



Micro Focus Storage Manager 5.2 for Active Directory Installation Guide

May 16, 2017

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Condrey Corporation
122 North Laurens St.
Greenville, SC 29601
U.S.A.
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Contents

About This Guide	5
1 Prerequisites	7
1.1 Folder Redirection and DNS Names	7
1.2 File Server Resource Manager	7
1.2.1 Installing File Server Resource Manager	8
1.3 Active Directory Schema	9
1.3.1 Extending the Active Directory Schema	9
1.4 Verifying Proper Configurations and Rights	10
1.5 What's Next	10
2 Licensing the Product	13
2.1 Licensing Overview	13
2.2 Obtaining a License File	14
2.3 Updating a License File	16
3 Installing and Configuring an SQL Server Instance	17
3.1 Determine Which Version of SQL Server to Use	17
3.2 Install SQL Server Express	18
3.3 Install a New Instance of SQL Server	25
3.4 SQL Server Post Configuration Considerations	32
4 Migrating from Storage Manager 3.1.1	35
4.1 Prerequisites	35
4.2 Understanding the Migration Process	35
4.3 Accessing the Product Contents	36
4.4 Stopping and Disabling Components	36
4.4.1 Stopping and Disabling the Engine	36
4.4.2 Stopping and Disabling the Event Monitor	36
4.4.3 Stopping and Disabling the Agents	37
4.5 Installing the Engine	37
4.6 Installing the License	38
4.7 Configuring the Database	40
4.8 Migrating the Database	44
4.9 Configuring the Engine	48
4.10 Migrating the Engine Data	55
4.11 Installing NSMAdmin	57
4.12 Review Migrated Policies	59
4.13 Upgrading to Storage Manager 5.2	59
5 Upgrading from Storage Manager 4.x for Active Directory to 5.2	61
5.1 Upgrading the Engine	61
5.2 Configuring the Database	63
5.3 Configuring the Engine	66

5.4	Upgrading the Event Monitor	69
5.5	Upgrading an Agent	71
5.6	Installing SMAAdmin	72
5.7	Removing NSMAAdmin	73
5.8	(Conditional) Install CouchDB	73
5.9	Administering Storage Manager	74
6	Upgrading from Storage Manager 5.x for Active Directory to 5.2	75
6.1	Configuring the Database	75
6.2	Configuring the Engine	79
6.3	Upgrading the Event Monitor	82
6.4	Upgrading an Agent	84
6.5	Update SMAAdmin	86
6.6	(Conditional) Install CouchDB	87
6.7	Administering Storage Manager	87
7	Installing Storage Manager 5.2 for Active Directory	89
7.1	Performing Installation Tasks as a Domain Administrator	89
7.2	Accessing the Product Contents	90
7.3	Installing the Engine	90
7.4	Installing the License	91
7.5	Configuring the Database	92
7.6	Configuring the Engine	95
7.7	Setting Rights and Privileges on Managed Storage	101
7.7.1	Granting Rights	102
7.7.2	Granting Privileges on a Member Server	102
7.7.3	Granting Privileges on a Domain Controller	103
7.8	Installing and Configuring the Event Monitor	105
7.9	Installing and Configuring the Agents	109
7.10	Installing SMAAdmin	113
7.11	Authorizing the Event Monitor	114
7.12	Authorizing the Agents	114
7.13	(Conditional) Install CouchDB	115
7.14	Administering Storage Manager	115
A	Documentation Updates	117
A.1	May 16, 2017	117
A.2	December 13, 2016	117
A.3	August 16, 2016	117
A.4	July 19, 2016	118
A.5	October 7, 2014	118
A.6	October 17, 2013	118
A.7	June 12, 2013	118
A.8	February 13, 2013	118
A.9	January 18, 2013	119
A.10	May 18, 2012	119
A.11	February 2, 2012	119
A.12	March 16, 2011	119
A.13	February 14, 2011	120

About This Guide

This installation guide is written to provide network administrators the conceptual and procedural information for installing and configuring Micro Focus Storage Manager 5.2 for Active Directory.

- ◆ Chapter 1, “Prerequisites,” on page 7
- ◆ Chapter 2, “Licensing the Product,” on page 13
- ◆ Chapter 3, “Installing and Configuring an SQL Server Instance,” on page 17
- ◆ Chapter 4, “Migrating from Storage Manager 3.1.1,” on page 35
- ◆ Chapter 5, “Upgrading from Storage Manager 4.x for Active Directory to 5.2,” on page 61
- ◆ Chapter 6, “Upgrading from Storage Manager 5.x for Active Directory to 5.2,” on page 75
- ◆ Chapter 7, “Installing Storage Manager 5.2 for Active Directory,” on page 89
- ◆ Appendix A, “Documentation Updates,” on page 117

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 *Micro Focus Storage Manager 5.2 for Active Directory Installation Guide*, visit the [Micro Focus Storage Manager Web site \(http://www.novell.com/documentation/storagemanager5/index.html\)](http://www.novell.com/documentation/storagemanager5/index.html).

Additional Documentation

For additional Micro Focus Storage Manager documentation, see the following guide at the [Micro Focus Storage Manager Documentation Web site \(http://www.novell.com/documentation/storagemanager5/index.html\)](http://www.novell.com/documentation/storagemanager5/index.html):

- ◆ *Micro Focus Storage Manager 5.2 for Active Directory Administration Guide*

1 Prerequisites

This section provides procedures that you must do before installing the Micro Focus Storage Manager 5.2 for Active Directory components.

- ♦ Section 1.1, “Folder Redirection and DNS Names,” on page 7
- ♦ Section 1.2, “File Server Resource Manager,” on page 7
- ♦ Section 1.3, “Active Directory Schema,” on page 9
- ♦ Section 1.4, “Verifying Proper Configurations and Rights,” on page 10
- ♦ Section 1.5, “What’s Next,” on page 10

1.1 Folder Redirection and DNS Names

Storage Manager 5.2 exclusively uses DNS Fully Distinguished Names (FDNs) for server names in all UNC paths set in and by Storage Manager. This is a change from Storage Manager 3.x and earlier, where NetBIOS names were used (although a config file-only option to use DNS names existed in Storage Manager 3.1.x). This is per Microsoft’s own recommendations, as Microsoft slowly attempts to phase out NetBIOS and WINS.

However, there are known bugs related to Folder Redirection when the DNS name for a server is used in a user’s home folder path (or any other path specified for folder redirection). These Windows bugs, which can result in loss of data in the redirected folders or the entire redirected folder, are described in the following Microsoft KB articles:

- ♦ “You are unable to update the target location of offline file shares in the Offline File client side cache without administrative permission in Windows Server 2008 R2 or in Windows 7.” <http://support.microsoft.com/kb/977229>
- ♦ “After you apply a GPO to redirect a folder to a new network share, the redirected folder is empty on client computers that are running Windows Vista or Windows Server 2008.” (<http://support.microsoft.com/kb/977611>)

These KB articles specifically apply to users logging on through Windows Vista or Windows 7 computers, as well as users logging on interactively on Windows Server 2008 and Windows Server 2008 R2. Users on other operating systems might be affected as well, however.

Both of the KB articles above include links to hotfixes that help resolve these issues.

While this is not a Storage Manager issue *per se*, Storage Manager’s exclusive use of DNS FDNs in UNC paths can exacerbate this problem, or introduce it into an environment that was previously exclusively using NetBIOS naming for servers and using folder redirection.

1.2 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. Storage Manager uses File Server Resource Manager to enable quota management.

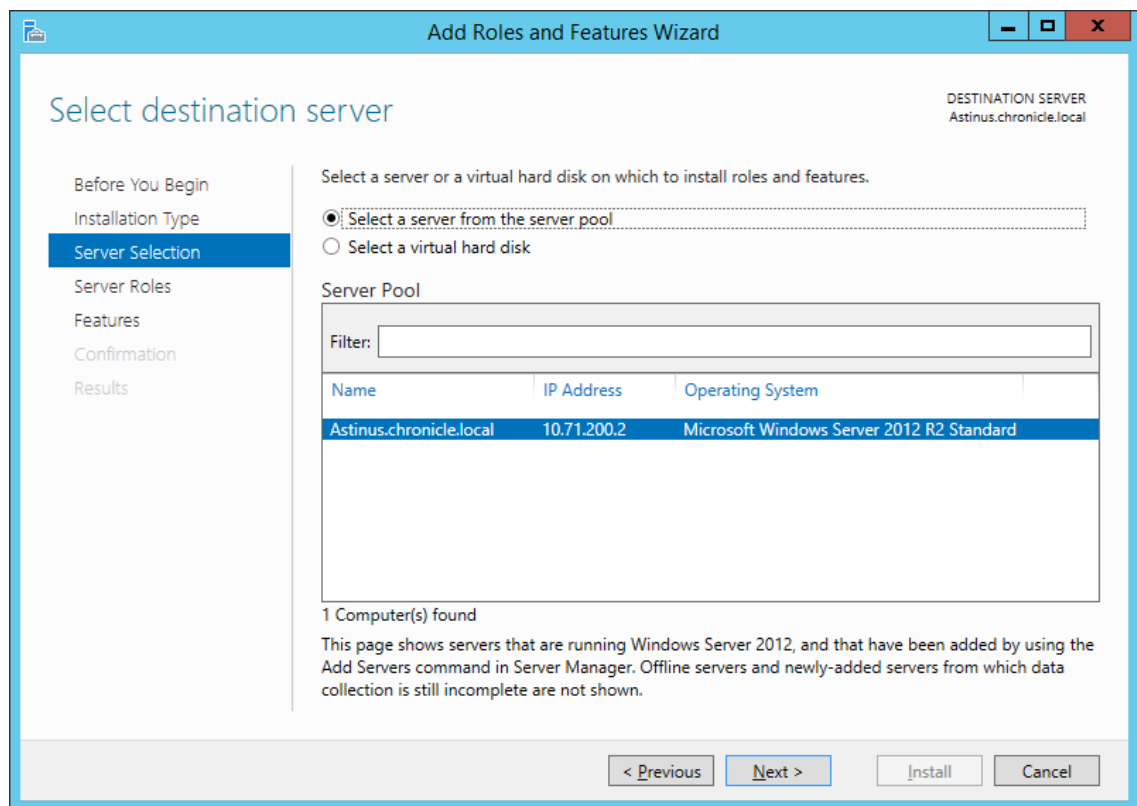
NOTE: You must install FSRM on all servers where Storage Manager will be managing quotas, including the server that will host the Engine. Even if the Engine host does not contain shares that will be managed, FSRM is still required because the FSRM COM interfaces must be present for the Engine to call them remotely on other servers.

1.2.1 Installing File Server Resource Manager

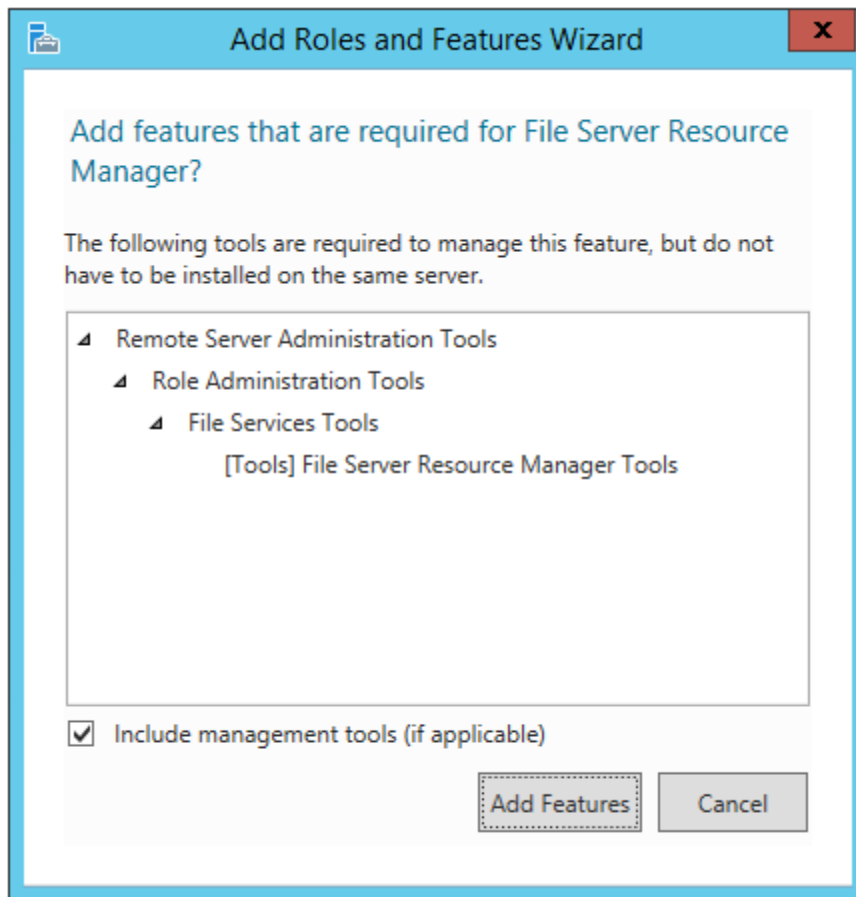
Quotas for user and collaborative storage can be managed through Storage Manager for Active Directory on all versions of Windows Server from 2008 and beyond. You need to install File Server Resource Manager on every server or active node that will be hosting user or collaborative quota-managed storage.

NOTE: These procedures are specific to Windows Server 2012 R2. Procedures vary for each version of Windows Server.

- 1 Launch Server Manager.
- 2 Select **Manage > Add Roles and Features**.
This launches the Add Roles and Features Wizard.
- 3 Click **Next**.



- 4 Select the server where you are going to install the Engine and click **Next**.
- 5 From the list of roles, expand **File and Storage Services**.
- 6 Expand **File and iSCSI Services**.
- 7 Select the **File Server Resource Manager** check box.



- 8 Click **Add Features**.
- 9 Click **Next**.
- 10 Click **Next**.
- 11 Click **Install**.

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, Storage Manager extends the Active Directory schema to enable Storage Manager attributes. These attributes are specified in “[Active Directory Schema Extensions](#)” in the *Micro Focus Storage Manager 5.2 for Active Directory Administration Guide*.

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

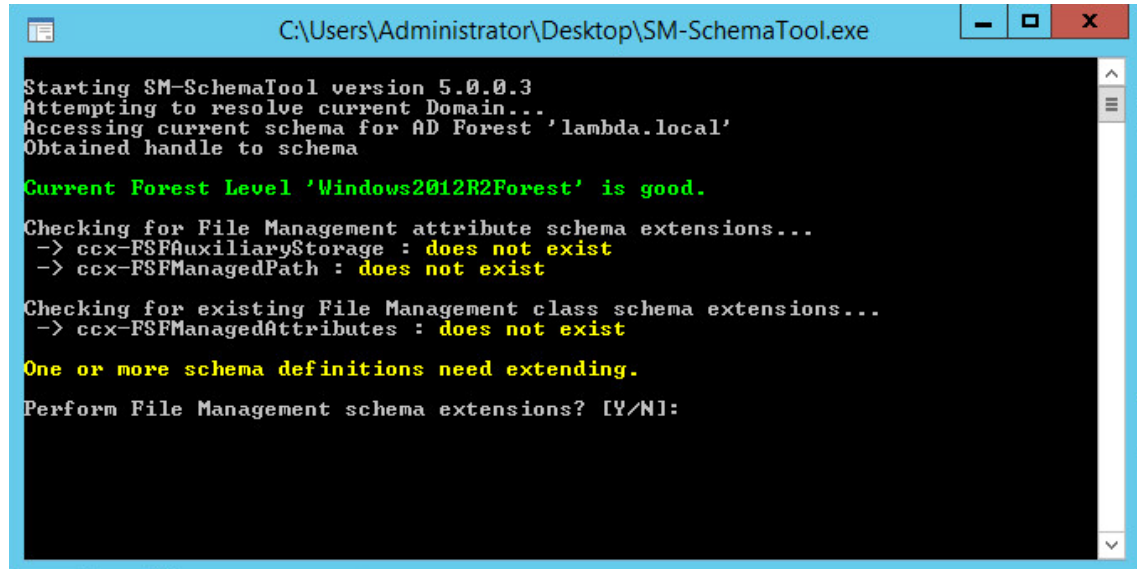
1.3.1 Extending the Active Directory Schema

- 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 `SM-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.



```
C:\Users\Administrator\Desktop\SM-SchemaTool.exe

Starting SM-SchemaTool version 5.0.0.3
Attempting to resolve current Domain...
Accessing current schema for AD Forest 'lambda.local'
Obtained handle to schema

Current Forest Level 'Windows2012R2Forest' is good.

Checking for File Management attribute schema extensions...
-> ccx-FSFAuxiliaryStorage : does not exist
-> ccx-FSFManagedPath : does not exist

Checking for existing File Management class schema extensions...
-> ccx-FSFManagedAttributes : does not exist

One or more schema definitions need extending.

Perform File Management 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 Storage Manager component because of an improper configuration or rights setting. Micro Focus recommends that you review the following sections in the *Micro Focus Storage Manager 5.2 for Active Directory Administration Guide* and make any needed adjustments before proceeding:

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

1.5 What’s Next

If you are upgrading your Storage Manager 3.x for Active Directory environment to Storage Manager 5.2 for Active Directory:

1. Proceed with [Chapter 4, “Migrating from Storage Manager 3.1.1,”](#) on page 35.
2. Then conclude with [Chapter 5, “Upgrading from Storage Manager 4.x for Active Directory to 5.2,”](#) on page 61.

If you are upgrading from Storage Manager 4.x to 5.2:

1. Proceed with [Chapter 2, “Licensing the Product,”](#) on page 13.
2. Follow the procedures in [Chapter 5, “Upgrading from Storage Manager 4.x for Active Directory to 5.2,”](#) on page 61.

If you are upgrading from Storage Manager 5.x to 5.2:

1. Follow the procedures in [Chapter 6, “Upgrading from Storage Manager 5.x for Active Directory to 5.2,”](#) on page 75.

If you are installing Storage Manager:

1. Proceed with [Chapter 2, “Licensing the Product,”](#) on page 13.
2. Follow the procedures in [Chapter 3, “Installing and Configuring an SQL Server Instance,”](#) on page 17 to install an SQL Server instance that Storage Manager supports.
3. Complete the installation by following the procedures in [Chapter 7, “Installing Storage Manager 5.2 for Active Directory,”](#) on page 89.

2 Licensing the Product

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

2.1 Licensing Overview

Micro Focus Storage Manager has four license types:

Table 2-1 Storage Manager License Types

License Type	Target Consumer	Intended Use
Evaluation	Customers	Allows customers to develop and understanding of the power of the product.
Production	Customers	Allows customers to create and run a policy-based infrastructure in production in their environment.
Production + eDirectory to AD Cross-Empire Data Migration	Customers	Allows for the migration of data from a Micro Focus (formerly Novell) file system to a Windows file system and then create and run a policy-based infrastructure in production in their Windows network environment.
Production + AD to AD Cross-Empire Data Migration	Customers	Allows for the migration of data from one Active Directory forest to another and then create and run a policy-based infrastructure in production in their Windows network environment.

The following table includes a comparison of features enabled in evaluation and production license types:

Table 2-2 Enabled Features

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

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

2.2 Obtaining a License File

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

- 1 In a web browser, go to www.storagemanagersupport.com.
- 2 On the top banner of the web page, click **License**.

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

Storage Manager Support Home License Software Documentation Support

License

Enter the required information below and click 'Submit' to generate your license file. After verification, a link to the license file will be sent to the e-mail address entered below.

Customer Details

Organization Name:

Contact

First Name:

Last Name:

Email:

Telephone:

Address

Street:

Street2:

City:

State/Province:

Country:

Zip/Postal Code:

Product Version

Product: Storage Manager

Version:

License Details

Directory Service: eDirectory Active Directory

eDirectory Info

Tree Name:

The license keys are based on the eDirectory tree name (not O=), so it must be correct. Example: MYTREE

License Type: Evaluation Activation


Evaluation License Policy

Notice: Evaluation licenses are for the express purpose of product evaluation and testing. All features of the software may not be active or available when using evaluation licenses. Any use of the product using this license in a production network for production purposes or work is expressly prohibited.



I certify acceptance of this policy on behalf of my company, school, or organization.

Form Verification

Verify:

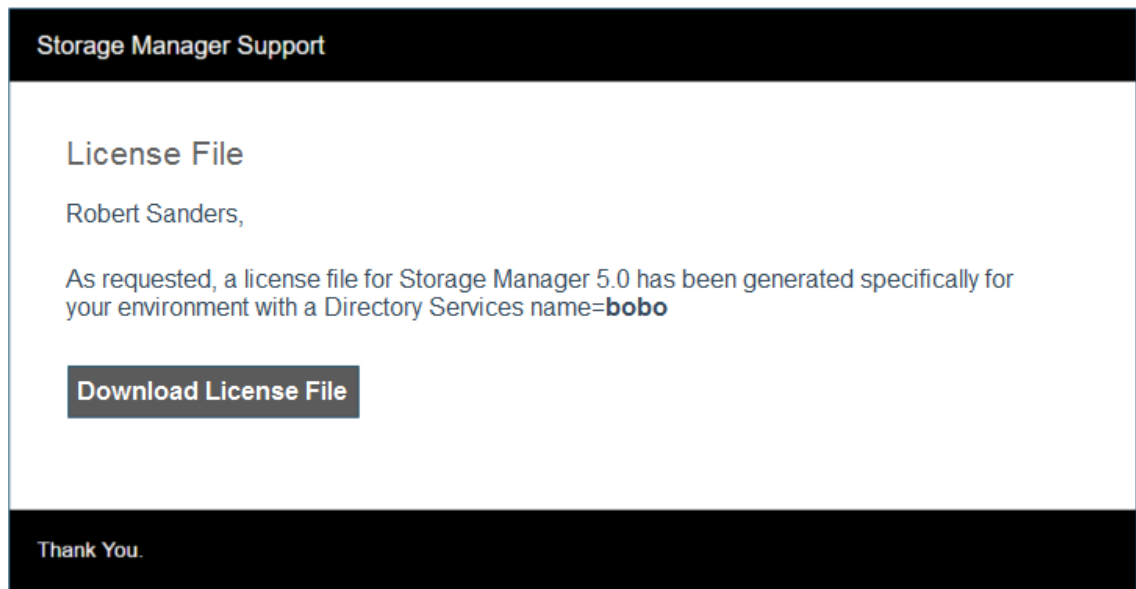


Enter the text above in the box below.

Copyright © 2003-2016 Condrey Corporation. All Rights Reserved.  

3 Complete the fields and click **Submit.**

An e-mail from Storage Manager Support is automatically sent to you with an embedded link for accessing the license.



- 4 In the email, click **Download License File**.
A new Access web page is opened.
- 5 From the Access page, select the listed license file and click the arrow icon to download the license.
- 6 Note where the license file is saved.
You need the license file to complete Engine setup wizard.

2.3 Updating a License File

After you have installed Micro Focus Storage Manager 5.2 for Active Directory, you can update your evaluation license or production license by simply replacing the old license file with the new one. You must first rename the new license file to `SM.LIC`. For more information, see [Section 7.4, "Installing the License,"](#) on page 91.

3 Installing and Configuring an SQL Server Instance

This section provides procedures for installing a Microsoft SQL Server instance with the settings needed to support Micro Focus Storage Manager 5.2 for Active Directory.

Storage Manager 5.2 for Active Directory requires a Microsoft SQL Server as the database and no longer supports the SQLite database that was utilized in previous versions of the product. If you are migrating from Storage Manager 3.x for Active Directory to Version 5.2, in Chapter 4 the Database Configuration Wizard will guide you through the migration of your database content from SQLite to SQL Server.

IMPORTANT: SQL Server is a fully-featured database service, and as such requires installation and maintenance planning before deployment. While a complete analysis of this maintenance is beyond the scope of this product's documentation, we strongly recommend that you review Microsoft's SQL Server documentation to plan for separation of data and transaction logs, regular database backups, and transaction log and data growth.

NOTE: Storage Manager 5.2 for Active Directory supports all versions of SQL Server 2012, 2014, and 2016, including the Express version.

- ♦ [Section 3.1, “Determine Which Version of SQL Server to Use,” on page 17](#)
- ♦ [Section 3.2, “Install SQL Server Express,” on page 18](#)
- ♦ [Section 3.3, “Install a New Instance of SQL Server,” on page 25](#)
- ♦ [Section 3.4, “SQL Server Post Configuration Considerations,” on page 32](#)

3.1 Determine Which Version of SQL Server to Use

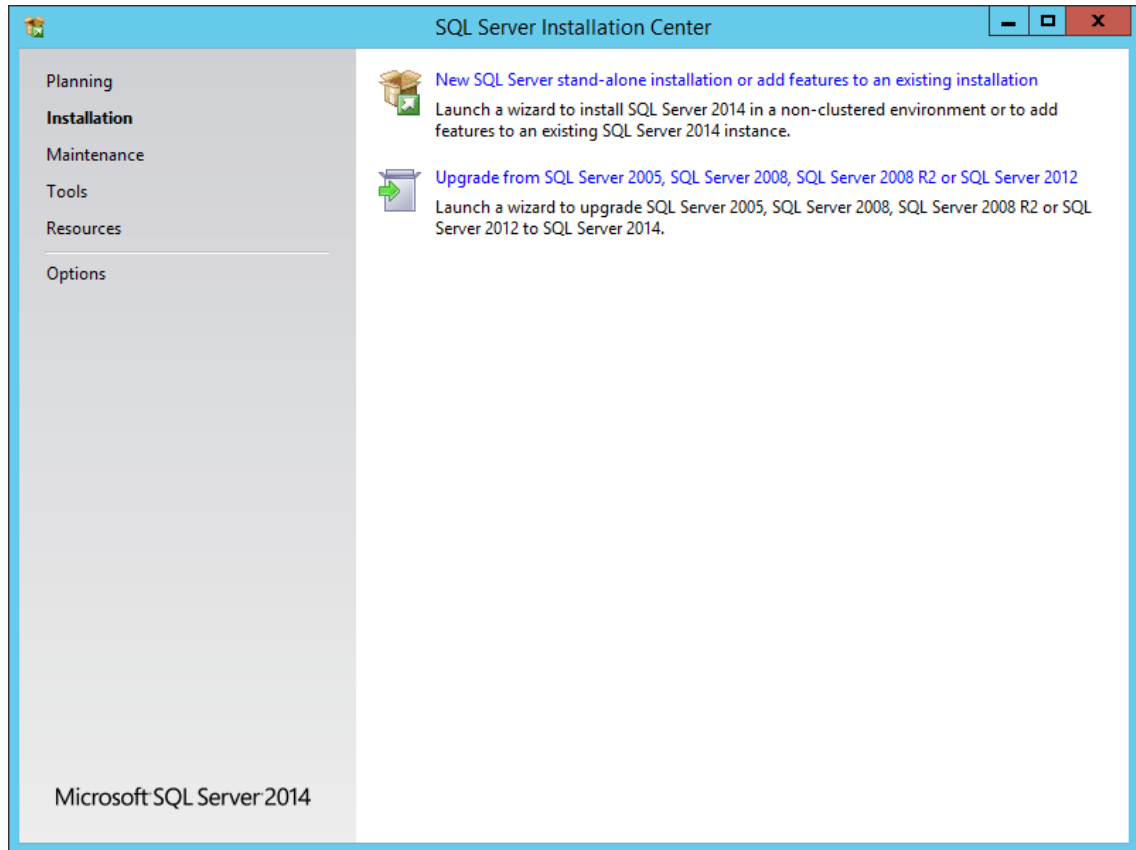
- ♦ If you do not already own SQL Server, you can use SQL Server Express. You can download SQL Server 2014 Express at: <http://www.microsoft.com/en-us/download/details.aspx?id=35579> (<http://www.microsoft.com/en-us/download/details.aspx?id=35579>). After downloading the software, proceed with “Install SQL Server Express.”

IMPORTANT: We do not recommend that you install the Engine on the same server running SQL Server. If you will be using SQL Server Express, you can run it on the same server host, but you will most likely experience better performance if they are running on separate server. You can download Express from Microsoft (SQL Express 2012), (SQL Express 2014). (We recommend SQLEXPRT_x64_ENU.exe as that package includes management tools.)

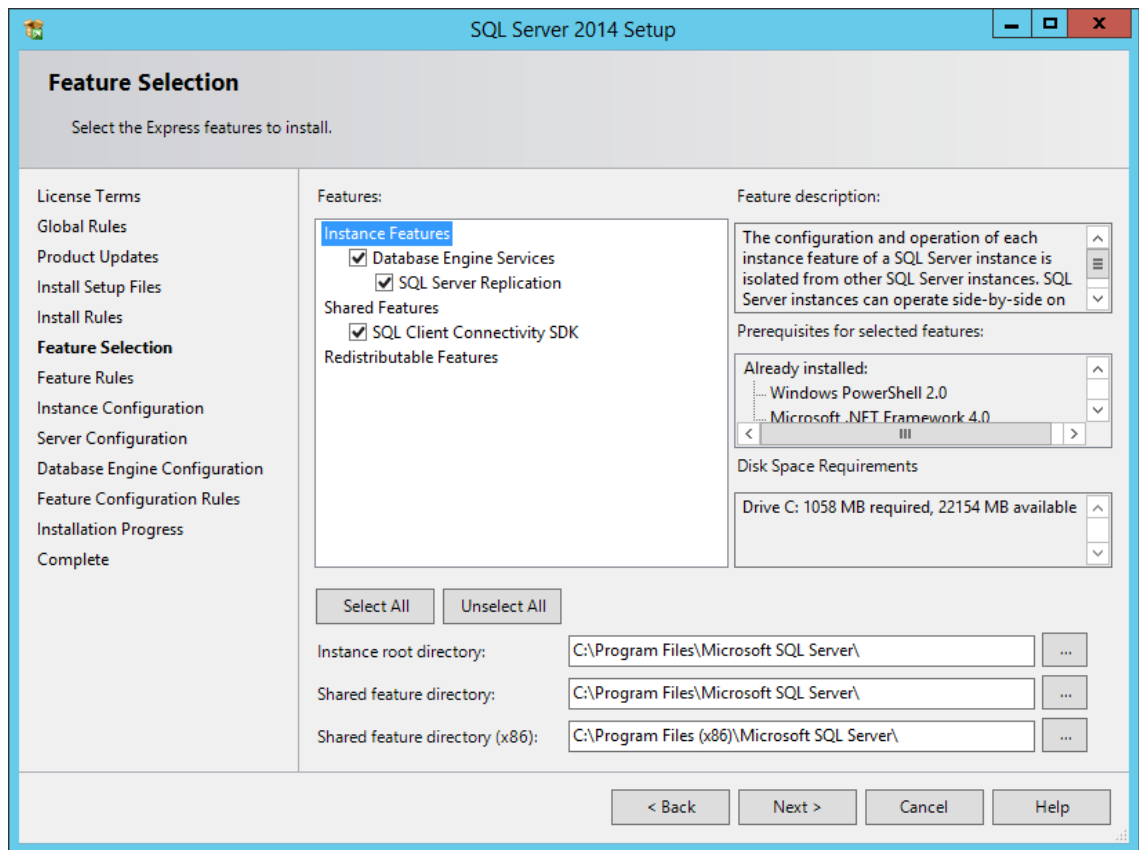
- ♦ If you already own a version of SQL Server, proceed with [Section 3.3, “Install a New Instance of SQL Server,” on page 25](#).

3.2 Install SQL Server Express

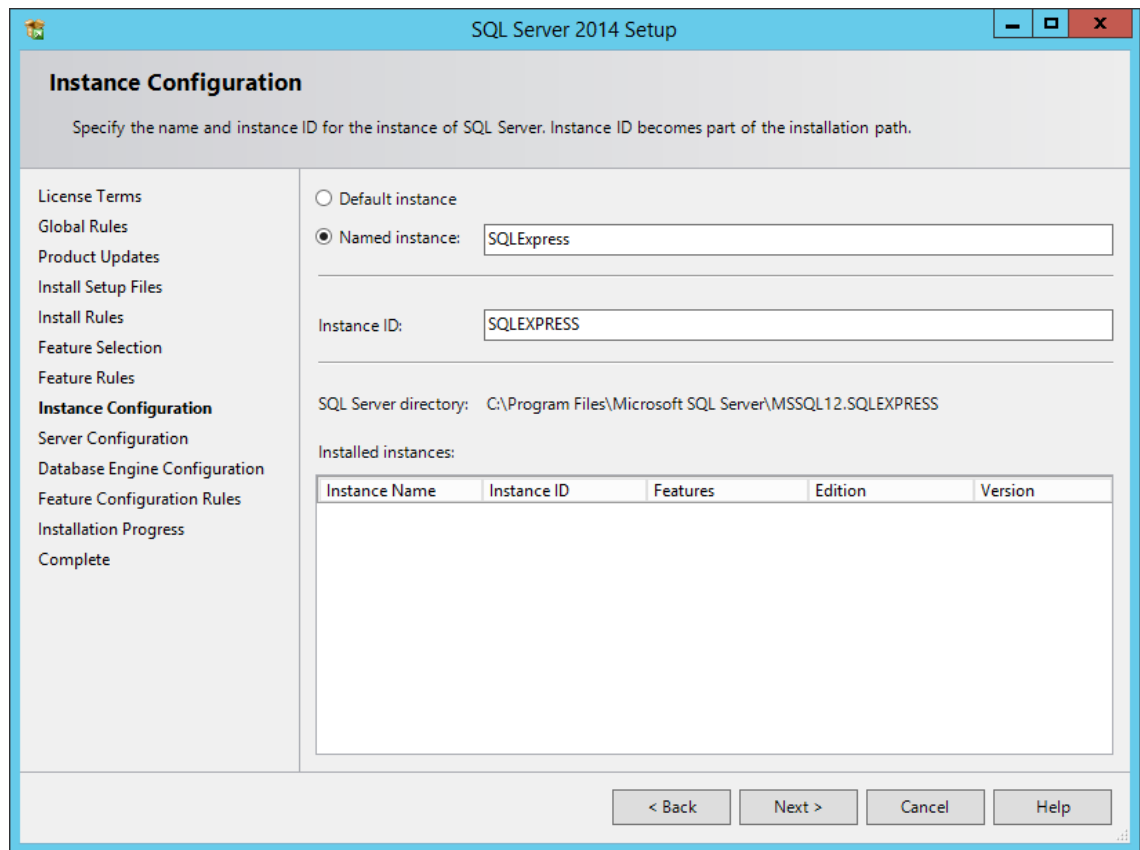
- 1 Launch the SQL Server Express installation file.
- 2 On the SQL Server Installation Center page, click **Installation**.



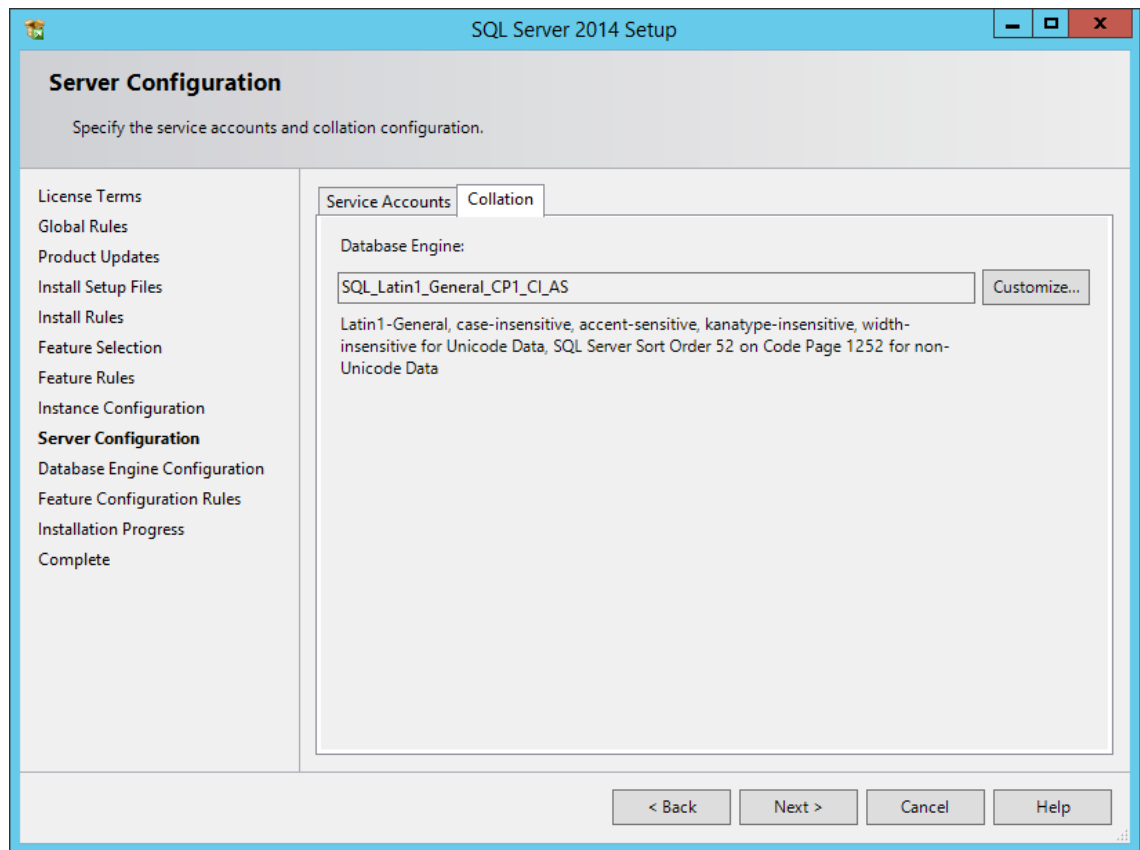
- 3 Select **New SQL Server stand-alone installation or add features to an existing installation**.
- 4 In the License Terms page, accept the license terms and click **Next**.
- 5 In the Product Updates page, click **Next**.
- 6 In the Feature Selection page, select the appropriate instance features and the location for the instance data and click **Next**.



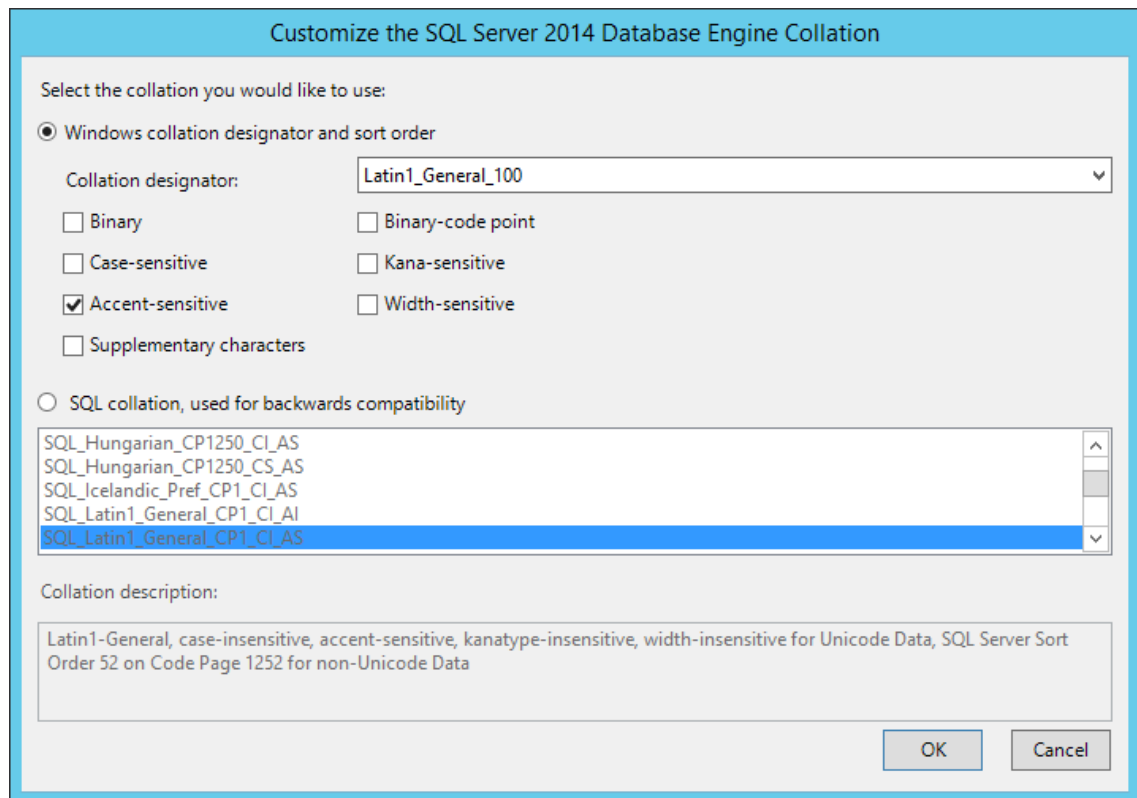
7 On the Instance Configuration page, specify a named instance and click **Next**.



8 In the Server Configuration page, click the **Collation** tab.



- 9 Click **Customize**.
- 10 Click the **Windows** collation designator and sort order option.



- 11 From the **Collation designator** drop-down menu, select an acceptable collation and settings for your locale.

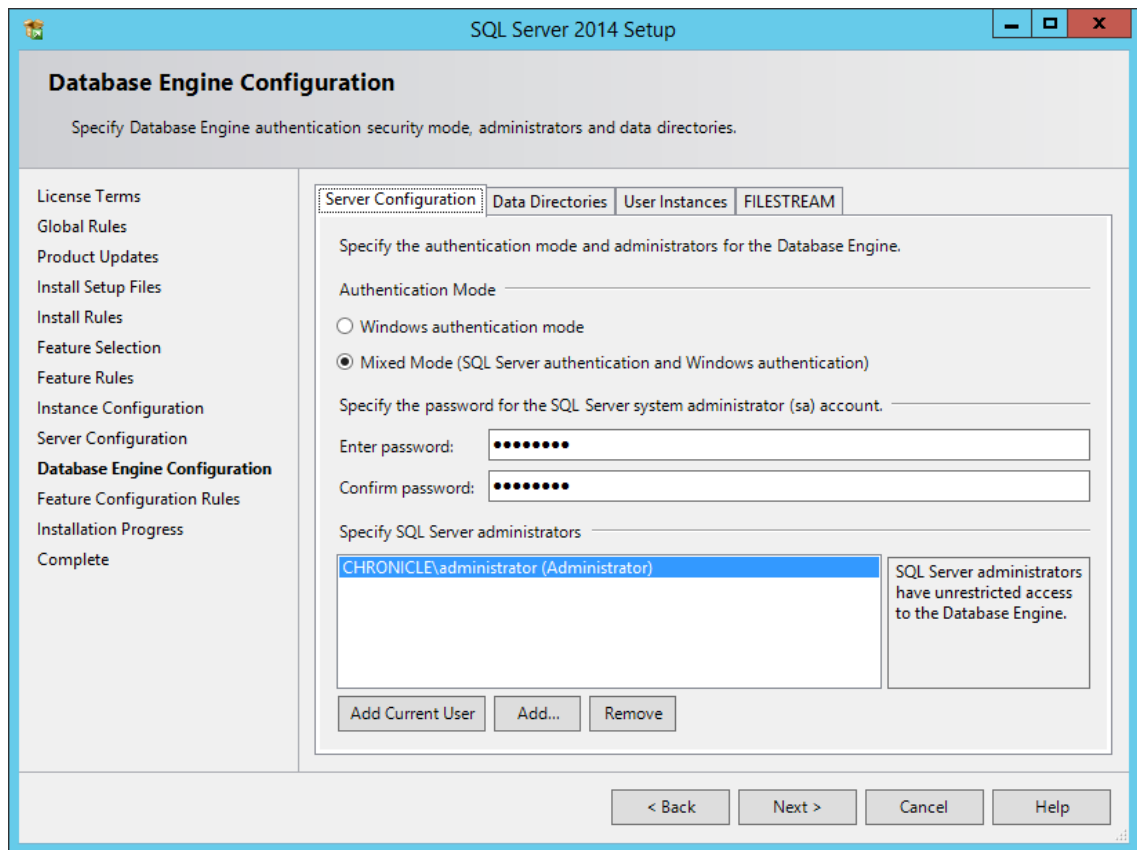
For example, in North America, an acceptable collation would be **Latin1_General_100** with the **Accent-sensitive** check box selected.

We recommend that you select a collation that aligns with the Windows locale of the server where the Engine is installed.

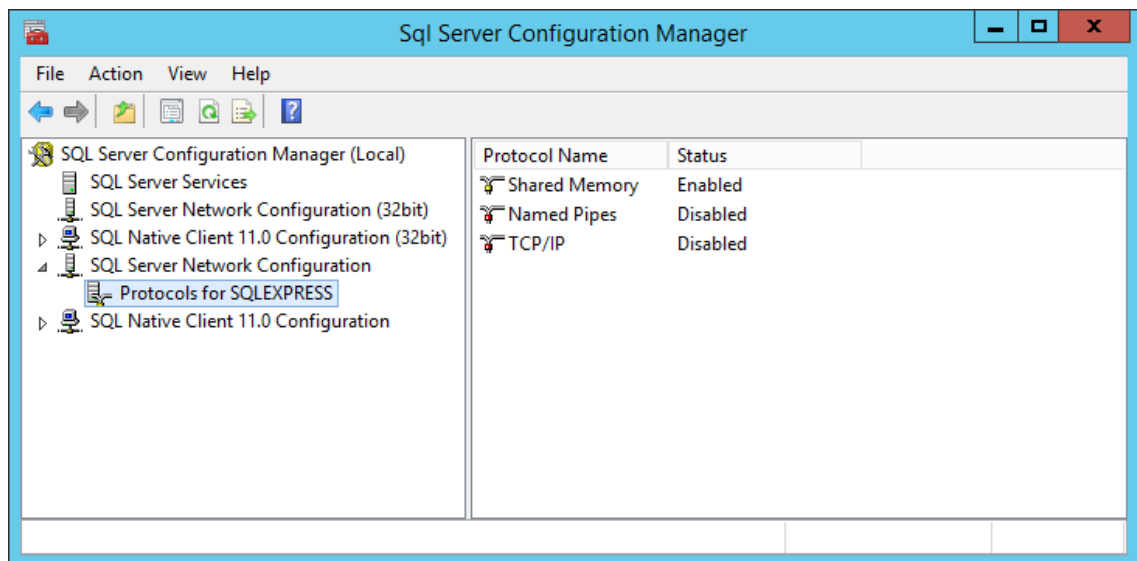
For more information on collation and locales, refer to this Microsoft document: (<http://technet.microsoft.com/en-us/library/ms175194%28v=sql.105%29.aspx>).

- 12 Click **OK**.
- 13 Click **Next**.
- 14 In the Database Engine Configuration page, select the **Mixed Mode (SQL Server authentication and Windows authentication)** option, enter and confirm a SQL Server administrator password, then click **Add Current User**.

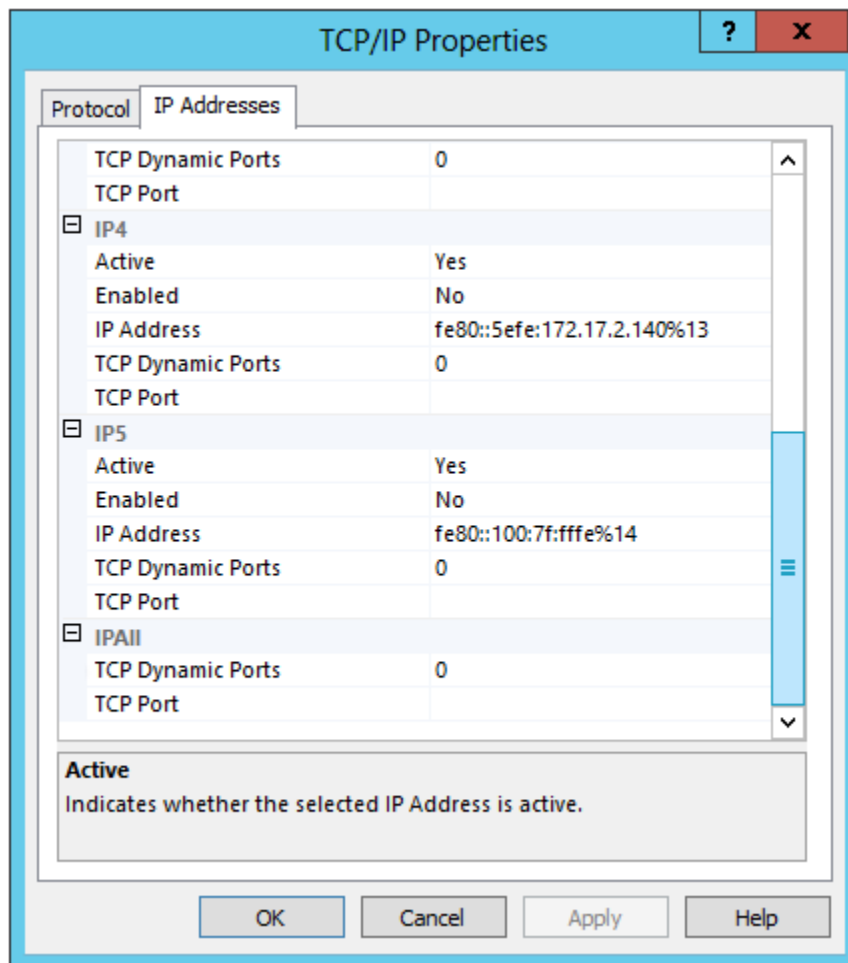
Storage Manager does not support Windows authentication mode (also known as Integrated Security).



- 15 Click **Next**.
- 16 In the Error Reporting page, click **Next**.
- 17 In the Complete page, click **Close**.
- 18 Launch SQL Server Configuration Manager.
- 19 In the left pane, expand **SQL Server Network Configuration**.
- 20 Click **Protocols for SQLEXPRESS**.



- 21 In the right pane, right-click **TCP/IP** and select **Enable**.
- 22 In the warning dialog box, click **OK**.
- 23 Right-click **TCP/IP** again and select **Properties**.
- 24 In the TCP/IP Properties dialog box, click the **IP Addresses** tab.

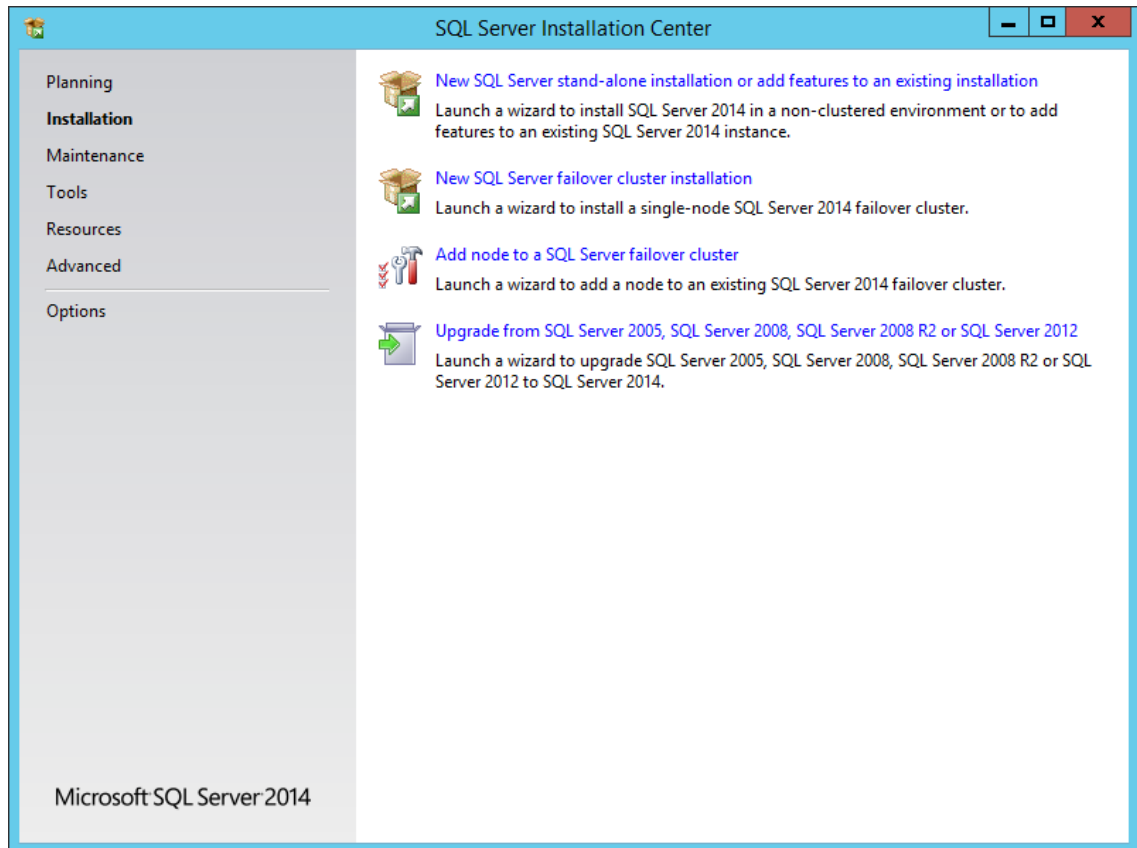


- 25 Select **TCP Dynamic Ports** and clear the field so there is no number associated to it.
- 26 Select **TCP Port** and enter 1433.
- 27 Click **Apply**.
- 28 When the warning dialog box appears, click **OK**.
- 29 Click **OK** to close the TCP/IP Properties page.
- 30 In the SQL Server Configuration Manager, click **SQL Server Services**.
- 31 Right-click **SQL Server (SQLEXPRESS)** and select **Restart**.

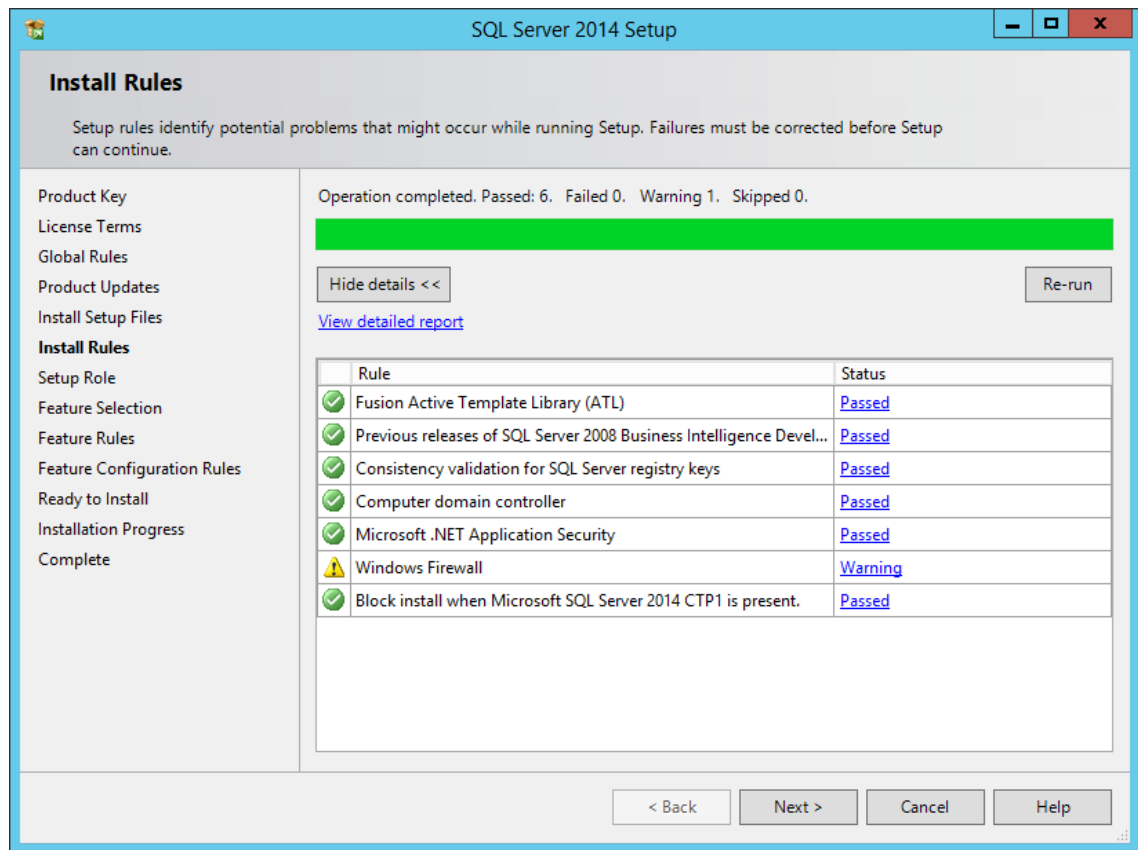
3.3 Install a New Instance of SQL Server

NOTE: These procedures and displayed interface are specific to SQL Server 2014. Procedures and interface will vary based on the version of SQL Server you are using.

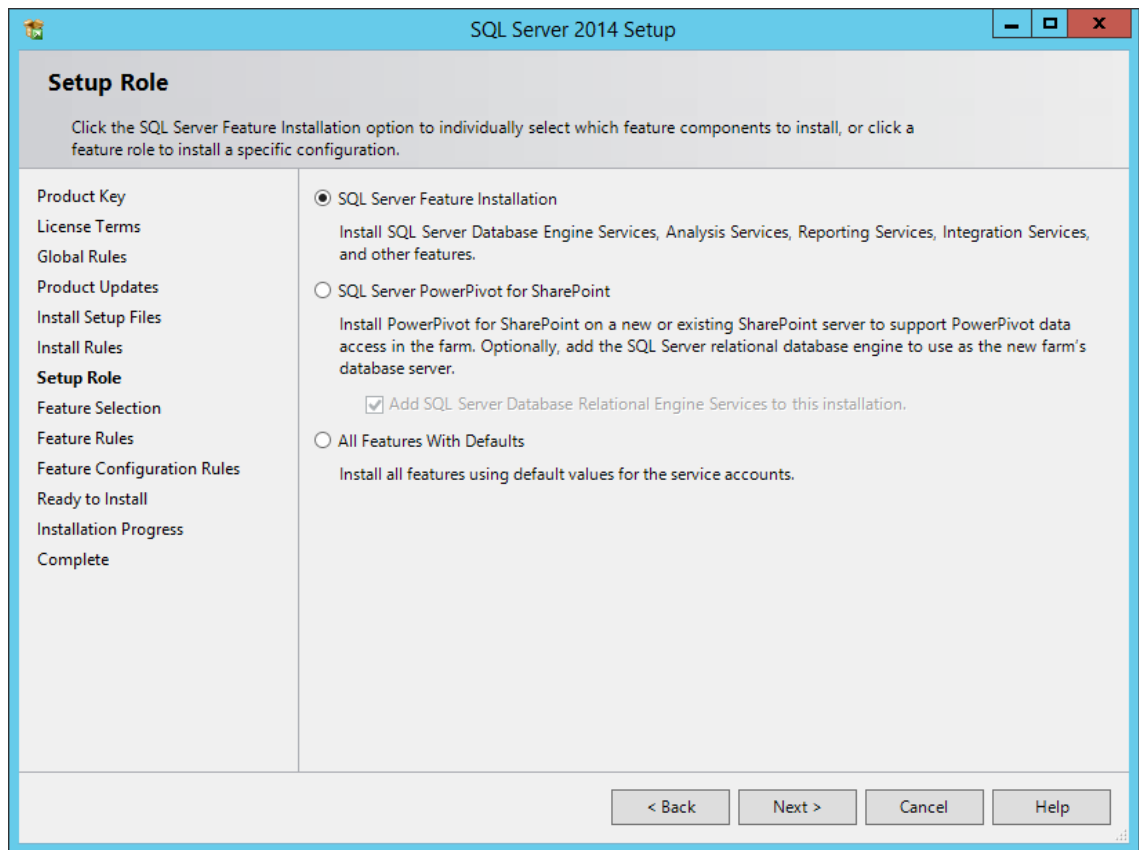
- 1 Launch the Microsoft SQL Server installation file, `setup.exe`.
- 2 In the SQL Server Installation page, click **Installation**.
- 3 Select **New SQL Server stand-alone installation or add features to an existing installation**.



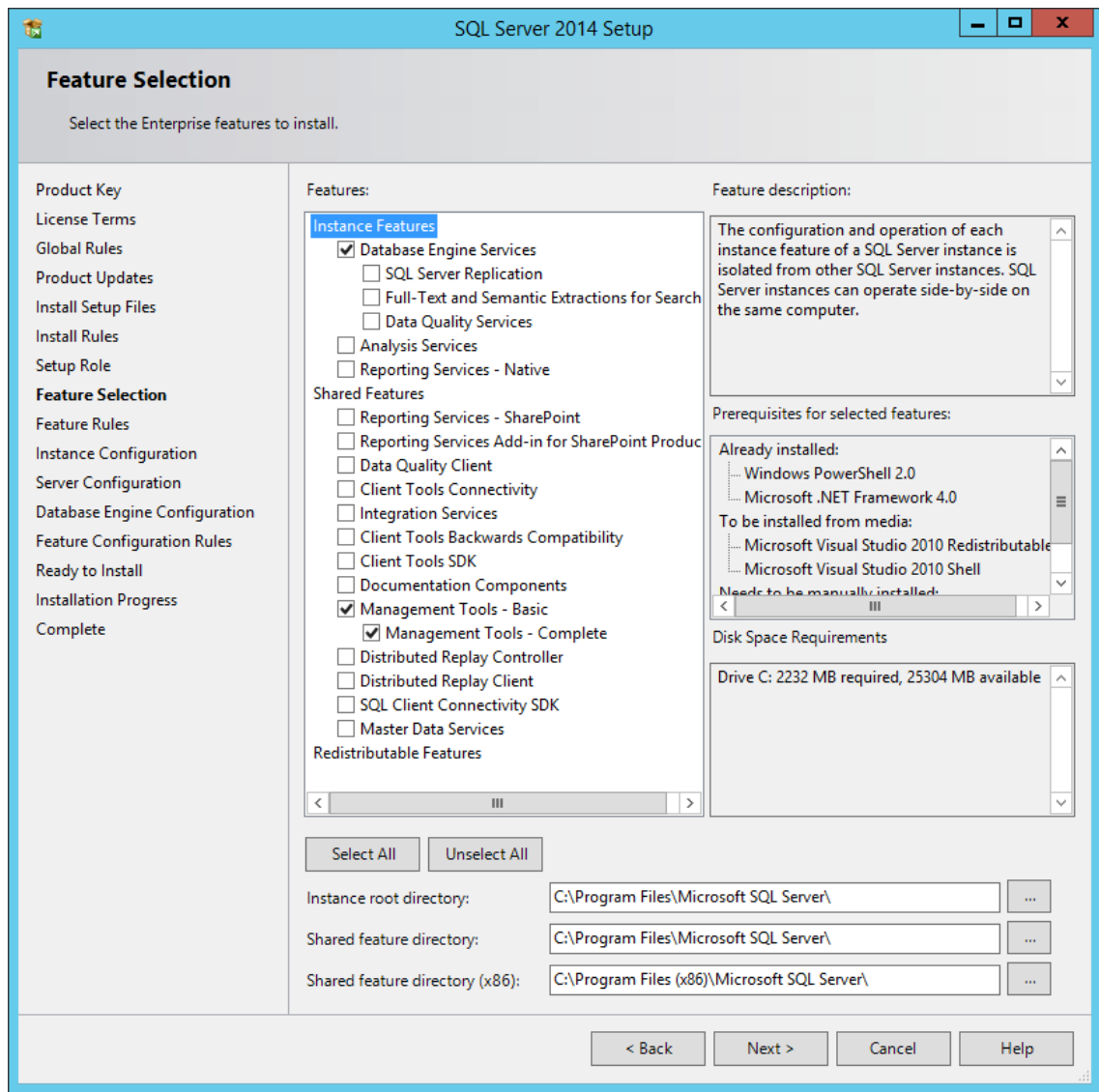
- 4 In the Product Key page, enter your product key, then click **Next**.
- 5 In the License Terms page, accept the license terms, then click **Next**.
- 6 In the Product Updates page, include all Microsoft SQL Server product updates, then click **Next**.
The Install Rules operation is run.



- 7 If there are any errors, address them accordingly, then click **Next**.
- 8 In the Setup Role page, select **SQL Server Feature Installation** and click **Next**.

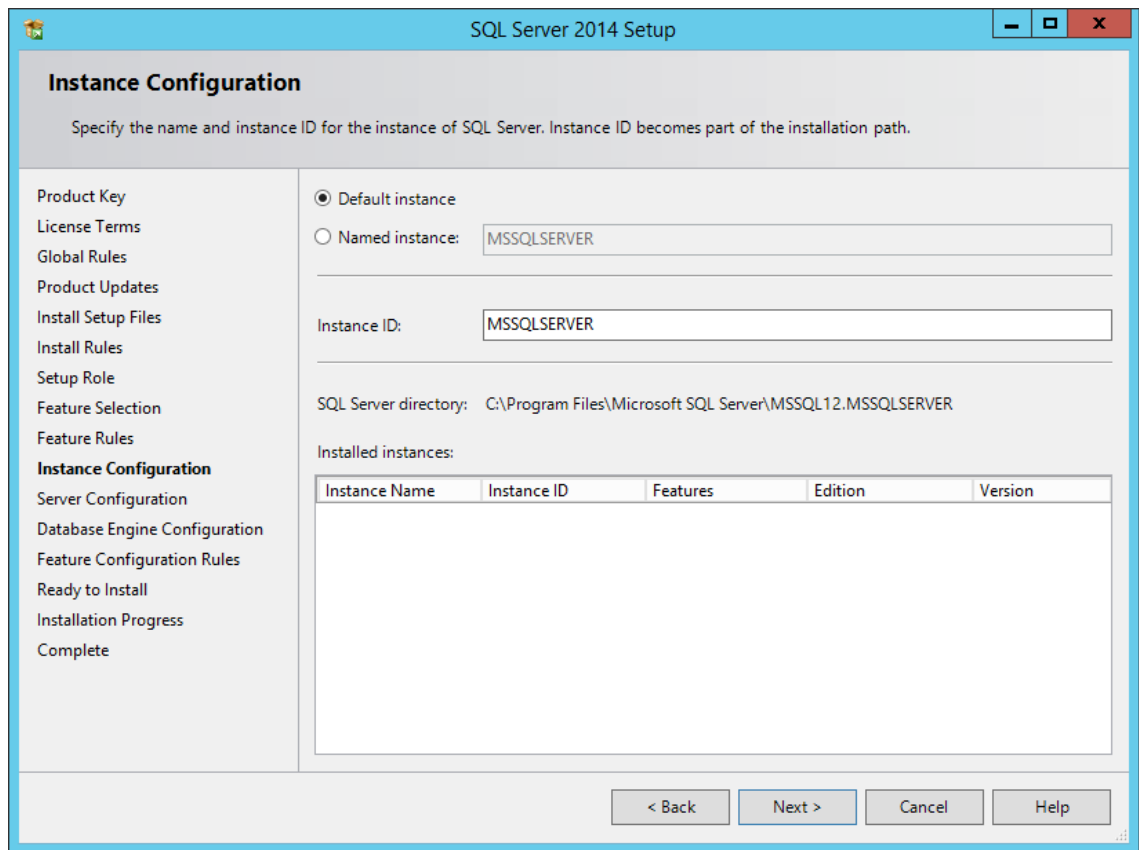


- 9 In the Feature Selection page, select the appropriate instance features and the location for the instance data and click **Next**.

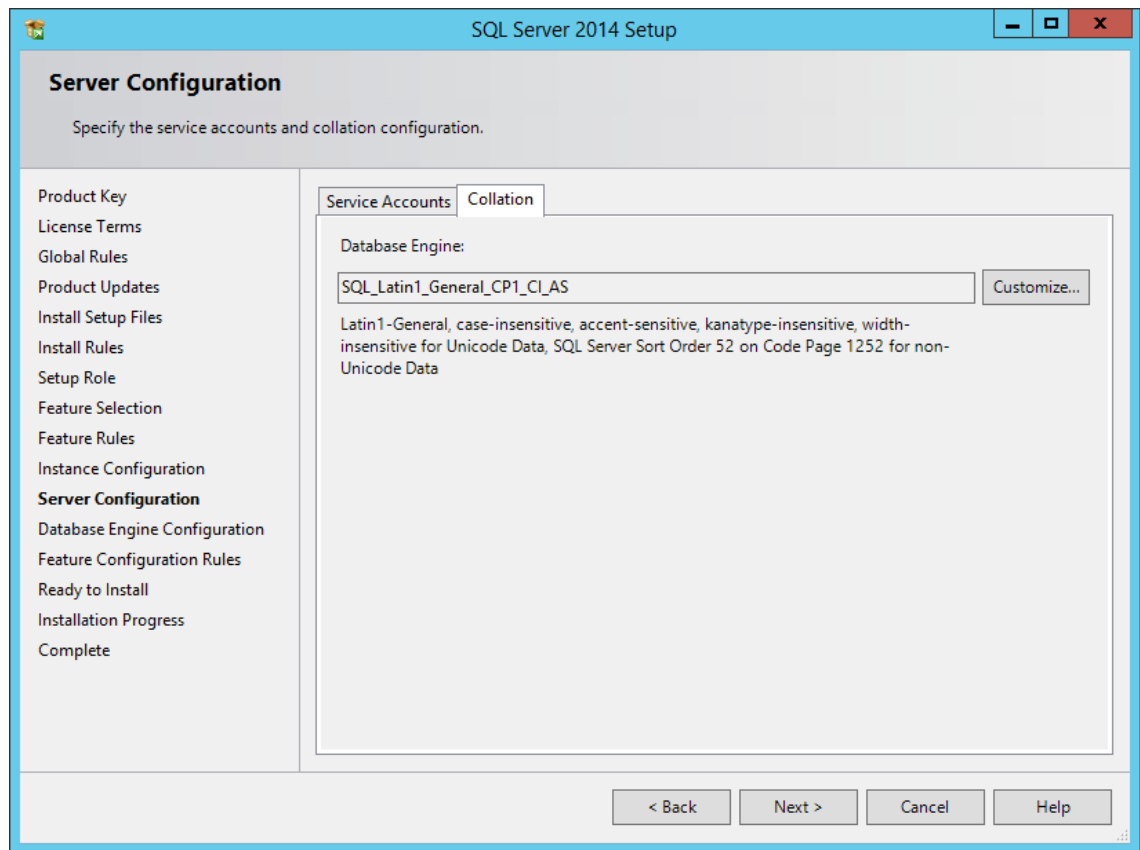


The Feature Rules operation is run. If there are any errors, address them accordingly.

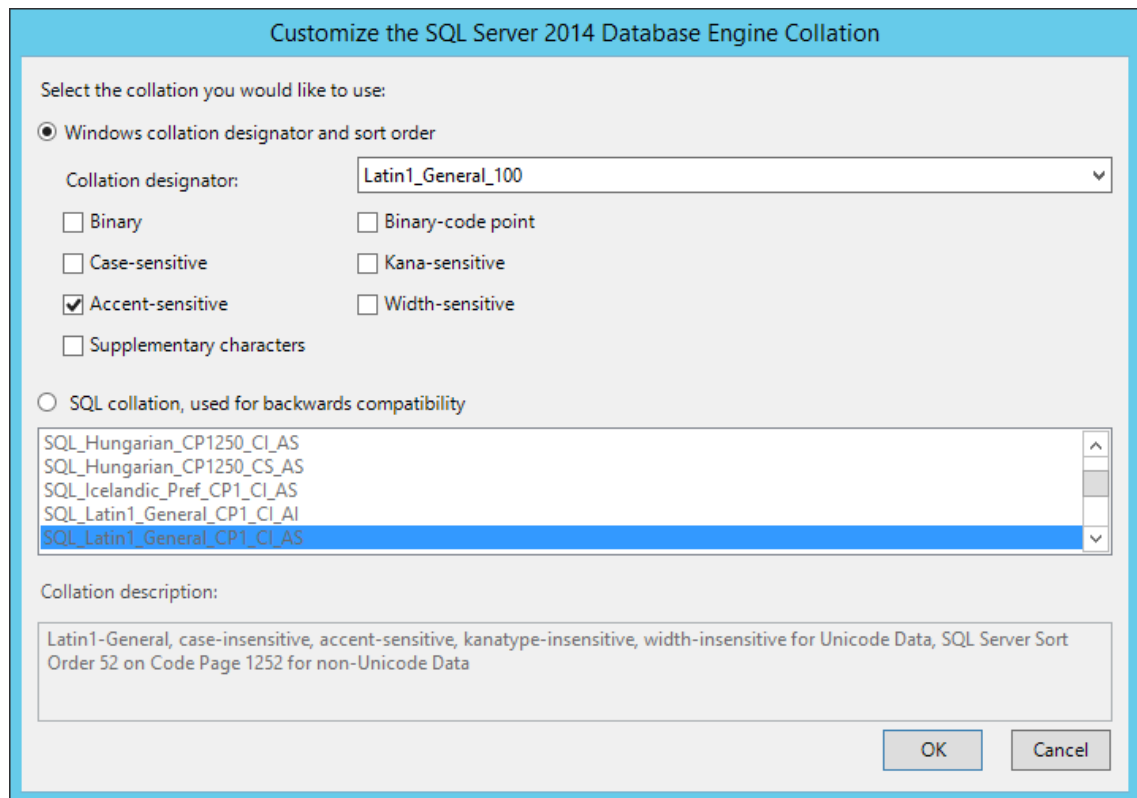
- 10 In the Instance Configuration page, specify a named instance and click **Next**.



11 In the Server Configuration page, click the **Collation** tab.



- 12 Click **Customize**.
- 13 Click the **Windows** collation designator and sort order option.



- 14 From the **Collation designator** drop-down menu, select an acceptable collation and settings for your locale.

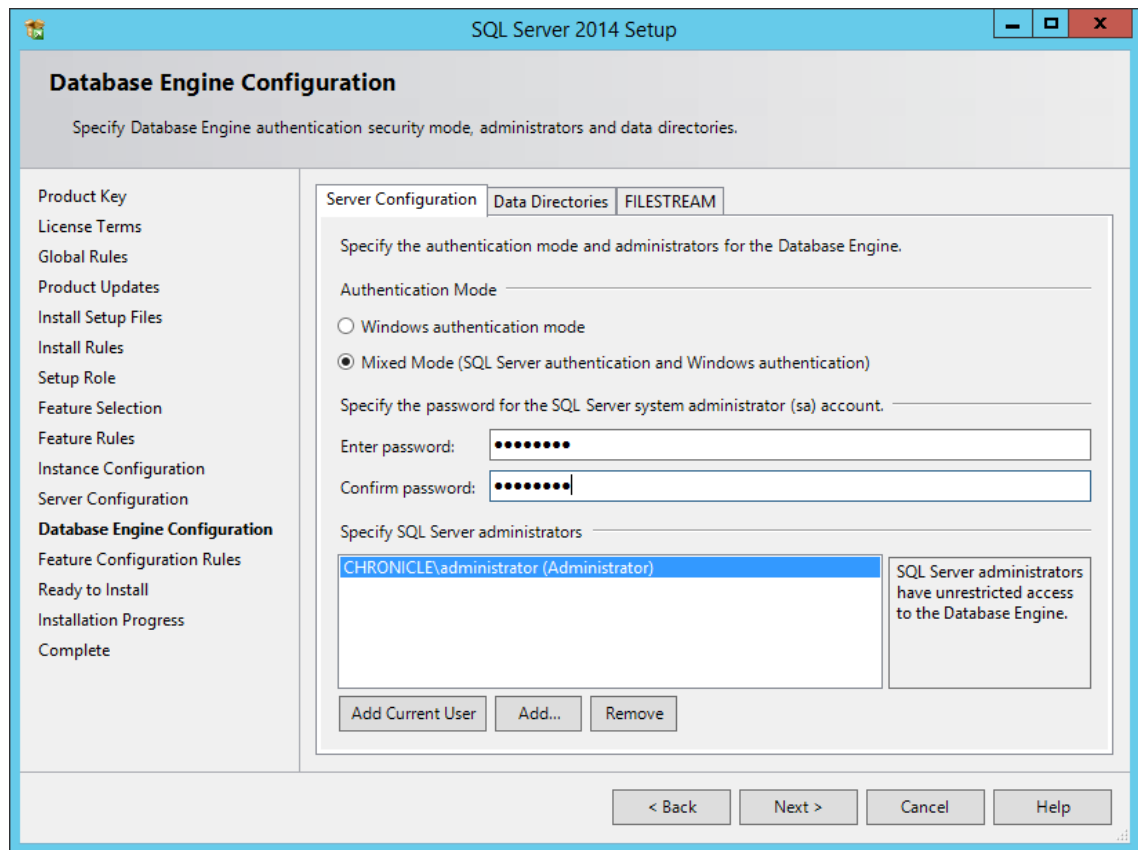
For example, in North America, an acceptable collation would be **Latin1_General_100** with the **Accent-sensitive** check box selected.

We recommend that you select a collation that aligns with the Windows locale of the server where the Engine is installed.

For more information on collation and locales, refer to this Microsoft document: (<http://technet.microsoft.com/en-us/library/ms175194%28v=sql.105%29.aspx>).

- 15 Click **OK**.
- 16 Click **Next**.
- 17 In the Database Engine Configuration page, select the **Mixed Mode (SQL Server authentication and Windows authentication)** option, enter and confirm a SQL Server administrator password, then click **Add Current User**.

Storage Manager does not support Windows authentication mode (also known as Integrated Security).

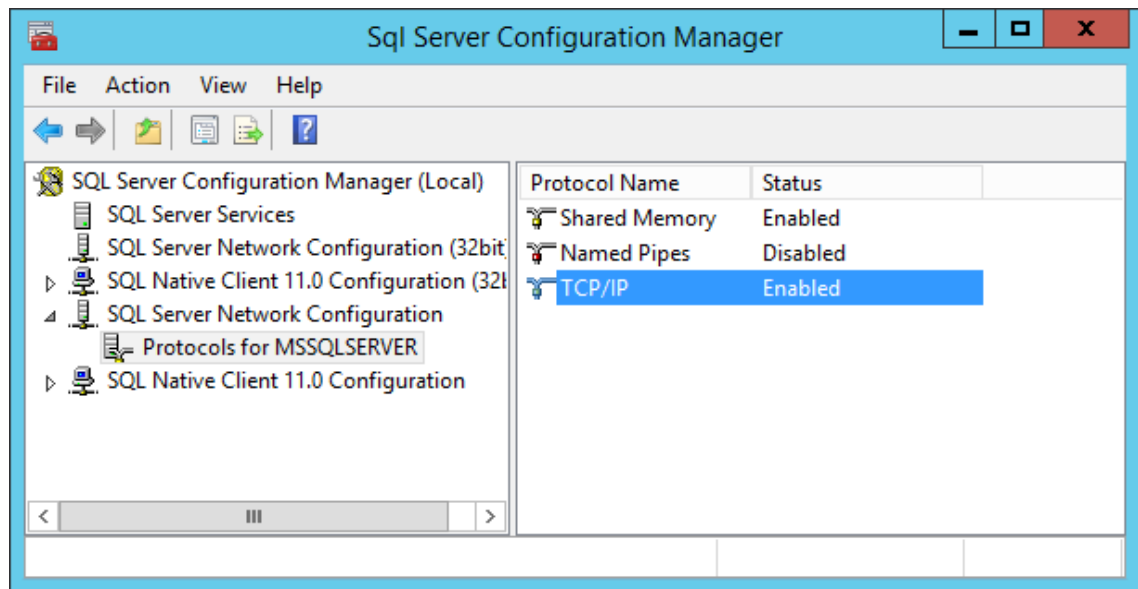


- 18 Click **Next**.
- 19 In the Ready to Install page, click **Install**.
- 20 When the installation has completed, click **Close** to close the wizard.
- 21 See [Section 3.4, “SQL Server Post Configuration Considerations,”](#) on page 32 or possible adjustments to the newly created SQL Server instance.

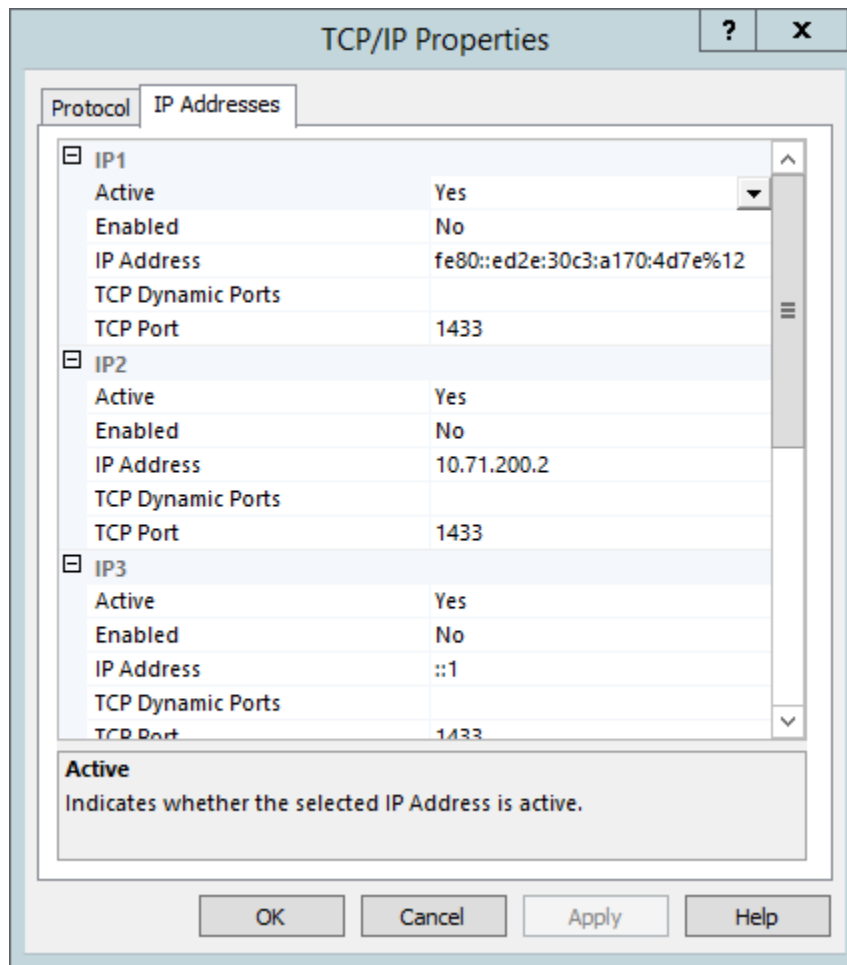
3.4 SQL Server Post Configuration Considerations

Review these points and make any needed adjustments to your SQL database settings before installing and configuring the Engine:

- ♦ The SQL Server service must be listening via TCP/IP v4, because the Engine requires TCP/IP via port number for access.



- ◆ Some editions of SQL Server do not have TCP/IP enabled by default. If there are multiple instances, the instance that you just installed and configured might not be listening on the default port of 1433.



- ◆ Firewall rules might need to be modified.

4 Migrating from Storage Manager 3.1.1

- ◆ Section 4.1, “Prerequisites,” on page 35
- ◆ Section 4.2, “Understanding the Migration Process,” on page 35
- ◆ Section 4.3, “Accessing the Product Contents,” on page 36
- ◆ Section 4.4, “Stopping and Disabling Components,” on page 36
- ◆ Section 4.5, “Installing the Engine,” on page 37
- ◆ Section 4.6, “Installing the License,” on page 38
- ◆ Section 4.7, “Configuring the Database,” on page 40
- ◆ Section 4.8, “Migrating the Database,” on page 44
- ◆ Section 4.9, “Configuring the Engine,” on page 48
- ◆ Section 4.10, “Migrating the Engine Data,” on page 55
- ◆ Section 4.11, “Installing NSMAdmin,” on page 57
- ◆ Section 4.12, “Review Migrated Policies,” on page 59
- ◆ Section 4.13, “Upgrading to Storage Manager 5.2,” on page 59

IMPORTANT: There is no direct upgrade path from Storage Manager 3.1.1 to 5.2. You must upgrade in two phases 1) From 3.1.1 to 4.1 and 2) From 4.1 to 5.2.

You will need a Storage Manager 4 license. Since only an evaluation one is needed, you can request one at <http://www.storagemanagersupport.com>.

Once you have completed this section, you should proceed with [Chapter 5, “Upgrading from Storage Manager 4.x for Active Directory to 5.2,” on page 61](#).

Use the procedures in this section to migrate your deployment of Novell Storage Manager 3.1.1 for Active Directory to Version 4.1. You should follow these procedures only after you have performed the prerequisite tasks in Chapter 1: [Chapter 1, “Prerequisites,” on page 7](#), obtained a Storage Manager 4 for Active Directory license, and installed an SQL Server instance as specified in Chapter 3: [Chapter 3, “Installing and Configuring an SQL Server Instance,” on page 17](#).

4.1 Prerequisites

If your Engine is not already running Version 3.1.1, update it before proceeding.

4.2 Understanding the Migration Process

The migration process involves the following steps:

- ◆ Accessing the product contents
- ◆ Stopping and disabling components
- ◆ Installing the 4.x Engine
- ◆ Installing the license

- ♦ Migrating the database
- ♦ Configuring the Engine
- ♦ Migrating the Engine Data
- ♦ Installing NSMAdmin
- ♦ Reviewing the migrated policies

Your options for migration can be either installing the components on the same server where the Storage Manager components are located, or on a different server. The only real migration that takes place is the database, which can be done in-place or across the wire.

4.3 Accessing the Product Contents

- 1 On the Windows server that will host the Engine, copy to a directory the `NSM-AD_4_1.iso` file that was made available to you following your purchase of Storage Manager 4.1 for Active Directory.
- 2 Mount the `NSM-AD_4_1.iso` file.
- 3 Note the location of the mounted ISO.

This is the installation source you will use to install Storage Manager 4.1 for Active Directory components.

4.4 Stopping and Disabling Components

Since Storage Manager 4.1 components use the same port settings as the Storage Manager 3.1.1 components, you must stop and disable those components to avoid conflicts during the migration.

4.4.1 Stopping and Disabling the Engine

Follow procedures below.

- 1 On the server hosting the Engine, load `Services.msc`.
- 2 Right-click **Novell Storage Manager 3 Engine** and select **Stop**.
- 3 Right-click **Novell Storage Manager 3 Engine** and select **Properties**.
- 4 From the **Startup type** drop-down menu, select **Disabled**.
- 5 Click **OK**.

4.4.2 Stopping and Disabling the Event Monitor

- 1 On the server hosting the Event Monitor, load `Services.msc`.
- 2 Right-click **Novell Storage Manager Event Monitor** and select **Stop**.
- 3 Right-click **Novell Storage Manager Event Monitor** and select **Properties**.
- 4 From the **Startup type** drop-down menu, select **Disabled**.
- 5 Click **OK**.

4.4.3 Stopping and Disabling the Agents

- 1 On the server hosting the Agent, load `Services.msc`.
- 2 Right-click **Novell Storage Manager Agent** and select **Stop**.
- 3 Right-click **Novell Storage Manager Agent** and select **Properties**.
- 4 From the **Startup type** drop-down menu, select **Disabled**.
- 5 Click **OK**.

4.5 Installing the Engine

Novell Storage Manager 4.1 for Active Directory uses only one Engine per forest. The Engine can be installed on a host server that meets the following minimum requirements:

- ♦ Microsoft Windows Server 2012 R2 (Member Server)
- ♦ Microsoft Windows Server 2012 (Member Server)
- ♦ Microsoft Server 2008 R2 (Member Server)
- ♦ At least 4 GB RAM
- ♦ For quota management, Microsoft File System Resource Manager (FSRM) must be installed; see [Section 1.2, "File Server Resource Manager," on page 7](#).
- ♦ Forest functional level of Windows Server 2003 or later

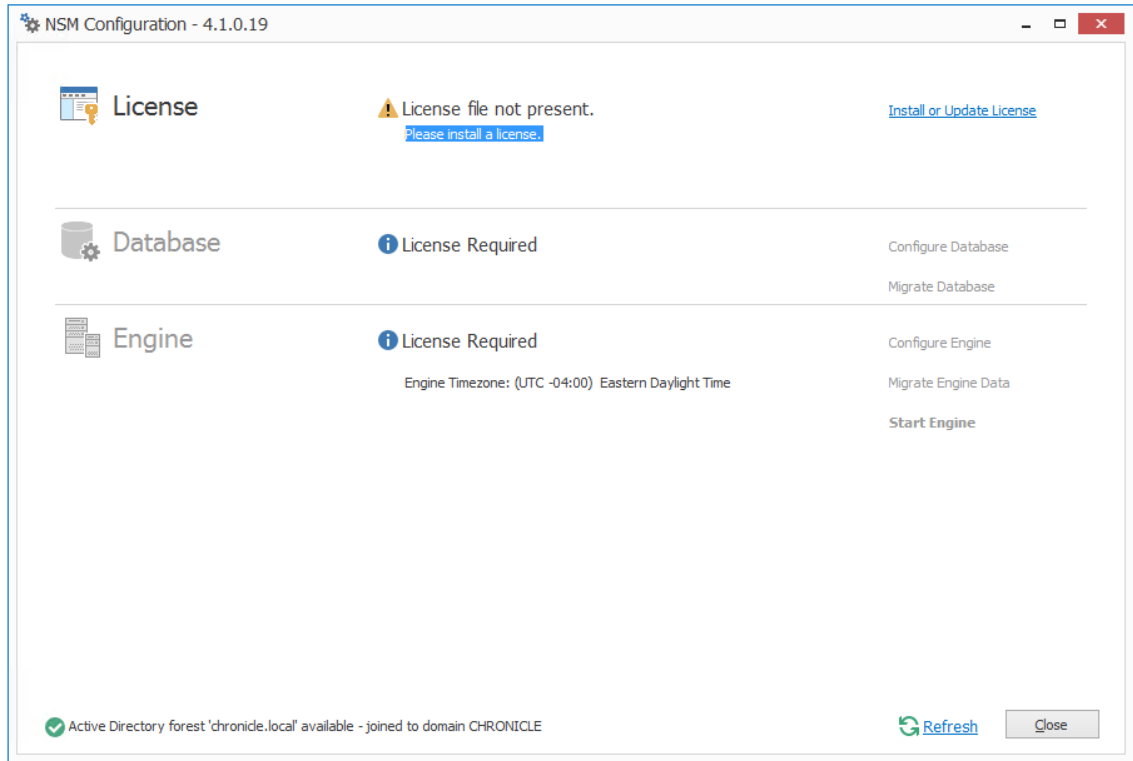
IMPORTANT: Once the Engine has been migrated, the existing Event Monitor and Agents become legacy components because they cannot perform their duties until they are also migrated. These legacy components are not deauthorized, nor are they removed, until you remove them yourself.

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

Other notable information about the Engine:

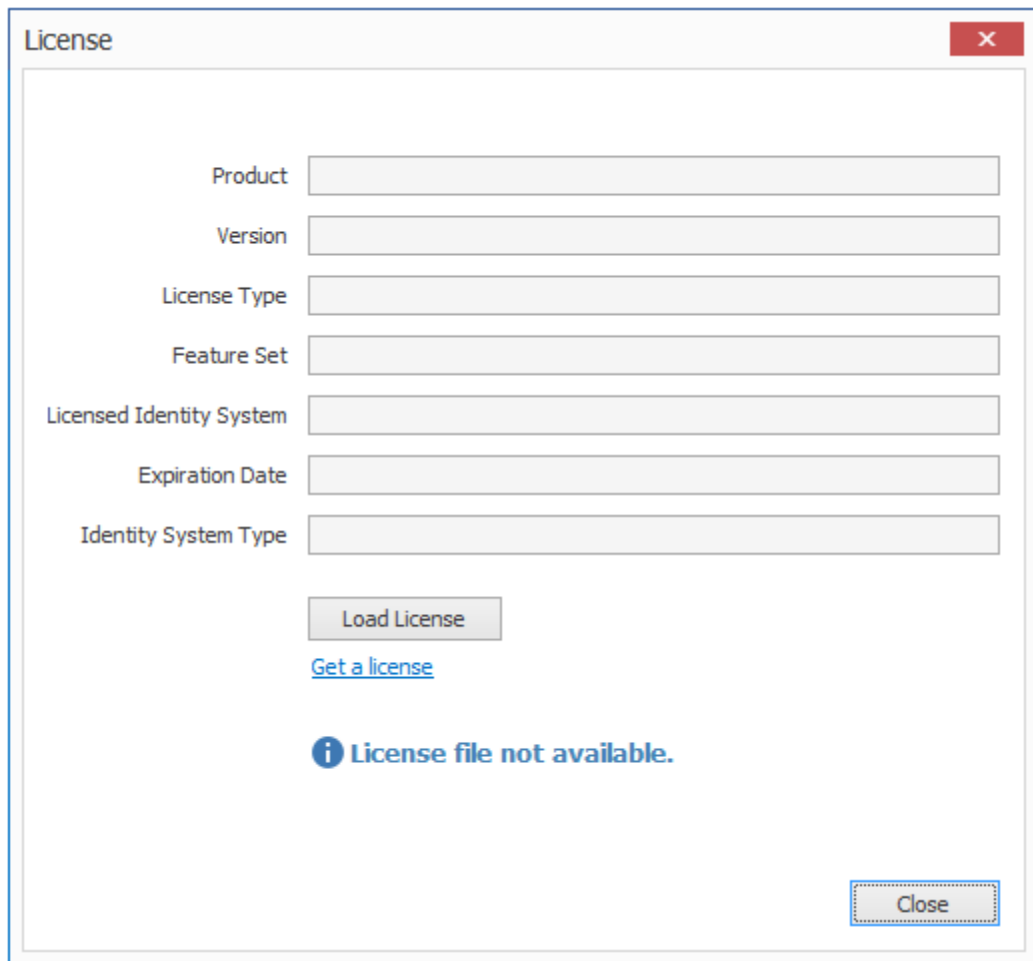
- ♦ The Engine runs as a native NT service that is configured to start by using the Local System account
 - ♦ The default Engine port is 3009
 - ♦ A firewall inbound rule is added during the Engine installation
- 1 At the root of the `NSM-AD_4_1.iso` image, double-click the `Windows` folder.
 - 2 Double-click the `x86_64` folder.
 - 3 Double-click `NSMEngine-Installer-4.1-x64-xxxx.exe`.
 - 4 When you are asked if you want to run this file, click **Run**.
 - 5 Agree to the licensing terms and conditions and click **Install**.
 - 6 When notified that the setup was successful, click **Run Setup Utility**.

The Configuration Dashboard appears.



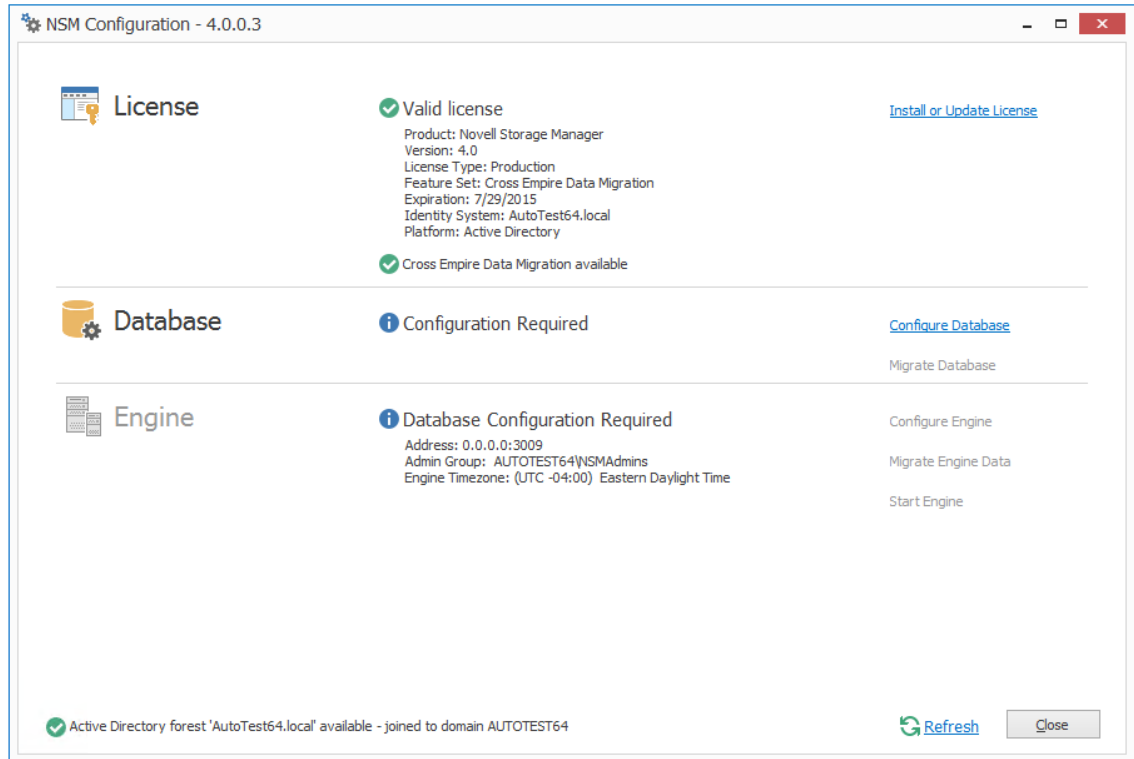
4.6 Installing the License

- 1 Click Install or Update License.



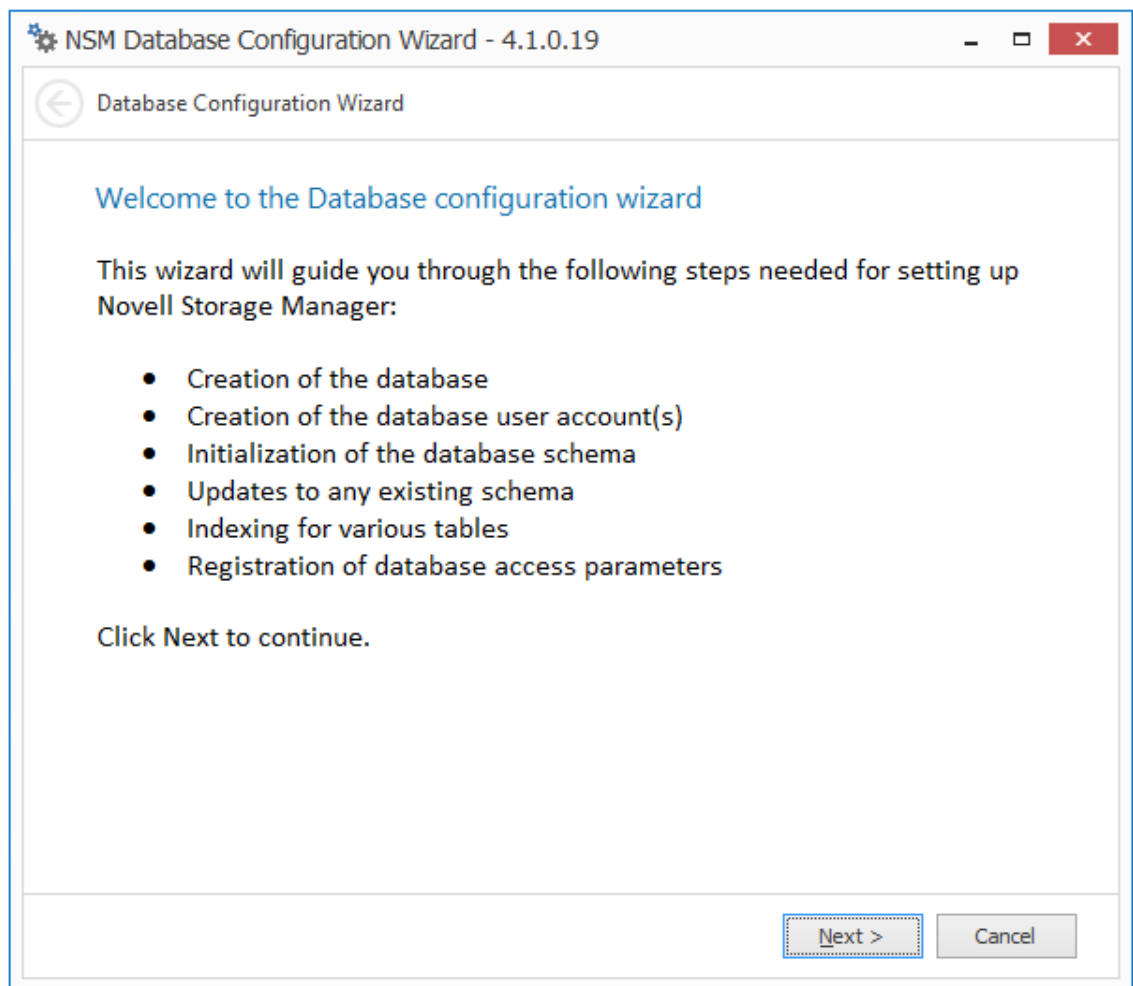
- 2 Click **Load License**, then browse to and select the license file.
- 3 When the confirmation prompt appears, click **Yes**.

4 Click Close.



4.7 Configuring the Database

1 Click **Configure Database**.



The page indicates what database configuration tasks are to be completed in this wizard.

- 2 From the wizard page, read the overview of what will be configured and click **Next**.

NSM Database Configuration Wizard - 4.1.0.19

Database Configuration Wizard

Database Connection

Database Properties

Type: SQL Server 2012

Communication

Database Host Address: Astinus.chronide.local Port: 1433

Initial Database: fsfdb

Database Service Account - Enter the name of a database account for this application.

Database Account Name: fsfadmin

Password:

Verify Password:

Database Admin Credentials - Enter the credentials needed for provisioning the database.

Database Administrator: sa

Password:

Next > Cancel

This page lets you establish the settings needed for the Engine to communicate with the database.

Database Properties: Displays information on the database.

Type: Displays the minimum supported version of the database, which is SQL Server 2012.

Communication: Specifies address, port number, and name of the database.

Database Host Address: Specify the host address of the server where the database is installed.

Port: The default SQL Server port setting is 1433. If there is a port conflict, you can change it.

Initial Database: The default name of the Novell Storage Manager database.

Database Service Account: Use this region to set authentication information for the database service account, which is the database account that the Engine uses to sign in to the database.

Database Account Name: By default, the database account is fsfadmin, which you can change in this field.

Password: Specify a password for the service account to connect to the database.

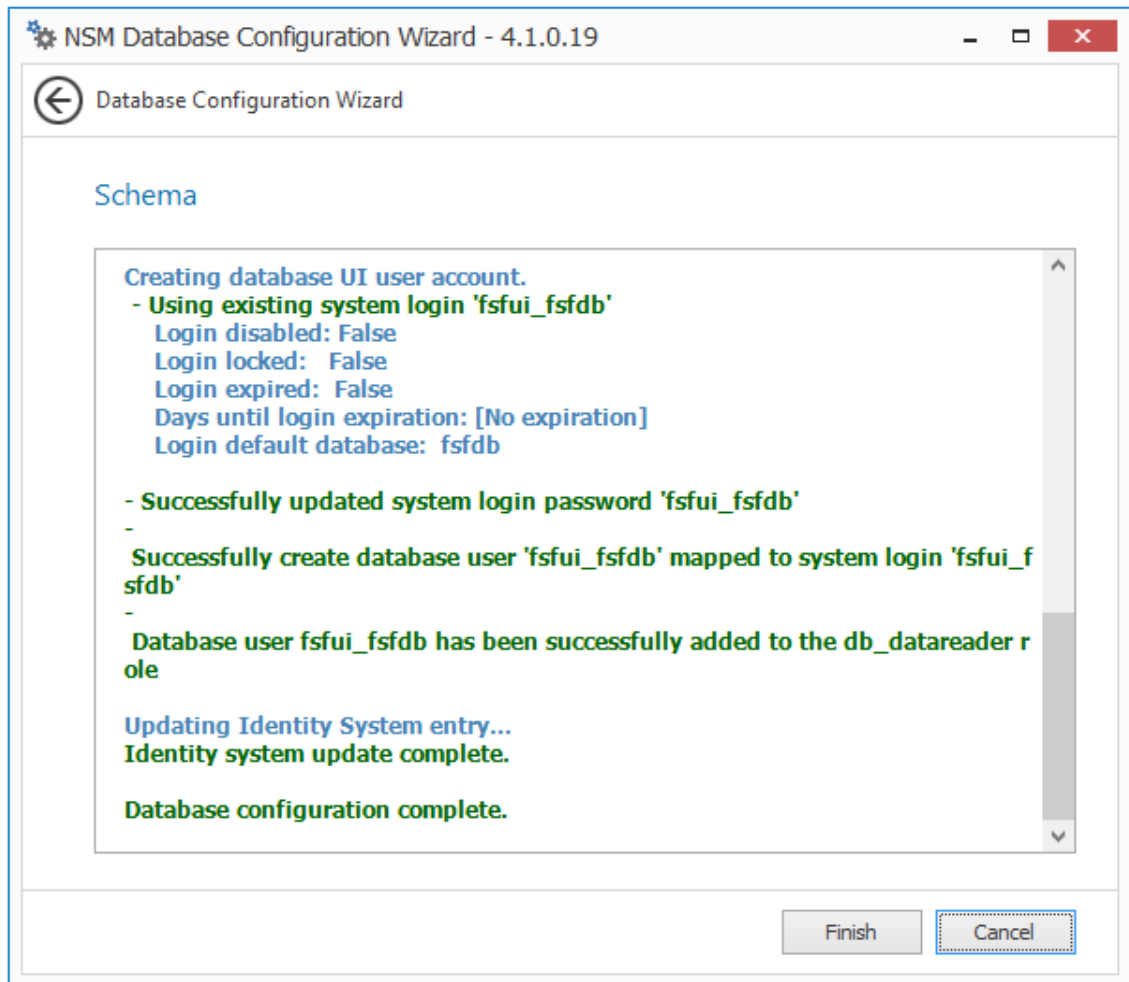
Verify Password: Specify the password again in this field.

Database Admin Credentials: Use this region to establish the database administrator name and credentials.

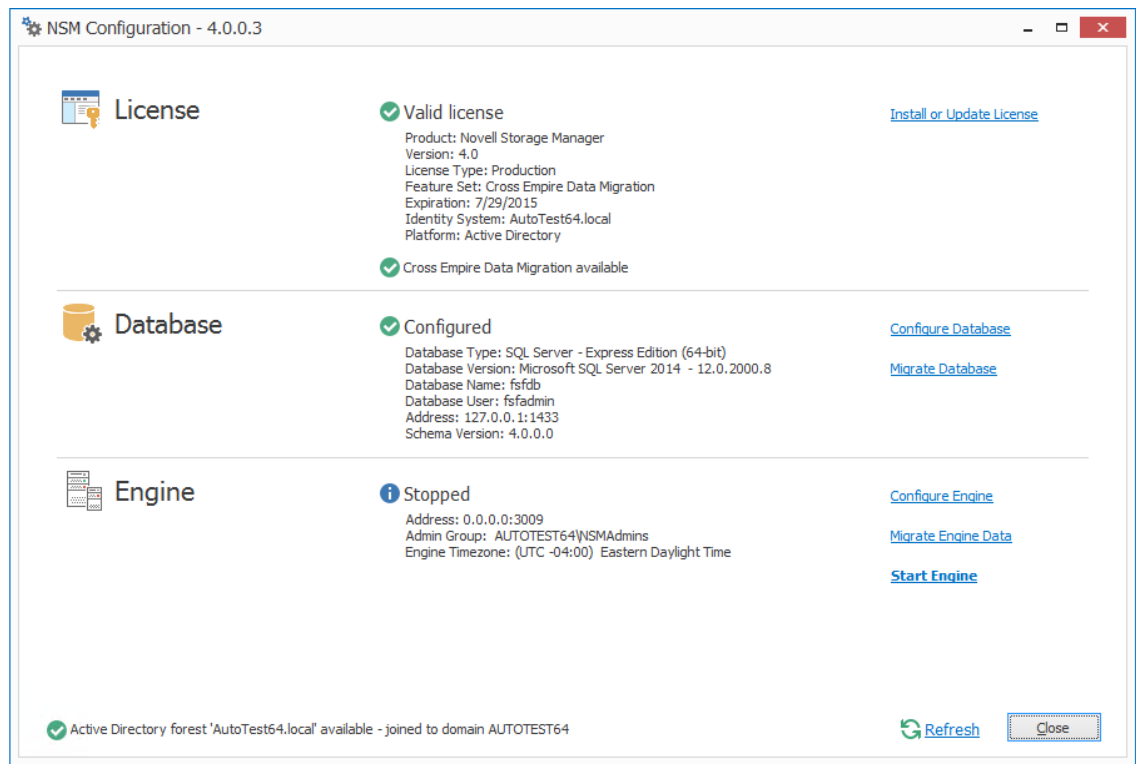
Database Administrator: Specify the SQL Server administrator name.

Password: Specify the SQL Server administrator password.

- 3 Complete the fields and click **Next**.



- 4 Review the configuration log and click **Finish**.

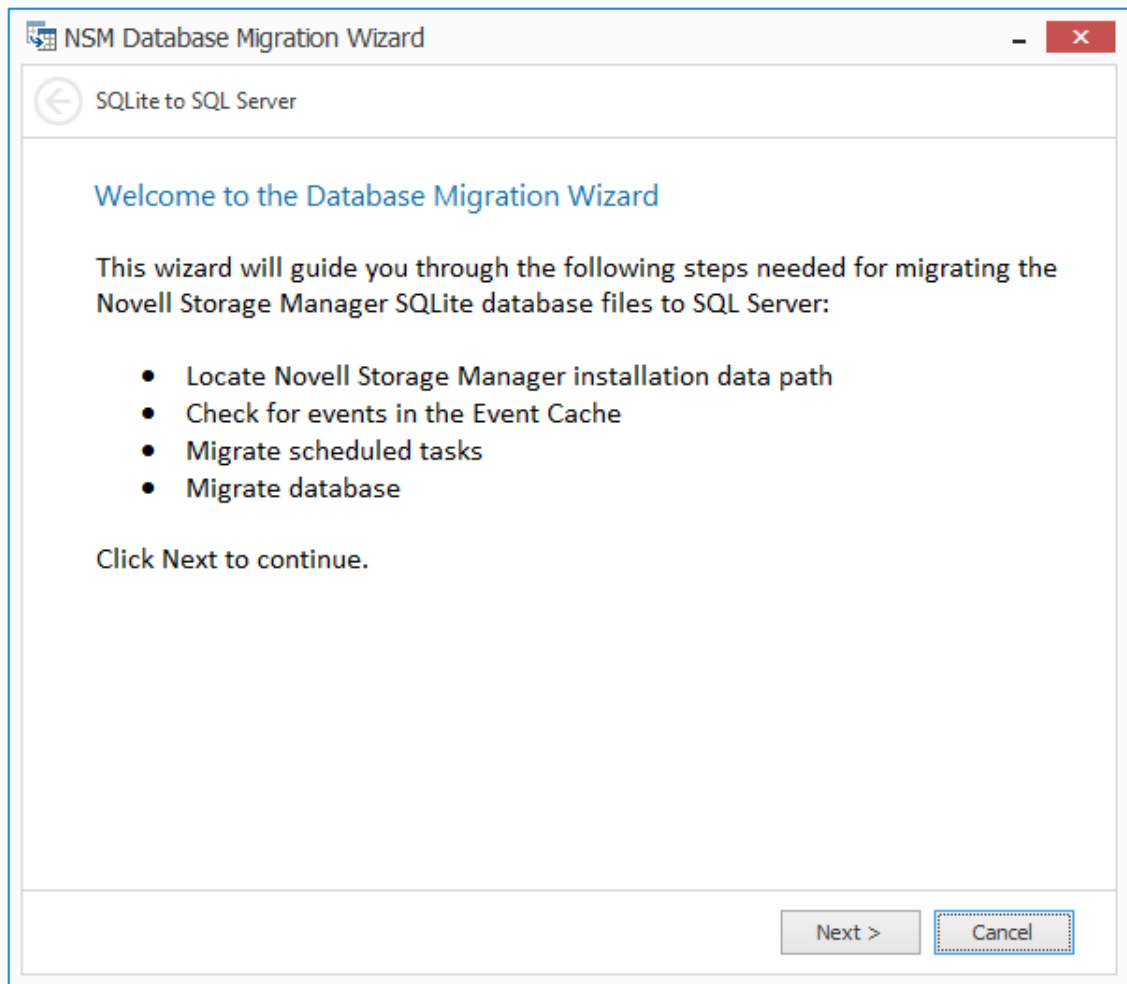


Note that the Configuration Dashboard now has the **Migrate Database** option.

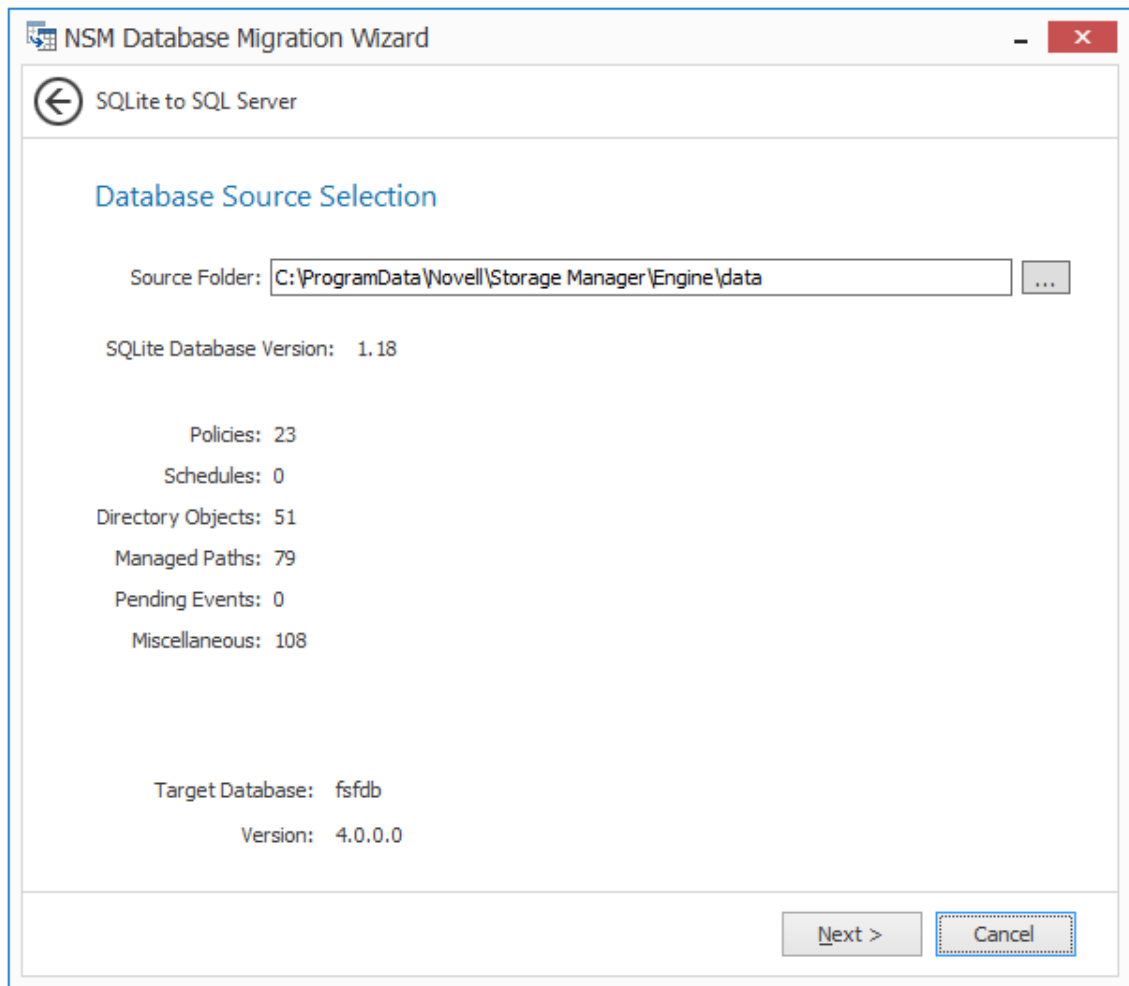
4.8 Migrating the Database

This procedure migrates the contents of the Novell Storage Manager 3.1.1 SQLite database to the Novell Storage Manager 4.1 SQL Server database. These contents include policies, schedules, pending events, etc.

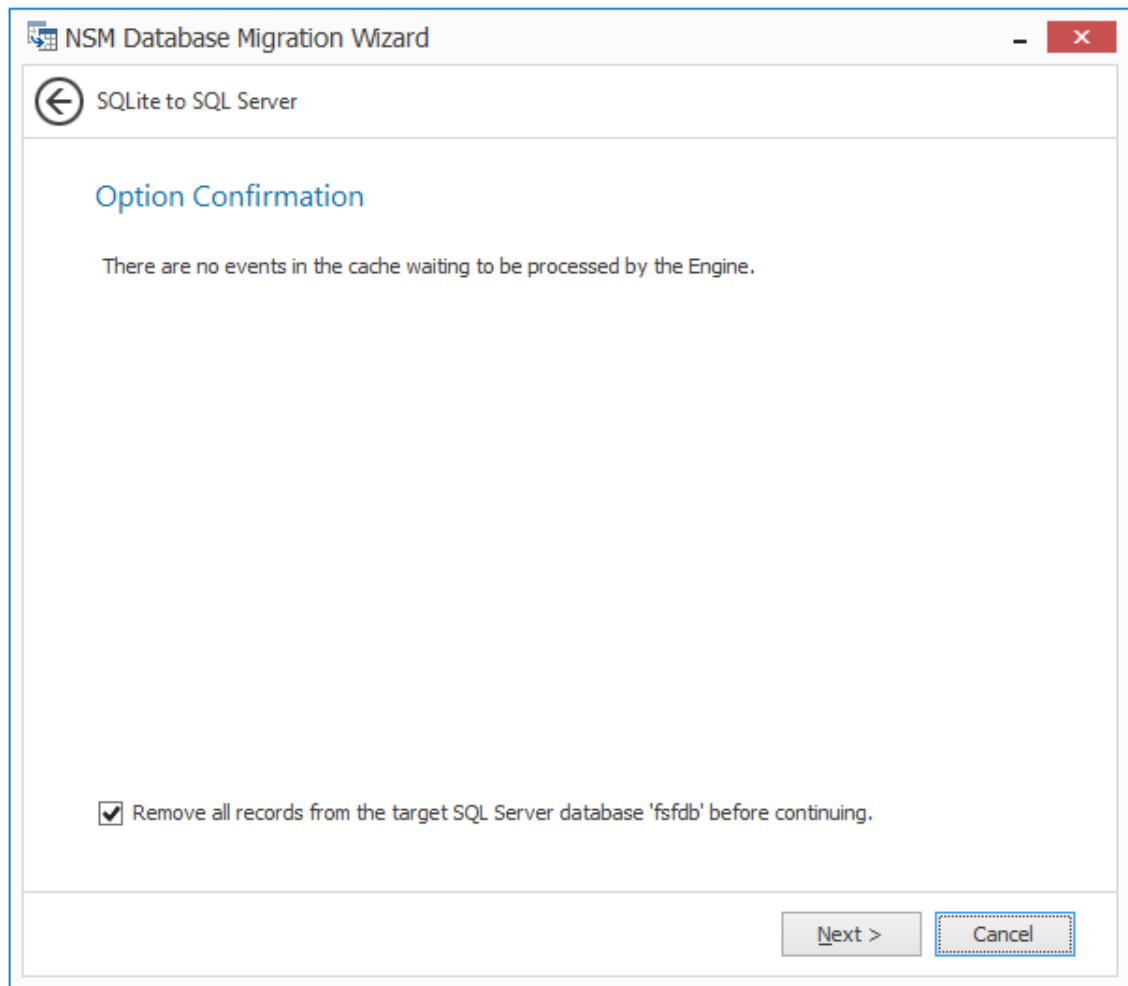
- 1 Click **Migrate Database**.



- 2 From the wizard page, read the overview of the migration process and click **Next**.



- 3 Verify that the Source Folder field displays the following path:
C:\ProgramData\Novell\Storage Manager\Engine\data
If the path is not displayed, click the browse button to specify the path.
- 4 Click **Next**.

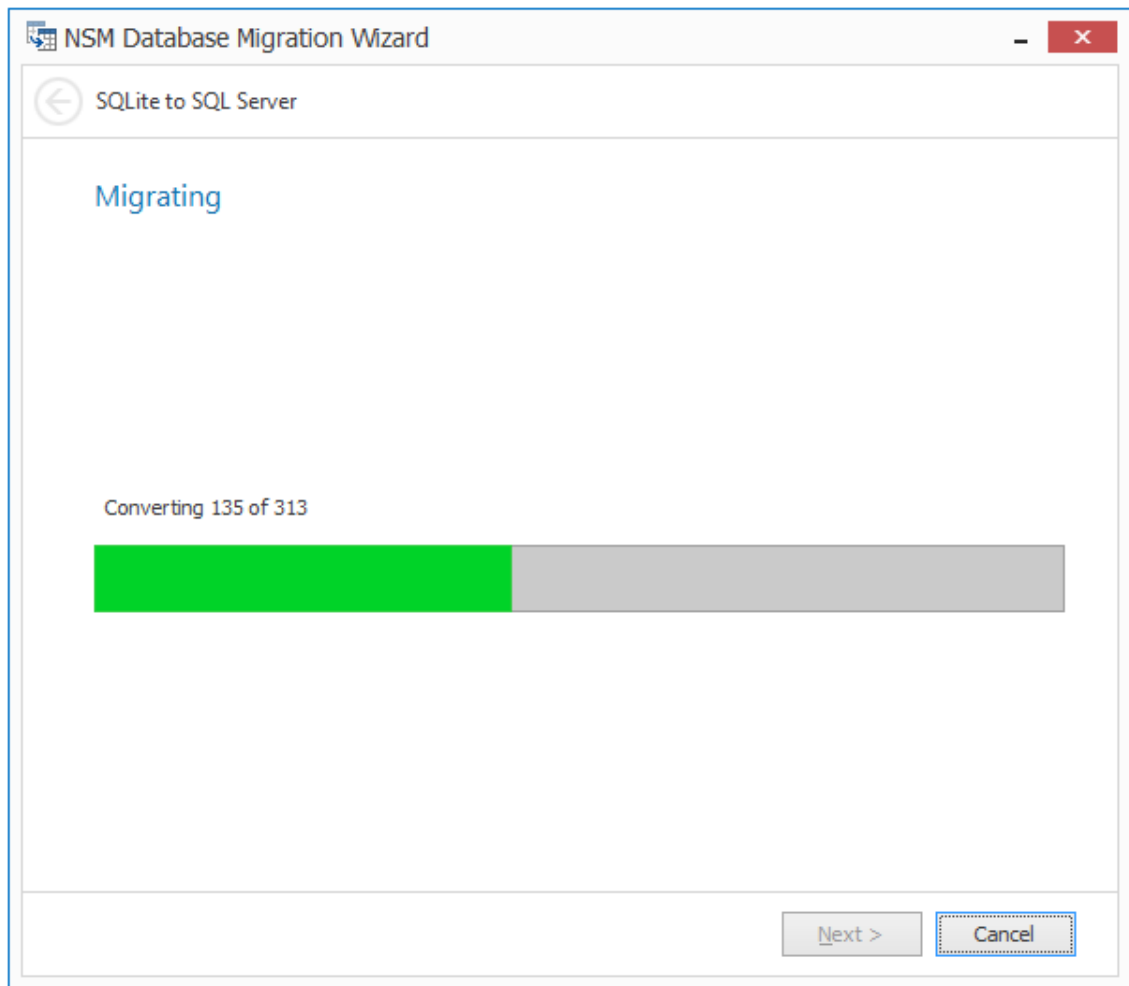


If there are any events in cache (and therefore not yet pending events), the events are displayed.

The **Remove all records from the target SQL Server database before continuing** option lets you remove any existing records in the target database instance before migrating. If there are any existing records in the SQL Server database instance, you should select this option to maintain the integrity of the database contents that are being migrated. This is applicable even if you decide to migrate the SQLite database again.

It is not safe to migrate a Novell Storage Manager SQLite database to a SQL Server database that contains policies or other critical data. Doing so is not supported as it could result in unpredictable behavior with the database.

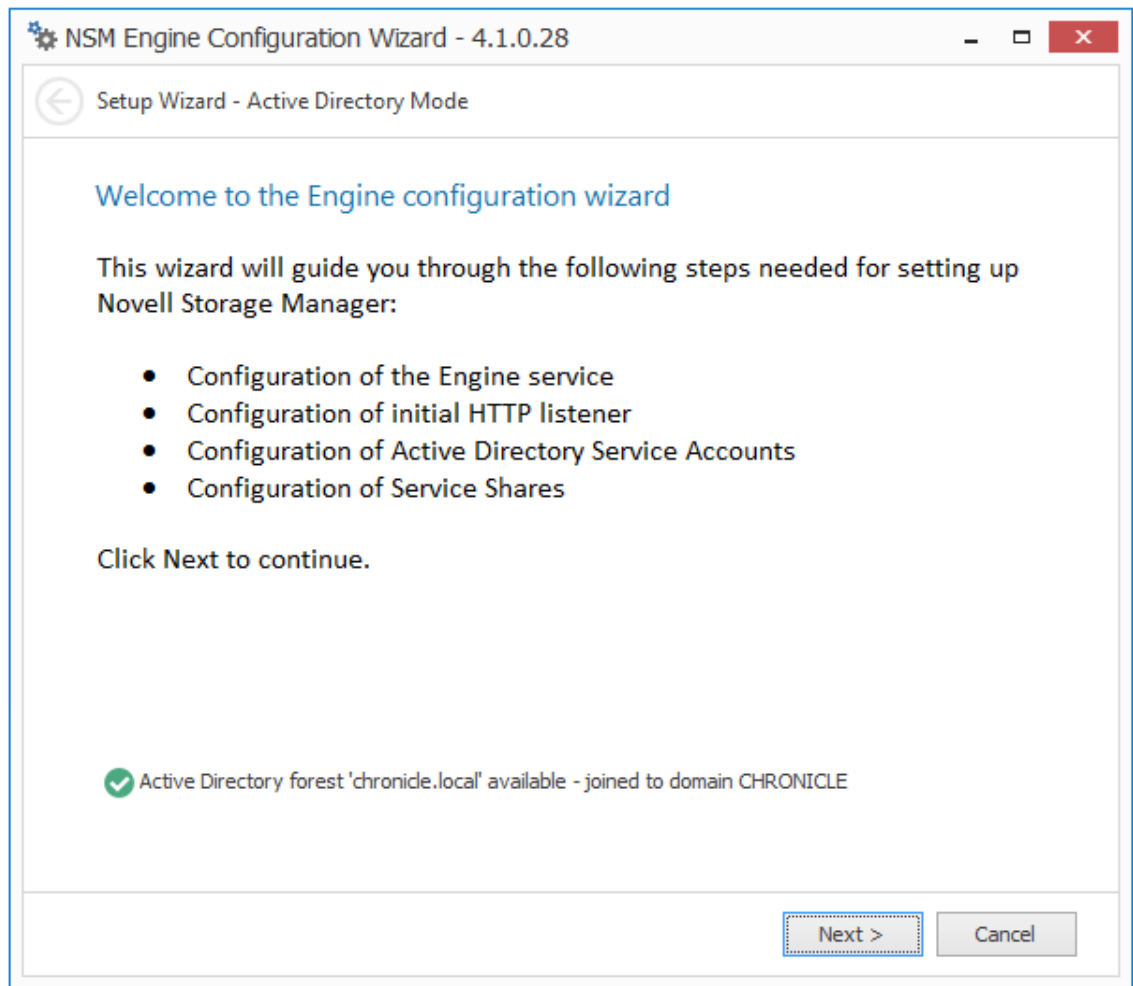
- 5 Specify whether to remove any existing records in the target database and click **Next**.



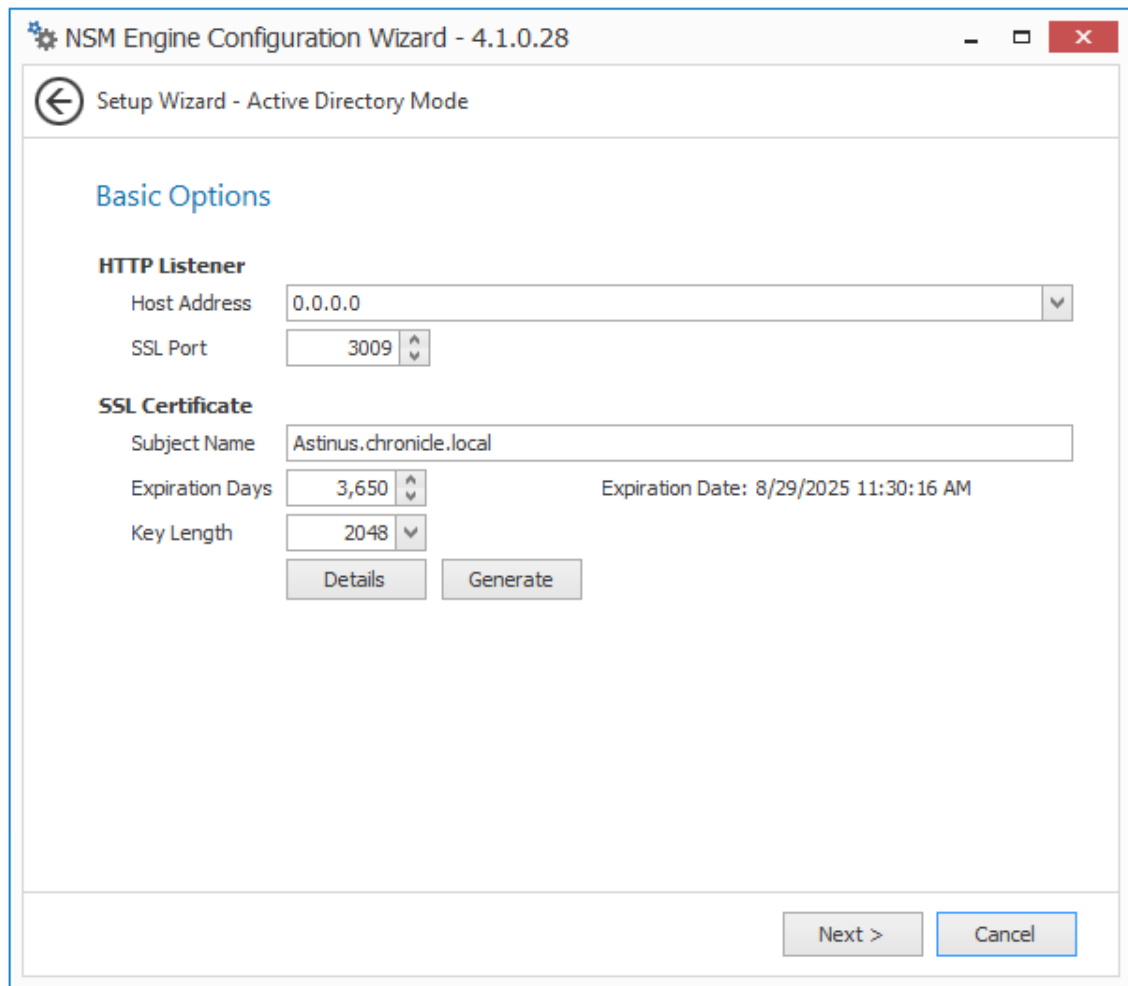
- 6 When notified that the migration has completed, click **Finish**.

4.9 Configuring the Engine

- 1 From the Configuration Dashboard, click **Configure Engine**.



2 From the wizard page, read the overview of what will be configured and click **Next**.



This page lets you confirm or change basic Engine configuration settings.

HTTP Listener: Communication parameters for the Engine.

Host Address: Unless you want the Engine to only listen on a certain IP address, leave this setting as it is.

SSL Port: Unless there is a port conflict, leave the setting at 3009.

SSL Certificate: Details for the SSL certificate that will be generated.

Subject Name: The name of the certificate that will be generated. The server name is listed by default.

Expiration Days: The life span of the security certificate, which is set at 10 years by default.

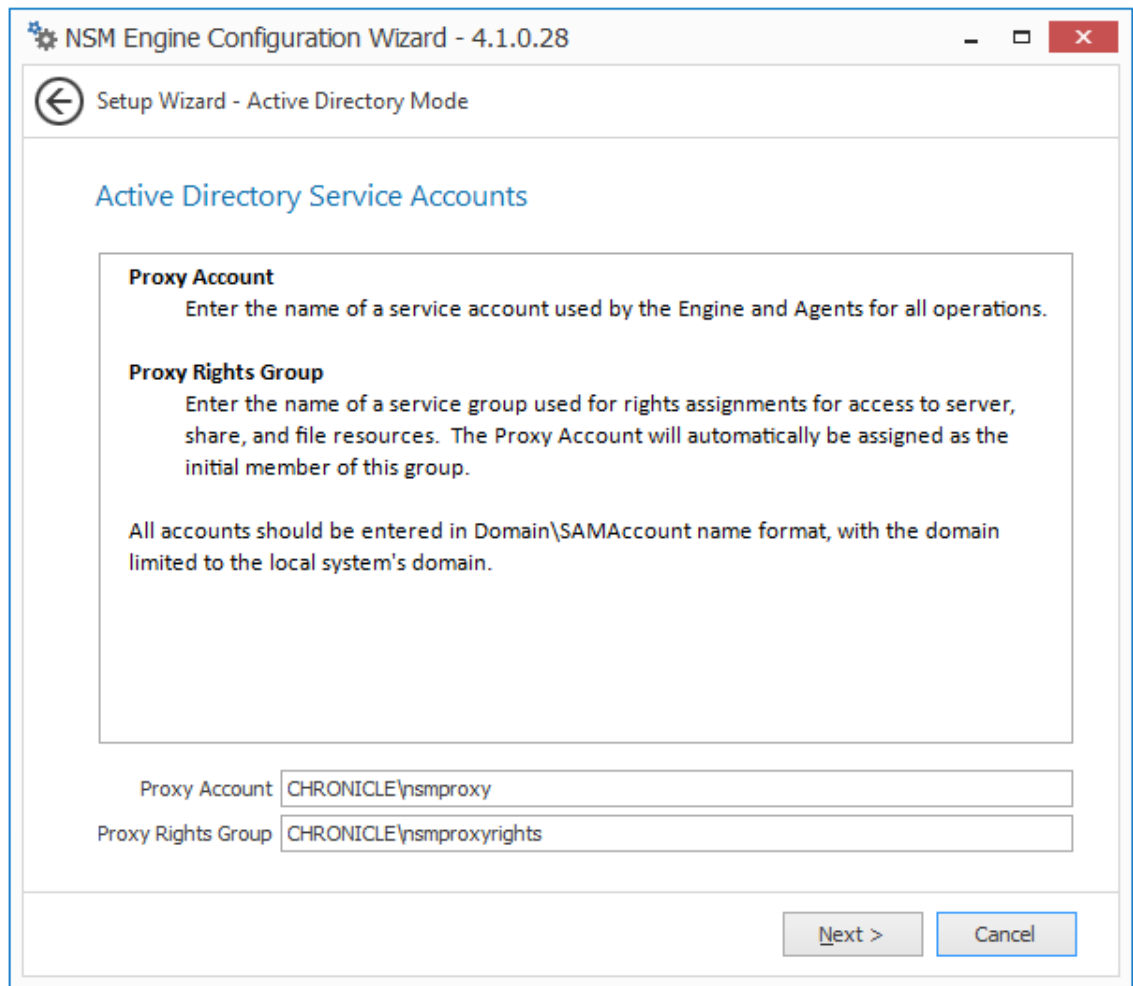
Key Length: The SSL certificate encryption setting, which is set at 2048 by default.

Details: Click the button to view the certificate data.

Generate: If you modify any of the settings in the SSL Certificate region, click this button to generate a new certificate.

Data Folder: The default location of the Data folder. The Data folder is used for a variety of tasks, including storing Agent configuration data, Event Monitor configuration data, and application specific historical data.

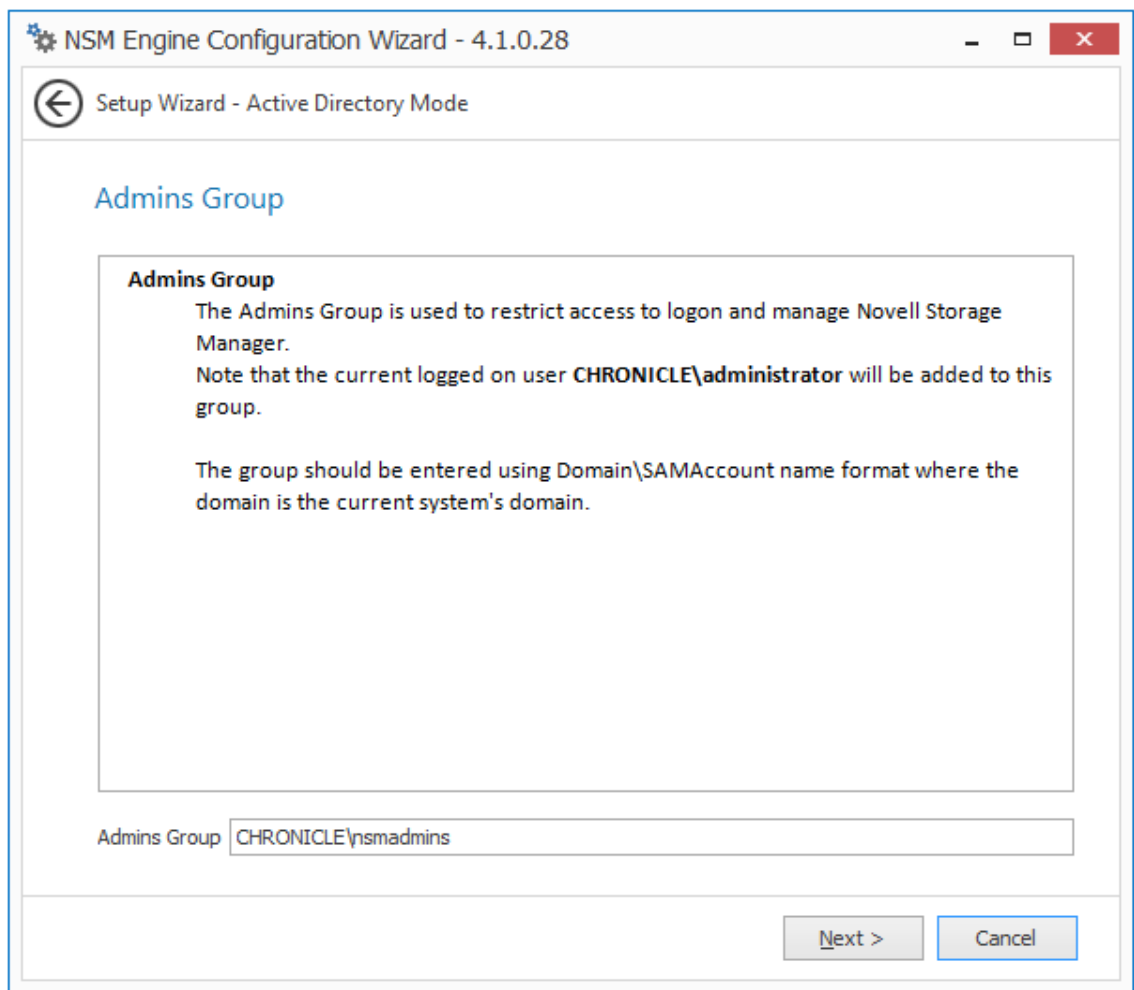
3 Edit any needed parameters settings and click **Next**.



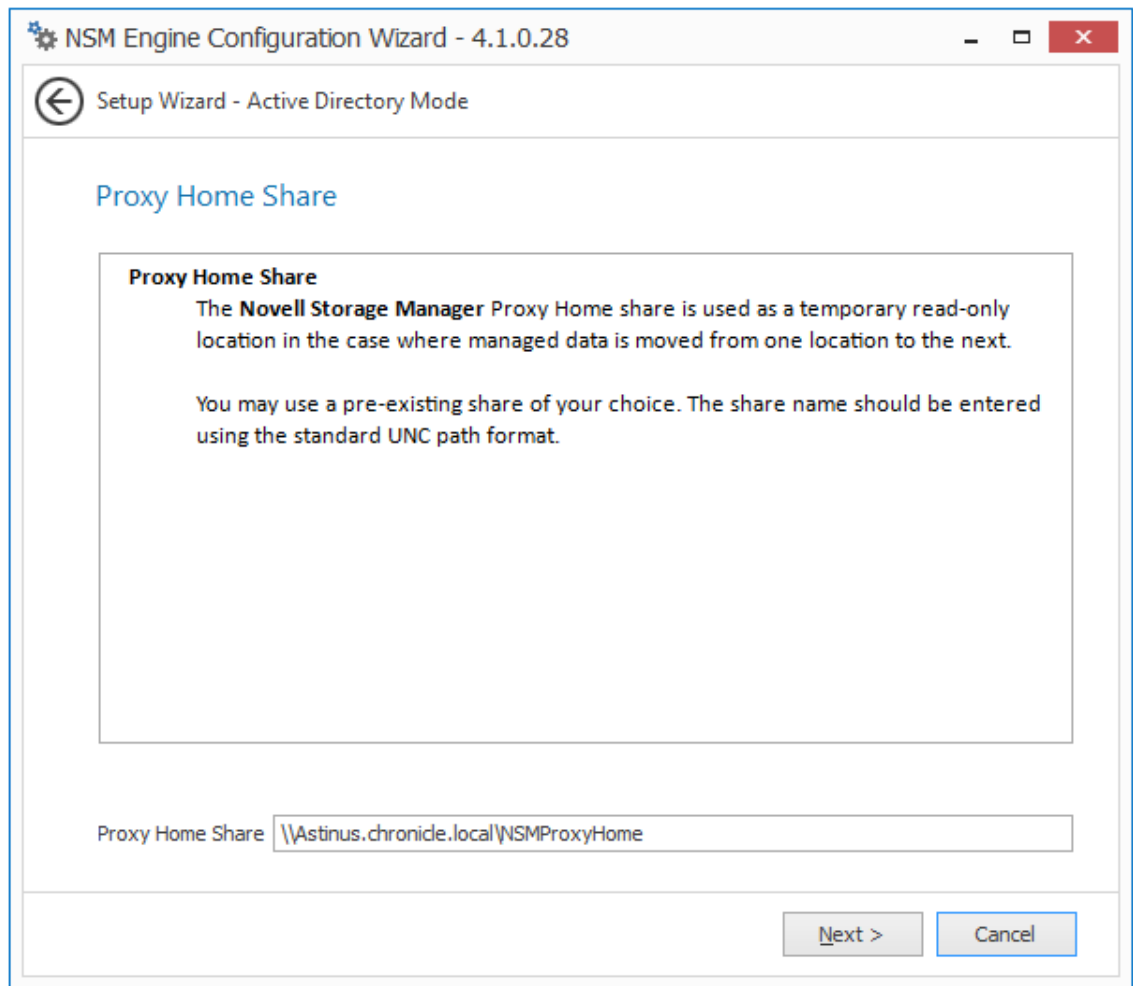
This page lets you establish a name for the proxy account and proxy rights group.

Novell Storage Manager uses a proxy account so that it can perform tasks necessary for storage management.

- 4 Click **Next**.



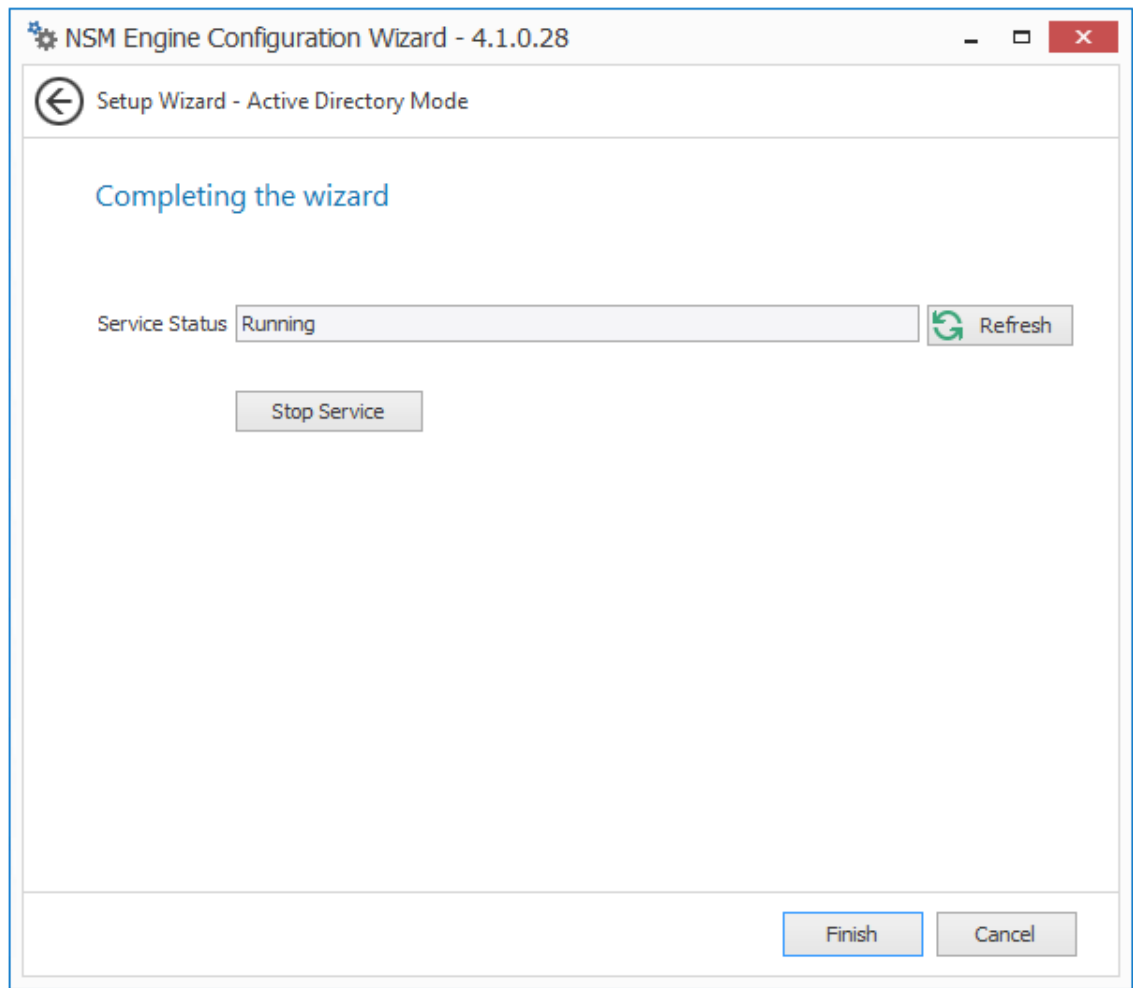
- 5 Specify the name for the Admins Group, or use the default name, and click **Next** to create the group.



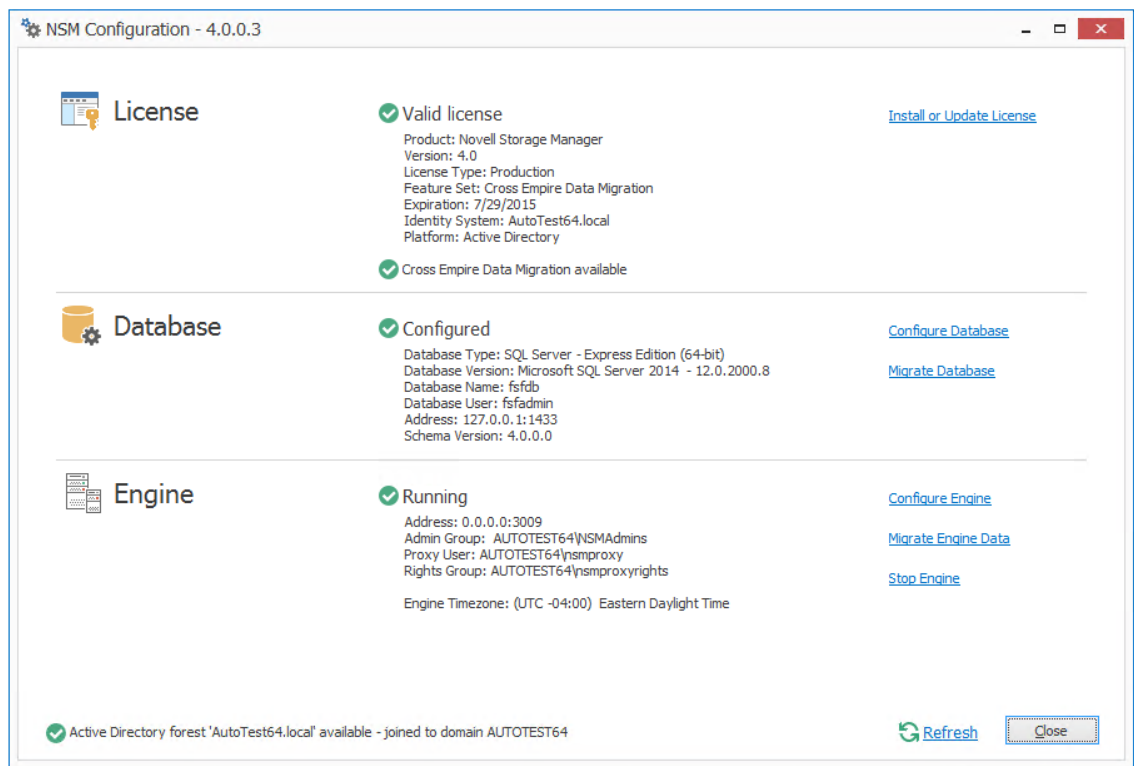
The Proxy Home Share that you establish in this page is the read-only location where users' managed path attributes are temporarily set when data is moved because of a change in policy.

The **Overwrite Existing Files** option lets the administrator specify whether files being placed in the Proxy Home Share are to replace existing files with the same name.

- 6 Specify whether to overwrite existing files and the Proxy Home Share path, then click **Next**.



7 Click Finish.

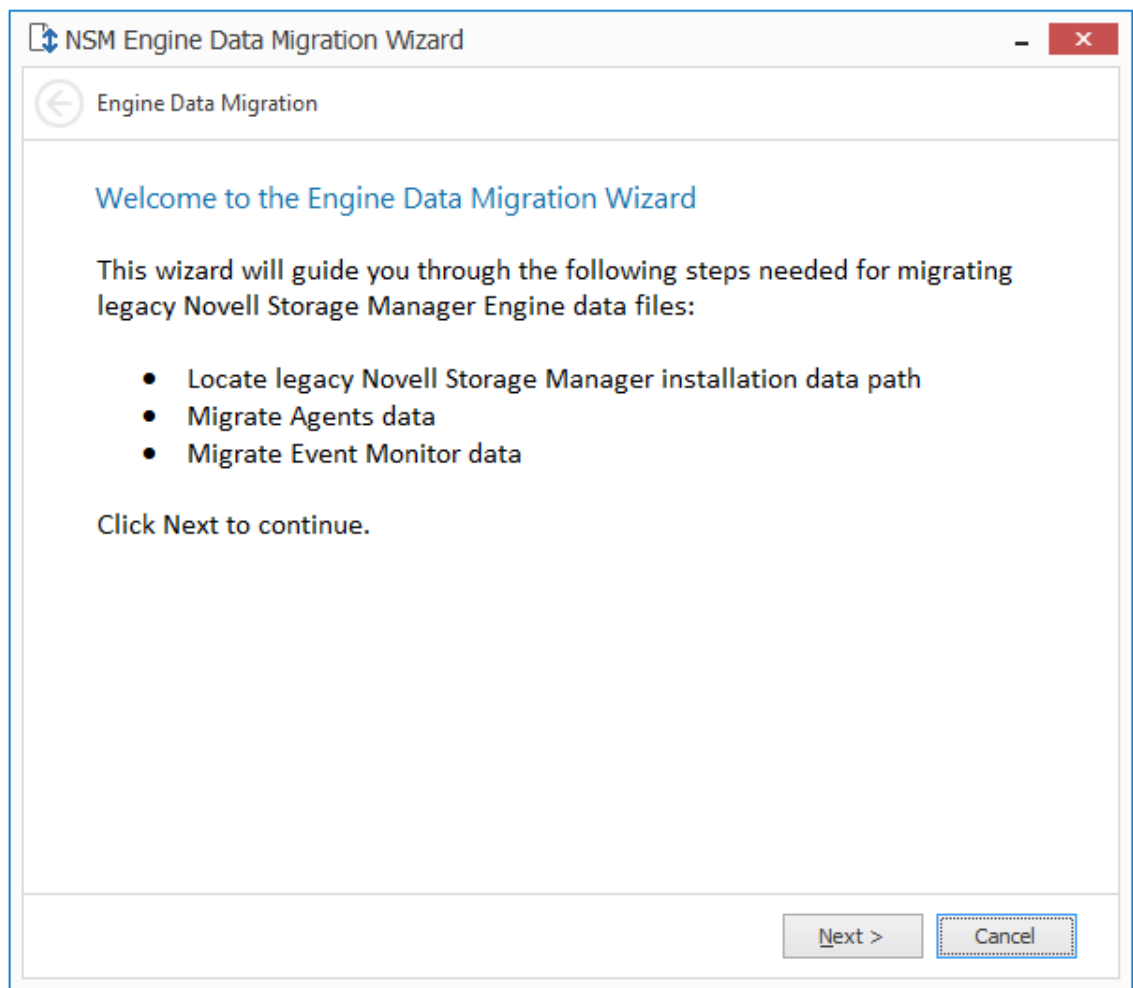


8 Proceed with [Section 4.10, "Migrating the Engine Data,"](#) on page 55.

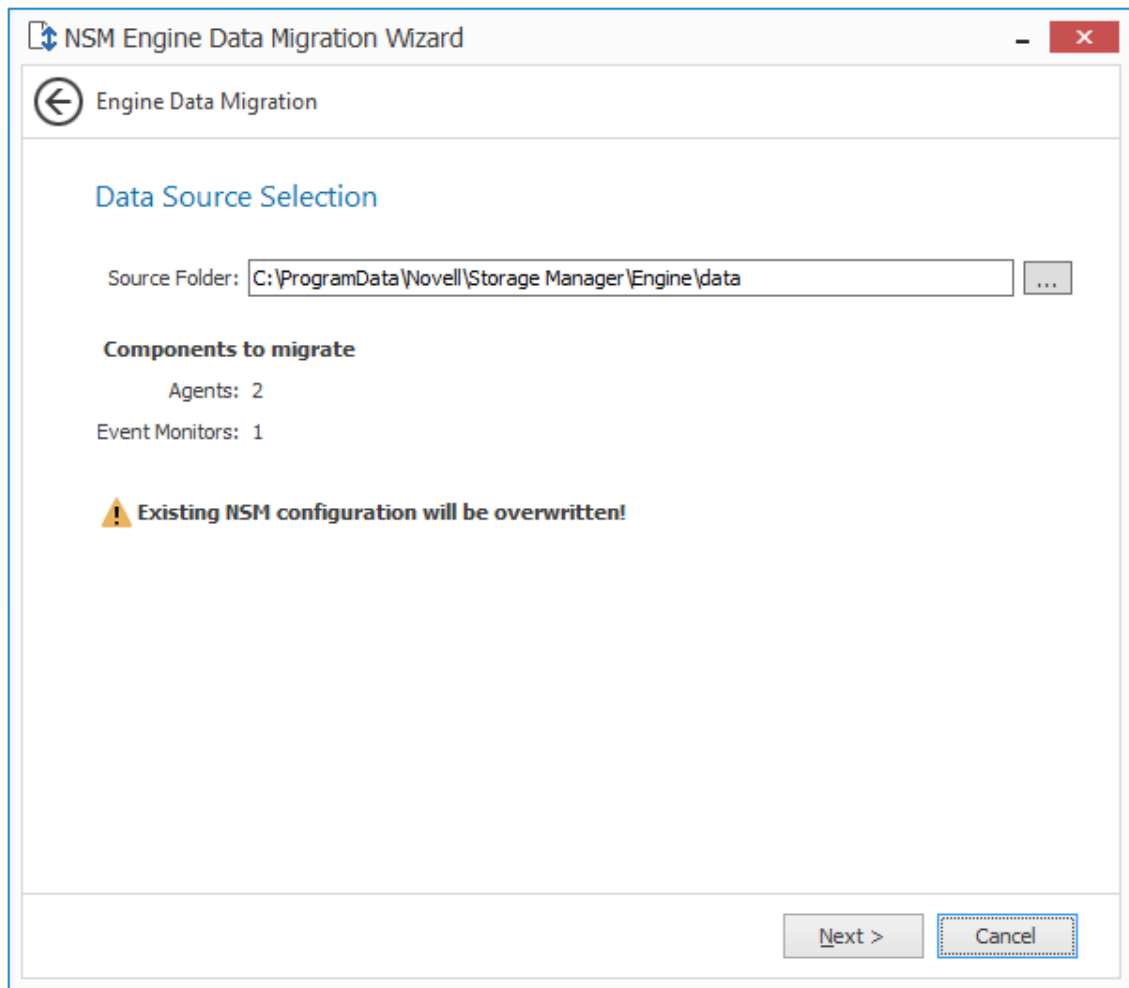
4.10 Migrating the Engine Data

Migrated Engine data includes the list of authorized Agents, the authorized Event Monitor, and the list of servers hosting Agents that are serving as Proxy Agents.

- 1 From the Configuration Dashboard, click **Migrate Engine Data**.
- 2 When prompted to stop the Engine, click **Yes**.



- 3 Read the summary of what is going to be migrated and click **Next**.



If the Novell Storage Manager data folder was installed using the default installation path, the path is displayed.

- 4 (Conditional) If the path to the data folder is not displayed, use the browse button to locate it.
- 5 Click **Next**.
- 6 When notified that the migration has completed, click **Finish**.
- 7 Click **Start Engine**.
- 8 Proceed with [Section 4.11, “Installing NSMAdmin,”](#) on page 57.

4.11 Installing NSMAdmin

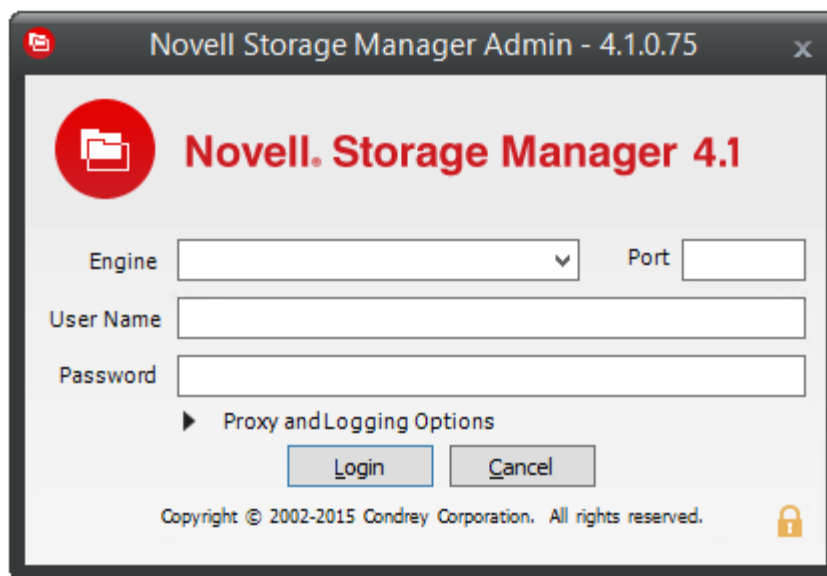
NSMAdmin is the administrative interface for Novell Storage Manager. It can be installed on:

- ♦ Windows 8
- ♦ Windows 7
- ♦ Windows Vista
- ♦ Windows Server 2012 R2, 2012, 2008 R2, or 2008

IMPORTANT: Novell Storage Manager 4.x introduces new database requirements for NSMAdmin. For details and requirements, see [SMAdmin Database User Setup](#) in the *Novell Storage Manager 4.1 for Active Directory Administration Guide*.

- 1 On the Windows server or workstation where you will run NSMAdmin, copy to a directory the NSM-AD_4_1.iso.
- 2 Mount the NSM-AD_4_1.iso file.
- 3 At the root of the NSM-AD_4_1.iso image, double-click the Windows folder.
- 4 Double-click NSMAdmin-AD-Installer-4.1-xxxx.exe.
- 5 When you are asked if you want to run this file, click **Run**.
- 6 Agree to the licensing terms and conditions and click **Install**.
- 7 When notified that the setup was successful, click **Run Admin Client**.

The NSMAdmin login dialog box appears.



- 8 In the **Engine** field, specify the DNS name or IP address.
- 9 In the **Port** field, specify the secure port number.
The default setting is 3009.
- 10 Specify the username and password.
The user must be a member of the nsmadmins group to be able to log in.
- 11 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**.
- 12 Proceed with [Section 4.12, "Review Migrated Policies,"](#) on page 59.

4.12 Review Migrated Policies

While in NSMAdmin, you should verify that your policies migrated properly and that the settings are accurate.

- 1 In NSMAdmin, click the **Main** tab.
- 2 Click **Policy Management**.
- 3 Verify that all of the policies from Novell Storage Manager 3.1.1 for Active Directory are listed.
- 4 Verify the settings in the policies to make sure that they are accurate.

4.13 Upgrading to Storage Manager 5.2

Now that you have upgraded to Storage Manager 4.0, you can upgrade to Storage Manager 5.2. For procedures, see [Chapter 5, “Upgrading from Storage Manager 4.x for Active Directory to 5.2,” on page 61](#).

5 Upgrading from Storage Manager 4.x for Active Directory to 5.2

IMPORTANT: With the release of Storage Manager 5.0, Micro Focus began providing the eDirectory to Active Directory Cross-Empire Data Migration and the new Active Directory to Active Directory Cross-Empire Data Migration subsystems only as additive support pack purchases to Storage Manager.

For example, if you want to migrate user data from OES to Microsoft, you need to purchase licenses for Storage Manager 5.2 for Active Directory + the eDirectory to Active Directory Cross-Empire Data Migration support pack.

If you are in the process of migrating data from a Novell network to a Microsoft network using Cross-Empire Data Migration (which was included in Storage Manager 4.x for Active Directory), do not upgrade to version 5.2 until you have completed your migration to Microsoft.

The upgrade from Storage Manager 4.x for Active Directory to Storage Manager 5.2 for Active Directory should be performed as an in-place upgrade.

By following the procedures in this chapter, you will be installing the new Micro Focus Engine, Event Monitor, and Agent paths while deleting the old Novell paths. Additionally, you will be installing the new SMAdmin management application.

NOTE: The Storage Manager 4.x and 5.0 Agents are not compatible with the Storage Manager 5.2 Engine. If you'd like to take advantage of the faster data copying feature in Agents, you will need to upgrade them.

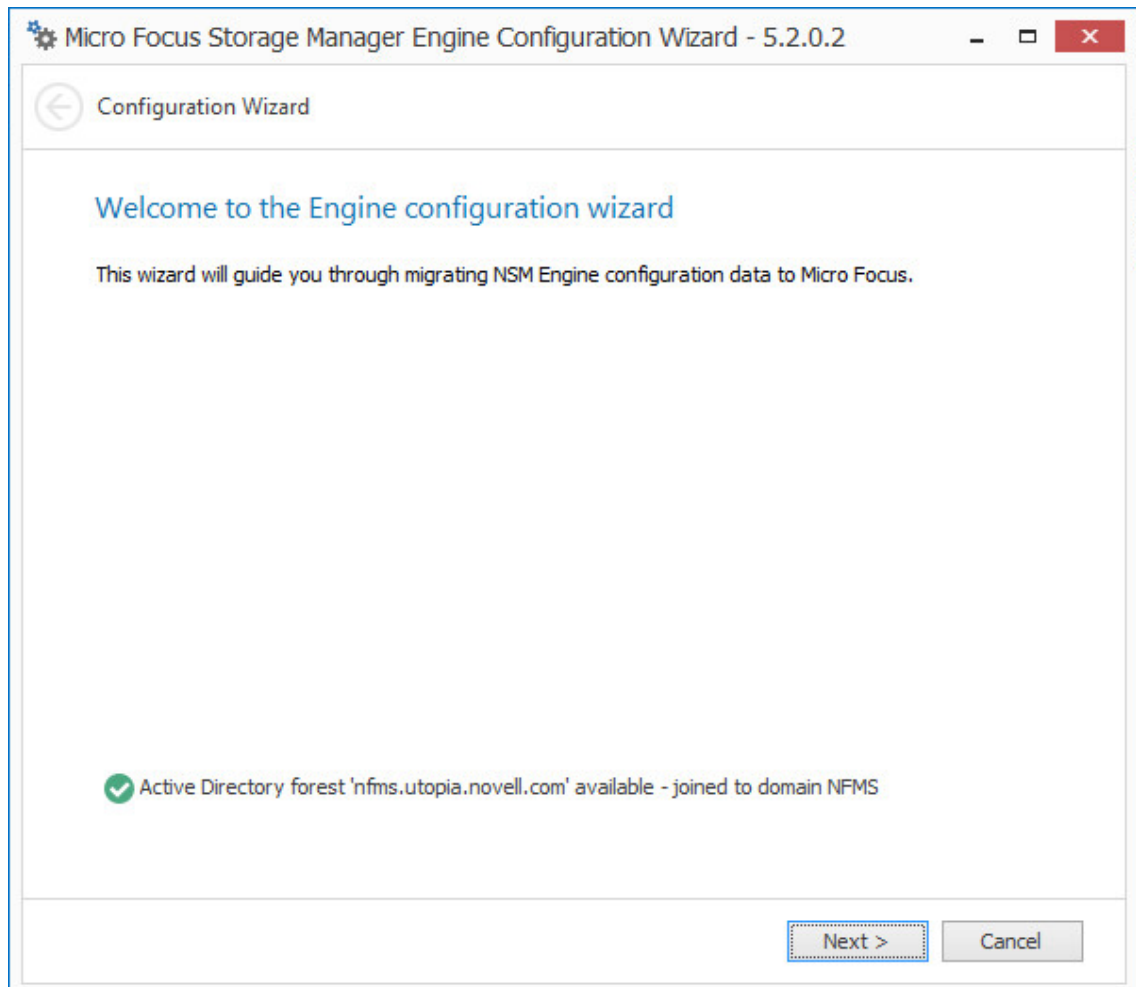
Storage Manager 5.2 requires that you replace NSMAdmin 4.x with SMAdmin 5.2.

- ♦ [Section 5.1, “Upgrading the Engine,” on page 61](#)
- ♦ [Section 5.2, “Configuring the Database,” on page 63](#)
- ♦ [Section 5.3, “Configuring the Engine,” on page 66](#)
- ♦ [Section 5.4, “Upgrading the Event Monitor,” on page 69](#)
- ♦ [Section 5.5, “Upgrading an Agent,” on page 71](#)
- ♦ [Section 5.6, “Installing SMAdmin,” on page 72](#)
- ♦ [Section 5.7, “Removing NSMAdmin,” on page 73](#)
- ♦ [Section 5.8, “\(Conditional\) Install CouchDB,” on page 73](#)
- ♦ [Section 5.9, “Administering Storage Manager,” on page 74](#)

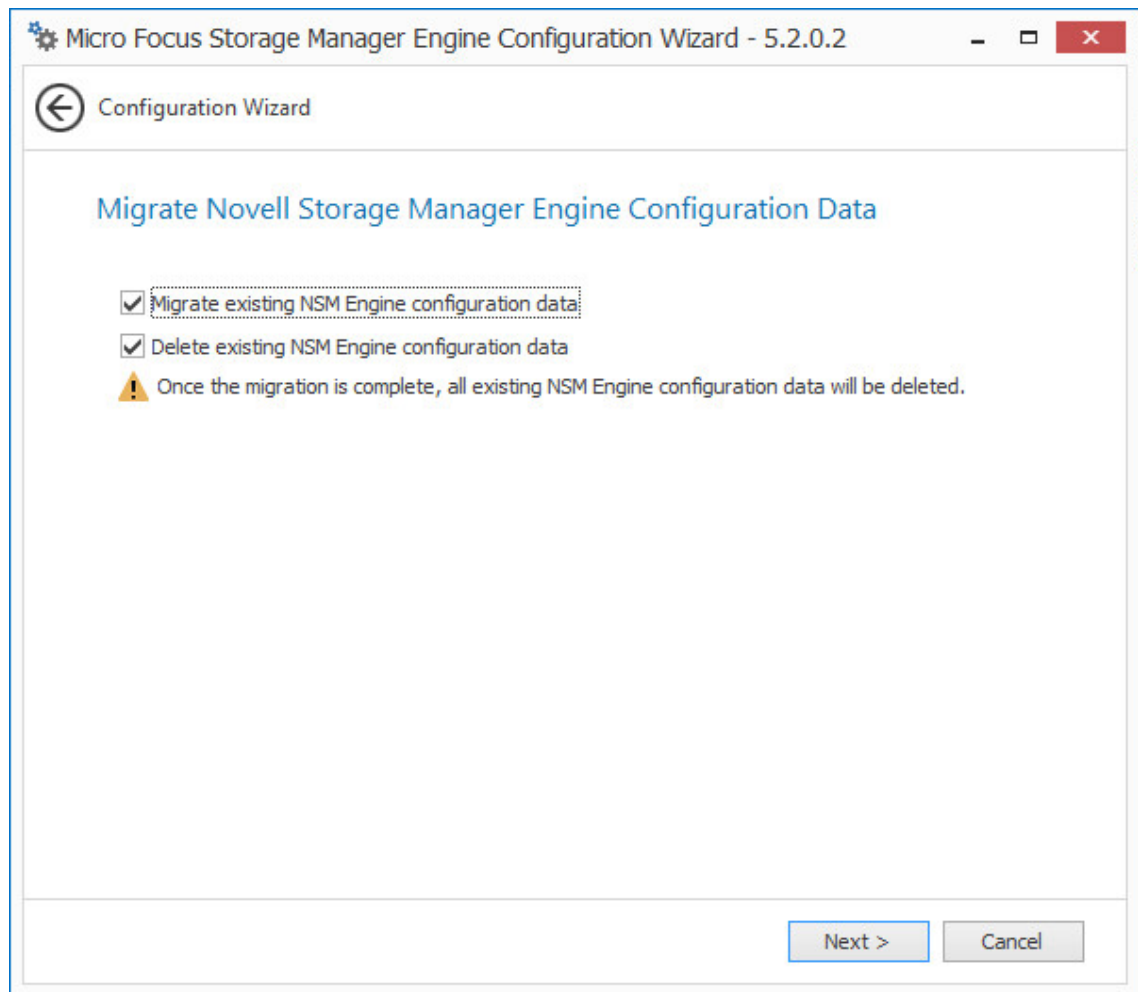
5.1 Upgrading the Engine

- 1 At the root of the `SM-AD_5_2_0.iso` image, double-click `SMEngine-Installer-5.2-x64-xx.exe`.
- 2 When asked if you want to run this file, click **Run**.
- 3 Agree to the licensing terms and conditions, then click **Install**.

- 4 When you are notified that the setup was successful, click **Run Setup Utility**.
The Engine Configuration Wizard is launched.



- 5 Click **Next**.
- 6 In the next page, select the **Migrate Existing NSM Engine configuration data** check box.
- 7 Leave the **Delete existing NSM Engine configuration data** check box selected.



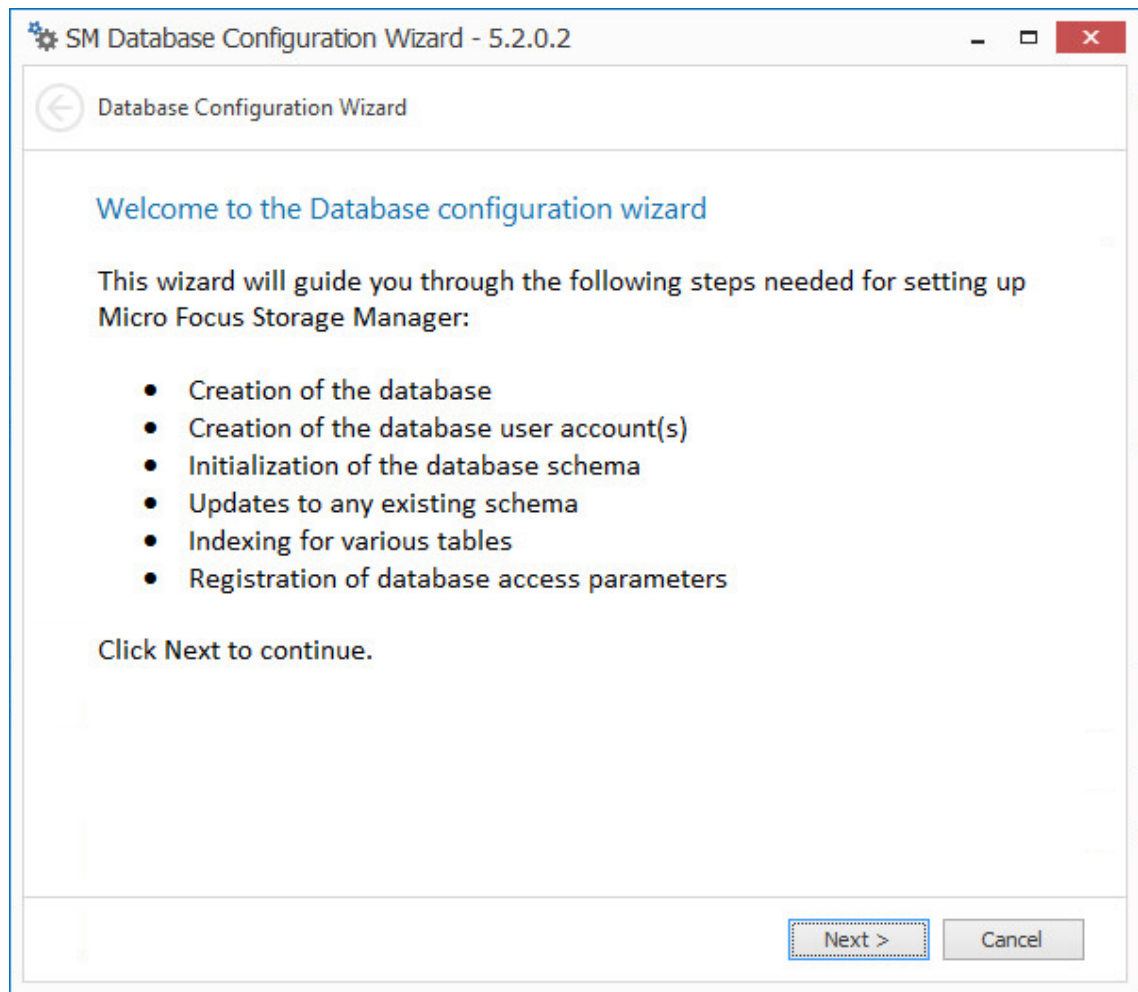
- 8 Click **Next**.
- 9 When notified that the Engine configuration data migration is complete, click **Finish**.
The Storage Manager Configuration Utility is launched.
- 10 Click **Install or Update License**.
- 11 When prompted, load the Storage Manager 5.x license.

5.2 Configuring the Database

As part of the upgrade process, you must configure the database to extend the database schema.

- 1 In the Configuration Utility, click **Configure Database**.
- 2 If you are asked if you want to stop the Engine, click **Yes**.

The following page appears:



- 3 From the wizard page, read the overview of what will be configured, then click **Next**.

SM Database Configuration Wizard - 5.2.0.2

Database Configuration Wizard

Database Connection

Database Properties

Type: SQL Server 2012

Communication

Database Host Address: fmsadutp.nfms.utopia.novell.com Port: 1433

Initial Database: fsfdb

Database Service Account - Enter the name of a database account for this application.

Database Account Name: fsfadmin

Password: ●●●●●●

Verify Password: ●●●●●●

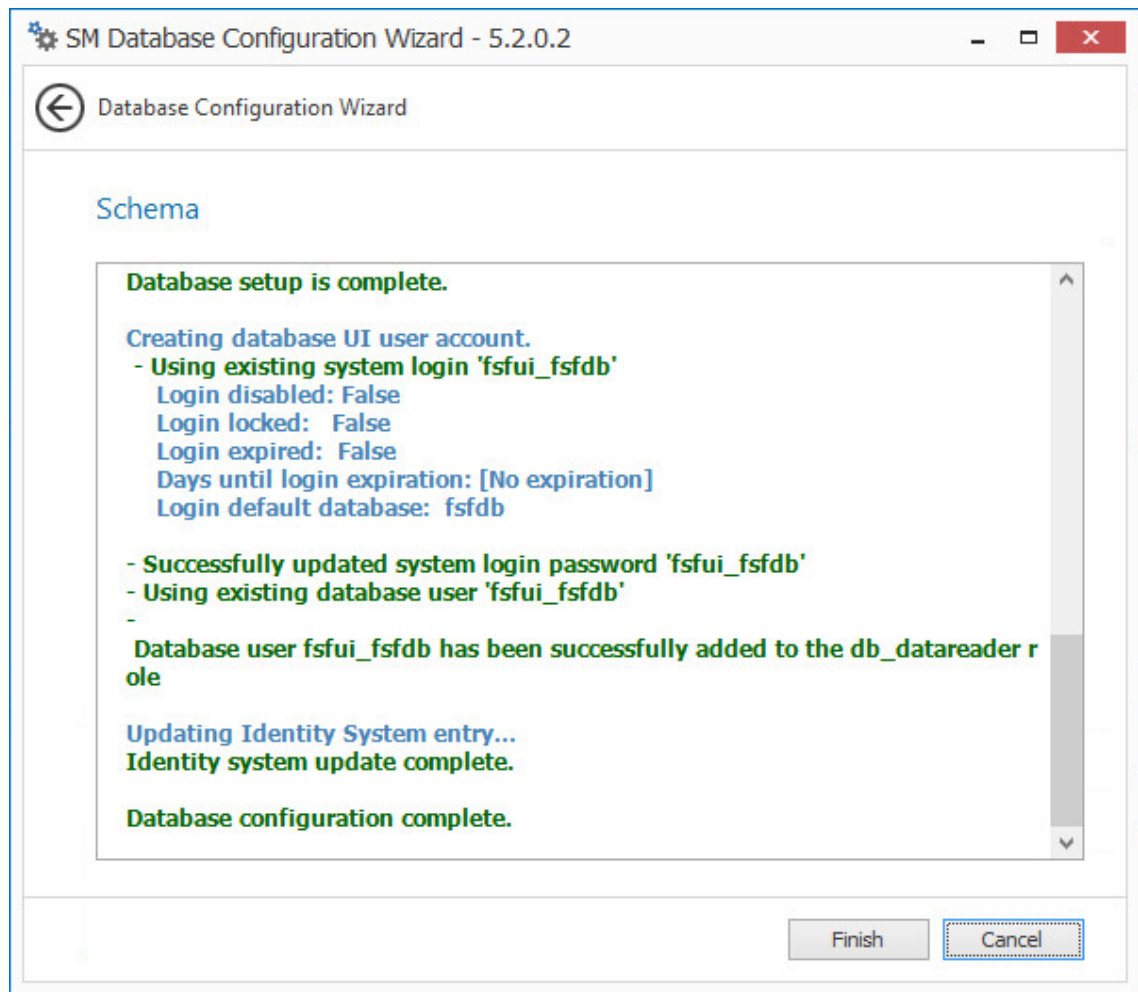
Database Admin Credentials - Enter the credentials needed for provisioning the database.

Database Administrator: sa

Password:

Next > Cancel

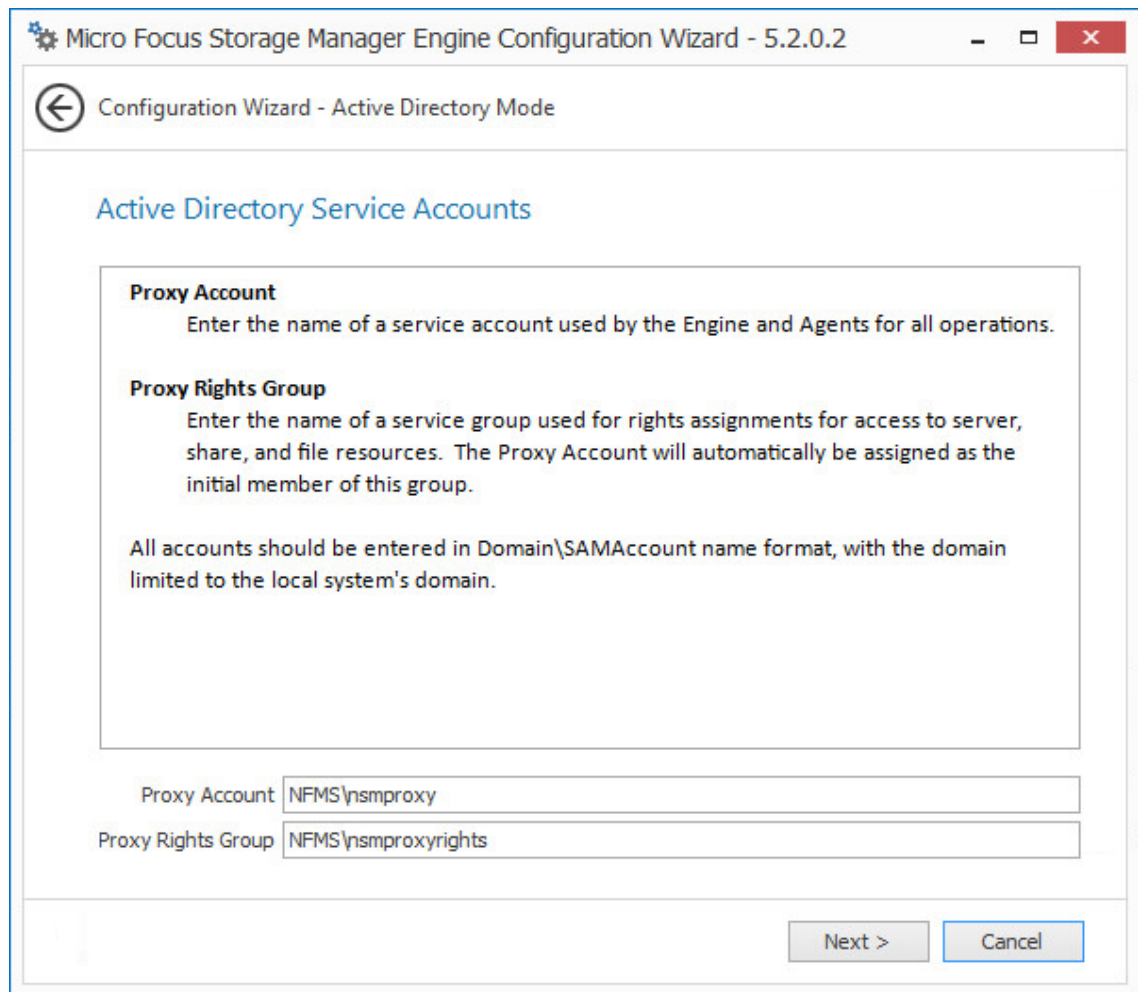
- 4 In the **Password** field of the **Database Admin Credentials** region, specify the SQL Server administrator password, then click **Next**.



- 5 Click Finish.

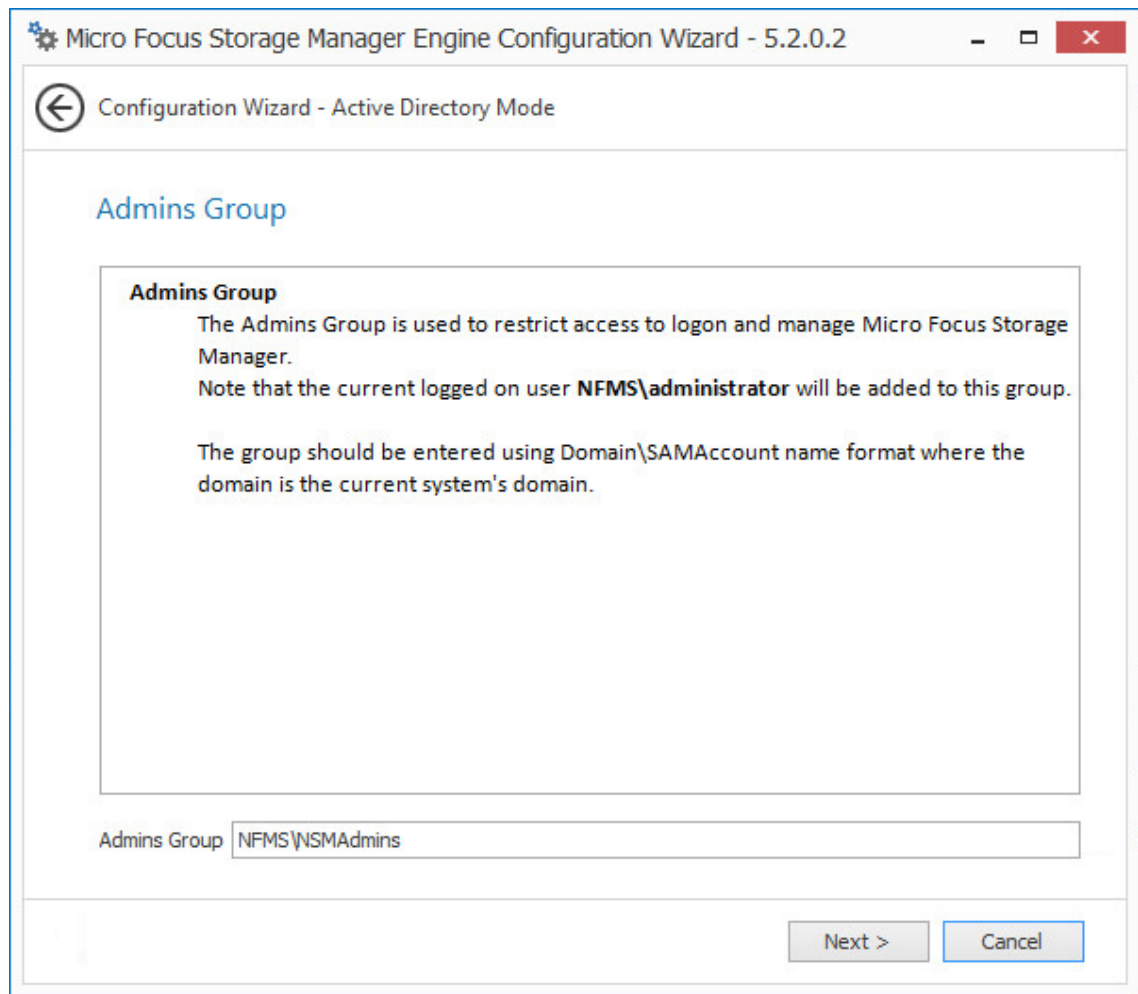
5.3 Configuring the Engine

- 1 In the Configuration Utility, click **Configure Engine**.
- 2 From the wizard page, read the overview of what will be configured, then click **Next**.
- 3 In the Basic Options page of the wizard, edit any needed parameters settings and click **Next**.



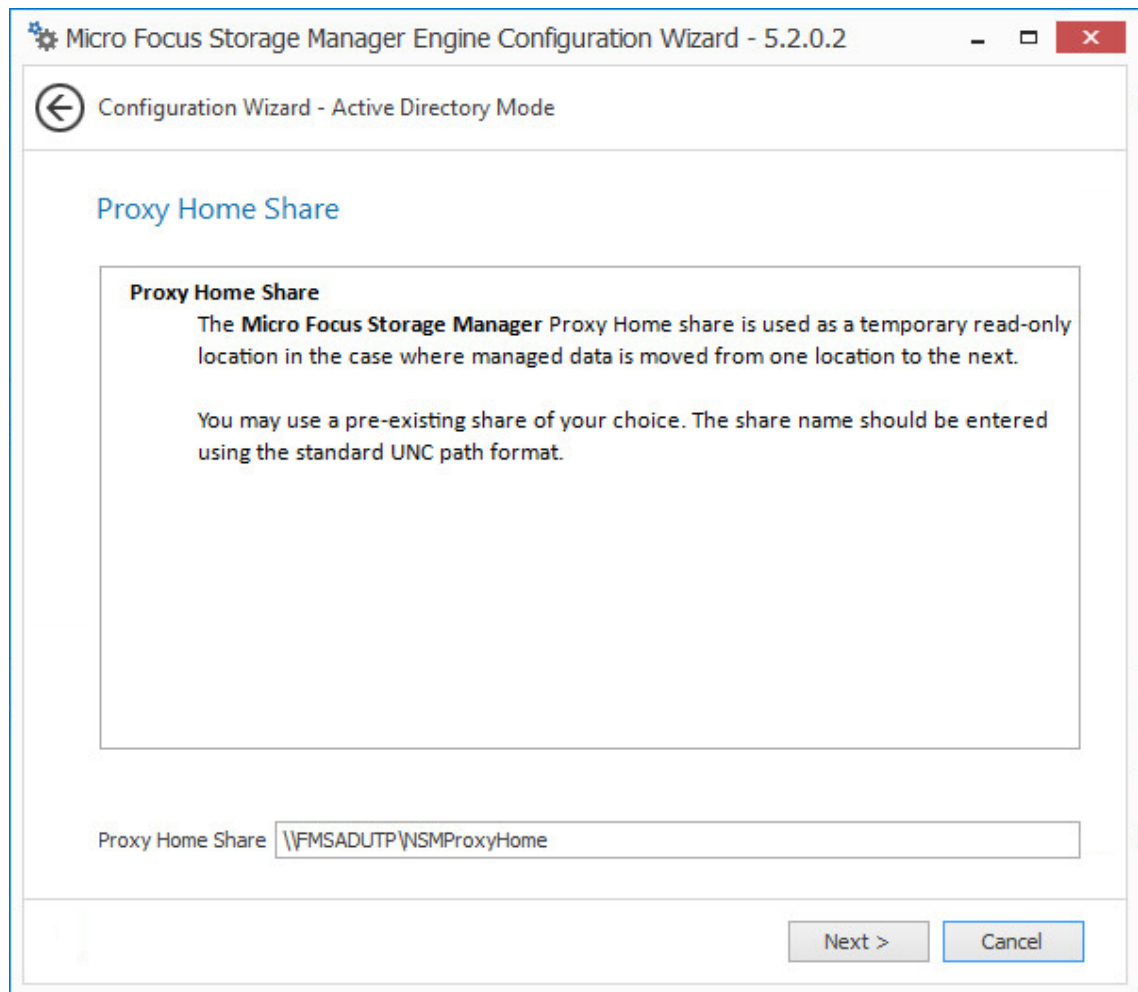
Storage Manager 5.2 utilizes the existing proxy account and proxy rights group.

- 4 Click **Next**.



Storage Manager 5.2 utilizes the existing admins group.

- 5 Click **Next**.

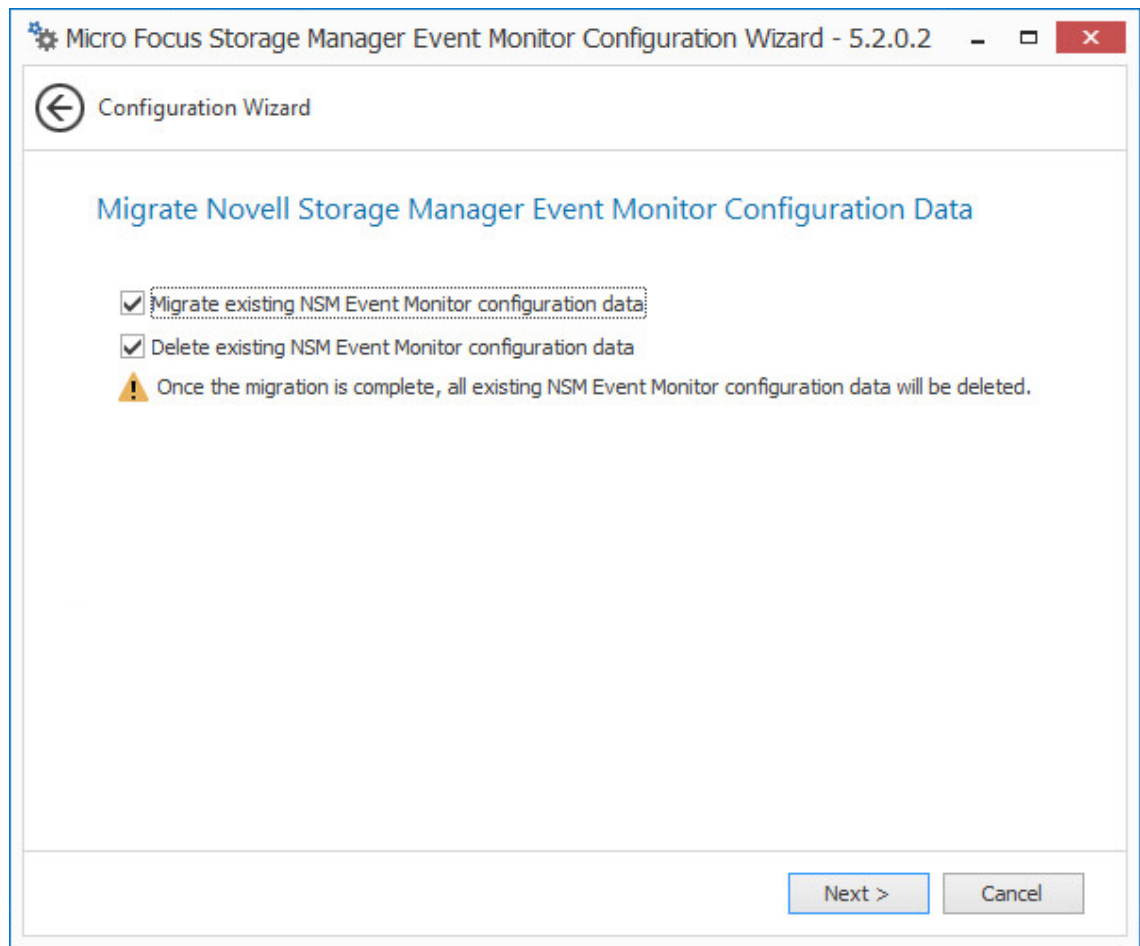


Storage Manager 5.2 utilizes the existing Proxy Home share.

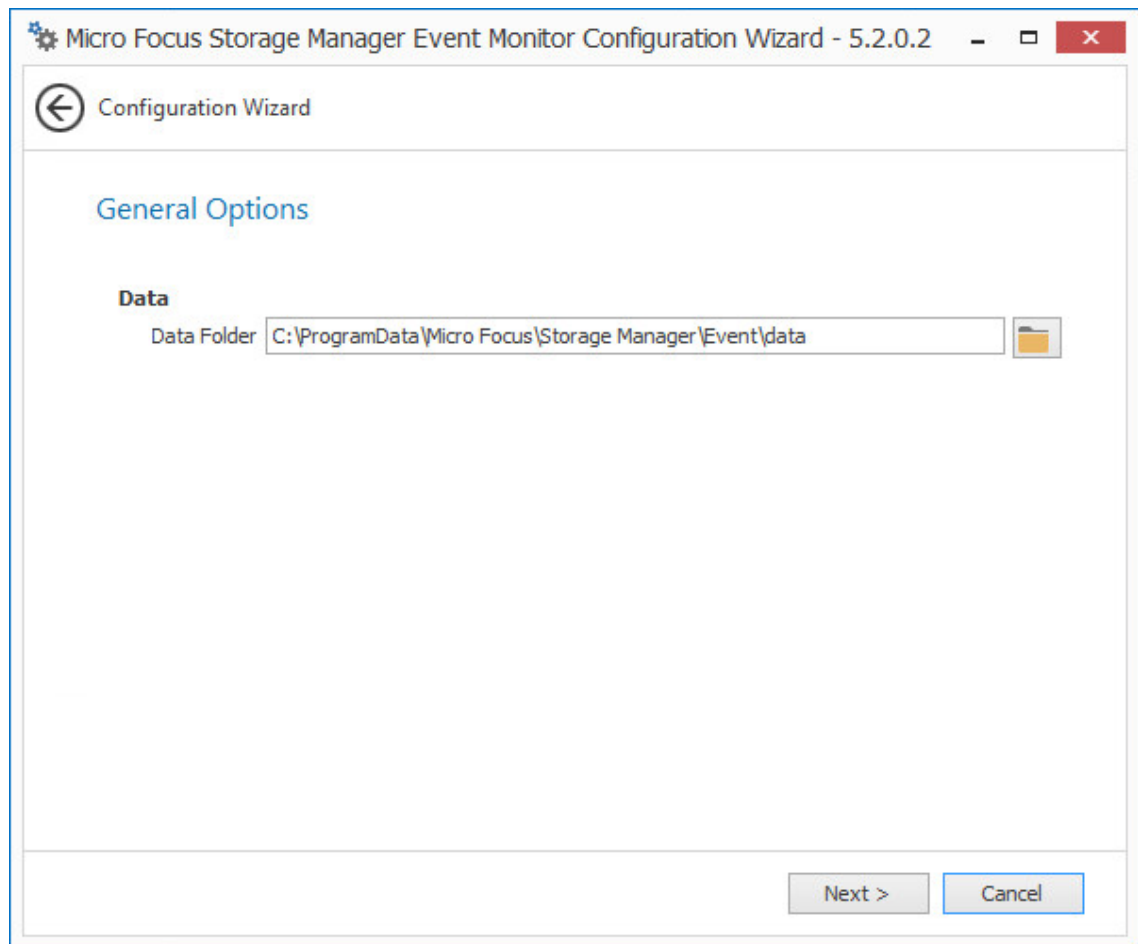
- 6 Click **Next**.
- 7 Click **Finish**.

5.4 Upgrading the Event Monitor

- 1 At the root of the `SM-AD_5_2_0.iso` image, double-click `SMEventMonitor-Installer-5.2-x64-xx.exe`.
- 2 When asked if you want to run this file, click **Run**.
- 3 Agree to the licensing terms and conditions, then click **Install**.
- 4 When you are notified that the setup was successful, click **Run Setup Utility**.
The Event Monitor Configuration Wizard is launched.
- 5 Read the overview and click **Next**.
- 6 In the next page, select the **Migrate Existing NSM Event Monitor configuration data** check box.
- 7 Leave the **Delete existing NSM Event Monitor configuration data** check box selected.



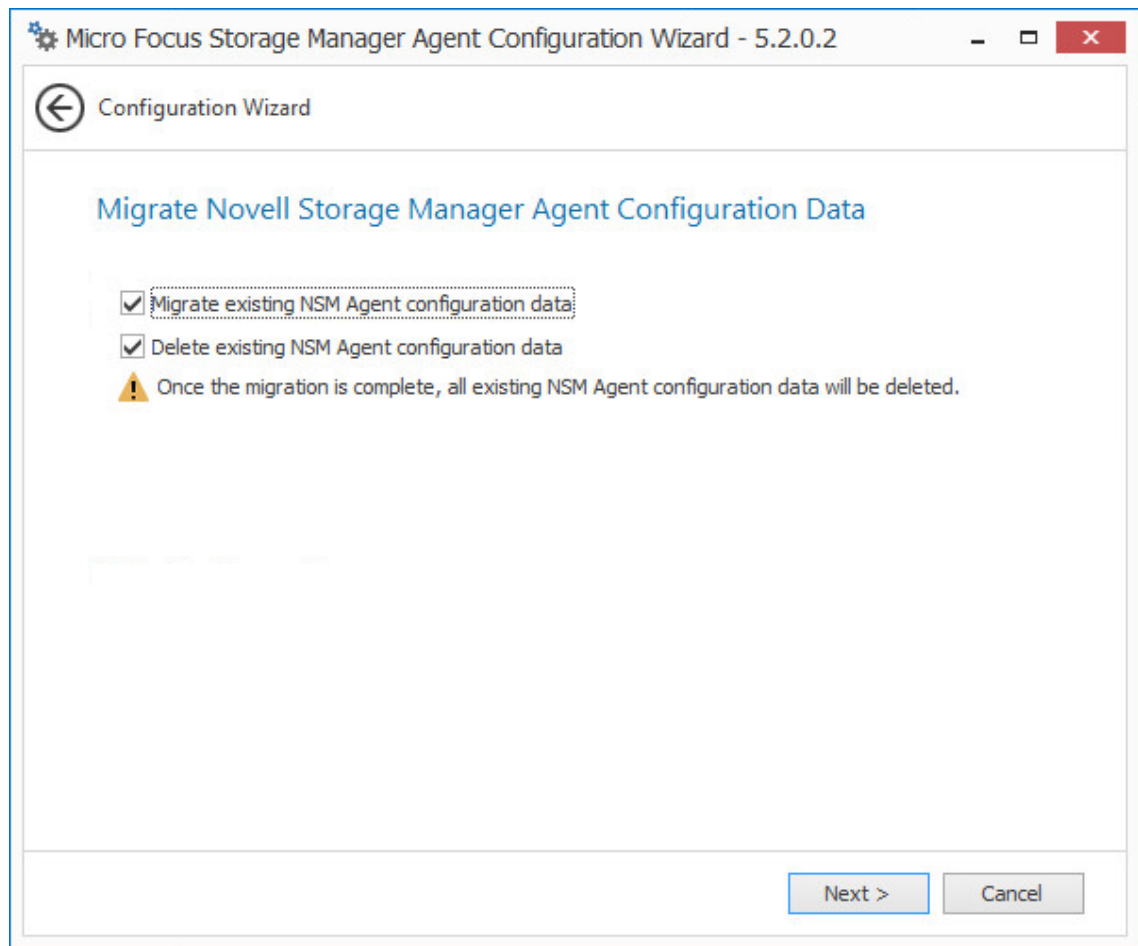
8 Click Next.



- 9 Accept the default path for the data folder by clicking **Next**.
- 10 Accept the Engine connection parameters by clicking **Next**.
- 11 Click **Finish**.

5.5 Upgrading an Agent

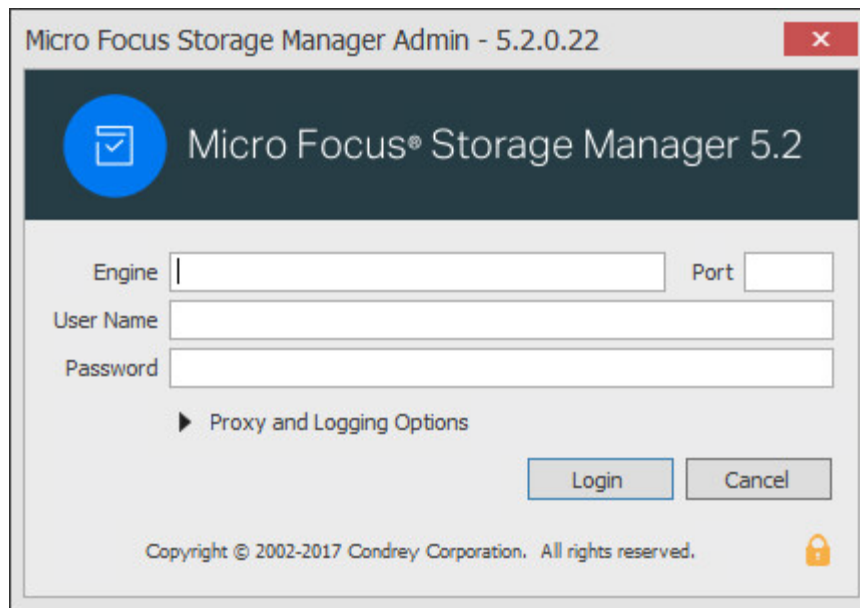
- 1 At the root of the `SM-AD_5_2_0.iso` image, double-click `SMAgent-Installer-5.2-x64-xx.exe`.
- 2 When asked if you want to run this file, click **Run**.
- 3 Agree to the licensing terms and conditions, then click **Install**.
- 4 When you are notified that the setup was successful, click **Run Setup Utility**.
The Agent Configuration Wizard is launched.
- 5 Read the overview and click **Next**.
- 6 In the next page, select the **Migrate Existing NSM Agent configuration data** check box.
- 7 Leave the **Delete existing NSM Agent configuration data** check box selected.



- 8 Click **Next**.
- 9 Accept the configuration HTTP listener and SSL certificate settings and click **Next**.
- 10 Accept the Engine connection parameters by clicking **Next**.
- 11 Click **Finish**.

5.6 Installing SMAdmin

- 1 On the Windows server or workstation where you will run SMAdmin, copy to a directory the `SM-AD_5_2_0.iso`.
- 2 Mount the `SM-AD_5_2_0.iso` file.
- 3 At the root of the `SM-AD_5_2_0.iso` image, double-click `SMAdmin-AD-Installer-5.2-xxx.exe`.
- 4 When asked if you want to run this file, click **Run**.
- 5 Agree to the licensing terms and conditions and click **Install**.
- 6 When notified that the setup was successful, click **Run Admin Client**.
The SMAdmin login dialog box appears.



7 In the **Engine** field, specify the DNS name or IP address.

8 In the **Port** field, specify the secure port number.

The default setting is 3009.

9 Specify the username and password.

The user must be a member of the nsmadmins group to be able to log in.

10 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**.

5.7 Removing NSMAdmin

With SAdmin installed, you should remove NSMAdmin 4.x, as you will not be able to use it to manage Storage Manager 5.2.

5.8 (Conditional) Install CouchDB

Storage Manager 5.2 includes an optional Work Log that when enabled, maintains a history of Storage Manager policy-enacted events. Data from the Work Log can be used for tracking historical events. For an expanded discussion of the Work Log, see [Work Log Reports](#) in the *Micro Focus Storage Manager 5.2 Administration Guide*.

The Work Log exclusively utilizes Apache CouchDB, an open source NoSQL database. You can deploy CouchDB on the Engine host, a separate server within the on-premises network, or in the cloud.

You can download CouchDB at: <http://couchdb.apache.org/>, which also includes product documentation.

5.9 Administering Storage Manager

You have now completed the upgrade to Storage Manager 5.2 for Active Directory. For administration procedures, refer to the *Micro Focus Storage Manager 5.2 for Active Directory Administration Guide*.

6 Upgrading from Storage Manager 5.x for Active Directory to 5.2

The upgrade from Storage Manager 5.x for Active Directory to Storage Manager 5.2 for Active Directory is performed as an in-place upgrade.

By following the procedures in this chapter, you will configure the database, configure the Engine, upgrade the Event Monitor, upgrade the Agents, and update SMAAdmin.

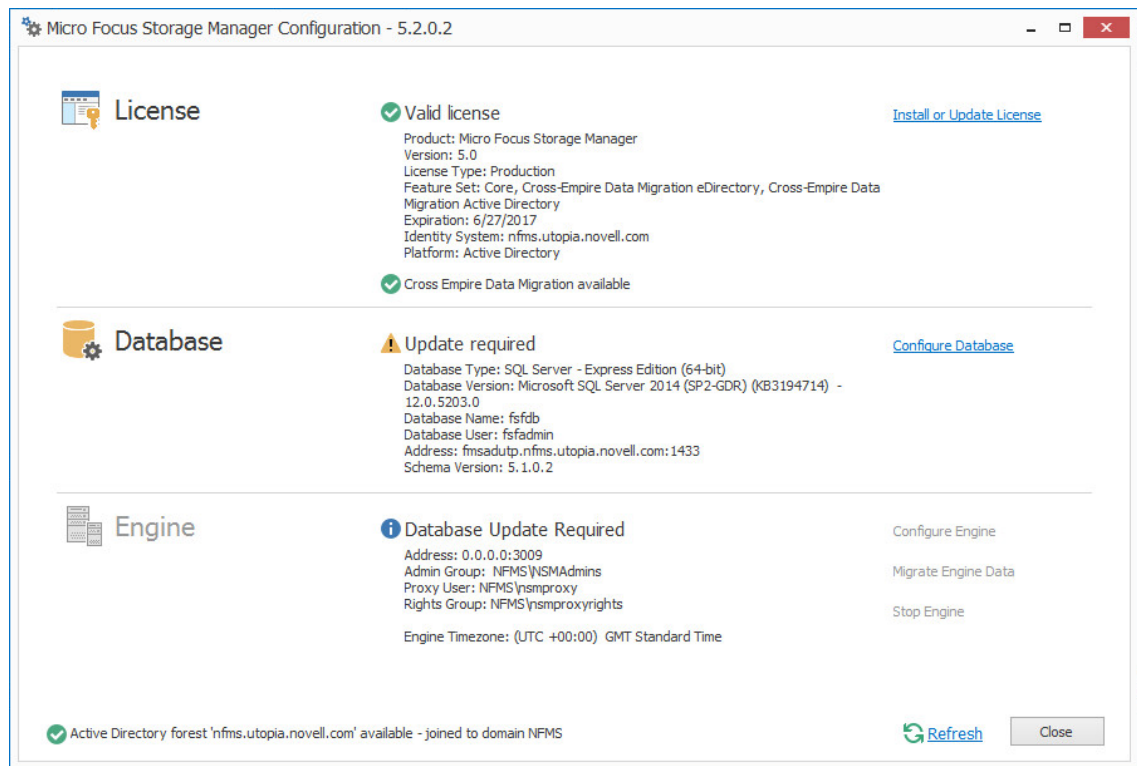
NOTE: The Storage Manager 4.x and 5.2 Agents are not compatible with the Storage Manager 5.2 Engine. If you'd like to take advantage of the faster data copying feature in Agents, you will need to upgrade them.

Storage Manager 5.2 requires that you replace SMAAdmin 5.x with SMAAdmin 5.2.

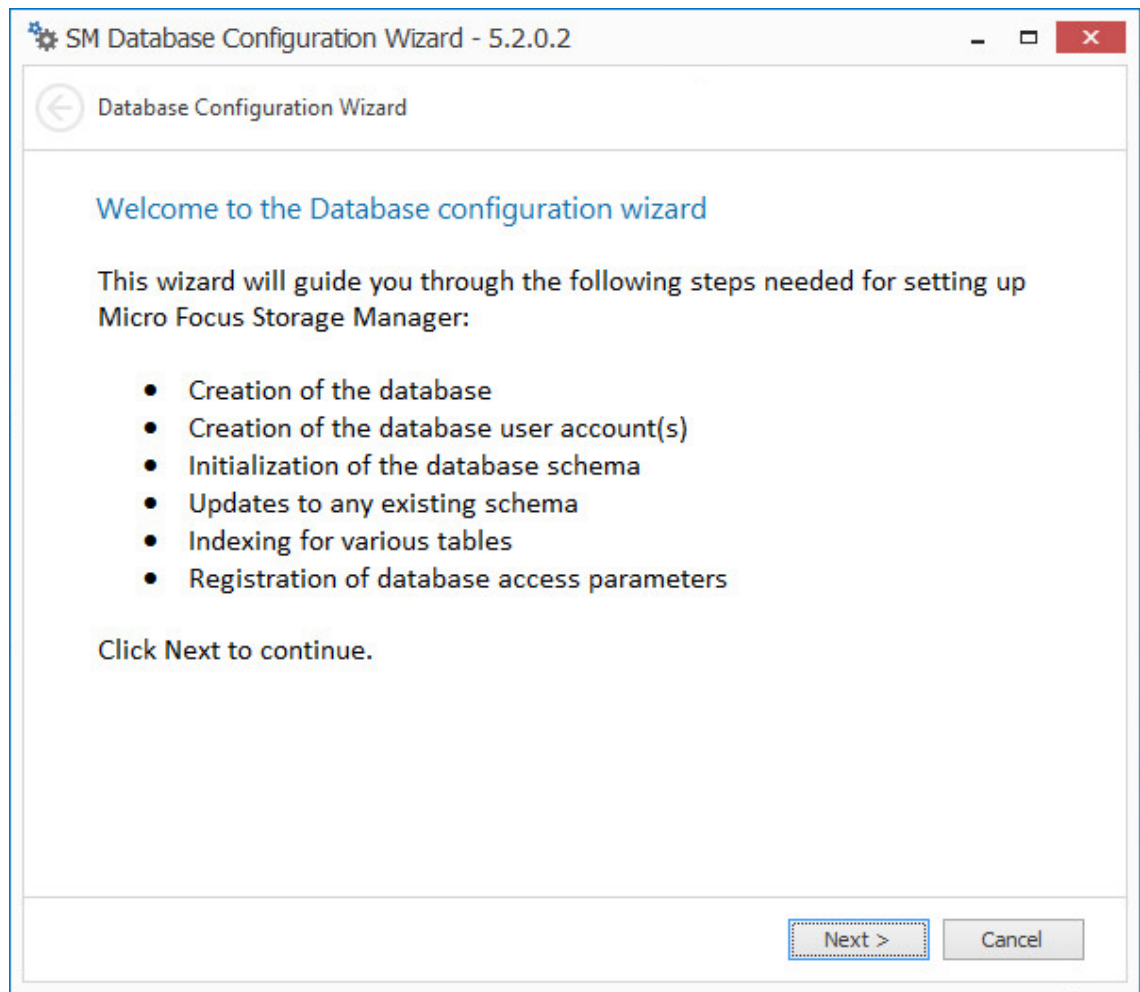
- ♦ [Section 6.1, “Configuring the Database,” on page 75](#)
- ♦ [Section 6.2, “Configuring the Engine,” on page 79](#)
- ♦ [Section 6.3, “Upgrading the Event Monitor,” on page 82](#)
- ♦ [Section 6.4, “Upgrading an Agent,” on page 84](#)
- ♦ [Section 6.5, “Update SMAAdmin,” on page 86](#)
- ♦ [Section 6.6, “\(Conditional\) Install CouchDB,” on page 87](#)
- ♦ [Section 6.7, “Administering Storage Manager,” on page 87](#)

6.1 Configuring the Database

- 1 At the root of the `SM-AD_5_2_0.iso` image, double-click `SMEngine-Installer-5.2-x64-xx.exe`.
- 2 When asked if you want to run this file, click **Run**.
- 3 Agree to the licensing terms and conditions, then click **Install**.
- 4 When you are notified that the setup was successful, click **Run Setup Utility**.
The Configuration Utility is launched.



- 5 Click **Configure Database**.
 - 6 When asked if you want to stop the Engine, click **Yes**.
- The following page appears:



- 7 From the wizard page, read the overview of what will be configured, then click **Next**.
The following page appears:

SM Database Configuration Wizard - 5.2.0.2

Database Configuration Wizard

Database Connection

Database Properties

Type: SQL Server 2012

Communication

Database Host Address: fmsadutp.nfms.utopia.novell.com Port: 1433

Initial Database: fsfdb

Database Service Account - Enter the name of a database account for this application.

Database Account Name: fsfadmin

Password: ●●●●●●

Verify Password: ●●●●●●

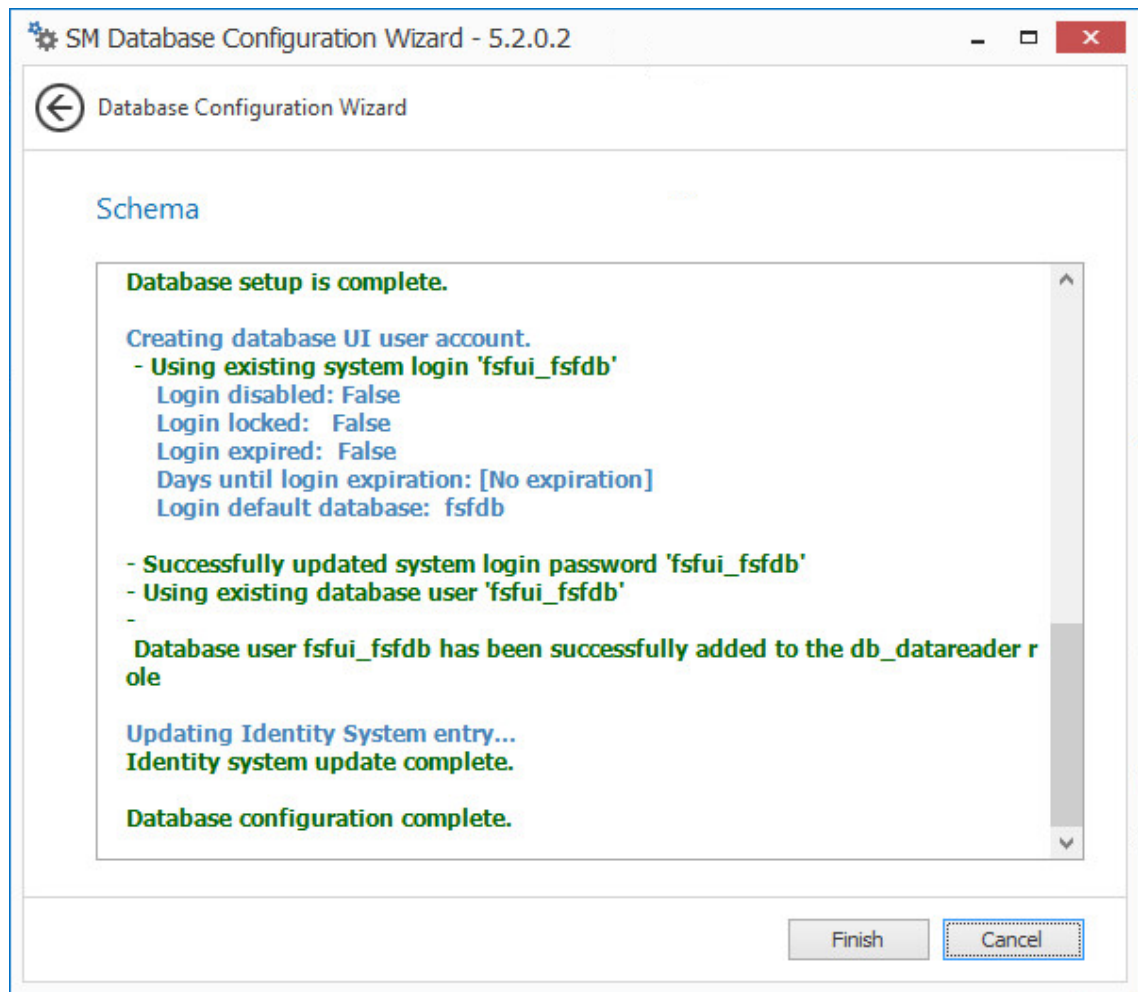
Database Admin Credentials - Enter the credentials needed for provisioning the database.

Database Administrator: sa

Password:

Next > Cancel

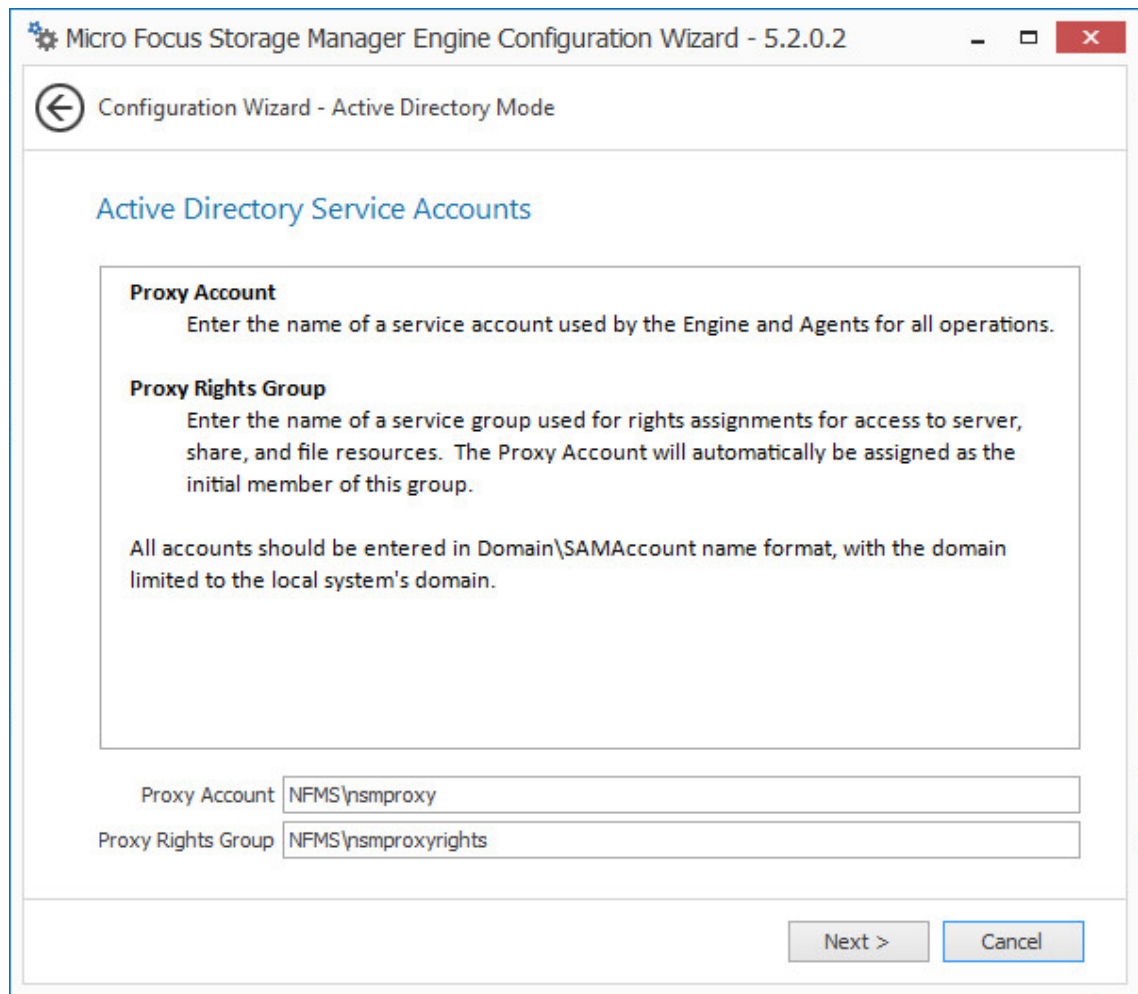
- 8 In the **Password** field of the **Database Admin Credentials** region, specify the SQL Server administrator password, then click **Next**.



- 9 Click Finish.

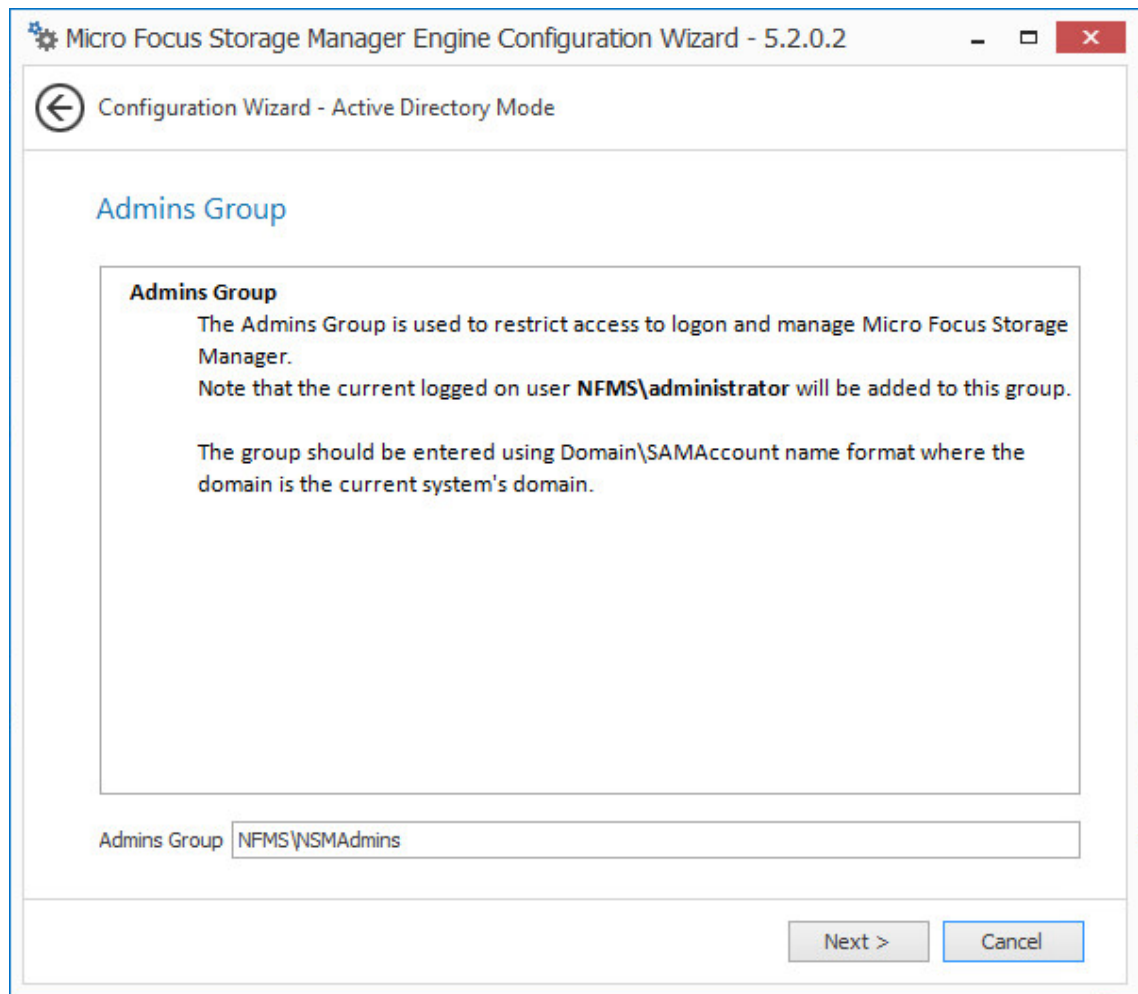
6.2 Configuring the Engine

- 1 In the Configuration Utility, click **Configure Engine**.
- 2 From the wizard page, read the overview of what will be configured, then click **Next**.
- 3 In the Basic Options page of the wizard, edit any needed parameters settings and click **Next**.



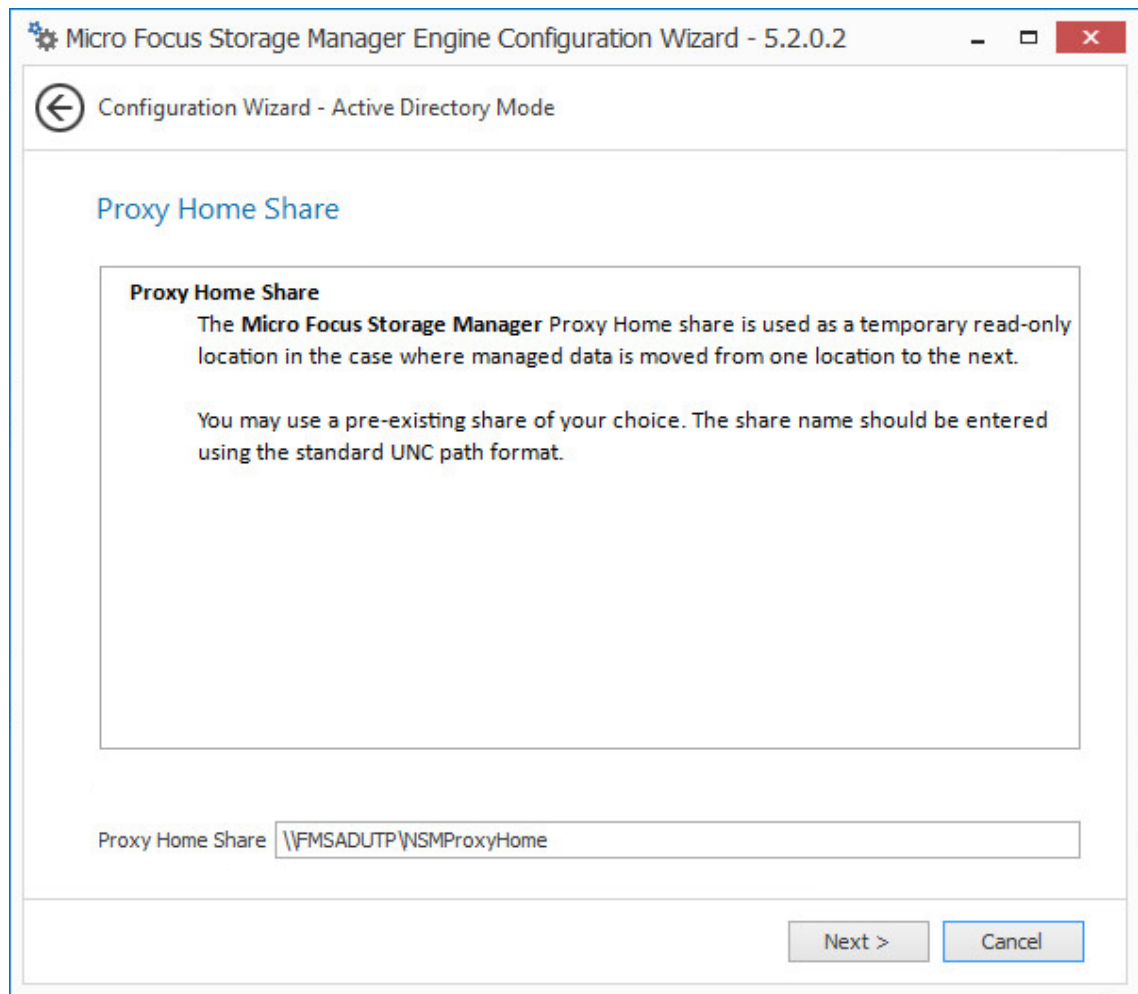
Storage Manager 5.2 utilizes the existing proxy account and proxy rights group.

- 4 Click **Next**.



Storage Manager 5.2 utilizes the existing admins group.

- 5 Click **Next**.

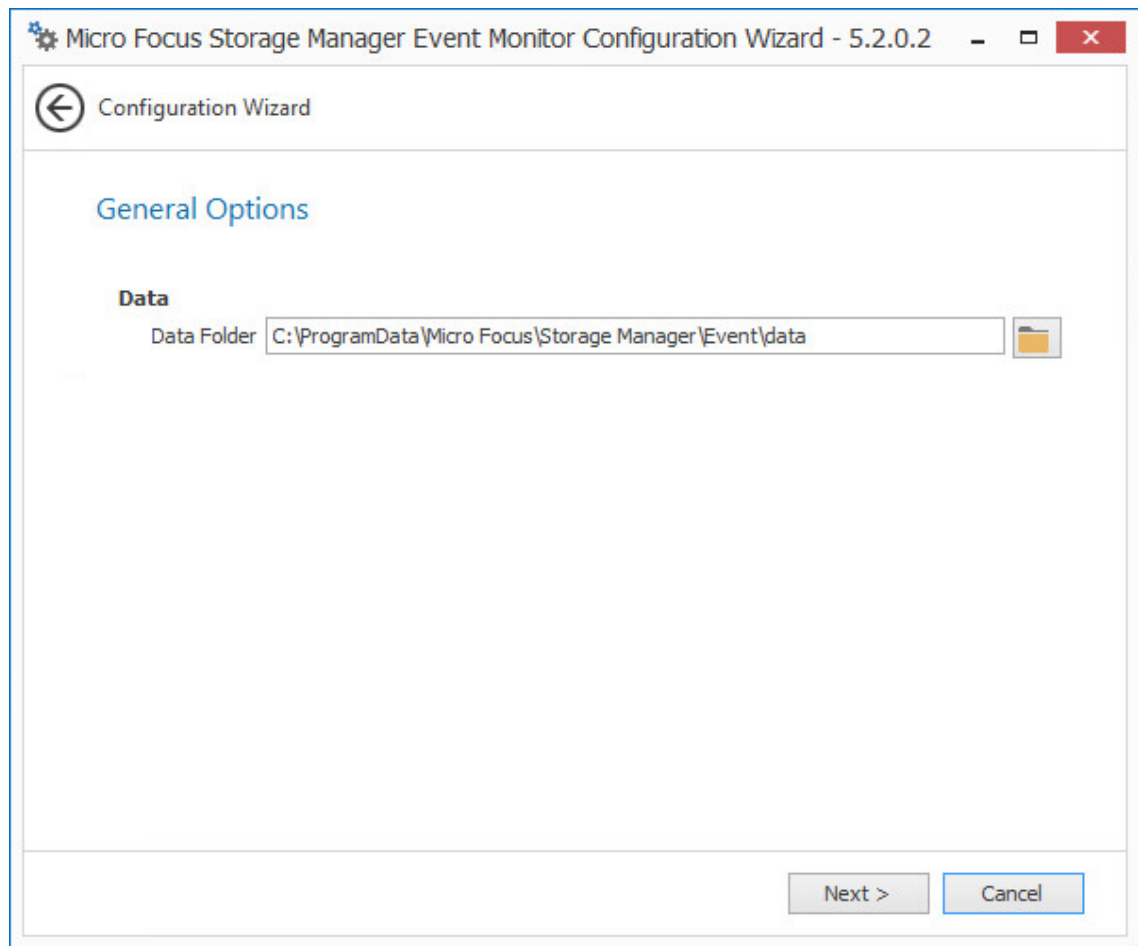


Storage Manager 5.2 utilizes the existing Proxy Home share.

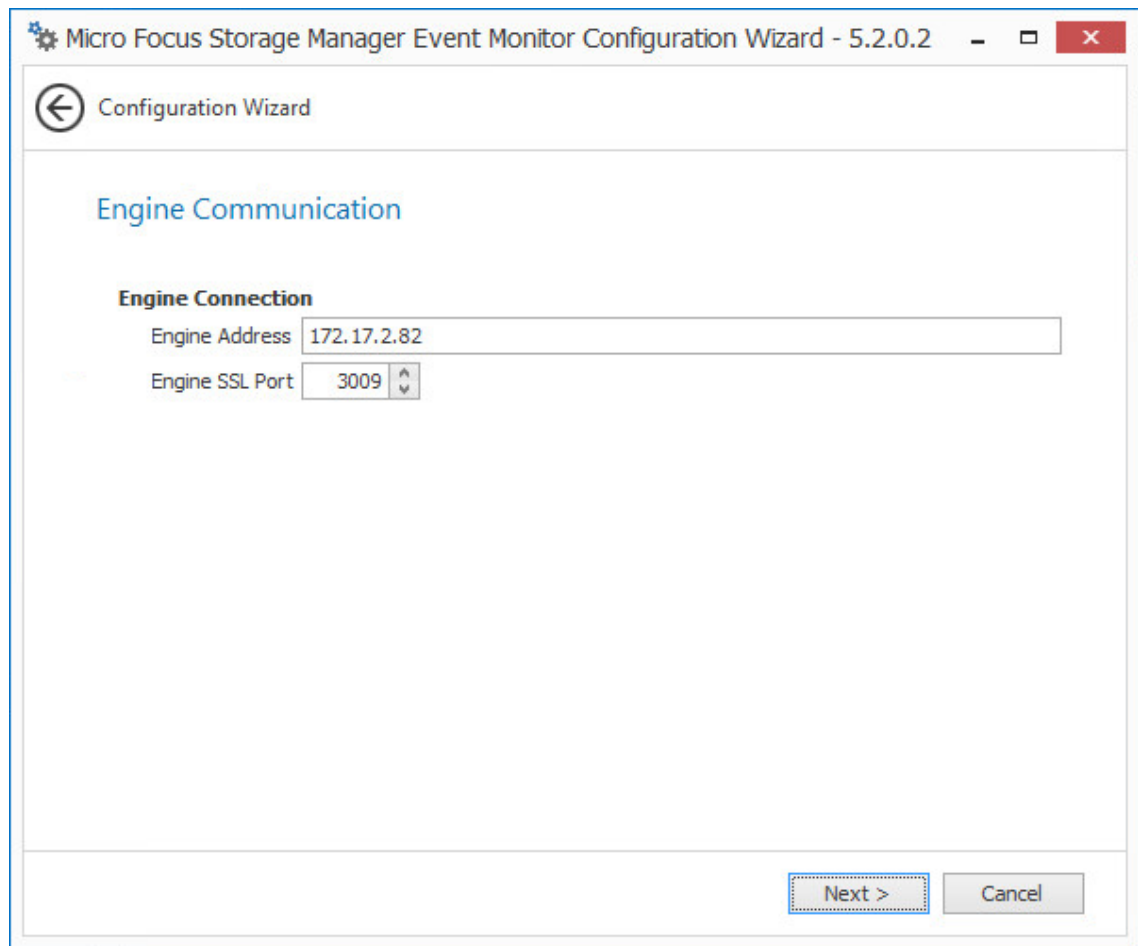
- 6 Click **Next**.
- 7 Click **Finish**.

6.3 Upgrading the Event Monitor

- 1 At the root of the `SM-AD_5_2_0.iso` image, double-click `SMEventMonitor-Installer-5.2-x64-xx.exe`.
- 2 When asked if you want to run this file, click **Run**.
- 3 Agree to the licensing terms and conditions, then click **Install**.
- 4 When you are notified that the setup was successful, click **Run Setup Utility**.
The Event Monitor Configuration Wizard is launched.
- 5 Read the overview and click **Next**.



- 6 The default path of the Data Folder is displayed, which you can edit. The Data folder contains application data needed by Storage Manager.
- 7 Click **Next**.



This page lets you set parameters for the Event Monitor to communicate with the Engine.

Engine Address: Specify the DNS name or IP address to the server hosting the Engine here.

Engine SSL Port: Specify the SSL port for the Engine here.

- 8 Enter the Engine connection settings and click **Next**.
- 9 Click **Finish**.

6.4 Upgrading an Agent

- 1 At the root of the `SM-AD_5_2_0.iso` image, double-click `SMAgent-Installer-5.2-x64-xx.exe`.
- 2 When asked if you want to run this file, click **Run**.
- 3 Agree to the licensing terms and conditions, then click **Install**.
- 4 When you are notified that the setup was successful, click **Run Setup Utility**.
The Agent Configuration Wizard is launched.
- 5 Read the overview and click **Next**.

Micro Focus Storage Manager Agent Configuration Wizard - 5.2.0.2

Configuration Wizard

General Options

HTTP Listener

Host Address: 0.0.0.0

SSL Port: 3011

SSL Certificate

Subject Name: fmsadutp

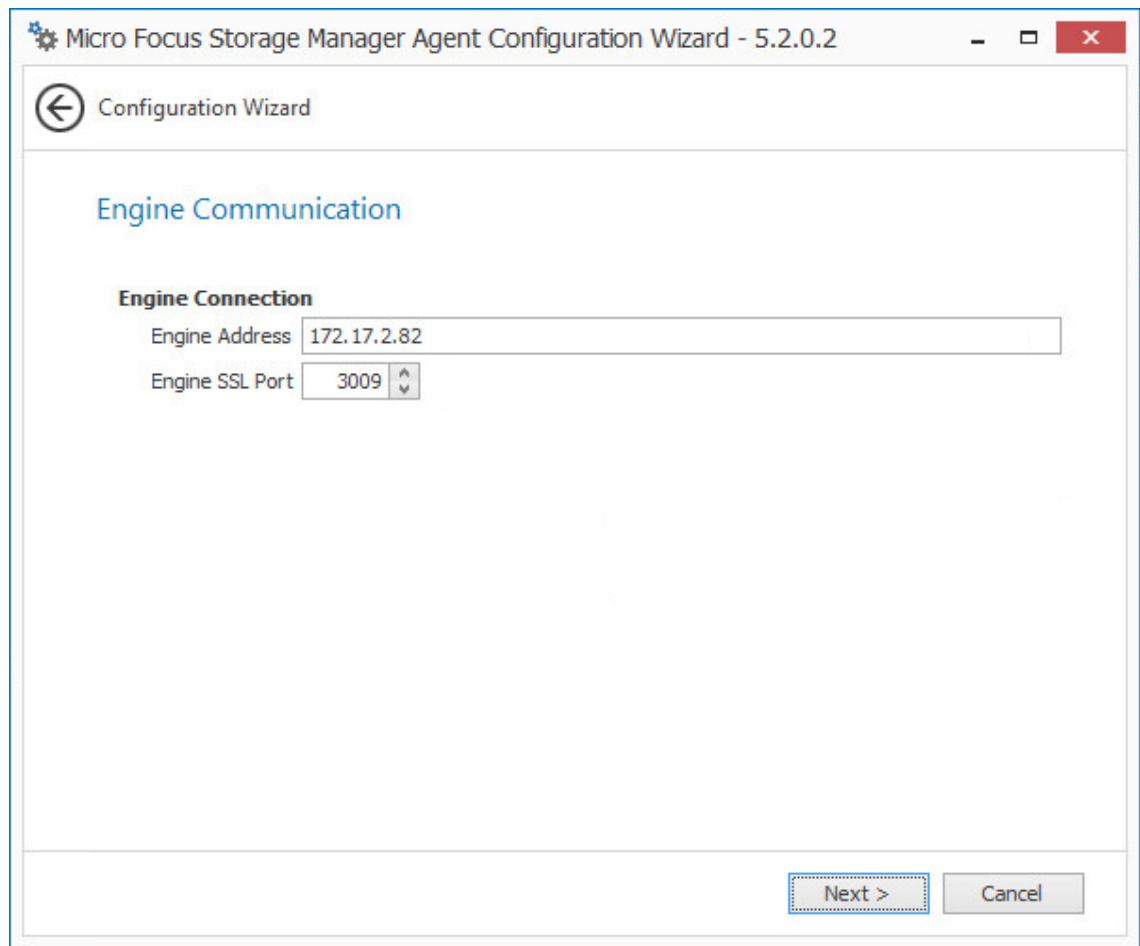
Expiration Days: 3,650 Expiration Date: 10/24/2026 6:53:14 PM

Key Length: 2048

Details Generate

Next > Cancel

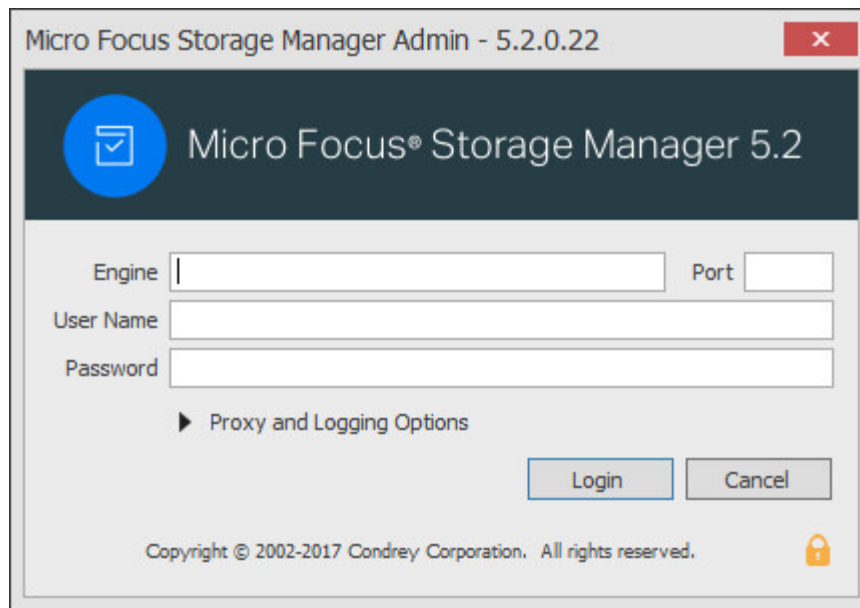
6 Edit any needed parameters settings and click **Next**.



- 7 Click **Next**.
- 8 Click **Finish**.

6.5 Update SMAAdmin

- 1 On the Windows server or workstation where you will run SMAAdmin, copy to a directory the `SM-AD_5_2_0.iso`.
- 2 Mount the `SM-AD_5_2_0.iso` file.
- 3 At the root of the `SM-AD_5_2_0.iso` image, double-click `SMAAdmin-AD-Installer-5.2-xx.exe`.
- 4 When asked if you want to run this file, click **Run**.
- 5 Agree to the licensing terms and conditions and click **Install**.
- 6 When notified that the setup was successful, click **Run Admin Client**.
The SMAAdmin login dialog box appears.



7 In the **Engine** field, specify the DNS name or IP address.

8 In the **Port** field, specify the secure port number.

The default setting is 3009.

9 Specify the username and password.

The user must be a member of the nsmadmins group to be able to log in.

10 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**.

6.6 (Conditional) Install CouchDB

Storage Manager 5.2 includes an optional Work Log that when enabled, maintains a history of Storage Manager policy-enacted events. Data from the Work Log can be used for tracking historical events. For an expanded discussion of the Work Log, see [Work Log Reports](#) in the *Micro Focus Storage Manager 5.2 Administration Guide*.

The Work Log exclusively utilizes Apache CouchDB, an open source NoSQL database. You can deploy CouchDB on the Engine host, a separate server within the on-premises network, or in the cloud.

You can download CouchDB at: <http://couchdb.apache.org/>, which also includes product documentation.

6.7 Administering Storage Manager

You have now completed the upgrade to Storage Manager 5.2 for Active Directory. For administration procedures, refer to the *Micro Focus Storage Manager 5.2 for Active Directory Administration Guide*.

7 Installing Storage Manager 5.2 for Active Directory

This section provides procedures for installing and configuring the Engine, database, Event Monitor, Agents, and the SMAdmin administrative utility. For information on how these components work in a Storage Manager deployment, see Chapter 2 “[Overview](#)” in the *Micro Focus Storage Manager 5.2 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](#), obtained a Storage Manager 5.x for Active Directory product license as indicated in [Chapter 2, “Licensing the Product,” on page 13](#), and installed an SQL Server instance as specified in [Chapter 3, “Installing and Configuring an SQL Server Instance,” on page 17](#).

- ◆ [Section 7.1, “Performing Installation Tasks as a Domain Administrator,” on page 89](#)
- ◆ [Section 7.2, “Accessing the Product Contents,” on page 90](#)
- ◆ [Section 7.3, “Installing the Engine,” on page 90](#)
- ◆ [Section 7.4, “Installing the License,” on page 91](#)
- ◆ [Section 7.5, “Configuring the Database,” on page 92](#)
- ◆ [Section 7.6, “Configuring the Engine,” on page 95](#)
- ◆ [Section 7.7, “Setting Rights and Privileges on Managed Storage,” on page 101](#)
- ◆ [Section 7.8, “Installing and Configuring the Event Monitor,” on page 105](#)
- ◆ [Section 7.9, “Installing and Configuring the Agents,” on page 109](#)
- ◆ [Section 7.10, “Installing SMAdmin,” on page 113](#)
- ◆ [Section 7.11, “Authorizing the Event Monitor,” on page 114](#)
- ◆ [Section 7.12, “Authorizing the Agents,” on page 114](#)
- ◆ [Section 7.13, “\(Conditional\) Install CouchDB,” on page 115](#)
- ◆ [Section 7.14, “Administering Storage Manager,” on page 115](#)

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

7.1 Performing Installation Tasks as a Domain Administrator

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

7.2 Accessing the Product Contents

- 1 On the Windows server that will host the Engine, copy to a directory the `SM-AD_5_2_0.iso` file that was made available to you following your purchase of Micro Focus Storage Manager 5.2 for Active Directory.
- 2 Mount the `SM-AD_5_2_0.iso` file.
- 3 Note the location of the mounted ISO.
This is the installation source you will use to install Storage Manager 5.2 for Active Directory components.

7.3 Installing the Engine

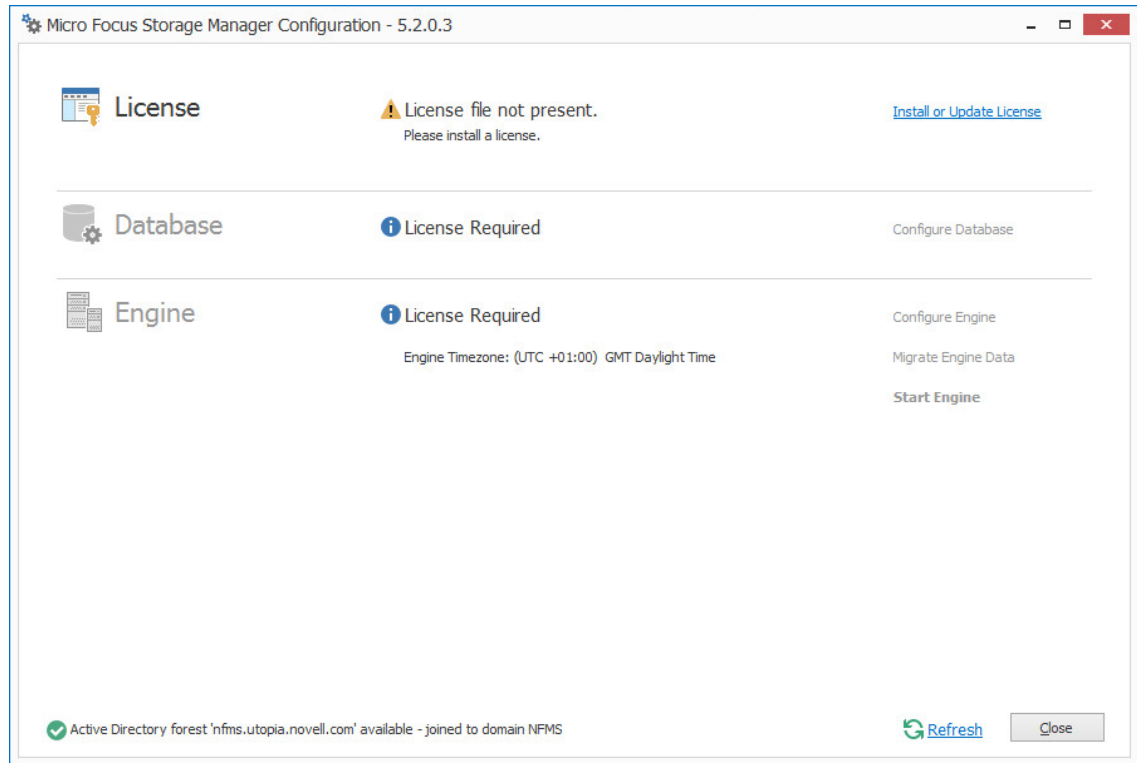
Storage Manager uses only one Engine per forest. The Engine can be installed on host server that meets the following minimum requirements:

- ♦ Microsoft Windows Server 2016 (Member Server)
- ♦ Microsoft Windows Server 2012 R2 (Member Server)
- ♦ Microsoft Windows Server 2012 (Member Server)
- ♦ Microsoft Windows Server 2008 R2 (Member Server)
- ♦ At least 4 GB RAM
- ♦ For quota management, Microsoft File System Resource Manager (FSRM) must be installed; see [Section 1.2, "File Server Resource Manager," on page 7](#).
- ♦ Forest functional level of Windows Server 2003 or later

Other notable information about the Engine:

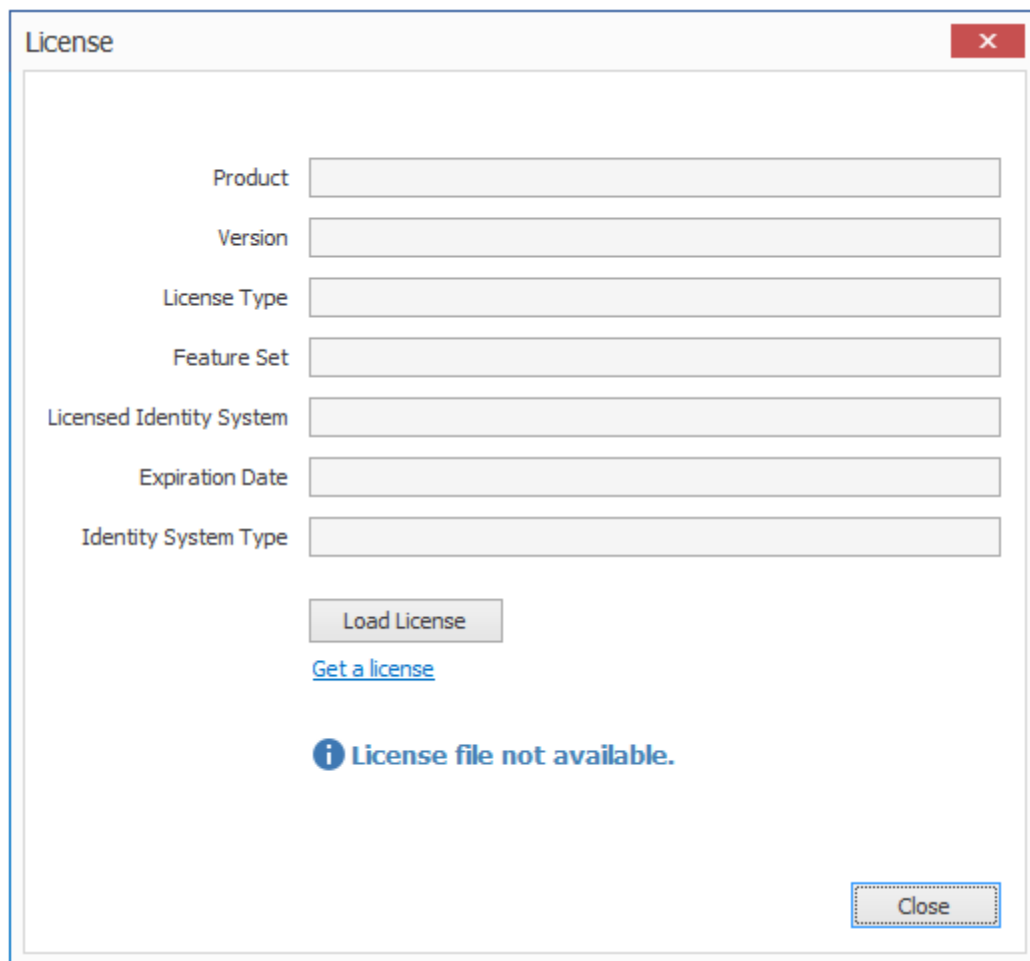
- ♦ The Engine runs as a native NT service that is configured to start by using the Local System account
 - ♦ The default Engine port is 3009
 - ♦ The firewall inbound rule is added during the Engine installation
- 1 At the root of the `SM-AD_5_2_0.iso` image, double-click `SMEngine-Installer-5.2-x64-xxx.exe`.
 - 2 When you are asked if you want to run this file, click **Run**.
 - 3 Agree to the licensing terms and conditions and click **Install**.
 - 4 When notified that the setup was successful, click **Run Setup Utility**.
 - 5 Accept the installation path or indicate a new path by using the **Browse** button.

The Configuration Utility is launched.



7.4 Installing the License

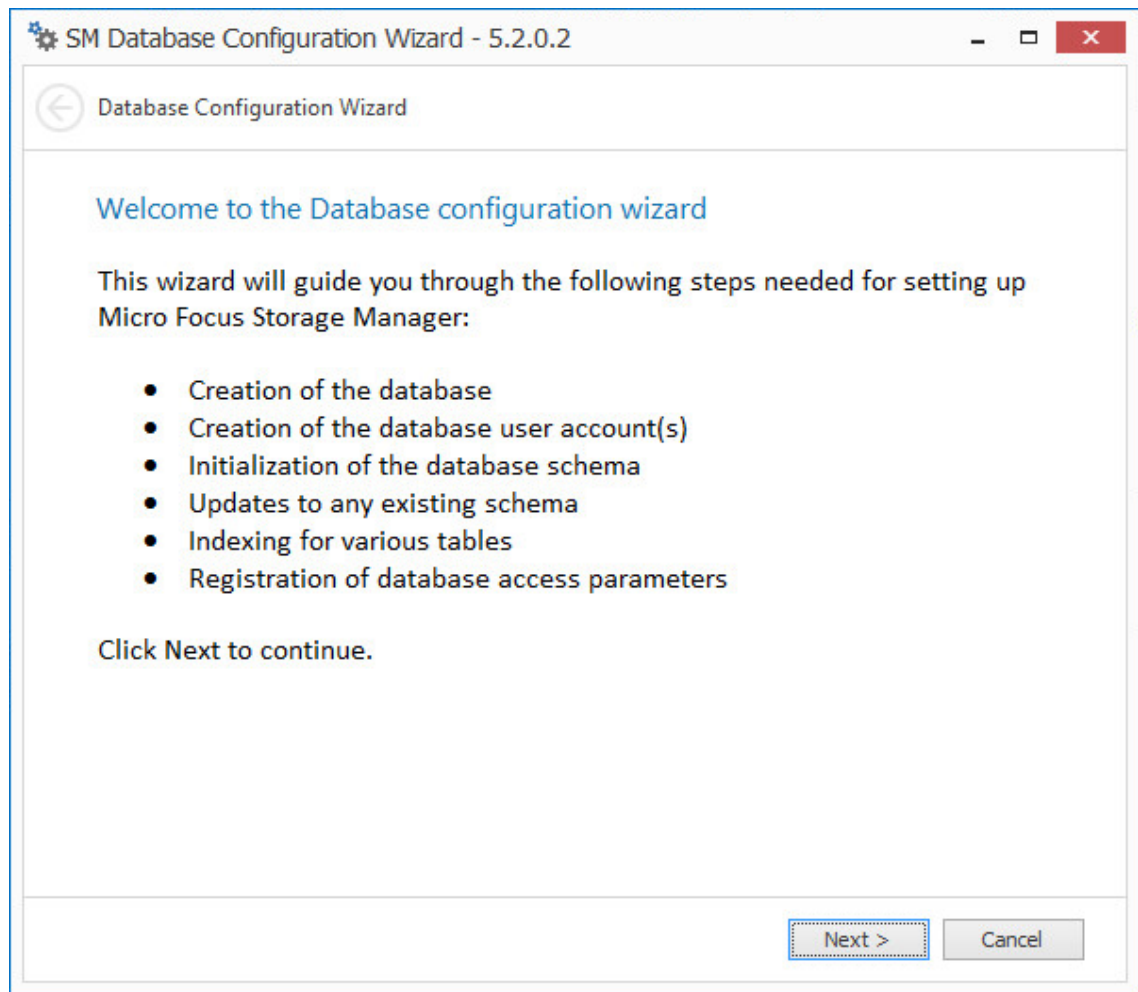
- 1 In the Configuration Utility, click **Install or Update License**.
The License dialog box appears.
If no license is found, the license properties will be empty.



- 2 Click **Load License**, then browse to and select the license file.
- 3 When the confirmation prompt appears, click **Yes**.
- 4 Examine the license properties to ensure that the license is valid.
- 5 Click **Close**.

7.5 Configuring the Database

- 1 In the Configuration Utility, click **Configure Database**.



The page indicates what database configuration tasks are to be completed in this wizard.

2 From the wizard page, read the overview of what will be configured and click **Next**.

The following page appears:

The screenshot shows the 'SM Database Configuration Wizard - 5.2.0.2' window. The main content area is titled 'Database Configuration Wizard' and contains several sections:

- Database Properties:** A dropdown menu for 'Type' is set to 'SQL Server 2012'.
- Communication:** 'Database Host Address' is 'fmsadutp.nfms.utopia.novell.com', 'Port' is '1433', and 'Initial Database' is 'fsfdb'.
- Database Service Account:** 'Database Account Name' is 'fsfadmin', 'Password' and 'Verify Password' fields are empty.
- Database Admin Credentials:** 'Database Administrator' is 'sa', and 'Password' field is empty.

At the bottom right, there are 'Next >' and 'Cancel' buttons.

This page lets you establish the settings needed for the Engine to communicate with the database.

Database Properties: Displays information on the database.

Type: Displays the minimum supported version of the database, which is SQL Server 2012.

Communication: Specifies address, port number, and name of the database.

Database Host Address: Specify the host address of the server where the database is installed.

Port: The default SQL Server port setting is 1433. If there is a port conflict, you can change it.

Initial Database: The default name of the Storage Manager database.

Database Service Account: Use this region to set authentication information for the database service account, which is the database account that the Engine uses to sign in to the database.

Database Account Name: By default, the database account is fsfadmin, which you can change in this field.

Password: Specify a password for the service account to connect to the database.

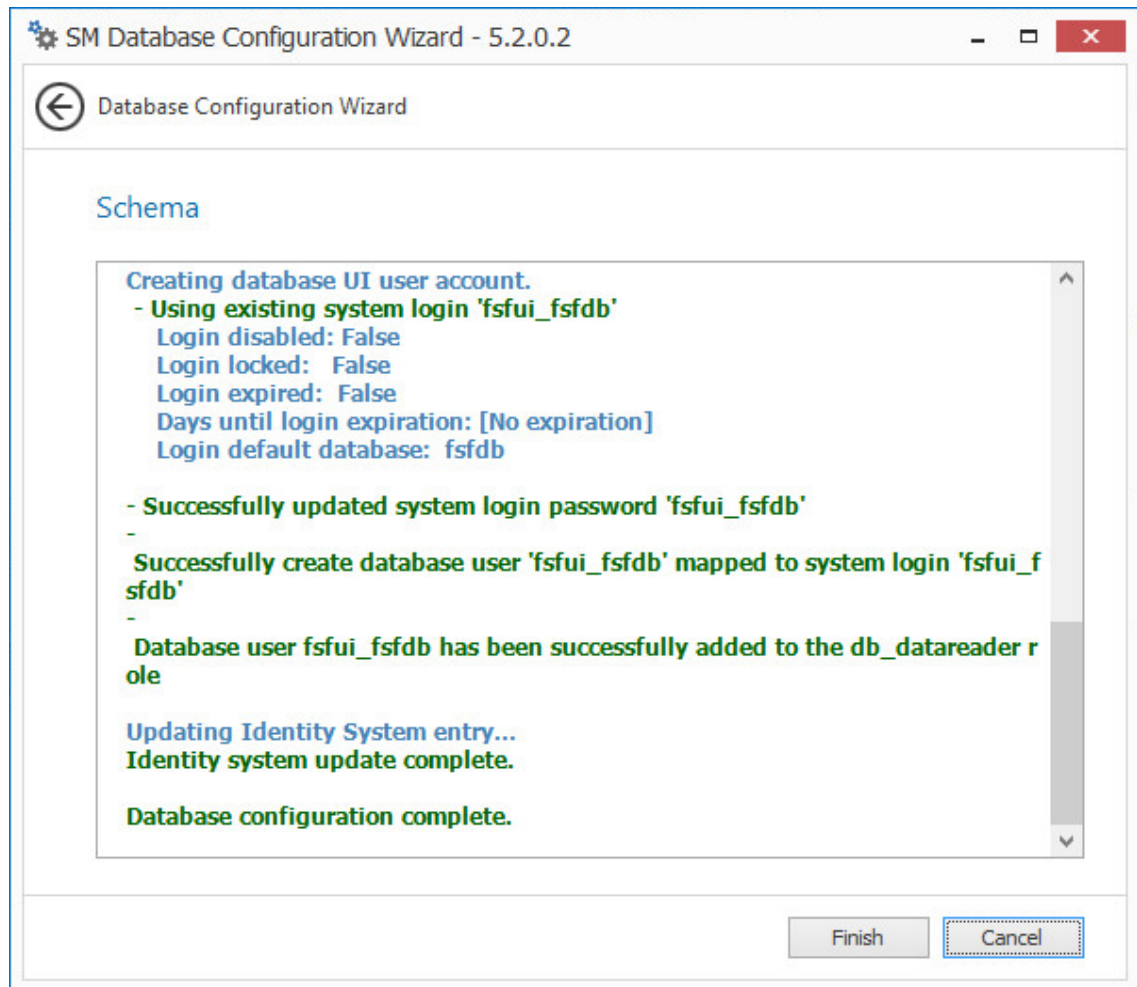
Verify Password: Specify the password again in this field.

Database Admin Credentials: Use this region to establish the database administrator name and credentials.

Database Administrator: Specify the SQL Server administrator name.

Password: Specify the SQL Server administrator password.

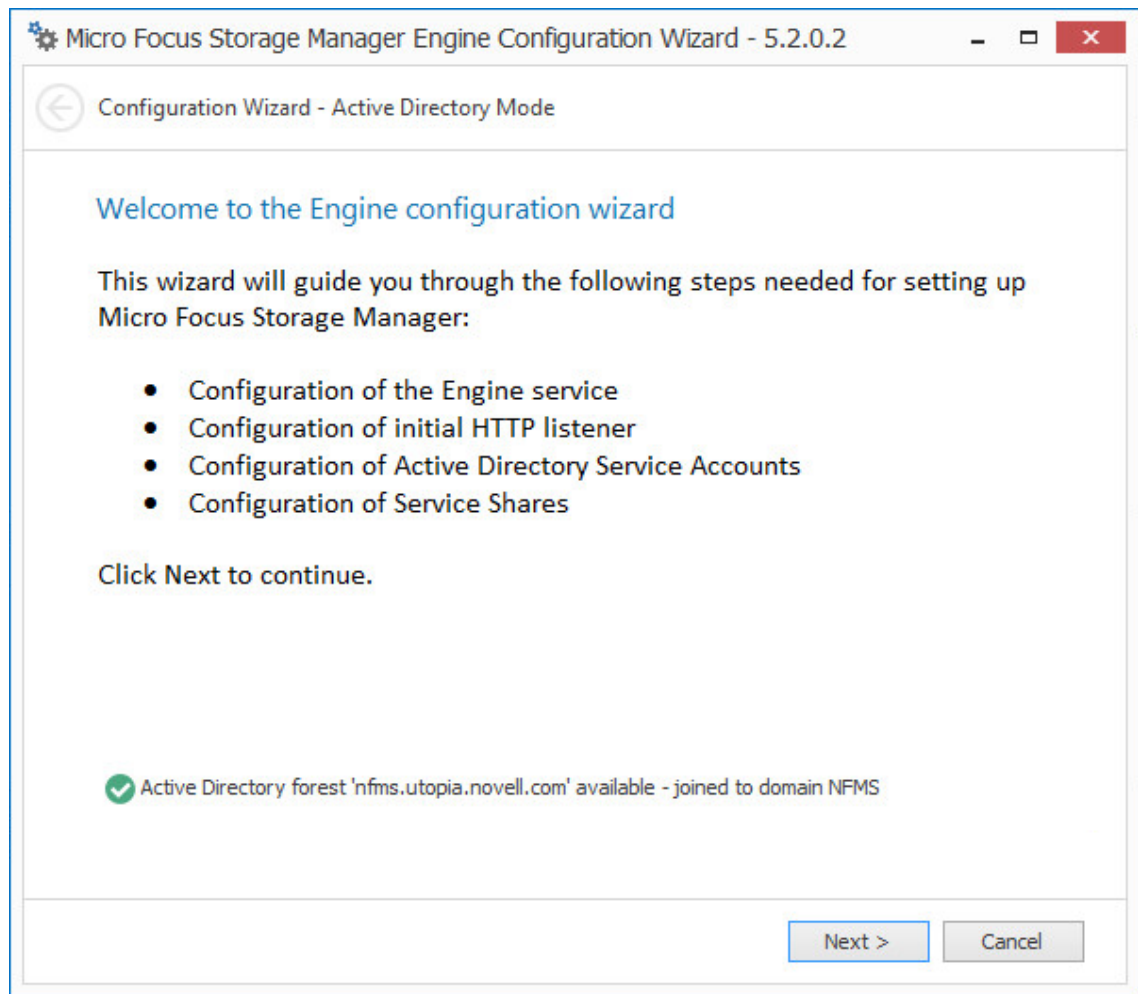
- 3 Complete the fields and click **Next**.



- 4 Review the configuration log and click **Finish**.

7.6 Configuring the Engine

- 1 In the Configuration Utility, click **Configure Engine**.



2 From the wizard page, read the overview of what will be configured and click **Next**.

Micro Focus Storage Manager Engine Configuration Wizard - 5.2.0.2

Configuration Wizard - Active Directory Mode

Basic Options

HTTP Listener

Host Address: 0.0.0.0

SSL Port: 3009

SSL Certificate

Subject Name: fmsadutp.nfms.utopia.novell.com

Expiration Days: 3,649 Expiration Date: 3/26/2027 4:11:38 PM

Key Length: 2048

Details Generate

Next > Cancel

This page lets you confirm or change basic Engine configuration settings.

HTTP Listener: Communication parameters for the Engine.

Host Address: Unless you want the Engine to only listen on a certain IP address, leave this setting as it is.

SSL Port: Unless there is a port conflict, leave the setting at 3009.

SSL Certificate: Details for the SSL certificate that will be generated.

Subject Name: The name of the certificate that will be generated. The server name is listed by default.

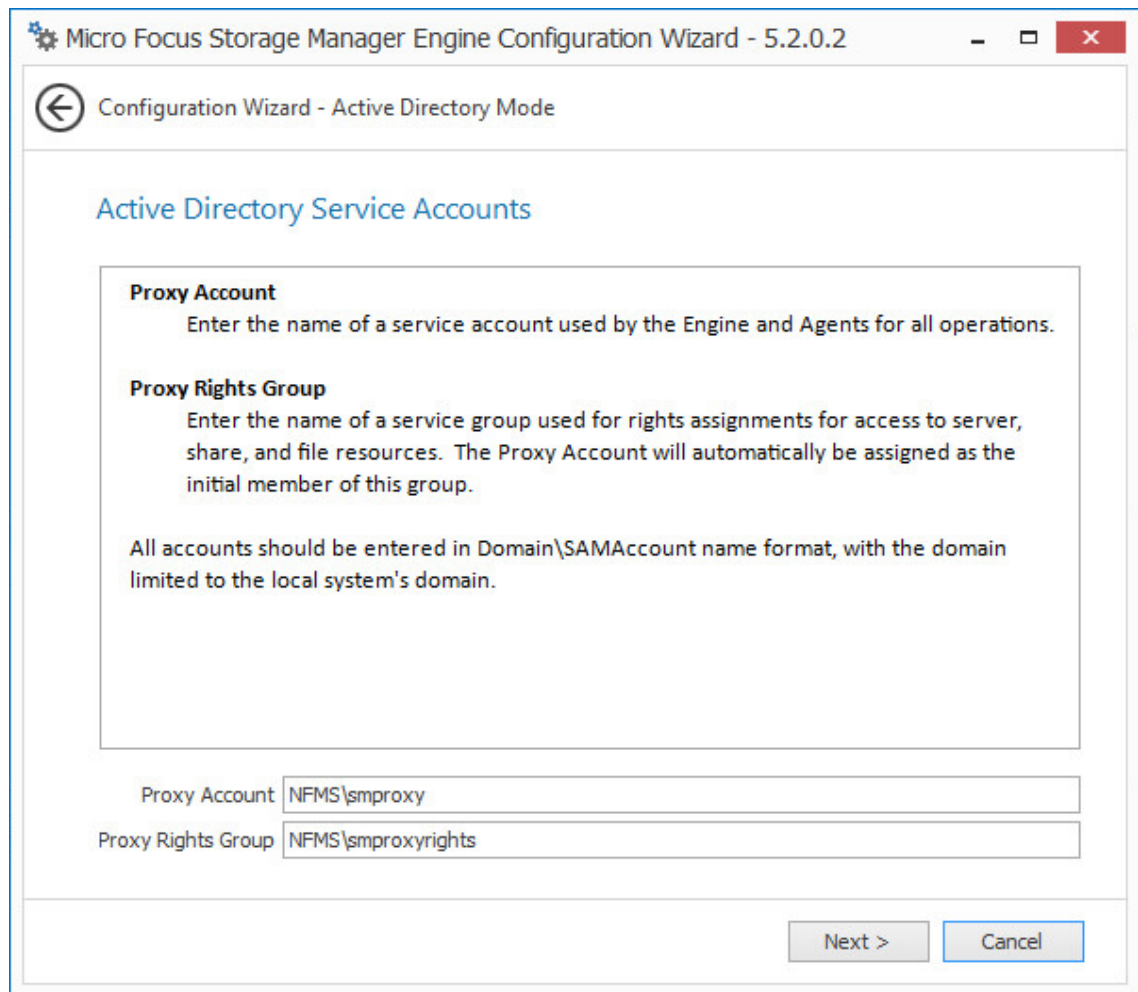
Expiration Days: The life span of the security certificate, which is set at 10 years by default.

Key Length: The SSL certificate encryption setting, which is set at 2048 by default.

Details: Click the button to view the certificate data.

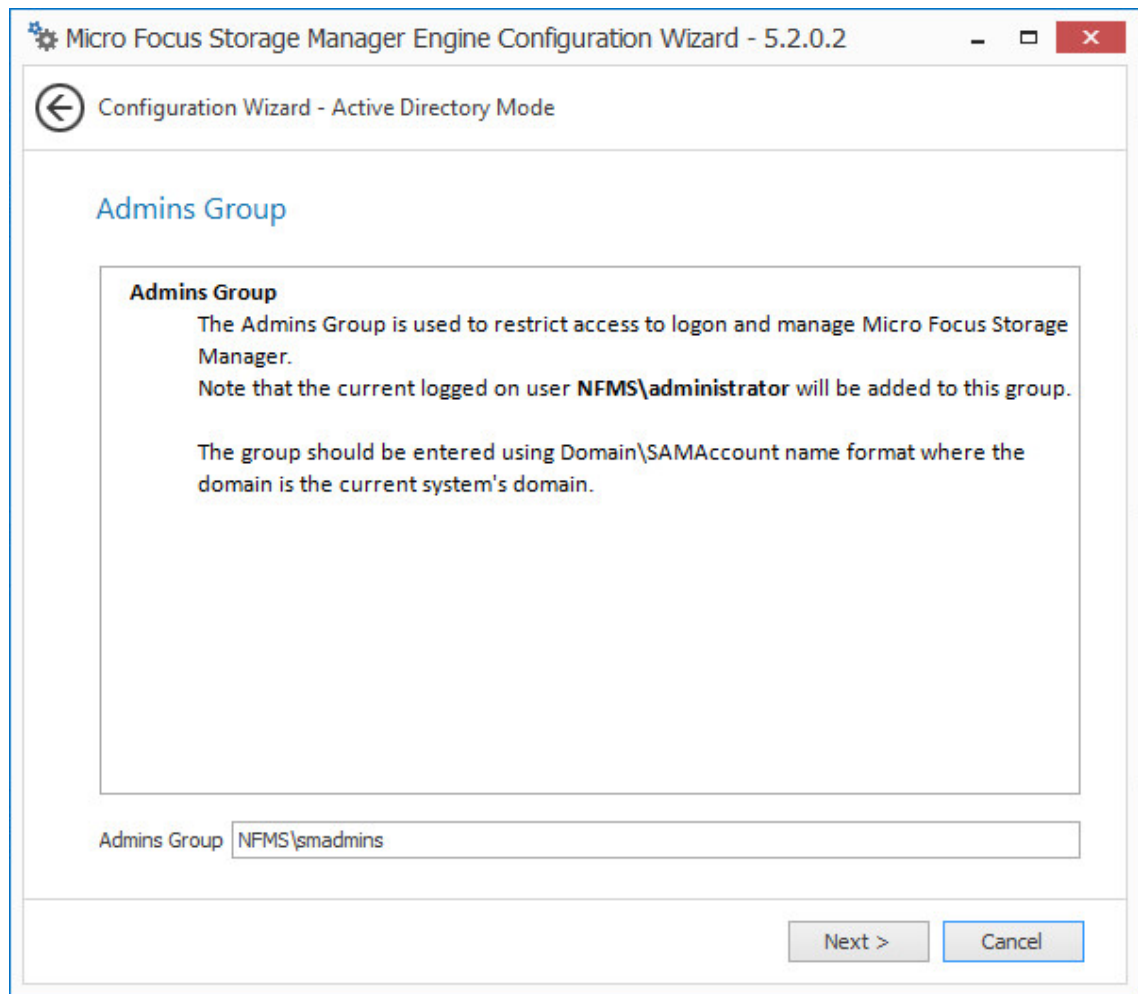
Generate: If you modify any of the settings in the SSL Certificate region, click this button to generate a new certificate.

- 3 Edit any needed parameters settings and click **Next**.

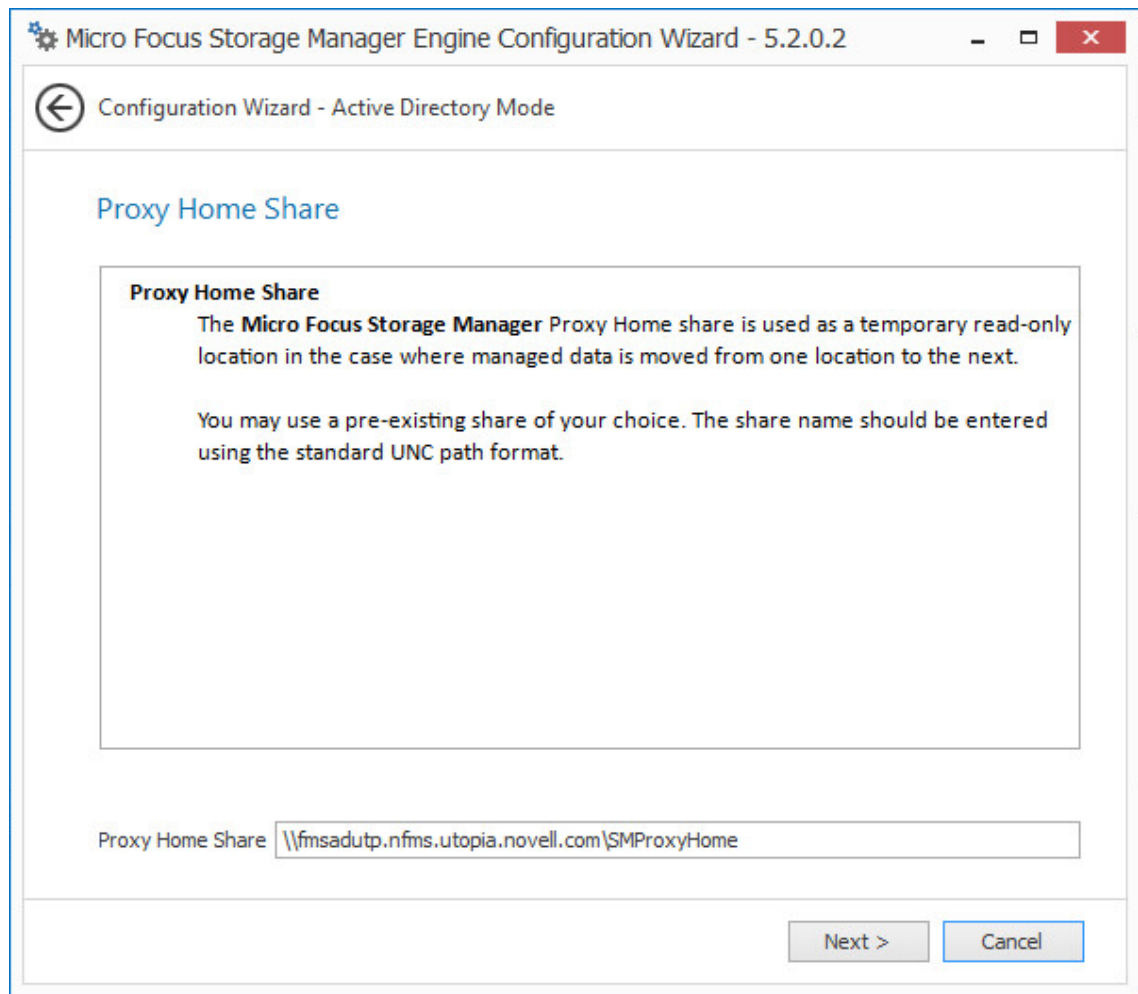


This page lets you establish a name for the proxy account and proxy rights group. Storage Manager uses a proxy account so that it can perform tasks necessary for storage management.

- 4 Click **Next**.

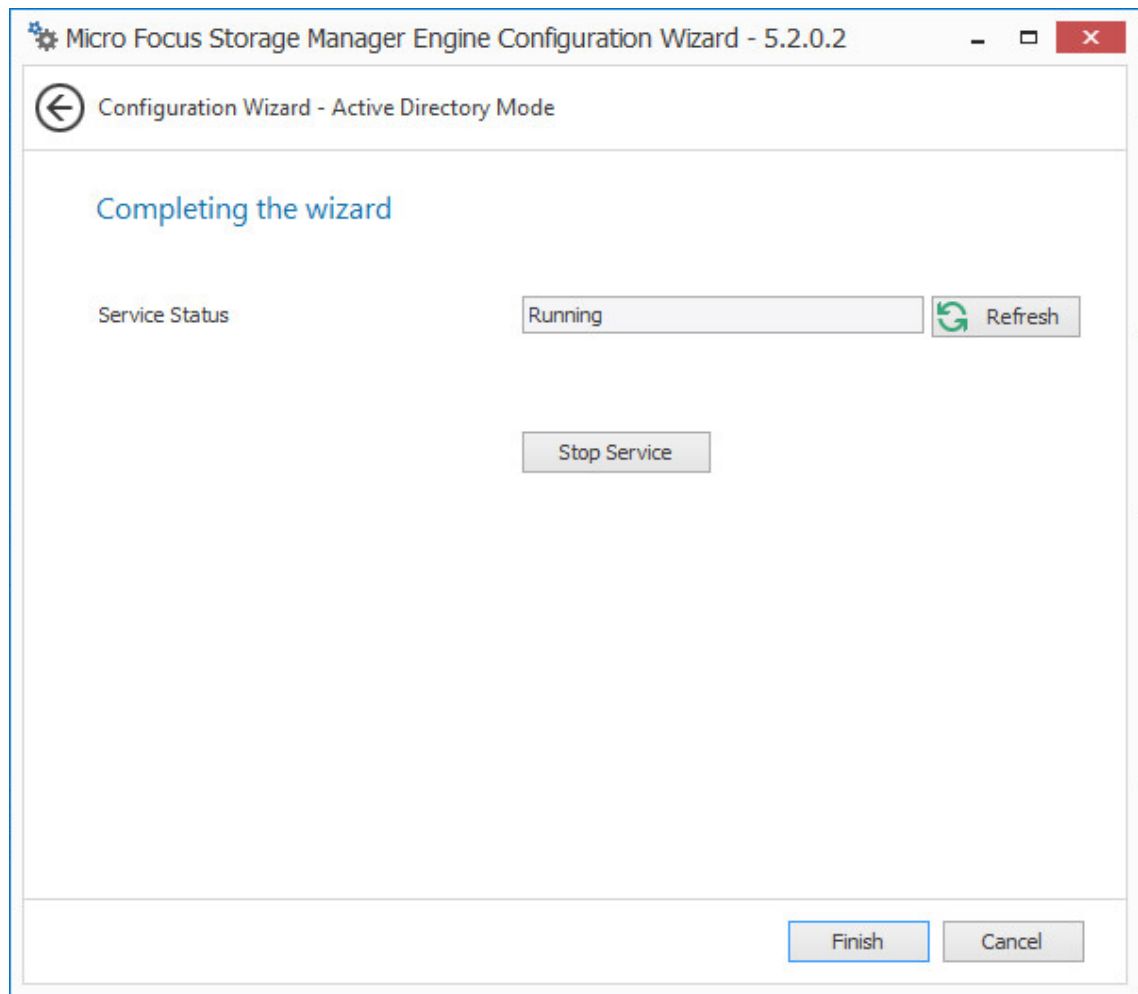


- 5 Specify the name for the Admins Group, or use the default name, and click **Next** to create the group.



The Proxy Home Share that you establish in this page is the read-only location where users' managed path attributes are temporarily set when data is moved because of a change in policy.

6 Click **Next**.



7 Click **Finish**.

With a valid license and a running Engine, you are now ready to set rights and privileges on managed storage.

8 Proceed with [Section 7.7, “Setting Rights and Privileges on Managed Storage,”](#) on page 101.

7.7 Setting Rights and Privileges on Managed Storage

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

7.7.1 Granting Rights

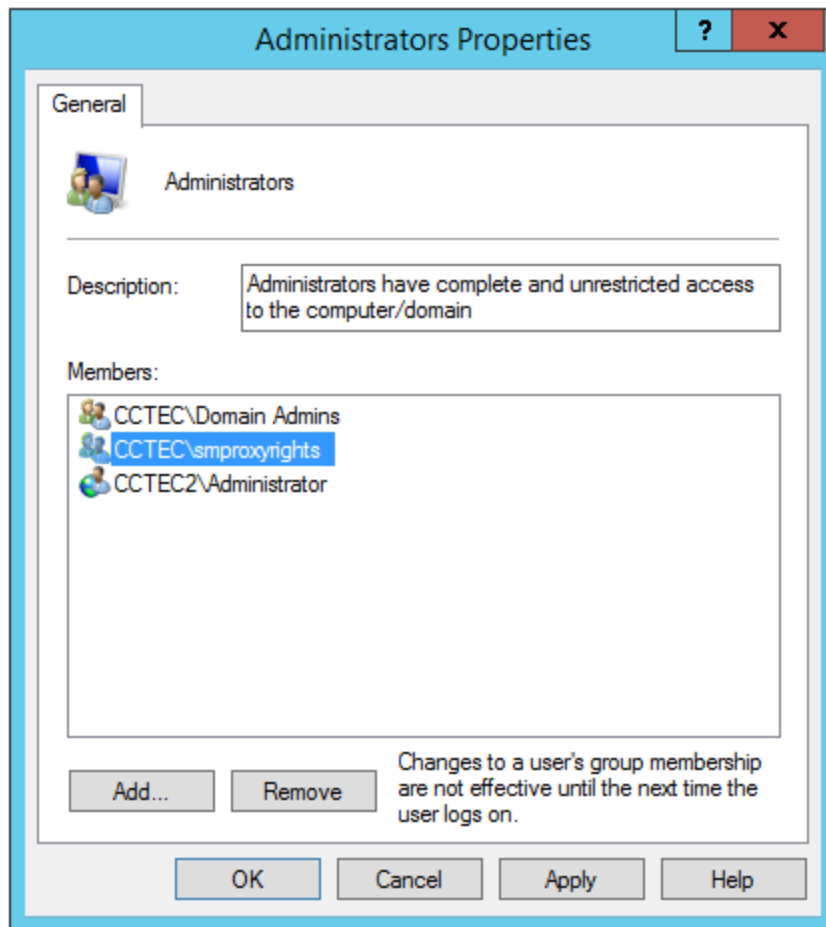
Every share to be managed by Storage Manager must have proper rights assigned to the smproxyrights group.

- 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 smproxyrights group for each share that Storage Manager will manage.
- 3 Do one of the following:
 - ♦ If you are proxying storage on a member server, go to [Section 7.7.2, “Granting Privileges on a Member Server,”](#) on page 102.
 - ♦ If you are proxying storage on a domain controller, go to [Section 7.7.3, “Granting Privileges on a Domain Controller,”](#) on page 103.

7.7.2 Granting Privileges on a Member Server

Every server that has storage managed by Storage Manager must have certain privileges granted to the smproxyrights group. If you install the Agent on a server, this privilege assignment is made automatically. If you use the Agent on one server to act as a Proxy Agent on another server—rather than installing an 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\smproxyrights`.

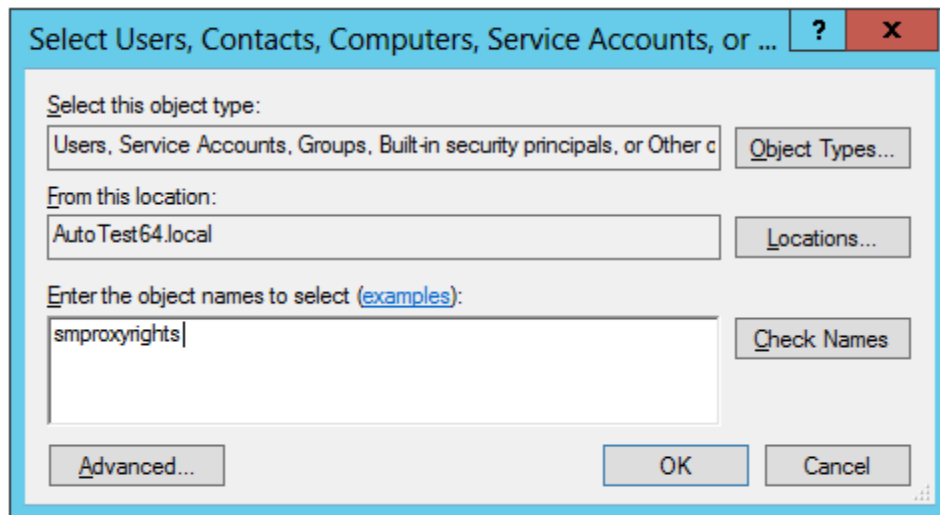


- 10 Click **OK** to save the setting.
- 11 Proceed with [Section 7.8, "Installing and Configuring the Event Monitor,"](#) on page 105.

7.7.3 Granting Privileges on a Domain Controller

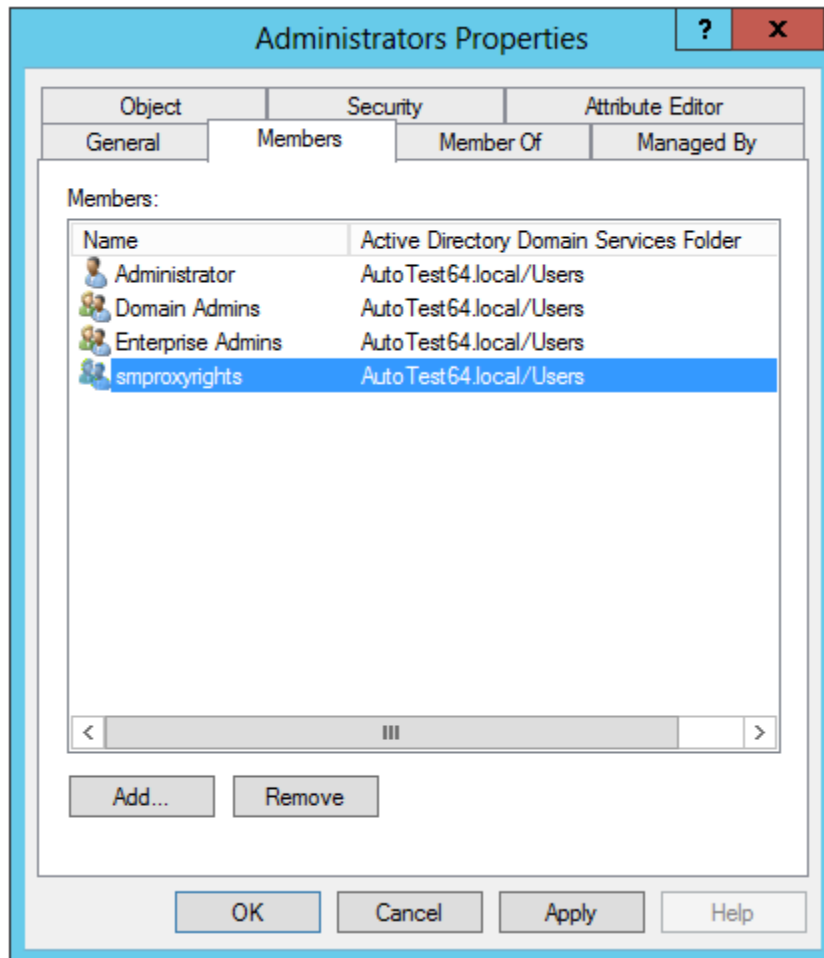
Every server that has storage managed by Storage Manager must have certain privileges granted to the smproxyrights group. If you install the Agent on a server, this privilege assignment is made automatically. If you use the Agent on one server to act as a Proxy Agent on another server—rather than installing an 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 Launch Active Directory Users and Computers.
This brings up the Active Directory Users and Computers page.
- 3 In the left pane, select **Builtin**.
- 4 In the right pane, double-click the **Administrators** group.
- 5 Click the **Members** tab.
- 6 Click **Add**.
- 7 In the **Enter the object names to select** field, type: smproxyrights



8 Click Check Names.

9 Click OK.



10 Click OK.

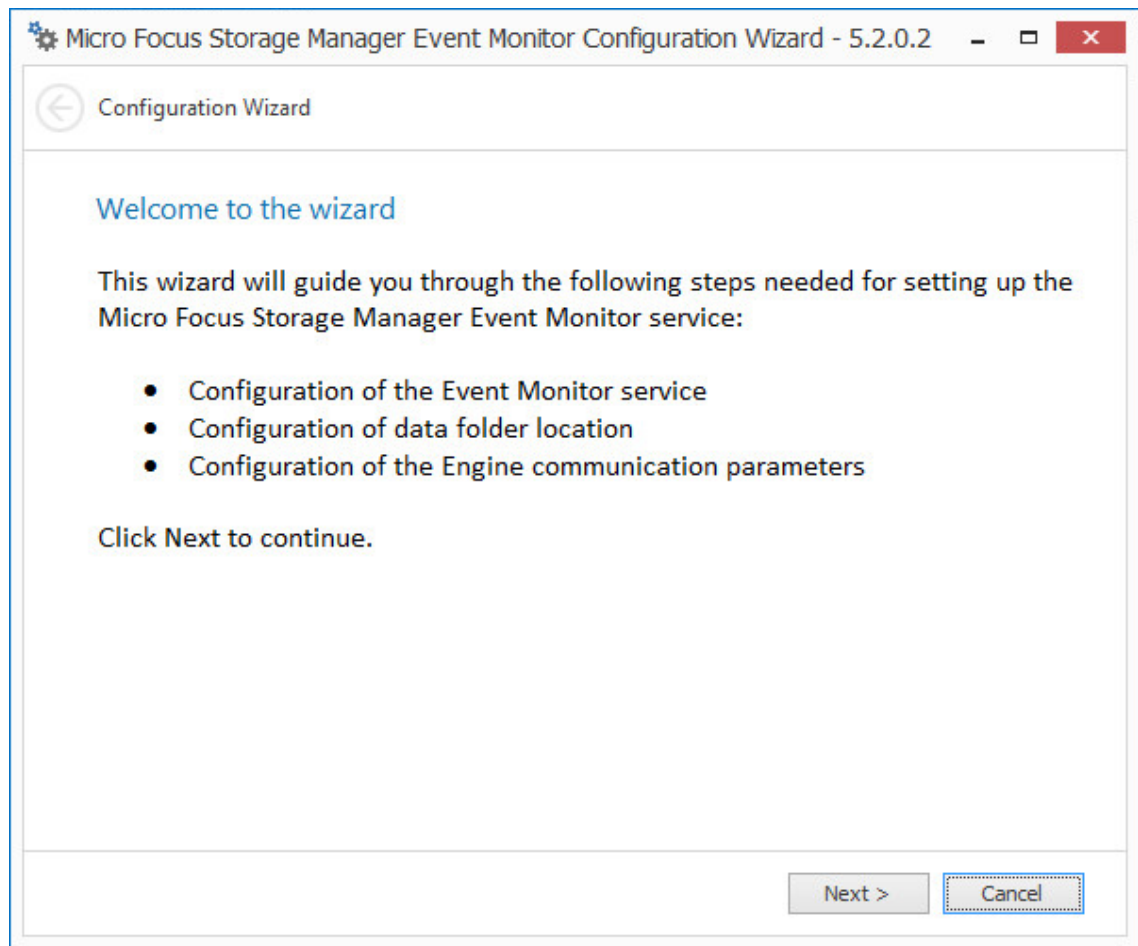
7.8 Installing and Configuring the Event Monitor

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

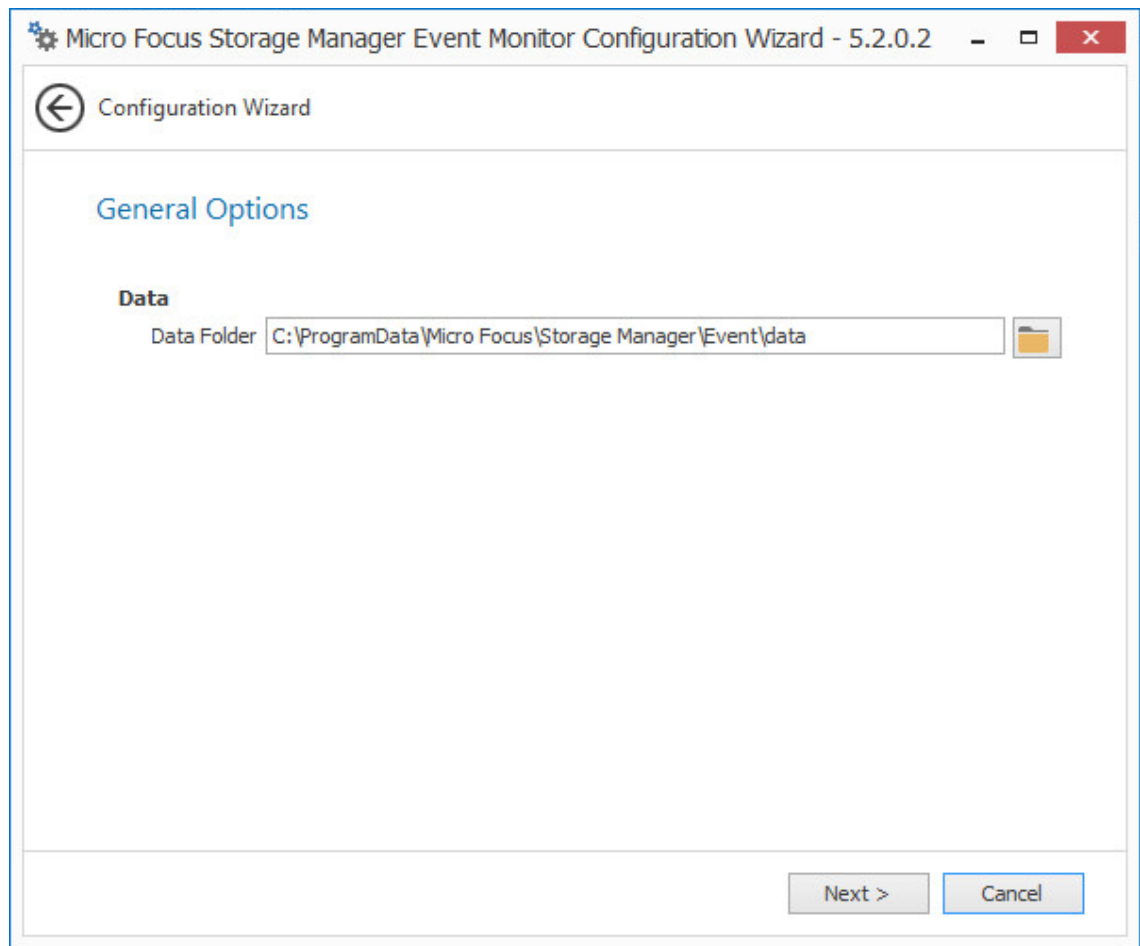
- ◆ Microsoft Windows Server 2016 (Member Server)
- ◆ Microsoft Windows Server 2012 R2 (Member Server)
- ◆ Microsoft Windows Server 2012 (Member Server)
- ◆ Microsoft Windows Server 2008 R2 (Member Server)
- ◆ At least 4 GB RAM
- ◆ Forest functional level 2003 or later in native mode

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 On the Windows server that will host the Event Monitor, copy to a directory the `SM-AD_5_2_0.iso`.
 - 2 Mount the `SM-AD_5_2_0.iso` file.
 - 3 At the root of the `SM-AD_5_2_0.iso` image, double-click `SMEventMonitor-Installer-5.2-x64-xxx.exe`.
 - 4 When you are asked if you want to run this file, click **Run**.
 - 5 Agree to the licensing terms and conditions and click **Install**.
 - 6 When notified that the setup was successful, click **Run Setup Utility**.

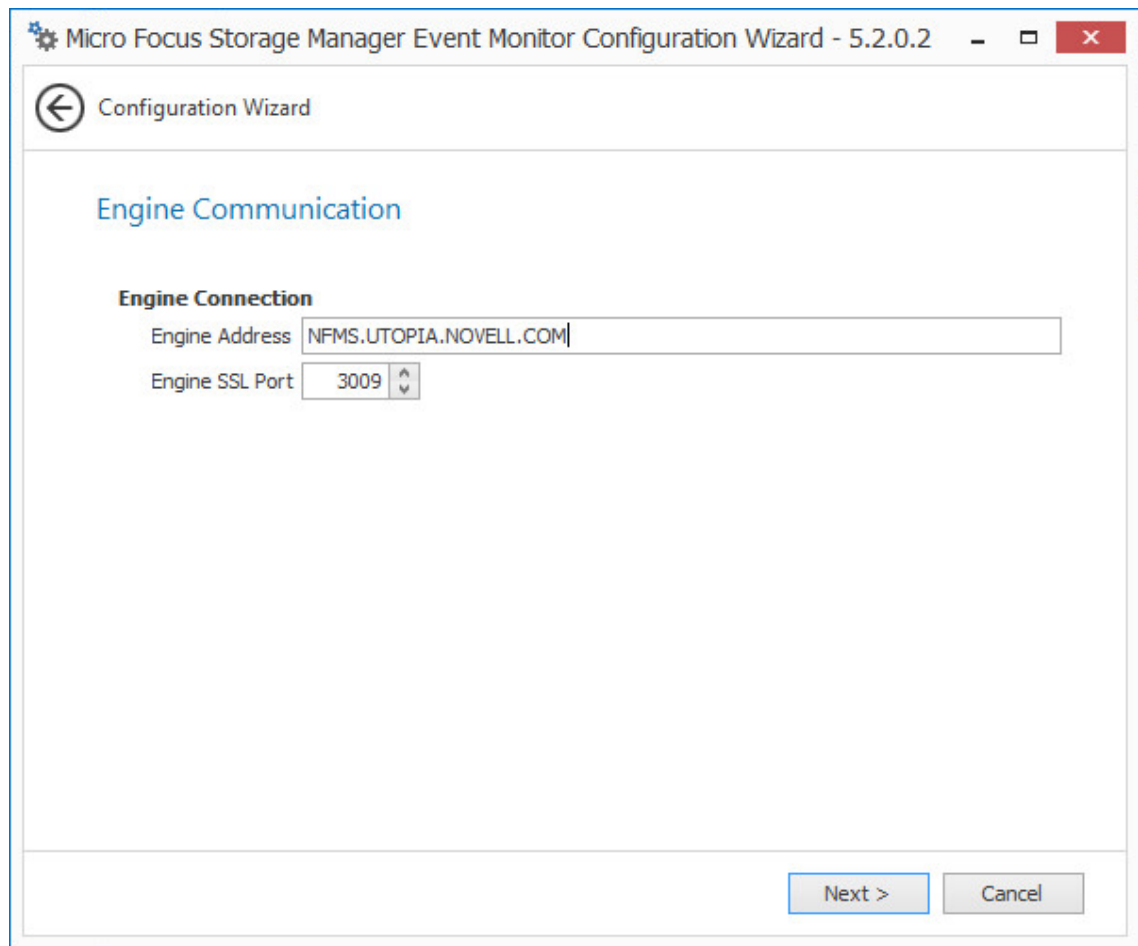


7 From the wizard page, read the overview of the setup steps and click **Next**.



The default path of the Data Folder is displayed, which you can edit. The Data folder contains application data needed by Storage Manager.

- 8 Click **Next**.

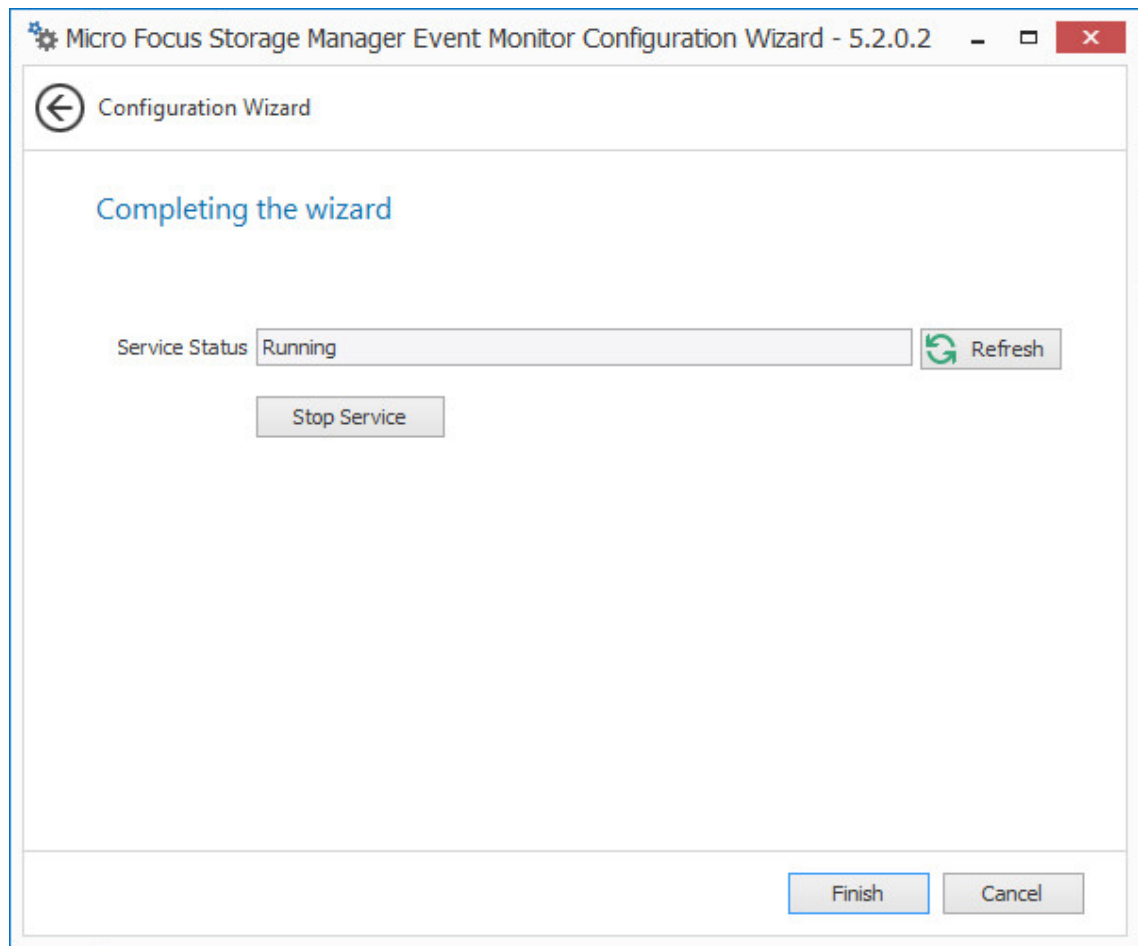


This page lets you set parameters for the Event Monitor to communicate with the Engine.

Engine Address: Specify the DNS name or IP address to the server hosting the Engine here.

Engine SSL Port: Specify the SSL port for the Engine here.

- 9 Enter the Engine connection settings and click **Next**.



10 Click **Finish**.

The Event Monitor is now installed and running. You must still authorize it using SMAAdmin. For procedures, see [Section 7.11, “Authorizing the Event Monitor,”](#) on page 114.

11 Proceed with [Section 7.9, “Installing and Configuring the Agents,”](#) on page 109.

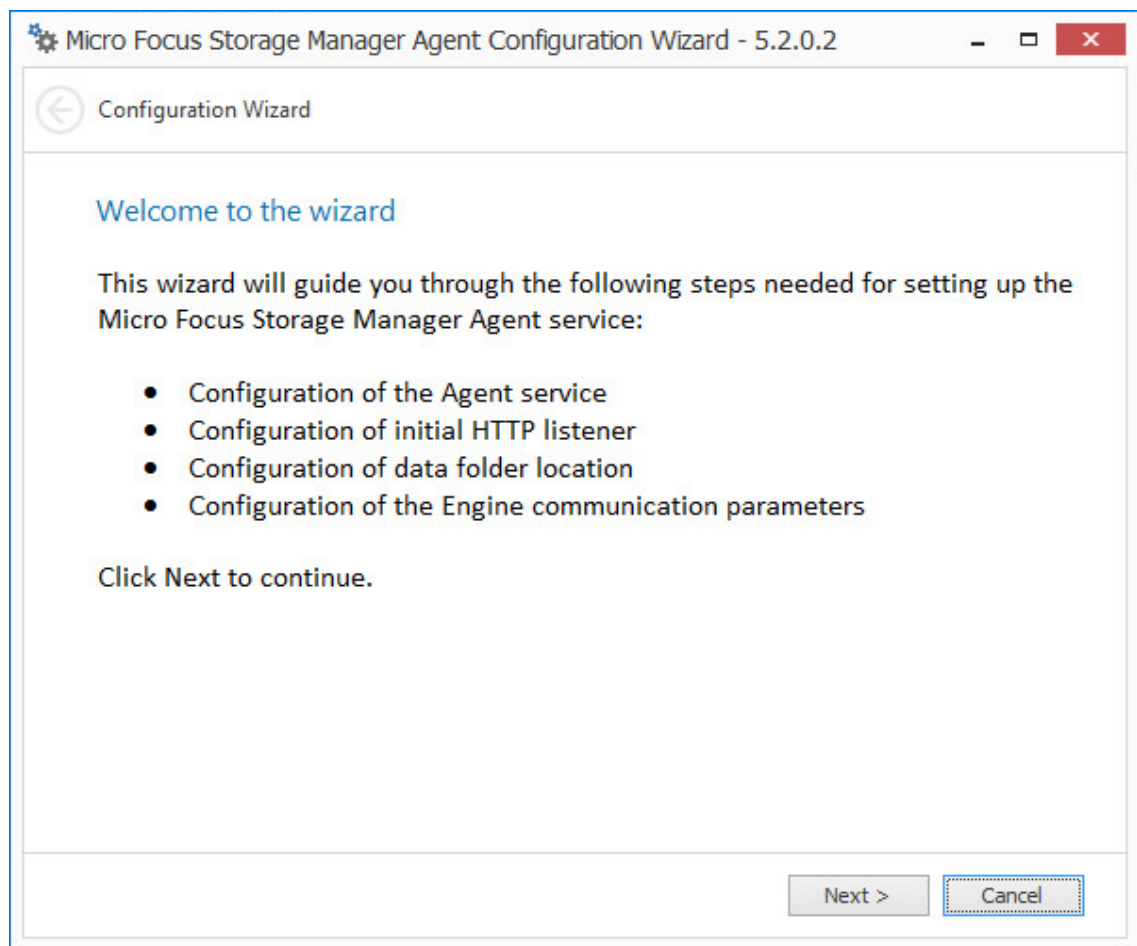
7.9 Installing and Configuring the Agents

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

- ♦ Microsoft Windows Server 2016 (Member Server)
- ♦ Microsoft Windows Server 2012 R2 (Member Server)
- ♦ Microsoft Windows Server 2012 (Member Server)
- ♦ Microsoft Windows Server 2008 R2 (Member Server)
- ♦ At least 4 GB RAM
- ♦ For quota management, Microsoft File System Resource Manager (FSRM) must be installed
See [Section 1.2, “File Server Resource Manager,”](#) on page 7.

Other notable information about Agents:

- ♦ An Agent runs as a native NT service that is configured to start by using the Local System account
 - ♦ The default Agent port is 3011
 - ♦ A firewall inbound rule for the Agent is created during the installation
- 1 On the Windows server that will host the Agent, copy to a directory the `SM-AD_5_2_0.iso`.
 - 2 Mount the `SM-AD_5_2_0.iso` file.
 - 3 At the root of the `SM-AD_5_2_0.iso` image, double-click `SMAgent-Installer-5.2-x64-xxx.exe`.
 - 4 When you are asked if you want to run this file, click **Run**.
 - 5 Agree to the licensing terms and conditions and click **Install**.
 - 6 When notified that the setup was successful, click **Run Setup Utility**.



- 7 From the wizard page, read the overview of the setup steps and click **Next**.

This page lets you confirm or change basic Agent configuration settings.

HTTP Listener: Communication parameters for the Agent.

Host Address: Unless you want the Agent to only listen on a certain IP address, leave this setting as it is.

SSL Port: Unless there is a port conflict, leave the setting at 3011.

SSL Certificate: Details for an SSL certificate that will be generated.

Subject Name: The name of the certificate that will be generated. The server name is listed by default.

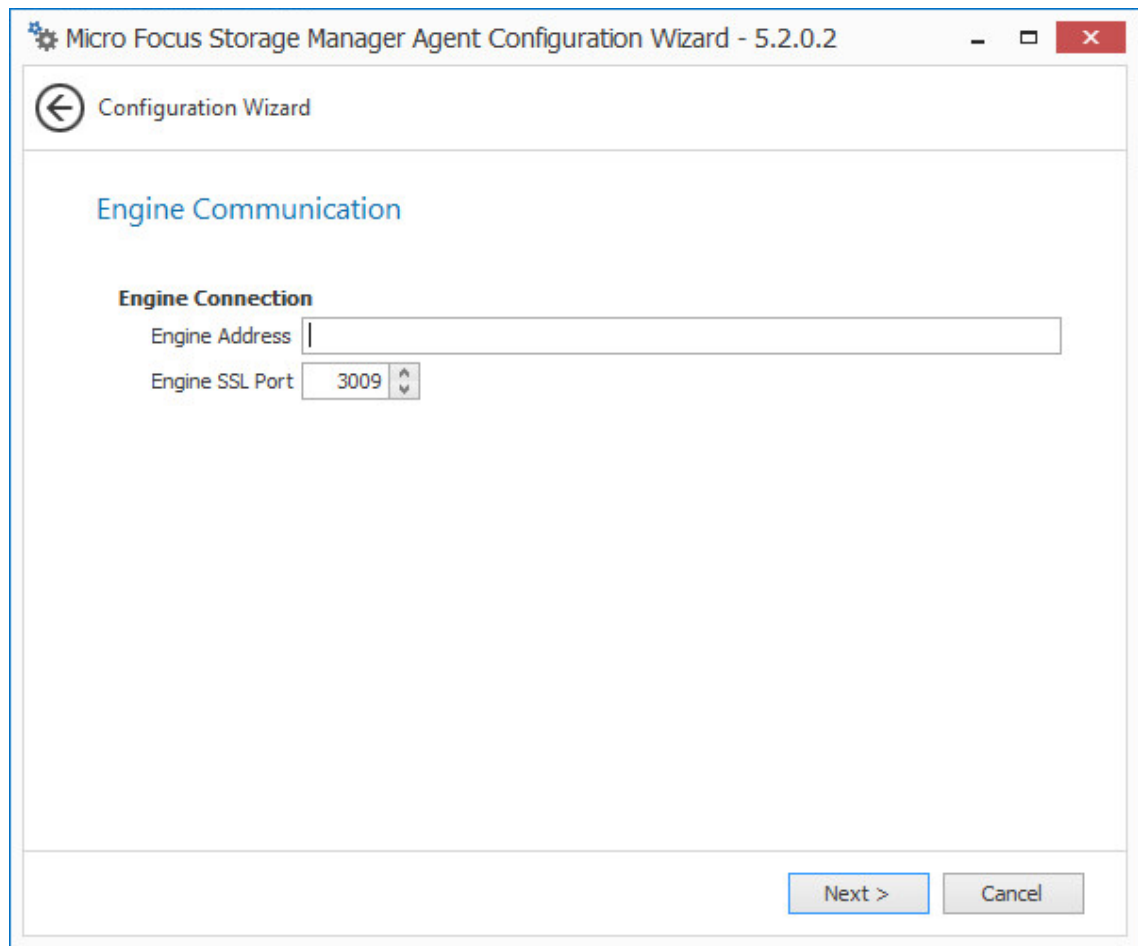
Expiration Days: The life span of the security certificate, which is set at 10 years by default.

Key Length: The SSL certificate encryption setting, which is set at 2048 by default.

Details: Click the button to view the certificate data.

Generate: If you modify any of the settings in the SSL Certificate region, click this button to generate a new certificate.

- 8 Edit any needed parameters settings and click **Next**.

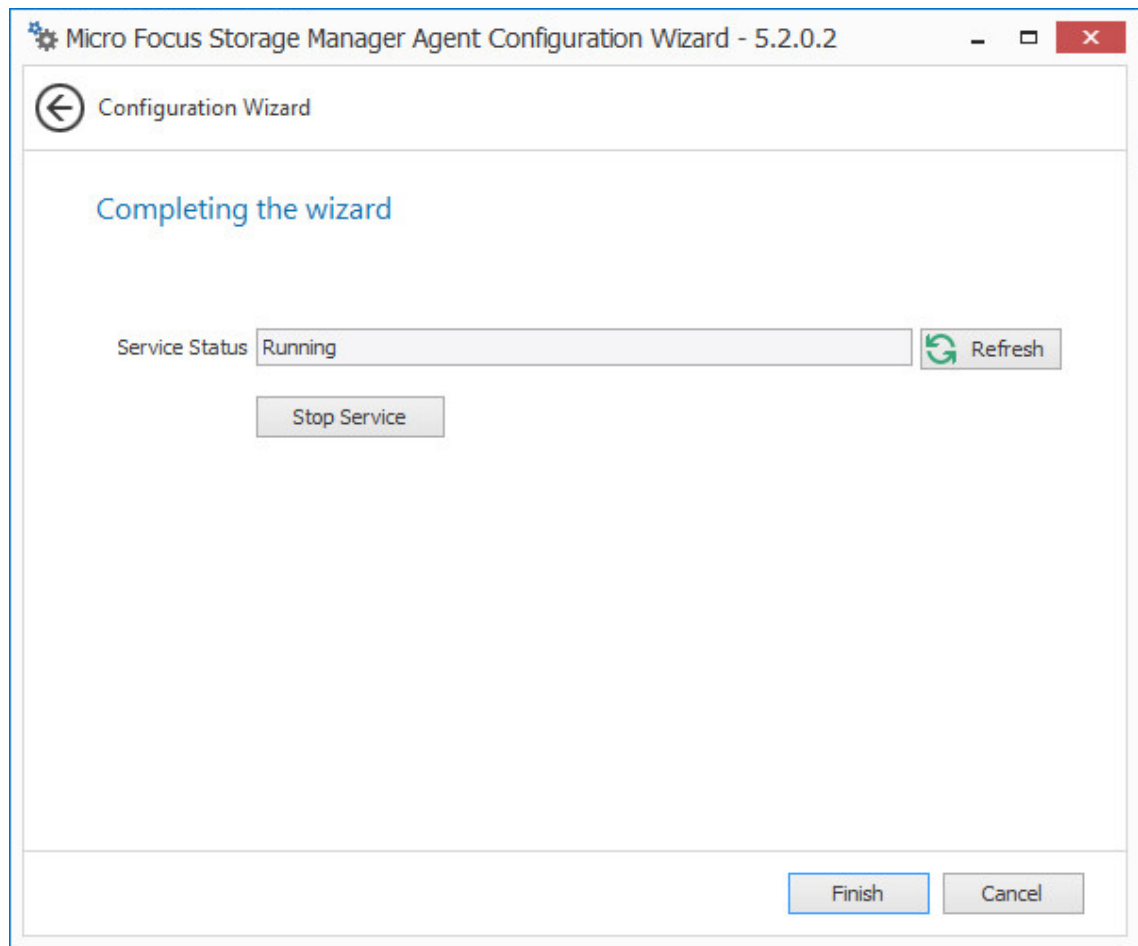


This page lets you set parameters for the Agent to communicate with the Engine.

Engine Address: Specify the DNS name or IP address to the server hosting the Engine here.

Engine SSL Port: Specify the SSL port for the Engine here.

- 9 Enter the Engine connection settings and click **Next**.



- 10 Click **Finish**.
- 11 The Agent is now installed, configured, and running. You must still authorize it using SMAdmin. For procedures, see [Section 7.12, “Authorizing the Agents,”](#) on page 114.
- 12 Proceed with [Section 7.10, “Installing SMAdmin,”](#) on page 113.

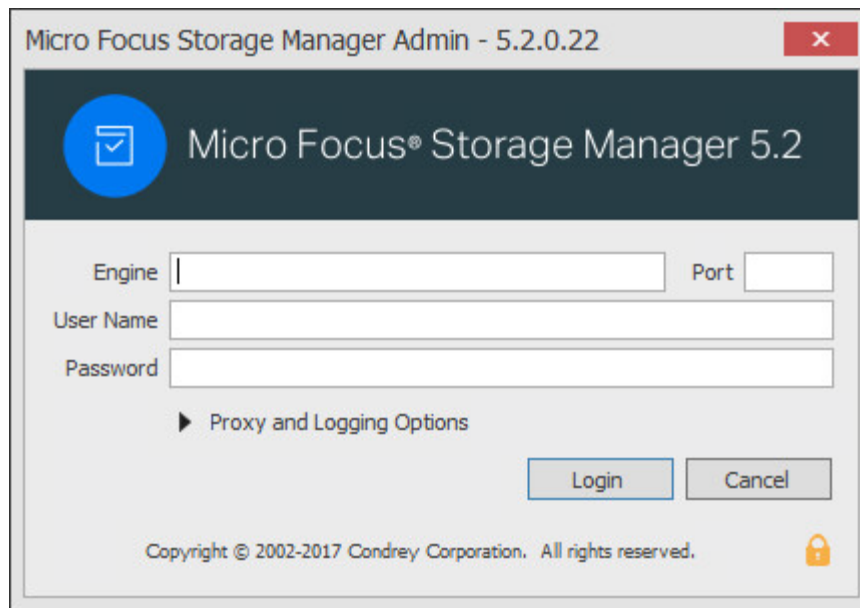
7.10 Installing SMAdmin

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

- ♦ Windows 10, 8, or 7
- ♦ Windows Server 2016, 2012 R2, 2012, 2008 R2, or 2008

- 1 On the Windows server or workstation where you will run SMAdmin, copy to a directory the `SM-AD_5_2_0.iso`.
- 2 Mount the `SM-AD_5_2_0.iso` file.
- 3 At the root of the `SM-AD_5_2_0.iso` image, double-click `SMAdmin-AD-Installer-5.2-xxx.exe`.
- 4 When you are asked if you want to run this file, click **Run**.
- 5 Agree to the licensing terms and conditions and click **Install**.
- 6 When notified that the setup was successful, click **Run Admin Client**.

The SMAdmin login dialog box appears.



- 7 In the **Engine** field, specify the DNS name or IP address.
- 8 In the **Port** field, specify the secure port number.
The default setting is 3009.
- 9 Specify the username and password.
The user must be a member of the smadmins group to be able to log in.
- 10 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**.
- 11 Proceed with [Section 7.11, “Authorizing the Event Monitor,”](#) on page 114.

7.11 Authorizing the Event Monitor

- 1 In SMAAdmin, click **Event Monitors**.
- 2 Select the listed Event Monitor.
- 3 Click **Authorize**.
- 4 When you are asked if you want to authorize the selected Event Monitor, click **Yes**.
- 5 When the Results page appears, click **Close**.
- 6 Proceed with [Section 7.12, “Authorizing the Agents,”](#) on page 114.

7.12 Authorizing the Agents

- 1 Click **Agent Servers**.
- 2 Select a listed Agent.
- 3 Click **Authorize**.
- 4 When you are asked if you want to authorize the selected Agent click **Yes**.

You can select multiple Agents and authorize them at the same time.

5 When the Results page appears, click **Close**.

7.13 (Conditional) Install CouchDB

Storage Manager 5.2 includes an optional Work Log that when enabled, maintains a history of Storage Manager policy-enacted events. Data from the Work Log can be used for tracking historical events. For an expanded discussion of the Work Log, see [Work Log Reports](#) in the *Micro Focus Storage Manager 5.2 Administration Guide*.

The Work Log exclusively utilizes Apache CouchDB, an open source NoSQL database. You can deploy CouchDB on the Engine host, a separate server within the on-premises network, or in the cloud.

You can download CouchDB at: <http://couchdb.apache.org/>, which also includes product documentation.

7.14 Administering Storage Manager

You have now completed the installation of Storage Manager 5.2 for Active Directory. For administration procedures, refer to the *Micro Focus Storage Manager 5.2 for Active Directory Administration Guide*.

A

Documentation Updates

This section contains information about documentation content changes that were made in this *Micro Focus Storage Manager 5.2 for Active Directory Installation Guide* after the initial release of 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:

A.1 May 16, 2017

Updates were made to the following sections:

Location	Update Description
Section 5.8, "(Conditional) Install CouchDB," on page 73.	New section.
Section 6.6, "(Conditional) Install CouchDB," on page 87.	New section.
Section 7.13, "(Conditional) Install CouchDB," on page 115.	New section.

A.2 December 13, 2016

Updates were made to the following sections:

Location	Update Description
Chapter 6, "Upgrading from Storage Manager 5.x for Active Directory to 5.2," on page 75.	New section.

A.3 August 16, 2016

Updates were made to the following sections:

Location	Update Description
Chapter 4, "Migrating from Storage Manager 3.1.1," on page 35.	Procedures throughout this chapter were corrected.

A.4 July 19, 2016

Updates were made to the following sections:

Location	Update Description
Chapter 5, "Upgrading from Storage Manager 4.x for Active Directory to 5.2," on page 61.	New section.

A.5 October 7, 2014

Updates were made to the following sections:

Location	Update Description
Chapter 3, "Installing and Configuring an SQL Server Instance," on page 17.	New section.
Chapter 7, "Installing Storage Manager 5.2 for Active Directory," on page 89.	Updated procedures.

A.6 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 7.3, "Installing the Engine," on page 90.	Removed bullet specifying Windows hotfix needed for Windows Server 2008 R2.
Chapter 7, "Installing Storage Manager 5.2 for Active Directory," on page 89.	Removed bullet specifying Windows hotfix needed for Windows Server 2008 R2.

A.7 June 12, 2013

Updates were made to the following sections:

Location	Update Description
Section 1.2.1, "Installing File Server Resource Manager," on page 8.	Added support for Windows Server 2012.

A.8 February 13, 2013

Updates were made to the following sections:

Location	Update Description
Chapter 7, "Installing Storage Manager 5.2 for Active Directory," on page 89.	Added a requirement for the .NET 4.0 (Full) Framework for the NSM Engine, Event Monitor, NSM Agent, and NSMAdmin.
Section 7.3, "Installing the Engine," on page 90.	Removed a reference to the NSM Engine being supported on a server with an x86 processor.

A.9 January 18, 2013

Updates were made to the following sections:

Location	Update Description
Multiple locations throughout the manual.	Changed references of 3.0.x to 3.1.

A.10 May 18, 2012

Updates were made to the following sections:

Location	Update Description
Section 7.3, "Installing the Engine," on page 90.	New steps.
Chapter 7, "Installing Storage Manager 5.2 for Active Directory," on page 89.	New steps.

A.11 February 2, 2012

Updates were made to the following section:

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

A.12 March 16, 2011

Updates were made to the following section:

Location	Update Description
Chapter 7, "Installing Storage Manager 5.2 for Active Directory," on page 89.	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.

A.13 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.