

# Dell EMC NetWorker Module for Microsoft

Version 18.1

## Installation Guide

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REV 01

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# Preface

As part of an effort to improve product lines, periodic revisions of software and hardware are released. Therefore, all versions of the software or hardware currently in use might not support some functions that are described in this document. The product release notes provide the most up-to-date information on product features.

If a product does not function correctly or does not function as described in this document, contact a technical support professional.

---

## Note

This document was accurate at publication time. To ensure that you are using the latest version of this document, go to the Support website at <https://support.emc.com>.

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## Purpose

This guide contains information about how to install and configure the NetWorker Module for Microsoft (NMM) Release 18.1 software.

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## Note

The *NetWorker Module for Microsoft Administration Guide* supplements the backup and recovery procedures described in this guide and must be referred to when performing application-specific tasks. Ensure that you download a copy of the *NetWorker Module for Microsoft Administration Guide* from the Support website at [support.emc.com](https://support.emc.com) before using this guide.

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## Audience

This guide is part of the NetWorker Module for Microsoft documentation set and is intended for use by system administrators during the setup and maintenance of the product.

Readers should be familiar with the following technologies that are used in backup and recovery operations:

- NetWorker software
- NetWorker backup management
- Microsoft Volume Shadow Copy Service (VSS) technology

## Revision history

The following table presents the revision history of this document.

**Table 1** Revision history

Revision	Date	Description
01	July 07, 2018	First release of this document for NMM 18.1.

## Related documentation

The NMM documentation set includes the following publications:

- *NetWorker Module for Microsoft Release Notes*

- *NetWorker Module for Microsoft Administration Guide*
- *NetWorker Module for Microsoft Installation Guide*
- *NetWorker Module for Microsoft for SQL and SharePoint VSS User Guide*
- *NetWorker Module for Microsoft for SQL VDI User Guide*
- *NetWorker Module for Microsoft for Exchange VSS User Guide*
- *NetWorker Module for Microsoft for Hyper-V User Guide*
- *ItemPoint for Microsoft SQL Server User Guide*
- *ItemPoint for Microsoft Exchange Server User Guide*
- *ItemPoint for Microsoft SharePoint Server User Guide*
- NetWorker documentation set

**Special notice conventions that are used in this document**

The following conventions are used for special notices:

**NOTICE**

Identifies content that warns of potential business or data loss.

---

**Note**

Contains information that is incidental, but not essential, to the topic.

---

**Typographical conventions**

The following type style conventions are used in this document:

**Table 2** Style conventions

<b>Bold</b>	Used for interface elements that a user specifically selects or clicks, for example, names of buttons, fields, tab names, and menu paths. Also used for the name of a dialog box, page, pane, screen area with title, table label, and window.
<i>Italic</i>	Used for full titles of publications that are referenced in text.
<code>Monospace</code>	Used for: <ul style="list-style-type: none"><li>• System code</li><li>• System output, such as an error message or script</li><li>• Pathnames, file names, file name extensions, prompts, and syntax</li><li>• Commands and options</li></ul>
<i>Monospace italic</i>	Used for variables.
<b><code>Monospace bold</code></b>	Used for user input.
[ ]	Square brackets enclose optional values.
	Vertical line indicates alternate selections. The vertical line means or for the alternate selections.
{ }	Braces enclose content that the user must specify, such as x, y, or z.
...	Ellipses indicate non-essential information that is omitted from the example.

---

You can use the following resources to find more information about this product, obtain support, and provide feedback.


### Where to find product documentation

- <https://support.emc.com>
- <https://community.emc.com>

### Where to get support

The Support website at <https://support.emc.com> provides access to licensing information, product documentation, advisories, and downloads, as well as how-to and troubleshooting information. This information may enable you to resolve a product issue before you contact Support.


To access a product specific Support page:

1. Go to <https://support.emc.com/products>.
2. In the **Find a Product by Name** box, type a product name, and then select the product from the list that appears.
3. Click .
4. (Optional) To add the product to **My Saved Products**, in the product specific page, click **Add to My Saved Products**.

### Knowledgebase

The Knowledgebase contains applicable solutions that you can search for by solution number, for example, 123456, or by keyword.

To search the Knowledgebase:

1. Go to <https://support.emc.com>.
2. Click **Advanced Search**.  
The screen refreshes and filter options appear.
3. In the **Search Support or Find Service Request by Number** box, type a solution number or keywords.
4. (Optional) To limit the search to specific products, type a product name in the **Scope by product** box, and then select the product from the list that appears.
5. In the **Scope by resource** list box, select **Knowledgebase**.  
The **Knowledgebase Advanced Search** panel appears.
6. (Optional) Specify other filters or advanced options.
7. Click .

### Live chat

To participate in a live interactive chat with a support agent:

1. Go to <https://support.emc.com>.
2. Click **Chat with Support**.

### Service requests

To obtain in-depth help from Licensing, submit a service request. To submit a service request:

1. Go to <https://support.emc.com>.
2. Click **Create a Service Request**.

---

**Note**

To create a service request, you must have a valid support agreement. Contact a sales representative for details about obtaining a valid support agreement or with questions about an account. If you know the service request number, then directly enter the service request number in the `Service Request` field to get the valid details.

---

To review an open service request:

1. Go to <https://support.emc.com>.
2. Click **Manage service requests**.

**Online communities**

Go to the Community Network at <https://community.emc.com> for peer contacts, conversations, and content on product support and solutions. Interactively engage online with customers, partners, and certified professionals for all products.

**How to provide feedback**

Feedback helps to improve the accuracy, organization, and overall quality of publications. You can send feedback to [DPAD.Doc.Feedback@emc.com](mailto:DPAD.Doc.Feedback@emc.com).

# CHAPTER 1

## Introduction

This chapter includes the following sections:

- [Overview](#) ..... 14
- [Requirements](#) ..... 14
- [Exchange Server-specific configuration requirements](#) ..... 18
- [Prerequisites for installing ItemPoint SharePoint GLR](#) ..... 20

## Overview

The NetWorker Module for Microsoft (NMM) software provides backup and recovery support for Microsoft applications.

You can use NMM to back up and recover:

- Microsoft SQL Server
- Microsoft SharePoint Server
- Microsoft Exchange Server
- Microsoft Hyper-V Server

Review the following information before you install and run NMM:

- NMM includes a Microsoft Volume Shadow Copy Service (VSS) requestor to perform backup and recovery operations. If you use a VSS solution other than the one that is configured with NMM to delete shadow copies that NMM created, data loss can occur. Restoring an application with a different VSS solution might prevent the application from being restored with NMM.
- Backing up a Microsoft application server with multiple backup products can cause products to respond unexpectedly. If you use NMM, do not use other products to back up a Microsoft application server.

## Requirements

Review the information in this section before you continue with the NMM installation.

The NetWorker client or storage node, NetWorker Extended Client (if required), and NMM software must be installed separately.

The *NetWorker Installation Guide* describes how to install the NetWorker client, NetWorker storage node, and NetWorker Extended Client. When you update from an earlier release, install the NetWorker Extended Client only.

Ensure that you install the required components in the following sequence on the application host:

1. NetWorker storage node (includes the NetWorker client):  
Run `NetWorker-18.1.exe` from the NetWorker package, and then select Storage Node.
2. NetWorker client:  
If the NetWorker storage node is not installed, install the NetWorker client separately.  
Run `NetWorker-18.1.exe` from the NetWorker package, and then select Client.
3. NetWorker Extended Client (if required):  
Run `lgtoxtclnt-18.1.exe` from the NetWorker package.  
The *NetWorker Installation Guide* provides more information about the additional features in the Extended Client package.
4. NMM software.  
Run `NWVSS.exe` to start the NMM Installation wizard.

NMM is an application client and cannot be installed on a NetWorker server.

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**Note**

The *NetWorker Online Software Compatibility Matrix* at <http://compatibilityguide.emc.com:8080/CompGuideApp/> contains the most up-to-date information about NMM compatibility.

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## Requirement when restoring backups taken with NMM 8.2.x or earlier

If you have backed up data with NMM 8.2.x or earlier and plan to recover the existing backups with NMM 18.1, you must install the NetWorker Extended Client and the NetWorker client. Select `lgtoxtdcInt-18.1.exe` and `NetWorker-18.1.exe` from the NetWorker package before you install NMM.

---

**Note**

If the NetWorker Extended client is not installed before the **Restore of NMM 8.2.x and Earlier Backups (VSS workflows)** option is selected during the installation, the NMM installer displays an error.

---

## Unsupported Microsoft Windows features

NMM does not support the following Microsoft Windows features:

- Windows IA64 editions
- Windows Small Business Server editions
- Snapshot Hardware Provider based proxy backup of Windows dynamic disks
- Single Instance Storage (SIS)

## Supported Microsoft .NET Framework versions

NMM supports Microsoft .NET Framework versions 4.0, 4.5, 4.5.1, 4.5.2, 4.6, or 4.6.2 with the condition that each Microsoft server version and application host version support specific Microsoft .NET Framework versions.

The Microsoft documentation provides details about supported Microsoft .NET Framework versions.

## Supported NetWorker server and client versions

This section provides the NMM support matrix for NetWorker server and client versions.

Refer to the individual NMM release sections of the *NetWorker Online Software Compatibility Matrix* at <http://compatibilityguide.emc.com:8080/CompGuideApp/> for more specific details.

Consider the following points:

- When a NetWorker version is referred to as "NetWorker x or later", the version includes the respective NetWorker release as well as any subsequent releases.
- When a NetWorker version is referred to as "NetWorker x.x," for example NetWorker 9.2.x, the version includes:
  - Maintenance releases and service packs that are released after a respective NetWorker or NMM release.
  - Cumulative HotFix releases.

- For Windows Server 2012 R2 protection, it is strongly recommended that you upgrade to NMM 8.2 SP1 or later, which contains the latest fixes related to Microsoft updates for Windows Server.
- Install the NetWorker client software on the host before installing the NMM software. If the host is a DSN, install the NetWorker Storage node software while you are installing the NetWorker client.

### Supported NetWorker server versions

**Table 3** NMM support matrix for NetWorker server versions

NetWorker server version	NMM 18.1
NetWorker server 18.1	Yes
NetWorker server 9.2	Yes
NetWorker server 9.1	Yes
NetWorker server 9.0.1	Yes
NetWorker server 9.0	Yes
NetWorker server 8.2 SP3 and SP4	Yes
NetWorker server 8.2 SP1 and 8.2 SP2	No
NetWorker server 8.2	No

### Supported NetWorker client versions

Install the same version of the NetWorker client and NMM on the host where NMM is installed. For example, when you install NMM version 18.1, install NetWorker client version 18.1.

## Hardware requirements

The minimum hardware requirements for the application host where NMM is installed are:

- CPU: 2.0 GHz
- Physical memory: 4 GB
- Host architecture: x64 systems only  
This requirement applies to all hosts:
  - Microsoft Exchange Server
  - SharePoint Server
  - Active Directory
  - Hyper-V
  - Microsoft SQL Server

### Exchange server hardware requirements

Exchange places additional demands on computer hardware and resources beyond the base requirements for NMM.

Ensure that the computer running the Exchange server meets or exceeds Microsoft hardware recommendations.

The following table describes the recommended hardware requirements for the Exchange server.



**Table 4** Exchange server hardware requirements

Requirement	Description
Memory (RAM)	<p>Exchange server often requires additional memory (RAM). Start with 8 GB of RAM. The amount of additional or total memory that is required depends on current system performance with existing memory:</p> <ul style="list-style-type: none"> <li>• If the memory resources are strained and performance is slow with normal NMM operations, add significantly more memory to support Exchange operations.</li> <li>• If the memory performance is adequate with normal NMM operations, additional memory might not be required to support Exchange operations.</li> </ul>
Disk staging area	Exchange server requires additional disk space for a disk staging area to hold writes to the Exchange database and log files.

## Hyper-V requirements

For best performance, ensure that the Hyper-V environment meets the following system requirements.

These resources must be available on the Hyper-V proxy node during the backup window for only NetWorker/NMM purposes.

When planning and allocating resources, do not exceed 70% utilization of the rated capacity of any hardware element (CPU, RAM, backplane, or NIC).

Hyper-V proxy node in a single proxy environment:

- 1 Gb/s LAN connection to DD, or a minimum 100 MB/s transfer rate
- 1 GHz CPU (single core)
- 512 MB RAM

Hyper-V proxy node in a multi-proxy environment:

- Shared 10 Gb/s LAN connection to DD, or a 400 MB/s transfer rate
- 4 GHz CPU total (or 2 GHz dual core)
- 2 GB RAM

## Licensing

Consider the following license considerations for NMM:

- For physical server environments, only one NMM license is required to manage multiple instances of supported applications on the same server (physical host).
- For virtual server environments, one NMM license is required for each application type (SQL, Exchange, SharePoint, Hyper-V) per physical host. The license can be used multiple times and within all the virtual guests on a single physical server for that application type.
- NMM requires one license per active node in a cluster environment (active-active requires two licenses).
- Licenses for NME (Exchange) and NMSQL can be used with NMM. Supporting these licenses ensures that customers can upgrade from NME (which is now end-of-sale) to NMM and avoid licensing changes.

- ItemPoint does not require a separate license.
- NMM licenses cannot be used with the legacy modules for Exchange and SQL.

The *NetWorker Licensing Guide* provides further details.

## Authorization requirements

The configuration and operation of NMM backups and recoveries require authorized access to data for the user backing up and recovering NMM data. The *NetWorker Module for Microsoft Administration Guide* provides details about the privileges to enable.

## Microsoft hotfixes

For NMM to function correctly with each supported Microsoft application, ensure that you install the required Microsoft hotfixes.

Install the required updates and hotfixes from the Microsoft website:

- Install the latest hotfixes for the Microsoft Windows operating system.
- Install the .NET Framework and the following .NET Framework updates:
  - KB2604121: <http://support.microsoft.com/kb/2604121>
  - KB2656351: <http://support.microsoft.com/kb/2656351>
  - KB2729449: <http://support.microsoft.com/kb/2729449>
  - KB2736428: <http://support.microsoft.com/kb/2736428>
  - KB2737019: <http://support.microsoft.com/kb/2737019>
  - KB2742595: <http://support.microsoft.com/kb/2742595>
  - KB2600217: <http://support.microsoft.com/kb/2600217>
  - KB2533523: <http://support.microsoft.com/kb/2533523>
  - KB2468871: <http://support.microsoft.com/kb/2468871>

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### Note

Without these updates, backups fail.

- The [Required Microsoft Hotfixes](#) on page 45 section provides the list of specific hotfixes that are required for each Microsoft application that is protected by the NMM software.

## Exchange Server-specific configuration requirements

Complete certain configuration tasks before you install the NetWorker client and the NMM software for Exchange Server backup and recovery.

The *NetWorker Module for Microsoft for Exchange VSS User Guide* provides more information about all of the configuration requirements described in this section.

## NMM Exchange Admin Configuration tool

The NMM Exchange Admin Configuration tool enables you to create or reset account permissions with the necessary privileges to perform backup and recovery operations on an Exchange Server. After installing NMM, use the tool to create an account, or to modify, validate, and update existing account privileges.

You must configure a user after installing NMM. When NMM is installed with the NMM Installation wizard, the NMM Exchange Admin Configuration tool runs

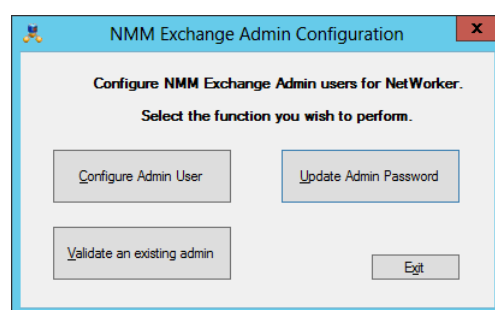
automatically. When NMM is installed silently, you must manually open the NMM Exchange Admin Configuration tool.

To use the NMM Exchange Admin Configuration tool, you must be logged in with domain administrator permissions. You can use a non-administrative user to run the NMM Exchange Admin Configuration tool only if you select **Skip Active Directory Authentication** and configure the user with the tool on each Exchange Server node.

You can use the Exchange NMM Admin Tool to create users, configure existing users, and assign correct permissions to existing users. NMM uses the user account that is set in the registry by the NMM Exchange Admin Configuration tool to perform backup, database, or granular-level recovery.

The following figure shows the NMM Exchange Admin Configuration tool landing page.

**Figure 1** NMM Exchange Admin Configuration tool



## NMM requirements for MAPI client and collaboration data objects

NMM requires Microsoft Exchange Server MAPI Client and Collaboration Data Objects 1.2.1 Kit for granular-level recovery (GLR) of Exchange Servers through the NMM UI.

### Note

NMM also supports GLR of Exchange Servers with ItemPoint for Microsoft Exchange Server. It is recommended that you use ItemPoint for Microsoft Exchange Server for GLR instead of the NMM UI. See the "Exchange server GLR using ItemPoint" section in the *NetWorker Module for Microsoft for Exchange VSS User Guide* for the required Outlook version. If you use ItemPoint for Microsoft Exchange Server, MAPI is not required for GLR.

The following table outlines the MAPI/CDO version requirements with different versions of Exchange Server.

**Table 5** Exchange Server GLR MAPI/CDO requirements

Exchange Server version	Required MAPI/CDO version
Exchange Server 2010	MAPI/CDO 1.2.1 version 6.5.8244.0 or earlier
Exchange Server 2013	MAPI/CDO 1.2.1 version 6.5.8353.0 or later
Exchange Server 2016	Not applicable GLR of Exchange Server 2016 is supported only through ItemPoint for Microsoft Exchange Server.

The Exchange Server 2010 and 2013 software does not include the MAPI client libraries and CDO. You can download the client library and CDO package from Microsoft's website. For information about downloading and installing this software, search for "Microsoft Exchange MAPI Client and Collaboration Data Objects" on the Microsoft Download Center website.

The *NetWorker Online Software Compatibility Matrix* at <http://compatibilityguide.emc.com:8080/CompGuideApp/> contains information about the most recent version of the MAPI and CDO kit that NMM supports.

## Exchange backup prerequisites

Ensure that you meet the following prerequisites before you perform backup procedures:

- Install the required .NET Framework version. The *NetWorker Module for Microsoft Release Notes* provides more information about the required .NET Framework version.
- Install the latest NMM hotfixes and cumulative updates.
- When configuring backup and recovery of a database availability group (DAG), ensure that each DAG node uses the same version of Exchange Servers, Windows Servers, and service packs or cumulative updates.
- Install the NetWorker client and NMM software on all Exchange Servers that you want to backup.
- Ensure that the user who administers backup operations is assigned the required privileges.

## NetWorker restricted datazone environments

NMM supports NetWorker restricted datazone (RDZ) environments. An RDZ adds an additional permission-checking layer.

To perform DAG backups and recoveries in an RDZ, configure additional permissions and configurations. The *NetWorker Module for Microsoft Administration Guide* provides details about the required permissions and configuration. The *NetWorker Administration Guide* provides detailed information about the NetWorker RDZ feature.

## Prerequisites for installing ItemPoint SharePoint GLR

To perform granular level recovery using ItemPoint for Microsoft SharePoint Server, ensure that you meet the following requirements:

- Configure a Direct File Access folder. See the section [Configuring a Direct File Access folder](#) on page 40 for more information.
- Install the ItemPoint Agent for Content Transfer service (*SetupACTS.exe*) on each SharePoint Server you intend to use as a target. The *SetupACTS.exe* installer is available as part of the NMM 64-bit package.

Before you perform the installation, ensure that:

- You have SharePoint Server Administrative privileges and SharePoint Farm Administrator credentials.
- To ensure that the Agent for Content Transfer Service and any ItemPoint for Microsoft SharePoint Server clients function correctly, configure the firewall

solutions to allow communication on the TCP port that the Agent for Content Service Transfer is using.

## Install the ItemPoint Agent for Content Transfer Service for SharePoint Server granular level recovery

### Procedure

1. Log in to the SharePoint Server using Administrative privileges.
2. Run the Agent for Content Transfer Service installation wizard SetupACTS.exe.
3. On the **Logon Information** page, type the **User Name** and **Password** for the SharePoint Farm Administrator User who runs the Agent for Content Transfer Service. The username must be in the format DOMAIN\Username.
4. On the **Agent for Content Service Setting** page, in the **Port Number** field, use the default value or type a different available port number.

---

### Note

The **Temporary File Location** path is used during the copy process. Ensure that sufficient space, possibly up to the amount of data being restored in a single operation, exists for this task.

---

The *ItemPoint for Microsoft SharePoint Server User Guide* provides further information about operating the Agent for Content Transfer Service.



# CHAPTER 2

## Configuration Checks and Installation

This chapter includes the following sections:

• <a href="#">Accessing the installation files</a> .....	24
• <a href="#">Running preconfiguration checks and installing the software</a> .....	24
• <a href="#">Installing NMM in MSCS and MSFCS environments</a> .....	28
• <a href="#">Installing NMM on Windows Server Core</a> .....	28
• <a href="#">Identifying or diagnosing system configuration issues</a> .....	29
• <a href="#">Uninstalling or changing installation options</a> .....	29
• <a href="#">Upgrading NMM</a> .....	30

## Accessing the installation files

You can access the installation files from a DVD disk or from <http://support.emc.com>.

To access the NMM software from a local DVD disk, use the following steps:

1. Log in as administrator or equivalent on the NetWorker client.
2. Insert the NMM DVD disk into the DVD drive.
3. Run `NWVSS.exe` directly from the DVD.

To access the NMM software from Online Support:

1. Log in as administrator or equivalent on the NetWorker client, use the following steps:
2. Open a web browser and navigate to <http://support.emc.com>.
3. Browse to the Downloads for NetWorker Module for Microsoft page.
4. Download the 64-bit NMM software `.zip` file to a temporary location.
5. Extract the `.zip` file to a folder on the client.

## Running preconfiguration checks and installing the software

### Before you begin

Review the Introduction chapter and ensure that the environment meets the requirements.

### Procedure

1. Run the `NWVSS.exe` file.

The installation wizard starts. The wizard installs the NMM software in the same path that you used to install the NetWorker client or NetWorker storage node software.

---

#### Note

Do not use non-English characters in the installation path.

---

2. On the **Welcome Wizard** page, read the license terms and agreements carefully. Select the **I agree to the license terms and agreements** option, and click **Next**.

The **Configuration Checks Option** page appears. The System Configuration Checker verifies that the setup is correctly configured for backup and recovery operations.

3. On the **Configuration Checks Option** page, specify whether to run the System Configuration Checker.
  - To continue with the NMM installation process and skip the System Configuration Checker, do not select **Run System Configuration Checker**, and then click **Next**.  
The **Configure Windows Firewall** page appears.
  - To run the System Configuration Checker before the NMM installation process, select **Run System Configuration Checker**, and then click **Next**.



**Application Host** is selected automatically. The System Configuration Checker runs the configuration checks on an application server. These checks are related to the operating system, software components, the subsystem, and generic conditions that are required for NMM backup and recovery operations.

Complete the following steps to run the configuration check:

a. Select one of the following applications, and then click **Check**.

- Microsoft Exchange Server
- Microsoft SharePoint Server
- Microsoft SQL Server
- Microsoft Hyper-V Server

The **Installation Progress** page appears. The wizard installs the System Configuration Checker and performs the configuration checks. Depending on the setup, this process can take some time.

b. When the wizard completes the configuration checks, click **Next**. The **Result of Configuration Checks** page appears.

c. Review the details on the **Result of Configuration Checks** page. This page lists the number of checks that have passed, failed, or have warnings. Correct the checks that have failed and review the ones that have warnings to ensure that NMM does not encounter problems during backup and recovery of data.

NMM saves this report as `results.html` in the local temporary folder directory `C:\Users\Administrator.<host_domain>\AppData\Local\Temp\2\EmcCfgChk\results.html` of the user who is running the NMM installation wizard. NMM also saves the configuration check log as `cfgchk_log.txt` in this folder.

To view the saved report, click **Open detailed report**.

- To eliminate errors and warnings in the setup, make the required changes and click **Rerun** to run the System Configuration Checker again.
- To ignore the errors and warnings and continue with the installation process, click **Next**. Choose this option only in cases when the configuration checker reports do not relate to the setup or requirements.

After you complete the System Configuration Checker, the **Configure Windows Firewall** page appears.

4. Select either of the following choices, and then click **Next**:

- Select **Configure the Windows Firewall** to add exceptions for NMM on the Windows firewall, so NMM can communicate through any Windows firewall that may be present on the Windows host.
- Select **Do not configure the Windows Firewall** if you want to manually specify NMM exceptions.  
For Microsoft SharePoint Server, you must enable Windows Management Instrumentation (WMI) communication through the firewall.

To allow WMI communication, click **Windows Firewall > Allow an app or feature through windows firewall**, and then select domain and private profiles for Windows Management Instrumentation (WMI).

After you click **Next**, the **NMM Installation Options** page appears.

5. Select the required options on the **NMM Installation Options** page, and then click **Next**.

**Figure 2** NMM Installation Options page

- If you are upgrading from a previous NMM release, select **Restore of NMM 8.2.x and Earlier Backups (VSS workflows)**. For example, select this option if you are upgrading from NMM 8.2.3 or later, and you plan to recover existing backups of Exchange Server, SharePoint Server, and Hyper-V by using NMM 18.1 (VSS workflows).  
The installation wizard completes the following actions when you select **Restore of NMM 8.2.x and Earlier Backups (VSS workflows)**:
  - Installs the NMM release 8.2 SP4 binaries, which are required to perform restore operations.
  - Installs the EldoS driver.
  - Creates a **Restore previous NMM release backups** shortcut on the **Start** menu which you can click, to start to recover the older backups.

#### Note

If you are using NMM for SQL VDI, do not select **Restore of NMM 8.2.x and Earlier Backups (VSS workflows)**. You can restore previous versions of NMM backups without this option.

If you used Avamar for deduplication with NMM 8.2.x and earlier releases, ensure that you install Avamar from the Avamar client package before you upgrade to NMM 18.1. NMM 18.1 does not support Avamar node backup and recovery.

- Under **Granular Recovery Options**:
  - Select **SharePoint Granular Recovery** to enable SharePoint granular-level recovery (GLR). ItemPoint for Microsoft SharePoint silently installs while NMM installs.
  - Select **SQL Granular Recovery** to enable SQL Server GLR. ItemPoint for SQL Server silently installs while NMM installs.

- Select **Exchange Granular Recovery** to enable Exchange Server GLR. ItemPoint for Exchange Server silently installs while NMM installs.

---

#### Note

If you are performing Exchange GLR of NMM 8.2.x and earlier backups, perform a flat-file restore of the database before you use ItemPoint. The *NetWorker Module for Microsoft for Exchange Server VSS User Guide* provides information about performing flat file restore operations.

---

- Select **SQL SSMS Plug-in** to perform SQL Server VDI backup and recovery from the SQL Server Management Studio. Selecting **SQL SSMS Plug-in** installs the **NetWorker** window in the SQL Server Management Studio GUI.
  - If you select **SQL SSMS Plug-in**, you can also select **Enable Backup Tab for Ad-hoc Backup** and **Enable Script in Backup Window**.
  - The **BBB MountPoint Location** field shows the Block Based Backup mount point location to mount backed-up data from media for granular level recoveries of Hyper-V and Exchange. The default location is `C:\Program Files\EMC NetWorker\nsr\tmp\BBBMountPoint`. To change the Block Based Backup mount point location, click (...), select the location, and click **OK**. In the installation wizard, click **Next**.
6. If you selected **SharePoint Granular Recovery** or **SQL Granular Recovery**, click **Next**.

The **GLR Options** page appears.

The NMM installer selects a default path for the **MountPoint Location** and **Hyper-V VHD Mount Point Location**.

To change the mount point location:

- a. Click (...).
  - b. Select the mount path location.
  - c. Click **OK**.
7. Click **Install**.

The **Wizard Progress** page appears and the installation begins. The installation can take several minutes.

For Exchange environments, if you are logged in with Domain Administrator privileges, the NMM Exchange Admin Configuration tool starts. If you are not logged in with Domain Administrator privileges, a message displays prompting you to log in with these privileges.

Use the NMM Exchange Admin Configuration tool to:

- Configure an administrative user.
- Update an administrative password.
- Validate an existing administrative user.

To return to the NMM installation wizard, click **OK**.

8. On the **Complete the Setup** page, the output shows the results of the installation.

To view the setup log file, click the link in the results area of the page. This file is stored in the `NetWorker Module for Microsoft` folder in the local

temporary folder directory of the user who is running the NMM installation wizard.

#### After you finish

Enable and register the NMM software. The *NetWorker Licensing Guide* provides details.

## Installing NMM in MSCS and MSFCS environments

You can install the NMM software in Microsoft Cluster Service (MSCS) and Microsoft Failover Cluster Service (MSFCS) environments.

#### Procedure

1. If required, ensure that Microsoft Distributed Transaction Coordinator (MSDTC) software is installed and running.

The *NetWorker Module for Microsoft Administration Guide* provides details about when the MSDTC software must be installed and running.

2. Install the NetWorker client (select "client" from the `NetWorker-18.1.exe` folder from NetWorker package) on each physical node of the cluster.
3. Install the NMM software on the physical disk of each physical node. [Running preconfiguration checks and installing the software](#) on page 24 provides details.
4. Configure each physical node as a client resource on the NetWorker Server, as described in each NMM application user guide.
5. In the **Remote Access** attribute of each virtual client resource, type the names of the physical nodes, as described in the application user guide.
6. Configure privileges for each physical node on the NetWorker server:

- a. In the **Users** attribute of the **Application > Administrators** user group, add the following values on a separate line for each physical node in the cluster:

```
user=administrator,host=VSS_cluster_node
```

```
user=system,host=VSS_cluster_node
```

where *VSS\_cluster\_node* is the DNS hostname of the physical node.

- b. Click **OK**.

The *NetWorker Module for Microsoft Administration Guide* provides more information about configuring a clustered client resource.

## Installing NMM on Windows Server Core

When you install NMM on Windows 2008 SP2, 2008 R2, 2012, 2012 R2, or 2016 Server Core, the installation process installs the NMM GUI. However, it is not recommended to use the NMM GUI on a Windows Server core host.

#### Before you begin

Ensure that you installed the NetWorker client (select "client" from the `NetWorker-18.1.exe` file from NetWorker package) software on Windows 2008 SP2, 2008 R2, 2012, 2012 R2, or 2016 Server Core.

**Procedure**

1. If the installation files are on a remote host, perform one of the following:
  - Use the `net use` command to mount the remote file system.
  - Copy the NMM installation files to Windows 2008 SP2, 2008 R2, 2012, 2012 R2, or 2016 Server Core by using FTP or a general access method.
2. Access the NMM installation files as described in [Accessing the installation files](#) on page 24.
3. Run the `NWVSS.exe` file in the `networker` directory to start the NMM installation.

**Note**

Do not use the `autorun.exe` file to install the NMM software.

4. To install the NMM software, follow the wizard prompts.  
[Running preconfiguration checks and installing the software](#) on page 24 provides details.

## Identifying or diagnosing system configuration issues

The NMM installer provides the System Configuration Checker to help identify or diagnose any configuration or environment issues in the system configuration.

To prevent configuration errors that might lead to failure in data backup or data recovery of the following applications, run the System Configuration Checker:

- Application host (operating system environment)
- Microsoft Exchange
- Microsoft Hyper-V
- Microsoft SharePoint
- Microsoft SQL

## Uninstalling or changing installation options

Run the Setup program (`NWVSS.exe`) in Change mode to perform any of the following actions:

- Change the firewall settings for the client.
- Select or remove the SharePoint granular recovery option.
- Select or remove the SQL granular recovery option.
- Select or remove the Exchange granular recovery option.
- Select or remove the SQL SSMS plug-in option, including the Backup tab and the Script options.

NMM is not uninstalled during the uninstallation of the NetWorker client. First, uninstall the NMM client, and then uninstall the NetWorker client.

**Procedure**

1. On the NMM client, log in as a user with administrative access.

2. Perform one of the following actions to run the Setup program:
  - From the command prompt, run the `NWVSS.exe` file.
  - From the Microsoft Windows menus:
    - a. Select **Start > Settings > Control Panel > Programs > Programs and Features**.
    - b. Select **NetWorker Module for Microsoft**.
    - c. Click **Change**.
3. In the **Welcome to NetWorker Module for Microsoft Maintenance** window, click **Next**.
4. In the **Maintenance Type** window, select the type of change to perform.
  - To change any of the following settings, select the **Change** option:
    - Firewall settings for NMM exceptions
    - SharePoint granular recovery option
    - SQL granular recovery option
    - Exchange granular recovery option
    - SQL SSMS plug-in, including the Backup tab and the Script options
  - To remove the NMM software from the system, select the **Remove** option.

---

#### Note

After you uninstall NMM, you can continue to perform traditional backups by using the NetWorker software, which is still available on the host.

---

5. If you uninstalled or changed NMM with one or more of the following options, check the NWFS log file, `nwfs.raw`, to determine whether you must restart the NMM host:
  - **SharePoint Granular Recovery**
  - **SQL Granular Recovery**
  - **Restore of NMM 8.2.x and Earlier Backups (VSS workflows)**

## Upgrading NMM

This section describes NMM upgrade procedures.

---

#### Note

Perform a full backup after upgrading from a previous NMM release to NMM 18.1.

---

#### Note

If you are upgrading NMM for Exchange from version 8.x or earlier, be aware that non-federated Exchange database availability group (DAG) backups are no longer supported. All Exchange DAG backups are federated. The *NetWorker Module for Microsoft for Exchange VSS User Guide* provides information about federated backups.

---

## Upgrading the client operating system from Windows Server 2012 to a later version

When upgrading the client operating system from Windows Server 2012 to a later version, perform the following steps.

---

### Note

It is recommended that you perform a full backup before and after upgrading the client operating system.

---

### Procedure

1. Uninstall NMM by performing the steps that are described in [Uninstalling or changing installation options](#) on page 29.
2. Upgrade Windows Server.
3. Install NMM by performing the steps that are described in [Running preconfiguration checks and installing the software](#) on page 24.

## Using Client Push to upgrade NMM

To upgrade from NetWorker 8.1 SP1 or later client and NMM 3.0 or later, use the Client Push feature.

Client Push provides the ability to distribute software and perform software updates to one or more NetWorker hosts from the NetWorker server. NMM supports upgrades only from NMM 3.0 or later in stand-alone environments. Client Push is not supported for clustered environments or for clients earlier than NMM 3.0. When upgrading NMM with Client Push, select both the module and the client, or the upgrade fails.

*NetWorker Updating from a Previous Release Guide* and the `nsrpush` man page describe how to use Client Push to update NetWorker products.

## Upgrading NMM from a previous release

You cannot perform a direct upgrade from an installation of an NMM release before NMM 3.0. For example, if you have NMM 2.4 installed and want to use NMM 3.0 or later, remove the existing installation of NMM and install NMM 3.0 or later. If you want to recover data that was backed up with an older version of NMM, consider the following information:

- Recover file system data by using NMM 3.0 or later. File system data cannot be browsed in the NMM GUI.
- Recover system component by using NMM 2.4 SP1.
- Recover application data other than SharePoint Server web application data with NMM.
- Recover SharePoint Server web application data with NMM 2.4 SP1.

### Procedure

1. Perform a full backup with the existing NMM program.
2. Remove all snapshots. To delete shadow copy entries, use `vssadmin` or `diskshadow`.
3. Remove the existing NMM software:

- a. Select **Start > Control Panel > Programs and Features**.
- b. Select **NetWorker Module for Microsoft**.
- c. Select **Uninstall**. Follow the procedure that is provided in [Uninstalling or changing installation options](#) on page 29.
4. Ensure that a supported version of the NetWorker client or NetWorker storage node software is installed and running on the application host.  
[Upgrading to NMM with a dedicated storage node](#) on page 33 provides details.
5. Run the NMM installer and select the **Run System Configuration Checker** option on the **Configuration Checks Option** page. [Running preconfiguration checks and installing the software](#) on page 24 provides details.
6. If a system restart is pending, restart the system after the NMM installation is complete.
7. To immediately protect all data with NMM, perform a full backup as soon as possible after the upgrade.

## Upgrading from NME or NMSQL

NMM supports all features of NetWorker Module for Microsoft Exchange Server (NME) software and NetWorker Module for Microsoft SQL Server (NMSQL) software. If you use NME or NMSQL, it is recommended that you move to NMM.

You cannot install NMM on a system that has NME or NMSQL installed. Conversely, you cannot install NME or NMSQL on a system that has NMM installed. To upgrade to NMM from NME or NMSQL, uninstall NME or NMSQL, and then install NMM.

### Procedure

1. Perform a full backup of the Exchange or SQL hosts with the existing NME or NMSQL program.
2. On each NME or NMSQL client host:
  - a. Run the **Setup** program in the maintenance mode.
  - b. Select the **Remove** option.

---

#### Note

Although this procedure removes the existing NME or NMSQL software, the configuration information that was created for these products is retained and is reapplied if you reinstall NME or NMSQL.

---

3. If required, install a supported version of NetWorker client or NetWorker storage node software.
4. Run the NMM installer and use the **Run System Configuration Checker** option on the **Configuration Checks Option** page, and then proceed with the installation.

### After you finish

After you install NMM, perform a full backup of the Exchange Server or SQL Server data. You cannot use NMM to recover data from a backup that was performed by using NME. You can use NMM to recover data from an NMSQL VDI backup after you upgrade to NMM.



## Upgrading to NMM with a dedicated storage node

NMM software supports a dedicated storage node that is deployed on the same host and thus does not require a NetWorker storage node that is shared with other hosts and software. This solution is useful for individual high-volume backup clients and can reduce network bandwidth usage.

This solution supports the upgrade from NetWorker 7.6 SP3 or later.

### Procedure

1. Uninstall the earlier version of NMM software.
2. Install a supported version of NetWorker storage node on the NMM host.  
The *NetWorker Installation Guide* provides details.
3. Run the NMM installer and use the **Run System Configuration Checker** option on the **Configuration Checks Option** page.  
The installation detects the storage node and prompts for permission to dedicate the storage node to the NMM client data.
4. Click **OK**, and then complete the installation.



# CHAPTER 3

## Silent Installation

This chapter includes the following sections:

- [Install NMM silently](#)..... 36
- [Remove NMM silently](#)..... 37
- [Upgrade NMM silently](#).....37
- [Modify NMM silently](#).....38

## Install NMM silently

Silent (unattended) installation is a stand-alone (non-network) method where you specify all the information that the installation requires either directly in the command prompt or using the commands written as scripts in a `.cmd` file.

### Procedure

1. Install the NetWorker client (select "client" from the `NetWorker-18.1.exe` folder from the NetWorker package) or storage node (select "storage node" from the `NetWorker-18.1.exe` folder from the NetWorker package) software on the hosts where you install NMM.

---

#### Note

Do not use non-English characters in the installation path.

---

The *NetWorker Installation Guide* describes how to install the NetWorker client or storage node software.

2. To install NMM, run the command or script.  
[Commands for silent installation of NMM](#) on page 36 provides the command and an example.
3. To verify the installation, inspect the installation log files. The locations of the log files are specified in the NMM installation. The default location is the `%temp%` folder, which you can view:
  - a. Click **Start > Run**.
  - b. Type `%temp%`.
  - c. Browse to the parent folder of the `%temp%` folder.
4. (For Exchange only) After a successful silent installation, if the Exchange Admin Configuration tool does not start automatically, manually run the tool for successful Exchange Server backup and recovery.

## Commands for silent installation of NMM

To install the NMM software with the Windows installer, open a command prompt, select **Run as administrator**, and then type the following command:

```
NWVSS.exe /s /log "C:\NMM_nw_install_detail.log".
```

The NMM installer has two basic features:

- NMM: `InstallLevel=100`
- SSMS: `InstallLevel=150`

These features work with other associated variables. If you provide `InstallLevel=150`, all the features below this installation level are installed. For example, if you provide `InstallLevel=150`, NMM and the SSMS plug-in are installed.

### Installer variables

You can also use variables to customize the installation.

Each variable-name pair should be placed within double quotation marks if there is embedded whitespace. Variable names are case sensitive. All silent installation switches, for example, switches such as `/v`, `/s`, `/q`, `/l` are supported. The following table provides the list of variables with valid values and defaults.

**Note**

The restore of NMM 8.2.x and earlier backups (VSS workflows), Exchange granular recovery, SharePoint granular recovery, and SQL granular recovery features cannot be silently installed. To install these features, use the NMM Installation wizard.

**Table 6** NMM installer variables

Variable	Valid values	Default value
EnableSSMS	[0 1]	0
EnableSSMSBackupTab	[0 1]	0
EnableSSMSScript	[0 1]	0
ConfigFirewall	[0 1]	1
InstallLevel	[100 150]	Not applicable
BBBMountPointFolder	<full path to directory>	C:\Program Files\EMC NetWorker\nsr\tmp \BBBMountPoint

**Sample commands**

The following table provides commands to install the three NMM installer features. These commands use the NMM installation command and the installer variables.

**Table 7** Commands for NMM installation

Task	Command
Install the NMM client only	NWVSS.exe /s /q /log "C:\NMM_nw_install_detail.log" InstallLevel=100
Install the NMM client and the SSMS plug-in	NWVSS.exe /s /q /log "C:\NMM_nw_install_detail.log" InstallLevel=150 EnableSSMS=1

## Remove NMM silently

The following command performs silent removal of NMM:

```
NWVSS.exe /uninstall /s.
```

## Upgrade NMM silently

You cannot perform a direct upgrade from an earlier version of NMM to a new version of NMM.

**Procedure**

1. Remove the existing NMM version using the silent uninstallation process. [Remove NMM silently](#) on page 37 provides details.
2. Install the NetWorker client software.

3. To install NMM using the silent installation process, follow the steps that are provided in [Install NMM silently](#) on page 36.

## Modify NMM silently

To modify installation of NMM, such as to install the SSMS plug-in, uninstall and then install NMM with the wanted features.

### Procedure

1. Remove the existing NMM installation by using the silent uninstallation process. [Remove NMM silently](#) on page 37 provides details.
2. Install the NetWorker client software.
3. To install NMM using the silent installation process, including the wanted features, follow the steps that are provided in [Install NMM silently](#) on page 36.

# CHAPTER 4

## Configuration Tasks

This chapter includes the following sections:

- [Configuring a dedicated storage node for NMM.....](#) 40
- [Configuring a Direct File Access folder.....](#) 40
- [Configuring NMM Proxy Recovery Agent for Hyper-V FLR.....](#) 40
- [Events notifications and errors.....](#) 41
- [Removing directives after migrating to NMM.....](#) 42
- [Troubleshooting installation issues.....](#) 42

## Configuring a dedicated storage node for NMM

For an Exchange Server 2010 database availability group (DAG), use the workaround that is provided in the "Configuring backups to use a remote storage node in a DAG environment" section in the *NetWorker Module for Microsoft for Exchange VSS User Guide*.

### Before you begin

You must have a dedicated storage node license. The *NetWorker Administration Guide* provides details.

To configure a dedicated storage node for NMM for all other applications, perform the following procedure:

### Procedure

1. Install the NetWorker Storage Node software.
2. Install the NMM software on the same host.
3. Create a remote backup device on the NetWorker server and on the Device Properties **Configuration** tab, set the **Dedicated Storage Node** attribute to **Yes**.

## Configuring a Direct File Access folder

Configure a Direct File Access folder to perform granular level recovery.

### Procedure

1. On the NetWorker server, create a folder.
2. Make the folder a shared folder and give permissions for the required user.
3. In the NetWorker Management Console, in the NetWorker Administration window, create a device resource.

When you configure the device resource:

- Use the Universal Naming Convention (UNC) path `\\<HostName>\<FolderName>`
- Provide the credentials of the user who is granted permission to the folder.

## Configuring NMM Proxy Recovery Agent for Hyper-V FLR

For NMM Hyper-V File Level Recovery (FLR) web UI configurations, configure an NMM Proxy Recovery Agent (RA). You can use NMM Proxy RA to perform recoveries to virtual machines that run on the Hyper-V server.

### Before you begin

- If NMM Proxy RA is deployed on a different system than the Hyper-V server or cluster, add the NMM RA host to the Backup Operator group of the Hyper-V server or to each node in the cluster.
- If you are using a Linux NetWorker server, the `lgtoadpt*.rpm` package must be installed on the NetWorker server.  
The *NetWorker Installation Guide* provides information about the `lgtoadpt*.rpm` package.



- NMM RA requires Windows Server 2012 R2 or later.
- NMM Proxy RA requires Windows Server 2008 or later.

### Procedure

1. Verify that integration services are up to date for all virtual machines.
2. Verify that all virtual machine hostnames are resolved from the Hyper-V server, and conversely.
3. Install NMM Proxy RA on each virtual machine by using one of the following options:
  - The `NWVSS Proxy Recovery Agent.exe` installer, which is available as part of the NMM installer kit.
  - The ISO `NWVSS Proxy Recovery Agent.iso` image. Mount the ISO image to the virtual machine, and then access the installer by using the CD drive that is inside the virtual machine.
4. Make appropriate rules in the firewall for the `nsrnmmpoxyra.exe` process so that the Hyper-V server and each virtual machine have proper communication.

### Note

`nsrnmmpoxyra.exe` uses port number 50000 for communication.

## Events notifications and errors

NetWorker and NMM can send notifications about errors and events. NetWorker can send notifications to several locations, including log files, SNMP printers, SNMP management console, and email messages.

The *NetWorker Administration Guide* describes how to set up notifications.

The following table describes several ways that the NetWorker server, NMM, and other NetWorker features provide information about problems.

**Table 8** Notifications and errors

Type	Description
Email notification of a NetWorker event	Configure an Owner Notification for the NMM client to send an email notification about NetWorker events.
Error message details window	Displays error and event messages for NetWorker server activities, including backup or recovery operations.
NetWorker Monitor window	Displays details of current NetWorker server activities, operations that are related to devices and libraries, group backup operations, and events that require user intervention.
Event Viewer	Alerts users that user intervention is required on the NMM host.
Log files	NMM creates log files for each operation and process. Separate log files are available for NetWorker and various features, depending on what features are installed and in use: <ul style="list-style-type: none"> <li>• NMM</li> </ul>

**Table 8** Notifications and errors (continued)

Type	Description
	<ul style="list-style-type: none"> <li>NetWorker Client or Storage Node</li> <li>NetWorker Server</li> </ul> <p>The debug level of a save or recover process determines the number of messages that an operation sends to the log file.</p>

## Removing directives after migrating to NMM

After you migrate to NMM from other modules such as NME and NMSQL, remove any directives on the application servers that skip database files during a file system backup. NME and NMSQL do not process directives to skip database files. However, after the migration, NMM recognizes these migrated directives, skips both database and log files, and reports a successful backup although no data is backed up.

## Troubleshooting installation issues

Review and follow the solutions that are provided for various issues that you might face for NMM installation.

### Unable to uninstall NMM after Windows Server upgrade

When you upgrade the Windows Server, uninstall NMM, upgrade Windows Server, then reinstall NMM. If you do not perform these steps in this order, NMM installation might fail.

#### Solution

1. Restore the pre-existing version of Windows Server.
2. Uninstall NMM by performing the steps that are described in [Uninstalling or changing installation options](#) on page 29.
3. Upgrade Windows Server.
4. Upgrade NMM by performing the steps that are described in [Configuration Checks and Installation](#) on page 23.

### Force cleaning an NMM installation on a client host

You can resolve errors by force cleaning the NMM installation while uninstalling NMM.

1. Make a copy of the log files in the following directories: `nsr\applogs` and `nsr\logs`.
2. Uninstall the NMM client software.
3. Ensure that the NetWorker Remote Exec service is not running.
4. Uninstall the base NetWorker client.
5. Delete all the files and directories in `\Program Files\EMC NetWorker\nsr`, but save the logs from step 1.
6. Delete the following registry keys:
  - `HKLM\SOFTWARE\EMC` and below
  - `HKLM\SOFTWARE\Legato` and below

7. Reinstall the base NetWorker client software.
8. Reinstall the NMM client software.

---

### Note

During installation in an Exchange environment, ensure that you provide the correct Exchange credentials and fulfill the other Exchange installation requirements.

---

When you flush the `nsr` folder (remove the metadata), the `nsrladb` folder contains the public key for the client that is cached in the NetWorker server's local hosts resource. To correct this issue, delete the NSR Peer Information on the backup server for the client so that the cached public key is updated.

Use this command to delete the peer information:

```
C:\>nsradmin -p nsrexec -s bv-rcserver
```

Output similar to the following appears:

```
NetWorker administration program.
Use the "help" command for help.
nsradmin> delete type: NSR peer information; name: bv-
tlscs.belred.legato.com
type: NSR peer information;
administrator: Administrators,
"group=Administrators,host=bv-rcserver.belred.legato.com";
name: bv-tlscs.belred.legato.com;
peer hostname: bv-tlscs.belred.legato.com;
Change certificate: ;
certificate file to load: ;
Delete? y
deleted resource id
8.0.72.7.0.0.0.0.174.29.184.76.0.0.0.0.10.5.220.27(1)
nsradmin>
```

### Inconsistent VSS writer state after NetWorker client installation

After NetWorker client installation, some VSS writers state might change to 'Waiting for completion'. Since the VSS state is inconsistent, backups fail.

To resolve this issue, perform the following steps:

1. Restart the client host.
2. Observe that the VSS writers are now in a consistent state.
3. Retry the backup.

### Using any of the options under Granular Recovery Options for may cause the system to reboot automatically without any user prompts

ItemPoint installs .NET framework 4.5. If .NET framework 4.0 is already installed on the system, and a granular recovery option is selected during installation, the system may reboot automatically.

Follow the instructions at [https://msdn.microsoft.com/enus/library/hh527997\(v=vs.110\).aspx](https://msdn.microsoft.com/enus/library/hh527997(v=vs.110).aspx) for information about reducing the likelihood of a system reboot if .NET Framework 4.0 is already installed on the system. Rerun the NMM installer after the reboot. Select the required granular recovery option during the NMM installation.



# APPENDIX A

## Required Microsoft Hotfixes

This appendix describes Microsoft hotfix updates that are required for NMM applications. No Microsoft hotfix requirements exist for NMM with SQL Server.

- [Hotfix updates that are required for VSS backup and recovery](#).....46
- [Hotfix updates that are required for Exchange Server backup and recovery](#).....46

## Hotfix updates that are required for VSS backup and recovery

The following table lists the hotfix updates that NMM requires for Volume Shadow Copy Service (VSS) backup and recovery.

**Table 9** Hotfixes that are required for NMM for VSS backup and recovery

Knowledge Base article ID	Applicable Windows Server version	Description
KB2748349	Windows Server 2008 R2	When you extend the current size of a volume that is a multiple of 8 GB by a size that is larger than 8 GB or when the volume is frequently extended by a multiple of 8 GB, corrupted backups might not be detected until you try a recovery.
KB975688	Windows Server 2008 R2	A snapshot might become corrupted when VSS snapshot providers take more than 10 seconds to create a snapshot on a host that is running Windows Server 2008 R2.

## Hotfix updates that are required for Exchange Server backup and recovery

The following table lists the hotfix updates that are required for NMM for Exchange Server backup and recovery.

**Table 10** Hotfixes that are required for NMM for Exchange Server backup and recovery

Knowledge Base article ID	Applicable Windows Server versions	Applicable Exchange Server version	Description
KB2425179	<ul style="list-style-type: none"> <li>Windows Server 2008 SP2 (x32 and x64)</li> <li>Windows Server 2008 R2</li> </ul>	Exchange Server 2010	To perform Recovery Database (RDB) item-level recovery, install Exchange Server 2010 SP1 Rollup 2 on all applicable hosts.