

Novell Storage Manager 3.1.1 for Active Directory Installation Guide

Installation Guide

Novell Storage Manager 3.1.1 for Active Directory

October 17, 2013

Novell.

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Contents

About This Guide	5
1 Prerequisites	7
1.1 File Server Resource Manager	7
1.1.1 Installing File Server Resource Manager	7
1.2 Preparing the Files for Installation	9
1.3 Active Directory Schema	9
1.3.1 Extending the Active Directory Schema	10
1.4 Verifying Proper Configurations and Rights	10
1.5 Determining Your Installation Method	10
1.5.1 Installation Folders	11
1.5.2 HTML Installation Interface	11
1.6 What's Next	12
2 Licensing the Product	13
2.1 Licensing Overview	13
2.2 Obtaining a License File	14
2.3 Updating a License File	15
3 Upgrading from Storage Manager 2.5x to 3.1.1	17
3.1 Understanding the Upgrade Process	17
3.2 Clearing Pending Events	18
3.3 Performing Upgrade Tasks as a Domain Administrator	18
3.4 Installing NSMAdmin 3.1.1	18
3.5 Running the NSM Migration Utility	20
3.6 Unloading Novell Storage Manager 2.5x Event Monitor Components	23
3.7 Unloading Novell Storage Manager 2.5x Agent Components	23
3.8 Installing the NSM Engine	24
3.9 Running the NSMAdmin 3.1.1 Setup Wizard	27
3.10 Setting Rights and Privileges on Managed Storage	30
3.10.1 Granting Rights	31
3.10.2 Granting Privileges	31
3.11 Performing Manage Operations	32
3.12 Installing and Configuring the Event Monitor	33
3.13 Installing and Configuring an NSM Agent	35
3.14 Authorizing the Event Monitor	39
3.15 Authorizing the NSM Agents	39
4 Upgrading from Storage Manager 3.x to 3.1.1	41
4.1 Upgrading from 3.1 to 3.1.1	41
4.2 Upgrading from 3.0.x to 3.1.1	41
4.2.1 Performing Installation Tasks as a Domain Administrator	42
4.2.2 Upgrading the NSM Engine	42
4.2.3 Upgrading an Event Monitor	44
4.2.4 Upgrading an NSM Agent	46

4.2.5	Upgrading NSMAdmin	49
4.2.6	Verifying that Upgraded Components Are Operating	51

5 Installing Novell Storage Manager 3.1.1 for Active Directory 53

5.1	Storage Manager 3.1.1 Components	53
5.2	Performing Installation Tasks as a Domain Administrator	53
5.3	Installing the NSM Engine	54
5.4	Installing and Configuring NSMAdmin	57
5.5	Setting Rights and Privileges on Managed Storage	60
5.5.1	Granting Rights	61
5.5.2	Granting Privileges	61
5.6	Installing and Configuring the Event Monitor	62
5.7	Installing and Configuring an NSM Agent	64
5.8	Authorizing the Event Monitor	68
5.9	Authorizing the NSM Agents	68

A Deploying Event Monitors and NSM Agents Remotely by Using the DeployAgents Tool 69

A.1	Overview	69
A.2	Prerequisites	70
A.2.1	Windows PowerShell	70
A.2.2	Windows Agents and Event Monitors	70
A.2.3	Linux Agents and Event Monitors	70
A.3	Copying the Component Installers	70
A.4	Creating the servenames.txt File	71
A.4.1	Manually Creating the servenames.txt File	72
A.4.2	Automatically Creating the servenames.txt File	72
A.5	Deploying the Linux RPMs	73
A.5.1	External Utilities	73
A.5.2	Deployment Specifics	73
A.5.3	Using DeployAgentsRPM.cmd	73
A.6	Deploying the Windows MSI or EXE Files	74
A.6.1	Deployment Specifics	74
A.6.2	Setting an Alternate Installation Path	74
A.6.3	Using DeployAgentsMSI.cmd	75
A.6.4	Using DeployAgentsEXE.cmd	75

B Documentation Updates 77

B.1	October 17, 2013	77
B.2	June 12, 2013	77
B.3	February 13, 2013	78
B.4	January 18, 2013	78
B.5	May 18, 2012	78
B.6	February 2, 2012	79
B.7	March 16, 2011	79
B.8	February 14, 2011	79

About This Guide

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

- ♦ Chapter 1, “Prerequisites,” on page 7
- ♦ Chapter 2, “Licensing the Product,” on page 13
- ♦ Chapter 3, “Upgrading from Storage Manager 2.5x to 3.1.1,” on page 17
- ♦ Chapter 4, “Upgrading from Storage Manager 3.x to 3.1.1,” on page 41
- ♦ Chapter 5, “Installing Novell Storage Manager 3.1.1 for Active Directory,” on page 53
- ♦ Appendix A, “Deploying Event Monitors and NSM Agents Remotely by Using the DeployAgents Tool,” on page 69
- ♦ Appendix B, “Documentation Updates,” on page 77

Audience

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

Feedback

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

Documentation Updates

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

Additional Documentation

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

- ♦ *Novell Storage Manager 3.1.1 for Active Directory Administration Guide*

1 Prerequisites

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

- ♦ [Section 1.1, “File Server Resource Manager,” on page 7](#)
- ♦ [Section 1.2, “Preparing the Files for Installation,” on page 9](#)
- ♦ [Section 1.3, “Active Directory Schema,” on page 9](#)
- ♦ [Section 1.4, “Verifying Proper Configurations and Rights,” on page 10](#)
- ♦ [Section 1.5, “Determining Your Installation Method,” on page 10](#)
- ♦ [Section 1.6, “What’s Next,” on page 12](#)

1.1 File Server Resource Manager

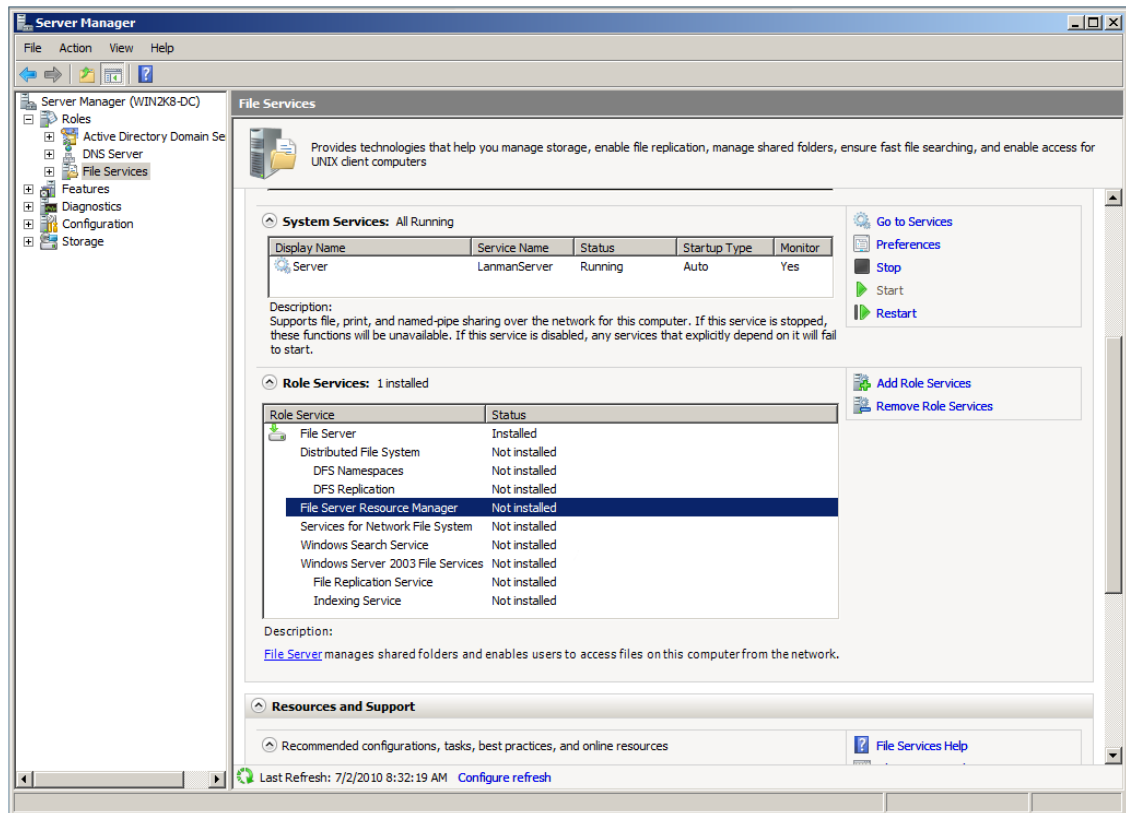
Microsoft File Server Resource Manager is a suite of tools from Microsoft that allows administrators to better understand, control, and manage the quantity and type of data stored on their servers. Novell Storage Manager uses File Server Resource Manager to enable quota management.

NOTE: You must install File Server Resource Manager on all servers where Novell Storage Manager will be managing quotas for user or collaborative storage.

1.1.1 Installing File Server Resource Manager

Quotas for user and collaborative storage can be managed through Novell Storage Manager on Windows Server 2012 and Windows Server 2008 SP2 or R2. You need to install File Server Resource Manager on every server or active node that will be hosting user or collaborative quota-managed storage.

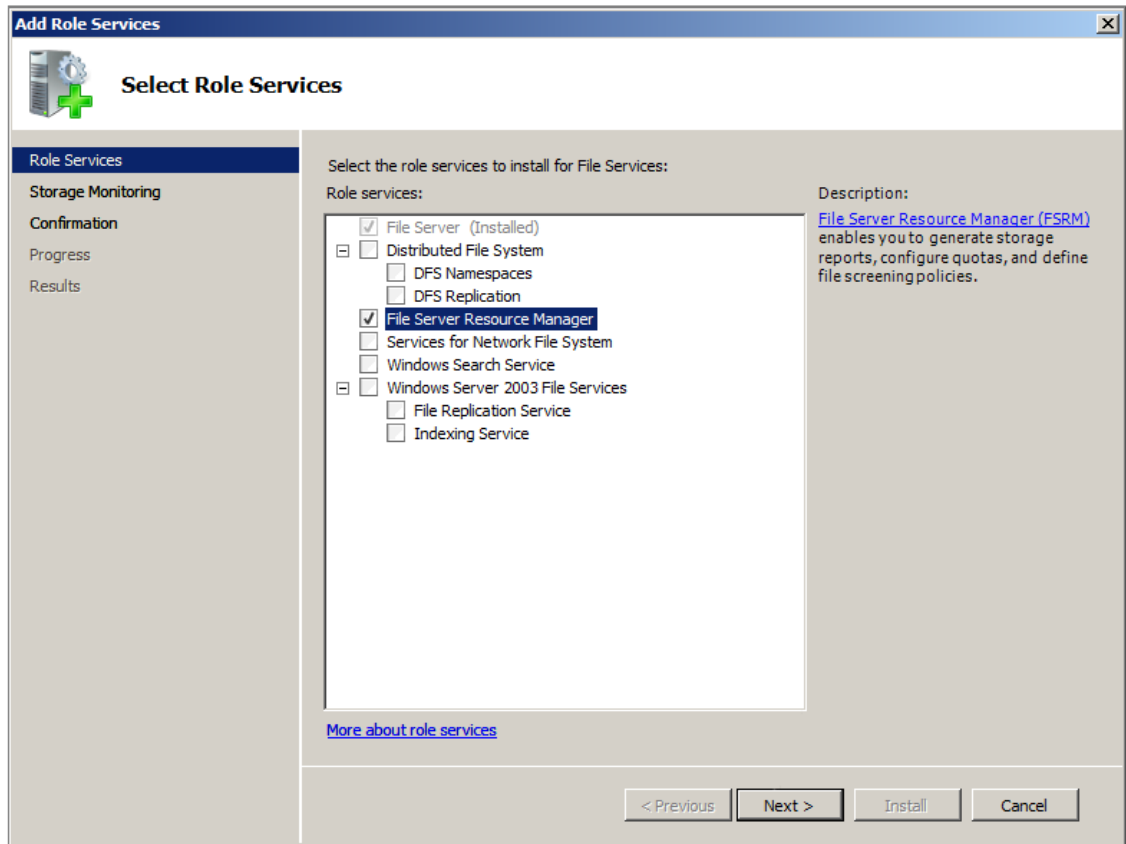
- 1 At the server or node, select *Start > Server Manager*.
- 2 In the left pane of the Server Manager interface, select *Roles > File Services*.
- 3 In the *Role Services* list box, select *File Server Resource Manager*.



4 Select *Add Role Services*.

This brings up the Select Role Services dialog box.

5 From the list of role services, select the check box corresponding to File Server Resource Manager and click *Next*.



- 6 When the Configure Storage Usage Monitoring window appears, click *Next*.
- 7 When the confirmation window appears, click *Install*.
- 8 When the Results window indicates that the installation was successful, click *Close*.

1.2 Preparing the Files for Installation

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

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

1.3 Active Directory Schema

The Microsoft Active Directory schema contains formal definitions of every object class that can be created in an Active Directory forest. The schema also contains formal definitions of every attribute that can exist in an Active Directory object.

To enable collaborative storage or auxiliary storage management, Novell Storage Manager extends the Active Directory schema to enable Novell Storage Manager attributes. These attributes are specified in “[Active Directory Schema Extensions](#)” in the *Novell Storage Manager 3.1.1 for Active Directory Administration Guide*.

NOTE: If your Novell Storage Manager deployment will not include support for collaborative storage or auxiliary storage management, there is no need to extend the Active Directory schema.

1.3.1 Extending the Active Directory Schema

- 1 Log in to the forest or domain as a user with Schema administration privileges.
You can do this by being a member of the Schema Admins group.
- 2 At the root of the ISO image, open the \\Windows folder, locate the NSM-ad-SchemaTool.exe file, and double-click it.
- 3 When you are asked if you want to run this file, click *Run*.
A Windows console application runs.

```

N:\Builds\pinehurst\Builds\AD-Schema-Extender\Release\ad-schema-extender.exe
Attempting to resolve current Domain...
Accessing current schema for AD Forest 'NUB.local'
Obtained handle to schema

Checking for existing attribute schema extensions...
-> ccx-FSPAuxiliaryStorage : exists
-> ccx-FSFManagedPath : exists

Checking for existing class schema extensions...
-> ccx-FSFManagedAttributes : exists

One or more schema definitions need extending.
Perform schema extensions? [Y/N]: _

```

- 4 Type *Y* to extend the schema.

1.4 Verifying Proper Configurations and Rights

In some cases, you might find that you are unable to install a Novell Storage Manager component because of an improper configuration or rights setting. Novell recommends that you review the following sections in the *Novell Storage Manager for Active Directory Administration Guide* and making any needed adjustments before proceeding:

- ♦ [“Windows Firewall Requirements”](#)
- ♦ [“LSA Rights and Privileges”](#)
- ♦ [“ProxyRights Group”](#)

1.5 Determining Your Installation Method

You must install the following Novell Storage Manager 3.1.1 components:

- ♦ NSM Engine

- ◆ Event Monitor
- ◆ NSM Agents
- ◆ NSMAdmin

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

- ◆ Installation Folders
- ◆ HTML Installation Interface

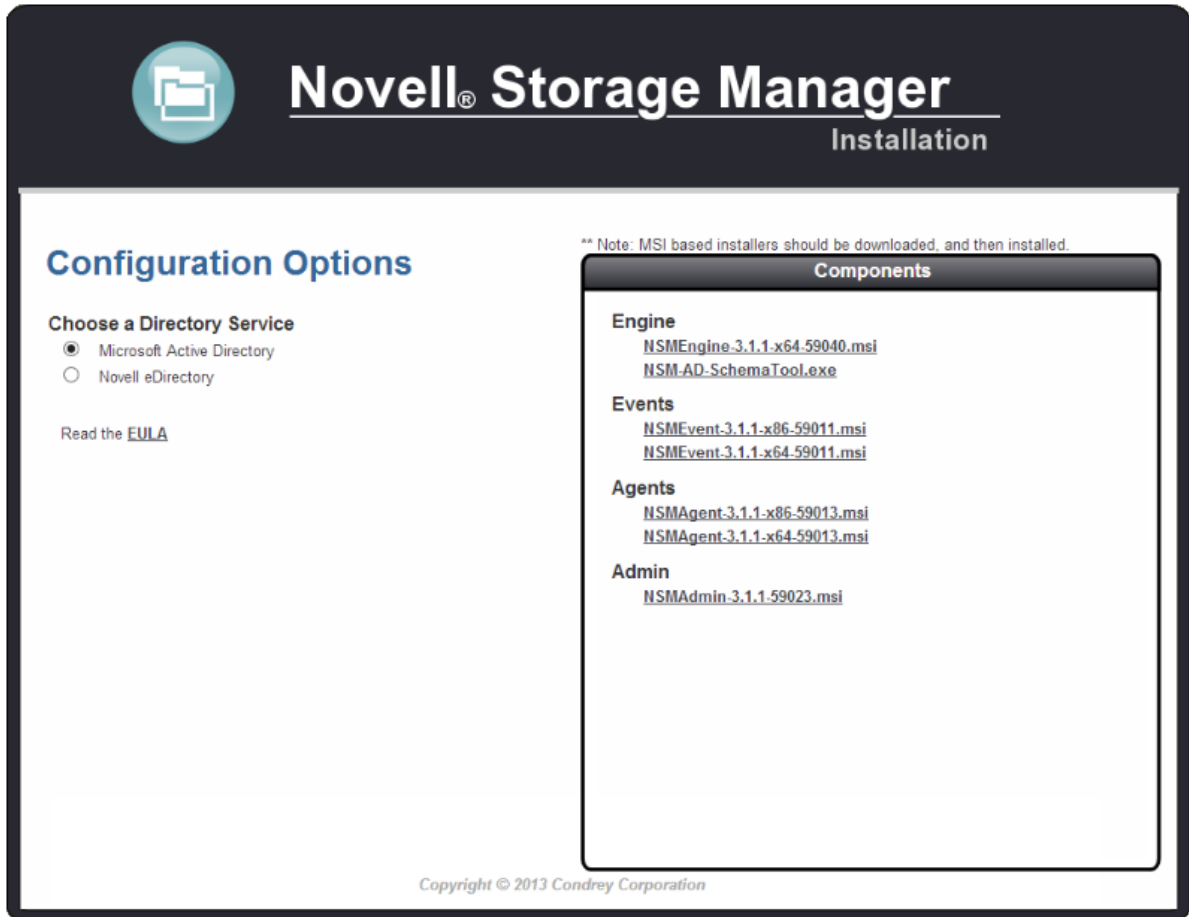
Each of these methods are explained below.

1.5.1 Installation Folders

The Windows folder located at the root of the ISO image includes an x86 and x86_64 folder. The x86 folder contains 32-bit installation files for the NSM Engine, Event Monitor, NSM Agent, and NSMAdmin. The x86_64 folders contains 64-bit versions of all of these except for NSMAdmin, which is developed as a 32-bit application only.

1.5.2 HTML Installation Interface

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



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.

1.6 What's Next

If you are upgrading your Novell Storage Manager 2.5x for Active Directory environment to Novell Storage Manager 3.1.1 for Active Directory:

1. Proceed with [Chapter 2, "Licensing the Product,"](#) on page 13.
2. Complete the upgrade by following the procedures in [Chapter 3, "Upgrading from Storage Manager 2.5x to 3.1.1,"](#) on page 17.

If you are performing a new installation of Novell Storage Manager 3.1.1 for Active Directory:

1. Proceed with [Chapter 2, "Licensing the Product,"](#) on page 13.
2. Complete the installation by following the procedures in [Chapter 5, "Installing Novell Storage Manager 3.1.1 for Active Directory,"](#) on page 53.

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 15

2.1 Licensing Overview

Novell Storage Manager has three license types:

Table 2-1 *Novell Storage Manager License Types*

License Type	Target Consumer	Intended Use
Evaluation	Customers	Allows customers to develop and 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 *Enabled Features*

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

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

2.2 Obtaining a License File

Novell Storage Manager requires a production license file, evaluation license file, or assessment 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

[Home](#)

Version 3.1.x

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

Version 3.0.x

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

Version 2.5.x

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

Support

- [Forums](#)

Product License – 3.1

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

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

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

- 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 the license file to complete NSM Engine setup wizard.

2.3 Updating a License File

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

3 Upgrading from Storage Manager 2.5x to 3.1.1

Use the procedures in this section to upgrade your deployment of Novell Storage Manager 2.5x for Active Directory to Novell Storage Manager 3.1.1 for Active Directory. You should follow these procedures only after you have performed the prerequisite tasks in [Chapter 1, “Prerequisites,”](#) on [page 7](#), and obtained a Novell Storage Manager 3.1.1 for Active Directory product license as indicated in [Chapter 2, “Licensing the Product,”](#) on [page 13](#).

IMPORTANT: You must upgrade your existing NSM Engine, and all Event Monitors and NSM Agents to Version 3.1.1.

- [Section 3.1, “Understanding the Upgrade Process,”](#) on [page 17](#)
- [Section 3.2, “Clearing Pending Events,”](#) on [page 18](#)
- [Section 3.3, “Performing Upgrade Tasks as a Domain Administrator,”](#) on [page 18](#)
- [Section 3.4, “Installing NSMAdmin 3.1.1,”](#) on [page 18](#)
- [Section 3.5, “Running the NSM Migration Utility,”](#) on [page 20](#)
- [Section 3.6, “Unloading Novell Storage Manager 2.5x Event Monitor Components,”](#) on [page 23](#)
- [Section 3.7, “Unloading Novell Storage Manager 2.5x Agent Components,”](#) on [page 23](#)
- [Section 3.8, “Installing the NSM Engine,”](#) on [page 24](#)
- [Section 3.9, “Running the NSMAdmin 3.1.1 Setup Wizard,”](#) on [page 27](#)
- [Section 3.10, “Setting Rights and Privileges on Managed Storage,”](#) on [page 30](#)
- [Section 3.11, “Performing Manage Operations,”](#) on [page 32](#)
- [Section 3.12, “Installing and Configuring the Event Monitor,”](#) on [page 33](#)
- [Section 3.13, “Installing and Configuring an NSM Agent,”](#) on [page 35](#)
- [Section 3.14, “Authorizing the Event Monitor,”](#) on [page 39](#)
- [Section 3.15, “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 Active Directory policies as well as deferred delete pending events.

A migration can be either “in-place” or an “across-the-wire.” You can do an in-place migration when the server currently hosting the Novell Storage Manager 2.5x NSM Engine will be the same server that hosts the Novell Storage Manager 3.1.1 NSM Engine. You do an across-the-wire migration when the Novell Storage Manager 3.1.1 NSM Engine will be hosted on a different server than the one currently hosting the Novell Storage Manager 2.5x NSM Engine.

The migration is a three-step process:

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

3.2 Clearing Pending Events

The NSM Migration utility migrates only deferred delete pending events. Therefore, before proceeding with the procedures below, 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.

3.3 Performing Upgrade Tasks as a Domain Administrator

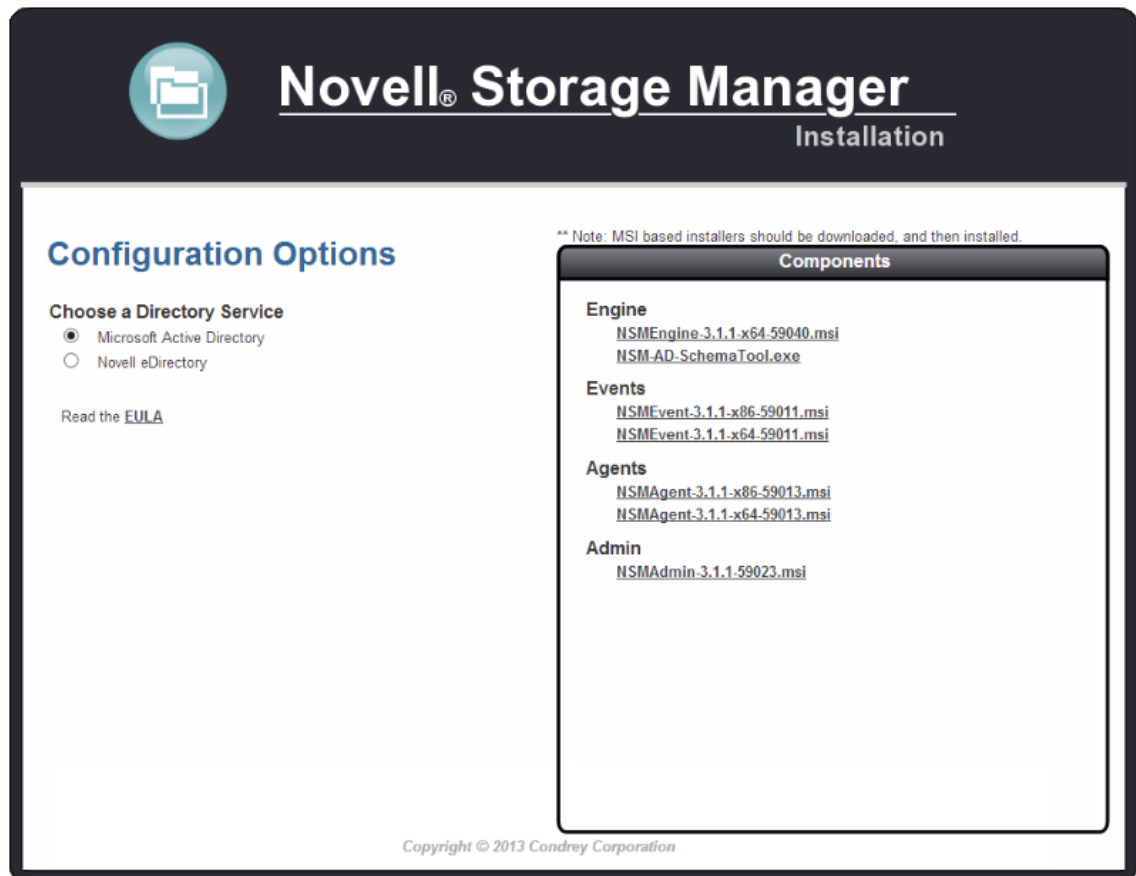
In order to successfully migrate files and upgrade the NSM Engine, Event Monitor, and NSM Agents, you must be logged in to the computer as a domain administrator. If you are not, the rights are not sufficient.

3.4 Installing NSMAdmin 3.1.1

The NSMAdmin 3.1.1 installation package includes the NSM Migration utility.

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

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



- 2 Select *Microsoft Active Directory*.
- 3 Click *NSMAdmin-3.1.1-xxxx.msi*.
- 4 When asked if you want to save or run the file, save the file to the hard drive of a computer where you will administer Novell Storage Manager.
- 5 From the saved location, launch the NSMAdmin installation file.
- 6 When you are asked if you want to run this file, click *Run*.

An Introduction page appears in the NSMAdmin Installation Wizard.

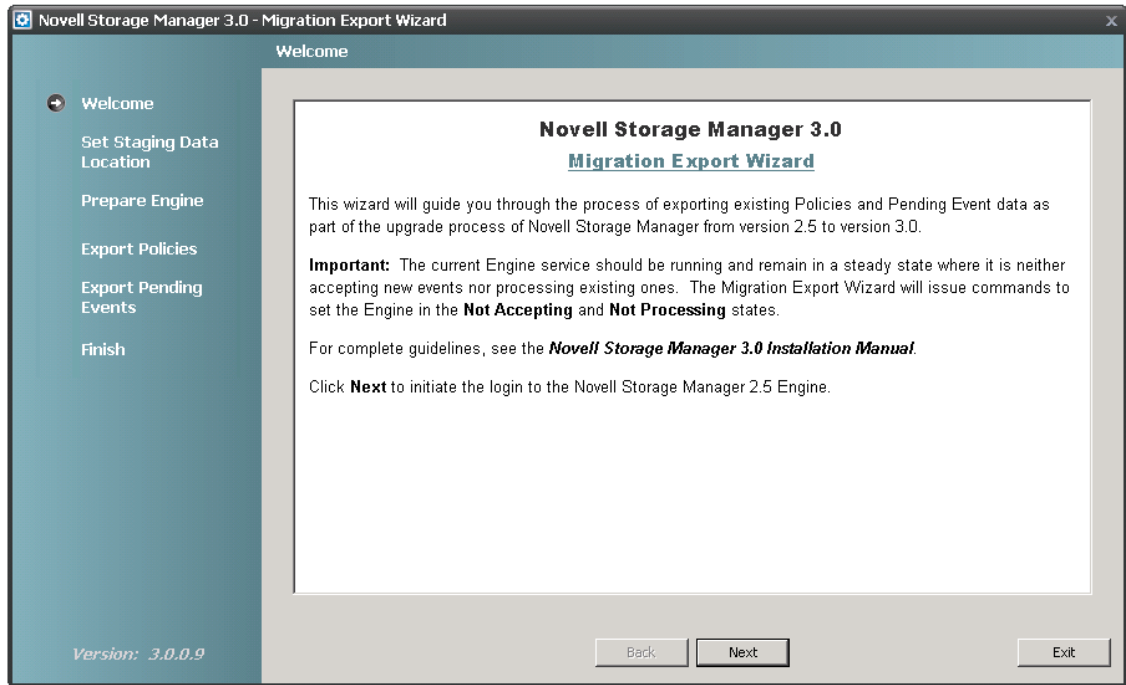
- 7 Read the text and click *Next*.
- 8 Accept the license terms and click *Next*.
- 9 Accept the installation path or indicate a new path by using the *Browse* button.
To review possible locations, you can click *Disk Usage* to see all available volumes with disk size and disk availability data.
- 10 Click *Next*.
- 11 Leave the *Create shortcut on Desktop* check box selected and click *Install*.
- 12 Deselect the *Launch NSMAdmin 3* checkbox, 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.

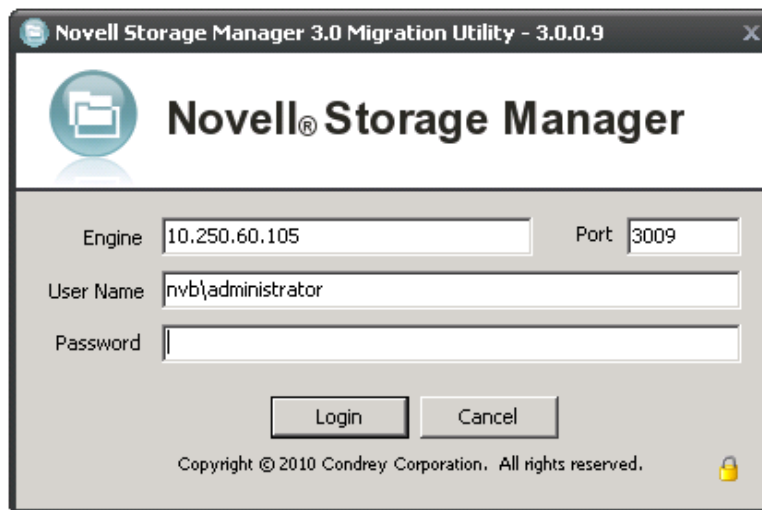
- 1 At the server where the Novell Storage Manager 3.1.1 NSM Engine will be hosted, click *Start > All Programs > Novell > Storage Manager > NSM Migration Utility*.

This launches a migration wizard.



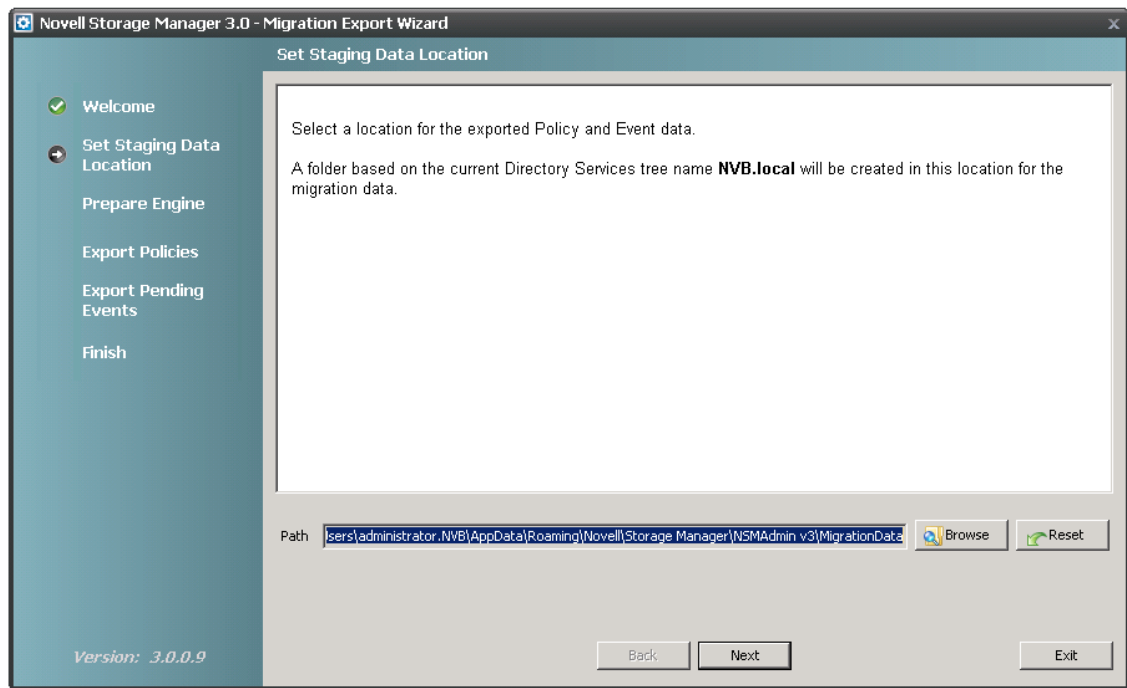
- 2 Read the text and click *Next*.

The following login window appears:



- 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*.

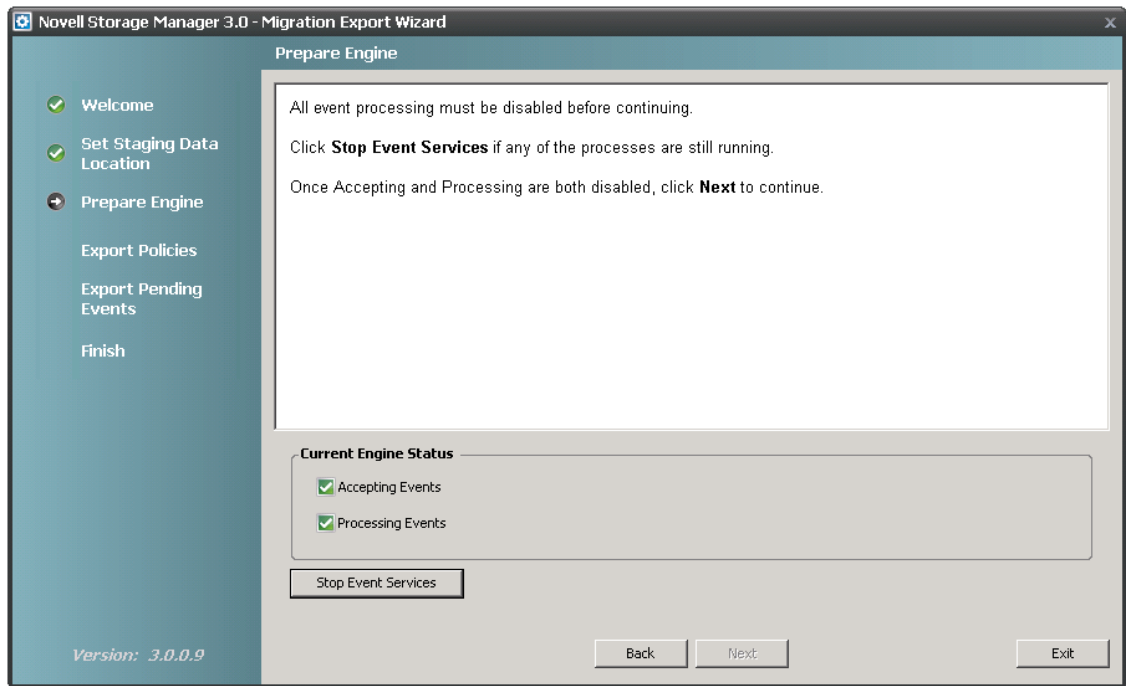
The following page appears:



- 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:

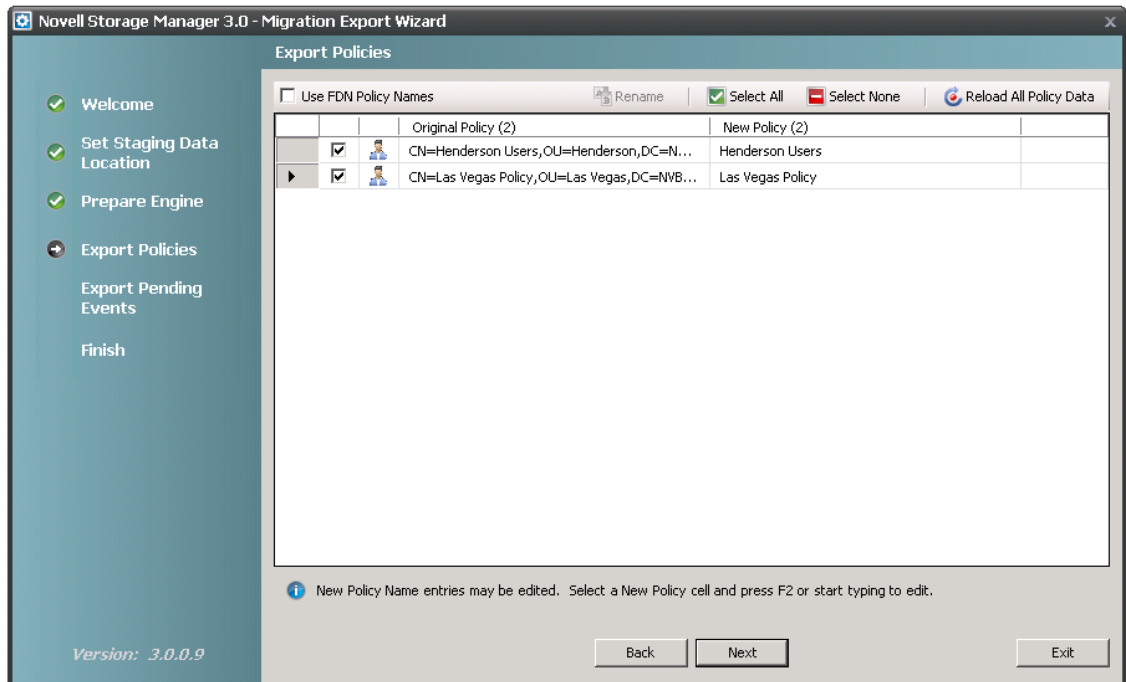


5 Click *Stop Event Services*, then click *Next*.

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

6 Click *Next*.

A screen similar to the following appears:



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 changed any, those changes may not show up on a subsequent run of the Migration utility until you click *Reload All Policy Data*.

- 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.
- 8 Click *Next*.
The wizard begins the export of the policies to the migration file and indicates when the export is complete.
- 9 Click *Next*.
The wizard begins the export of the deferred delete events to the migration file and indicates when the export is complete.
- 10 Click *Next*.
A concluding wizard page appears with procedures for importing the migration file to the Novell Storage Manager 3.1.1 NSM Engine.
- 11 Read the summary of procedures and click *Finish*.
- 12 Proceed with [Section 3.6, “Unloading Novell Storage Manager 2.5x Event Monitor Components,”](#) on page 23.

3.6 Unloading Novell Storage Manager 2.5x Event Monitor Components

- 1 At each server console hosting Novell Storage Manager 2.5x Event Monitors, unload or stop each Event Monitor and confirm that the event processing has stopped.
- 2 Proceed with [Section 3.7, “Unloading Novell Storage Manager 2.5x Agent Components,”](#) on page 23.

3.7 Unloading Novell Storage Manager 2.5x Agent Components

- 1 At each server console running hosting Novell Storage Manager 2.5x NSM Agents, unload or stop each NSM Agent and confirm that these processes have stopped.
- 2 Proceed with [Section 3.8, “Installing the NSM Engine,”](#) on page 24.

3.8 Installing the NSM Engine

Novell Storage Manager uses only one NSM Engine per forest. The NSM Engine can be installed on a Windows Server 2008 machine that meets the following minimum requirements:

- ◆ Microsoft Windows Server 2012 (Member or DC Server)
- ◆ Microsoft Windows Server 2008 R2 (Member or DC Server)
- ◆ .NET 3.5 Framework and .NET 4.0 (Full) Framework installed
- ◆ For quota management, Microsoft File System Resource Manager (FSRM) must be installed; see [Section 1.1, “File Server Resource Manager,”](#) on page 7.
- ◆ Forest functional level of Windows Server 2003 or later

IMPORTANT: In cases where managed storage may include redirected folders, such as “My Documents” or similar types commonly seen with managed Profile Paths, a Windows Server hotfix (<http://support.microsoft.com/kb/973278>) will need to be applied to any Engine and Agent servers involved in the data copy process. This hotfix only applies to the following platforms where the Engine or an Agent is installed:

- ◆ Windows Server 2008
- ◆ Windows Server 2008 SP1

In cases where this hotfix has not been applied to the affected systems, symptoms may include stuck Copy Data pending events with the message: Current Error - 32: The requested operation is not supported in the properties for that event as well as the error message identified by the hotfix “0x00000032 (ERROR_NOT_SUPPORTED)” appearing in the log file of the Engine or Agent that tried processing the data copy.

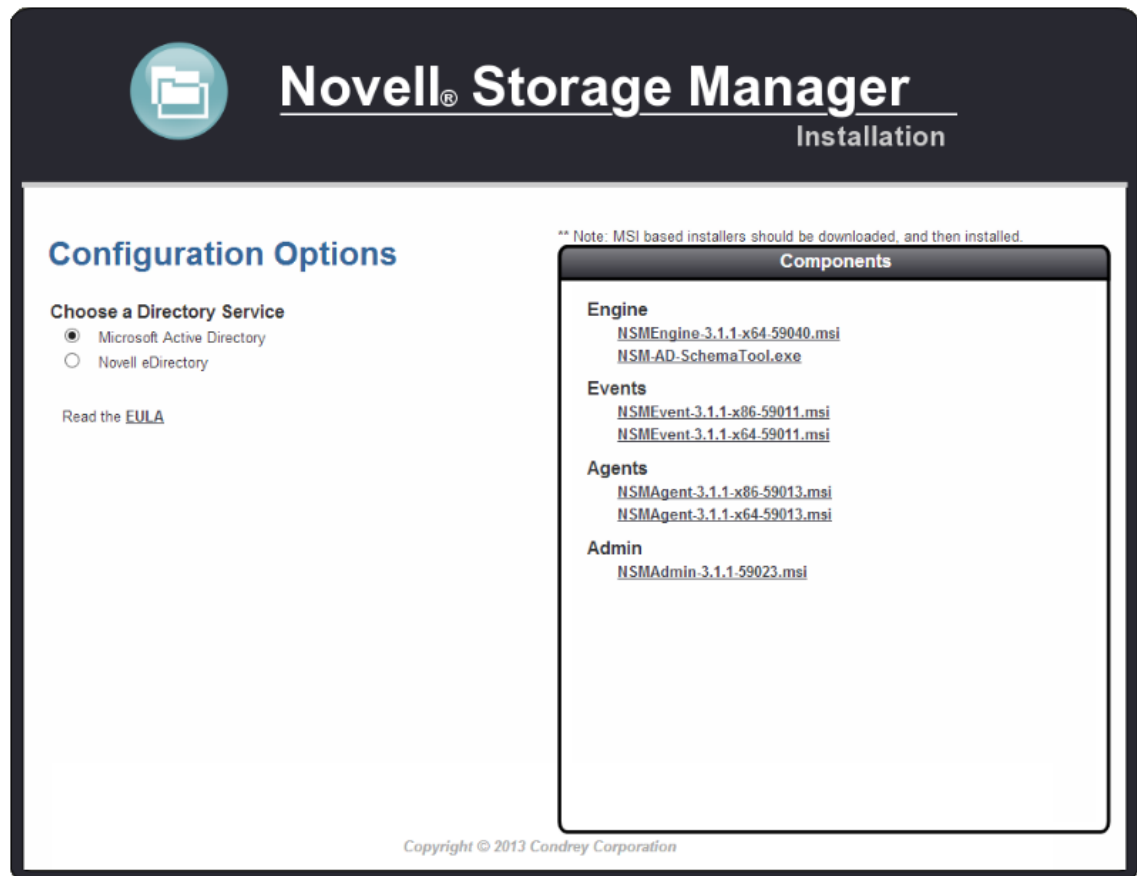
WARNING: Once the NSM Engine has been upgraded, the existing Event Monitors and NSM Agents become legacy components because they cannot perform their duties until they are also upgraded. These legacy components are not deauthorized, nor are they removed, until you remove them yourself using NSMAdmin.

Having legacy components allows you to view the configuration settings and proxy assignments so you can reestablish them when you install the new Event Monitors and NSM Agents.

Other notable information about the NSM Engine:

- ◆ There is only one NSM Engine per forest
- ◆ The NSM Engine runs as a native NT service that is configured to start by using the Local System account
- ◆ The default NSM Engine port is 3009
- ◆ The Firewall Inbound Rule is added during the NSM Engine installation

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



- 2 Select *Microsoft Active Directory*.
- 3 Click *NSMEngine-3.1.1-x64-xxxx.msi*.
- 4 When asked if you want to save or run the file, save the file to the hard drive of the server that will host the NSM Engine.
- 5 From the saved location, launch the NSM Engine installation file.
- 6 When you are asked if you want to run this file, click *Run*.

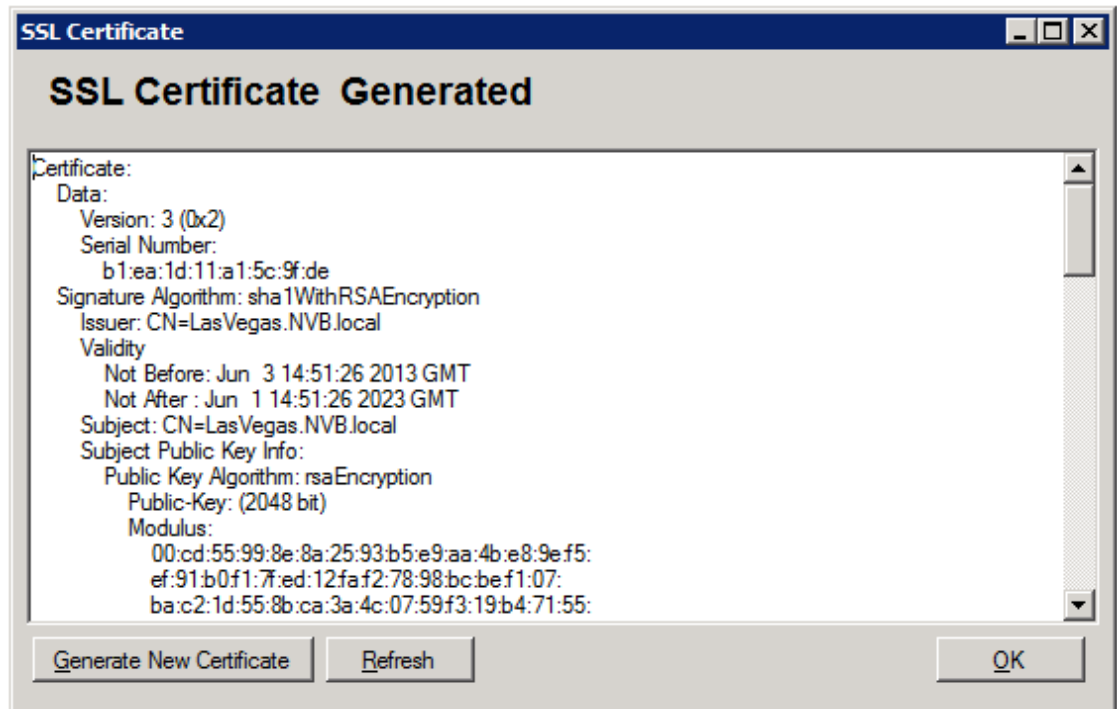
An Introduction page appears in the Novell Storage Manager Installation Wizard.

- 7 Read the text and click *Next*.
- 8 Accept the licensing terms and click *Next*.
- 9 Accept the installation path or indicate a new path by using the *Browse* button.

To review possible locations, you can click *Disk Usage* to see all available volumes with disk size and disk availability data.

- 10 Click *Next*.
- 11 Click *Install* to begin the installation.
- 12 Click *Finish*.

Novell Storage Manager creates a unique private certificate.



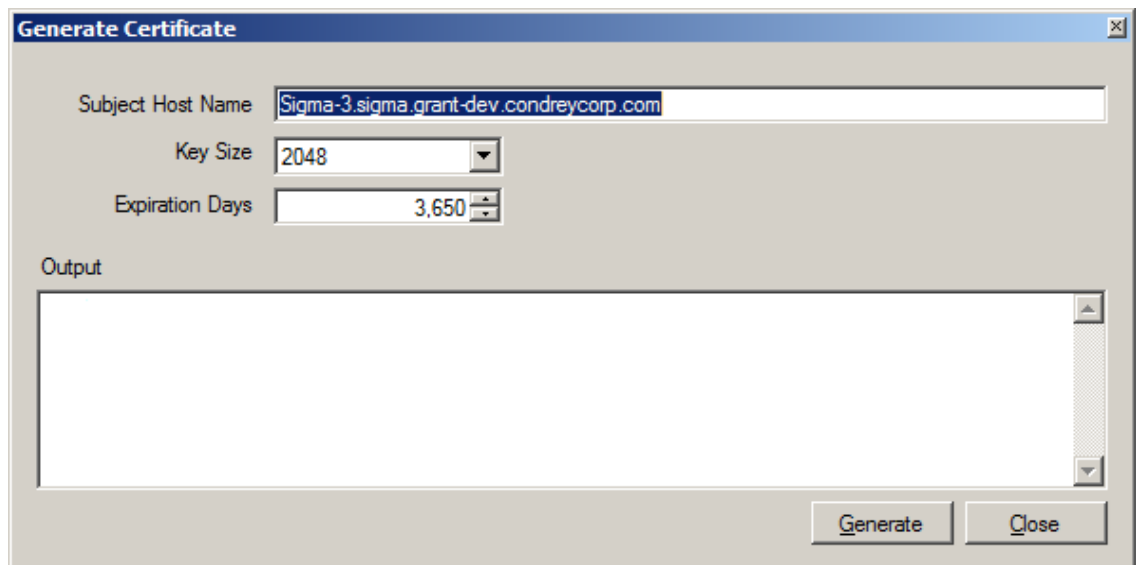
13 Do one of the following:

- ◆ If you want the server on which you are installing the Novell Storage Manager Engine to function as the certificate server, click OK, then skip to [Section 3.9, “Running the NSMAdmin 3.1.1 Setup Wizard,”](#) on page 27.

If you have an existing certificate issued from a third party that you want to use, you can change the certificate later. Simply stop the Engine service, replace the certificate located in `C:\ProgramData\Novell\Storage Manager\Engine\Config` (the certificate is a `.pem` file that must be replaced by a `.pem` file) and then restart the Engine service.

- ◆ If you want a different server in the network to issue the certificate and function as the certificate server, continue with [Step 14](#).

14 Click *Generate New Certificate*.

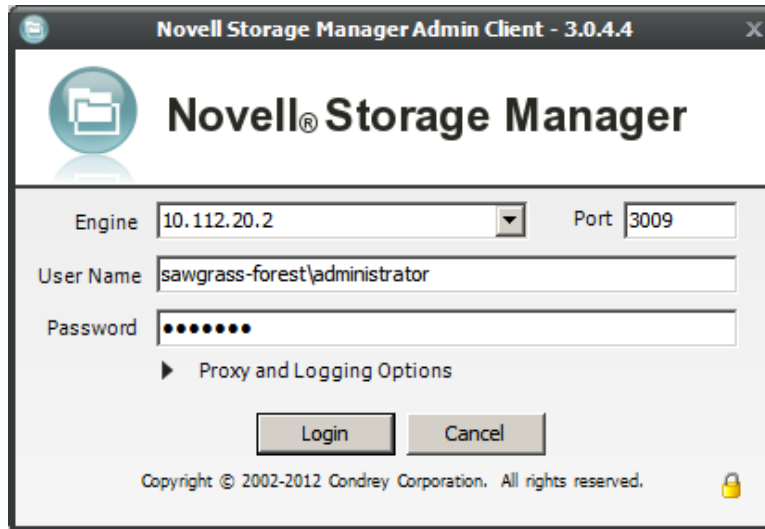


- 15 In the *Subject Host Name* field, specify the server name.
- 16 In the *Key Size* field, leave the default setting of 2048 or select the key size you want.
- 17 In the *Expiration Days* field, leave the setting at 10 years (3,650 days) or specify a new setting.
- 18 Click *Generate*.
- 19 Click *Close*.
- 20 Click *Save*.
- 21 Proceed with [Section 3.9, “Running the NSMAdmin 3.1.1 Setup Wizard,”](#) on page 27.

3.9 Running the NSMAdmin 3.1.1 Setup Wizard

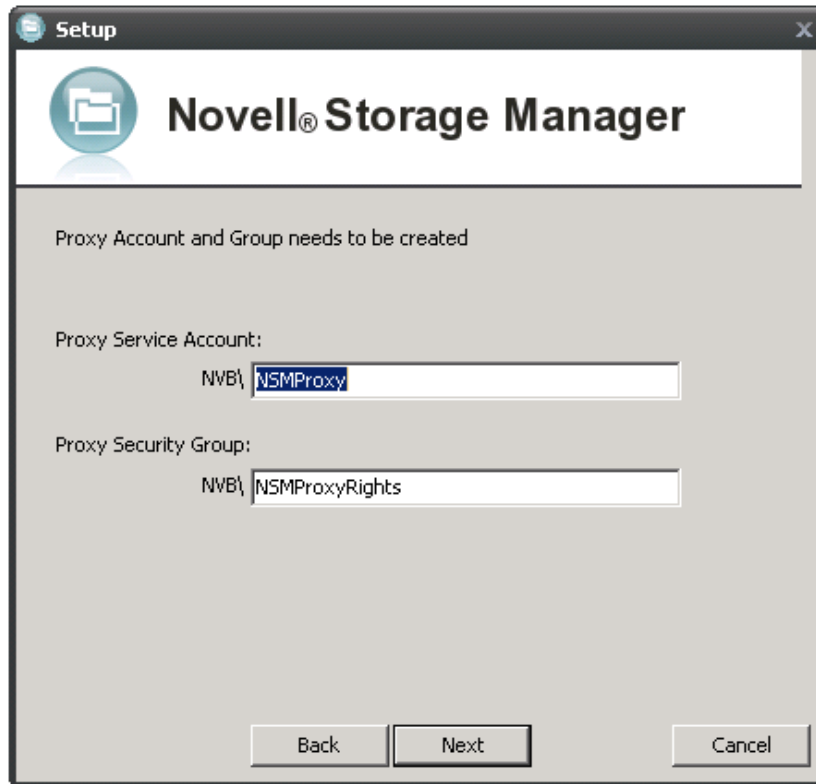
With the Novell Storage Manager 3.1.x NSM Engine installed, you can now run the NSMAdmin Setup Wizard to import the migration file you created in [Section 3.5, “Running the NSM Migration Utility,”](#) on page 20.

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



- 2 In the *Engine* field, specify the DNS name or IP address.
- 3 In the *Port* field, specify the secure port number.
The default setting for Microsoft Active Directory managed networks is 3009.
- 4 Specify the username and password.
The user must be a member of the NSMAdmins group to be able to log in.
- 5 Click *Login*.
If you are unable to log in, your proxy settings might be preventing you from doing so. Until you enter a proxy exception in your proxy settings, you can click *Proxy and Logging Options*, select *Do not use a Proxy*, then click *Login*.
The Setup Wizard welcome screen appears.
- 6 Read the text on the screen and click *Next*.

- 7 Do one of the following:
 - ♦ Click *Browse* to locate and select the path to the license file
 - ♦ Click *Get a License* to obtain an evaluation license
- 8 Click *Next*.
- 9 In the *Proxy Service Account* and *Proxy Service Group* fields, accept the account names that will be created and click *Next*.



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



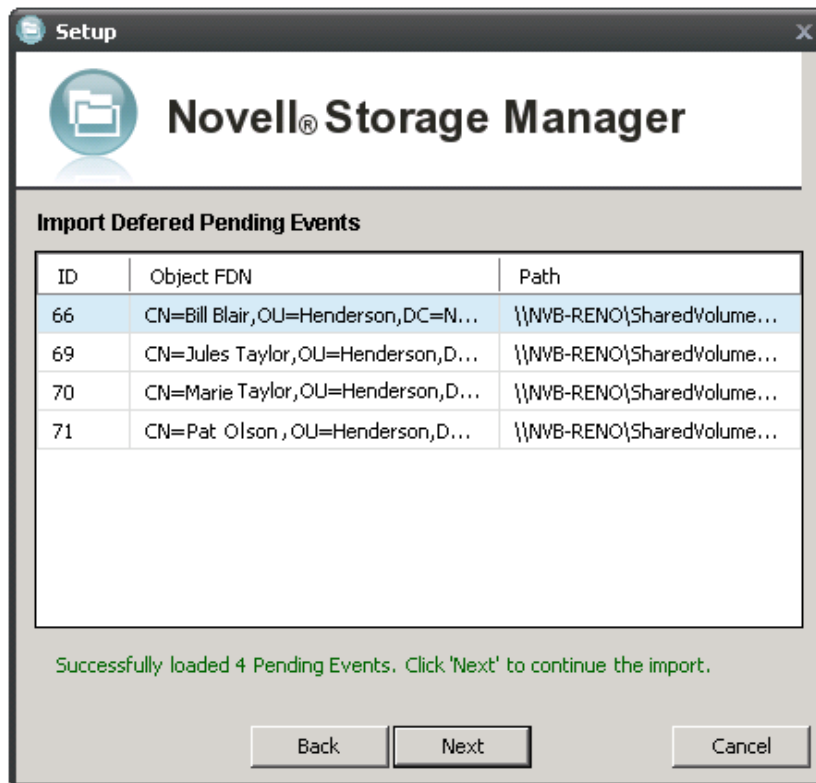
- 12** If you want to import your policies at this time, select the *Complete Migration* check box. If you modified the path where the migration file was saved in [Step 4 on page 21](#), indicate the path by using the *Browse* button, then click *Next*.

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

A message appears informing you that the import is complete.

- 13** Click *Next*.

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



- 14 Click *Next*.

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

- 15 Click *Next*.

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

- 16 Log in to NSMAdmin.

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

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

- 19 Continue with [Section 3.10, “Setting Rights and Privileges on Managed Storage,”](#) on page 30.

3.10 Setting Rights and Privileges on Managed Storage

Novell Storage Manager must have the proper rights set on each network share that it will manage; these are shares that contain managed home folders or collaborative storage. In addition, certain privileges must be granted to Novell Storage Manager on each server where storage will be managed.

- ◆ [Section 3.10.1, “Granting Rights,”](#) on page 31
- ◆ [Section 3.10.2, “Granting Privileges,”](#) on page 31

3.10.1 Granting Rights

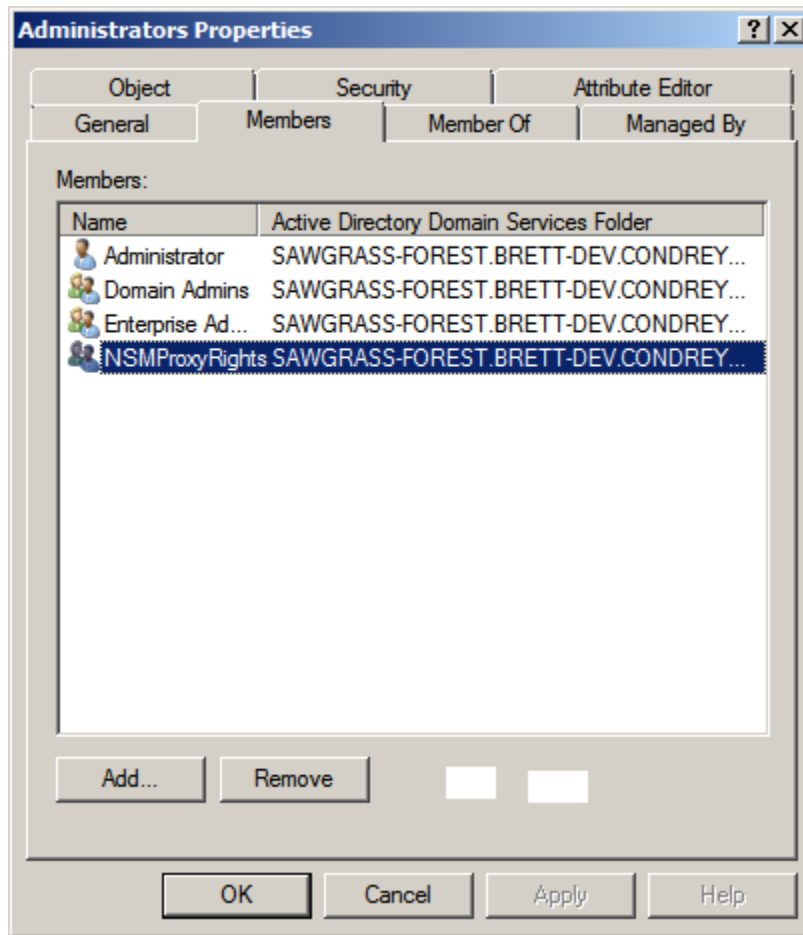
Every share to be managed by Novell Storage Manager must have proper rights assigned to the NSMProxyRights group.

- 1 As a user with privileges to manage shares, authenticate to the server where the storage is located.
- 2 Grant Full Control sharing privileges to the NSMProxyRights group for each share that Novell Storage Manager will manage.
- 3 Proceed with [Section 3.10.2, “Granting Privileges,”](#) on page 31.

3.10.2 Granting Privileges

Every server that has storage managed by Novell Storage Manager must have certain privileges granted to the NSMProxyRights group. If you install the NSM Agent on a server, this privilege assignment is made automatically. If you use the NSM Agent on one server to act as a proxy agent on another server—rather than installing an FSF Agent on that server—you need to manually assign these privileges on that server.

- 1 Authenticate to a domain controller within the domain where the storage is located.
Be sure to log in as a domain administrator.
- 2 At any domain controller or any computer where the Admin or Remote Server administration tools are installed, click *Start > Administrative Tools > Active Directory Users and Computers*.
This brings up the Active Directory Users and Computers page.
- 3 In the left pane, select the container where the server is so that it is listed in the right pane.
- 4 In the right pane, right-click the server and select *Manage*.
This brings up the Computer Management page.
- 5 In the left pane, expand *Local Users and Groups*.
- 6 Select *Groups*.
- 7 In the right pane, double-click *Administrators*.
This brings up the Administrators Properties dialog box.
- 8 Click *Add*.
This brings up the Select Users, Computers, or Groups dialog box.
- 9 In the *Enter the object names to select* field, type: `domain_name\NSMProxyRights`.



- 10 Click *OK* to save the setting.
- 11 Proceed with [Section 3.11, "Performing Manage Operations,"](#) on page 32.

3.11 Performing Manage Operations

The final step in the migration process is to rebuild catalog information for managed users, groups, and storage from Active Directory 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. You should perform this operation for containers and groups with users managed by User Home Folder policies.

- 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 will be taken since these users are not managed by Novell Storage Manager.

- 6 Click *Collapse*.

- 7 Uncheck *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 containers and groups that have an associated policy that was migrated.
- 14 Proceed with [Section 3.12, "Installing and Configuring the Event Monitor,"](#) on page 33.

3.12 Installing and Configuring the Event Monitor

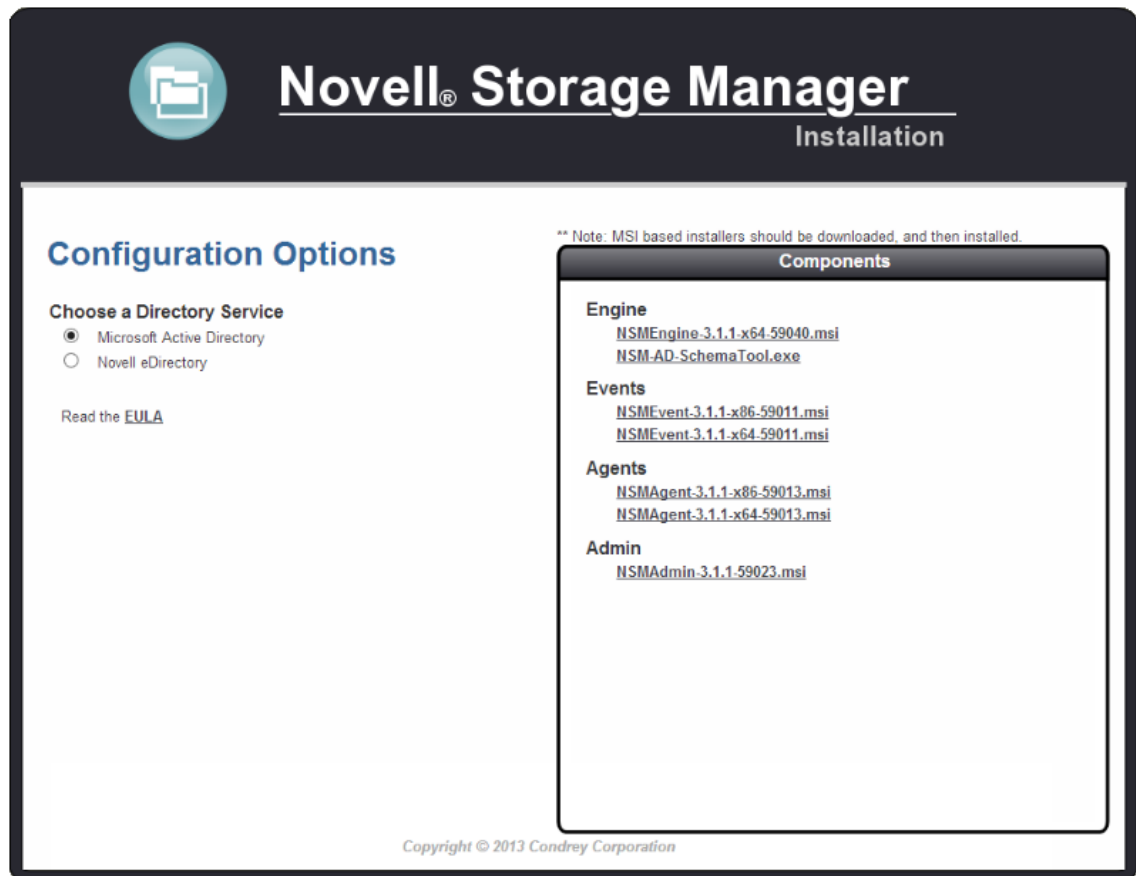
The Event Monitor can be installed on a Windows Server machine that meets the following minimum requirements:

- ♦ Microsoft Windows Server 2012 (Member or DC Server)
- ♦ Microsoft Windows Server 2008 or later, or R2 with an x86 or x64 processor (Member or DC Server)
- ♦ Microsoft Windows Server 2003 SP2 or later (Member or DC Server)
- ♦ At least 1 GB RAM
- ♦ .NET 3.5 Framework and .NET 4.0 (Full) Framework installed
- ♦ Forest functional level 2003 or later in native mode

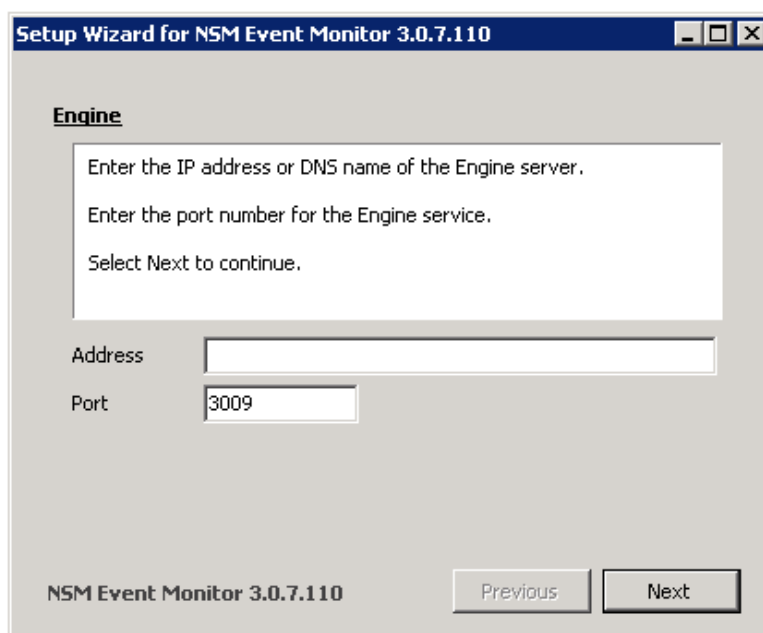
Other notable information about the Event Monitor:

- ♦ There is only one Event Monitor per domain
- ♦ The Event Monitor runs as a native NT service that is configured to start by using the Local System account
- ♦ The Event Monitor must be permitted to make outbound connections through the firewall

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



- 2 Click one of the following Event Monitor installation files:
 - ◆ *NSMEvent-3.1.1-x86-xxxx.msi*
 - ◆ *NSMEvent-3.1.1-x64-xxxx.msi*
- 3 When asked if you want to save or run the file, save the file to the hard drive of the server that will host the Event Monitor.
- 4 From the saved location, launch the Event Monitor installation file.
- 5 When you are asked if you want to run this file, click *Run*.
An Introduction page appears in the Setup Wizard.
- 6 Read the text on the page 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 Click *Install*.
- 11 Leave the *Launch Event Monitor configuration utility* check box selected, then click *Finish*.
The following dialog box appears.



- 12 Specify the IP address or DNS name of the server hosting the NSM Engine, then click *Next*.
- 13 Leave the *Start Service* check box selected, then click *Next* to start the Event Monitor service.
- 14 View the configuration settings and click *Close*.
- 15 Proceed with [Section 3.13, “Installing and Configuring an NSM Agent,”](#) on page 35.

3.13 Installing and Configuring an NSM Agent

An NSM Agent can be installed on a Windows machine that meets the following minimum requirements:

- ♦ Microsoft Windows Server 2012 (Member or DC Server)
- ♦ Microsoft Windows Server 2008 SP2 or R2 with an x86 or x64 processor (for deployment with quota management) (Member or DC Server)
- ♦ Microsoft Windows Server 2003 SP2 or later with an x86 or x64 processor (for deployment without quota management)
- ♦ Windows 7 or later with an x64 processor
- ♦ .NET 3.5 Framework and .NET 4.0 (Full) Framework installed
- ♦ For quota management, Microsoft File System Resource Manager (FSRM) must be installed

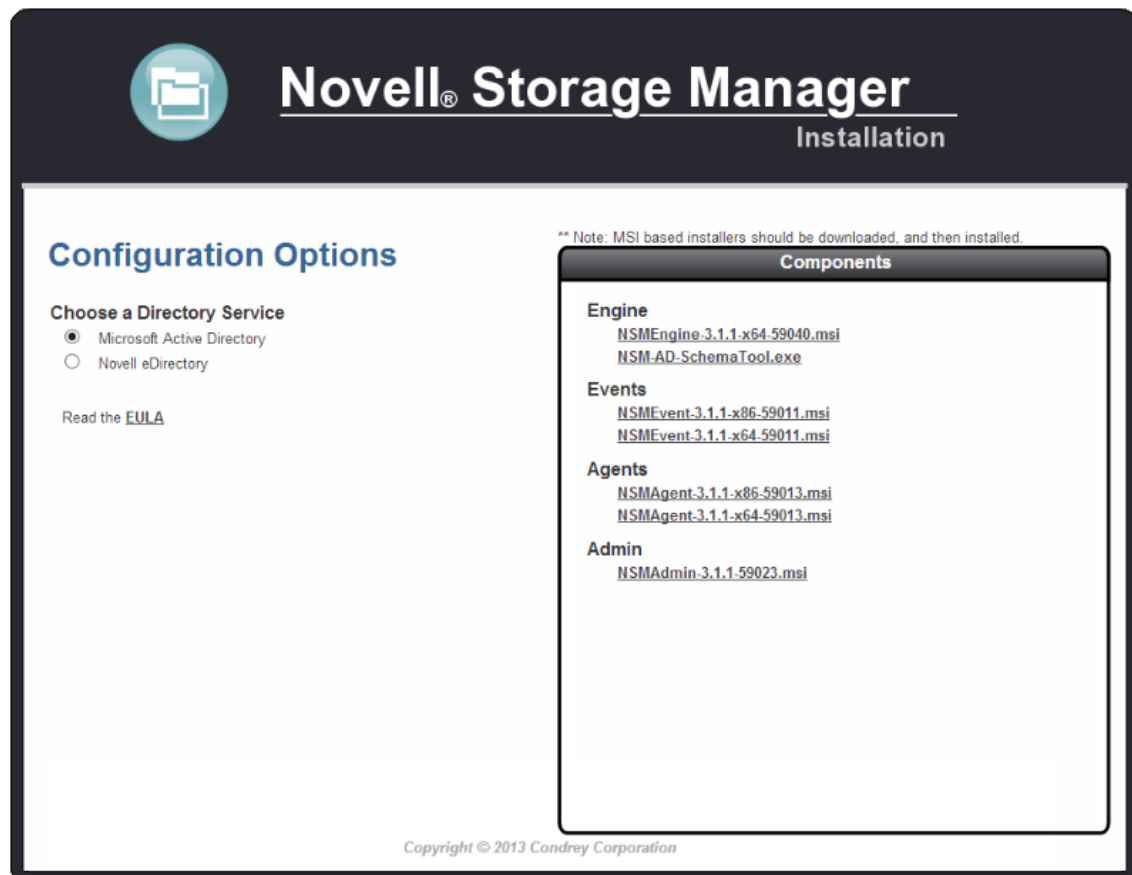
IMPORTANT: In cases where managed storage might include redirected folders (such as My Documents or similar types commonly seen with managed Profile Paths) or if the Agent will perform any file copying operations (such as migrating home folders or copying templates) a [Windows Server hotfix \(http://support.microsoft.com/kb/973278\)](http://support.microsoft.com/kb/973278) needs to be applied to the Agent if the Agent is hosted on any server with the following platforms:

- ♦ Windows Server 2008
- ♦ Windows Server 2008 SP1

In cases where this hotfix has not been applied to the affected systems, symptoms may include stuck Copy Data pending events with the message: Current Error - 32: The requested operation is not supported in the properties for that event as well as the error message identified by the hotfix "0x00000032 (ERROR_NOT_SUPPORTED)" appearing in the log file of the Engine or Agent that tried processing the data copy.

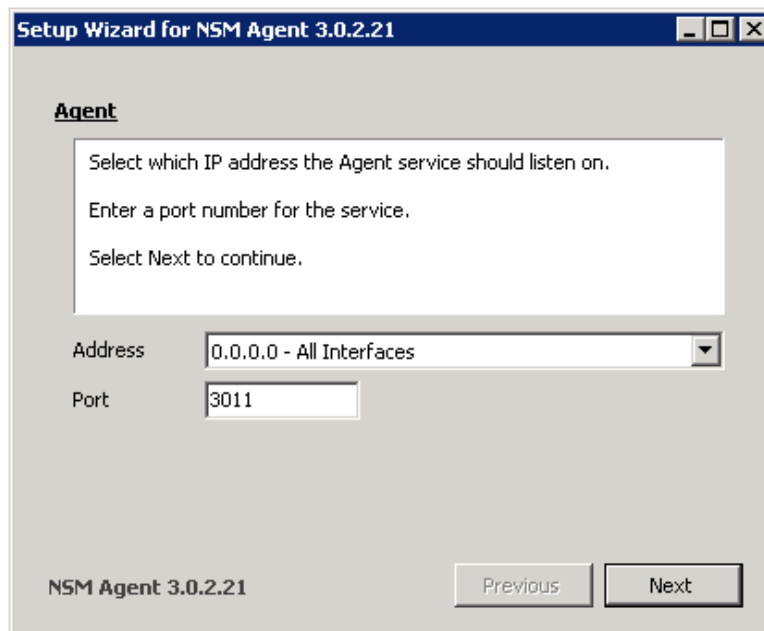
Other notable information about NSM Agents:

- ♦ An NSM Agent runs as a native NT service that is configured to start by using the Local System account
 - ♦ The default NSM Agent port is 3011
 - ♦ A firewall inbound rule for the NSM Agent is created during the installation
- 1 At the root of the NSM_3_1_1.iso image, click the install.html file.

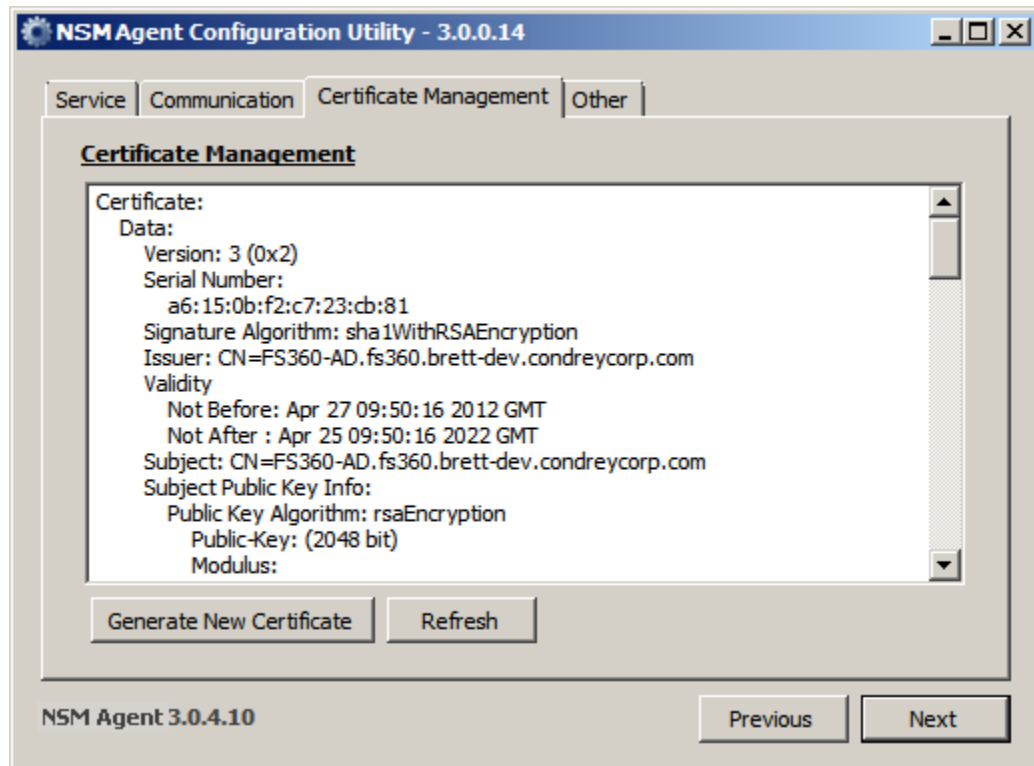


- 2 Click one of the following NSM Agent installation files:
 - ♦ *NSMAgent-3.1.1-x86-xxxx.msi*
 - ♦ *NSMAgent-3.1.1-x64-xxxx.msi*
- 3 When asked if you want to save or run the file, save the file to the hard drive of the server that will host for the NSM Agent.
- 4 From the saved location, launch the NSM Agent installation file.
- 5 When you are asked if you want to run this file, click *Run*.
An introduction page appears in the Setup Wizard.
- 6 Read the text on the page 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 Click *Install*.
- 11 Leave the *Launch Agent configuration utility* check box selected, then click *Finish*.
The following dialog box appears:



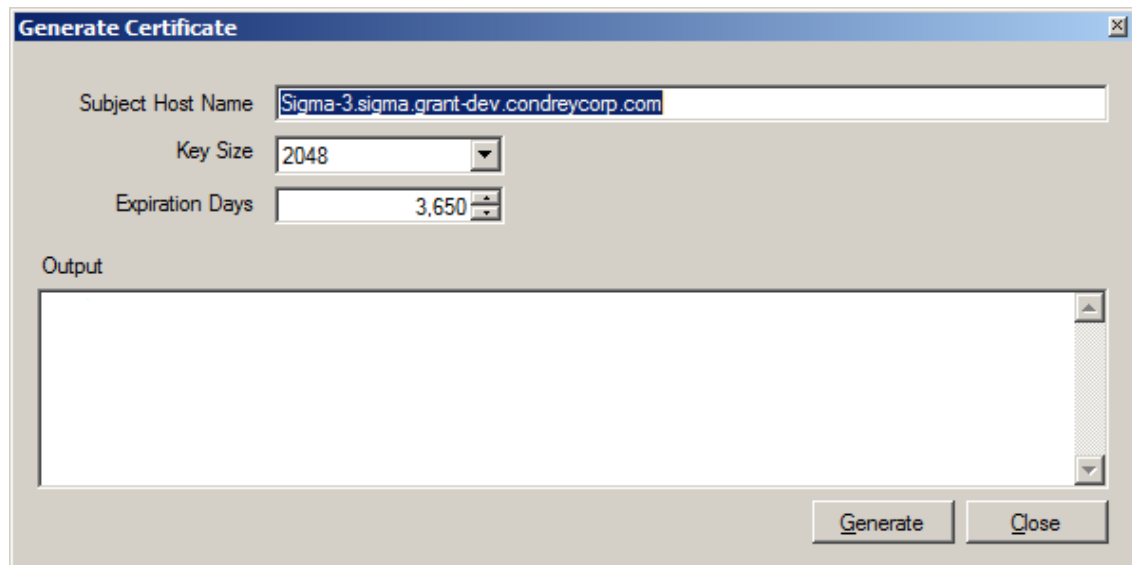
- 12 Specify the IP address of the server hosting the NSM Agent. Unless there is a port conflict, leave the port setting at 3011 and click *Next*.
- 13 Leave the *Start Service* check box selected and click *Next*.
Novell Storage Manager creates a unique private certificate.



14 Do one of the following:

- ◆ If you want the server on which you are installing the NSM Agent to function as the certificate server, click *Next*, *Finish*, and then *Close*. Then proceed with [Section 3.14, "Authorizing the Event Monitor,"](#) on page 39.
- ◆ If you want a different server in the network to issue the certificate and function as the certificate server, continue with [Step 15](#).

15 Click *Generate New Certificate*.



16 In the *Subject Host Name* field, specify the server name.

- 17 In the *Key Size* field, leave the default setting of 2048 or select the key size you want.
- 18 In the *Expiration Days* field, leave the setting at 10 years (3,650 days) or specify a new setting.
- 19 Click *Generate*.
- 20 Click *Close*.
- 21 Click *Save*.
- 22 Proceed with [Section 3.14, “Authorizing the Event Monitor,”](#) on page 39.

3.14 Authorizing the Event Monitor

- 1 In NSMAdmin, click the *Configure* tab.
- 2 Click *Event Servers*.
- 3 Select the listed domain.
- 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 3.15, “Authorizing the NSM Agents,”](#) on page 39.

3.15 Authorizing the NSM Agents

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

4 Upgrading from Storage Manager 3.x to 3.1.1

- ♦ [Section 4.1, “Upgrading from 3.1 to 3.1.1,” on page 41](#)
- ♦ [Section 4.2, “Upgrading from 3.0.x to 3.1.1,” on page 41](#)

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

4.1 Upgrading from 3.1 to 3.1.1

The process for upgrading Novell Storage Manager 3.1 to Novell Storage Manager 3.1.1 is to simply install the NSM Engine, Event Monitors, and NSM Agents on the same machines that are hosting the Novell Storage Manager components. You do not need to install a new product license. You must also update your version of NSMAdmin.

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

For installation procedures for each of these components, see [Chapter 5, “Installing Novell Storage Manager 3.1.1 for Active Directory,” on page 53](#).

4.2 Upgrading from 3.0.x to 3.1.1

- ♦ [Section 4.2.1, “Performing Installation Tasks as a Domain Administrator,” on page 42](#)
- ♦ [Section 4.2.2, “Upgrading the NSM Engine,” on page 42](#)
- ♦ [Section 4.2.3, “Upgrading an Event Monitor,” on page 44](#)
- ♦ [Section 4.2.4, “Upgrading an NSM Agent,” on page 46](#)
- ♦ [Section 4.2.5, “Upgrading NSMAdmin,” on page 49](#)
- ♦ [Section 4.2.6, “Verifying that Upgraded Components Are Operating,” on page 51](#)

The upgrade process requires you to install the NSM Engine, Event Monitors, and NSM Agents on the same machines that are hosting the components of your 3.0.x version of Novell Storage Manager. Depending on the version and component you are upgrading, you might then need to run the component configuration utilities. Finally, you must then upgrade your version of NSMAdmin where you will install the new 3.1.1 product license.

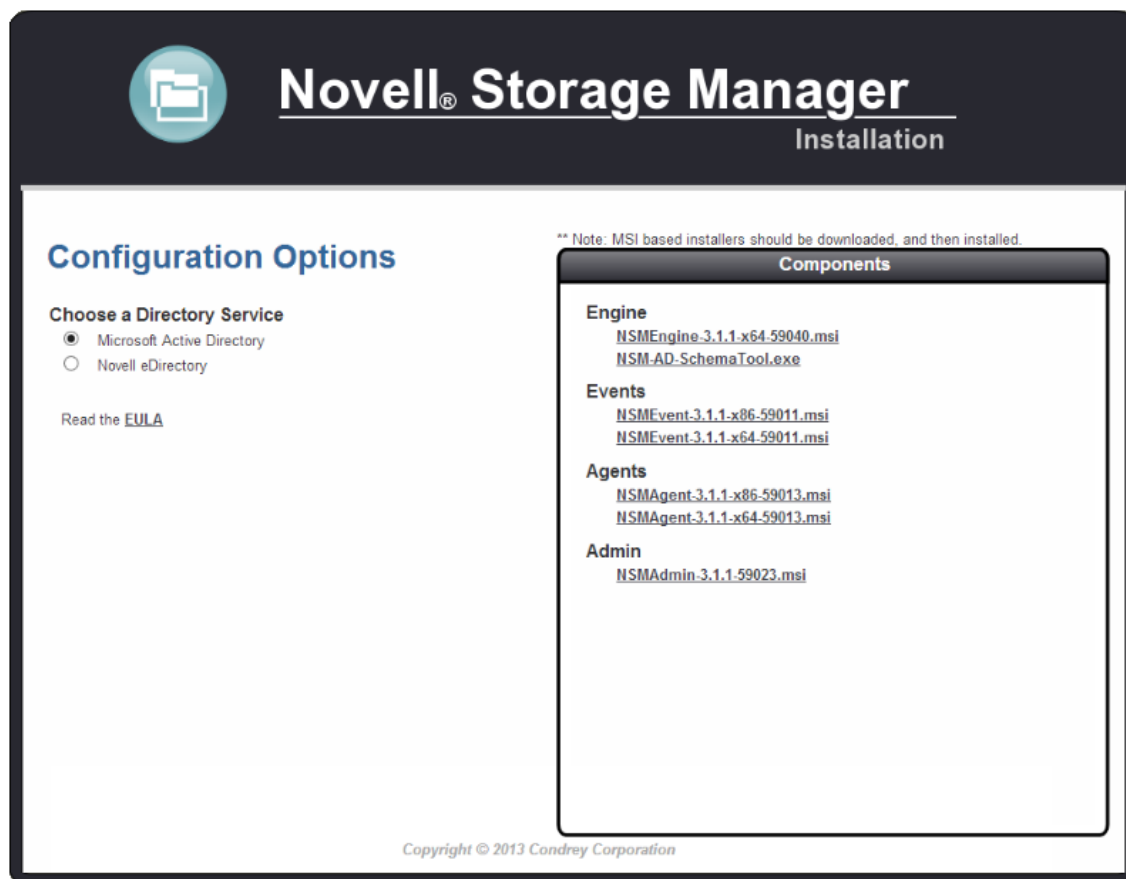
4.2.1 Performing Installation Tasks as a Domain Administrator

In order to successfully install the NSM Engine, Event Monitor, NSM Agents, and NSMAdmin, you must be logged in to the computer as a domain administrator. If you are not, the rights are not sufficient.

4.2.2 Upgrading the NSM Engine

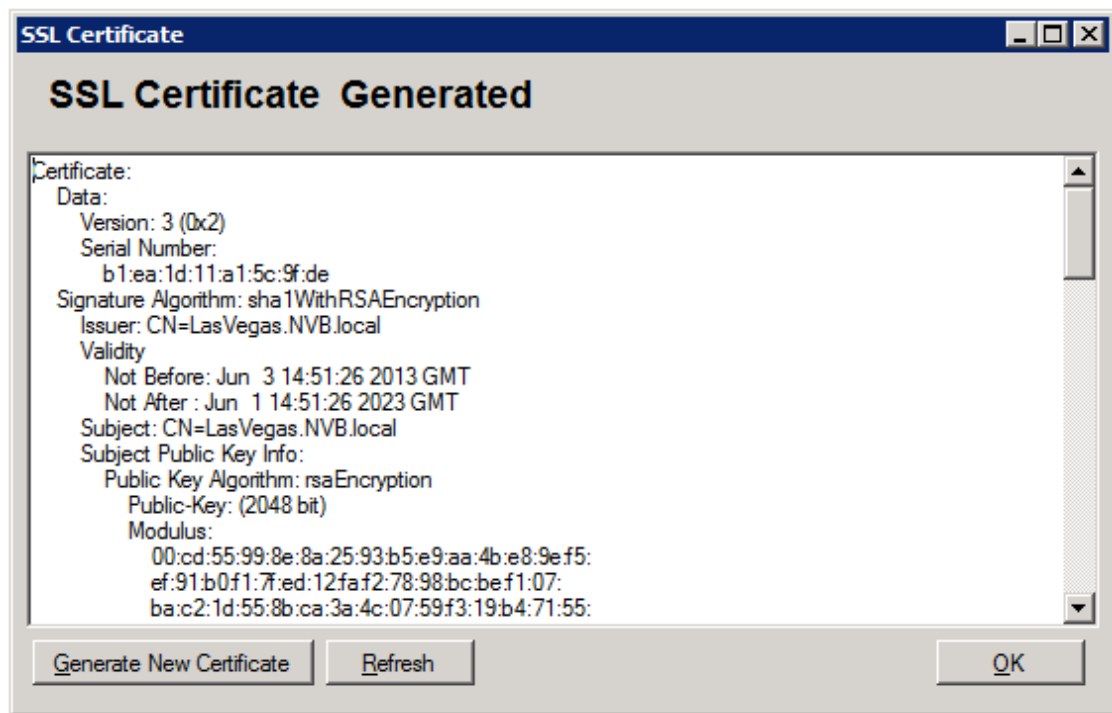
NOTE: With the exception of a now mandatory 64-bit server host, the system requirements and prerequisite tasks have not changed significantly since you installed the Novell Storage Manager 3.0.x NSM Engine. Therefore, they are excluded from this section. If you want to review them, refer to [Section 5.3, “Installing the NSM Engine,” on page 54.](#)

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

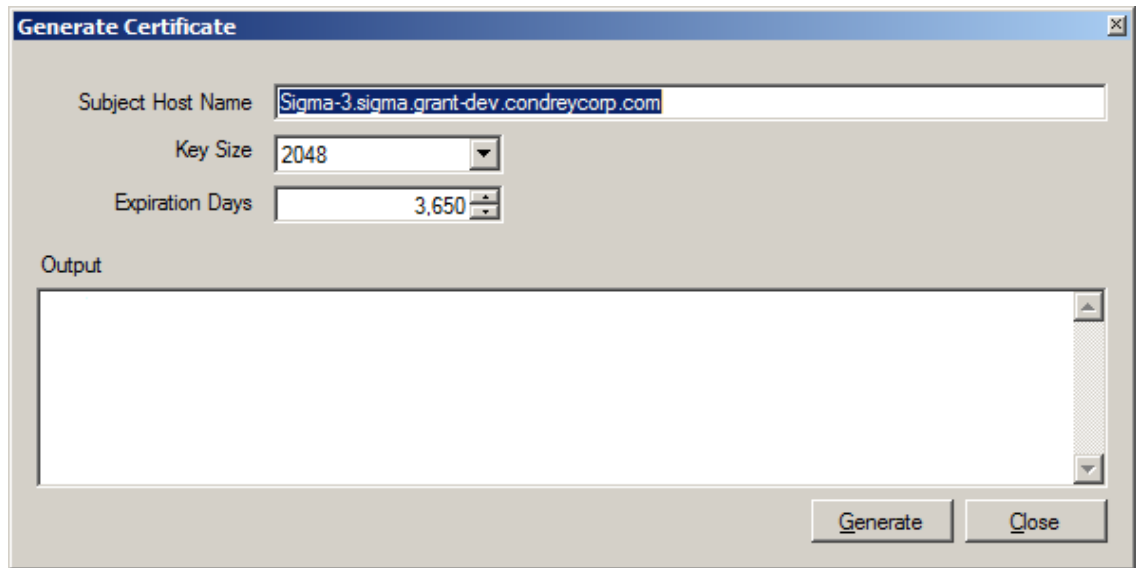


- 2 Select *Microsoft Active Directory*.
- 3 Click *NSMEngine-3.1.1-x64-xxxx.msi*.
- 4 When asked if you want to save or run the file, save the file to the hard drive of the server that will host the NSM Engine.
- 5 From the saved location, launch the NSM Engine installation file.
- 6 When you are asked if you want to run this file, click *Run*.
An Introduction page appears in the Novell Storage Manager Installation Wizard.
- 7 Read the text and click *Next*.

- 8 Accept the licensing terms and click *Next*.
- 9 Accept the installation path or indicate a new path by using the *Browse* button.
To review possible locations, you can click *Disk Usage* to see all available volumes with disk size and disk availability data.
- 10 Click *Next*.
- 11 Click *Install* to begin the installation.
- 12 Click *Finish*.
- 13 Do one of the following:
 - ♦ If you are upgrading from Novell Storage Manager 3.04, the NSM Engine does not need to be configured. Proceed with [Section 4.2.3, “Upgrading an Event Monitor,” on page 44](#).
 - ♦ If you are upgrading from Novell Storage Manager 3.0, 3.0.1, 3.0.2, or 3.0.3, proceed with the steps that follow in this section.
- 14 From the desktop, click the SSL Certificate icon.
Novell Storage Manager creates a unique private certificate.



- 15 Do one of the following:
 - ♦ If you want the server on which you are installing the Novell Storage Manager Engine to function as the certificate server, click *OK*. When asked to restart the Engine service, click *Yes*, then skip to [Section 4.2.3, “Upgrading an Event Monitor,” on page 44](#).
If you have an existing certificate issued from a third party that you want to use, you can change the certificate later. Simply stop the Engine service, replace the certificate located in `C:\ProgramData\Novell\Storage Manager\Engine\Config` (the certificate is a `.pem` file that must be replaced by a `.pem` file), and then restart the Engine service.
 - ♦ If you want a different server in the network to issue the certificate and function as the certificate server, continue with [Step 16](#).
- 16 Click *Generate New Certificate*.

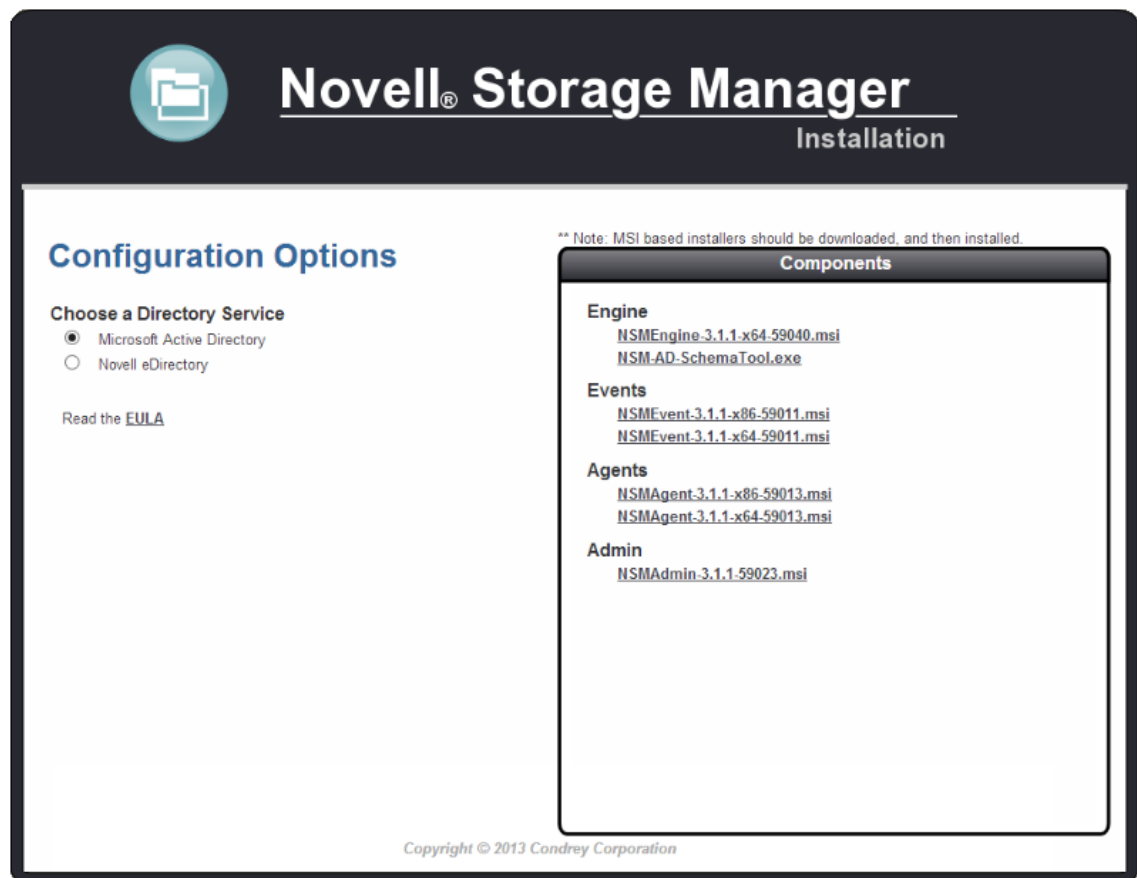


- 17 In the *Subject Host Name* field, specify the server name.
- 18 In the *Key Size* field, leave the default setting of 2048, or select the key size you want.
- 19 In the *Expiration Days* field, leave the setting at 10 years (3,650 days), or specify a new setting.
- 20 Click *Generate*.
- 21 Click *Close*.
- 22 Click *Save*.
- 23 Proceed with [Section 4.2.3, “Upgrading an Event Monitor,”](#) on page 44.

4.2.3 Upgrading an Event Monitor

NOTE: The system requirements and prerequisite tasks have not changed significantly since you installed the Novell Storage Manager 3.0.x Event Monitors. Therefore, they are excluded from this section. If you want to review them, refer to [Section 5.6, “Installing and Configuring the Event Monitor,”](#) on page 62.

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

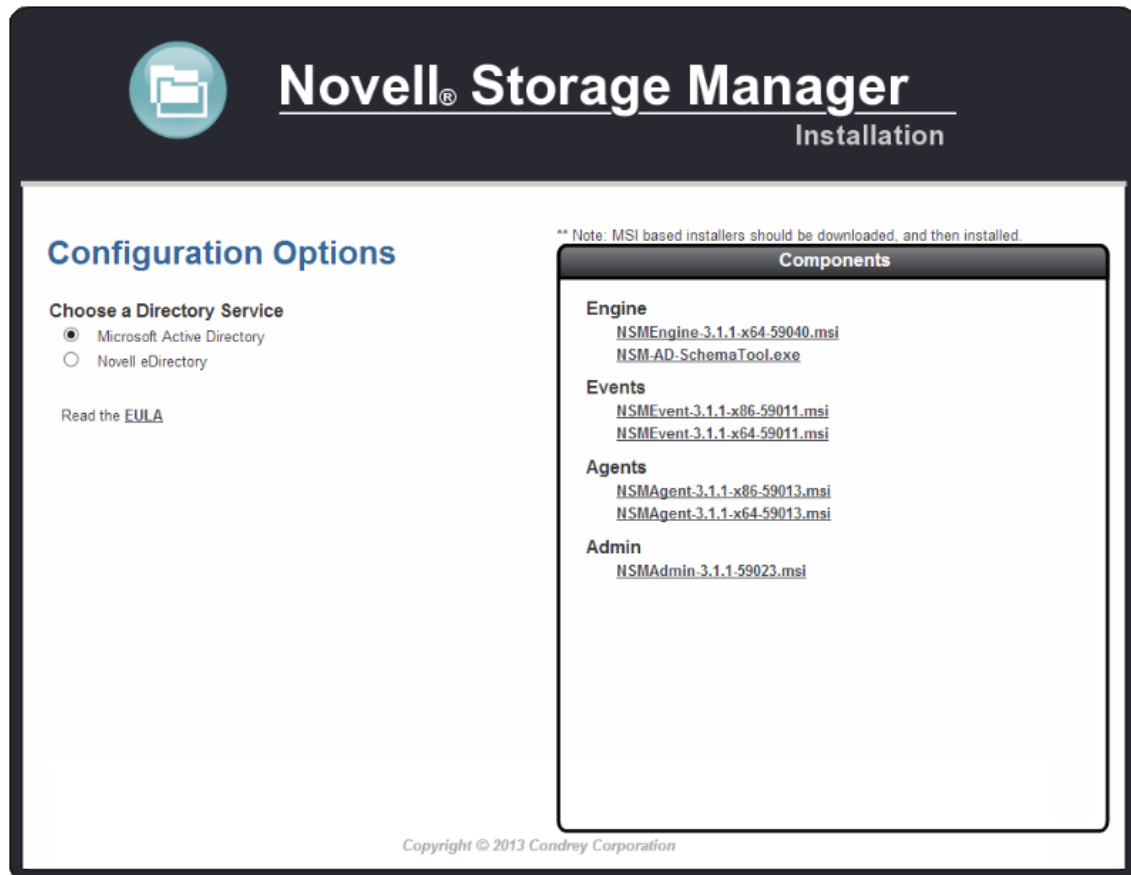


- 2 Select *Microsoft Active Directory*.
- 3 Click one of the following Event Monitor installation files:
 - ◆ *NSMEvent-3.1.1-x86-xxxx.msi*
 - ◆ *NSMEvent-3.1.1-x64-xxxx.msi*
- 4 When asked if you want to save or run the file, save the file to the hard drive of the server that will host the Event Monitor.
- 5 From the saved location, launch the Event Monitor installation file.
- 6 When you are asked if you want to run this file, click *Run*.
An Introduction page appears in the Setup Wizard.
- 7 Read the text on the screen and click *Next*.
- 8 Accept the license terms and click *Next*.
- 9 Accept the installation path or indicate a new path by using the *Browse* button.
To review possible locations, you can click *Disk Usage* to see all available volumes with disk size and disk availability data.
- 10 Click *Next*.
- 11 Click *Install*.
- 12 Deselect the *Launch Event Monitor configuration utility* check box, as you do not need to configure the Event Monitor, and click *Finish*.
- 13 Continue with [Section 4.2.4, “Upgrading an NSM Agent,”](#) on page 46.

4.2.4 Upgrading an NSM Agent

NOTE: The system requirements and prerequisite tasks have not changed significantly since you installed the Novell Storage Manager 3.0.x NSM Agents. Therefore, they are excluded from this section. If you want to review them, refer to [Section 5.7, “Installing and Configuring an NSM Agent,”](#) on page 64.

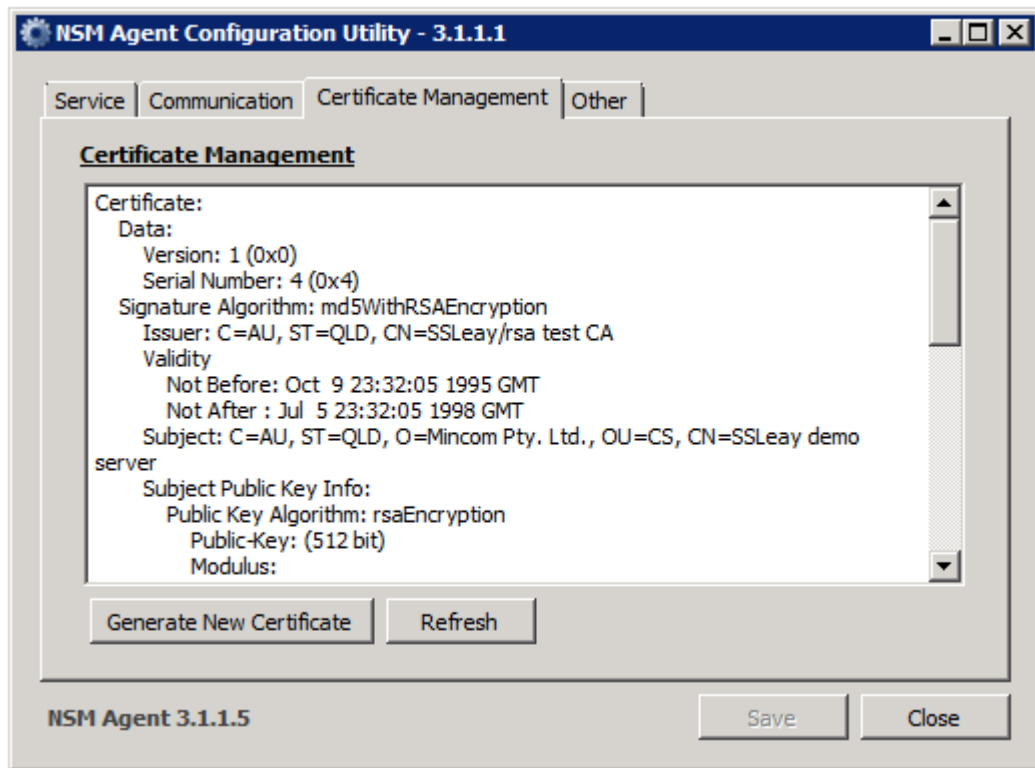
- 1 At the root of the NSM_3_1_1.iso image, click the install.html file.



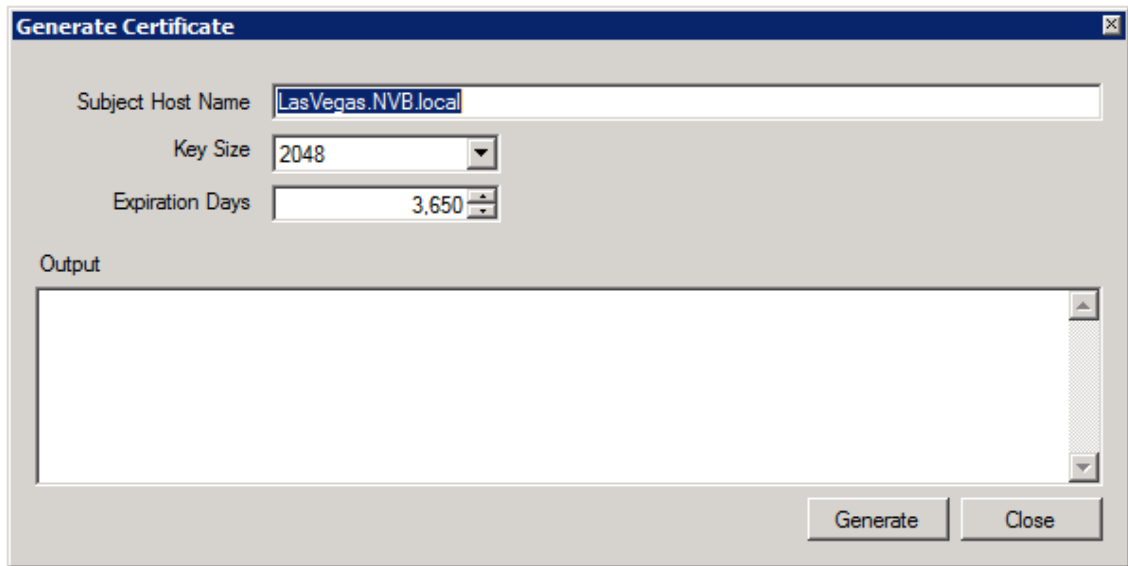
- 2 Select *Microsoft Active Directory*.
- 3 Click one of the following NSM Agent installation files:
 - ◆ *NSMAgent-3.1.1-x86-xxxx.msi*
 - ◆ *NSMAgent-3.1.1-x64-xxxx.msi*
- 4 When asked if you want to save or run the file, save the file to the hard drive of the server that will host the NSM Agent.
- 5 From the saved location, launch the NSM Agent installation file.
- 6 When you are asked if you want to run this file, click *Run*.
An introduction page appears in the Setup Wizard.
- 7 Read the text on the page and click *Next*.
- 8 Accept the license terms and click *Next*.
- 9 Accept the installation path or indicate a new path by using the *Browse* button.

To review possible locations, you can click *Disk Usage* to see all available volumes with disk size and disk availability data.

- 10 Click *Next*.
- 11 Click *Install*.
- 12 Do one of the following:
 - ♦ If you are upgrading from Novell Storage Manager 3.0.4, deselect the *Launch Agent configuration utility* check box, as you do not need to configure the NSM Agent. Then click *Finish*, and skip to [Section 4.2.5, “Upgrading NSMAdmin,” on page 49](#).
 - ♦ If you are upgrading from Novell Storage Manager 3.0, 3.0.1, 3.0.2, or 3.0.3, leave the *Launch Agent configuration utility* check box selected, then click *Finish*.
- 13 From the NSM Agent Configuration Utility interface, click the *Certificate Management* tab.

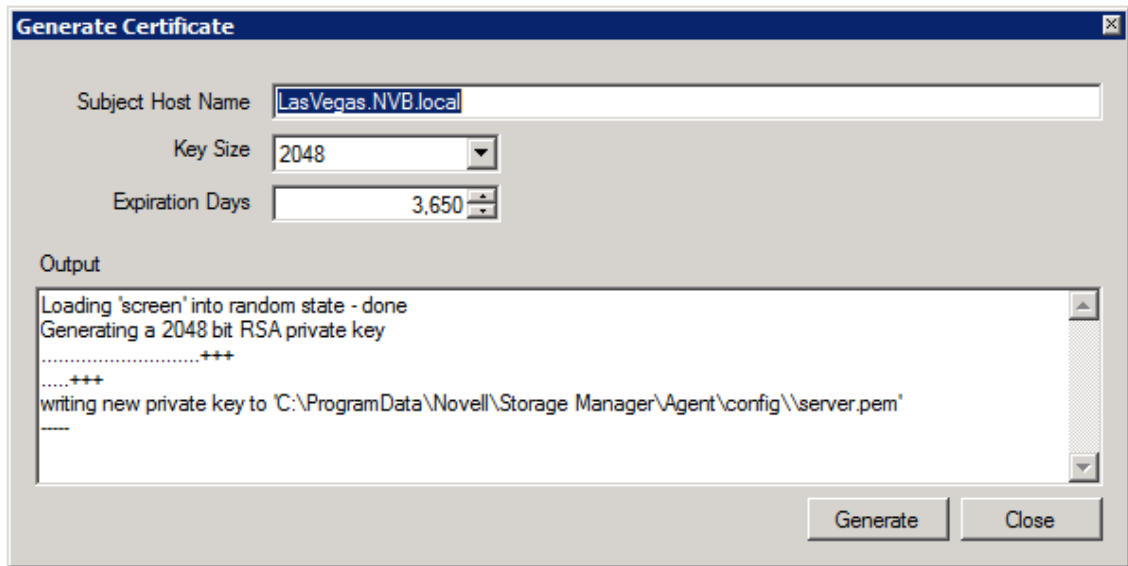


- 14 Click *Generate New Certificate*.



- 15 Click *Generate*.

The certificate is updated to the one that you created in [Step 15 on page 43](#).

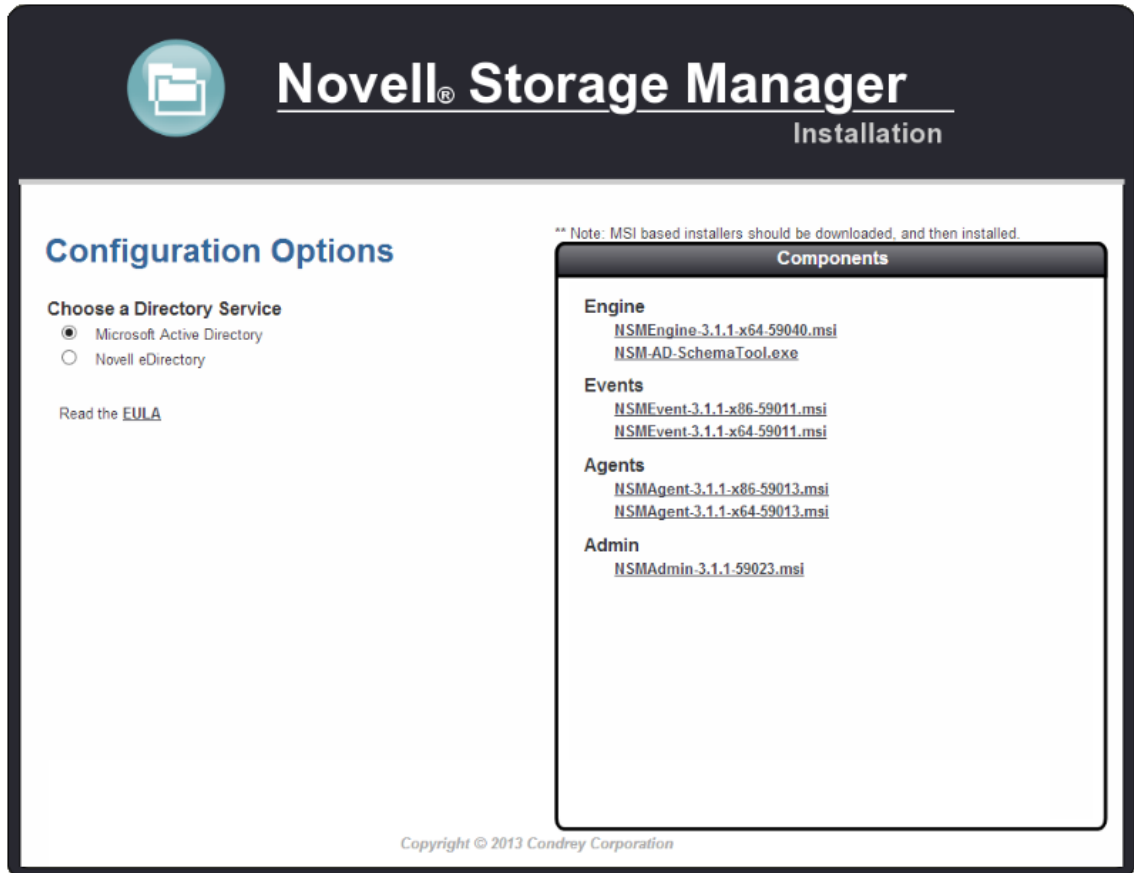


- 16 Click *Close*.
- 17 From the NSM Agent Configuration Utility interface, click *Close*.
- 18 Proceed with [Section 4.2.5, "Upgrading NSMAdmin," on page 49](#).

4.2.5 Upgrading NSMAdmin

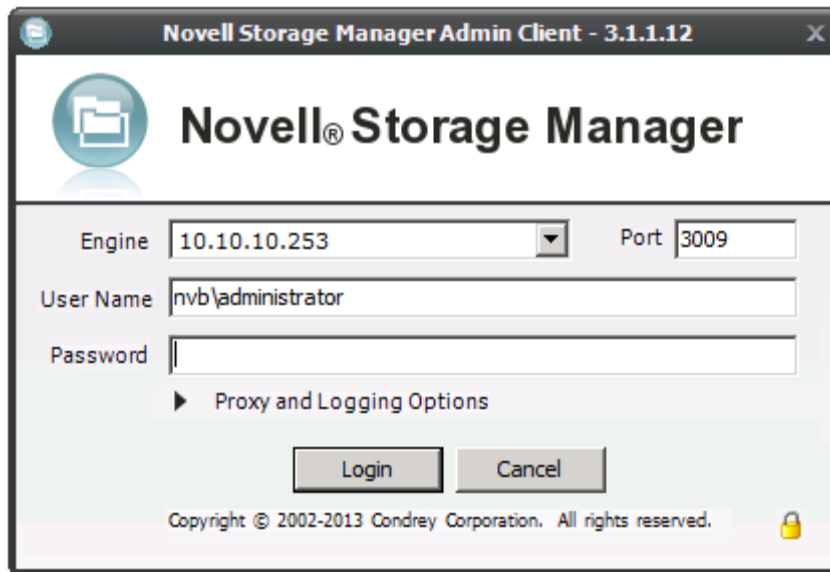
NOTE: The system requirements and prerequisite tasks have not changed significantly since you installed the Novell Storage Manager 3.x NSMAdmin. Therefore, they are excluded from this section. If you want to review them, refer to [Section 5.4, “Installing and Configuring NSMAdmin,”](#) on [page 57](#).

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

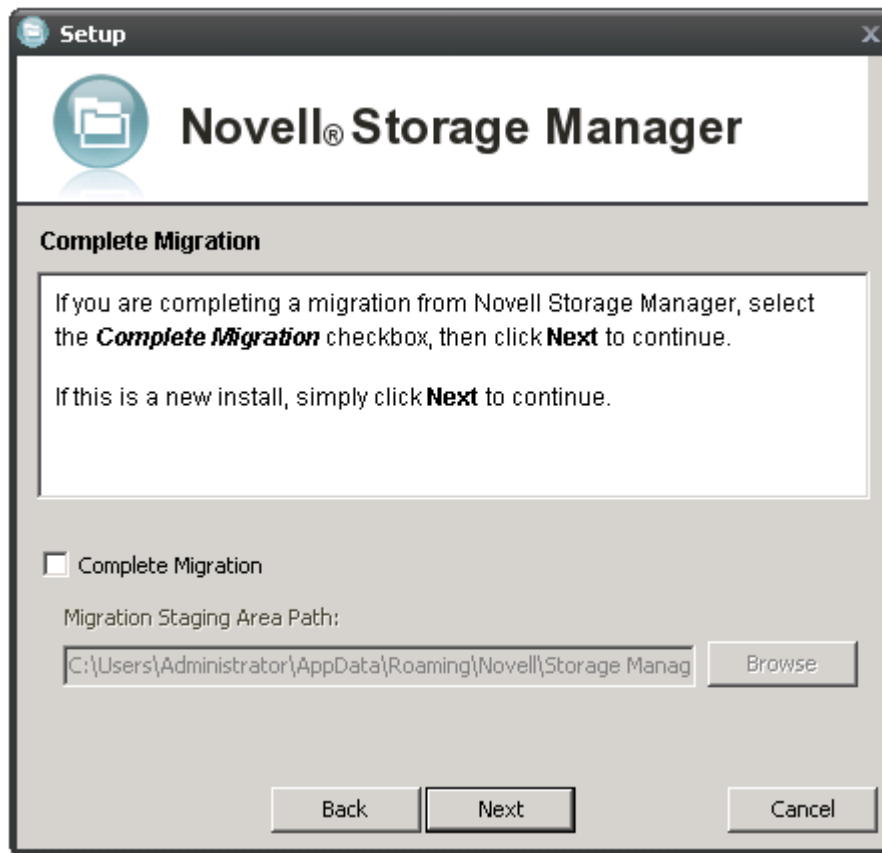


- 2 Select *Microsoft Active Directory*.
- 3 Click *NSMAdmin-3.1.1-xxxx.msi*.
- 4 When asked if you want to save or run the file, save the file to the hard drive of a computer where you will administer Novell Storage Manager.
- 5 From the saved location, launch the NSMAdmin installation file.
- 6 When you are asked if you want to run this file, click *Run*.
An Introduction page appears in the NSMAdmin Installation Wizard.
- 7 Read the text and click *Next*.
- 8 Accept the license terms and click *Next*.
- 9 Accept the installation path or indicate a new path by using the *Browse* button.
To review possible locations, you can click *Disk Usage* to see all available volumes with disk size and disk availability data.
- 10 Click *Next*.

- 11 Leave the *Create shortcut on Desktop* check box selected and click *Install*.
The old NSMAdmin shortcut is removed and a new one is installed on the desktop.
- 12 Leave the *Launch NSMAdmin 3* check box selected and click *Finish*.
NSMAdmin is launched.



- 13 In the *Engine* field, specify the DNS name or IP address.
- 14 In the *Port* field, specify the secure port number.
The default setting for Microsoft Active Directory managed networks is 3009.
- 15 Specify the username and password.
The user must be a member of the NSMAdmins group to be able to log in.
- 16 Click *Login*.
If you are unable to log in, your proxy settings might be preventing you from doing so. Until you enter a proxy exception in your proxy settings, you can click *Proxy and Logging Options*, select *Do not use a Proxy*, then click *Login*.
The Setup Wizard welcome screen appears.
- 17 Read the text on the screen and click *Next*.
- 18 Do one of the following:
 - ♦ Click *Browse* to locate and select the path to the license file.
 - ♦ Click *Get a License* to obtain an evaluation license.
- 19 Click *Next*.
The proxy service account and security group information is displayed.
- 20 Click *Next*.
- 21 Accept or modify the NSM Administrators' Group name, leave the *Add current user to NSM Administrators Group* check box selected, then click *Next*.
The following page appears:



Even though this is an upgrade from an earlier version of Novell Storage Manager, the *Complete Migration* check box is applicable only when migrating policies from Version 2.5.x.

- 22 Leave the Complete Migration check box deselected and click *Next*.
You are notified that Novell Storage Manager needs to initialize its engine and subsystems.
- 23 Click *Next*.
- 24 When prompted, enter your password and click *Login*.
- 25 Proceed with [Section 4.2.6, “Verifying that Upgraded Components Are Operating,”](#) on page 51.

4.2.6 Verifying that Upgraded Components Are Operating

- 1 From NSMAdmin, click the *Configure* tab.
- 2 Click *Event Servers* and verify that the updated Event Monitors are operating.
- 3 Click *Agent Servers* and verify that the updated NSM Agents are operating.

5 Installing Novell Storage Manager 3.1.1 for Active Directory

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 Chapter 2 “[Overview](#)” in the *Novell Storage Manager 3.1.1 for Active Directory Administration Guide*.

You should follow these procedures only after you have performed the prerequisite tasks in [Chapter 1, “Prerequisites,” on page 7](#), and obtained a Novell Storage Manager 3.1.1 for Active Directory product license as indicated in [Chapter 2, “Licensing the Product,” on page 13](#).

- ♦ [Section 5.1, “Storage Manager 3.1.1 Components,” on page 53](#)
- ♦ [Section 5.2, “Performing Installation Tasks as a Domain Administrator,” on page 53](#)
- ♦ [Section 5.3, “Installing the NSM Engine,” on page 54](#)
- ♦ [Section 5.4, “Installing and Configuring NSMAdmin,” on page 57](#)
- ♦ [Section 5.5, “Setting Rights and Privileges on Managed Storage,” on page 60](#)
- ♦ [Section 5.6, “Installing and Configuring the Event Monitor,” on page 62](#)
- ♦ [Section 5.7, “Installing and Configuring an NSM Agent,” on page 64](#)
- ♦ [Section 5.8, “Authorizing the Event Monitor,” on page 68](#)
- ♦ [Section 5.9, “Authorizing the NSM Agents,” on page 68](#)

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

5.1 Storage Manager 3.1.1 Components

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

5.2 Performing Installation Tasks as a Domain Administrator

In order to successfully install the NSM Engine, Event Monitor, NSM Agents, and NSMAdmin, you must be logged in to the computer as a domain administrator. If you are not, the rights are not sufficient.

5.3 Installing the NSM Engine

Novell Storage Manager uses only one NSM Engine per forest. The NSM Engine can be installed on a Windows Server 2008 machine that meets the following minimum requirements:

- ◆ Microsoft Windows Server 2012 (Member or DC Server)
- ◆ Microsoft Windows Server 2008 R2 (Member or DC Server)
- ◆ .NET 3.5 Framework and .NET 4.0 (Full) Framework installed
- ◆ For quota management, Microsoft File System Resource Manager (FSRM) must be installed; see [Section 1.1, “File Server Resource Manager,” on page 7](#).
- ◆ Forest functional level of Windows Server 2003 or later

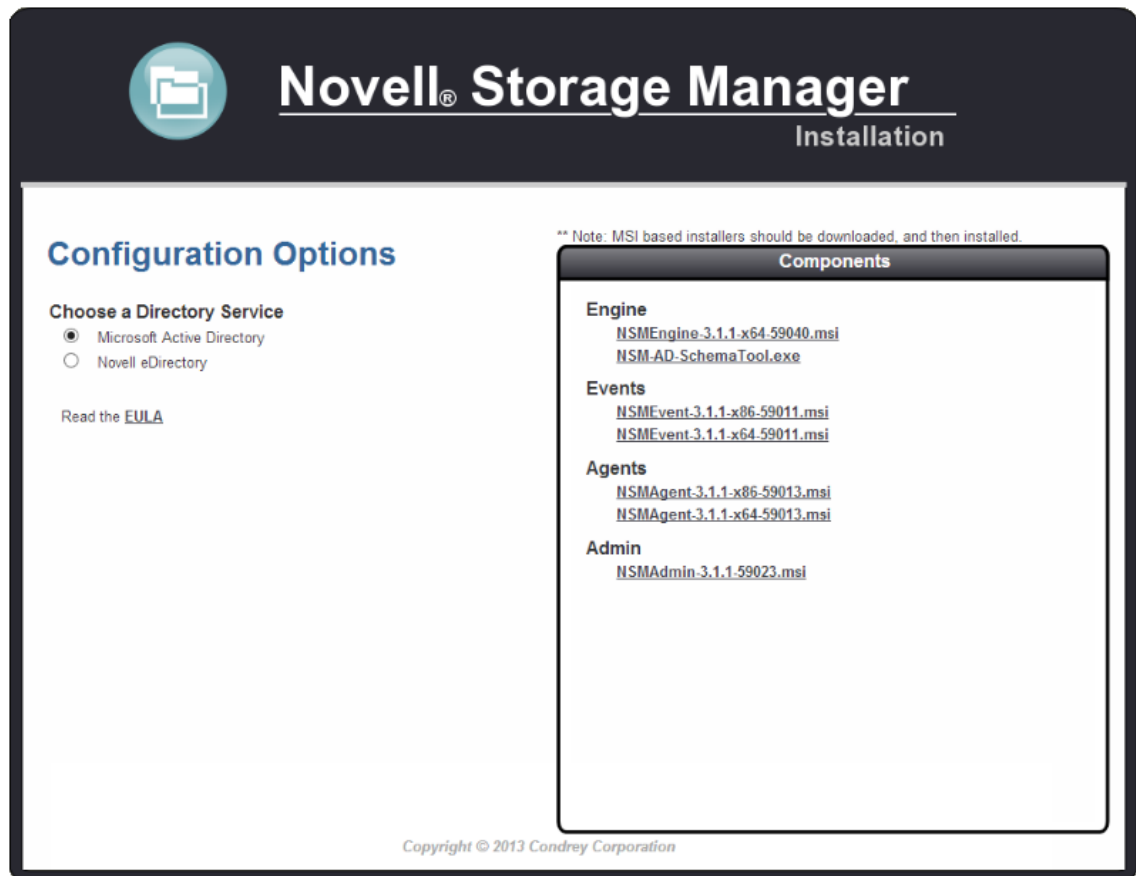
IMPORTANT: In cases where managed storage may include redirected folders, such as “My Documents” or similar types commonly seen with managed Profile Paths, a Windows Server hotfix (<http://support.microsoft.com/kb/973278>) will need to be applied to any Engine and Agent servers involved in the data copy process. This hotfix only applies to the following platforms where the Engine or an Agent is installed:

- ◆ Windows Server 2008
- ◆ Windows Server 2008 SP1

In cases where this hotfix has not been applied to the affected systems, symptoms may include stuck Copy Data pending events with the message: Current Error - 32: The requested operation is not supported in the properties for that event as well as the error message identified by the hotfix “0x00000032 (ERROR_NOT_SUPPORTED)” appearing in the log file of the Engine or Agent that tried processing the data copy.

Other notable information about the NSM Engine:

- ◆ There is only one NSM Engine per forest
 - ◆ The NSM Engine runs as a native NT service that is configured to start by using the Local System account
 - ◆ The default NSM Engine port is 3009
 - ◆ The Firewall Inbound Rule is added during the NSM Engine installation
- 1 At the root of the `NSM_3_1_1.iso` image, click the `install.html` file.



- 2 Select *Microsoft Active Directory*.
- 3 Click *NSMEngine-3.1.1-x64-xxxx.msi*.
- 4 When asked if you want to save or run the file, save the file to the hard drive of the server that will host the NSM Engine.
- 5 From the saved location, launch the NSM Engine installation file.
- 6 When you are asked if you want to run this file, click *Run*.

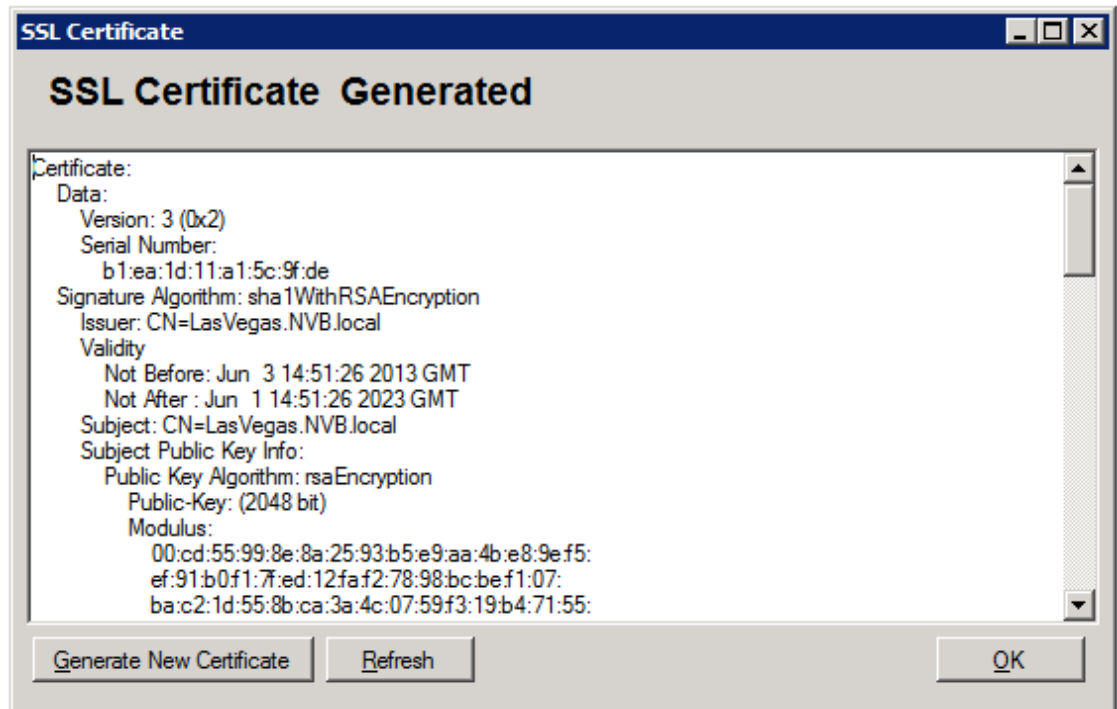
An Introduction page appears in the Novell Storage Manager Installation Wizard.

- 7 Read the text and click *Next*.
- 8 Accept the licensing terms and click *Next*.
- 9 Accept the installation path or indicate a new path by using the *Browse* button.

To review possible locations, you can click *Disk Usage* to see all available volumes with disk size and disk availability data.

- 10 Click *Next*.
- 11 Click *Install* to begin the installation.
- 12 Click *Finish*.

Novell Storage Manager creates a unique private certificate.



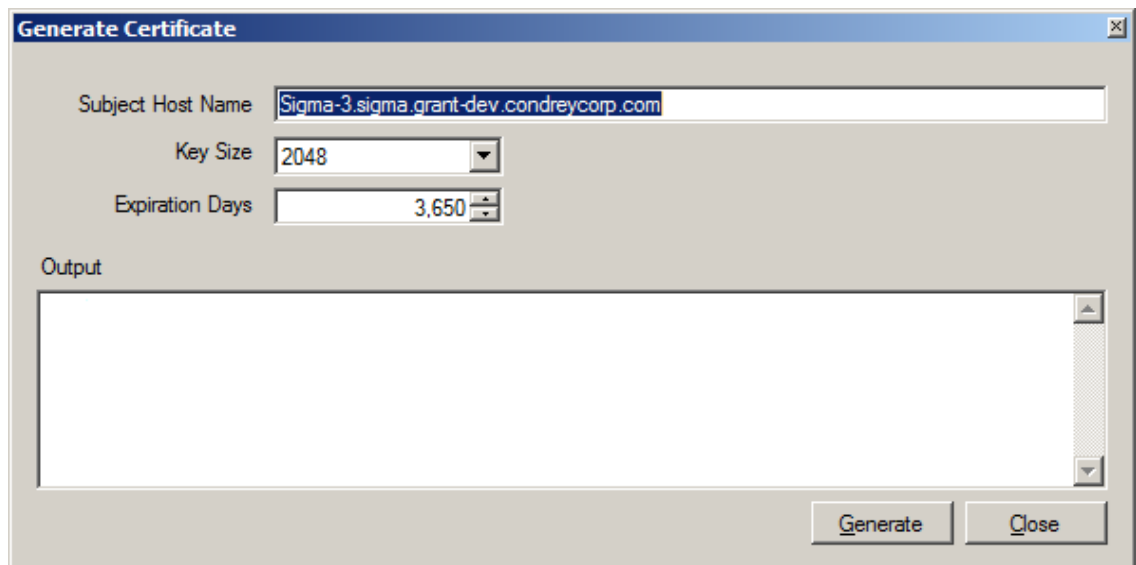
13 Do one of the following:

- ◆ If you want the server on which you are installing the Novell Storage Manager Engine to function as the certificate server, click **OK**, then skip to [Section 5.4, “Installing and Configuring NSMAdmin,”](#) on page 57.

If you have an existing certificate issued from a third party that you want to use, you can change the certificate later. Simply stop the Engine service, replace the certificate located in `C:\ProgramData\Novell\Storage Manager\Engine\Config` (the certificate is a `.pem` file that must be replaced by a `.pem` file) and then restart the Engine service.

- ◆ If you want a different server in the network to issue the certificate and function as the certificate server, continue with [Step 14](#).

14 Click *Generate New Certificate*.



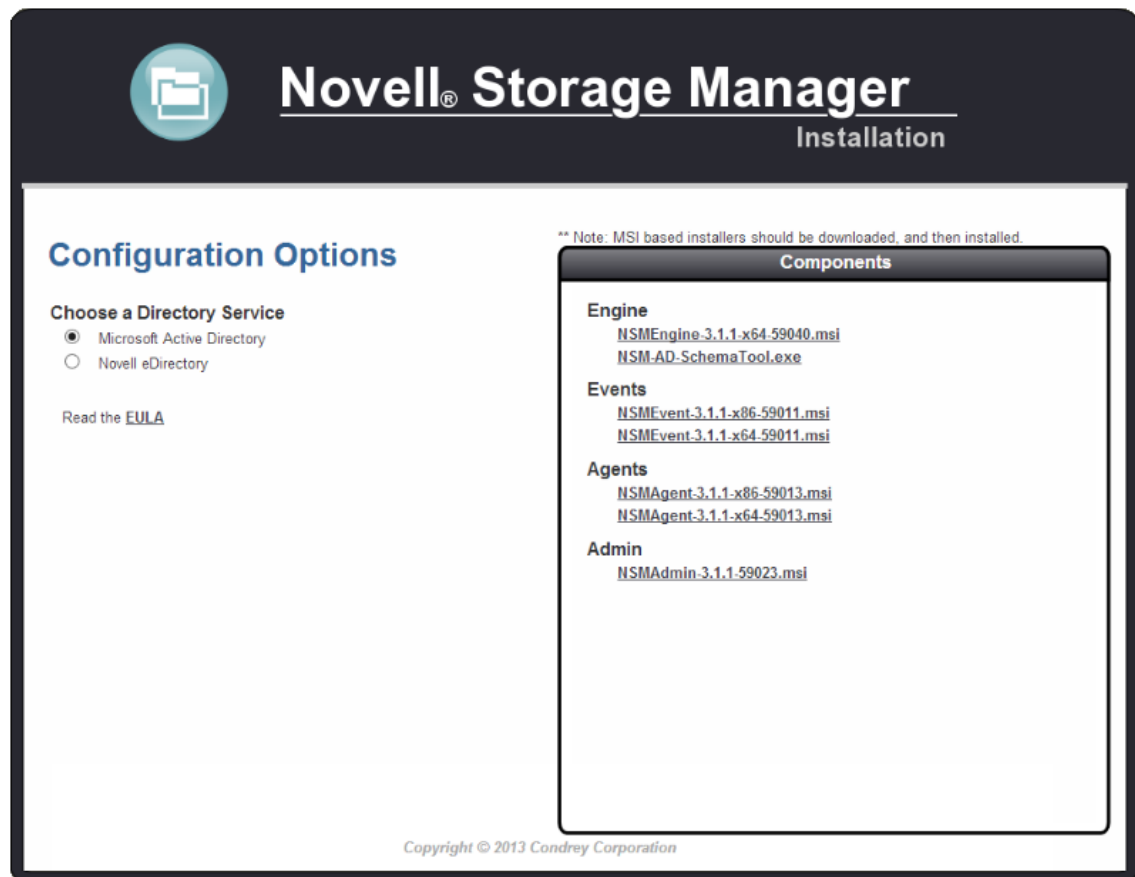
- 15 In the *Subject Host Name* field, specify the server name.
- 16 In the *Key Size* field, leave the default setting of 2048 or select the key size you want.
- 17 In the *Expiration Days* field, leave the setting at 10 years (3,650 days) or specify a new setting.
- 18 Click *Generate*.
- 19 Click *Close*.
- 20 Click *Save*.
- 21 Proceed with [Section 5.4, “Installing and Configuring NSMAdmin,”](#) on page 57.

5.4 Installing and Configuring NSMAdmin

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

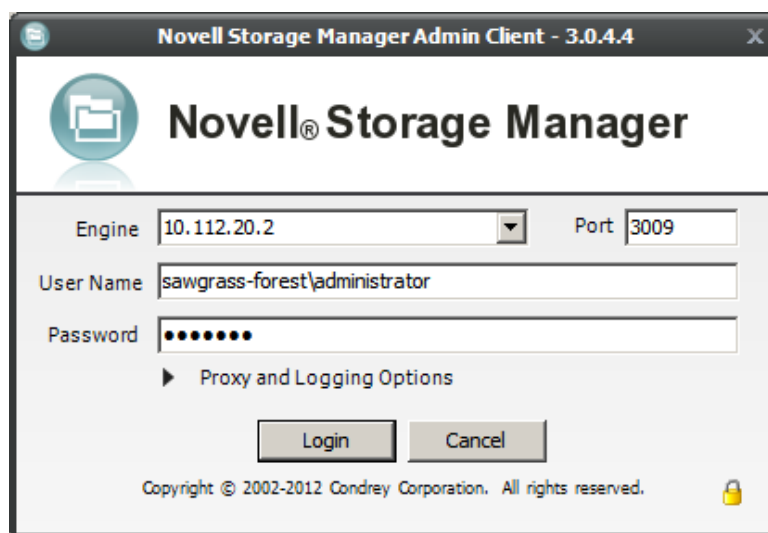
- ♦ Windows platform (Windows 7, Vista, XP SP3, and Windows Server 2012, 2008, or 2003)
- ♦ .NET 3.5 Framework and .NET 4.0 (Full) Framework installed
- ♦ .NET security settings are adjusted if you are running the executable from a network drive (optional)

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



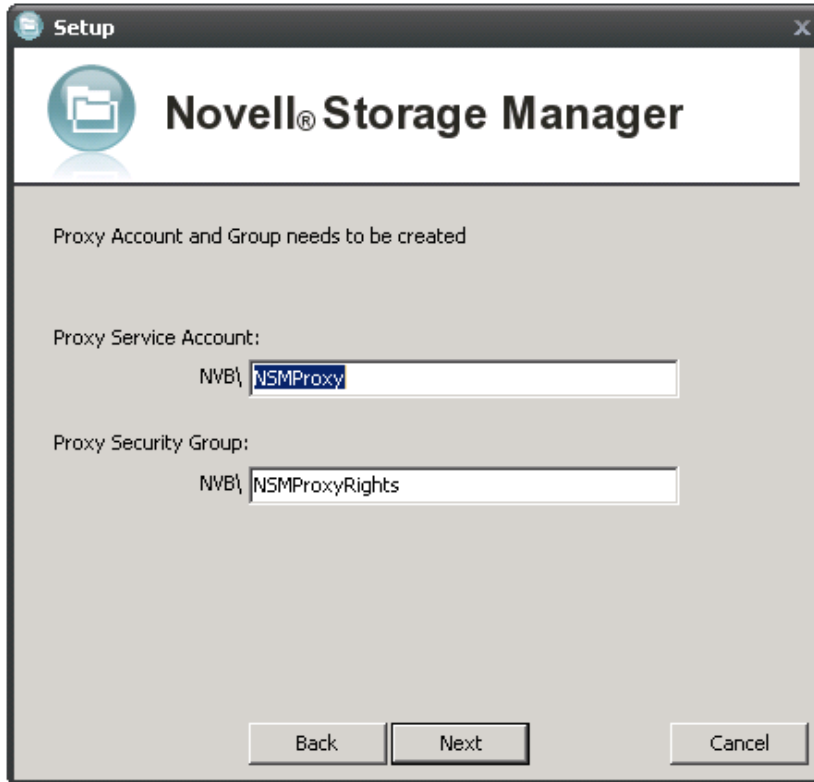
- 2 Select *Microsoft Active Directory*.
- 3 Click `NSMAdmin-3.1.1-xxxx.msi`.

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



- 13 In the *Engine* field, specify the DNS name or IP address.
- 14 In the *Port* field, specify the secure port number.
The default setting for Microsoft Active Directory managed networks is 3009.
- 15 Specify the username and password.
The user must be a member of the NSMAdmins group to be able to log in.
- 16 Click *Login*.
If you are unable to log in, your proxy settings might be preventing you from doing so. Until you enter a proxy exception in your proxy settings, you can click *Proxy and Logging Options*, select *Do not use a Proxy*, then click *Login*.
The Setup Wizard welcome screen appears.
- 17 Read the text on the screen and click *Next*.

- 18 Do one of the following:
- ◆ Click *Browse* to locate and select the path to the license file
 - ◆ Click *Get a License* to obtain an evaluation license
- 19 Click *Next*.
- 20 In the *Proxy Service Account* and *Proxy Service Group* fields, accept the account names that will be created and click *Next*.



- 21 Accept or modify the NSM Administrators' Group name, leave the *Add current user to NSM Administrators Group* check box selected, then click *Next*.
- 22 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:



- 23** Because this is a new installation and not a migration from Novell Storage Manager 2.5.x, click *Next*.
- You are notified that Novell Storage Manager needs to initialize its engine and subsystems.
- 24** Click *Next*.
- 25** When prompted, enter your password and click *Login*.
- 26** Proceed with [Section 5.5, “Setting Rights and Privileges on Managed Storage,”](#) on page 60.

5.5 Setting Rights and Privileges on Managed Storage

Novell Storage Manager must have the proper rights set on each network share that it will manage; that is, shares that contain managed home folders or collaborative storage. In addition, certain privileges must be granted to Novell Storage Manager on each server where storage will be managed.

- ♦ [Section 5.5.1, “Granting Rights,”](#) on page 61
- ♦ [Section 5.5.2, “Granting Privileges,”](#) on page 61

5.5.1 Granting Rights

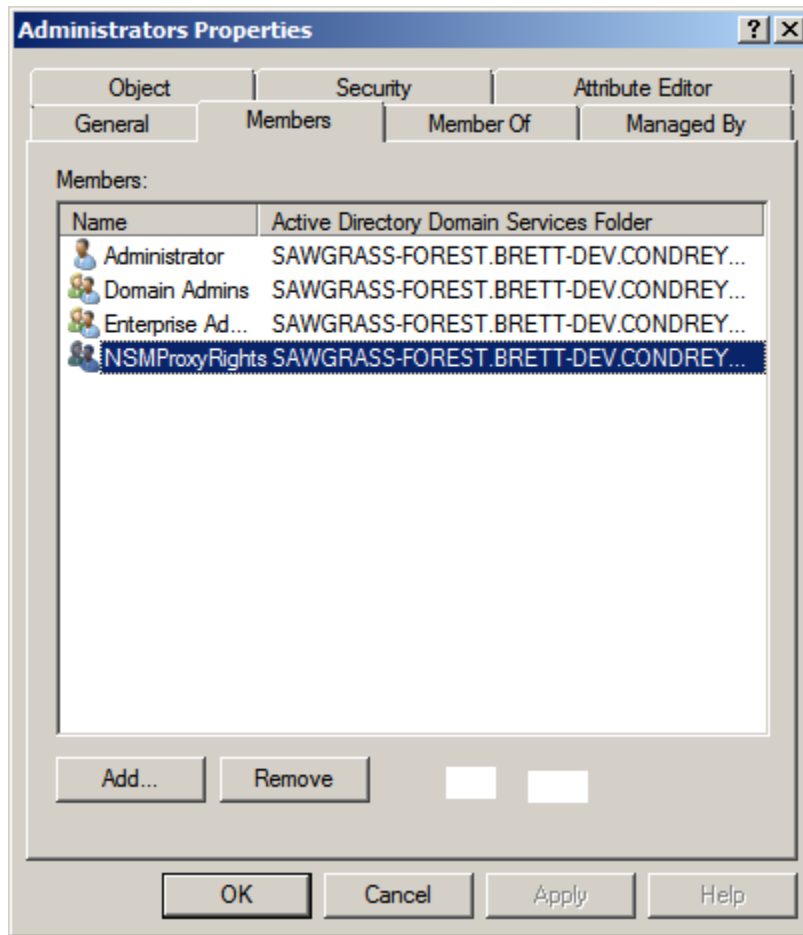
Every share to be managed by Novell Storage Manager must have proper rights assigned to the NSMProxyRights group.

- 1 As a domain administrator, authenticate to the server where the storage is located.
- 2 Grant Full Control sharing privileges to the NSMProxyRights group for each share that Novell Storage Manager will manage.
- 3 Proceed with [Section 5.5.2, “Granting Privileges,”](#) on page 61.

5.5.2 Granting Privileges

Every server that has storage managed by Novell Storage Manager must have certain privileges granted to the NSMProxyRights group. If you install the NSM Agent on a server, this privilege assignment is made automatically. If you use the NSM Agent on one server to act as a proxy agent on another server—rather than installing an NSM Agent on that server—you need to manually assign these privileges on that server.

- 1 Authenticate to a domain controller within the domain where the storage is located.
Be sure to log in as a domain administrator.
- 2 At any domain controller or any computer where the Admin or Remote Server administration tools are installed, click *Start > Administrative Tools > Active Directory Users and Computers*.
This brings up the Active Directory Users and Computers page.
- 3 In the left pane, select the container where the server is so that it is listed in the right pane.
- 4 In the right pane, right-click the server and select *Manage*.
This brings up the Computer Management page.
- 5 In the left pane, expand *Local Users and Groups*.
- 6 Select *Groups*.
- 7 In the right pane, double-click *Administrators*.
This brings up the Administrators Properties dialog box.
- 8 Click *Add*.
This brings up the Select Users, Computers, or Groups dialog box.
- 9 In the *Enter the object names to select* field, type the following: `domain_name\NSMProxyRights`.



- 10 Click **OK** to save the setting.
- 11 Proceed with [Section 5.6, "Installing and Configuring the Event Monitor,"](#) on page 62.

5.6 Installing and Configuring the Event Monitor

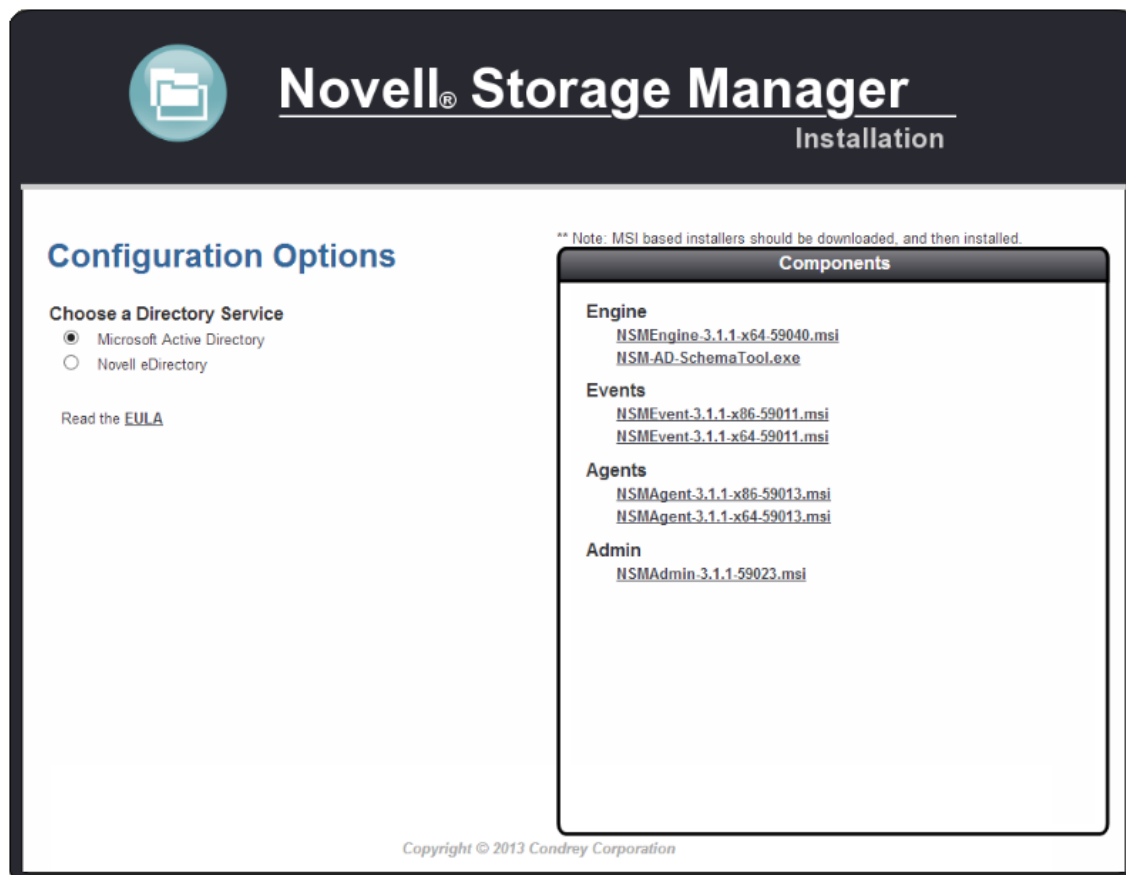
The Event Monitor can be installed on a Windows Server machine that meets the following minimum requirements:

- ♦ Microsoft Windows Server 2012 (Member or DC Server)
- ♦ Microsoft Windows Server 2008 or later, or R2 with an x86 or x64 processor (Member or DC Server)
- ♦ Microsoft Windows Server 2003 SP2 or later (Member or DC Server)
- ♦ .NET 3.5 Framework and .NET 4.0 (Full) Framework installed
- ♦ At least 1 GB RAM
- ♦ Forest functional level 2003 or later in native mode

Other notable information about the Event Monitor:

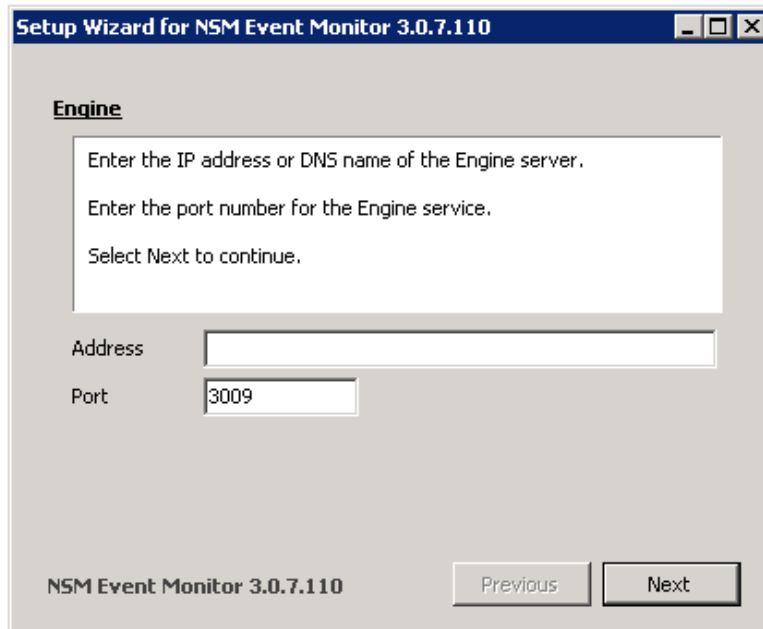
- ♦ There is only one Event Monitor per domain

- ♦ The Event Monitor runs as a native NT service that is configured to start by using the Local System account
 - ♦ The Event Monitor must be permitted to make outbound connections through the firewall
- 1 At the root of the NSM_3_1_1.iso image, click the install.html file.



- 2 Select *Microsoft Active Directory*.
- 3 Click one of the following Event Monitor installation files:
 - ♦ *NSMEvent-3.1.1-x86-xxxx.msi*
 - ♦ *NSMEvent-3.1.1-x64-xxxx.msi*
- 4 When asked if you want to save or run the file, save the file to the hard drive of the server that will host the Event Monitor.
- 5 From the saved location, launch the Event Monitor installation file.
- 6 When you are asked if you want to run this file, click *Run*.
An Introduction page appears in the Setup Wizard.
- 7 Read the text on the screen and click *Next*.
- 8 Accept the license terms and click *Next*.
- 9 Accept the installation path or indicate a new path by using the *Browse* button.
To review possible locations, you can click *Disk Usage* to see all available volumes with disk size and disk availability data.
- 10 Click *Next*.

- 11 Click *Install*.
- 12 Leave the *Launch Event Monitor configuration utility* check box selected, then click *Finish*.
The following page appears.



- 13 Specify the IP address or DNS name of the server hosting the NSM Engine, then click *Next*.
- 14 Leave the *Start Service* check box selected, then click *Next* to start the Event Monitor service.
- 15 View the configuration settings and click *Close*.
- 16 Proceed with [Section 5.7, “Installing and Configuring an NSM Agent,”](#) on page 64.

5.7 Installing and Configuring an NSM Agent

An NSM Agent can be installed on a Windows machine that meets the following minimum requirements:

- ◆ Microsoft Windows Server 2012 (Member or DC Server)
- ◆ Microsoft Windows Server 2008 SP2 or R2 with an x86 or x64 processor (for deployment with quota management) (Member or DC Server)
- ◆ Microsoft Windows Server 2003 SP2 or later with an x86 or x64 processor (for deployment without quota management)
- ◆ Windows 7 or later with an x64 processor
- ◆ .NET 3.5 Framework and .NET 4.0 (Full) Framework installed
- ◆ For quota management, Microsoft File System Resource Manager (FSRM) must be installed

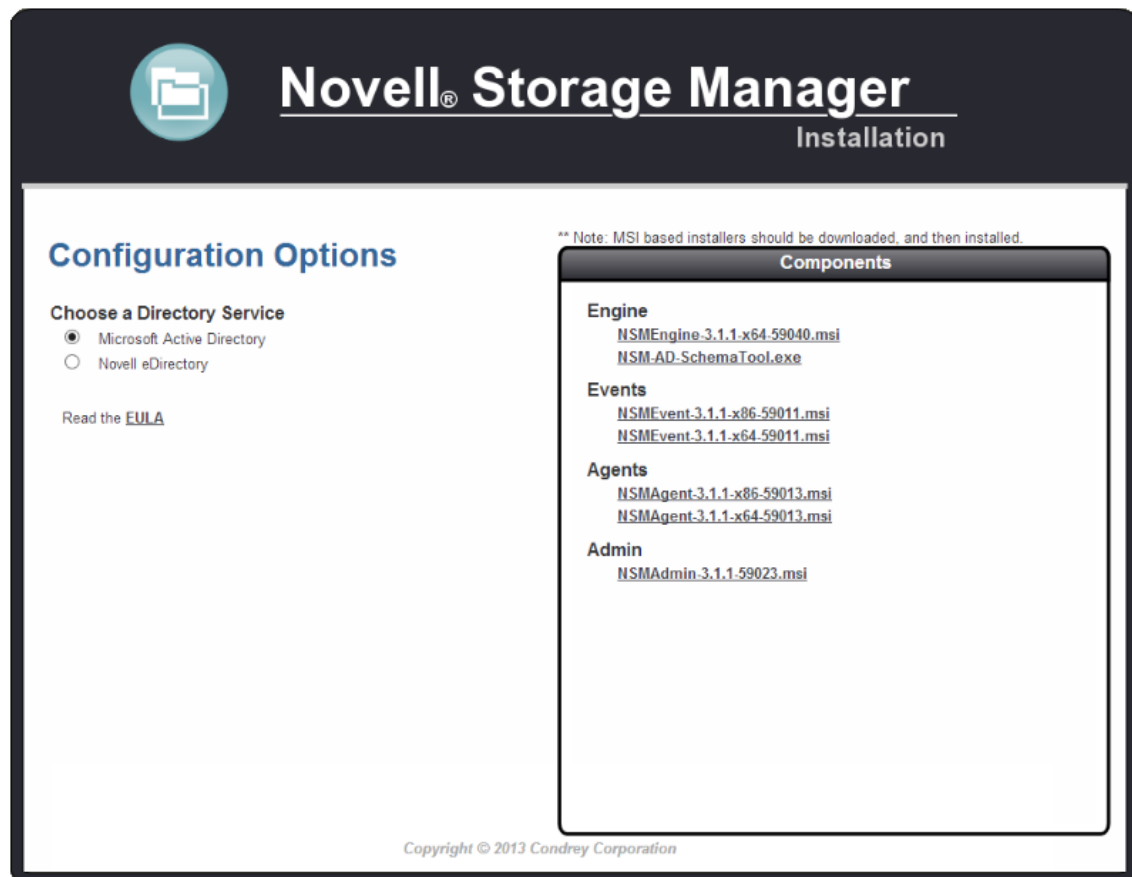
IMPORTANT: In cases where managed storage may include redirected folders, such as “My Documents” or similar types commonly seen with managed Profile Paths, a Windows Server hotfix (<http://support.microsoft.com/kb/973278>) will need to be applied to any Engine and Agent servers involved in the data copy process. This hotfix only applies to the following platforms where the Engine or an Agent is installed:

- ◆ Windows Server 2008
- ◆ Windows Server 2008 SP1

In cases where this hotfix has not been applied to the affected systems, symptoms may include stuck Copy Data pending events with the message: Current Error - 32: The requested operation is not supported in the properties for that event as well as the error message identified by the hotfix “0x00000032 (ERROR_NOT_SUPPORTED)” appearing in the log file of the Engine or Agent that tried processing the data copy.

Other notable information about NSM Agents:

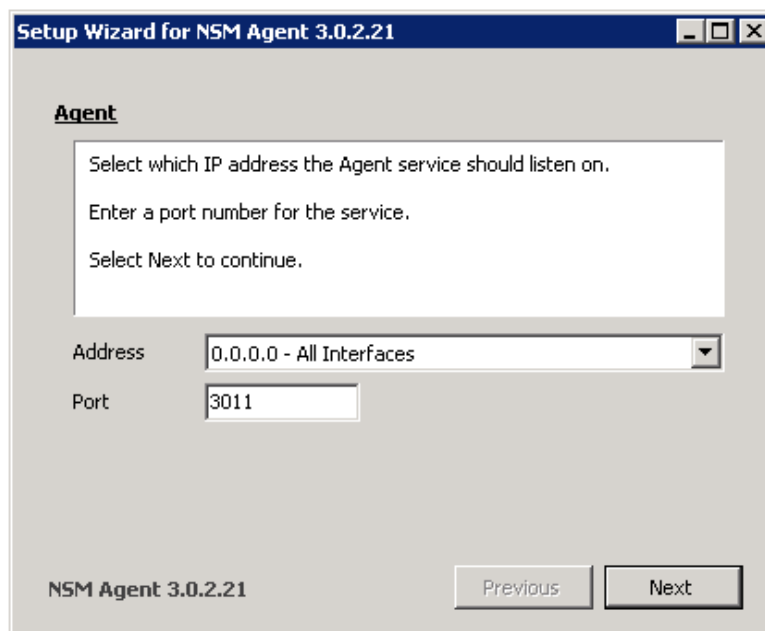
- ◆ An NSM Agent runs as a native NT service that is configured to start by using the Local System account
 - ◆ The default NSM Agent port is 3011
 - ◆ A firewall inbound rule for the NSM Agent is created during the installation
- 1 At the root of the NSM_3_1_1.iso image, click the install.html file.



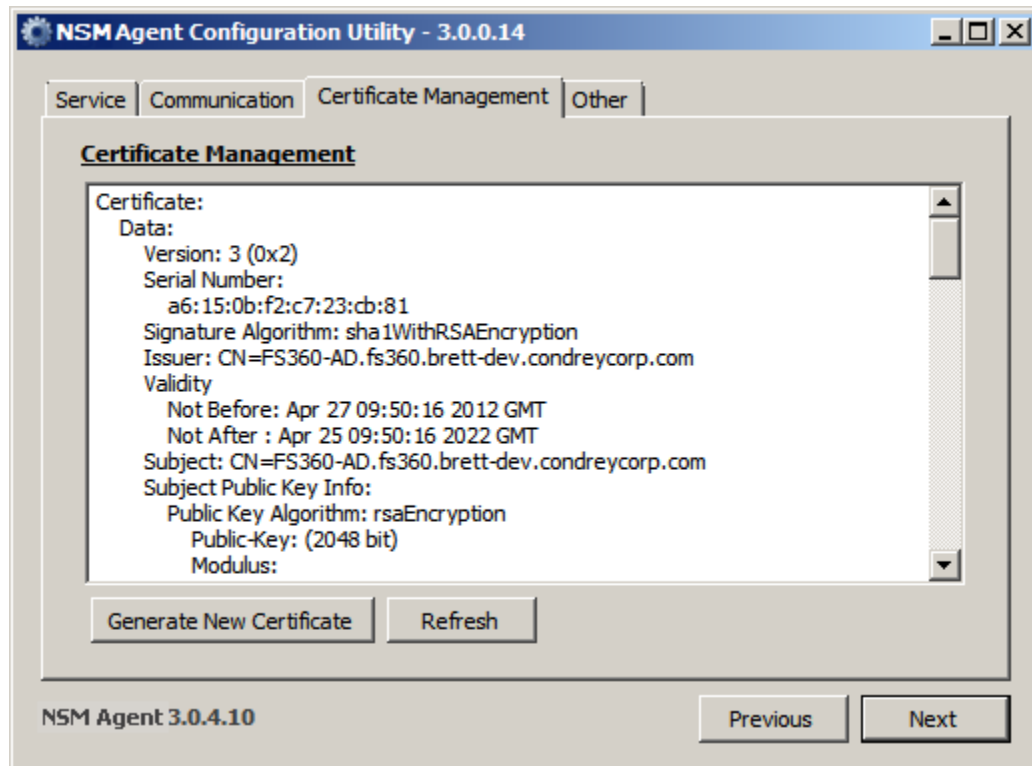
2 Select *Microsoft Active Directory*.

- 3 Click one of the following NSM Agent installation files:
 - ♦ *NSMAgent-3.1.1-x86-xxxx.msi*
 - ♦ *NSMAgent-3.1.1-x64-xxxx.msi*
- 4 When asked if you want to save or run the file, save the file to the hard drive of the server that will host the NSM Agent.
- 5 From the saved location, launch the NSM Agent installation file.
- 6 When you are asked if you want to run this file, click *Run*.
An introduction page appears in the Setup Wizard.
- 7 Read the text on the page and click *Next*.
- 8 Accept the license terms and click *Next*.
- 9 Accept the installation path or indicate a new path by using the *Browse* button.
To review possible locations, you can click *Disk Usage* to see all available volumes with disk size and disk availability data.
- 10 Click *Next*.
- 11 Click *Install*.
- 12 Leave the *Launch Agent configuration utility* check box selected, then click *Finish*.

The following page appears:



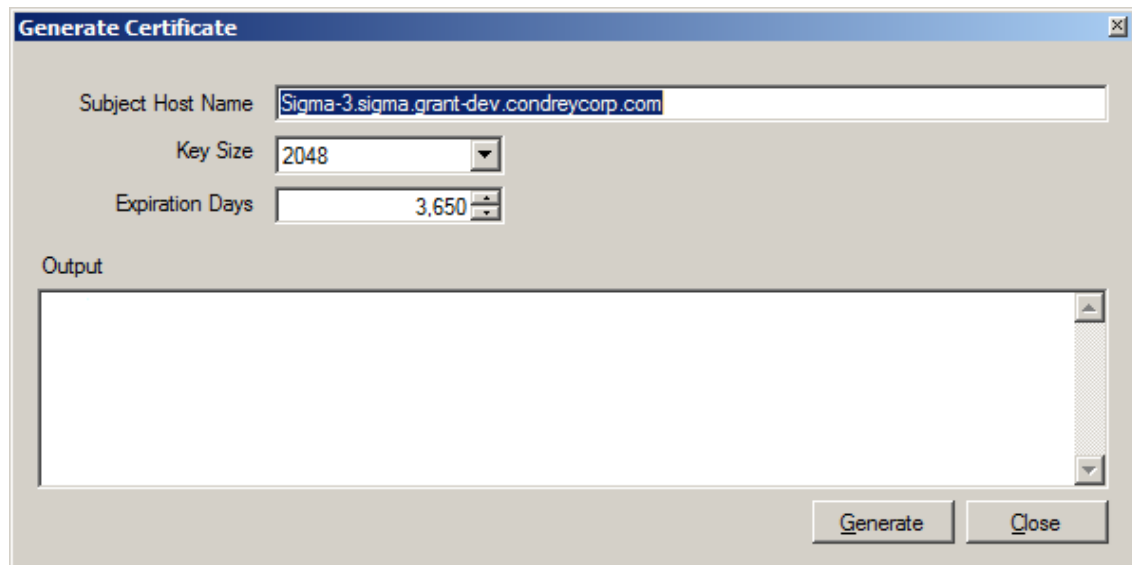
- 13 Specify the IP address of the server hosting the NSM Agent. Unless there is a port conflict, leave the port setting at 3011 and click *Next*.
- 14 Leave the *Start Service* check box selected and click *Next*.
Novell Storage Manager creates a unique private certificate.



15 Do one of the following:

- ◆ If you want the server on which you are installing the NSM Agent to function as the certificate server, click *Next*, *Finish*, and then *Close*. Then proceed with [Section 5.8, "Authorizing the Event Monitor,"](#) on page 68.
- ◆ If you want a different server in the network to issue the certificate and function as the certificate server, continue with [Step 16](#).

16 Click *Generate New Certificate*.



17 In the *Subject Host Name* field, specify the desired server name.

- 18 In the *Key Size* field, leave the default setting of 2048 or select the key size you want.
- 19 In the *Expiration Days* field, leave the setting at 10 years (3,650 days) or specify a new setting.
- 20 Click *Generate*.
- 21 Click *Close*.
- 22 Click *Save*.
- 23 Proceed with [Section 5.8, "Authorizing the Event Monitor,"](#) on page 68.

5.8 Authorizing the Event Monitor

- 1 In NSMAdmin, click the *Configure* tab.
- 2 Click *Event Servers*.
- 3 Select the listed domain.
- 4 Click the check mark button.
- 5 When you are asked if you want to authorize the selected event monitor, click *Yes*.
- 6 When the Results page appears, click *Close*.
- 7 Proceed with [Section 5.9, "Authorizing the NSM Agents,"](#) on page 68.

5.9 Authorizing the NSM Agents

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

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

- ◆ [Section A.1, “Overview,” on page 69](#)
- ◆ [Section A.2, “Prerequisites,” on page 70](#)
- ◆ [Section A.3, “Copying the Component Installers,” on page 70](#)
- ◆ [Section A.4, “Creating the servernames.txt File,” on page 71](#)
- ◆ [Section A.5, “Deploying the Linux RPMs,” on page 73](#)
- ◆ [Section A.6, “Deploying the Windows MSI or EXE Files,” on page 74](#)

A.1 Overview

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

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

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

The DeployAgents tool performs the following actions:

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

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

A.2 Prerequisites

- ♦ [Section A.2.1, “Windows PowerShell,” on page 70](#)
- ♦ [Section A.2.2, “Windows Agents and Event Monitors,” on page 70](#)
- ♦ [Section A.2.3, “Linux Agents and Event Monitors,” on page 70](#)

A.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.

A.2.2 Windows Agents and Event Monitors

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

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

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

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

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

A.2.3 Linux Agents and Event Monitors

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

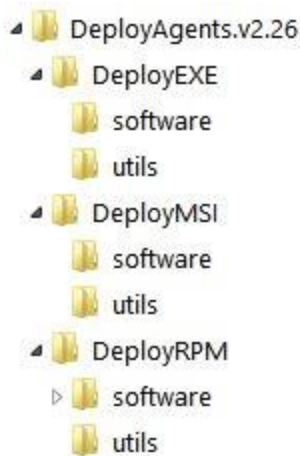
RPM installations require that all Linux servers are installed with default port numbers.

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

A.3 Copying the Component Installers

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

The folder structure looks like the image below:



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

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

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

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

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

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

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

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

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

The sample NSM Engine to be edited looks like this:

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

A.4 Creating the `servername.txt` File

- ♦ [Section A.4.1, “Manually Creating the `servername.txt` File,” on page 72](#)
- ♦ [Section A.4.2, “Automatically Creating the `servername.txt` File,” on page 72](#)

This file specifies the names of all of the servers on which the agent or Event Monitor software is to be deployed. The file is specific to each of the installer formats identified in [Table A-1 on page 69](#). For example, there should be an individual `servername.txt` file for MSI files, EXE files, and RPM files.

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

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

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

For example:

```
cclx1.cctec.org
cclx2.cctec.org
cclx3.cctec.org
```

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

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

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

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

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

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

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

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

A.5 Deploying the Linux RPMs

- ♦ Section A.5.1, “External Utilities,” on page 73
- ♦ Section A.5.2, “Deployment Specifics,” on page 73
- ♦ Section A.5.3, “Using DeployAgentsRPM.cmd,” on page 73

A.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.

A.5.2 Deployment Specifics

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

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

A.5.3 Using DeployAgentsRPM.cmd

Usage:

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

Explanation

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

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

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

Example on a Single Command Line

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

Or

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

A.6 Deploying the Windows MSI or EXE Files

- ◆ [Section A.6.1, “Deployment Specifics,” on page 74](#)
- ◆ [Section A.6.2, “Setting an Alternate Installation Path,” on page 74](#)
- ◆ [Section A.6.3, “Using DeployAgentsMSI.cmd,” on page 75](#)
- ◆ [Section A.6.4, “Using DeployAgentsEXE.cmd,” on page 75](#)

A.6.1 Deployment Specifics

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

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

A.6.2 Setting an Alternate Installation Path

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

Table A-3 *Default Installation Paths*

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

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

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

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

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

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

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

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

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

MSI Example:

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

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

EXE Example:

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

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

4 Save the `AlternateInstallPath.txt` file.

A.6.3 Using `DeployAgentsMSI.cmd`

1 Launch the DOS Command Prompt utility.

2 Change to the `DeployMSI` directory.

3 Do one of the following:

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

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

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

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

A.6.4 Using `DeployAgentsEXE.cmd`

1 Launch the DOS Command Prompt utility.

2 Change to the `DeployEXE` directory.

3 Do one of the following:

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

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

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

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

B Documentation Updates

This section contains information about documentation content changes that were made in this *Novell Storage Manager 3.1.1 for Active Directory Installation Guide* after the initial release of Novell Storage Manager 3.0 for Active Directory. 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 October 17, 2013

Updates were made to the following sections:

Location	Update Description
Section 1.4, "Verifying Proper Configurations and Rights," on page 10.	New section.
Section 3.8, "Installing the NSM Engine," on page 24.	Removed bullet specifying Windows hotfix needed for Windows Server 2008 R2.
Section 3.13, "Installing and Configuring an NSM Agent," on page 35.	Removed bullet specifying Windows hotfix needed for Windows Server 2008 R2.
Section 5.3, "Installing the NSM Engine," on page 54.	Removed bullet specifying Windows hotfix needed for Windows Server 2008 R2.
Section 5.7, "Installing and Configuring an NSM Agent," on page 64.	Removed bullet specifying Windows hotfix needed for Windows Server 2008 R2.

B.2 June 12, 2013

Updates were made to the following sections:

Location	Update Description
Section 1.1.1, "Installing File Server Resource Manager," on page 7.	Added support for Windows Server 2012.

Location	Update Description
Section 3.8, "Installing the NSM Engine," on page 24.	Inserted Important information on a Windows Server hotfix. Inserted Warning on existing Event Monitors and NSM Agents becoming legacy components following the upgrade of an NSM Engine.
Section 3.10, "Setting Rights and Privileges on Managed Storage," on page 30.	New section.
Chapter 4, "Upgrading from Storage Manager 3.x to 3.1.1," on page 41.	New chapter.
Section A.2.1, "Windows PowerShell," on page 70.	New section.

B.3 February 13, 2013

Updates were made to the following sections:

Location	Update Description
Chapter 3, "Upgrading from Storage Manager 2.5x to 3.1.1," on page 17.	Added a requirement for the .NET 4.0 (Full) Framework for the NSM Engine, Event Monitor, NSM Agent, and NSMAdmin.
Chapter 5, "Installing Novell Storage Manager 3.1.1 for Active Directory," on page 53.	Added a requirement for the .NET 4.0 (Full) Framework for the NSM Engine, Event Monitor, NSM Agent, and NSMAdmin.
Section 3.8, "Installing the NSM Engine," on page 24.	Removed a reference to the NSM Engine being supported on a server with an x86 processor.
Section 5.3, "Installing the NSM Engine," on page 54.	Removed a reference to the NSM Engine being supported on a server with an x86 processor.

B.4 January 18, 2013

Updates were made to the following sections:

Location	Update Description
Multiple locations throughout the manual.	Changed references of 3.0.x to 3.1.
Appendix A, "Deploying Event Monitors and NSM Agents Remotely by Using the DeployAgents Tool," on page 69	New appendix.

B.5 May 18, 2012

Updates were made to the following sections:

Location	Update Description
Section 3.8, "Installing the NSM Engine," on page 24.	New steps beginning with Step 12 on page 25.
Section 3.13, "Installing and Configuring an NSM Agent," on page 35.	New steps beginning with Step 13 on page 37.
Section 5.3, "Installing the NSM Engine," on page 54.	New steps beginning with Step 12 on page 55.
Section 5.7, "Installing and Configuring an NSM Agent," on page 64.	New steps beginning with Step 14 on page 66.

B.6 February 2, 2012

Updates were made to the following section:

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

B.7 March 16, 2011

Updates were made to the following section:

Location	Update Description
Section 5.5.1, "Granting Rights," on page 61	The step requiring that Full Control security privileges to the FSFProxyRights group for each share that File System Factory for AD will manage, was removed because this step is now automated.

B.8 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.

