

Dell™ NetVault™ Backup Plug-in for NDMP 10.0.5

User's Guide



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Legend

 **CAUTION:** A CAUTION icon indicates potential damage to hardware or loss of data if instructions are not followed.

 **WARNING:** A WARNING icon indicates a potential for property damage, personal injury, or death.

 **IMPORTANT NOTE, NOTE, TIP, MOBILE, or VIDEO:** An information icon indicates supporting information.

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Introduction

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- [About this document](#)
- [Target audience](#)
- [Recommended additional reading](#)

About Dell™ NetVault™ Backup Plug-in for NDMP

Dell NetVault Backup Plug-in for NDMP (Plug-in for NDMP) is an advanced data protection solution for information stored in Network Attached Storage (NAS) devices running Network Data Management Protocol (NDMP). It provides efficient backup and recovery options regardless of the NDMP network configuration model in use. The plug-in also offers advanced features, including browsable volume selection and Direct Access Restore (DAR), which lets you quickly find what must be restored to provide rapid time-to-recovery.

Key benefits

- **Recover faster with Direct Access Restore (DAR):** Filers that support DAR can take advantage of this NDMP feature, which enables fast recovery of whole directories, single files, or subsets of files by recording each file's location within the backup media. This feature eliminates the need for you to read sequentially through the entire backup set to locate and restore individual files.
- **Operate seamlessly between multiple platforms:** The Plug-in for NDMP supports mixed server environments with integrated data protection for UNIX®, Windows®, Linux®, and NAS devices.
- **Choose from multiple backup configuration options:** Increase NAS and network availability by defining NDMP-based backup functions to meet your existing storage environment. The plug-in supports all five NDMP data transfer models. NetVault Backup and Plug-in for NDMP work together to support dynamic sharing of tape devices in a NAS/SAN storage environment leveraging existing tape technology investments.
- **Ensure efficient backup performance:** Experience fast NDMP backups regardless of the type or location of secondary storage devices in use. A filer backup can be performed to any machine with a direct attached device – you are not limited to just the backup server or NAS appliance.
- **Manage and control distributed data centrally:** Leverage data transfer over the network while maintaining centralized backup administration.

Feature summary

- Fast indexing of backup data
- Directory-level relocation
- Simple point-and-click installation and configuration

- Local backup and restore
- Filer-to-filer backup and restore
- NetVault Server or Client to filer backup and restore
- Dynamic Drive Sharing on SAN between filers and NetVault Backup Server and Clients
- Direct Access Restore
- Incremental Restore
- Browsable backup
- Disk-based backups to Dell™ NetVault™ SmartDisk (NetVault SmartDisk), including the ability to deduplicate data

About this document

This guide describes the procedures for installing and configuring the Plug-in for NDMP. The information covered in this guide is common to all supported NAS appliances using NDMP. For additional notes on your particular filer, see the *Dell NetVault Plug-in for NDMP Application Notes* which are intended as a supplement to this guide. The Application Notes provide additional installation and configuration notes, outline the backup and restore procedures, and contain troubleshooting instructions specific to your filer.

Target audience

This guide is intended for system administrators responsible for installing, configuring, and using the Plug-in for NDMP. An understanding of filer administration and the host platform is assumed.

Recommended additional reading

- NetVault Backup documentation
 - *Dell NetVault Backup Installation Guide*: This guide provides information about installing the NetVault Backup Server and Client software.
 - *Dell NetVault Backup Administrator's Guide*: This guide provides information about configuring and using NetVault Backup to protect your data. It provides comprehensive information about all NetVault Backup features and functionality.
 - *Dell NetVault Backup Command Line Interface Reference Guide*: This guide provides information about using the NetVault Backup command-line utilities.
 - *Dell NetVault Backup Plug-in for NDMP Application Notes*: These notes provide filer-specific information.

You can download these guides from <https://support.software.dell.com/>.

IMPORTANT: Starting with 10.0, NetVault Backup provides a web-based user interface to configure, manage, and monitor your NetVault Backup system and installed plug-ins. The procedures described in this guide are intended for the new NetVault WebUI. For procedures based on the NetVault Backup Console (user interface available with NetVault Backup 9.x), see the documentation for an earlier version of the plug-in

- NAS device documentation
 - *Administrator's Guide for your NDMP-based NAS appliance*

Installing the plug-in

- Understanding data transfer models
- Prerequisites
- Installing the plug-in
- Removing the plug-in

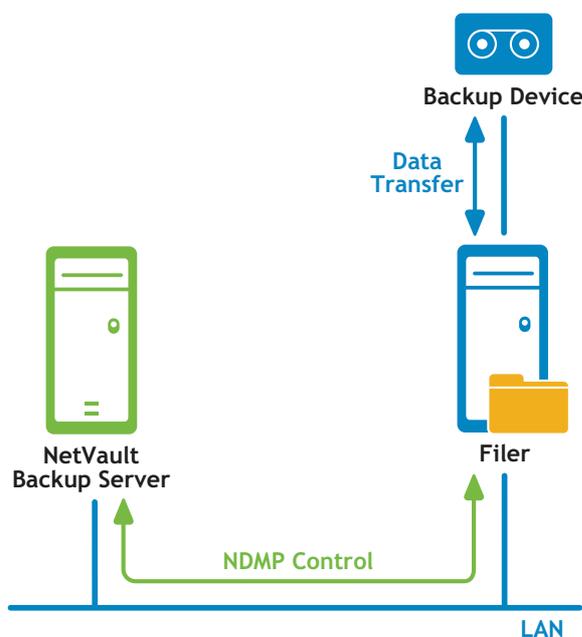
Understanding data transfer models

The Plug-in for NDMP supports the following data transfer models:

- Direct-attached or local backups
- Filer-to-filer or three-way backups
- Remote backups
- Heterogeneous three-way NDMP backups
- Filer to NDMP-compliant network-attached tape backups

Direct-attached or local backups

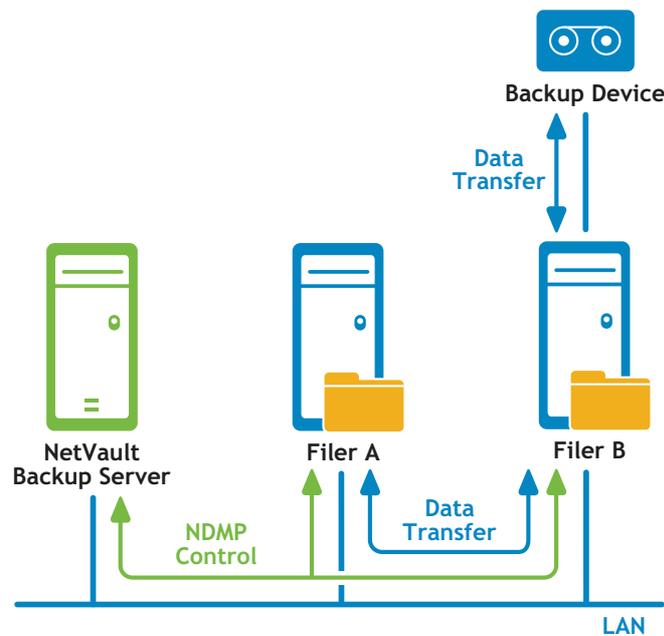
Figure 1. Direct-attached or local backup model



In the direct-attached or local backup model, the NetVault Backup Server instructs the filer to perform backups to the device directly attached to the filer (through Fibre Channel or SCSI). The filer transfers the backup index information to the server using NDMP over the network. During restores, the filer reads the data from the direct-attached device on server instruction. The actual data is not transmitted over the network during backup or restore, eliminating network congestion altogether.

Filer-to-filer or three-way backups

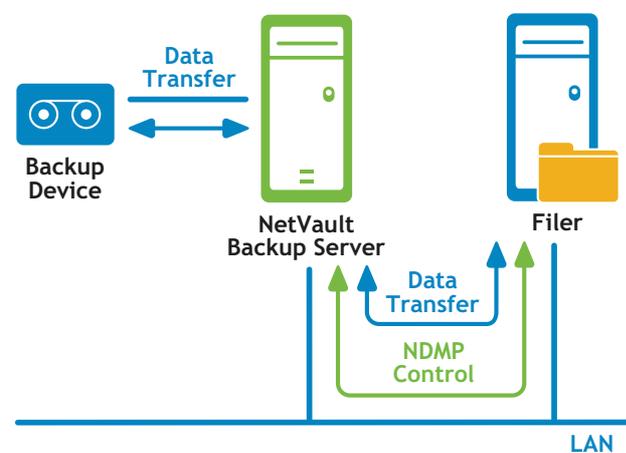
Figure 2. Filer-to-filer or three-way backup model



In the filer-to-filer or three-way backup model, the NetVault Backup Server instructs Filer A to perform backups to the tape device attached to Filer B. Filer A transfers the data and backup index information over the network. Filer B transfers the data directly to the device; it transfers the backup index information to the server using NDMP over the network. This model allows sharing of tape libraries among multiple filers.

Remote backups

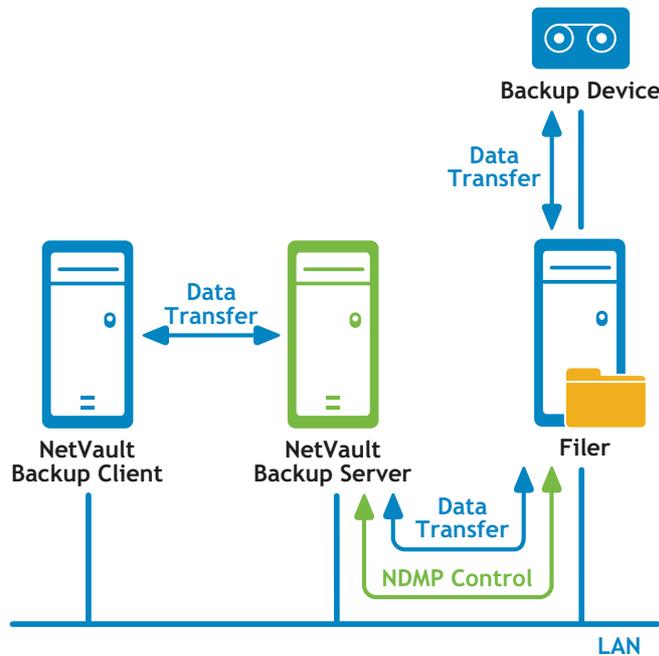
Figure 3. Remote backup model



In the filer-to-server (filer-to-client) or remote backup model, the NetVault Backup Server instructs the filer to perform backups to tape devices attached to the server. The filer transfers the data and index information to the server using NDMP over the network.

Heterogeneous three-way NDMP backups

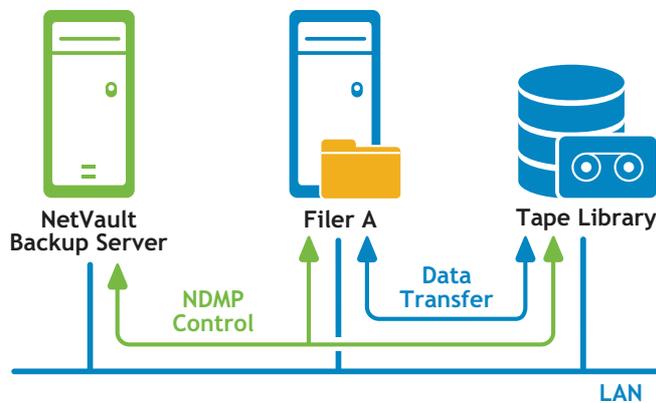
Figure 4. Heterogeneous three-way NDMP backup model



The heterogeneous three-way NDMP backup model is similar to the direct-attached model, but in this model the NetVault Backup machines on the network also use the filer-attached tape device for backups and restores.

Filer to NDMP-compliant network-attached tape backups

Figure 5. Filer to NDMP-compliant network-attached tape backups



In this model, the NetVault Backup Server instructs the filer to perform backups to the NDMP-compliant network-attached storage device. The filer uses NDMP over the network to transfer the data to the storage device and backup index information to the NetVault Backup Server. The network-attached storage device can be shared by one or more filers, NetVault Backup Server and any number of NetVault Backup Clients.

Prerequisites

For filer-specific installation requirements, see the relevant *Dell NetVault Backup Plug-in for NDMP Application Notes*.

Installing the plug-in

To install the plug-in

- 1 In the Navigation pane, click **Guided Configuration**, and then on the **NetVault Configuration Wizard** page, click **Install Plugins**. In the **NetVault Backup Clients** list, select the clients on which you want to install the plug-in.

— or —

In the Navigation pane, click **Manage Clients**. In the **NetVault Backup Clients** list, select the client on which you want to install the plug-in, and click **Manage**. At the lower-right corner of the **Installed**

Software table, click the **Install Plugin** button ().

 **NOTE:** You can use the configuration wizard to install the plug-in on multiple clients at the same time (if the selected clients are all of the same type). When you select multiple clients, verify that the plug-in binary file is compatible with the OS and platforms of the target clients.

From the **Manage Clients** page, you can only select one client for installing the plug-in.

- 2 Click **Choose Plug-in File**, and in the browse window, navigate to the location of the “.npk” installation file for the plug-in (on the installation CD or the directory to which the file was downloaded from the website).
- 3 Select the file named **ndm-x-x-x-x.npk** (x-x-x-x represents the version, build, and platform numbers), and click **Next** to begin installation.
- 4 After the plug-in is installed successfully, a message is displayed.

Removing the plug-in

To remove the plug-in

- 1 In the Navigation pane, click **Manage Clients**.
- 2 In the **NetVault Backup Clients** list, select the client on which the plug-in is installed, and click **Manage**.
- 3 In the **Installed Plug-ins** table, select **NDMP Client**, and click the **Remove Plugin** button ().
- 4 In the confirmation dialog box, click **Remove**.

Configuring the plug-in

- [Prerequisites](#)
- [Adding an NDMP Server](#)
- [Configuring NetVault Backup user account](#)
- [Configuring default settings](#)
- [Configuring filer-attached devices](#)

Prerequisites

Before you start the configuration procedure, verify that the following requirements are met:

- To use UTF-8 encoding, do the following:
 - Enable UTF-8 encoding on the filer and all volumes.
 - Configure appropriate language-type on all volumes.

To determine if UTF-8 encoding is supported on the target filer and for instructions on configuring the Character Set Encoding on the filer, see the relevant filer documentation.

- For filer-specific configuration notes, see relevant *Dell NetVault Backup Plug-in for NDMP Application Notes*.

Adding an NDMP Server

To start using the plug-in for backups and restores, you must add the applicable filers to the plug-in, and configure a user account to log on to the filer.

To add an NDMP Server

- 1 In the Navigation pane, click **Create Backup Job**.

— or —

In the Navigation pane, click **Guided Configuration**, and then on the **NetVault Configuration Wizard** page, click **Create Backup Jobs**.

- 2 Click **Create New** next to the **Selections** list to open the **NetVault Backup Selections** page.
- 3 Open the **NetVault Backup Server**. Select **NDMP Client**, and in the **Actions** list, click **Add Server**.

- 4 In the NDMP Server dialog box, configure the following settings.

Table 1. Add NDMP Server

Option	Description
Name	Type a name for the filer. The filer name must be unique. You can assign the actual name of the filer to easily identify it in the NetVault Backup environment. NOTE: You cannot change the server name once it is configured.
Address(es)	Type the IP address of the filer.
Port	By default, the filer is configured to listen on port number 10000. Unless otherwise required, do not change the listener port for the filer.
Account	Specify a user account that can be used to log on to the filer. The user account must have necessary privileges to perform NDMP backups and restores.
Password	Type the password for the user account.
Use UTF-8 Conversions	Select this check box to convert the filenames and display them correctly according to the locale configured on the NetVault WebUI. This feature can only be used if the filer supports UTF-8 encoding. To use this feature, do the following: <ul style="list-style-type: none">• Enable UTF-8 conversion on the filer.• Set the appropriate language type on each target volume.• Set the configuration option Codepage for UTF-8 Conversions. For more information, see Configuring default settings. NOTE: For NetApp filers, the actual conversion is specified on a per-job basis by setting the option Request Unicode File Information in the Backup Options Set. However, the Use UTF-8 Conversions check box must be selected to use this feature.

- 5 Click OK to add the filer.

Editing server details

To edit the server details

- 1 Start the Backup Job Wizard, and click **Create New** next to the **Selections** list.
- 2 Open the NetVault Backup Server, and then open **NDMP Client**.
- 3 Select the filer, and in the **Actions** list, click **Edit Server**.
- 4 Reconfigure the applicable settings. For more information about these settings, see [Add NDMP Server](#).

Note the following:

- You cannot change the server name.
 - To change the password, select the **New Password** check box, and type the password.
- 5 Click OK to save the new settings.

Removing an NDMP Server

To remove an NDMP Server

- 1 Start the Backup Job Wizard, and click **Create New** next to the **Selections** list.
- 2 Open the NetVault Backup Server, and then open **NDMP Client**.
- 3 Select the filer, and in the **Actions** list, click **Remove Server**.
- 4 In the confirmation dialog box, click **OK**.

Configuring NetVault Backup user account

When backing up multiple volumes, the plug-in uses the “default” user account to run child jobs. If you assign a new password to this user account, you must also update the account details in the plug-in. Otherwise, the backup jobs that include multiple volumes report an error (“unable to log on to auditor, check account and password are valid”) and fail.

To configure password for the “default” user account

- 1 Start the Backup Job Wizard, and click **Create New** next to the **Selections** list.
- 2 Open the NetVault Backup Server, and then open **NDMP Client**.
- 3 Select the filer, and in the **Actions** list, click **Set Account**.
- 4 In the **NetVault Account** dialog box, provide the following information:
 - **Account:** Type “default”, which is the user account used to run the subjobs.
 - **New Password:** Select the **New Password** check box, and specify the password set for the “default” account.
- 5 Click **OK** to save the information.

Configuring default settings

The default settings apply globally to all NDMP Servers added to the plug-in.

To configure the default settings for Plug-in for NDMP

- 1 Start the Backup Job Wizard, and click **Create New** next to the **Selections** list. Open the NetVault Backup Server. Select **NDMP Client**, and in the **Actions** list, click **Configure**.

— or —

In the Navigation pane, click **Change Settings**. On the **Configuration** page, click **Server Settings**, and then click **Plugin Options**.

- 2 Under **NDMP Backup Log Filters**, configure the following settings:

Table 2. NDMP backup log filters

Option	Description
Filter 1	You can use these settings to filter log messages generated during backup jobs. The messages that contain the strings specified in these boxes are not displayed on the View Logs page. Each box can contain one filter string. Thus, you can specify a maximum of 10 filter strings in the filter boxes.
Filter 2	
...	
Filter 10	

- Under NDMP Backup Configuration, configure the following settings.

Table 3. NDMP backup configuration

Option	Description
Maximum File Buffer Size	This setting can be used to increase the buffer size for file transfer to improve performance. The maximum buffer size value depends on the resources available on the NAS Filer. A large buffer size can have a negative impact on the data transfer and overall performance.
Maximum Index Buffer Size	This setting can be used to increase the buffer size for the transfer of backup index entries to improve performance. The maximum buffer size value depends on the resources available on the NAS Filer. A large buffer size can have a negative impact the data transfer and overall performance.
Codepage for UTF-8 Conversions	Type the codepage identifier for UTF-8 conversions. Use this option with the Use UTF-8 Conversions option described in the section Adding an NDMP Server . Translations depend on the configuration, locale, and code sets installed on the system. For a list of codepage values, see the operating system documentation.
Use APM UTF-8 Conversion	To store and index UTF-8 character sets for browsing, select this check box. This setting allows you to browse the files in a native UTF supported language, such as Japanese. Without this setting, the plug-in indexes the files by filer-specific NDMP metadata.

NOTE: After configuring UTF-8 encoding setting on the filer, filer volumes, and plug-in, we recommend that you perform a test backup of some data on the relevant volumes. Then, browse these savesets using the Restore Job Wizard to ensure that the names of the directories and files are displayed correctly. This test is necessary because the UTF-8 name translations are received from the filer. If the filer fails to supply the names in UTF-8 format, it can cause corruption or truncation of the file and directory names.

- Under NDMP Restore Log Filters, configure the following settings:

Table 4. NDMP restore log filters

Option	Description
Filter 1	You can use these settings to filter log messages generated during restore jobs. The messages that contain the strings specified in these boxes are not displayed on the View Logs page. Each box can contain one filter string. Thus, you can specify a maximum of 10 filter strings in the filter boxes.
Filter 2	
...	
Filter 10	Consider the following while configuring the filter expressions for NDMP restore logs: <ul style="list-style-type: none"> When performing a restore, an error message is reported every time a file is overwritten. These errors can quickly add up to thousands of log messages, causing system degradation. The Filter 1 box contains a default expression "Warning: cannot create directory" that automatically blocks this type of error messages. We recommend that you do not change the default expression in the Filter 1 box. By default, the text in Filter 1 appears in English regardless of the locale setting for NetVault Backup. This string should match the log messages that the NDMP Filer sends, indicating that it was unable to create a directory while performing a restore. If the filer log messages are in a language other than English, then the text in Filter 1 should be changed to match the message.

- Click OK to save the settings and close the dialog box.

Configuring filer-attached devices

For administration of backups and restores to direct-attached devices, the device must be added to the NetVault Backup Server. For more information about adding storage devices to the NetVault Backup Server, see the *Dell NetVault Backup Administrator's Guide*.

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The site enables you to:

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- Obtain product notifications
- Download software. For trial software, go to [Trial Downloads](#).
- View how-to videos
- Engage in community discussions
- Chat with a support engineer