

# Hands-on Guide for Open Enterprise Server

**Novell Filr 1.0.1 Beta**

August 2013

**Novell.**

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# About This Guide

This guide is designed to help you understand and evaluate Novell Filr by:

- ♦ Downloading two pre-configured virtual machines (VMs).
- ♦ Performing basic administration and end-user tasks involving those VMs.

It contains the following sections:

- ♦ [Chapter 1, “Overview of the Three Filr Hands-on Paths,” on page 7](#)
- ♦ [Chapter 2, “System Requirements,” on page 9](#)
- ♦ [Chapter 3, “Filr Hands-on Administration Exercises,” on page 11](#)
- ♦ [Chapter 4, “Filr Hands-on End User Exercises,” on page 23](#)
- ♦ [Appendix A, “Creating Your Own Virtual Machines for the Filr Hands-on Exercises,” on page 37](#)
- ♦ [Appendix B, “Documentation Updates,” on page 69](#)

## Audience

This guide is intended for network administrators and others who want a direct experience with Novell Filr as part of their product evaluation.

## Feedback

We want to hear your comments and suggestions about this guide and the other documentation included with Novell Filr. To submit your comments, use the User Comments feature at the bottom of each page of the online documentation.

## Documentation Updates

For the most recent version of this guide, see the [Novell Filr Documentation Web site \(http://www.novell.com/documentation/novell-filr1/filr1\\_hands-on/data/front.html\)](http://www.novell.com/documentation/novell-filr1/filr1_hands-on/data/front.html).

## Additional Documentation

For other Novell Filr documentation, see the [Novell Filr Documentation Web site \(http://www.novell.com/documentation/novell-filr1\)](http://www.novell.com/documentation/novell-filr1).

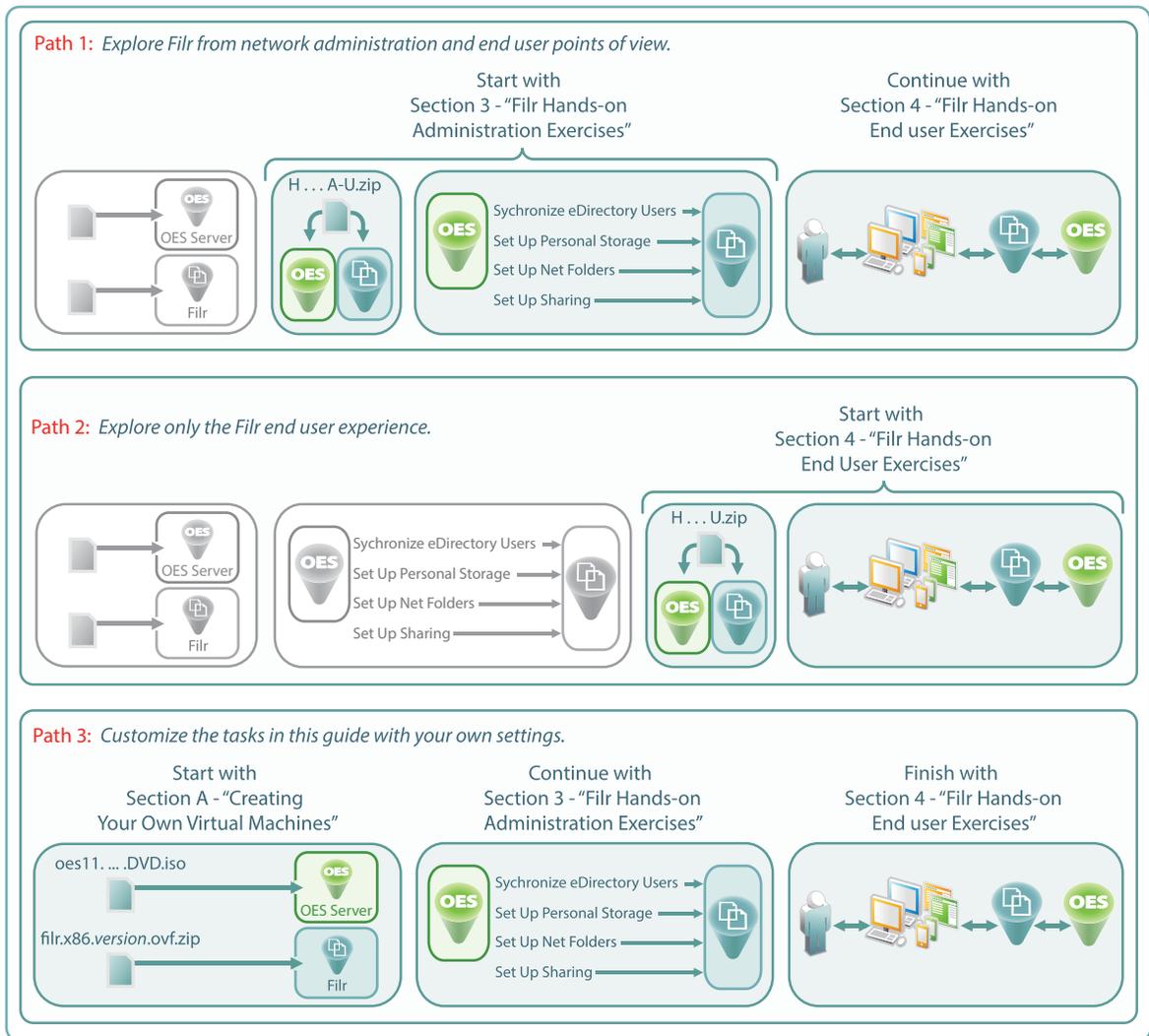


# 1 Overview of the Three Filr Hands-on Paths

Setting up an evaluation environment is always a big challenge for product evaluations.

Therefore, we have removed the “setting up” challenge by providing downloadable, pre-configured, ready-to-use VMs that you can download and run, as illustrated in [Figure 1-1](#).

**Figure 1-1** Evaluation and Setup Paths Covered in This Guide



## About the Three Filr Evaluation Paths

As illustrated in [Figure 1-1](#), you can approach your Filr product evaluation in three different ways:

- ♦ Download the administrative-ready VMs, then explore both the administrative and the end user exercises.
- ♦ Download the end user-ready VMs, then explore only the end user exercises.
- ♦ Download and install Open Enterprise Server and Filr evaluation software, then explore the administrative and end user exercises.

## About the Downloadable Sets of Pre-Configured Virtual Machines

There are two sets of pre-configured VMs associated with this guide:

- ♦ One set that is ready to be used with [Chapter 3, “Filr Hands-on Administration Exercises,”](#) on page 11, and then with [Chapter 4, “Filr Hands-on End User Exercises,”](#) on page 23.
- ♦ One that begins where Chapter 3 ends and is ready for [Chapter 4, “Filr Hands-on End User Exercises,”](#) on page 23.

Both sets contain fully functional evaluation installations of Novell Filr and Novell’s premier file server—Open Enterprise Server 11 SP1 (OES 11 SP1).

No previous OES experience is required for using the exercises in this guide.

## Migrating or Updating the Evaluation VMs to a Production Deployment Is Not Supported

To facilitate Filr evaluations, Novell provides the ability to install *Small Installation* Filr appliance, in which the Filr appliance, database server, and search engine all run in a single VM. Both of the hands-on evaluation file sets include one *Small Installation* Filr appliance.

*Small Installation* Filr appliances are not suitable for production environments from either scalability or performance perspectives. Production environments require at least three separate single-purposes appliances that are running: the Filr appliance, a MySQL database server, and the Filr-supplied Lucene search appliance.

There is no migration or update path for converting a small installation to three separate appliances. Therefore, there is no path for moving the hands-on evaluation VMs to a production environment.

## Work through the Guide Sequentially

As illustrated in [Figure 1-1 on page 7](#) and explained above, there are three possible paths through this guide. After picking a starting point, be sure to access and complete the remaining instructions in the order given. Each section and sub-section depends on completion of the tasks that precede it.

## If You Want to Use This Guide as a Reference

If you want to install additional virtual machines, create a different eDirectory tree structure than the one specified in this guide, or diverge from the instructions presented, you can still use these instructions as a basic outline for getting acquainted with Novell Filr. For more information, see [Appendix A, “Creating Your Own Virtual Machines for the Filr Hands-on Exercises,”](#) on page 37.

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# 2 System Requirements

For the tasks and exercises associated with this guide, you need the following:

- A wireless router (home network varieties are fine)
- VMware Workstation 8 or later

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**IMPORTANT:** The use of VMware Workstation 8 is intended for Novell Filr evaluation purposes only. It is *not* supported for Novell Filr running in a production environment.

---

- A 64-bit host workstation that meets the following conditions:
  - ◆ Has the VMware platform of your choice (above) installed and ready to use
  - ◆ Has the following resources available for running VMware:

Component	Minimum	Recommended
RAM	6 GB	8 GB
Hard drive free space	50 GB	
Network card	Ethernet 100 Mbps	
Mozilla Firefox	latest version	

- ◆ Has a version of LibreOffice installed.
- Two Web-based email addresses for receiving invitations and notifications.
- At least one mobile device (iOS 5 or later or Android 2.3 or later) that is capable of connecting to the wireless router.
- Software for the evaluation path you are following in this guide.

For [Path 1](#) and [Path 2](#), download the applicable Hands-on VMs from the Web:

1. If you don't already have a Novell account, register for one on the [Novell website \(https://secure-www.novell.com/selfreg/jsp/createAccount.jsp?\)](https://secure-www.novell.com/selfreg/jsp/createAccount.jsp?).
2. Access the [Novell Downloads Web page \(http://download.novell.com\)](http://download.novell.com).
3. Do a keyword search for *Novell Filr*.
4. In the *Results* section, click *Novell Filr Evaluation*.
5. Click the *proceed to download* button (upper-right corner of the first table).
6. If you are prompted to log in, type your *Novell Account > username* and *password*, then click *login*.
7. Accept the *Export Agreement* (required for first downloads only), and answer the survey questions about your download (optional).
8. Print the download page. You need the listed MD5 verification numbers for verifying your download.

9. For [Path 1](#), download the Hands-on\_Filr\_1\_A-U.zip file to your VMware host workstation.

For [Path 2](#), download the Hands-on\_Filr\_1\_U.zip file to your VMware host workstation.

---

**IMPORTANT:** These files are approximately 3.7 GB.

We strongly recommend that you use a download manager, such as those recommended in the *how to use a download manager* link on the download page.

---

10. Verify the integrity of each downloaded file by running an MD5-based checksum utility on it and comparing the values against the list that you printed in [Step 8](#).

For example, on a Linux system you can enter the following command:

```
md5sum Hands-on_Filr_1_path-type.zip
```

For a Windows system, you need to obtain a Windows-compatible MD5-based checksum utility from the Web and follow its usage instructions.

11. Continue with [Filr Hands-on Administration Exercises](#).

For [Path 3](#), you must download the software listed in [Section A.2.1, "Obtaining Installation Media," on page 41](#)) to your VMware host workstation.

# 3 Filr Hands-on Administration Exercises

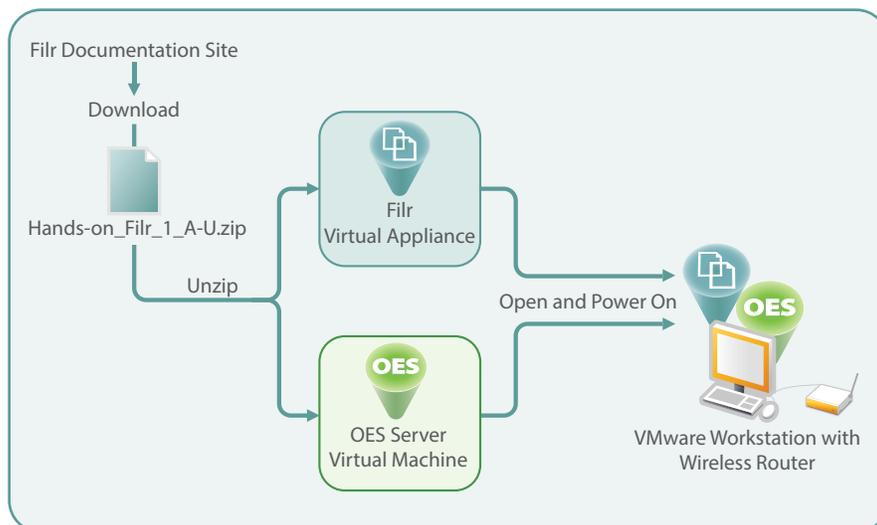
This section guides you through the following tasks:

- ♦ Section 3.1, “Overview of Filr Administration Exercises,” on page 11
- ♦ Section 3.2, “Starting the Virtual Machines,” on page 12
- ♦ Section 3.3, “Connecting to the Wireless Router,” on page 12
- ♦ Section 3.4, “Before You Begin the Administrative Exercises,” on page 14
- ♦ Section 3.5, “Synchronizing LDAP Users,” on page 14
- ♦ Section 3.6, “Setting Up Users’ My Files Folders,” on page 16
- ♦ Section 3.7, “Setting Up Net Folders,” on page 17
- ♦ Section 3.8, “Enabling Sharing,” on page 20
- ♦ Section 3.9, “Allowing the Desktop Application to Be Deployed,” on page 20
- ♦ Section 3.10, “(Optional) Setting Up Email Communication with the Filr VM,” on page 20

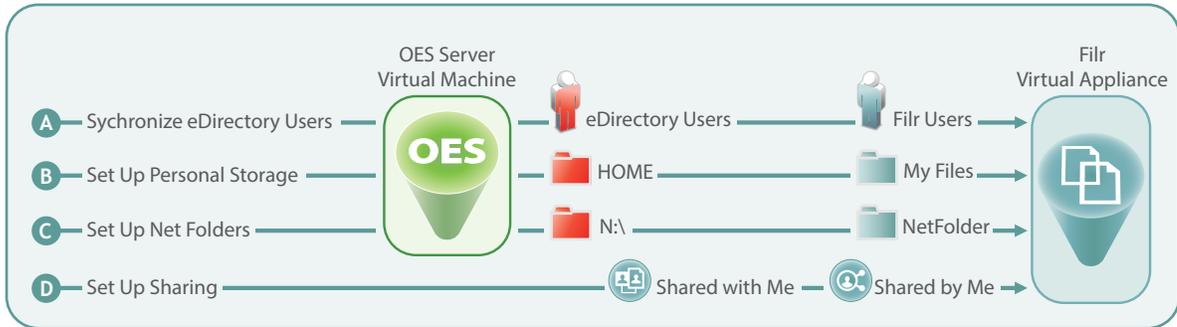
## 3.1 Overview of Filr Administration Exercises

The Filr administration exercises can be summarized as follows:

### 1. Downloading and Starting the Administration-Ready Virtual Machines



## 2. Configuring Filr and Connecting It to the OES Server



Make sure you have reviewed the system and software requirements that are outlined in [Chapter 2, “System Requirements,”](#) on page 9 before proceeding.

## 3.2 Starting the Virtual Machines

**IMPORTANT:** The instructions in this section only apply to [Path 1](#). If you are following [Path 3](#), skip this section and continue with [Section 3.3, “Connecting to the Wireless Router,”](#) on page 12.

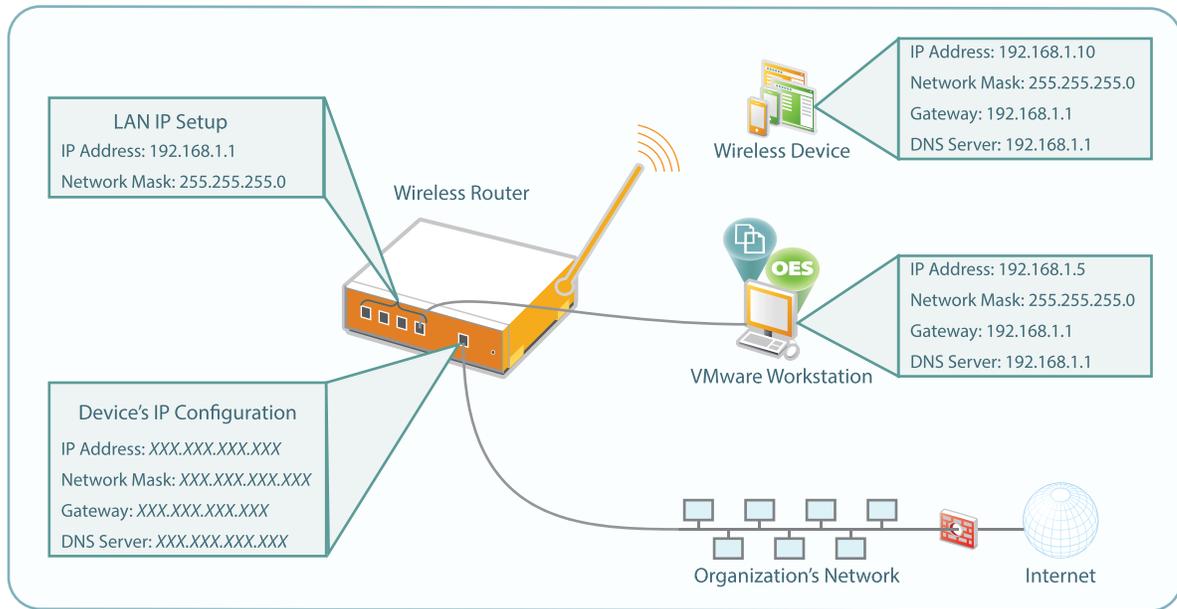
Start the downloaded, pre-configured virtual appliances by doing the following:

- 1 If you haven't already downloaded the software for [Path 1](#), review and follow the instructions in [Chapter 2, “System Requirements,”](#) on page 9.
- 2 After the zip file is downloaded, extract the files and folders to where you want to run them in VMware.
- 3 Start your chosen VMware platform and open the OES-11 VM (`oes-11.vmx`).
- 4 Open the Filr VM (`filr.vmx`).
- 5 Select the `oes-11` tab, click *Edit Virtual Machine Settings*, click *Network Adapter*, select *Bridged* and the *Replicate physical network connection state* option, then click *OK*.
- 6 Repeat [Step 5](#) for the Filr VM.
- 7 Start the pre-configured VMs by doing the following:
  - 7a Select the `oes-11` tab, then click *Power on this virtual machine*.
  - 7b When VMware asks whether the VM was moved or copied, select *I moved it*.
  - 7c After the OES server VM has started up, select the Filr VM, then click *Power on this virtual machine*.
  - 7d When VMware asks whether the VM was moved or copied, select *I moved it*.
- 8 When both VMs are running, continue with [Connecting to the Wireless Router](#).

## 3.3 Connecting to the Wireless Router

When you have completed the instructions in this section, your wireless router configuration should resemble [Figure 3-1](#).

**Figure 3-1** Wireless Router Setup



**IMPORTANT:** The instructions in this section assume that you are connecting your wireless router to the Internet through your organization's network. Most wireless routers have DHCP services active by default. To avoid problems with your organization's DHCP service, you need to disable DHCP before connecting the router to the network.

Of course, having DHCP disabled necessitates that each device connecting to the router use a static IP address.

Set up your wireless router, and connect to it by doing the following:

- 1 Disconnect the VMware workstation from your organization's network, and connect it to one of the LAN ports on the wireless router.

**IMPORTANT:** Do not connect the router to the Internet at this point.

- 2 Start the router.
- 3 Using the instructions for your router, access the administration console and do the following:
  - 3a Set the router to obtain its IP address through a DHCP service.  
If DHCP is not available, configure it with a static IP address, network mask, gateway, and so on, for your network.
  - 3b Set the router to communicate with devices that are attached to it by ensuring that its LAN IP setup uses IP address 192.168.1.1 and network mask 255.255.255.0.
  - 3c Ensure that the router is not set to act as a DHCP server.
  - 3d For the wireless configuration, assign an easily identifiable SSID, such as Filr\_Lab.
  - 3e If possible, disable wireless security to make it simpler to connect through a wireless connection.
  - 3f Save the settings.

---

**IMPORTANT:** If your router's LAN IP address configuration changed, then remember to use 192.168.1.1, rather than the previous address, when connecting to the router's management console.

---

- 4 Set the workstation's network adapter that is connected to the wireless router, with the following IP address information:

IP address	192.168.1.5
Network Mask	255.255.255.0
Default Gateway	192.168.1.1
DNS Server Addresses	192.168.1.1

For example, on Windows 7, access the workstation's Control Panel. Then in the Network Sharing Center, set the Local Area Connection adapter with the address information.

- 5 Connect the wireless router to your organization's network.
- 6 Configure the mobile device with the following Static IP address information:

IP address	192.168.1.10
Network Mask	255.255.255.0
Default Gateway	192.168.1.1
DNS Server Addresses	192.168.1.1

For example, on an iPad, access the *Settings* panel, choose *Wi-Fi*, choose the network with the SSID name you set in [Step 3d](#), choose the blue arrow for the network, choose the *Static* tab, then specify the address information.

- 7 Open a browser on the workstation and the mobile device, and ensure that you can connect to the Internet through them, then continue with the next section.

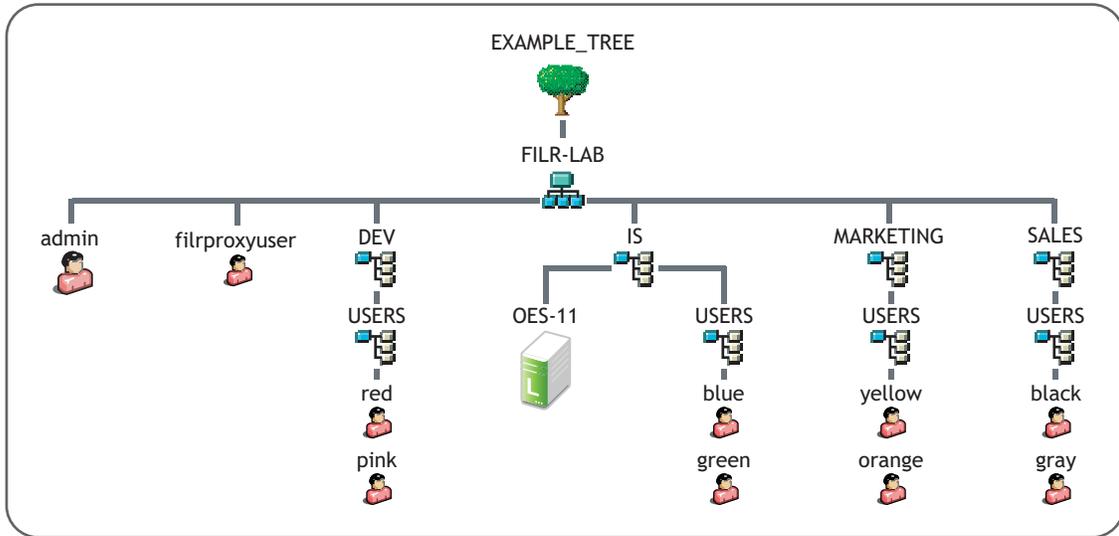
## 3.4 Before You Begin the Administrative Exercises

If you want the ability to repeat the exercises that follow, consider taking a snapshot in VMware before you begin. That way you can always restore the VMs to their original states without risking ripple effects from previous sessions.

## 3.5 Synchronizing LDAP Users

Your OES 11 server is pre-configured with the eDirectory users shown in [Figure 3-2 on page 15](#).

**Figure 3-2** The Pre-configured eDirectory Tree and the Users That It Contains



Importing users to Filr is accomplished by setting up LDAP synchronization with the eDirectory tree as follows:

- 1 Using your administrative browser, access Filr through the following URL:  
`https://192.168.1.110:8443`
- 2 If prompted, accept and trust the certificate.
- 3 Sign in as User: admin with Password: admin.
- 4 When prompted, change the password to novellfilr.



- 5 Click *admin* (upper right), then select *Administration Console*.
- 6 Under *System*, click *LDAP*.
- 7 Click *Add a New LDAP Source* > *OK*.

- 8 In the *LDAP server URL* field, type `ldaps://192.168.1.100`.  
This is the IP address of the OES server (oes-11 in [Figure 3-2 on page 15](#)).
- 9 In the *User DN* field, type `cn=admin,o=filr-lab`.  
This is the eDirectory tree Admin ([Figure 3-2 on page 15](#)).
- 10 In the *Password* field, type `novellfilr`.
- 11 In the *LDAP attribute that uniquely identifies a user or group* field, type `GUID`.
- 12 In the *LDAP Attribute Used for Filr Name* field replace `uid` with `cn`.
- 13 Skip to the *Base DN* field, then type `ou=users,ou=dev,o=filr-lab`.  
This is the location of users *red* and *pink* in the eDirectory tree ([Figure 3-2 on page 15](#)).
- 14 Click *Add* to enter the next *Base DN*.
- 15 Create Base DN entries for the following, clicking *Add* for each entry.
  - ◆ `ou=users,ou=is,o=filr-lab`
  - ◆ `ou=users,ou=mrktg,o=filr-lab`
  - ◆ `ou=users,ou=sales,o=filr-lab`
- 16 Select the following options:
  - ◆ *Enable Schedule*
  - ◆ *Run Immediately*
  - ◆ *Every Day*
  - ◆ *Repeat Every 0.25 Hours*
- 17 Select the following options for User synchronization:
  - ◆ *Synchronize User Profiles*
  - ◆ *Register LDAP User Profiles Automatically*
- 18 Click *Apply*.  
The eight users in the four USERS containers are added.
- 19 Do not close the Administration Console. Continue with [Section 3.6, "Setting Up Users' My Files Folders," on page 16](#).

For complete instructions on using Filr LDAP synchronization, see "[Synchronizing Users and Groups from an LDAP Directory](#)," in the *Novell Filr 1.0 Administration Guide*.

## 3.6 Setting Up Users' My Files Folders

- 1 Under *Management*, click *User Accounts*.
- 2 Select the check boxes next to the names of the following users that you synchronized from eDirectory, then click *More > Enable Personal Storage*.
  - ◆ M Black
  - ◆ M Green
  - ◆ M Orange
  - ◆ M Pink
- 3 Do not close the Administration Console. Continue with [Setting Up Net Folders](#).

## 3.7 Setting Up Net Folders

- ♦ [Section 3.7.1, “Specifying Net Folder Servers,”](#) on page 17
- ♦ [Section 3.7.2, “Setting Net Folder Access and Sharing Rights,”](#) on page 18

### 3.7.1 Specifying Net Folder Servers

Net Folder Servers are connections to NSS volumes on NetWare and OES file servers, and to shares on Windows file servers. You can set up as many connections to each file server as needed. For the hands-on lab, you create one Net Folder Server for each NSS volume.

- 1 Under *Management*, click *Net Folder Servers*.
- 2 Four of the users that you synchronized with the OES-11 server have Home directories on the server. Therefore, the Net Folder Server *192.168.1.100-HOME* is already created and listed.

---

**IMPORTANT:** Although Home folders are technically like other Net Folders in Filr, their primary role is personal storage. Therefore, they are accessed through *My Files* rather than through *Net Folders*.

---

- 3 The Home Net Folder Server is marked with an icon that indicates that its configuration needs attention.

In the Name column, click *192.168.1.100-HOME*.

- 4 A chief feature of Filr is the ability to share files and folders with others who do not have native file system rights. This sharing functionality is provided through Filr proxy users, but the Home Net Folder Server has no Filr proxy user assigned.

The proxy user for these exercises (filrproxyuser) is shown in the FILR-LAB organization in [Figure 3-2 on page 15](#).

In the Proxy Name field, type

```
cn=filrproxyuser,o=filr-lab
```

In the Proxy Password field, type

```
novellfilr
```

- 5 Click *Test Connection*.  
You should see a message that the test succeeded.
- 6 Click *OK > OK*.
- 7 To add Net Folder Servers for the other volumes on the OES server, click *Add*.
- 8 Type the following in the fields indicated for a volume, beginning with DEV:

Volume	Field	Text
DEV	Name	Development
	Server Path	\\192.168.1.100\DEV
	Proxy Name	cn=filrproxyuser,o=filr-lab
	Proxy Password	novellfilr

Volume	Field	Text
IS	Name	IS
	Server Path	\\192.168.1.100\IS
	Proxy Name	cn=filproxyuser,o=filr-lab
	Proxy Password	novellfilr
MRKTG	Name	Marketing
	Server Path	\\192.168.1.100\MRKTG
	Proxy Name	cn=filproxyuser,o=filr-lab
	Proxy Password	novellfilr
SALES	Name	Sales
	Server Path	\\192.168.1.100\SALES
	Proxy Name	cn=filproxyuser,o=filr-lab
	Proxy Password	novellfilr

Notice that the Net Folder Server names do not necessarily need to mirror the server and volume information.

- 9 Click *Test Connection* to ensure that everything is entered correctly.
- 10 Under *Synchronization Schedule*, select
  - ◆ *Enable Scheduled Synchronization*
  - ◆ *Every Day*
  - ◆ *At 0:00 GMT*

11 Click *OK*.

12 Repeat from [Step 8](#) for the IS, MRKTG, and SALES volumes.

13 Click *Sync*.

When the sync operation completes, Filr has metadata for each Net Folder Server in its database.

14 Continue with [Setting Net Folder Access and Sharing Rights](#).

## 3.7.2 Setting Net Folder Access and Sharing Rights

Net Folders are connections to specific directories on Net Folder Servers. You can set up as many Net Folders as needed. You can also specify a separate and independent synchronization schedule for each Net Folder.

- 1 Under *Management*, click *Net Folders*.

Notice that although four users have Home folders and the HOME volume was listed as a Net Folder Server in the previous section, there are no Net Folders displayed in the list. This is because Home folders are displayed and managed under *My Files* rather than *Net Folders*.

- 2 Click *Add*, then use the information in [Table 3-1](#) to complete the sub-steps for each Net Folder listed.

**Table 3-1** Net Folder Configuration Information

Name	Server	Relative Path	Users with Rights to Net Folder	Sharing Rights
reviews	Development	personnel\reviews	red	Allow Access Internal
comp planning	Development	personnel\salaries	red	Allow Access
projects	Development	projects	red	Allow Access Internal External
training	IS	training\quick_starts	blue	Allow Access Internal Re-share
cool stuff	Marketing	advertising\brochures	yellow	Allow Access Internal External Public Re-share
projections	Sales	revenue\projections	black	Allow Access Internal
2013 tracking	Sales	revenue\quotas	black	Allow Access Internal

**2a** In the *Name* field, type a name from [Table 3-1](#) (*reviews* is first).

**2b** In the *Net Folder Server* drop-down list, select the Net Folder Server listed for the Net Folder (*Development* is first).

**2c** In the *Relative Path* field, type the relative path shown for the Net Folder (*personnel\reviews* is first).

**2d** Click *Test Connection* and verify that the information is entered correctly.

**2e** Click *Index the Contents of This Net Folder*.

Although content indexing carries significant processing overhead and should, therefore, probably not be applied to all Net Folders, the content used in these exercises is so small that the overhead involved with indexing it is miniscule.

**2f** Click *Enable Just-in-Time Synchronization*.

Again, the content used in these exercises is small, and this option ensures that the folder's content is synchronized between OES and Filr each time a user accesses it.

**2g** Click the *Rights* tab.

**2h** In the *User or Group* field, begin typing, and then select the first user listed for the Net Folder (*M Red* is first.)

**2i** In the *Grant Rights* dialog, set the sharing rights as listed (the first choices are: *Allow Access to the Net Folder* and *Internal Users*), then click *OK*.

- 2j Click *OK > OK*, then return to [Step 2a](#) for the next Net Folder.
- 2k When all of the Net Folders have been specified, continue with [Enabling Sharing](#).

## 3.8 Enabling Sharing

Even though you granted sharing rights in the previous section, actually allowing users to share files and folders requires that you enable sharing for the Filr site.

- 1 Under *System*, click *Share Settings*.
- 2 In the *User or Group* field, start to type *all*, then select *All Internal Users*.

Because the Filr VM was copied, in some cases the system index gets compromised. If the list is empty, do the following:

- 2a Under *Management*, click *Search Index*.
- 2b Select *Re-Index Everything*, then click *OK*.

On most installations, reindexing would take some time. However, because this is such a small installation, the process happens very quickly.

- 2c Repeat from [Step 1](#).
- 3 Click *Re-share Items* and *Share with the Public*, then click *OK > OK*.

This sets the maximum sharing rights that can be granted anywhere on the system. Re-sharing and public access are only available if they are actually enabled on the Net Folders.

- 4 Under *System*, click *User Access*, select *Allow Guest access* and *Guest access is read-only*, then click *OK*.

The *read-only* option prevents public (guest) users from logging comments. This is generally a good idea in light of the risk of “spam” comments. Comments cannot be removed in this version of Filr.

- 5 Continue with [Allowing the Desktop Application to Be Deployed](#).

## 3.9 Allowing the Desktop Application to Be Deployed

Some of the Filr end user exercises are done through the Desktop Application. To enable the Desktop Application to be deployed through the Web application:

- 1 Under *System*, click *Desktop Application*.
- 2 Select *Be deployed*.
- 3 In the *Auto-update URL* field, type `https://192.168.1.110:8443/desktopapp/`.
- 4 Click *OK*.
- 5 Continue with [\(Optional\) Setting Up Email Communication with the Filr VM](#).

## 3.10 (Optional) Setting Up Email Communication with the Filr VM

The hands-on exercises leverage two of your personal email addresses:

- ♦ One is assigned to user *red* for demonstrating Filr’s notification capabilities.
- ♦ The other is used for inviting an external user to collaborate on a project.

If you are not interested in email notifications or external sharing as part of the end user exercises, you can skip all of the remaining sections and steps in this guide that are marked (Email Only).

If you want to experiment with email notifications that originate from Filr, you must complete the following sections:

- ♦ [Section 3.10.1, “\(Email Only\) Configuring the Host Workstation to Recognize Filr’s DNS Name,” on page 21](#)
- ♦ [Section 3.10.2, “\(Email Only\) Entering an Email Address for User red,” on page 21](#)
- ♦ [Section 3.10.3, “\(Email Only\) Synchronizing red’s Change with Filr,” on page 22](#)

### 3.10.1 (Email Only) Configuring the Host Workstation to Recognize Filr’s DNS Name

- 1 On the VMware host workstation, open Windows Explorer and ensure that the file toolbar is displayed. If it’s not displayed, press F10.
- 2 Click *Tools > Folder Options*.
- 3 Click the *View* tab, then click *Show hidden files, folders, and drives > Apply > OK*.
- 4 Navigate to *Windows > System 32 > drivers > etc*, then right-click the *hosts* file and select *Properties*.
- 5 Click the *Security* tab.
- 6 Select your user name, then Edit the permissions and assign yourself Full Control of the *hosts* file.
- 7 Click *OK*.
- 8 Right-click the *hosts* file and open it in a text editor, such as Notepad, then add the following line:  

```
192.168.1.110 filr.filr-lab.example.com.
```
- 9 Save and close the file.

### 3.10.2 (Email Only) Entering an Email Address for User red

- 1 Go to [Section A.2.6, “Accessing iManager,” on page 48](#), complete the instructions in that section and in [Section A.2.7, “Enabling Pop-Ups for iManager,” on page 48](#), then return here.
- 2 Ensure that the *Roles and Tasks* icon  is selected.
- 3 In the left panel, click *Users > Modify User*.
- 4 Click the *Browse* icon  next to the *Username* field.
- 5 Click the *Search* tab.
- 6 In the *Search for objects named* field, type *red*, then click *Search*.
- 7 Under *Results*, click the link for user *red*.
- 8 Click *OK*.
- 9 Click the plus icon next to the *Internet E-mail address* field.
- 10 Type the email address you have chosen to use with these exercises, for example `myusername@example.com`.
- 11 Click *OK > Apply > OK*, then close iManager.

### 3.10.3 (Email Only) Synchronizing red's Change with Filr

- 1 Using your administrative browser, access Filr through the following URL:  
`https://192.168.1.110:8443`
- 2 Sign in as User: admin with Password: novellfilr.
- 3 Click *admin* (upper right), then select *Administration Console*.
- 4 Under *System*, click *LDAP*.
- 5 Click *Run Immediately*.
- 6 Click *Apply*.  
User red's profile is modified.
- 7 Continue with [Chapter 4, "Filr Hands-on End User Exercises,"](#) on page 23.

# 4 Filr Hands-on End User Exercises

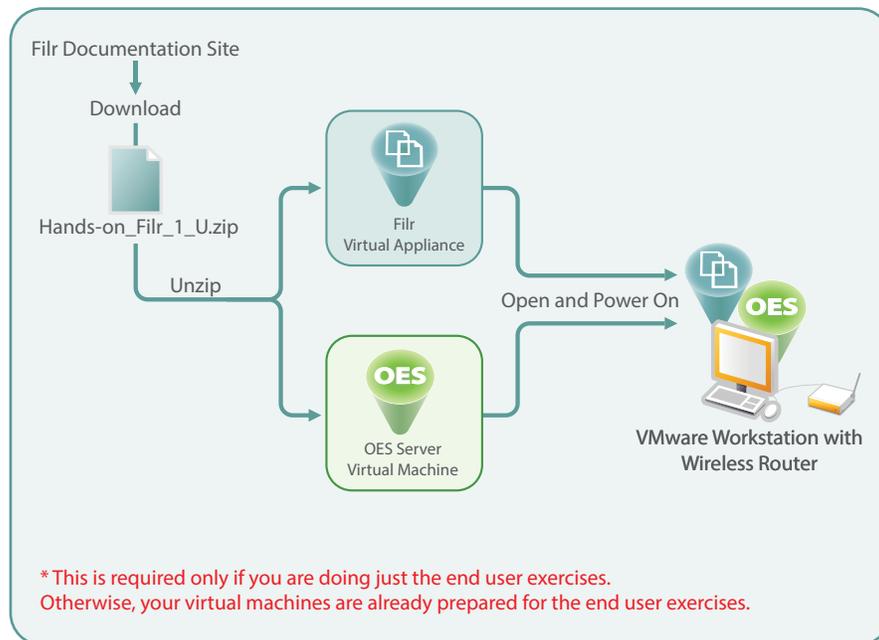
This section guides you through the following tasks:

- ◆ Section 4.1, “Overview of Filr End User Exercises,” on page 23
- ◆ Section 4.2, “Downloading and Starting the Virtual Machines,” on page 24
- ◆ Section 4.3, “Connecting to the Wireless Router,” on page 25
- ◆ Section 4.4, “Accessing Filr to Do the Filr End User Exercises,” on page 26
- ◆ Section 4.5, “FILR-LAB Users and Roles,” on page 27
- ◆ Section 4.6, “Before You Begin the End User Exercises,” on page 28
- ◆ Section 4.7, “Exploring Filr Functionality for End Users,” on page 28

## 4.1 Overview of Filr End User Exercises

The Filr end user exercises can be summarized as follows:

### (Conditional\*) Downloading the End-User-Ready Virtual Machines



## Using Filr As an End User



## 4.2 Downloading and Starting the Virtual Machines

**IMPORTANT:** There are two things you must understand about the downloadable end-user exercise VM files.

- ♦ The instructions in this section only apply to [Path 2](#). If you are following Paths 1 or 3, you have already prepared the virtual machines for the exercises in this section. Therefore, you should not complete the steps below. Instead, skip to [Section 4.4, “Accessing Filr to Do the Filr End User Exercises,”](#) on page 26.
- ♦ The downloadable end-user exercise VM files are not configured with an email address for user *red*. This means that if you are following Path 2 and you want to do the optional email exercises, you must complete the instructions in [Section 3.10, “\(Optional\) Setting Up Email Communication with the Filr VM,”](#) on page 20 after downloading the end-user exercise VM files and completing the steps below.

Of course, if you aren’t interested in the email exercises, setting up email communication is not needed.

Download the pre-configured virtual appliances by doing the following:

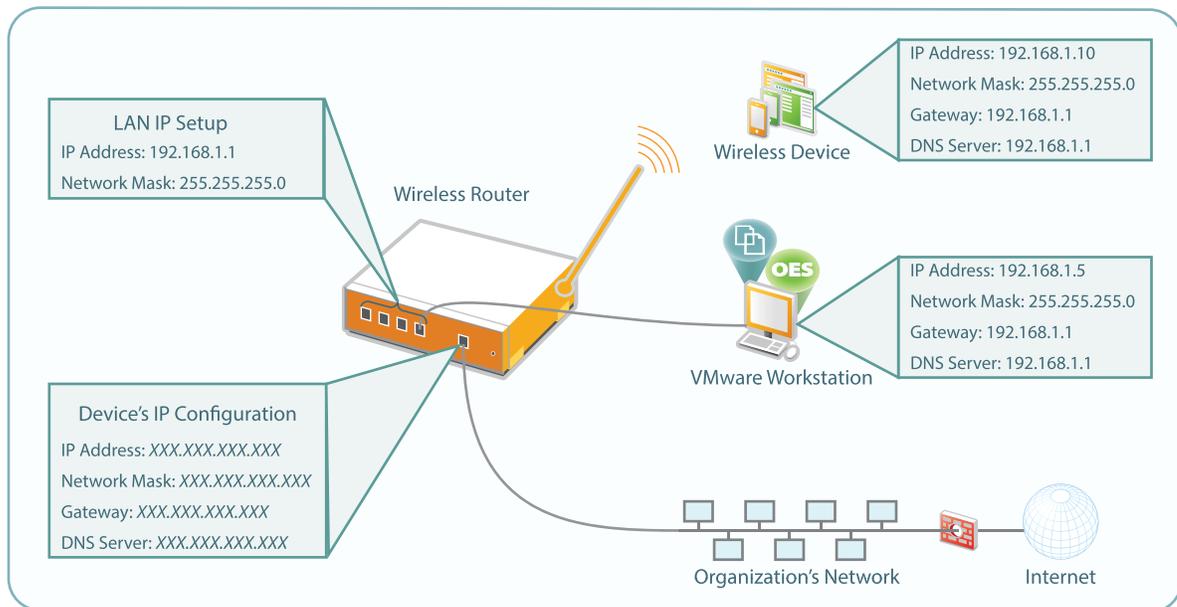
- 1 If you haven’t already downloaded the software for Path 1, review and follow the instructions in [Chapter 2, “System Requirements,”](#) on page 9.
- 2 After the zip file is downloaded, extract the files and folders to where you want to run them in VMware.
- 3 Start your chosen VMware platform and open the OES-11 VM (`oes-11.vmx`).
- 4 Open the Filr VM (`filr.vmx`).
- 5 Select the `oes-11` tab, click *Edit Virtual Machine Settings*, click *Network Adapter*, select *Bridged* and the *Replicate physical network connection state* option, then click *OK*.
- 6 Repeat [Step 5](#) for the Filr VM.
- 7 Start the pre-configured VMs by doing the following:
  - 7a Select the `oes-11` tab, then click *Power on this virtual machine*.
  - 7b When VMware asks whether the VM was moved or copied, select *I moved it*.
  - 7c After the OES server VM has started up, select the Filr VM, then click *Power on this virtual machine*.
  - 7d When VMware asks whether the VM was moved or copied, select *I moved it*.
- 8 When both VMs are running, continue with [Connecting to the Wireless Router](#).

## 4.3 Connecting to the Wireless Router

**IMPORTANT:** The instructions in this section only apply to [Path 2](#). If you are following Paths 1 or 3, you have already set up the wireless router and connected to it. Skip to [Section 4.4, “Accessing Filr to Do the Filr End User Exercises,”](#) on page 26.

When you have completed the instructions in this section, your wireless router configuration should resemble [Figure 4-1](#).

**Figure 4-1** Wireless Router Setup



**IMPORTANT:** The instructions in this section assume that you are connecting your wireless router to the Internet through your organization's network. Most wireless routers have DHCP services active by default. To avoid problems with your organization's DHCP service, you need to disable DHCP before connecting the router to the network.

Of course, having DHCP disabled necessitates that each device connecting to the router use a static IP address.

Set up your wireless router, and connect to it by doing the following:

- 1 Disconnect the VMware workstation from your organization's network, and connect it to one of the LAN ports on the wireless router.

**IMPORTANT:** Do not connect the router to the Internet at this point.

- 2 Start the router.
- 3 Using the instructions for your router, access the administration console and do the following:
  - 3a Set the router to obtain its IP address through a DHCP service.  
If DHCP is not available, configure it with a static IP address, network mask, gateway, and so on, for your network.
  - 3b Set the router to communicate with devices that are attached to it by ensuring that its LAN IP setup uses IP address 192.168.1.1 and network mask 255.255.255.0.

- 3c Ensure that the router is not set to act as a DHCP server.
- 3d For the wireless configuration, assign an easily identifiable SSID, such as `Filr_Lab`.
- 3e If possible, disable wireless security to make it simpler to connect through a wireless connection.
- 3f Save the settings.

---

**IMPORTANT:** If your router's LAN IP address configuration changed, then remember to use 192.168.1.1, rather than the previous address, when connecting to the router's management console.

---

- 4 Set the workstation's network adapter that is connected to the wireless router, with the following IP address information:

IP address	192.168.1.5
Network Mask	255.255.255.0
Default Gateway	192.168.1.1
DNS Server Addresses	192.168.1.1

For example, on Windows 7, access the workstation's Control Panel. Then in the Network Sharing Center, set the Local Area Connection adapter with the address information.

- 5 Connect the wireless router to your organization's network.
- 6 Configure the mobile device with the following Static IP address information:

IP address	192.168.1.10
Network Mask	255.255.255.0
Default Gateway	192.168.1.1
DNS Server Addresses	192.168.1.1

For example, on an iPad, access the *Settings* panel, choose *Wi-Fi*, choose the network with the SSID name you set in [Step 3d](#), choose the blue arrow for the network, choose the *Static* tab, then specify the address information.

- 7 Open a browser on the workstation and the mobile device, and ensure that you can connect to the Internet through them, then continue with the next section.

## 4.4 Accessing Filr to Do the Filr End User Exercises

You need connections to Filr through the following access points to complete the Filr End User Exercises:

- ♦ A browser on the VMware host workstation
- ♦ The Filr Desktop Application on the VMware host workstation
- ♦ The wireless device

## 4.4.1 Connecting to Filr through the Browser and Installing the Filr Desktop Application

To connect through the browser and install the Filr Desktop Application:

- 1 On the VMware host workstation, start the browser and access the following URL:  
`https://192.168.1.110:8443`
- 2 If prompted, accept and install the certificate.
- 3 Log in as *User ID: Admin* with *Password: novellfilr*.
- 4 In the upper-right corner, click *admin*, then select *Download Filr Desktop App*.
- 5 Click the appropriate link for the host workstation, for example, *Windows X64 Client*.
- 6 Save the file, close the download dialog, then install the client.  
For help, see the applicable Quick Start on the [Novell Filr online documentation site](#).
- 7 Continue with [Starting the Filr Desktop Application](#).

## 4.4.2 Starting the Filr Desktop Application

- 1 On the Novell Filr welcome screen, click *Start*.
- 2 In the *Server URL* field, type `https://192.168.1.110:8443`.
- 3 Log in as *Username: pink* with *Password: filrrocks*.
- 4 Continue through any security warnings.
- 5 Click *Next > Next > Finish*.

The Filr folder is now available in Windows Explorer or Macintosh Finder.

## 4.4.3 Installing and Starting a Filr Mobile App

Filr mobile apps are available as free downloads in the Apple App Store, the Google Play App Store, and the Amazon Appstore for Android.

Download and install the Filr mobile app on the mobile device as you would any other device app.

To access the Filr Mobile App:

- 1 Start the app in the same way as you start other apps on your mobile device.
- 2 Log in as *Username: black* with *Password: filrrocks*.
- 3 Continue with [FILR-LAB Users and Roles](#).

## 4.5 FILR-LAB Users and Roles

[Table 4-1](#) lists eight users that have been synchronized from the OES 11 server to Filr.

As you can see, there are differences in their Home directory and personal storage allocations (third column). We will briefly explore these in [Section 4.7.1, “My Files—Home Directories and Personal Storage,”](#) on page 29.

Only the manager-level users, such as *red*, *blue*, and so on, have file system rights on the OES 11 server (fourth column). However, the server contains files that need to be accessed by internal users, such as *pink*, *green*, and so on, who do not have file system rights. Some files also need to be reviewed by external users.

We will explore how Filr facilitates your organization’s review and input processes in [Section 4.7.3, “Internal Sharing,” on page 31](#) and the sections that follow it.

**Table 4-1** *User Roles and Tasks*

User Name	Role in the FILR-LAB organization	Home Directory and Personal Storage	File System Rights on the OES 11 Server
<i>red</i>	Development Manager	HOME	Supervisor on volume DEV
<i>pink</i>	Developer	Personal	None
<i>blue</i>	IT Manager	HOME	Supervisor on volume IT
<i>green</i>	Filr Administrator	Personal	None
<i>yellow</i>	Marketing Manager	HOME	Supervisor on volume MRKTG
<i>orange</i>	Product Line Manager	Personal	None
<i>black</i>	District Manager	HOME Personal	Supervisor on volume SALES
<i>gray</i>	Account Manager		None

## 4.6 Before You Begin the End User Exercises

If you want the ability to repeat the exercises that follow, consider taking a snapshot in VMware before you begin. That way you can always restore the VMs to their original states without risking ripple effects from previous sessions.

## 4.7 Exploring Filr Functionality for End Users

After you have completed the setup and administrations instructions in this guide that pertain to the Path you are following, the Filr and OES 11 VMs are ready for the exercises in the following sections:

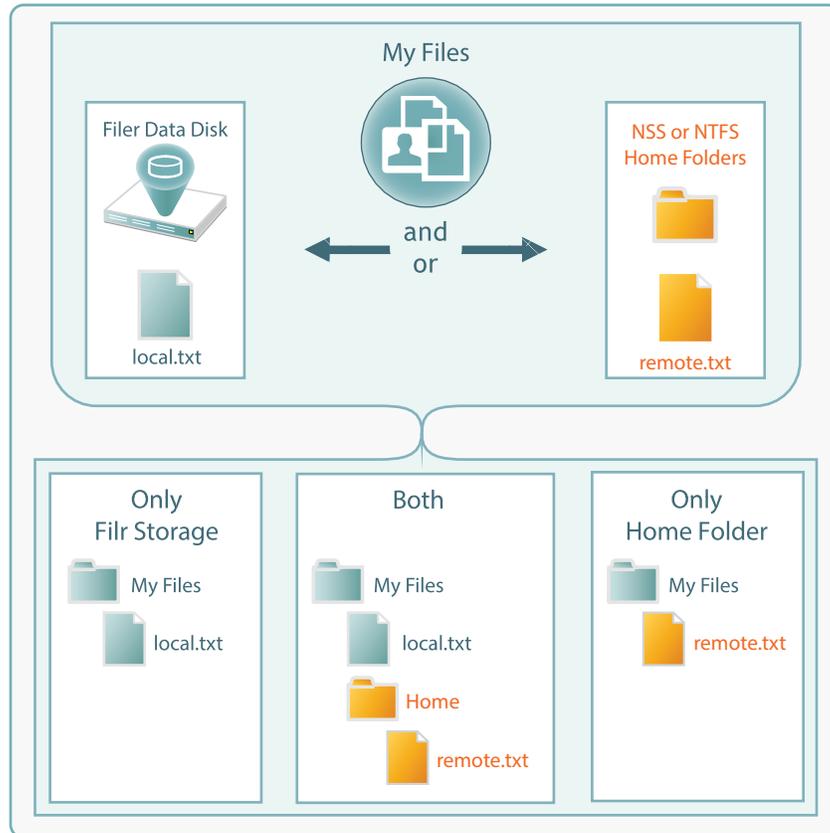
- ♦ [Section 4.7.1, “My Files—Home Directories and Personal Storage,” on page 29](#)
- ♦ [Section 4.7.2, “About the Folders and Files That Are on the OES Server and Are Accessible through Filr,” on page 30](#)
- ♦ [Section 4.7.3, “Internal Sharing,” on page 31](#)
- ♦ [Section 4.7.4, “\(Email Only\) External Sharing,” on page 33](#)
- ♦ [Section 4.7.5, “Public Sharing,” on page 35](#)
- ♦ [Section 4.7.6, “Re-sharing and Searching,” on page 36](#)
- ♦ [Section 4.7.7, “More Things You Can Try,” on page 36](#)

## 4.7.1 My Files—Home Directories and Personal Storage

Table 4-1 lists the different storage locations assigned to users for their personal storage needs and accessed through Filr's My Files functionality.

The files and folders that users see when they access My Files are illustrated in Figure 4-2 and demonstrated in the steps that follow.

**Figure 4-2** What Filr Users See in My Files Depends on What Is Set Up for Them



In the following steps, take the role and do the steps of the users that are indicated.

- 1 User *black* is a fan of the Hubble telescope and especially likes [this image \(http://hubblesite.org/gallery/wallpaper/pr2007041a\)](http://hubblesite.org/gallery/wallpaper/pr2007041a).

Click the 1280X1024 link and save the displayed image to the desktop.

- 2 Copy the image to *black*'s home folder on the OES server.

For example, on Windows 7:

- 2a** Open Windows Explorer and enter the following URL in the Address Bar:

```
\\192.168.1.100\HOME
```

- 2b** Log in as *User Name: black* with *Password: filrrocks*.

Notice that although users *red*, *blue*, and *yellow* each have home directories, *black* only sees the *black* directory.

- 2c** Open the *black* folder.

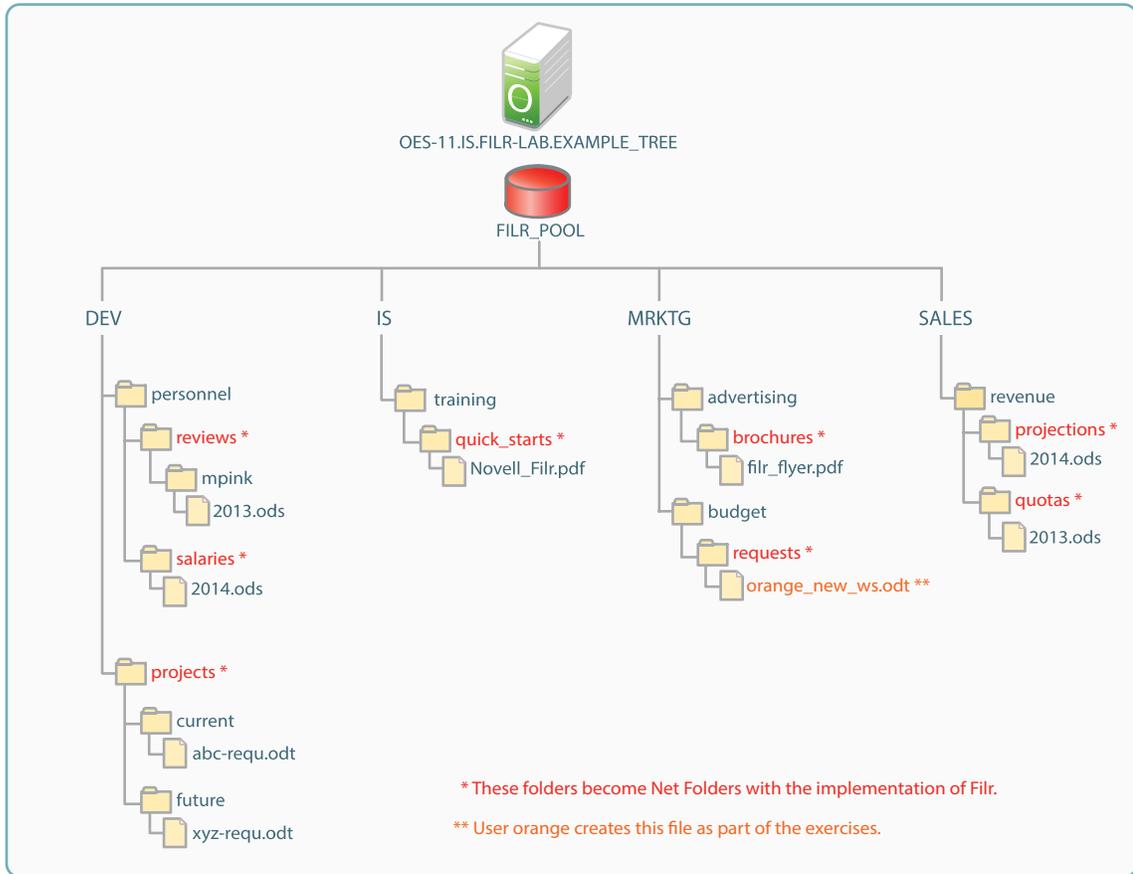
- 2d** Copy the downloaded image to the folder.

- 3 Access the Filr Web site, sign out as user admin, then sign in as *User ID: black* with *Password: filrrocks*.  
Notice that My Files includes a sub-folder named Home. This is *black's* home directory on the OES server.  
Refer to [Table 4-1](#) and notice that user *black* has a home directory and is also assigned personal storage. In other words, user *black* is an example of the section labeled “Both” in [Figure 4-2](#).
- 4 Open the Home folder. The Hubble image file is there as you would expect it to be.
- 5 Sign out as user *black*, then sign in as *User ID: admin* with *Password: novellfilr*.
- 6 Access the *Administration Console* (upper-right corner), then under *Management* click *User Accounts*.
- 7 Select *M Black*, then click *More* and select *Purge User Workspaces > Yes*.
- 8 Select *M Black* again, then click *More* and select *Disable Personal Storage*.
- 9 Sign out as user admin, then sign in as user *black*.
- 10 Notice that the Home folder has disappeared from user *black's* My Files folder and the Hubble image file is now directly listed as a child.  
Because you purged and removed the Personal Storage that was assigned to user *black*, user *black* now fits the definition in the section of [Figure 4-2](#) that is labeled “Only Home Folder.” (Purging *black's* personal storage had no effect on the OES server’s file structure.)
- 11 Click the down-arrow next to the image, then select *Share*.
- 12 In the *Share with* field, type a, then select *All Internal Users*.
- 13 Click *OK > OK*.
- 14 Feel free to explore further if you want to get more experience with Filr’s *My Files* functionality and the role that traditional home folders play in that context. Then continue with [About the Folders and Files That Are on the OES Server and Are Accessible through Filr](#).

## 4.7.2 About the Folders and Files That Are on the OES Server and Are Accessible through Filr

Unless you are following Path 3, and you personally prepared the OES and Filr VMs, you haven’t yet been introduced to the folders and files as they are stored on the OES 11 server. [Figure 4-3](#) shows a visual summary.

**Figure 4-3** Files and Folders on the Hands-on OES 11 Server



If you are following Path 1, then in [Section 3.7, “Setting Up Net Folders,”](#) on page 17, you created Net Folder servers for the volumes shown and Net Folders for the folders marked with a single asterisk (\*) in the graphic. If you are following Path 2, these were created for you in the VMs that you downloaded.

The remaining end user exercises deal primarily with these files and folders.

### 4.7.3 Internal Sharing

The exercises in this section demonstrate how Novell Filr users can share files with users who are internal to your organization.

- ♦ [“User red Initiates User pink’s Annual Review”](#) on page 32
- ♦ [“User pink Responds to the Annual Review Request”](#) on page 32
- ♦ [“User red Approves pink’s Annual Review”](#) on page 33

## User red Initiates User pink's Annual Review

User *red* needs to complete the annual review for user *pink*, but *pink* doesn't have file system access to the review file (`mpink_2013.odt`). Rather than sending the file in email or assigning *pink* the required file system trustee rights on the OES server, *red* simply shares the review file with *pink* and includes Editor privileges. First, however, *red* optionally ensures that email notifications will be sent when the file changes.

- 1 Sign in to the Web application as user *red*. (This requires that you sign out as user *admin* first.)
- 2 Click *Shared with Me* and notice that the image that *black* shared is listed.

---

**IMPORTANT:** If you are not experimenting with email notifications, skip to [Step 4](#) and skip all subsequent steps that are marked (Email only).

---

- 3 (Email only) Click *M Red* in the upper-right corner, then select *View Profile*.  
When the profile displays, notice that the email address you configured in eDirectory for user *red* is listed.
- 4 Click *Net Folders > reviews > mpink*.
- 5 Click the check box for `mpink_2013.odt`, then click the file drop-down arrow ▼ to the right of the file and select *Share*.
- 6 In the *Share with* field, type `p`, then select *M Pink*.
- 7 Select *Editor*, then click *OK > OK*.
- 8 (Email only) Click the check box for `mpink_2013.odt` and the file drop-down arrow again, then click *Subscribe*.
- 9 (Email only) Expand the *Message Only* option, then select the email address you entered for user *red* in Directory and click *OK*.
- 10 Click the comment icon .
- 11 Add a comment, such as  
Hi pink.  
  
Would you please edit this with your objectives and achievements and let me know when you have finished?  
  
Thanks.  
  
red
- 12 Click *Send* and close the Comments dialog.

## User pink Responds to the Annual Review Request

- 1 On the desktop in the notifications area, right-click the Filr icon.



- 2 Select *Open Filr folder*.
- 3 Right-click `mpink_2013.odt`, then select *Open*.
- 4 In the notifications area, right-click the Filr icon, then select *Open Filr folder*.  
The file opens in LibreOffice Writer.
- 5 Make a few changes, then save and close the file.

You can be as verbose or brief as you want.

- 6 In the Shared with Me folder on the workstation, right-click the file you just edited and select *Synchronize now*.
- 7 Sign in to the Web application as user *pink*, then click *Shared with Me*.
- 8 Click the drop-down arrow for `mpink_2013.odt`, then click View HTML.  
Your changes are reflected in the view.
- 9 Close the HTML view tab.
- 10 Click the review file's comment icon, type a comment indicating that the review is ready, then click *Send* and close the comment panel.

## User red Approves pink's Annual Review

- 1 Log in to the email account that you assigned to user *red*.
- 2 Open the message from `filr-admin`.
- 3 Click the *Visit Message* link.
- 4 Sign in to the Web application as user *red*.  
The revised Performance Review is displayed as HTML.
- 5 Click the Comments down arrow to view *pink's* comment.
- 6 In the new comment box, type a comment indicating that the review is approved, then click *Send*.
- 7 Close the view.
- 8 Continue with [\(Email Only\) External Sharing](#).

### 4.7.4 (Email Only) External Sharing

The exercises in this section demonstrate how Filr users can share files with users who are external to your organization.

- ♦ ["About External Users" on page 33](#)
- ♦ ["User red Gathers Input for the Next Release" on page 34](#)
- ♦ ["User opaque Self-Provisions and Responds to the Review Request" on page 34](#)
- ♦ ["User red Responds to User opaque's Input" on page 35](#)

---

**IMPORTANT:** Completing the instructions in [Section 3.10, "\(Optional\) Setting Up Email Communication with the Filr VM," on page 20](#) is required for the exercises in this section.

---

## About External Users

External users are those who receive share invitations through email and subsequently provision themselves as system users. They can then log in to the system using the credentials they establish with Filr, or they can elect to be authenticated through a Google or Yahoo Open ID account.

For more information about the different kinds of users who can access Filr, see ["Users and Groups with Filr"](#) in the *Novell Filr 1 "How Filr Works"—Overview Guide*.

## User red Gathers Input for the Next Release

User *red* managed the ABC product release and is responsible for gathering input for the upcoming XYZ product. User *red* also wants to invite input from a key partner named M Opaque. Inviting M Opaque to participate requires using the second email address mentioned in [Chapter 2, “System Requirements,” on page 9](#) and further explained in [Section 3.10, “\(Optional\) Setting Up Email Communication with the Filr VM,” on page 20](#).

- 1 If you aren't already signed in to the Web application as user *red*, do so now.
- 2 Click *Net Folders > projects > current*.
- 3 Click the check box for `abc_reqr.odt`, then click the file drop-down arrow ▼ to the right of the file and select *Share*.
- 4 In the *Share with* field, type your second email address, then click the plus sign (+) to add the external user.

At this point user *red* could share the document with other internal users, but for brevity's sake, we aren't including steps for that.
- 5 Click *OK > OK*.
- 6 Click the check box for `abc_reqr.odt` and the file drop-down arrow again, then click *Subscribe*.
- 7 Expand the *Message Only* option, then select the email address you entered for user *red* in Directory and click *OK*.
- 8 Click the comment icon  to the right of the down-arrow.
- 9 Add a comment, such as  

```
It's time to gather input for the next release.  
Please log comments to let us know which features we need to include this time.
```
- 10 Then click *Send* and close the Comments dialog.

## User opaque Self-Provisions and Responds to the Review Request

- 1 Log in to the email account that you used to invite user *opaque* to participate in the review.
- 2 Open the message from the email address you assigned to user *red*.
- 3 Click the `abc_reqr.odt` link.
- 4 The email address is the automatic User ID assigned to M Opaque and cannot be changed.

We suggest you type *First name: M, Last name: Opaque, Password: filrrocks*, and *Re-enter password: filrrocks*, but you are free to customize these fields as you wish.

Of course, the two password field values must match.
- 5 Click *Register*.
- 6 Open the confirmation email, then click *Sign in and access shared items*.
- 7 Type the password you chose for user *opaque*, then click *Sign in*.
- 8 Click *Comments* and read the comment from user *red*.
- 9 Click *Actions*, then click *Subscribe*.

Emails will now be sent to user *opaque* as others comment on the document, and so on.
- 10 Read the HTML view of ABC Project displayed in the window, then log the following comment:  

```
Competing products have had morning coffee functionality for over 18 months  
now.
```

If the next release doesn't include this, we will be forced to switch.

- 11 Click *Send*.

## User red Responds to User opaque's Input

User *red* receives notification of user *opaque*'s comment (you can check *red*'s email if you wish) and remembers that the requested feature has been discussed. It should already be in the next requirements document (*xyz\_reqr.odt*), but *red* isn't certain that it is.

- 1 Log in to the Web application as user *red*.
- 2 Click *Net Folders > projects > future*.
- 3 Click the file drop-down arrow ▼ for *xyz\_reqr.odt* and select *View HTML*.  
The file has not been updated.
- 4 Click the file drop-down arrow ▼ again, then select *View details*.
- 5 Click *Edit this file*, then continue past the security warning and other messages until you are prompted to log in.
- 6 Log in as user *red*.
- 7 Insert the following text before the period:  
, and it will make the morning coffee
- 8 Save the file and close LibreOffice.
- 9 Navigate to *xyz\_reqr.odt* again and view its details to confirm that the change has been made.
- 10 Log and send a comment indicating that the file has been updated.
- 11 Share the file with user *opaque*.

## 4.7.5 Public Sharing

User *yellow* wants to get the word out about the abc version of the organization's product and elicits user *orange*'s help with the effort.

- 1 Log in to the Web application as *User ID: yellow* with *Password: filrrocks*.
- 2 Click *Net Folders > cool stuff*.
- 3 Click the file drop-down arrow ▼ for *abc\_flyer.pdf*, then select *Share*.
- 4 In the *Share with* field, type *o*, then select *M Orange*.
- 5 Click *Public > OK > OK*.
- 6 Log in as *User ID: orange* with *Password: filrrocks*.
- 7 Click *Shared with Me*.
- 8 Select the *abc\_flyer.pdf* file, then click *Share*.
- 9 Click *Make Public*.
- 10 In the *Type* column, click *Public* to view and copy the URLs that can be shared in social media, and so on.
- 11 Enter one of the URLs in a separate browser window or tab to see what Internet users who access the URL will see.

## 4.7.6 Re-sharing and Searching

User *red* hears about a training quick start but can't find it.

- 1 Log in to the Web application as *User ID: blue* with *Password: filrrocks*.
- 2 In Net Folders, navigate to *training > quick\_starts > Novell-Filr.pdf*, then share the file with *green* as a *Viewer* with rights to reshare the file with internal users.
- 3 Log in as user *green*, then share the file, with rights to reshare, with users *pink, yellow, orange, black, and gray*.

At this point, user *pink* comments on the quick start to user *red* in the hallway.

- 4 Log in as user *red*, then in the search field type *quick* and press Enter.  
Because the file is not found, user *red* asks *pink* to share the file.
- 5 Log in as user *pink* and share the file with *red*.
- 6 Log in as user *red* and search for the file again.  
The file is listed in the search results window.

## 4.7.7 More Things You Can Try

There are a few additional files in the other Net Folders that you can experiment with as indicated below. You can also experiment with your own files.

Activity Type	Net Folder	File Location	Task Descriptions
Planning	comp planning	2014.ods	1. User <i>red</i> opens the file in LibreOffice and plans a 5.5% increase for <i>pink's</i> 2014 salary.
Planning	projections	fy_2014.ods	1. User <i>black</i> shares the file with user <i>gray</i> as a viewer and asks whether the goals are realistic. 2. User <i>gray</i> comments that the Q3 estimate is low and the Q4 estimate is high. <i>gray</i> asks that \$10,000 be transferred from Q4 to Q3. 3. User <i>black</i> adjusts Q3 and Q4 estimates, thanks <i>gray</i> , and acknowledges the change.
Reporting	quotas	fy_2013.ods	1. User <i>black</i> shares this file with user <i>gray</i> as an Editor and requests that <i>gray</i> update it with Q4 actual results. 2. User <i>gray</i> opens the file, enters \$110,900, and saves the file. 3. User <i>gray</i> comments that the file is now ready for review.

---

# A Creating Your Own Virtual Machines for the Filr Hands-on Exercises

This section presents the steps that were followed to create the pre-configured OES and Filr virtual machines that are available for download, and are used with [Chapter 3, “Filr Hands-on Administration Exercises,”](#) on page 11. It contains the following information:

- ◆ [Section A.1, “Configuring the VMware Host Workstation for the Wireless Router,”](#) on page 37
- ◆ [Section A.2, “Installing the OES Server,”](#) on page 40
- ◆ [Section A.3, “Creating Users, Pools, and Volumes,”](#) on page 49
- ◆ [Section A.4, “Setting Up Novell CIFS,”](#) on page 54
- ◆ [Section A.5, “Preparing Files for the Hands-on Exercises,”](#) on page 56
- ◆ [Section A.6, “Installing and Configuring the Filr Appliance,”](#) on page 60

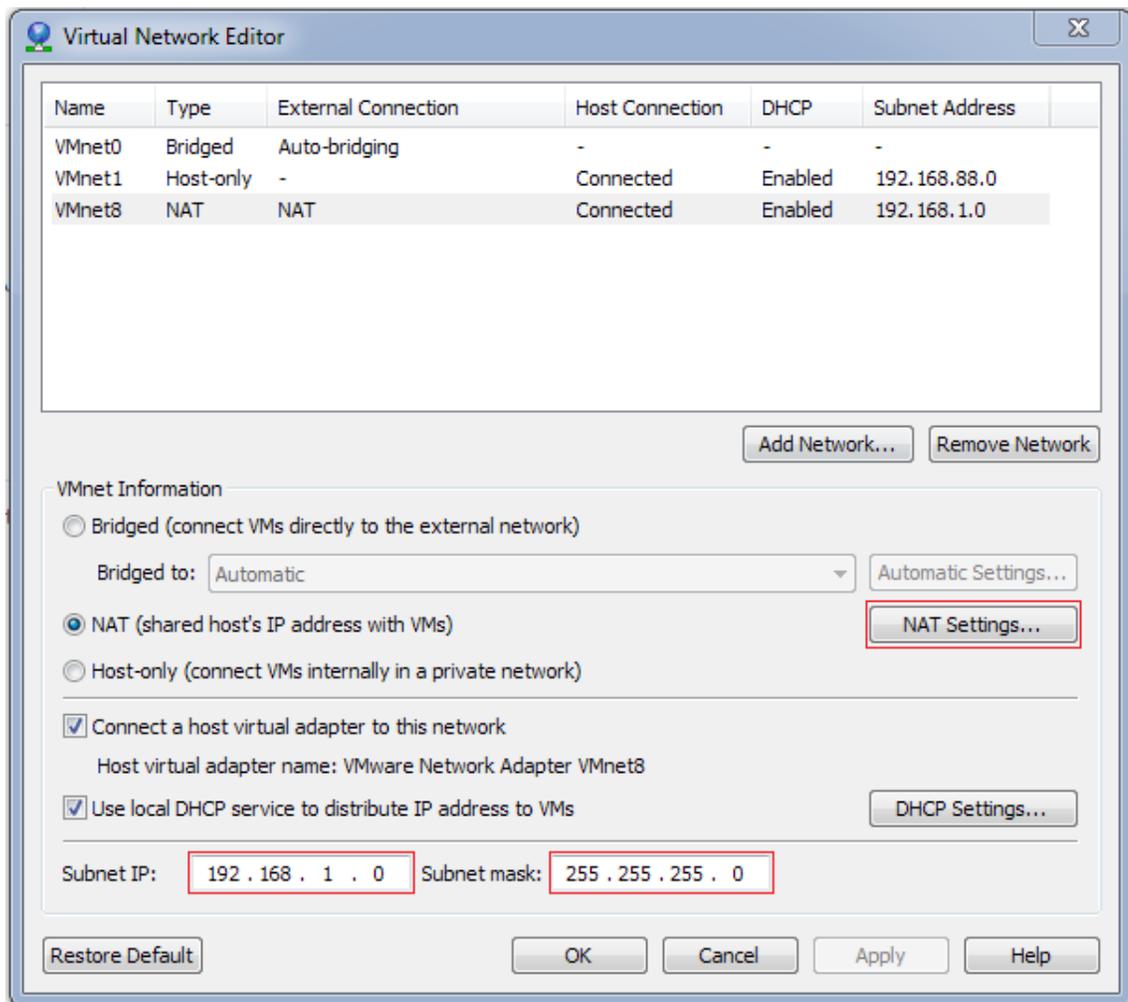
## A.1 Configuring the VMware Host Workstation for the Wireless Router

The instructions in this section assume that you are using a Windows 7 workstation (VMware Workstation host) that is directly connected to your organization’s network for optimal bandwidth for downloading large files. (Later, you connect it to the wireless router, but that is not recommended for initial configuration because the router might not provide the same bandwidth, thus impacting the download and installation process.)

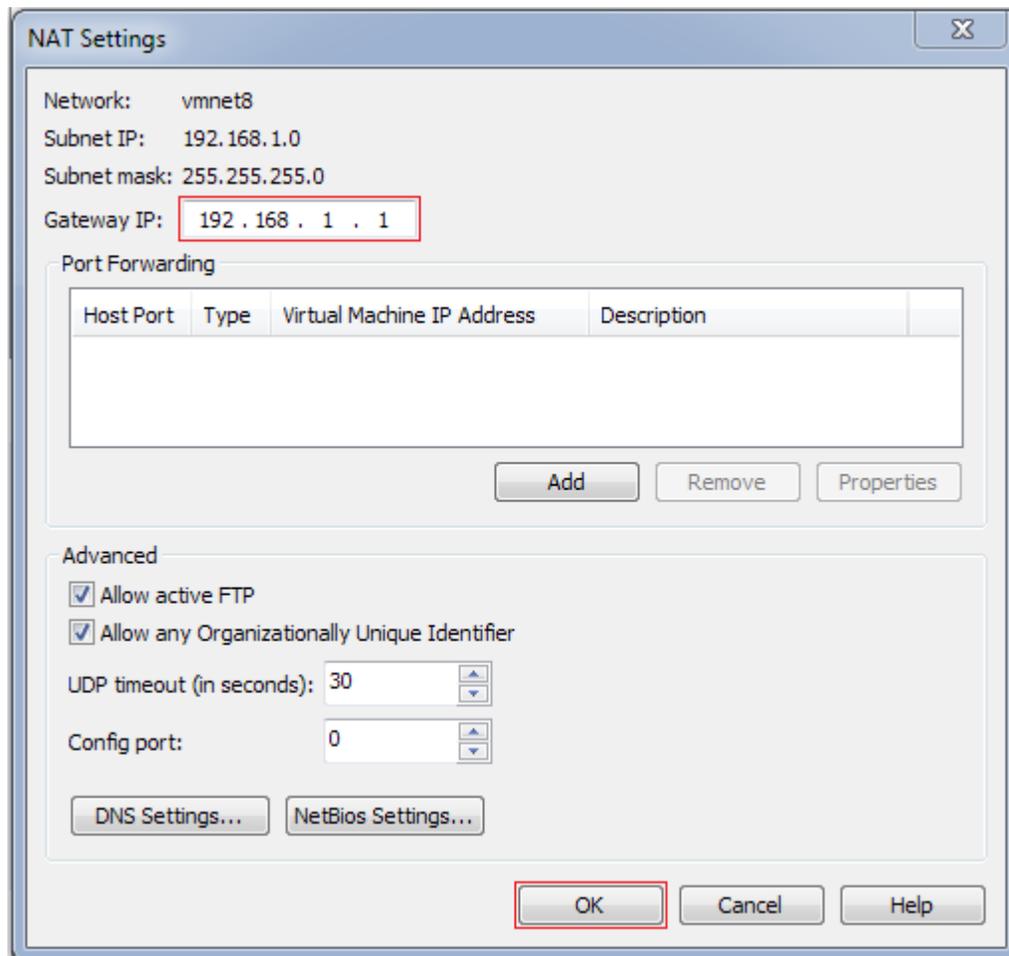
Furthermore, these instructions assume that you plan to use a wireless router that is configured for a 192.168.1.0 IP address subnet, with the router itself configured with IP address 192.168.1.1 (a common configuration for many home wireless routers).

Finally, these instructions prepare VMware Workstation to support VMs that are created with IP address configurations that are compatible with connecting to the wireless router through a bridged connection. However, the VMs are created in VMware by using the NAT (network address translation) capabilities in VMware, which is why these preparation steps are required.

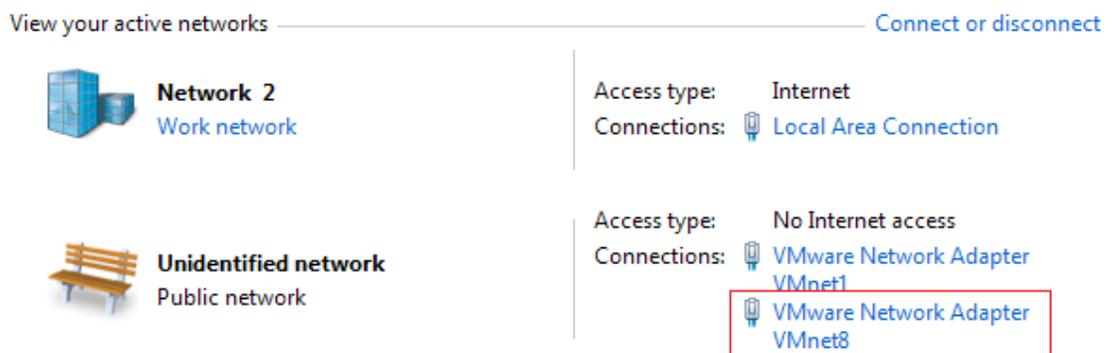
- 1 Ensure that you have met all of the system and software requirements outlined in [Chapter 2, “System Requirements,”](#) on page 9.
- 2 Start VMware Workstation, then click *Edit > Virtual Network Editor*.
- 3 Select *VMnet8*, change the *Subnet IP* field to 192.168.1.0 and *Subnet Mask* field to 255.255.255.0, then click *NAT Settings*.



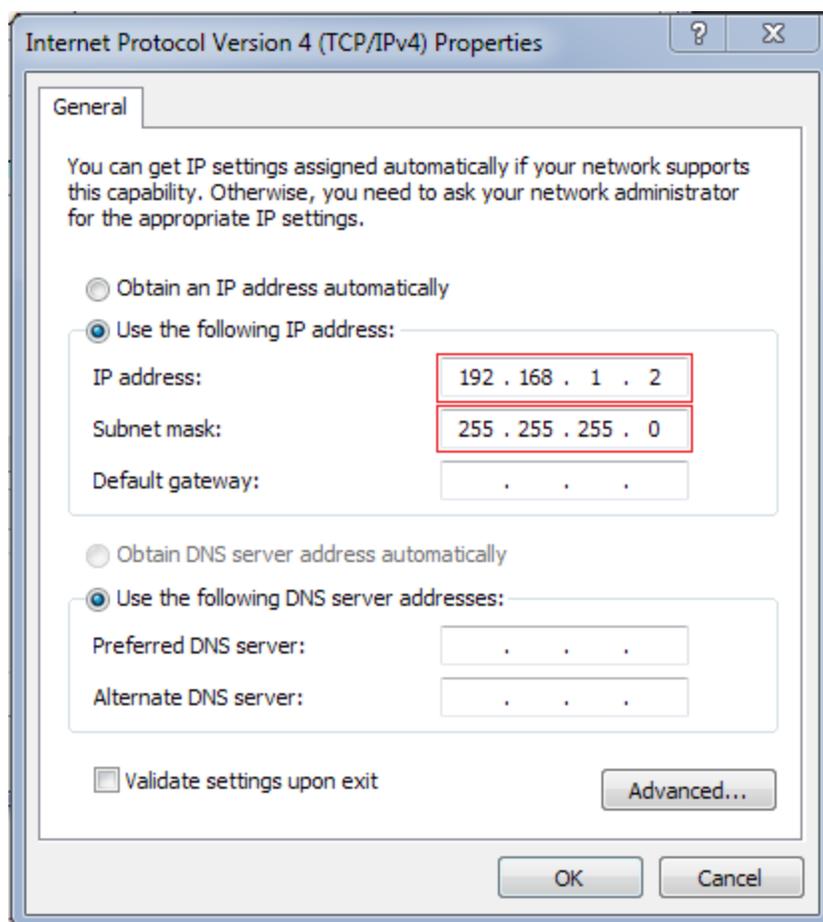
4 Change the *Gateway IP* field to 192.168.1.1.



- 5 Click **OK** > *Apply* > **OK**.
- 6 On the workstation's desktop, click *Start* > *Control Panel* > *Network Sharing Center*. Then under *View Your Active Networks*, select *VMware Network Adapter VMnet8*.



- 7 Click *Properties* > *Internet Protocol Version 4 (TCP/IPv4)* > *Properties*.
- 8 Specify only the IP address (192.168.1.2) and the Subnet mask (255.255.255.0) for the VMware 8 adapter as shown.



- 9 Click *OK* > *Close* > *Close*.
- 10 Close the Control Panel and continue with [Installing the OES Server](#).

## A.2 Installing the OES Server

- ♦ [Section A.2.1, "Obtaining Installation Media,"](#) on page 41
- ♦ [Section A.2.2, "Installing the Server Software,"](#) on page 41
- ♦ [Section A.2.3, "Setting the Root Password and Updating the Server,"](#) on page 44
- ♦ [Section A.2.4, "Configuring eDirectory and OES Services,"](#) on page 46
- ♦ [Section A.2.5, "Setting Up the Graphical User Interface,"](#) on page 47
- ♦ [Section A.2.6, "Accessing iManager,"](#) on page 48
- ♦ [Section A.2.7, "Enabling Pop-Ups for iManager,"](#) on page 48
- ♦ [Section A.2.8, "Where to Go from Here,"](#) on page 49

## A.2.1 Obtaining Installation Media

To complete the instructions in this section, you need to download the OES 11 SP1 combined installation ISO file.

- 1 Go to “[Downloading OES 11 SP1 Software from the Novell Web Site](#),” in the *OES 11 SP1: Planning and Implementation Guide*.
- 2 Working on the VMware workstation host, complete all steps in the section, except the instructions on deciding which files to download. The file you need for the exercises in this guide is `OES11-SP1-addon_with_SLES11-SP2-x86_64-DVD.iso`.
- 3 Be sure to print the pages as instructed, record the two activation codes, print and check the MD5 verification checksum, and so on.
- 4 After you have downloaded the file to your VMware workstation host, continue with [Installing the Server Software](#).

## A.2.2 Installing the Server Software

- 1 In VMware Workstation 8, click *File > New Virtual Machine*.
- 2 Ensure that the *Typical* option is selected, then click *Next*.
- 3 Select *I will install the operating system later*, then click *Next*.
- 4 Under *Guest Operating System*, click *Linux*. Then under *Version*, select *SUSE Linux Enterprise 11*.
- 5 Click *Next*.
- 6 Name the virtual machine `oes-11`, specify an alternate location for the VM if desired, then click *Next*.
- 7 Ensure that the *Maximum Disk Size* is 20 GB, select *Store virtual disk as a single file*, then click *Next*.
- 8 Click *Customize Hardware*.
- 9 In the right panel, change the Memory (RAM) setting to 1024 MB.  
Normally, the RAM setting would be higher; however, for this small installation, this amount is adequate.
- 10 In the left panel, click *New CD/DVD (IDE)*.
- 11 Select *Use ISO image file*.
- 12 Browse to the `OES11-SP1-addon_with_SLES11-SP2-x86_64-DVD.iso` file that you downloaded in “[Obtaining Installation Media](#),” then click *Open*.
- 13 Click *Network Adapter*, then select the *NAT* option.
- 14 Click *Close > Finish*.
- 15 With the OES 11 SP1 VM selected, click *VM > Power > Power On to BIOS*.
- 16 Click inside the setup dialog, then use the Right-arrow key to move to *Boot*.
- 17 Use the Down-arrow key to select *CD-ROM Drive*, then use Shift + to move *CD-ROM Drive* to the top of the list.
- 18 Use the Right-arrow key to select *Exit*, then press Enter and Enter again to exit.
- 19 When the boot selection page appears, immediately press the Down-arrow key to select the *Installation* option, then press Enter.  
If you don’t respond before the machine starts trying to boot from the hard disk, restart the VM and repeat this step.

- 20 After the boot process finishes, select a *Language* and *Keyboard Layout*, read and agree to the SLES 11 SP2 software license agreement, then click *Next*.
- 21 Read and agree to the software license agreement for OES 11 SP1, then click *Next*.
- 22 Ensure that *New Installation* is selected, select *Include Add-on Products from Separate Media*, then click *Next*.
- 23 Ensure that the *Yes, Run the Network Setup* option is selected, then click *Next*.
- 24 Use the following table to navigate and configure your server.

Page Name	Action
Network Setup	<ol style="list-style-type: none"> <li>1. Select <i>Static Address Setup</i>.</li> <li>2. In the <i>IP Address</i> field, type 192.168.1.100.</li> <li>3. In the <i>Netmask</i> field, type 255.255.255.0.</li> <li>4. In the <i>Default Gateway IP</i> field, type 192.168.1.1.</li> <li>5. In the <i>DNS Server IP</i> field, type 192.168.1.1.</li> <li>6. Click <i>OK</i>.</li> </ol>
Add-On Product Installation	<ol style="list-style-type: none"> <li>1. Ensure that <i>Novell Open Enterprise Server 11 SP1</i> is listed as an add-on product, then click <i>Next</i>.</li> </ol>
Clock and Time Zone	<ol style="list-style-type: none"> <li>1. Select the region and time zone for the server, then click <i>Next</i>. The preconfigured VMs are set to use <i>Mountain (Denver)</i>.</li> </ol>
Server Base Scenario	<ol style="list-style-type: none"> <li>1. Ensure that the <i>Physical Machine</i> option is selected, then click <i>Next</i>.</li> </ol>
Installation Settings	<ol style="list-style-type: none"> <li>1. Click <i>Partitioning</i>.</li> </ol>

- 25 To ensure a clean installation, use the following table to navigate the partitioning pages and prepare your system disk.

Page Name	Action
Preparing Hard Disk: Step 1	<ol style="list-style-type: none"> <li>1. Select <i>Custom Partitioning (for experts)</i>.</li> <li>2. Click <i>Next</i>.</li> </ol>
Expert Partitioner	<ol style="list-style-type: none"> <li>1. Double-click the VMware virtual disk.</li> <li>2. Click <i>Add</i>.</li> </ol>

Page Name	Action
Add Partition on <i>device_name</i>	<ol style="list-style-type: none"> <li>1. With <i>Primary Partition</i> selected, click <i>Next</i>.</li> <li>2. In the <i>Custom Size</i> field, type 200 MB, then click <i>Next</i>.</li> <li>3. Under <i>File System</i>, select <i>Ext2</i>.</li> <li>4. In the <i>Mount Point</i> drop-down list, select <i>/boot</i>, then click <i>Finish</i>.</li> <li>5. Click <i>Add &gt; Next</i>.</li> <li>6. In the <i>Custom Size</i> field, type 2048 MB, then click <i>Next</i>.</li> <li>7. In the <i>File system</i> drop-down list, select <i>Swap</i>, then click <i>Finish</i>.</li> <li>8. Click <i>Add &gt; Next</i>.</li> <li>9. In the <i>Custom Size</i> field, type 10 GB, then click <i>Next</i>.</li> <li>10. In the <i>Mount Point</i> drop-down list, ensure that <i>/</i> is selected, then click <i>Finish</i>.</li> <li>11. Click <i>Accept</i>.</li> </ol>

26 On the Installation Settings page, click *Software*.

Use the following table to navigate and configure the software pages:

Page Name	Action
Software Selection and System Tasks	<ol style="list-style-type: none"> <li>1. Under <i>OES Services</i>, select (or confirm the selection of) the following: <ul style="list-style-type: none"> <li>♦ <i>Novell CIFS</i></li> <li>♦ <i>Novell eDirectory*</i></li> <li>♦ <i>Novell iManager</i></li> <li>♦ <i>Novell NCP Server/Dynamic Storage Technology*</i></li> <li>♦ <i>Novell Storage Services*</i></li> </ul> <p>Services marked with an asterisk (*) are selected when you click <i>Novell AFP</i>.</p> <p><i>Novell Backup/Storage Management Services (SMS)</i>, <i>Novell Linux User Management</i>, and <i>Novell Remote Manager</i> are all selected by default when any OES selections are made, and they are installed on every OES 11 SP1 server.</p> </li> <li>2. Click <i>OK</i>.</li> </ol>
agfa fonts	<ol style="list-style-type: none"> <li>1. Click <i>Accept</i>.</li> </ol>
Installation Settings	<ol style="list-style-type: none"> <li>1. Click <i>Install</i>.</li> </ol>
Confirm Installation	<ol style="list-style-type: none"> <li>1. Click <i>Install</i>.</li> </ol>

27 If you are prompted for additional input during the configuration, accept the default actions.

28 Continue with [Setting the Root Password and Updating the Server](#).

## A.2.3 Setting the Root Password and Updating the Server

After the initial system configuration and system reboot, the installation needs a password for the root user. It also needs to update the system with the latest software.

- 1 Use the following table to navigate and complete the various configuration pages.

Page Name	Action
Password for the System Administrator "root"	<ol style="list-style-type: none"><li>1. Enter and confirm the password <code>novellfilr</code>, click <i>Next</i>, then confirm that you want to use that password.</li></ol>
Hostname and Domain Name	<ol style="list-style-type: none"><li>1. In the <i>Host Name</i> field, type <code>oes-11</code>.</li><li>2. In the <i>Domain Name</i> field, type <code>filr-lab.example.com</code>.</li><li>3. Deselect <i>Change Hostname via DHCP</i>.</li><li>4. Click <i>Next</i>.</li></ol>
Network Configuration	<ol style="list-style-type: none"><li>1. Click <i>Next</i>.</li></ol> <p>You configured the network in <a href="#">Section A.2.2, "Installing the Server Software,"</a> on page 41.</p>
Test Internet Connection	<p>You will need to register your server on the Internet in order to download the latest patches, so you should test the Internet connection at this point to ensure that everything is configured correctly.</p> <ol style="list-style-type: none"><li>1. Select the option to test the connection.</li><li>2. Click <i>Next</i>.</li></ol>
Running Internet Connection Test	<p>After a few moments, the <i>Test Status</i> should indicate <i>Success</i>.</p> <p>If it does not, you need to click <i>Back</i> and fix your network configuration and the connection to the Internet. It is essential that OES 11 SP1 servers always have the latest security and other critical patches downloaded and installed.</p> <ol style="list-style-type: none"><li>1. Click <i>Next</i>.</li></ol>
Novell Customer Center Configuration	<ol style="list-style-type: none"><li>1. Click <i>Next</i>.</li></ol> <p>The server establishes a connection with the Novell Customer Center.</p>
Manual Interaction Required	<ol style="list-style-type: none"><li>1. Click <i>Continue</i>.</li></ol>

Page Name	Action
Novell Customer Center System Registration	<ol style="list-style-type: none"> <li>In the fields indicated, type and confirm the email address to which you want administrative notifications sent.</li> <li>In the <i>Activation code for SLES components</i> field, type the SLES activation code you noted or printed while downloading the image files.  If this code is not entered, the server can't download updates and patches through the Novell patch channels. For the OES 11 SP1 release, downloading the SLES patches is critical for service configuration success.</li> <li>In the <i>Activation code for OES components</i> field, type the OES 11 SP1 activation code you noted or printed while downloading the image files.  If this code is not entered, the same patch channel restriction applies as for SLES.</li> <li>Click <i>Submit</i>.  Your registration information is sent to the Novell Customer Center. This might take a couple of minutes to complete.</li> <li>Click <i>Continue</i>.  The update server is added to your system configuration. Again, this might take a few minutes.</li> </ol>
Novell Customer Center Configuration pop-up	<ol style="list-style-type: none"> <li>Click <i>OK</i>.</li> </ol>
Online Update	<p>Depending on the patches that are in the Update channels, you might need to run the update process more than once.</p> <ol style="list-style-type: none"> <li>Select <i>Run Update</i>, then click <i>Next</i>.</li> <li>Click <i>Accept</i>.</li> <li>If you see one or more YaST pop-ups indicating that changes have been made to resolve dependencies, click <i>Continue</i>.  If you see pop-ups indicating that you have selected patches that should be installed later, click <i>Cancel</i>.  The update patches are downloaded and installed.</li> <li>Click <i>Next &gt; OK</i>.  The system restarts.</li> <li>Repeat from Step 2 until no more patches are selected for installation.</li> </ol>
Network Services Configuration	<ol style="list-style-type: none"> <li>Because the system reboots due to a kernel changes, you must type and confirm the root password (novellfilr), then click <i>OK</i>.</li> <li>Click <i>Next</i>.</li> </ol>

2 Continue with [Configuring eDirectory and OES Services](#).

## A.2.4 Configuring eDirectory and OES Services

For the exercises in this guide, you need specific eDirectory, NTP, and SLP configurations.

- 1 Use the following table to navigate and complete the eDirectory pages.

Page Name	Action
eDirectory Configuration - New or Existing Tree	<ol style="list-style-type: none"> <li>1. In the <i>Tree Name</i> field, type <code>EXAMPLE_TREE</code>.  Notice that the <i>Use eDirectory Certificates for HTTPS Services</i> option is selected. This option configures all of the HTTPS services (OES and SLES) to use the new eDirectory tree's Organizational CA for certificate management and encryption of HTTPS communications.  For more information on the value that this adds to your network, see "<a href="#">Certificate Management</a>" in the <i>OES 11 SP1: Planning and Implementation Guide</i>.</li> <li>2. Click <i>Next</i>.</li> </ol>
eDirectory Configuration - New Tree Information	<ol style="list-style-type: none"> <li>1. In the <i>FDN Admin Name with Context</i> field, type <code>CN=admin.O=FILR-LAB</code>.  In this guide, the Admin User object is named <code>admin</code> (all lowercase) to differentiate the name from the object itself (Admin User), which is a standard eDirectory object and is always capitalized in the documentation by convention.  The eDirectory Admin User object can have any name you choose, although most administrators use "admin."  In this guide, all container objects, such as <code>FILR-LAB</code>, are created in uppercase so that they are more easily distinguished in the illustrations and procedures.</li> <li>2. In the <i>Admin Password</i> and <i>Verify Admin Password</i> fields, specify <code>novellfilr</code> as the password for the eDirectory Admin User.</li> <li>3. Click <i>Next</i>.</li> </ol>
eDirectory Configuration - Local Server Configuration	<ol style="list-style-type: none"> <li>1. Change the server context to <code>OU=IS.O=FILR-LAB</code>.</li> <li>2. Click <i>Next</i>.</li> </ol>
eDirectory Configuration - NTP	<p>Time synchronization is required for eDirectory.</p> <ol style="list-style-type: none"> <li>1. Click <i>Add</i>.</li> <li>2. Type <code>time-a.nist.gov</code>, then click <i>Add</i>.</li> <li>3. Click <i>Next</i>.</li> </ol>
eDirectory Configuration - SLP	<ol style="list-style-type: none"> <li>1. Click <i>Next</i>.</li> <li>2. Click <i>Yes</i> to confirm that SLP is being configured for multicast.  Because this is a single-server tree and for Filr evaluation only, further SLP configuration is not needed.</li> </ol>
Novell Modular Authentication Services	<ol style="list-style-type: none"> <li>1. Click <i>Next</i>.</li> </ol>

Page Name	Action
OES Common Proxy User Information	<p>1. Click <i>Next</i>.</p> <p>This creates a common proxy user for some of the OES services you are installing. For more information, see “<a href="#">Common Proxy User</a>” in the <i>OES 11 SP1: Planning and Implementation Guide</i>.</p> <p><b>IMPORTANT:</b> Filr also has proxy users. They are not the same as this common proxy user.</p>
Novell Open Enterprise Server Configuration	<p>1. Click <i>Next</i>.</p> <p>The eDirectory and iManager configuration processes can take a few minutes, or much longer, depending on the server processor speed, and so forth. The other OES services should self-configure fairly quickly.</p>
User Authentication Method	<p>1. Click <i>Next</i>.</p>
New Local User	<p>The local <code>root</code> user was created during the SLES installation. On OES servers, we recommend that all users except <code>root</code> be defined in eDirectory. Therefore, you shouldn’t create additional local users.</p> <p>1. Click <i>Next</i>.</p>
Empty User Login	<p>1. Click <i>Yes</i>.</p>
Release Notes	<p>1. Click <i>Next</i>.</p> <p>The official <a href="#">OES 11 SP1: Readme</a> is published with the <a href="#">OES 11 SP1 Online Documentation (http://www.novell.com/documentation/beta/oes11)</a>.</p>

- 2 Continue with [Setting Up the Graphical User Interface](#).

## A.2.5 Setting Up the Graphical User Interface

Although most Linux servers don’t have a graphical user interface loaded, your OES 11 hands-on server runs the GNOME interface by default.

When the Hardware Configuration page appears:

- 1 Review the Graphics Cards configuration to ensure that your monitor was detected and that your color and resolution settings are the way you want them.  
If the settings are correct, skip to [Step 3](#).
- 2 If the configuration is incomplete or wrong, click the blue links to configure your monitor, color, resolution, and so forth.
- 3 Click *Next*.
- 4 When the *Installation Completed* page appears, deselect *Clone This System for Autoyast*, then click *Finish*.
- 5 When the login splash page appears, continue with [Accessing iManager](#).

## A.2.6 Accessing iManager

iManager is the main browser-based tool that is used to manage eDirectory and the OES services.

To start iManager and prepare your browser for future sessions:

- 1 On your VMware host workstation, open the OES 11 SP1 Welcome page in your Web browser by entering the following URL:  
`http://192.168.1.100`
- 2 If you receive a security alert, such as a warning that the connection is not trusted, select the options to continue, such as *I Understand the Risks > Add Exception*. Ensure that the option to permanently store the exception is selected if available, then confirm the exception.
- 3 Click the *Management Services* tab.
- 4 On the Available Services page, click *iManager*.  
You can also start iManager directly by including `/nps` after `IP_or_DNS` in the access URL. For example, enter `http://192.168.1.100/nps`.
- 5 Log in as the eDirectory Admin user:
  - 5a In the *Username* field, type `admin`.
  - 5b In the *Password* field, type `novellfilr`.
  - 5c In the *Tree* field, type `192.168.1.100`.  
If SLP services were configured and working properly, you could enter the tree name, but they are not.
  - 5d Click *Login*.
- 6 Do not close iManager. Continue with the next section, [Enabling Pop-Ups for iManager](#).

## A.2.7 Enabling Pop-Ups for iManager

Some iManager plug-ins use pop-up dialog boxes that are blocked by most browsers. To use iManager, you must enable pop-ups that originate from the servers where iManager is running.

### Firefox

- 1 On the Firefox menu bar, click *Tools > Options > Content*.
- 2 Disable all pop-up blocking by deselecting the *Block Pop-up Windows* option and clicking *OK*.  
or  
Add the hands-on lab server to the list of exceptions by doing the following:
  - 2a Click the *Exceptions* button.
  - 2b In the *Address of Web Site* field, type the OES 11 SP1 hands-on lab server's IP address.
  - 2c Click *Allow > Close*.

### Internet Explorer

- 1 On the Command bar, click *Tools > Pop-up Blocker > Turn Off Pop-up Blocker*.
- 2 Click *Yes*.

## A.2.8 Where to Go from Here

Continue with [Creating Users, Pools, and Volumes](#).

## A.3 Creating Users, Pools, and Volumes

eDirectory is the central, key component of Novell Open Enterprise Server (OES). It provides the following:

- ♦ Centralized identity management
- ♦ The underlying infrastructure for managing your network servers and the services they provide
- ♦ Secure access to network services, from within the firewall and from the Web

At this point you have created a new eDirectory tree named EXAMPLE\_TREE that you will use to learn about Filr. Now you need to create users and configure Novell Storage Services (NSS) for the exercises in this guide.

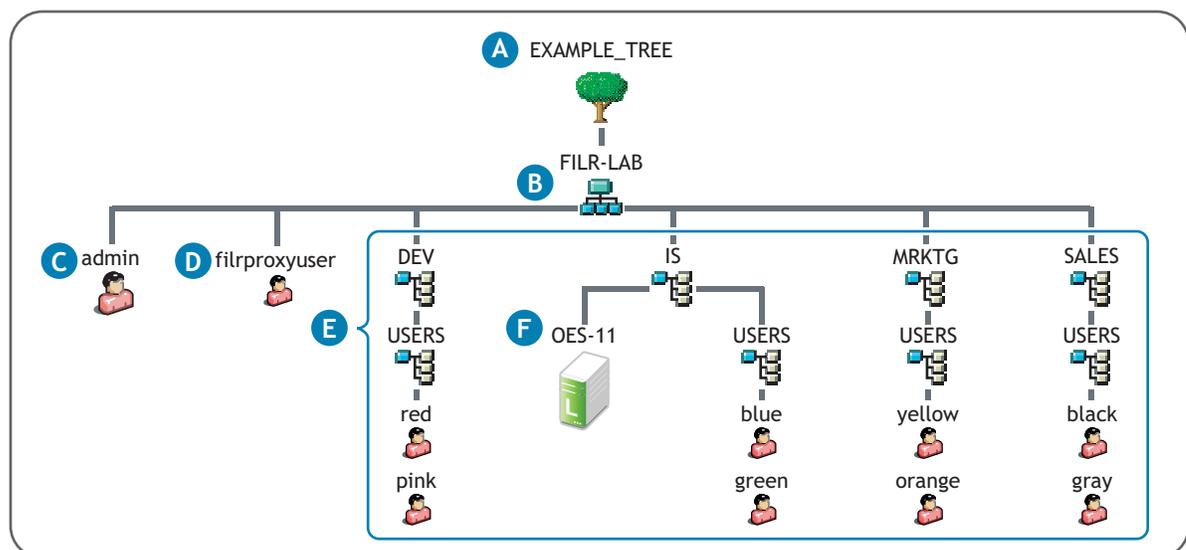
See the following:

- ♦ [Section A.3.1, “Your Hands-on eDirectory Tree,”](#) on page 49
- ♦ [Section A.3.2, “Creating Contexts for Your Users,”](#) on page 50
- ♦ [Section A.3.3, “Assigning a Password Policy to Your Users,”](#) on page 51
- ♦ [Section A.3.4, “NSS Pools and Volumes,”](#) on page 51
- ♦ [Section A.3.5, “Creating an NSS Pool,”](#) on page 52
- ♦ [Section A.3.6, “Creating Users,”](#) on page 53

### A.3.1 Your Hands-on eDirectory Tree

[Figure A-1](#) illustrates the basic eDirectory tree that you will now create on your hands-on OES 11 server.

**Figure A-1** Your Hands-on eDirectory Tree



Reference Letter	Explanation
A	The Tree object is the top container object in the tree.
B	The Organization object (FILR-LAB) normally represents your company or organization. However, in this case its only purpose is to contain the eDirectory objects and configuration information required for the exercises and explanations in this guide.
C	Every tree requires an Admin User object. You can log in as Admin to manage objects in the tree.
D	filrproxyuser is a system user that reads, writes, creates, and deletes files on file servers in behalf of users who have rights via a Share in Filr, rather than native rights on the file systems.
E	FILR-LAB contains four Organizational Unit (OU) container objects (DEV, IS, MRKTG, and SALES), each representing a department within the organization.  Each of these in turn has a USERS OU container.
F	Unlike its sibling departments, the IS OU also contains the OES-11 object that represents the OES 11 SP1 server that all departments use.

## A.3.2 Creating Contexts for Your Users

Figure A-1 illustrates that the users in this hands-on-setup belong to four different organizations that are represented by OUs in your eDirectory tree: DEV, IS, MRKTG, and SALES. These OUs are the parent containers for the users, and define their contexts within the tree.

To create the Organizational Unit container objects shown in Figure A-1:

- 1 In iManager, click the *View Objects* icon .
- 2 In the left pane, click the *Tree* tab.
- 3 Click the *FILR-LAB* Organization object .
 

The objects contained in *FILR-LAB* are listed in the right pane. Notice that the *IS* OU object already exists. This was created when you specified the context of the OES server during the installation.
- 4 Click *New*, then select *Create Object* from the drop-down list.
- 5 From the *Available Object Classes* list, select *Organizational Unit*, then click *OK*.
- 6 In the *Organizational Unit name* field, type *DEV*.
- 7 Click *OK*.
- 8 Click *Repeat Task*, then repeat from [Step 6](#) to create objects for the *MRKTG* and *SALES* organizations.
- 9 Click the *DEV* Organization object .
- 10 Click *New*, then select *Create Object* from the drop-down list.
- 11 From the *Available Object Classes* list, select *Organizational Unit*, then click *OK*.
- 12 In the *Organizational Unit name* field, type *USERS*.
- 13 Click *Repeat Task*, then repeat from [Step 9](#) to create *USERS* Organization Unit objects in the *IS*, *MRKTG*, and *SALES* OUs.

With each iteration, in the *Context* field replace *DEV* with one of the other three OUs in turn (IS, MRKTG, and SALES) until each contains a USERS OU object.

- 14 Click *OK*.
- 15 Do not close iManager. Continue with the next section, [Assigning a Password Policy to Your Users](#).

### A.3.3 Assigning a Password Policy to Your Users

In “[Configuring eDirectory and OES Services](#)” on page 46, you create a common proxy user and a universal password policy named Common Proxy Policy.

For the users to use some of the OES services you have installed, you must associate the Common Proxy Policy with those users. The simplest method for doing this is to associate the policy with the containers you created in [Section A.3.2, “Creating Contexts for Your Users,”](#) on page 50.

---

**NOTE:** The Common Proxy Policy is associated with the server’s parent container (IS) by default. If all of your users were in the same container as the server or in a subcontainer of it, then the following steps would not be needed. However, the DEV, MRKTG, and SALES containers are siblings to the IS container in the tree created in this guide, and must be associated with the policy manually.

---

- 1 In iManager, click the *Roles and Tasks* icon .
- 2 Click *Passwords > Password Policies*.
- 3 Click the *Common Proxy Policy* link.
- 4 Click the *Policy Assignment* tab.
- 5 Click the *Browse* icon  next to the *Assign To* field.
- 6 In the *Contents* pane, click the down-arrow  next to *FILR\_LAB*.
- 7 Navigate to and select the USERS objects in the IS, DEV, MRKTG, and SALES Organizational Unit objects, then click *OK*.
- 8 Click *Apply > OK*.
- 9 Do not close iManager. Continue with the next section, [Creating an NSS Pool](#).

### A.3.4 NSS Pools and Volumes

OES supports NSS volumes. NSS is a fast-mounting, journaled file system for OES and NetWare. It is the only file system in the industry that is integrated with identity management. NSS volumes support the Novell File and Directory Trustee Rights model and also NSS file attributes. For more information, see [The Traditional Novell Access Control Model](#), in the *OES 11 SP1: Planning and Implementation Guide*.

If you create NCP and NSS volumes before creating users, you can then create home directories at the same time as you create the user objects. For that reason, it makes sense to set up the volumes prior to user object creation.

## A.3.5 Creating an NSS Pool

NSS volumes are created inside NSS Pools.

- 1 From your hands-on lab workstation, access iManager, then click the *Roles and Tasks* icon .
- 2 Click *Storage > Pools*.
- 3 Click the *Browse* icon  next to the *Server* field.
- 4 Browse to and select your hands-on oes-11 object (in *FILR-LAB > IS*).
- 5 Click *New*.
- 6 Name the pool `filr_pool`, then click *Next*.
- 7 Click the box next to the system disk in your server (`sda`).
- 8 By default, all free space on the disk (~7.8 GB) should automatically be entered in the *Used Size* field, and the amount should match the *Free Size (MB)* displayed to the right of the system disk. If the *Used Size* field is blank, type the free space amount.
- 9 Click *Finish*.

FILR\_POOL is listed as an available pool. Notice that the NSS pool name is uppercase, even though you typed lowercase. All NSS pools and volumes are created and displayed in uppercase to give a visual distinction from the Linux POSIX lowercase norm, to prevent visual confusion of letters and numbers (`vol1` vs. `VOL1`), and because names are case-insensitive on NSS.

### Creating NSS Volumes

- 1 After the pool appears in the list, continue in the *Storage* task by clicking *Volumes* in the left frame. Then use the information below to create five NSS volumes on your server.

Volume Name	Volume Quota in GB
HOME	3
DEV	1
IS	1
MRKTG	1
SALES	1

- 2 Click *New*.
- 3 In the *Name* field, type the first volume name listed in [Step 1](#), then click *Next*.
- 4 Click the box next to `FILR_POOL`, then deselect *Allow volume quota to grow to the pool size*.
- 5 Type the volume quota in the *Volume Quota* field, then click *Next > Finish*.  
The volume is listed.
- 6 Repeat from [Step 2](#) until all volumes have been created.
- 7 Do not close iManager. Continue with the next section, [Summary of Hands-on Volumes and Purposes](#).

## Summary of Hands-on Volumes and Purposes

Your hands-on OES 11 server now has five volumes.

- ♦ **HOME:** This volume is the personal workspace for all users in the FILR-LAB organization. When you provision users in Filr, some of their My Files workspaces point to directories on this volume.
- ♦ **DEV, IS, MRKTG, and SALES:** These volumes contain their respective department's folders and files. Access is generally limited to members of the department. Access to certain folders and files is limited according to roles within the department. When you set up Filr, you create Net Folders in Filr that point to directories that they contain.

### A.3.6 Creating Users

For the hands-on exercises, you need to create the users shown in [Table A-1](#).

**Table A-1** Users to Create

User Name	First Name	Last Name	eDirectory Context within FILR-LAB	Password	Home Directory
red	M	Red	DEV/USERS	filrrocks	Yes
pink	M	Pink	DEV/USERS	filrrocks	No
blue	M	Blue	IS/USERS	filrrocks	Yes
green	M	Green	IS/USERS	filrrocks	No
yellow	M	Yellow	MRKTG/USERS	filrrocks	Yes
orange	M	Orange	MRKTG/USERS	filrrocks	No
black	M	Black	SALES/USERS	filrrocks	Yes
gray	M	Gray	SALES/USERS	filrrocks	No
filrproxyuser	Filr	Proxyuser	(directly in FILR-LAB with the eDir Admin user)	novellfilr  IMPORTANT: the password for this user is novellfilr, <i>not</i> filrrocks.	No

To create the users:

- 1 In iManager, in the left pane, click *Users > Create User*.
- 2 In the *Username* field, type a user name from [Table A-1](#).  
For the first user, this is red.
- 3 Type the first name and last name for the user, as shown in [Table A-1](#).
- 4 Click the *Browse* icon  next to the *Context* field.
- 5 Browse to the context indicated for the user, then click the OU object.
- 6 Type the password listed in both the *Password* field and the *Retype Password* field.

None of the exercises require unique passwords, so for simplicity, we use the same password for each user *except* filrproxyuser, as indicated in the table.

- 7 If the Home Directory column is marked No, skip to [Step 8](#). Otherwise, select the *Create Home Directory* option and browse  to the oes-11\_HOME volume (in the IS OU).  
For the third and other odd-numbered users, you can use the *object-history* icon  to select the context rather than browsing.
- 8 Click *OK*.
- 9 Click *Repeat Task* to repeat the process until the other users listed in [Table A-1 on page 53](#) are created.
- 10 Do not close iManager. Continue with [Setting Up Novell CIFS](#).

## A.4 Setting Up Novell CIFS

Novell CIFS lets Windows users access NSS volumes on Novell Open Enterprise Server 11 SP1 servers exactly as they would access a Windows file server. For some organizations, CIFS (Common Internet File System) is preferred over NCP (NetWare Core Protocol) because it doesn't require the installation of Novell Client software.

Filr enables mobile device access to files through both the CIFS and the NCP file protocols.

See following:

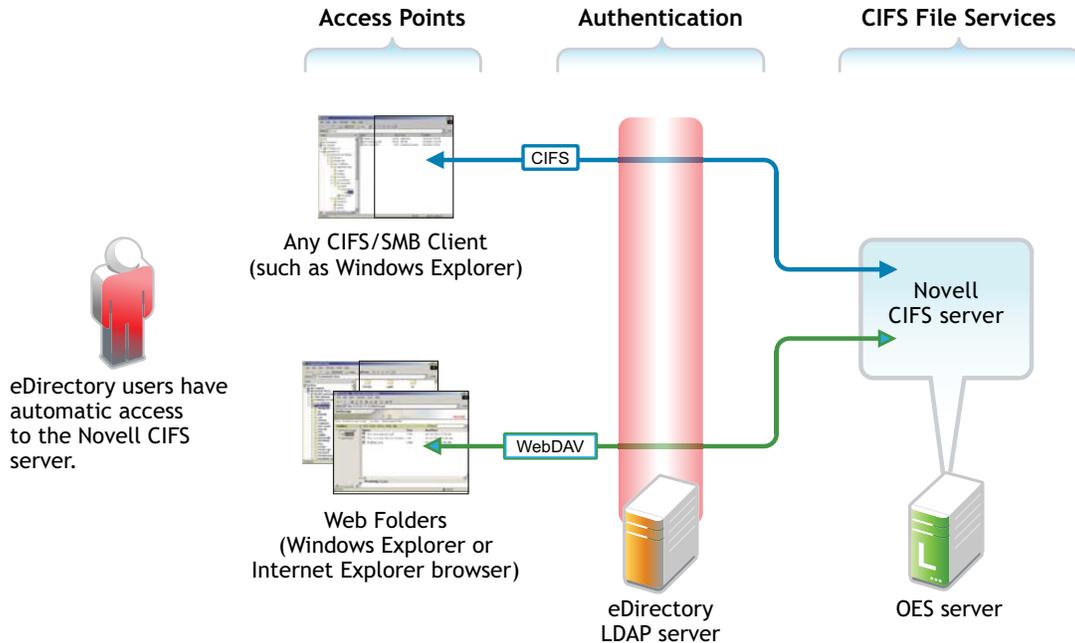
- ♦ [Section A.4.1, "Overview of Novell CIFS," on page 54](#)
- ♦ [Section A.4.2, "Setting the Search Context," on page 55](#)
- ♦ [Section A.4.3, "Making Novell CIFS Shares Available to CIFS Users," on page 55](#)
- ♦ [Section A.4.4, "Novell CIFS Users' Access Rights," on page 56](#)

### A.4.1 Overview of Novell CIFS

[Figure A-2](#) illustrates the file services available through Novell CIFS in OES.

For more information on Novell CIFS file services in OES 11 SP1, see [Novell CIFS Implementation and Maintenance](#) in the *OES 11 SP1: Planning and Implementation Guide*.

Figure A-2 Novell CIFS



## A.4.2 Setting the Search Context

By default, the search context for CIFS users is set to the container where the OES 11 SP1 server is installed (IS in this case). The assigned proxy user searches in this context for users seeking access to the CIFS file service. You must set a context that points to the other containers where your User objects are located.

- 1 In iManager, click *Roles and Tasks*, then click *File Protocols > CIFS*.
- 2 Click the *Browse* icon next to the *Server* field, then browse to and select the oes-11 lab server (in the IS container).
- 3 Click the *Context* tab.
- 4 Click *Add*.
- 5 Browse to and select the *USERS* container in *DEV*, then click *OK*.
- 6 Repeat from [Step 4](#) to add the *USERS* containers in *IS*, *MRKTG*, and *SALES* containers.
- 7 Continue with the next section.

## A.4.3 Making Novell CIFS Shares Available to CIFS Users

By default, all NSS volumes hosted on an OES server have shares associated with them. These shares point to the root of the volume.

If a volume is created while the Novell CIFS service is running, the service must be restarted to discover the volume.

- 1 Click the *Shares* tab.
- 2 If the five shares are listed (one for each volume), skip to [Novell CIFS Users' Access Rights](#). If not, continue with [Step 3](#).
- 3 Click the *General* tab, then click *Stop*. The service status changes to *Stopped*.

- 4 Click the *Start* sub-tab. The service status changes to *Running*.
- 5 Click the *Shares* tab.  
The five shares are listed.
- 6 Continue with [Novell CIFS Users' Access Rights](#).

## A.4.4 Novell CIFS Users' Access Rights

As illustrated in [Figure A-2 on page 55](#), all eDirectory users have automatic access to the Novell CIFS file service, assuming that the service is configured correctly.

However, access to the CIFS file service does not equate to access to the NSS file system and the folders and files that it contains. It is the Novell File and Directory Trustee Rights model that provides this access. It also ensures that users can see only those files and folders to which they have access rights, including when they use Filr for access.

Continue with [Preparing Files for the Hands-on Exercises](#).

## A.5 Preparing Files for the Hands-on Exercises

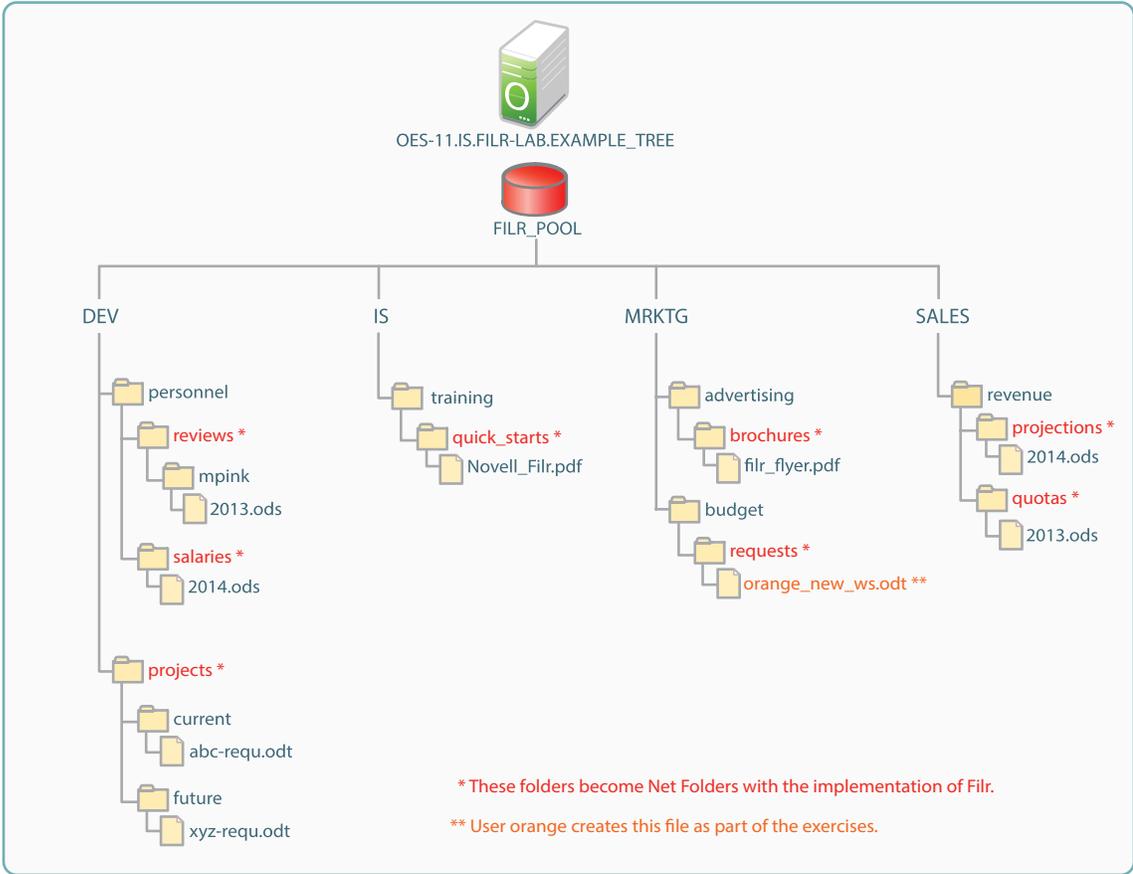
After installing and configuring the OES-11 server and its required services, you need to create files and folders on the server in order to use in the exercises in this guide. See the following sections:

- ♦ [Section A.5.1, "Creating Files and Folders," on page 56](#)
- ♦ [Section A.5.2, "Uploading the Files to the OES 11 Server," on page 59](#)
- ♦ [Section A.5.3, "Assigning File and Folder Trustee Rights," on page 59](#)
- ♦ [Section A.5.4, "Proxy User Rights to Volume Objects," on page 60](#)

### A.5.1 Creating Files and Folders

Refer to [Figure A-3](#) and [Table A-2](#) as you create the folders and files that will be used for the exercises.

Figure A-3 Files and Folders on the Hands-on OES 11 Server



**Table A-2** Folder Structure to Create on the OES Server

Volume Name	Subfolder Structure
DEV	personnel
	personnel\reviews
	personnel\reviews\mpink
	personnel\salaries
	projects
	projects\current
	projects\future
IS	training
	training\quick_starts
MRKTG	advertising
	advertising\brochures
	budget
	budget\requests
SALES	revenue
	revenue\projections
	revenue\quotas

- 1 In iManager, click *Roles and Tasks > Files and Folders > New Folder*.
- 2 Click the *Browse* icon  next to the *Path* field.
- 3 In the *Contents* pane, navigate to *FILR-LAB > IS > oes-11\_DEV*.
- 4 In *oes-11\_DEV*, click the `\\oes-11\DEV:` link.

---

**IMPORTANT:** As you follow these steps, remember that the targets you are selecting are all found in the *IS* Organizational Unit object container and within their respective volume containers, such as *oes-11\_DEV*.

Unless you keep the structure of *EXAMPLE\_TREE* in mind, it's easy to get confused and try to find the *DEV* volume object in the *DEV* container.

- 
- 5 In the *Folder Name* field, type `personnel`, then click *OK*.
  - 6 Click *Repeat Task*.
  - 7 Click the *Browse* icon  next to the *Path* field, then browse to and click the link to the `personnel` folder that you just created.
  - 8 In the *Folder Name* field, type `reviews`, then click *OK*.
  - 9 Repeat the applicable steps until you have created the folders shown in [Figure A-3](#) and [Table A-2](#).
  - 10 When you have created all of the folders, click *OK*.
  - 11 Continue with [Uploading the Files to the OES 11 Server](#).

## A.5.2 Uploading the Files to the OES 11 Server

- 1 Download the user exercise files from the [Filr Documentation Site](#) and unzip the archive, which contains the files shown below.

**Table A-3** Files and Locations

File Name	Path to File
mpink_2013.odt	DEV:personnel\reviews\mpink
2014.ods	DEV:personnel\salaries
abc_reqr.odt	DEV:projects\current
xyz_reqr.odt	DEV:projects\future
Novell-Filr.pdf	IS:training\quick_starts
abc_flyer.pdf	MRKTG:advertising\brochures
fy_2014.ods	SALES:revenue\projections
fy_2013.ods	SALES:revenue\quotas

- 2 In iManager, click *Roles and Tasks*, then click *Files and Folders > Upload*.
- 3 Click the *Browse* icon  next to the *Path* field, then navigate to the first path shown in [Table A-3 on page 59](#).
- 4 Browse to and click the link to the mpink folder.
- 5 Click *Browse* and navigate to the mpink\_2013.odt file that you downloaded in [Step 1](#), then click *OK*.
- 6 Click *Repeat Task*, then repeat from [Step 3](#) and navigate to the second path, and so on, until all of the files that you created are uploaded to their proper folders.
- 7 Continue with [Assigning File and Folder Trustee Rights](#).

## A.5.3 Assigning File and Folder Trustee Rights

Filr access to files and folders is ultimately controlled by the rights on the file system. Therefore, you now need to assign the eDirectory users as trustees to the files and folders on the OES-11 server volumes.

- 1 Assign the managing users Supervisor rights to their respective volumes:
  - 1a In iManager, click *Roles and Tasks*, then click *Files and Folders > Properties*.
  - 1b Click the *Browse* icon  next to the *Name* field.
  - 1c In the *Contents* pane, navigate to *FILR-LAB > IS > oes-11\_DEV*.
  - 1d Click the `\\oes-11\DEV` link.
  - 1e Click *OK*.
  - 1f Click the *Rights* tab.
  - 1g Click the *Browse* icon  next to the *Add Trustee* field.
  - 1h Browse to *FILR-LAB > DEV > USERS*, then click the link for user *red*.

- 1i Click *OK*.
- 1j In the *Trustees* panel, select the *S* (Supervisor) option. If desired, you can deselect *W* (Write) and *F* (File Scan) because *S* includes those rights.
- 1k Click *Apply* > *OK*.
- 1l Repeat from [Step 1a](#) and assign the following rights:
  - ♦ User *blue* as Supervisor on volume *IS*.
  - ♦ User *yellow* as Supervisor on volume *MRKTG*.
  - ♦ User *black* as Supervisor on volume *SALES*.
  - ♦ User *filrproxyuser* as Supervisor on *DEV*, *HOME*, *IS*, *MRKTG*, and *SALES*.
- 2 Continue with [Proxy User Rights to Volume Objects](#).

## A.5.4 Proxy User Rights to Volume Objects

The *filrproxyuser* needs Read rights to each volume object. Because *filrproxyuser* is in the FILR-LAB container above the volume objects, and therefore has Read rights to the objects, no additional action is required.

Continue with [Installing and Configuring the Filr Appliance](#).

## A.6 Installing and Configuring the Filr Appliance

For the hands-on exercises, Filr is installed using a small configuration. This means that Filr, the MySQL database, and the Lucene search server are installed together on the same virtual machine.

### A.6.1 Downloading the Filr Files

To download Filr from the Web:

- 1 If you don't already have a Novell account, register for one on the [Web \(https://secure-www.novell.com/selfreg/jsp/createAccount.jsp?\)](https://secure-www.novell.com/selfreg/jsp/createAccount.jsp?).
- 2 Access the [Novell Downloads Web page \(http://download.novell.com\)](http://download.novell.com).
- 3 Do a keyword search for *Novell Filr*.
- 4 In the *Results* section, click *Novell Filr Evaluation*.
- 5 Click the *proceed to download* button (upper-right corner of the first table).
- 6 If you are prompted to log in, type your *Novell Account* > *username* and *password*, then click *login*.
- 7 Accept the *Export Agreement* (required for first downloads only), and answer the survey questions about your download (optional).
- 8 Print the download page. You need the listed MD5 verification numbers in order to verify your downloads.
- 9 Scroll down to the *Download Instructions* section, then click the *Download Instructions* link.
- 10 Print the Download Instructions page for future reference.
- 11 Verify the integrity of each downloaded file by running an MD5-based checksum utility on it and comparing the values against the list that you printed in [Step 8](#).

For example, on a Linux system you can enter the following command:

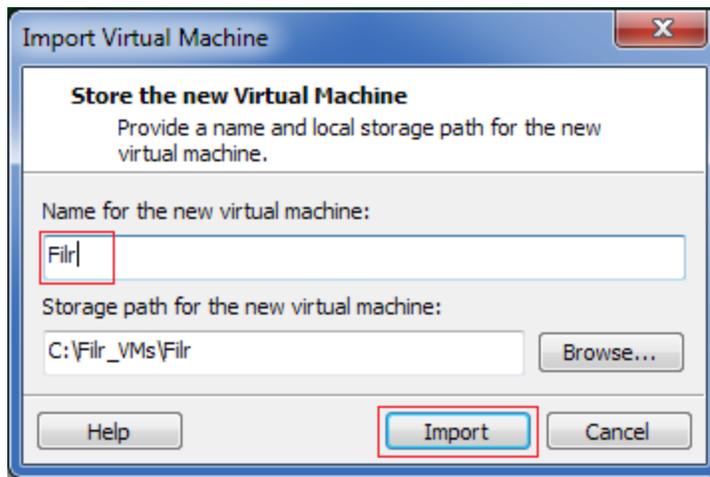
```
md5sum Filr.x86_64-0.0.version.ovf.zip
```

For a Windows system, you need to obtain a Windows-compatible MD5-based checksum utility from the Web and follow its usage instructions.

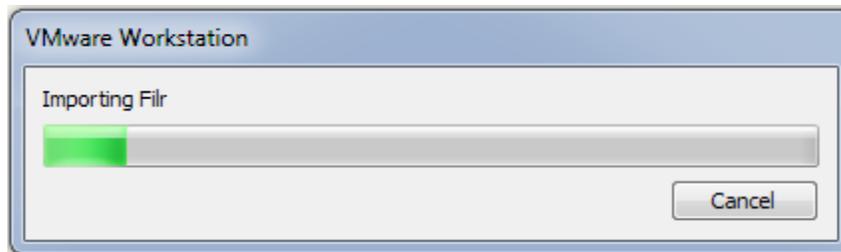
- 12 Continue with [Deploying Filr](#).

## A.6.2 Deploying Filr

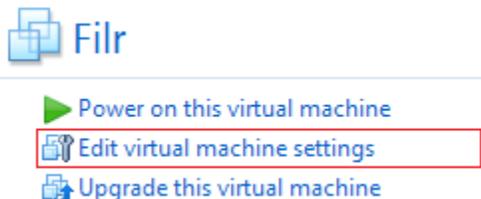
- 1 Download the .zip file to your VMware virtual machine location.
- 2 Extract the .zip file until you have a folder containing three files with .mf, .ovf, and .vmdk extensions.
- 3 On VMware workstation, open the .ovf file.  
To see the .ovf file listed, you might have to change the filter (by the File name field) to display all image files.
- 4 Change the VM name as shown, then click *Import*.



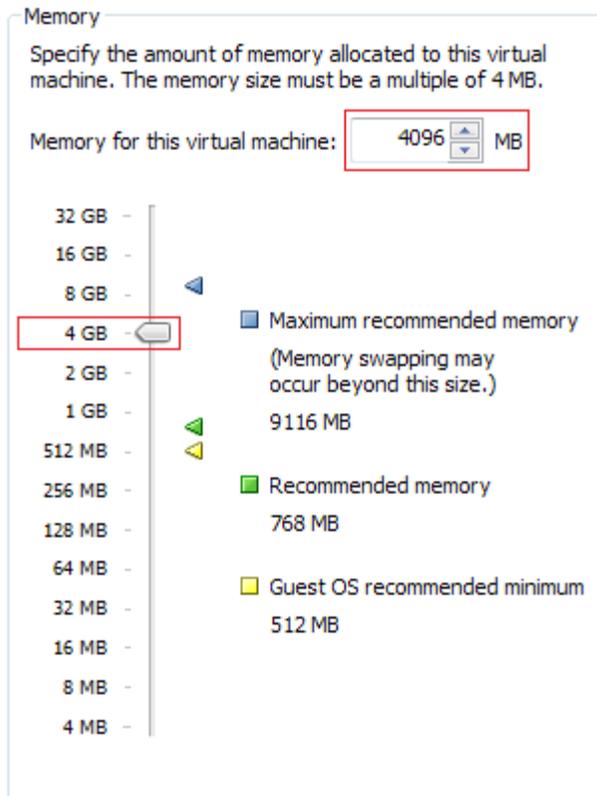
Filtr is imported.



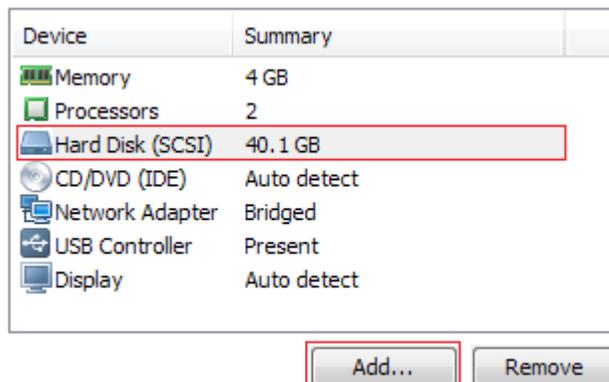
- 5 Click *Edit virtual machine settings*.



- 6 In the *Hardware* list, select *Memory*, then reduce the memory allocation to 4 GB.



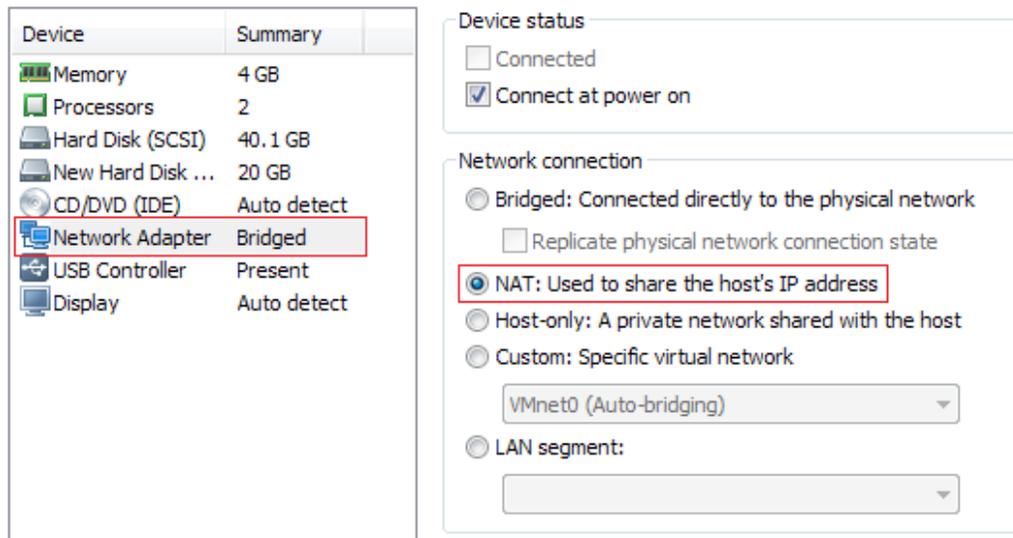
7 In the *Hardware* list, select *Hard Disk (SCSI)*, then click *Add > Next*.



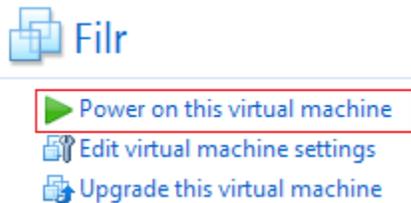
8 Click *Next > Next > Next > Next > Finish*.

A second 20 GB hard disk is added.

9 In the *Hardware* list, click *Network Adapter*, then select *NAT*.



- 10 Click OK.
- 11 Click *Power on this virtual machine*.



- 12 After the appliance starts, read and *Accept* the license agreement.
- 13 Complete the initial configuration settings, as shown in the screen shot below.  
All administrative passwords are novellfilr. (In the actual dialog, passwords are obfuscated by asterisks (\*).)

---

**IMPORTANT:** Ensure that the Time Zone settings match the settings of the OES 11 server that you specified in [Step 24 on page 42](#).

---

<b>Root Password:</b>	<b>Confirm Root Password:</b>
<input type="text" value="novellfilr"/>	<input type="text" value="novellfilr"/>
<b>Vaadmin Password:</b>	<b>Confirm Vaadmin Password:</b>
<input type="text" value="novellfilr"/>	<input type="text" value="novellfilr"/>
<b>Hostname (e.g. server.domain.com):</b>	
<input type="text" value="filr.filr-lab.example.com"/>	
<b>IP Address (e.g. 10.0.0.1):</b>	
<input type="text" value="192.168.1.110"/>	
<b>Network Mask (e.g. 255.255.255.0):</b>	
<input type="text" value="255.255.255.0"/>	
<b>Gateway (e.g. 10.0.0.2):</b>	
<input type="text" value="192.168.1.1"/>	
<b>DNS Server (e.g. 10.0.0.3):</b>	<b>Alternate DNS Server (e.g. 10.0.0.3):</b>
<input type="text" value="192.168.1.1"/>	<input type="text"/>
<b>NTP Server/s (e.g. time.domain.com):</b>	
<input type="text" value="time-a.nist.gov"/>	
<b>Region:</b>	<b>Time Zone:</b>
<input type="text" value="USA"/>	<input type="text" value="Mountain (Denver)"/>

- 14 Click *Next*.
- 15 You created a second hard disk in [Step 8](#), so click *Next > Next > Next*.
- 16 After the initial configuration process completes, you are instructed to open a browser and proceed with the configuration.
- 17 Continue with [Configuring the Filr Appliance](#).

### A.6.3 Configuring the Filr Appliance

- 1 In your management browser, enter the following URL: `https://192.168.1.110:9443`.
- 2 Click through the security warnings and accept the certificate if needed.
- 3 Log in with Username: `vaadmin` and Password: `novellfilr`.

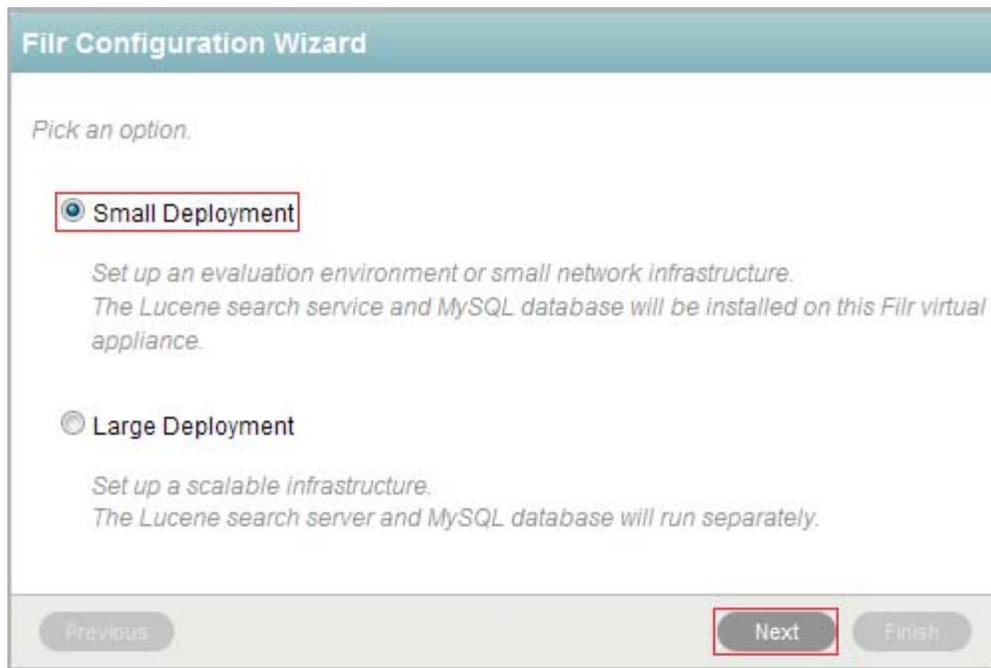


- 4 Click the *Novell Appliance Configuration* icon.



- 5 Ensure that *Small Deployment* is selected, then click *Next*.

A Small Deployment has all three Filr services (Filr, Search, and MySQL) running on the same appliance.



- 6 Specify and confirm `novellfilr` as the root user password, then click *Next*.



- 7 Click *Finish*.
- 8 Wait until the appliance restarts, then continue with [Adjusting the Java Heap Size](#).

## A.6.4 Adjusting the Java Heap Size

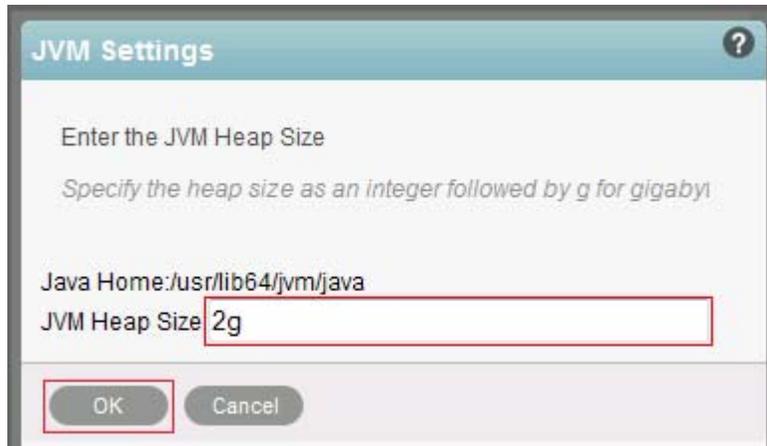
By default the Java Heap Size is set to 4 GB. However, you have reduced the default memory (RAM) allocation for the appliance to 4 GB, so the heap size must also be set lower.

- 1 If needed, log in to the appliance management console again (<https://192.168.1.110:9443>) and click the *Novell Appliance Configuration* icon.



- 2 Click *Java JDK*.
- 3 Change the *Java Heap Size* to *2g*, then click *OK*.

As a general rule, the heap size should be about 2 GB less than the total RAM assigned to the virtual appliance.



- 4 In the left panel, click *Reconfigure Filr Server*.
- 5 After the appliance reconfigures, continue with [Securing LDAP Synchronization between the Filr VA and the OES Server](#).

## A.6.5 Securing LDAP Synchronization between the Filr VA and the OES Server

- 1 Generate a root certificate for the eDirectory tree:
  - 1a In iManager, click the *Roles and Tasks* icon .
  - 1b Click *Novell Certificate Server > Configure Certificate Authority*.
  - 1c Click the *Certificates* tab, then select the check box for the *self-signed certificate*.
  - 1d Click the *Validate* sub-tab, select the check box again, then click the *Export* sub-tab.
  - 1e Deselect *Export Private Key*.  
The *Export Format* changes to DER.
  - 1f Click *Next*.
  - 1g Click *Save the Exported Certificate > OK*, then save the file to disk. Change the file name to something that you'll remember and note the location.
  - 1h Click *Close > OK*.

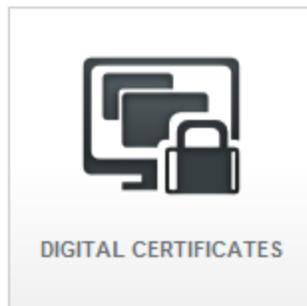
**2** Import the certificate into the Java Keystore:

**2a** In the Filr Console, upper-right corner, click the Home link.

**2b** Click the *Appliance System Configuration* icon.



**2c** Click the *Digital Certificates* icon.



**2d** Click *File > Import > Trusted Certificate*.

**2e** Browse to the certificate file that you saved in [Step 1g on page 67](#), then click *Open*.

**2f** Click *OK > Close*.

**2g** Click *Reboot > OK > OK*.

As soon as the Filr appliance restarts, both the OES server and Filr are prepared for the exercises in [Chapter 3, "Filr Hands-on Administration Exercises," on page 11](#).

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# B Documentation Updates

This section summarizes the changes made to this guide since the initial release of Novell Filr.

## June 7, 2013

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Various	Renamed the VM download files and changed the download location and instructions associated with them.
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