Section 4.2.5, "Move Group," on page 25](#)
- ♦ [Section 4.2.6, "Rename Group," on page 25](#)
- ♦ [Section 4.2.7, "Viewing My Groups," on page 25](#)

For more information about using and configuring Group objects, see the *eDirectory Administration guide* (<http://www.novell.com/documentation/edir88/index.html?page=/documentation/edir88/edir88/data/fbabihe.html#fbacjdfg>).

4.2.1 Creating a Group

- 1 In Roles and Tasks, select *Groups > Create Group*.
- 2 In the Create Group page, provide the required information, then click *OK*.

Select *Dynamic Group* to make the new group a dynamic group, of the class `dynamicGroup`. Otherwise, the group is created as a static group, or the class `Group`.

Select *Set Owner* to make the creator of a group object the group owner. The group's `Owner` attribute is set to the DN of iManager's logged-in user. Deselect *Set Owner* to leave the `Owner` attribute undefined.

NOTE: You can convert a static group to a dynamic group after the fact by using the **Modifying a Group** option. This extends the selected Group object to belong to the `dynamicGroupAux` class.

4.2.2 Deleting a Group

- 1 In Roles and Tasks, select *Groups > Delete Group*.
- 2 In the Delete Group page, specify the name of the group object to delete, or use the Object Selector to locate it, then click *OK*.

The Delete Group page lets you Select a single object, Select multiple objects, or use Advanced Selection option to specify the object to delete.

4.2.3 Modifying a Group

- 1 In Roles and Tasks, select *Groups > Modify Group*.
- 2 In the Modify Group page, specify the name of a Group object, or use the Object Selector to locate it, then click *OK*.
- 3 Make the desired changes to the Group object's attributes, then click *OK*.

NOTE: If you modify a static group to be a dynamic group, and you are using RBS, you must enable `dynamicGroupAux` class support. To do this, open *Configure > iManager Server > Configure iManager > RBS > Dynamic Group Search Type*. Select *DynamicGroupObjects&AuxClasses* from the drop-down menu, then click *Save*.

4.2.4 Modifying Members of Group

This task lets you make simultaneous identical modifications to the attributes of all member objects of a specified group.

- 1 In Roles and Tasks, select *Groups > Modify Members of Group*.
- 2 In the Modify Members of Group page, specify the name of a Group object, or use the Object Selector to locate it, then click *OK*.
- 3 Make the desired changes to the member object's attributes, then click *OK*.

4.2.5 Move Group

This link redirects you to the Move an Object task. For more information, see [Section 4.1.5, “Moving an Object,” on page 23](#).

4.2.6 Rename Group

This option is identical to the Rename an Object task. For more information, see [Section 4.1.6, “Renaming an Object,” on page 23](#).

4.2.7 Viewing My Groups

This page displays the groups that you own. From it, you can create a new group, and edit or delete an existing group.

4.3 Help Desk

Help Desk provides access to a limited number of user-related tasks. The user who owns this role can do the following:

- ◆ [Section 4.3.1, “Clearing a Lockout,” on page 25](#)
- ◆ [Section 4.3.2, “Creating a User,” on page 25](#)
- ◆ [Section 4.3.3, “Setting a Password,” on page 25](#)

For more information about User objects, see the *eDirectory Administration guide* (<http://www.novell.com/documentation/edir88/index.html?page=/documentation/edir88/edir88/data/afxkmdi.html>).

4.3.1 Clearing a Lockout

A user can be locked out for entering the wrong password too many times or trying to log in with an expired password.

- 1 In Roles and Tasks, select *Help Desk > Clear Lockout*.
- 2 In the Clear Lockout page, specify the name of a User object, or use the Object Selector to locate it, then click *OK*.

4.3.2 Creating a User

To create a new user object:

- 1 In Roles and Tasks, select *Help Desk > Create User*.
Fill out the necessary user information, as described in [“Creating a User” on page 33](#).

4.3.3 Setting a Password

- 1 In Roles and Tasks, select *Help Desk > Set Password*.
- 2 In the Set Password page, specify the name of a User object, or use the Object Selector to locate it.

- 3 Specify the new password for the selected User object (twice), then click OK.

Select *Set simple password* to define a simple password, which is required for native file access for Windows* and Macintosh* users. It is not necessary when Universal Password is enabled.

4.4 Partitions and Replicas

Partition and replica operations let you manage eDirectory's physical design and distribution across your directory servers, and includes the following tasks:

- ◆ Section 4.4.1, "Creating a Partition," on page 26
- ◆ Section 4.4.2, "Merging a Partition," on page 26
- ◆ Section 4.4.3, "Moving a Partition," on page 27
- ◆ Section 4.4.4, "Viewing Replica Information," on page 27
- ◆ Section 4.4.5, "Viewing Partition Information," on page 27
- ◆ Section 4.4.6, "Using the Filtered Replica Wizard," on page 28

For information about partitions and replicas, see the *eDirectory Administration guide* (<http://www.novell.com/documentation/edir88/index.html?page=/documentation/edir88/edir88/data/a2iiiiik.html#a2iiiiik>).

4.4.1 Creating a Partition

Partitions create logical divisions of the eDirectory tree. For example, if you choose an Organizational Unit and create it as a new partition, you split the Organizational Unit and all of its subordinate objects from its parent partition. The Organizational Unit you choose becomes the root of a new partition. The replicas of the new partition exist on the same servers as the replicas of the parent, and objects in the new partition belong to the new partition's root object.

- 1 In Roles and Tasks, select *Partitions and Replicas > Create Partition*.
- 2 In the Create Partition page, specify the container to use as the root of the new partition, or use the Object Selector to locate it, then click *OK*.

A confirmation message appears indicating that the partition create operation was successful.

4.4.2 Merging a Partition

Merging a partition effectively recombines it with its parent partition. Creating and merging partitions is how you determine how the directory is logically divided.

- 1 In Roles and Tasks, select *Partitions and Replicas > Merge Partition*.
- 2 In the Merge Partition page, specify the partition to merge with its parent, or use the Object Selector to locate it, then click *OK*.

To specify a partition, specify the Container object that acts as the partition root.

A confirmation message appears indicating that the partition create operation was successful.

4.4.3 Moving a Partition

Moving a partition lets you move a subtree in your directory tree. This is also known as a prune and graft operation. You can only move partitions that have no subordinate partitions. If subordinate partitions exist, you must first merge those partitions before performing the move operation.

When you move a partition, eDirectory changes all references to the partition Root object. Although the object's common name remains unchanged, the complete name of the container (and of all its subordinates) changes.

NOTE: When you move a partition, you must follow eDirectory containment rules. For example, you cannot move an Organizational Unit directly under the root of the directory tree, because the root's containment rules permit only Locality, Country, or Organization objects, but not Organizational Unit objects.

- 1 In Roles and Tasks, select *Partitions and Replicas > Merge Partition*.
- 2 In the Move partition page, specify the required information, then click *OK*.
 - ♦ The *Object name* field specifies the partition to move, or use the Object Selector to locate it.
 - ♦ The *Move to* field specifies the Container object into which you want to move the specified partition.
 - ♦ The *Create an alias in place of moved object* creates a pointer to the partition's new location. This allows any operations that are dependent on the old location to continue uninterrupted until you can update those operations to reflect the new location. Users can continue to log in to the network and find objects in the original directory location.

WARNING: Make sure your directory tree is synchronizing correctly before you move a partition. If you have any errors in synchronization in either the partition you want to move or the destination partition, do not perform a move partition operation. First, fix the synchronization errors. After moving the partition, if you don't want the partition to remain a partition, merge it with its parent partition.

4.4.4 Viewing Replica Information

Viewing a replica tells you about its current state. An eDirectory replica can be in various states depending on the partition or replication operations it is undergoing.

- 1 In Roles and Tasks, click *Partitions and Replicas > Replica View*.
- 2 In the Replica View page, specify the partition or server whose replica table you want to view, then click *OK*.

A table appears listing the replica Partition, Type, Filter, and State. For information about replica states, see the *eDirectory Administration guide* (<http://www.novell.com/documentation/edir88/index.html?page=/documentation/edir88/edir88/data/fbgeaaeg.html#a2iikn>).

4.4.5 Viewing Partition Information

- 1 In Roles and Tasks, select *Partitions and Replicas > View Partition Information*.

- 2 In the Partition Information page, specify the partition for which you want to view information, then click *OK*.

To specify a partition, specify the Container object that acts as the partition root.

4.4.6 Using the Filtered Replica Wizard

Filtered replicas maintain a filtered subset of information from an eDirectory partition (objects or object classes along with a filtered set of attributes and values for those objects). The Filtered Replica Wizard steps you through the configuration of the filtered replicas on the selected server.

- 1 In Roles and Tasks, select *Partitions and Replicas > Filtered Replica Wizard*.
- 2 Specify the name and context of the server on which you want to configure a filtered replica, or use the Object Selector to find it, then click *Next*.
- 3 Click Define the Filter Set to specify the classes and attributes for a filter set on the selected server, then click *Next*.

The replication filter contains the set of eDirectory classes and attributes you want to host on this server's set of filtered replicas.

- 4 Click *Finish*.

For more information about filtered replicas, see the *eDirectory Administration guide* (<http://www.novell.com/documentation/edir88/index.html?page=/documentation/edir88/edir88/data/a5lhibw.html>).

4.5 Rights

Rights refers to eDirectory trustee rights and trustees. When you create a tree, the default rights assignments give your network generalized access and security. iManager lets you perform the following rights-related tasks:

- ◆ [Section 4.5.1, “Modifying the Inherited Rights Filter,” on page 28](#)
- ◆ [Section 4.5.2, “Modifying Trustee Rights,” on page 29](#)
- ◆ [Section 4.5.3, “Rights to Other Objects,” on page 29](#)
- ◆ [Section 4.5.4, “Viewing Effective Rights,” on page 29](#)

For more information about eDirectory rights, see the *eDirectory Administration guide* (<http://www.novell.com/documentation/edir88/index.html?page=/documentation/edir88/edir88/data/fbachifb.html>).

4.5.1 Modifying the Inherited Rights Filter

Both eDirectory and the NetWare file system provide an Inherited Rights Filter (IRF) mechanism to block rights inheritance on individual subordinate items. One exception is that the Supervisor right can't be blocked in the NetWare file system.

For more information about Inherited Rights Filters, see the *eDirectory Administration guide* (<http://www.novell.com/documentation/edir88/index.html?page=/documentation/edir88/edir88/data/fbachifb.html#a2iidd>).

- 1 In Roles and Tasks, select *Rights > Modify Inherited Rights Filter*.

- 2 Specify the full name of the object whose inherited rights filter you want to modify, or use the Object Selector to find it, then click *OK*.

This displays a list of the inherited rights filters that have already been set on the object.

- 3 On the property page, edit the list of inherited rights filters as needed, then click *OK*.

To edit the list of filters, you must have the Supervisor or Access Control right to the ACL property of the object. You can set filters that block inherited rights to the object as a whole, to all the properties of the object, and to individual properties.

4.5.2 Modifying Trustee Rights

A trustee is one object that has been granted explicit rights to another object in your directory tree. To modify the trustee list for a given object:

- 1 In Roles and Tasks, select *Rights > Modify Trustees*.
- 2 Specify, or use the Object Selector to find, the name of the object whose trustee list you want to view, then click *OK*.

This opens a list of the object's currently assigned trustees.
- 3 Modify the trustee list as needed, then click *OK*.
 - ♦ Add a trustee by clicking *Add Trustee*.
 - ♦ Remove a trustee by selecting its check box and clicking *Remove Selected*.
 - ♦ Modify a trustee's rights assignment by selecting the *Assigned Rights* link for that trustee.

4.5.3 Rights to Other Objects

This task allows you to view and modify the list of objects to which an object is a trustee.

- 1 In Roles and Tasks, select *Rights > Rights To Other Objects*.
- 2 In the Rights To Other Objects page, provide the required information, then click *OK*.
 - ♦ Specify the name of the object in *Trustee name*.
 - ♦ Specify the context in which you want to search for objects that have this trustee in *Context to search from*.

Select *Search entire subtree* to search all containers under the specified context.
- 3 Modify the object list as needed, then click *OK*.
 - ♦ Add explicit rights to another object by clicking *Add Object*.
 - ♦ Remove explicit rights to an object by selecting its check box and clicking *Remove Selected*.
 - ♦ Modify the explicit rights granted to an object by selecting the *Assigned Rights* link for that object.

4.5.4 Viewing Effective Rights

Effective rights is the combination of explicit and inherited rights that an object has at any point in the directory tree. To view an object's effective rights to another object:

- 1 In Roles and Tasks, select *Rights > View Effective Rights*.

- 2 Specify, or use the Object Selector to find, the name of the trustee whose rights you want to view, then click *OK*.
- 3 In the Object name field, specify the name of the object for which you want to calculate the trustee's effective rights.
eDirectory calculates the effective rights and displays them in the *Effective Rights* field.
- 4 Click *Done* when finished.

4.6 Schema

The directory schema defines the types of objects that can be created in your tree (such as Users, Printers, and Groups) and what information is required or optional at the time the object is created. iManager provides the following schema-related tasks:

- ◆ [Section 4.6.1, “Adding an Attribute,” on page 30](#)
- ◆ [Section 4.6.2, “Viewing Attribute Information,” on page 31](#)
- ◆ [Section 4.6.3, “Viewing Class Information,” on page 31](#)
- ◆ [Section 4.6.4, “Creating an Attribute,” on page 31](#)
- ◆ [Section 4.6.5, “Creating a Class,” on page 31](#)
- ◆ [Section 4.6.6, “Deleting an Attribute,” on page 32](#)
- ◆ [Section 4.6.7, “Deleting a Class,” on page 32](#)
- ◆ [Section 4.6.8, “Extending a Schema,” on page 32](#)
- ◆ [Section 4.6.9, “Extending an Object,” on page 32](#)

For more information about eDirectory schema, see the *eDirectory Administration guide* (<http://www.novell.com/documentation/edir88/index.html?page=/documentation/edir88/edir88/data/a4a9bz0.html>).

4.6.1 Adding an Attribute

You can add optional attributes to existing classes if your organization's information needs change or if you are preparing to merge trees. To add an attribute to an existing class:

NOTE: Mandatory attributes can be defined only while creating a class. (A mandatory attribute is one that must be completed when an object is being created.)

- 1 In Roles and Tasks, select *Schema > Add Attribute*.
- 2 Select the class you want to add an attribute to, then click *OK*.
- 3 Select the attributes you want to add, then click *OK*.

Select the desired attributes from the *Available Optional Attributes* list, then click the *Right-arrow* to add these attributes to the *Add These Optional Attributes* list. Use the *Left-arrow* to remove attributes from *Add These Optional Attributes*.

Objects you create of this class now have the properties you added. To set values for the added properties, use the generic Other property page of the object.

4.6.2 Viewing Attribute Information

You can view an attribute's structural details such as Syntax, flags and Classes that use the attribute. To see an attribute's information:

- 1 In Roles and Tasks, select *Schema > Attribute Information*.
- 2 Select the attribute for which you want to see information, then click *View*.
The Content frame displays information related to the selected attribute.
- 3 When finished, click *Close*.

4.6.3 Viewing Class Information

The Class Information page displays information about the selected class and lets you add attributes. During class creation, if the class is specified to inherit attributes from another class, the inherited attributes are classified as they are in the parent class. For instance, if Object Class is a mandatory attribute for the parent class, then it displays on this screen as a mandatory attribute for the selected class.

To see a Class's information:

- 1 In Roles and Tasks, select *Schema > Class Information*.
- 2 Select the class for which you want to see information, then click *View*.
The Content frame displays information related to the selected class. To add an attribute to the class, select *Add a new attribute*. To view the class's parent class, select *View superclass*.
- 3 When finished, click *Close*.

4.6.4 Creating an Attribute

You can define your own custom types of attributes and add them as optional attributes to existing object classes. However, you cannot add mandatory attributes to existing classes. To create an attribute:

- 1 In Roles and Tasks, click *Schema > Create Attribute*.
- 2 Follow the steps in the Create Attribute Wizard to complete the attribute creation procedure.

4.6.5 Creating a Class

An auxiliary class is a set of properties (attributes) added to particular object rather than to an entire class of objects. For example, an e-mail application could extend the schema of your eDirectory tree to include an E-Mail Properties auxiliary class and then extend individual objects with those properties as needed.

Using Schema Manager, you can define your own auxiliary classes. You can then extend individual objects with the properties defined in your auxiliary classes. To create an auxiliary class:

- 1 In Roles and Tasks, click *Schema > Create Class*.
- 2 Follow the steps in the Create Class Wizard to define the new class.

4.6.6 Deleting an Attribute

You can delete unused attributes that aren't part of the base schema of your eDirectory tree. This might be useful after merging two directory trees, or if an attribute has become obsolete over time. To delete an attribute:

- 1 In Roles and Tasks, click *Schema > Delete Attribute*.
- 2 Select the attribute you want to delete, then click *Delete*.
Only attributes that you can delete are displayed.

4.6.7 Deleting a Class

You can delete unused classes that aren't part of the base schema of your eDirectory tree. iManager prevents you from deleting classes that are currently being used in locally replicated partitions. To delete a class:

- 1 In Roles and Tasks, click *Schema > Delete Class*.
- 2 Select the class you want to delete, then click *Delete*.
Only classes that are allowed to be deleted are shown.

4.6.8 Extending a Schema

You can extend the schema of a tree by creating a new class or attribute. To extend the schema of your eDirectory tree, you need Administrator/Supervisor right to the entire tree. To extend the schema:

- 1 In Roles and Tasks, click *Schema > Extend Schema*.
- 2 Follow the ICE Wizard through the import, export, migration of data, or schema update and compare operations.

4.6.9 Extending an Object

- 1 In Roles and Tasks, click *Schema > Object Extensions*.
- 2 Specify the name and context of the object you want to extend, then click *OK*.
- 3 Depending on whether the auxiliary class that you want to use is already listed under Current Auxiliary Class Extensions, click one of the following:
 - ♦ *Yes*: Quit this procedure. See [Modifying an Object's Auxiliary Properties \(http://www.novell.com/documentation/edir88/index.html?page=/documentation/edir88/edir88/data/fbbdchgh.html#a3olrac\)](http://www.novell.com/documentation/edir88/index.html?page=/documentation/edir88/edir88/data/fbbdchgh.html#a3olrac) in the *eDirectory Administration Guide* instead.
 - ♦ *No*: Click *Add*, select the auxiliary class, then click *OK*.
- 4 Click *Close*.

4.7 Users

Managing users and their network access is a central purpose of the directory. iManager provides the following user-related tasks:

- ♦ [Section 4.7.1, "Creating a User," on page 33](#)

- ◆ Section 4.7.2, “Deleting a User,” on page 33
- ◆ Section 4.7.3, “Disabling an Account,” on page 34
- ◆ Section 4.7.4, “Enabling an Account,” on page 34
- ◆ Section 4.7.5, “Modifying a User,” on page 34
- ◆ Section 4.7.6, “Moving a User,” on page 34
- ◆ Section 4.7.7, “Renaming a User,” on page 34

For more information about user objects in the directory, see the *eDirectory Administration guide* (<http://www.novell.com/documentation/edir88/index.html?page=/documentation/edir88/edir88/data/afxkmdi.html>).

4.7.1 Creating a User

To create a new user object:

- 1 In Roles and Tasks, select *User > Create User*.
- 2 In the Create User page provide, at a minimum, the required user-related information, then click *OK*.
 - ◆ Username
 - ◆ Last Name
 - ◆ Context
 - ◆ Password (twice)

IMPORTANT: If you fail to enter a password, you are prompted to either allow the user to log in without a password (not recommended) or require a password for login.

Select *Set simple password* to define a simple password, which is required for native file access for Windows* and Macintosh* users. It is not necessary when Universal Password is enabled.

Select *Copy from template or user object* to create a user based on an existing Template or User object. When copying from a user object, iManager allows only a copy of the New Object NDS rights instead of a copy of NDS rights, to prevent users from receiving the same rights as the administrator.

Select *Create home directory* to specify a location for the user’s home directory, which is created when the user object is created. If you specify a path that doesn't exist, a message appears stating that the user's home directory has not been created.

4.7.2 Deleting a User

To delete a user object:

- 1 In Roles and Tasks, select *Users > Delete User*.
- 2 Type the name and context of the object or use the search feature to find it, then click *OK*.
- 3 Click *Delete*.

A confirmation appears indicating the user object has been deleted.

4.7.3 Disabling an Account

To disable a user account, thereby preventing the user from authenticating to the directory:

NOTE: This only prevents a user from authenticating subsequent to disabling the account. If they are logged in when the account is disabled, their access continues unchanged until they log out.

- 1 In Roles and Tasks, select *Users > Disable Account*.
- 2 Specify, or use the Object Selector to find, the name and context of the object, then click *OK*.
- 3 Click *Disable*.

4.7.4 Enabling an Account

To enable a previously disabled user account:

- 1 In Roles and Tasks, select *Users > Enable Account*.
- 2 Specify, or use the Object Selector to find, the name and context of the object, then click *OK*.
- 3 Click *Enable*.

4.7.5 Modifying a User

To modify an existing user object's properties:

- 1 In Roles and Tasks, select *Users > Modify User*.
- 2 Specify, or use the Object Selector to find, the name and context of the object, then click *OK*.
The Content frame displays the user object's property book.
- 3 Make your changes, then click *Apply* or *OK* to save the changes.

4.7.6 Moving a User

To move a user object:

- 1 In Roles and Tasks, select *Users > Move User*.
- 2 Provide the required information, as described in [“Moving an Object” on page 23](#).

4.7.7 Renaming a User

To rename a user object:

- 1 In Roles and Tasks, select *Users > Rename User*.
- 2 Provide the required information, as described in [“Renaming an Object” on page 23](#).

Configuring for iManager Auditing

5

Use Novell® Audit 2.0 for iManager auditing tasks. For more information, see the [Novell Audit 2.0 Administration guide](http://www.novell.com/documentation/novellaudit20/index.html) (<http://www.novell.com/documentation/novellaudit20/index.html>).

Novell Audit captures data about the following events:

- ◆ Added authorized user
- ◆ Successful login
- ◆ Successful NPM install
- ◆ Startup iManager
- ◆ Failed SSL connection
- ◆ Logout
- ◆ Changed configuration
- ◆ Failed login
- ◆ Failed NPM install
- ◆ Shutdown iManager

The *iman_en.lsc* file that contains this data is installed during the Novell Audit installation process. It can also be installed manually via the Novell Audit iManager plug-in as described in the following section.

5.1 Installing the IMAN_EN.LSC File in iManager

Install Novell Audit 2.0 *before* you install the `IMAN_EN.LSC` file.

- 1 Log in to iManager.
- 2 Select the Auditing and Logging role.
- 3 Select the Logging Server Options task.
- 4 Browse to and select the Logging Server object, then click *OK*.
- 5 Select the *Log Applications* tab.
- 6 Select *Applications*.
- 7 Select *Applications Actions*, then click *New*.
- 8 Click *OK* to create a new Log Application in the container.
- 9 Specify a Log Application name.
- 10 To import the `iman_en.lsc` file, click *Browse* and select the file found in the `TOMCAT_HOME\webapps\nps\support\audit` directory, then click *OK*.

The new log application should now appear under the Applications container.

5.2 Enabling Auditing in iManager

- 1 Log in to iManager.

- 2** In the Configure view, click *iManager Server > Configure iManager*.
- 3** Select *Enable Novell Audit*, select the events you want to record, then click *Save*.

Configuring and Customizing iManager

6

This section describes the various features of Novell® iManager configuration. You configure iManager from the Configure view. This section discusses the following topics:

- ◆ [Section 6.1, “Role-Based Services,” on page 37](#)
- ◆ [Section 6.2, “RBS Configuration,” on page 41](#)
- ◆ [Section 6.3, “RBS Reporting,” on page 50](#)
- ◆ [Section 6.4, “iManager Server,” on page 53](#)
- ◆ [Section 6.5, “Object Creation List,” on page 58](#)
- ◆ [Section 6.6, “Plug-In Module Installation,” on page 58](#)
- ◆ [Section 6.7, “Downloading and Installing Plug-in Modules,” on page 59](#)
- ◆ [Section 6.8, “E-Mail Notification,” on page 62](#)
- ◆ [Section 6.9, “Views,” on page 63](#)

IMPORTANT: Using Role-Based Services is optional, although we recommend setting it up for the optimal use of the iManager software. RBS must be configured in the eDirectory™ tree in order to use the Plug-In Studio.

Do not use Novell ConsoleOne® to modify or delete any RBS objects. RBS objects should be managed using only iManager.

If desired, you can prevent non-admin and non-collection-owner users from accessing iManager's Configure view. For more information see the following topics:

- ◆ iManager Views: [Section 6.9, “Views,” on page 63](#).
- ◆ User Preferences: [Chapter 7, “Preferences,” on page 65](#).
- ◆ Authorized Users: [“Authorized Users” on page 55](#).

6.1 Role-Based Services

iManager gives you the ability to assign specific responsibilities to users and to present them with the tools (and their accompanying rights) necessary to perform those sets of responsibilities. This functionality is called Role-Based Services (RBS).

Role-Based Services is a set of extensions to the eDirectory schema. RBS defines several object classes and attributes that provide a mechanism for administrators to grant a user access to management tasks based on the user's role in the organization. This gives users access to only those tasks that the users need to perform. RBS grants only the rights necessary to perform assigned tasks.

NOTE: Novell iManager Role-Based Services (RBS) grants rights based upon the Access Control List (ACL) capability of Novell eDirectory. The ACLs allow a trustee to be granted rights to a specific object or its subordinate objects. ACLs are not granted based upon specific object types. Each Novell iManager task defines its applicable object types and necessary ACLs. However, these

ACLs allow the user to perform those operations with other object types through eDirectory APIs or other tools such as Novell ConsoleOne or NWAdmin.

Use RBS to create specific roles within your organization; the roles contain tasks that an assigned user can perform within iManager, such as creating a new user or changing a password. Tasks are preassigned to roles but can be replaced, reassigned, or removed altogether.

Furthermore, users are associated with roles in a specified scope, which is a container in the tree in which the user has the requisite permissions to perform a task. A role requires this threefold association of role, members, and scope to be complete.

An RBS Role object creates an association between users and tasks. An administrator grants a user access to a task by making the user a member of the role to which the task is assigned.

A user can be assigned to a role in the following ways:

- ◆ Directly as a user
- ◆ Through group and dynamic group assignments
If a user is a member of a group or a dynamic group that is assigned to a role, then the user has access to the role.
- ◆ Through organizational role assignments
If a user is an occupant of a organizational role that is assigned a role, then the user has access to the role.
- ◆ Through container assignment
A User object has access to all of the roles that its parent container is assigned. This could also include other containers up to the root of the tree.

A user can be associated with a role multiple times, each with a different scope.

6.1.1 RBS Objects in eDirectory

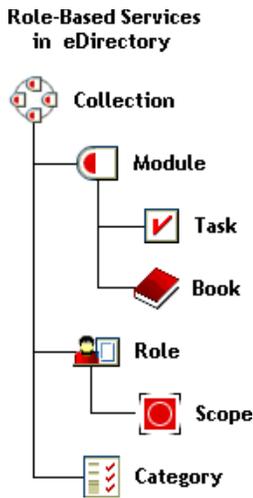
The following table lists the RBS objects. iManager extends the eDirectory schema to include these objects when you install RBS. For more information, see [Installing RBS \(page 40\)](#).

Object	Description
 rbsCollection	<p>A container object that holds all RBS Role and Module objects.</p> <p>rbsCollection objects are the uppermost containers for all RBS objects. A tree can have any number of rbsCollection objects. These objects have owners, which are users who have management rights over the collection.</p> <p>rbsCollection objects can be created in any of the following containers:</p> <ul style="list-style-type: none">◆ Country◆ Domain◆ Locality◆ Organization◆ Organizational Unit

Object	Description
 rbsRole	<p>Defining a role includes creating an rbsRole object and specifying the tasks that the role can perform.</p> <p>rbsRoles are container objects that can be created only in an rbsCollection container.</p> <p>Role members can be Users, Groups, Organizations, Organization Roles, or Organizational Units, and role members are associated to a role in a specific scope of the tree. The rbsTask and rbsBook objects are assigned to rbsRole objects.</p>
 rbsTask	<p>A leaf object that holds a specific function, such as resetting login passwords.</p> <p>rbsTask objects are located only in rbsModule containers.</p>
 rbsBook (aka Property Book)	<p>A book is a leaf object that displays a group of pages that allow a user to view or modify the properties of an object or set of objects of the same type. Each page of the book has a tab that you click, to view a different page.</p> <p>A book object resides only in rbsModule containers and can be assigned to one or more roles and to one or more object class types.</p>
 rbsScope	<p>A leaf object used for ACL assignments (instead of making assignments for each User object). rbsScope objects represent the context in the tree where a role is performed and are associated with rbsRole objects. They inherit from the Group class. User objects are assigned to an rbsScope object. These objects have a reference to the scope of the tree that they are associated with.</p> <p>The objects are dynamically created when needed, then automatically deleted when no longer needed. They are located only in rbsRole containers.</p> <hr/> <p>WARNING: Never change the configuration of an rbsScope object. Doing so has serious consequences and could possibly break the system.</p> <hr/>
 rbs Module	<p>Represents a container object that holds rbsTask and rbsBook objects. rbsModule objects have a module name attribute that represents the name of the product that defines the tasks or books (for example, eDirectory Maintenance Utilities, NMAS™ Management, or Novell Certificate Server™ Access).</p> <p>rbsModule objects can be created only in rbsCollection containers.</p>
 rbs Category	<p>A category groups roles and tasks that are specific to a particular function. iManager has 14 default categories: Authentication & Passwords, Collaboration, Directory, File Management, Identity Manager, Infrastructure, Install & Upgrade, Network, Nsure Audit, Printing, Security, Servers, Software Licenses & Network, Usage, and Users & Groups.</p> <p>The All Categories selection displays all available roles and tasks.</p> <p>You can also create new categories and assign roles and tasks to them.</p>

RBS objects reside in the eDirectory tree as depicted in the following figure:

Figure 6-1 *Role-Based Services in eDirectory*



6.1.2 Installing RBS

RBS is installed using the iManager Configuration Wizard.

- 1 In the Configure view, select *Role Based Services > RBS Configuration*.
- 2 Select *Configure iManager*.
- 3 Follow the on-screen instructions.

6.1.3 Removing RBS

If Role-Based Services is no longer needed in the tree, the RBS Collection object can be safely deleted through iManager. Deleting the RBS collection automatically cleans up all user role associations and scopes in the tree. Do not delete the RBS collection using other utilities, such as ConsoleOne.

To remove Roll-based Services:

- 1 In the Configure view, select *Role Based Services > RBS Configuration*.
- 2 Select the collection to be deleted.
- 3 Click *Delete*.

After the RBS collection is deleted, all users logging in to iManager enter in Assigned Access mode even though there is no RBS collection object in the tree.

To switch back to Unrestricted mode (the default mode):

- 1 In the Configure view, select *iManager Server > Configure iManager*.
- 2 Select the *RBS* tab.
- 3 Select the appropriate tree name in the *RBS Tree List* field, then click the minus button.
- 4 Click *Save*.

NOTE: When using iManager in Unrestricted mode, you typically see the following message on the iManager Home Page: `Notice: Some of the roles and tasks are not available. Clicking View Details might display a Not supported by current authenticators message for several of the tasks, even though the tasks work correctly. This message is misleading, and iManager removes these messages after you configure RBS.`

6.2 RBS Configuration

The RBS Configuration task provides complete control over RBS objects. It is a central place for managing and configuring RBS objects. You can list and modify RBS objects by type. The task also gives you useful information about the RBS system, such as the number of modules in a collection, how many are installed, how many are not installed, and how many are outdated. Some tasks let you operate on multiple objects simultaneously. For example, you can associate or disassociate multiple members from a role at the same time.

From the Configure view, select *Role-Based Services > RBS Configuration* to open the RBS Configuration page in the Content frame.

The page includes two tabs:

iManager 2.x Collection: Displays current RBS collections.

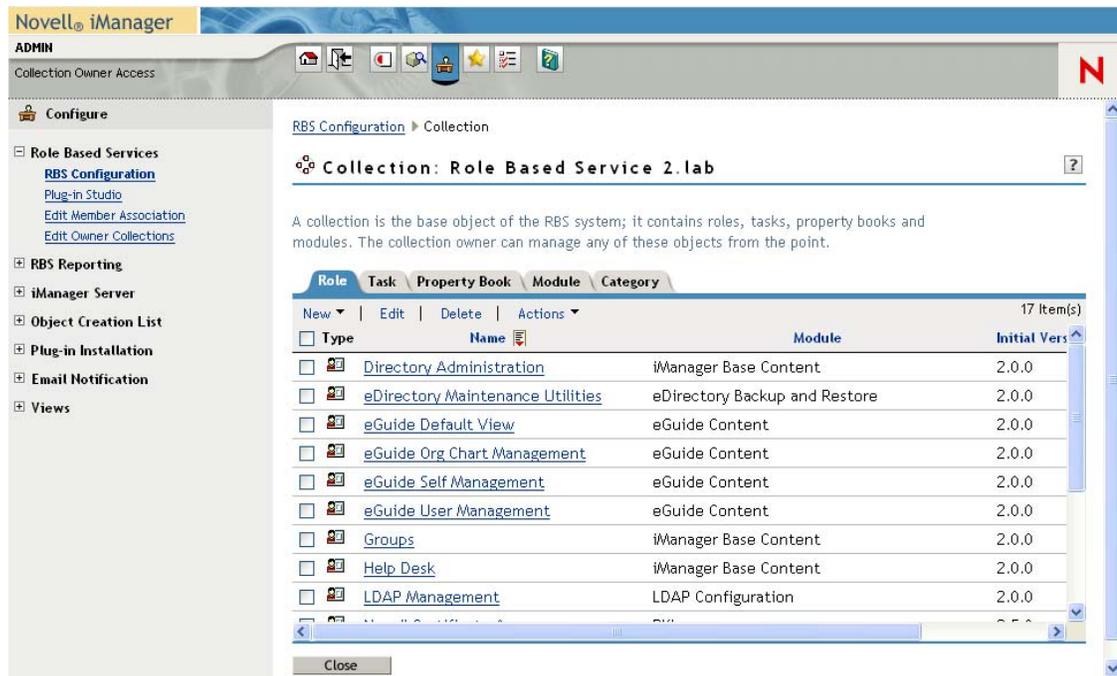
iManager 1.x Collections: Displays older RBS collections that you can either delete or migrate to iManager 2.x. If you select Migrate, a wizard steps you through the migration process.

iManager displays only those collections you own, and includes the following information about each collection:

- ◆ **Module:** Indicates the number of modules on the Web server that you are logged in to.
- ◆ **Installed:** Indicates the number of modules that are currently installed.
- ◆ **Outdated:** Indicates the number of outdated modules currently installed.
- ◆ **Not-Installed:** Indicates the number of modules that are available but not installed.

To work with a particular collection, select it from the list. This opens a collection-specific view, as shown in [Figure 6-2](#).

Figure 6-2 Working with RBS collections in iManager



The remainder of this section describes the various tabs in the RBS Collection page as well as the other RBS-related tasks in the Role Based Services category.

- ◆ [Section 6.2.1, “The Role Tab,”](#) on page 42
- ◆ [Section 6.2.2, “The Task Tab,”](#) on page 44
- ◆ [Section 6.2.3, “The Property Book Tab,”](#) on page 45
- ◆ [Section 6.2.4, “The Module Tab,”](#) on page 46
- ◆ [Section 6.2.5, “The Category Tab,”](#) on page 47
- ◆ [Section 6.2.6, “Plug-In Studio,”](#) on page 48
- ◆ [Section 6.2.7, “Editing Member Associations,”](#) on page 50
- ◆ [Section 6.2.8, “Editing Owner Collections,”](#) on page 50

6.2.1 The Role Tab

The RBS Collection Role tab lets you manage the RBS roles in the collection. From this tab you can do the following:

- ◆ [“Create a New Role”](#) on page 43
- ◆ [“Edit a Role”](#) on page 43
- ◆ [“Delete a Role”](#) on page 43
- ◆ [“Set a Member Association”](#) on page 43
- ◆ [“Assign a Category”](#) on page 44

- ♦ “Add a Description to a Role” on page 44

NOTE: To select a role, select the checkbox to the left of the role name.

Create a New Role

To create a new role in the collection:

- 1 In the *Role* tab, select *New > iManager Role*.
- 2 Complete the steps in the iManager Role Wizard.

The wizard steps you through naming the role; assigning tasks and categories to the role; and assigning role members and scopes to the role.

Edit a Role

To edit an existing role in the collection:

- 1 In the *Role* tab, select the role, then click *Edit*.
The role's task list appears.
- 2 Add or remove a task from this page as needed, then click *OK*.

Delete a Role

To delete a role in the collection:

- 1 In the *Role* tab select the role, then click *Delete*.

A message appears: This operation will delete all of the selected roles. Do you want to continue?

- 2 Click *OK* to complete the deletion of the role.

Set a Member Association

To add a member to an existing role:

- 1 In the *Role* tab select the role, then select *Actions > Member Associations*.
- 2 Provide the required member information, then click *Add*.
 - ♦ *Name*: Specify, or use the Object Selector to find, the desired object to be a role member.
 - ♦ *Scope*: Specify, or use the Object Selector to find, the container that defines the scope within which this member can perform the role.
- 3 In the members list, specify how you want rights related to this role assigned to the member, then click *OK*.
 - ♦ *Assign Rights*: Instructs eDirectory to automatically grant the member rights necessary to perform the assigned role. When not selected, the member is assigned the role but might not have rights to perform all tasks associated with the role. The member's rights assignments are handled separately.
 - ♦ *Inheritable*: Select *subtree* to indicate that the member's scope includes all sub-containers in the specified context. Select *base object* to indicate that the member can perform the role only in the specified container.

Assign a Category

To add a category assignment to an existing role:

- 1 In the *Role* tab, select the role, then select *Actions > Category Assignment*.
The Category Assignment page appears.
- 2 Select a category, then click the right-arrow to assign it to the role.
- 3 Click *OK*.

Add a Description to a Role

To add a description to an existing role:

- 1 In the *Role* tab, select the role and click *Actions > Description*.
- 2 Specify the description in the text box, then click *OK*.

6.2.2 The Task Tab

A task is a plug-in that performs a distinct management function, such as creating a user or setting a password. iManager lists the tasks by group in the navigation area on the left side of the window.

The RBS Collection Task tab lets you do the following operations:

- ♦ “Creating a New Task” on page 44
- ♦ “Deleting a Task” on page 44
- ♦ “Editing the Role Assignment of a Task” on page 45
- ♦ “Adding a Description to a Task” on page 45

Creating a New Task

To create a new task:

- 1 In the *Task* tab, select *New > iManager Task*.
- 2 Complete the steps in the Create iManager Task Wizard.
The wizard steps you through providing the necessary detail about the new task you are creating.

For information on creating tasks in the Plug-in Studio, see “Creating a New Task from Plug-In Studio” on page 48.

Deleting a Task

To delete an existing task:

- 1 In the *Task* tab, select the task, then select *Delete*.
A message appears: This operation will delete all of the selected tasks. Do you want to continue?
- 2 Click *OK*.

Editing the Role Assignment of a Task

To edit the list of roles to which a task is assigned:

- 1 In the *Task* tab, select the task, then select *Actions > Role Assignment*.
- 2 On the Edit Role Assignment page, add or remove roles from the *Assigned Roles* field, then click *OK*.

Adding a Description to a Task

To add a description to an existing task:

- 1 In the *Task* tab, select the task, then select *Actions > Description*.
- 2 Specify the description in the text box, then click *OK*.

6.2.3 The Property Book Tab

A property book displays the attributes of a specific object type that you can modify. These properties are of an object or set of objects of the same type.

Property books can be assigned to roles and appear in the list of tasks for a role. For example, a property book that modifies the attributes of User objects might have a page that lets you to specify a user's login script. Another page could let you change a user's e-mail address and telephone number.

Property book pages are similar to tasks. However, they are for displaying and modifying attributes in a single view. For a more complex, wizard-like UI, you should create a task.

The RBS Collection Property Book tab lets you perform the following operations:

- ♦ “Creating a New Property Book” on page 45
- ♦ “Deleting a Property Book.” on page 46
- ♦ “Editing the Role Assignment in a Property Book” on page 46
- ♦ “Modifying the Page List for a Property Book” on page 46
- ♦ “Modifying the Object Type Assignment of a Property Book” on page 46
- ♦ “Modifying the Description of a Property Book” on page 46

Creating a New Property Book

To create a new property book:

- 1 In the *Property Book* tab, select *New*.
- 2 Complete the steps in the Create Property Book Wizard.

The wizard steps you through providing the necessary detail for the property book you are creating.

IMPORTANT: In iManager, some characters have special significance and must be escaped with the backslash (\) character. For more information, see [Section 3.2, “Special Characters,” on page 18](#).

Deleting a Property Book.

To delete a property book:

- 1 In the *Property Book* tab, select the property book, then select *Delete*.

A message appears: This operation will delete all of the selected property books. Do you want to continue?

- 2 Click *OK*.

Editing the Role Assignment in a Property Book

To modify the list of roles to which a property book is assigned:

- 1 In the *Property Book* tab, select the property book, then select *Actions > Role Assignment*.
- 2 On the Edit Role Assignment page, add or remove roles from the *Assigned Roles* field, then click *OK*.

Modifying the Page List for a Property Book

To modify the attribute pages associated with a property book:

- 1 In the *Property Book* tab, select the property book, then select *Actions > Page List*.
- 2 On the Edit Page List page, add or remove roles from the *Assigned Pages* field, then click *OK*.

Modifying the Object Type Assignment of a Property Book

To modify the list of object types associated with a property book:

- 1 In the *Property Book* tab, select the property book, then select *Actions > Object Type*.
- 2 On the Edit Object Type page, add or remove roles from the *Assigned Object Types* field, then click *OK*.

Modifying the Description of a Property Book

To add a description to an existing task:

- 1 In the *Property Book* tab, select the property book, then select *Actions > Description*.
- 2 Specify the description in the text box, then click *OK*.

6.2.4 The Module Tab

The Module page lists the RBS modules currently installed on a selected collection. Each module contains RBS property books and tasks. From this page, you can add (if you want to create a custom property book) and delete modules, and also type a description for a selected plug-in module.

The RBS Collection Module tab lets you perform the following operations:

- ♦ “Adding a New Plug-in Module” on page 47
- ♦ “Deleting an RBS Module” on page 47
- ♦ “Adding a description” on page 47

Adding a New Plug-in Module

To add a new plug-in module:

- 1 In the *Module* tab, select *New*.
- 2 Specify the RBS module name and a destination context, then click *OK*.
iManager displays a message indicating the module has been added.

Deleting an RBS Module

To delete an existing plug-in module:

- 1 In the *Module* tab, select a module to delete, then select *Delete*.
- 2 Click *OK* to confirm the module deletion..

Adding a description

To add a description to an existing plug-in module:

- 1 In the *Module* tab, select a module, then select *Actions > Description*.
- 2 Specify the module description, then click *OK*.

6.2.5 The Category Tab

Categories group related roles and tasks together. The RBS Collection Category tab lets you perform the following operations:

- ♦ [“Adding a New Category” on page 47](#)
- ♦ [“Deleting a Category” on page 47](#)
- ♦ [“Adding a Description” on page 48](#)

Adding a New Category

To add a description to an existing plug-in module:

- 1 In the *Category* tab, select *New*.
This launches the Create Category Wizard.
- 2 Specify category name and description (optional), then click *Next*.
- 3 Select the roles to be associated with the new category, then click *Next*.
- 4 Review the new category summary, then click *Finish*.

Deleting a Category

To delete an existing category:

- 1 In the *Category* tab, select a module to delete, then select *Delete*.
- 2 Click *OK* to confirm the category deletion..

Adding a Description

To add or modify the description of an existing category:

- 1 In the *Category* tab, select a category, then select *Actions > Description*.
- 2 Specify the category description, then click *OK*.

6.2.6 Plug-In Studio

Plug-In Studio offers a quick and easy way to streamline the tasks that you do several times a day. Use Plug-in Studio to dynamically create tasks for your most frequently used operations. You can also edit and delete tasks here.

For example, to modify a user, instead of selecting *Modify Object*, you can create a dynamic UI to edit only the attributes you have selected, such as first name or title. Data is stored in the `TOMCAT_HOME/webapps/nps/portal/modules/custom` directory (Your Web Server might differ if you use a different Web server program.)

From the Plug-in Studio task, you can perform the following operations:

- ♦ “Creating a New Task from Plug-In Studio” on page 48
- ♦ “Editing a Task” on page 49
- ♦ “Deleting a task” on page 49
- ♦ “Copying Custom Tasks” on page 49
- ♦ “Exporting Custom Tasks” on page 49
- ♦ “Importing Custom Tasks” on page 49

Creating a New Task from Plug-In Studio

To create a new task with Plug-In Studio:

- 1 In the Configure view, select *Role-Based Services > Plug-in Studio*.
- 2 Select *New*.

The Task Builder appears to help you build custom tasks and property pages.

- 3 Specify the object type and platform information, then click *Next*.

Available classes: Specify the object class associated with the new task.

Target device: Specify the platform on which the task is used. Typically, the default selection (Default) works fine.

Plug-in type: Specify the type of task you are creating.

Add Auxiliary Classes: Select this option to add aux class support to the task.

- 4 In the Plug-in Fields screen, provide the necessary information, then click *Install*.

When you click *Install*, iManager dynamically builds the task's `.xml` file, `.jsp` file, and the Java files that execute the task, then it installs those files into the system.

Attributes: Select an attribute to associate with the task from the list of available attributes.

Double-click the attribute to move it to the *Plug-in Fields* field, using the default control.

Controls: Displays the available controls for the attribute selected in the *Attributes* field.

Double-click a control to move the current attribute to the *Plug-in Fields* field, using the selected control.

Plug-in Fields: Displays each attribute/control currently associated with the task. From this field, you can remove attributes from the task, change the control associated with an attribute, and modify the control properties for the attribute.

Plug-in Properties: Lets you specify a *Plug-in ID*, assign the task to an *RBS collection*, and assign the task to a *Role*. The role you assign determines where this task appears in the Roles and Tasks Navigation frame.

Editing a Task

To edit an existing plug-in with Plug-in Studio:

- 1 In the Configure view, select *Role-Based Services > Plug-in Studio*.
- 2 Select the task, then select *Edit*.
- 3 Modify the settings described in [Creating a New Task \(page 44\)](#), then click *Install*.
iManager displays a confirmation message indicating the plug-in was successfully created and installed.

Deleting a task

To delete an existing plug-in with Plug-in Studio:

- 1 In the Configure view, select *Role-Based Services > Plug-in Studio*.
- 2 Select the plug-in from the list of installed custom plug-ins, then click *Delete*.
A message appears: Are you sure you want to delete this plug-in?
- 3 Click *OK* to delete the plug-in.
iManager displays a confirmation message indicating the plug-in was successfully deleted.

Copying Custom Tasks

To copy an existing plug-in with Plug-in Studio:

- 1 In the Configure view, select *Role-Based Services > Plug-in Studio*.
- 2 Select the plug-in from the list of installed custom plug-ins, then click *Actions > Copy*.
- 3 Specify a name for the copied plug-in, then click *OK*.

Exporting Custom Tasks

Use this task to export your custom tasks, making them deployable to other iManager servers.

- 1 In the Configure view, select *Role-Based Services > Plug-in Studio*.
- 2 Select the custom plug-in to export, then click *Actions > Export*.

Importing Custom Tasks

Use this task to deployan exported custom tasks onto multiple iManager servers.

- 1 In the Configure view, select *Role-Based Services > Plug-in Studio*.

- 2 Select *Actions > Import*.
- 3 Specify, or use the Object Selector to find, the RBS collection into which you want to import the custom plug-ins.
- 4 Specify, or browse to, the NPM file that you previously exported.
- 5 Click *Import*.

6.2.7 Editing Member Associations

There are two ways to associate members with roles:

- ♦ Select a member, then assign it to a role within a scope as described in “[Set a Member Association](#)” on page 43.
- ♦ Select a role, then assign members and a scope to it as described below.

To assign an existing role to a selected member

- 1 In the Configure view, select *Role Based Services > Edit Member Association*.
- 2 Specify, or use the Object Selector to find, a member, then click *OK*.
A list appears displaying the roles to which this member is assigned.
- 3 Specify a role and role scope to add to this member, then click *OK*.

This data is saved to eDirectory. After login, the newly assigned role appears in the left column of the member who owns it.

6.2.8 Editing Owner Collections

Use this task to change the owner assigned to a collection.

- 1 In the Configure view, select *Role Based Services > Edit Owner Collections*.
- 2 Specify, or use the Object Selector to find, a collection owner, then click *OK*.
- 3 Add or remove collections this person can own, then click *OK*.

6.3 RBS Reporting

The RBS Reporting feature lets you generate reports about RBS objects in the directory and their configuration. Reports are in chart format and can be exported to other formats and printed. RBS Reporting generates the following reports:

Role Assignments	Unassigned Tasks
Role Tasks Assignments	Unassigned Categories
User Roles Assignments	Custom Roles
User Task Assignments	Custom Tasks
Role Rights Assignments	Custom Categories
Unassigned Roles	Collections

6.3.1 Creating Reports

To create an RBS Report:

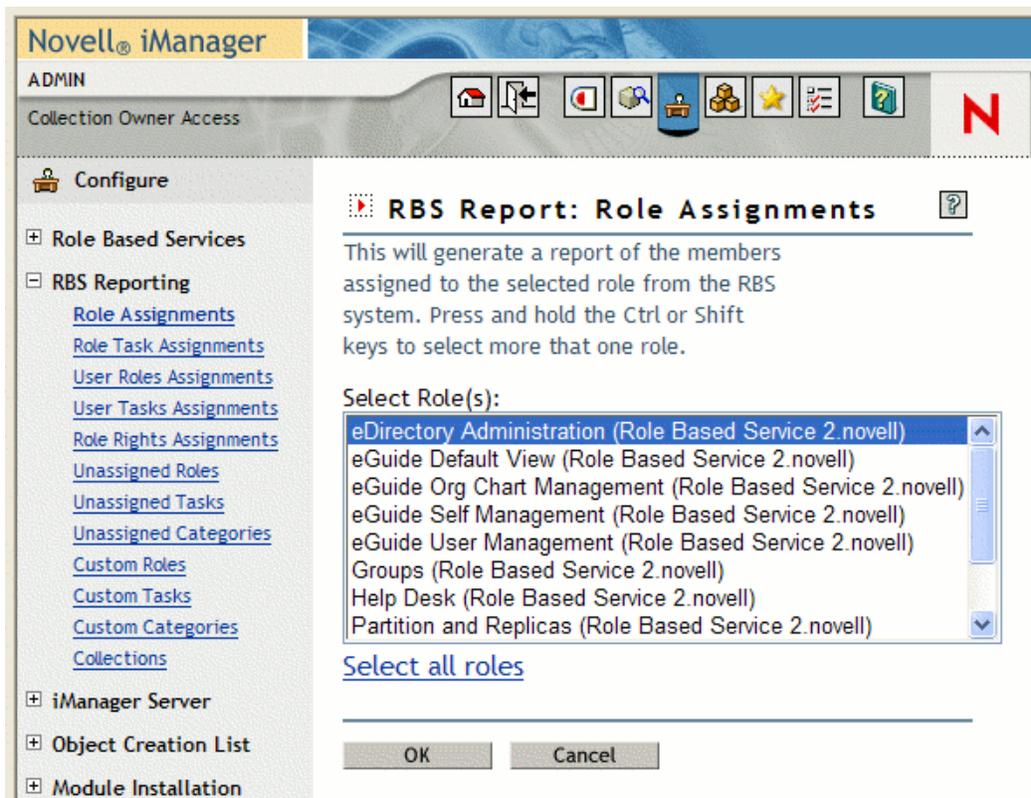
- 1 In the Configure view, select *RBS Reporting*.

Each type of report is implemented as a task.

- 2 Select the desired report, provide the necessary information, then click *OK*.

Each report requires that you provide some initial information, such as the roles for which you want to generate a list of assigned members.

Figure 6-3 *iManager Configure View Showing the Role Assignments Task*



6.3.2 Using Reports

The RBS Reporting tasks generate reports that you can sort, print, and export. The following figure shows an example of an iManager report.

Figure 6-4 *Members Assigned to a Role*

RBS Report: Role Assignments						
Role Name: eDirectory Administration		Date: Monday, October 11, 2004 (5:52:21 PM GMT-07:00)				
Role Name	Role Object	Type	Member	Scope	Assigned	Inherit
eDirectory Administration	eDirectory Administration.Role Based Service 2.novell		admin.novell	.MY_TREE.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
eDirectory Administration	eDirectory Administration.Role Based Service 2.novell		jdoe.novell	novell	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

OK Print Export

Sorting Reports

By default, the items listed in a report are sorted alphabetically in ascending order on the first column. To indicate the column in which items are sorted, iManager displays a small icon next to the column name, and the icon indicates the sort order. To change the column in which items are sorted, click the name of the column you want. To change the sort order, click the name of the column in which items are currently sorted.

Printing Reports

You can easily print RBS reports by clicking the *Print* button. This opens your browser's print dialog box, where you can select a printer and other printing options. This feature prints only the browser frame that contains the report and it prints the report as displayed in the frame, so you should make sure the items are sorted in the order you want before you click *Print*.

Exporting Reports

You can export report data to XML, CSV, and plain text files to use in other applications such as spreadsheets and databases. The export files contain only data and enough metadata to describe the report columns. Other information, such as the report title and date, is not exported. Items in a report are exported in the currently displayed sort order.

- 1 Click the *Export* button.
- 2 In the RBS Report Export window, select the format for the exported data, then click *Export*.
- 3 When your browser prompts you to open or save the file generated by iManager, select the option you prefer and proceed as required by your browser.

The following are examples of XML, CSV, and plain text files exported from the same RBS report:

XML:

```
<?xml version="1.0"?>
<rbs-report>
  <rbs-record>
```

```

    <role-name>eDirectory Administration</role-name>
    <role-object>eDirectory Administration.Role Based Service
2.novell</role-object>
    <member-type>User</member-type>
    <member-object>admin.novell</member-object>
    <scope>.MY_TREE.</scope>
    <rights-assigned>>true</rights-assigned>
    <rights-inherit>>true</rights-inherit>
</rbs-record>
<rbs-record>
    <role-name>eDirectory Administration</role-name>
    <role-object>eDirectory Administration.Role Based Service
2.novell</role-object>
    <member-type>User</member-type>
    <member-object>jdoe.novell</member-object>
    <scope>novell</scope>
    <rights-assigned>>true</rights-assigned>
    <rights-inherit>>true</rights-inherit>
</rbs-record>
</rbs-report>

```

CSV:

```

"Role Name","Role
Object","Type","Member","Scope","Assigned","Inherit",
"eDirectory Administration","eDirectory Administration.Role Based
Service 2.novell","User","admin.novell",".MY_TREE.,""true","true",
"eDirectory Administration","eDirectory Administration.Role Based
Service 2.novell","User","jdoe.novell","novell","true","true",

```

Plain text:

```

Role Name: eDirectory Administration
Role Object: eDirectory Administration.Role Based Service 2.novell
Type: User
Member: admin.novell
Scope: .MY_TREE.
Assigned: true
Inherit: true

```

```

-----
Role Name: eDirectory Administration
Role Object: eDirectory Administration.Role Based Service 2.novell
Type: User
Member: jdoe.novell
Scope: novell
Assigned: true
Inherit: true
-----

```

6.4 iManager Server

If you do not see this task, you are not an authorized user. See [“Authorized Users” on page 55](#). This topic includes the following information:

- ◆ [Section 6.4.1, “Configure iManager,” on page 54](#)

- ◆ Section 6.4.2, “Security,” on page 54
- ◆ Section 6.4.3, “Look and Feel,” on page 55
- ◆ Section 6.4.4, “Logging Events,” on page 56
- ◆ Section 6.4.5, “Authentication,” on page 56
- ◆ Section 6.4.6, “RBS,” on page 56
- ◆ Section 6.4.7, “Plug-In Download,” on page 57
- ◆ Section 6.4.8, “Misc,” on page 57

6.4.1 Configure iManager

There are three settings in the `config.xml` file that control the security and the certificates used when iManager creates an LDAP SSL connection:

Security.Keystore.AutoUpdate: If the value of `AutoUpdate` is `True`, when a user successfully logs in to iManager, the certificate from that eDirectory server might automatically be imported into the iManager-specific keystore. Select the setting **Auto Import Tree Certificate for Secure LDAP** (*Configure iManager > Security*).

Security.Keystore.UpdateAllowAll: When `UpdateAllowAll` is `True`, then any successful user login imports/updates a certificate into the iManager certificate keystore. If the setting is `false`, only an **authorized user** login imports/updates certificates.

Security.Keystore.Priority: The priority setting contains two words that define the search order for certificates during a connection: *system*, and *imanager*. *system* uses the default JVM* keystore to locate certificates when created the SSL context. If that fails, it then goes to the iManager keystore.

You can change the search order of *system* and *iManager* by removing either word from the entry.

To further tighten security, do not allow `AutoUpdate` and use only the system keystore. If you do this, you must manually import the certificates that you want to reside in the default system keystore by using the tools that come with Java. If you disable `UpdateAllowAll`, then certificate imports occur only from a successful iManager authorized user login.

6.4.2 Security

These settings affect your entire Web server configuration and are saved in the `config.xml` file. You can either save as you go or click *Save* once after you have made all your changes on the various tabbed pages.

Warn When Using a Nonsecure Connection

Select this option if you want users without a secure connection between the Web browser and the Web server to receive the following warning: *You are using a non-secure connection.*

Enable Novell Audit

Make sure you have met the Novell Audit **prerequisites**. Select the **Enable Novell Audit** option and select specific iManager logging events, then click *Save*.

Auto Import Tree Certificate for Secure LDAP

Secure LDAP connections require a certificate. If you select this feature, the system automatically imports a public tree certificate for secure LDAP.

Authorized Users

Authorized users are those that iManager permits to perform its various administrative tasks. Authorized user data is saved in `TOMCAT_HOME\webapps\nps\WEB-INF\configiman.properties`. The iManager installation process creates this file only if authorized user information is provided, but doing so is not required. Failure to do so results in iManager allowing any user to install iManager plug-ins and modify iManager server settings (not recommended long-term.)

After installing iManager, you can add an authorized user by specifying, or using the Objector Selector to find, the user object in the *Authorized Users* field. Doing this modifies the `configiman.properties` file.

To designate all users as authorized users, type `AllUsers`.

For security-related information about the `configiman.properties` file, see [“iManager Authorized Users” on page 88](#).

6.4.3 Look and Feel

The *Look and Feel* tab lets you customize the appearance of the iManager interface. This information is stored in `TOMCAT_HOME\webapps\nps\WEB-INF\config.xml`.

Title Bar Name

Specify your organization name in this text box. It then appears in the title bar of the Web browser in place of the default text (Novell iManager).

Images

The Title bar contains three images: the header background image, the header filler image, and the header branding image. Your own images must conform to the dimensions given in the interface.

Store these files in `nps/portal/modules/fw/images`. Specify the path of each image in its respective text field.

Navigation Menu Colors

You can customize the color of the menu header and the background of the navigation menu on the left.

You can type either color names or hexadecimal numbers. Entries do not need to be case sensitive. Click *Reset* to return to default colors and images, or click *Save* to save the settings. to the `config.xml` file.

6.4.4 Logging Events

The *Logging Events* tab lets you configure iManager's logging environment. There are two logging settings:

Logging Level: Select the types of messages you want to log, from four options: *No Logging*, *Errors only*, *Errors and Warnings*, and *Errors, Warnings and Debug Information*.

Select your logging output options.

Logging Output: Select the destination for logged messages, from three options: *Send Log Output to Standard Error Device*, *Send Log Output to Standard output Device*, and *Send Log Output to Debug.html File*.

The log file path and log file size both appear on this page. Select *View* to display the current log file in HTML format. Select *Clear* to clear the current log file and reset the log file size to 0 (zero) bytes.

6.4.5 Authentication

The *Authentication* tab configures iManager's login page. It contains the following options:

Remember login credentials: If you select this option, users must only enter a password to log in.

Use Secure LDAP for auto-connection: This setting specifies whether iManager communicates via LDAP SSL or LDAP clear text. Some plug-ins, such as Dynamic Groups and NMASTM, do not work if this option is not selected. This setting does not take effect until you log out of iManager.

Allow 'Tree' selection on Login page: When selected, iManager's login page displays the *Tree* field. If you do not select this option, you must have a default tree name specified or you cannot log in.

Contextless Login: Contextless login allows users to log in with only a username and password, without knowing their entire User object context (for example, .admin.support.sales.novell.)

If there are multiple users with the same username in the tree, contextless login tries to log in using the first user account it finds with the supplied password. In this case, a user should provide a full context when logging in or limit the search containers that contextless login searches.

Select *Search from Root* to perform the user search from the root of the directory tree. Select *Search Containers* to specify one or more containers where User objects can be found.

By default, iManager connects with public access, requiring no specific credentials. You can specify a user with specific credentials to do the search for the contextless lookup. The iManager public user is used if you don't specify a user.

IMPORTANT: If you specify a public user, consider carefully the implications of password expiration settings. If the password is set to expire for the public user, you do not have the opportunity to change the password during login after it expires.

6.4.6 RBS

Role-Based Services (RBS) assigns the rights within eDirectory to perform tasks. When you assign a role to a user, by default RBS assigns the rights necessary to perform the tasks included with that role.

The *RBS* tab lets you configure the following settings:

Enable Dynamic Groups: When selected, RBS allows dynamic groups to be members of a role. For more information about dynamic groups, see the [eDirectory Administration guide \(http://www.novell.com/documentation/edir88/index.html?page=/documentation/edir88/edir88/data/fbabihe.html#fbacjdfg\)](http://www.novell.com/documentation/edir88/index.html?page=/documentation/edir88/edir88/data/fbabihe.html#fbacjdfg).

Show Roles in Owned Collections: When selected, collection owners see all roles and tasks whether they are members of them or not. Deselect this option to force collection owners to see only their assigned roles.

Role Discovery Domain: Indicates where in the tree iManager is to search for roles that are assigned to a member.

- ◆ Parent, iManager searches for Dynamic Groups up to the parent container.
- ◆ Partition, iManager searches for Dynamic Groups up to the first eDirectory partition.
- ◆ Root, iManager searches for Dynamic Groups in the entire tree.

Dynamic Group Discovery Domain: Indicates where in the tree iManager is to search for Dynamic Group membership. Role membership is then checked in the Dynamic Groups found.

- ◆ Parent, iManager searches for roles in the user's parent container.
- ◆ Partition, iManager searches for roles up to the first eDirectory partition.
- ◆ Root, iManager searches for roles in the entire tree.

Dynamic Group Search Type: Selects which type of Dynamic Groups should be searched for role membership.

- ◆ Dynamic Groups only, searches for objects that are of the Dynamic Group class type.
- ◆ Dynamic Group Objects and Aux classes, searches for objects that are either of the dynamicGroup class type or have been extended with the dynamicGroupAux class. This includes group objects that were later converted to Dynamic Groups.

RBS Tree List: Auto-populated with the eDirectory tree's name when a collection owner or a role member authenticates. If RBS is removed from an eDirectory tree, remove that tree's entry in this list in order to return to Unassigned Access mode.

6.4.7 Plug-In Download

The *Plug-in Download* tab lets you configure the following settings:

Query Novell download site for new Novell Plug-in Modules (NPM): Indicates that the iManager Server should query the [Novell Download site \(http://download.novell.com/index.jsp?product_id=&search=Search&build_type=SDBuildBean&families=&date_range=&keywords=iManager&x=23&y=4\)](http://download.novell.com/index.jsp?product_id=&search=Search&build_type=SDBuildBean&families=&date_range=&keywords=iManager&x=23&y=4) for new plug-in modules (NPMs).

Two radio buttons let you configure the query for every available NPM, or query only for updates to already-installed NPMs.

6.4.8 Misc

The *Misc* tab lets you configure the following settings:

Enable [this]: You can safely ignore this option. Enable [this] was added to iManager to allow some internal teams to modify their own objects. [this] is an attribute in the tree that enables specific self-management functionality. If [this] is enabled, all eDirectory servers in the tree must be version 8.6.2 or later.

eGuide URL: Specifies the URL to eGuide. This is used in the eGuide launch button in the header and in the eGuide role and task management tasks. This must be a full URL, (for example, <https://my.dns.name/eGuide/servlet/eGuide>) or the keyword EMFRAME_SERVER. Using EMFRAME_SERVER causes eMFrame to look for eGuide on the same server that eMFrame is located on.

For more information on eGuide, see the [Novell eGuide documentation Web site \(http://www.novell.com/documentation/eguide212/index.html\)](http://www.novell.com/documentation/eguide212/index.html).

6.5 Object Creation List

When you create an object, a preconfigured list of object classes is registered with the Create Object task. The Object Creation List Category contains the following tasks:

- ◆ [Section 6.5.1, “Adding an Object Class to the Creation List,” on page 58](#)
- ◆ [Section 6.5.2, “Deleting an Object Class from the Creation List,” on page 58](#)

6.5.1 Adding an Object Class to the Creation List

Use this task to add more objects to the Object Creation List, which is the list of objects that can be created in iManager, using the Directory Administration > Create Object task.

- 1 In the Configure view, select *Object Creation List > Add Object Class to Creation List*.
- 2 Select the object to add, then click *Next*.
- 3 Review the XML definition information, then click Finish to create the .xml file.

6.5.2 Deleting an Object Class from the Creation List

Use this task to delete an object from the Object Creation List, which is the list of objects that can be created in iManager, using the Directory Administration > Create Object task.

- 1 In the Configure view, select *Object Creation List > Delete Object Class from Creation List*.
- 2 Select the object to delete, then click *Next*.
- 3 Review the XML definition information, then click Finish to delete the object from the Object Creation List.

6.6 Plug-In Module Installation

If you do not see this role in your iManager interface, you are probably not an authorized user. See [“Authorized Users” on page 55](#).

There are two types of modules used in iManager:

Novell Plug-in Module (NPM): These are archives that contain the files for plug-ins to iManager. When you install an NPM using the Available Novell Plug-in Modules task, you are installing a plug-in to iManager to add to its functionality.

RBS Module: These are objects in eDirectory that contain RBS Tasks and RBS Book objects. When Role-Based Services has been configured in an eDirectory tree, click *Configure > RBS Configuration* to install the RBS Module after the NPM in order for the new tasks associated with the plug-in to become available for use.

Module Installation relates to NPMs only. For information about installing NPMs during the iManager installation process, see “[Downloading and Installing Plug-ins During Installation](#)” in the *iManager 2.6 Installation Guide*.

6.6.1 Available Novell Plug-in Modules

The Available Novell Plug-in Modules (NPM) page lists the available NPMs contained in the packages directory/download site. (See [Section 6.4.7, “Plug-In Download,” on page 57.](#)) The name, version, and description of each module are in their respective manifest files.

6.6.2 Installed Novell Plug-in Modules

This list contains the NPMs that have been installed in iManager. Each NPM is listed by name, local version, and description found in the current manifest files.

iManager 2.6 does not include all plug-in modules as part of the base product. Most iManager 2.6 plug-ins must be downloaded separately. However, the following plug-ins are included in the *base.npm* module that ships with iManager 2.6:

- ◆ Directory Administration
- ◆ Partitions and Replicas
- ◆ Help Desk
- ◆ Schema
- ◆ Rights
- ◆ Users
- ◆ Groups

For more information, see [Chapter 4, “Roles and Tasks,” on page 21.](#)

IMPORTANT: To function properly, a plug-in module's version must be compatible with the version of iManager on which it is running. Refer to the specific product documentation for information about iManager version requirements for a particular plug-in module.

6.7 Downloading and Installing Plug-in Modules

New in iManager 2.6 is the ability to download and install plug-ins from within iManager. iManager 2.6 queries the [Novell download Web site \(http://download.novell.com/index.jsp\)](http://download.novell.com/index.jsp) for updates on existing plug-ins and plug-ins available for installation.

NOTE: Plug-in modules are not replicated between iManager servers. We recommend that you install the plug-in modules you want on each iManager server.

To download and install one or more plug-in modules:

- 1 Launch iManager and log in.
- 2 In the Configure view, select *Plug-in Installation > Available Novell Plug-in Modules*.
- 3 (Optional) If you have downloaded an NPM, or have one locally that you want to install, click *Add*, then browse for the appropriate plug-in NPM file.
- 4 Click *OK*.
This returns you to the Available Novell Plug-in Modules page.
- 5 Select the plug-in NPM you want, then click *Install*.
The file location shows whether the plug-in is local or from novell.com. Installing a plug-in from the Novell download site can take several minutes, depending on your connection speed and how many plug-ins are being installed. A status bar indicates the download time.
- 6 Restart Tomcat.
Tomcat sometimes requires several minutes to fully initialize. Wait at least 5 minutes before trying to log in to iManager.
For information about restarting Tomcat, see “[Starting and Stopping Tomcat and Apache](#)” on [page 70](#).
- 7 Verify that the new Role appears in the Roles and Tasks page.
To add members to the new Role, use the Modify Member Association task.

6.7.1 If RBS is Configured

IMPORTANT: In order to reinstall an existing plug-in, you must first delete the rbsModule object for that plug-in from eDirectory using the *Module Configuration > Delete RBS Module* task.

- 1 From the Configure view, select *Role-Based Services > RBS Configuration*.
The table on the 2.x Collections tab displays any out-of-date modules.
- 2 To update them, select the number in the Out-of-Date column for the Collection you want to update.
The list of outdated modules is displayed.
- 3 Select the modules you want to update, then click Update at the top of the table.

6.7.2 Uninstalling a Plug-in Module

- 1 In the Configure view, select *Plug-in Installation > Installed Novell Plug-in Modules*.
- 2 Select the plug-in modules to delete, then click Uninstall.
- 3 Restart Tomcat.
For information about restarting Tomcat, see “[Starting and Stopping Tomcat and Apache](#)” on [page 70](#).

The steps for manually removing a plug-in module are available in [TID #10096957 \(http://support.novell.com/cgi-bin/search/searchtid.cgi?/10096957.htm\)](http://support.novell.com/cgi-bin/search/searchtid.cgi?/10096957.htm).

6.7.3 Customizing the Plug-In Download Location

You can create a plug-in download repository if a proxy server or firewall prevents iManager 2.6 from contacting the Novell download Web site. This lets you host plug-in modules on a local Web server or a common file system location.

The best way to do this is to use the XML descriptor file from the [Novell download Web site \(http://www.novell.com/products/soles/imanager/iman_mod_desc.xml\)](http://www.novell.com/products/soles/imanager/iman_mod_desc.xml) as a template. For more information about the iManager descriptor file, see “[Downloading and Installing Plug-ins During Installation](#)” in the *iManager 2.6 Installation Guide*.

To set up a local plug-in repository, save the descriptor file locally; then open the file and copy the URL for each plug-in module you want to make available locally, and paste it in a Web browser address bar to download the file. After downloading all desired plug-in modules, edit the local copy of the descriptor file to reflect the new URL for each downloaded plug-in module.

A plug-in module URL can be an HTTP link or a file system location. For example:

Windows File System

```
<url><![CDATA[file:///c:\iManager_plugins\NMA5.npm]]></url>
```

Linux File System

```
<url><![CDATA[file:///home/admin/iManager_plugins/NMA5.npm]]></url>
```

HTTP Link

```
<url><![CDATA[http://<IP_Address>/iManager_plugins/NMA5.npm]]></url>
```

Specifying a Local Descriptor File

You can specify a custom descriptor file either during the iManager 2.6 installation, or after iManager 2.6 has been installed.

During the installation process, the iManager 2.6 plug-in download URL can be redirected to a custom descriptor file. To do this, simply change the URL on the Select Plug-ins to Download and Install page to the location of the custom descriptor file and click *Go*.

NOTE: If the message `No plug-ins found or server not available` appears in the Plug-in download area, one or both of the following conditions can exist: There are no updated plug-ins available on the Novell download site, or the connection to download.novell.com from the install program was not successful. Verify your Internet connection.

When iManager 2.6 is installed, you can change the plug-in module download URL by modifying `<TOMCAT_HOME>\webapps\nps\WEB-INF\config.xml`. For example:

Windows File System

```
<setting>
  <name><![CDATA[ModuleDownloadDescriptorURL]]></name>
  <value><![CDATA[file:///c:\iManager_plugins\custom.xml]]></value>
</setting>
```

Linux File System

```
<setting>
  <name><![CDATA[ModuleDownloadDescriptorURL]]></name>
  <value><![CDATA[file:///home/admin/iManager_plugins/custom.xml]]></
value>
</setting>
```

HTTP Link

```
<setting>
  <name><![CDATA[ModuleDownloadDescriptorURL]]></name>
  <value><![CDATA[http://<IP_Address>/iManager_plugins/custom.xml]]></
value>
</setting>
```

6.8 E-Mail Notification

This role enables you to select plug-in-specific tasks that users want to be notified of whenever that specific task occurs. The tasks are set up by the plug-in itself. You decide whether or not to be notified, and specify who should be notified of selected events. Your first task is to set up the mail server.

TIP: Depending on what you select, you could receive a *lot* of e-mail!

6.8.1 Mail Server Configuration

The mail server configuration specifies the SMTP server settings for event notification.

- 1 In the Configure view, select Email Notification > Mail Server Configuration.
- 2 Specify the mail server settings, then click *OK*.

From Address: Specifies the address that appears in the From field of the iManager e-mail message.

Primary Mail Server: Specifies an IP address or server name (for example: smtp.novell.com) of a mail server. You must also provide the username and password for iManager to use to access the SMTP server.

Secondday Mail Server: Specifies an optional backup mail server. Provide the same information as that for the primary mail server.

6.8.2 Task Event Notification

Plug-ins whose tasks are listed in their `.xml` files automatically register task events on this page.

- 1 In the Configure view, select *Email Notification > Task Event Notification*.
- 2 In the *Email Address* field, specify the E-mail addresses you want to receive this notification, separated by commas.
- 3 Select an event.
The Task Event Properties screen appears.

- 4 Specify the e-mail subject and the E-mail message in the appropriate fields.
- 5 In the *Additional Email Addresses* field, type any additional e-mail addresses (separated by commas) you want to notify.
- 6 Select *Override Default and Notify Only These Addresses* if you want the message to ignore the E-mail list in step 2 and go only to the e-mail addresses specified on this page.

6.9 Views

If you do not see this role in your iManager interface, you are probably not an authorized user. See [“Authorized Users” on page 55](#).

iManager Views are management pages accessed from buttons in iManager’s Header frame. You might want to prevent users from accessing certain views, such as *View Objects* or *Configure*.

By default, all views inherit the settings of the parent set.

6.9.1 Showing and Hiding iManager Views

- 1 In the Configure view, select *Views > iManager Views*.
- 2 Specify, or use the Object Selector to find, a container at which you want to restrict access to Views, then click OK.
- 3 Specify the appropriate view settings, then click *OK*.

There are three view settings from which you can choose:

- ♦ Do not set: Does not explicitly set the view state. This is the default setting.
- ♦ Hide: Hides the view.
- ♦ Show: Displays the view.

Select *Read parent containers of this object* to use the settings of the object's parent container for this object. When selected, the parent settings take precedence over the object’s local settings.

Preferences

7

The Preferences view lets you configure iManager settings related to the application's look and feel. It provides access to the following tasks:

- ◆ [Section 7.1, “Manage Favorites,” on page 65](#)
- ◆ [Section 7.2, “Object Selector,” on page 65](#)
- ◆ [Section 7.3, “Object View,” on page 65](#)
- ◆ [Section 7.4, “Set Initial View,” on page 66](#)
- ◆ [Section 7.5, “Language,” on page 66](#)

7.1 Manage Favorites

Configures the Favorites view, which displays a custom set of often-used tasks together in a special view.

- 1 From the Preferences view, select *Manage Favorites*.
- 2 Select the desired tasks from the *Tasks* field and move them to the *Favorites* field.
Double click tasks to move them, or select them and use the arrow icons to move them.
Select *Make favorites my initial view* to use the Favorites view as your iManager “Home page”.
- 3 Click *OK*.

7.2 Object Selector

Configures the Object Selector settings:

Window Size: Specify Object Selector's window width, height, and left column width, in pixels.

User-Specified Defaults: Specify Object Selector's default settings, including

- ◆ **Startup Mode:** Specifies whether the *Browse* tab or *Search* tab is displayed initially.
- ◆ **Results per Page:** Specifies the number of results to display per page.
- ◆ **Starting Context:** Specifies the default container to which Object Selector opens.
- ◆ **Search on Startup:** Specifies initial search actions when Object Selector opens to the *Search* tab.

7.3 Object View

Configures the Object View settings:

Column Width: Specifies Object View's column width, in pixels.

Startup Mode: Specifies whether the *Browse* tab or *Search* tab is displayed initially.

Selection Mode: Specifies Object View's initial object selection mode: single object, or multiple objects.

Results per Page Specifies the number of results to display on a page, in Single-select Mode or Multi-select Mode.

Starting Context: Specifies the default container to which Object View opens.

Search on Startup: Specifies initial search actions when Object View opens to the *Search* tab.

7.4 Set Initial View

Specifies the view that displays when you first log in to iManager. If nothing is selected, the *Roles and Tasks* view defaults to the initial view. you select determines what appears after you log in to iManager.

7.5 Language

Specifies the language in which you want iManager to display. The language setting is a session-level setting, and is not persistent. To make the language setting permanent, set your preferred default language in the Web browser.

NOTE: Plug-ins cannot work properly if the first language (top position) listed in your Web browser's Language setting is not set to a supported language for iManager.

To avoid problems, in your Web browser, click *Tools > Options > Languages* or a sequence similar to this, then set the first language preference in the list to a supported language.

This section provides some troubleshooting tips resulting from iManager testing in Novell® test labs. These tips are arranged alphabetically in the following topics:

- ◆ Section 8.1, “Authentication Issues,” on page 67
- ◆ Section 8.2, “Tomcat and Apache,” on page 70
- ◆ Section 8.3, “Deleting and Re-creating User Accounts with the Same Name (Windows XP/2000),” on page 72
- ◆ Section 8.4, “DNS 630 Error Message Appears When Creating a Property Book with Invalid Characters in Name,” on page 72
- ◆ Section 8.5, “eDirectory Maintenance Task Errors,” on page 72
- ◆ Section 8.6, “Enabling Debug Messages for Install and Configure,” on page 73
- ◆ Section 8.7, “Firefox 1.0.6 Incompatible with iManager Plug-In Functionality,” on page 73
- ◆ Section 8.8, “History Does Not Automatically Sync Across Multiple Simultaneous User Logins,” on page 73
- ◆ Section 8.9, “iManager Doesn't Work after Installing Groupwise 7.0 WebAccess (Windows Server 2000/2003),” on page 74
- ◆ Section 8.10, “iManager 2.6 Remote Install for NetWare 6.5,” on page 74
- ◆ Section 8.11, “Missing Attribute, Object, or Value Errors,” on page 74
- ◆ Section 8.12, “The Configure View is Missing Roles or Tasks,” on page 74
- ◆ Section 8.13, ““Page Not Found” Error on a Windows IIS Server,” on page 75
- ◆ Section 8.14, “Performing a System Restore from Image Software,” on page 76
- ◆ Section 8.15, “Running eDirectory and iManager on the Same Machine (Windows only),” on page 76
- ◆ Section 8.16, ““Service Unavailable” Message Appears During Multiple Plug-In Installs,” on page 77
- ◆ Section 8.17, ““Unable to Determine Universal Password Status” Error,” on page 77

8.1 Authentication Issues

Authentication is a complex topic, and your existing network infrastructure can affect your ability to successfully perform an initial iManager login. The following facts can help you minimize authentication-related difficulties. For more information about authentication-related topics, see Novell's [NMAS documentation \(http://www.novell.com/documentation/nmas30/index.html\)](http://www.novell.com/documentation/nmas30/index.html) and [eDirectory documentation \(http://www.novell.com/documentation/edir88/index.html\)](http://www.novell.com/documentation/edir88/index.html).

- ◆ iManager authentication is a platform-dependent operation, meaning that it functions differently depending on the platform on which iManager is running

NetWare servers: When iManager runs on a NetWare server (including OES NetWare) it utilizes eDirectory's legacy authentication mechanism and the regular eDirectory/NDS password. This mechanism does not support eDirectory's Simple Password or Universal Password options.

Linux and Windows servers: When iManager runs on a Linux or Windows server it utilizes eDirectory's legacy authentication mechanism and the regular eDirectory/NDS password. This mechanism does not support eDirectory's Simple Password or Universal Password options.

Mobile iManager: Mobile iManager runs on a client workstation, either Linux or Windows, and leverages the NMAS client that allows it to use Universal Password, if configured.

- ♦ iManager does not use LDAP for the initial iManager authentication process. It utilizes eDirectory's proprietary authentication protocol. However, following initial authentication, iManager can, create LDAP connections to eDirectory as needed to support directory access for the installed plug-ins that require LDAP access.
- ♦ iManager does not support authenticating with eDirectory's Simple Password.

You might encounter the following error messages when authenticating to iManager. Each error message section discusses possible causes.

- ♦ [Section 8.1.1, "HTTP 404 Errors," on page 68](#)
- ♦ [Section 8.1.2, "HTTP 500 Errors," on page 68](#)
- ♦ [Section 8.1.3, "601 Error Messages," on page 69](#)
- ♦ [Section 8.1.4, "622 Error Messages," on page 69](#)
- ♦ [Section 8.1.5, "632 Error Messages," on page 69](#)
- ♦ [Section 8.1.6, "634 Error Messages," on page 69](#)
- ♦ [Section 8.1.7, "669 Error Messages," on page 69](#)

8.1.1 HTTP 404 Errors

If you receive a 404 error the first time you attempt to access iManager, you need to verify the ports that Apache is running on. Depending on how you installed iManager and whether you chose to use Apache or IIS, the configuration file locations will vary. Apache uses either the httpd.conf file or the ssl.conf file. Refer to Microsoft's documentation for information on IIS port settings.

8.1.2 HTTP 500 Errors

If you receive an internal server error or servlet container error (either unavailable or being upgraded), iManager is having one of two problems with Tomcat:

- ♦ Tomcat has not fully initialized after a reboot.
- ♦ Tomcat has failed to start.

Wait a few minutes and try again to access iManager. If you still receive the same errors, verify the status of Tomcat.

Checking the Status of Tomcat

- 1 Restart Tomcat.

For information about restarting Tomcat, see ["Starting and Stopping Tomcat and Apache" on page 70](#).

- 2 Check the Tomcat logs for any errors.

The log file is located in the `$tomcat_home$/logs` directory on the UNIX, Linux, and Windows platforms. On UNIX and Linux, the logs are named `catalina.out` or `localhost_log.date.txt`; on Windows, the log files are named `stderr` and `stdout`. On NetWare, errors appear on the logger screen.

8.1.3 601 Error Messages

The object name entered could not be found in the context specified.

Some possible causes:

- ◆ Contextless login might be disabled.
- ◆ Your User object might not be in the configured search containers list. Either ask your administrator to add your user location to the contextless login search containers or log in with a full context.

8.1.4 622 Error Messages

The NDS password has been disabled in the Universal Password policy. This may also manifest itself with a 222 Error Message.

You can avoid this error with iManager Workstation by installing the NMAS client, which allows iManager to utilize the Universal Password authentication mechanism rather than eDirectory's legacy authentication process.

8.1.5 632 Error Messages

This error is a system failure having any of several [possible causes](http://www.novell.com/documentation/nwec/nwec_enu/nwec_ids_t_err_system_failure.html) (http://www.novell.com/documentation/nwec/nwec_enu/nwec_ids_t_err_system_failure.html).

8.1.6 634 Error Messages

The target server does not have a copy of what the source server is requesting, or the source server has no objects that match the request and has no referrals on which to search for the object.

Some possible causes:

- ◆ You entered an incorrect Tree or IP Address. If you are using the IP address, make sure you include the port if eDirectory™ is installed on a nonstandard (524) port.
- ◆ iManager cannot locate your Tree or IP Address before timing out.
If the tree name fails, use the IP address.

8.1.7 669 Error Messages

An invalid password was used, authentication failed, one server tried to synchronize with another one but the target server's database was locked, or a problem exists with the remote ID or public key.

Some possible causes:

- ◆ You typed an incorrect password

- ◆ There are multiple users with the same username in the tree. Contextless login tries to log in using the first user account it finds with the supplied password. In this case, provide a full context when you log in or limit the search containers that contextless login searches.

8.2 Tomcat and Apache

The following general Apache and Tomcat information can be useful in your troubleshooting efforts.

8.2.1 Starting and Stopping Tomcat and Apache

The following tables describe how to start and stop Tomcat and Apache on the platforms supported by iManager 2.6.

Table 8-1 *Stopping and Starting Tomcat*

Platform	Restart Command
Linux	Enter <code>/etc/init.d/novell-tomcat4 stop</code> , then enter <code>/etc/init.d/novell-tomcat4 start</code> .
NetWare® 6.5	Enter <code>TC4STOP</code> to stop Tomcat. Wait at least one minute, then enter <code>TOMCAT4</code> to start Tomcat again.
Mobile iManager	Shut down and restart Mobile iManager.
Windows	Stop and start the Tomcat service.
Solaris	Enter <code>/etc/init.d/imgr stop</code> , then enter <code>/etc/init.d/imgr start</code> .
HP-UX	Enter <code>/opt/hpws/tomcat/bin/shutdown.sh</code> , then enter <code>su www /opt/hpws/tomcat/bin/startup.sh</code> .

Table 8-2 *Stopping and starting Apache*

Platform	Restart Command
Linux	iManager doesn't use Apache on the Linux platform, so you won't need to stop and start it.
NetWare 6.5	Enter <code>AP2WEBDN</code> to stop Apache. Wait at least one minute, then enter <code>AP2WEBUP</code> to start Apache again.
Mobile iManager	Shut down and restart Mobile iManager.
Windows	Stop and start the Apache service.
Solaris	Enter <code>/etc/init.d/imgr stop</code> , then enter <code>/etc/init.d/imgr start</code> .
HP-UX	Enter <code>/opt/hpws/apache/bin/apachectl stop</code> to stop Apache, then enter <code>/opt/hpws/apache/bin/apachectl startssl</code> to start Apache.

8.2.2 Apache and Tomcat Ports

If you experience port conflicts while upgrading to iManager 2.6, or need to know the ports that Apache and Tomcat are using, consult the platform-specific information in this section.

NetWare

For the Apache HTTP port, see the `httpd.conf` file in `sys:\apache2\conf`.

For the Apache HTTPS port, see the `httpd.conf` file in `sys:\apache2\conf`.

For the Tomcat ports, see the `server.xml` file in `sys:\tomcat\4\conf`.

Linux

For the Apache HTTP port, see the `vhost.conf` file in `/etc/opt/novell/httpd/gconfd` (or the location you put it.)

For the Apache HTTPS port, see the `sslvhost.conf` file in `/etc/opt/novell/httpd/gconfd` (or the location you put it.)

For the Tomcat ports, see the `server.xml` file in `/var/opt/novell/tomcat4/conf` (or the location you put it.)

The non-SSL port begins with `Define a non-SSL Coyote HTTP/1.1 Connector on port n`.

The SSL port begins with `Define an SSL Coyote HTTP/1.1 Connector on port n`.

IMPORTANT: Find the section that reads `Define a Coyote/JK2 AJP 1.3 Connector on port n`. Set the redirect port to be the same as the Apache SSL. For example, if Apache is on port 443, Tomcat should also be on that port.

Solaris

For the Apache HTTP port, see the `httpd.conf` file in `/var/opt/novell/httpd/conf/` (or the location you put it.)

For the Apache HTTPS port, see the `ssl.conf` file in `/var/opt/novell/httpd/conf` (or the location you put it.)

For the Tomcat ports, see the `server.xml` file in `/var/opt/novell/tomcat4/conf`.

HP-UX

For the Apache HTTP port, on an upgrade, see the `httpd.conf` file in `/opt/hpws/apache/conf` (or the location you put it.)

For the Apache HTTPS port, on an upgrade, see the `sslvhost.conf` file in `/opt/hpws/apache/conf/` (or the location you put it.)

For Tomcat ports, see the `server.xml` file in `/opt/hpws/tomcat/conf/`.

IMPORTANT: Find the section that reads, *Define a Coyote/JK2 AJP 1.3 Connector on port n*. Set the redirect port to be the same as the Apache SSL. For example, if Apache is on port 443, Tomcat should also be on that port.

Windows

Windows allows for relocation of all files. If you accept the defaults in the iManager installation, look in the following places for Apache and Tomcat configuration files:

For the Apache HTTP port, see the `httpd.conf` file in `rootdir\novell\apache\conf`.

For the Apache HTTPS port, see the `ssl.conf` file in `rootdir\novell\apache\conf`.

For the Tomcat ports, see the `server.xml` file in `rootdir\novell\tomcat4\conf`.

If you can't find a configuration file, search the Registry.

8.3 Deleting and Re-creating User Accounts with the Same Name (Windows XP/2000)

If you have deleted one or more Windows user accounts, and then re-created them with the same name, do the following in order to use Mobile iManager with the re-created account:

- 1 Log in as a member of the Administrator group.
- 2 Take ownership of the `\system32\novell\nici\<username>` folder. The absolute path varies between Windows 2000 and Windows XP.
- 3 Delete the directory.

When the user next logs in, this folder is automatically re-created using NICI keys of the re-created user account, and the user can then run Mobile iManager.

8.4 DNS 630 Error Message Appears When Creating a Property Book with Invalid Characters in Name

If you create a Property Book and name it using special characters that are invalid, a DNS Error 603 message might be returned. For more information about naming a Property Book, see [“Creating a New Property Book” on page 45](#).

8.5 eDirectory Maintenance Task Errors

Running eDirectory Maintenance Tasks requires that Role-Based Services (RBS) must be configured through iManager for the tree that is being administered. For RBS configuration information, see [Chapter 4, “Roles and Tasks,” on page 21](#).

For additional information, see the [Novell eDirectory documentation \(http://www.novell.com/documentation/lg/edir871/index.html?page=/documentation/lg/edir871/edir871/data/agabn4a.html\)](http://www.novell.com/documentation/lg/edir871/index.html?page=/documentation/lg/edir871/edir871/data/agabn4a.html).

8.6 Enabling Debug Messages for Install and Configure

If installation fails, you must enable some debugging messages to help determine what is wrong.

- ♦ Linux, Solaris, and HP-UX: Export `LAX_DEBUG=true` in the terminal session that you start the iManager InstallAnywhere program from.
- ♦ Windows: Hold the Ctrl key down as you start the iManager InstallAnywhere program and continue holding it until the debugging screen appears.

8.7 Firefox 1.0.6 Incompatible with iManager Plug-In Functionality

If you are using the shipping version of Firefox 1.0.6 to run iManager 2.6, you can get 404 errors when you select a task. This is a bug in Firefox. It occurs when you use iManager plug-ins that utilize the clipboard and you select *Remember This Decision* in the security window that displays when the clipboard is accessed. You can monitor this bug at the [Mozilla bug tracking system \(https://bugzilla.mozilla.org/show_bug.cgi?id=269270\)](https://bugzilla.mozilla.org/show_bug.cgi?id=269270).

There are two things you can do if you find yourself in this state:

- ♦ Run iManager in simple mode by replacing “iManager.html” with “Simple.html” in the URL that runs iManager
- ♦ Edit your Mozilla `prefs.js` file by doing the following:
 - 1 Close the Firefox browser.
 - 2 Locate the `prefs.js` file in your account's `Application Data/Mozilla/Profiles` folder and delete the following two lines; where *iManager URL Root* is the root of the URL of the version of iManager you are using and the *X* in the ...pX... of the two settings match.
 - ♦ `user_pref("capability.principal.codebase.pX.denied", "UniversalXPConnect")`
 - ♦ `user_pref("capability.principal.codebase.pX.id", "<iManager URL Root>")`
 - 3 Restart the browser.
 - 4 (Optional) If the Internet Security message annoys you, select *Allow*, but do not select *Remember this Decision*.

8.8 History Does Not Automatically Sync Across Multiple Simultaneous User Logins

Using two instances of the same browser (such as two Firefox or two Mozilla browsers but not Internet Explorer) avoids the problem. The history book is shared by the two instances.

8.9 iManager Doesn't Work after Installing Groupwise 7.0 WebAccess (Windows Server 2000/2003)

On Windows 2000 and 2003 Server with IIS 5 or 6, installing Groupwise 7.0 WebAccess to IIS automatically installs Tomcat 5.5.

As the iManager installation begins, the iManager installer program detects that IIS and Tomcat are available for use. The installer reports the inability to stop the iisadmin service. Near the end of the install, the installer reports the inability to start Tomcat.

After the install is completed, Groupwise WebAccess still works, but iManager does not (HTTP 404: Page not found).

Workaround: Do not install iManager and Groupwise on the same computer.

8.10 iManager 2.6 Remote Install for NetWare 6.5

If the iManager 2.6 remote install for NetWare 6.5 fails or behaves erratically, try deleting the Novell Installation Service temporary files. Delete the entire Novell directory located in `C:\Program Files\Common Files\`.

8.11 Missing Attribute, Object, or Value Errors

If you have a large installation with synchronization delays, you can force iManager to communicate with the master replica. This ensures that you have access to any attributes, objects, or values that have been recently added or modified. This is not recommended for regular use of iManager, but can be helpful when you are experiencing synchronization delays.

To use this parameter when logging in to iManager, add `&forceMaster=true` to the end of the URL after you have loaded the login page. This setting can also be enabled in `TOMCAT_HOME\webapps\nps\WEB-INF\config.xml`. For example: `https://127.0.0.1/nps/servlet/webacc?taskId=fw.Startup&forceMaster=true`.

You must restart Tomcat after making any changes to the `config.xml` file.

8.12 The Configure View is Missing Roles or Tasks

If the following Roles or Tasks are not present in the Configure view, you need to verify that you are an authorized user. For more information, see [“Authorized Users” on page 55](#).

8.12.1 Possible Missing Roles or Tasks

- ◆ Configure iManager task
- ◆ Object Creation List role
- ◆ Plug-in Installation role
- ◆ Email Notification role
- ◆ View role

8.12.2 Possible Reasons Why You Are Not an Authorized User

- ◆ You renamed your tree.

Edit the `configiman.properties` file and change the tree name for each user.

- ◆ Information entered during the iManager installation for the authorized user was incorrect.

Edit the `configiman.properties` file and add the correct username including the tree name.

- ◆ The `configiman.properties` file has become corrupt for some reason.

Delete the `configiman.properties` file and either re-create the file with the correct information or log in to iManager and go to the *Configure view > iManager Server > Configure iManger* . On the Security page, add the Authorized Users for the system by browsing the tree, or if you are sure of the full path to the user, you can manually enter it.

- ◆ The permissions on the `configiman.properties` file have been changed to prevent iManager from reading the file.

Change the permissions on the file to match the files in the same directory.

- ◆ Your administrator has not added you as an authorized user.

Request to be added to the Authorized Users list. For more information, see [“Authorized Users” on page 55](#).

8.13 “Page Not Found” Error on a Windows IIS Server

If your server is running multiple Web sites, the iManager installation program selects the first site that meets its criteria, mostly likely the default Web site that uses port 80. If you want iManager to run from a different Web site, you need to create a virtual directory on the desired Web site.

- 1 Go to `Control Panel > Administration Tools > Computer Management`, then select `Services and Applications > Internet Information Services` in the left navigation frame.
- 2 Click the Web site icon that you want to configure for iManager.
- 3 From the *Action* menu, select `New > Virtual Directory`.
- 4 In the Virtual Directory Creation Wizard, type `jakarta` in the *Alias* field.
- 5 In the *Directory* field, browse to the ISAPI redirector directory, which is found in the Tomcat home directory (`\bin\win32\1386`), then click *OK*.
- 6 For access permissions, select *Read*, *Run scripts* (such as ASP), *Execute* (such as ISAPI applications or CGI), and *Write*.
- 7 Click *Next* to create the virtual directory and return to the Computer Manager window.
- 8 In the left frame, select the *Default Web Site > Jakarta*, then delete Jakarta.

iManager creates this `Jakarta` directory. If this Web site does not contain the `Jakarta` directory, browse the other Web sites until you find the one with the `Jakarta` directory.

8.14 Performing a System Restore from Image Software

If you perform a system restore from image software such as Ghost, the `NPS-APACHE.CONF` file could become truncated in the process. (located in `sys:\tomcat4\conf`.)

If this file is truncated to `NPS-APACHE~1.CON` or some other corrupt filename, rename the file and then stop and restart Apache and Tomcat. For information about restarting Tomcat and Apache, see [“Starting and Stopping Tomcat and Apache” on page 70](#).

8.15 Running eDirectory and iManager on the Same Machine (Windows only)

If iManager was installed before eDirectory, you might experience any of the following errors when using iManager, LDAP(S), or HTTP(S) to access eDirectory.

-340 error when trying to access encrypted attributes with iManager

```
LDAP : SSL_CTX_use_KMO failed. Error stack: error:1412D0D4:SSL
  routines:SSL_CTX_use_KMO:read wrong packet type (err = -1418)
HTTP : 0016 TLS operation failed, err: 1, result: -1 --
HTTP : -- error:1408A0C1:SSL routines:SSL3_GET_CLIENT_HELLO:no
  shared cipher
HTTP : 0017 TLS operation failed, err: 1, result: -1 --
HTTP : -- error:1406B0BD:SSL routines:GET_CLIENT_MASTER_KEY:no p
  rivatekey
HTTP : Unable to access server certificate and key, handshakes
  will fail -- HTTP : -- error:1412D0D4:SSL
  routines:SSL_CTX_use_KMO:read wrong packet type
Limber : Error while setting NCP Key Material Name SSL
  CertificateDNS to server, Err: failed, -340 (0xfffffeac)...
Limber : Error During syncKeyMaterialInfo -340 (0xfffffeac)
```

It could be that eDirectory’s initial system configuration has not occurred. The user who installed eDirectory and the user who is running the eDirectory server must coordinate the eDirectory configuration. Generally, eDirectory is installed as administrator and is run as SYSTEM. You can manually correct this issue, but an understanding of eDirectory, iManager, NICE, and other currently installed products is necessary. You must determine if the following steps are safe to perform. You should also check the product’s documentation and dependencies to see if any long-term encrypted data or secrets are used.

If eDirectory and iManager are installed on the same physical machine, you can manually configure eDirectory after its installation.

NOTE: You should not do this if eDirectory was installed at a previous time and has been successfully running on the current machine.

- 1 Log in as an administrator.
- 2 Stop the NDS Server and the Tomcat services.
Also stop any other service that may be using NICE.

- 3 Take ownership of the %systemroot%\system32\novell\NICI\SYSTEM directory.
Do this from the file properties' *Security tab > Advanced Options*.
- 4 Save the contents of the SYSTEM directory in a backup directory.
- 5 Delete the contents of the SYSTEM directory.
- 6 Copy the contents of %systemroot%\system32\novell\NICI\Administrator to %systemroot%\system32\novell\NICI\SYSTEM
- 7 You can reset the permissions of %systemroot%\system32\novell\NICI\SYSTEM and its contents so that only SYSTEM has access.
- 8 Restart the NDS Server and Tomcat services and any other service you may have stopped.
For information about restarting Tomcat, see “Starting and Stopping Tomcat and Apache” on page 70.

8.16 “Service Unavailable” Message Appears During Multiple Plug-In Installs

This situation occurs when you select several plug-ins to install, all at the same time. While the plug-in installation continues over several minutes, the browser page times out and returns a 503 Error.

Although you probably don't need to do anything but wait, you can monitor plug-in installations through the Tomcat log files or on the NetWare logger screen.

8.17 “Unable to Determine Universal Password Status” Error

If an eDirectory for UNIX server is configured to use SSL for LDAP communications, you might receive the following error when you select the option in iManager to set a Simple Password:

```
Unable to determine universal password status
```

To resolve this error, run the /usr/bin/nmasinst/nmasinst utility on the eDirectory for UNIX server. This utility lets you install login methods into eDirectory from a UNIX machine and is required to run the Universal Password feature.

For more information, see the *Universal Password Deployment Guide* (http://www.novell.com/documentation/lg/nw65/universal_password/data/front.html).

Best Practices and Common Questions

9

This section contains recommendations about the following topics from some of our experts. If you find something that works well for you, please share it at [Cool Solutions \(http://www.novell.com/coololutions\)](http://www.novell.com/coololutions).

- ◆ [Backup and Restore Options \(page 79\)](#)
- ◆ [Coexistence with iManager 2.0.2, 2.5, and Role-Based Services \(page 79\)](#)
- ◆ [Collections \(page 80\)](#)
- ◆ [Failed Installs \(page 80\)](#)
- ◆ [High Availability: Running iManager in a Clustered Environment \(page 81\)](#)
- ◆ [Patching iManager \(page 82\)](#)
- ◆ [Performance Tuning \(page 82\)](#)

9.1 Backup and Restore Options

There is no automatic backup and restore feature included with iManager. iManager is composed of two parts: the local files on the server and the Role-Based Services objects in eDirectory™.

To make a full backup of iManager, make sure you have a valid backup of the RBS collection and all subordinate objects in the tree, either through replica redundancy or with an eDirectory backup solution.

All local iManager files on the file system are stored in the Tomcat directory. As long as you have a backup of the Tomcat directory, all iManager content is preserved. If the Tomcat directory is somehow compromised on the server, shutting down Tomcat and recopying the directory allows you to recover iManager. If you are not using RBS, backing up the Tomcat directory is all that is needed.

9.2 Coexistence with iManager 2.0.2, 2.5, and Role-Based Services

You should update your RBS collection to version 2.6. Otherwise, if you use iManager to access a tree that has an RBS collection from iManager 2.0.2, you won't see all of the roles and tasks that should display.

- 1 In the Configure view, select *Role Based Services > RBS Configuration*.
- 2 Select the link in the *Out-of-Date* column for a module that needs updating.
- 3 On the Out-Of-Date Modules page, select a module, then click *Update*.

A message appears that confirms a successful update.

Updated plug-ins are visible in iManager 2.0.2, 2.5, and 2.6.

9.3 Collections

It is important to recognize that one configuration is not ideal for all companies. We recommend multiple collections in a tree only if you use a hierarchical structure using geographical or functional organizations with different administrators in each location. Following are the most common situations together with suggestions for managing their respective collections:

- ◆ A hierarchical tree organized to reflect a geographical organization
Create a collection in every geographical location and have one or more iManager servers per location. Login time is faster and tree navigation is simplified. Each geographical administrator manages the collection of a specified location.
- ◆ A hierarchical tree that reflects the company's organizational structure
Create one collection at the same level as the organization and have one or more iManager servers as company size requires. You manage only one collection.
- ◆ A flat tree in which all objects are in a unique container
Create one collection as a sibling of the unique container and have one or more iManager servers as company size requires. You manage only one collection.

9.4 Failed Installs

To avoid failed installs, make sure that your operating system is updated to the most current version and that all system requirements are met. See “[Prerequisites](#)” in the *iManager 2.6 Installation Guide*.

Recovery from a failed install varies by platform, but in every case you need to assess the problem based upon the error message generated during installation.

- ◆ [Section 9.4.1, “Windows,” on page 80](#)
- ◆ [Section 9.4.2, “HP-UX and Solaris,” on page 81](#)
- ◆ [Section 9.4.3, “Linux,” on page 81](#)

9.4.1 Windows

- 1 If the error involves one of these components, check the specified log files for errors:

NICI: *installed directory\temp\wcniciu0.log*

Apache: *root install directory\apache_install.log*. For example, C:\Program Files\Novell\apache_install.log.

Tomcat: *tomcat install directory\Apache_Tomcat_InstallLog.log*. For example, C:\Program Files\Novell\Tomcat\Apache_Tomcat_InstallLog.log.

- 2 Check the iManager install log file (*servlet root\WEB_INF\log\iManager_Install_2.6_InstallLog.log*) for any errors.
- 3 If the log file does not give sufficient information to identify the problem, rerun the install in debug mode.

To view or capture the debug output from an installer, open and copy the console output to a text file for later review.

- 3a** Immediately after launching the installer, hold down the Ctrl key until a console window appears.
 - 3b** After the install has completed, click the icon in the upper left corner of the console window and select *Properties > Layout*.
 - 3c** Change the buffer size to 3000, then click *OK*.
 - 3d** In the Layout window, select *Edit > Select All > Edit > Copy*.
 - 3e** Open a text editor and paste the output of the debug in it.
- 4** Identify and correct any errors or stack traces, then rerun the install.

9.4.2 HP-UX and Solaris

- 1** Check the iManager install log file (*servlet root\WEB_INF\log\iManager_Install_2.6_InstallLog.log*) for any errors.
- 2** If the log file does not give sufficient information to identify the problem, rerun the install in debug mode.
At the command line, enter the following:

```
export LAX_DEBUG=true
```
- 3** Identify and correct any errors or stack traces, then rerun the install.

9.4.3 Linux

- 1** Check the iManager install log file (*/var/log/Novell/iManager_Install_2.6_InstallLog.log*) for any errors.
- 2** If the log file does not give sufficient information to identify the problem, rerun the install in debug mode.
At the command line, type the following:

```
export LAX_DEBUG=true
```
- 3** Identify and correct any errors or stack traces, then rerun the install.

9.5 High Availability: Running iManager in a Clustered Environment

Although iManager is a session-based tool that ships without any failover features, you can run it in a clustered environment. For more information about clustering, see the [OES Clustering documentation \(http://www.novell.com/documentation/oes/cluster-services.html#cluster-services\)](http://www.novell.com/documentation/oes/cluster-services.html#cluster-services).

- 1** Install and configure iManager on the nodes in the cluster where the virtual IP is moved to (that is, an Active/Active cluster).

If the node running iManager fails, Novell Cluster Services[®] detects the node failure and moves (reloads) the virtual IP address on another node in the cluster.

- 2** Using the *Generic_IP_Service* template that ships with Novell Cluster Services, create a new cluster resource called iManager.

This cluster resource uses a virtual IP address that moves between nodes in the cluster. When creating a new cluster resource, the wizard steps you through the creation of a load script and an unload script.

3 Verify the load and unload scripts.

The load script should contain only the following lines (any other lines should be commented out):

```
. /opt/novell/ncs/lib/ncsfuncs
exit_on_error add_secondary_ipaddress xxx.xxx.xxx.xxx
exit 0
```

The unload script should contain only the following lines (any other lines should be commented out):

```
. /opt/novell/ncs/lib/ncsfuncs
ignore_error del_secondary_ipaddress xxx.xxx.xxx.xxx
exit 0
```

4 Point your Web browser to `http://web_server/nps/iManager.html` (where `web_server` is the IP address used in the iManager cluster resource).

iManager services are now highly available; however, any live sessions are not failed over. If a service fails in the middle of user operations, users must reauthenticate and restart whatever operations were interrupted.

Because iManager, Tomcat and Apache are already running (Active/Active) on the other nodes, there is no load time for these applications if Novell Cluster Services has to migrate (move) the virtual IP to another node.

There is little benefit in using an Active/Passive cluster because it requires much more configuration and makes you wait the entire load time for each failover. If you really want iManager configured as an Active/Passive clustered resource, you must create a cluster resource that loads and unloads iManager and its dependencies (such as Apache and Tomcat). This identical configuration of iManager then needs to be done on all nodes where you want iManager highly available.

9.6 Patching iManager

Patching a server is as easy as installing a module. Any updates for iManager are packaged into an plug-in package (NPM) file. This file is installed like any other plug-in.

- 1 In the Configure view, select *Plug-in Module Installation*.
- 2 Select Available Novell Plug-in Modules.
- 3 Click *New*.
- 4 Browse to the location of the patch file, then click *OK*.
- 5 Select the patch from the list, then click *Install*.

The server is patched with the latest code.

9.7 Performance Tuning

The following are tips for enhancing speed and efficiency.

9.7.1 Using Dynamic Groups with RBS

Disable Dynamic Group support for RBS if you are not using this feature. By default, Dynamic Group support is enabled and, when used, significantly taxes resources because of the extensive searches it conducts.

- 1 In the Configure view, select *iManager Server > Configure iManager*.
- 2 Select the *RBS* tab, then deselect *Enable Dynamic Groups*.

9.7.2 Role Assignments

If you have assigned more than five users to a role within the same scope, consider using Group objects to reduce the number of role assignments and make RBS administration more efficient. By doing so, you have fewer objects to update and you can manage the Group object by adding and removing members.

Also, consider using Dynamic Group objects. You can set up User objects to match a Dynamic Group search criteria.

9.8 Changing the Web Server Used by iManager

iManager is not designed to detect, and respond to, changes to the Web server software it is using. If iManager was originally installed and configured with Apache and you want to change to IIS, or vice versa:

- Back up any custom plug-ins in the `\packages` directory.
- Uninstall iManager (don't delete the configuration files that remain following the uninstall.)
- Uninstall the Web server previously used by iManager
- Install the new Web server software
- Install iManager

For information about uninstalling and installing iManager, see the *Novell iManager 2.6 Installation Guide*.

To migrate an iManager server from the OES NetWare® platform to the OES Linux platform:

- 1** Install iManager on the new OES Linux server.
- 2** Copy the file system configuration from the old OES NetWare server to the new OES Linux Server. To do this, copy the following files and directories to the new OES Linux server:
 - ♦ Copy `sys:/tomcat/4/webapps/nps/WEB-INF/configiman.properties` to `/var/opt/novell/iManager/nps/WEB-INF/configiman.properties`.
 - ♦ Copy `sys:/tomcat/4/webapps/nps/WEB-INF/config.xml` to `/var/opt/novell/iManager/nps/WEB-INF/config.xml`.
 - ♦ Copy `sys:/tomcat/4/webapps/nps/packages/custom.npm` to `/var/opt/novell/iManager/nps/packages/custom.npm`. This file may not exist if you have not created any Plug-in Studio tasks.
 - ♦ Copy the contents of the `sys:/tomcat/4/webapps/nps/WEB-INF/config` directory to `/var/opt/novell/iManager/nps/WEB-INF/config`.

iManager Security Issues

A

This section provides information about potential security issues related to iManager, and includes information about the following topics:

- ◆ [Section A.1, “Secure LDAP Certificates,” on page 87](#)
- ◆ [Section A.2, “Self-Signed Certificates,” on page 88](#)
- ◆ [Section A.3, “iManager Authorized Users,” on page 88](#)
- ◆ [Section A.4, “Preventing Username Discovery,” on page 89](#)
- ◆ [Section A.5, “Tomcat/Apache Settings,” on page 89](#)
- ◆ [Section A.6, “Encrypted Attributes,” on page 90](#)
- ◆ [Section A.7, “Secure Connections,” on page 90](#)

A.1 Secure LDAP Certificates

iManager can create secure LDAP connections behind the scenes without any user intervention. If the LDAP server’s SSL certificate is updated for any reason (for example, new Organizational CA), iManager should automatically retrieve the new certificate using the authenticated connection and import it into its own keystore database.

If this does not happen correctly, you must delete the private key store that iManager uses, in order to force iManager and Tomcat to re-create the database and reacquire the certificate. To do so, complete the following steps:

- 1 Shut down Tomcat.
- 2 Delete the `iMKS` file, located in the `TOMCAT_HOME\webapps\nps\WEB-INF` directory.
- 3 Restart Tomcat.
For information about restarting Tomcat, see [“Starting and Stopping Tomcat and Apache” on page 70](#).
- 4 Open iManager in a browser and log back in to the tree, to automatically reacquire the new certificate and re-create the database store.

Alternately, you can also manually import the required certificate into Tomcat’s JVM default keystore using the `keytool` certificate management utility available in the JDK*. When creating secure SSL connections, iManager first tries the JVM default keystore, then uses the iManager specific keystore database.

After you have an eDirectory™ certificate saved in DER format, you must import the trusted root certificate into the iManager keystore. To do this, you need a JDK to use `keytool`. If a JRE was installed with iManager, you must download a JDK to use the `keytool`.

NOTE: For information about creating a `.der` certificate file, see [Exporting a Trusted Root or Public Key Certificate \(http://www.novell.com/documentation/crt32/crtadmin/data/a2ebopb.html\)](http://www.novell.com/documentation/crt32/crtadmin/data/a2ebopb.html) in the *Novell Certificate Server Admin Guide*. You will want to export the trusted root certificate.

- 1 Open a command window.

2 Browse to the `bin` directory where you have installed the JDK.

For example, on a Windows system, you would enter the following command:

```
cd j2sdk1.4.1_02\bin
```

3 Import the certificate into the keystore with the `keytool`, executing the following `keytool` commands (platform specific):

- ◆ NetWare

```
keytool -import -alias [alias_name] -file  
[full_path]\trustedrootcert.der -keystore  
sys:java\lib\security\cacerts
```

- ◆ Windows

```
keytool -import -alias [alias_name] -file  
[full_path]\trustedrootcert.der -keystore  
[full_path]\jre\lib\security\cacerts
```

- ◆ Linux

```
keytool -import -alias [alias_name] -file [full_path]/  
trustedrootcert.der -keystore [full_path]/jre/lib/security/  
cacerts
```

Replace `alias_name` with a unique name for this certificate and make sure you include the full path to `trustedrootcert.der` and `cacerts`.

The last path in the command specifies the keystore location. This varies from system to system because it is based on where iManager is installed. The default location for iManager on a Windows server, for example, is `C:\Program Files\Novell\jre\lib\security\cacerts`.

4 Enter `changeit` for the keystore password.

5 Click *Yes* to trust this certificate.

NOTE: This process must be repeated for each eDirectory tree you will be accessing with iManager. If LDAP has been configured to use a certificate not signed by the tree's Organizational CA, you must import that certificate's Trusted Root. This is necessary, for example, if LDAP is configured to use a VeriSign*-signed certificate.

A.2 Self-Signed Certificates

iManager 2.6 includes a temporary, self-signed certificate that you use when installing iManager on any platform except NetWare®. It has an expiration date of one year. For more information, see “[Self-Signed Certificates](#)” in the *iManager 2.6 Installation Guide*.

A.3 iManager Authorized Users

Authorized Users are those that iManager permits to perform its various administrative tasks. For more information about specifying and configuring Authorized Users, see “[Authorized Users](#)” on [page 55](#).

Authorized User data is stored in the `configiman.properties` file, which must be secured to prevent unauthorized modification. To do this, modify the access controls for `configiman.properties` to restrict those users authorized to manually edit the file.

NOTE: Not specifying an Authorized User, which prevents the `configiman.properties` file from being created, or specifying an Authorized User of `AllUsers`, allows any user to install iManager plug-ins and modify iManager server settings. This is a security risk for server-based iManager environments.

A.4 Preventing Username Discovery

In some installations, the eDirectory server is protected behind a firewall, but the iManager server is open to the outside world to allow management from home or on the road. Access to iManager is controlled with Username and Password fields on the login screen. In such installations, it is often desirable to tighten security to avoid revealing any information about the system.

Standard iManager configurations pass through eDirectory messages related to invalid usernames and passwords during iManager authentication. These messages can inadvertently provide too much information to potential crackers. To avoid this, iManager 2.6 SP2 and later includes a configuration option to hide the specific reason for login failure. When enabled, the following error messages are replaced with a generic error message that reads: `Login Failure. Invalid Username or Password.`

- ◆ Invalid Username (-601)
- ◆ Incorrect password (-669)
- ◆ Expired password or disabled account (-220)

To enable this setting, set `Authenticate.Form.HideLoginFailReason=true` in `config.xml`.

Additionally, iManager 2.6 SP2 and later no longer supports the asterisk (*) character as a wildcard in the Username field. This closes a security vulnerability that could let unauthorized users discover valid usernames. It also prevents possible denial-of-service attacks that attempt to overload the eDirectory server by continually attempting a login using only the wildcard (*), which forces eDirectory to search for and return all matching usernames.

A.5 Tomcat/Apache Settings

Because iManager makes use of Tomcat Servlet Container and Apache Web server, iManager administrators should be aware of the encryption-related configuration options of those resources as part of their overall security strategy. Of particular interest are cipher suites and trusted certificates, which directly impact the quality of your wire-level encryption. Consider the following rules when configuring your Tomcat and Apache environments:

- ◆ Do not use SSL 2.0 cipher suites, which are outdated and not guaranteed to be secure.
- ◆ Do not use the NULL cipher suite in a production environment.
- ◆ Do not use any cipher suite classified as LOW or EXPORT quality, because these are less secure.
- ◆ Regularly review the list of trusted certificates, and limit the list of accepted Certificate Authorities to only those you are actually using

More information for Tomcat is available at the [Tomcat Documentation Web site \(http://tomcat.apache.org/tomcat-4.1-doc/index.html\)](http://tomcat.apache.org/tomcat-4.1-doc/index.html). More information for Apache is available at the [Apache Documentation Web site \(http://httpd.apache.org/docs/2.0/\)](http://httpd.apache.org/docs/2.0/).

NOTE: Because of the way that iManager interprets and uses data, there are no known risks of HTML-based attacks such as cross-site scripting.

A.6 Encrypted Attributes

iManager is able to securely read eDirectory 8.8 encrypted attributes. However, because of the way it determines if an attribute is encrypted, iManager does not securely modify or delete these encrypted attributes. The impact of this, which can result in some wire-level data exposure, can be mitigated through normal network security practices such as the following:

- ◆ Locating all iManager servers behind the firewall
- ◆ Locating iManager servers physically near their associated eDirectory servers
- ◆ Physically securing iManager and eDirectory servers
- ◆ Requiring remote administrators to use a VPN to access iManager and eDirectory servers

A.7 Secure Connections

Although iManager leverages secure HTTP (SSL) for client communications, and secure LDAP connections between iManager and eDirectory servers, iManager does not, with the exception of reading encrypted attributes, utilize secure NCP connections for communications between iManager servers and eDirectory servers.

This is also true for the NCP connection used by Mobile iManager. The impact of this, which can result in some wire-level data exposure, can be mitigated through normal network security practices such as the following:

- ◆ Locating all iManager servers behind the firewall
- ◆ Locating iManager servers physically near their associated eDirectory servers
- ◆ Physically securing iManager and eDirectory servers
- ◆ Requiring remote administrators to use a VPN to access iManager and eDirectory servers

NOTE: Regardless of the wire-level encryption being used, passwords are always encrypted and protected as part of the iManager authentication process.

Novell Plug-in Modules

B

iManager 2.6 ships with the following plug-ins as part of the `base.npm` module. Additional plug-in modules must be downloaded separately.

- ◆ Directory Administration
- ◆ Partitions and Replicas
- ◆ Help Desk
- ◆ Schema
- ◆ Rights
- ◆ Users
- ◆ Groups

The best place to locate and download iManager plug-ins is the [Novell download site \(http://download.novell.com\)](http://download.novell.com). Select iManager as the product in the search criteria.

Additionally, Novell occasionally releases iManager plug-in updates. These updates are available on the [Novell Patches download site \(http://support.novell.com/filefinder/20544/index.html\)](http://support.novell.com/filefinder/20544/index.html).

iManager base plug-ins are only available as part of the complete iManager software download (for example, eDirectory™ administrative plug-ins). Unless there are specific updates to these plug-ins, they can only be downloaded and installed with the entire iManager product.

For more information about downloading iManager plug-ins, see “[Downloading and Installing Plug-ins During Installation](#)” in the *iManager 2.6 Install Guide*.

NOTE: By default, the plug-in modules are not replicated between iManager servers. We recommend that you install the plug-in modules you want on each iManager server.
