

Installation Guide

Novell Storage Manager for eDirectory 3.0.x

May 18, 2012

Novell.

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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 3.0.x for eDirectory.

- ♦ Chapter 1, “Prerequisites,” on page 7
- ♦ Chapter 2, “Licensing the Product,” on page 13
- ♦ Chapter 3, “Upgrading from Novell Storage Manager 2.5x for eDirectory,” on page 17
- ♦ Chapter 4, “Installing Novell Storage Manager 3.0.x for eDirectory,” on page 41
- ♦ Appendix A, “NSM Engine Certificate Management,” on page 59
- ♦ Appendix B, “Documentation Updates,” on page 63

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 3.0.x 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 3.0.x for eDirectory Administration Guide*

1 Prerequisites

This section provides procedures that you must do before installing the Novell Storage Manager 3.0.x 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 3.0.x is packaged as a single `NSM_3_0_x.iso` file. Before you can install the Novell Storage Manager 3.0.x for eDirectory components, you must do one of the following:

- ♦ Mount the `NSM_3_0_x.iso` on the server where you are installing one of the Novell Storage Manager 3.0.x components.
- ♦ Burn the `NSM_3_0_x.iso` to a CD or DVD

1.2 Determining Your Installation Method

- ♦ [Section 1.2.1, “Windows Directory,” on page 8](#)
- ♦ [Section 1.2.2, “HTML Installation Interface,” on page 8](#)
- ♦ [Section 1.2.3, “Software Repository,” on page 9](#)

You must install the following Novell Storage Manager 3.0.x 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:

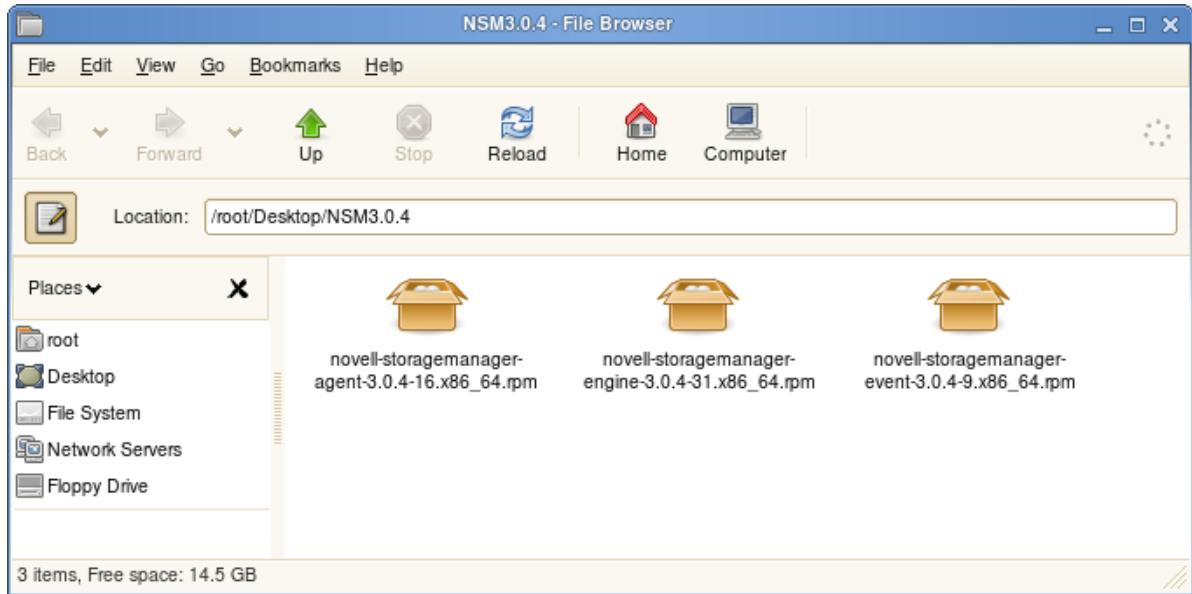
- ♦ [Section 1.2.1, “Windows Directory,” on page 8](#)
- ♦ [Section 1.2.2, “HTML Installation Interface,” on page 8](#)
- ♦ [Section 1.2.3, “Software Repository,” on page 9](#)

Each of these methods is explained below.

1.2.1 Windows Directory

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
- ♦ `\\SLES10x86_64` and `\\SLES11x86_64` contain the installation RPMs for 64-bit processor servers.



1.2.2 HTML Installation Interface

Novell Storage Manager 3.0.x includes an HTML installation interface that can simplify the installation of Novell Storage Manager 3.0.x product components.

Novell® Storage Manager
Installation

Configuration Options

Choose a Directory Service

Microsoft Active Directory

Novell eDirectory

Novell Storage Manager Software Repository

Add this media as a [Software Repository](#) to help with RPM dependencies.

Read the [EULA](#)

Components

Engine

SLES 10

[novell-storagemanager-engine-3.0.4-27.i586.rpm](#)

[novell-storagemanager-engine-3.0.4-27.x86_64.rpm](#)

SLES 11

[novell-storagemanager-engine-3.0.4-27.x86_64.rpm](#)

Events

SLES 10

[novell-storagemanager-event-3.0.4-7.i586.rpm](#)

[novell-storagemanager-event-3.0.4-7.x86_64.rpm](#)

SLES 11

[novell-storagemanager-event-3.0.4-7.x86_64.rpm](#)

Agents

SLES 10

[novell-storagemanager-agent-3.0.4-12.i586.rpm](#)

[novell-storagemanager-agent-3.0.4-12.x86_64.rpm](#)

SLES 11

[novell-storagemanager-agent-3.0.4-12.x86_64.rpm](#)

Admin

[NSMAdmin-3.0.4-40014.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 or launch the component installation file by clicking the file name. For more information on using the HTML Installation Interface to install Novell Storage Manager 3.0.x, see [Chapter 3, “Upgrading from Novell Storage Manager 2.5x for eDirectory,”](#) on page 17 or [Chapter 4, “Installing Novell Storage Manager 3.0.x for eDirectory,”](#) on page 41

1.2.3 Software Repository

You can install Novell Storage Manager 3.0.x components through a software repository that you can create through the HTML installation interface. The software repository is especially useful because it utilizes YaST to assist in installing component files, as well as any dependent files on the Novell Open Enterprise Server 2 that YaST determines are necessary to be installed.

- ♦ [“Setting Up a Software Repository”](#) on page 9
- ♦ [“Viewing the Software Repository”](#) on page 11

Setting Up a Software Repository

A software repository must be set up on each server where you install a component. For example, if you intend to install the NSM Engine on one server, the Event Monitor on another, and at least one agent on another, you need to set up a software repository on all three servers.

- 1 From the root of the CD, DVD, or ISO image, click the `Install.html` file.

This launches the HTML Installation Interface.

- 2 Read through the summary of procedures that you will follow below.

Novell Storage Manager
Installation

Novell Storage Manager

Setup the Storage Manager Repository

The install CD/DVD has been created to be a standalone repository and can be added to the *Installation Sources* for the SUSE Linux Enterprise Server.

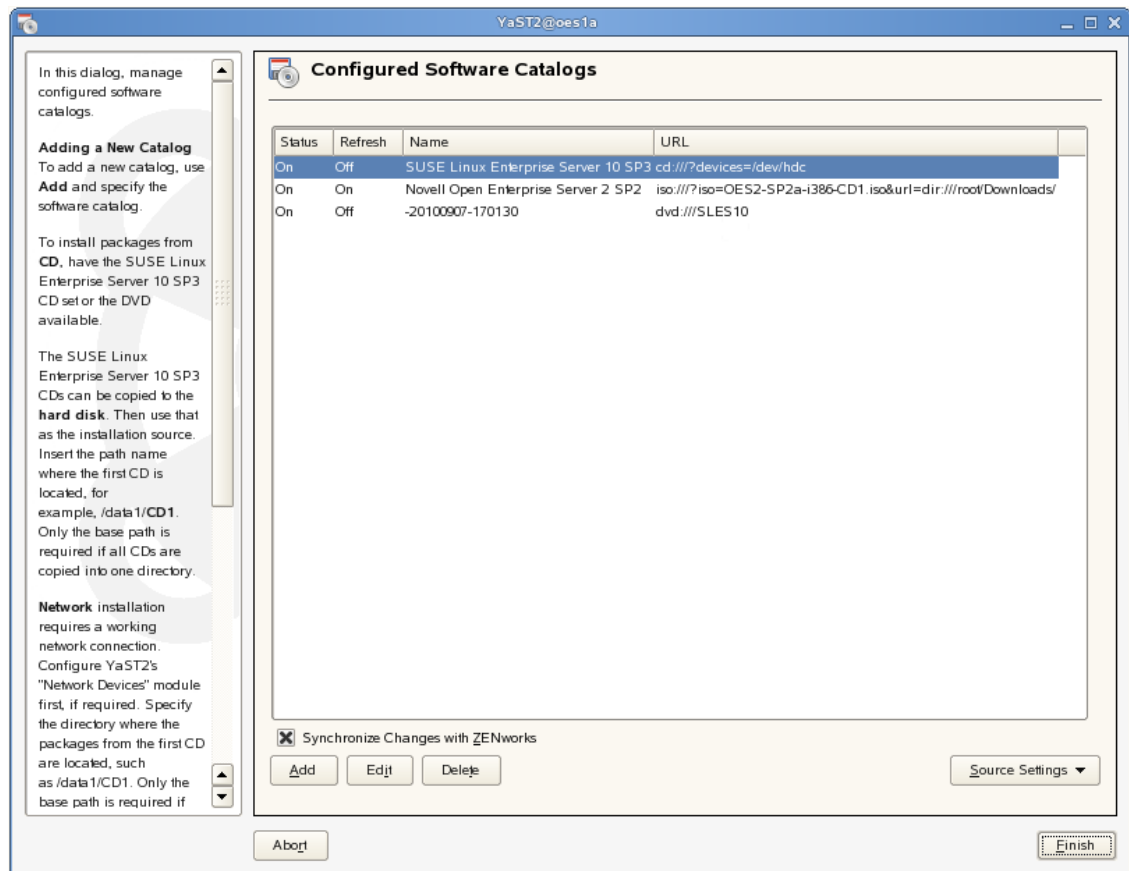
Steps:

1. Start YaST2
2. Select *Software*
3. Select *Installation Sources*
4. Click the *Add* button
5. Select the *Specify Url* option
6. Set the URL to **dvd:///SLES11**
7. Verify the URL has created an installation source
8. Click *Finish*

The Novell Storage Manager components can now be found via YaST2 Software Management by searching for **storagemanager**.

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- 3 At the server, launch YaST.
- 4 In the left pane of the interface, click *Software*.
- 5 In the *Software* icons, click *Installation Source*.
- 6 In the Configured Software Catalogs dialog box, click *Add*.
- 7 In the Media Type dialog box, click the *Specify URL* option and click *Next*.
- 8 In the *URL* field, type `dvd:///SLES10` and click *Next*.
- 9 When the Signed with Untrusted Public Key warning appears, click *Trust the Key*.
- 10 When the Import Untrusted GnuPG Key warning appears, click *Import* to import the key.
The new entry is listed in the Configured Software Catalogs dialog box.

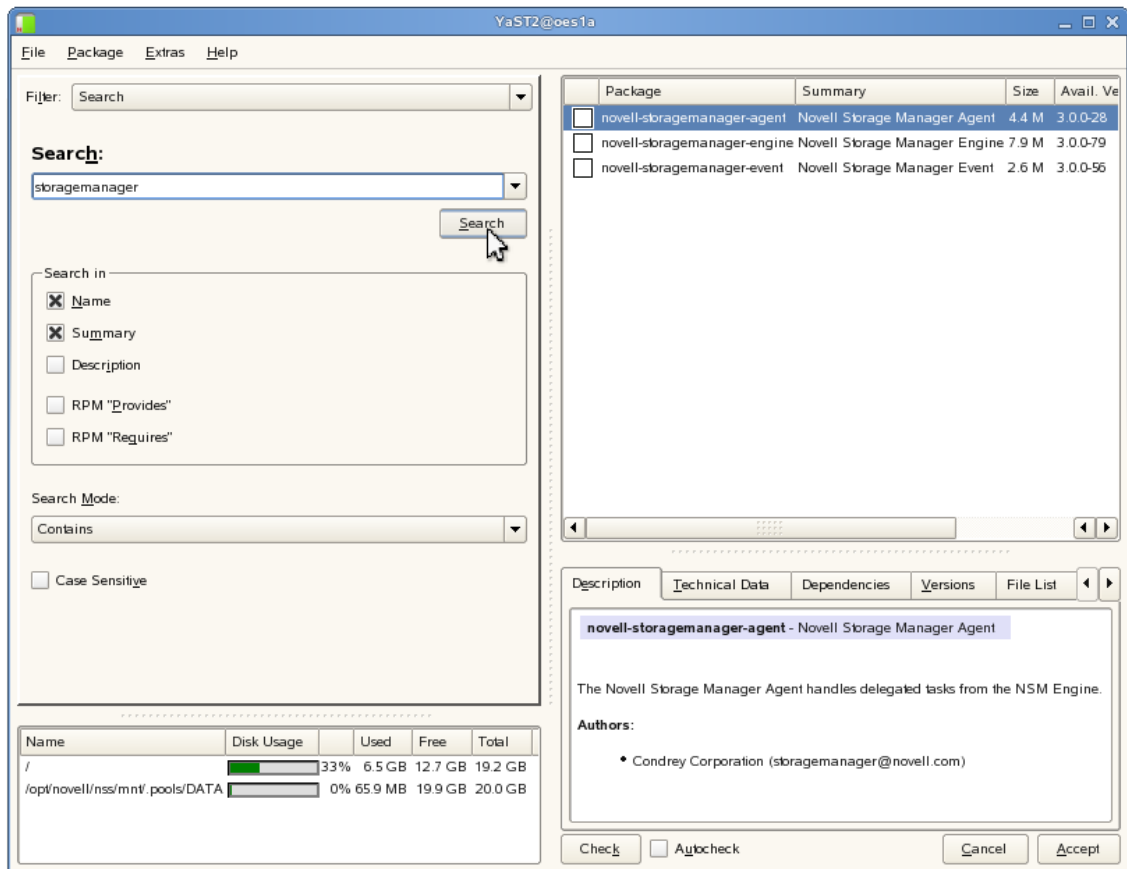


- 11 Select the new entry, open the *Source Settings* list, then click *Set Name*.
- 12 In the *Name of the Source* field, specify a more descriptive name to replace the numbers displayed in the *Name* column.
For example, `NSMRepository`.
- 13 Click *OK*.
- 14 Click *Finish*.
Depending on your network configuration, it might take a few minutes to synchronize with all of the background tools.

Viewing the Software Repository

- 1 In the *Software* icons in YaST, click *Software Management*.
- 2 In the *Search* field of the dialog box, type `storagemanager` and click *Search*.

YaST displays only the Storage Manager 3.0.x packages capable of running on your system. For example, if you are installing the software repository on a 32-bit system, it does not display 64-bit packages.



If you select a package in the top right pane, you can read a description of it in the bottom right pane.

At this point, you can select a package to install on the server by clicking one of the check boxes.

2 Licensing the Product

- ♦ [Section 2.1, “Licensing Overview,”](#) on page 13
- ♦ [Section 2.2, “Obtaining a License File,”](#) on page 14
- ♦ [Section 2.3, “Updating a License File,”](#) on page 16

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
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 – 3.0

Welcome to the Novell Storage Manager™ (NSM) 3.0 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.



Novell® Storage Manager

Support Site

[Home](#)

Version 3.0

- [Download](#)
- [Licensing](#)
- [Documentation](#)

Version 2.5

- [Download](#)
- [Licensing](#)
- [Documentation](#)

Support

- [FAQs](#)
- [Forums](#)
- [Troubleshooting](#)

License



Novell Storage Manager Version 3.0


The link for your license file appears below:

[NovellStorageManagerV30_NV.B.LOCAL_Sep-25-2010_LICENSE.DAT](#)

(Please use **Right-Click-->Save Target As..** to download the file.)

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

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- 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 3.0.x for eDirectory, you can update your evaluation license or production license by simply replacing the old license file with the new one.

At the server that is hosting the NSM Engine, go to `\etc\opt\storagemanager\engine\config` and replace the old `nsm.lic` file with the new one.

3 Upgrading from Novell Storage Manager 2.5x for eDirectory

Use the procedures in this section to upgrade your deployment of Novell Storage Manager 2.5x for eDirectory to Novell Storage Manager 3.0.x 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 3.0.x for eDirectory product license as indicated in [Chapter 2, “Licensing the Product,” on page 13](#).

- ♦ [Section 3.1, “Understanding the Upgrade Process,” on page 17](#)
- ♦ [Section 3.2, “Migration Considerations,” on page 18](#)
- ♦ [Section 3.3, “Clearing Pending Events,” on page 20](#)
- ♦ [Section 3.4, “Installing NSMAdmin 3.0.x,” on page 20](#)
- ♦ [Section 3.5, “Running the NSM Migration Utility,” on page 21](#)
- ♦ [Section 3.6, “Unloading Novell Storage Manager 2.5x Event Monitor Components,” on page 25](#)
- ♦ [Section 3.7, “Unloading Novell Storage Manager 2.5x Agent Components,” on page 25](#)
- ♦ [Section 3.8, “Installing the NSM Engine,” on page 25](#)
- ♦ [Section 3.9, “Configuring the NSM Engine,” on page 26](#)
- ♦ [Section 3.10, “Running the NSMAdmin 3.0.x Setup Wizard,” on page 29](#)
- ♦ [Section 3.11, “Verifying Storage Resource Lists,” on page 32](#)
- ♦ [Section 3.12, “Performing Manage Operations for Migrated Policies,” on page 33](#)
- ♦ [Section 3.13, “Installing the Event Monitor,” on page 33](#)
- ♦ [Section 3.14, “Configuring the Event Monitor,” on page 34](#)
- ♦ [Section 3.15, “Installing 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 39](#)
- ♦ [Section 3.18, “Authorizing the NSM Agents,” on page 39](#)

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 3.0.x 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 18](#)
- ♦ [Section 3.2.2, “Novell Storage Manager 3.0.x for eDirectory Components,” on page 18](#)
- ♦ [Section 3.2.3, “NetWare Support,” on page 18](#)
- ♦ [Section 3.2.4, “Schema Management,” on page 19](#)
- ♦ [Section 3.2.5, “Policy, Catalog, and Pending Event Migration,” on page 19](#)

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 3.0.x for eDirectory Components

All of the components of Novell Storage Manager 3.0.x for eDirectory are built exclusively for Novell Open Enterprise Server 2. The NSM Engine and NSM Agent components can run on both 32-bit and 64-bit implementations of Novell Open Enterprise Server 2. The Event Monitor can run on both 32-bit and 64-bit implementations of both Novell Open Enterprise Server 2 and SUSE Linux Enterprise Server 10.

3.2.3 NetWare Support

Novell Storage Manager 3.0.x 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 3.0.x 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 19](#)
- ♦ [“Agent Services” on page 19](#)

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 3.0.x 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 3.0.x 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 3.0.x 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 3.0.x for eDirectory Administration Guide*.

3.2.4 Schema Management

There are several schema changes that take place in Novell Storage Manager 3.0.x 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 3.0.x for eDirectory Administration Guide*.

3.2.5 Policy, Catalog, and Pending Event Migration

With the introduction of Novell Storage Manager 3.0.x, 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 3.0.x catalog serves two purposes:

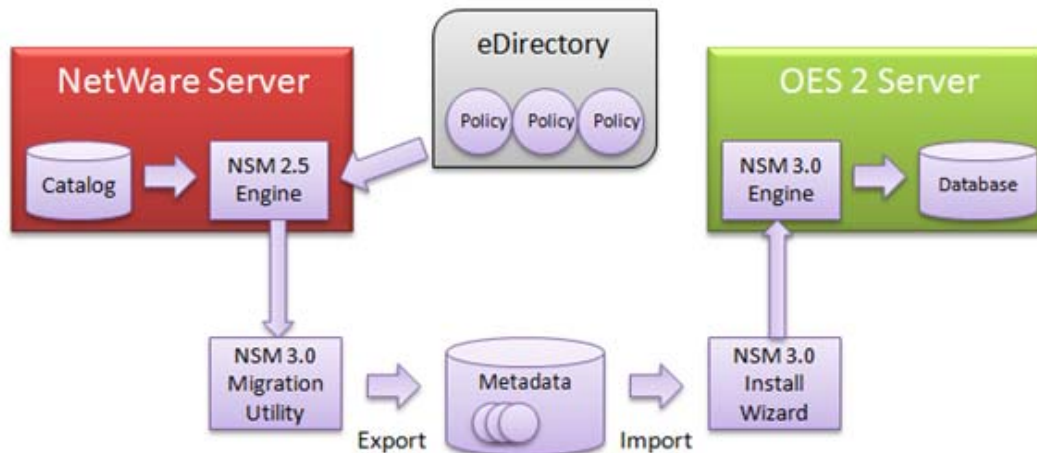
- ◆ Maintains status information on pending events that are waiting for execution or currently being executed
- ◆ Maintains static information about the objects and storage that are currently under the management of Novell Storage Manager 3.0.x.

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 3.0.x 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 3.0.x. This process uses the Novell Storage Manager 3.0.x 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 3.0.x 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 3.0.x

The NSMAdmin 3.0.x installation package includes the NSM Migration utility, which you need to install on the server where the Novell Storage Manager 3.0.x NSM Engine will eventually be hosted.

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

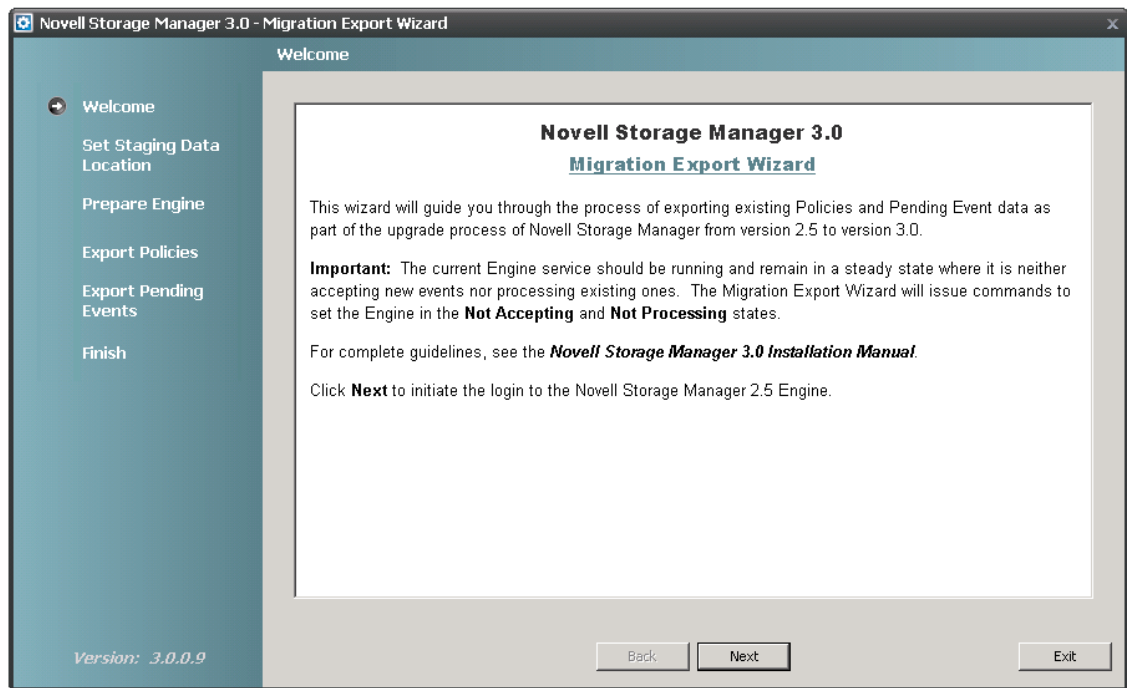
- ♦ Windows platform (Windows 7, Vista, XP SP3, and Windows Server 2008 or 2003)

- ♦ .NET 3.5 Framework or higher is installed
 - ♦ .NET security settings are adjusted if you are running the executable from a network drive (optional)
- 1 Do one of the following:
 - ♦ From the HTML Installation Interface, click the `NSMAdmin-3.0.x-x86.xxxxx.msi` link and save it to a location where it can be accessed from the Windows workstation or server where you will be running NSMAdmin.
 - ♦ At the root of the ISO image, go to `\\Windows\x86\` and save the `NSMAdmin-3.0.x-x86.xxxx.msi` to a location where it can be accessed from the Windows workstation or server where you will be running NSMAdmin.
 - 2 Launch the `NSMAdmin-3.0.x-x86.xxxx.msi` file.
 - 3 When you are asked if you want to run this file, click *Run*.
An Introduction page appears in the NSMAdmin Installation Wizard.
 - 4 Read the text and click *Next*.
 - 5 Accept the license terms and click *Next*.
 - 6 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.
 - 7 Click *Next*.
 - 8 If you want to create a shortcut for NSMAdmin, leave the *Create shortcut on Desktop* check box selected and click *Install*.
NSMAdmin is installed.
 - 9 Deselect the *Launch NSMAdmin 3* check box, which is selected by default, and click *Finish*.

3.5 Running the NSM Migration Utility

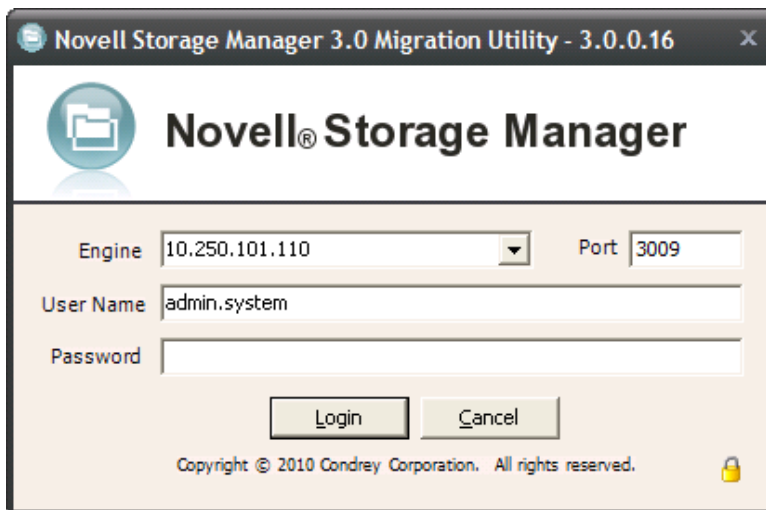
This procedure creates the file for exporting your policies and deferred delete events from your Novell Storage Manager 2.5x NSM Engine.

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



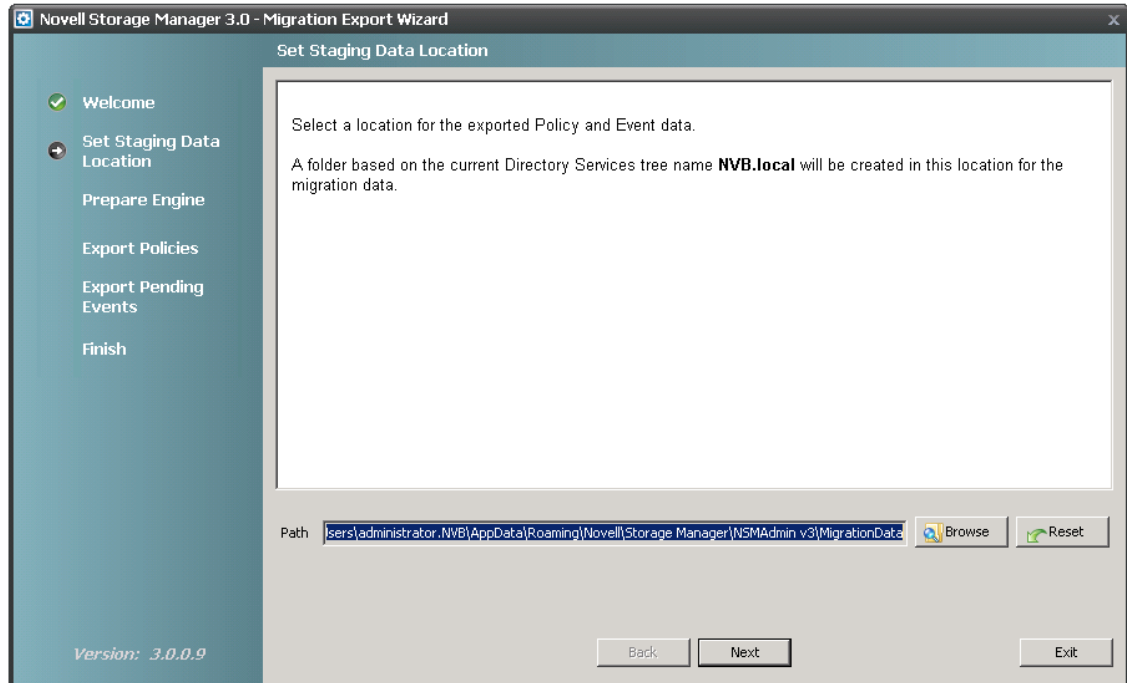
- 2 Read the text and click *Next*.

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*.

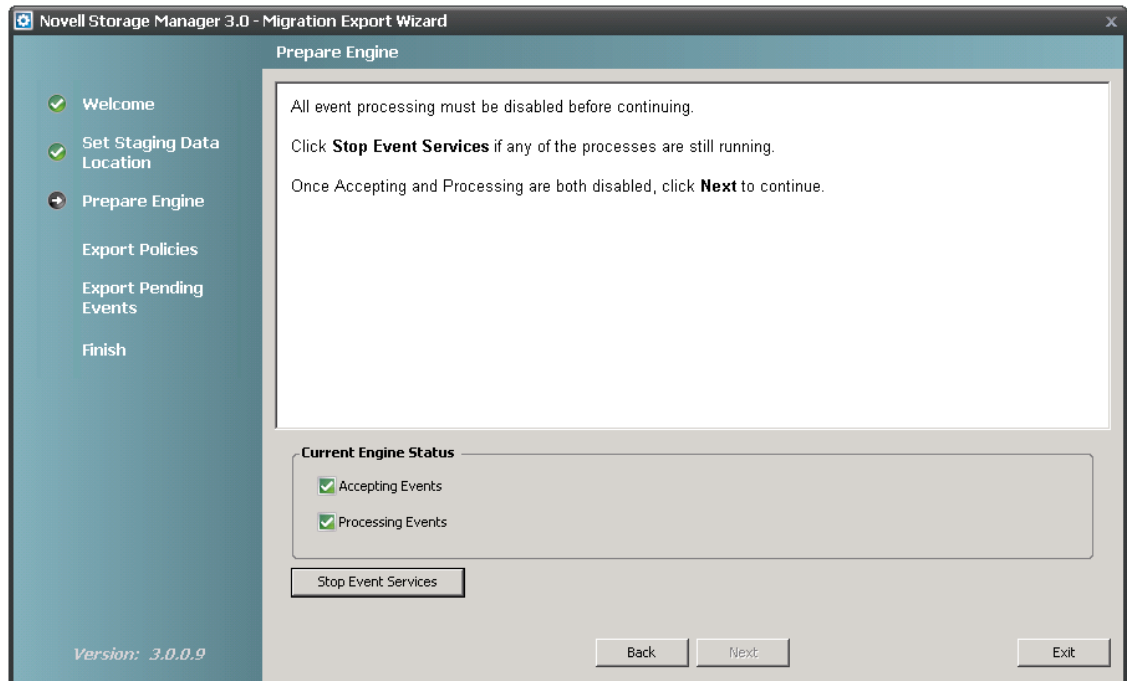
The following page appears:



- 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:

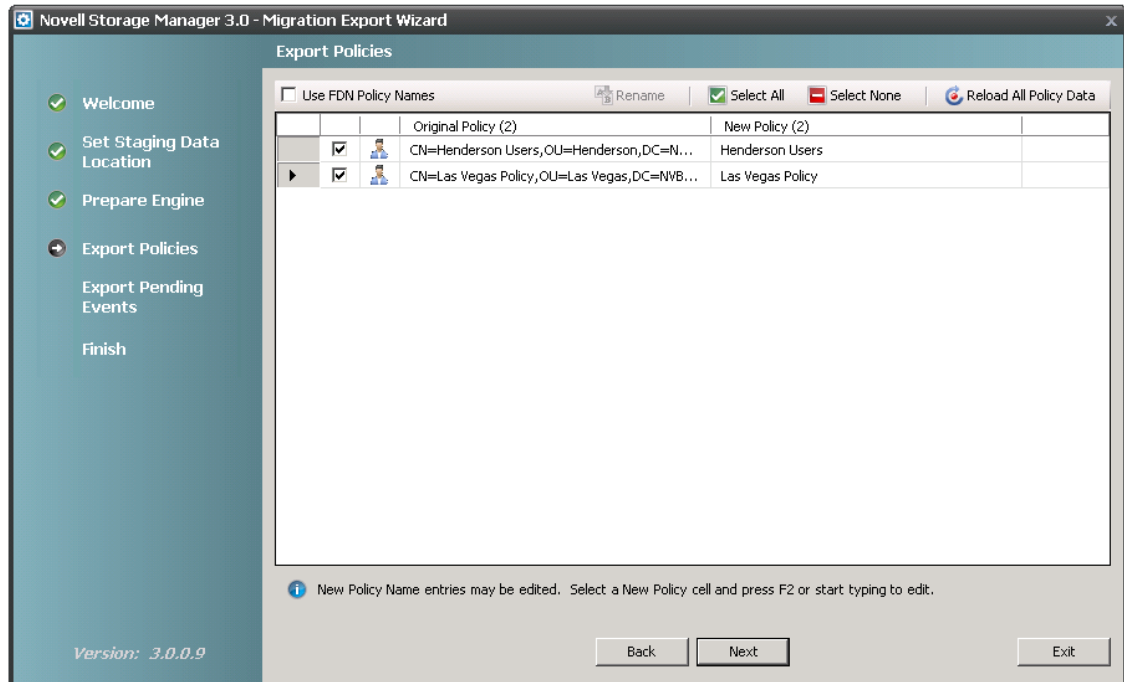


- 5 Click *Stop Event Services*, then click *Next*.

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 3.0.x 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 25.

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 25.

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, “Installing the NSM Engine,”](#) on page 25.

3.8 Installing the NSM Engine

Novell Storage Manager uses only one NSM Engine per tree. The NSM Engine can be installed on a Novell Open Enterprise Server 2 machine that meets the following minimum requirements:

- ♦ Novell Open Enterprise Server 2 SP2a or later with an x86 or x64 processor
 - ♦ eDirectory 8.7.3.9 or later; or eDirectory 8.8 SP 2 or later
- 1 Do one of the following:
 - ♦ From the software repository, select the `novell-storagemanager-engine` check box and click *Accept*. For information on installing a software repository, see [Section 1.2.3, “Software Repository,”](#) on page 9.
 - ♦ From the HTML Installation Interface, or the root of the ISO image, click one of the following NSM Engine installation RPMs:

```
\\SLES10\i586\novell-storagemanager-engine-3.0.x-83.i586.rpm
```

```
\\SLES10\x86_64\novell-storagemanager-engine-3.0.x-83.x86_64.rpm
```

```
\\SLES11\i586\novell-storagemanager-engine-3.0.x-83.i586.rpm
```

```
\\SLES11\x86_64\novell-storage-manager-engine-3.0.x-83.x86_64.rpm
```

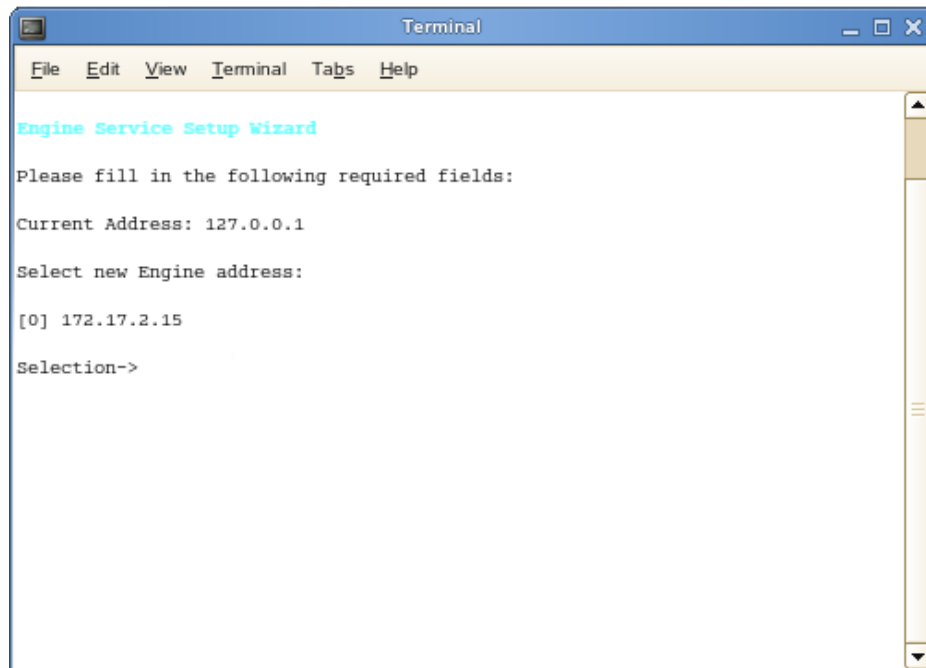
For information on the HTML Installation Interface, see [Section 1.2.2, “HTML Installation Interface,”](#) on page 8.

- 2 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.

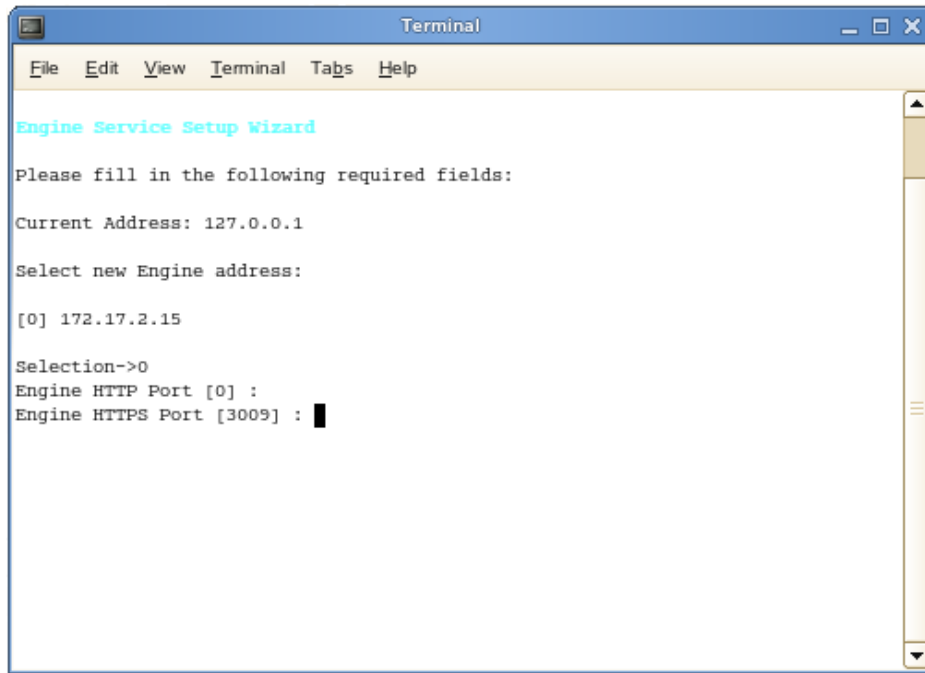
The console is updated and looks similar to the one below.



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

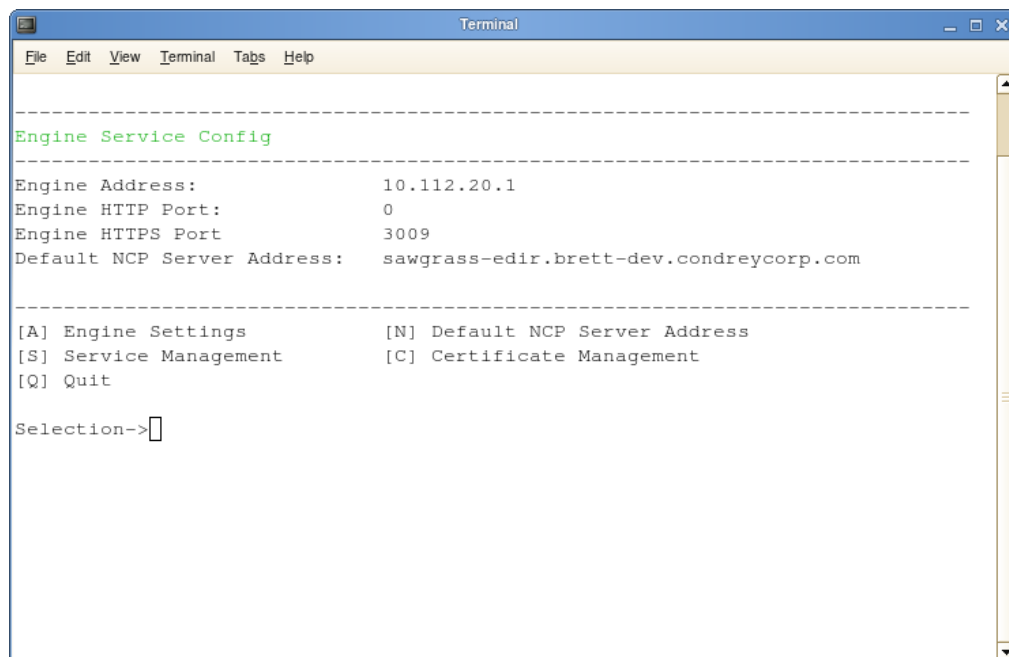
X509v3 Basic Constraints:
CA:TRUE
Signature Algorithm: sha1WithRSAEncryption
73:b9:da:31:27:a1:75:a3:cc:23:dc:70:19:c3:b3:06:4e:f8:
a6:55:13:c1:86:70:ae:ed:cc:6e:9c:6e:6a:47:f3:ee:0e:87:
f5:8c:40:79:8a:26:f2:a7:73:07:d6:ef:97:d3:88:b8:3b:90:
b9:2e:07:a1:ea:00:e4:d2:8b:53:15:fa:a5:6f:f5:89:45:2a:
4b:9a:5a:93:2d:9e:44:3f:86:d9:10:af:80:5c:d8:80:db:9f:
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.

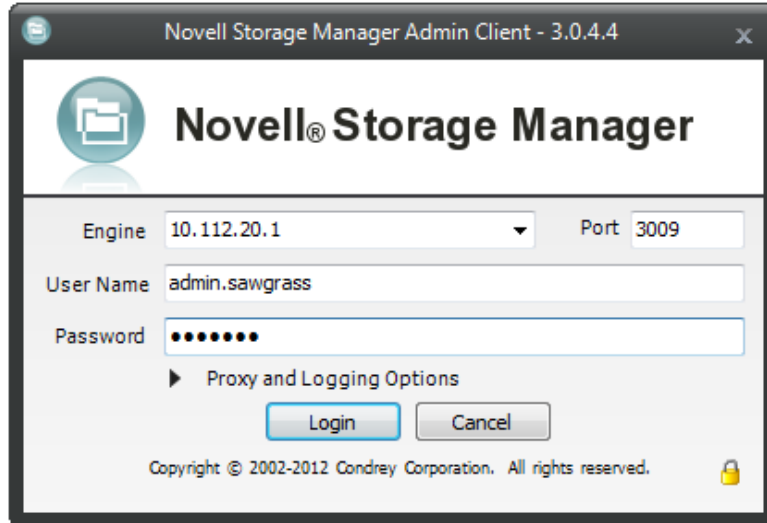
- 9 Press q to quit.

3.10 Running the NSMAdmin 3.0.x Setup Wizard

With the Novell Storage Manager 3.0.x 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 21.

- 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.

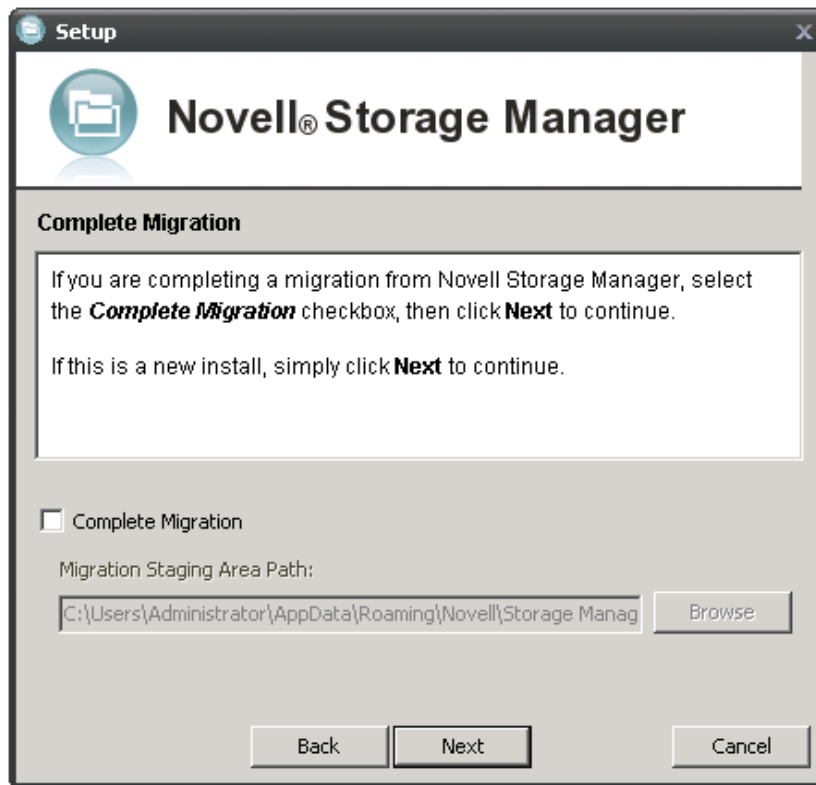
- 8 Click *Next*.

- 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:



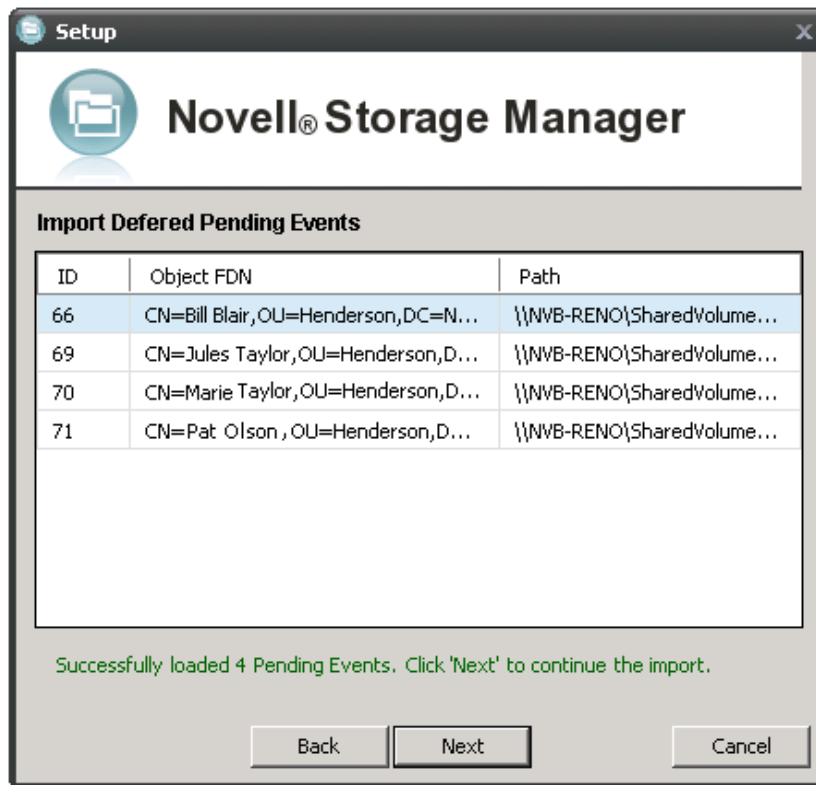
- 12** If you want to import your policies at this time, select the *Complete Migration* check box. If you modified the path where the migration file was saved in [Step 4 on page 23](#), indicate the path by using the *Browse* button, then click *Next*.

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 3.0.x 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 32.

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 33.

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, "Installing the Event Monitor,"](#) on page 33.

3.13 Installing 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 (currently does not support SUSE Linux Enterprise Server 11)

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 Do one of the following:
 - ♦ From the software repository, select the *novell-storagemanager-event* check box and click *Accept*. For information on installing a software repository, see [Section 1.2.3, "Software Repository,"](#) on page 9.

- ♦ From the HTML Installation Interface, or the root of the ISO image, click one of the following Event Monitor installation RPMs:

```
\\SLES10\i586\novell-storagemanager-event-3.0.x-xx.i586.rpm
```

- ♦ \\SLES10\x86_64\novell-storagemanager-event-3.0.x-xx.x86_64.rpm

```
\\SLES11\i586\novell-storagemanager-event-3.0.x-xx.i586.rpm
```

- ♦ \\SLES11\x86_64\novell-storagemanager-event-3.0.x-xx.x86_64.rpm

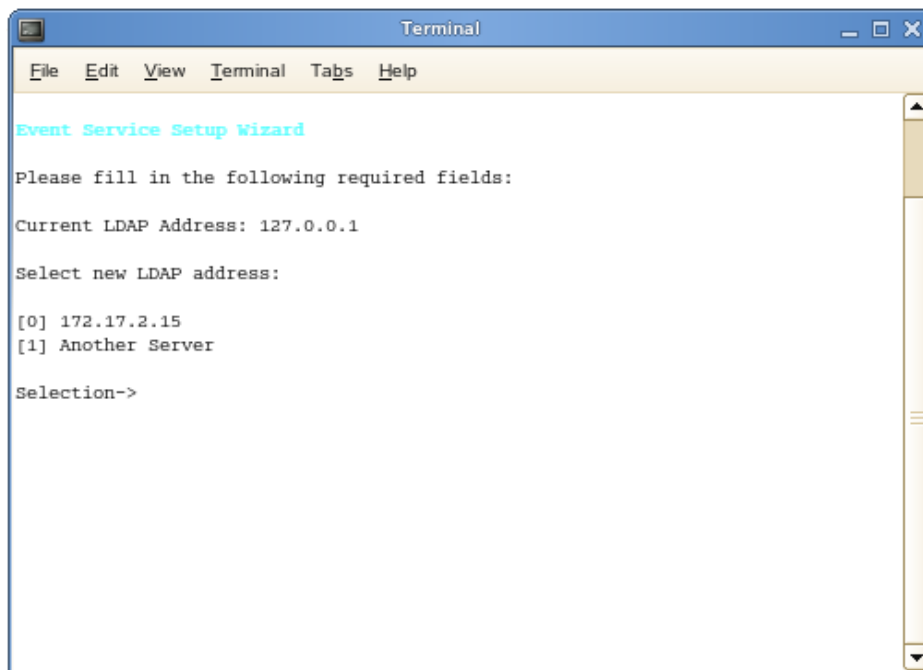
For information on the HTML Installation Interface, see [Section 1.2.2, “HTML Installation Interface,”](#) on page 8.

- 2 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.



- 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 Installing an NSM Agent

An NSM Agent can be installed on an Novell Open Enterprise Server 2 SP2a or later with an x86 or x64 processor.

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 Do one of the following:
 - ♦ From the software repository, select the *novell-storagemanager-agent* check box and click *Accept*. For information on installing a software repository, see [Section 1.2.3, “Software Repository,”](#) on page 9.
 - ♦ From the HTML Installation Interface, or root of the ISO image, click one of the following Event Monitor installation RPMs:

```
\\SLES10\i586\novell-storagemanager-agent-3.0.x-xx.i586.rpm
```

```
\\SLES10\x86_64\novell-storage-manager-agent-3.0.x-xx.x86_64.rpm
```

For information on the HTML Installation Interface, see [Section 1.2.2, “HTML Installation Interface,”](#) on page 8.

- 2 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.



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

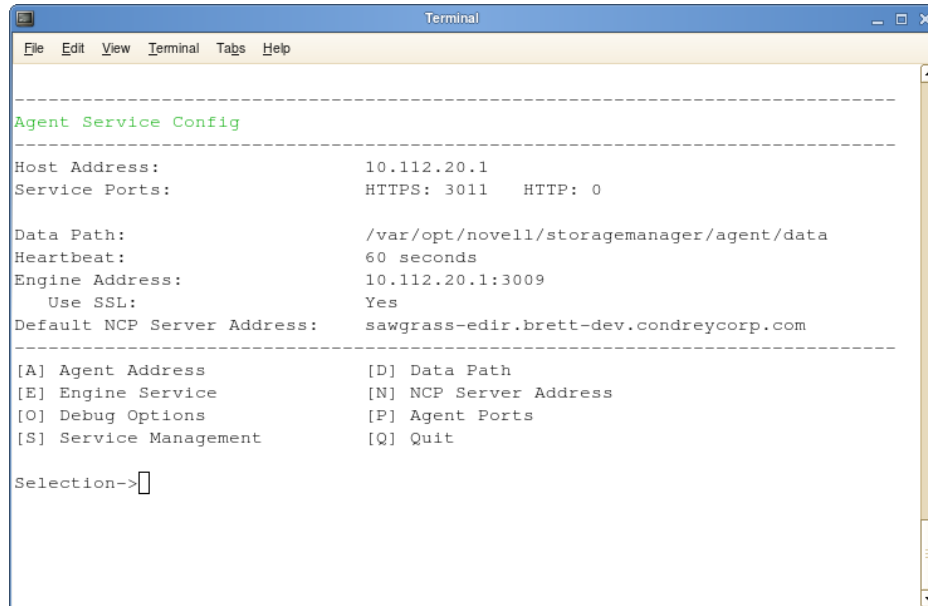
For each of the following, enter a port number.
(Enter zero (0) to turn off a port listener or hit [Enter] to accept
the current value.)

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

Current Data Path: /var/opt/novell/storage manager/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
-----
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 39.

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 Installing Novell Storage Manager 3.0.x 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 3.0.x 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 3.0.x for eDirectory product license as indicated in [Chapter 2, “Licensing the Product,”](#) on page 13.

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

- ♦ [Section 4.1, “Installing the NSM Engine,”](#) on page 41
- ♦ [Section 4.2, “Configuring the NSM Engine,”](#) on page 42
- ♦ [Section 4.3, “Installing the Event Monitor,”](#) on page 44
- ♦ [Section 4.4, “Configuring the Event Monitor,”](#) on page 44
- ♦ [Section 4.5, “Installing an NSM Agent,”](#) on page 47
- ♦ [Section 4.6, “Configuring an NSM Agent,”](#) on page 48
- ♦ [Section 4.7, “Installing and Configuring NSMAdmin,”](#) on page 50
- ♦ [Section 4.8, “Authorizing the Event Monitor,”](#) on page 56
- ♦ [Section 4.9, “Authorizing the NSM Agents,”](#) on page 56

4.1 Installing the NSM Engine

Novell Storage Manager uses only one NSM Engine per tree. The NSM Engine can be installed on a Novell Open Enterprise Server 2 machine that meets the following minimum requirements:

- ♦ Novell Open Enterprise Server 2 SP2a or later with an x86 or x64 processor
 - ♦ eDirectory 8.7.3.9 or later; or eDirectory 8.8 SP 2 or later
- 1 Do one of the following:
 - ♦ From the software repository, select the *novell-storagemanager-engine* check box and click *Accept*. For information on installing a software repository, see [Section 1.2.3, “Software Repository,”](#) on page 9.
 - ♦ From the HTML Installation Interface, or the root of the ISO image, click one of the following NSM Engine installation RPMs:

```
\\SLES10\i586\novell-storagemanager-engine-3.0.x-xx.i586.rpm
```

```
\\SLES10\x86_64\novell-storagemanager-engine-3.0.x-xx.x86_64.rpm
```

```
\\SLES11\i586\novell-storage-manager-engine-3.0.x-xx.i586.rpm
```

```
\\SLES11\x86_64\novell-storage-manager-engine-3.0.x-xx.x86_64.rpm
```

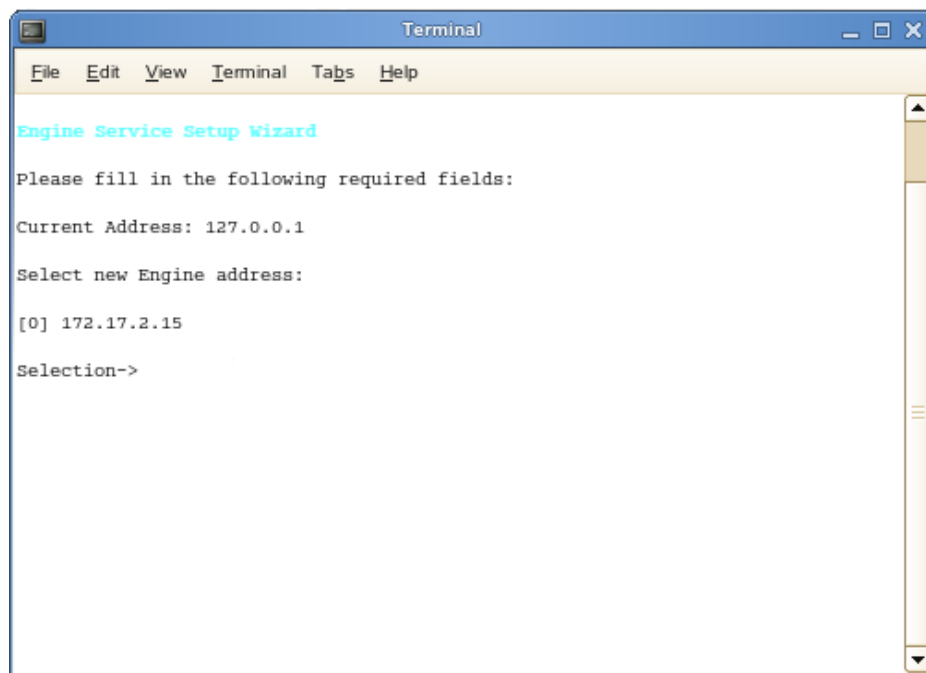
For information on the HTML Installation Interface, see [Section 1.2.2, “HTML Installation Interface,”](#) on page 8.

- 2 Follow the installation procedures as directed in the NSM Engine installation interface.

4.2 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.

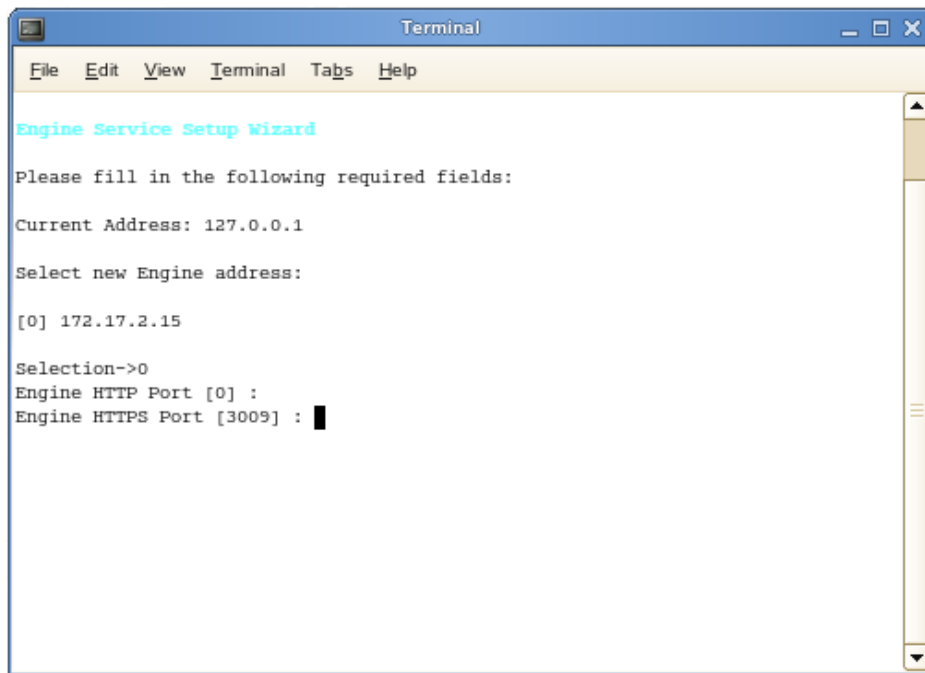
The console is updated and looks similar to the one below.



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

- 3 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.
- 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

Engine Service Setup Wizard

Please fill in the following required fields:

Current Address: 127.0.0.1

Select new Engine address:

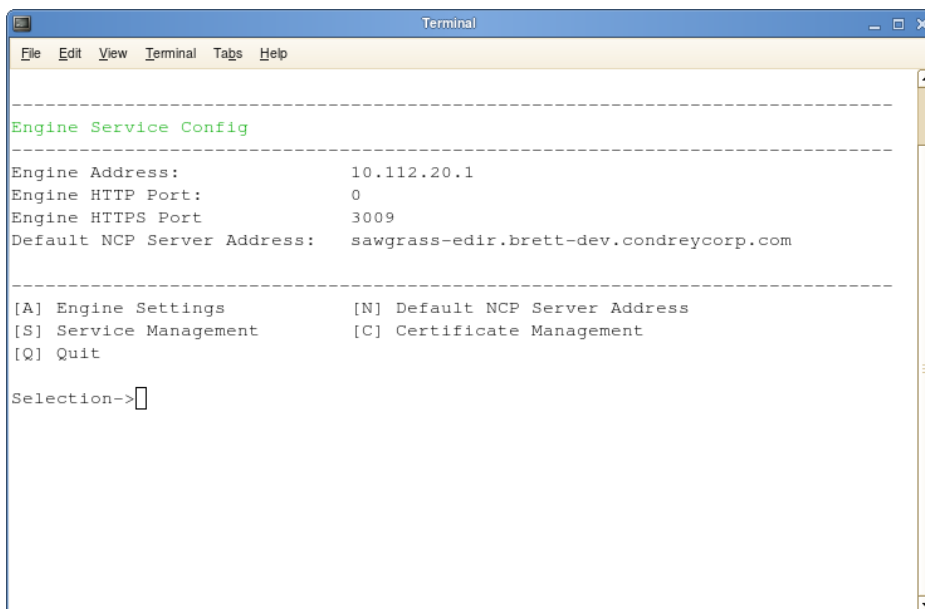
[0] 172.17.2.15

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

-----
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.

- 8 Press q to quit.

4.3 Installing 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 (currently does not support SUSE Linux Enterprise Server 11)

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 Do one of the following:

- ♦ From the software repository, select the *novell-storagemanager-event* check box and click *Accept*. For information on installing a software repository, see [Section 1.2.3, “Software Repository,”](#) on page 9.
- ♦ From the HTML Installation Interface, or the root of the ISO image, click one of the following Event Monitor installation RPMs:
 - ♦ `\\SLES10\i586\novell-storagemanager-event-3.0.x-xx.i586.rpm`
 - ♦ `\\SLES10\x86_64\novell-storagemanager-event-3.0.x-xx.x86_64.rpm`
 - ♦ `\\SLES11\i586\novell-storagemanager-event-3.0.x-xx.i586.rpm`
 - ♦ `\\SLES11\x86_64\novell-storagemanager-event-3.0.x-xx.x86_64.rpm`

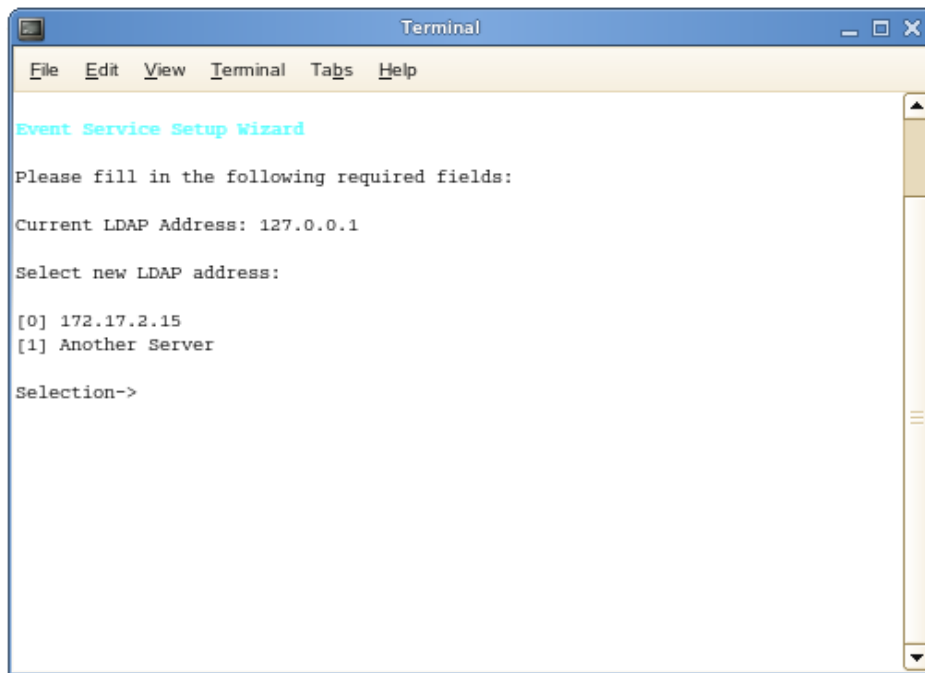
For information on the HTML Installation Interface, see [Section 1.2.2, “HTML Installation Interface,”](#) on page 8.

2 Follow the installation procedures as directed in the Event Monitor installation interface.

4.4 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 `nsmenvent-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 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] : █

```

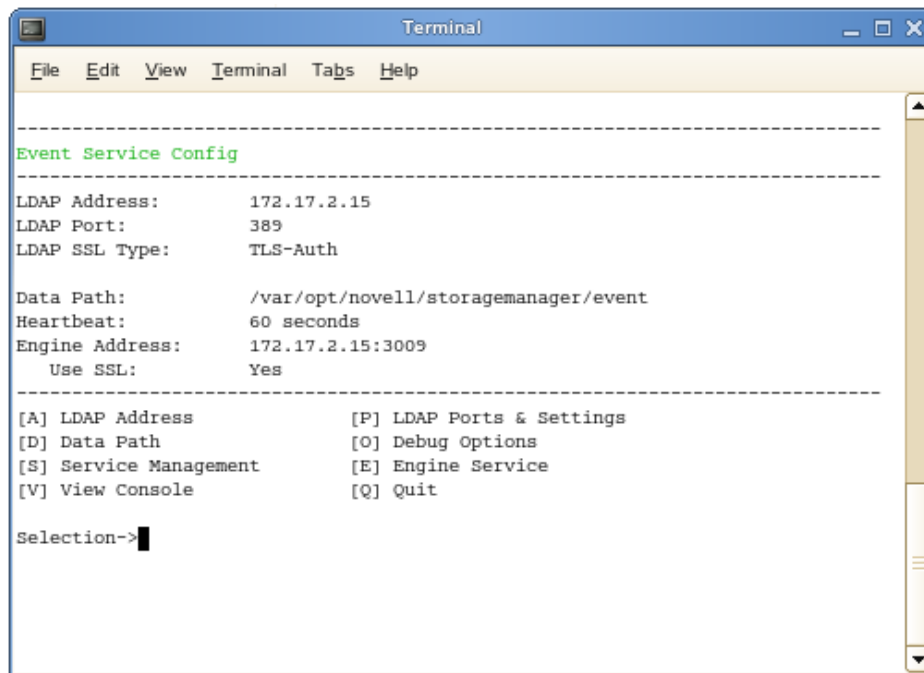
- 8 Specify the IP address of the server hosting the NSM Engine and press Enter.
You can also enter a DNS entry at this prompt.
- 9 Accept the port entry of 3009 by pressing Enter.

- 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] Event 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.

4.5 Installing an NSM Agent

An NSM Agent can be installed on an Novell Open Enterprise Server 2 SP2a or later with an x86 or x64 processor.

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 Do one of the following:

- ♦ From the software repository, select the *novell-storagemanager-agent* check box and click *Accept*. For information on installing a software repository, see [Section 1.2.3, "Software Repository,"](#) on page 9.
- ♦ From the HTML Installation Interface, or root of the ISO image, click one of the following Event Monitor installation RPMs:
 - ♦ `\\SLES10\i586\novell-storagemanager-agent-3.0.x-xx.i586.rpm`
 - ♦ `\\SLES10\x86_64\novell-storagemanager-agent-3.0.x-xx.x86_64.rpm`

- ♦ `\\SLES11\i586\novell-storage-manager-agent-3.0.x-xx.i586.rpm`
- ♦ `\\SLES11\x86_64\novell-storage-manager-agent-3.0.x-xx.x86_64.rpm`

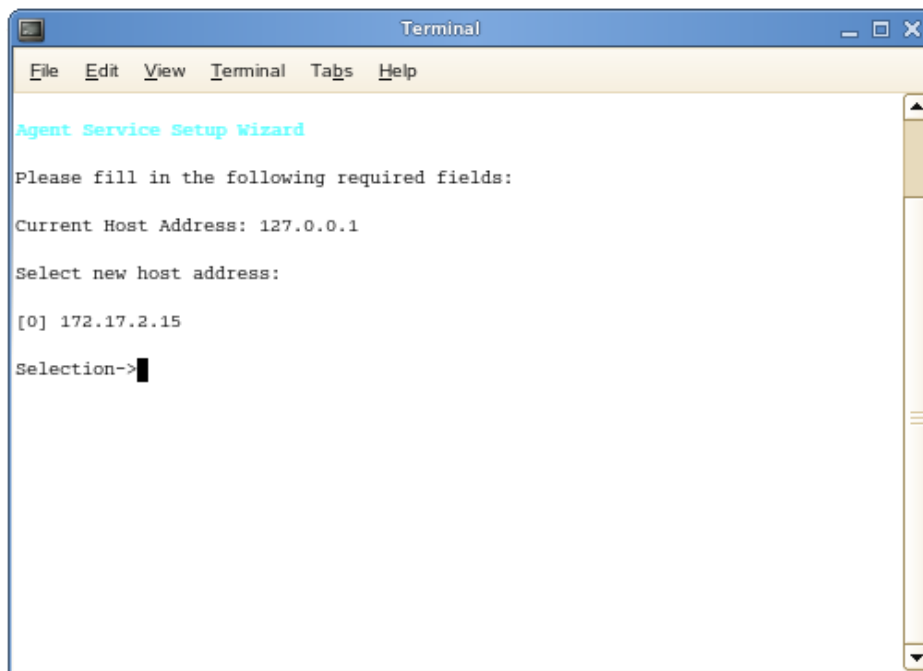
For information on the HTML Installation Interface, see [Section 1.2.2, “HTML Installation Interface,”](#) on page 8.

- 2 Follow the installation procedures as directed in the NSM Agent installation interface.

4.6 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.



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

- 3 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.
- 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/storage manager/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
-----
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.

4.7 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:

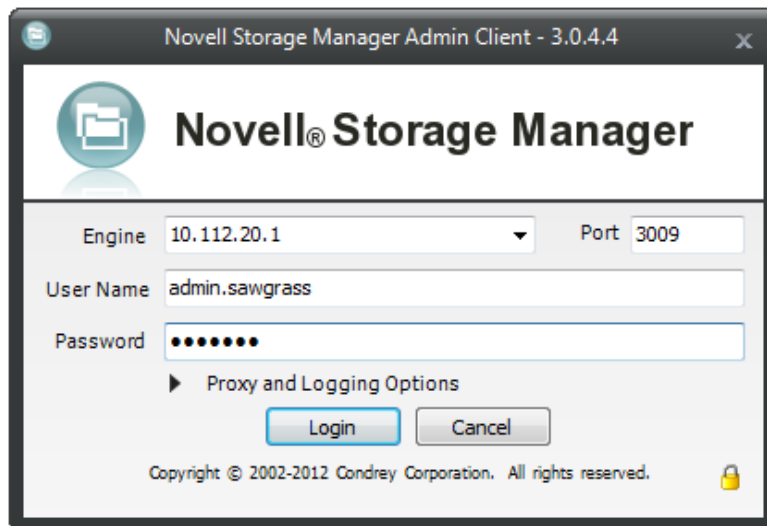
- Windows platform (Windows 7, Vista, XP SP3, and Windows Server 2008, or 2003)
- .NET 3.5 Framework or higher is installed
- .NET security settings are adjusted if you are running the executable from a network drive (optional)

- 1 Do one of the following:

- From the HTML Installation Interface, click the `NSMAdmin-3.0.x-x86.msi` link and save it to a location where it can be accessed from the Windows workstation or server where you will be running NSMAdmin. For information on the HTML Installation Interface, see [Section 1.2.2, "HTML Installation Interface," on page 8](#).
- At the root of the ISO image, go to `\\Windows\x86\` and save the `NSMAdmin-30.x86.msi` to a location where it can be accessed from the Windows workstation or server where you will be running NSMAdmin.

- 2 Double-click the `NSMAdmin-3.0.x-x86.msi` file.

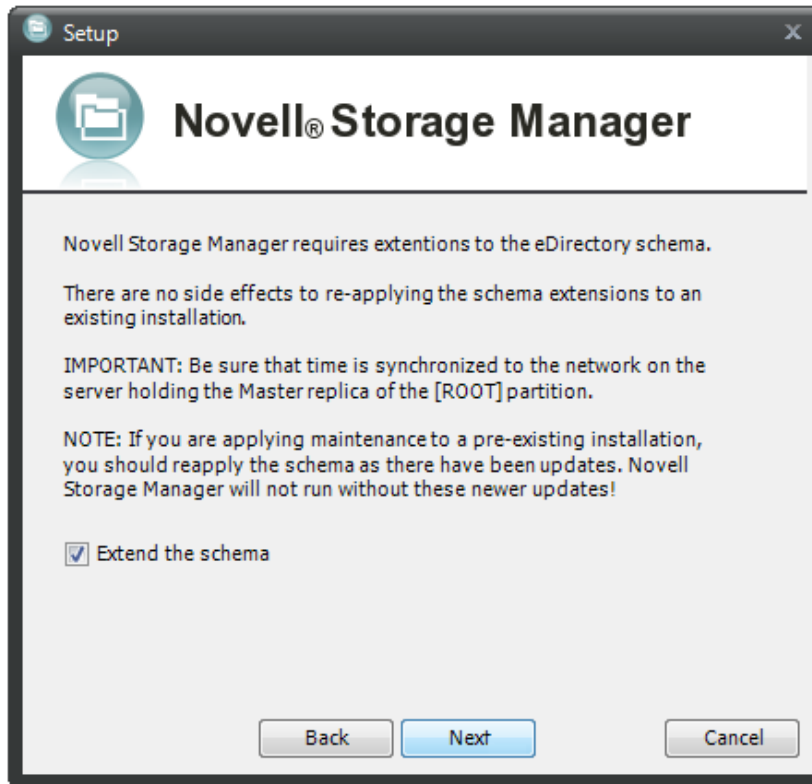
- 3 When you are asked if you want to run this file, click *Run*.
An Introduction page appears in the NSMAdmin Installation Wizard.
- 4 Read the text and click *Next*.
- 5 Accept the license terms and click *Next*.
- 6 Accept the installation path or indicate a new path by using the *Browse* button.
To review possible locations, you can click *Disk Usage* to see all available volumes with disk size and disk availability data.
- 7 Click *Next*.
- 8 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.
- 9 Leave the *Launch NSMAdmin 3* check box selected and click *Finish*.
NSMAdmin is launched.



- 10 In the *Engine* field, specify the DNS name or IP address.
- 11 In the *Port* field, specify the secure port number.
The default setting is 3009.
- 12 Specify the username and password.
The user must be a member of the NSMAdmins group to be able to log in.
- 13 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.
- 14 Read the text on the page and click *Next*.
- 15 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

16 Click *Next*.

17 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.

18 Click *Next*.

The following page appears:



- 19 Accept the account name that will be created and click *Next*.
- 20 Accept or modify the NSM Administrators' Group name, leave the *Add current user to NSM Administrators Group* check box selected, then click *Next*.
- 21 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:



- 22** 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.

- 23** 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*.

- 24** 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.

- 25** Click *Next*.

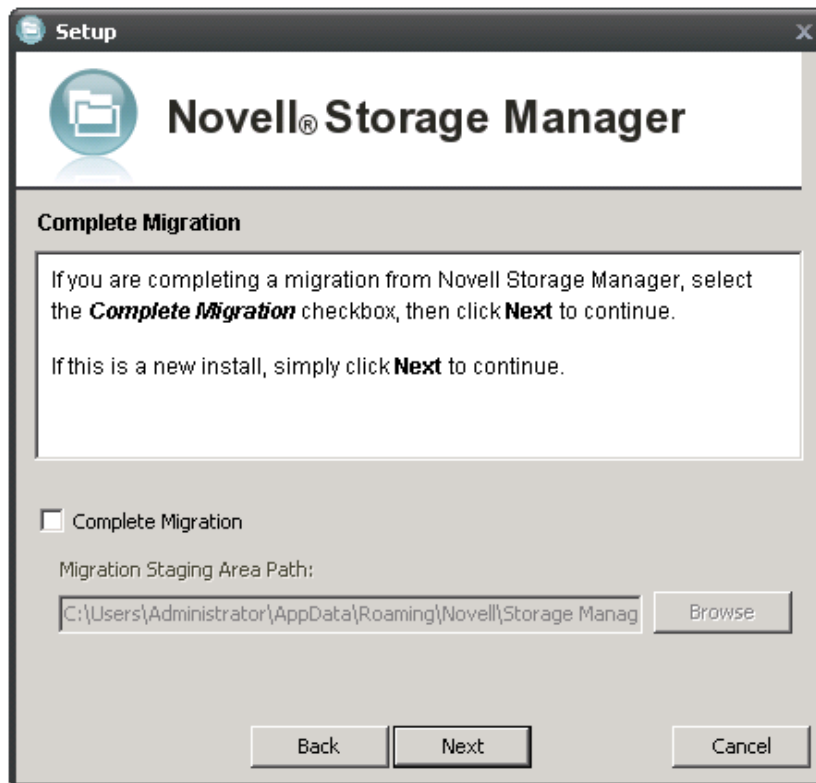
The following page appears:



- 26** 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:



- 27 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.
- 28 Click *Next*.
- 29 When you are prompted, enter your password and click *Login*.
- 30 Proceed with [Section 4.8, “Authorizing the Event Monitor,”](#) on page 56.

4.8 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 4.9, “Authorizing the NSM Agents,”](#) on page 56.

4.9 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 59](#)
- [Section A.2, “Creating a New Certificate,” on page 59](#)
- [Section A.3, “Managing Existing Certificates,” on page 60](#)

A.1 Upgrading Earlier Versions of Novell Storage Manager

When you upgrade the NSM Engine from any earlier version to 3.0.4, 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 3.0.4 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.

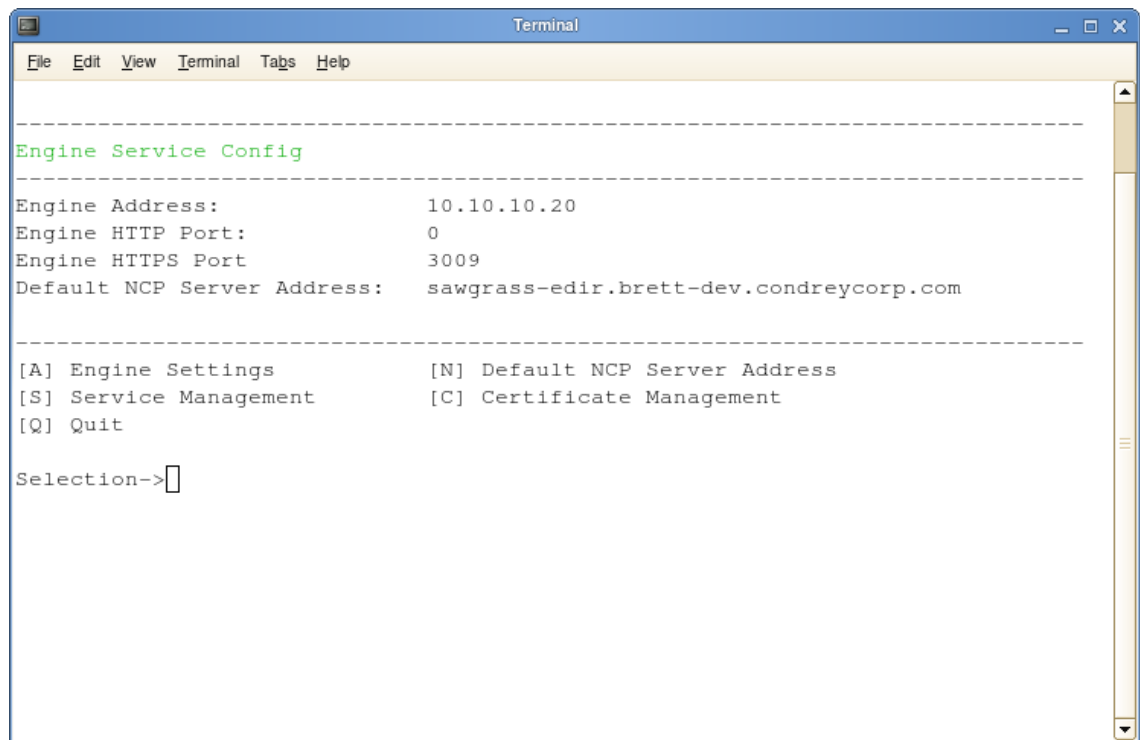
The Certificate Management Wizard generates a 2048-bit RSA private key and stores it as a `.pem` file in the `Engine config` directory. The details of the certificate are then displayed in the console.

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

A.3 Managing Existing Certificates

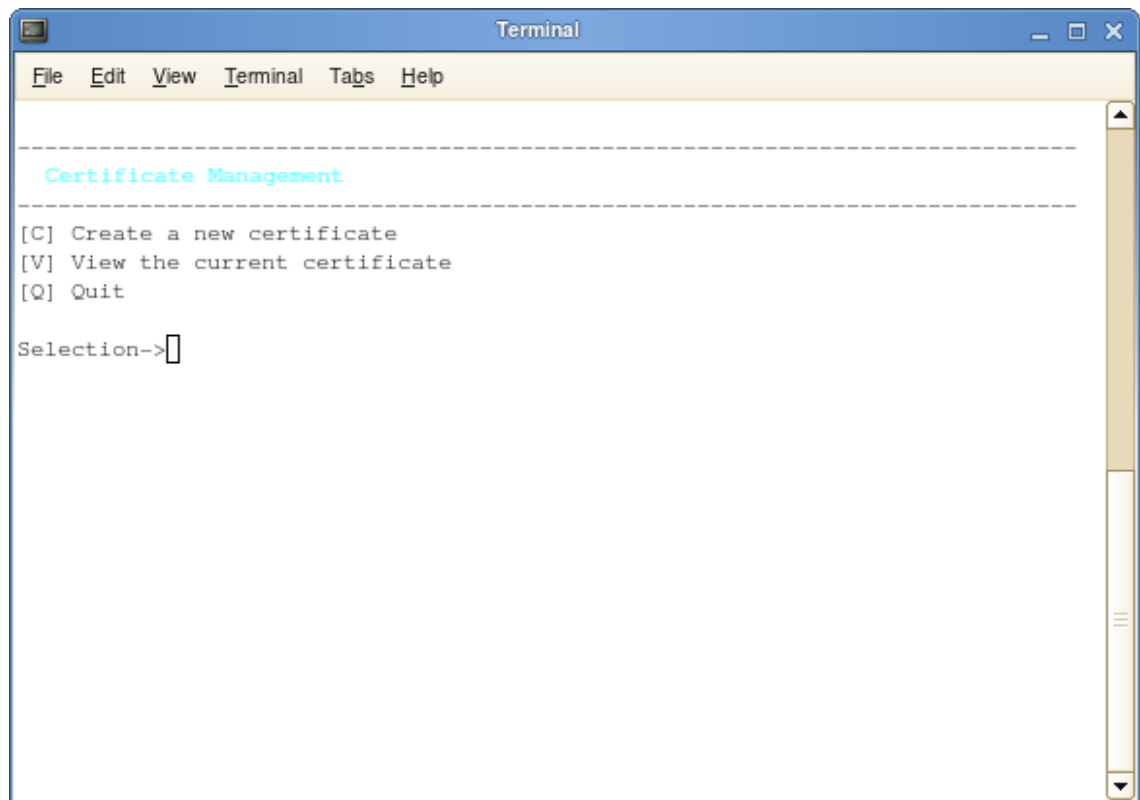
After a certificate has been created, you can use the Certificate Management Wizard to view the details of an existing certificate.

- 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 Documentation Updates

This section contains information about documentation content changes that were made in this *Novell Storage Manager 3.0.x 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:

B.1 May 18, 2012

Updates were made to the following section:

Location	Update Description
Section 3.9, "Configuring the NSM Engine," on page 26.	Modified the procedures beginning with Step 7 on page 27.
Appendix A, "NSM Engine Certificate Management," on page 59.	New appendix.

B.2 February 2, 2012

Updates were made to the following section:

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

B.3 February 14, 2011

Updates were made to the following section:

Location	Update Description
Section 2.1, "Licensing Overview," on page 13	Overview of license types and the features and capabilities enabled in each.

