

Installation Guide

Novell Storage Manager 3.1.1 for eDirectory

October 17, 2013

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About This Guide

This installation guide is written to provide network administrators the conceptual and procedural information for installing and configuring Novell Storage Manager 3.1.1 for eDirectory.

- ♦ Chapter 1, “Prerequisites,” on page 7
- ♦ Chapter 2, “Licensing the Product,” on page 11
- ♦ Chapter 3, “Upgrading from Storage Manager 2.5x to 3.11,” on page 15
- ♦ Chapter 4, “Upgrading from Storage Manager 3.x to 3.1.1,” on page 41
- ♦ Chapter 5, “Installing Novell Storage Manager 3.1.1 for eDirectory,” on page 53
- ♦ Appendix A, “NSM Engine Certificate Management,” on page 73
- ♦ Appendix B, “Deploying Event Monitors and NSM Agents Remotely by Using the DeployAgents Tool,” on page 77
- ♦ Appendix C, “Documentation Updates,” on page 85

Audience

This guide is intended for network administrators who manage user and collaborative network storage resources.

Feedback

We want to hear your comments and suggestions about this guide and the other documentation included with this product. Please use the User Comment feature at the bottom of each page of the online documentation, or go to www.novell.com/documentation/feedback.html and enter your comments there.

Documentation Updates

For the most recent version of the *Novell Storage Manager 3.1.1 for eDirectory Installation Guide*, visit the [Novell Storage Manager Web site \(http://www.novell.com/documentation/storagemanager3/index.html\)](http://www.novell.com/documentation/storagemanager3/index.html).

Additional Documentation

For additional Novell Storage Manager documentation, see the following guide at the [Novell Storage Manager Documentation Web site \(http://www.novell.com/documentation/storagemanager3/\)](http://www.novell.com/documentation/storagemanager3/):

- ♦ *Novell Storage Manager 3.1.1 for eDirectory Administration Guide*

1 Prerequisites

This section provides procedures that you must do before installing the Novell Storage Manager 3.1.1 for eDirectory components.

- ♦ [Section 1.1, “Preparing the Files for Installation,” on page 7](#)
- ♦ [Section 1.2, “Determining Your Installation Method,” on page 7](#)

1.1 Preparing the Files for Installation

Novell Storage Manager 3.1.1 is packaged as a single `NSM_3_1_1.iso` file. Before you can install the Novell Storage Manager 3.1.1 for eDirectory components, you must do one of the following:

- ♦ Mount the `NSM_3_1_1.iso` on the server where you are installing one of the Novell Storage Manager 3.1.1 components.
- ♦ Burn the `NSM_3_1_1.iso` to a CD or DVD

1.2 Determining Your Installation Method

- ♦ [Section 1.2.1, “Direct from the File System,” on page 7](#)
- ♦ [Section 1.2.2, “HTML Installation Interface,” on page 8](#)

You must install the following Novell Storage Manager 3.1.1 components:

- ♦ NSM Engine
- ♦ Event Monitor
- ♦ NSM Agents
- ♦ NSMAdmin

The NSM Engine, Event Monitor, and NSM Agents can be installed by using any of the following methods:

- ♦ [Section 1.2.1, “Direct from the File System,” on page 7](#)
- ♦ [Section 1.2.2, “HTML Installation Interface,” on page 8](#)

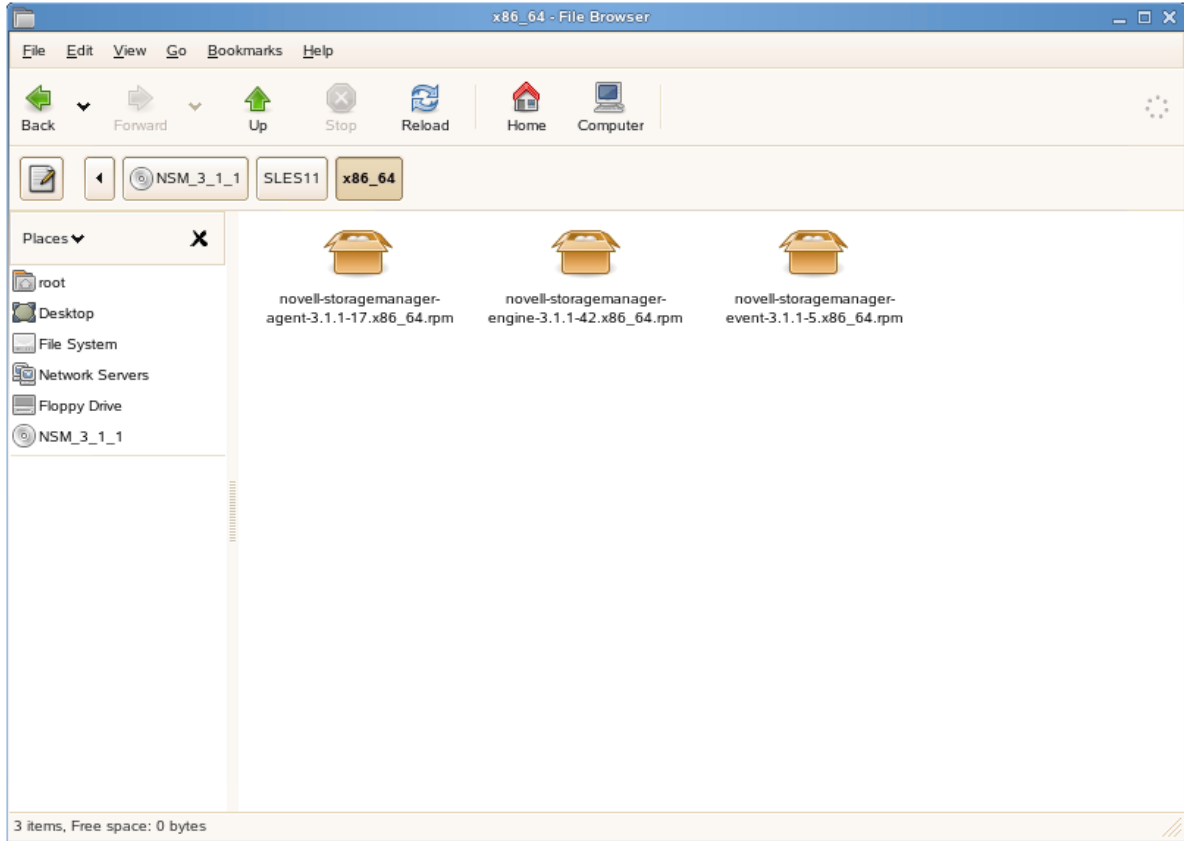
Each of these methods is explained below.

1.2.1 Direct from the File System

Network administrators comfortable with running RPMs through a terminal session might prefer this method.

- ♦ `SLES10i586` and `SLES11i586` contain the installation RPMs for 32-bit processor servers

- ♦ SLES10\x86_64 and SLES11\x86_64 contain the installation RPMs for 64-bit processor servers.



1.2.2 HTML Installation Interface

Novell Storage Manager 3.1.1 includes an HTML installation interface that can simplify the installation of Novell Storage Manager 3.1.1 product components.

Novell® Storage Manager
Installation

Configuration Options

Choose a Directory Service

Microsoft Active Directory

Novell eDirectory

Read the [EULA](#)

Components

Engine

SLES 10
[novell-storagemanager-engine-3.1.1-42.x86_64.rpm](#)

SLES 11
[novell-storagemanager-engine-3.1.1-42.x86_64.rpm](#)

Events

SLES 10
[novell-storagemanager-event-3.1.1-5.i586.rpm](#)
[novell-storagemanager-event-3.1.1-5.x86_64.rpm](#)

SLES 11
[novell-storagemanager-event-3.1.1-5.x86_64.rpm](#)

Agents

SLES 10
[novell-storagemanager-agent-3.1.1-17.i586.rpm](#)
[novell-storagemanager-agent-3.1.1-17.x86_64.rpm](#)

SLES 11
[novell-storagemanager-agent-3.1.1-17.x86_64.rpm](#)

Admin

[NSMAdmin-3.1.1-59025.msi](#)

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Clicking either of the directory service options on the left, indicates which component files can be installed. You can save the component installation file by clicking the file name.

2 Licensing the Product

- ♦ [Section 2.1, “Licensing Overview,”](#) on page 11
- ♦ [Section 2.2, “Obtaining a License File,”](#) on page 12
- ♦ [Section 2.3, “Updating a License File,”](#) on page 13

2.1 Licensing Overview

Novell Storage Manager has three license types:

Table 2-1 License Types

License Type	Target Customer	Intended Use
Evaluation	Customers	Allows customers to develop an understanding of the power of the product.
Assessment	Partners	Produces reports that allow customers to see the scope of file system management problems in their environment. Shows examples of how a policy-based infrastructure can benefit the customer’s environment.
Production	Customers	Allows customers to create and run a policy-based infrastructure in production in their environment.

The following table includes a summary of the features enabled in each license type:

Table 2-2 Feature Summary for License Types

Feature	Evaluation License	Assessment License	Production License
Consistency Check Reports	Limited to 100 objects in a report	Yes	Yes
Anomaly Reports	Limited to 100 rows in a report	Yes	Yes
Trustee Reports	No	Yes	Yes
Policy Path Reporter (integrated with Novell File Reporter)	Limited to 100 rows in a report	Yes	Yes
Data Migration	No	No	Yes
Redistribution	No	No	Yes

Feature	Evaluation License	Assessment License	Production License
Managed Objects	Limited to 100 concurrent objects	Limited to 100 concurrent objects	Yes
Manage Operations	Check mode can be run for multiple objects simultaneously, but management action can be taken for only one object at a time.	Check mode can be run for multiple objects simultaneously, but management action can be taken for only one object at a time.	Yes
Action Object Support	No	No	Yes

2.2 Obtaining a License File

Novell Storage Manager requires a production license file or evaluation license file that you obtain from Novell.

- 1 In a Web browser, go to `www.storagemanagersupport.com`.
- 2 On the left side of the Web page, click *Licensing*.

A new Web page appears with options for obtaining the license in either eDirectory or Active Directory managed network environments.

Novell® Storage Manager Support Site

printer friendly

Product License – 3.1

Welcome to the Novell Storage Manager™ (NSM) 3.1 License and Activation page. Here you will have the opportunity to either request a Evaluation license key or activate a production license key, which will immediately be sent to you via e-mail. Please select either license generation server.

Option	eDirectory	Active Directory
Evaluation License		
You can obtain a free 30 day Unlimited use evaluation license for Novell Storage Manager by using one of the following servers:	Server1	Server1
	Server2	Server2
Production License Activation		
Select one of the following links to proceed to a server to activate your Novell Storage Manager license:	Server1	Server1
	Server2	Server2

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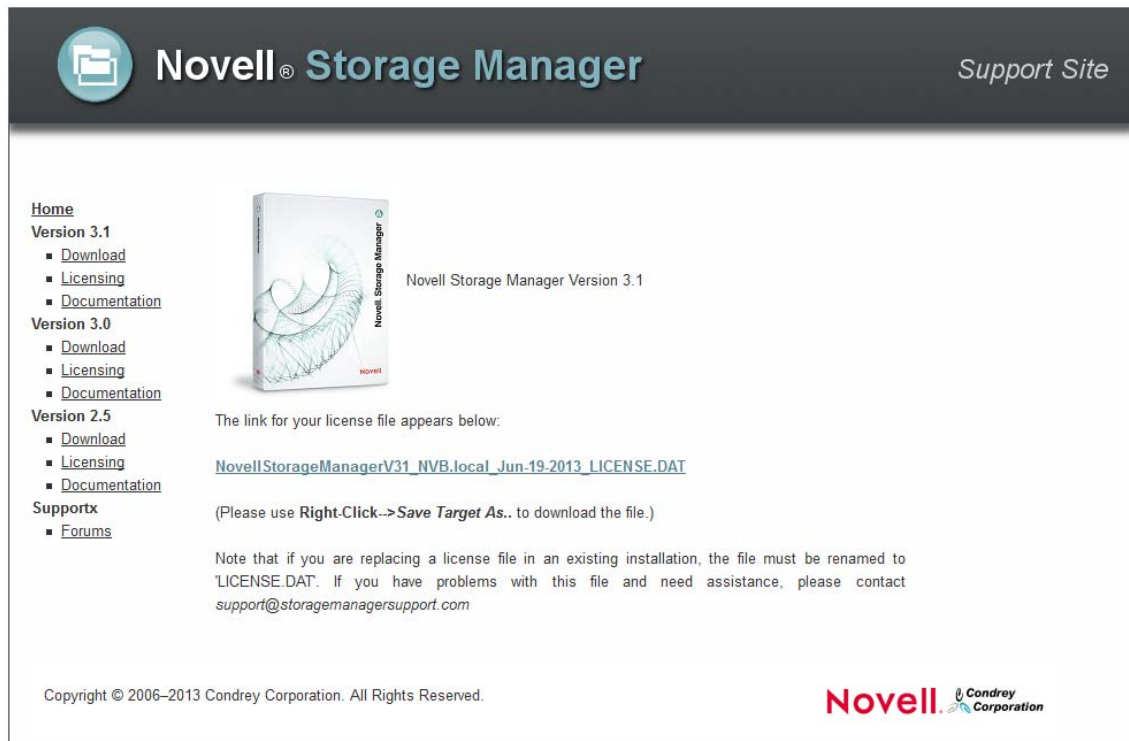
- 3 Do one of the following:
 - ♦ Request a trial license by clicking one of the server links in the *Trial License* region.
 - ♦ After you purchase Novell Storage Manager, activate your production license by clicking one of the server links in the *Production Action* region.

A new Web page appears with registration fields for you to complete.

- 4 Complete the fields and click *Submit*.

An e-mail from the License Generator is automatically sent to you with an embedded link for accessing the license.

- 5 Click the link to access a new Web page with an embedded license file.



The screenshot shows the Novell Storage Manager Support Site. The header includes the Novell logo and the text "Novell® Storage Manager" and "Support Site". The main content area features a navigation menu on the left with links for Home, Version 3.1 (Download, Licensing, Documentation), Version 3.0 (Download, Licensing, Documentation), Version 2.5 (Download, Licensing, Documentation), and Supportx (Forums). The central content area displays a product image of "Novell Storage Manager Version 3.1" and a link to the license file: [NovellStorageManagerV31_NVB.local_Jun-19-2013_LICENSE.DAT](#). Below the link, it instructs users to use Right-Click->Save Target As.. to download the file. A note at the bottom states: "Note that if you are replacing a license file in an existing installation, the file must be renamed to 'LICENSE.DAT'. If you have problems with this file and need assistance, please contact support@storagemanagersupport.com". The footer contains the copyright notice "Copyright © 2006–2013 Condrey Corporation. All Rights Reserved." and the Novell Condrey Corporation logo.

- 6 Right-click the license file, select *Save Target As*, then save the license file to a directory of your choice.
- 7 Note where the license file is saved.
You need to retrieve the license during the installation of NSMAdmin.

2.3 Updating a License File

After you have installed Novell Storage Manager 3.1.1 for eDirectory, you can update your evaluation license or production license by simply replacing the old license file with the new one. For more information see "[Replacing an Unexpired License File](#)" or "[Replacing an Expired License File](#)" in the *Novell Storage Manager 3.1.1 for eDirectory Administration Guide*.

3 Upgrading from Storage Manager 2.5x to 3.11

Use the procedures in this section to upgrade your deployment of Novell Storage Manager 2.5x for eDirectory to Novell Storage Manager 3.1.1 for eDirectory. You should follow these procedures only after you have performed the prerequisite tasks in [Chapter 1, “Prerequisites,” on page 7](#), and obtained a Novell Storage Manager 3.1.1 for eDirectory product license as indicated in [Chapter 2, “Licensing the Product,” on page 11](#).

- ◆ [Section 3.1, “Understanding the Upgrade Process,” on page 15](#)
- ◆ [Section 3.2, “Migration Considerations,” on page 16](#)
- ◆ [Section 3.3, “Clearing Pending Events,” on page 18](#)
- ◆ [Section 3.4, “Installing NSMAdmin 3.1.1,” on page 19](#)
- ◆ [Section 3.5, “Running the NSM Migration Utility,” on page 20](#)
- ◆ [Section 3.6, “Unloading Novell Storage Manager 2.5x Event Monitor Components,” on page 23](#)
- ◆ [Section 3.7, “Unloading Novell Storage Manager 2.5x Agent Components,” on page 23](#)
- ◆ [Section 3.8, “Upgrading the NSM Engine,” on page 24](#)
- ◆ [Section 3.9, “Configuring the NSM Engine,” on page 25](#)
- ◆ [Section 3.10, “Running the NSMAdmin 3.1.1 Setup Wizard,” on page 28](#)
- ◆ [Section 3.11, “Verifying Storage Resource Lists,” on page 31](#)
- ◆ [Section 3.12, “Performing Manage Operations for Migrated Policies,” on page 32](#)
- ◆ [Section 3.13, “Upgrading the Event Monitor,” on page 32](#)
- ◆ [Section 3.14, “Configuring the Event Monitor,” on page 33](#)
- ◆ [Section 3.15, “Upgrading an NSM Agent,” on page 36](#)
- ◆ [Section 3.16, “Configuring an NSM Agent,” on page 37](#)
- ◆ [Section 3.17, “Authorizing the Event Monitor,” on page 40](#)
- ◆ [Section 3.18, “Authorizing the NSM Agents,” on page 40](#)

3.1 Understanding the Upgrade Process

The upgrade process involves migrating any of your existing Novell Storage Manager 2.5x for eDirectory policies as well as deferred delete pending events, then rebuilding the Novell Storage Manager catalog.

Because you are moving the NSM Engine in Novell Storage Manager 2.5x from a NetWare server to a Novell Open Enterprise Server 2 machine, you perform an across-the-wire migration.

The migration is a three-step process:

1. The NSM Migration utility exports policies and deferred delete content from the Novell Storage Manager 2.5x NSM Engine.
2. The NSMAdmin Setup Wizard imports the policies and deferred delete content to the Novell Storage Manager 3.1.1 NSM Engine.
3. You perform Manage Operations to rebuild the Novell Storage Manager catalog.

3.2 Migration Considerations

As part of the planning process, consider the following:

- ♦ [Section 3.2.1, “Novell Storage Manager 2.0 Customers,” on page 16](#)
- ♦ [Section 3.2.2, “Novell Storage Manager 3.1.1 for eDirectory Components,” on page 16](#)
- ♦ [Section 3.2.3, “NetWare Support,” on page 16](#)
- ♦ [Section 3.2.4, “Schema Management,” on page 17](#)
- ♦ [Section 3.2.5, “Policy, Catalog, and Pending Event Migration,” on page 18](#)

3.2.1 Novell Storage Manager 2.0 Customers

Customers running a version of Novell Storage Manager earlier than 2.5x must upgrade to 2.5x before performing a migration. If you choose, you can limit the upgrade to only the NSM Engine component.

NOTE: The Event Monitor and NSM Agents are not involved in the migration process.

3.2.2 Novell Storage Manager 3.1.1 for eDirectory Components

All of the components of Novell Storage Manager 3.1.1 for eDirectory are built exclusively for being hosted on Novell Open Enterprise Server machines.

- ♦ For the NSMAdmin requirements, see [Section 3.4, “Installing NSMAdmin 3.1.1,” on page 19](#)
- ♦ For NFR Engine requirements, see [Section 3.8, “Upgrading the NSM Engine,” on page 24](#).
- ♦ For the Event Monitor requirements, see [Section 3.13, “Upgrading the Event Monitor,” on page 32](#).
- ♦ For the NSM Agent requirements, see [Section 3.15, “Upgrading an NSM Agent,” on page 36](#).

3.2.3 NetWare Support

Novell Storage Manager 3.1.1 for eDirectory can manage storage on NetWare volumes. However, unlike previous versions of Novell Storage Manager, there are no components that run on NetWare itself. Novell Storage Manager 3.1.1 for eDirectory has been designed to manage storage residing on servers running Novell Open Enterprise Server running SUSE Linux or Novell NetWare.

NOTE: Novell Storage Manager 2.5x continues to be fully supported by Novell for Novell Storage Manager customers in NetWare environments.

- ♦ [“Event Services” on page 17](#)
- ♦ [“Agent Services” on page 17](#)

Event Services

Event Monitors should be configured to monitor at least one server per eDirectory partition ring that you care about. That is, you should monitor servers that hold a replica for each eDirectory partition that contains objects that you want to receive event data about and for which Novell Storage Manager 3.1.1 for eDirectory will consequently manage storage.

NOTE: Novell recommends two Event Monitors per replica ring.

The Linux-based Event Monitor can monitor events on remote eDirectory servers, not just the local server as was the case with all previous versions of Novell Storage Manager for eDirectory. This means that the Novell Storage Manager 3.1.1 Event Monitor running on Linux can be instructed to monitor existing NetWare servers holding replicas. The Event Monitor running in this configuration can be run on either Novell Open Enterprise Server 2 or SUSE Linux Enterprise Server 10, so you do not need to introduce new servers into the directory tree if the replicas are on NetWare. Similarly, you do not need to move or change any replicas. For more information on Event Monitors, see [“Event Monitor”](#) in the *Novell Storage Manager 3.1.1 for eDirectory Administration Guide*.

Agent Services

Although the NSM Engine is fully capable of performing all of the storage management work, you can improve performance by using the NSM Agents to offload some of the work. Customers can deploy NSM Agents on Novell Open Enterprise Server 2 machines in a “proxy mode” to allow them to take work for one or more target NetWare servers while still offloading work from the NSM Engine. This is an important consideration for Novell Storage Manager customers that are currently running storage on NetWare servers that have yet to be migrated to Novell Open Enterprise Server 2. For more information on proxy agents, see [“Proxy Agents”](#) in the *Novell Storage Manager 3.1.1 for eDirectory Administration Guide*.

3.2.4 Schema Management

There are several schema changes that take place in Novell Storage Manager 3.1.1 for eDirectory. Most notable for those customers migrating from Novell Storage Manager 2.5x is that schema extensions are now done using auxiliary class definitions that can be removed. The attribute names for some extensions have also changed. For this reason, the schema is upgraded in the NSMAdmin Installation Wizard. For more information on schema extensions, see [“Active Directory Schema Extensions”](#) in the *Novell Storage Manager 3.1.1 for eDirectory Administration Guide*.

3.2.5 Policy, Catalog, and Pending Event Migration

With the introduction of Novell Storage Manager 3.1, policy definitions are no longer stored as objects in eDirectory, but have been moved to a local database on the server hosting the NSM Engine. This results in improved performance and functionality. When you run the NSMAdmin Setup Wizard, you are asked if you want to import migration data from Novell Storage Manager 2.5x, which includes the policy definitions.

The Novell Storage Manager 3.1.1 catalog serves two purposes:

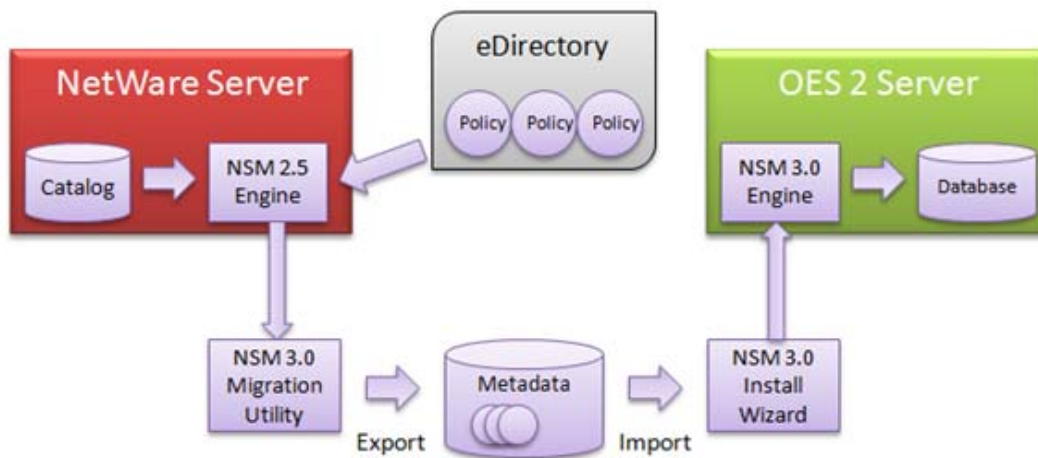
- ♦ Maintains status information on pending events that are waiting for execution or currently being executed
- ♦ Maintains static information about the objects and storage that are currently under the management of Novell Storage Manager 3.1.

In previous versions, Novell Storage Manager used a flat file mechanism for maintaining the catalog, but for the purpose of improved performance and functionality, Novell Storage Manager 3.1.1 moves the catalog to a local database.

When you run the NSMAdmin Setup Wizard, you can import deferred delete pending events from Novell Storage Manager 2.5x.

The diagram below illustrates the migration process for policy and catalog information from Novell Storage Manager 2.5x to Novell Storage Manager 3.1. This process uses the Novell Storage Manager 3.1.1 Migration utility to produce a metadata file holding relevant data from Novell Storage Manager 2.5x, which is then injected into the Novell Storage Manager 3.1.1 system.

Figure 3-1 Migration Process for Policy and Catalog Information



3.3 Clearing Pending Events

The NSM Migration utility migrates only deferred delete pending events. Therefore, before beginning with the procedures in this section, you should clean up all pending events except for deferred delete events.

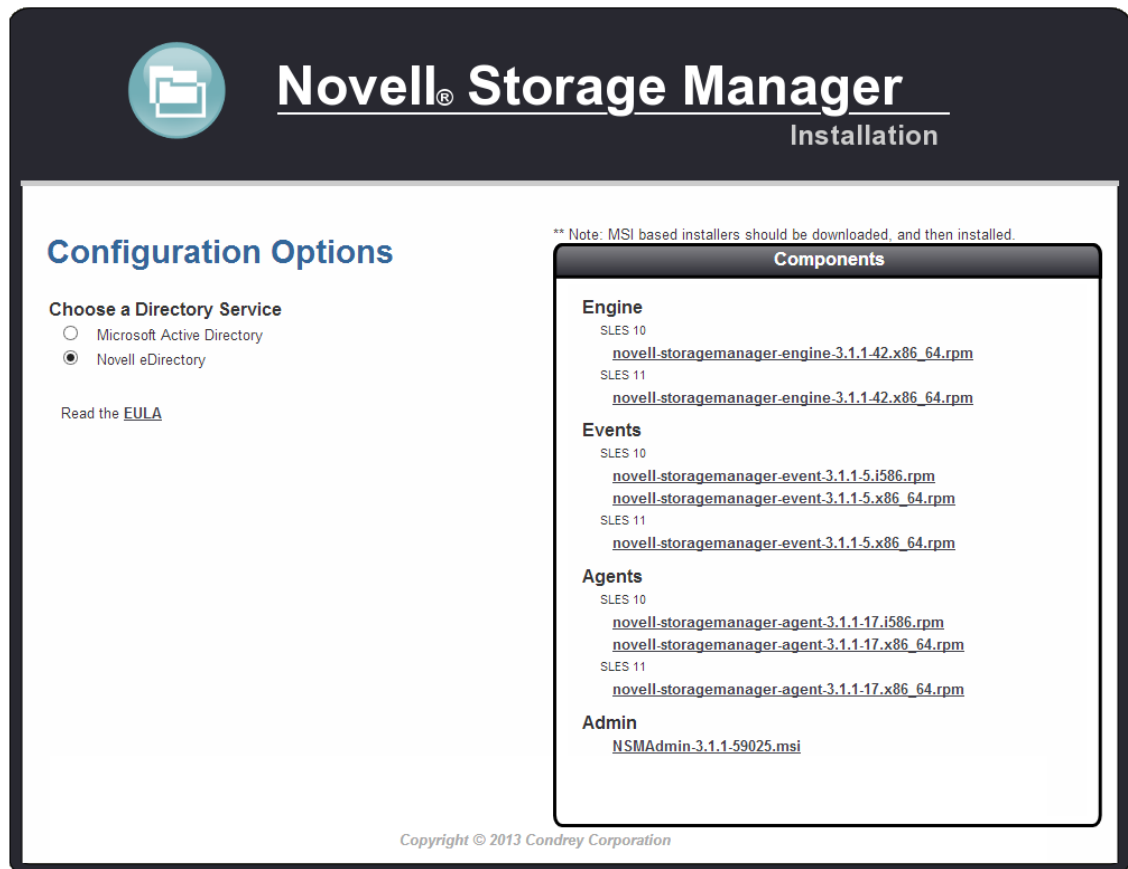
NOTE: A deferred delete event is the scheduled deletion of a user home folder or a collaborative storage folder. It has not yet taken place because the number of days in the Cleanup Storage parameter of the policy has not been met.

3.4 Installing NSMAdmin 3.1.1

The NSMAdmin 3.1.1 installation package includes the NSM Migration utility, which you need to install on the server where the Novell Storage Manager 3.1.1 NSM Engine will eventually be hosted.

NSMAdmin can be installed on a Windows server or workstation that meets the following minimum requirements:

- ♦ Windows platform (Windows 7, Vista, XP SP3, and Windows Server 2012, 2008 or 2003)
 - ♦ .NET 3.5 Framework and .NET 4.0 (Full) Framework installed.
 - ♦ .NET security settings are adjusted if you are running the executable from a network drive (optional)
- 1 At the root of the NSM_3_1_1.iso image, click the install.html file.



- 2 Select *Novell eDirectory*.
- 3 Click *NSMAdmin-3.1.1-xxxx.msi*.
- 4 When asked if you want to save or run the file, save the file to the hard drive of a computer where you will administer Novell Storage Manager.
- 5 From the saved location, launch the NSMAdmin installation file.
- 6 When you are asked if you want to run this file, click *Run*.
An Introduction page appears in the NSMAdmin Installation Wizard.
- 7 Read the text and click *Next*.

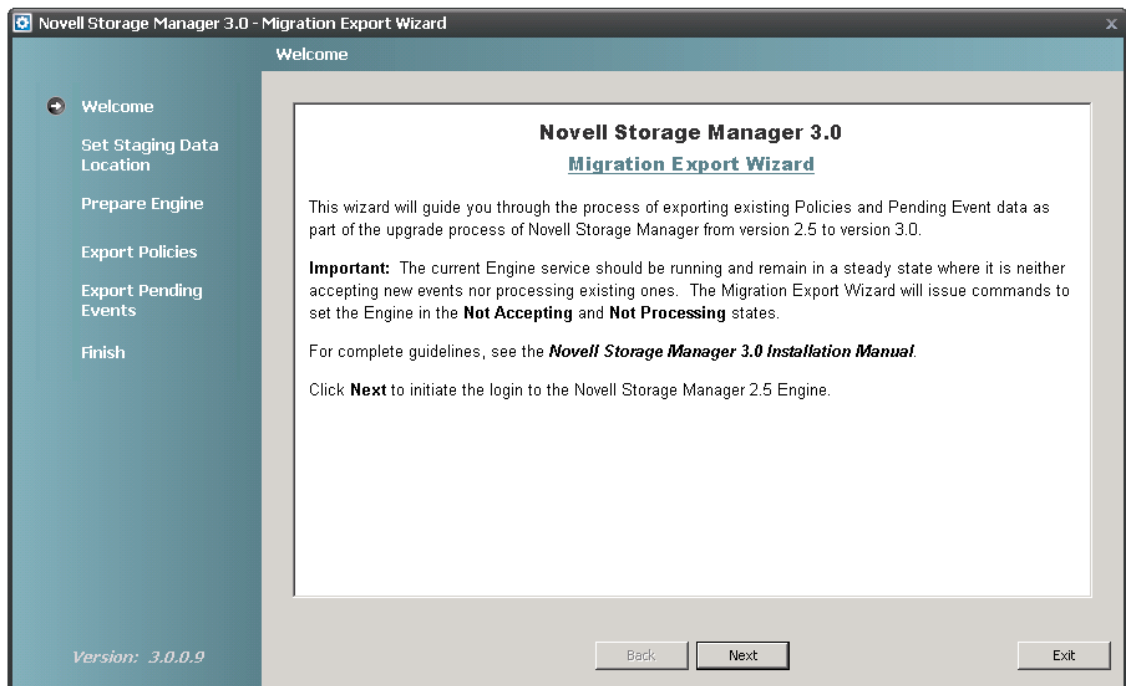
- 8 Accept the license terms and click *Next*.
- 9 Accept the installation path or indicate a new path by using the *Browse* button.
To review possible locations, you can click *Disk Usage* to see all available volumes with disk size and disk availability data.
- 10 Click *Next*.
- 11 If you want to create a shortcut for NSMAdmin, leave the *Create shortcut on Desktop* check box selected and click *Install*.
NSMAdmin is installed.
- 12 Deselect the *Launch NSMAdmin 3* check box, which is selected by default, and click *Finish*.

3.5 Running the NSM Migration Utility

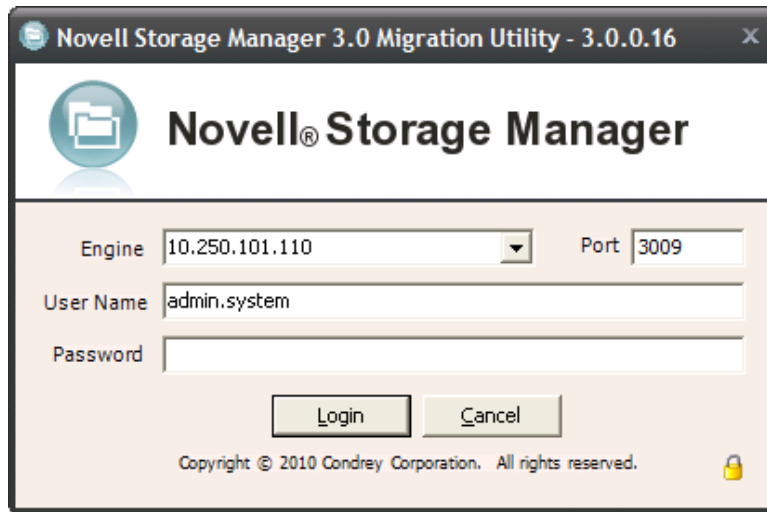
This procedure creates the file for exporting your policies and deferred delete events from your Novell Storage Manager 2.5x NSM Engine.

- 1 At workstation where you installed NSMAdmin, click *Start > All Programs > Novell > Storage Manager > NSM Migration Utility*.

This launches a migration wizard.

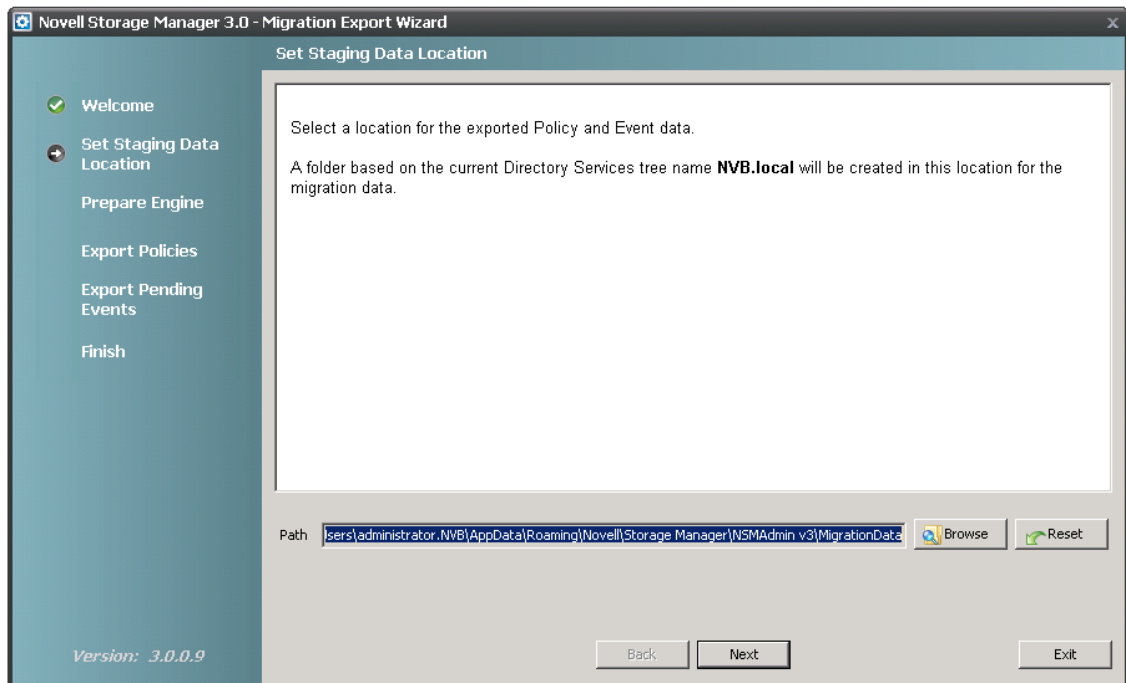


- 2 Read the text and click *Next*.
The following login window appears:



- 3 Log in to the server hosting the Novell Storage Manager 2.5x NSM Engine by specifying the server's DNS name or IP address in the *Engine* field, specifying the port number, administrator name, and password, then clicking *Login*.

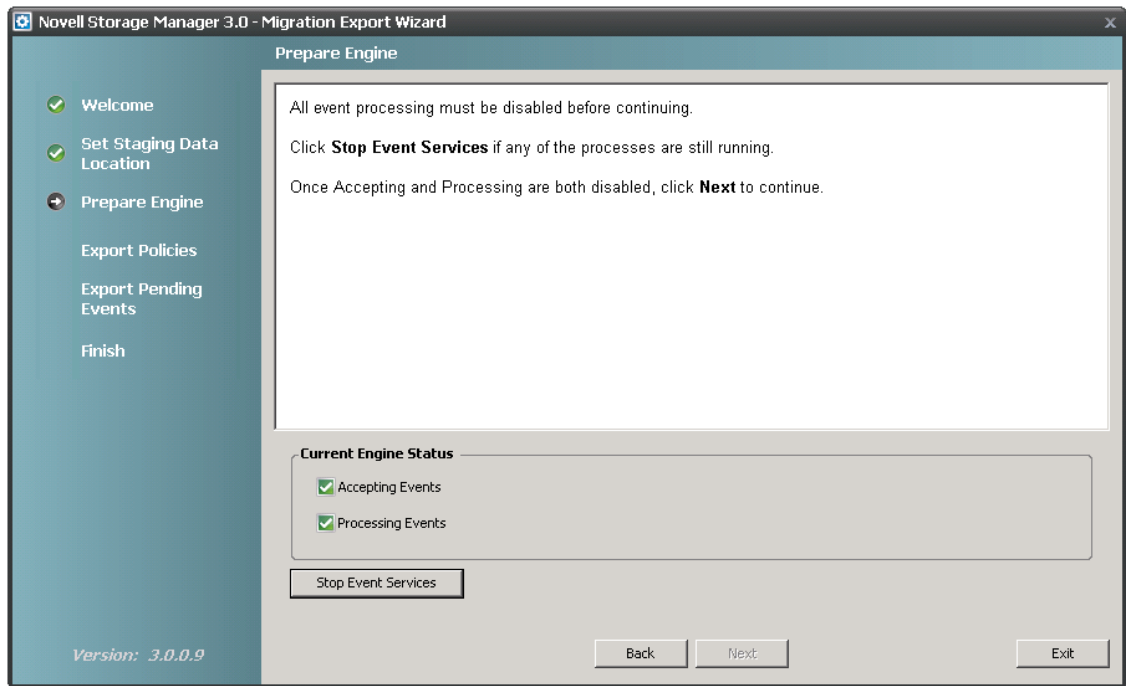
The following page appears:



- 4 Accept the path where the migration file will be stored, or indicate a new one by using the *Browse* button, then click *Next*.

Unless you change the default path, the path appears automatically when you import the migration file through the NSMAdmin Setup Wizard.

The following page appears:

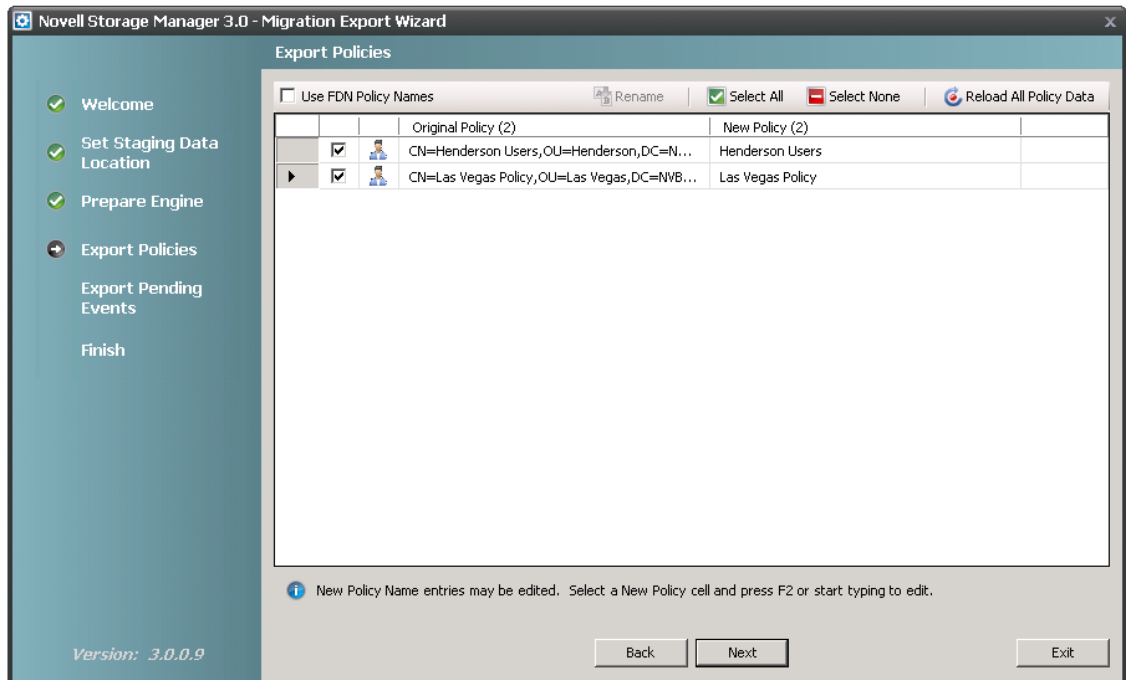


5 Click *Stop Event Services*, then click *Next*.

This stops the Novell Storage Manager 2.5x NSM Engine from accepting and processing events.

6 Click *Next*.

A page similar to the following appears:



7 Indicate the Novell Storage Manager 2.5x policies you want migrated by leaving the corresponding policy check boxes selected.

You can rename a policy before migrating it by editing the name listed in the *New Policy* column. Clicking the *Use FDN Policy Names* check box displays the fully distinguished name, which you can also edit.

If you have a policy displayed with a red error symbol, this indicates that the policy cannot be exported. Typically, this is due to a missing policy type attribute, possibly from a policy created before the release of Novell Storage Manager 2.5x that was updated but did not properly convert to the Novell Storage Manager 2.5x environment.

Once you have fixed these policies to conform to Novell Storage manager 2.5x standards, you can run the Migration utility again. If the policies do not appear, click *Reload All Policy Data*.

At this point in the migration, if you quit and restart the Migration utility, any changes or edits (such as policy renames, and selection of policies to import) that have been performed are actually saved and reloaded the next time you run the Migration utility. However, if you add any new policies or fixed any, those changes may not show up on a subsequent run of the Migration utility until you click *Reload All Policy Data*.

8 Click *Next*.

The wizard exports the policies to the migration file and indicates when the export is complete.

9 Click *Next*.

The wizard exports the deferred delete events to the migration file and indicates when the export is complete.

10 Click *Next*.

A concluding wizard page appears with procedures for importing the migration file to the Novell Storage Manager 3.1.1 NSM Engine.

11 Read the summary of procedures and click *Finish*.

12 Proceed with [Section 3.6, “Unloading Novell Storage Manager 2.5x Event Monitor Components,”](#) on page 23.

3.6 Unloading Novell Storage Manager 2.5x Event Monitor Components

- 1** At each server console hosting Novell Storage Manager 2.5x Event Monitors, unload or stop each Event Monitor and confirm that the event processing has stopped.
- 2** Remove associated load commands in the `autoexec.ncf` file from NetWare, and disable analogous components on Open Enterprise Server 2 and SUSE Linux Enterprise Server 10 machines.
- 3** Proceed with [Section 3.7, “Unloading Novell Storage Manager 2.5x Agent Components,”](#) on page 23.

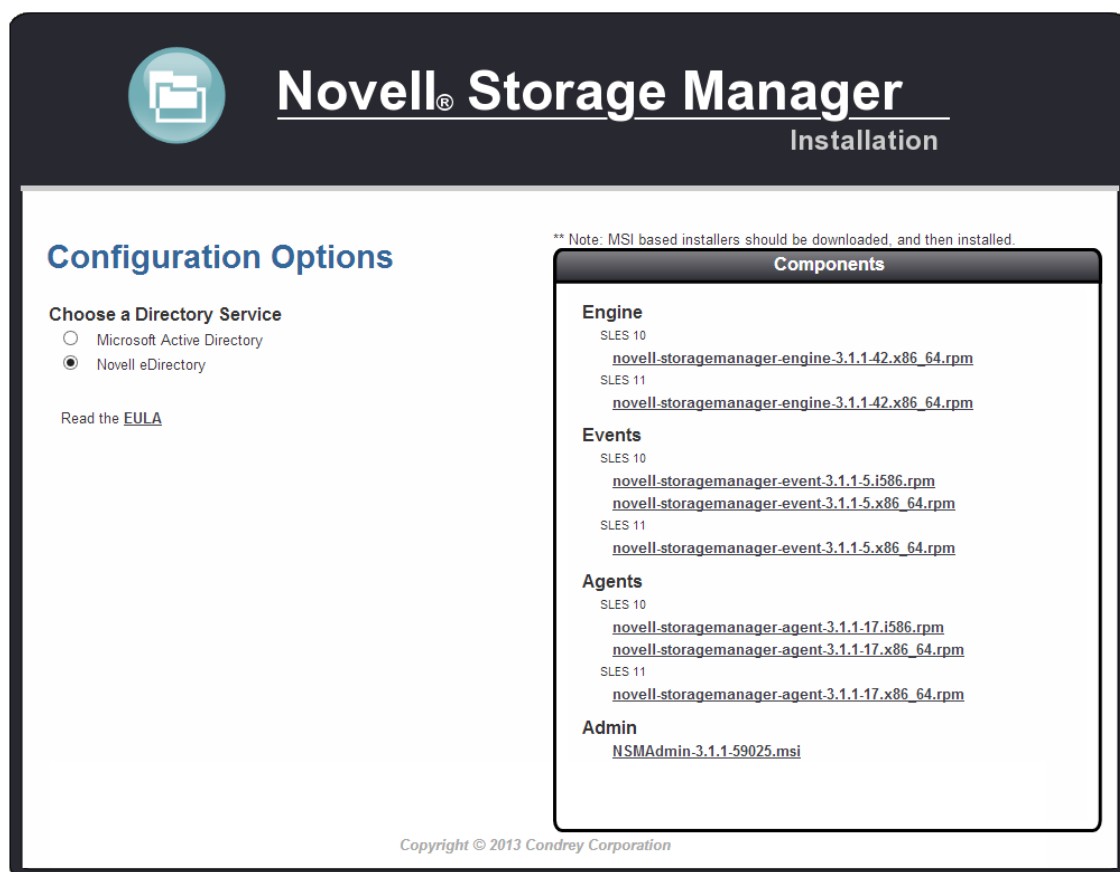
3.7 Unloading Novell Storage Manager 2.5x Agent Components

- 1** At each server console running Novell Storage Manager 2.5x NSM Agents, unload or stop each NSM Agent and confirm that these processes have stopped.
- 2** Remove associated load commands in the `autoexec.ncf` file from NetWare, and disable analogous components on Open Enterprise Server 2 and SUSE Linux Enterprise Server 10 machines.
- 3** Proceed with [Section 3.8, “Upgrading the NSM Engine,”](#) on page 24.

3.8 Upgrading the NSM Engine

Novell Storage Manager uses only one NSM Engine per tree. The NSM Engine can be installed on a machine that meets the following minimum requirements:

- ♦ Novell Open Enterprise Server 2 SP2a or later with an x64 processor
 - ♦ Novell Open Enterprise Server 11 SP1 with Jan. 2013 Maintenance release or later
 - ♦ eDirectory 8.7.3.9 or later; or eDirectory 8.8 SP 2 or later
- 1 At the root of the NSM_3_1_1.iso image, click the install.html file.



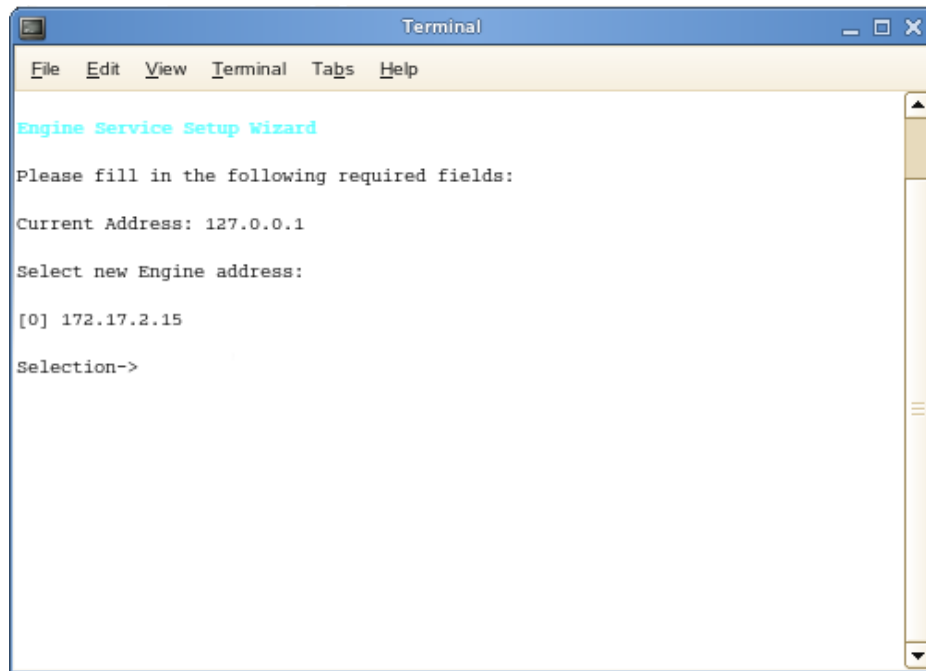
- 2 Select *Novell eDirectory*.
- 3 Under the platform on which you are installing the NSM Engine, click *novell-storage-manager-engine-3.1.1-xx.x86_64.rpm*.
- 4 Save the RPM.
- 5 Launch a terminal session.
- 6 Upgrade the NSM Engine RPM package by typing:


```
# rpm -U novell-storage-manager-engine-3.1.1-xx.x86_64.rpm.
```
- 7 Follow the installation procedures as directed in the NSM Engine installation interface.

3.9 Configuring the NSM Engine

- 1 From the server where you installed the NSM Engine, launch a terminal session by selecting *Computer > Gnome Terminal*.
- 2 Type `nsmengine-config` and press Enter.

The console is updated and looks similar to the one below.

A screenshot of a terminal window titled "Terminal". The window has a menu bar with "File", "Edit", "View", "Terminal", "Tabs", and "Help". The main content area displays the "Engine Service Setup Wizard" in cyan text. Below the title, it says "Please fill in the following required fields:". The current address is shown as "Current Address: 127.0.0.1". It then asks to "Select new Engine address:" and lists "[0] 172.17.2.15". The prompt "Selection->" is at the bottom of the visible text.

```
Terminal
File Edit View Terminal Tabs Help

Engine Service Setup Wizard

Please fill in the following required fields:

Current Address: 127.0.0.1

Select new Engine address:

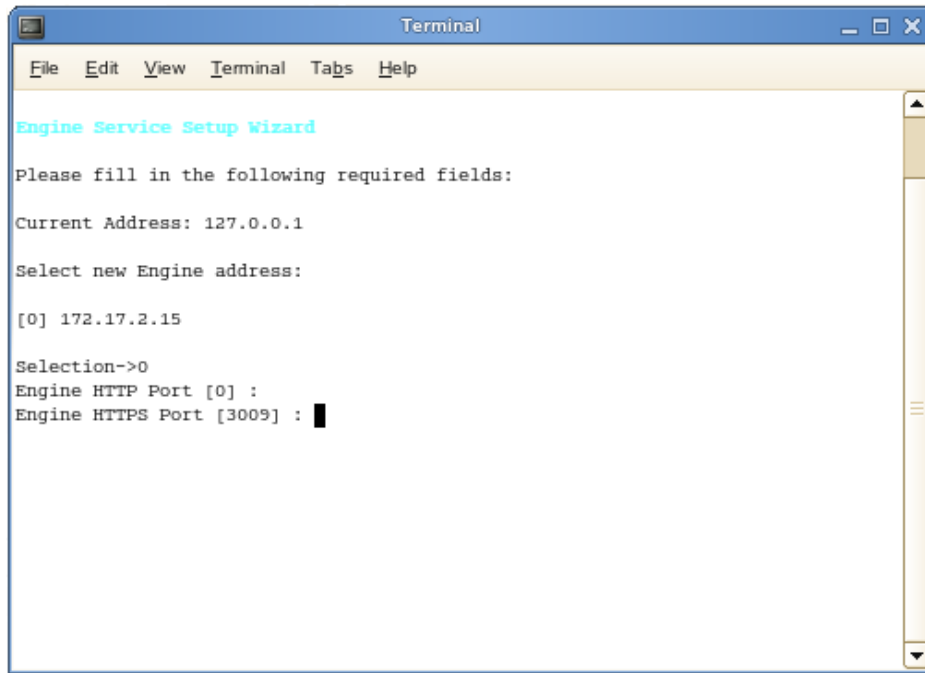
[0] 172.17.2.15

Selection->
```

If your server has multiple NIC cards, multiple IP address options are listed.

- 3 Specify the IP address option you want (such as 0 in the example above) and press Enter.
- 4 When the HTTP Port [0] option appears, type 0 and press Enter.

The console is updated and looks similar to the one below:

A screenshot of a terminal window titled "Terminal". The window has a menu bar with "File", "Edit", "View", "Terminal", "Tabs", and "Help". The main content area displays the "Engine Service Setup Wizard" in cyan text. Below the title, it says "Please fill in the following required fields:". The current address is shown as "Current Address: 127.0.0.1". It then asks to "Select new Engine address:" and lists "[0] 172.17.2.15". Below that, it says "Selection->0". The next two prompts are "Engine HTTP Port [0] :" and "Engine HTTPS Port [3009] :", with a cursor at the end of the second line.

```
Terminal
File Edit View Terminal Tabs Help

Engine Service Setup Wizard

Please fill in the following required fields:

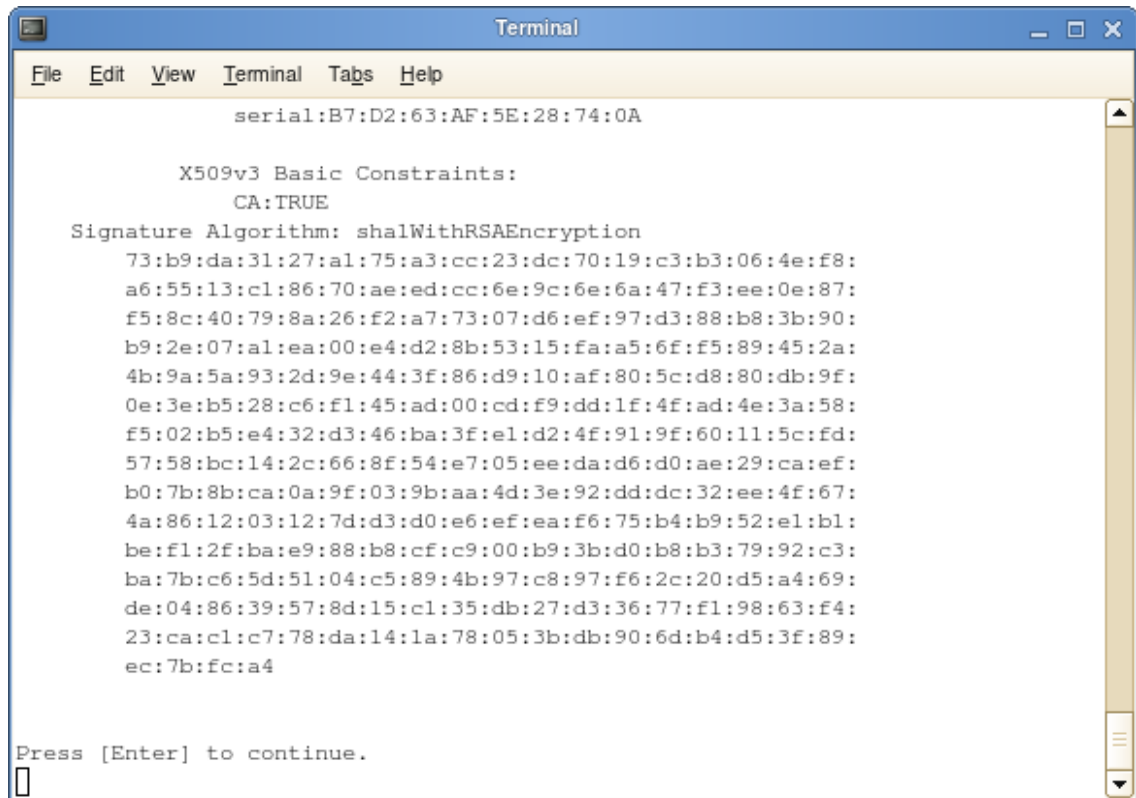
Current Address: 127.0.0.1

Select new Engine address:

[0] 172.17.2.15

Selection->0
Engine HTTP Port [0] :
Engine HTTPS Port [3009] :
```

- 5 Unless there is a conflict, accept the default HTTPS port number of 3009 by pressing Enter. If you need to use another port number, provide the new port number.
- 6 When you are asked if you want to start the service, click **y** for yes.
This starts the NSM Engine.
- 7 Press Enter to continue.
The console is updated and looks similar to the one below.



```

Terminal
File Edit View Terminal Tabs Help
serial:B7:D2:63:AF:5E:28:74:0A

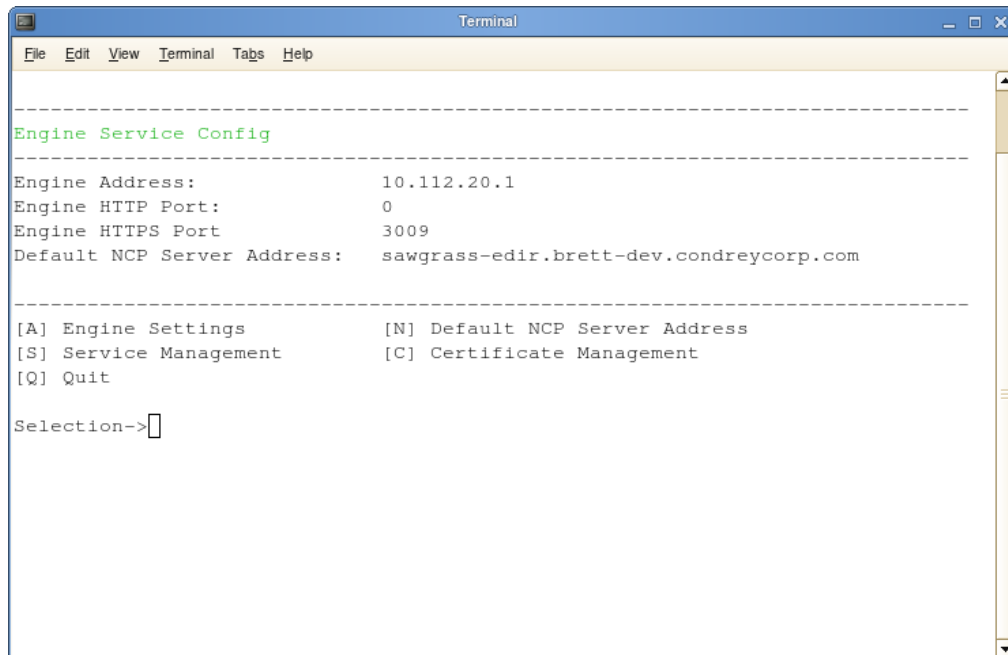
X509v3 Basic Constraints:
CA:TRUE
Signature Algorithm: sha1WithRSAEncryption
73:b9:da:31:27:a1:75:a3:cc:23:dc:70:19:c3:b3:06:4e:f8:
a6:55:13:c1:86:70:ae:ed:cc:6e:9c:6e:6a:47:f3:ee:0e:87:
f5:8c:40:79:8a:26:f2:a7:73:07:d6:ef:97:d3:88:b8:3b:90:
b9:2e:07:a1:ea:00:e4:d2:8b:53:15:fa:a5:6f:f5:89:45:2a:
4b:9a:5a:93:2d:9e:44:3f:86:d9:10:af:80:5c:d8:80:db:9f:
0e:3e:b5:28:c6:f1:45:ad:00:cd:f9:dd:1f:4f:ad:4e:3a:58:
f5:02:b5:e4:32:d3:46:ba:3f:e1:d2:4f:91:9f:60:11:5c:fd:
57:58:bc:14:2c:66:8f:54:e7:05:ee:da:d6:d0:ae:29:ca:ef:
b0:7b:8b:ca:0a:9f:03:9b:aa:4d:3e:92:dd:dc:32:ee:4f:67:
4a:86:12:03:12:7d:d3:d0:e6:ef:ea:f6:75:b4:b9:52:e1:b1:
be:f1:2f:ba:e9:88:b8:cf:c9:00:b9:3b:d0:b8:b3:79:92:c3:
ba:7b:c6:5d:51:04:c5:89:4b:97:c8:97:f6:2c:20:d5:a4:69:
de:04:86:39:57:8d:15:c1:35:db:27:d3:36:77:f1:98:63:f4:
23:ca:c1:c7:78:da:14:1a:78:05:3b:db:90:6d:b4:d5:3f:89:
ec:7b:fc:a4

Press [Enter] to continue.

```

- 8 Press Enter to create the server certificate and to continue.

The console is updated and looks similar to the one below.



```

Terminal
File Edit View Terminal Tabs Help
-----
Engine Service Config
-----
Engine Address:                10.112.20.1
Engine HTTP Port:              0
Engine HTTPS Port              3009
Default NCP Server Address:    sawgrass-edir.brett-dev.condreycorp.com
-----
[A] Engine Settings             [N] Default NCP Server Address
[S] Service Management          [C] Certificate Management
[Q] Quit

Selection->

```

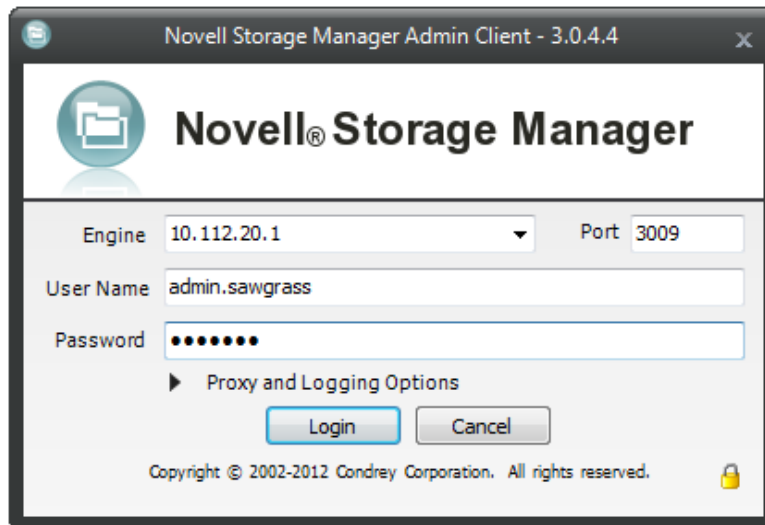
At this point, you can navigate through the menu to see how to perform management tasks on the NSM Engine when necessary.

- 9 Press q to quit.

3.10 Running the NSMAdmin 3.1.1 Setup Wizard

With the Novell Storage Manager 3.1.1 NSM Engine installed, you can now run the NSMAdmin Setup Wizard to import the migration file you created in [Section 3.5, “Running the NSM Migration Utility,”](#) on page 20.

- 1 From your desktop, double-click the NSMAdmin icon.
The login window appears.



- 2 In the *Engine* field, specify the DNS name or IP address.
- 3 In the *Port* field, specify the secure port number.
The default setting is 3009.
- 4 Specify the username and password.
The user must be a member of the NSMAdmins group to be able to log in.
- 5 Click *Login*.
If you are unable to log in, your proxy settings might be preventing you from doing so. Until you enter a proxy exception in your proxy settings, you can click *Proxy and Logging Options*, select *Do not use a Proxy*, then click *Login*.
The Setup Wizard welcome screen appears.
- 6 Read the text on the screen and click *Next*.
- 7 Do one of the following:
 - ♦ Click *Browse* to locate and select the path to the license file.
 - ♦ Click *Get a License* to obtain an evaluation license.
- 8 Click *Next*.
- 9 In the *Proxy Service Account* and *Proxy Service Group* fields, accept the account names that will be created and click *Next*.



- 10 Accept or modify the NSM Administrators' group name, leave the *Add current user to the NSM Administrators Group* check box selected, then click *Next*.
 - 11 When you are notified that a Proxy Home share will be created on the engine's local Proxy Home source path, click *Next*.
- The following page appears:



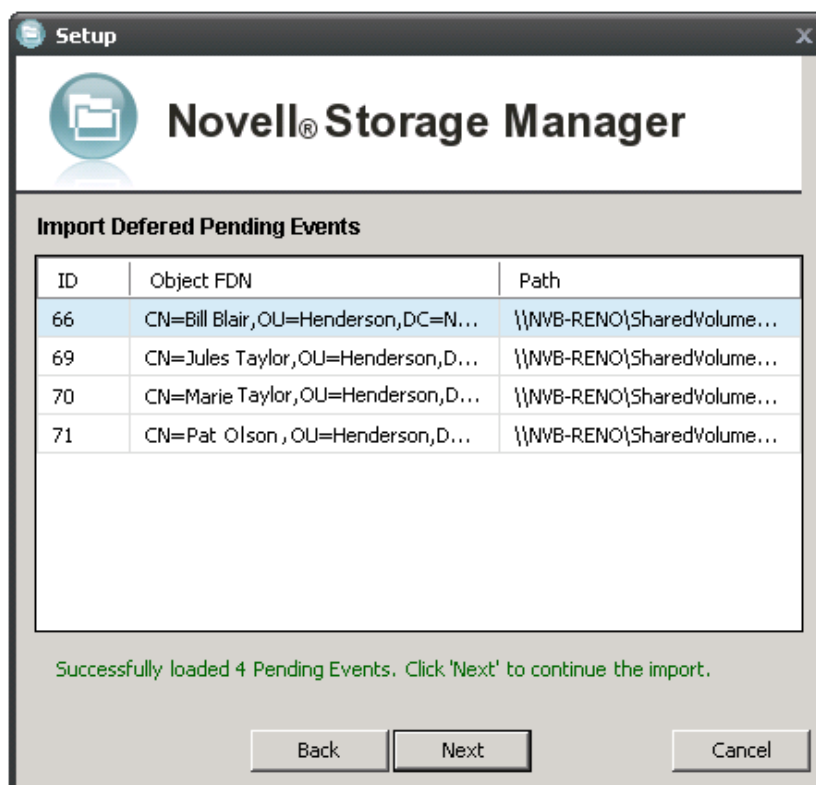
- 12** If you want to import your policies at this time, select the *Complete Migration* check box. If you modified the path where the migration file was saved in [Step 4 on page 21](#), indicate the path by using the *Browse* button, then click *Next*.

If you choose not to import the policies at this time, you can do so later in NSMAdmin using the *Import Upgraded Policies*.

A message appears informing you that the import is complete.

- 13** Click *Next*.

The NSM Migration utility shows the deferred delete events that are to be migrated.



- 14 Click *Next*.

A message appears informing you that Novell Storage Manager needs to initialize the engine and its subsystems.

- 15 Click *Next*.

When the initialization is complete, the NSMAdmin 3.1.1 login window appears.

- 16 Log in to NSMAdmin.

- 17 In the *Main* tab, click *Policy Management* to see the imported policies.

- 18 Click *Pending Events* to see the deferred delete events.

- 19 Proceed with [Section 3.11, “Verifying Storage Resource Lists,”](#) on page 31.

3.11 Verifying Storage Resource Lists

- 1 In NSMAdmin, click the *Main* tab and Select *Storage Resource List*.

- 2 Verify that all server and volumes are listed.

- 3 (Conditional) If they are not listed, select *Rebuild*.

It might take a few minutes for Novell Storage Manager to scan all of eDirectory for volumes.

- 4 When the list is complete, click *Continue*.

- 5 Proceed with [Section 3.12, “Performing Manage Operations for Migrated Policies,”](#) on page 32.

3.12 Performing Manage Operations for Migrated Policies

The final step in the migration process is to rebuild catalog information for managed users, groups, and storage from eDirectory and the file system. Perform the following sets of steps for users managed by user policies and for groups and containers managed by collaborative policies.

This procedure rebuilds catalog information for storage for all users in a specific container of a directory tree.

- 1 In NSMAdmin, click the *Main* tab and select *Storage Management*.
- 2 Right-click a container in the left panel and select *Users Actions > Manage*.
- 3 With *Run in Check Mode* selected, click *Run*.
- 4 Select *Expand* to view the results.
- 5 Click the *Action* column to sort.

If there is no applicable policy for users in the container, no action is taken because these users are not managed by Novell Storage Manager.

- 6 Click *Collapse*.
- 7 Deselect *Run in Check Mode* and click *Run*.
- 8 Click *Consistency Check*.
- 9 Click *Expand*.
- 10 Click the *Policy* column to sort by policy.
- 11 Verify that the users are now managed.
- 12 Close the Take Action form.
- 13 Repeat these steps for all groups and containers that have an associated policy that was migrated.

For Group objects, you must select *Group Actions > Manage*.

For Container objects, you must select *Container Actions > Manage*.
- 14 Proceed with [Section 3.13, "Upgrading the Event Monitor," on page 32](#).

3.13 Upgrading the Event Monitor

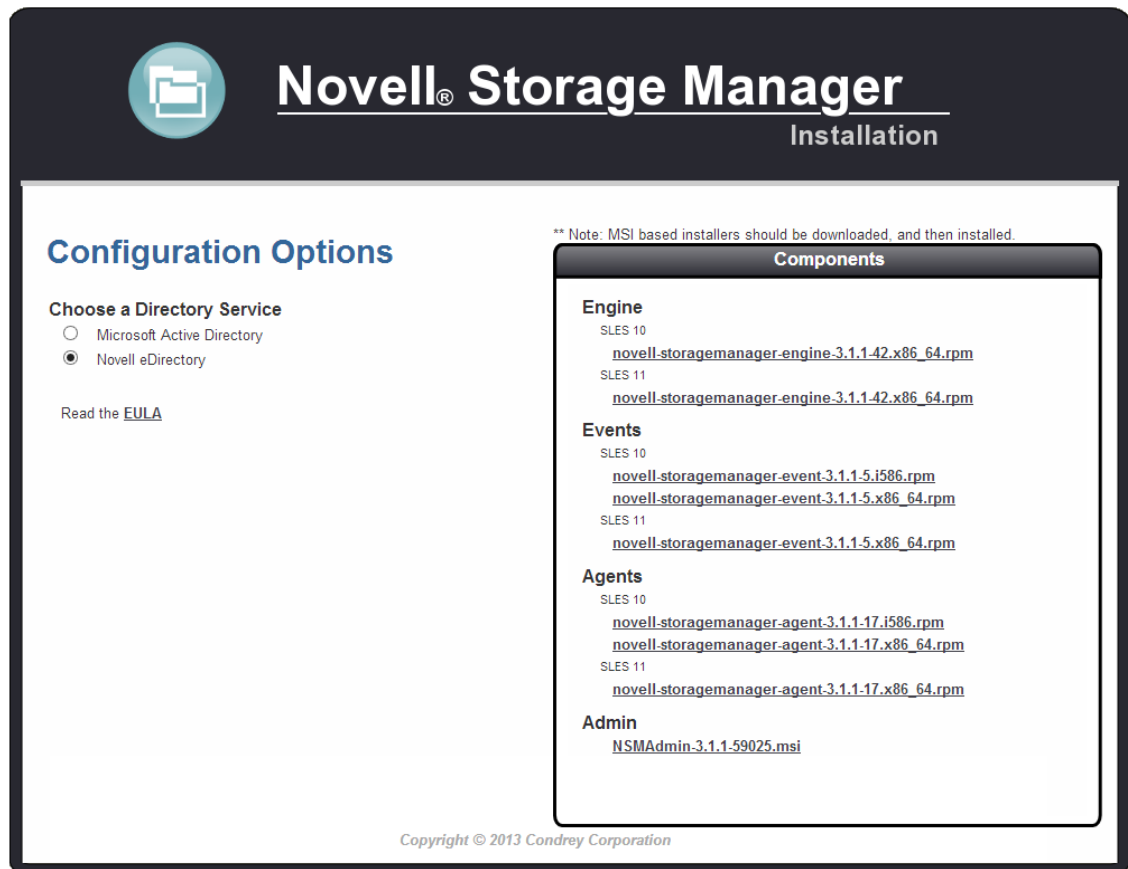
The Event Monitor can be installed on either of the following servers:

- ♦ Novell Open Enterprise Server 2 SP2a or later with an x86 or x64 processor
- ♦ SUSE Linux Enterprise Server 10 SP2 or later with an x86 or x64 processor
- ♦ Novell Open Enterprise Server 11 SP1 with Jan. 2013 Maintenance release or later

Other notable information about the Event Monitor:

- ♦ You can have multiple Event Monitors per directory tree
- ♦ The Event Monitor must be permitted to make outbound connections through the firewall

- 1 At the root of the `NSM_3_1_1.iso` image, click the `install.html` file.

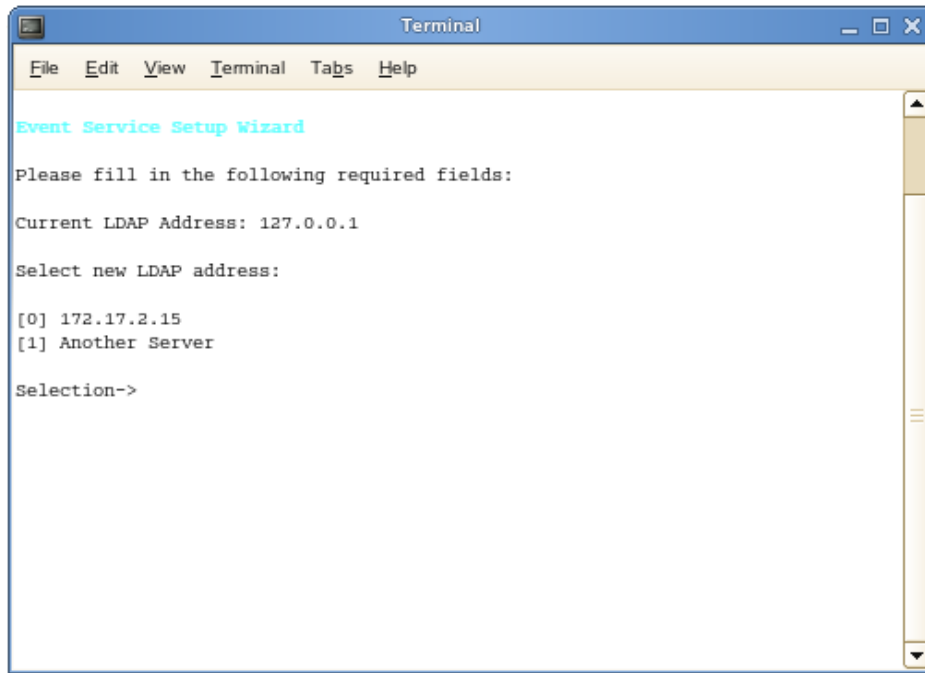


- 2 Select *Novell eDirectory*.
- 3 Under the platform on which you are installing the Event Monitor click *novell-storage-manager-event-3.1.1-x.xxxx.rpm*.
- 4 Save the RPM.
- 5 Launch a terminal session.
- 6 Upgrade the NSM Event Monitor RPM package by typing:


```
# rpm -U novell-storage-manager-event-3.1.1-x.xxxx.rpm.
```
- 7 Follow the installation procedures as directed in the Event Monitor installation interface.

3.14 Configuring the Event Monitor

- 1 From the server where you installed the Event Monitor, launch a terminal session by selecting *Computer > Gnome Terminal*.
- 2 Type `nsmevent-config` and press Enter.
The console is updated and looks similar to the one below.



```
Terminal
File Edit View Terminal Tabs Help

Event Service Setup Wizard

Please fill in the following required fields:

Current LDAP Address: 127.0.0.1

Select new LDAP address:

[0] 172.17.2.15
[1] Another Server

Selection->
```

3 Specify the IP address of the LDAP server you are going to monitor.

For example, if you are going to monitor this server, type 0. If you are going to monitor another server, type 1 and then type the IP address and other configuration information that is requested.

Event monitors should be configured to monitor at least one server per eDirectory partition ring that you care about. That is, you should monitor servers that hold a replica for each eDirectory partition that contains objects that you want to receive event data about and for which NSM will consequently manage storage.

4 Press Enter.

The console is updated and looks similar to the one below.

```

Terminal
File Edit View Terminal Tabs Help

Event Service Setup Wizard

Please fill in the following required fields:

Current LDAP Address: 127.0.0.1

Select new LDAP address:

[0] 172.17.2.15
[1] Another Server

Selection->0

Configure Ports:
Enter new port values

For each of the following, enter a port number.
(Enter zero (0) to turn off a port listener or hit [Enter] to accept
the current value.)

LDAP Port [389]:

```

- 5 Accept the default LDAP port setting by pressing Enter.
- 6 Accept the TLS-Auth LDAP SSL type by pressing Enter.
- 7 Accept the default data path by pressing Enter.

The console is updated and looks similar to the one below.

```

Terminal
File Edit View Terminal Tabs Help

Configure Ports:
Enter new port values

For each of the following, enter a port number.
(Enter zero (0) to turn off a port listener or hit [Enter] to accept
the current value.)

LDAP Port [389]:

Set LDAP SSL Type:
[0] Clear
[1] SSL
[2] TLS-Auth
[3] TLS-Full

LDAP SSL Type: [2]:

Current Data Path: /var/opt/novell/storagemanager/event
New Path->
Engine Address [127.0.0.1] : █

```

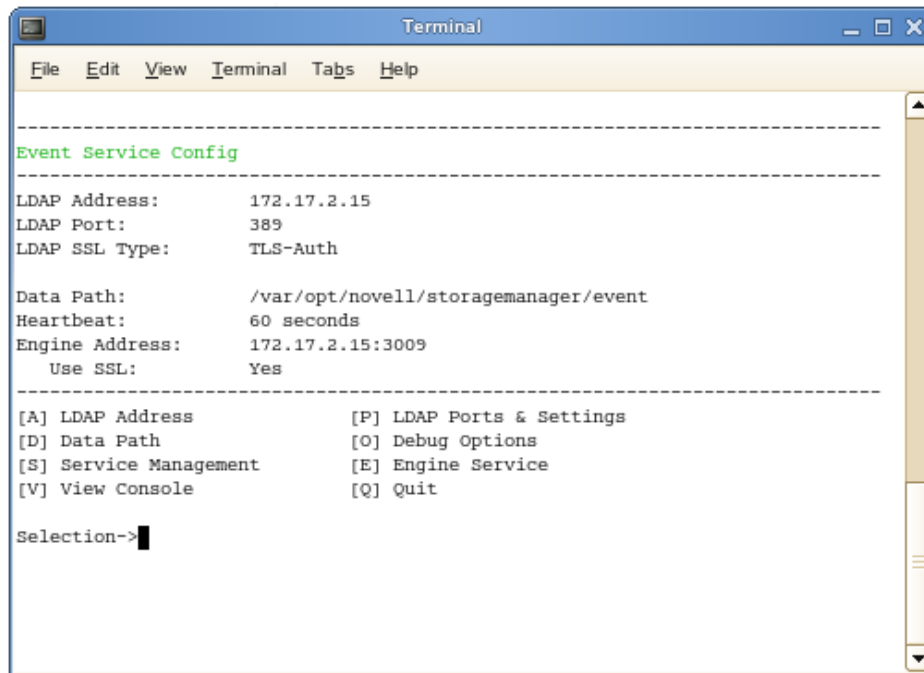
- 8 Specify the IP address of the server hosting the NSM Engine and press Enter.
You can also enter a DNS entry at this prompt.
- 9 Accept the port entry of 3009 by pressing Enter.

- 10 When you are asked if you want to start the service, press `y` for yes.

This starts the Event Monitor.

- 11 Press `Enter` to continue.

The console is updated and looks similar to the one below.



```

Terminal
-----
Event Service Config
-----
LDAP Address:      172.17.2.15
LDAP Port:        389
LDAP SSL Type:    TLS-Auth

Data Path:        /var/opt/novell/storagemanager/event
Heartbeat:        60 seconds
Engine Address:   172.17.2.15:3009
  Use SSL:        Yes
-----
[A] LDAP Address      [P] LDAP Ports & Settings
[D] Data Path         [O] Debug Options
[S] Service Management [E] Engine Service
[V] View Console     [Q] Quit

Selection->

```

At this point, you can navigate through the menu to see how to perform management tasks on the Event Monitor when necessary.

- 12 Press `q` to quit.

3.15 Upgrading an NSM Agent

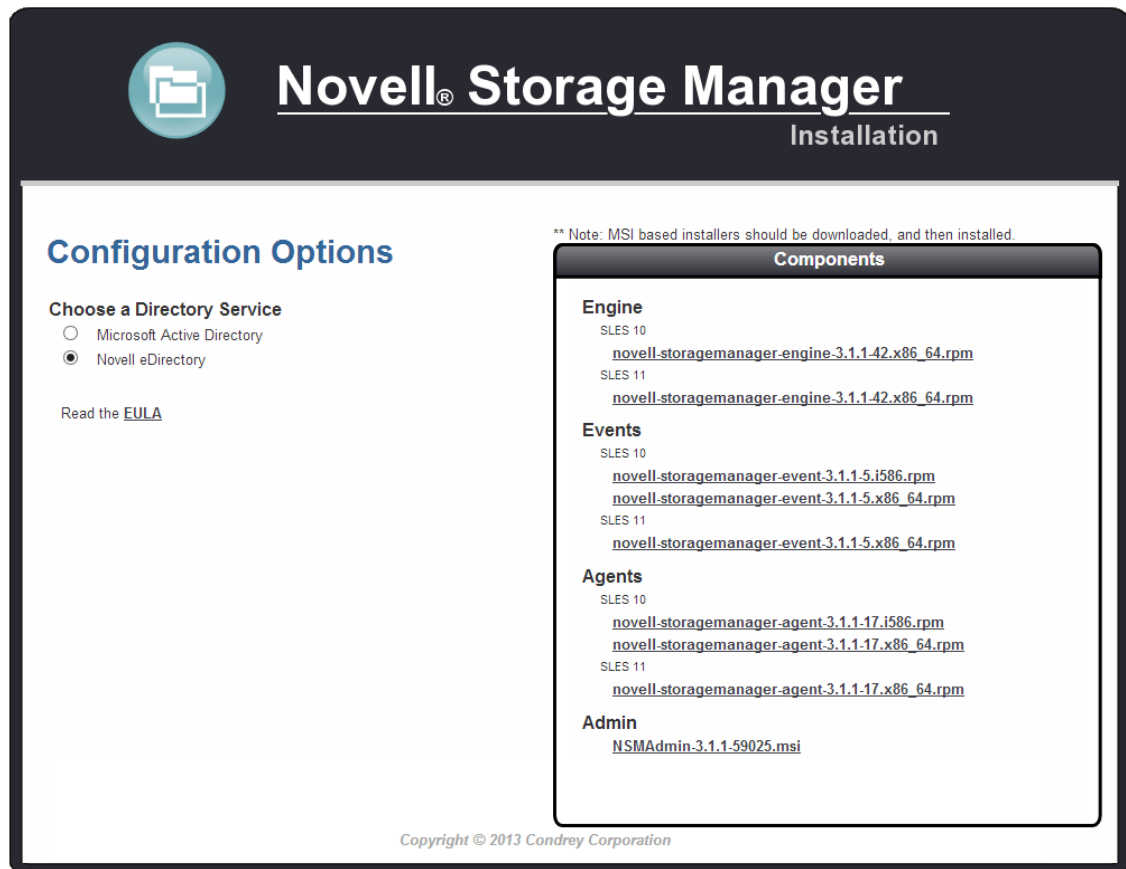
An NSM Agent can be installed on any of the following machines:

- ♦ Novell Open Enterprise Server 2 SP2a or later with an x86 or x64 processor
- ♦ Novell Open Enterprise Server 11 SP1 with Jan. 2013 Maintenance release or later

Other notable information about NSM Agents:

- ♦ The default NSM Agent port is 3011
- ♦ A firewall inbound rule for the NSM Agent is created during the installation

- 1 At the root of the `NSM_3_1_1.iso` image, click the `install.html` file.

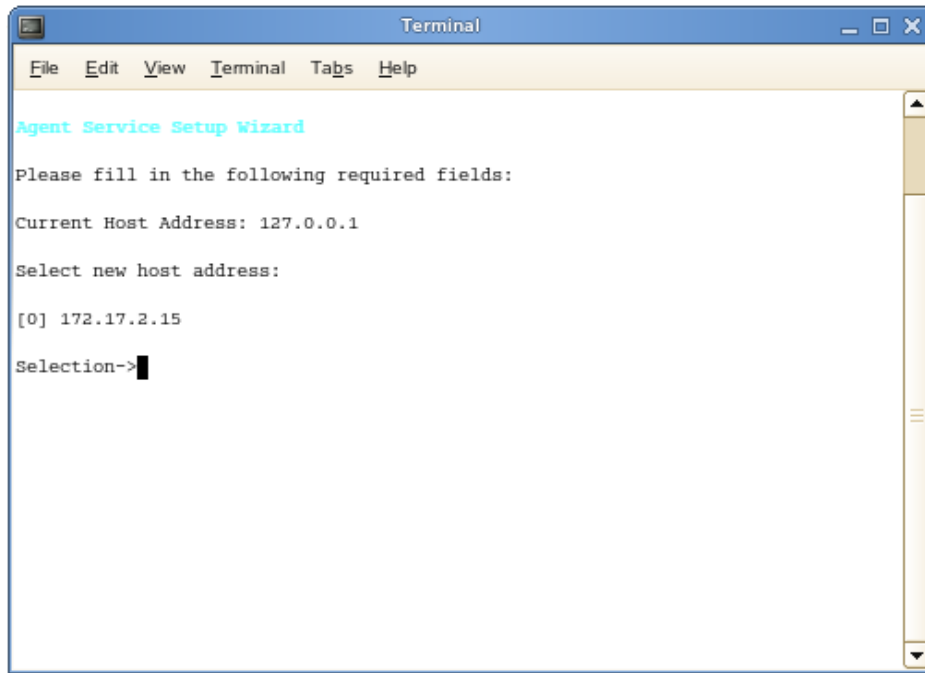


- 2 Select *Novell eDirectory*.
- 3 Under the platform on which you are installing the NSMAgent, click *novell-storage-manager-agent-3.1.1-xx.xxx.rpm*.
- 4 Save the RPM.
- 5 Launch a terminal session.
- 6 Upgrade the NSM Agent RPM package by typing:


```
# rpm -U novell-storage-manager-agent-3.1.1-xx.xxx.rpm.
```
- 7 Follow the installation procedures as directed in the NSM Agent installation interface.

3.16 Configuring an NSM Agent

- 1 From the server where you installed the NSM Agent, launch a terminal session by selecting *Computer > Gnome Terminal*.
- 2 Type `nsmagent-config` and press Enter.
The console is updated and looks similar to the one below.



```

Terminal
File Edit View Terminal Tabs Help

Agent Service Setup Wizard

Please fill in the following required fields:

Current Host Address: 127.0.0.1

Select new host address:

[0] 172.17.2.15

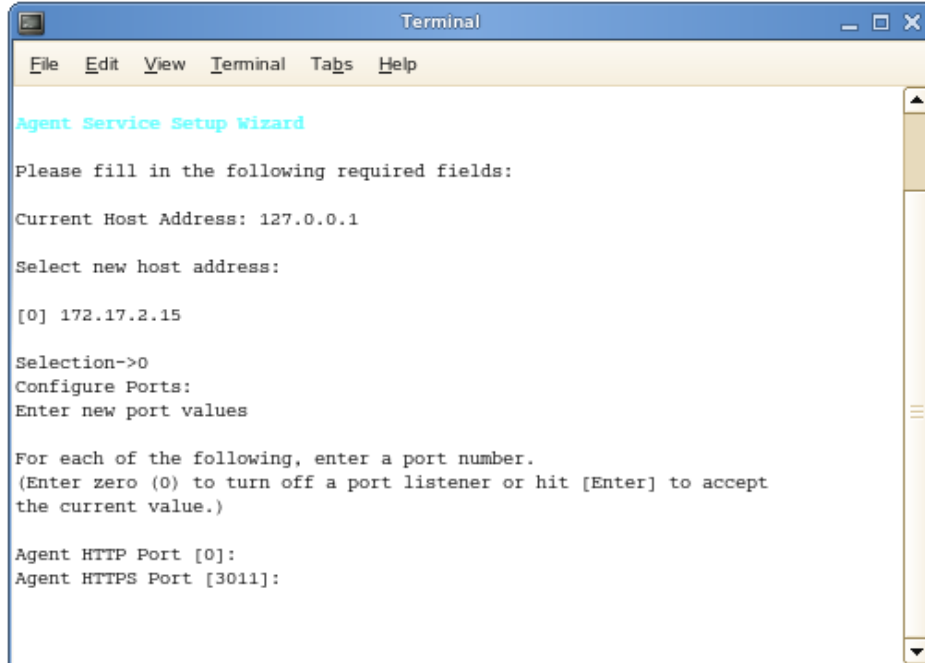
Selection->

```

If your server has multiple NIC cards, multiple IP address options are listed.

- 3 Specify the IP address option you want (such as 0 in the example above) and press Enter.
- 4 When the HTTP Port [0] option appears, type 0 and press Enter.

The console is updated and looks similar to the one below.



```

Terminal
File Edit View Terminal Tabs Help

Agent Service Setup Wizard

Please fill in the following required fields:

Current Host Address: 127.0.0.1

Select new host address:

[0] 172.17.2.15

Selection->0
Configure Ports:
Enter new port values

For each of the following, enter a port number.
(Enter zero (0) to turn off a port listener or hit [Enter] to accept
the current value.)

Agent HTTP Port [0]:
Agent HTTPS Port [3011]:

```

- 5 Accept the port setting of 3011 by pressing Enter.
- 6 Accept the default data path by pressing Enter.
- 7 When you are asked if you want to create the new data path, press y for yes.

- 8 When you are prompted for the engine address, specify the IP address for the server hosting the NSM Engine.
- 9 Accept the 3009 port setting for the NSM Engine by pressing Enter.
The console is updated and looks similar to the one below.

```

Terminal
File Edit View Terminal Tabs Help
Current Host Address: 127.0.0.1

Select new host address:

[0] 172.17.2.15

Selection->0
Configure Ports:
Enter new port values

For each of the following, enter a port number.
(Enter zero (0) to turn off a port listener or hit [Enter] to accept
the current value.)

Agent HTTP Port [0]:
Agent HTTPS Port [3011]:

Current Data Path: /var/opt/novell/storagemanager/agent/data
New Path->
Path does not exist. Create path? [Y/N]: y
Engine Address [] : 172.17.2.15
Engine Port [3009] :
Use SSL (Y/N) [Y]: █

```

- 10 When you are asked if you want to use SSL, press `y` for yes.
- 11 When you are asked if you want to start the service, press `y` for yes.
This starts the NSM Agent.
- 12 Press Enter to continue.

The console is updated and looks similar to the one below.

```

Terminal
File Edit View Terminal Tabs Help

-----
Agent Service Config
-----

Host Address:          10.112.20.1
Service Ports:        HTTPS: 3011  HTTP: 0

Data Path:             /var/opt/novell/storagemanager/agent/data
Heartbeat:             60 seconds
Engine Address:       10.112.20.1:3009
  Use SSL:             Yes
Default NCP Server Address: sawgrass-edir.brett-dev.condreycorp.com

-----
[A] Agent Address      [D] Data Path
[E] Engine Service     [N] NCP Server Address
[O] Debug Options     [P] Agent Ports
[S] Service Management [Q] Quit

Selection->█

```

At this point, you can navigate through the menu to see how to perform management tasks when necessary.

- 13 Press **q** to quit.

3.17 Authorizing the Event Monitor

- 1 In NSMAdmin, click the *Configure* tab.
- 2 Click *Event Servers*.
- 3 Select the listed server.
- 4 Click the check mark button.
- 5 When you are asked if you want to authorize the selected event monitor, click *Yes*.
- 6 When the Results page appears, click *Close*.
- 7 Proceed with [Section 3.18, "Authorizing the NSM Agents,"](#) on page 40.

3.18 Authorizing the NSM Agents

- 1 In NSMAdmin, click the *Configure* tab.
- 2 Click *Agent Servers*.
- 3 Select a listed server.
- 4 Click the check mark button.
- 5 When you are asked if you want to authorize the selected event monitor, click *Yes*.
- 6 When the Results page appears, click *Close*.

4 Upgrading from Storage Manager 3.x to 3.1.1

- ♦ [Section 4.1, “Overview,” on page 41](#)
- ♦ [Section 4.2, “Upgrading the NSM Engine,” on page 41](#)
- ♦ [Section 4.3, “Upgrading the Event Monitor,” on page 42](#)
- ♦ [Section 4.4, “Upgrading the NSM Agent,” on page 43](#)
- ♦ [Section 4.5, “Upgrading NSMAdmin,” on page 44](#)

IMPORTANT: Novell Storage Manager 3.1.1 requires a 64-bit host for the NSM Engine. If you are upgrading from a 32-bit host, the procedures in this chapter are not applicable.

4.1 Overview

The process for upgrading Novell Storage Manager 3.x to Novell Storage Manager 3.1.1 is to simply install the NSM Engine, Event Monitors, and NSM Agents on the same machines that are hosting the Novell Storage Manager components. You must also update your version of NSMAdmin.

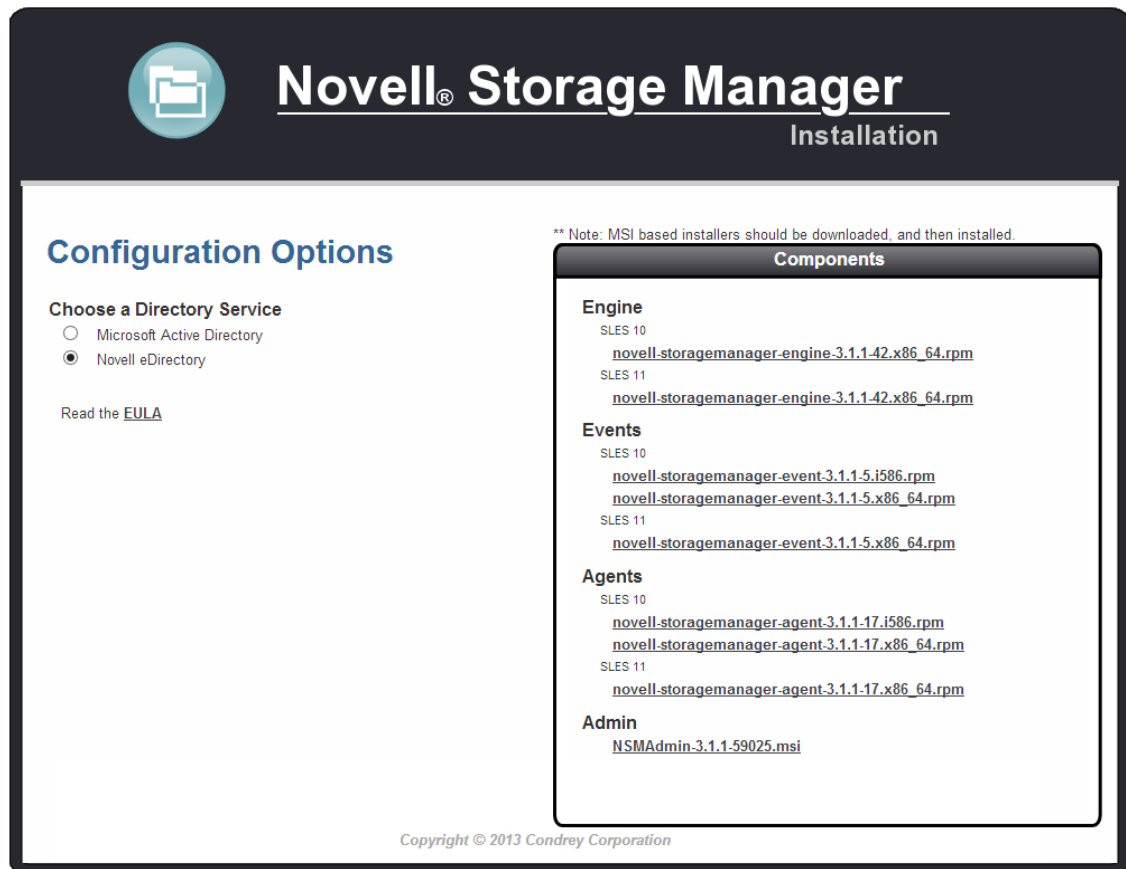
If you are upgrading from Novell Storage Manager 3.0.x, you must update the product license using NSMAdmin.

IMPORTANT: Novell Storage Manager 3.1.1 is engineered to work only with corresponding Version 3.1.1 components. In other words, if you update your NSM Engine to Version 3.1.1, you must also update all Event Monitors and NSM Agents to Version 3.1.1. In addition, you must also update your version of NSMAdmin to the new version included on your Novell Storage Manager 3.1.1 product ISO.

4.2 Upgrading the NSM Engine

NOTE: With the exception of a now mandatory 64-bit server host, the system requirements and prerequisite tasks have not changed significantly since you installed the Novell Storage Manager 3.0.x NSM Engine. Therefore, they are excluded from this section. If you want to review them, refer to [Section 5.1, “Installing the NSM Engine,” on page 53](#).

- 1 At the root of the `NSM_3_1_1.iso` image, click the `install.html` file.



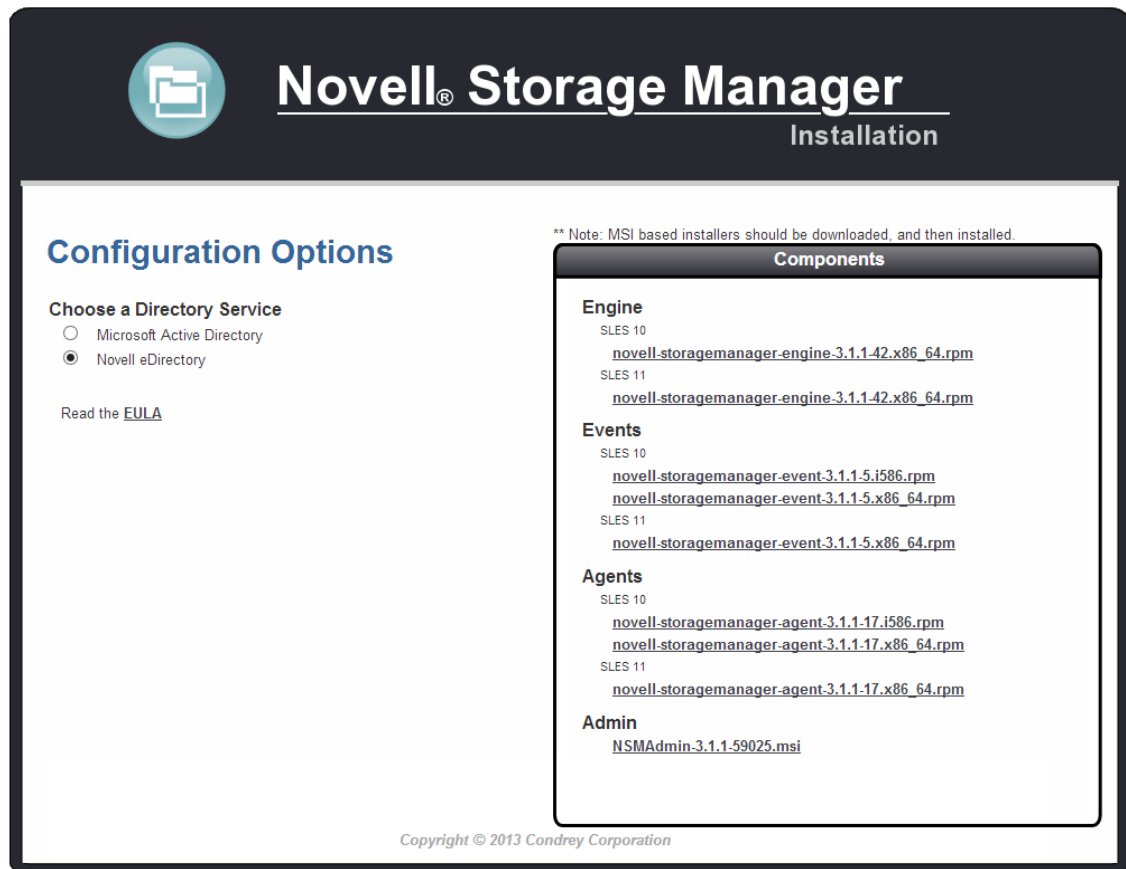
- 2 Select *Novell eDirectory*.
- 3 Under the platform on which you are installing the NSM Engine, click `novell-storage-manager-engine-3.1.1-xx.x86_64.rpm`.
- 4 Save the RPM.
- 5 Launch a terminal session.
- 6 Upgrade the NSM Engine RPM package by typing:

```
# rpm -U novell-storage-manager-engine-3.1.1-xx.x86_64.rpm
```

4.3 Upgrading the Event Monitor

NOTE: The system requirements and prerequisite tasks have not changed significantly since you installed the Novell Storage Manager 3.0.x Event Monitor. Therefore, they are excluded from this section. If you want to review them, refer to [Section 5.3, “Installing the Event Monitor,”](#) on page 56.

- 1 At the root of the `NSM_3_1_1.iso` image, click the `install.html` file.



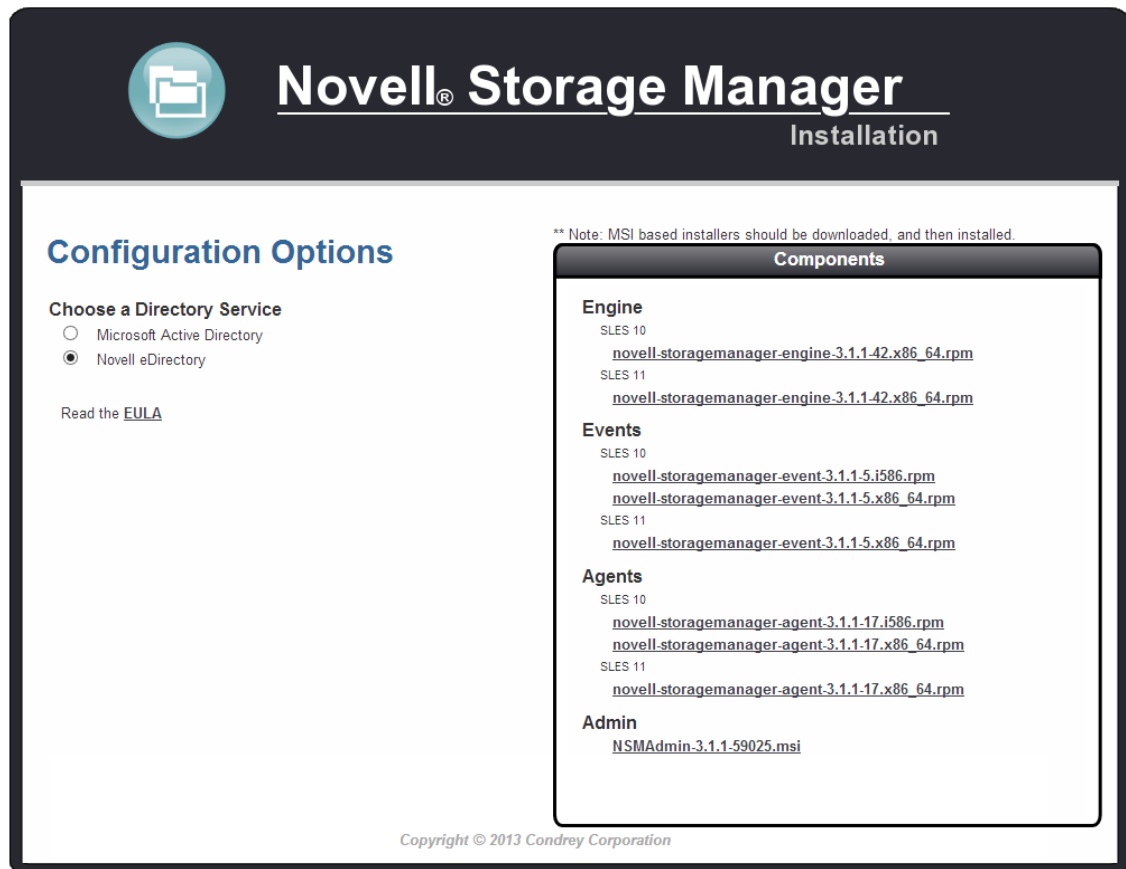
- 2 Select *Novell eDirectory*.
- 3 Under the platform on which you are installing the Event Monitor, click *novell-storage-manager-event-3.1.1-xx.xxx.rpm*.
- 4 Save the RPM.
- 5 Launch a terminal session.
- 6 Install the NSM Engine RPM package by typing:

```
# rpm -U novell-storage-manager-event-3.1.1-xx.xxx.rpm
```

4.4 Upgrading the NSM Agent

NOTE: The system requirements and prerequisite tasks have not changed significantly since you installed the Novell Storage Manager 3.0.x NSM Agent. Therefore, they are excluded from this section. If you want to review them, refer to [Section 5.5, “Installing an NSM Agent,”](#) on page 60.

- 1 At the root of the `NSM_3_1_1.iso` image, click the `install.html` file.



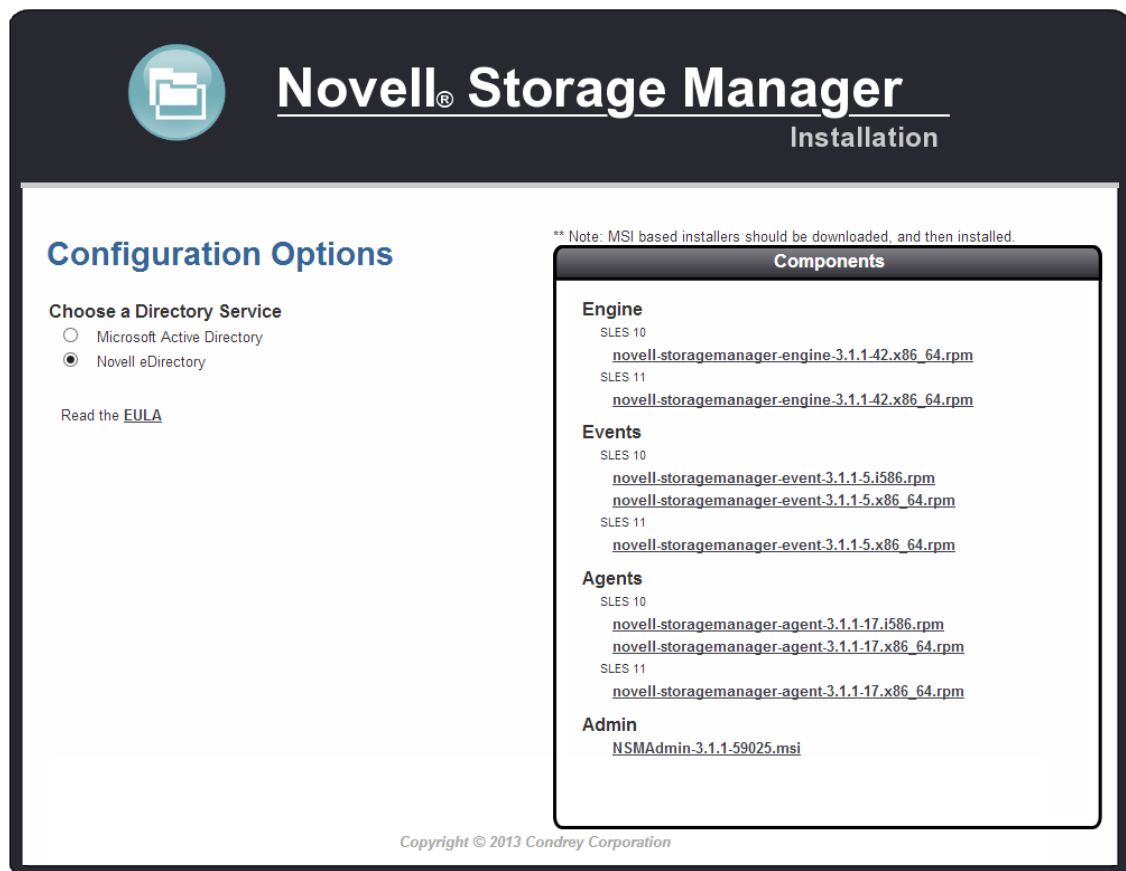
- 2 Select *Novell eDirectory*.
- 3 Under the platform on which you are installing the NSM Agent, click *novell-storage-manager-agent-3.1.1-xx.xxxx.rpm*.
- 4 Save the RPM.
- 5 Launch a terminal session.
- 6 Install the NSM Engine RPM package by typing:

```
# rpm -i novell-storage-manager-agent-3.1.1-xx.xxxx.rpm
```

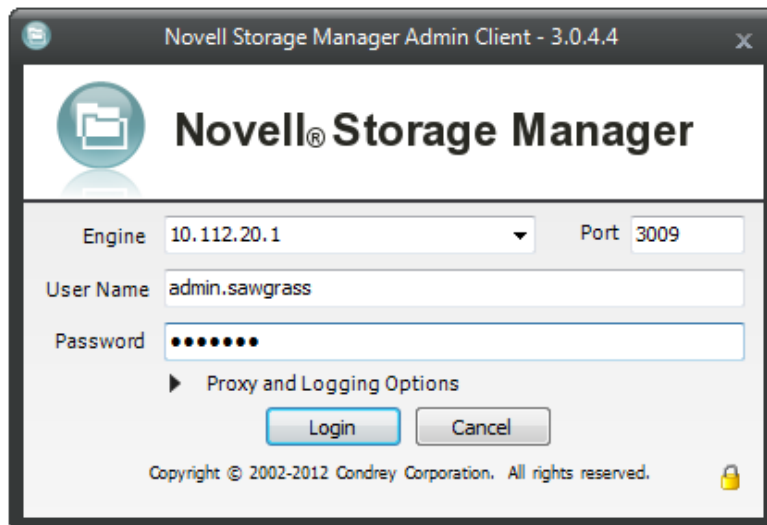
4.5 Upgrading NSMAdmin

NOTE: The system requirements and prerequisite tasks have not changed significantly since you installed the Novell Storage Manager 3.x NSMAdmin. Therefore, they are excluded from this section. If you want to review them, refer to [Section 5.7, “Installing and Configuring NSMAdmin,”](#) on [page 64](#).

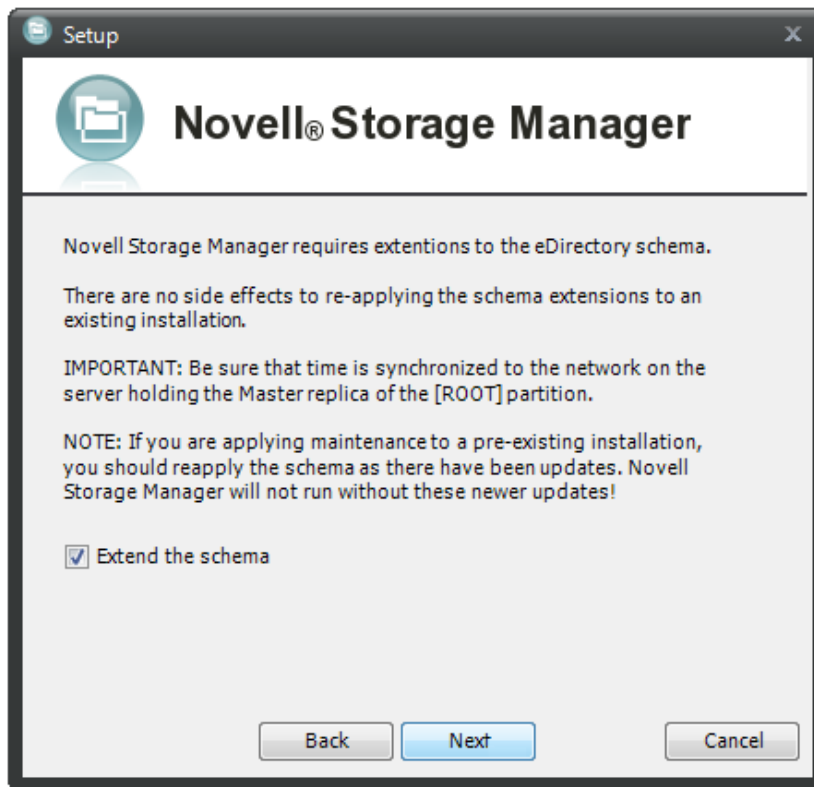
- 1 At the root of the NSM_3_1_1.iso image, click the `install.html` file.



- 2 Select *Novell eDirectory*.
- 3 Click *NSMAdmin-3.1.1-xxxx.msi*.
- 4 When asked if you want to save or run the file, save the file to the hard drive of a computer where you will administer Novell Storage Manager.
- 5 From the saved location, launch the NSMAdmin installation file.
- 6 When you are asked if you want to run this file, click *Run*.
An Introduction page appears in the NSMAdmin Installation Wizard.
- 7 Read the text and click *Next*.
- 8 Accept the license terms and click *Next*.
- 9 Accept the installation path or indicate a new path by using the *Browse* button.
To review possible locations, you can click *Disk Usage* to see all available volumes with disk size and disk availability data.
- 10 Click *Next*.
- 11 If you want to create a shortcut on the desktop, leave the *Create shortcut on Desktop* check box selected and click *Install*.
NSMAdmin is installed.
- 12 Leave the *Launch NSMAdmin 3* check box selected and click *Finish*.
NSMAdmin is launched.



- 13 In the *Engine* field, specify the DNS name or IP address.
- 14 In the *Port* field, specify the secure port number.
The default setting is 3009.
- 15 Specify the username and password.
The user must be a member of the NSMAdmins group to be able to log in.
- 16 Click *Login*.
If you are unable to log in, your proxy settings might be preventing you from doing so. Until you enter a proxy exception in your proxy settings, you can click *Proxy and Logging Options*, select *Do not use a Proxy*, then click *Login*.
The Setup Wizard welcome page appears.
- 17 Read the text on the page and click *Next*.
- 18 Do one of the following:
 - ◆ Click *Browse* to locate and select the path to the license file.
 - ◆ Click *Get a License* to obtain an evaluation license.
- 19 Click *Next*.
- 20 The following page appears, asking if you want to extend the Novell eDirectory schema.



If you plan to manage collaborative storage or auxiliary user storage, you must extend the eDirectory schema.

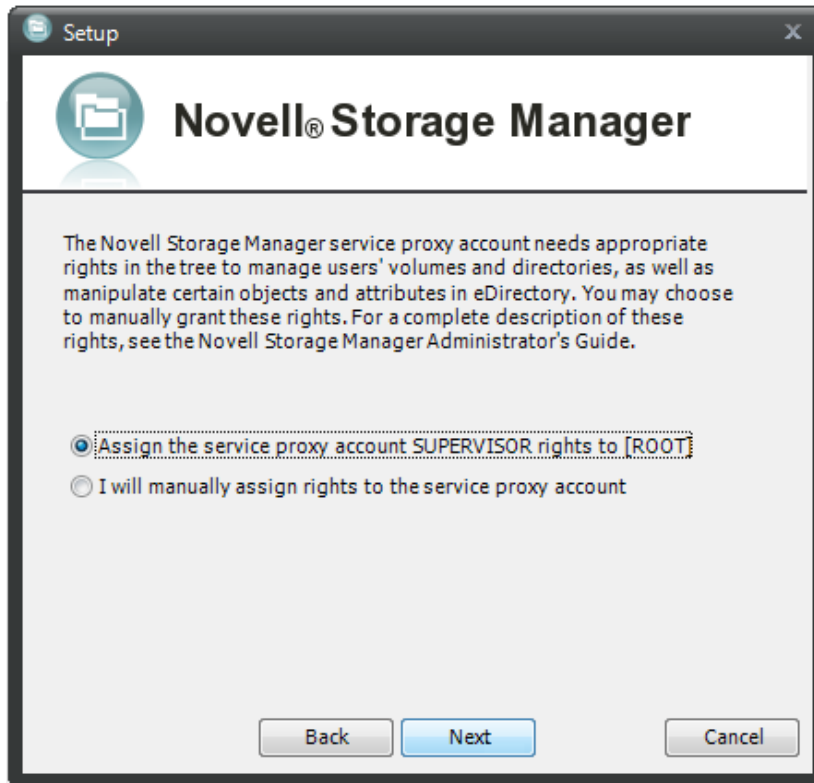
- 21 Click *Next*.

The following page appears:



- 22 Accept the account name that will be created and click *Next*.
- 23 Accept or modify the NSM Administrators group name, leave the *Add current user to NSM Administrators Group* check box selected, then click *Next*.
- 24 When you are notified that a Proxy Home share will be created on the engine's local Proxy Home source path, click *Next*.

The following page appears:



- 25** Assign the NSMProxy account Supervisor rights to the root of the directory tree by accepting the default option.

If you choose to set the rights manually, click the corresponding option.

- 26** Accept the name of the NSM Administrators group as NSMAdmins and leave the *Add current user to the ANM Administrators Group* check box selected, then click *Next*.
- 27** Because this is a new installation and not a migration from an earlier version of Novell Storage Manager, click *Next*.

You are notified that Novell Storage Manager needs to initialize its engine and subsystems.

- 28** Click *Next*.

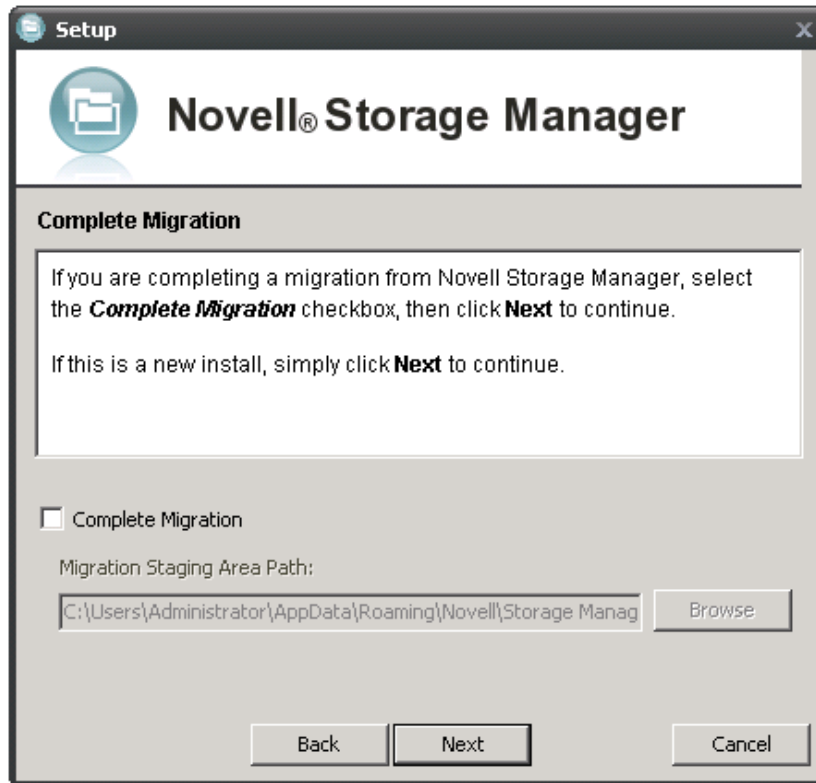
The following page appears:



- 29** Accept the default path or indicate a new path for the proxy home share, then click *Next*.

The proxy home share is the location that managed items, such as home directories, temporarily reference when they are going through a move operation.

The following page appears:



30 Click *Next*.

You are informed that Novell Storage Manager needs to initialize the NSM Engine and its subsystems.

31 Click *Next*.

32 (Conditional) If you want to now run NSMAdmin, enter your password and click *Login*.

5 Installing Novell Storage Manager 3.1.1 for eDirectory

This section provides procedures for installing the NSM Engine, NSMAdmin, the Event Monitor, and the NSM Agents. For information on how these components work in a Novell Storage Manager deployment, see the *Novell Storage Manager 3.1.1 for eDirectory Administration Guide*.

You should follow these procedures only after you have performed the prerequisite tasks in [Chapter 1, “Prerequisites,” on page 7](#), and obtained a Novell Storage Manager 3.1.1 for eDirectory product license as indicated in [Chapter 2, “Licensing the Product,” on page 11](#).

This section also provides procedures for assigning rights and privileges to the NSMProxyRights group that is created when you install NSMAdmin.

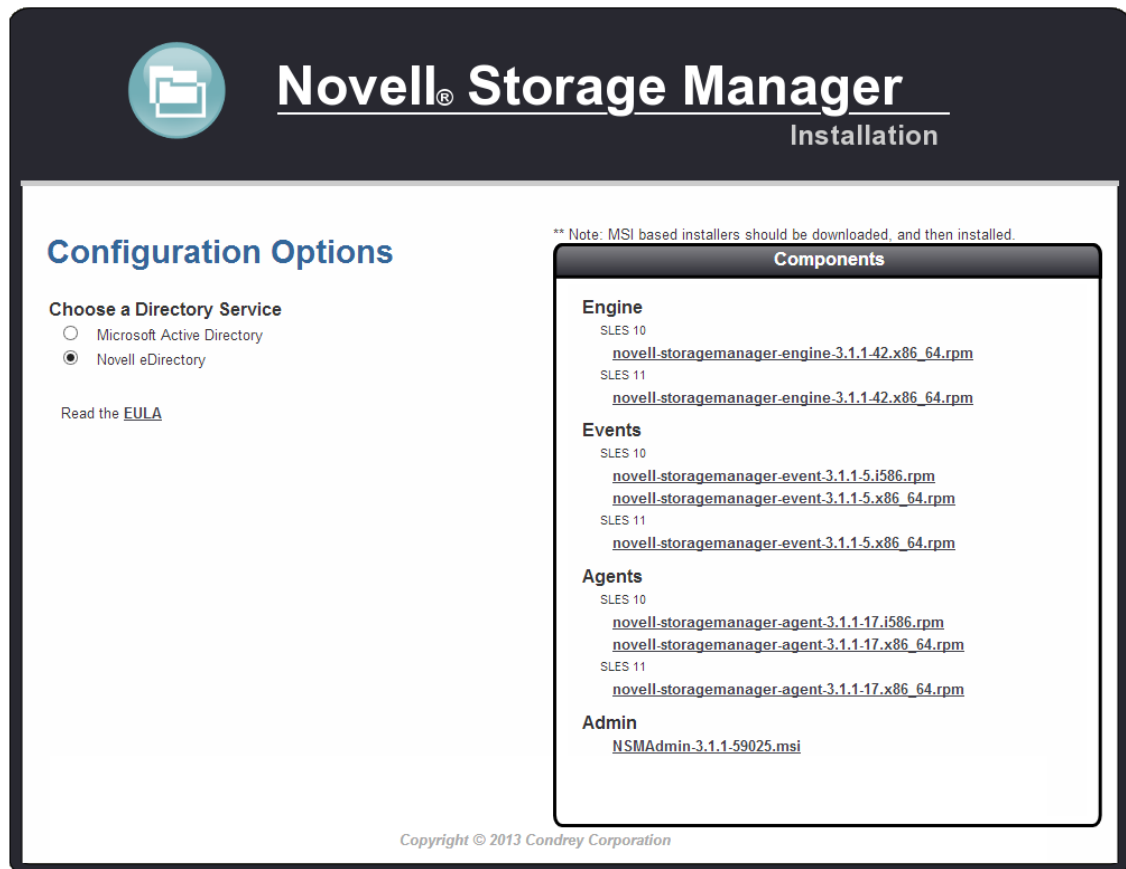
- ♦ [Section 5.1, “Installing the NSM Engine,” on page 53](#)
- ♦ [Section 5.2, “Configuring the NSM Engine,” on page 54](#)
- ♦ [Section 5.3, “Installing the Event Monitor,” on page 56](#)
- ♦ [Section 5.4, “Configuring the Event Monitor,” on page 57](#)
- ♦ [Section 5.5, “Installing an NSM Agent,” on page 60](#)
- ♦ [Section 5.6, “Configuring an NSM Agent,” on page 61](#)
- ♦ [Section 5.7, “Installing and Configuring NSMAdmin,” on page 64](#)
- ♦ [Section 5.8, “Authorizing the Event Monitor,” on page 71](#)
- ♦ [Section 5.9, “Authorizing the NSM Agents,” on page 71](#)

5.1 Installing the NSM Engine

Novell Storage Manager uses only one NSM Engine per tree. The NSM Engine can be installed on a server that meets the following minimum requirements:

- ♦ Novell Open Enterprise Server 2 SP2a or later with an x64 processor
- ♦ Novell Open Enterprise Server 11 SP1 with Jan. 2013 Maintenance release or later
- ♦ eDirectory 8.7.3.9 or later; or eDirectory 8.8 SP 2 or later

- 1 At the root of the `NSM_3_1_1.iso` image, click the `install.html` file.

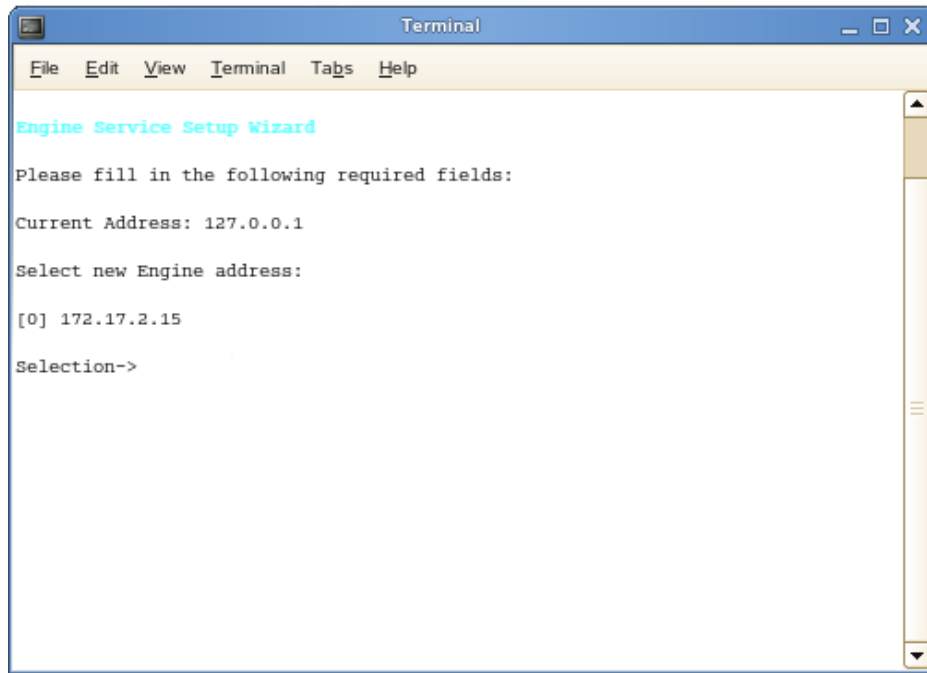


- 2 Select *Novell eDirectory*.
- 3 Under the platform on which you are installing the NSM Engine, click *novell-storage-manager-engine-3.1.1-xx.x86_64.rpm*.
- 4 Save the RPM.
- 5 Launch a terminal session.
- 6 Install the NSM Engine RPM package by typing:


```
# rpm -i novell-storage-manager-engine-3.1.1-xx.x86_64.rpm.
```
- 7 Continue with [Section 5.2, “Configuring the NSM Engine,”](#) on page 54.

5.2 Configuring the NSM Engine

- 1 At the same terminal, type `nsmengine-config` and press Enter.
The console is updated and looks similar to the one below.



```

Terminal
File Edit View Terminal Tabs Help

Engine Service Setup Wizard

Please fill in the following required fields:

Current Address: 127.0.0.1

Select new Engine address:

[0] 172.17.2.15

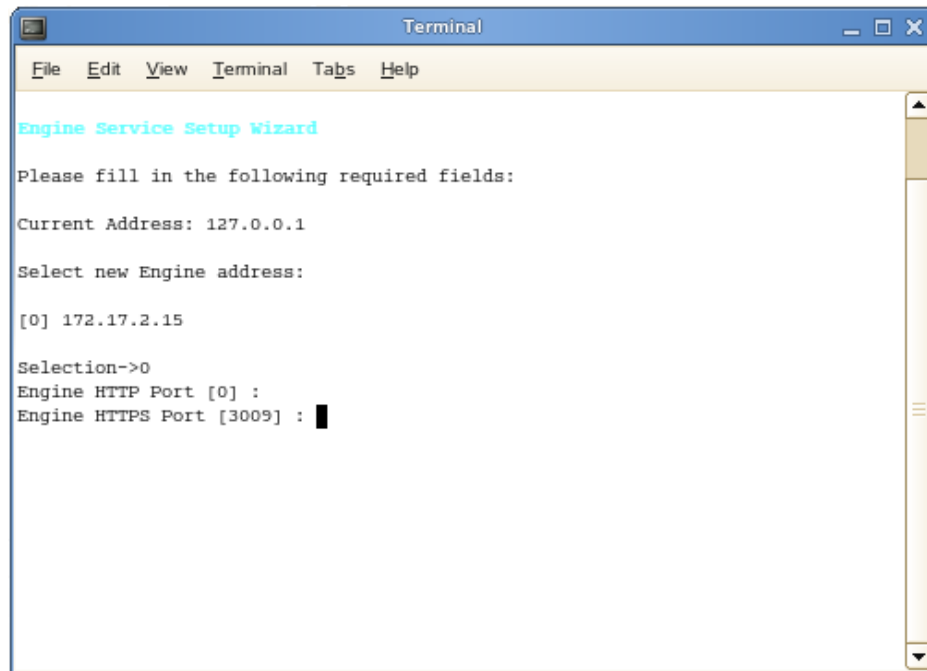
Selection->

```

If your server has multiple NIC cards, multiple IP address options are listed.

- 2 Specify the IP address of the server hosting the NSM Engine and press Enter. If the displayed IP address is correct, you can press 0.
- 3 When the HTTP Port [0] option appears, type 0 and press Enter.

The console is updated and looks similar to the one below:



```

Terminal
File Edit View Terminal Tabs Help

Engine Service Setup Wizard

Please fill in the following required fields:

Current Address: 127.0.0.1

Select new Engine address:

[0] 172.17.2.15

Selection->0
Engine HTTP Port [0] :
Engine HTTPS Port [3009] : █

```

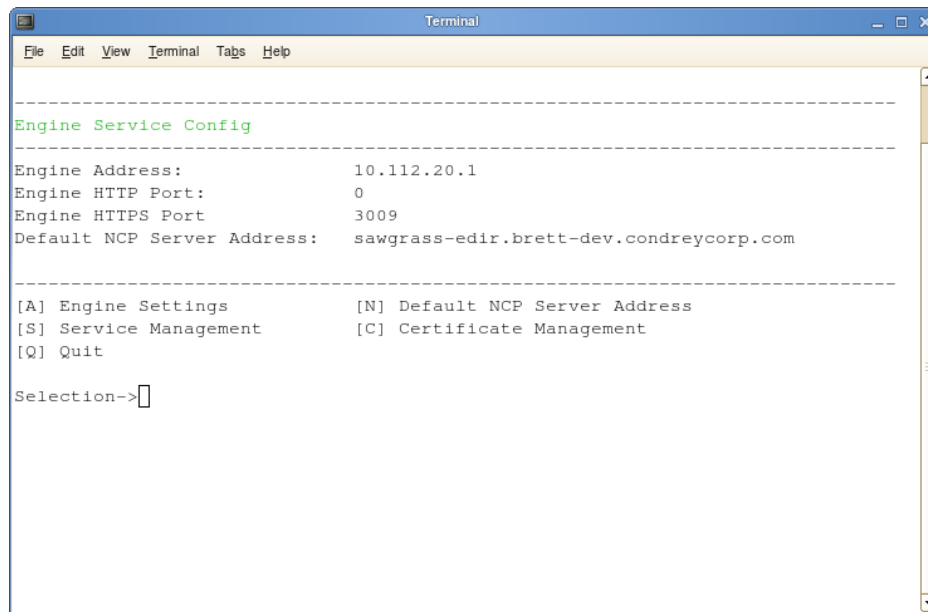
- 4 Unless there is a conflict, accept the default HTTPS port number of 3009 by pressing Enter. If you need to use another port number, provide the new port number.

- 5 When you are asked if you want to start the service, click **Y** for yes.

This starts the NSM Engine.

- 6 Press **Enter** to continue.

The console is updated and looks similar to the one below.



```

Terminal
-----
Engine Service Config
-----
Engine Address:          10.112.20.1
Engine HTTP Port:       0
Engine HTTPS Port:      3009
Default NCP Server Address: sawgrass-edir.brett-dev.condreycorp.com
-----
[A] Engine Settings      [N] Default NCP Server Address
[S] Service Management   [C] Certificate Management
[Q] Quit

Selection->

```

At this point, you can navigate through the menu to see how to perform management tasks on the NSM Engine when necessary.

- 7 Press **q** to quit.

5.3 Installing the Event Monitor

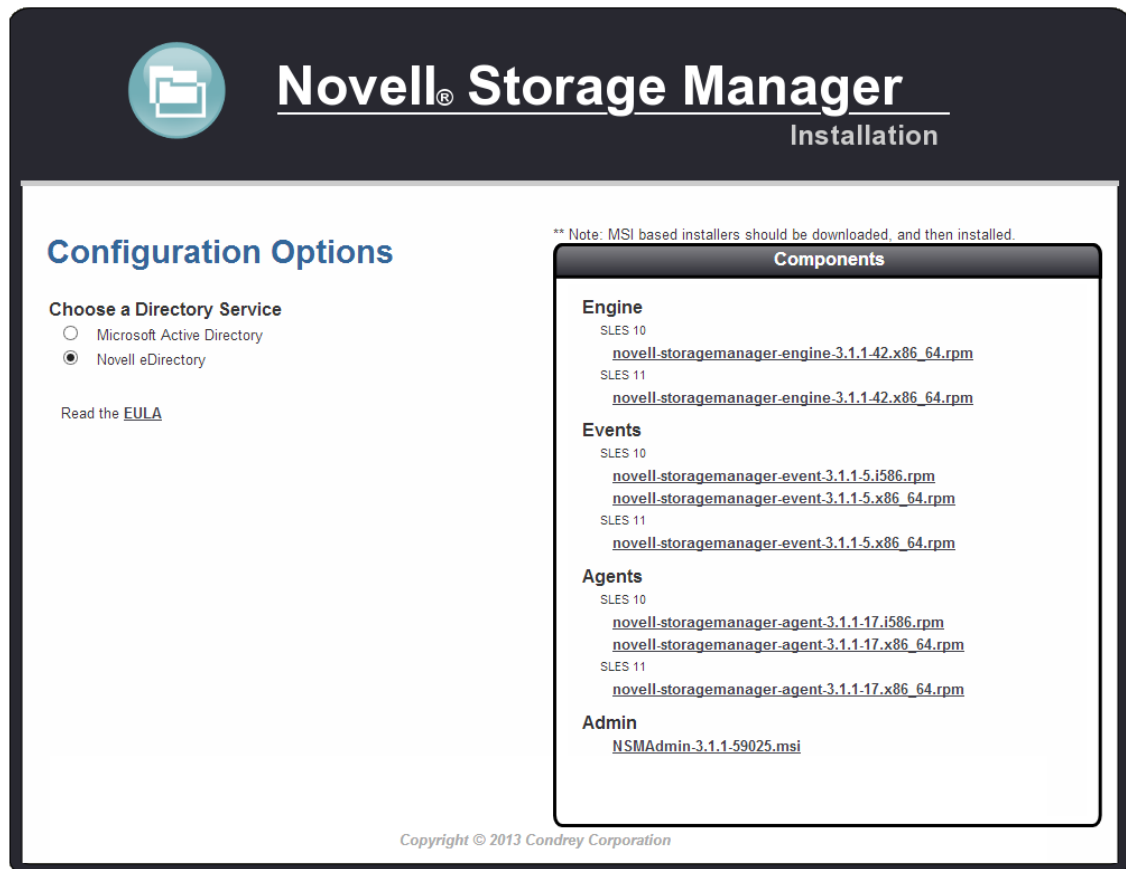
The Event Monitor can be installed on any of the following servers:

- ♦ Novell Open Enterprise Server 2 SP2a or later with an x86 or x64 processor
- ♦ SUSE Linux Enterprise Server 10 SP2 or later with an x86 or x64 processor
- ♦ Novell Open Enterprise Server 11 SP1 with Jan. 2013 Maintenance release or later

Other notable information about the Event Monitor:

- ♦ You can have multiple Event Monitors per directory tree.
- ♦ As a best practice, Novell recommends two Event Monitors per replica ring
- ♦ The Event Monitor must be permitted to make outbound connections through the firewall

- 1 At the root of the `NSM_3_1_1.iso` image, click the `install.html` file.



- 2 Select *Novell eDirectory*.
- 3 Under the platform on which you are installing the Event Monitor click *novell-storage-manager-event-3.1.1-xx.xxx.rpm*.
- 4 Save the RPM.
- 5 Launch a terminal session.
- 6 Install the Event Monitor RPM package by typing:

```
# rpm -i novell-storage-manager-event-3.1.1-xx.xxx.rpm.
```

- 7 Continue with [Section 5.4, "Configuring the Event Monitor,"](#) on page 57.

5.4 Configuring the Event Monitor

- 1 At the same terminal, type `nsmevent-config` and press Enter.
The console is updated and looks similar to the one below.

```

Terminal
File Edit View Terminal Tabs Help

Event Service Setup Wizard

Please fill in the following required fields:

Current LDAP Address: 127.0.0.1

Select new LDAP address:

[0] 172.17.2.15
[1] Another Server

Selection->

```

2 Specify the IP address of the server you are going to monitor.

For example, if you are going to monitor this server, type 0. If you are going to monitor another server, type 1 and then type the IP address and other configuration information that is requested.

Event monitors should be configured to monitor at least one server per eDirectory partition ring that you care about. That is, you should monitor servers that hold a replica for each eDirectory partition that contains objects that you want to receive event data about and for which NSM will consequently manage storage.

3 Press Enter.

The console is updated and looks similar to the one below.

```

Terminal
File Edit View Terminal Tabs Help

Event Service Setup Wizard

Please fill in the following required fields:

Current LDAP Address: 127.0.0.1

Select new LDAP address:

[0] 172.17.2.15
[1] Another Server

Selection->0

Configure Ports:
Enter new port values

For each of the following, enter a port number.
(Enter zero (0) to turn off a port listener or hit [Enter] to accept
the current value.)

LDAP Port [389]:

```

- 4 Accept the default LDAP port setting by pressing Enter.
- 5 Accept the TLS-Auth LDAP SSL type by pressing Enter.
- 6 Accept the default data path by pressing Enter.

The console is updated and looks similar to the one below.

```

Terminal
File Edit View Terminal Tabs Help

Configure Ports:
Enter new port values

For each of the following, enter a port number.
(Enter zero (0) to turn off a port listener or hit [Enter] to accept
the current value.)

LDAP Port [389]:

Set LDAP SSL Type:
[0] Clear
[1] SSL
[2] TLS-Auth
[3] TLS-Full

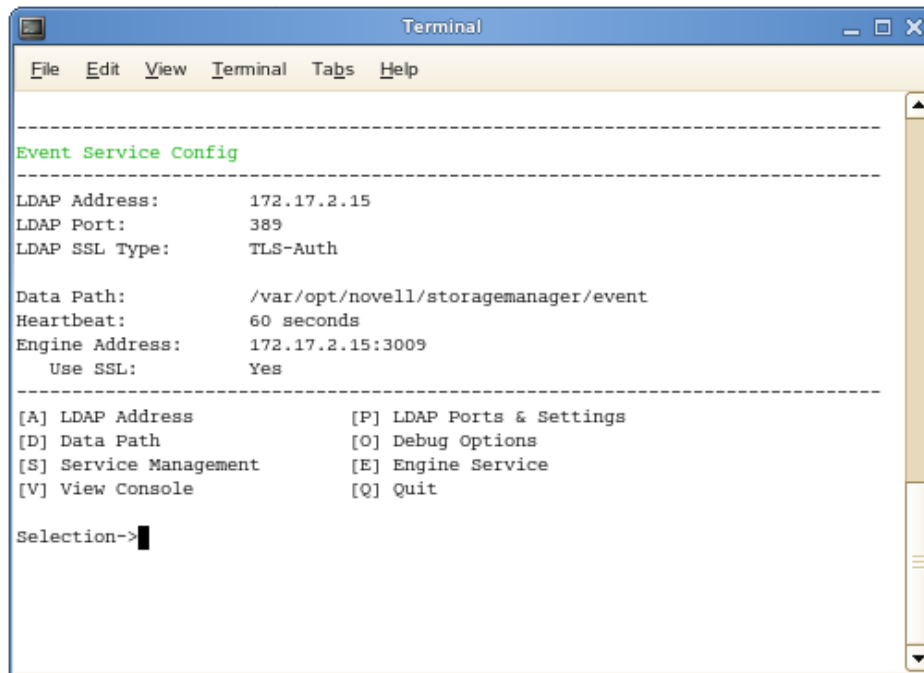
LDAP SSL Type: [2]:

Current Data Path: /var/opt/novell/storagemanager/event
New Path->
Engine Address [127.0.0.1] : █

```

- 7 Specify the IP address of the server hosting the NSM Engine and press Enter.
You can also enter a DNS entry at this prompt.
- 8 Accept the port entry of 3009 by pressing Enter.

- 9 When you are asked if you want to start the service, press `y` for yes.
This starts the Event Monitor.
- 10 Press `Enter` to continue.
The console is updated and looks similar to the one below.



```

Terminal
-----
Event Service Config
-----
LDAP Address:      172.17.2.15
LDAP Port:        389
LDAP SSL Type:    TLS-Auth

Data Path:        /var/opt/novell/storagemanager/event
Heartbeat:        60 seconds
Engine Address:   172.17.2.15:3009
  Use SSL:        Yes
-----
[A] LDAP Address          [P] LDAP Ports & Settings
[D] Data Path             [O] Debug Options
[S] Service Management    [E] Engine Service
[V] View Console          [Q] Quit

Selection->

```

At this point, you can navigate through the menu to see how to perform management tasks on the Event Monitor when necessary.

- 11 Press `q` to quit.

5.5 Installing an NSM Agent

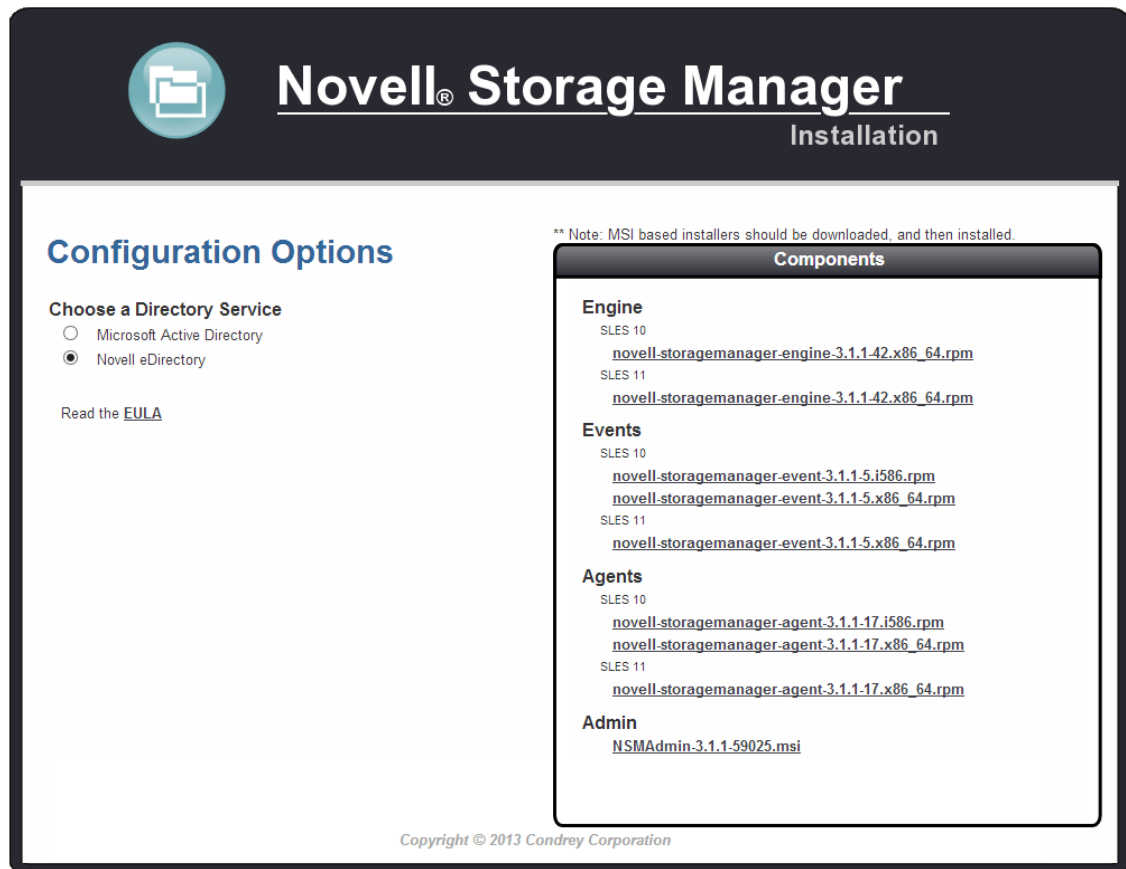
An NSM Agent can be installed on any of the following machines:

- ♦ Novell Open Enterprise Server 2 SP2a or later with an x86 or x64 processor
- ♦ Novell Open Enterprise Server 11 SP1 with Jan. 2013 Maintenance release or later

Other notable information about NSM Agents:

- ♦ The default NSM Agent port is 3011
- ♦ A firewall inbound rule for the NSM Agent is created during the installation

- 1 At the root of the `NSM_3_1_1.iso` image, click the `install.html` file.



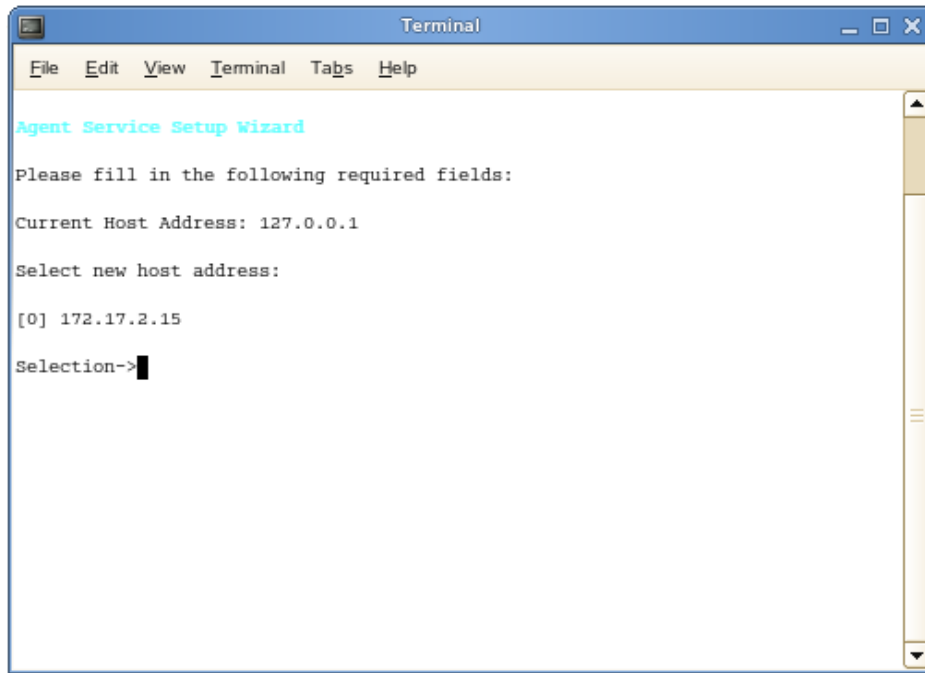
- 2 Select *Novell eDirectory*.
- 3 Under the platform on which you are installing the NSM Agent, click *novell-storage-manager-agent-3.1.1-xx.xxxx.rpm*.
- 4 Save the RPM.
- 5 Launch a terminal session.
- 6 Install the NSM Engine RPM package by typing:

```
# rpm -i novell-storage-manager-agent-3.1.1-xx.xxxx.rpm.
```

- 7 Continue with [Section 5.6, “Configuring an NSM Agent,”](#) on page 61.

5.6 Configuring an NSM Agent

- 1 From the same terminal, type `nsmagent-config` and press Enter.
The console is updated and looks similar to the one below.



```

Terminal
File Edit View Terminal Tabs Help

Agent Service Setup Wizard

Please fill in the following required fields:

Current Host Address: 127.0.0.1

Select new host address:

[0] 172.17.2.15

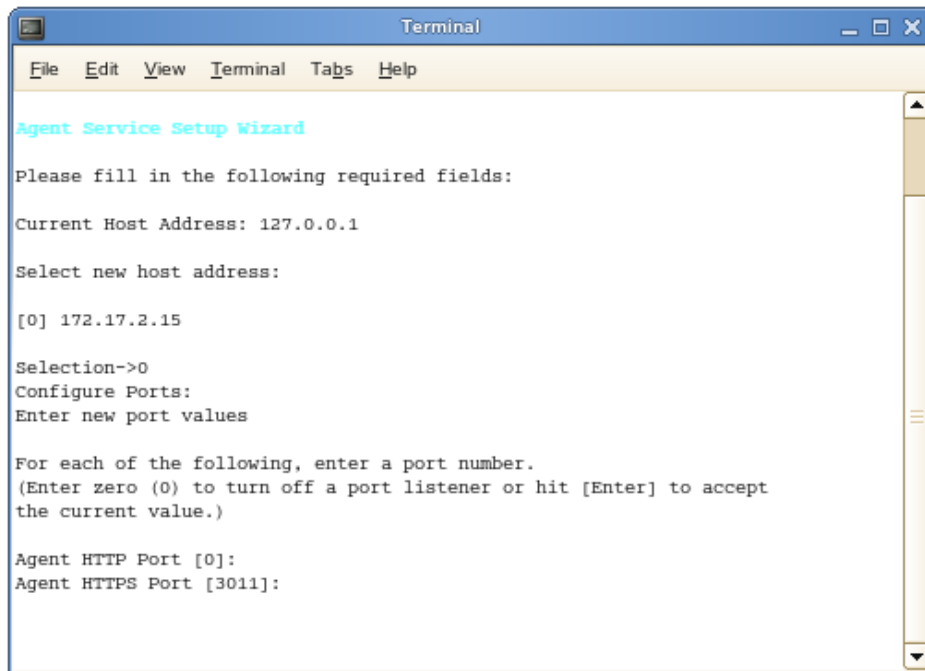
Selection->

```

If your server has multiple NIC cards, multiple IP address options are listed.

- 2 Specify the IP address of the server hosting the NSM Agent and press Enter. If the displayed IP address is correct, you can press 0.
- 3 When the HTTP Port [0] option appears, type 0 and press Enter.

The console is updated and looks similar to the one below.



```

Terminal
File Edit View Terminal Tabs Help

Agent Service Setup Wizard

Please fill in the following required fields:

Current Host Address: 127.0.0.1

Select new host address:

[0] 172.17.2.15

Selection->0
Configure Ports:
Enter new port values

For each of the following, enter a port number.
(Enter zero (0) to turn off a port listener or hit [Enter] to accept
the current value.)

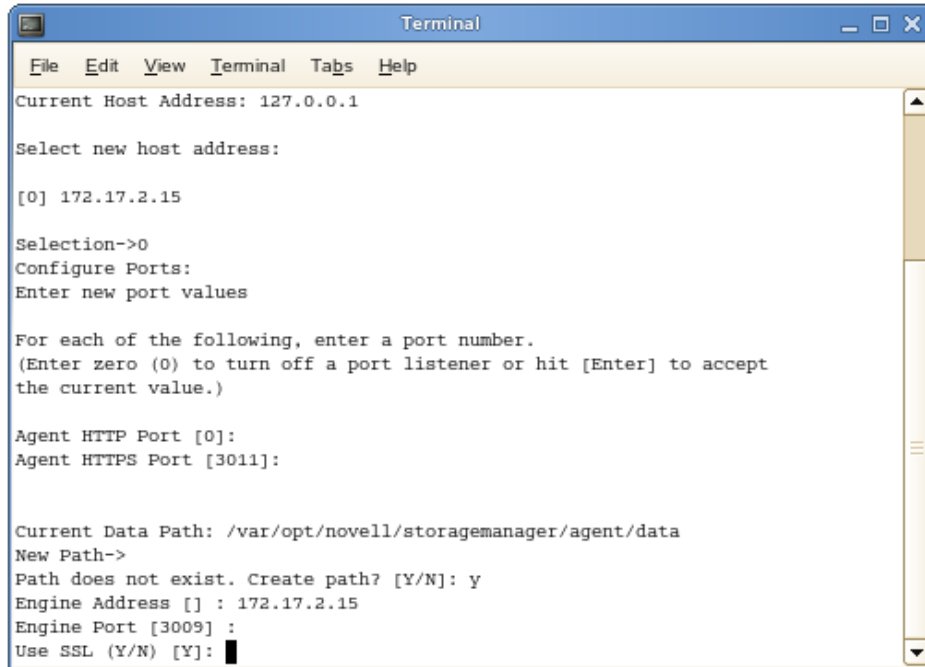
Agent HTTP Port [0]:
Agent HTTPS Port [3011]:

```

- 4 Accept the port setting of 3011 by pressing Enter.
- 5 Accept the default data path by pressing Enter.

- 6 When you are asked if you want to create the new data path, press `y` for yes.
- 7 When you are prompted for the engine address, specify the IP address for the server hosting the NSM Engine.
- 8 Accept the 3009 port setting for the NSM Engine by pressing Enter.

The console is updated and looks similar to the one below.



```

Terminal
File Edit View Terminal Tabs Help
Current Host Address: 127.0.0.1

Select new host address:

[0] 172.17.2.15

Selection->0
Configure Ports:
Enter new port values

For each of the following, enter a port number.
(Enter zero (0) to turn off a port listener or hit [Enter] to accept
the current value.)

Agent HTTP Port [0]:
Agent HTTPS Port [3011]:

Current Data Path: /var/opt/novell/storagemanager/agent/data
New Path->
Path does not exist. Create path? [Y/N]: y
Engine Address [] : 172.17.2.15
Engine Port [3009] :
Use SSL (Y/N) [Y]: █

```

- 9 When you are asked if you want to use SSL, press `y` for yes.
- 10 When you are asked if you want to start the service, press `y` for yes.
- 11 Press Enter to continue.

This starts the NSM Agent.

The console is updated and looks similar to the one below.

```

Terminal
-----
Agent Service Config
-----
Host Address:                10.112.20.1
Service Ports:              HTTPS: 3011  HTTP: 0

Data Path:                   /var/opt/novell/storagemanager/agent/data
Heartbeat:                   60 seconds
Engine Address:              10.112.20.1:3009
  Use SSL:                    Yes
Default NCP Server Address:  sawgrass-edir.brett-dev.condreycorp.com
-----
[A] Agent Address           [D] Data Path
[E] Engine Service         [N] NCP Server Address
[O] Debug Options          [P] Agent Ports
[S] Service Management     [Q] Quit

Selection->

```

At this point, you can navigate through the menu to see how to perform management tasks when necessary.

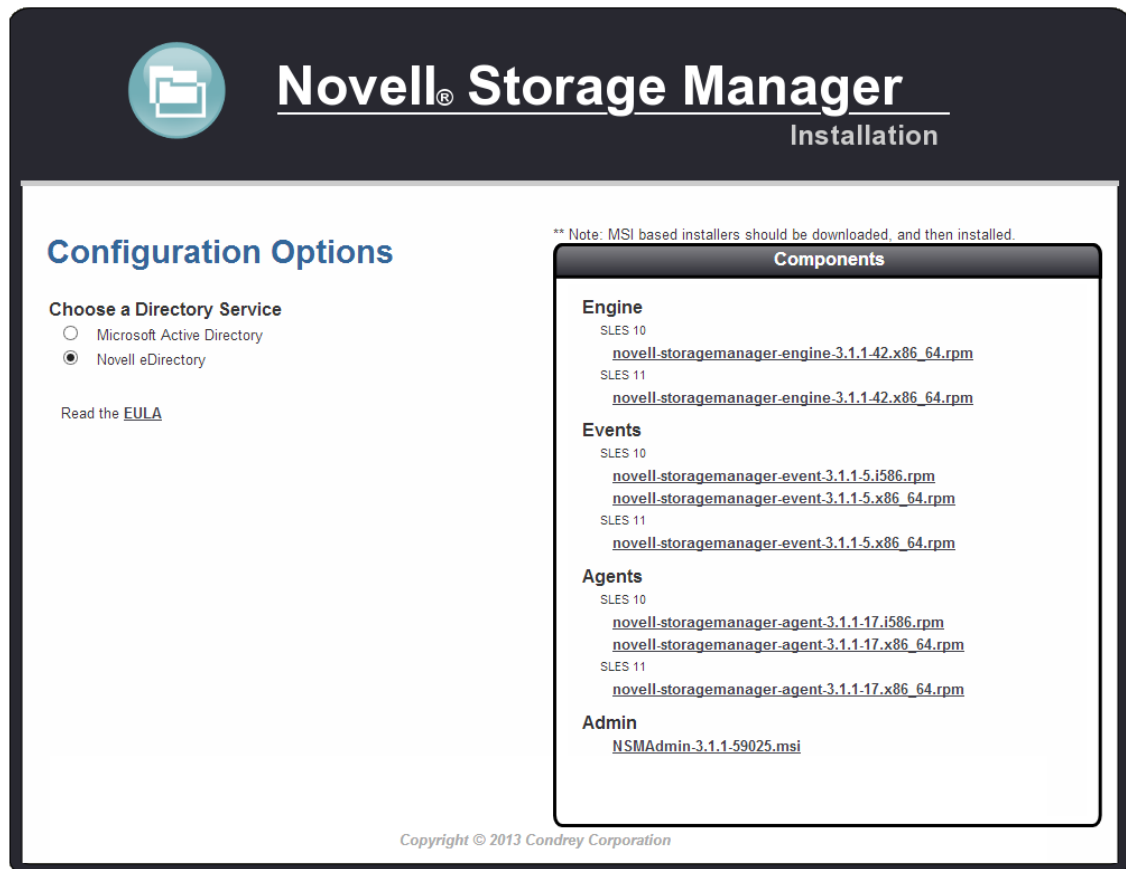
- 12 Press `q` to quit.

5.7 Installing and Configuring NSMAdmin

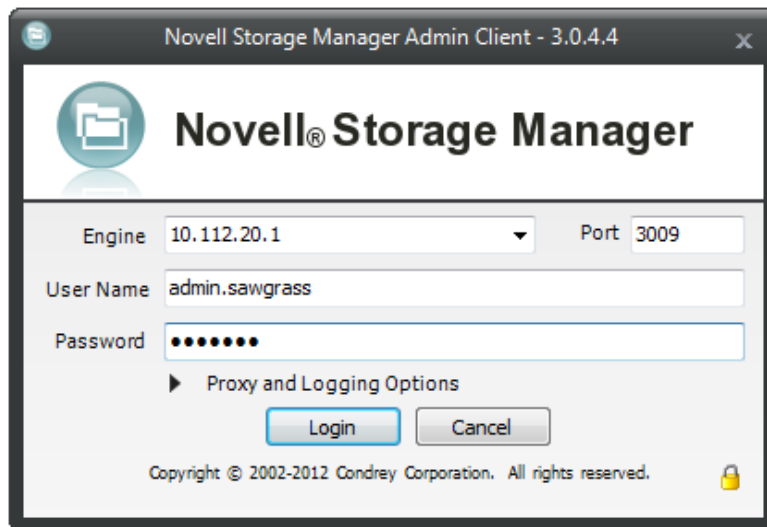
NSMAdmin is the administrative interface for Novell Storage Manager. It can be installed on a Windows server or workstation that meets the following minimum requirements:

- ♦ Windows platform (Windows 7, Vista, XP SP3, and Windows Server 2012, 2008, or 2003)
- ♦ .NET 3.5 Framework and .NET 4.0 (Full) Framework installed.
- ♦ .NET security settings are adjusted if you are running the executable from a network drive (optional)

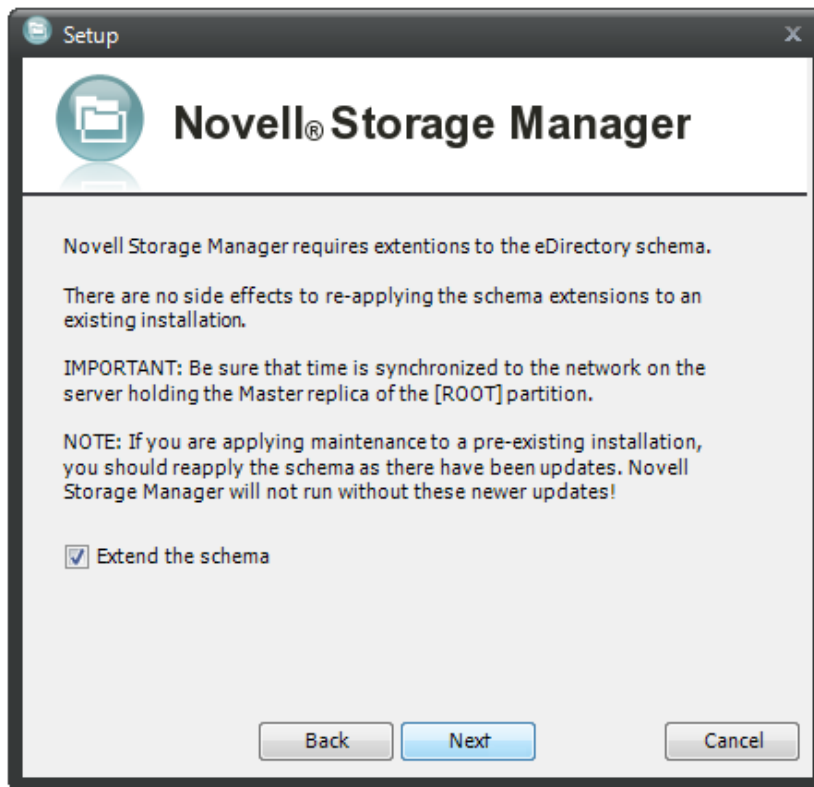
- 1 At the root of the `NSM_3_1_1.iso` image, click the `install.html` file.



- 2 Select *Novell eDirectory*.
- 3 Click *NSMAdmin-3.1.1-xxxx.msi*.
- 4 When asked if you want to save or run the file, save the file to the hard drive of a computer where you will administer Novell Storage Manager.
- 5 From the saved location, launch the NSMAdmin installation file.
- 6 When you are asked if you want to run this file, click *Run*.
An Introduction page appears in the NSMAdmin Installation Wizard.
- 7 Read the text and click *Next*.
- 8 Accept the license terms and click *Next*.
- 9 Accept the installation path or indicate a new path by using the *Browse* button.
To review possible locations, you can click *Disk Usage* to see all available volumes with disk size and disk availability data.
- 10 Click *Next*.
- 11 If you want to create a shortcut on the desktop, leave the *Create shortcut on Desktop* check box selected and click *Install*.
NSMAdmin is installed.
- 12 Leave the *Launch NSMAdmin 3* check box selected and click *Finish*.
NSMAdmin is launched.



- 13 In the *Engine* field, specify the DNS name or IP address.
- 14 In the *Port* field, specify the secure port number.
The default setting is 3009.
- 15 Specify the username and password.
The user must be a member of the NSMAdmins group to be able to log in.
- 16 Click *Login*.
If you are unable to log in, your proxy settings might be preventing you from doing so. Until you enter a proxy exception in your proxy settings, you can click *Proxy and Logging Options*, select *Do not use a Proxy*, then click *Login*.
The Setup Wizard welcome page appears.
- 17 Read the text on the page and click *Next*.
- 18 Do one of the following:
 - ◆ Click *Browse* to locate and select the path to the license file
 - ◆ Click *Get a License* to obtain an evaluation license
- 19 Click *Next*.
- 20 The following page appears, asking if you want to extend the Novell eDirectory schema.



If you plan to manage collaborative storage or auxiliary user storage, you must extend the eDirectory schema.

- 21 Click *Next*.

The following page appears:



- 22 Accept the account name that will be created and click *Next*.
- 23 Accept or modify the NSM Administrators' Group name, leave the *Add current user to NSM Administrators Group* check box selected, then click *Next*.
- 24 When you are notified that a Proxy Home share will be created on the engine's local Proxy Home source path, click *Next*.

The following page appears:



- 25** Assign the NSMProxy account Supervisor rights to the root of the directory tree by accepting the default option.

If you choose to set the rights manually, click the corresponding option.

- 26** Accept the name of the NSM Administrators group as NSMAdmins and leave the *Add current user to the ANM Administrators Group* check box selected, then click *Next*.
- 27** Because this is a new installation and not a migration from an earlier version of Novell Storage Manager, click *Next*.

You are notified that Novell Storage Manager needs to initialize its engine and subsystems.

- 28** Click *Next*.

The following page appears:



- 29** Accept the default path or indicate a new path for the proxy home share, then click *Next*.

The proxy home share is the location that managed items such as home directories temporarily reference when they are going through a move operation.

The following page appears:



- 30 Because this is a new installation and not a migration from an earlier version of Novell Storage Manager, click *Next*.
You are informed that Novell Storage Manager needs to initialize the NSM Engine and its subsystems.
- 31 Click *Next*.
- 32 When you are prompted, enter your password and click *Login*.
- 33 Proceed with [Section 5.8, “Authorizing the Event Monitor,”](#) on page 71.

5.8 Authorizing the Event Monitor

- 1 In NSMAdmin, click the *Configure* tab.
- 2 Click *Event Servers*.
- 3 Select the listed server.
- 4 Click the check mark button.
- 5 When you are asked if you want to authorize the selected event monitor, click *Yes*.
- 6 When the Results page appears, click *Close*.
- 7 Proceed with [Section 5.9, “Authorizing the NSM Agents,”](#) on page 71.

5.9 Authorizing the NSM Agents

- 1 In NSMAdmin, click the *Configure* tab.
- 2 Click *Agent Servers*.

- 3 Select a listed server.
- 4 Click the check mark button.
- 5 When you are asked if you want to authorize the selected event monitor, click *Yes*.
- 6 When the Results page appears, click *Close*.

A NSM Engine Certificate Management

The enhanced SSL certificate management capabilities introduced in Novell Storage Manager 3.0.4 allow you to generate your own certificates. This section provides information for managing these certificates.

- ♦ [Section A.1, “Upgrading Earlier Versions of Novell Storage Manager,” on page 73](#)
- ♦ [Section A.2, “Creating a New Certificate,” on page 73](#)
- ♦ [Section A.3, “Managing Existing Certificates,” on page 74](#)

A.1 Upgrading Earlier Versions of Novell Storage Manager

When you upgrade the NSM Engine from any earlier version to 3.1, a new SSL certificate must be generated before the engine can start successfully. If the `rcnsmengine` script is invoked to start the Engine before a new certificate is created, the script generates a certificate that uses the default settings.

A.2 Creating a New Certificate

You can use the Certificate Management Wizard to create the initial certificate if the Engine has not been started since Novell Storage Manager 3.1.1 was installed. You can also create another certificate if you need to change the default settings.

- 1 Load the NSM Engine Configuration Utility by running `nsmengine-config`.

```

Terminal
File Edit View Terminal Tabs Help
-----
Engine Service Config
-----
Engine Address:                10.10.10.20
Engine HTTP Port:             0
Engine HTTPS Port:           3009
Default NCP Server Address:   sawgrass-edir.brett-dev.condreycorp.com
-----
[A] Engine Settings           [N] Default NCP Server Address
[S] Service Management       [C] Certificate Management
[Q] Quit
Selection->

```

- 2 In the console, enter `C` to start the Certificate Management Wizard.
- 3 Select the settings you want, then press Enter.

The Certificate Management Wizard prompts you to generate a new OpenSSL certificate using the default server name for the common name of the certificate. You can choose to use a different name for the common name of the certificate if you want.

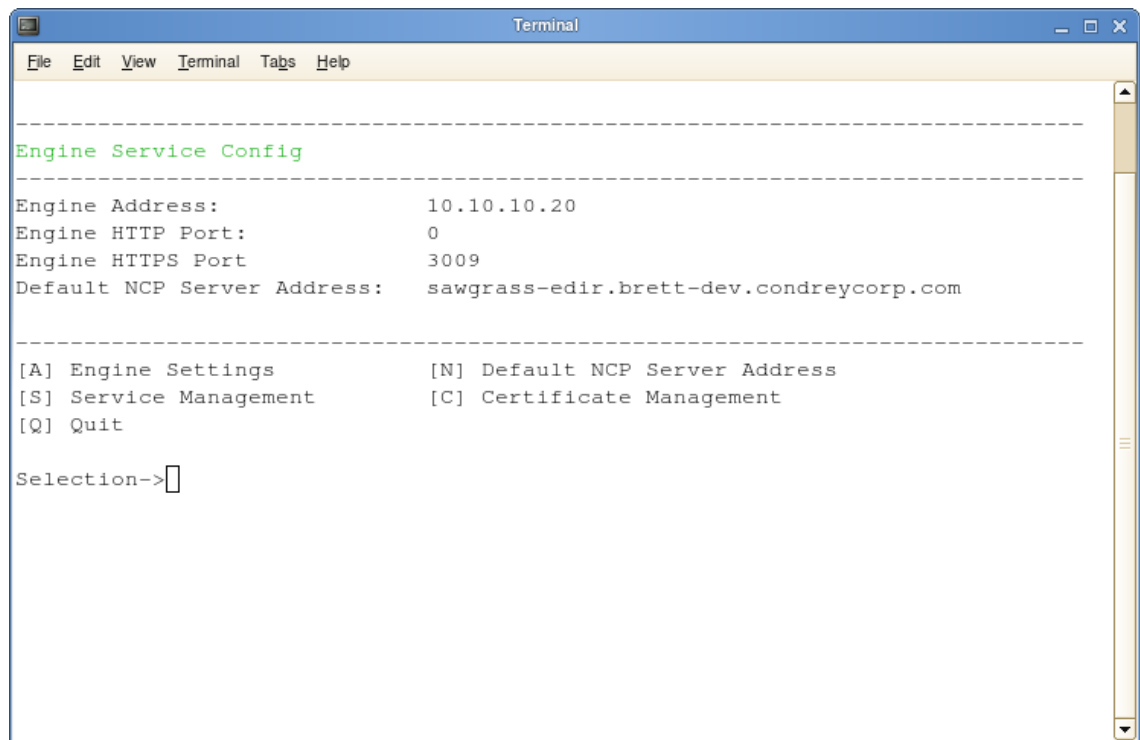
The Certificate Management Wizard generates a 2048-bit RSA private key and stores it as a `.pem` file in the `Engine config` directory. The details of the certificate are then displayed in the console.

- 4 Start the NSM Engine, either through the *Service Management* submenu or at the console with the `rcnsmengined start` command.

A.3 Managing Existing Certificates

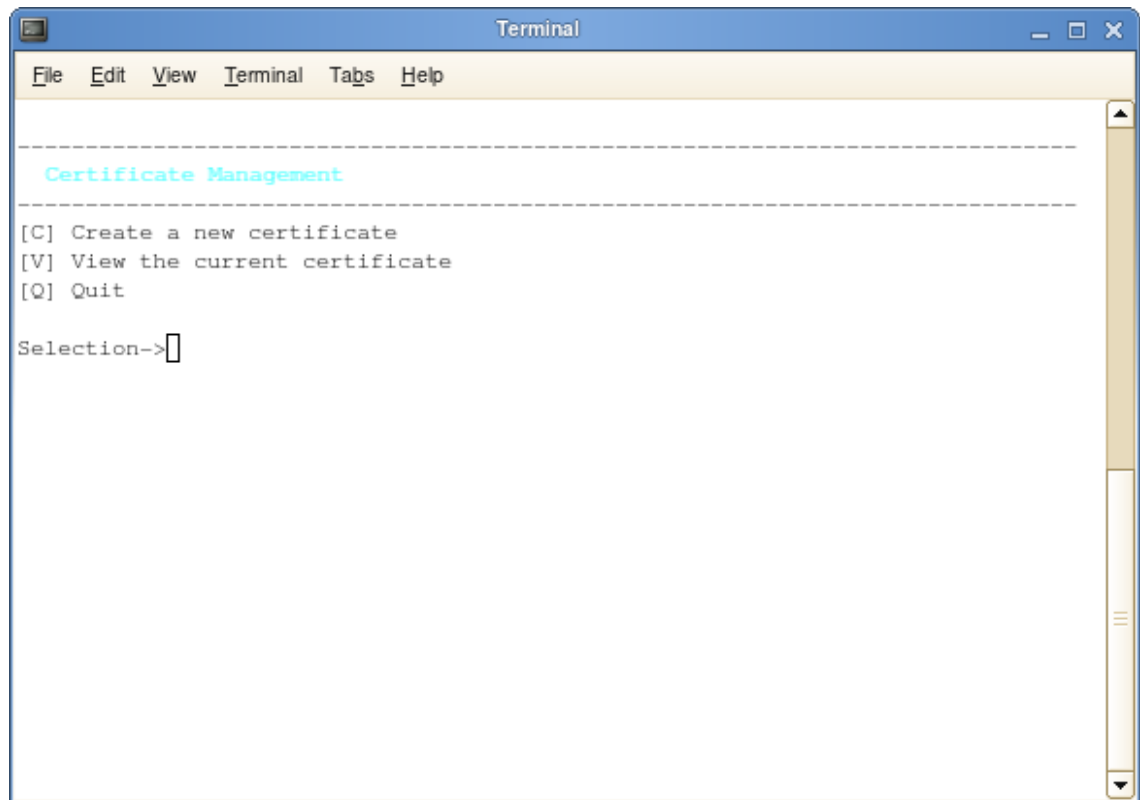
After a certificate has been created, you can use the Certificate Management Wizard to view the details of an existing certificate.

- 1 Load the NSM Engine Configuration Utility by running `nsmengine-config`.



```
Terminal
File Edit View Terminal Tabs Help
-----
Engine Service Config
-----
Engine Address:          10.10.10.20
Engine HTTP Port:       0
Engine HTTPS Port:      3009
Default NCP Server Address: sawgrass-edir.brett-dev.condreycorp.com
-----
[A] Engine Settings      [N] Default NCP Server Address
[S] Service Management   [C] Certificate Management
[Q] Quit
Selection->
```

- 2 In the console, enter C to start the Certificate Management Wizard.



```
Terminal
File Edit View Terminal Tabs Help
-----
Certificate Management
-----
[C] Create a new certificate
[V] View the current certificate
[Q] Quit
Selection->
```

- 3 Enter v to view the certificate.

B Deploying Event Monitors and NSM Agents Remotely by Using the DeployAgents Tool

- ◆ [Section B.1, “Overview,” on page 77](#)
- ◆ [Section B.2, “Prerequisites,” on page 78](#)
- ◆ [Section B.3, “Copying the Component Installers,” on page 78](#)
- ◆ [Section B.4, “Creating the servenames.txt File,” on page 79](#)
- ◆ [Section B.5, “Deploying the Linux RPMs,” on page 81](#)
- ◆ [Section B.6, “Deploying the Windows MSI or EXE Files,” on page 82](#)

B.1 Overview

The DeployAgents tool lets you remotely install Novell File Reporter agent software and Novell Storage Manager agent and Event Monitor software through a batch installation process. Installer formats vary, based on agent type and environment:

Table B-1 *Installer Formats for Deploy Agents Tool Components*

Component	Installer Format
Storage Manager for the Active Directory Agent	MSI
Storage Manager for the eDirectory Agent	RPM
Storage Manager Event Monitor on Windows	MSI
Storage Manager Event Monitor on Linux	RPM
File Reporter Agent for Windows	MSI in boot-strapped EXE
File Reporter Agent for Linux	RPM

The DeployAgents tool performs the following actions:

- ◆ Installs and configures the agent or Event Monitor software
- ◆ Creates and copies the necessary SSL certificate for each server
- ◆ Modifies and copies the configuration file (if necessary)
- ◆ Sets any necessary privileges on the local server

NOTE: OpenSSL certificates are generated using the OpenSSL command line utilities, which have not been modified, and are distributed with permission. See the attribution provided in the `OpenSSL-License.txt` file for more details.

B.2 Prerequisites

- ♦ [Section B.2.1, “Windows PowerShell,” on page 78](#)
- ♦ [Section B.2.2, “Windows Agents and Event Monitors,” on page 78](#)
- ♦ [Section B.2.3, “Linux Agents and Event Monitors,” on page 78](#)

B.2.1 Windows PowerShell

On the Windows workstation where you are conducting the remote installations, verify that Windows PowerShell 2.0 or above is installed.

B.2.2 Windows Agents and Event Monitors

- ♦ Verify that Windows PowerShell 2.0 or above is enabled on each Windows server where agents or Event Monitors are being installed in an Active Directory environment.

DeployAgents uses Windows PowerShell version 2.0 or above for parsing text, hiding credentials from plain text, and remote installation, but requires that remote signed scripts be allowed.

- ♦ Verify that the ExecutionPolicy is set to something other than RESTRICTED.
REMOTESIGNED works for deploying MSI files.

Use the `Get-ExecutionPolicy` PowerShell command to determine how the current policy is set. The `Set-ExecutionPolicy RemoteSigned` command can be used to change the current policy to one that is compatible with this process.

- ♦ Verify that the .NET 4.0 (Full) Framework is installed and enabled on each Windows server.

B.2.3 Linux Agents and Event Monitors

- ♦ Verify that SSH is enabled and the port is set to the default port 22.

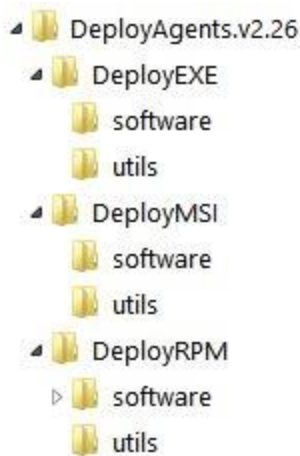
RPM installations require that all Linux servers are installed with default port numbers.

- ♦ Open Enterprise Server must be installed on the SUSE Linux Enterprise Server before installing the agent RPMs.

B.3 Copying the Component Installers

- 1 From the Novell Storage Manager or Novell File Reporter software ISO image, copy the `DeployAgentv2.xx.zip` file to a folder of your choice.
- 2 Unzip the file.

The folder structure looks like the image below:



- From the Novell Storage Manager or Novell File Reporter ISO image, copy all of the agent and Event Monitor installation files you want to install into the `software` folder of the appropriate installer format.

For example, if you were going to do a batch installation of 32-bit and 64-bit Windows agents for Novell File Reporter, you would copy the following files into the `DeployEXE/software` folder:

```
Windows/x86/NFRAgent-Installer-x86-2.0.xx.exe
```

```
Windows/x86/NFRAgent-Installer-x64-2.0.xx.exe
```

Always copy both the 32-bit and 64-bit versions of the installer MSI or EXE to the local `software` folder. The DeployAgents tool determines the architecture of the server and installs the appropriate version.

For Linux agents and Event Monitors, copy the entire `sles10` and `sles11` folders from the Novell Storage Manager or Novell File Reporter ISO images to the `sles10` and `sles11` folders inside the `DeployRPM/software` folder. The DeployAgents tool determines the proper distribution and installs the appropriate component from the appropriate directory.

- Verify that each `software` folder contains a configuration file for the agent or Event Monitor. Depending on the type of agent or Event Monitor, this will be a `.conf` file for Linux or a `.cfg` file for Windows.
- In the configuration file, replace the sample IP address with the NFR or NSM Engine address.

The sample NFR Engine address to be edited looks like this:

```
<Engine HostAddress="192.168.17.11" Port="3035" Secure="1"
PollingIntervalHB="60000" />
```

The sample NSM Engine to be edited looks like this:

```
<Engine>
  <HostAddress>10.82.2.16</HostAddress>
</Engine>
<Engine>
  <HostAddress>192.168.17.11</HostAddress>
```

B.4 Creating the `servername.txt` File

- Section B.4.1, “Manually Creating the `servername.txt` File,” on page 80
- Section B.4.2, “Automatically Creating the `servername.txt` File,” on page 80

This file specifies the names of all of the servers on which the agent or Event Monitor software is to be deployed. The file is specific to each of the installer formats identified in [Table B-1 on page 77](#). For example, there should be an individual `servername.txt` file for MSI files, EXE files, and RPM files.

B.4.1 Manually Creating the `servername.txt` File

- 1 Launch a text editor such as Notepad.
- 2 On individual lines, type the names of each server where you want to deploy the agent or Event Monitor software.

Depending on whichever is appropriate for your environment, you can use simple or DNS naming. We recommend DNS naming.

For example:

```
cclx1.cctec.org
```

```
cclx2.cctec.org
```

```
cclx3.cctec.org
```

- 3 Save the document as `servername.txt` to the root directory of the deployment folder for the installer format.

For example, if the `servername.txt` file listed Novell Open Enterprise Server machines, you would save the file to the `DeployRPM` folder.

B.4.2 Automatically Creating the `servername.txt` File

If you already have agents or Event Monitors installed and you want to update them, the `DeployAgents` tool can automatically create a `servername.txt` file for you.

Simply copy the `agents.dat` or `eventmonitors.dat` file from its location on the NSM Engine or NFR Engine to the root of `DeployEXE`, `DeployMSI`, or `DeployRPM` folders.

Table B-2 Locations of `agents.dat` and `eventmonitors.dat` Files

Product	Location on Windows	Location on Linux
Storage Manager	C:\ProgramData\Novell\Storage Manager\Engine\data\agents.dat	/var/opt/novell/storagemanager/engine/data/agents.dat
Storage Manager	C:\ProgramData\Novell\Storage Manager\Engine\data\eventmonitors.dat	/var/opt/novell/storagemanager/engine/data/eventmonitors.dat
File Reporter	C:\ProgramData\Novell\File Reporter\Engine\data\agents.dat	No agent.dat file with Version 1.

When you provide either the `agents.dat` file or the `eventmonitors.dat` file, the `DeployAgents` tool parses the existing server names and creates the `servername.txt` file for you.

B.5 Deploying the Linux RPMs

- ♦ Section B.5.1, “External Utilities,” on page 81
- ♦ Section B.5.2, “Deployment Specifics,” on page 81
- ♦ Section B.5.3, “Using DeployAgentsRPM.cmd,” on page 81

B.5.1 External Utilities

Deploying Linux agent RPMs from a Windows workstation requires some extra tools. The DeployAgents tool uses two external utilities from the PuTTY software family: `plink.exe` and `pscp.exe` (<http://www.chiark.greenend.org.uk/~sgtatham/putty/download.html>). Both utilities are distributed with permission and have not been modified. See (<http://the.earth.li/~sgtatham/putty/0.58/html/doc/AppendixC.html#licence>) for more details.

B.5.2 Deployment Specifics

For RPM deployments, the DeployAgents tool performs the following actions.

- ♦ Uses the RPM command line argument only as a guide to getting the proper component installed. The DeployAgents tool determines Novell Open Enterprise Server version and architecture, and installs the proper `i586` or `x86_64` RPM version from the `software/sles10` or `software/sles11` folder as required by the server.
- ♦ Uses PowerShell to hide the password from plain text view, but does not encrypt the password in memory. It also uses a User-based environment variable, and cleans up the password as soon as it finished.
- ♦ Uses PowerShell to parse the `agent.dat` or `servername.txt` file. The `agent.dat` file is XML-based, and is converted to a plain text list of servers named `servername.txt`. If an existing `servername.txt` file exists, the parser looks for leading and trailing spaces, and makes a copy of the original file in `servername.txt.original`.
- ♦ Uses the `/etc/SuSE-release` and `/etc/novell-release` files from the server to get Novell Open Enterprise Server and SUSE Linux Enterprise Server version information.
- ♦ Creates a temporary directory in `/tmp/software` on the server as a local software repository, which is cleaned up at the end of the process.
- ♦ Uses the component’s default installation paths and configuration paths. For example, the configuration directory would follow this pattern: `/etc/opt/novell/${product}/${component}/config`
- ♦ Assumes that the root or provided administrative user account shares the same password across all servers in the `servername.txt` file.

B.5.3 Using DeployAgentsRPM.cmd

Usage:

```
DeployAgentsRPM.cmd <agents.dat> <linux admin username> <rpm to deploy>
```

Explanation

The `<agents.dat>` is provided by the product whose agent or Event Monitor you are attempting to deploy. It can be found in the engine component `data` directory. Both the NSM Engine and NFR Engine provide this file.

The `<linux admin username>`, generally `root`, is needed to install software.

The `<rpm to deploy>` is just the RPM name without path information.

Example on a Single Command Line

```
DeployAgentsRPM.cmd agents.dat root novell-filereporter-agent-2.0.0-4.i586.rpm
```

Or

```
DeployAgentsRPM.cmd servernames.txt root novell-filereporter-agent-2.0.0-4.i586.rpm
```

B.6 Deploying the Windows MSI or EXE Files

- ◆ [Section B.6.1, “Deployment Specifics,” on page 82](#)
- ◆ [Section B.6.2, “Setting an Alternate Installation Path,” on page 82](#)
- ◆ [Section B.6.3, “Using DeployAgentsMSI.cmd,” on page 83](#)
- ◆ [Section B.6.4, “Using DeployAgentsEXE.cmd,” on page 83](#)

B.6.1 Deployment Specifics

For MSI and EXE deployments, the `DeployAgents` tool performs the following actions:

- ◆ Employs wrapper scripts that work with both the Novell Storage Manager MSI agents and Event Monitors and the Novell File Reporter EXE agents.
- ◆ Utilizes scripts that rely on the `C$` admin share being available on the servers where the agent is to be installed, and that the `C:\temp` directory exists or can be created, and can be written to over the network by a domain administrator.
- ◆ Uses the installer name without path information.
- ◆ Uses the latest version by time and date in the `software` folder, regardless of the command line designation.

B.6.2 Setting an Alternate Installation Path

By default, `DeployAgents` installs the agent and Event Monitor software to the following locations:

Table B-3 *Default Installation Paths*

Software	File Path
NSM Agent	C:\Program Files\Novell\Storage Manager\Agent
NSM Event Monitor	C:\Program Files\Novell\Storage Manager\Event

Software	File Path
NFR Agent	C:\Program Files\Novell\File Reporter\Agent

For MSI and EXE files, you can change the default installation path for the agent or Event Monitor software through the `AlternateInstallPath.txt` file.

1 In the root of the `DeployEXE` or `DeployMSI` file, locate the `_AlternateInstallPath.txt` file.

2 Rename the file to `AlternateInstallPath.txt` by removing the underscore.

After it is renamed, the file can be edited via Notepad or another text editor.

The `AlternateInstallPath.txt` file uses a combination of text and variables so it can be used over and over.

3 Use Notepad or another text editor to edit the installation path.

You can change the drive letter, add additional path text, or change the text altogether to make the component best fit your environment.

MSI Example:

Default path: `c:\%brand%\%product%\%component%`

Modified path example: `e:\%brand%\%product%\%component%`

EXE Example:

Default path: `c:\%brand%\%product%`

Modified path example: `e:\%brand%\%product%`

4 Save the `AlternateInstallPath.txt` file.

B.6.3 Using `DeployAgentsMSI.cmd`

1 Launch the DOS Command Prompt utility.

2 Change to the `DeployMSI` directory.

3 Do one of the following:

- ♦ Enter: `deployAgentsMSI.exe servernames.txt domain\administrator NSMAgent-3.1.0-x64-xx.msi`

- ♦ Enter: `deployAgentsMSI.exe agents.dat domain\administrator NSMAgent-3.1.0-x64-xx.msi`

When you deploy MSIs through an `agents.dat` file, if a `servernames.txt` file already exists, you are asked if you want to use the `servernames.txt` file that already exists.

If you choose *No*, the `servernames.txt` file is deleted and a new one is created, based on the contents of the `agent.dat` file.

B.6.4 Using `DeployAgentsEXE.cmd`

1 Launch the DOS Command Prompt utility.

2 Change to the `DeployEXE` directory.

3 Do one of the following:

- ♦ Enter: `deployAgentsEXE.exe servernames.txt domain\administrator NSMAgent-3.1.0-x64-xx.exe`

- ◆ Enter: `deployAgentsEXE.exe agents.dat domain\administrator NSMAgent-3.1.0-x64-xx.exe`

When you deploy EXEs through an `agents.dat` file, if a `servername.txt` file already exists, you are asked if you want to use the `servername.txt` file that already exists.

If you choose *No*, the `servername.txt` file is deleted and a new one is created, based on the contents of the `agent.dat` file.

C Documentation Updates

This section contains information about documentation content changes that were made in this *Novell Storage Manager 3.1.1 for eDirectory Installation Guide* after the initial release of Novell Storage Manager 3.0 for eDirectory. The changes are listed according to the date they were published.

The documentation for this product is provided on the Web in two formats: HTML and PDF. The HTML and PDF documentation are both kept up-to-date with the changes listed in this section.

If you need to know whether a copy of the PDF documentation that you are using is the most recent, the PDF document includes a publication date on the title page.

The documentation was updated on the following dates:

C.1 October 17, 2013

Updates were made to the following sections:

Location	Update Description
Section 3.14, "Configuring the Event Monitor," on page 33.	Corrected the syntax in Step 2 .
Section 5.4, "Configuring the Event Monitor," on page 57.	Corrected the syntax in Step 1 .

C.2 June 12, 2013

Updates were made to the following sections:

Location	Update Description
Chapter 4, "Upgrading from Storage Manager 3.x to 3.1.1," on page 41.	New chapter.
Section B.2.1, "Windows PowerShell," on page 78.	New section.

C.3 February 13, 2013

Updates were made to the following sections:

Location	Update Description
Chapter 3, "Upgrading from Storage Manager 2.5x to 3.11," on page 15.	Updated the chapter to include NSM Engine, Event Monitor, and NSM Agent support for Open Enterprise Server 11 and Open Enterprise Server 11 SP1.
Chapter 5, "Installing Novell Storage Manager 3.1.1 for eDirectory," on page 53.	Updated the chapter to include NSM Engine, Event Monitor, and NSM Agent support for Open Enterprise Server 11 and Open Enterprise Server 11 SP1.
Section 3.4, "Installing NSMAdmin 3.1.1," on page 19.	Updated the requirements to include the .NET 4.0 (Full) Framework. Updated the supported servers to include Windows Server 2012.
Section 3.8, "Upgrading the NSM Engine," on page 24.	Removed support for a server host with an x86 processor.
Section 5.2, "Configuring the NSM Engine," on page 54.	Removed support for a server host with an x86 processor.
Section 5.7, "Installing and Configuring NSMAdmin," on page 64.	Updated the requirements to include the .NET 4.0 (Full) Framework. Updated the supported servers to include Windows Server 2012.

C.4 January 18, 2013

Updates were made to the following sections:

Location	Update Description
Multiple locations throughout the manual.	Changed references of 3.0.x to 3.1.
Section 1.2, "Determining Your Installation Method," on page 7.	Modified this section based on removal of software repository installation option.
Appendix B, "Deploying Event Monitors and NSM Agents Remotely by Using the DeployAgents Tool," on page 77.	new appendix.

C.5 May 18, 2012

Updates were made to the following sections:

Location	Update Description
Section 3.9, "Configuring the NSM Engine," on page 25.	Modified the procedures beginning with Step 7 on page 26.
Appendix A, "NSM Engine Certificate Management," on page 73.	New appendix.

C.6 February 2, 2012

Updates were made to the following section:

Location	Update Description
Throughout the manual.	Changed 3.0.2 to 3.0.x.

C.7 February 14, 2011

Updates were made to the following section:

Location	Update Description
Section 2.1, "Licensing Overview," on page 11	Overview of license types and the features and capabilities enabled in each.

