# TABLES

<table>
<thead>
<tr>
<th>Title</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 EMC publications for additional information</td>
<td>10</td>
</tr>
<tr>
<td>2 Supported Microsoft .NET Framework versions</td>
<td>17</td>
</tr>
<tr>
<td>3 NMM support matrix for NetWorker server versions</td>
<td>18</td>
</tr>
<tr>
<td>4 NMM support matrix for NetWorker client versions</td>
<td>18</td>
</tr>
<tr>
<td>5 Installed services</td>
<td>37</td>
</tr>
<tr>
<td>6 Commands for silent installation of NMM</td>
<td>46</td>
</tr>
<tr>
<td>7 Commands for silent installation of NWFS</td>
<td>48</td>
</tr>
<tr>
<td>8 Commands for silent removal of NMM</td>
<td>50</td>
</tr>
<tr>
<td>9 Sample scripts for silent installation</td>
<td>51</td>
</tr>
<tr>
<td>10 Notifications and errors</td>
<td>58</td>
</tr>
<tr>
<td>11 Hotfixes required for NMM general backup and recovery</td>
<td>62</td>
</tr>
<tr>
<td>12 Hotfixes required for NMM for VSS backup and recovery</td>
<td>62</td>
</tr>
<tr>
<td>13 Hotfixes required for NMM for Exchange Server backup and recovery</td>
<td>63</td>
</tr>
<tr>
<td>14 Hotfixes required for NMM for SharePoint Server backup and recovery</td>
<td>64</td>
</tr>
<tr>
<td>15 Hotfixes required for NMM for Hyper-V Server backup and recovery</td>
<td>65</td>
</tr>
</tbody>
</table>
## FIGURES

<table>
<thead>
<tr>
<th>Title</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Simple LAN-based environment</td>
<td>26</td>
</tr>
<tr>
<td>LAN-based environment with a proxy client</td>
<td>27</td>
</tr>
<tr>
<td>LAN-free environment</td>
<td>28</td>
</tr>
<tr>
<td>LAN-free environment with a DSN</td>
<td>30</td>
</tr>
</tbody>
</table>
Figures
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 representative if a product does not function properly or does not function as described in this document.

**Note:** This document was accurate at publication time. Go to EMC Online Support (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 NetWorker Module for Microsoft (NMM) Release 8.2 software.

**IMPORTANT**

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 to download a copy of the *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 used in backup and recovery:

- EMC NetWorker software
- EMC NetWorker snapshot management
- Microsoft Volume Shadow Copy Service (VSS) technology
## Related documentation

The following table lists the EMC publications that provide additional information.

<table>
<thead>
<tr>
<th>Publication title</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>EMC NetWorker Module for Microsoft Release 8.2</strong>&lt;br&gt;Release Notes</td>
<td>Provides information about new features and changes, problems fixed from previous releases, known limitations, and late-breaking information that was not provided in the remaining documentation set.</td>
</tr>
<tr>
<td><strong>EMC NetWorker Module for Microsoft Release 8.2</strong>&lt;br&gt;Administration Guide</td>
<td>Provides information common to all the supported Microsoft applications that can be backed up and recovered by using EMC NetWorker Module for Microsoft.</td>
</tr>
<tr>
<td><strong>EMC NetWorker Module for Microsoft for SQL and SharePoint VSS Release 8.2 User Guide</strong></td>
<td>Provides information about using NMM for backup and recovery of SQL Server VSS and SharePoint Server VSS.</td>
</tr>
<tr>
<td><strong>EMC NetWorker Module for Microsoft for Exchange VSS Release 8.2 User Guide</strong></td>
<td>Provides information about using NMM for backup and recovery of Exchange Server VSS.</td>
</tr>
<tr>
<td><strong>EMC NetWorker Module for Microsoft for Hyper-V VSS Release 8.2 User Guide</strong></td>
<td>Provides information about using NMM for backup and recovery of Hyper-V Server VSS.</td>
</tr>
<tr>
<td><strong>EMC NetWorker Module for Microsoft for SQL VDI Release 8.2 User Guide</strong></td>
<td>Provides information about using NMM for backup and recovery of SQL Server using the Virtual Device Interface technology.</td>
</tr>
<tr>
<td><strong>EMC NetWorker Module for Microsoft for Windows Bare Metal Recovery Release 8.2 User Guide</strong></td>
<td>Provides information about performing Windows Bare Metal Recovery by using NMM.</td>
</tr>
<tr>
<td><strong>EMC NetWorker Module for Microsoft Release 8.2</strong>&lt;br&gt;Advanced Recovery Guide</td>
<td>Provides supplemental information about using NMM for backup and recovery of all supported Microsoft applications. Use this guide along with application-specific user guides for backup and recovery information.</td>
</tr>
<tr>
<td><strong>EMC NetWorker Performing backup and recovery of SharePoint Server by using NetWorker Module for Microsoft SQL VDI solution Release 8.2 Technical Notes</strong></td>
<td>Provides information for performing backup and recovery of a SharePoint Server by using the SQL Server Virtual Device Interface (VDI) technology and the SharePoint VSS Writer with NMM.</td>
</tr>
<tr>
<td><strong>EMC NetWorker Performing Exchange Server Granular Recovery by using NetWorker Module for Microsoft with Ontrack PowerControls Release 8.2 Technical Notes</strong></td>
<td>Provides information about using NMM with Ontrack PowerControls to perform granular level recovery (GLR) of deleted Microsoft Exchange Server mailboxes, public folders, and public folder mailboxes.</td>
</tr>
<tr>
<td><strong>EMC NetWorker SharePoint BLOB Backup and Recovery by using NetWorker Module for Microsoft and Metalogix StoragePoint Release 8.2 Technical Notes</strong></td>
<td>Provides information about backup and recovery of SharePoint Binary Large Objects (BLOB) by using EMC NetWorker Module for Microsoft release 8.2 and Metalogix StoragePoint.</td>
</tr>
<tr>
<td><strong>EMC NetWorker Cloning Integration Guide</strong></td>
<td>Provides planning, practices, and configuration information for using the NetWorker, NMM, and NMDA cloning feature.</td>
</tr>
<tr>
<td><strong>EMC NetWorker Licensing Guide</strong></td>
<td>Provides information about licensing NetWorker and its modules.</td>
</tr>
<tr>
<td><strong>EMC NetWorker Online Software Compatibility Guide</strong></td>
<td>Provides a list of supported client, server, and storage node operating systems for the following software products: NetWorker and NetWorker application modules and options (including deduplication and virtualization support), AlphaStor, Data Protection Advisor, and HomeBase.</td>
</tr>
<tr>
<td><strong>EMC NetWorker and EMC Data Domain Deduplication Devices Integration Guide</strong></td>
<td>Provides planning and configuration information about the use of Data Domain devices for data deduplication backup and storage in a NetWorker environment.</td>
</tr>
<tr>
<td><strong>EMC NetWorker and EMC Avamar Integration Guide</strong></td>
<td>Provides planning and configuration information about the use of Avamar in a NetWorker environment.</td>
</tr>
</tbody>
</table>
EMC uses the following conventions for special notices:

**NOTICE**

NOTICE is used to address practices not related to personal injury.

**Note:** A note presents information that is important, but not hazard-related.

**IMPORTANT**
An important notice contains information essential to software or hardware operation.

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

**Normal**
Used in running (nonprocedural) text for:
- Names of interface elements, such as names of windows, dialog boxes, buttons, fields, and menus
- Names of resources, attributes, pools, Boolean expressions, buttons, DQL statements, keywords, clauses, environment variables, functions, and utilities
- URLs, pathnames, filenames, directory names, computer names, links, groups, service keys, file systems, and notifications

**Bold**
Used in running (nonprocedural) text for names of commands, daemons, options, programs, processes, services, applications, utilities, kernels, notifications, system calls, and man pages

Used in procedures for:
- Names of interface elements, such as names of windows, dialog boxes, buttons, fields, and menus
- What the user specifically selects, clicks, presses, or types

**Italic**
Used in all text (including procedures) for:
- Full titles of publications referenced in text
- Emphasis, for example, a new term
- Variables

**Courier**
Used for:
- System output, such as an error message or script
- URLs, complete paths, filenames, prompts, and syntax when shown outside of running text

**Courier bold**
Used for specific user input, such as commands

**Courier italic**
Used in procedures for:
- Variables on the command line
- User input variables

<> Angle brackets enclose parameter or variable values supplied by the user

[] 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 nonessential information 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, licensing, and service, go to the EMC online support website (registration required) at:

support.emc.com

**Technical support** — For technical support, go to EMC online support and select Support. On the Support page, you will see several options, including one to create a service request. Note that to open a service request, you must have a valid support agreement. Contact your EMC sales representative for details about obtaining a valid support agreement or with questions about your account.

**Online communities** — Visit EMC Community Network at community.emc.com for peer contacts, conversations, and content on product support and solution. Interactively engage online with customers, partners, and certified professionals for all EMC products.

Your comments

Your suggestions will help us continue to improve the accuracy, organization, and overall quality of the user publications. Send your opinions of this document to:

DPAD.Doc.Feedback@emc.com
The following table lists the revision history of this document.

<table>
<thead>
<tr>
<th>Revision</th>
<th>Date</th>
<th>Description of added or changed sections</th>
</tr>
</thead>
<tbody>
<tr>
<td>03</td>
<td>September 26, 2014</td>
<td>Added “Supported NetWorker server and client versions” on page 18 and added “Command for silent installation of the SSMS plug-in option for SQL Server Management Studio” on page 49.</td>
</tr>
<tr>
<td>02</td>
<td>July 23, 2014</td>
<td>Added “Supported NetWorker server and client versions” on page 18.</td>
</tr>
<tr>
<td>01</td>
<td>June 18, 2014</td>
<td>First release of this document for EMC NetWorker Module for Microsoft release 8.2.</td>
</tr>
</tbody>
</table>
Revision History
CHAPTER 1
Introduction

This chapter includes the following sections:

- Overview.......................................................... 16
- Requirements ................................................... 16
- Exchange Server-specific tasks......................... 20
Overview

The EMC® NetWorker® Module for Microsoft (NMM) release 8.2 software provides backup and recovery support for Microsoft applications. You can use NMM to back up and recover:

- Microsoft Active Directory
- Microsoft SharePoint Server
- Microsoft Exchange Server*
- Microsoft SQL Server
- Microsoft Hyper-V Server*

* Requires a reboot if you select the GLR option during installation.

**NOTICE**

The NMM software installation includes EMC PowerSnap™, EMC Replication Manager for PowerSnap, and Volume Shadow Copy Service (VSS) software. Do not use a VSS solution other than the one installed with NMM. Data loss can occur if you use a different VSS solution to delete shadow copies that NMM created. Restoring an application with a different VSS solution might prevent the application from being restored with NMM.

After installing the NMM client software, if you perform a save or rollover save operation and then move to a non-NMM client, you cannot browse the save sets created by the NMM client with the non-NMM client. You must use the NMM software to recover backups performed with NMM. When the NMM software is not installed, the NetWorker User application cannot browse NMM save sets. This is because the NetWorker client can only recognize the client file index entry format that is created with an NMM client when displayed in NMM.

Backing up any Microsoft application server with multiple backup products can result in improper behavior of the products. Do not use multiple products to back up a Microsoft application server.

Requirements

You must install both the NetWorker client software and NMM on the client. Install the NetWorker client software before installing NMM.

Because NMM is an application client, it does not run on the NetWorker server. Do not install the NMM client on a NetWorker server.

Prior to performing NMM backups, you must create the client instance on the NetWorker server.

**NOTICE**

The *NetWorker Online Software Compatibility Guide* contains additional and the most up-to-date information about NMM compatibility.
Introduction

For details on version, license, access, and connectivity requirements for installation of NMM, review:

- “Supported Microsoft Windows systems and features” on page 17
- “Supported Microsoft .NET Framework versions” on page 17
- “Supported NetWorker server and client versions” on page 18
- “Hardware requirements” on page 18
- “License requirements” on page 19
- “Authorization requirements” on page 19
- “Microsoft hotfixes” on page 19

Supported Microsoft Windows systems and features

This section lists the various Microsoft Windows versions and Microsoft Windows-related features that NMM 8.2 supports.

**NOTICE**

NMM does not support:
- Windows IA64 editions
- VSS Hardware Provider based proxy backup of Windows dynamic disks
- Single Instance Storage (SIS)

Supported Microsoft .NET Framework versions

The following table lists the versions of the Microsoft .NET Framework that NMM supports:

<table>
<thead>
<tr>
<th>OS Version</th>
<th>.Net 4.5.1</th>
<th>.Net 4.5</th>
<th>.Net 4.0</th>
<th>NMM 8.2</th>
<th>NMM 3.0 SP1</th>
<th>NMM 3.0</th>
</tr>
</thead>
<tbody>
<tr>
<td>Windows 2012 R2</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
<td>Yes</td>
<td>Yes</td>
<td>OS not supported</td>
</tr>
<tr>
<td>Windows 2012</td>
<td>Yes</td>
<td>Yes</td>
<td>No</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Windows 2008 R2</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Windows 2008</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Windows 2003</td>
<td>No</td>
<td>No</td>
<td>Yes</td>
<td>OS not supported</td>
<td>Yes (SQL VDI only)</td>
<td>OS not supported</td>
</tr>
<tr>
<td>Windows 2003 R2</td>
<td>No</td>
<td>No</td>
<td>Yes</td>
<td>OS not supported</td>
<td>Yes (SQL VDI only)</td>
<td>OS not supported</td>
</tr>
</tbody>
</table>
Supported NetWorker server and client versions

The following tables provide the NMM support matrix for NetWorker server and client versions. Please refer to the individual NMM release sections of the Software Compatibility Guide for more specific details.

Table 3 NMM support matrix for NetWorker server versions

<table>
<thead>
<tr>
<th>NetWorker server version</th>
<th>NMM 2.4</th>
<th>NMM 2.4 SP1</th>
<th>NMM 3.0</th>
<th>NMM 3.0 SP1</th>
<th>NMM 8.2</th>
</tr>
</thead>
<tbody>
<tr>
<td>NetWorker server 8.2 or later</td>
<td>No</td>
<td>No</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>NetWorker server 8.1 or later</td>
<td>No</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>NetWorker server 8.0 or later</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
</tbody>
</table>

Table 4 NMM support matrix for NetWorker client versions

<table>
<thead>
<tr>
<th>NetWorker client version</th>
<th>NMM 2.4</th>
<th>NMM 2.4 SP1</th>
<th>NMM 3.0</th>
<th>NMM 3.0 SP1</th>
<th>NMM 8.2</th>
</tr>
</thead>
<tbody>
<tr>
<td>NetWorker client 8.2</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>Yes</td>
</tr>
<tr>
<td>NetWorker client 8.1 SP1 or later</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>NetWorker client 8.1</td>
<td>No</td>
<td>No</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>NetWorker client 8.0 or later</td>
<td>Yes</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
<td>No</td>
</tr>
</tbody>
</table>

Note the following considerations:

- 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, and includes cumulative releases.
- For Windows Server 2012 R2 protection, it is strongly recommended that you upgrade to NMM 8.2, which contains the latest fixes related to Microsoft updates for Windows Server.

Install the NetWorker software on the host before installing the NMM software. If the host is a DSN, install the NetWorker Storage node software.

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

Hyper-V requirements

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

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

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

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

License requirements

This section provides a brief overview of the license requirements for NMM. The NetWorker Licensing Guide provides details.

- 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, which can be used multiple times and within all of the virtual guests on a single physical server for that application type.
- 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. This ensures that customers can upgrade from NME (which is now end-of-sale) to NMM and avoid licensing changes.
- The reverse is not true. NMM licenses cannot be used with the legacy modules for Exchange and SQL.

Authorization requirements

The configuration and operation of NMM backups and recoveries require authorized access to data for the user who will perform the configuration. 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, install the required updates and hotfixes from the Microsoft website.

- Install the latest hotfixes for 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/KB2736428
Introduction

- 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

Without these updates, backups will fail.

- Each Microsoft application protected by the NMM software. Appendix A, “Microsoft Hotfixes Required for NMM 8.2,” provides the list of specific hotfixes required for application backup and recovery.

Exchange Server-specific tasks

You must complete certain configuration tasks before you install the NetWorker client and the NMM software for Exchange Server backup and recovery:

- “Creating the Exchange backup user account and configuring Exchange services” on page 20
- “Updating and modifying the Exchange Server user identity” on page 23
- “Configuring Exchange permissions for user accounts” on page 23

Creating the Exchange backup user account and configuring Exchange services

You must create an NMM backup user account, NMMBackupUser, so that NMM has sufficient Exchange and administrator privileges to perform all backup, browse, and restore operations. You only need to create this account once in the Exchange domain.

After you create the NMMBackupUser account on the domain and activated the NMMBackupUser mailbox, you must configure the NMM services on each Exchange server to run as NMMBackupUser.

1. Ensure that MAPI/CDO1.2.1 is installed.
   Exchange Server 2010 and 2007 require 6.5.8244.0. Exchange Server 2013 requires version 6.5.8320.0 or later.

2. Log in to the domain controller server using an administrative user account.
   If the Exchange server is in the child domain of a parent-child domain, then log in to the child domain using the parent domain administrator account.

   The Active Directory Users and Computers application appears.

   The New Object - User wizard appears.

5. In the Full name text box, type the name for the account. The suggested name is NMMBackupUser.

6. In the User logon name text box, type the login name for the account. The suggested name is NMMBackupUser.
7. From the list next to the User logon name text box, select the Active Directory domain for the account.

8. In the User logon name (pre-Windows 2000) text box, type the same login name for the account again and click Next.

9. In the Password and Confirm password text boxes, type and confirm the password for the account. Select the Password never expires checkbox.

10. Click Next, and then complete the remaining pages of the wizard to create the account.

11. The new user appears in the list of Active Directory users.

12. Right-click the new account and select Properties.

   The User Properties dialog box appears.

13. Click the Member Of tab.

14. Make the account a member of the following groups:
   - Administrators group on each Exchange server
   - Backup Operators
   - Domain Users
   - Exchange Servers
   - Log on as Service
   - Remote Desktop Users
   - (Exchange Server 2010 only) Organization Management
   - (Exchange Server 2007 only) Exchange Organization Administrators

   When the Exchange server is also a Domain Controller, you can add the NMMBackupUser account to the Organization Management group only.

15. Click OK.

16. Log in to the Exchange server as an administrator.

   If you are currently logged into the Exchange Server, you must log off and log in again to apply the Active Directory changes.

17. Click Start > Administrative Tools > Local Security Policy.

18. In the Local Security Policy window, in the Security Settings pane, expand the Local Policies folder and then click User Rights Assignment.

19. In the Policy pane, right-click Log on as a service and click Properties.

   The Log on as a service Properties window appears.

20. On the Local Security Setting tab, click Add User or Group.

21. Add NMMBackupUser and then click OK.

22. Click OK.

23. Connect to the NetWorker server from the NetWorker Management Console Administration window and click Configuration.

24. Click User Groups.
25. Add the NMMBackupUser and system accounts as a NetWorker administrator.

   For NetWorker server 8.0 and later:
   a. In the NetWorker Management Console, connect to the NetWorker server.
   b. Click Configuration, right-click the NetWorker server in the navigation pane, and then click Properties.
   c. On the Setup tab in the Administrators field, type the following:

   user=NMMBackupUser,host=machine_name
   user=system,host=machine_name

   where machine_name is the name of the Exchange server.

   For NetWorker server 7.6 and earlier:
   a. In the NetWorker Management Console, connect to the NetWorker server.
   b. Click Configuration, select User Groups in the navigation pane, then edit the properties of the Administrators user group.
   c. In the Users attribute, type the following:

   user=NMMBackupUser,host=machine_name
   user=system,host=machine_name

   where machine_name is the name of the Exchange server.

26. Click OK.

27. From the Exchange Management Console, create an NMMBackupUser mailbox with the default settings.

28. Create a new mailbox for the NMMBackupUser account.

29. Add FullAccess permission to the NMMBackupUser account by using the Exchange Management Shell. Type the following command on a single command line:

   get-ExchangeServer Exchange Server name/virtual server name |
   add-adpermission -user NMMBackupUser -accessrights ExtendedRight -extendedrights Send-As, Receive-As, ms-Exch-Store-Admin

   Substitute the applicable machine name, virtual name (for a cluster), and username.

30. When you manually create the NMMBackupUser account, you must activate the NMMBackupUser Exchange server mailbox using one of the following methods:
   - Access the NMMBackupUser mailbox with an Outlook email client.
   - Send a test email message to the NMMBackupUser email account.

31. Add the NMMBackupUser user to the local administrators group.

32. Log off of the Exchange server and then log in as NMMBackupUser.

33. Install the NMM software. Chapter 3, “Configuration Checks and Installation,” provides details.
Updating and modifying the Exchange Server user identity

The username, password, and domain for Exchange Server 2007, Exchange Server 2010, or Exchange Server 2013 are copied into the NMM software during an NMM installation. The user information will be incorrect if either of the following conditions has occurred:

◆ Exchange Server is installed after the NMM client is installed.
◆ The username, password, or domain is changed after NMM client is installed or the information is incorrect.

To update the NMM software with the correct user information, follow the steps provided in the EMC article: http://solutions.emc.com/emcsolutionview.asp?id=esg130356.

Note: Without the proper user identity, backups will fail, even if they do not involve Exchange Server data.

Configuring Exchange permissions for user accounts

Configure the appropriate Exchange permissions for the NMM software.

For Exchange Server 2010 or Exchange Server 2013

To specify or restrict permissions, use the Exchange Management Shell to configure the appropriate Exchange Server 2010 or Exchange Server 2013 permissions for user accounts as follows:

◆ For stand-alone servers, configure the domain user account for the Databases role by running the following command from the Exchange Management Shell:

```powershell
New-ManagementRoleAssignment -Role "Databases" -User user_account
```

Alternatively, you can add the user to the Server Management group instead of adding the roles.

◆ For Database Availability Group (DAG) servers, configure the domain user account with the Database, Database Copies, Database Availability Group, and View-Only Configuration roles. Run the following command from the Exchange Management Shell:

```powershell
New-ManagementRoleAssignment -Role "Databases" -User user_account
New-ManagementRoleAssignment -Role "Database Copies" -User user_account
New-ManagementRoleAssignment -Role "Database Availability Groups" -User user_account
New-ManagementRoleAssignment -Role "View-Only Configuration" -User user_account
```

Alternatively, you can add the user to the Server Management group instead of adding the roles.
Introduction

- For mount hosts, provide a domain user account that is a member of the local administrators group.

  **Step 14** provides details on the user account permissions that are required for all Exchange environments. Add View-Only to this list.

**For Exchange Server 2007**

During the installation of NMM for Exchange Server 2007, specify a domain account with local administrator rights and specify Exchange full administration privileges.

**For Restricted Data Zones environments**

NMM supports NetWorker Restricted Data Zones (RDZ). An RDZ adds an additional permission checking layer, which ensures that RDZ administrators accessing areas that have not been specifically coded for this feature, by default, do not have access to those areas.

To perform DAG backups and recoveries in an RDZ, you must configure additional permissions and configuration. 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.
CHAPTER 2
Supported Network Configurations

This chapter includes the following sections:

- Simple LAN-based environment ................................................................. 26
- LAN-based environment with a proxy client .................................................. 27
- LAN-free environment .................................................................................. 28
- LAN-free dedicated storage node environment ............................................. 29
Simple LAN-based environment

In a LAN-based environment, NetWorker stores the production data on a storage area network (SAN) or direct-attached storage (DAS). The data path to the NetWorker storage node is over a LAN. You install the NMM software on the application server host.

The figure below shows a simple LAN-based storage area network with a supported NetWorker server, storage node, and clients.

The data moves as follows:

1. The NetWorker server contacts the application server to start the process.
2. The application server uses NMM to create a snapshot of the data on the primary storage volume.
   
   The figure below shows example snapshots, S1 through S5.
3. The application server transfers the data from the snapshot over the LAN and onto a backup medium such as a file type disk, advanced file type disk, tape, Data Domain device, or Avamar deduplication node.

![Figure 1 Simple LAN-based environment](image-url)
LAN-based environment with a proxy client

A proxy client is a remote host that acts as a data mover (DM) to “roll over” the snapshot to a conventional backup medium. To free up resources on the application server, you can perform a serverless backup, where NMM uses a proxy client to process and backup a snapshot. This configuration is also called a RolloverOnly backup.

To perform a serverless backup, ensure that the application server and proxy client have the same operating system version. Install the same version of the NMM client, NetWorker software, and VSS provider on the application server and proxy client.

The figure below shows a LAN-based environment with a SAN and a proxy client with a NetWorker server, storage node, and clients.

The data moves as follows:

1. The NetWorker server contacts the application server to start the process.
2. The NMM software on the application server works with other software to create a snapshot of the data on the primary storage volume and mount the snapshot on the proxy client.
   
The figure below shows example snapshots S1 through S5.
3. NetWorker moves the snapshot data from the proxy client over the LAN to a backup medium such as a file type disk, advanced file type disk, tape, Data Domain device, or Avamar deduplication node.

![Figure 2 LAN-based environment with a proxy client](image-url)
LAN-free environment

The LAN-free environment avoids the network traffic that occurs during a snapshot rollover to a conventional backup medium. The NetWorker server and the application server communicate through the LAN. However, NetWorker does not transfer the data across the LAN.

The figure below shows a LAN-free environment that uses a SAN with a NetWorker server, storage node, and clients. The NMM client software is installed on the application server. The proxy client is configured on the NetWorker storage node. Both the snapshot and the backup device are directly attached to the NetWorker storage node.

The data moves as follows:

1. The NetWorker server contacts the application server to start the process.
2. The NMM software on application server works with other software to create a snapshot of the data on the storage volume and make it available to the proxy client.
3. NetWorker mounts the snapshot on the proxy client, which is also a NetWorker storage node.
4. NetWorker moves the snapshot data from the proxy client to the attached backup medium such as a file type disk, advanced file type disk, tape, Data Domain device, or Avamar deduplication node.

Figure 3  LAN-free environment
LAN-free dedicated storage node environment

A dedicated storage node (DSN) is a storage node host that can only backup the data that the host owns.

You can configure an Application Server as a DSN to support the following operations:

- LAN-free backups without a separate NMM proxy node.
- Backups to the SAN devices attached directly to an NMM client host.
- Backups to the SAN devices attached to an NMM proxy node.

**NOTICE**

DSN support is available for all applications, however for Exchange Server 2010 DAG a Regular Storage node (RSN) license is required.

DSN support for NMM requires the following:

- A NetWorker storage node device. First install the NetWorker storage node before installing NMM.
- A valid snapshot policy, for example:
  
  Number of Snapshot = 1, Retain Snapshot = 0, Backup = All
- A NetWorker Group resource that uses the selected snapshot policy.
- A storage node device on the NetWorker Client resource that uses NetWorker media pool selection criteria.
- Backup device configured on the DSN.
- A backup device on the NetWorker server host, as required for bootstrap data, client file indexes, and Cover Save set entries.

**NOTICE**

When not using a DSN device, ensure that you manually create a default device.

The figure below illustrates the data movement in a LAN-free environment with a DSN:

1. The NetWorker server starts the process by contacting the application server. NMM software is installed on the application server, and the application server is configured as a NetWorker DSN.

2. The NMM software on the application server, with other software, creates a snapshot of the data on the primary storage volume and makes the snapshot available to the DSN, which also resides on the application server.

   The NetWorker server and the application server communicate over the LAN. However, NetWorker does not transfer the data across the LAN because the backup medium and storage media are connected to the SAN.

3. The DSN stores the snapshot data on a conventional backup medium, such as a file type disk, advanced file type disk, or tape.
The figure below shows example snapshots S1 through S5 created on the storage volume.

**Figure 4** LAN-free environment with a DSN

**Note:** If Dedicated Storage Node is set to Yes, the storage node host does not allow any data from any other host.
CHAPTER 3
Configuration Checks and Installation

This chapter includes the following sections:

- Accessing the installation files ................................................................. 32
- Running preconfiguration checks and installing the software..................... 32
- Installing NMM in MSCS and MSFCS environments..................................... 37
- Installing NMM on Windows Server Core .................................................. 38
- Uninstalling or changing installation options.............................................. 39
- Upgrading NMM ....................................................................................... 40
Accessing the installation files

Access the installation files from a DVD disk or the EMC website as follows:

- To access the NMM software from a local DVD disk:
  a. Log in as administrator or equivalent on the NetWorker client.
  b. Insert the NMM DVD disk into the DVD drive.
  c. Run `setup.exe` directly from the DVD.

- To access the NMM software from EMC Online Support:
  a. Log in as administrator or equivalent on the NetWorker client.
  b. Go to EMC Online Support at [http://support.emc.com](http://support.emc.com).
  c. Browse to the Downloads for NetWorker Module for Microsoft page.
  d. Download the NMM software .zip file, either the 32-bit or 64-bit version as appropriate for the system, to a temporary folder that you create.
  e. Extract the .zip file to the temporary folder.

Running preconfiguration checks and installing the software

The NetWorker client software and NMM software are installed separately. The NetWorker storage node software is also installed separately from the NMM software. Install the NetWorker client and, if applicable, storage node software before you install NMM. The NetWorker Installation Guide describes how to install the NetWorker software.

To run the configuration checks and install the NMM software:

1. Review Chapter 1, “Introduction,” and ensure that the environment meets the requirements.
2. In the “networkr” directory, run `setup.exe` to start the installation wizard.
   The wizard installs the NMM software in the same path where you installed the NetWorker client or NetWorker storage node software.
3. In the Welcome to NetWorker Module for Microsoft Installation page, click Next.
   The Customer Information dialog box appears.
4. Type your full name and the organization name, and then click Next.
   The License Agreement page appears.
5. Read the license agreement carefully. Select the I accept the terms in the license agreement option, and then click Next.
   The Select Configuration Checks Option page appears, as shown in the following figure.
Running preconfiguration checks and installing the software

6. Select one of the following options and click Next:

- **Run System Configuration Checker** — Select this option to check if the setup is correctly configured for backup and recovery.

- **Install NetWorker Module for Microsoft** — Select this option to skip the System Configuration Checker and only install NMM.

- **Run System Configuration Checker and Install NetWorker Module for Microsoft (Recommended)** — Select this option when:
  - Performing a fresh installation of NMM.
  - Upgrading from a previous NMM release, the Exchange interim solution, or NetWorker Module for SQL Server (NMSQL).

When selected, first the System Configuration Checker is run and then NMM is installed.

The **Select Applications for Configuration Checks** page appears. This page provides the following options:

- Application Host — The installation process always runs the configuration checks on an application server. These tests are related to the operating system, software components, Volume Shadow Copy Service (VSS) subsystem, and generic conditions that NMM requires.

- Microsoft Exchange Server

- Microsoft SharePoint Server

- Microsoft SQL Server

- Microsoft Hyper-V Server
Configuration Checks and Installation

The installer automatically detects the presence of an Exchange, SharePoint, or SQL application on the system and selects that application by default. To prevent the configuration check for a detected application, clear the option.

For example, if the Exchange Server is installed, then by default, the installer selects the Exchange option.

7. Select one or more options in the **Select Applications for Configuration Checks** page and click **Next**.

   Depending on the options you select, the subsequent page might differ:
   - If you select the Microsoft Exchange option, then the Microsoft Exchange Domain Information page appears. Continue with **step 8**.
   - If you select any other option, then the Running Configuration Checks page appears. Continue with **step 9**.

8. In the **Microsoft Exchange Domain Information** page that appears, type the required information and click **Next**. Provide the login information for the user who will perform the backups and recoveries.

   **IMPORTANT**

   If you type incorrect information in the Microsoft Exchange Domain Information page and complete the installation, then you must uninstall and reinstall NMM to correct the domain information.

9. When the configuration checks complete, click **Next**.

   The Result of Configuration Checks page appears, as shown in the following figure. Review the details in this page. This page lists the number of checks that have passed, failed, or have warnings against them. You must 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.

10. Click **Open detailed report** to view the generated report. NMM saves the report in the nsr\applogs folder.
11. After you make the required changes to eliminate the errors, click **ReRun** to perform the configuration checks again and ensure that there are no errors. The **ReRun** button appears when errors or warnings appear in the results report. When the check does not report any errors or warnings, the **Next** button replaces the **ReRun** button. You can continue with the NMM installation.

You can also ignore the errors and warnings and continue with the installation process. To do this, select the **Ignore errors and continue with installation** option. Choose this option in cases when the that the configuration checker reports do not relate to your setup or requirements. When you select the **Ignore errors and continue with installation** option, the **Next** button appears, even though errors appear in the results window.

The **Select NetWorker Module for Microsoft features** page appears, as shown in the following figure. Exchange, SharePoint, and Hyper-V support granular level recovery.

12. On the **Select NetWorker Module for Microsoft features** page, select the following options:

- If you plan to use granular level recovery for Exchange, SharePoint, or Hyper-V, select the **Granular Level Recovery (GLR)** option. To use GLR, you must reboot the application server after you complete the installation.

- If you plan to use the SQL SQL Server Management Studio (SSMS) plug-in, which lets you perform backups and recoveries from the SQL Server Management Studio, select the **SQL SSMS Plug-in** option.

  **NOTICE**

  When you select the GLR option on a host with Internet Explorer 9, a mount notifier add-on appears in the Internet Explorer Manage Add-ons window. EMC recommends that you leave this add-on option disabled.

13. Click **Next**.

The Write Cache, Mount Point and Hyper-V VHD Mount Point locations page appears.

14. On the **Write Cache, Mount Point and Hyper-V VHD Mount Point locations** page, provide the locations for GLR cache, mount point, and Hyper-V VHD mount point. To use the default locations or select new locations by, click the **Change** button and click **Next**.
NMM only requires the HyperV_VHD_mount_point_location setting to mount GLR Hyper-V save sets. If the application server is not a Hyper-V server, ignore this setting.

To ensure proper GLR operation, the Mount Point folder location for GLR must be empty.

15. On the Windows Firewall page, select either Configure the Windows Firewall or Do not configure the Windows Firewall. When you select Do not configure the Windows Firewall, you must manually specify NMM exceptions.

“Configuring Windows firewall settings” on page 56 contains information on how you can configure the firewall settings after NMM installation is complete.

16. Click Next.

The Replication Manager Client Setup page appears.

17. On the Replication Manager Client Setup page, modify the control and data port numbers if required and then click Next. The default value for the control port is 6728 and the data port is 6729. However, you can change the port numbers to those of your choice. When a firewall exists, open these TCP ports between the NetWorker server and application server.

If you change the port numbers, you must use different port number values for the control port and data port. That is, the port numbers for “Enter a port number for control port” and “Enter a port number for data port” must be different.

You can change the Replication Manager port settings from the command line after you complete the installation. “Configuring Replication Manager port settings” on page 56 describes how to change the port settings.

EMC Replication Manager is also sold as a separate product. If you have installed Replication Manager as a separate product, do not try to run it on the same system as NMM.

18. In the Ready to Install window, click Next to start the NMM installation. The installation can take several minutes.

19. If you selected GLR, click Install to install the EldoS device software. This software installs the NetWorker Virtual File System (NWFS) drivers that NMM requires for GLR support.

20. In the NetWorker Module for Microsoft Setup Complete window, click Finish to complete the installation and exit the installation wizard.

21. If you chose to install the GLR option, in the pop-up window that appears, click Yes to restart the system.

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

23. Configure the setup according to instructions in Chapter 5, “Configuration Tasks.”
24. Verify that the NMM software creates the software services in the following figure. These software services are provided as part of the NMM installation and start automatically.

**Table 5 Installed services**

<table>
<thead>
<tr>
<th>Service name (listed in Service Control Manager)</th>
<th>Service nickname (use with net start)</th>
<th>Process name</th>
</tr>
</thead>
<tbody>
<tr>
<td>Replication Manager client for RMAgentPS</td>
<td>rmagent</td>
<td>ircd.exe</td>
</tr>
<tr>
<td>NetWorker PowerSnap Services</td>
<td>nsrpssd</td>
<td>nsrpssd.exe</td>
</tr>
<tr>
<td>NetWorker Service</td>
<td>nsrexcld</td>
<td>nsrexcld.exe</td>
</tr>
<tr>
<td>Replication Manager Exchange Interface</td>
<td>rm_exchangeinterface</td>
<td>rm_exchangeinterface.exe</td>
</tr>
</tbody>
</table>

**NOTICE**

Replication Manager Client for RMAgentPS, ircd.exe, starts automatically and should be running. You must manually start the Replication Manager Exchange Interface.

## Installing NMM in MSCS and MSFCS environments

To install the NMM software in a Microsoft Cluster Service (MSCS) and Microsoft Failover Cluster Service (MSFCS) environments:

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. The *EMC Solutions Enabler Installation Guide* provides details about the MSDTC.

2. Install NetWorker client 8.2 or later on each physical node of the cluster.

3. Install the NMM software on the private disk of each physical node. “Running preconfiguration checks and installing the software” on page 32 provides details.

4. Configure each physical node as a client resource on the NetWorker Server, as described in the 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 for each physical node in the cluster.
      – Add each value on a separate line:
        
        ```
        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.

7. On each physical node, verify the following services:
   • Replication Manager Client for RMAgentPS, irccd.exe, starts automatically and should be running.
   • The Replication Manager Exchange Interface is available for manual startup in Exchange setups.

   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 Server Core, the installation process does not install an NMM GUI.

To install the NMM software on Windows 2008 SP2, 2008 R2, 2012, or 2012 R2 Server Core:

1. Ensure that you installed the NetWorker client 8.2 software on Windows 2008 SP2, 2008 R2, 2012 or 2012 R2 Server Core.

2. Access the NMM installation files as described in “Accessing the installation files” on page 32.

   If the installation files are on a remote host, do one of the following:
   • Use the net use command to mount the remote filesystem.
   • Copy the NMM installation files to Windows 2008 SP2, 2008 R2, 2012, or 2012 R2 Server Core by using FTP or a general access method.

3. Run `setup.exe` in the networkr directory to start the NMM installation.

   **Note:** Do not use autorun.exe to install the NMM software.

4. Follow the wizard to install the NMM software.

   “Running preconfiguration checks and installing the software” on page 32 provides details.
5. Verify the following services, for example, by running the **net start** command:
   - Replication Manager Client for RMAgentPS, irccd.exe, starts automatically and should be running.
   - The Replication Manager Exchange Interface is available for manual startup in Exchange setups.

**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 your system configuration. Run the System Configuration Checker to prevent configuration errors that might lead to failure in data backup or data recovery of:

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

**Uninstalling or changing installation options**

You can run the Setup program in maintenance mode to either remove the NMM software or change the password for the Exchange Server; change the firewall settings for the client; select the granular recovery option for Exchange, SharePoint, or Hyper-V; or select the SQL SSMS plug-in option.

1. On the NMM client, log in as a user with administrative access.
2. Perform **one** of the following to run the Setup program:
   - From the command line run the **setup.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:
   - Select the **Change** option to change either one of the following:
     - Password for Exchange Server
     - Firewall settings for NMM exceptions
     - Granular recovery option for Exchange, SharePoint, or Hyper-V
     - SQL SSMS plug-in option
   - Select the **Remove** option to remove the NMM software from the system.
This option not only removes the NMM software, but also the PowerSnap and Replication Manager software and services. Completely removing Replication Manager (RM) and the PowerSnap binaries might require you to force clean the NMM installation. “Force cleaning an NMM installation on a client host” on page 59 provides details.

**NOTICE**

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

## Upgrading NMM

An NMM upgrade might involve:

- “Upgrade from NMM 3.0 or later in a stand-alone environment” on page 40
- “Upgrade from NMM 3.0 or later in a clustered environment or upgrade from an earlier release in a stand-alone or clustered environment” on page 40
- “Upgrade from NME or NMSQL” on page 42
- “Upgrade to NMM with a dedicated storage node” on page 43

**Note:** For recovery of SYSTEM COMPONENTS and file system backed up by a previous release of NMM, either use the NetWorker client or the older version of NMM.

### Upgrade from NMM 3.0 or later in a stand-alone environment

To upgrade from NetWorker 8.1 SP1 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 only supports upgrades 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 by using Client Push, select both the module and the client, or the upgrade will fail.

*Updating to NetWorker 8.2 from a Previous NetWorker Release* and the `nsrpush` man page describes how to use Client Push to update NetWorker products.

### Upgrade from NMM 3.0 or later in a clustered environment or upgrade from an earlier release in a stand-alone or clustered environment

You cannot perform a direct upgrade from an existing installation of an NMM release prior to NMM 3.0. For example, if you have NMM 2.4 installed in the setup, and now want to use NMM 3.0 or later, you must first remove the existing installation of NMM and perform a fresh installation of NMM 3.0 or later.

1. Perform a full backup by using the existing NMM program.
2. Remove all existing snapshots. To delete shadow copy entries, use vshadow or diskshadow.
3. Remove the existing NMM software:
   a. Select Start > Settings > Control Panel > Programs > Programs and Features.
   b. Select NetWorker Module for Microsoft.
   c. Select Uninstall. Follow the procedure provided in “Uninstalling or changing installation options” on page 39.
   d. Ensure that the PowerSnap and RM components are removed from Add or Remove program.

   **Note:** The uninstall process retains the configuration information. The installation process applies this configuration to NMM.

4. Ensure that a supported version of the NetWorker client or NetWorker storage node software is installed and running on the application host.

   “Upgrade to NMM with a dedicated storage node” on page 43 provide 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 32 provides details.

6. If a system reboot is pending, reboot the system after the NMM installation is complete.

7. Perform a full backup of all the data as soon as possible after the upgrade to provide immediate protection by using NMM.

**IMPORTANT**

After upgrading to NMM, if you are expecting to recover data that was backed up by using an older version of NMM, you should consider the following:

— Recover file system data by using NetWorker 8.2. File system data can not 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 by using NMM to perform the recovery.
— Recover SharePoint Server web application data by using NMM 2.4 SP1 to perform the recovery.
Upgrade 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, EMC recommends that you move to NMM.

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

To upgrade to NMM from an existing NME or NMSQL installation:

1. Perform a full backup of the Exchange or SQL hosts by using 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. Remove all existing snapshots. To delete shadow copy entries, use vshadow or diskshadow.

4. If required, install a supported version of NetWorker client or NetWorker storage node software.
   “Click OK and complete the installation.” on page 43 and “Upgrade to NMM with a dedicated storage node” on page 43 provide details.

5. Run the NMM installer and use the Run System Configuration Checker and Install NetWorker Module for Microsoft (Recommended) option in the Select Configuration Checks Option page. “Running preconfiguration checks and installing the software” on page 32 provides details.

**NOTICE**

After you install NMM, perform a full backup of your Exchange Server or SQL Server data. You cannot use NMM to recover data from a backup performed by using NME. You can use NMM to recover data from a NMSQL VDI backup after upgrading to NMM.
Upgrade to NMM with a dedicated storage node

NMM software supports a DSN deployed on the same host and thus does not need to use 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.

To upgrade to NMM with a DSN:

1. Uninstall the earlier version of NMM software.

2. Install a supported version of NetWorker storage node on the NMM host.
   
   “Click OK and complete the installation.” on page 43 provides details.
   
   The 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 in the Select Configuration Checks Option page. “Running preconfiguration checks and installing the software” on page 32 provides details.
   
   The installation detects the storage node and prompts for permission to dedicate the storage node to the NMM client data.

4. Click OK and complete the installation.
CHAPTER 4
Silent Installation

This chapter includes the following sections:

- Silent installation of NMM ................................................................. 46
- Commands for silent installation of NWFS ............................................. 48
- Command for silent installation of the SSMS plug-in option for SQL Server Management Studio ................................................................. 49
- Silent removal of NMM ........................................................................ 50
- Silent upgrade of NMM ........................................................................ 51
- Sample scripts for silent installation and removal of NMM....................... 51
- Installing and removing NMM by using an SCCM 2007 Server ............... 52
- Troubleshooting the installation ............................................................ 53
Silent installation of NMM

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 line or using the commands written as scripts in a .cmd file.

1. Install the NetWorker 8.2 or later client or storage node software on the hosts where you will install NMM.

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

2. Run the command or script to install NMM.

   “Commands for silent installation of NMM” on page 46 provides the command and example.

3. Inspect the installation log files to verify the installation. The location of the log files are specified in the NMM installation. The default location is the temp directory, which you can view:

   a. Click **Start** → **Run**.
   
   b. Type `%temp%`.

**Commands for silent installation of NMM**

To install the NMM software by using the Windows installer, open a command prompt, selecting the option Run as administrator, then type the command:

```
setup /s /v"/qn" /L*v "%temp%\NMMinstall.log" /w
```

The following table describes the *setup* command options for a silent installation of the NMM software.

<table>
<thead>
<tr>
<th>Task</th>
<th>Command</th>
</tr>
</thead>
</table>
| Performs a silent installation of NMM with a progress bar. | `setup /s /v"/qb"`  
   Ensure that there is a space between:
   • setup and /s  
   • /s and /v"/qb" |
| Performs a silent installation of NMM with no progress bar. | `setup /s /v"/qn"`  
   Ensure that there is a space between:
   • setup and /s  
   • /s and /v"/qn" |
| Performs a silent installation of NMM and create an MSI log file. | `setup /s /v"/l*v \"%temp%\mylog.log\" /qb`  
   Ensure that there is a space between:
   • setup and /s  
   • /s and /v"/l*v  
   • /v"/l*v and \%temp%\mylog.log\"  
   • \"%temp%\mylog.log\" and /qb |

**Note:** This command is useful for troubleshooting installation problems. NMM creates the log file in the %temp% directory. Use triple quotes in the command in case the %temp% path contains spaces.
Table 6 Commands for silent installation of NMM  (page 2 of 2)

<table>
<thead>
<tr>
<th>Task</th>
<th>Command</th>
</tr>
</thead>
<tbody>
<tr>
<td>Performs a silent installation of NMM.</td>
<td><code>setup.exe /s /v&quot;/%temp%\mylog.log\&quot; RMCPORT=6730 RMDPORT=6731&quot;</code></td>
</tr>
<tr>
<td></td>
<td>Ensure that there is a space between:</td>
</tr>
<tr>
<td></td>
<td>• setup and /s</td>
</tr>
<tr>
<td></td>
<td>• /s and /v&quot;/qn</td>
</tr>
<tr>
<td></td>
<td>• /v&quot;/qn and /l*v</td>
</tr>
<tr>
<td></td>
<td>• /l*v and /v&quot;/%temp%\mylog.log&quot;</td>
</tr>
<tr>
<td></td>
<td>• /v&quot;/%temp%\mylog.log&quot; and RMCPORT=6730</td>
</tr>
<tr>
<td></td>
<td>• RMCPORT=6730 and RMDPORT=6731*</td>
</tr>
<tr>
<td>Performs a silent installation of NMM on a Microsoft Exchange host.</td>
<td><code>setup.exe /s /v&quot;/%temp%\mylog.log\&quot; /qn RMEXCHDOMAIN=&lt;Exchange domain name&gt; RMEXCHUSER=&lt;administrator&gt; RMEXCHPASSWORD=&lt;domain password&gt; RMCPORT=6730 RMDPORT=6731*</code></td>
</tr>
<tr>
<td></td>
<td>The RMEXCHUSER administrator should be NMMBackupUser or the equivalent account you created to perform backups.</td>
</tr>
<tr>
<td></td>
<td>Ensure that there is a space between:</td>
</tr>
<tr>
<td></td>
<td>• setup and /s</td>
</tr>
<tr>
<td></td>
<td>• /s and /v&quot;/l*v</td>
</tr>
<tr>
<td></td>
<td>• /v&quot;/l*v and /v&quot;/%temp%\mylog.log&quot;</td>
</tr>
<tr>
<td></td>
<td>• /v&quot;/%temp%\mylog.log&quot; and /qn</td>
</tr>
<tr>
<td></td>
<td>• /qn and RMEXCHDOMAIN=&lt;Exchange domain name&gt;</td>
</tr>
<tr>
<td></td>
<td>• RMEXCHDOMAIN=&lt;Exchange domain name&gt; and RMEXCHUSER=&lt;administrator&gt;</td>
</tr>
<tr>
<td></td>
<td>• RMEXCHUSER=&lt;administrator&gt; and RMEXCHPASSWORD=&lt;domain password&gt;</td>
</tr>
<tr>
<td></td>
<td>• RMEXCHPASSWORD=&lt;domain password&gt; and RMCPORT=6730</td>
</tr>
<tr>
<td></td>
<td>• RMCPORT=6730 and RMDPORT=6731*</td>
</tr>
<tr>
<td>Creates the Windows Firewall exceptions for NMM.</td>
<td><code>cscript NMMConfigFW.vbs</code></td>
</tr>
<tr>
<td></td>
<td>For example:</td>
</tr>
<tr>
<td></td>
<td><code>cscript &quot;C:\nmm_win_x86\win_x86\network\NMMConfigFW.vbs&quot;</code></td>
</tr>
</tbody>
</table>
Silent Installation

Commands for silent installation of NWFS

The following table describes the `setup` command options for a silent installation of the NetWorker Virtual File System (NWFS) software when the NetWorker client is or is not installed.

Table 7  Commands for silent installation of NWFS (page 1 of 2)

<table>
<thead>
<tr>
<th>Task</th>
<th>Command</th>
</tr>
</thead>
<tbody>
<tr>
<td>Performs a silent installation of NWFS in the path where the NetWorker client and NMM are installed. You will be required to reboot the computer.</td>
<td><code>setup.exe /s /v&quot;/qn /l*v setup.log INSTALLLEVEL=200 REBOOTMACHINE=1 NW_GL_R_FEATURE=1 WRITECACHEDIR &quot;C:\Program Files\EMC NetWorker\nsr\tmp\nwfs\&quot; MOUNTPOINTDIR &quot;C:\Program Files\EMC NetWorker\nsr\tmp\nwfs\NetWorker Virtual File System\&quot; HYPERV_MOUNTPOINTDIR &quot;C:\Program Files\EMC NetWorker\nsr\tmp\&quot; SETUPTYPE=Install&quot;</code></td>
</tr>
</tbody>
</table>

Ensure that there is a space between:
- `setup` and `/s`
- `/s` and `/v"/qn`
- `/v"/qn"` and `/l*v`
- `/l*v` and `setup.log`
- `setup.log` and `INSTALLLEVEL=200`
- `INSTALLLEVEL=200` and `REBOOTMACHINE=1`
- `REBOOTMACHINE=1` and `NW_GL_R_FEATURE=1`
- `NW_GL_R_FEATURE=1` and `WRITECACHEDIR`
- `WRITECACHEDIR` and "C:\Program Files\EMC NetWorker\nsr\tmp\nwfs\"
- "C:\Program Files\EMC NetWorker\nsr\tmp\nwfs\" and `MOUNTPOINTDIR`
- `MOUNTPOINTDIR` and "C:\Program Files\EMC NetWorker\nsr\tmp\nwfs\NetWorker Virtual File System\"
- "C:\Program Files\EMC NetWorker\nsr\tmp\nwfs\NetWorker Virtual File System\" and `HYPERV_MOUNTPOINTDIR`
- `HYPERV_MOUNTPOINTDIR` and "C:\Program Files\EMC NetWorker\nsr\tmp\" SETUPTYPE=Install"
Command for silent installation of the SSMS plug-in option for SQL Server Management Studio

To perform silent installation of the SSMS plug-in option for SQL Server Management Studio, run the following command on the client host:

```bash
setup.exe /s /v"/qn /l*v "C:\NMM_nw_install_detail.log" INSTALLLEVEL=150 SETUPTYPE=Install INSTCLIENTPUSH=1 RMCPORT=6728 RMDPORT=6729 NW_SSMS_FEATURE=1"
```

### Table 7 Commands for silent installation of NWFS (page 2 of 2)

<table>
<thead>
<tr>
<th>Task</th>
<th>Command</th>
</tr>
</thead>
</table>
| Performs a silent installation of NWFS in the path where the NetWorker client and NMM are **not** installed. You will be required to reboot the computer. | `setup.exe /s /v"/qn /l*v setup.log INSTALLLEVEL=200 NW_GLR_FEATURE=1 REBOOTMACHINE=1 WRITECACHEDIR=C:\ MOUNTPOINTDIR=C:\ HYPERVMOUNTPOINTDIR=C:\Temp SETUPTYPE=Install"` Ensure that there is a space between:  
  • setup and /s  
  • /s and /v"/qn  
  • /l*v and setup.log  
  • setup.log and INSTALLLEVEL=200  
  • INSTALLLEVEL=200 and NW_GLR_FEATURE=1  
  • NW_GLR_FEATURE=1 and REBOOTMACHINE=1  
  • REBOOTMACHINE=1 and WRITECACHEDIR=C:\  
  • WRITECACHEDIR=C:\ and MOUNTPOINTDIR=C:\  
  • MOUNTPOINTDIR=C:\ and HYPERVMOUNTPOINTDIR=C:\Temp  
  • HYPERVMOUNTPOINTDIR=C:\Temp and SETUPTYPE=Install"` |
Silent removal of NMM

The following table describes the commands for silent removal of NMM.

**NOTICE**

Removal of NMM does not remove the NetWorker client. To remove both NMM and NetWorker from a host, first uninstall NMM and then NetWorker.

**Table 8 Commands for silent removal of NMM**

<table>
<thead>
<tr>
<th>Task</th>
<th>Command</th>
</tr>
</thead>
<tbody>
<tr>
<td>Removes NMM, creates an MSI log file</td>
<td><code>setup.exe /s /v&quot;/qn /l*v ****%temp%\NMUninstall.log\*** * /x</code></td>
</tr>
<tr>
<td></td>
<td>Ensure that there is a space between:</td>
</tr>
<tr>
<td></td>
<td>• *setup and /s</td>
</tr>
<tr>
<td></td>
<td>• /s and /v&quot;/qn</td>
</tr>
<tr>
<td></td>
<td>• /v&quot;/qn and /l*v</td>
</tr>
<tr>
<td></td>
<td>• /l*v and **<strong>%temp%\NMUninstall.log*</strong></td>
</tr>
<tr>
<td></td>
<td>• **<strong>%temp%\NMUninstall.log*</strong> and &quot;</td>
</tr>
<tr>
<td></td>
<td>• &quot; and /x</td>
</tr>
<tr>
<td>Performs a silent removal of NMM and the GLR option for all applications</td>
<td><code>setup.exe /s /v&quot;/qn /l*v setup.log INSTALLLEVEL=100 NW_GLR_FEATURE=0 REBOOTMACHINE=0 SETUPTYPE=Install&quot; /x</code></td>
</tr>
<tr>
<td></td>
<td>Ensure that there is a space between:</td>
</tr>
<tr>
<td></td>
<td>• setup and /s</td>
</tr>
<tr>
<td></td>
<td>• /s and /v&quot;/qn</td>
</tr>
<tr>
<td></td>
<td>• /v&quot;/qn and /l*v</td>
</tr>
<tr>
<td></td>
<td>• /l*v and setup.log</td>
</tr>
<tr>
<td></td>
<td>• setup.log and INSTALLLEVEL=100</td>
</tr>
<tr>
<td></td>
<td>• INSTALLLEVEL=100 and NW_GLR_FEATURE=0</td>
</tr>
<tr>
<td></td>
<td>• NW_GLR_FEATURE=0 and REBOOTMACHINE=0</td>
</tr>
<tr>
<td></td>
<td>• REBOOTMACHINE=0 and SETUPTYPE=Install&quot;</td>
</tr>
<tr>
<td></td>
<td>• SETUPTYPE=Install&quot; and /x</td>
</tr>
<tr>
<td></td>
<td><code>setup.exe /s /v&quot;/qn /l*v setup.log INSTALLLEVEL=100 NW_GLR_FEATURE=0 REBOOTMACHINE=1 SETUPTYPE=Install&quot; /x</code></td>
</tr>
<tr>
<td></td>
<td>Ensure that there is a space between:</td>
</tr>
<tr>
<td></td>
<td>• setup and /s</td>
</tr>
<tr>
<td></td>
<td>• /s and /v&quot;/qn</td>
</tr>
<tr>
<td></td>
<td>• /v&quot;/qn and /l*v</td>
</tr>
<tr>
<td></td>
<td>• /l*v and setup.log</td>
</tr>
<tr>
<td></td>
<td>• setup.log and INSTALLLEVEL=100</td>
</tr>
<tr>
<td></td>
<td>• INSTALLLEVEL=100 and NW_GLR_FEATURE=0</td>
</tr>
<tr>
<td></td>
<td>• NW_GLR_FEATURE=0 and REBOOTMACHINE=1</td>
</tr>
<tr>
<td></td>
<td>• REBOOTMACHINE=1 and SETUPTYPE=Install&quot;</td>
</tr>
<tr>
<td></td>
<td>• SETUPTYPE=Install&quot; and /x</td>
</tr>
</tbody>
</table>
Silent upgrade of NMM

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

1. Remove the existing NMM version by using the silent uninstallation process. “Silent removal of NMM” on page 50 provides details.
2. Install NetWorker Server 8.2 or later.
3. Follow the steps provided in “Silent installation of NMM” on page 46 to install NMM using the silent installation process.

Sample scripts for silent installation and removal of NMM

The following table lists sample scripts that you can use for the silent installation and removal of the NMM software. All these samples are included in the NMM installation media kit in the directory where setup.exe is located. You can modify the sample scripts to provide custom installations for your environment.

Each sample script creates a log in the %temp% directory, whose base name is the same as the script base name. The only difference is that the file extension .cmd is replaced by .log. For example, the file created for the install_nmm_silent_sample.cmd script is named install_nmm_silent_sample.log.

You can also use these logs to troubleshoot installation problems.

<table>
<thead>
<tr>
<th>Script name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>install_nmm_silent_sample.cmd</td>
<td>Silently installs NMM. You can modify this sample script.</td>
</tr>
<tr>
<td>uninstall_nmm_silent_sample.cmd</td>
<td>Silently removes NMM. You can modify this sample script.</td>
</tr>
<tr>
<td>NMMInstalled.vbs</td>
<td>Determines if NMM or NetWorker is currently installed.</td>
</tr>
<tr>
<td>DotNetInstalled.vbs</td>
<td>Determines if .NET Framework 2.0 is currently installed.</td>
</tr>
<tr>
<td>DotNetInst.cmd</td>
<td>Installs .NET Framework 2.0.</td>
</tr>
<tr>
<td>NMMConfigFW.vbs</td>
<td>Creates Windows firewall exceptions for NMM.</td>
</tr>
</tbody>
</table>

Silent installation master script

The install_nmm_silent_sample.cmd script is the master script that executes all the scripts in Table 9 on page 51, except for uninstall_nmm_silent_sample.cmd. The install_nmm_silent_sample.cmd script uses the default installation path and leaves the res\server file blank.

The install_nmm_silent_sample.cmd script performs the following sequence of operations:

1. Verifies whether NMM software is already installed. If installed, the script exits.
2. Installs the Microsoft .NET Framework, if it is not installed.
Silent Installation

**NOTICE**

The script installs Microsoft .NET Framework 2.0. The script does not install the newer version of the .NET Framework that is required for NMM. Before installing NMM, you must first download and install the newer version of .NET manually in the setup. “Supported Microsoft .NET Framework versions” on page 17 provides details.

3. Installs the Microsoft VC80 side-by-side redistributable DLLs.

4. Installs NMM in the default installation path with the command, which you can modify by running the following command:

   `%~dp0\setup /s /v"/qn /L*v ""%temp%\NMMinstall.log"" /w`

   Ensure that there is a space between:
   - `%~dp0\setup` and `/s`
   - `/s` and `/v"/qn`
   - `/v"/qn` and `/L*v`
   - `/L*v` and ""%temp%\NMMinstall.log""
   - "%temp%\NMMinstall.log"" and "
   - ” and `/w`

5. Configures the Windows firewall.

### Installing and removing NMM by using an SCCM 2007 Server

You can remotely install or remove the NMM software by using a Microsoft System Center Configuration Manager (SCCM) 2007 Server.

#### Install NMM by using an SCCM 2007 server

Install NMM from a remote location by using the Microsoft System Center Configuration Manager (SCCM) 2007 Server.

1. Run the **New Collection Wizard** to specify the client host, where you will install the NMM software.

2. Copy the NMM installation package to the local drive on the SCCM Server and specify a local SCCM hostname as a new distribution point for the distribution package.

3. Run the **New Package Wizard** to create a software distribution package. Specify general information, data source, distribution settings, and other information for the new package.

   The wizard creates example installation and uninstallation script files in the installation kit \networkr directory. “Sample scripts for silent installation and removal of NMM” on page 51 provides details.

4. Run the **New Program Wizard** to create an installation program for a software distribution package:

   a. To use the install_nmm_silent_sample.cmd file as the source installation file:

      1. On the SCCM Server, on the **General** tab, click **Browse**.
      2. Select **Show all files**.
      3. Select the **install_nmm_silent_sample.cmd** file in the /networkr directory.
b. In the Environment Wizard window:
   1. Set the administrative rights to Run Mode.
   2. Use the default setting for all other options.
   3. Click Close to complete the program creation.
5. Run the New Advertisement Wizard to create an advertisement for the installation. Specify the general information, package name, program, and collection to which the advertisement should be distributed:
   a. For the schedule option, select Run as soon as possible.
   b. For the delivery method, select Run program from distribution point.
   c. For all other options, use the default settings.
   d. Complete the New Advertisement Wizard.

After the SCCM server creates the advertisement, the SCCM Server is ready to install the software. Allow 30 minutes or more for the SCCM Server to process the advertised installation. You can view and verify the installation process status in the Advertisement Status section in the SCCM Server.

The C:\Windows\temp directory contains the SCCM server installation status log files. For quick access to the temp directory, select Start > Run and then type %SystemRoot%\temp.

Uninstall NMM by using an SCCM 2007 server

To uninstall the NMM software with an SCCM 2007 Server, run the uninstall_nmm_silent_sample.cmd file. The procedure to uninstall NMM with an SCCM 2007 server is the same as the install procedure. “Install NMM by using an SCCM 2007 server” on page 52 provides details.

Troubleshooting the installation

You might have to troubleshoot errors when NMM is not running correctly after a fresh installation or if moving from a previous release of NMM to a new version of NMM.

The NetWorker Module for Microsoft Administration Guide provides more details on troubleshooting.

Errors in installation of Replication Manager

Most often, NMM installation problems are due to errors in the installation of Replication Manager services.

If the installation is not correctly performed, NMM installation automatically rolls back completely.
Silent Installation

Windows firewall exception error for irccd.exe

Under certain circumstances, the following firewall error message might appear during an NMM installation:

“Unable to create a Windows Firewall exception for C:\Program Files\EMC Networker\nsr\bin\irccd.exe. File not found.”

If this occurs, configure the firewall setting manually, and then validate the configuration.

“Configuring Windows firewall settings” on page 56 provides details.

Using non-English characters in installation path

When you install the NMM software, during silent or GUI installation, do not use non-English characters in the installation path. Although NetWorker might install properly, the installation of services for PowerSnap and Replication Manager fail and an error message appears.
CHAPTER 5
Configuration Tasks

This chapter includes the following topics:

- Configuring Replication Manager port settings ......................................................... 56
- Configuring Windows firewall settings ....................................................................... 56
- Configuring a dedicated storage node for NMM .......................................................... 57
- Set up events notifications and find errors ................................................................. 57
- Troubleshooting installation issues .............................................................................. 58
Configuring Replication Manager port settings

During installation, NMM automatically configures the Replication Manager port settings. NMM uses 6728 for the control port and 6729 for the data port. To ensure that the NMM software functions correctly, open ports 6278 and 6729 for communication between the NetWorker server and the NMM client.

You can configure the Replication Manager port settings to those of your choice, even after the NMM installation is complete.

1. From the command line, stop the rmagent service.
   
   For example:
   ```
   net stop RMAgentPS
   ```

2. In the `%Program Files%\Legato\nsr\rmagentps\client\bin` directory, run the `irccd` command to change the port settings:
   ```
   irccd -p control_channel_port -P data_channel_port
   ```
   
   For example:
   ```
   irccd -p 7131 -P 7456
   ```

3. In the `%ProgramFiles%\Legato\nsr\res` directory, edit the following values in the `rmps.res` file:
   - control port
   - data port

   These values must match the values set in step 2.

   type: RM Service Ports;
   Control Port: control_channel_port;
   Data Port: data_channel_port;

   For example:

   ```
   type: RM Service Ports;
   Control Port: 7131;
   Data Port: 7456;
   ```

4. Start the rmagent service.
   
   For example:
   ```
   net start RMagentps
   ```

Configuring Windows firewall settings

The NMM installation process can configure rules on a Windows firewall. However, you can also configure the firewall after the NMM installation is complete.

1. Click Start, and then click Control Panel.
2. Open Windows Firewall.
3. In the Windows Firewall window, select Allow a program through Windows Firewall.
4. In the **Allowed programs and features** list, verify that the **EMC Replication Manager Client for RMAgentPS** appears.
   - If the option is not selected, select it.
   - If there is no entry for **EMC Replication Manager Client for RMAgentPS**, manually add it:
     a. Click **Add Program**.
     b. Click **Browse**.
     c. Type `C:\Program Files\EMC NetWorker\ns\rmagentps\client\bin\irccd.exe`.
        - If you installed NMM on an a drive other than `C:\`, then specify the correct path to `irccd.exe`.
     d. Click **OK**.

### Configuring a dedicated storage node for NMM

To configure a DSN for NMM for all other applications:

1. Install NetWorker Server 8.2 or later, or NetWorker Storage Node 8.2 or later.
2. Install the NMM software on the same host.
   - Chapter 3, “Configuration Checks and Installation,” provides details.
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**.
   - A DSN license is required. The *NetWorker Administration Guide* provides details.
   
   For an Exchange 2010 DAG, use the workaround provided in the “Configuring backups to use a remote storage node in a DAG environment” section in the *NetWorker Module for Microsoft Exchange VSS User Guide*.

### Set up events notifications and find errors

Set up NetWorker and NMM to 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>
<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 MM client to send an email notification about NetWorker events.</td>
</tr>
<tr>
<td>Error message details window</td>
<td>Displays error and event message 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 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>
</tbody>
</table>
| 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:  
  • NMM  
  • NetWorker Client or Storage Node  
  • NetWorker Server  
  • NetWorker PowerSnap  
  • Replication Manager  
  • EMC VSS Provider client for RMAgent  
  The debug level of a save or recover process determines the amount of messages that operation sends to the log file. |

### Troubleshooting installation issues

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

### NMM uninstall and reinstall required to change the Replication Manager port number

The Replication Manager port number can change after you install NMM.

**Solution**

To change the Replication Manager port that NMM uses, uninstall and then install the NMM software. Specify the port when prompted during the installation process.
Force cleaning an NMM installation on a client host

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

Solution

Follow these steps to remove the Replication Manager (RM) and PowerSnap binaries completely:

1. Make a copy of the log files in the following directories: nsr\applogs, nsr\logs, and nsr\rmagentps directories.
2. Uninstall the NMM Client.
   
   This also uninstalls the RM binaries.
3. Ensure that the following services are not running:
   
   • NetWorker PowerSnap service (Listens and Services BRC Protocol)
   
   • Replication Manager Client for RMAgentPS (Executes operations for Replication Manager Client for RMAgentPS)
   
   • NetWorker Power Monitor Service (Works with the energy-saving features of Windows to keep NetWorker components running correctly during power-saving modes. It might be disabled, if not needed.)
   
   • RM_ExchangeInterface (This service runs Exchange Server 2007 or Exchange Server 2010 commands for Replication Manager)
4. Uninstall the base NetWorker client.
5. Delete all the files and directories in \\Program Files\\EMC NetWorker\\nsr, but save the logs from in 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.

For Exchange Environment, if the reinstall is not successful after deleting the above keys, it might be necessary to explicitly remove any other references to:

   – Replication Manager Exchange Interface
   
   – RM_ExchangeInterface
   
   – PowerSnap

**NOTICE**

Ensure to provide the correct Exchange credentials during installation in an Exchange environment and take care of other requirements specific to Exchange installations.
Configuration Tasks

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, you must 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 nsrexecl -s bv-rcserver
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>
```
APPENDIX A
Microsoft Hotfixes Required for NMM 8.2

This appendix includes the following sections:

- Hotfix updates required for backup and recovery of all applications ......................... 62
- Hotfix updates required for VSS backup and recovery .................................................... 62
- Hotfix updates required for Exchange Server backup and recovery .............................. 63
- Hotfix updates required for SharePoint Server backup and recovery .......................... 64
- Hotfix updates required for Hyper-V Server backup and recovery .............................. 65

**NOTICE**
There are no Microsoft hotfix requirements for NMM with SQL Server.
**Hotfix updates required for backup and recovery of all applications**

The following table lists the hotfix updates required for general NMM backup and recovery.

### Table 11  Hotfixes required for NMM general backup and recovery

<table>
<thead>
<tr>
<th>Knowledge Base article ID</th>
<th>Windows 2008 SP2 (X32)</th>
<th>Windows 2008 SP2 (X64)</th>
<th>Windows 2008 R2</th>
<th>Applies to</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>KB975688</td>
<td></td>
<td>✓</td>
<td>✓</td>
<td>Windows Server 2008 R2 editions</td>
<td>A snapshot might become corrupted when the Volume Shadow Copy Service (VSS) snapshot providers take more than 10 seconds to create it on a host that is running Windows Server 2008 R2.</td>
</tr>
<tr>
<td>KB978897</td>
<td>✓</td>
<td>✓</td>
<td></td>
<td>Windows Server 2008 SP2</td>
<td>On Windows 2008, during NMM backups, Virtual Disk Service (VDS) crashes while applying retention because VDS incorrectly accesses some providers that are unloaded, when VDS is in the exit process.</td>
</tr>
</tbody>
</table>

**Hotfix updates required for VSS backup and recovery**

The following table lists the hotfix updates that NMM requires for VSS backup and recovery.

### Table 12  Hotfixes required for NMM for VSS backup and recovery

<table>
<thead>
<tr>
<th>Knowledge Base article ID</th>
<th>Windows 2008 SP2 (X32)</th>
<th>Windows 2008 SP2 (X64)</th>
<th>Windows 2008 R2</th>
<th>Applies to</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>KB975832</td>
<td>✓</td>
<td>✓</td>
<td></td>
<td>VSS</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>✓</td>
<td>✓</td>
<td></td>
<td>VSS</td>
<td>When the current size of the volume that you extend is a multiple of 8 gigabytes (GB) by a size that is larger than 8 GB or the volume is frequently extended by a multiple of 8 GB, corrupted backups might not be detected until you attempt a recovery.</td>
</tr>
</tbody>
</table>
Hotfix updates required for Exchange Server backup and recovery

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

**Table 13 Hotfixes required for NMM** for Exchange Server backup and recovery

<table>
<thead>
<tr>
<th>Knowledge Base article ID</th>
<th>Windows 2008 SP2 (X32)</th>
<th>Windows 2008 SP2 (X64)</th>
<th>Windows 2008 R2</th>
<th>Applies to</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>KB2425179</td>
<td>✓</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>
<tr>
<td>KB930800</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>Exchange Server 2007</td>
<td>If encountering VSS_E_WRITERERROR_RETRRYABLE errors, take corrective action documented in this knowledge base article.</td>
</tr>
<tr>
<td>KB971534</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>Exchange Server 2007 SP2</td>
<td>Microsoft has released Update Rollup 1 for Exchange Server 2007 Service Pack 2 (SP2).</td>
</tr>
<tr>
<td>KB982118</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>Exchange 2007 Service Pack 3 Update Rollup 1</td>
<td>This hotfix is required for stand-alone, CCR, LCR, and SCC configurations to prevent occasionally VSS backup operation failure and Event ID: 2034 error on an Exchange Server 2007 server.</td>
</tr>
</tbody>
</table>
Hotfix updates required for SharePoint Server backup and recovery

The following table lists the hotfix updates required for NMM for SharePoint Server backup and recovery.

**Table 14  Hotfixes required for NMM for SharePoint Server backup and recovery**

<table>
<thead>
<tr>
<th>Knowledge Base article ID</th>
<th>Windows 2008 SP1 R2 (X64)</th>
<th>Windows 2008 SP2 (X64, X86)</th>
<th>Applies to</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>KB2412267</td>
<td>✔</td>
<td>✔</td>
<td>SharePoint Server 2007 SP3</td>
<td>Cumulative update packages for Microsoft Office SharePoint server 2007 (released in October 2010) contain hotfixes. SharePoint 2007 VSS backup and restore fails on named instance if the updates are not installed.</td>
</tr>
<tr>
<td>KB971538</td>
<td></td>
<td>✔</td>
<td>SharePoint Server 2007</td>
<td>Cumulative update packages for Windows SharePoint Services 3.0 contain hotfixes for the Windows SharePoint Services 3.0 issues that were fixed since the release of Windows SharePoint Services 3.0. This build of the cumulative update package is also known as build 12.0.6510.5001. Go to the Microsoft support website and search for KB971538 - &quot;Description of the Windows SharePoint Services 3.0 cumulative update server Hotfix Package (WSS server-package): June 30, 2009&quot; and follow the directions provided on the website.</td>
</tr>
</tbody>
</table>
| KB953334                  | ✔                         |                             | SharePoint server 2007 | The Microsoft Office 2007 servers SP2 package provides the latest updates. It includes two main categories of fixes:  
  • Previously unreleased fixes that were made specifically for this service pack, including improvements in stability, performance, and security.  
  • All the public updates, security updates, cumulative updates, and hotfixes that were released through February 2009. |
| KB953338                  | ✔                         |                             | SharePoint Server 2007 | Windows SharePoint services 3.0 SP2 provides the latest updates, including:  
  • Previously unreleased fixes that were made specifically for this service pack, including improvements in stability, performance, and security.  
  • All the public updates, security updates, cumulative updates, and hotfixes that were released through February 2009. Before you try to install this service pack, read about how to deploy software updates for Windows SharePoint Services 3.0. |
| KB981043                  |                           |                             | SharePoint Server 2007 | Cumulative update packages for Windows SharePoint Services 3.0 (released in April 2010) contain hotfixes. SharePoint 2007 VSS backup and restore fails if the updates are not installed. |
Hotfix updates required for Hyper-V Server backup and recovery

The following table lists the hotfix updates required for NMM for Hyper-V Server backup and recovery.

<table>
<thead>
<tr>
<th>Knowledge Base article ID</th>
<th>Windows 2008 SP2 (X32)</th>
<th>Windows 2008 SP2 (X64)</th>
<th>Windows 2008 R2 SP1</th>
<th>Applies to</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>KB967560</td>
<td>✓</td>
<td>✓</td>
<td></td>
<td>Hyper-V Server</td>
<td>When a scheduled save is started, the event viewer might display: “ASR Error: Failed to collect critical information for ASR Backup.” The ASR is unable to obtain disk information for device 3 (Win32 error code 0x2).</td>
</tr>
<tr>
<td>KB951308</td>
<td>✓</td>
<td>✓</td>
<td></td>
<td>Hyper-V Server SP2</td>
<td>Apply to each cluster node for cluster deployment. This provides increased functionality and virtual machine control in the Windows Server 2008 Failover Cluster Management console for the Hyper-V Server role.</td>
</tr>
<tr>
<td>KB956697</td>
<td>✓</td>
<td></td>
<td></td>
<td>Hyper-V Server SP2</td>
<td>Applies when the Hyper-V Writer seems to be missing due to the presence of corrupt virtual machine configuration files in the Hyper-V Server.</td>
</tr>
<tr>
<td>KB958184</td>
<td>✓</td>
<td></td>
<td></td>
<td>Hyper-V Server SP2</td>
<td>Applies when you save virtual machine files on a volume mounted on a failover cluster using a volume GUID.</td>
</tr>
<tr>
<td>KB959962</td>
<td>✓</td>
<td></td>
<td></td>
<td>Hyper-V Server SP2</td>
<td>Updates Hyper-V Writer to fix backup failure for any of the following reasons: • Retry operations result in a VSS error. • VSS Application Writer Provider is moving to a bad state. • Virtual machine recoveries fail because of an attached legacy adaptor. After performing this update: 1. Insert the Integration Services Disk 2. From the Action menu in each virtual machine's management console, update the integration services. 3. Restart the virtual machine.</td>
</tr>
<tr>
<td>KB960038</td>
<td>✓</td>
<td>✓</td>
<td></td>
<td>Hyper-V Server SP2</td>
<td>Apply to all Hyper-V hosts. This update for Windows Server 2008 fixes Hyper-V host server crash. A crash can occur when you perform backups by using the Hyper-V Writer.</td>
</tr>
</tbody>
</table>
Microsoft Hotfixes Required for NMM 8.2