

*Novell Storage Manager 4.0 for eDirectory Installation Guide*

# **Installation Guide**

## **Novell Storage Manager 4.0 for eDirectory**

October 7, 2014

**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 4.0 for eDirectory.

- ♦ Chapter 1, “Prerequisites,” on page 7
- ♦ Chapter 2, “Licensing the Product,” on page 9
- ♦ Chapter 3, “Upgrading from Storage Manager 3.1.1 to 4.0,” on page 13
- ♦ Chapter 4, “Installing Novell Storage Manager 4.0 for eDirectory,” on page 15
- ♦ Appendix A, “NSM Engine Certificate Management,” on page 31
- ♦ Appendix B, “Deploying NSM Agents Remotely by Using the DeployAgents Tool,” on page 35
- ♦ Appendix C, “Documentation Updates,” on page 39

## 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](http://www.novell.com/documentation/feedback.html) and enter your comments there.

## Documentation Updates

For the most recent version of the *Novell Storage Manager 4.0 for eDirectory Installation Guide*, visit the [Novell Storage Manager Web site \(http://www.novell.com/documentation/storagemanager4/index.html\)](http://www.novell.com/documentation/storagemanager4/index.html).

## Additional Documentation

For additional Novell Storage Manager documentation, see the following guide at the [Novell Storage Manager Documentation Web site \(http://www.novell.com/documentation/storagemanager4\)](http://www.novell.com/documentation/storagemanager4):

- ♦ *Novell Storage Manager 4.0 for eDirectory Administration Guide*



---

# 1 Prerequisites

This section provides procedures that you must do before installing the Novell Storage Manager 4.0 for eDirectory components.

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

## 1.1 Preparing the Files for Installation

Novell Storage Manager 4.0 is packaged as a single `NSM-EDIR_4_0_0.iso` file. Before you can install the Novell Storage Manager 4.0 for eDirectory components, you must mount the `NSM-EDIR_4_0_0.iso` on the server where you are installing one of the Novell Storage Manager components.

## 1.2 Component Installation Overview

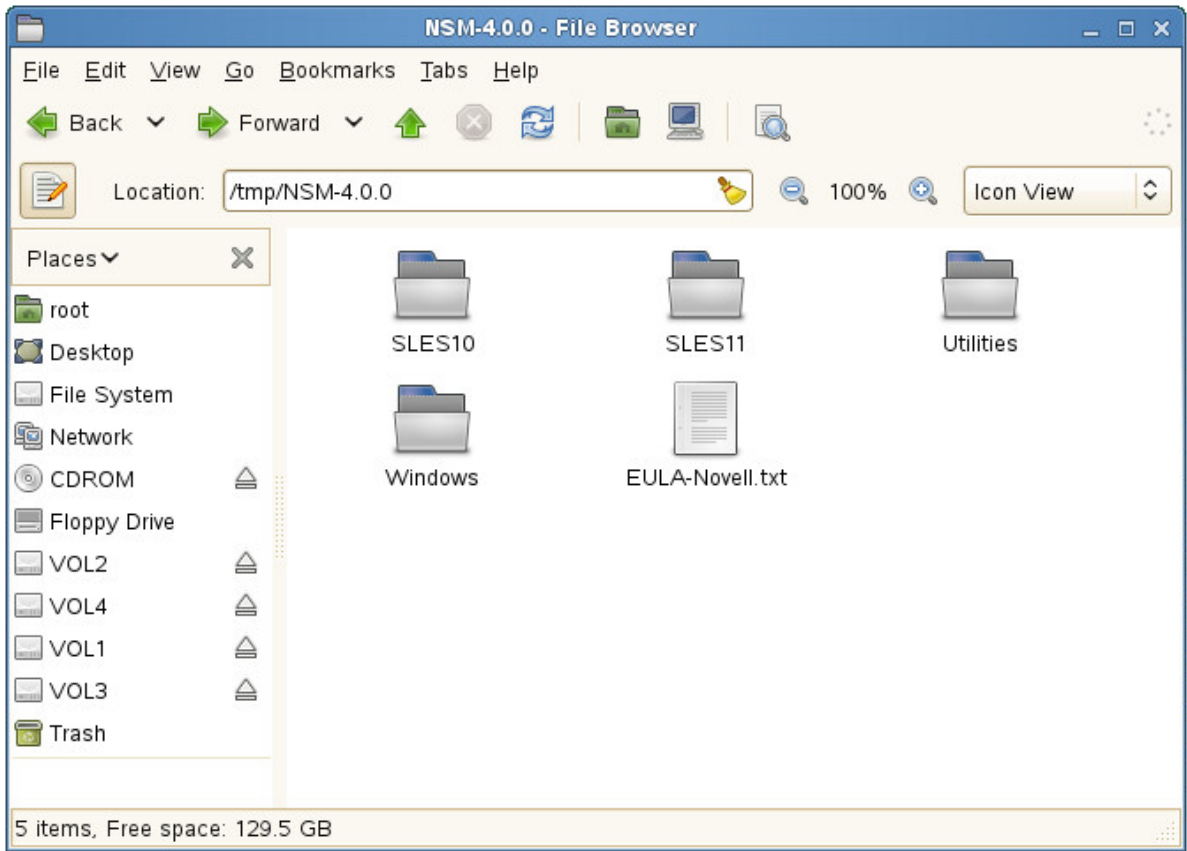
You must install the following Novell Storage Manager 4.0 components:

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

### 1.2.1 Installation Files

The installation files for the NSM Engine, Event Monitor, and Linux Agents are RPMs.

- ♦ **SLES10i586** contains the Event Monitor and Agent installation RPMs for 32-bit processor servers running SUSE Linux Enterprise Server 10.
- ♦ **SLES10x86\_64** contains the Engine, Event Monitor and Agent installation RPMs for 64-bit processor servers running SUSE Linux Enterprise Server 10.
- ♦ **SLES11x86\_64** contains the Engine, Event Monitor, and Agent installation RPMs for 64-bit processor servers running SUSE Linux Enterprise Server 11.
- ♦ **Windows** contains the NSMAdmin utility that is installed on a Windows server or workstation.





# 2 Licensing the Product

- ♦ [Section 2.1, “Licensing Overview,” on page 9](#)
- ♦ [Section 2.2, “Obtaining a License File,” on page 10](#)
- ♦ [Section 2.3, “Updating an Evaluation License File,” on page 11](#)

## 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

Feature	Evaluation License	Assessment License	Production License
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](http://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 – 4.0**

Welcome to the Novell Storage Manager™ (NSM) 4.0 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
<b>Evaluation License</b>		
You can obtain a free 30 day Unlimited use evaluation license for Novell Storage Manager by using one of the following servers:	<a href="#">Server1</a>	<a href="#">Server1</a>
	<a href="#">Server2</a>	<a href="#">Server2</a>
<b>Production License Activation</b>		
Select one of the following links to proceed to a server to activate your Novell Storage Manager license:	<a href="#">Server1</a>	<a href="#">Server1</a>
	<a href="#">Server2</a>	<a href="#">Server2</a>

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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

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Version 3.1.1

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Novell Storage Manager Version 4.0

The link for your license file appears below:

[NovellStorageManagerv40\\_NVB.local\\_Sep-19-2014\\_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](mailto: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 an Evaluation License File

After you have installed Novell Storage Manager 4.0 for eDirectory, you can update your evaluation license or production license by simply replacing the old license file with the new one.



---

# 3 Upgrading from Storage Manager 3.1.1 to 4.0

- ♦ [Section 3.1, “NSM Engine,” on page 13](#)
- ♦ [Section 3.2, “Event Monitor,” on page 13](#)
- ♦ [Section 3.3, “NSM Agents,” on page 13](#)
- ♦ [Section 3.4, “NSMAdmin,” on page 13](#)
- ♦ [Section 3.5, “License,” on page 13](#)

The process for upgrading from Novell Storage Manager for eDirectory 3.x to 4.0 involves installing the new updated components over the existing ones.

## 3.1 NSM Engine

Upgrade the NSM Engine by following the installation procedures in [Section 4.1, “Installing the NSM Engine,” on page 15](#).

## 3.2 Event Monitor

Upgrade the Event Monitor by following the installation procedures in [Section 4.3, “Installing the Event Monitor,” on page 18](#).

## 3.3 NSM Agents

Upgrade the NSM Agents by following the installation procedures in [Section 4.5, “Installing an NSM Agent,” on page 21](#).

## 3.4 NSMAdmin

Update NSMAdmin by following the installation and configuration procedures in [Section 4.7, “Installing and Configuring NSMAdmin,” on page 24](#).

## 3.5 License

Update the product license during the installation and configuration of NSMAdmin.



# 4 Installing Novell Storage Manager 4.0 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 4.0 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 4.0 for eDirectory product license as indicated in [Chapter 2, “Licensing the Product,” on page 9](#).

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 15](#)
- ♦ [Section 4.2, “Configuring the NSM Engine,” on page 16](#)
- ♦ [Section 4.3, “Installing the Event Monitor,” on page 18](#)
- ♦ [Section 4.4, “Configuring the Event Monitor,” on page 19](#)
- ♦ [Section 4.5, “Installing an NSM Agent,” on page 21](#)
- ♦ [Section 4.6, “Configuring an NSM Agent,” on page 22](#)
- ♦ [Section 4.7, “Installing and Configuring NSMAdmin,” on page 24](#)
- ♦ [Section 4.8, “Authorizing the Event Monitor,” on page 29](#)
- ♦ [Section 4.9, “Authorizing the NSM Agents,” on page 30](#)

## 4.1 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-EDIR_4_0_0.iso` image, open the folder pertaining to the platform on which you will be installing the NSM Engine.

For example, if you will be installing the NSM Engine on a Novell Open Enterprise Server 11, open the `SLES 11` folder.

- 2 Locate and click `novell-storage-manager-engine-4.0-xx.x86_64.rpm`.
- 3 Save the RPM.
- 4 Launch a terminal session.
- 5 Do one of the following:

- ♦ Install the NSM Engine RPM package by typing:

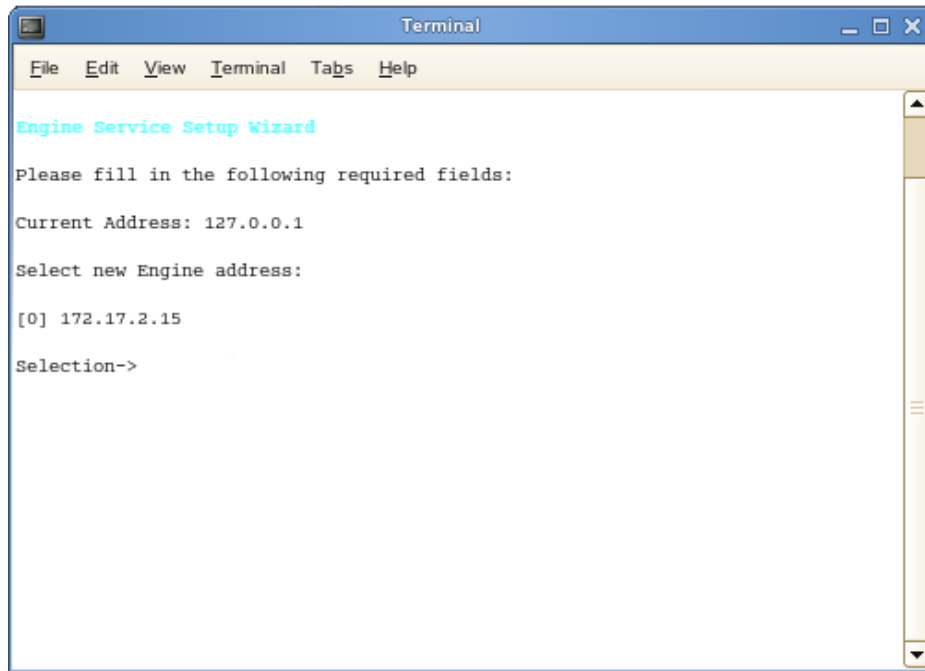
```
# rpm -i novell-storage-manager-engine-4.0.0-xx.x86_64.rpm.
```

- ♦ Upgrade the NSM Engine by typing:
 

```
# rpm -Uvh novell-storage-manager-engine-4.0.0-xx.x86_64.rpm.
```
- 6 Continue with [Section 4.2, “Configuring the NSM Engine,”](#) on page 16.

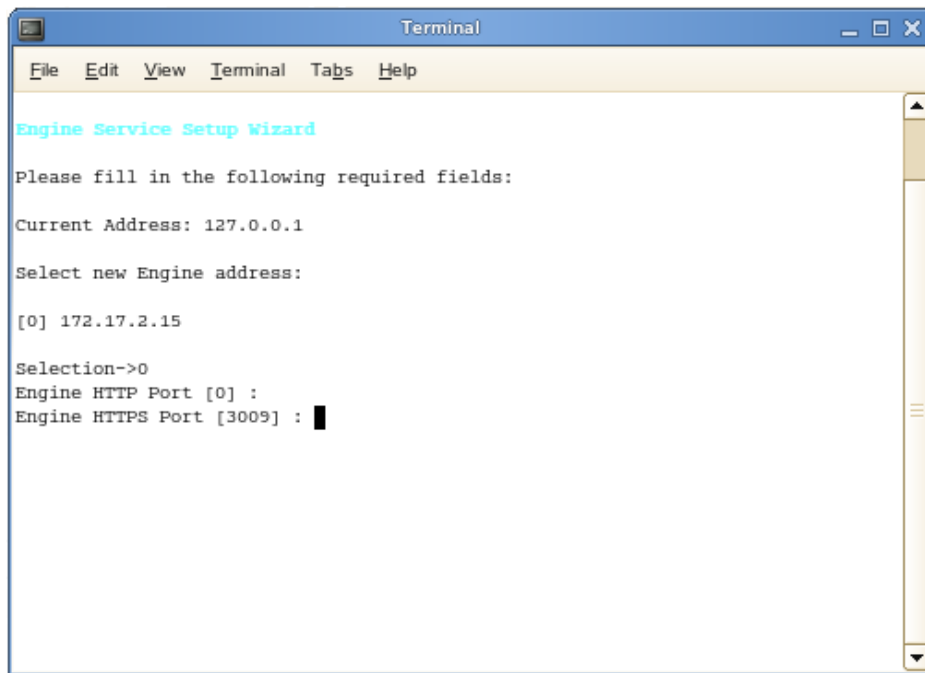
## 4.2 Configuring the NSM Engine

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



- 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:



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 shows a list with "[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] :
```

- 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 Press `Y` to use the default server name for the common name of the certificate.
- 6 Press Enter to continue.  
The certificate is generated.
- 7 Press Enter to continue.
- 8 When you are asked if you want to start the service, click `y` for yes.  
This starts the NSM Engine.
- 9 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.

- 10 Press `q` to quit.

## 4.3 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-EDIR_4_0_0.iso` image, open the folder pertaining to the platform on which you will be installing the Event Monitor.

For example, if you will be installing the Event Monitor on a Novell Open Enterprise Server 11, open the SLES 11 folder.

- 2 Locate and click `novell-storage-manager-event-4.0.0-xx.xxx.rpm`.

- 3 Save the RPM.

- 4 Launch a terminal session.

- 5 Do one of the following:

- ♦ Install the Event Monitor RPM package by typing:
 

```
# rpm -i novell-storage-manager-event-4.0.0-xx.xxx.rpm.
```

- ◆ Upgrade the Event Monitor by typing:

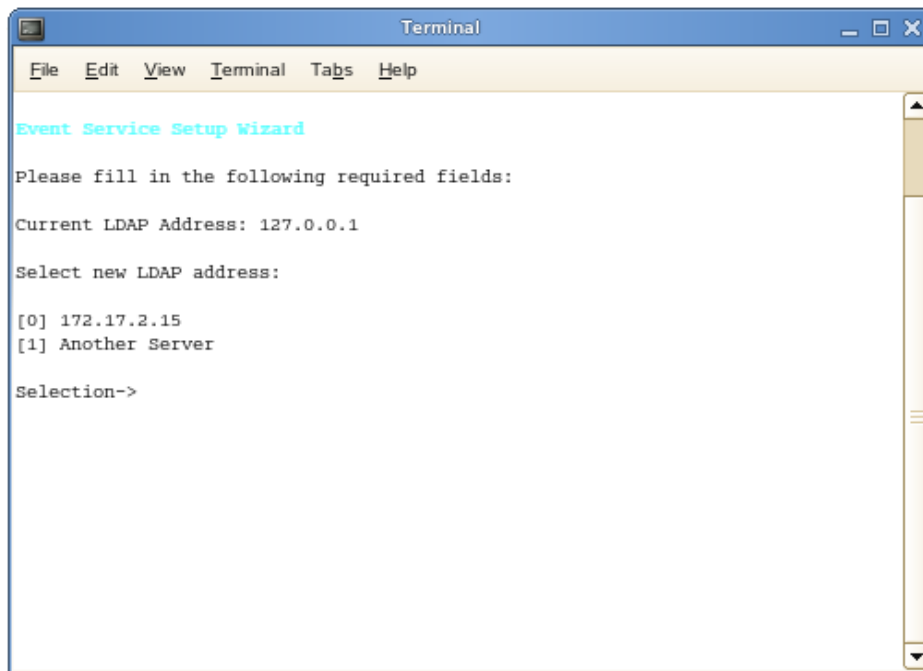
```
# rpm -Uvh novell-storage-manager-event-4.0.0-xx.xxx.rpm.
```

- 6 Continue with [Section 4.4, “Configuring the Event Monitor,”](#) on page 19.

## 4.4 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.



- 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 Press Enter to accept this server as the default LDAP login server.
- 10 Press `y` to use the default server name for the common name of the certificate.
- 11 Press Enter to continue.  
The certificate is generated.
- 12 Press Enter to continue.
- 13 When you are asked if you want to start the service, press `y` for yes.  
This starts the Event Monitor.
- 14 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.

- 15 Press `q` to quit.

## 4.5 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-EDIR_4_0_0.iso` image, open the folder pertaining to the platform on which you will be installing the NSM Agent.

For example, if you will be installing the NSM Agent on a Novell Open Enterprise Server 11, open the `SLES 11` folder.

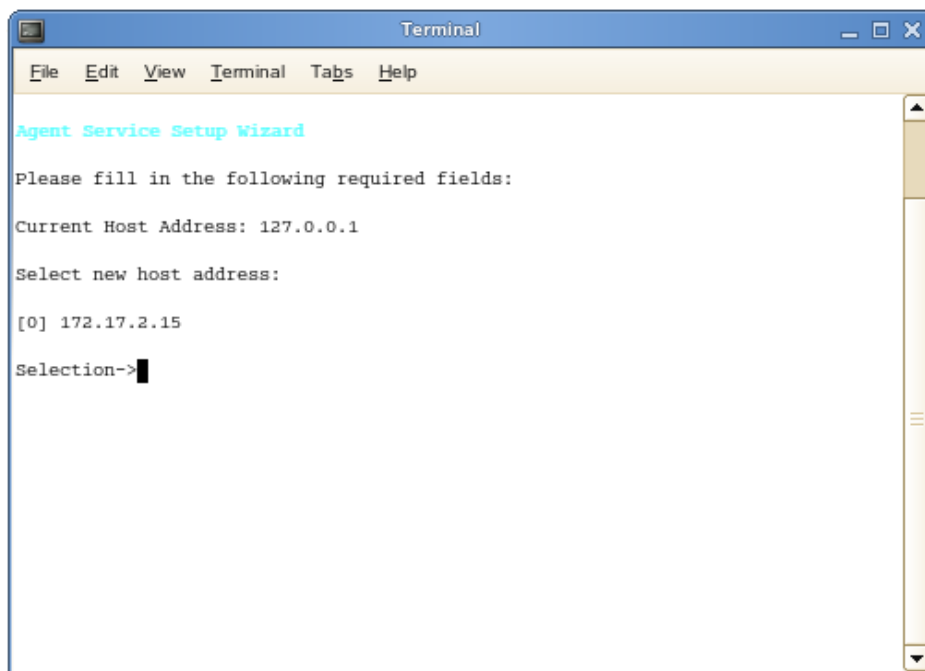
- 2 Locate and click `novell-storage-manager-agent-4.0.0-xx.xxxx.rpm`.
- 3 Save the RPM.
- 4 Launch a terminal session.
- 5 Do one of the following:
  - ♦ Install the NSM Agent RPM package by typing:
 

```
# rpm -i novell-storage-manager-agent-4.0.0-xx.xxxx.rpm.
```
  - ♦ Upgrade the NSM Agent by typing:
 

```
# rpm -Uvh novell-storage-manager-agent-4.0.0-xx.xxxx.rpm.
```
- 6 Continue with [Section 4.6, “Configuring an NSM Agent,”](#) on page 22.

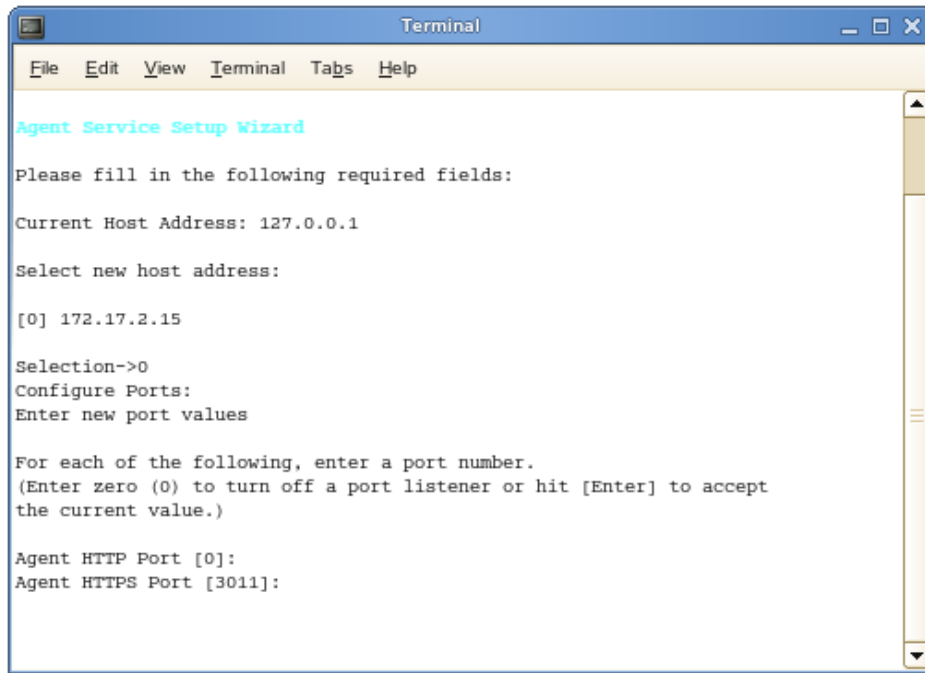
## 4.6 Configuring an NSM Agent

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



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

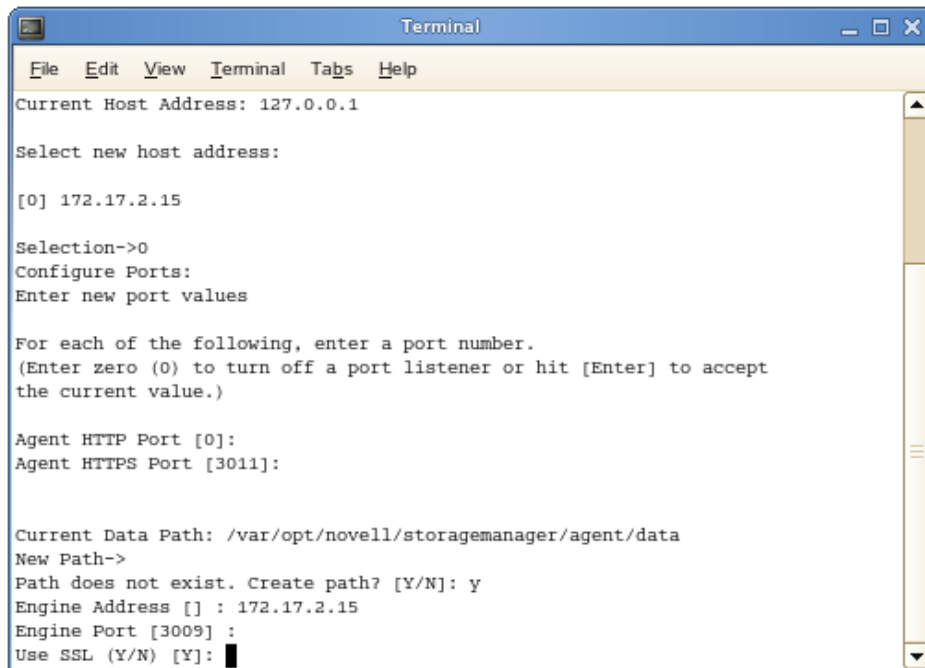
Selection->0
Configure Ports:
Enter new port values

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

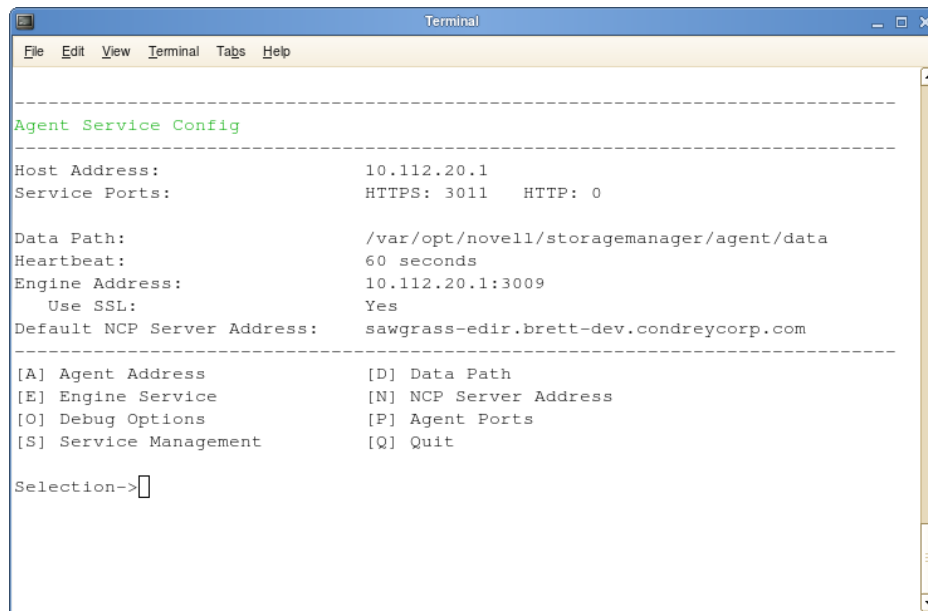
For each of the following, enter a port number.
(Enter zero (0) to turn off a port listener or hit [Enter] to accept
the current value.)

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 Press `y` to use the default server name for the common name of the certificate.
- 11 Press Enter to continue.  
The certificate is generated.
- 12 Press Enter to continue.
- 13 When you are asked if you want to start the service, press `y` for yes.  
This starts the NSM Agent.
- 14 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.

- 15 Press `q` to quit.

## 4.7 Installing and Configuring NSMAdmin

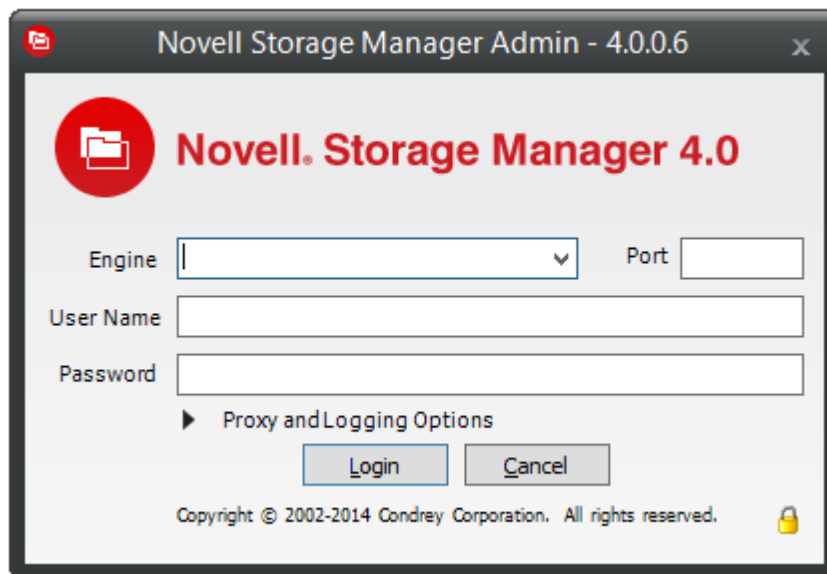
NSMAdmin is the administrative interface for Novell Storage Manager. It can be installed on:

- ♦ Windows 8
- ♦ Windows 7
- ♦ Windows Vista
- ♦ Windows Server 2012, 2008, or 2003

- 1 At the root of the `NSM-EDIR_4_0_0.iso` image, double-click the `Windows` folder.
- 2 Click `NSMAdmin-4.0.0-xxxx.msi`.
- 3 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.
- 4 From the saved location, launch the NSMAdmin installation file.

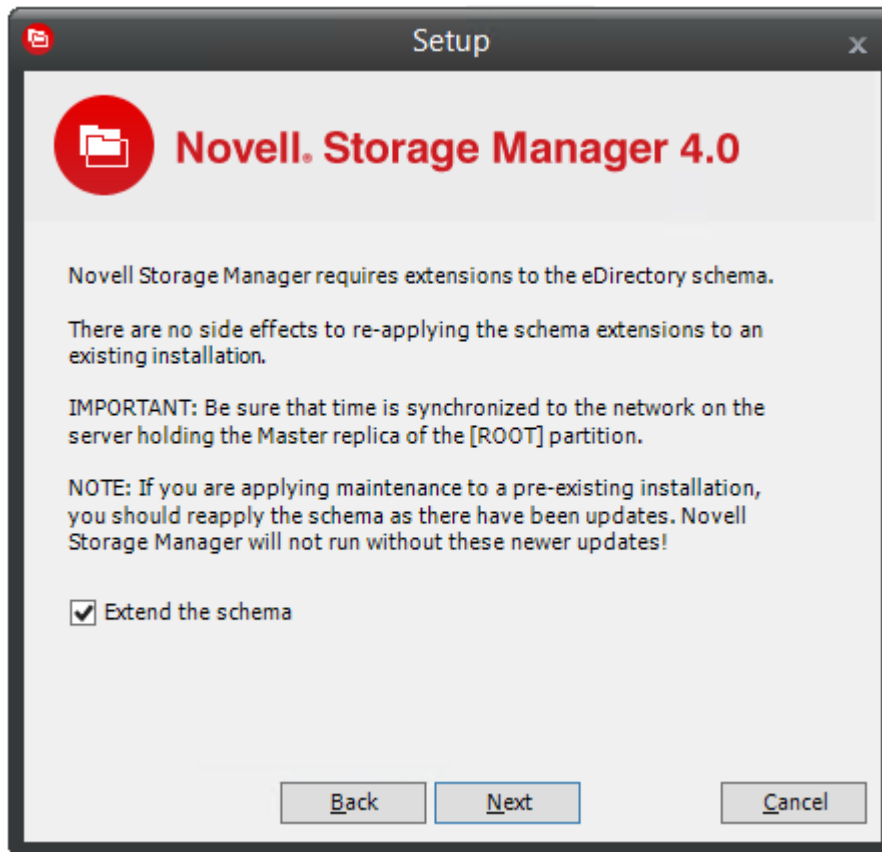


- 5 When you are asked if you want to run this file, click *Run*.  
An Introduction page appears in the NSMAdmin Installation Wizard.
- 6 Read the text and click *Next*.
- 7 Accept the license terms and click *Next*.
- 8 Accept the installation path or indicate a new path by using the *Browse* button.  
To review possible locations, you can click *Disk Usage* to see all available volumes with disk size and disk availability data.
- 9 Click *Next*.
- 10 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.
- 11 Leave the *Launch NSMAdmin 4 eDirectory* check box selected and click *Finish*.  
NSMAdmin is launched.



- 12 In the *Engine* field, specify the DNS name or IP address.
- 13 In the *Port* field, specify the secure port number.  
The default setting is 3009.
- 14 Specify the username and password.  
The user must be a member of the NSMAdmins group to be able to log in.
- 15 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.
- 16 Read the text on the page and click *Next*.
- 17 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

- 18 Click *Next*.
- 19 The following page appears, asking if you want to extend the Novell eDirectory schema.

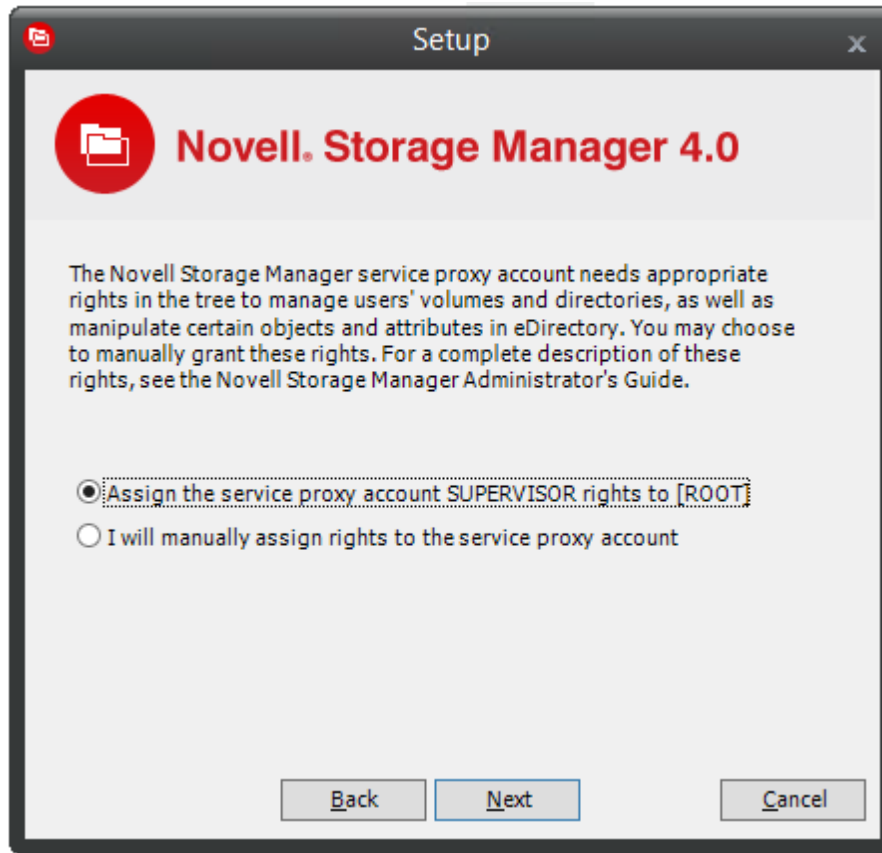


If you plan to manage collaborative storage or auxiliary user storage, you must extend the eDirectory schema.

- 20 Click *Next*.
- The following page appears:

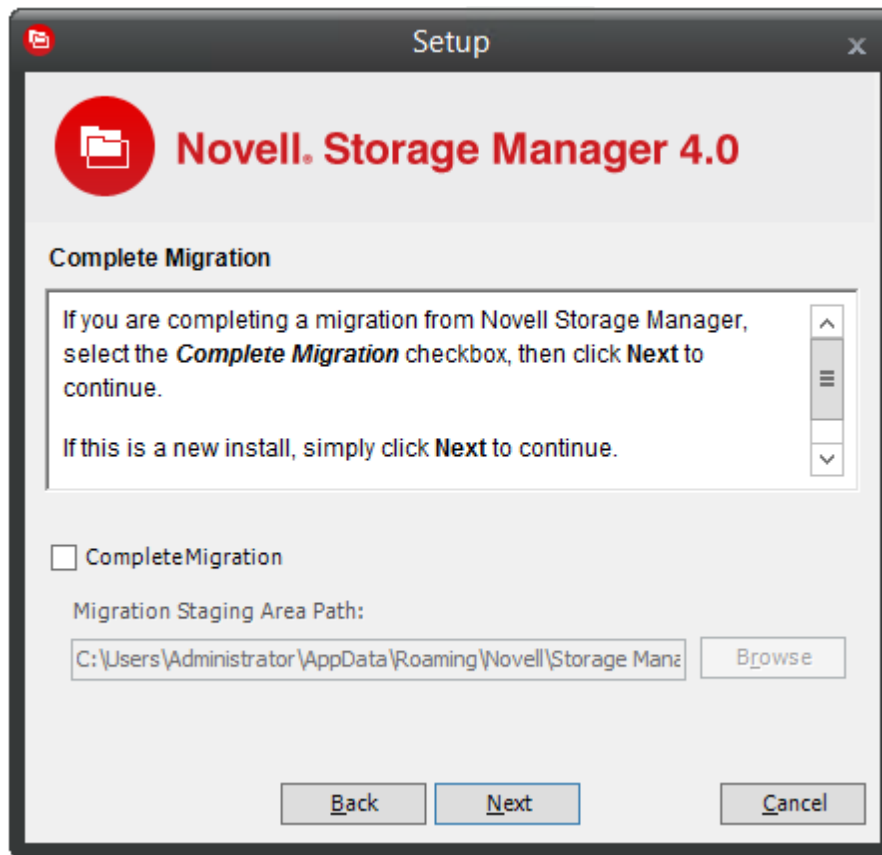


- 21 Accept the account name that will be created and click *Next*.  
The following page appears:



- 22 Select one of the options 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 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.

26 Click *Next*.

27 When you are prompted, enter your password and click *Login*.

28 Proceed with [Section 4.8, “Authorizing the Event Monitor,”](#) on page 29.

## 4.8 Authorizing the Event Monitor

1 In NSMAdmin, click the *Configure* tab.

2 Click *Event Servers*.

3 Select the listed server.

4 Click *Authorize*.

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 30.

## 4.9 Authorizing the NSM Agents

- 1 In NSMAdmin, click the *Configure* tab.
- 2 Click *Agent Servers*.
- 3 Select a listed server.
- 4 Click *Authorize*.
- 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 first 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 31](#)
- [Section A.2, “Creating a New Certificate,” on page 31](#)
- [Section A.3, “Managing Existing Certificates,” on page 32](#)

## 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.

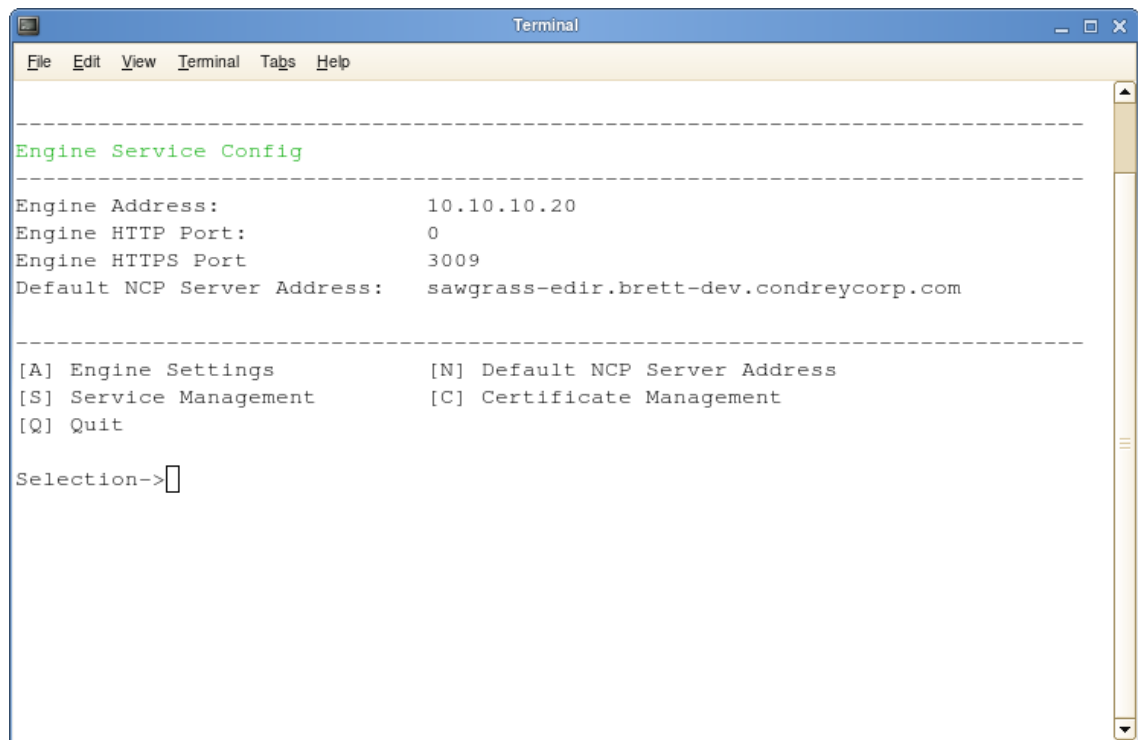
- 4 Start the NSM Engine, either through the *Service Management* submenu or at the console with the `rcnsmengine start` command.

## 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.

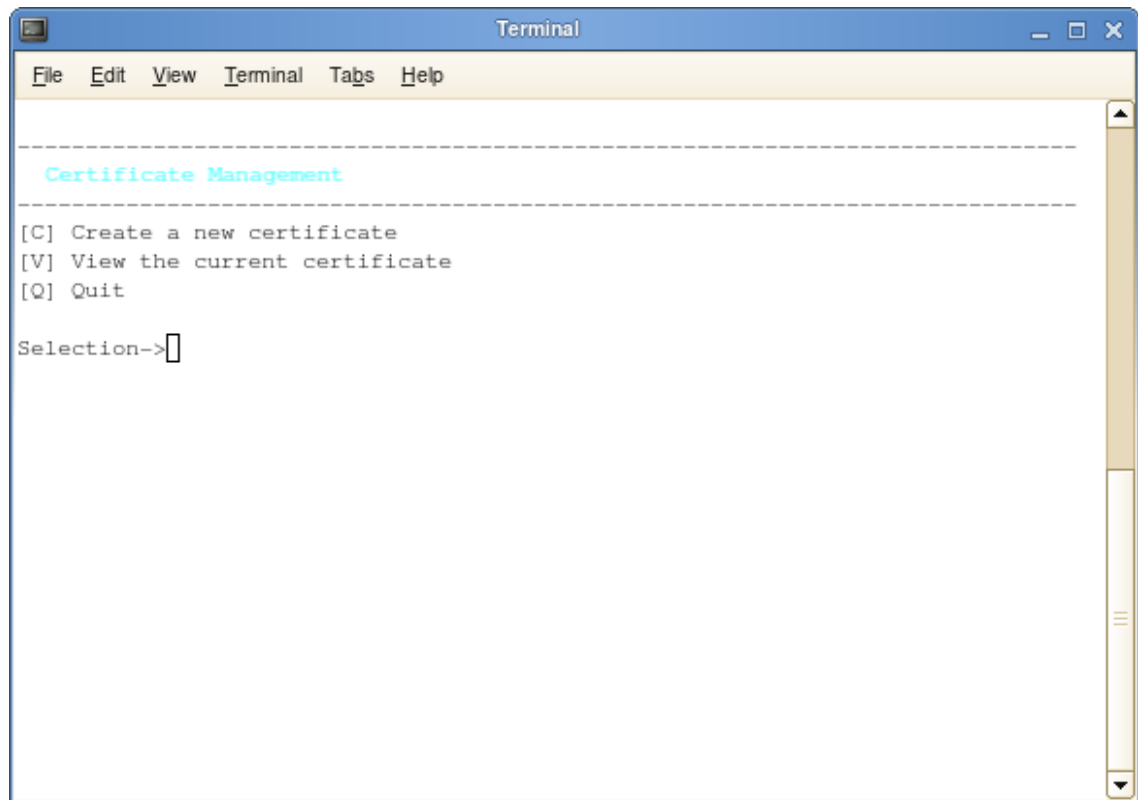
- 1 Load the NSM Engine Configuration Utility by running `nsmengine-config`.





```
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 Deploying NSM Agents Remotely by Using the DeployAgents Tool

- ♦ [Section B.1, “Overview,” on page 35](#)
- ♦ [Section B.2, “Prerequisites,” on page 35](#)
- ♦ [Section B.3, “Copying the Component Installers,” on page 35](#)
- ♦ [Section B.4, “Creating the servernames.txt File,” on page 36](#)
- ♦ [Section B.5, “Deploying the Linux RPMs,” on page 37](#)

## B.1 Overview

The DeployAgents tool lets you remotely install NSM Agents RPMs through a batch installation process.

---

**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 35](#)
- ♦ [Section B.2.2, “Linux Agents,” on page 35](#)

### 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.

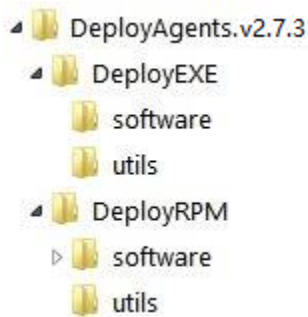
### B.2.2 Linux Agents

- ♦ 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 `NSM-EDIR_4_0_0.iso`, copy the `DeployAgentv2.xx.zip` file to a folder of your choice.
- 2 Unzip the file.

The folder structure looks like the image below:



- 3 From the `NSM-EDIR_4_0_0.iso`, copy the entire `sles10` and `sles11` folders from the ISO image 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.

- 4 Verify that each `software` folder contains a configuration file for the Agent.

For Linux, this will be a `.conf` file.

- 5 In the configuration file, replace the sample IP address with the NSM Engine address.

The sample NSM Engine to be edited looks like this:

```

<Engine>
  <HostAddress>10.82.2.16</HostAddress>
<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 36](#)
- ♦ [Section B.4.2, “Automatically Creating the `servername.txt` File,” on page 37](#)

This file specifies the names of all of the servers on which the NSM Agent software is to be deployed. The file is specific to the RPM file format.

### 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 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 NSM Agents installed and you want to update them, the `DeployAgents` tool can automatically create a `servername.txt` file for you.

Simply copy the `agents.dat` file from its location on the NSM Engine to the root of the `DeployRPM` folder.

## B.5 Deploying the Linux RPMs

- ♦ [Section B.5.1, “External Utilities,” on page 37](#)
- ♦ [Section B.5.2, “Deployment Specifics,” on page 37](#)
- ♦ [Section B.5.3, “Using `DeployAgentsRPM.cmd`,” on page 38](#)

### 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 `servernames.txt` file.

### B.5.3 Using DeployAgentsRPM.cmd

#### Usage:

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

#### Explanation

The `<agents.dat>` file can be found in the NSM Engine's `data` directory.

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-storage-manager-agent-4.0.0-4.x86_64.rpm
```

# C Documentation Updates

This section contains information about documentation content changes that were made in this *Novell Storage Manager 4.0 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 7, 2014

Updates were made to the following sections:

Location	Update Description
<a href="#">Chapter 3, "Upgrading from Storage Manager 3.1.1 to 4.0," on page 13.</a>	New section.
<a href="#">Appendix B, "Deploying NSM Agents Remotely by Using the DeployAgents Tool," on page 35.</a>	Updated procedures.

## C.2 October 17, 2013

Updates were made to the following sections:

Location	Update Description
<a href="#">Section 4.4, "Configuring the Event Monitor," on page 19.</a>	Corrected the syntax in <a href="#">Step 1</a> .

## C.3 June 12, 2013

Updates were made to the following sections:

Location	Update Description
<a href="#">Section B.2.1, "Windows PowerShell," on page 35.</a>	New section.

## C.4 February 13, 2013

Updates were made to the following sections:

Location	Update Description
<a href="#">Chapter 3, "Upgrading from Storage Manager 3.1.1 to 4.0," on page 13.</a>	Updated the chapter to include NSM Engine, Event Monitor, and NSM Agent support for Open Enterprise Server 11 and Open Enterprise Server 11 SP1.
<a href="#">Chapter 4, "Installing Novell Storage Manager 4.0 for eDirectory," on page 15.</a>	Updated the chapter to include NSM Engine, Event Monitor, and NSM Agent support for Open Enterprise Server 11 and Open Enterprise Server 11 SP1.
<a href="#">Section 4.2, "Configuring the NSM Engine," on page 16.</a>	Removed support for a server host with an x86 processor.
<a href="#">Section 4.7, "Installing and Configuring NSMAdmin," on page 24.</a>	Updated the requirements to include the .NET 4.0 (Full) Framework.  Updated the supported servers to include Windows Server 2012.

## C.5 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.
<a href="#">Appendix B, "Deploying NSM Agents Remotely by Using the DeployAgents Tool," on page 35.</a>	new appendix.

## C.6 May 18, 2012

Updates were made to the following sections:

Location	Update Description
<a href="#">Appendix A, "NSM Engine Certificate Management," on page 31.</a>	New appendix.

## C.7 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.8 February 14, 2011

Updates were made to the following section:



Location	Update Description
<a href="#">Section 2.1, "Licensing Overview," on page 9</a>	Overview of license types and the features and capabilities enabled in each.

