## CONTENTS

### Preface

1. Figures

2. Tables

3. Chapter 1  **Introduction**

   - Overview.....................................................................................................14
   - Requirements..............................................................................................14
     - Requirement when restoring backups taken with an NMM release earlier than NMM 9.0 ..................................................15
     - Unsupported Microsoft Windows features...........................................15
     - Supported Microsoft .NET Framework versions................................15
     - Supported NetWorker server and client versions............................. 15
     - Hardware requirements.......................................................................16
     - License requirements for NMM and EMC ItemPoint..........................17
     - Authorization requirements.................................................................18
     - Microsoft hotfixes...............................................................................18
   - Exchange Server-specific configuration requirements....................19
     - Configuring an administrative user with the NMM Exchange Admin Configuration tool....................................................19
     - Exchange Server requirements for MAPI client and collaboration data objects.................................................................21
     - Exchange backup prerequisites.........................................................22
     - NetWorker restricted datazone environments.....................................22
   - Prerequisites for installing EMC ItemPoint SharePoint GLR.................22
     - Install the EMC ItemPoint Agent for Content Transfer Service for SharePoint Server granular level recovery....................22

4. Chapter 2  **Configuration Checks and Installation**

   - Accessing the installation files...............................................................26
   - Running preconfiguration checks and installing the software..............26
   - Installing NMM in MSCS and MSFCS environments.............................30
   - Installing NMM on Windows Server Core.............................................31
   - Identifying or diagnosing system configuration issues........................31
   - Uninstalling or changing installation options.......................................32
   - Upgrading NMM....................................................................................33
     - Upgrading the client operating system from Windows Server 2012 to a later version...........................................................33
     - Using Client Push to upgrade NMM...................................................33
     - Upgrading NMM from a previous release..........................................34
     - Upgrading from NME or NMSQL.......................................................35
     - Upgrading to NMM with a dedicated storage node............................35

5. Chapter 3  **Silent Installation**

   - 37

---

EMC NetWorker Module for Microsoft 9.1 Installation Guide
## FIGURES

1. NMM Exchange Admin Configuration tool................................................................. 19
2. NMM Installation Options page.............................................................................. 28
# TABLES

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Revision history</td>
</tr>
<tr>
<td>2</td>
<td>Style conventions</td>
</tr>
<tr>
<td>3</td>
<td>NMM support matrix for NetWorker server versions</td>
</tr>
<tr>
<td>4</td>
<td>Exchange server hardware requirements</td>
</tr>
<tr>
<td>5</td>
<td>User group roles configured by the NMM Exchange Admin Configuration tool</td>
</tr>
<tr>
<td>6</td>
<td>Exchange Server GLR MAPI/CDO requirements</td>
</tr>
<tr>
<td>7</td>
<td>NMM installer variables</td>
</tr>
<tr>
<td>8</td>
<td>Commands for NMM installation</td>
</tr>
<tr>
<td>9</td>
<td>Notifications and errors</td>
</tr>
<tr>
<td>10</td>
<td>Hotfixes that are required for NMM for VSS backup and recovery</td>
</tr>
<tr>
<td>11</td>
<td>Hotfixes that are required for NMM for Exchange Server backup and recovery</td>
</tr>
</tbody>
</table>
As part of an effort to improve its product lines, EMC periodically releases revisions of its software and hardware. Therefore, some functions described in this document might not be supported by all versions of the software or hardware currently in use. The product release notes provide the most up-to-date information on product features.

Contact your EMC technical support professional if a product does not function correctly or does not function as described in this document.

Note
This document was accurate at publication time. Go to EMC Online Support (https://support.emc.com) to ensure that you are using the latest version of this document.

Purpose
This guide contains information about how to install and configure the EMC® NetWorker® Module for Microsoft (NMM) Release 9.1 software.

Note
The EMC 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 EMC NetWorker Module for Microsoft Administration Guide from EMC Online Support (support.emc.com) before using this guide.

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:

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

Revision history
The following table presents the revision history of this document.

<table>
<thead>
<tr>
<th>Revision</th>
<th>Date</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>04</td>
<td>August 1, 2017</td>
<td>Fourth release of this document for EMC NetWorker Module for Microsoft release 9.1. Added a note to &quot;Upgrading NMM&quot; about upgrading NMM for Exchange from version 8.2.x.</td>
</tr>
<tr>
<td>03</td>
<td>February 27, 2017</td>
<td>Third release of this document for EMC NetWorker Module for Microsoft release 9.1. Added Microsoft .NET</td>
</tr>
</tbody>
</table>
Table 1 Revision history (continued)

<table>
<thead>
<tr>
<th>Revision</th>
<th>Date</th>
<th>Description</th>
</tr>
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<tr>
<td></td>
<td></td>
<td>Framework version 4.5.2 to the &quot;Supported Microsoft .NET Framework versions&quot; section.</td>
</tr>
<tr>
<td>02</td>
<td>February 22, 2017</td>
<td>Second release of this document for EMC NetWorker Module for Microsoft release 9.1. The following changes are included:</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Changes are made throughout this document to improve organization and readability.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Updated the &quot;Running preconfiguration checks and installing the software&quot; section.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Updated the &quot;Uninstalling or changing installation options&quot; section.</td>
</tr>
<tr>
<td>01</td>
<td>December 22, 2016</td>
<td>First release of this document for EMC NetWorker Module for Microsoft release 9.1. The following information is added:</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• The &quot;Introduction&quot; chapter is updated to remove mention of the 32-bit NMM software package which is no longer supported, and add details about NMM 9.1 supported environments.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• The &quot;Configuration Checks and Installation&quot; chapter is updated to reflect changes to the installation wizard.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• The &quot;Silent Installation&quot; chapter is updated to remove silent install options which are no longer supported.</td>
</tr>
</tbody>
</table>

Related documentation
The NMM documentation set includes the following publications:

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

Special notice conventions that are used in this document
EMC uses the following conventions for special notices:
Identifies content that warns of potential business or data loss.

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

**Typographical conventions**
EMC uses the following type style conventions in this document:

### Table 2 Style conventions

**Bold**
Used for names of interface elements, such as names of buttons, fields, tab names, and menu paths (what the user specifically selects or clicks)

**Italic**
Used for full titles of publications that are referenced in text

**Monospace**
Used for:
- System code
- System output, such as an error message or script
- Pathnames, file names, prompts, and syntax
- Commands and options

**Monospace italic**
Used for variables

**Monospace bold**
Used for user input

[ ]
Square brackets enclose optional values

|
Vertical bar indicates alternate selections - the bar means “or”

{} 
Braces enclose content that the user must specify, such as x or y or z

...
Ellipses indicate non-essential information that is omitted from the example

**Where to get help**
EMC support, product, and licensing information can be obtained as follows:

**Product information**
For documentation, release notes, software updates, or information about EMC products, go to EMC Online Support at [https://support.emc.com](https://support.emc.com).

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Your comments

Your suggestions help to improve the accuracy, organization, and overall quality of the user publications. Send your opinions of this document to DPAD.Doc.Feedback@emc.com.
CHAPTER 1

Introduction

This chapter includes the following sections:

- Overview ............................................................................................................ 14
- Requirements ..................................................................................................... 14
- Exchange Server-specific configuration requirements ........................................19
- Prerequisites for installing EMC ItemPoint SharePoint GLR.............................. 22
Overview

The EMC® NetWorker® Module for Microsoft (NMM) release 9.1 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 *EMC 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-9.1.0.0.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-9.1.0.0.exe` from the NetWorker package, and then select Client.

3. NetWorker Extended Client (if required):
   - Run `lgtoxtdlnt-9.1.0.0.exe` from the NetWorker package.
   - The *EMC 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.

### Requirement when restoring backups taken with an NMM release earlier than NMM 9.0

If you have backed up data with an NMM release earlier than NMM 9.0 (for example NMM 3.0, NMM 8.2, and so on) and plan to recover the existing backups with NMM 9.1, you must install the NetWorker Extended Client (select *lgtoxtdc1nt-9.1.0.0.exe* from the NetWorker package) and the NetWorker client (select *client from NetWorker-9.1.0.0.exe* from NetWorker package) before you install NMM.

**Note**

If the NetWorker Extended client is not installed before the **Restore previous NMM release backups** 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 9.1 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.


Consider the following points:

- Later (for example, NetWorker client 8.1 SP1 or later) applies to:
  - Service packs that are released after a respective NetWorker server or client release, or NMM release.
  - Cumulative releases for various service packs. For example, the cumulative releases NMM 8.2.1.6, NMM 8.2.1.7, and so on, apply for NMM 8.2 SP1 or later.
The NetWorker client and NMM release mapping must be the same. For example, if you are using NetWorker client 8.2.1.8, then use NMM 8.2.1.8.

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

<table>
<thead>
<tr>
<th>NetWorker server version</th>
<th>NMM 9.1</th>
</tr>
</thead>
<tbody>
<tr>
<td>NetWorker server 9.1</td>
<td>Yes</td>
</tr>
<tr>
<td>NetWorker server 9.0.1</td>
<td>Yes</td>
</tr>
<tr>
<td>NetWorker server 9.0</td>
<td>Yes</td>
</tr>
<tr>
<td>NetWorker server 8.2 SP3 and SP4</td>
<td>Yes</td>
</tr>
<tr>
<td>NetWorker server 8.2 SP1 and 8.2 SP2</td>
<td>No</td>
</tr>
<tr>
<td>NetWorker server 8.2</td>
<td>No</td>
</tr>
<tr>
<td>NetWorker server 8.1</td>
<td>No</td>
</tr>
<tr>
<td>NetWorker server 8.0</td>
<td>No</td>
</tr>
</tbody>
</table>

### 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 9.1, install NetWorker client version 9.1.

### 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**

<table>
<thead>
<tr>
<th>Requirement</th>
<th>Description</th>
</tr>
</thead>
</table>
| Memory (RAM)         | 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:  
  - If the memory resources are strained and performance is slow with normal NMM operations, add significantly more memory to support Exchange operations.  
  - If the memory performance is adequate with normal NMM operations, additional memory might not be required to support Exchange operations. |
| 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

**License requirements for NMM and EMC ItemPoint**

**NMM licensing**
Consider the following license requirements 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.

• NMM licenses cannot be used with the legacy modules for Exchange and SQL. The *EMC NetWorker Licensing Guide* provides further details.

**EMC ItemPoint licensing**

All editions of ItemPoint for SharePoint Server or Exchange Server require a license file. The ItemPoint for SharePoint Server software and the ItemPoint for Exchange Server software are licensed based on the enabled agents.

---

**Note**

EMC ItemPoint for Microsoft SharePoint Server does not open more databases than it was originally licensed for. Click **Help > About > License Info** to view the currently enabled license.

---

**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 *EMC 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](http://support.microsoft.com/kb/2604121)
  - KB2656351: [http://support.microsoft.com/kb/2656351](http://support.microsoft.com/kb/2656351)
  - KB2729449: [http://support.microsoft.com/kb/2729449](http://support.microsoft.com/kb/2729449)
  - KB2736428: [http://support.microsoft.com/kb/2736428](http://support.microsoft.com/kb/2736428)
  - KB2737019: [http://support.microsoft.com/kb/2737019](http://support.microsoft.com/kb/2737019)
  - KB2742595: [http://support.microsoft.com/kb/2742595](http://support.microsoft.com/kb/2742595)
  - KB2600217: [http://support.microsoft.com/kb/2600217](http://support.microsoft.com/kb/2600217)
  - KB2533523: [http://support.microsoft.com/kb/2533523](http://support.microsoft.com/kb/2533523)
  - KB2468871: [http://support.microsoft.com/kb/2468871](http://support.microsoft.com/kb/2468871)

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**Note**

Without these updates, backups fail.

• The **Required Microsoft Hotfixes** on page 47 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.

Configuring an administrative user with the 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 the Exchange NMM Admin Tool to create users, configure existing users, and assign correct permissions to existing users.

Note

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

You can use the NMM Exchange Admin Configuration tool to perform the following tasks:

Configure Admin User

You can perform the following actions after clicking Configure Admin User:

- Create an NMM Exchange Admin user, configure the permissions that are required for Exchange backup and recovery (both database and GLR), and set the user account in the registry.
- Update an existing Exchange Admin user's permissions to those that are required for Exchange backup and recovery (both database and GLR), and set the NMM Exchange administrator account in the registry.
- Set an existing user as an NMM Exchange Admin account in the registry.
**Update Admin Password**
Click **Update Admin Password** to modify the NMM Exchange administrator account password and update the registry.

**Validate an existing Admin**
Click **Validate an existing Admin** to verify that an existing NMM Exchange administrator account is correctly configured.

**NMM Exchange Admin Configuration tool operations**
The NMM Exchange Admin Configuration tool simplifies configuring security group memberships by ensuring that users have all the required Active Directory security group memberships and PowerShell management roles.

You can assign users to an Organization Management role, or you can assign them to the EMC NMM Exchange Admin Role group. If you assign a user to the EMC NMM Exchange Admin Role group, that user is removed from the Organization Management role. Conversely, if you assign a user to the Organization Management role, that user is removed from the EMC NMM Exchange Admin Role group. The EMC NMM Exchange Admin Role group is not created unless at least one user is configured without Organization Management rights.

To create an NMM Exchange Administrator account, the tool automatically performs the following steps:

1. Creates an Active Directory user account.
2. Creates a custom Exchange security group.
3. Adds the NMM Exchange Administrator account to the user groups listed in the following table.

**Table 5 User group roles configured by the NMM Exchange Admin Configuration tool**

<table>
<thead>
<tr>
<th>User group</th>
<th>Exchange Server role</th>
</tr>
</thead>
<tbody>
<tr>
<td>Security group memberships on NMM Client computer</td>
<td>Local Administrator</td>
</tr>
<tr>
<td>Security group memberships on Domain Controller</td>
<td>• Backup Operators</td>
</tr>
<tr>
<td></td>
<td>• Remote Desktop Users</td>
</tr>
<tr>
<td>Exchange Security Group memberships</td>
<td>• Exchange Servers</td>
</tr>
<tr>
<td></td>
<td>• Organization Management or EMC NMM Exchange Admin Roles</td>
</tr>
<tr>
<td></td>
<td>• EMC NMM Exchange Admin Roles include:</td>
</tr>
<tr>
<td></td>
<td>• Database Copies</td>
</tr>
<tr>
<td></td>
<td>• Databases</td>
</tr>
<tr>
<td></td>
<td>• Disaster Recovery</td>
</tr>
<tr>
<td></td>
<td>• Mailbox Import Export</td>
</tr>
<tr>
<td></td>
<td>• Mail Recipient Creation</td>
</tr>
<tr>
<td></td>
<td>• Mail Recipients</td>
</tr>
<tr>
<td></td>
<td>• View-Only Configuration</td>
</tr>
</tbody>
</table>
Table 5 User group roles configured by the NMM Exchange Admin Configuration tool (continued)

<table>
<thead>
<tr>
<th>User group</th>
<th>Exchange Server role</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>View-Only Recipients</td>
</tr>
</tbody>
</table>

4. Assigns the Mailbox Import Export management role to the user.
5. Creates an Exchange mailbox.
6. Assigns Send-As and Receive-As rights.
7. Registers the user account for backup and recovery on Exchange servers where NMM is installed.

Exchange Server 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 EMC 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 EMC NetWorker Module for Microsoft for Exchange VSS User Guide for the required Outlook version. If you use EMC ItemPoint for Microsoft Exchange Server, MAPI is not required for GLR.

Table 6 Exchange Server GLR MAPI/CDO requirements

<table>
<thead>
<tr>
<th>Exchange Server version</th>
<th>Required MAPI/CDO version</th>
</tr>
</thead>
<tbody>
<tr>
<td>Exchange Server 2010</td>
<td>MAPI/CDO 1.2.1 version 6.5.8244.0 or earlier</td>
</tr>
<tr>
<td>Exchange Server 2013</td>
<td>MAPI/CDO 1.2.1 version 6.5.8320.0 or later</td>
</tr>
<tr>
<td>Exchange Server 2016</td>
<td>Not applicable</td>
</tr>
</tbody>
</table>

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 EMC 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 *EMC NetWorker Module for Microsoft Release Notes* provides more information about the required .NET Framework version.
- Install the 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.

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 *EMC NetWorker Module for Microsoft Administration Guide* provides details about the required permissions and configuration. The *EMC NetWorker Administration Guide* provides detailed information about the NetWorker RDZ feature.

Prerequisites for installing EMC ItemPoint SharePoint GLR

To perform granular level recovery using EMC 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 42 for more information.
- Install the EMC 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 EMC 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 EMC 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 *EMC 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:

- Accessing the installation files................................................................. 26
- Running preconfiguration checks and installing the software.................. 26
- Installing NMM in MSCS and MSFCS environments............................... 30
- Installing NMM on Windows Server Core................................................. 31
- Identifying or diagnosing system configuration issues............................. 31
- Uninstalling or changing installation options........................................... 32
- Upgrading NMM.................................................................................... 33
Accessing the installation files

You can access the installation files from a DVD disk or from the EMC website.

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 EMC Online Support:

1. Log in as administrator or equivalent on the NetWorker client, use the following steps:
2. Go to EMC Online Support at [http://support.emc.com](http://support.emc.com).
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 **Wizard Welcome** 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 **Wizard 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.NMME\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.

The **Configure Windows Firewall** page appears.

4. Select either of the following choices, and 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).

   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**

- Select **Restore of NMM 8.2.x and Earlier Backups (VSS workflows)** if you are upgrading from a previous NMM release. For example, select this option if you are upgrading from NMM 3.0.1 or 8.2, and you plan to recover existing backups of Exchange Server, SQL Server, SharePoint Server, and Hyper-V by using NMM 9.1 (VSS workflows).

  The installation wizard completes the following steps 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 9.1. NMM 9.1 does not support Avamar node backup and recovery.

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

- Select **Exchange Granular Recovery (includes EMC ItemPoint)** 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 *EMC NetWorker Module for Microsoft for Exchange Server VSS User Guide* provides information about performing flat file restore operations.

**Note**

Selecting any of the granular recovery options using EMC ItemPoint may cause the system to reboot automatically without any user prompts. Rerun the NMM 9.1 installer after the reboot.

- 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 **EMC NetWorker** window in the SQL Server Management Studio GUI. Optionally, 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 (includes EMC ItemPoint)** or **SQL Granular Recovery (includes EMC ItemPoint)**, 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 location.

c. Click OK.

7. Click **Install**.

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

If you selected a GLR option, the **ItemPoint Capacity License** dialog box appears. Click **Yes** to continue with the install, or **No** to return to the **NMM Installation Options** window.

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 **Wizard Completing** page, click **Finish** to complete the installation and exit the installation wizard.

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.

9. If you installed NMM with one or more of the following options, check the NWFS log file, `nsfs.raw`, to determine whether you must restart the NMM host:

- SharePoint Granular Recovery (includes EMC ItemPoint)
- SQL Granular Recovery (includes EMC ItemPoint)
- Restore of NMM 8.2.x and Earlier Backups (VSS workflows)

The NMM 9.1 Installation wizard does not currently notify you when a restart is required. This issue is fixed in NMM version 9.1.0.3 and later. A message similar to the following in the `<install_path>`\applogs\nwfs.raw file indicates that you must restart the NMM host:

"Reboot the computer to apply the changes."

**After you finish**

Enable and register the NMM software. The *EMC 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 *EMC 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-9.1.0.0.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 26 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 *EMC 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-9.1.0.0.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:
   a. Use the `net use` command to mount the remote file system.
   b. 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 26.

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.
   
   Running preconfiguration checks and installing the software on page 26 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 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, `nsfs.raw`, to determine whether you must restart the NMM host:
   - SharePoint Granular Recovery (includes EMC ItemPoint)
   - SQL Granular Recovery (includes EMC ItemPoint)
   - Restore of NMM 8.2.x and Earlier Backups (VSS workflows)

The NMM 9.1 Installation wizard does not currently notify you when a restart is required. This issue is fixed in NMM version 9.1.0.3 and later. A message similar to the following in the `<install_path>\applogs\nwfs.raw` file indicates that you must restart the NMM host:

"Reboot the computer to apply the changes."

---

**Upgrading NMM**

This section describes NMM upgrade procedures.

**Note**

Perform a full backup after upgrading from a previous NMM release to NMM 9.1.

**Note**

If you are upgrading NMM for Exchange from version 8.x, be aware that non-federated Exchange database availability group (DAG) backups are no longer supported. All Exchange DAG backups are federated. The *EMC 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 32.
2. Upgrade Windows Server.
3. Install NMM by performing the steps that are described in *Running preconfiguration checks and installing the software* on page 26.

---

**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.

*EMC 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:

- 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 32.
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 35 provides details.
5. Run the NMM installer and select the **Run System Configuration Checker and Install NetWorker Module for Microsoft (Recommended)** option on the Select Configuration Checks Option page. Running preconfiguration checks and installing the software on page 26 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 and Install NetWorker Module for Microsoft (Recommended)** option on the **Select Configuration Checks Option** page.

   **NOTICE**
   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 **EMC NetWorker Installation Guide** provides details.
3. Run the NMM installer and use the **Run System Configuration Checker and Install NetWorker Module for Microsoft (Recommended)** option on the **Select 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 ................................................................. 38
- Remove NMM silently ............................................................ 39
- Upgrade NMM silently ............................................................ 40
- Modify NMM silently ............................................................... 40
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-9.1.0.0.exe folder from the NetWorker package) or storage node (select "storage node" from the NetWorker-9.1.0.0.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 *EMC 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 38 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`, `/i` are supported. The following table provides the list of variables with valid values and defaults.
Note

The recovering from previous versions of NMM (RPVNMM), SharePoint granular level recovery (GLR), and SQL VDI GLR features cannot be silently installed. To install the RPVNMM, SharePoint GLR, or SQL VDI GLR features, use the NMM Installation wizard.

Table 7 NMM installer variables

<table>
<thead>
<tr>
<th>Variable</th>
<th>Valid values</th>
<th>Default value</th>
</tr>
</thead>
<tbody>
<tr>
<td>EnableSSMS</td>
<td>[0</td>
<td>1]</td>
</tr>
<tr>
<td>EnableSSMSBackupTab</td>
<td>[0</td>
<td>1]</td>
</tr>
<tr>
<td>EnableSSMSScript</td>
<td>[0</td>
<td>1]</td>
</tr>
<tr>
<td>ConfigFirewall</td>
<td>[0</td>
<td>1]</td>
</tr>
<tr>
<td>InstallLevel</td>
<td>[100</td>
<td>150]</td>
</tr>
<tr>
<td>EnableExchangeGLR</td>
<td>[0</td>
<td>1]</td>
</tr>
<tr>
<td>BBBMountPointFolder</td>
<td>&lt;full path to directory&gt;</td>
<td>C:\Program Files\EMC NetWorker\nsr\tmp \BBBMountPoint</td>
</tr>
</tbody>
</table>

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 8 Commands for NMM installation

<table>
<thead>
<tr>
<th>Task</th>
<th>Command</th>
</tr>
</thead>
<tbody>
<tr>
<td>Install the NMM client only</td>
<td>NWVSS.exe /s /q /log &quot;C:\NMM_nw_install_detail.log&quot; InstallLevel=100</td>
</tr>
<tr>
<td>Install the NMM client and the SSMS plug-in</td>
<td>NWVSS.exe /s /q /log &quot;C:\NMM_nw_install_detail.log&quot; InstallLevel=150 EnableSSMS=1</td>
</tr>
</tbody>
</table>

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 39 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 38.

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 39 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 38.
CHAPTER 4

Configuration Tasks

This chapter includes the following sections:

- Configuring a dedicated storage node for NMM ................................................................. 42
- Configuring a Direct File Access folder ............................................................................. 42
- Configuring NMM Proxy Recovery Agent for Hyper-V FLR .............................................. 42
- Events notifications and errors .......................................................................................... 43
- Removing directives after migrating to NMM ...................................................................... 44
- Troubleshooting installation issues ..................................................................................... 44
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 *EMC NetWorker Module for Microsoft for Exchange VSS User Guide*.

**Before you begin**

You must have a dedicated storage node license. The *EMC 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.

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 9.1 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 nsrnmmproxyra.exe process so that the Hyper-V server and each virtual machine have proper communication.

**Note**

nsrnmmproxyra.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 *EMC 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 9** Notifications and errors

<table>
<thead>
<tr>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Email notification of a NetWorker event</td>
<td>Configure an Owner Notification for the NMM client to send an email notification about NetWorker events.</td>
</tr>
<tr>
<td>Error message details window</td>
<td>Displays error and event messages for NetWorker server activities, including backup or recovery operations.</td>
</tr>
<tr>
<td>NetWorker Monitor window</td>
<td>Displays details of current NetWorker server activities, operations that are related to devices and libraries, group backup operations, and events that require user intervention.</td>
</tr>
<tr>
<td>Event Viewer</td>
<td>Alerts users that user intervention is required on the NMM host.</td>
</tr>
<tr>
<td>Log files</td>
<td>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:</td>
</tr>
<tr>
<td></td>
<td>NMM</td>
</tr>
<tr>
<td></td>
<td>NetWorker Client or Storage Node</td>
</tr>
<tr>
<td></td>
<td>NetWorker Server</td>
</tr>
</tbody>
</table>
### Table 9 Notifications and errors (continued)

<table>
<thead>
<tr>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>The debug level of a save or recover process determines the number of messages that an operation sends to the log file.</td>
</tr>
</tbody>
</table>

### 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 32.
4. Upgrade NMM by performing the steps that are described in Configuration Checks and Installation on page 25.

**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 Power Monitor 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.
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:

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

Output similar to the following appears:

```
NetWorker administration program.
Use the "help" command for help.
sradmin> delete type: NSR peer information; name: bv-tlscs.belred.legato.com
```

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.
Configuration Tasks
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. For required Hyper-V over CSV hotfixes, see *EMC NetWorker Best Practices for Hyper-V over CSV Cluster Data Protection Using EMC NetWorker Module for Microsoft Technical Notes*.

- Hotfix updates that are required for VSS backup and recovery ..................48
- Hotfix updates that are required for Exchange Server backup and recovery ......48
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 10 Hotfixes that are required for NMM for VSS backup and recovery

<table>
<thead>
<tr>
<th>Knowledge Base article ID</th>
<th>Windows Server 2008 R2</th>
<th>Windows Server 2012</th>
<th>Windows Server 2012 R2</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>KB975832</td>
<td>X</td>
<td></td>
<td></td>
<td>You cannot perform certain disk-related operations after a VSS hardware provider fails to create a snapshot on a computer that is running Windows Server 2008.</td>
</tr>
<tr>
<td>KB2748349</td>
<td>X</td>
<td></td>
<td></td>
<td>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.</td>
</tr>
<tr>
<td>KB975688</td>
<td>X</td>
<td></td>
<td></td>
<td>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.</td>
</tr>
</tbody>
</table>

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 11 Hotfixes that are required for NMM for Exchange Server backup and recovery

<table>
<thead>
<tr>
<th></th>
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<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>KB2425179</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td></td>
<td></td>
<td>Exchange Server 2010</td>
<td>To perform Recovery Database (RDB) item-level recovery, install Exchange Server 2010 SP1 Rollup 2 on all applicable hosts.</td>
</tr>
</tbody>
</table>