VERITAS NetBackup™ 4.5

User's Guide

for Microsoft Windows

VERITAS

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Contents

Preface

This guide describes how to use NetBackup to back up and restore files and folders that reside on a Microsoft Windows PC.

Audience

This guide is written for the end user and for the system administrator.

Organization

This guide is organized to help you find the information you need in the chapters and appendices described below:

◆ Chapter 1, "Introduction", provides an overview of NetBackup, describes how the end user operates NetBackup, and describes technical terms and concepts.

◆ Chapter 2, "User-Directed Operations", explains how to use NetBackup to perform backup, archive, and restore operations.

◆ Chapter 3, "Reference", describes the various windows, screens, and menus associated with NetBackup.

◆ Appendix A, "System Administrators", contains information important to the NetBackup system administrator.

◆ Appendix B, "NetBackup Commands", provides a detailed listing of commands available for use on the NetBackup client.

◆ Appendix C, "Open Transaction Manager Parameters", gives information on configuring the Open Transaction Manager (OTM) parameters in the Windows registry.

Related Documentation

The following documents provide related information. For a more detailed listing of NetBackup documents, refer to *NetBackup Release Notes.*

◆ *NetBackup Installation Guide for PC Clients*

Explains how to install NetBackup PC client software. The PC clients are Windows, Mac OS, and Novell NetWare.

If you have a UNIX server, refer to these documents:

◆ *NetBackup Release Notes*

Provides important information about NetBackup DataCenter and BusinesServer products on UNIX- and Windows-based servers, such as the platforms and operating systems that are supported and operating notes that may not be in the NetBackup manuals or the online help.

◆ *NetBackup DataCenter System Administrator's Guide for UNIX*

Explains how to configure and manage NetBackup DataCenter on a UNIX server.

◆ *NetBackup BusinesServer System Administrator's Guide for UNIX*

Explains how to configure and manage NetBackup BusinesServer on a UNIX server.

◆ *NetBackup Troubleshooting Guide for UNIX*

Provides troubleshooting information for UNIX-based NetBackup products.

If you have a Windows server, refer to these documents:

◆ *NetBackup Release Notes*

Provides important information about NetBackup software, such as the platforms and operating systems that are supported and operating notes that may not be in the manuals or the online help.

◆ *NetBackup DataCenter System Administrator's Guide for Windows*

Explains how to configure and manage NetBackup DataCenter on a Windows server.

◆ *NetBackup BusinesServer System Administrator's Guide for Windows*

Explains how to configure and manage NetBackup BusinesServer on a Windows server.

◆ *NetBackup Troubleshooting Guide for Windows*

Provides troubleshooting information for Windows-based NetBackup products.

Accessibility

NetBackup contains features that make the user interface easier to use by people who are visually impaired and by people who have limited dexterity. Accessibility features include:

◆ Support for assistive technologies such as screen readers and voice input (Windows servers only)

◆ Support for keyboard (mouseless) navigation using accelerator keys and mnemonic keys

For more information, see the NetBackup system administrator's guide.

Conventions

The following explains typographical and other conventions used in this guide.

Type Style

Typographic Conventions

Typeface	Usage
Bold fixed width	Input. For example, type `cd` to change directories.
`Fixed width`	Paths, commands, filenames, or output. For example: The default installation directory is `/opt/VRTSxx`.
Italics	Book titles, new terms, or used for emphasis. For example: *Do not* ignore cautions.
Sans serif (italics)	Placeholder text or variables. For example: Replace *filename* with the name of your file.
Serif (no italics)	Graphical user interface (GUI) objects, such as fields, menu choices, etc. For example: Enter your password in the **Password** field.

Notes and Cautions

Note This is a Note. Notes are used to call attention to information that makes using the product easier or helps in avoiding problems.

Caution This is a Caution. Cautions are used to warn about situations that could cause data loss.

Key Combinations

Some keyboard command sequences use two or more keys at the same time. For example, holding down the **Ctrl** key while pressing another key. Keyboard command sequences are indicated by connecting the keys with a plus sign. For example:

Press Ctrl+t

Command Usage

The following conventions are frequently used in the synopsis of command usage.

brackets [ ]

The enclosed command line component is optional.

Vertical bar or pipe (|)

Separates optional arguments from which the user can choose. For example, when a command has the following format:

command *arg1* | *arg2*

the user can use either the *arg1* or *arg2* variable.

Terms

The terms listed in the table below are used in the VERITAS NetBackup documentation to increase readability while maintaining technical accuracy.

Term	Definition
Microsoft Windows, Windows	Terms used as nouns to describe a line of operating systems developed by Microsoft, Inc.
	A term used as an adjective to describe a specific product or noun. Some examples are: Windows 95, Windows 98, Windows NT, Windows 2000, Windows servers, Windows clients, Windows platforms, Windows hosts, and Windows GUI.
	Where a specific Windows product is identified, then only that particular product is valid with regards to the instance in which it is being used.
	For more information on the Windows operating systems that NetBackup supports, refer to the VERITAS support web site at `http://www.support.veritas.com`.
Windows servers	A term that defines the Windows server platforms that NetBackup supports; those platforms are: Windows NT and Windows 2000.
Windows clients	A term that defines the Windows client platforms that NetBackup supports; those platforms are: Windows 95, 98, ME, NT, 2000, XP (for 32- and 64-bit versions), and LE.

Getting Help

For updated information about this product, including system requirements, supported platforms, supported peripherals, and a list of current patches available from Technical Support, visit our web site:

```
http://www.support.veritas.com/
```

VERITAS Customer Support has an extensive technical support structure that enables you to contact technical support teams that are trained to answer questions to specific products. You can contact Customer Support by sending an e-mail to support@veritas.com, or by finding a product-specific phone number from the VERITAS support web site. The following steps describe how to locate the proper phone number.

1. Open `http://www.support.veritas.com/` in your web browser.

2. Click **Contact Support**. The *Contacting Support Product List* page appears.

3. Select a product line and then a product from the lists that appear. The page will refresh with a list of technical support phone numbers that are specific to the product you just selected.

Introduction 1

During installation, the Backup, Archive, and Restore interface is configured to work with a specific NetBackup client. When a user starts an operation using the Backup, Archive, and Restore interface, the software sends the appropriate messages to its designated NetBackup client. The software on the NetBackup client then communicates with the server and handles the client side of the operation.

The Backup, Archive, and Restore interface enables *server-directed* backup, archive, and restore operations on entire folders or individual files that reside on your NetBackup client. This interface also allows you to perform *user-directed* backup, archive, and restore operations on your NetBackup client, without logging into the NetBackup master server. Once you start a user-directed operation, the NetBackup process runs under the control of the NetBackup master server. You request the service and the NetBackup master server manages the rest, including the storage and retrieval of data.

In NetBackup terminology, the system that requires the backup or archive is the NetBackup client. The system that manages the storage and retrieval of the backup data is called the NetBackup master server.

Backup and Archive Operations

A backup saves copies of selected files and folders from a NetBackup client to a storage device on a NetBackup master server or a NetBackup media server.

An archive saves copies of selected files and folders from a NetBackup client to a storage device on a NetBackup master server or NetBackup media server, then deletes the original files from the NetBackup client.

User-Directed Backups and Archives

You can perform a user-directed backup during the time period scheduled by the NetBackup system administrator. NetBackup allows you to select a combination of files, folders with files, or entire drives to back up.

Files can be backed up through the Backup, Archive, and Restore interface or, if NetBackup Explorer Extensions are installed and enabled, through Windows Explorer.

Server-Directed Backups and Archives

The NetBackup administrator can schedule full backups and incremental backups to occur automatically and unattended, under the control of the NetBackup master server. Full, incremental, and true image backups can only be performed by the NetBackup master server. When properly scheduled, the server-directed backups will meet most of your backup requirements.

Note In previous versions of NetBackup for Windows, server-directed backups could be only partially successful since some applications retain locks on files when left open. NetBackup DataCenter is packaged with OTM (Open Transaction Manager), which resolves this problem. If OTM is disabled, be sure to shut down all applications on the NetBackup client before proceeding with server-directed backups. See the *NetBackup Installation Guide for PC Clients* for more information on installing OTM.

Note OTM is a separately-priced option for BusinesServer.

Full Backup

When the NetBackup master server is configured to perform a full backup, NetBackup backs up all files in a specified folder or volume to a storage unit. The archive bit is cleared as each file is backed up. If the full backup fails, NetBackup will attempt another full backup at the same time each day until successfully completed. A successfully completed backup will include all files.

Cumulative-Incremental Backup

When the NetBackup master server is configured to perform a cumulative-incremental backup, NetBackup backs up all files that have changed since the last successful full backup.

Cumulative-incremental backups can be configured to use either the datetime stamp or the archive bit. If the datetime stamp is used, the cumulative-incremental backup includes all files with a datetime stamp that is more recent than the last full backup. If the archive bit is used, the cumulative-incremental backup includes all files that have their archive bit set. Archive bits are not cleared on cumulative-incrementals. Refer to "General Tab" on page 61 for more details on performing incremental backups with archive bits.

Differential-Incremental Backup

When the NetBackup master server is configured to perform a differential-incremental backup, NetBackup backs up all files that have changed since the last successful backup.

Differential-incremental backups can be configured to use either the datetime stamp or the archive bit. If the datetime stamp is used, the differential-incremental backup includes all files with datetime stamps that are more recent than the last full or incremental backup. If the archive bit is used, the differential-incremental backup includes all files that have their archive bit set. Archive bits are cleared on differential-incrementals if all files are successfully backed up. Refer to "General Tab" on page 61 for more details on performing incremental backups with archive bits.

True Image Backup

A true image backup takes place when the **Collect true image restore information** attribute has been set on the NetBackup master server. When this attribute is set, NetBackup collects additional information necessary to restore a folder to exactly what it was at the time of the full backup or incremental backup.

Only those backups performed with this attribute set can be used for the true image restore. For complete details, refer to the *NetBackup System Administrator's Guide for UNIX* or the *NetBackup System Administrator's Guide for Windows*.

Restore Operations

A restore reads backups from the storage device on the NetBackup master server or the NetBackup media server and restores them to the NetBackup client. NetBackup allows you to select a combination of files, folders with files, or entire drives to restore.

File Permissions and Open Files

File permissions require write permission on the destination folder in order to restore a file. A file will not be restored when a file with the identical name is open on the NetBackup client.

Access Control Lists

If the access control list to a file on a Windows NT or Windows 2000 system has changed since the file was backed up, it will be restored to what it was at the time of the backup.

A file will be restored by NetBackup as follows:

◆ A user that has been granted access to the file since the backup will *not* have access to the file after the restore.

◆ A user that has had access to the file removed since the backup will again have access after the file is restored.

Server-Directed Restores

The administrator on the NetBackup master server can direct restores to any NetBackup client (regardless of which NetBackup client the files came from). Refer to "Redirecting a Restore to a Different Client" on page 88 for details.

A client can prohibit server-directed restores by clearing the **Allow Server-Directed Restores** option in the **General** tab. This option can only be cleared by the system administrator. Refer to "General Tab" on page 100 for more information.

User-Directed Restores

A user can start a restore operation at any time. Restored folders and drives include all files that were backed up or archived during a range of backups. NetBackup is also able to restore from Backup Exec images, redirect a restore to a different client, and perform true image restores.

Restoring from Backup Exec Images

NetBackup 4.5 can read Backup Exec media written by Backup Exec 7.3 or later. To be able to restore from Backup Exec images, the Backup Exec catalogs need to have been converted to the NetBackup catalog format, using the catalog converter utility. The Backup Exec Tape Reader option also needs to be installed on the NetBackup server. See your system administrator for more information.

Redirected Restore to a Different Client

With the necessary permissions and configuration, users can browse the NetBackup database for files backed up by another NetBackup client and restore files to their own computer.

System administrators can direct restores to the client that originally backed up the files or to different client. This type of restore must be performed on the master server and is called a server-directed restore.

Refer to "Redirecting a Restore to a Different Client" on page 88 for details on using the Backup, Archive, and Restore interface on the NetBackup server for redirected restores to different clients.

Restores from True Image Backups

True image backups can be restored only on server-directed backups and archives in which the **Collect true image restore information** attribute has been set. Refer to the *NetBackup System Administrator's Guide for UNIX* or the *NetBackup System Administrator's Guide for Windows* for details.

A true image restore of a folder, by default, restores the folder so its contents are exactly what they were at the time of the most recent server-directed full backup or incremental backup. Files deleted prior to the specified backup are not restored.

During a true image restore of a folder, NetBackup determines which files belong in the folder and then reconstructs it by using the most recent backup of these files.

NetBackup does not allow a true image restore that is based on the time of a user operation. However, NetBackup does use the backups from a user-directed operation if they are more recent than the latest server-directed full backup or incremental backup.

A true image restore is the best choice if, for example, you have recently cleaned up a folder by deleting unwanted files and now want to restore the latest version without having to repeat your cleanup. It is also possible to restore the true image of an earlier version of a folder.

View Status

You can view, print, and delete status reports from within the View Status dialog box. Refer to "View Status Dialog Box" on page 69 for more information.

File Permissions Required By NetBackup

You need backup privileges to back up or archive a file. Without backup privileges, you must have read access to a file in order to back up the file and read and delete access to a file in order to archive the file (since the archive operation removes the file from the disk).

Listing and restoring files and directories require the following permissions:

◆ To list or restore files in a directory owned by someone else, you must have restore privileges. Without restore privileges, you can only restore from a user-directed backup you have performed (unless Free Browse is turned on). (Refer to "Free Browse" on page 85 for more details.)

◆ To restore a file to its original location, you must have write access to the file (if the file exists), or to the directory (if the file does not exist).

The following table shows how NetBackup restores files in various situations (for example, if a copy of the file or directory already exists).

File Permissions

Type of Restore Attempted	Results
Restore a file that already exists and overwrite the existing file.	If you have restore privileges, NetBackup restores the file and sets file ownership to the same owner as the backup image.
	If you do not have restore privileges, NetBackup restores the file only if you have write access to it. In a case where the file is read only, but you have write access to the parent directory, NetBackup removes the file and restores the backup image with the original owner as the owner.
Restore a file that already exists and *not* overwrite the existing file.	Whether you have restore privileges or not, NetBackup does not restore the file and places a message in the progress log.
Restore a file that doesn't exist.	Whether you have restore privileges or not, NetBackup restores the file and sets file ownership to the owner that originally owned the file.

File Permissions

Type of Restore Attempted	Results
Restore a file when a directory exists with the same name as the file.	Whether you have restore privileges or not, NetBackup places a message in the log file indicating that the directory will be replaced with the file after the next system reboot. After the system boot, the directory is not replaced and the file is restored with a temporary filename in the parent directory of the directory. This occurs only when overwrite existing files is enabled. The log file will indicate the name the file was given and to which directory it was restored.
Restore a directory when a file exists with the same name as the directory.	The directory will not be restored.
Restore a file in a directory that does not exist.	NetBackup creates the directory with the owner set to the account used to start the NetBackup client service. The file is then restored in the same manner as one that does not exist (see above).

File Permissions Required By NetBackup

User-Directed Operations 2

This section provides step-by-step instructions on using the Backup, Archive, and Restore interface to perform backups, archives and restores. For information on scheduled backups and other server-directed operations, see the *NetBackup System Administrator's Guide for UNIX* or the *NetBackup System Administrator's Guide for Windows.*

Starting the Backup, Archive, and Restore Interface

◆ Click the Windows **Start** menu, point to **Programs**, point to **VERITAS NetBackup**, and click **Backup, Archive, and Restore.**

  The Backup, Archive, and Restore interface displays.

Toolbar

For most operations, it is easiest to use the buttons on the toolbar. The horizontal toolbar on the Backup, Archive, and Restore interface opens windows to browse for backups or restores and to view the progress report of a NetBackup operation.

The NetBackup Backup window or the NetBackup Restore window has a vertical toolbar with buttons for frequently used menu commands. Clicking a button on a toolbar has the same effect as using the menu command. Any action initiated by the buttons on the vertical toolbar only pertains to the window it is associated with.

Helpful Hints

Marking Files and Folders

◆ To mark a file for backup or restore, select the checkbox to left of a file.

◆ To mark a folder for backup or restore, select the checkbox to the left of a folder. A check mark will appear in the box. A slash mark in the box indicates only some of the files or subfolders within that folder are marked.

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◆ To mark all the files (and folders) that currently appear in the Contents of '*<folder>*' pane, click **Mark Displayed Files** from the **Edit** menu.

Unmarking Files and Folders

◆ To unmark a file, clear the checkbox to the left of the file.

◆ To unmark a folder, and all the files and subfolders marked within that folder, clear the checkbox to the left of the folder.

◆ To unmark all files and folders that currently appear in the Contents of '*<folder>*' pane, select **Unmark Displayed Files** on the **Edit** menu.

◆ To unmark all previously marked files and folders, select **Unmark All** on the **Edit** menu. You can also click the **Unmark All** button on the NetBackup Backup window or NetBackup Restore window toolbars.

Performing Backups and Archives

This section includes a tutorial which goes through a simple backup of the `Readme_Client.txt` file installed in the NetBackup folder.

You can back up a file either through the Windows Explorer, by using the NetBackup Bin feature, or through the Backup, Archive, and Restore interface.

Backing Up a File Through Windows Explorer

Note Explorer Extensions must be enabled in order to be able to back up files through Windows Explorer. To enable this feature, open the Backup, Archive, and Restore interface and on the **File** menu select **NetBackup Explorer Extensions**.

1. Open Windows Explorer. (Click on the Windows **Start** menu, point to **Programs**, point to **Accessories**, and choose **Windows Explorer**.)

2. Locate the file (or folder) you wish to back up and right-click on it. For example:

   a. Open the `Program Files\VERITAS\NetBackup` folder.

   b. Find the `Readme_Client.txt` file and right-click on it.

3. Click **Backup Now**.

   To show the progress of the backup operation, select **Automatically Show Progress Log**.

4. To begin the backup operation, click **Yes**.

Backing Up a File Using NetBackup Bin

Note Explorer Extensions must be enabled in order to back up files using NetBackup Bin. To enable this feature, open the Backup, Archive, and Restore interface and on the **File** menu select **NetBackup Explorer Extensions**.

1. Open Windows Explorer. (Click on the Windows **Start** menu, point to **Programs**, point to **Accessories**, and choose **Windows Explorer**.)

2. Locate the file (or folder) you wish to back up. For example:

a. Open the `Program Files\VERITAS\NetBackup` folder.

b. Find the `Readme_Client.txt` file.

3. Drag the file to NetBackup Bin. You can do this by either:

- **-** Dragging the file to the NetBackup Bin icon on your desktop.

  or

- **-** Dragging the file to the NetBackup Bin folder in Windows Explorer.
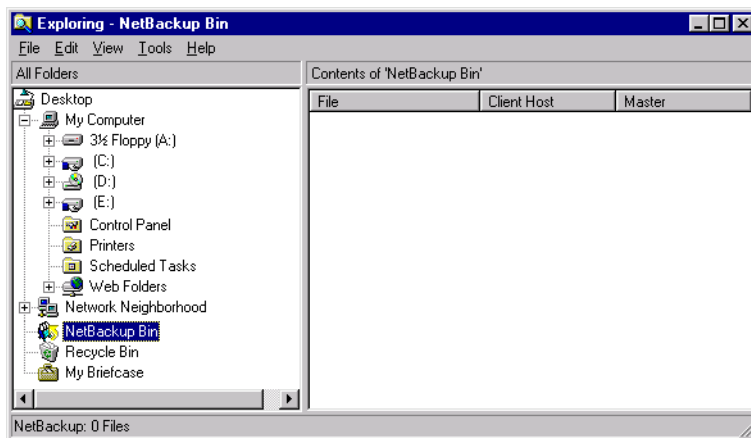
4. To view the files in the NetBackup Bin folder:

- **-** Double-click on the NetBackup Bin icon on your desktop.

  or

- **-** Right-click on the NetBackup Bin folder in Windows Explorer and click **Open**.

5. Right-click on NetBackup Bin icon, or on the NetBackup Bin folder in Windows Explorer, and click **Backup Now**.

To show the progress of the backup operation, select **Automatically Show Progress Log**.

6. To begin the backup operation, click **Yes**.

Backing Up a File Through the Backup, Archive, and Restore Interface

1. Start the Backup, Archive, and Restore interface as described in "Starting the Backup, Archive, and Restore Interface" on page 9.

   The Backup, Archive, and Restore interface displays.

2. On the **File** menu, choose **Select Files and Folders to Backup**.

   The NetBackup Backup window is displayed.
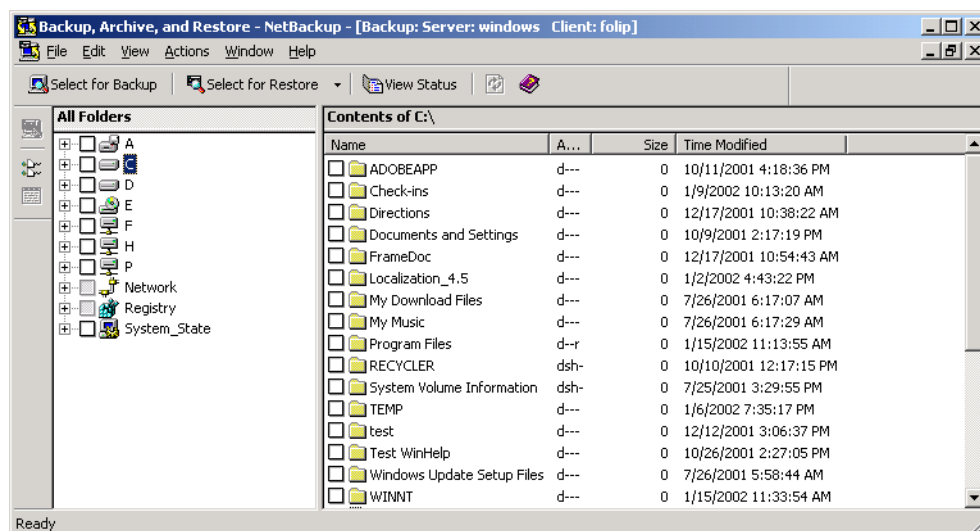
3.   Mark a file to backup.

   a.   Open the `Program Files\VERITAS\NetBackup` folder.

   b.   Find the `Readme_Client.txt` file and select the checkbox to the left of the item.
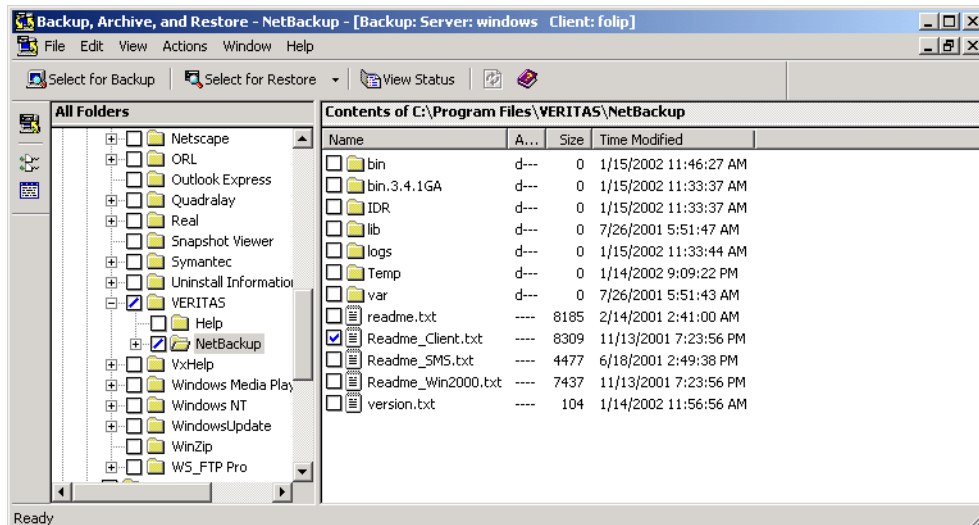
4.   On the **Actions** menu, choose **Start Backup of Marked Files**.

   The Specify Backup Options dialog box is displayed.
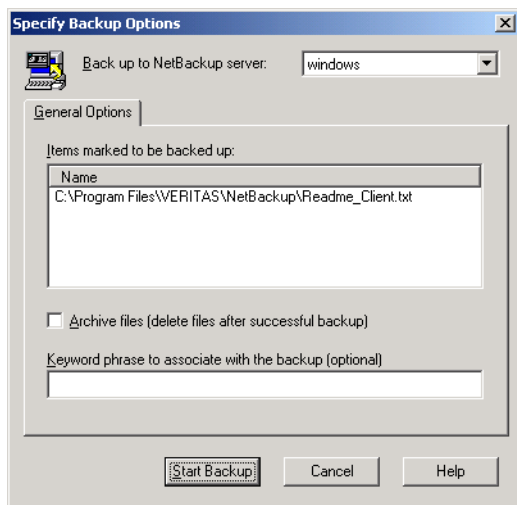
a. Review your selections in the **Name** list box.

b. If you wish to associate the backup with a keyword phrase, enter a keyword in the **Keyword phrase to associate with the backup (optional)** box. Later, you can search for this keyword if you wish to restore the items that were backed up. In this example `test` is used as the keyword.
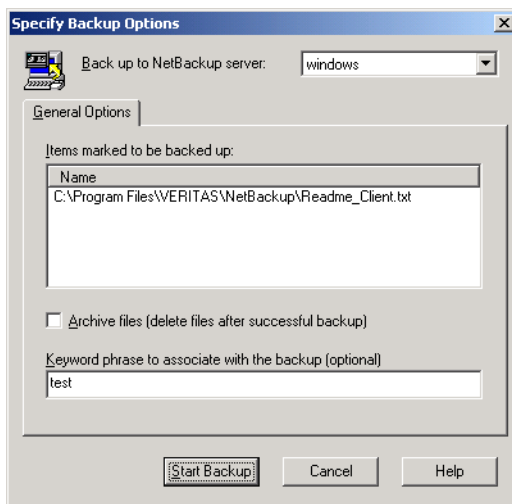
c. Click **Start Backup**.

The backup request goes to the NetBackup master server. A NetBackup message displays, indicating that the backup was successfully started.
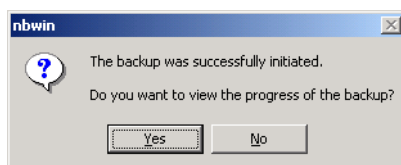
5. Click **Yes** on the NetBackup Message dialog box to open the View Status dialog box.

The View Status dialog box allows you to view the progress report of a NetBackup operation. For more information see "View the Status of a User-Directed Operation" on page 22.

Note The NetBackup operation may take a few minutes to complete. You can close the Backup, Archive, and Restore interface after starting a backup operation. NetBackup will continue the backup operation in the background.

Backing Up Shared Folders

For information on backing up shared folders, refer to the "Backup Network Drives" topic in the *NetBackup System Administrator's Guide.*

Performing Restores

This section walks you through a simple restore of the `Readme_Client.txt` file backed up in "Performing Backups and Archives" on page 11 of this manual.

1. Start the Backup, Archive, and Restore interface as described in "Starting the Backup, Archive, and Restore Interface" on page 9.

2. On the **File** menu, point to **Select Files and Folders to Restore**, then click **from Normal Backup**.

   The NetBackup Restore window displays.
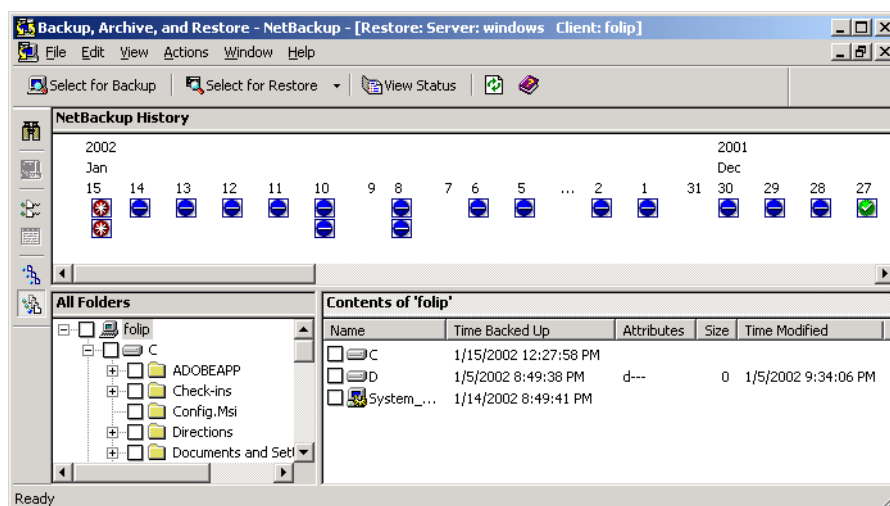
   There may be a delay before lists display in the NetBackup Restore window. NetBackup has to obtain the file information from the catalogs on the NetBackup master server.

   If files or folders do not display in the NetBackup Restore window, it can be due to one of the following:

   - **Perform Default Search** is not enabled. In this case, start a search manually by clicking **Search Backups** on the **Actions** menu. Or to display the files in a backup, click a backup image.

   - The NetBackup server does not have any backups of files for your client. Ensure that the client is connecting to the correct server (see "Servers Tab" on page 65). Also, ensure that you are using the correct client name (see "Clients Tab and Clients/Policy Type Tab" on page 67). You can also refer to the title bar, which

displays the names of the client and the server the client is connected to. If these settings are correct and you believe there are backups available, contact your system administrator.

3. Select a file to restore.

If you know the backup image (or the range of images) you can select the file from the NetBackup History pane without going through the Search Backups dialog box.

In this tutorial, we are going to use the Search Backups feature to restore the `Readme_Client.txt` file backed up in "Performing Backups and Archives" on page 11.

Tip Before initiating a search, collapse the tree in the All Folders pane as much as possible. NetBackup will expand the tree to the folders that match your search criteria.

a. On the **Actions** menu, click **Search Backups**.

The Search Backups dialog box displays.

b. In the **Search Folder** box, type the path to the backed up file.

For this example the path is `C:\Program Files\VERITAS\NetBackup\`.

c. Type **test** in the **Keyword phrase (optional)** box.
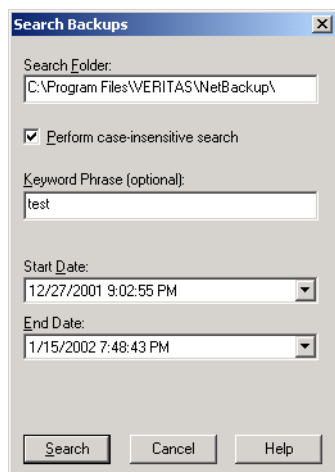
d. Click **Search**. NetBackup will display the tree to the lowest levels of folders which contain files that were backed up.
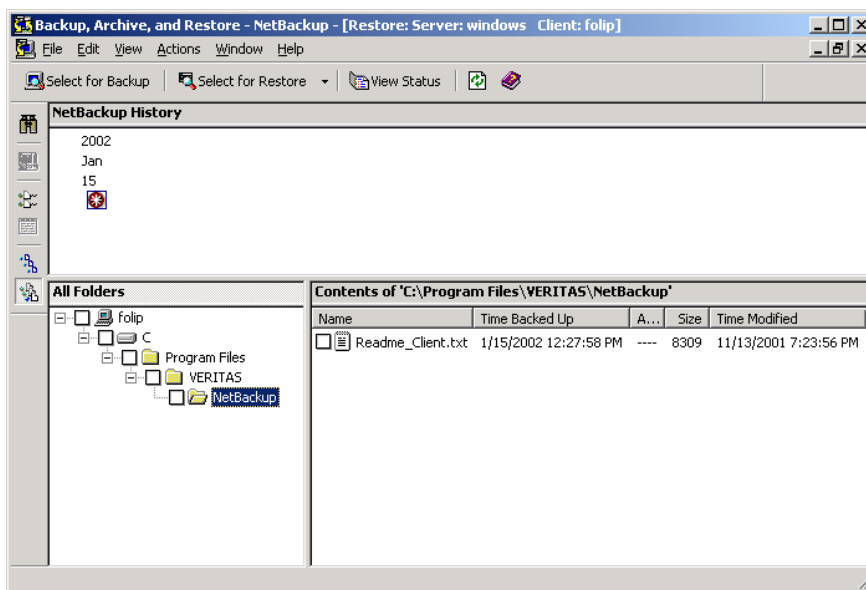
4. Select the checkbox to the left of the `Readme_Client.txt` file.
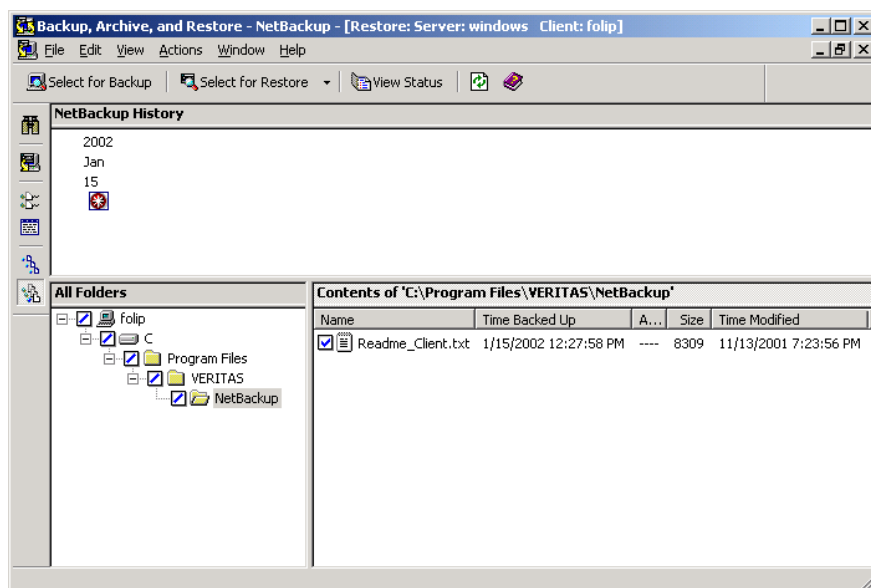
5. On the **Actions** menu, click **Start Restore of Marked Files**.

The Restore Marked Files dialog box will open.

6. Click **Overwrite the existing file**.
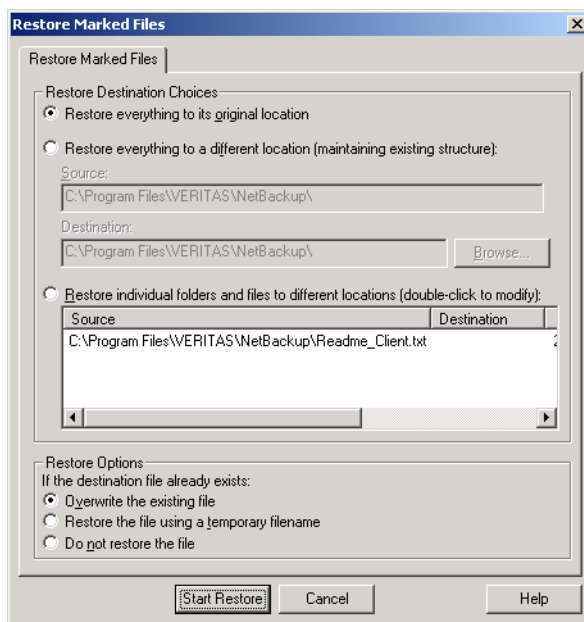
7. Click **Start Restore**.

A NetBackup message displays, indicating that the restore was successfully started.
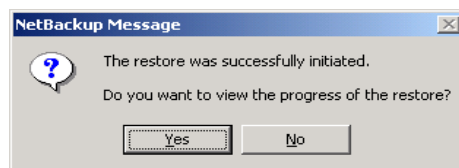
8. Click **Yes** on the NetBackup Message box to open the View Status dialog box.

The View Status dialog box allows you to view the progress report of a NetBackup operation. For more information see "View the Status of a User-Directed Operation" on page 22.

Note The NetBackup operation may take a few minutes to complete. After starting a restore operation, you can close the Backup, Archive, and Restore interface and perform other tasks on your computer. NetBackup will continue the restore operation in the background.

View the Status of a User-Directed Operation

1. On the **File** menu, click **View Status**.
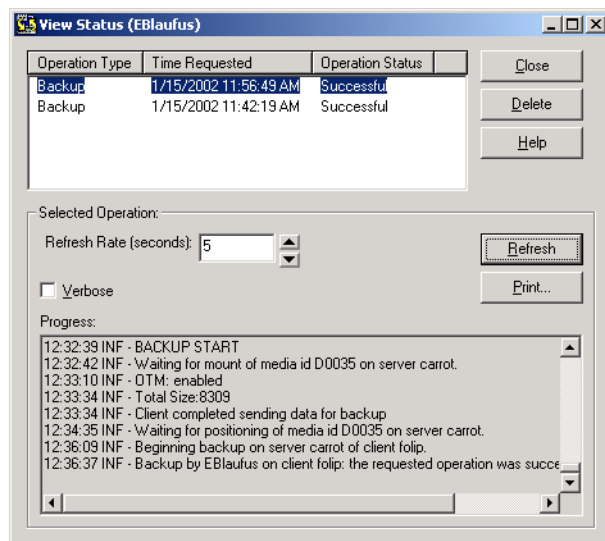
The status of the operation displays under the Operation Status column.

2. Select the operation for which you want to check the progress.

3. Click **Refresh**.

The lower pane will reflect the progress of the item selected in the top pane.

4. Select a refresh interval from the **Refresh Rate** box. The default setting is 0 seconds, which means the status will not be automatically refreshed.

5. By default the progress file is displayed in an abbreviated form. If you wish to view the entire contents of the progress file, select the **Verbose** option.

The NetBackup operation is finished when the Status changes to `Successful`. If NetBackup was unable to back up or restore all of the requested files, a status code appears a few lines before the end of the progress report. The *NetBackup Troubleshooting Guide for UNIX* or the *NetBackup Troubleshooting Guide for Windows* list the meaning of the final status code.

Advanced Restore Procedures

The following sections give detailed explanations of how to perform different types of advanced restore procedures.

Selecting Specific Backup Dates to Restore

By default, the NetBackup Restore window shows the files and folders that were backed up from the time of the last full backup to the most recent backup. If the client belongs to more than one policy[1], the default display starts with the last full backup that occurred first. For example, assume that the client belongs to PolicyW1 and PolicyW2. Also assume that full backups occur for both of them: PolicyW1's most recent full backup occurred on Feb. 2 and PolicyW2's most recent full backup occurred on Feb. 10. The display shows files ranging from the time of the PolicyW1 full backup on Feb. 2.

The default range will satisfy the majority of your needs to restore files. There will be times, however, when you must restore a file that was not backed up during the default time period. For example, a file that was deleted prior to the last full backup does not appear in the default display. In this case, you must use the NetBackup History pane to select a backup that contains the file.

Searching for Files to Restore

1. Open the NetBackup Restore window.

2. On the **View** menu, choose **Show All Backups**. This will display all copies of files and folders from all of the backups. To display the most recent copy of the file or folder, choose **Show Most Recent Backup** from the **View** menu.

3. Select the images from the NetBackup History pane that you believe contain the files and folders you want to restore.

4. Narrow the search range as much as possible to speed up your search by doing the following:

    -   Select a specific backup image in the NetBackup History pane.

    -   To select a range of backup images, select the first one in the range and then, while holding the Shift key, select the last one in the range. In this case, NetBackup searches all of the backup images in the selected range. The range search will start after the second image is selected.

---

1. A NetBackup policy defines the backup policies for a specific group of one or more clients that have similar backup requirements. The NetBackup system administrator configures the policy for your PC.

- Cancel previous selections by selecting another backup.

5. To open the Search Backups dialog box, click **Search Backups** on the **Actions** menu.
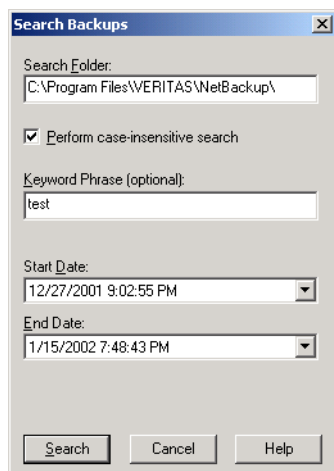
6. Type the search path that you want NetBackup to use in its search.

Note The number of files you can list during a search is limited by the amount of free memory you have on your computer. If you reach the limit, modify the date or file path parameters to narrow the scope of the search.

By default, the Search Backups dialog box shows the information for the folder that is currently selected in the All Folders pane of the NetBackup Restore window. See "Search Backups Dialog Box" on page 75 for more information.

7. Click **Search**.

When the search is complete, NetBackup updates the NetBackup Restore window.

Restoring an Earlier Version of a Folder or File

This procedure will restore all files that were backed up during the range of backup dates. This includes files that were deleted from your online folder after they were backed up. If you do not want to restore the deleted files, refer to "Restoring a True Image of a Directory" on page 25.

1. Open a NetBackup Restore window.

2. Open the backup NetBackup History pane.

If the NetBackup History pane is not open, click and drag the horizontal split bar down.

3. In the NetBackup History pane, select backup images for the dates of the backed up files or folders you want to restore.

NetBackup will search the backup images, and display the contents of the backup images in the All Folders and Contents of '*<folder>*' panes.

- **-** To restore a version of a folder or file that existed prior to the last full backup, select only the backups that include the desired version of the folder or file. Continue with step 4.

- **-** To further narrow your search for a specific folder, file or keyword, go to step a.

a. On the **Actions** menu, click **Search Backups**.

b. Enter a filename or keyword.

c. Click **Search**. When the search is complete, the NetBackup Restore window is updated.

4. Select the folder you want to restore in the All Folders pane of the NetBackup Restore window.

5. Select the files or folders you need in the Contents of '*<folder>*' pane. By default, NetBackup restores files and folders to their original location.

6. On the **Actions** menu, click **Start Restore of Marked Files**.

Restoring a True Image of a Directory

Note You can restore a true image of a directory only if the NetBackup policy that is backing up your files and directories is configured to collect true image restore information prior to backup. If in doubt, ask your NetBackup administrator.

What Is a True Image Restore?

A true image restore of a directory, by default, restores the directory so its contents are exactly what they were at the time of the most recent automatic full or incremental backup. Files deleted prior to the specified backup are not restored.

A true image restore is the best choice if, for example, you have recently cleaned up a directory by deleting unwanted files and now want to restore the latest version without having to repeat your cleanup. It is also possible to restore the true image of an earlier version of a directory.

Example of a True Image Restore

To illustrate the concept of a true image restore, refer to the following table, which shows the contents of a directory named `c:\doc` during a series of backups performed between `12/01/00` and `12/04/00`.

Day Type of Backup	12/01/00 (Full)	12/02/00 (Incr)	12/03/00 (Incr)	12/04/00 (User Back)	12/04/00 (Incr)
	file1	file1	file1	file1	file1
	file2	file2	file2	file2	file2
	dirA/fileA	dirA/fileA	dirA/fileA	dirA/fileA	-
	dirB/fileB	-	-	-	-
	file3	-	-	-	-
				dirC/fileC	-
				file4	file4

Assume that you are going to restore the most recent version of the directory.

◆ If you perform a standard restore, NetBackup will restore all files and subdirectories that were backed up during the time period from `12/01/00` (last full backup) through `12/04/00`.

```
file1
file2
dirA\fileA
dirB\fileB
file3
dirC\fileC
file4
```

◆ If you restore a true image backup, NetBackup restores only the files and directories that existed at the time of the incremental backup on `12/04/00`.

```
file1
file2
file4
```

NetBackup does not restore anything deleted prior to the `12/04/00` incremental backup.

Notice that the restored directory does not include the dirA and dirC subdirectories, even though they were backed up on 12/04/00 with a user-directed backup. NetBackup did not restore these directories because they did not exist at the time of the incremental backup that was the reference for the true image restore.

True Image Restores and Overwriting

If you are overwriting the directory you are restoring, NetBackup does not delete files that are currently in the directory but not in the true image restore backups.

Using the previous example, if you had created a file5 after the incremental backup occurred on 12/04/00, but before doing the restore, then the contents of the directory after the restore would have been:

```
file1
file2
file4
file5  (this is the new file that is not in any of the backups)
```

▼ **To restore a true image of a directory**

1. On the **Actions** menu, point to **Select Restore Type** and click **True Image Backups**.

Note You can perform a true image restore only if the TIR (True Image Restore) option on the NetBackup server is set AND if a backup with the TIR option set has been previously performed. If you get a `No Entity Found` message at this point, notify your NetBackup administrator.

2. In the All Folders pane of the NetBackup Restore (True Image) window, double-click the parent of the folder you want to restore.

    The double-click updates the NetBackup Restore (True Image) window to show the folders that are available for true image restores. Notice that the lists show only folders. Individual files do not appear because true image restores are intended only for restoring entire folders. To list or select individual files, use **Normal Backups**.

    If NetBackup cannot find any folders, click **Search Folder** in the Search Backups dialog box. Also check the range of backups that you are searching (NetBackup History pane). If all of these settings are correct and no folders are found, ask the administrator to see if the NetBackup policy that is backing up your files and folders is configured to collect true image restore information.

3. Select the folder you want to restore by marking it in the Contents of '*<folder>*' pane of the NetBackup Restore (True Image) window (you must select from this side of the window).

> **Note** When a file in the folder has the same file name as a file in the true image backup, NetBackup will delete the file from the folder and replace, or restore, the file from the true image backup. NetBackup will not delete files from the folder that are not in the true image restore.

4. On the **Actions** menu, click **Start Restore of Marked Files**.

By default, NetBackup restores the folder to its original location.

Restoring from Backup Exec Images

It is possible to restore Backup Exec images or both Backup Exec and NetBackup images in a single NetBackup restore job. To be able to restore from Backup Exec images, the Backup Exec catalogs need to have been converted to the NetBackup catalog format, using the catalog converter utility. NetBackup 4.5 is able to convert on-disk catalogs of Backup Exec 7.3 or later. See your system administrator for more information.

Backup Exec backup type descriptions in the NetBackup Restore window differ from the descriptions of the NetBackup types. The differences are as follows:

NetBackup Backup Type	Backup Exec Backup Type
Full	Copy
Differential	Incremental
Cumulative Incremental	Differential

> **Note** NetBackup 4.5 is able to read Backup Exec media written by Backup Exec 7.0 or later.

> **Note** The Backup Exec Tape Reader for NetBackup option should be installed on the NetBackup server. Refer to the *NetBackup DataCenter System Administrator's Guide for Windows* for more information.

▼ **To restore from Backup Exec images**

1. Start the Backup, Archive, and Restore interface.

2. Select the desired restore type.

- To restore Backup Exec images: on the **File** menu, point to **Select Files and Folders to Restore** and click **from Backup Exec Backup**.

- To restore Backup Exec and NetBackup images: on the **File** menu, point to **Select Files and Folders to Restore** and click **from Normal and Backup Exec Backups**.

The NetBackup Restore window displays.

3. Select the files or folders to restore.

4. On the **Actions** menu, click **Start Restore of Marked Files**.

The Restore Marked Files dialog box displays.

5. If desired, files can be redirected to a different path. Refer to the next section, "Redirecting Files to a Different Path," for more information.

Note When both Backup Exec and NetBackup images are being restored, files cannot be redirected to a different path.

6. Select the desired restore options.

7. Click **Start Restore** to start the restore operation.

Redirecting Files to a Different Path

In some instances, you may want to restore items to a file or path other than the one from which they were backed up. All items can be restored to a different path or individual items can be restored to different paths.

Restoring Everything to a Different Path

Note If restoring from both Backup Exec and NetBackup images, files cannot be redirected to a different path.

▼ **To restore all items to a different path**

1. Start the Backup, Archive, and Restore interface.

2. Select the desired restore type.

- To restore from NetBackup images: on the **File** menu, point to **Select Files and Folders to Restore**, then click **from Normal Backup**.

   -   To restore from Backup Exec images: on the **File** menu, point to **Select Files and Folders to Restore** and click **from Backup Exec Backup**.

The NetBackup Restore window appears.

3. Select the items to restore.

4. On the **Actions** menu, click **Start Restore of Marked Files**. The Restore Marked Files dialog box will appear.

5. Click **Restore everything to a different location**.

6. In the **Source** box, enter the folder from which the items were backed up.

By default, the lowest level folder common to all the items being restored appears in the **Source** box. If this is changed to a folder that only contains some of the items, only those items will be restored to the folder specified in the **Destination** box. All other items will be restored to their original location.

7. In the **Destination** box, indicate the folder to which you want to restore the items.

Note When redirecting a restore from a Backup Exec image, and restoring to a specific drive on your Windows client, the sharename for that drive must be specified in the path. For example, if you wanted to redirect a restore to `C:\temp`, and the sharename for drive C: is C$, you would need to specify the path as `\C$\temp`. For more examples, please refer to "Redirecting a Restore to a Different Client" on page 88.
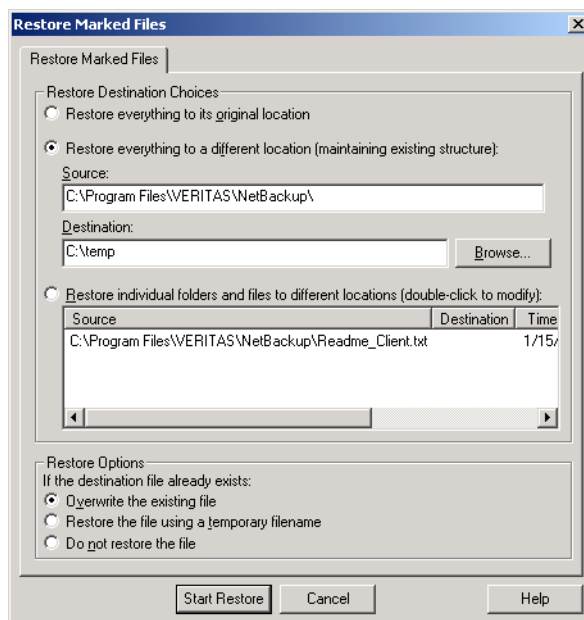
8. Under **Restore Options**, click the desired option.

Note The **Restore the file using a temporary filename** option is not available when restoring from Backup Exec images.

9. Click **Start Restore**.

NetBackup will restore the items to the new destination folder.

Restoring Individual Items to Different Paths

Note If restoring from Backup Exec images or both Backup Exec and NetBackup images, files cannot be redirected to a different path.

▼ **To restore individual items to different paths**

1. Start the Backup, Archive, and Restore interface.

2. Select the desired restore type.

- To restore from NetBackup images: on the **File** menu, point to **Select Files and Folders to Restore**, then click **from Normal Backup**.

- To restore from Backup Exec images: on the **File** menu, point to **Select Files and Folders to Restore** and click **from Backup Exec Backup**.

The NetBackup Restore window appears.

3. Select the files or folders you wish to restore.

4. On the **Actions** menu, click **Start Restore of Marked Files**.

The Restore Marked Files dialog box will appear.

5. Click **Restore individual folders and files to different locations**.

The individual items you marked for restore will appear in the **Restore individual folders and files to different locations** list box. If you mark a folder to be restored, that folder name, not the individual files, will appear in the list box. To be able to restore individual files to different locations, files must be selected individually.

6. To change the destination location for a file:

a. Double-click on the file name in the Source window. The Enter New Destination dialog box opens.

b. Type a new path to restore to.

or

Click the **Browse** button to browse for and select a new path to restore to.

c. Click **OK**.

The new path entered appears in the Destination column.
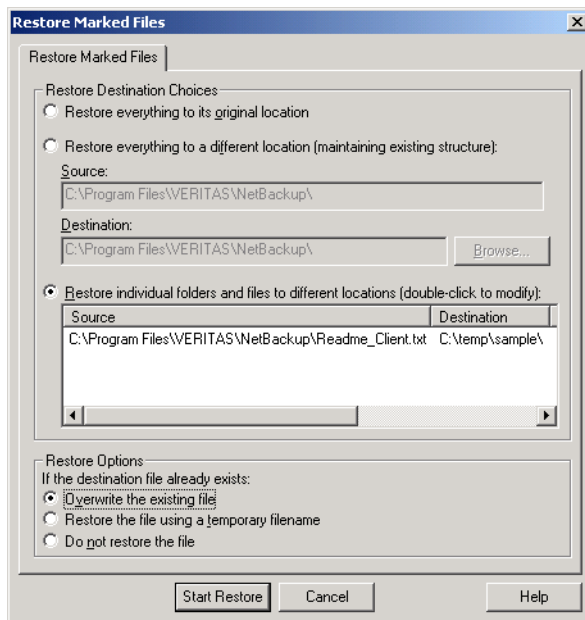
d. Repeat these steps for each file or folder you want to restore.

7. Under **Restore Options**, click the desired option.

8. Click **Start Restore**.

Restoring Using a Temporary Filename

Note If restoring from Backup Exec images or both Backup Exec and NetBackup images, a file cannot be restored to a temporary filename.

1. Open the NetBackup Restore window.

2. Select the desired restore type.

- To restore from NetBackup images: on the **File** menu, point to **Select Files and Folders to Restore**, then click **from Normal Backup**.

- To restore from Backup Exec images: on the **File** menu, point to **Select Files and Folders to Restore** and click **from Backup Exec Backup**.

The NetBackup Restore window appears.

3. Select the item to restore.

4. On the **Actions** menu, click **Start Restore of Marked Files**.

The Restore Marked Files dialog box will appear.

5. Click **Restore the file using a temporary filename**.
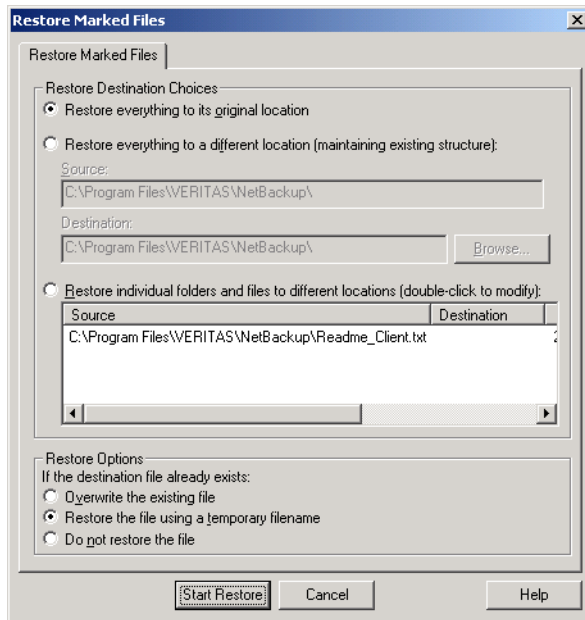
6. Click **Start Restore**.

NetBackup will restore the item to *filenameXXXXXX*.`TMP`. Where filename is the name of the file being restore and *XXXXXX* is generated based on the current date and time.

Restoring from a Disk-Image Backup

A restore of a disk-image backup can be performed using the Backup, Archive, and Restore interface. When restoring a backup of a disk image, only an entire drive can be restored. Individual files or folders cannot be selected.

Before you restore from a disk-image backup, make sure that you shut down all applications that are running on either the source or the destination drive.

Note The **from Raw Partition** sub-menu option on the **Select Files and Folders to Restore** option from the **File** menu should be used only to restore raw partition backups of UNIX clients. To restore a backup of a Windows disk image, choose the **from Normal Backup** option.

Restoring the Drive to the Same Location

A backup of a disk image can be restored to the drive from which it was backed up. The restored files will overwrite all of the information currently on the drive. You cannot select individual files or folders to restore.

▼ **To restore the drive to the same location:**

1. Shut down all applications that are running on drive that you want to restore.

2. Open the NetBackup Restore window.

3. Click on the arrow on the right edge of the **Select for Restore** button, then click **Restore from Normal Backup**.

4. Select the drive that you want to restore.

5. Choose **Start Restore of Marked Files** from the **Actions** menu.

   The Restore Marked files dialog box displays.
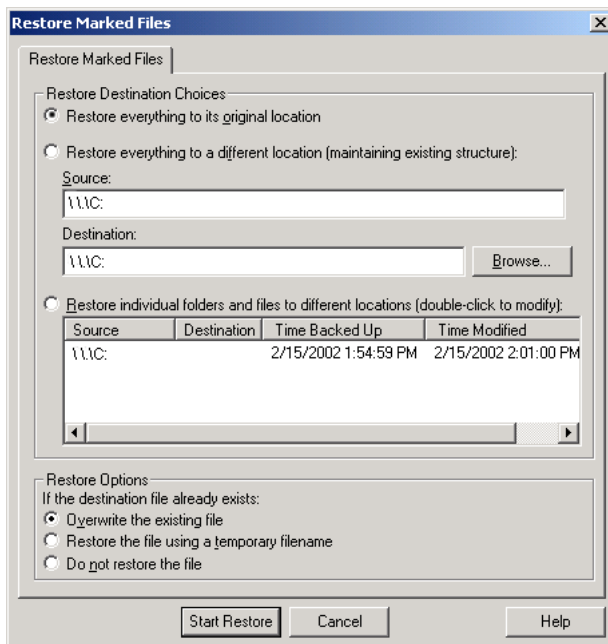
a. Choose the **Restore everything ot its original location** option.

b. Choose the **Overwrite the existing file** option.

6. Click **Start Restore** to start the restore process.

Restoring the Drive to a Different Location

A backup of a disk image can be restored to a drive that is different from the drive that was backed up. The restored files will overwrite all of the information currently on the drive. You cannot select individual files or folders to restore.

▼ **To restore the drive to a different location:**

1. Shut down all applications that are running on the drive that you want to restore to.

2. Open the NetBackup Restore window.

3. Click on the arrow on the right edge of the **Select for Restore** button, then click **Restore from Normal Backup**.

4. Select the drive that you want to restore.

5. Choose **Start Restore of Marked Files** from the **Actions** menu.

The Restore Marked files dialog box displays.
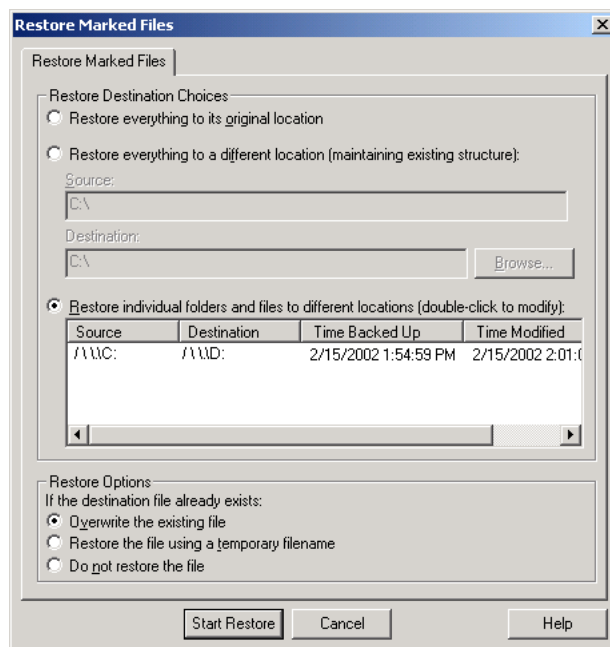
6. Choose the **Restore individual files and folders to different locations** option.

7. To specify the destination drive, double-click on the line of text in the window.

The Enter New Destination dialog box displays.
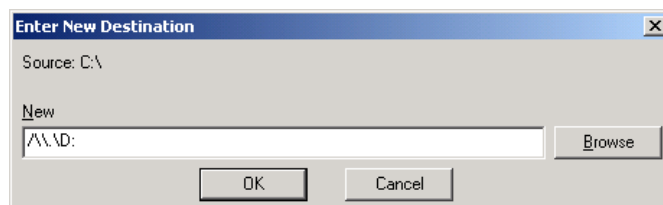
a. In the **New** field, enter the drive in which the restored information should be placed. To avoid getting a syntax error message, the drive path must be entered as follows:

`/ \\.\D:` (where D is the drive in which the restored information should be placed)

b. Click the **OK** button to save your entry.

The Restore Marked Files dialog box is displayed.
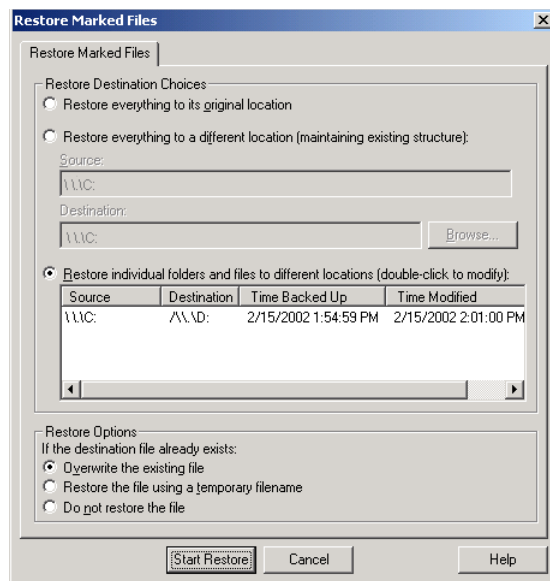
8. Choose the **Overwrite the existing file** option.

9. Click **Start Restore** to start the restore process.

Proxy Restore

In some environments users store their files on a file server rather than on their PC. A proxy restore allows backups of the file server to be restored to the file server from the user's desktop PC.

Note Though you are able to view and mark any of the folders and files in a selected backup, you will not be able to restore any items you do not have write access to.

▼ **To perform a proxy restore**

1. Open the NetBackup Restore window.

   a. On the **Actions** menu, point to **Select Restore Type**, then click **Proxy Normal Backups**.

   The Browse for Computer dialog box displays.
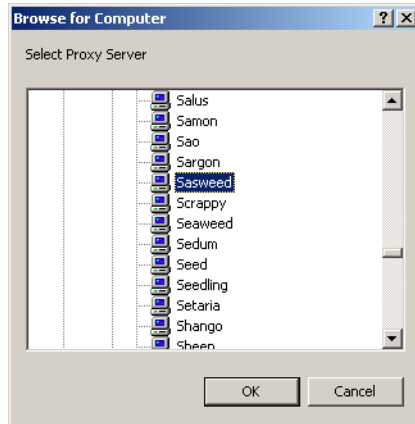
   b. Select the file server to which you want to restore folders and/or files and click **OK**. For this tutorial we will select a computer called sasweed.

The NetBackup Restore window displays.

The NetBackup server will change to the master server of the selected file server.
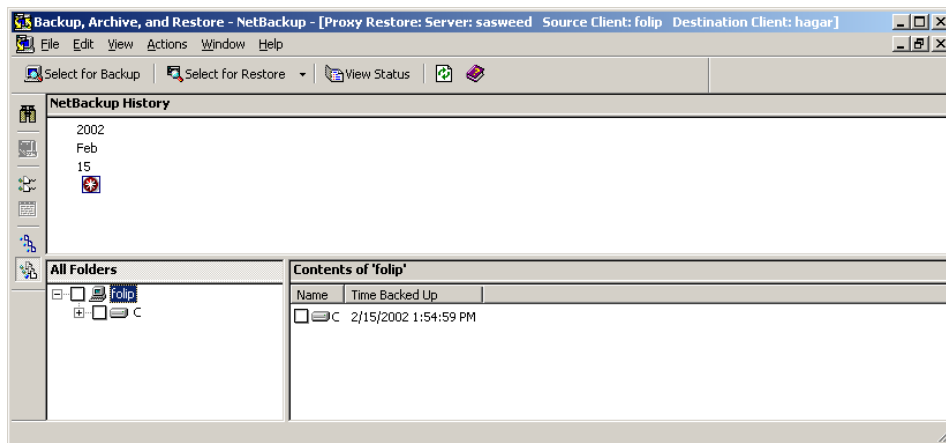
2. Select the item you wish to restore.
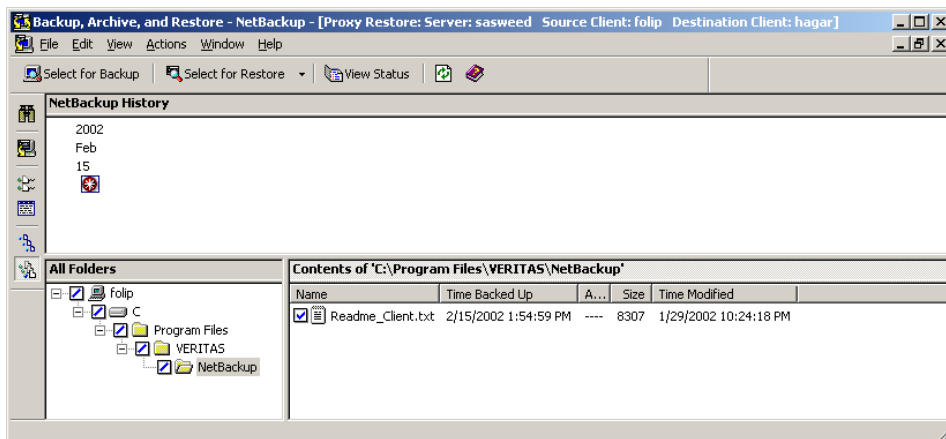
3. On the **Actions** menu, click **Start Restore of Marked Files**.

The Restore Marked Files dialog box will open.

4. Click **Overwrite the existing file**.

5. Click **Start Restore**.

Reference 3

This chapter provides reference information on the Backup, Archive, and Restore interface. It includes a description of the menus, windows, and dialog boxes.

NetBackup Icons

The following table describes NetBackup icons you may see on the Microsoft Windows desktop.

Icon	Description
	Represents NetBackup. It is used on the title bar in the Backup, Archive, and Restore interface, in the Windows Start menu, and Windows Explorer.
	Indicates that the NetBackup Client Job Tracker is running, but there are currently no backups or restores processing. Used in the system tray.
	Indicates that the NetBackup Client Job Tracker is running, with at least one restore processing. Used in the system tray. When the yellow arrow is blinking, you can open the NetBackup Client Job Tracker for an estimate of the restore operation.
	Indicates that the NetBackup Client Job Tracker is running, with at least one backup processing. Used in the system tray. When the yellow arrow is blinking, you can open the NetBackup Client Job Tracker for an estimate of the backup operation.
	Indicates that the NetBackup Client Job Tracker is running, with at least one backup and one restore processing. Used in the system tray with the yellow arrows blinking.

Menus

This section explains the menu bar commands on the Backup, Archive, and Restore interface.

File Menu

The commands on the **File** menu provide overall control of your NetBackup session.
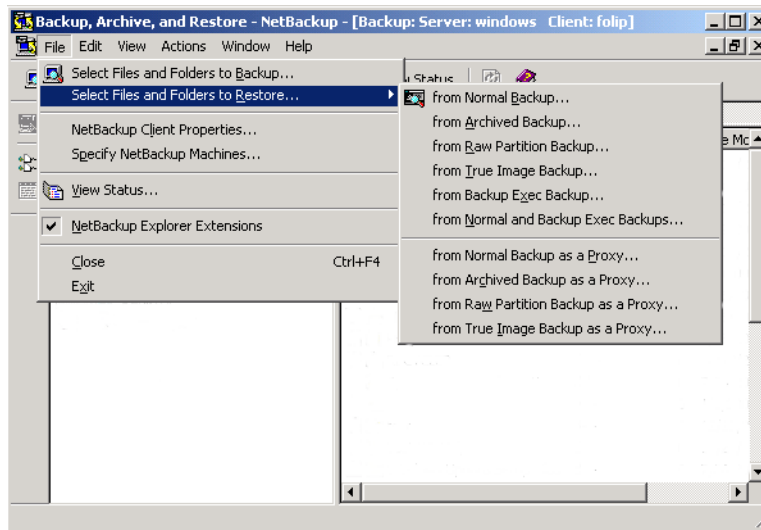
These menu options are available on the File menu.

Select Files and Folders to Backup	Opens the NetBackup Backup window. From this window, you can select files, folders, or registry keys to back up, and then start a backup or archive operation.
Select Files and Folders to Restore	Opens the submenu and provides access to the following commands:
from Normal Backup	Opens a NetBackup Restore window. From this window, you can select files, folders, or registry keys saved during previous backups and start a restore operation.
from Archived Backup	Opens a NetBackup Restore (Archive) window. From this window, you can select files, folders, or registry keys saved during previous archives and start a restore operation.
from Raw Partition Backup	This menu option is not supported in NetBackup 4.5 for Windows. To restore a raw partition backup, use the **from Normal Backup** menu option.
from True Image Backup	Opens a NetBackup Restore (True Image) window. From this window, you can select files, folders, or registry keys saved during previous true image backups and start a true image restore operation.

from Backup Exec Backup	Opens a NetBackup Restore window. From this window, you can select files, folders, or registry keys saved during previous backups and restore Backup Exec images.
from Normal and Backup Exec Backups	Opens a NetBackup Restore window. From this window, you can select files, folders, or registry keys saved during previous backups and restore both NetBackup and Backup Exec images.
from Normal Backup as a Proxy	This feature allows a user on a Windows NT/2000 machine to browse the backups of another Windows NT/2000 machine. The remote user can select files, folders, or registry keys from the backup and restore to the remote machine. NetBackup will see all the requests as if they were coming from the remote Windows NT/2000 machine.
from Archived Backup as a Proxy	This feature allows a user on a Windows NT/2000 machine to browse the archive backup of another Windows NT/2000 machine. The remote user can select files, folders, or registry keys from the backup and restore to the remote machine. NetBackup will see all the requests as if they were coming from the remote machine.
from Raw Partition Backup as a Proxy	This feature allows a user on a Windows NT/2000 machine to browse the raw partition backup of another Windows NT/2000 machine. The remote user can select files, folders, or registry keys from the backup and restore to the remote machine. NetBackup will see all the requests as if they were coming from the remote machine.
from True Image Backup as a Proxy	This feature allows a user on a Windows NT/2000 machine to browse the true image backup of another Windows NT/2000 machine. The remote user can select files, folders, or registry keys from the backup and restore to the local machine. NetBackup will see all the requests as if they were coming from the remote machine.
NetBackup Client Properties	Opens the NetBackup Client Properties dialog box. From this dialog box, you can specify the parameters that control backups, archives and restores for your client. See "NetBackup Client Properties Dialog Box" on page 61 for more information.
Specify NetBackup Machines	Opens the Specify NetBackup Machines dialog box. From this dialog you can change the settings for the master server and client machines. See "Specify NetBackup Machines Dialog Box" on page 64 for more information.
View Status	Opens the View Status dialog box. From this dialog box, you can review the progress report of a user operation in progress. You can also review logs from past user-directed NetBackup operations.

NetBackup Explorer Extensions	If the NetBackup Explorer Extensions feature is installed, this item toggles this feature off and on.
Close	This command appears in the **File** menu when a NetBackup Backup window or a NetBackup Restore window is open. Use this command to close an active window.
Exit	Terminates the Backup, Archive, and Restore interface. Any backups or restores in progress will continue to completion.

Edit Menu

This menu is available when either the NetBackup Backup window or the NetBackup Restore window is opened.
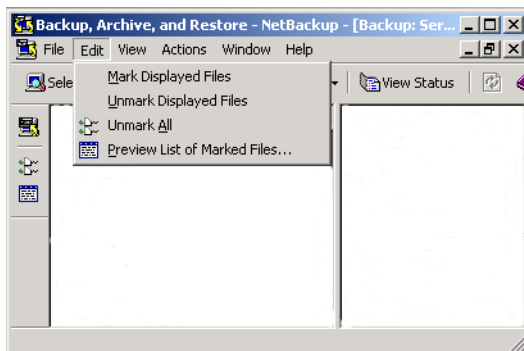
The commands on the **Edit** menu modify your selections in the currently selected backup or restore window.

Mark Displayed Files	Marks only the files, folders, or registry keys that currently appear in the Contents of '*<folder>*' pane of the NetBackup Backup window or NetBackup Restore window.
Unmark Displayed Files	Unmarks only the selections that currently appear in the Contents of '*<folder>*' pane of the NetBackup Backup window or NetBackup Restore window.
Unmark All	Unmarks all files, folders, or registry keys in this window. You can also execute this command by clicking the **Unmark All** button on the NetBackup Restore window toolbar or the NetBackup Backup window toolbar.

Preview List of Marked Files Opens the Preview List dialog box. This command is enabled when files, folders, or registry keys have been selected in the NetBackup Backup window or the NetBackup Restore window. You can also execute this command by clicking **Preview List of Marked Files** on the NetBackup Restore window toolbar or the NetBackup Backup window toolbar.

View Menu

The commands on the **View** menu control the contents of the NetBackup Backup window and the NetBackup Restore window.
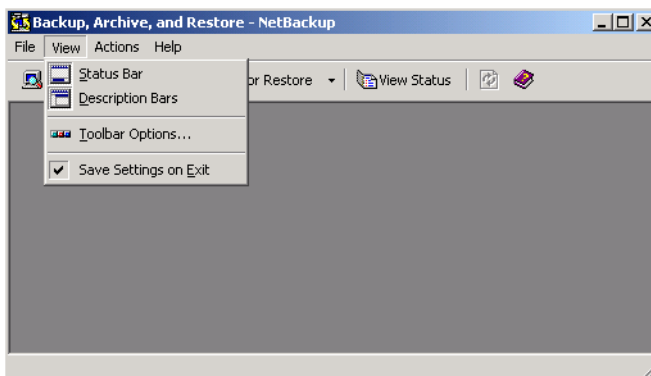
During a backup or archive operation, the following menu is available.
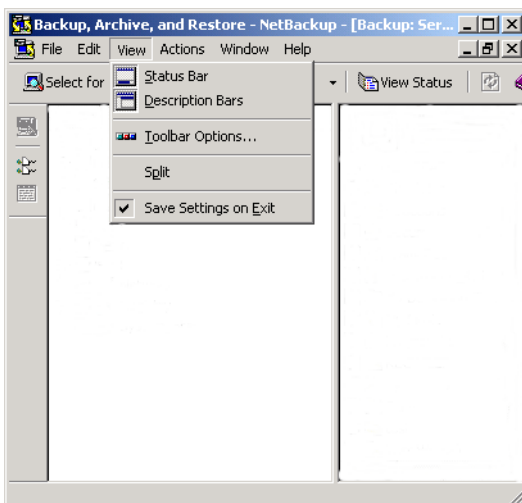
During a restore operation, the following menu is available.
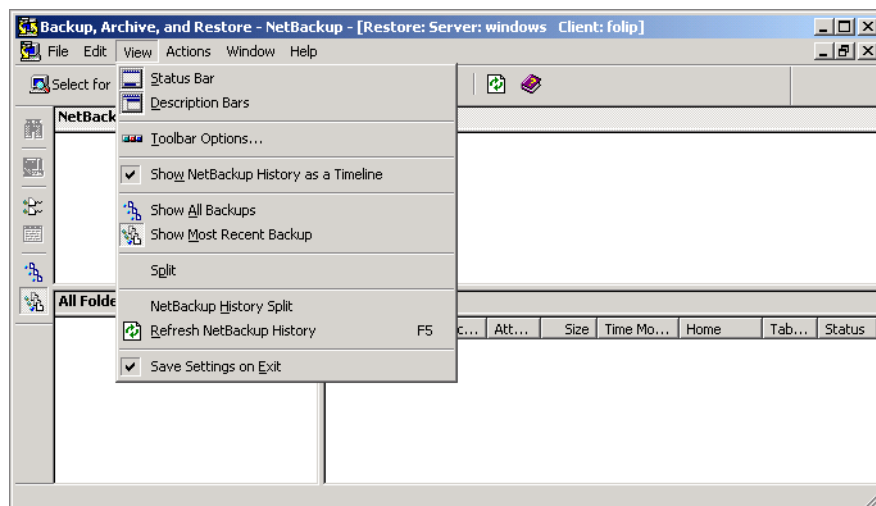
Status Bar — Shows the NetBackup status bar. Deselect this option to hide the NetBackup status bar.

Description Bars — Shows the description bars on the backup and restore window panes. Deselect this option to turn off the description bars.

Toolbar Options — Opens the Toolbar Options dialog box. Go to "Toolbar Options Dialog Box" on page 73 for more details.

Show NetBackup History as a Timeline — Displays the NetBackup History pane as a timeline. To show the NetBackup History pane as a detailed list, clear this checkbox.

Show All Backups — Shows all instances of files, folders, or registry keys in the currently selected image(s). You can also execute this command on the NetBackup Restore window toolbar.

Show Most Recent Backup — Shows the most recent backup of files, folders, or registry keys from the currently selected backup image(s). You can also execute this command on the NetBackup Restore window toolbar.

Split — Changes the cursor to a double bar with two arrows and positions it over the vertical split bar between the All Folders and Contents of '*<folder>*' panes. You can then move the cursor left or right to position the split bar.

NetBackup History Split	Changes the cursor to a double bar with two arrows and positions it over the horizontal split bar between the NetBackup History pane and the All Folders and Contents of '*<folder>*' panes. You can then move the cursor up or down to position the split bar.
Refresh NetBackup History	Updates information in the NetBackup History pane.
Save Settings on Exit	When selected, this command will save window specific settings upon exit.

Actions Menu

The following menu items appear when the NetBackup Backup window is active. These commands control backup operations.
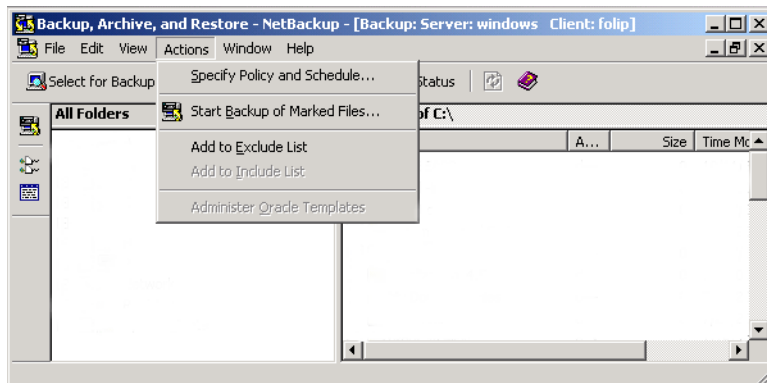
Specify Policy and Schedule	Opens the Backup Policy and Schedule dialog box. See "Backup Policy and Schedule Dialog Box" on page 74 for more details.
Start Backup of Marked Files	Opens the Specify Backup Options dialog box. You can also execute this command by clicking **Start Backup of Marked Files** on the NetBackup Backup window toolbar.
Add to Exclude List	Adds the selected files, folders, or registry keys to the Exclude File List. For more details, refer to "Exclude List Tab" on page 103.
Add to Include List	Adds the selected files, folders, or registry keys to the Include File List. For more details, refer to "Include List Tab" on page 104.
Administer Oracle Templates	Allows you to list, remove, rename, edit, and run existing Oracle templates.

The following menu items appear when the NetBackup Restore window is active. These commands control restore operations.
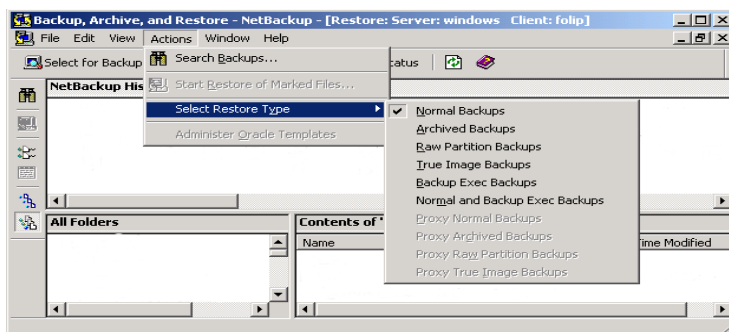
Search Backups	Opens the Search Backups dialog box. You can also execute this command by clicking **Search Backups** on the NetBackup Restore window toolbar.
Start Restore of Marked Files	Opens the Restore Marked Files dialog box. You can also execute this command by clicking **Start Restore** on the NetBackup Restore window toolbar.
Select Restore Type	Opens the submenu and provides access to the following commands:

Normal Backups	Opens the NetBackup Restore window. You can select files, folders, or registry keys saved during previous backups and start a restore operation.
Archived Backups	Opens the NetBackup Restore (Archive) window. You can select files, folders, or registry keys saved during previous archives and start a restore operation.
Raw Partition Backups	This menu option should be used to restore raw partition backups of UNIX clients. To restore a backup of a Windows disk-image, choose the **Normal Backups** menu option.
True Image Backups	Opens the NetBackup Restore (True Image) window. You can select files, folders, or registry keys and start a true image restore operation.
Backup Exec Backups	Opens the NetBackup Restore window. You can select files, folders, or registry keys saved during previous backups and restore Backup Exec images.
Normal and Backup Exec Backups	Opens the NetBackup Restore window. You can select files, folders, or registry keys saved during previous backups and restore NetBackup and Backup Exec images.

Proxy Normal Backups	This feature allows a user on a Windows NT/2000 machine to browse the backups of another Windows NT/2000 machine. The remote user can select files, folders, or registry keys from the backup and restore to the remote machine. NetBackup will see all the requests as if they were coming from the remote Windows NT/2000 machine.
Proxy Archived Backups	This feature allows a user on a Windows NT/2000 machine to browse the archives of another Windows NT/2000 machine. The remote user can select files, folders, or registry keys from the backup and restore to the remote machine. NetBackup will see all the requests as if they were coming from the remote Windows NT/2000 machine.
Proxy Raw Partition Backups	This menu option should be used to restore proxy raw partition backups of UNIX clients. To restore a proxy backup of a Windows disk-image, choose the **Proxy Normal Backups** menu option.
Proxy True Image Backups	This feature allows a user on a Windows NT/2000 machine to browse the true image backups of another Windows NT/2000 machine. The remote user can select files, folders, or registry keys from the backup and restore to the remote machine. NetBackup will see all the requests as if they were coming from the remote Windows NT/2000 machine.
Administer Oracle Templates	Allows you to list, remove, rename, edit, and run existing Oracle templates.

Window Menu

The **Window** menu has commands for arranging your NetBackup windows. It becomes available when the NetBackup Backup window or the NetBackup Restore window is opened.
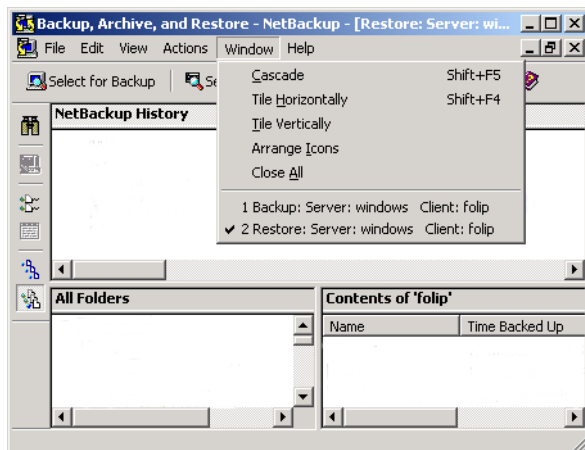
These menu options are available on the Window menu:

Cascade	Arranges NetBackup windows so they overlap, but the title bars will still be visible.
Tile Horizontally	Modifies the size of NetBackup windows and arranges them horizontally on the desktop.
Tile Vertically	Modifies the size of NetBackup windows and arranges them vertically on the desktop.
Arrange Icons	Arranges icons so they are located in the lower left corner of the desktop.
Close All	Closes the NetBackup Backup windows and the NetBackup Restore windows.

Help Menu

This menu provides access to the online instructions for using NetBackup.
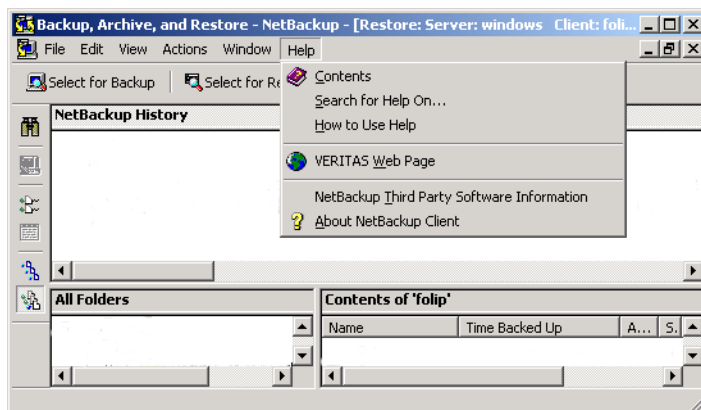
These menu options are available on the Help menu:

Contents	Opens the table of contents in the online help.
Search For Help On	Opens the search facility for the online help.
How to Use Help	Describes how to use the online help.
VERITAS Web Page	Opens the VERITAS Web site in your internet browser.

NetBackup Third Party Software Information	Displays additional copyright information for third party software used in NetBackup.
About NetBackup Client	Displays information about NetBackup, including the version number.

Windows

This section explains the windows on the Backup, Archive, and Restore interface.

NetBackup Window Icons

This section describes all icons displayed in the windows.

Icon   Description

Represents NetBackup. It is used on the title bar in the Backup, Archive, and Restore interface, in the Windows Start menu, and Windows Explorer.

Represents a backup. It is used on the title bar of the backup window.

Represents a restore. It is used on the title bar of the restore window.

Represents a floppy drive. Used in the All Folders pane.

Represents a logical hard drive. Used in the All Folders pane.

Represents a CD-ROM drive. Used in the All Folders pane.

Represents a networked drive. Used in the All Folders pane.

Represents a client PC. Used in the All Folders pane.

Expand or collapse these structures to see more or fewer subentries. A plus sign indicates that the folder can be expanded. A minus sign indicates that the folder can be collapsed. Used in the All Folders pane.

Represents a closed folder that may or may not contain other items. Used in the All Folders pane where only folders are displayed under drives. Also in the Contents of '<folder>' pane.

Represents an opened folder that may or may not contain other items. Used in the All Folders pane where only folders are displayed under drives.

Represents a file or a folder, with all of its contents, that has been marked for backup or restore. Used in the All Folders pane and the Contents of '<folder>' pane.

Represents a folder with some of its contents marked for backup or restore. Used in the All Folders pane and the Contents of '<folder>' pane.

Represents a file or folder that has not been marked for backup or restore, but could be. Used in the All Folders pane and the Contents of '<folder>' pane.

Icon   Description

Represents an object with all of its contents marked for backup or restore, but the object itself cannot be marked. Used in the All Folders pane and the Contents of '*<folder>*' pane.

Represents an object with some of its contents marked for backup or restore, but the object itself cannot be marked. Used in the All Folders pane and Contents of '*<folder>*' pane.

Represents an object that cannot be marked for backup or restore but contains other objects that can be marked for backup or restore. Used in the All Folders pane and Contents of '*<folder>*' pane.

Represents a folder that wasn't specifically backed up, but at least some of its contents were backed up. Used in the All Folders pane of the NetBackup Restore window.

Represents a file that doesn't have an icon associated with it. Used in the Contents of '*<folder>*' pane.

Represents the entire registry. Used in the All Folders pane.

The registry opens to two base keys: **HKEY_LOCAL_MACHINE** and **HKEY_USERS**.

Represents a registry key. Used in the All Folders pane. Also used in Contents of '*<folder>*' pane if it contains subkeys.

Represents the entire network. Used in the All Folders pane.

Represents a specific network. Used in the All Folders pane and the Contents of '*<folder>*' pane.

Represents a domain within a network. Used in the All Folders pane and the Contents of '*<folder>*' pane.

Backup, Archive, and Restore Window

This window displays when you start NetBackup.
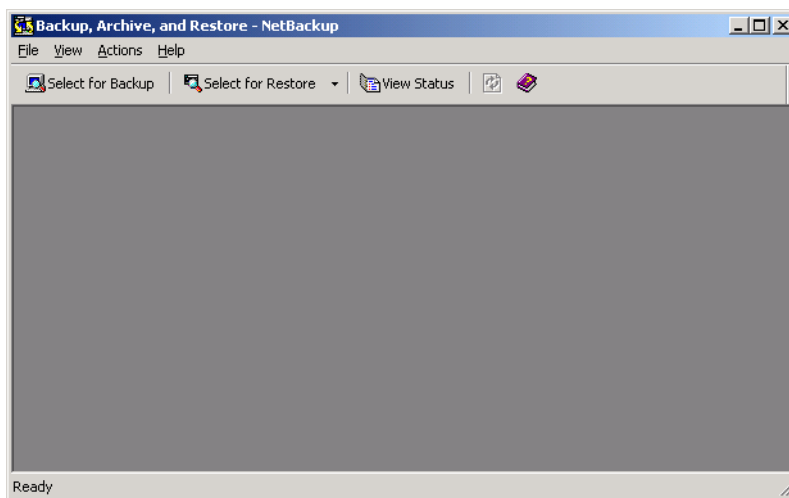
The following buttons appear on the toolbar.

Button	Description
	Opens the NetBackup Backup window.
	Opens the NetBackup Restore window.
	Opens the View Status dialog box.
	Updates the list of backup images. This button is only available when a Restore window is open and is the active window.
	Opens the online help.

NetBackup Backup Window

This window shows the files, folders, or registry keys you can mark for back up.
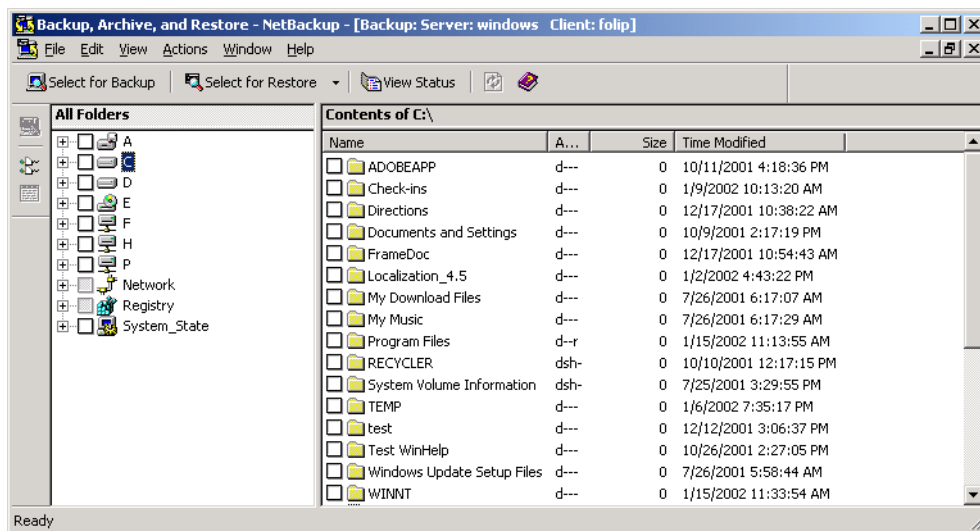
To access this window:

◆ On the **File** menu, click **Select Files and Folders to Backup**

◆ Click the **Select for Backup** button on the Backup, Archive, and Restore interface toolbar.

You can position this window separately. You can also cascade, tile or minimize the window by using commands from the **Window** menu.

Buttons

These buttons are available in the NetBackup Backup window.

Button	Description
	Opens the Specify Backup Options dialog box. From this dialog you can start the backup operation.
	Unmarks all files, folders and registry keys in this window. You can also execute this command by selecting **Unmark All** from the **Edit** menu.
	Opens the Preview List dialog box during a backup operation. You can also execute this command by selecting **Preview List** from the **Edit** menu.

Panes

The NetBackup Backup window contains two panes: All Folders and Contents of '*<folder>*'.

◆ To adjust the width of the panes, position the cursor over the split bar. The cursor will change to a double-headed arrow. Press the left mouse button and move the cursor left or right to position the split bar.

◆ To resize columns in a pane, move the mouse over the column header until the cursor changes to a double-headed arrow. Hold the left mouse button down and move the mouse left or right to decrease or increase the column width.

◆ To sort information in a pane, click on the column header for the information you wish to sort by. For example, to sort the pane by "Size," click on the Size column. This will sort the list from the smallest to largest size. Click the Size column again to sort from largest to smallest.

NetBackup Restore Window

This window shows the files, folders, or registry keys that you can mark for restore.
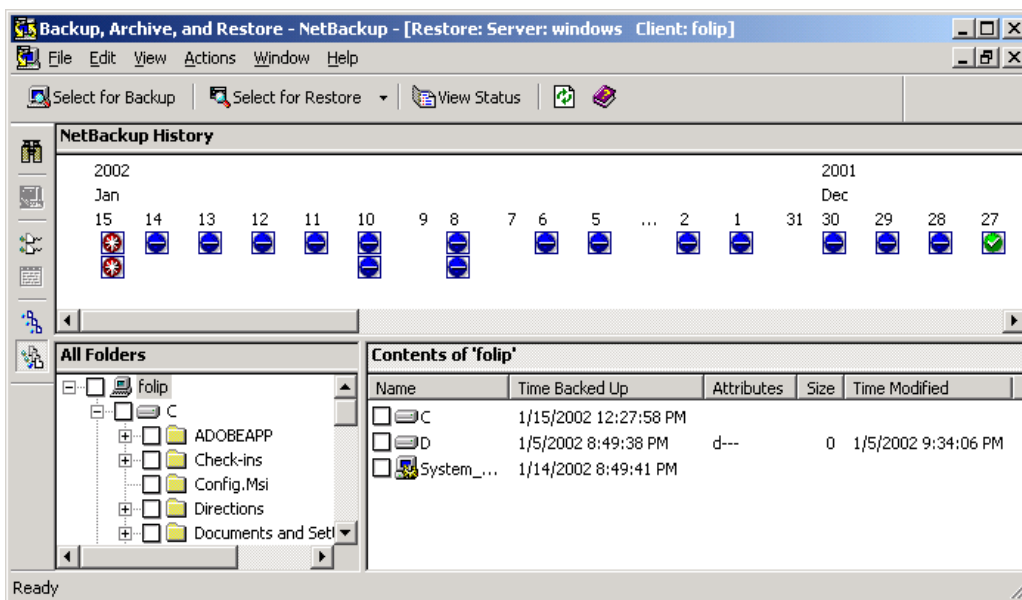
To access this window:

◆ On the **File** menu, click **Select Files and Folders to Restore**, then click the desired type of restore.

◆ To open the same type of restore as opened previously, click **Select for Restore** on the toolbar.

◆ To open a different type of restore, click the arrow next to the **Select for Restore** button, then select the desired type of restore.

The folder trees in this window contain only files and folders that were backed up. You can position this window separately. You can also cascade, tile, or minimize the window by using commands from the **Window** menu.

Notes:

◆ If the client belongs to more than one policy, the default display starts with the last full backup that occurred first. For example, assume that the client belongs to Policy A and Policy B and full backups occur for both of them. If the last full backup for Policy A occurred before the one for Policy B, then the display shows files ranging from the time of the Policy A full backup.

◆ If you are restoring from a true image backup, the NetBackup Restore window shows only the folders that were included in true image backups. Files do not appear in this window because you cannot select individual files for a true image restore.

Buttons

These buttons are available on the NetBackup Restore window:

Button **Description**

Opens the Search Backups dialog box.

Opens the Restore Marked Files dialog box. From this dialog you can start the restore operation.

Unmarks all files, folders, or registry keys in this window. You can also execute this command by selecting **Unmark All** from the **Edit** menu.

Opens the Preview List dialog box during a restore operation. You can also execute this command by selecting **Preview List of Marked Files** from the **Edit** menu.

Shows all instances of the files, folders, or registry keys in the currently selected image(s). You can also execute this command by selecting **Show All Backups** from the **View** menu.

Button   Description

Shows the most recent backup of files, folders, or registry keys in the selected backup images. You can also execute this command by selecting **Show Most Recent Backup** from the **View** menu.

Panes

The NetBackup Restore window is split into three panes: the NetBackup History pane on the top, the All Folders pane on the left and the Contents of '*<folder>*' pane on the right.

◆ To adjust the height of the NetBackup History pane, position the cursor over the horizontal split bar. The cursor will change to a double bar with two arrows. Press the left mouse button and move the cursor up or down to position the split bar.

◆ To adjust the width of the All Folders pane and the Contents of '*<folder>*' pane, position the cursor over the vertical split bar. The cursor will change to a double bar with two arrows. Press the left mouse button and move the cursor left or right to position the split bar.

◆ To resize columns in a pane, move the mouse over the column header until the cursor changes to a double-headed arrow. Hold the left mouse button down and move the mouse left or right to decrease or increase the column width.

◆ To sort information in a pane, click on the column header for the information you wish to sort by. For example, to sort the pane by "Size," click on the Size column. This will sort the list from the smallest to largest size. Click the Size column again to sort from largest to smallest.

NetBackup History Pane

The NetBackup History pane shows the NetBackup image(s). When first opened, the following backup images are selected by default:

◆ The most recent full backup.

◆ All cumulative-incremental backups and differential-incremental backups that have occurred since the most recent full backup.

◆ All user-directed backups that have occurred since the most recent full backup.

If there is no full backup, only the most recent image will be selected.

▼ **To Open the NetBackup History Pane**

◆ Position the cursor over the horizontal split bar. The cursor will change to a double-headed arrow. Press the left mouse button and move the cursor up or down to position the split bar.

or

◆ On the **View** menu, click **NetBackup History Split**. This changes the cursor to a double-headed arrow. Move the cursor up or down to position the split bar. Click the left mouse button to hold position.

▼ **Backup History as a Timeline**

To show the NetBackup History pane as a timeline, from the **View** menu click **Show NetBackup History as a Timeline**.

The icons, representing images, appear directly underneath the date of the backups. Icons with a square represent selected backup images. Several backup image icons may appear below a date. The most current backup image is on top of the list. As you move the cursor over the icons, tool tips will show the schedule type and the date and time of the backup.

Tip If you do not see tool tips, open the Toolbar Options dialog box from the **View** menu and select **Show tool tips**.

Icon   Description

 This green icon represents a full backup.

 This blue icon represents a differential incremental backup.

 This light blue icon represents a cumulative incremental backup.

 This red icon represents a user-directed backup.

 This yellow icon represents a user-directed archive.

 This grey icon represents an unknown type of backup.

▼ **To Select Backup Images**

◆ Select a single backup image by clicking on it.

◆ Select a range of backup images by clicking on the first, holding down the Shift key, and clicking on the last image.

▼ **Backup History as a Detailed List**

To show the NetBackup History pane as a detailed list, clear the **Show NetBackup History as a Timeline** option on the **View** menu. The list starts with the most recent backup and includes the following information (reading from left to right).

◆ Date and time when the backup occurred.

◆ Date when NetBackup will expire the backup and delete it from the NetBackup History pane.

◆ Number of files in the backup.

◆ Size of the backup in kilobytes.

◆ Whether the backup is compressed (Y for yes, N for no).

◆ Type of schedule.

◆ Name of the policy associated with the backup. The system administrator configures the policy names, as explained in the *NetBackup System Administrator's Guide for UNIX* or the *NetBackup System Administrator's Guide for Windows.*

◆ Keyword assigned to the backup.

Dialog Boxes

This section describes the dialog boxes used in the Backup, Archive, and Restore interface.

NetBackup Client Properties Dialog Box

This section explains the tabs found in the NetBackup Client Properties dialog box. To open this dialog box, choose **NetBackup Client Properties** on the **File** menu.

General Tab
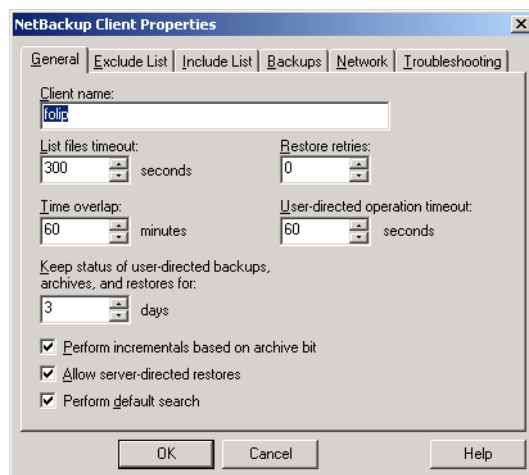
Use this tab to set any of the configuration parameters for your client.

To access this tab:

1. On the **File** menu, click **NetBackup Client Properties**.

2. Click the **General** tab.

Only the system administrator should change the following parameters. Refer to "General Tab" on page 100 for details on these parameters:

◆ **Client name**

◆ **List files timeout**

◆ **Restore retries**

◆ **Time overlap**

◆ **User-directed operation timeout**

◆ **Perform incrementals based on archive bit**

◆ **Allow server-directed restores**

The NetBackup client user as well as the system administrator can change the following parameters.

Keep status of user-directed backups, archives, and restores for	Specify the number of days to store progress reports before the system will automatically delete them. Default is 3 days. The minimum allowable value is zero. The maximum is 9,999.
Perform default search	If selected, NetBackup will automatically search the default range of backup images and display the backed up folders and files whenever a restore window is opened.
	Clear this box to disable the initial search. The NetBackup Restore window will not show any files or folders when initially opened. Clicking a backup image, or selecting a range of backup images, will initiate a search.
	By default, this box is selected.
OK	To accept changes to the parameters, click this button.
Cancel	To cancel and return to the previous display without accepting changes to the parameters in this dialog box, click this button.
Help	To view online help for this dialog box, click this button.

Exclude List Tab

Only the system administrator should change the parameters on this tab. System administrators should refer to "Exclude List Tab" on page 103 for details on these parameters.

Include List Tab

Only the system administrator should change the parameters on this tab. System administrators should refer to "Include List Tab" on page 104 for details on these parameters.

Backups Tab

Use this tab to specify the policies and schedules to use when you start a backup from the client.
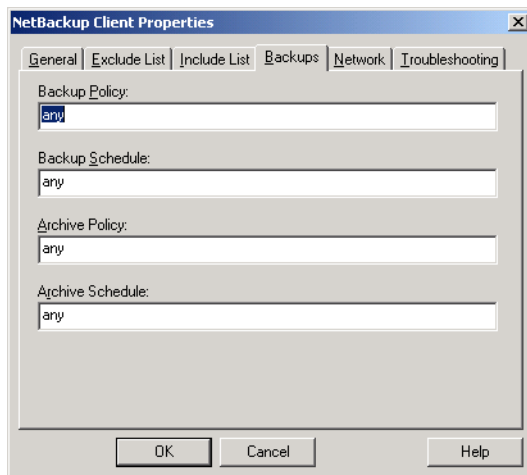
To access this tab:

1. On the **File** menu, click **NetBackup Client Properties**.

2. Click the **Backups** tab.

Note Changes made to this tab will not apply to currently open backup windows. The changes will apply to all backup windows opened after the tab modifications have been saved.

Backup Policy Specify the policy to use for user-directed backups of this client. If you set this value to "any" (which is the default), NetBackup uses the first policy that it finds with both the client name and a user-directed backup schedule.

Backup Schedule Specify the schedule to use for the user-directed backups for this client. If you set this value to "any" (which is the default), NetBackup uses the first user-directed backup schedule in the first policy that it finds with both the client name and a user-directed backup schedule.

Archive Policy	Specify the policy to use for user-directed archives of this client. If you set this value to "any" (which is the default), NetBackup uses the first policy that it finds with both the client name and a user-directed archive schedule.
Archive Schedule	Specify the user-directed archive schedule to use for user-directed archives of this client. If you set this value to "any" (which is the default), NetBackup uses the first user-directed archive schedule in the first policy that it finds with both the client name and a user-directed archive schedule.
OK	To accept changes to the parameters, click this button.
Cancel	To cancel and return to the previous display without accepting changes to the parameters in this dialog box, click this button.
Help	To view online help for this dialog box, click this button.

Network Tab

Only the system administrator should change the parameters on this tab. System administrators should refer to "Network Tab" on page 107 for details on these parameters.

Troubleshooting Tab

Only the system administrator should change the parameters on this tab. System administrators should refer to "Troubleshooting Tab" on page 108 for details on these parameters.

Specify NetBackup Machines Dialog Box

This section explains the tabs found in the Specify NetBackup Machines dialog box when using the Backup, Archive, and Restore interface for the client. To open this dialog box, choose **Specify NetBackup Machines** from the **File** menu.

For information on the tabs available when using the Backup, Archive, and Restore interface on the server, see "Specify NetBackup Machines Dialog Box for System Administrators" on page 96.

Servers Tab

Use this tab to add and remove NetBackup servers and to specify the current server to be used for user operations.
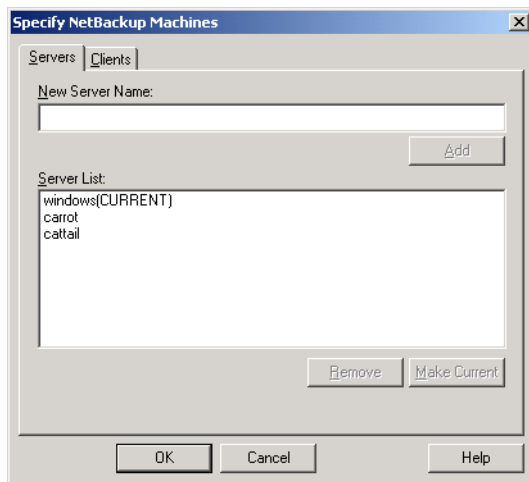
To access this tab:

1. On the **File** menu, click **Specify NetBackup Machines**.

2. Click on the **Servers** tab.

New Server Name   To add another NetBackup server to the **Server List**, type the name of the new server in the **New Server Name** text box and click **Add**. The name must be as defined by the system administrator on that server.

If a new server is added to the list from this dialog box, it will appear in the server list for all windows currently opened and any new window that is opened. The new server will be saved in the **Server List** box after the current window is closed.

Add   Adds the server, entered in the **New Server Name** box, to the **Server List**.

Server List Shows the names of the NetBackup servers that require access to the client for scheduled backups, and any other servers used when performing user-directed backups. The master server and any remote media servers that perform scheduled backups of the client must appear in this list. The machine designated as CURRENT will be the server used for user-directed operations.

To mark a server as CURRENT, select a server from the **Server List** and click **Make Current**. The word CURRENT appears in parentheses beside the name.

Remove Removes a server. First highlight the server in the **Server List**, then click **Remove**.

> **Note** The master server cannot be removed from the **Server List**. While other servers can be removed from the list, be careful not to remove any remote media servers. Doing so will prevent scheduled backups from being performed. For more information on making changes to the **Server List**, refer to the *NetBackup System Administrator's Guide for UNIX* or the *NetBackup System Administrator's Guide for Windows.*

Make Current First highlight the server in the **Server List**, then click **Make Current**. Changing the current server will affect only the selected window. This setting will not be saved after the currently selected window is closed.

OK To accept changes to the parameters, click this button.

Cancel To cancel and return to the previous display without accepting changes to the parameters in this dialog box, click this button.

Help To view online help for this dialog box, click this button.

Clients Tab and Clients/Policy Type Tab

If the NetBackup Backup window is active when you open the Specify NetBackup Machines dialog box, the **Clients** tab is available:
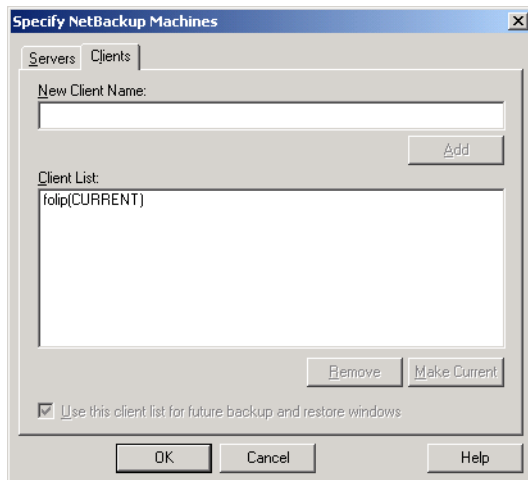
If the NetBackup Restore window is active when you open the Specify NetBackup Machines dialog box, the **Clients/Policy Type** tab is available:
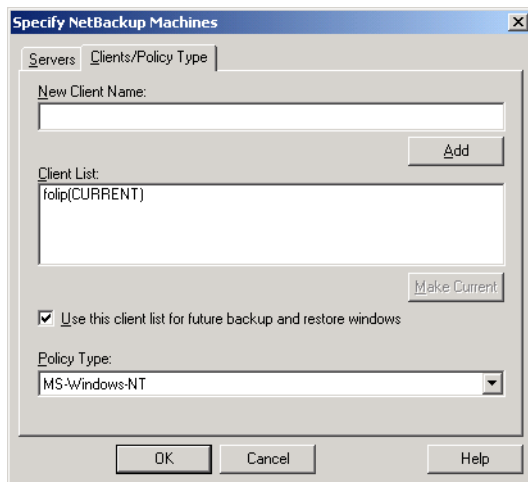
Use this tab to select the remote client whose backups you want to restore to your client. You can also add names of remote clients.

To access this tab:

1. On the **File** menu, click **Specify NetBackup Machines.**

2. Click on the **Clients** tab or the **Clients/Policy Type** tab.

Note Most changes made to the this tab will not apply to currently open backup or restore windows. If, however, a client is added, the open windows will be able to switch to them.

New Client Name	To add another client name to the **Client List**, type the name of the client in the **New Client Name** box and click **Add**. The client name entered must also be defined in a policy on the NetBackup server.
	If a new client is added to the list it will be in the client list for all windows currently opened and any new window that is opened. The new client will be saved in the **Client List** box after the current window is closed.
Add	Adds the client, entered in the **New Client Name** box, to the **Client List**.
Client List	The **Client List** contains the client name for your computer. It can also contain the names of remote NetBackup clients. You can select local or remote NetBackup clients on which to perform NetBackup operations.
	The NetBackup server administrator must set up the required permissions before you can browse and restore from any remote client.
	To perform a NetBackup operation on a NetBackup client, select the name from the **Client List** and click **Make Current**. The word CURRENT appears in parentheses beside the name of the new default client.
Remove	Removes a client. First highlight the client in the **Client List**, then click **Remove**.
Make Current	Designates the client backup images you can browse for restore operations. First highlight the client in the **Client List**, then click **Make Current**. Changing the current client will affect only the selected window. This setting will not be saved after the currently selected window is closed.

Policy Type	(Only available when a restore window is the active window.) Specifies the policy type for the client selected in the **Client List**. The policy type must be the same as specified in the configuration for that client on the NetBackup server.
Use this client list for future backup and restore windows	(Only available when a restore window is the active window.) If selected, NetBackup applies any changes to the client list to all backup and restore windows opened after the tab modifications have been saved.
OK	To accept changes to the parameters, click this button.
Cancel	To cancel and return to the previous display without accepting changes to the parameters in this dialog box, click this button.
Help	To view online help for this dialog box, click this button.

View Status Dialog Box

Use this dialog box to view the results of each user operation in a progress report.
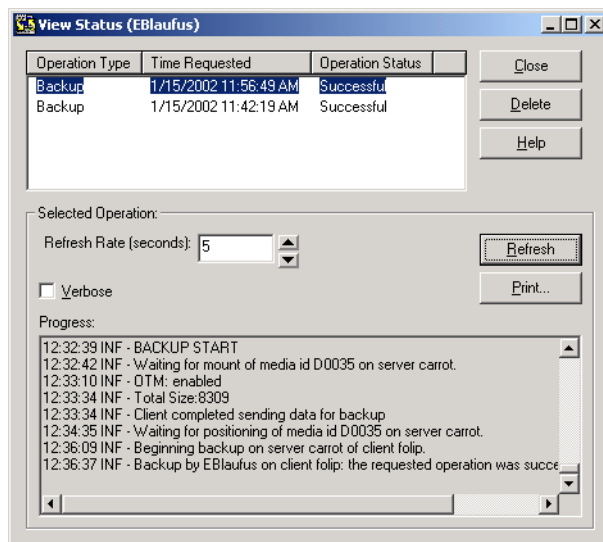
To access this dialog box:

◆ On the **File** menu, click **View Status**.

> **Note** If a backup is split across more than one media ID, the **Status** lists all the media. NetBackup uses only what it needs to restore the requested files, folders, or registry keys.

Operations List	Lists operation status reports for NetBackup operations. The most current NetBackup operation is on top of the list. By default NetBackup operation status reports will be stored on the NetBackup client for three days. Refer to "General Tab" on page 61 for more information on changing the configuration setting called **Keep status of user-directed backups, archives, and restores for**.
Operation Type	Shows the type of NetBackup operation for the selected progress report: Backup, Archive, or Restore.
Time Requested	Shows the start date and time of the selected NetBackup operation. The format of the start date and time depends upon how the date and time display has been configured on the computer.
Operation Status	Shows the status of a NetBackup operation.
Close	Closes the dialog box. **Close** does not terminate NetBackup or affect other dialog boxes or windows.
Delete	Deletes the progress report selected in the Operations List. First select the progress report in the Operations List then click **Delete**. Operation status reports are automatically deleted after a specified number of days. The **Keep status of user-directed backups, archives, and restores for** parameter in the **General** tab in the NetBackup Client Properties dialog box specifies the number of days.
Help	To view online help for this dialog box, click this button.
Refresh Rate (seconds)	Changes the rate at which NetBackup updates the **Status** display for the selected operation. Recommended value is 10. This parameter can be set at any time during a NetBackup operation. A value of 0 turns off automatic refreshing.
Verbose	Displays a more detailed progress report for the selected NetBackup operation.
Refresh	Updates the status display for the selected NetBackup operation. **Refresh** is enabled when a NetBackup operation is selected from the Operations List.
Print	Opens the Microsoft Windows print dialog box and prints out the progress report for the selected NetBackup operation.

Progress Displays the progress of the selected operation. If the **Refresh Rate (seconds)** parameter is set to 0, the user can click **Refresh** to view the progress of the selected NetBackup operation. Select **Verbose** for a more detailed progress report.

Each message begins with the time of the related event and an acronym that indicates the nature of the message (see below). **Operation Status** also lists all the media IDs used to store the data.

`DAT` Informational messages that are helpful in debugging.

`ERR` Error message

`FTL` Fatal error message

`INF` Informational message (no error occurred)

`TRV` Trivial error message

`WRN` Warning error message

Note If the drive on which NetBackup is installed is full, no progress messages are displayed except those indicating the job has been initiated and the job has been completed.

Preview List Dialog Box

Use this dialog box to view all of the files, folders, or registry keys you have marked. This is a view-only dialog box.

To access this dialog box:

◆ From the **Edit** menu, select **Preview List of Marked Files**. The Preview List dialog box which appears depends upon whether the backup or restore window is the active window.

List of files to backup
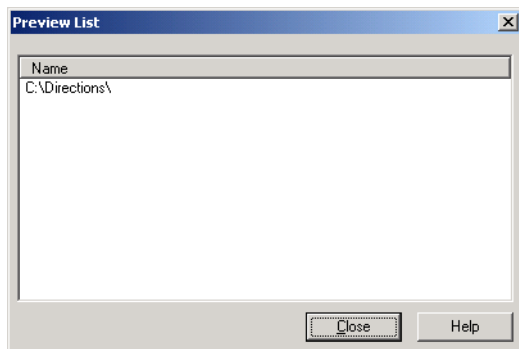
List of files to restore
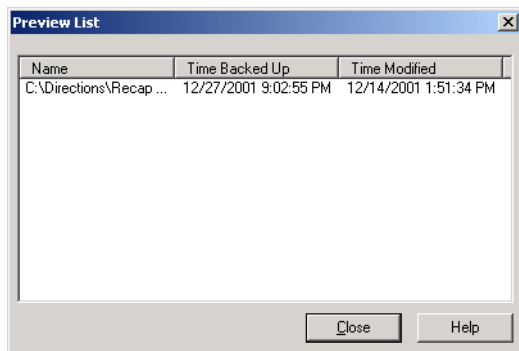
Name	When a Backup window is open, a list of the files or folders to be backed up is displayed. When a Restore window is open, a list of the files or folders to be restored is displayed.
Time Backed Up	Lists the time the backup was initiated.
Time Modified	Lists the time at which the backed up file or directory was changed.
Close	Closes the dialog box. **Close** does not terminate NetBackup or affect other dialog boxes or windows.
Help	To view online help for this dialog box, click this button.

Toolbar Options Dialog Box

Use this dialog box to control display options on the Backup, Archive, and Restore interface.
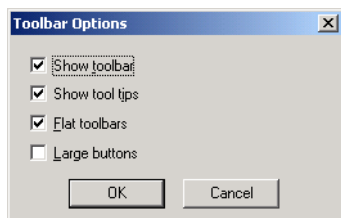
To access this dialog box:

◆ On the **View** menu, click **Toolbar Options**.

Show toolbar	Shows the NetBackup toolbars.
Show tool tips	Shows tool tips. When the mouse pointer moves over the different elements of the Backup, Archive, and Restore interface, the tool tips appear.
Flat Toolbars	When selected, the main (or horizontal) toolbar buttons are displayed as two-dimensional buttons. If not selected, buttons are displayed as three-dimensional buttons.
Large Buttons	When selected, large button icons and text are shown on the toolbar buttons. If not selected, only small icons are shown on the buttons.
OK	To accept changes to the parameters, click this button.
Cancel	To cancel and return to the previous display without accepting changes to the parameters in this dialog box, click this button.

Backup Policy and Schedule Dialog Box

This section explains the tab in the Backup Policy and Schedule dialog box. To open this dialog box, choose **Specify Policy and Schedule** from the **Actions** menu.

Backups Tab

Use this tab to specify a specific policy and schedule to use when you start a backup from the client.
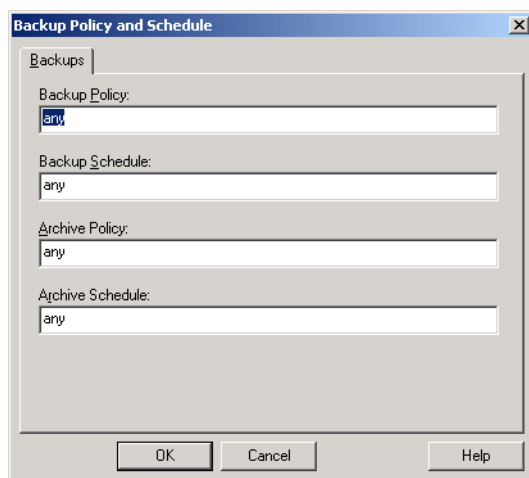
To access this tab:

1. Open a Backup window.

2. On the **Actions** menu, click **Specify Policy and Schedule**.

Backup Policy   Specify the policy to use for user-directed backups of this client. If you set this value to "any" (which is the default), NetBackup uses the first policy that it finds with both the client name and a user-directed backup schedule.

Backup Schedule   Specify the schedule to use for the user-directed backups for this client. If you set this value to "any" (which is the default), NetBackup uses the first user-directed backup schedule in the first policy that it finds with both the client name and a user-directed backup schedule.

Archive Policy	Specify the policy to use for user-directed archives of this client. If you set this value to "any" (which is the default), NetBackup uses the first policy that it finds with both the client name and a user-directed archive schedule.
Archive Schedule	Specify the user-directed archive schedule to use for user-directed archives of this client. If you set this value to "any" (which is the default), NetBackup uses the first user-directed archive schedule in the first policy that it finds with both the client name and a user-directed archive schedule.
OK	To accept changes to the parameters, click this button.
Cancel	To cancel and return to the previous display without accepting changes to the parameters in this dialog box, click this button.
Help	To view online help for this dialog box, click this button.

Search Backups Dialog Box

Use this dialog box to narrow the backup history search parameters for a restore.
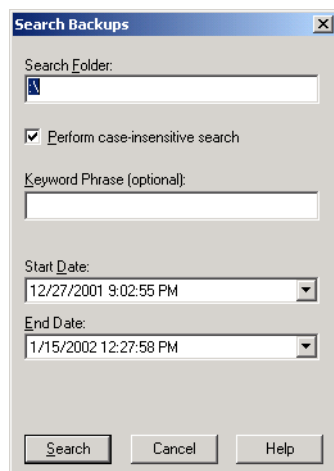
To access this dialog box:

1. Open a Restore window.

2. From the **Actions** menu, click **Search Backups**.

Search Folder	Shows the folder or registry key for which you are searching. The initial value for the **Search Folder** is ":\". If you select a folder in the NetBackup Restore window, that folder becomes the new default.
	To change the path, enter a new value and press Return.
	If you enter a full path name, NetBackup will search for the specific path and file in the selected backup images. Or you can enter only the filename (`csb.tmp` or `*.tmp`) and NetBackup will show, in the All Folders pane, the folders where the specified files were found.
	You can use these wildcard characters:
	*
	?

> **Tip** Before initiating a search, collapse the tree in the All Folders pane as much as possible. NetBackup will expand the tree to the folders that match your search criteria.

Perform case-insensitive search	Select **Perform case-insensitive search** to perform case-insensitive searches.
	The search path is case sensitive and must match what is in the database on the NetBackup server. By default the checkbox is checked.
Keyword Phrase (optional)	Enter a keyword phrase associated with a backup image.
Start Date and **End Date**	View and select the **Start Date** and the **End Date**. The **Start Date** and **End Date** show the range of backups that NetBackup will search. By default, the start date will be the time of the last full backup and the end date will be the time of the most recent backup.
	To change the dates, click in the box and select from the list of available backup images.
	If you change the **Start Date** or **End Date**, NetBackup clears all the restore selections that you have previously made.
Search	Initiates a search for specified files, folders, or registry keys. The NetBackup Restore window will show the folders that match the search criteria.

Cancel	To cancel and return to the previous display without accepting changes to the parameters in this dialog box, click this button.
Help	To view online help for this dialog box, click this button.

Specify Backup Options Dialog Box

Use this dialog box to view your selections before proceeding with the operation.
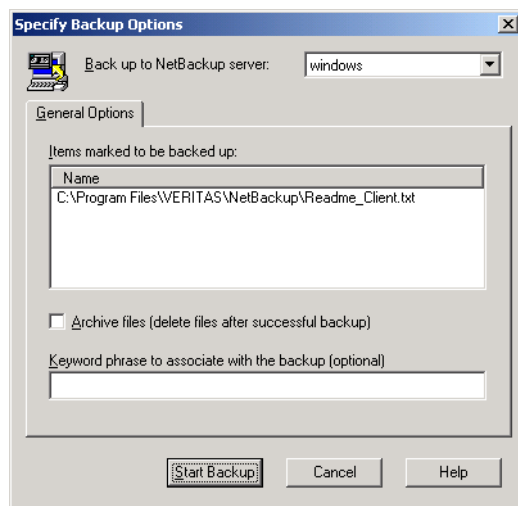
This dialog box displays after you have initiated a backup or archive by selecting **Start Backup of Marked Files** from the **Actions** menu.

Back up to NetBackup Server	To change the NetBackup server that will perform the backup operation, select another server from the drop-down list.
List box	Contains a list of objects to be backed up.
Archive files (delete files after successful backup)	Select this option to perform an archive instead of a backup. Files or folders will be deleted after they have been backed up successfully.

|	
Keyword phrase to associate with the backup	Specifies a keyword phrase, up to 128 characters in length, that NetBackup will associate with the image created by this backup operation. You can then restore the image by specifying the keyword phrase in the Search Backups dialog box.
	All printable characters are permitted including period ("."). The default keyword phrase is the null (empty) string.
Start Backup	Initiates the backup or archive operation.
Cancel	To cancel and return to the previous display without accepting changes to the parameters in this dialog box, click this button.
Help	To view online help for this dialog box, click this button.

Restore Marked Files Dialog Box

This dialog box appears after you have initiated a restore operation by selecting **Start Restore of Marked Files** from the **Actions** menu.
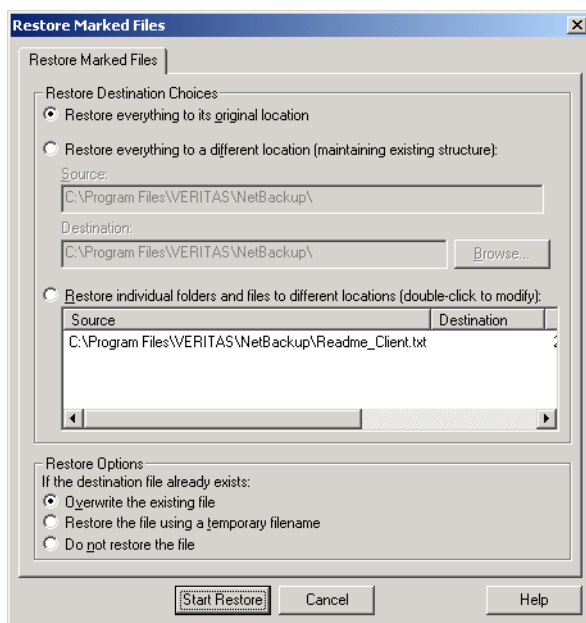
Use this dialog box to view your selections before proceeding with the operation. If the list is longer than the list box, a vertical scroll bar appears along the right edge of the pane.

Restore Destination Choices	This pane contains radio buttons which determine the destination for restored files. The user must choose one of the radio buttons in the pane.
Restore everything to its original folder	Restore files, folders, or registry keys to the folder from which they were backed up. This is the default.
Restore everything to a different location	Enter the folder to which you want to redirect the files, folders, or registry keys.
Source	Enter the path from which the files, folders, or registry keys were backed up. This field is enabled when the **Restore everything to a different location** checkbox is selected.
Destination	Enter the path to which the files, folders, or registry keys will be restored. This field is enabled when the **Restore everything to a different location** checkbox is selected.
	By default, the lowest level folder common to all the items being restored appears in the **Source** box. If this is changed to a folder that only contains some of the items, only those items will be restored to the folder specified in the **Destination** box. All other items will be restored to their original location.
Browse	This button is enabled when the **Restore everything to a different location** checkbox is selected. Click this button to open the Browse for Folder dialog box. You can then select a destination folder.
	Note You will be browsing the local machine where the Backup, Archive, and Restore interface is running, even if you are redirecting a restore to a different client.
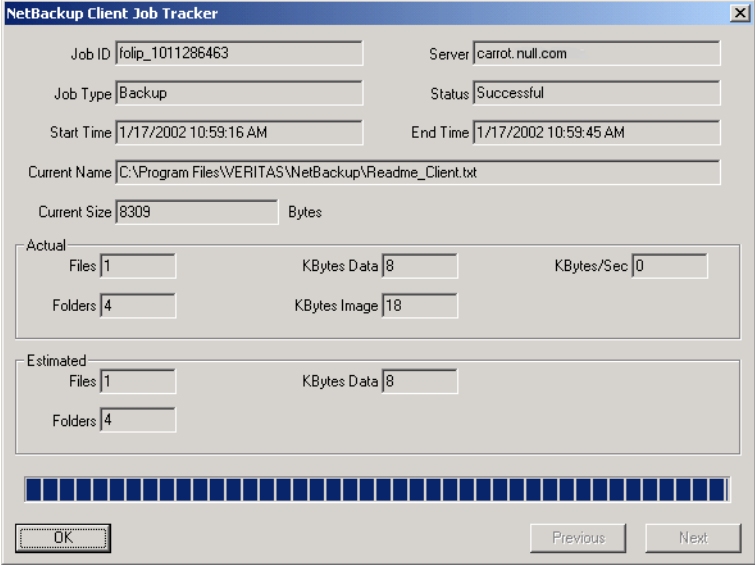
Restore individual folders and files to different locations	Restore files, folders, or registry keys to a different path on a file by file, folder by folder, or registry key by registry key basis. The default is to restore to the original path.
	Select this option, then double-click on an item in the list, and the Enter New Destination dialog box displays. In the new dialog box, you can either manually enter a new destination path, or click the **Browse** button to browse for a new destination path. If you click **OK**, that path then displays in the **Destination** field of the list for that item.
	The individual items you marked for restore display in the **Restore individual folders and files to different locations** list box. If you mark a folder to be restored, that folder name, not the individual files, will appear in the list box. To be able to restore individual files to different locations, files must be selected individually.
Restore Options	This pane contains radio buttons which specify how to restore files, folders, or registry keys onto a system which may contain files, folders, or registry keys with identical names. The user must choose one of the radio buttons in the pane.
Overwrite the existing file	Overwrites existing files, folders, or registry keys. The default is to not overwrite. In this mode, the restore does not occur if the files, folders, or registry keys exist.
Restore the file using a temporary filename	NetBackup will rename a file so as not to copy over an existing file. NetBackup will restore the item to `filenameXXXXXX.TMP`, where filename is the name of the file being restore and *XXXXXX* is generated based on the current date and time. This option is only valid when the restore has been requested by, and performed on, the same machine. This option is not supported by server-directed restores.
Do not restore the file	This is the default.
Start Restore	Initiates the restore operation.
Cancel	To cancel and return to the previous display without accepting changes to the parameters in this dialog box, click this button.
Help	To view online help for this dialog box, click this button.

NetBackup Client Job Tracker Dialog Box

NetBackup Client Job Tracker's purpose is to inform the user that a backup or restore is being done on the client machine. The NetBackup Client Job Tracker gives an estimate of the size of the job. It is not intended to replace the View Status dialog box available through the Backup, Archive, and Restore interface or the Activity Monitor available through the NetBackup Server.

Job Tracker only reports on the status of a backup, archive, or restore as it is running on the client. Once a backup is sent to the NetBackup Server, it will not update the status of that job. For example, the client sends all of the data to be backed up to the server successfully. It reports the backup status as Successful. If at a later time an error occurs on the server which causes the backup to fail, the status shown by the Job Tracker is not updated.

To access the NetBackup Client Job Tracker dialog:

1. Start the NetBackup Client Job Tracker by pointing to **Start**, **Programs**, **VERITAS NetBackup**, then choosing **NetBackup Client Job Tracker**.

   When the NetBackup Client Job Tracker has been started, the NetBackup Client icon displays in the system tray.

2. Right-click on the NetBackup Client icon in the system tray to display the Job Tracker menu.

3. Click the **Start NetBackup Client Service** menu option if it is available. If this menu option is disabled, the Job Tracker service has already been started.

4. If the **Details** option is disabled, there have not been any backups or restores since the NetBackup Job Tracker was started.

5. Perform either a backup or restore, then right-click on the NetBackup Client icon in the system tray to display the Job Tracker menu, then choose the **Details** menu option to display the NetBackup Client Job Tracker dialog box.

Once the NetBackup Client Job Tracker is started, it reports on server-directed operations, scheduled operations, and user operations. When the NetBackup Client Job Tracker is shut down, it "forgets" about the jobs it has been tracking (this includes logging off the system).

Job ID	Displays the NetBackup Job ID.
Server	Displays the name of the server to which the file was backed up.
Job Type	Shows the type of NetBackup operation for the selected job: backup, archive or restore.
Status	Displays the progress of the selected operation.
Start Time	Displays the time the NetBackup operation started.
End Time	Displays the time the NetBackup operation stopped.
Current Name	Displays the name of the file currently being backed up, archived, or restored.
Current Size	Displays the size (in bytes) of the file currently being backed up, archived, or restored.
Actual	Displays the status of the NetBackup operation.
Files	Displays the number of the files currently backed up, archived, or restored.
Folders	Displays the number of folders backed up. A folder is counted each time a file or sub folder contained in the folder is backed up.
KBytes Data	Displays the amount of data, in kilobytes, currently backed up, archived, or restored. This is rounded to the nearest whole number, so it is possible this number may be 0 if the number of bytes being backed up is less then 500.
KBytes Image	Displays the current size, in kilobytes, of the image backed up or archived.
KBytes/Sec	Displays the rate of the NetBackup operation in kilobytes per second.
Estimated	Displays an estimate of the finished NetBackup operation.

Files	Displays the total number of files to be processed by the NetBackup operation.
Folders	Displays the number of folders being backed up. A folder is counted each time a file or sub folder contained in the folder is backed up.
KBytes Data	Displays the total amount of data, in kilobytes, to be processed by the NetBackup operation. This is rounded to the nearest whole number, so it is possible this number may be 0 if the number of bytes being backed up is less then 500.
OK	Closes the NetBackup Client Job Tracker dialog box.
Previous	Shows the operating status of the previous NetBackup operation in the queue.
Next	Shows the operating status of the next NetBackup operation in the queue.

Dialog Boxes

System Administrators A

This section contains information for the NetBackup Administrator.

Free Browse

The Free Browse feature allows users without restore privileges to restore from scheduled backups. In previous versions of NetBackup, when a scheduled backup was performed by a system administrator using a root user id, the client user was not able to restore from that backup. The Free Browse feature allows the user to use a scheduled backup to restore files. The user will be able to restore only those files to which they have write access.

There are three different settings: Use, Deny, and Allow.

◆ When the client is set to Use, the user will be allowed to browse scheduled backups if the NetBackup server is set to Allow or Use.

◆ When the client is set to Deny, the user will not be allowed to browse backups no matter how the NetBackup server is configured.

◆ When the client is set to Allow, the user will be able to browse scheduled backups if the NetBackup server is set to Use.

The NetBackup master server setting is configured using the `bpclient` command.

Note By default, the NetBackup master server setting is set to Allow.

To set Use:

`# bpclient <clientname> -free_browse 2`

To set Deny:

`# bpclient <clientname> -free_browse 1`

To set Allow:

`# bpclient <clientname> -free_browse 0`

To verify the configuration:

`# bpclient <`*clientname*`> -L`

The following table displays the different combinations.

NetBackup Client	NetBackup Server	Use 'Free Browse'
Deny	Deny	No
Deny	Allow	No
Deny	Use	No
Allow	Deny	No
Allow	Allow	No
Allow	Use	Yes
Use	Deny	No
Use	Allow	Yes
Use	Use	Yes

The Free Browse feature will only be used when either the NetBackup client or the NetBackup server has been configured to Use it, and neither have been set to Deny it. By default, all users get the Allow privilege.

In order to make use of the feature on the client, a registry key needs to be created for Use and Deny using the Windows `regedt32.exe` utility. A registery key does not need to be set up for Allow, as Allow acts as the default.

1. Use the registry editor to create the following two keys.

```
'HKEY_LOCAL_MACHINE\
    SOFTWARE\
        VERITAS\
            NetBackup\
                CurrentVersion\
                    Security\
                        FreeBrowse\
                            Use'
```

and

```
'HKEY_LOCAL_MACHINE\
    SOFTWARE\
        VERITAS\
            NetBackup\
                CurrentVersion\
```

```
Security\
    FreeBrowse\
        Deny'.
```

2. Set the user share permissions on each key.

3. Enter a data value for each key with the name of Flag (type = DWORD). Only when a key has a non-zero Flag value will that privilege be turned on. If both of the Flag values are zero, then all users will get the Allow privilege.

For example:

Deny/Use Key Values and Privileges Given to User

Deny Key	Use Key	Deny Key Flag value	Use Key Flag value	Privilege
Read access	--	non-zero	--	Deny
--	Read access	--	non-zero	Use
Read access	Read access	non-zero	non-zero	Use
Read access	Read access	non-zero	zero	Deny
No access	No access	--	--	Allow

Redirecting a Restore to a Different Client

The administrator on the NetBackup master server can use the Backup, Archive, and Restore interface on that server to direct a restore to any client of the same type that backed up the files. However, it is not possible to perform a server-directed restore through a database extension product such as NetBackup for Oracle.

Policy Type Settings

When redirecting from or to a different client, the source and destination clients must be of same type. Refer to the table "Policy Settings for Clients" below to select the appropriate policy type.

Policy Settings for Clients

Client	Policy
UNIX	Standard
Macintosh	Standard
Microsoft Windows 98 or 95	Standard
Microsoft Windows NT/2000	MS-Windows-NT
NetWare Target	Standard
NetWare Non-Target	NetWare
IBM OS/2 Warp	OS/2

Restore Path Formats

When redirecting a restore to a different client, the appropriate path format must be used when specifying the source and destination information. Refer to the table "Restore Path Formats" below.

Restore Path Formats

Client	Path Format	Example
UNIX (from a Normal Backup image)	directory:\	usr:\openv\netbackup\
UNIX (from a Backup Exec image)	export_path\directory	exported_path\netbackup (where exported_path is defined in the agent.cfg file)
Macintosh	folder/folder/	NetBackup Admin/Configuration Files Dist/
Microsoft Windows (from a Normal Backup image)	drive:\directory\	c:\Veritas\NetBackup\
Microsoft Windows (from a Backup Exec image)	\NT_share_name\directory\	\C$\VERITAS\NetBackup
NetWare NonTarget	drive:\directory\	c:\Veritas\NetBackup\
NetWare Target	/target/volume/data_path	/SYS/MARGE/veritas/netbackup/
IBM OS/2	drive:\directory	c:\veritas\netbackup

Redirecting a Restore from a Backup Exec Image

When restoring a group of files from both Backup Exec and NetBackup images, redirection is not allowed. Redirecting a restore from a Backup Exec image must be done separately. Within the Backup Exec image, individual files cannot be restored to different paths. All of the files in the image must be redirected to the same path.

The following types of restores are allowed when redirecting a restore from a Backup Exec image:

◆ Redirecting a Restore to a Windows Client

Backups of a Windows , UNIX, or NetWare client can be restored to a Windows client using the following redirection path:

`\share_name\dir1`

For example, if you wanted to redirect a restore to `C:\temp`, and the sharename for the drive `C:` is `C$`, then the path should be specified as `\C$\temp`.

Note When restoring a NetWare client backup to a Windows client, the NetBackup Windows client interface (`nbwin.exe`), or the NetBackup Java interface, the `bprestore` command should be used. The NetBackup Windows NetWare client (`nbnwnt.exe`) should NOT be used to restore NetWare client backups to Windows clients.

◆ Redirecting a Restore to a UNIX Client

Backups of a Windows, UNIX, or NetWare client can be restored to a UNIX client using the following redirection path:

`export_path\dir1`

where `export_path` is defined in the `agent.cfg` file on the UNIX client. The `agent.cfg` file is a Backup Exec configuration file for the Backup Exec UNIX client. Files can be redirected and restored only to paths that have been exported in the `agent.cfg` file.

For example, if the `agent.cfg` file on the UNIX client contains the following lines:

```
export/space/home as space_home
export/home1 as home1
```

To redirect to `/space/home/dir1` the redirection path should be specified as `space_home/dir1`. To redirect to `/home1/dir1` the redirection path should be specified as `home1/dir1/`.

Note When restoring a NetWare client backup to a UNIX client, the NetBackup Windows client interface (`nbwin.exe`) should be used. To restore a Backup Exec image to a NetWare client, the NetWare client must also be a NetBackup NetWare client. Refer to the *NetBackup User's Guide for Novell NetWare NonTarget* for information on restoring NetWare backups to NetWare clients.

◆ Redirecting a Restore to a NetWare Client

When restoring a NetWare client backup to a NetWare client, the NetBackup Windows NetWare client interface (`nbnwnt.exe`) should be used. To restore a Backup Exec image to a NetWare client, the NetWare client must also be a NetBackup NetWare client. Refer to the *NetBackup User's Guide for Novell NetWare NonTarget* for information on restoring NetWare backups to NetWare clients.

▼ **To restore files to a different client (server-directed restore):**

1. Log on to the master server as administrator.

2. Start the NetBackup Administration Console.
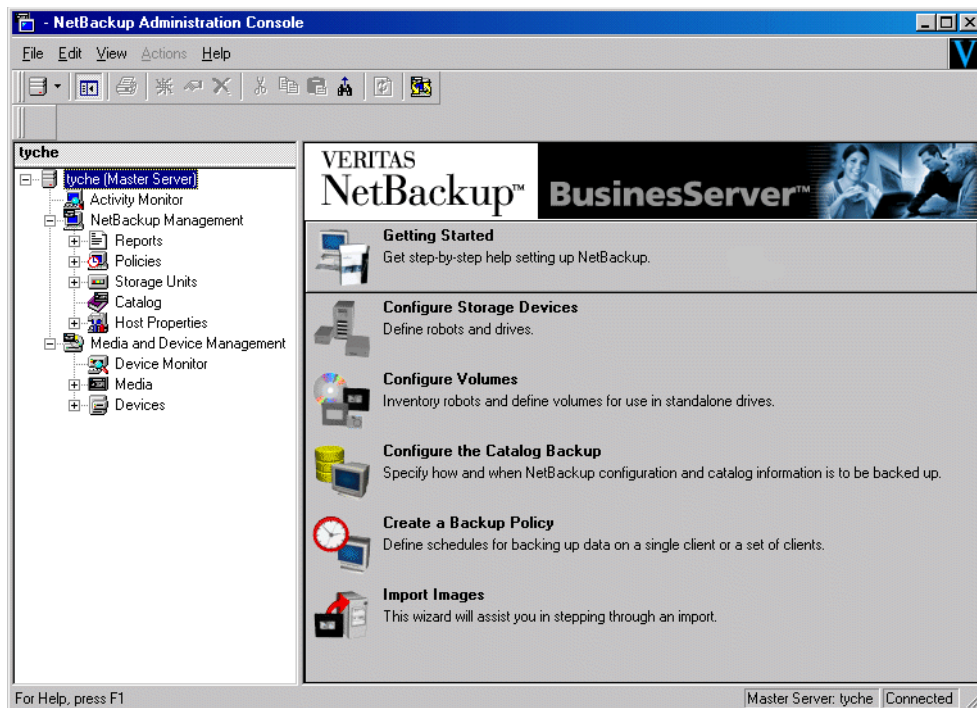
3. On the **File** menu, click **Backup, Archive, and Restore**.

   The Backup, Archive, and Restore interface opens.

4. On the **File** menu, point to **Select Files and Folders to Restore** and click on the type of restore desired from those listed.

The Restore window displays.
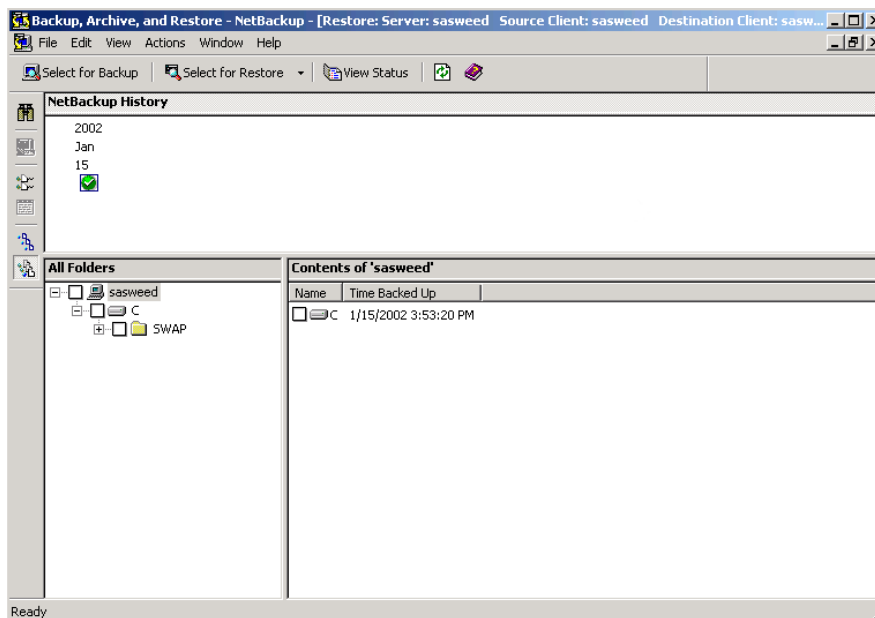
5. On the **File** menu, click **Specify NetBackup Machines**.
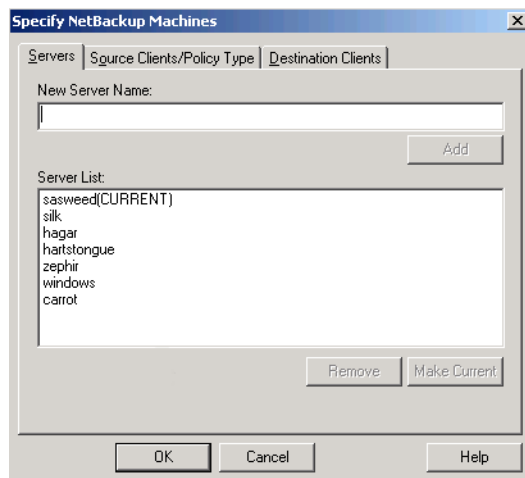
6. On the **Servers** tab, select the server that you are using and click **Make Current**. In this example, sasweed was selected.

7. Click on the **Source Clients\Policy Type** tab.
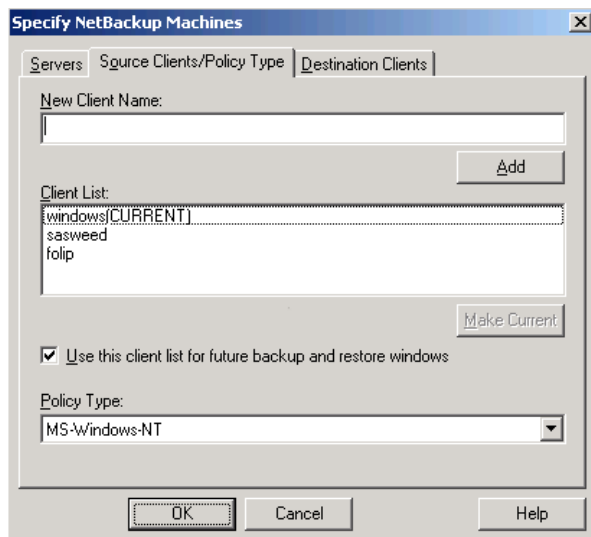
c. Select the client whose backup image you are going to restore files from and click **Make Current**. In this example, windows was selected.

d. Select the policy type for the images that you are going to browse. Refer to the Table, "Policy Settings for Clients" on page 88.

8. Select the **Destination Clients** tab.
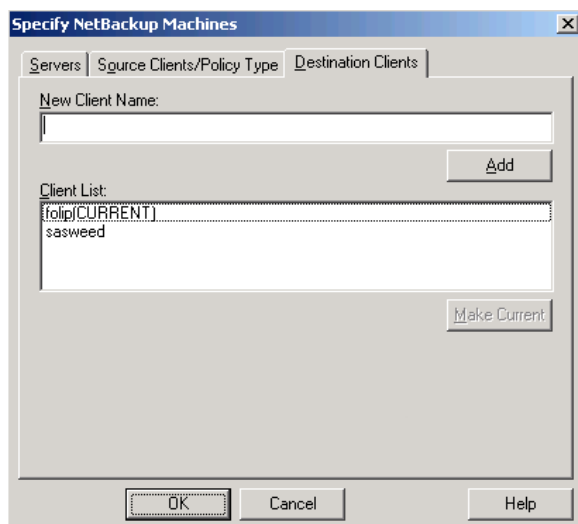
e. Select the client to which you are going to restore the files and click **Make Current**. In this example, folip was selected.

f. Click **OK**.

9. In the NetBackup Restore window, select the files for restore.

10. On the **Actions** menu, click **Start Restore of Marked Files**.

11. Select the desired option from the Restore Destination Choices.

For more information on redirecting restores to different paths, see "Redirecting Files to a Different Path" on page 29.

The paths in the **Source** and **Destination** boxes must use the formats required by the clients as shown in the table "Restore Path Formats" on page 89.

In this example, we are restoring a file from one Windows client (windows) to another Windows client (folip) and specifying the path where the files will go on folip.
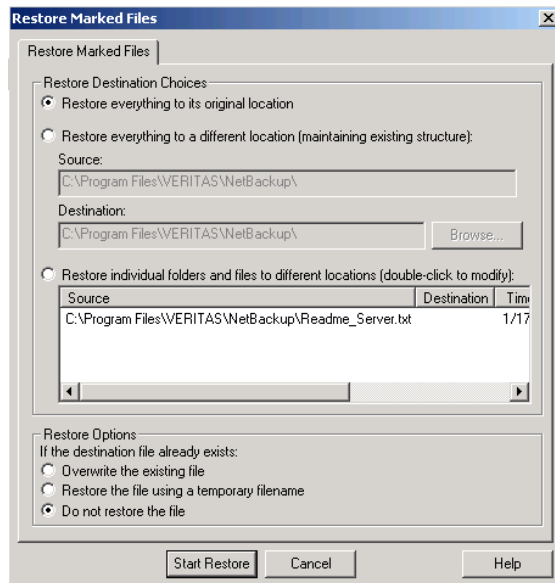
12. Select the desired restore option.

For more information on restoring to a temporary file, see "Restoring Using a Temporary Filename" on page 33.

13. Click **Start Restore**.

Preventing Server-Directed Restores

To prevent server-directed restores, either add or delete settings on the client as specified in the table below.

Client Type	Location of Setting	To Prevent Server-directed Restores
Microsoft Windows	**General** tab in NetBackup Client Properties dialog box on the client (click **NetBackup Client Properties** on the **File** menu to display this dialog box)	Clear **Allow server-directed restores** box
UNIX	`/usr/openv/netbackup/bin/bp.conf`	Add `DISALLOW_SERVER_FILE_WRITES`
Macintosh	`/NetBackup Admin/Configuration Files Dist/bp.conf`	Add `DISALLOW_SERVER_FILE_WRITES`
NetWare (Target and Non-Target)	**General** tab in NetBackup Configuration dialog box on the client (click **Configure** on the **Actions** menu to display this dialog box)	Clear **Allow server-directed restores** box
IBM OS/2	`c:\veritas\netbackup\bp.ini`	Delete `Allow_Server_Write`

Specify NetBackup Machines Dialog Box for System Administrators

When the current window is a Restore window and the Specify NetBackup Machines dialog is opened on a NetBackup server, the following tabs are available:

◆ Servers

◆ Source Clients ⁄ Policy Type

◆ Destination Clients

Servers Tab

Refer to "Servers Tab" on page 65 for more information.

Source Clients/Policy Type Tab

Use this tab to select the client whose backups you want to restore. Files or folders that were backed up or archived from one NetBackup client can be restored to a different NetBackup client. This is called a redirected restore to a different client.
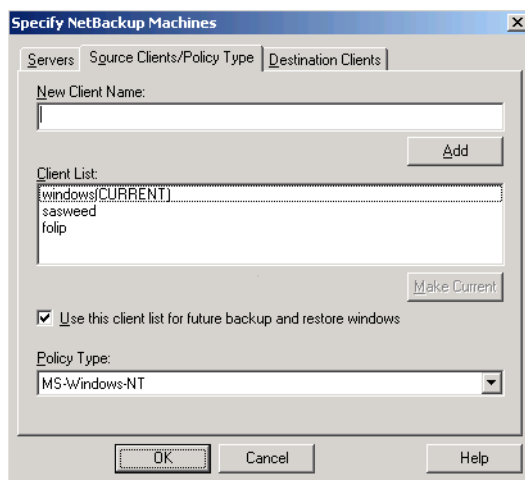
To access this dialog box:

1. Make a Restore window active.

2. On the **File** menu, click **Specify NetBackup Machines**.

3. Click the **Source Clients/Policy Type** tab.

Notes:

◆ The NetBackup master server must be configured to allow restores to be redirected to different clients. (Refer to the section on server-directed restores in the *NetBackup System Administrator's Guide for UNIX* or the *NetBackup System Administrator's Guide for Windows* for details.)

◆ For information on file permissions required, see "File Permissions Required By NetBackup" on page 6.

New Client Name	To add another client name to the **Client List**, type the name of the client in the **New Client Name** box and click **Add**. The client name entered must also be defined in a policy on the NetBackup server. If a new client is added to the list it will be in the client list for all windows currently opened and any new window that is opened. The new client will be saved in the **Client List** box after the current window is closed.
Add	Adds the client entered in the **New Client Name** box to the **Client List**.
Client List	The **Client List** shows the names of the NetBackup clients that your client can access. To change the name of the client whose backups you can browse for files to restore, select a name from the **Client List** and click **Make Current**. The word CURRENT displays in parentheses beside the name of the new source client.
Make Current	Designates the client backup images you can browse for restore operations. First highlight the client in the **Client List**, then click **Make Current**. Changing the current client will affect only the selected window. This setting will not be saved after the currently selected window is closed.
Use this client list for future backup and restore windows	If selected, NetBackup applies any changes to the client list to all backup and restore windows opened after the tab modifications have been saved.

Policy Type	View and select a policy type for the client selected in the **Client List**. The policy type must be the same as specified for the client in the NetBackup configuration on the NetBackup server.
OK	To accept changes to the parameters, click this button.
Cancel	To cancel and return to the previous display without accepting changes to the parameters in this dialog box, click this button.
Help	To view online help for this dialog box, click this button.

Destination Clients Tab

Use this tab to select the client which will receive the restored backups. Restoring files to another client is a type of server-directed restore.
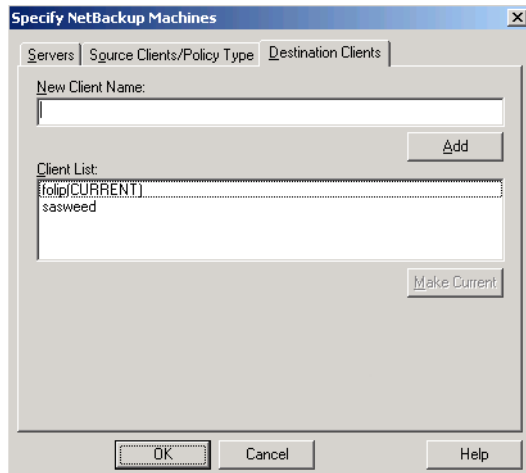
To access this dialog box:

1. Make a Restore window active.

2. On the **File** menu, click **Specify NetBackup Machines**.

3. Select the **Destination Clients** tab.

Notes:

◆ The NetBackup master server must be configured to allow restores to be redirected to different clients. (Refer to the section on server-directed restores in the *NetBackup System Administrator's Guide for UNIX* or the *NetBackup System Administrator's Guide for Windows* for details.)

◆ For information on file permissions required, see "File Permissions Required By NetBackup" on page 6.

◆ A client can prohibit server-directed restores by clearing the **Allow server-directed restores** option on the **General** tab in the **NetBackup Client Properties** dialog box. See "General Tab" on page 61.

New Client Name	To add another client name to the **Client List**, type the name of the client in the **New Client Name** box and click **Add**. The client name entered must also be defined in a policy on the NetBackup server. If a new client is added to the list it will be in the client list for all windows currently opened and any new window that is opened. The new client will be saved in the **Client List** box after the current window is closed.
Add	Adds the client entered in the **New Client Name** box to the **Client List**.
Client List	The **Client List** shows the names of the NetBackup clients that your client can access. To change the name of the client whose backups you can browse for files to restore, select a name from the **Client List** and click **Make Current**. The word CURRENT displays in parentheses beside the name of the new source client.
Make Current	Designates the client that will receive the restore operations. First highlight the server in the **Client List**, then click **Make Current**. Changing the current client will affect only the selected window. This setting will not be saved after the currently selected window is closed.
OK	To accept changes to the parameters, click this button.
Cancel	To cancel and return to the previous display without accepting changes to the parameters in this dialog box, click this button.
Help	To view online help for this dialog box, click this button.

NetBackup Client Properties Dialog Box

This section contains information on the NetBackup Client Properties dialog box for the system administrator.

Configuration information is kept in the registry key
`\HKEY_LOCAL_MACHINE\Software\VERITAS\NetBackup`
`\CurrentVersion\Config.`

General Tab

Use this tab to set any of the configuration parameters for your client.
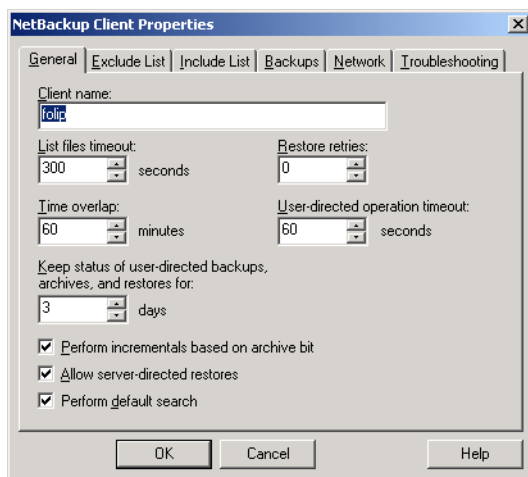
To access this tab:

1. On the **File** menu, click **NetBackup Client Properties**.

2. Click the **General** tab.

Client name	This parameter should be changed only by a system administrator. Specify the NetBackup client name of your client. This name is used when backing up, archiving and restoring files, folders, or registry keys. The client name in the NetBackup server policy configuration must match the client name specified here.

List files timeout This parameter should be changed only by a system administrator. Specify the number of seconds to wait for a response from the NetBackup master server when listing files. If this amount of time is exceeded, the user receives the "socket read failed" error even if the server is still processing the user's request.

The default is 300 seconds. The minimum setting is 0. The maximum setting is 36,000 seconds.

Restore retries This parameter should be changed only by a system administrator. Specify the number of times to retry a restore after a failure.

The default is 0, which is no retries. The maximum setting is 999.

Time overlap This parameter should be changed only by a system administrator. Specify the extra number of minutes to add to the date range for incremental backups when using date-based backups. This value can be used to compensate for differences in the speed of the clock between the client and NetBackup server.

The default is 60 minutes. The minimum setting is 0. The maximum setting is 1,440 minutes.

User-directed operation timeout Specify the number of seconds to wait for a response from the NetBackup master server when performing user-directed operations. If this amount of time is exceeded, the user receives the "socket read failed" error even if the server is still processing the user's request.

The default is 60 seconds. The minimum setting is 0. The maximum setting is 32,400 seconds.

Keep status of user-directed backups, archives, and restores for Specify the number of days to store progress reports before the system will automatically delete them.

Default is 3 days. The minimum allowable value is 0. The maximum is 9,999.

|	
Perform incrementals based on archive bit	This parameter should be changed only by a system administrator. Select this check box to have NetBackup include files in an incremental backup only if their archive bit is set. The system sets this bit whenever a file is changed and it will remain set until NetBackup clears it. A full backup always clears the archive bit. A differential-incremental backup clears the archive bit if all files are successfully backed up within the number of seconds indicated by the `Clear_Archive_Bit_Incr_Wait` parameter. A cumulative-incremental backup or user backup has no effect on the archive bit.
	Clear this checkbox to have NetBackup include a file in an incremental backup only if the file's datetime stamp has been changed since the last backup. For a cumulative-incremental backup, NetBackup compares the file's time stamp against the last full backup. For a differential-incremental backup, NetBackup compares the time stamp against the last full backup or incremental backup.
	If you install or copy files from another computer, the new files retain the datetime stamp of the originals. If the original date is before the last backup date on this computer, then the new files will not be backed up until the next full backup, whichever is most recent. Windows 95/98 and Windows NT/2000 clients use the create and modify datetime stamp.
Allow server-directed restores	This parameter should be changed only by a system administrator. Select this check box to let the administrator on the NetBackup server initiate restores to this client. The default is to allow server-directed restores.
Perform default search	If selected, NetBackup will automatically search the default range of backup images and display the backed up folders and files whenever a restore window is opened.
	Clear this box to disable the initial search. The NetBackup Restore window will not show any files or folders when initially opened. Clicking a backup image, or selecting a range of backup images, will initiate a search.
	By default, this box is selected.
OK	To accept changes to the parameters, click this button.
Cancel	To cancel and return to the previous display without accepting changes to the parameters in this dialog box, click this button.
Help	To view online help for this dialog box, click this button.

Exclude List Tab

Use this tab to view and change the list of files to exclude from a master server directed backup. For example, if you add `C:\*.bat` to the **Exclude File List**, all files with a `.bat` extension that appear in the root of the `C:` drive will not be backed up. Exclude lists only apply to full backups, cumulative-incremental backups, and differential-incremental backups initiated by the NetBackup server. Refer to "Syntax Rules for Exclude and Include Lists" on page 111 for more details.

Exclude lists can be created for specific policies and schedules. The first exclude list has the policy and schedule disabled. The list cannot be deleted, but it can be empty.

Note Only the system administrator should change the parameters on this tab.
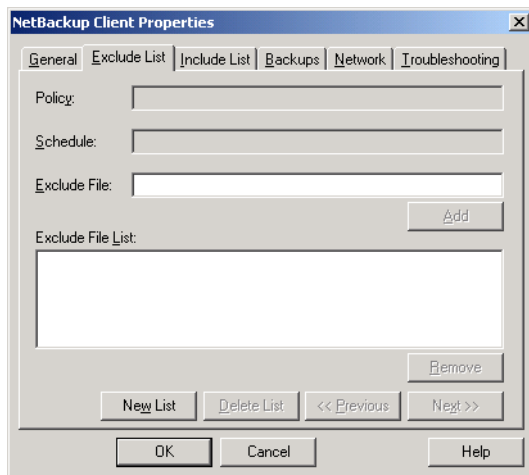
To access this tab:

1. On the **File** menu, click **NetBackup Client Properties**.

2. Click the **Exclude List** tab.

Policy	The **Exclude File List** applies only to server-directed backups for the specified policy. To create an exclude list with a different policy and schedule combination, click the **New List** button.
Schedule	The **Exclude File List** applies only to server-directed backups for the specified schedule. This requires that a policy be specified. To create an exclude list with a different policy and schedule combination, click the **New List** button.

Exclude File	Enter the file or folder that you want to exclude in the list box. Click **Add** to move the file or folder to the **Exclude File List**.
	The exclude list is case sensitive unless the `case_sensitive_exclude_list` data value in the registry is set to `no`.
Add	Click this button to add a file or folder to the **Exclude File List**.
Exclude File List	The file list applies only to scheduled backups. It shows the names of the files that will be excluded in a scheduled backup. To remove a file from the list, select the name and click **Remove**.
Remove	Click this button to remove a selected file or folder from the file list.
New List	Use this button to create a new list with a policy and schedule. Duplicates of policy and schedule are not allowed.
Delete List	Use this button to delete the current list.
Previous	Use this button to view the previous list.
Next	Use this button to view the next list.
OK	To accept changes to the parameters, click this button.
Cancel	To cancel and return to the previous display without accepting changes to the parameters in this dialog box, click this button.
Help	To view online help for this dialog box, click this button.

Include List Tab

Use this tab to make exceptions to the list of files that are excluded from a server-directed backup (those files listed in the Exclude List). For example, if you want to exclude all files with a `.bat` extension *except* the `autoexec.bat` file from backups, you would add `*.bat` to the Exclude File List and `autoexec.bat` to the Include File List. Include lists only apply to backups initiated by the NetBackup master server. Refer to "Syntax Rules for Exclude and Include Lists" on page 111 for details.

Include lists can be created for specific policies and schedules. The first include list has the policy and schedule disabled. The list cannot be deleted, but it can be empty.
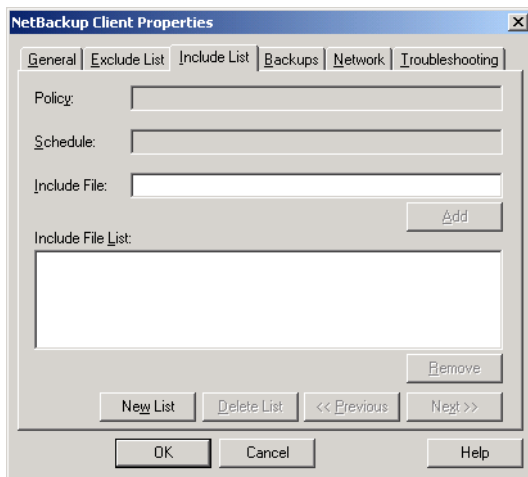
Note Only the system administrator should change the parameters on this tab.

To access this tab:

1. On the **File** menu, click **NetBackup Client Properties**.

2. Click the **Include List** tab.

Policy	Enter the name of the policy. The name must match the policy name on the master server. To create an include list with a different policy and schedule combination, click the **New List** button.
	The **Include File List** applies only to server-directed backups for the specified policy.
Schedule	Enter the name of the schedule. The name must match the schedule name on the master server. To create an include list with a different policy and schedule combination, click the **New List** button.
	The **Include File List** applies only to server-directed backups for the specified schedule. This requires that a policy be specified.

|	
Include File	Enter the file or folder that you want to include in the list box. Click **Add** to move the file or folder to the **Include File List**.
	The include list is case sensitive unless the `case_sensitive_exclude_list` data value in the registry is set to `no`.
Add	Click this button to add a file or folder to the **Include File List**.
Include File List	The file list applies only to scheduled backups. It shows the names of the files that will be included in a scheduled backup. To remove a file from the list, select the name and click **Remove**.
Remove	Click this button to remove a selected file or folder from the file list.
New List	Use this button to create a new list with a policy and schedule. Duplicates of policy and schedule are not allowed.
Delete List	Use this button to delete the current list.
Previous	Use this button to view the previous list.
Next	Use this button to view the next list.
OK	To accept changes to the parameters, click this button.
Cancel	To cancel and return to the previous display without accepting changes to the parameters in this dialog box, click this button.
Help	To view online help for this dialog box, click this button.

Backups Tab

For information on this tab, see "Backups Tab" on page 63.

Network Tab

Use this tab to view and change the port numbers used during communications between your client and the NetBackup master server.
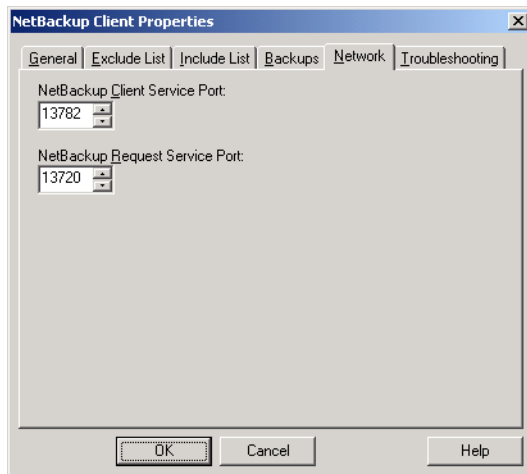
Note Only the system administrator should change the parameters on this tab.

To access this tab:

1. On the **File** menu, click **NetBackup Client Properties**.

2. Click the **Network** tab.

NetBackup Client Service Port	Specify the port the NetBackup server uses to communicate with the NetBackup client. The default is 13782.
NetBackup Request Service Port	Specify the port to which the client should send requests to the NetBackup request service, `bprd`, on the NetBackup server. The default is 13720.
OK	To accept changes to the parameters, click this button.
Cancel	To cancel and return to the previous display without accepting changes to the parameters in this dialog box, click this button.
Help	To view online help for this dialog box, click this button.

Troubleshooting Tab

Use this tab to view and change the amount of information that NetBackup saves in its debug/troubleshooting logs. NetBackup only creates log files if the log folders are created. See "Troubleshooting Logs" on page 110 for more details. Also see the *NetBackup Troubleshooting Guide for UNIX* or the *NetBackup Troubleshooting Guide for Windows* for information on using these logs.
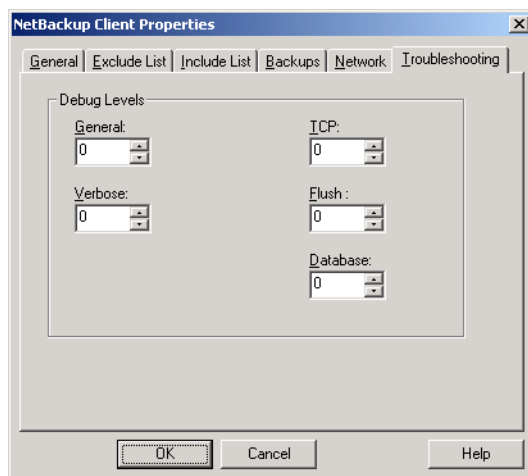
Note Only the system administrator should change the parameters on this tab.

To access this tab:

1.   On the **File** menu, click **NetBackup Client Properties**.

2.   Click the **Troubleshooting** tab.

General   Controls the amount of information that NetBackup writes to the troubleshooting logs. Supported values are 0, 1, or 2. The higher the level, the more information that is written. The default is 0.

Verbose   Verbose controls the amount of information that the NetBackup Windows NT server writes to its logs. This parameter is only in effect when the local machine (where the NetBackup client is being run) is also a NetBackup Windows NT server.

Supported values are:

0   No extra logging. This is the default.

1- 99   Verbose logging.

Use the default setting of 0 unless advised otherwise by VERITAS Technical Support.

TCP   Enables TCP debugging. Supported values are:

0   No extra logging. This is the default.

1   Log basic TCP/IP functions.

2   Log all TCP/IP functions, including all read and write requests.

3   Log contents of each read/write buffer.

Note: Setting **TCP** to 2 or 3 can cause the status reports to be very large. It can also slow the performance of a backup or restore operation.

Flush   NetBackup periodically flushes the progress reports on NetBackup operations. This setting specifies the frequency of the flushes or how often the internal buffer gets written to the progress report. The higher the flush level, the more often the buffer is written to the file. Supported values are 0, 1 or 2. The default is 0.

Database   Controls the amount of information the NetBackup Database Extensions write to their log files.

Supported values are 0 through 9. The higher the level, the more information is written. The default is 0.

OK   To accept changes to the parameters, click this button.

Cancel   To cancel and return to the previous display without accepting changes to the parameters in this dialog box, click this button.

**Help**   To view online help for this dialog box, click this button.

Troubleshooting Logs

NetBackup will generate troubleshooting logs only if you create the following folders on your client.

Windows NT/2000
(This assumes that your install directory is `C:\Program Files\VERITAS`)

```
C:\
   \Program Files
     \VERITAS
       \NetBackup
         \logs
           \BPBKAR
           \BPCD
           \BPINETD
           \NBWIN
           \TAR
```

Windows 95/98
(This assumes that your install directory is `C:\Program Files\VERITAS`)

```
C:\
   \Program Files
     \VERITAS
       \NetBackup
         \logs
           \BPCD
           \NBWIN
```

All log files use the format `yymmdd.LOG`.

`BPBKAR`	Log files in this folder contain information about user-directed and server-directed backups.
`BPCD`	Log files in this folder have information useful for troubleshooting communications between your NetBackup client and the NetBackup server.
`BPINETD`	Log files in this folder have information on the NetBackup Client Service operation.
`NBWIN`	Log files in this folder have information on user operations.
`TAR`	Log files in this folder contain information about user-directed and server-directed restores.

> **Note** If you use Notepad to view the log files, the file will appear as one long line. Wordpad recognizes the line breaks and properly displays the lines.

Syntax Rules for Exclude and Include Lists

Syntax Rules

The following syntax rules apply to exclude lists and include lists.

◆ Only one pattern per line is allowed.

◆ The following meta or wildcard characters are recognized:

[ ]

?

*

◆ To use the wildcard characters literally (that is, as non wildcard characters), precede them with a backslash (\). For example, assume that the brackets in the following example are not being used as wildcards:

`\home\abc\fun[ny[name`

In your exclude list, precede the brackets with a backslash as in

`\home\abc\fun\[ny\[name`

to have NetBackup interpret the brackets literally.

> **Note** Note that a backslash (\) acts as an escape character only when it precedes a wildcard as in the above example. This means that NetBackup normally interprets a backslash literally and it is a legal character to use in pathnames.

◆ Spaces are considered legal characters. Be careful to omit extra spaces unless they are part of the file name.

For example, if you want to exclude a file named

`C:\home\testfile` (with no extra space character at the end)

and your exclude list entry is

`C:\home\testfile` (with an extra space character at the end)

NetBackup will not be able to find the file until you delete the extra space from the end of the file name.

◆ End a file path with \ to exclude only folders with that path name (for example, `C:\home\test\`). If the pattern does not end in \ (for example, `C:\usr\test`) NetBackup excludes both files and folders with that path name.

◆ To exclude all files with a given name, regardless of their folder path, just enter the name without a preceding slash. For example:

        test

rather than

        C:\test

This is equivalent to prefixing the file pattern with

`C:\`

`C:\*\`

`C:\*\*\`

`C:\*\*\*\`

and so on.

Example of an Exclude List

If an exclude list has the following entries:

        C:\home\doe\john

        C:\home\doe\abc\

        C:\home*\test

        C:*\temp

        temp

the following are excluded from server-directed backups:

◆ The file or folder named `C:\home\doe\john`.

◆ The folder `C:\home\doe\abc` (because the exclude entry ends with \).

◆ All files or folders named `test` that are two levels below home.

◆ All files or folders named `temp` that are two levels below the root.

◆ All files or folders named `temp` at any level.

User-Directed Archive Operations (NTFS5 and later)

Mount Points

NetBackup will not enter mount points encountered in an archive operation. Instead, the mount point will be unmounted and the then empty folder deleted. If an archive operation starts inside a mounted volume (not at the root), the target items will be removed.

For example, assume that a file structure exists as follows: `MountPoint` is a volume mount point and `d2` and is an object in the mounted volume.

`c:\d1\MountPoint\d2`

Depending on what is archived, the following may occur:

◆ Archiving `c:\d1` results in an unmount of `MountPoint` and its removal, along with any other objects in `c:\d1`. Nothing in the mounted volume is deleted.

◆ Archiving `c:\d1\MountPoint\d2` results in the deletion of `c:\d1\MountPoint\d2` and any non-mount point children of `d2`.

Single Instance Store (SIS)

NetBackup will not delete any items in the Common Store for Single Instance Store volumes. If requested, links can be deleted, and the SIS manager will determine whether or not to delete corresponding Common Store items.

NetBackup Commands   B

This section describes man pages specific to the NetBackup product.

The following are special conventions used in the command descriptions.

◆ Brackets [ ] mean that the enclosed command line component is optional.

◆ A vertical bar (or pipe) symbol | separates optional arguments from which the user can choose. For example, assume that a command has the following format:

>   command [arg1 | arg2]

Here, the user can choose either arg1 or arg2 (but not both).

◆ Italics indicate that the information is user supplied. For example, the user supplies *policy*, *schedule*, and *filename* in the following command:

>   `bpbackup -p` *policy* `-s` *schedule filename*

◆ An ellipses (...) means that you can repeat the previous parameter. For example, consider the following command:

>   `bpbackup` [`-S` *master_server* [,*master_server*,...]] *filename*

Here, the `-S` option requires the first master server name. Additional names can be added, separated by commas and followed by a file name as in:

>   `bpbackup -S mars,coyote,shark,minnow memofile.doc`

bparchive(1)

NAME

`bparchive` - Archive files to the NetBackup server

SYNOPSIS

`/usr/openv/netbackup/bin/bparchive` `[-p` *policy*`]` `[-s` *schedule*`]` `[-S` *master_server* `[,` *master_server,...*`]]` `[-t` *policy_type*`]` `[-L` *progress_log* `[-en]]` `[-w` `[`*hh:mm:ss*`]]` `[-help]` `[-k` `"`*keyword_phrase*`"]` `-f` *listfile* `|` *filenames*

DESCRIPTION

`bparchive` processes files that you list on the command line or in the file you specify with the `-f` *listfile* option. Any file path entered can be a file or directory name. If the list of files includes a directory, `bparchive` archives all files and subdirectories of that directory starting at the directory itself.

By default, you are returned to the system prompt after `bparchive` is successfully submitted. The command works in the background and does not return completion status directly to you. The `-w` option lets you change this behavior so `bparchive` works in the foreground and returns completion status after a specified time period.

`bparchive` writes its informative and error messages to a progress-log file. You must create this file prior to running the `bparchive` command and then specify it with the `-L` *progress_log* option. If `bparchive` cannot archive any of the requested files or directories, you can use the progress log to determine the reason for the failure.

If you create a `/usr/openv/netbackup/logs/bparchive/` directory with public-write access, `bparchive` creates an debug log file in this directory that you can use for troubleshooting.

In addition, if a nonroot user specifies `USEMAIL` `=` *mail_address* in their `$HOME/bp.conf` file or a root user specifies it in the `/usr/openv/netbackup/bp.conf` file, NetBackup sends mail on the archive completion status to *mail_address*. This message is sent when the archive process is complete.

The following restrictions apply to this command:

◆ To archive a file with the `bparchive` command, you must be either root or the owner and a member of the primary group (as owner) to delete the file. Also, the file must not be read-only. Otherwise, NetBackup saves the files but cannot reset their access time (utime) and does not delete them from the disk.

◆ If you specify a UNIX file that is a link, `bparchive` archives only the link itself, not the file to which it links.

◆ `bparchive` does not archive the "." or ".." directory entries, and also does not archive raw partitions.

OPTIONS

-p *policy*   Names the policy to use for the user archive. If it is not specified, the NetBackup server uses the first policy it finds that includes the client and a user archive schedule.

-s *schedule*

      Names the schedule to use for the user archive. If it is not specified, the NetBackup server uses the first user archive schedule it finds in the policy it is using (see the -p option).

-S *master_server* [, *master_server,...*]

      Specifies the name of the NetBackup master server. The default is the first `SERVER` entry in the `/usr/openv/netbackup/bp.conf` file.

-t *policy_type*

      Specifies one of the following numbers corresponding to the policy type. The default for NT clients is `13`, for Apollo workstations the default is `3`, and for Netware clients the default is `10`. The default for all others is `0`:

      `0` = Standard

      `4` = Oracle

      `6` = Informix-On-BAR

      `7` = Sybase

      `13` = MS-Windows-NT

      `14` = OS/2

      `15` = MS-SQL-Server

      `16` = MS-Exchange-Server

      `19` = NDMP

Note The following policy types apply only to NetBackup DataCenter.

      `3` = Apollo-wbak

      `11` = DataTools-SQL-BackTrack

      `17` = SAP

      `18` = DB2

      `20` = FlashBackup

      `21` = Split-Mirror

      `22` = AFS

-L *progress_log* [-en]

Specifies the name of an existing file in which to write progress information. The file name must begin with /.

For example: /home/tlc/proglog.

The default is to not use a progress log.

Include the -en option to generate a log in English. The name of the log will contain the string _en. This option is useful to support personnel assisting in a distributed environment where differing locales may create logs of various languages.

-w [*hh:mm:ss*]

Causes NetBackup to wait for a completion status from the server before returning you to the system prompt.

The date and time format depend on the user's locale. See NOTES.

You can optionally specify a wait time in hours, minutes, and seconds. The maximum wait time you can specify is 23:59:59. If the wait time expires before the archive is complete, the command exits with a timeout status. The archive, however, still completes on the server.

If you use -w without specifying the wait time or if you specify a value of 0, NetBackup waits indefinitely for the completion status.

-help
Prints a command line usage message when -help is the only option on the command line.

-k *keyword_phrase*

Specifies a keyword phrase that NetBackup associates with the image created by this archive operation. You can then restore the image by specifying the keyword phrase with the -k option on the bprestore command.

The keyword phrase is a textual description of the archive that is a maximum of 128 characters in length. All printable characters are permitted including space (" ") and period ("."). Enclose the phrase in double quotes ("...") or single quotes ('...') to avoid conflict with the UNIX shell.

The default keyword phrase is the null (empty) string.

-f *listfile*
Specifies a file (*listfile*) containing a list of files to be archived and can be used instead of the *filenames* option. In *listfile*, place each file path on a separate line.

The format required for the file list depends on whether the files have spaces or newlines in the names.

To archive files that do not have spaces or newlines in the names, use this format:

filepath

Where *filepath* is the path to the file you are archiving. For example:

/home

/etc

/var

To archive files that have spaces or newlines in the names, use this format:

filepathlen filepath

Where *filepath* is the path to the file you are archiving and *filepathlen* is the number of characters in the file path.

For example:

```
5 /home
4 /etc
4 /var
19 /home/abc/test file
```

filenames

Names one or more files to be archived and can be used instead of the `-f` option.

Any files that you specify must be listed at the end, after all other options.

For Apollo clients, specify absolute file paths (Apollo clients are supported only by NetBackup DataCenter master servers).

NOTES

The format that you must use for date and time values in NetBackup commands varies according to the locale setting.

If you are uncertain of the NetBackup command requirements for your locale, enter the command with the `-help` option and check the usage. The following is part of the `bparchive` usage statement output that shows the `-w` option:

```
[-w [hh:mm:ss]
```

Notice the hours:minutes:seconds requirements. These are for a locale setting of C and can be different for other locales.

For more information on locale, see the `locale(1)` man page for your system.

EXAMPLES

◆ Example 1

To archive a single file, enter:

```
bparchive /usr/user1/file1
```

◆ Example 2

To archive files listed in a file named `archive_list`, enter:

```
bparchive -f archive_list
```

◆ Example 3

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To associate the keyword phrase "Archive My Home Directory 02/02/02" to the archive of the directory `/home/kwc` and use a progress log named `/home/kwc/arch.log` enter the following (the backslash continues the command as if it were on one line):

```
bparchive -k "Archive My Home Directory 02/02/02" \
-L /home/kwc/arch.log  /home/kwc
```

FILES

`$HOME/bp.conf`

`/usr/openv/netbackup/logs/bparchive/log.`*mmddyy*

SEE ALSO

`bp(1)`, `bpbackup(1)`, `bplist(1)`, `bprestore(1)`

bpbackup(1)

NAME

`bpbackup` - Back up files to the NetBackup server

SYNOPSIS

`/usr/openv/netbackup/bin/bpbackup [-p` *policy*`] [-s` *schedule*`] [-S`
master_server `[,` *master_server,...*`]] [-t` *policy_type*`] [-L`
progress_log `[-en]] [-w [`*hh*`:`*mm*`:`*ss*`]] [-help] [-k`
`"`*keyword_phrase*`"] -f` *listfile* `|` *filenames*

`/usr/openv/netbackup/bin/bpbackup -p` *policy* `-i [-h` *hostname*`] [-s`
schedule`] [-S` *master_server* `[,` *master_server,...*`]] [-t`
policy_type`] [-w [`*hh*`:`*mm*`:`*ss*`]] [-k "`*keyword_phrase*`"]`

DESCRIPTION

`bpbackup` starts either of the following processes:

On clients

Using the first form of the command above, `bpbackup` starts a user backup that is the equivalent to what is performed by using the interface on the client. This type of backup can be started from any NetBackup client in order to back up files from that client.

The `bpbackup` command processes the files that you list on the command line or in the file that you specify with the `-f` *listfile* option. A file path can be a file or directory name. If the named files include a directory, `bpbackup` backs up all files and subdirectories of that directory starting at the directory itself.

On master servers

Using the second form of the command shown above, `bpbackup` starts an immediate-manual backup of a client. This variation requires the `-i` option on the `bpbackup` command and is available only to the administrator on the master server. It is the equivalent of starting a manual backup from the NetBackup administrator's interface. Use the `-h` option to specify the host.

Since progress logs are written only on clients, and since this form of the `bpbackup` command is run from the master server only, the `-L` option is undefined.

The following restrictions apply to this command:

◆ You must be the owner of the file or an administrator to back up a file with `bpbackup`.

◆ You can back up files and directories owned by other users if you have the necessary UNIX file permissions.

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◆ If you specify a UNIX file that is a link, `bpbackup` backs up only the link itself, not the file to which it links.

◆ `bpbackup` does not back up the "." or ".." directory entries.

By default, you are returned to the system prompt after `bpbackup` is successfully submitted. The command works in the background and does not return completion status directly to you. The `-w` option lets you change this behavior so the command works in the foreground and returns completion status after a specified time period.

`bpbackup` writes informative and error messages to a progress-log file if you create the file prior to running the `bpbackup` command and then specify the file with the `-L` *progress_log* option. If `bpbackup` cannot back up the requested files or directories, use the progress log to determine the reason for the failure.

If you create a directory named `/usr/openv/netbackup/logs/bpbackup/` with public-write access, `bpbackup` creates a debug log file in this directory that can be used for troubleshooting.

In addition, if a nonroot user specifies `USEMAIL = `*mail_address* in their `$HOME/bp.conf` file or a root user specifies it in the `/usr/openv/netbackup/bp.conf` file, NetBackup sends mail on the backup completion status to *mail_address*. This message is sent when the backup process is complete.

OPTIONS

`-p` *policy*   Names the policy to use for the backup.

       If this option is not specified for a user backup, NetBackup uses the first policy it finds that includes the client and a user backup schedule.

       The `-p` option is required for an immediate-manual backup (`-i` option).

`-i`   Starts an immediate-manual backup. This is the equivalent of starting a manual backup from the NetBackup administrator interface. You must be the administrator on the master server to use the `-i` option.

`-h` *hostname*

       It names the client host on which to run the backup. If it is not specified, NetBackup runs the backup on all clients in the policy.

`-s` *schedule*

       Names the schedule to use for the backup. If it is not specified, the NetBackup server uses the first user backup schedule it finds for the client in the policy it is using (see the `-p` option).

`-S` *master_server* [, *master_server,...*]

       Specifies the name(s) of the NetBackup master server(s). The default is the first `SERVER` entry found in the `/usr/openv/netbackup/bp.conf` file.

-t *policy_type*

Specifies one of the following numbers corresponding to the policy type. The default for NT clients is `13`, for Apollo workstations the default is `3`, and for Netware clients the default is `10`. The default for all others is `0`:

`0` = Standard

`4` = Oracle

`6` = Informix-On-BAR

`7` = Sybase

`13` = MS-Windows-NT

`14` = OS/2

`15` = MS-SQL-Server

`16` = MS-Exchange-Server

`19` = NDMP

Note The following policy types apply only to NetBackup DataCenter.

`3` = Apollo-wbak

`11` = DataTools-SQL-BackTrack

`17` = SAP

`18` = DB2

`20` = FlashBackup

`21` = Split-Mirror

`22` = AFS

-L *progress_log* [-en]

Specifies the name of a file in which to write progress information. NetBackup creates the file if it doesn't exist.

For example: `/home/tlc/proglog`

The default is to not use a progress log.

Include the `-en` option to generate a log in English. The name of the log will contain the string `_en`. This option is useful to support personnel assisting in a distributed environment where differing locales may create logs of various languages.

-w [*hh:mm:ss*]

Causes NetBackup to wait for a completion status from the server before returning you to the system prompt.

The date and time format depend on the user's locale. See NOTES.

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You can optionally specify a wait time in hours, minutes, and seconds. The maximum wait time you can specify is 23:59:59. If the wait time expires before the backup is complete, the command exits with a timeout status. The backup, however, still completes on the server.

If you use `-w` without specifying a wait time or you specify a value of 0, NetBackup waits indefinitely for the completion status.

If you include `-i` with `-w`, NetBackup waits until all initiated jobs have completed before returning status. However, if more than one job starts, the status is unpredictable. If the multiple jobs are due to there being more than one client and the policy does not have Allow Multiple Data Streams selected, you can include the `-h` option to restrict the operation to one client and obtain predictable status. However, if the policy has Allow Multiple Data Streams selected and there is more than one job from the selected client, the status is still unpredictable.

`-help`   Prints a command line usage message when `-help` is the only option on the command line.

`-k` *keyword_phrase*

Specifies a keyword phrase that NetBackup associates with the image being created by this backup operation. You can then restore the image by specifying the keyword phrase with the `-k` option on the `bprestore` command.

If you use the `-i` option with `-k`, NetBackup establishes an association between the keyword phrase and the backup policy and image.

The keyword phrase is a textual description of the backup that is a maximum of 128 characters in length. All printable characters are permitted including space (" ") and period ("."). Enclose the phrase in double quotes ("...") or single quotes ('...') to avoid conflict with the UNIX shell.

The default keyword phrase is the null (empty) string.

`-f` *listfile*

Specifies a file (*listfile*) containing a list of files to be backed up. This option can be used instead of the *filenames* option, but cannot be used with the `-i` option. List each file on a separate line.

The format required for the file list depends on whether the files have spaces or newlines in the names.

To back up files that do not have spaces or newlines in the names, use this format:

 filepath

Where *filepath* is the path to the file you are backing up. For example:

`/home`

```
/etc
/var
```

To back up files that have spaces or newlines in the names, use this format:

 filepathlen filepath

Where *filepath* is the path to the file you are backing up and *filepathlen* is the number of characters in the file path.

For example:

```
5 /home
4 /etc
4 /var
19 /home/abc/test file
```

filenames

Names one or more files to be backed up. This option can be used instead of the -f option, but cannot be used with the -i option. Any files that you specify must be listed at the end, following all other options.

For Apollo clients, specify absolute file paths (Apollo clients are supported only by NetBackup DataCenter master servers).

NOTES

The format that you must use for date and time values in NetBackup commands varies according to the locale setting.

If you are uncertain of the NetBackup command requirements for your locale, enter the command with the -help option and check the usage. The following is part of the bpbackup usage statement output that shows the -w option:

```
[-w hh:mm:ss]
```

Notice the hours:minutes:seconds requirement. These are for a locale setting of C and may be different for other locales.

For more information on locale, see the locale(1) man page for your system.

EXAMPLES

◆ Example 1

To perform a user backup of a single file, enter:

```
bpbackup /usr/user1/file1
```

◆ Example 2

The following command starts a user backup of the files that are listed in a file named backup_list.

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```
bpbackup -f backup_list
```

◆   Example 3

The following command (all on one line) starts an immediate-manual backup of the client host named diablo, in the policy named cis_co. The policy type is Standard policy and is in the configuration on the master server named hoss.

```
bpbackup -p cis_co -i -h diablo -S hoss -t 0
```

◆   Example 4

The following command (all on one line, or using the backslash continuation character) associates the keyword phrase "Backup My Home Directory 01/01/0'" to the user backup of the directory /home/kwc. The progress log is /home/kwc/bkup.log.

```
bpbackup -k "Backup My Home Directory 01/01/01" \
-L /home/kwc/bkup.log  /home/kwc
```

◆   Example 5

The following command (all on one line) associates the keyword phrase "Policy Win NT 01/01/01" to the immediate-manual backup of the client host named slater in the policy named win_nt_policy.

```
bpbackup -k "Policy Win NT 01/01/2001" -i -h slater \
-p win_nt_policy -t 13
```

FILES

`$HOME/bp.conf`

`/usr/openv/netbackup/logs/bpbackup/log.`*mmddyy*

SEE ALSO

`bp(1)`, `bparchive(1)`, `bplist(1)`, `bprestore(1)`

bplist(1)

NAME

`bplist` - Lists backed up and archived files on the NetBackup server

SYNOPSIS

```
/usr/openv/netbackup/bin/bplist [-A | -B] [-C client] [-S
            master_server] [-t policy_type] [-k policy] [-F] [-R [n]] [-b
            | -c | -u] [-l] [-r] [-flops file_options] [-Listseconds]
            [-T] [-unix_files] [-nt_files] [-s mm/dd/yy
            [hh:mm:ss]] [-e mm/dd/yy [hh:mm:ss]] [I] [PI] [-help]
            [-keyword "keyword_phrase"] [filename]
```

DESCRIPTION

`bplist` shows a list of previously archived or backed up files according to the options that you specify. You can choose the file or directory and the time period that you want the listing to cover. Directories can be recursively displayed to a specified depth.

The list shows only the files that you have read access to. You also must own or have read access to all directories in the file paths. You can list files that were backed up or archived by another client only if you are validated to do so by the NetBackup administrator.

If you create directory `/usr/openv/netbackup/logs/bplist/` with public-write access, `bplist` creates an debug log file in this directory that you can use for troubleshooting.

The output of `bplist` goes to standard output.

OPTIONS

`-A | -B`   Specifies whether to produce the listing from archives (`-A`) or backups (`-B`). The default is `-B`.

`-C client`   Specifies a client name to use for finding backups or archives to list. This name must be as it appears in the NetBackup configuration. The default is the current client name.

`-S master_server`
              Specifies the name of the NetBackup server. The default is the first `SERVER` entry found in the `/usr/openv/netbackup/bp.conf` file.

`-t policy_type`
              Specifies one of the following numbers corresponding to the policy type (the default is `0` on all clients except Apollos, where it is `3`):

              `0` = Standard

              `4` = Oracle

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      `6` = Informix-On-BAR

      `7` = Sybase

      `10` = NetWare

      `13` = MS-Windows-2000/NT

      `14` = OS/`2`

      `15` = MS-SQL-Server

      `16` = MS-Exchange-Server

      `19` = NDMP

Note The following policy types apply only to NetBackup DataCenter.

      `3` = Apollo-wbak

      `11` = DataTools-SQL-BackTrack

      `17` = SAP

      `18` = DB`2`

      `20` = FlashBackup

      `21` = Split-Mirror

      `22` = AFS

`-k` *policy* Names the policy to search to produce the list. If not specified, all policies are searched.

`-F`   Specifies that in the list output, symbolic links (applies only to UNIX clients) will end with a trailing @ and executable files with a trailing *.

`-R` [*n*]   Recursively lists subdirectories encountered to a depth of *n*. The default for *n* is 999.

`-b | -c | -u`
       Specifies an alternate date and time to be used for printing with the `-l` option:

       `-b` displays the backup date and time of each file.

       `-c` displays the last inode modification date and time for each file.

       `-u` displays the last access date and time of each file.

       The default is to display the time of last modification of each file.

`-l`   Lists in long format, giving mode, owner, group, size in bytes, and time of last modification for each file (see the EXAMPLES section of this man page). The list shows the mode of each file as 10 characters that represent the standard UNIX file permissions. The first character is one of the following:

       d (specifies a directory)

l (specifies a link)

- (specifies a file)

The next nine characters show the three sets of permissions. The first set shows the owner's permissions, the next set shows the user-group permissions, and the last set shows permissions for all other users. Each set of three specifies the read, write, and execute permissions as follows:

r means the file is readable

w means the file is writable

x means the file is executable

- means the indicated permission is not granted

-Listseconds

Specifies that seconds granularity be used for the time stamp when the the `-l` option is used.

-r   Lists raw partitions that were backed up. The default is to list file systems.

-flops *file_options*]

Allows either Backup Exec files to be listed, or both Backup Exec and NetBackup files to be listed. The default (`-flops` not specified) is to list only NetBackup files.

To list only Backup Exe files specify:

`-flops 524288`

To list Backup Exe and NetBackup files specify:

`-flops 1048576`

-T   Lists directories in true-image backups. The default is to list non-true-image backups.

-unix_files

Lists the files and directories in UNIX format. For example:
`/C/users/test.`

-nt_files

Lists the files and directories in Windows format. For example:
`C:\users\test.`

-s *mm/dd/yy* [*hh:mm:ss*]

-e *mm/dd/yy* [*hh:mm:ss*]

Specifies the start and end date range for the listing.

The date and time format are dependent on the user's locale. See NOTES.

`-s` specifies a start date and time for the listing. The resulting list shows only files in backups or archives that occurred at or after the specified date and time. Use the following format for the start date and time:

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        mm/dd/yy [*hh*[:*mm*[:*ss*]]]

        The valid range of dates are from 01/01/1970 00:00:00 to 01/19/2038 03:14:07. The default is the current date minus six months.

        `-e` specifies an end date and time for the listing. The resulting list shows only files from backups or archives that occurred at or before the specified date and time. Use the same format as explained above for start date and time. The default is the current date and time.

`-I`   Specifies a case-insensitive search. This means that capitalization is not considered when comparing names (for example, Cat matches cat).

`-PI`   Specifies a path-independent search, which means that NetBackup searches for a specified file or directory without regard to the path. For example, if a file named `test` exists in the three directories shown below, a search for `test` finds all three instances of the file:

        `/tmp/junk/test`

        `/abc/123/xxx/test`

        `/abc/123/xxx/yyy/zzz/test`

`-help` Prints a command line usage message when `-help` is the only option on the command line.

`-keyword` "*keyword_phrase*"
        Specifies a keyword phrase for NetBackup to use when searching for backups or archives from which to restore files. The phrase must match the one that was previously associated with the backup or archive by the `-k` option of the `bpbackup` or `bparchive` command.

        You can use this option in place of or in combination with the other restore options in order to make it easier to restore your backups and archives. The following meta characters can be used to simplify the task of matching keywords or parts of keywords in the phrase:

        * matches any string of characters.

        ? matches any single character.

        [ ] matches one of the sequence of characters specified within the brackets.

        [-] matches one of the range of characters separated by the "-".

        The keyword phrase can be up to 128 characters in length. All printable characters are permitted including space (" ") and period ("."). The phrase must be enclosed in double quotes ("...") or single quotes ('...') to avoid conflict with the UNIX shell.

        The default keyword phrase is the null (empty) string.

filename Names the file or directory to list. If you do not specify a path, the default is the current working directory.

Any files or directories that you specify must be listed at the end, following all other options.

For directories, if you do not use the `-R` option, include the trailing path separator (\ for Windows and / for UNIX) as in the following:

`bplist -l D:\WS_FTP.LOG\*` (Windows)

`bplist -l /home/user1/*` (UNIX)

NOTES

The format that you must use for date and time values in NetBackup commands varies according to the locale setting.

If you are uncertain of the NetBackup command requirements for your locale, enter the command with the `-help` option and check the usage. The following is part of the `bplist` usage output that shows the `-s` and `-e` options:

`[-s mm/dd/yy hh:mm:ss] [-e mm/dd/yy hh:mm:ss]`

These formats are for a locale setting of C and may be different for other locales. For more information on locale, see the `locale(1)` man page for your system.

EXAMPLES

◆ Example 1

To list recursively, in long format, the files that were backed up in `/home/user1`.

```
bplist -l -R /home/user1
lrwxrwxrwx  user1    eng     0   Apr  5 12:25 /home/user1/dirlink
drwxr-xr-x  user1    eng     0   Apr  4 07:48 /home/user1/testdir
drwxr-x--- user1     eng     0   Apr  4 07:49 /home/user1/dir
-rwxr-----  user1    eng   1002  Apr  2 09:59 /home/user1/dir/file
lrwxrwxrwx  user1    eng     0   Apr  4 07:49 /home/user1/dir/link
```

◆ Example 2

To list, with details, the files that were backed up and associated with all or part of the keyword phrase

`"My Home Directory"`

in directory `/home/kwc,` enter the following:

`bplist -keyword "*My Home Directory*" -l /home/kwc/`

◆ Example 3

To list, with details, the files that were archived and associated with all or part of the keyword phrase

`"My Home Directory"`

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in directory `/home/kwc`, enter the following:

`bplist -A -keyword "*My Home Directory*" -l /home/kwc/`

◆ Example 4

To list, recursively and with details, the files that were backed up on drive D of Windows NT client slater and associated with all or part of the keyword phrase

`"Win NT"`

enter the following:

`bplist -keyword "*Win NT*" -C slater -t 13 -R -l /D`

FILES

`/usr/openv/netbackup/logs/bplist/log.`*mmddyy*

SEE ALSO

`bp(1), bparchive(1), bpbackup(1), bprestore(1)`

bprestore(1)

NAME

`bprestore` - Restores files from the NetBackup server

SYNOPSIS

```
/usr/openv/netbackup/bin/bprestore [-A | -B] [-BR
            be_redirection_path] [-F file_options] [-K] [-l | -H | -y]
            [-r] [-T] [-L progress_log [-en]] [-R rename_file] [-C
            client] [-D client] [-S master_server] [-t policy_type] [-p
            policy] [-s mm/dd/yy [hh:mm:ss]] [-e mm/dd/yy
            [hh:mm:ss]] [-w [hh:mm:ss]] [-k "keyword_phrase"] -f
            listfile | filenames
```

DESCRIPTION

`bprestore` lets users restore a backed up or archived file or list of files. You can also name directories to restore. If you include a directory name, `bprestore` restores all files and subdirectories of that directory. You can exclude a file or directory path that was previously included in the restore by placing an exclamation mark (!) in front of the file or directory path (does not apply to NDMP restores). The exclude capability is useful, for example, if you want to exclude part of a directory from the restore.

By default, you are returned to the system prompt after `bprestore` is successfully submitted. The command works in the background and does not return completion status directly to you. The `-w` option lets you change this behavior so `bprestore` works in the foreground and returns completion status after a specified time period.

The `bprestore` command restores the file from the most recent backups within the time period you specify, except for a true-image restore (see the `-T` option description).

`bprestore` overwrites any file of the same name that already exists on the local client disk, unless you include the `-K` option. It is also possible to restore files that were backed up or archived on another client (`-C` option). You must be validated by the NetBackup administrator to restore from other clients.

Use the `bplist` command to display information on the files and directories that were backed up or archived.

`bprestore` writes informative and error messages to a progress-log file if you create the file prior to running the `bprestore` command and then specify the file with the `-L` *progress_log* option. If `bprestore` cannot restore the requested files or directories, you can use the progress log to find the reason for the failure.

For detailed troubleshooting information, create a directory named `/usr/openv/netbackup/logs/bprestore` with public-write access. `bprestore` then creates an debug log file in this directory.

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In addition, if a nonroot user specifies USEMAIL = *mail_address* in their $HOME/bp.conf file, NetBackup sends mail on the restore completion status to *mail_address*. This message is sent when the restore process is complete.

The following restrictions apply to bprestore:

◆ You can restore files and directories that you own and those owned by other users if you have read access. You need write access to another user's directories and files to restore that user's files to their original location.

◆ The operating system restricts the number of files and directories that you can specify on a single bprestore command line. If this is a problem, use the -f option to restore the files.

OPTIONS

-A | -B   Specifies whether to restore from archives (-A) or backups (-B). The default is -B.

-BR *be_redirection_path*

Contains the redirection path when restoring Backup Exec files. Valid only when -F is set to 524288. For example, when only Backup Exec files are being restored.

-F *file_options*

Allows either Backup Exec files to be restored, or both Backup Exec and NetBackup files to be restored. The default (-F is not specified), is to restore only NetBackup files.

To restore only Backup Exe files specify:

-F 524288

To restore Backup Exe and NetBackup files specify:

-F 1048576

-K   Specifying this option causes bprestore to keep existing files rather than writing over them when restoring files with the same name. The default is to overwrite existing files.

Note The -l | -H | -y options apply only when restoring UNIX files to a UNIX system.

-l | -H | -y

Specifying -l renames the targets of UNIX links by using the -R *rename_file* option in the same way as when renaming files.

Specifying -H renames UNIX hard links by using the -R *rename_file* option in the same way as when renaming files. Soft links are unchanged.

Specifying `-y` renames UNIX soft links by using the `-R` *rename_file* option in the same way as when renaming files. Hard links are unchanged.

See Example 5 in the EXAMPLES section.

`-r`   Specifying this option restores raw partitions instead of file systems.

`-L` *progress_log* `[-en]`

Specifies the name of an existing file in which to write progress information.

For example: `/home/tlc/proglog`

The default is to not use a progress log.

Include the `-en` option to generate a log in English. The name of the log will contain the string `_en`. This option is useful to support personnel assisting in a distributed environment where differing locales may create logs of various languages.

`-R` *rename_file*

Specifies the name of a file with name changes for alternate-path restores.

Use the following form for entries in the rename file:

`change` *backup_filepath* `to` *restore_filepath*

The file paths must start with `/` (slash)

The first *backup_filepath* that is matched is replaced with the *restore_filepath* string. The default is to restore using the original path.

For example, the following entry renames `/usr/fred` to `/usr/fred2`:

`change /usr/fred to /usr/fred2`

`-C` *client*   Specifies a client name to use for finding backups or archives from which to restore files. This name must be as it appears in the NetBackup catalog. The default is the current client name.

Note   The destination client does not default to the source client. See the description for `-D` *client* option.

`-D` *client*   Specifies a destination client. This can be done by a root user on the master server in order to direct the restored files to a machine other than the client specified with the `-C` option. The default is the current client name.

`-S` *master_server*

Specifies the name of the NetBackup server. The default is the first server found in the `/usr/openv/netbackup/bp.conf` file.

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-t *policy_type*
> Specifies one of the following numbers corresponding to the policy type (the default is `0` on all clients except Apollos, where it is `3`):
>
> `0` = Standard
>
> `4` = Oracle
>
> `6` = Informix-On-BAR
>
> `7` = Sybase
>
> `10` = NetWare
>
> `13` = MS-Windows-NT
>
> `14` = OS/2
>
> `15` = MS-SQL-Server
>
> `16` = MS-Exchange-Server
>
> `19` = NDMP

Note The following policy types apply only to NetBackup DataCenter.

> `3` = Apollo-wbak
>
> `11` = DataTools-SQL-BackTrack
>
> `17` = SAP
>
> `18` = DB2
>
> `20` = FlashBackup
>
> `21` = Split-Mirror
>
> `22` = AFS

-p *policy* Specifies the policy for which the backups or archives were performed.

-s *mm/dd/yy* [*hh:mm:ss*]

-e *mm/dd/yy* [*hh:mm:ss*]
> Specifies the start and end date range for the listing. The `bprestore` command restores only files from backups or archives that occurred within the specified start and end date range.
>
> The date and time format are dependent on the user's locale. See NOTES.
>
> `-s` specifies a start date and time for the restore window. `bprestore` restores files only from backups or archives that occurred at or after the specified date and time. Use the following format:
>
> *mm/dd/yy* [*hh*[:*mm*[:*ss*]]]
>
> The valid range of dates are from 01/01/1970 00:00:00 to 01/19/2038 03:14:07. The default start date is 01/01/1970 00:00:00.

-e specifies an end date and time for the restore window. `bprestore` restores only files in backups or archives that occurred at or before the specified date and time. Use the same format as for the start date and time.

The end backup date and time do not need to be exact, except for a true-image restore (see the -T option description). The bprestore command restores the file that has the specified backup date and time or the file that is the most recent backup preceding the end date and time. The default is the current date and time."

If you do not specify either -s or -e, `bprestore` restores the most recently backed up version of the file.

-T   Specifies a true-image restore, where only files and directories that existed in the last true-image backup are restored. This option is useful only if true-image backups were performed. If this option is not specified, all files and directories meeting the specified criteria are restored, even if they were deleted.

When the -T option is specified, the image requested must be uniquely identified. Unique identification is accomplished by using the -e option with seconds granularity. The -s option, if any, is ignored. The seconds granularity of an image can be retrieved by using the `bplist` command with the -l and -Listseconds options.

-w [*hh:mm:ss*]
Causes NetBackup to wait for a completion status from the server before returning you to the system prompt.

The date and time format are dependent on the user's locale. See NOTES.

You can optionally specify a wait time in hours, minutes, and seconds. The maximum wait time you can specify is 23:59:59. If the wait time expires before the restore is complete, the command exits with a timeout status. The restore, however, still completes on the server.

Specifying 0 or not specifying a time, means wait indefinitely for the completion status.

-k "*keyword_phrase*"
Specifies a keyword phrase for NetBackup to use when searching for backups or archives from which to restore files. The phrase must match the one that was previously associated with backup or archive by the -k option of the `bpbackup` or `bparchive` command.

You can use this option in place of or in combination with the other restore options in order to make it easier to restore your backups and archives. The following meta characters can simplify the task of matching keywords or parts of keywords in the phrase:

* matches any string of characters.

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? matches any single character.

[ ] matches one of the sequence of characters specified within the brackets.

[-] matches one of the range of characters separated by the "-".

The keyword phrase can be up to 128 characters in length. All printable characters are permitted including space (" ") and period ("."). The phrase must be enclosed in double quotes ("...") or single quotes ('...') to avoid conflict with the UNIX shell.

The default keyword phrase is the null (empty) string.

-f *listfile*

Specifies a file (*listfile*) containing a list of files to be restored and can be used instead of the *filenames* option. In *listfile*, list each file path on a separate line.

The format required for the file list depends on whether the files have spaces or newlines in the names.

To restore files that do not have spaces or newlines in the names, use this format:

filepath

Where *filepath* is the path to the file that you are restoring. For example:

/home

/etc

/var

To restore files that have spaces or newlines in the names, use one of the following formats:

filepathlen filepath

filepathlen filepath start_date_time end_date_time

filepathlen filepath -s *datetime* -e *datetime*

The *filepath* is the path to the file you are restoring.

The *filepathlen* is the total number of characters in the file path.

The *start_date_time* and *end_date_time* are the decimal number of seconds since 01/01/1970 00:00:00.

datetime is the same as the command line (*mm/dd/yy* [*hh*[:*mm*[:*ss*]]]). The start and end date and time specified on the command line is used unless a line in *listfile* overrides it. The dates may change from line to line.

The user's locale affects how dates and time are specified. See NOTES.

You can exclude a file or directory path that was previously included in the restore by placing an exclamation mark (!) in front of the file or directory path (except when performing NDMP restores).

The following is an example that uses *filepathlen filepath*:

```
5 /home
4 /etc
4 /var
19 /home/abc/test file
12 !/etc/passwd
```

filenames   Names one or more files to be restored and can be used instead of the -f
               option.

               Any files that you specify must be listed at the end, following all other
               options. You must also specify absolute file paths. You can exclude a file
               or directory path that was previously included in the restore by placing
               an exclamation mark (!) in front of the file or directory path (except when
               performing NDMP restores).

NOTES

The format that you must use for date and time values in NetBackup commands varies
according to the locale setting.

If you are uncertain of the NetBackup command requirements for your locale, enter the
command with the -help option and check the usage. The following is part of the
bpbprestore usage statement output that shows the -s, -e, and -w options:

```
[-s mm/dd/yyyy  [HH:MM:SS]] [-e mm/dd/yyyy  [HH:MM:SS]]
      [-w [hh:mm:ss]]
```

Note formats for the month, day, year and hours, minutes, seconds. These are for a locale
setting of C, and may be different for other locales. For more information on locale, see the
locale(1) man page for your system.

EXAMPLES

◆   Example 1

     To restore files from backups of /usr/user1/file1 that were performed between
     04/01/2001 06:00:00 and 04/10/2001 18:00:00, enter the following (all on one line):

```
bprestore -s 04/01/2001 06:00:00 -e 04/10/2001 18:00:00
/usr/user1/file1
```

◆   Example 2

     To restore files listed in a file named restore_list by using the most recent
     backups, enter the following:

```
     bprestore -f restore_list
```

◆   Example 3

To restore the directory `/home/kwc` from the backups that are associated with a keyword phrase that contains "My Home Directory" and use a progress log named `/home/kwc/bkup.log`, enter the following (all on one line):

```
bprestore -k "*My Home Directory*" -L /home/kwc/bkup.log  /home/kwc
```

◆ Example 4

To restore the `D` drive on the Windows NT client slater from the backups that are associated with a keyword phrase that contains "My Home Dir" and use a progress log named `/home/kwc/bkup.log`, enter the following (all on one line, or using the backslash continuation character):

```
bprestore -k "*My Home Dir*" -C slater \
-D slater -t 13 -L /home/kwc/bkup.log  /D
```

◆ Example 5

Assume you have a rename file named `/home/kwc/rename` on a UNIX client and it contains the following:

```
change /home/kwc/linkback to /home/kwc/linkback_alt
```

To restore the hard link named `/home/kwc/linkback` to alternate path `/home/kwc/linkback_alt` on that client, run the following command:

```
bprestore -H -R /home/kwc/rename /home/kwc/linkback
```

◆ Example 6

Assume you want to restore files from backups of `/home/user1` that were performed between 04/01/01 06:00:00 and 04/10/01 18:00:00. You also want to exclude all files with a `.pdf` extension, except for the one named `final_doc.pdf`. To do this, run the following (all on one line, or using the backslash continuation character):

```
bprestore -s 04/01/01 06:00:00 -e 04/10/01 18:00:00 /home/user1 \
!/home/user1/*.pdf /home/user1/final_doc.pdf
```

FILES

```
$HOME/bp.conf
```

```
/usr/openv/netbackup/logs/bprestore/log.mmddyy
```

SEE ALSO

`bp(1)`, `bparchive(1)`, `bpbackup(1)`, `bplist(1)`

OTM Parameter Information   C

Open Transaction Manager Parameters

The Open Transaction Manager (OTM) parameters in the registry are used to define the behavior of OTM. NetBackup uses OTM to back up files, databases, and applications that are open or active.

Open Transaction Manager establishes a point-in-time view, or snapshot, of the data on the drives that contain files to be backed up. NetBackup then backs up the selected files as they existed at the time of the snapshot, regardless of file system activity. The snapshot is maintained by using a cache system to store changes that occur during the backup.

In addition to eliminating problems with busy files, Open Transaction Manager keeps all relationships between files in the backup intact. For example, assume that keywords in files A and B must be synchronized for an application to work. Without OTM, if A is backed up but B is changed before it is backed up, the two files are not synchronized after a restore and the application will not work. With OTM, all files are backed up as they exist at a single point in time so that relationships are maintained and these problems cannot occur.

Windows Registry Description

The Windows registry is divided into sections and each section is formatted as follows:

[*section name*]
`parameter name` = *value*

Where:

[*section name*]	Identifies the start of a new configuration file section.
`parameter name`	Identifies the name of a configuration file parameter.
value	Is the value to be set for the associated configuration file parameter.

The following describes the OTM section of the registry. An example registry follows these descriptions.

[otm] Section

OTM_Cache_File

Specifies the location of the cache file that contains the copy of data that changes during the backup. For best performance, place the cache file on a drive that is not backed up. By default, the program determines the cache location at run time (for example, `C:\temp`).

OTM_Cache_Control

Specifies the frequency with which Open Transaction Manager clears its cache during a backup, which can help to reduce the size of the cache file. For example, if this value is set to 50, then after every 50 files that are backed up, Open Transaction Manager clears its cache of data that it has for those files. A lower number results in the cache being cleared more often, but that can decrease performance. The default setting is 0, which means cache clearing does not occur.

When OTM_Current is set to 0 (meaning that global snapshots are used), the OTM_Cache_Control setting works as described in the following examples. For these examples, assume that OTM_Current is set to 0 and that there are two drives: C and D. Also assume that both drives are backed up and that Open Transaction Manager places the cache on drive C.

- If OTM_Cache_Control is set to 0, the cache is never cleared and cannot grow past the OTM_Cache_Size_Init setting. This means that OTM_Cache_Size_Init must always be set for the maximum amout of data expected.

- If OTM_Cache_Control is greater than 0, Open Transaction Manager clears the cache of data for drive C after the backup of drive C is complete. Open Transaction Manager then allows the cache to grow to the OTM_Cache_Size_Max setting and clears it periodically, according to the OTM_Cache_Control setting. This allows you to set OTM_Cache_Size_Init to a lower value because if more space is required, Open Transaction Manager can increase the OTM_Cache_Size_Max setting.

OTM_Cache_Control is not used if **Allow multiple data streams** is also set for the policy and more than one backup runs at a time. The action that occurs in this instance depends on whether the backups were synchronized.

- If more than one backup is running and the backups were synchronized, then cache control is not performed for any of the backups.

- **-** If more than one backup is running but the backups were not synchronized, then open transaction management is enabled for the first backup but disabled for the rest.

`OTM_Cache_Size_Init`

Specifies the initial size of the cache file (in megabytes). If you do not specify a value, NetBackup sets it to 150 megabytes. See "Guidelines for Setting the OTM Cache" on page 145 for more information.

`OTM_Cache_Size_Max`

Specifies the maximum cache size (in megabytes) of the cache file. The guideline for maximum cache size is to set it to 10% of all used disk space. For example, if your used disk space is 1 GB, set the maximum cache to 100 MB. A shortcut is to set the maximum cache size to 0 MB and let NetBackup determine the appropriate value at run time. The default maximum cache size for the client is 592 MB, and for a master or media server is 250 MB.

If the cache file reaches this size and more cache is required, the action depends on the `OTM_Error_Control` setting:

- **-** If `OTM_Error_Control` is set to 0 (abort on error), the backup aborts. This is the default setting.

- **-** If `OTM_Error_Control` is set to 1 (disable OTM), open transaction managment is turned off and the backup continues. However, relationships between the backed up files can be lost because the snapshot is not used.

- **-** If `OTM_Error_Control` is set to 2 (retry OTM), NetBackup disables open transaction management and then attempts to enable it again before continuing the backup. This second try starts over with a new snapshot, so as with `OTM_Error_Control` set to 1 (disable OTM), relationships between backed up files can be lost.

For more information, see "Guidelines for Setting the OTM Cache" on page 145.

`OTM_Logging`

Specifies the logging level for open transaction management but does not affect other logging. This allows you to obtain more information about an open transaction management problem without affecting the logging level for other parts of the backup. The value can range from 0 to 3, with level 3 providing the most information. The default value is 0.

`OTM_Quiescent_Timeout`

Specifies how many seconds to wait for a quiet period to occur. If this time expires, the backup proceeds, but without open transaction management. The default time period is 60 seconds.

`OTM_Quiescent_Wait`

Specifies the duration (in seconds) of the quiet period that must occur before NetBackup starts Open Transaction Manager. The quiet period is a period of time during which no writes are being performed on the drives or volumes to be backed up. The default time period is 5 seconds.

`OTM_Sync_Timeout`

Intended for use with multiple data streams and specifies how long NetBackup waits to determine if other backup jobs are going to start for this schedule and client before enabling open transaction managment. The default wait time period is 60 seconds.

If another backup starts up within this time period, the wait cycle restarts. For example, if this setting is at the default, the first backup starts and waits 60 seconds for other backups. If a second backup starts 30 seconds into the wait cycle, the wait cycle restarts for both backups. If no further backups start within the second 60 second period, the first backup will have waited 90 seconds and the second backup will have waited 60 seconds.

If the **Allow multiple data streams** is not set for the policy, you can eliminate the initial wait period by setting `OTM_Sync_Timeout` to 0.

`OTM_Use`

Enables open transaction management. This must be turned on for open management to occur. Enter yes or 1 to enable OTM, or no or 0 to disable OTM.

`OTM_Error_Control`

Specifies the behavior of the backup when an open transaction management error is encountered during a backup. The most likely error is a cache full condition. The possible settings are as follows:

- If `OTM_Error_Control` is set to 0 (abort on error), the backup aborts. This is the default setting.

- If `OTM_Error_Control` is set to 1 (disable OTM), open transaction managment is turned off and the backup continues. However, relationships between the backed up files can be lost because the snapshot is not used.

- If `OTM_Error_Control` is set to 2 (retry OTM), NetBackup disables open transaction management and then attempts to enable it again before continuing the backup. This second try starts over with a new snapshot, so as with `OTM_Error_Control` set to 1 (disable OTM), relationships between backed up files can be lost.

Use 1 (disable OTM) or 2 (retry OTM) only if there is no concern about file relationships. With either of these settings, file relationships can be affected, if, for example, two files are backed up from different snapshots or if one is from a snapshot and the other is not from a snapshot.

`OTM_Current`

The `OTM_Current` setting determines the type of snapshot that is taken of the drive. Two snapshot types are available: individual drive or global.

Individual Drive Snapshots

Specifies that OTM takes a snapshot of each drive and backs it up before proceeding to the next drivet. For example, assume that drives C and D are being backed up. OTM first takes a snapshot of drive C, backs it up, and discards the snapshot. Next, OTM takes a snapshot of drive D, backs it up, and discards the snapshot. To specify this type of snapshot, the `OTM_Current` setting should be 1.

Open transaction management is enabled on only one drive at a time, depending on which one is being backed up. This mode is useful when it is not necessary to maintain relationships between files on the different drives.

Global Drive Snapshots

Specifies that OTM takes a snapshot that includes all drives that are part of the backup, then backs up the drives. For example, assume that drives C and D are being backed up. OTM first takes a snapshot of drives C and D. Drive C is backed up, then drive D is backed up. OTM then discards the snapshot. To specify this type of snapshot, the `OTM_Current` setting should be 0.

Open transaction management is enabled on both the C and D drives for the entire duration of the backup. This mode is useful when it is necessary to maintain relationships between files on the different drives.

Guidelines for Setting the OTM Cache

The required settings for `OTM_Cache_Size_Init` and `OTM_Cache_Size_Max` depend on the system that is being backed up, and on how Open Transaction Manager is configured. The following explains how NetBackup chooses a drive for the cache and how this choice affects the cache requirements.

When open transaction management is enabled and a backup starts, the cache file is created and NetBackup attempts to place it on a drive where open transaction management is not used. If it is used on all drives, NetBackup places the cache file on a drive that is big enough to contain it.

The requirement for the initial cache size depends on whether the cache is placed on a drive where open transaction management is used:

◆ If the cache file is on a drive where open transaction management is being used, the size of the cache file does not grow past the initial size. Here, the initial cache size must be large enough to hold the maximum amount of data that is anticipated (10% of the used disk space is the guideline).

◆ If the cache file is placed on a drive where open transaction management is not used, the size of the cache file can grow to the maximum size. Here, initial cache size can be set to less than the maximum because it will grow.

The snapshot setting determines the drives where NetBackup uses open transaction management and at what point is it enabled:

◆ Individual drive snapshot (set OTM_Current to 1) enables open transaction management on each drive as it is backed up. Here, it is possible to place the cache on a drive where open transaction is not used so a smaller initial cache size is possible.

◆ Global drive snapshot (set OTM_Current to 0) enables open transaction management on all drives that are backed up at the start of the backup. Here, the cache can grow from its initial size only if there is a drive that is not being backed up so that cache can be placed on that drive.

Open Transaction Manager uses a kernel mode driver. The type of Windows system (NT or 2000) on which OTM is installed can affect the amount of memory available and the maximum cache file size.

	Windows 2000	Windows NT
Memory that can be allocated by kernel mode drivers (the memory is shared by all kernel mode drivers in the system)	380 MB	192 MB
Memory used by Open Transaction Manager per MB of OTM cache file	40 KB	40 KB
Maximum cache file size, which is dependent on the number of kernel mode drivers on the server	3 GB	2 GB
The OTM_Cache_Size_Max setting may need to be manually configured downward if the total amount of data on the server is greater than: (This is dependent on the amount of memory being used by other kernel mode drivers on the server.)	30 GB	20 GB

If OTM has reached the kernel driver memory limitation or the physical memory limitation available for the Windows NT or Windows 2000 system, the following entry is logged in the bpkar log from the client:

OTM: not enabled (err=0x000005aa)

The backup will continue but will not use OTM, and the backup may end with an exit code of "Status 1 - not all files backed up". A smaller OTM_Cache_Size_Max size should be set if there is enough physical RAM available in the server.

Example Windows Registry

The following is an example of the OTM section in a Windows registry:

```
[otm]
OTM_Cache_File = C:\temp
OTM_Cache_Control = 0
OTM_Cache_Size_Init = 10
OTM_Cache_Size_Max = 50
OTM_Logging = 0
OTM_Quiescent_Timeout = 60
OTM_Quiescent_Wait = 5
OTM_Sync_Timeout = 60
OTM_Use = 1
OTM_Error_Control = 0
OTM_Current = 0
```

Glossary

access control list (ACL)

Security information associated with files on some file systems.

ACS

Automated Cartridge System. ACS can refer to any of the following:

◆ A type of Media Manager robotic control. This robot type is supported only by NetBackup DataCenter servers.

◆ The StorageTek (STK) system for robotic control.

◆ The highest-level component under STK's ACS library software, which refers to a specific standalone robotic library or to multiple libraries connected with a media passthru mechanism.

active job

A job for which NetBackup is currently processing backup or restore data.

activity logs

See "debug logs."

activity monitor

A NetBackup administration utility that displays information about NetBackup jobs and provides limited control over them.

administration client

See "remote administration console."

administrator

A user that is granted special privileges to install, configure, and manage the operation of a system, network, or application.

AIT

Sony Advanced Intelligent Tape, a type of tape drive or media type.

alternate-client restore

See "redirected restore (different client)."

alternate-target restore

See "redirected restore (different target)."

alternate path restore

See "redirected restore (different path)."

alternate read server

A server used to read a backup image which was originally written by a different media server. The media server specified as Alternate Read Server must have access to the media containing the backup image or images it is configured to read.

archive

A special kind of backup where NetBackup backs up the selected files, and if the backup is successful, deletes the files from the local disk. In this manual, references to backups also apply to the backup portion of archive operations except where otherwise noted.

archive bit

A file-status bit that the Microsoft based operating system sets when it writes a file, thereby indicating that the file has changed.

attributes for a policy

Configuration parameters that control the behavior of NetBackup during operations involving this policy.

autochanger

See "robotic library."

autoloader

See "robotic library."

automatic backup

A scheduled backup by the master server.

back up

> The act of copying and saving files and folders to storage media.

backup

> Refers to the process of copying and saving files and directories to storage media. For example, *the backup is complete.* This term can also refer to the collection of data that NetBackup saves for a client during a backup or archive. For example, *duplicate the backup.*
>
> Backup is two words when used as a verb. For example, *back up the file.*

backup, archive, and restore interface

> The name of the NetBackup Microsoft Windows and Java based user interfaces for clients. On servers these interfaces can be started through the NetBackup Administration Console.

backup window

> The period of time during which backups can begin.

block size

> The number of bytes in each block of data written on the media during a backup.

bp

> A backup, archive, and restore utility for users on NetBackup UNIX clients. It has a character-based, menu interface that can be run from terminals that do not have X Windows capabilities.

bpadm

> An administrator utility that runs on NetBackup UNIX servers. It has a character-based, menu interface that can be run from terminals that do not have X Windows capabilities.

bp.conf file

> A NetBackup configuration file on UNIX servers and also on UNIX, Macintosh, and OS/2 clients.

bp.ini file

> NetBackup initialization file for Novell NetWare target clients.

bpcd

> NetBackup Client service on Windows and the NetBackup Client daemon on UNIX.

bprd

NetBackup Request Manager service on Windows and NetBackup Request daemon on UNIX.

cancel a job

Terminating a job and removing it from the job queue.

carousel

See "robotic library."

catalogs

Internal NetBackup and Media Manager databases. These catalogs contain information about configuration, media, devices, status, errors, and the files and directories in the stored backup images.

CDF

Context-dependent file, which is a type of directory structure on a Hewlett-Packard system.

changer

See "robotic library."

class

See "policy."

client

The system with the files to back up, archive, or restore.

client-user interface

See "user interface."

cluster

See master and media server cluster.

command lines

Commands that users can execute either from the system prompt or in scripts.

compression

The process of compacting data to enable more efficient transmission and storage.

configuration

The parameters that govern the behavior of an application. This term can also refer to the manner in which a network or system is laid out or connected (for example, a network configuration).

consolidated eject

A process of ejecting media for more than one Vault session at a time. A Consolidated Eject can be performed for one or more logical vaults at one time.

consolidated report

A process of generating reports for more than one Vault session at a time. A Consolidated Report can be performed for one or more logical vaults at one time. Consolidated reports are organized by report title, not by vault.

cpio

A UNIX command that can be used for copying files to or from a cpio archive on disk or tape.

ctime

The time that a UNIX inode was changed.

cumulative-incremental backup

A backup that is scheduled by the administrator on the master server and backs up files that have changed since the last successful full backup. All files are backed up if no prior backup has been done. Also see "differential-incremental backup."

daemon

A program on a UNIX system that runs in the background and performs some task (for example, starting other programs when they are needed). Daemons are generally referred to as services or processes on Windows server systems.

database-agent clients

Clients with additional NetBackup software that is designed to back up relational databases.

database-extension clients

See "database-agent clients."

debug logs

Logs that can be optionally enabled for specific NetBackup and Media Manager programs and processes and then used to investigate problems.

destination storage unit

A storage unit to which Vault sends the data from a duplication operation. If the duplicated backup images are to be vaulted, then the destination storage unit must correspond to the robotic volume group.

device delays

Delays caused by the device that are beyond the control of the storage application. An example is the time required to position tape under the read and write heads.

device host

A host (that has Media Manager installed) where a drive or robotic control is attached or is defined.

device monitor

A Media Manager administration utility that provides monitoring and manual control of Media Manager storage devices. For example, an administrator or computer room operator can use this utility to manually reset devices or set them to the UP or DOWN state.

DHCP

Dynamic host configuration protocol. This TCP/IP protocol automatically assigns temporary IP addresses to hosts when they connect to the network.

differential-incremental backup

Scheduled by the administrator on the master server and backs up files that have changed since the last successful incremental or full backup. All files are backed up if no prior backup has been done. Also see "cumulative-incremental backup."

directory depth

The number of levels below the current directory level that the NetBackup interfaces show in their directory and file list displays.

directory tree

The hierarchical structure in which files are organized on a disk. Each directory lists the files and directories that are directly below it in the tree. On UNIX, the topmost directory is called the root directory.

disaster recovery

Recovering data from backups after a disk crash or other catastrophe.

disk

Magnetic or optical disk storage media.

disk-image backup

A bit-by-bit rather than a file system backup of a disk drive on a Windows platform.

DLT

Digital-linear tape or tape drive type.

Domain Name Service (DNS)

A program that handles name translation for network communications.

drive cleaning

The use of a special cleaning tape to clean the heads on a drive.

duplicate image

A copy of a backup image.

eject

Move media out of a robotic library.

encryption

Provides additional security by encrypting backup data on the client. This capability is available only with the NetBackup Encryption option.

entry and exit ports

See "media access port."

exclude list

A list that designates files or directories to exclude from automatic backups.

expiration (image)

The date and time when NetBackup stops tracking a backup image.

expiration (volume)

The date and time when the physical media (tape) is considered to be no longer usable.

external media ID

This is an identifier written on a media cartridge or canister to help the operator identify the volume before inserting it into a drive or robot. For labeled media, the external media ID should be the same as the media ID recorded on the media.

EVSN

See "external media ID."

FlashBackup

A special type of raw-partition backup that requires the NetBackup FlashBackup separately-priced option (this option is available only for NetBackup DataCenter).

flush level

Controls how often Netbackup clears its log files on a Novell NetWare or Microsoft Windows client platform.

fragment

A part of a backup or archive image. NetBackup can be configured to divide images into fragments when they exceed a certain size or span tapes.

frequency (backup)

How often NetBackup performs scheduled backups. For example, if the frequency is seven days then backups occur once a week.

FROZEN media state

If a volume is FROZEN, NetBackup keeps it indefinitely and can restore from it but not use it for further backups or archives.

full backup

A backup that copies, to a storage unit, all files and directories that are beneath a specified directory.

FULL media state

If this appears in a report or listing, it indicates the volume is FULL and cannot hold more data or be used for further backups.

global attributes

NetBackup configuration attributes that affect all policies.

GDM Dashboard

The name for the Global Data Manager interface. The Dashboard enables monitoring job and drive activity on multiple master servers, as well as providing alerts to problem conditions.

GDM Managed Server

A NetBackup master server that appears as a managed master server in the left pane of the GDM Dashboard.

GDM Server

A NetBackup master server that has the Global Data Manager license activated. When logging into this host, the user can monitor the activity on multiple master servers using the GDM Dashboard interface. If the host has installed the Advanced Reporter option, the reports show information on multiple master servers.

Global Data Manager (GDM)

A separately-priced option (for UNIX servers) that provides an interface with a tree view where the administrator can view and administer multiple master servers. The server where the option is installed is called a GDM Server.

Global Device Database

A single host that serves as the repository for global device configuration information. When you install NetBackup, by default the master server is configured as the global device database host.

GNU tar

A public domain version of the UNIX tar program.

goodies directory

A directory containing programs, scripts, and other files that are not formally supported.

GUI

Graphical user interface.

hard link

On UNIX, a hard link is a pointer to the inode for the data. On a Windows server, a hard link is a directory entry for a file. Every file can be considered to have at least one hard link. On NTFS volumes each file can have multiple hard links, and a single file can appear in many directories (or even in the same directory with different names).

heap level

A parameter for memory-heap debugging on a Novell NetWare or Windows NetBackup client.

hierarchical storage management

The process of automatically migrating selected files from a managed file system to specified migration levels on secondary storage, while maintaining transparent access to those files.

host

A computer that executes application programs.

host name

Name by which a host computer is identified by programs and other computers in the network.

HSM

See storage migrator.

image

The collection of data that NetBackup saves for an individual client during each backup or archive. The image contains all the files, directories, and catalog information associated with the backup or archive.

import

The process of recreating NetBackup records of images so the images can be restored.

include list

A list that designates files or directories to add back in from the exclude list.

incremental backup

See "cumulative-incremental backup" and "differential-incremental backup."

inject

Move media into a robotic library.

inport

See "media access port."

inode

A UNIX data structure that defines the existence of a single file.

install_path

Directory where NetBackup and Media Manager software is installed. The default on Windows servers is `C:\Program Files\VERITAS` and on UNIX it is `/usr/openv`.

jbpSA

The Java-based NetBackup interface for performing user backups, archives, and restores.

jnbSA

The Java-based NetBackup interface for administrators.

job

A parcel of work submitted to a computer. NetBackup jobs are backups, archives, or restores.

kernel

The nucleus of an operating system.

keyword phrase

A textual description of a backup.

kill a job

See "cancel a job."

label

Identifier of a tape or optical disk volume. A recorded label includes a media ID.

A barcode label allows a barcode scanner to be used for media tracking.

library

See "robotic library."

link

> See "hard link" or "symbolic link."

LMF - Library Management Facility

> A Media Manager designation for a category of robot. For the specific vendor types and models in this category, see the VERITAS support web site.

> This robot type is supported only by NetBackup DataCenter servers.

load

> (noun) Amount of work that is being performed by a system or the level of traffic on a network. For example, network load affects performance.

> (verb) Copy data to internal memory. For example, load the installation program.

> (verb) Used to indicate tape drive initialization done when new media is being added.

logs

> Files where a computer or application records information about its activities.

mailslot

> See "media access port."

man pages

> Online documentation provided with UNIX computer systems and applications.

Master and media server cluster

> A NetBackup master server and the remote media servers that it is using for additional storage. It is possible to configure clusters only with NetBackup DataCenter servers. NetBackup BusinesServer supports only a single server, the master.

Master of Masters

> A NetBackup host where Global Data Manager software is installed. When logging into this host, the interface has a tree view where the administrator can view and administer multiple master servers.

master server

> The NetBackup server that provides administration and control for backups and restores for all clients and servers in a master and media server cluster. NetBackup BusinesServer supports only a single server and it is the master.

media

Physical magnetic tapes, optical disks, or magnetic disks where data are stored.

media access port

A slot or other opening in a robot where you can insert or remove a tape without having to access the interior of the robot. After inserting a tape, you move it to a slot by using an inject command. Prior to removing a tape, you move it to the port by using an eject command. The inject and eject commands are supported through the add and move screens in the Media Manager administration interface.

media host

NetBackup server to which the job (client) is sending the data.

media ID

An identifier that is written on a volume as part of the recorded label.

Media Manager

Software that is part of NetBackup and manages the storage devices and removable media.

Media Manager Host

Host where Media Manager is installed (may have devices attached).

media server

A NetBackup server that provides storage within a master and media server cluster. The master can also be a media server. A media server that is not the master is called a remote media server. NetBackup BusinesServer does not support remote media servers.

menu interface

A character-based interface for use on terminals that do not have graphical capabilities.

mount

Make a volume available for reading or writing.

mount point

The point where a file system on a disk logically connects to a system's directory structure so the file system is available to users and applications.

MPX

See "multiplexing."

mtime

The point in time when a UNIX or NTFS file is modified.

multiplexing

The process of sending concurrent-multiple backups from one or more clients to a single storage device and interleaving those images onto the media.

multiplexed group

A set of backups that were multiplexed together in a single multiplexing session.

NDMP

Network data management protocol. NetBackup requires the NetBackup for NDMP separately-priced option to support NDMP.

NetBackup Client service

NetBackup Windows service that runs on clients and servers and listens for connections from NetBackup servers and clients in the network. When a connection is made, this service starts the necessary programs.

NetBackup configuration options

On UNIX servers and on UNIX and Macintosh, clients, these settings are made in the `bp.conf` file. On NetWare target and OS/2 clients, they are in the `bp.ini` file. On Windows servers and Windows clients, these settings are called properties and are made through the Backup, Archive, and Restore interface or the Host Properties dialog in the NetBackup Administration Console.

NetBackup databases

See catalogs.

NetBackup Database Manager service

NetBackup Windows service that runs on the master server and manages the NetBackup internal databases (called catalogs). This service must be running on the master server during all NetBackup administrative operations.

NetBackup Device Manager service

The NetBackup Windows service that runs on a NetBackup server and starts the robotic control processes and controls the reservation and assignment of volumes. This service runs only if the server has devices under Media Manager control. The process is `ltid`.

NetBackup properties

Same as NetBackup configuration options but are called NetBackup properties on Microsoft Windows platforms.

NetBackup Request Manager service

The NetBackup Windows service that runs on the master server and starts the scheduler and receives requests from clients.

NetBackup Volume Manager service

A NetBackup Windows service that runs on a NetBackup server, allows remote administration of Media Manager, and manages volume information. The process is `vmd`.

NIS

Network information service.

NLM

NetWare loadable module.

NFS

Network file system.

nonrobotic

See "standalone."

ODL

Optical disk library. This robot type is supported only by NetBackup DataCenter servers.

offsite volume group

A volume group in which media will appear after having been ejected from the robot for vaulting. When Vault ejects media it is moved from the robotic volume group to the off-site volume group.

offsite volume pool

A volume pool that contains media that is to be ejected and vaulted. Backup images written to an off-site volume pool by an original NetBackup backup policy or by Vault's duplication feature will be ejected and vaulted. More than one off-site volume pool can be specified for the Eject step of a Vault profile.

original backup

A backup image created by a backup job. A single backup image or all backup images created by an Inline Tape Copy (multiple copy) configuration are considered original backups. A backup image created by a duplication job is not an original backup.

outport

See "media access port."

partitions

The logical partitions into which a magnetic disk is divided.

patch

A program that corrects a problem or adds a feature to an existing release of software.

path length

Number of characters in a pathname.

pathname

The list of directories in the path to a destination directory or file.

PC clients

NetBackup clients that have Microsoft Windows, Macintosh, or IBM OS/2 operating systems.

peername

The name by which a computer identifies itself when establishing connections to other systems.

policy

Defines the backup characteristics for a group of one or more clients that have similar backup requirements.

port

A location used for transferring data in or out of a computer.

Also see "media access port."

primary copy

The copy of an image that NetBackup uses to satisfy restores. When NetBackup duplicates an image, the original is designated as the primary copy.

privileges

The tasks or functions that a user, system, or application is authorized to perform.

profile

A vault profile is a way to save configuration settings. Specific parameters for duplication, catalog backup, eject, and report or any combination of these steps, are configured within a profile.

progress report

Log where NetBackup records events that occur during user operations.

proxy restore

A proxy restore allows the user to restore files that he has write access to, on a machine other than his desktop. The files must be in a backup of the machine to which they are being restored.

QIC

Quarter-inch-cartridge tape.

queued job

A job that has been added to the list of jobs to be performed.

raw-partition backup

Bit-by-bit backup of a partition of a disk drive on UNIX. On Windows, this is called a disk-image backup.

rbak

The program that Apollo clients use to read data from tape during a restore.

recorded media ID

This is an identifier written as part of the label on a volume and used by Media Manager to ensure that the correct volume is mounted. The recorded media ID should match the external media ID.

redirected restore (different client)

Restoring files to your client when they were originally backed up from a different client. The administrator using the interface on the master server can direct a restore to any client (this variation is called a server directed restore).

redirected restore (different target)

On a Novell NetWare server platform running the NetBackup target version of client software, this operation restores files to a different target than the one from which they were backed up.

redirected restore (different path)

Restores files to a different directory than the one from which they were backed up.

registry

A Microsoft Windows database that has configuration information about hardware and user accounts.

remote administration console

A Windows NetBackup client that has the administration interface software installed and can be used to administer NetBackup servers.

remote media server

A media server that is not the master. Note that only NetBackup DataCenter supports remote media servers. NetBackup BusinesServer supports only a single server, the master.

residence

In Media Manager, information about the location of each volume is stored in a volume database. This residence entry contains information, such as robot number, robot host, robot type, and media type.

resource

A Novell NetWare term that refers to a data set on the target. For example, in DOS, resources are drives, directories, and files. Also see "target service."

restore

(verb) The act of restoring selected files and directories from a previous backup or archive and returning them to their original directory locations (or to a different directory).

(noun) The process of restoring selected files and directories from a previous backup and returning them to their original directory locations (or to a different directory).

retention level

An index number that corresponds to a user-defined retention period. There are 10 levels from which to choose (0 though 9) and the retention period associated with each is configurable. Also see "retention period."

retention period

The length of time that NetBackup keeps backup and archive images. The retention period is specified on the schedule.

robotic arm

The component of a robotic library that physically selects the media (tape or optical disk).

robotic library

Refers to a robot and its accompanying software. A robotic library includes a collection of tapes or optical platters used for data storage and retrieval. For example, a Tape Library DLT (TLD) refers to a robot that has TLD robotic control.

robotic volume group

A volume group from which media will be ejected and vaulted. When Vault duplicates backups, they are duplicated to media in the robotic volume group.

root

The highest level directory in a hierarchical directory structure. In MS-DOS, the root directory on a drive is designated by a backslash (for example, the root on drive C is C:\). On UNIX, the root directory is designated by a slash (/).

Also, a UNIX user name having administration capability.

RS-232

An industry-standard interface for serial communications and sometimes used for communicating with storage peripherals.

RSM Interface

Application in Windows 2000 used to manage Removable Storage Manager (RSM) devices.

RSM - Removable Storage Manager

A Media Manager designation for a category of robot. For the specific vendor types and models in this category, see the VERITAS support web site.

Also, a component of the Windows 2000 operating system that manages storage devices.

RVSN

See "recorded media ID."

schedules

Controls when backups can occur in addition to other aspects of the backup, such as: the type of backup (full, incremental) and how long NetBackup retains the image.

SCSI

Small computer system interface. This is a type of parallel interface that is frequently used for communicating with storage peripherals.

server-directed restore

Using the user interface on the master server to restore files to any client. Only the administrator can perform this operation.

server independent restore

Restoring files by using a NetBackup server other than the one that was used to write the backup. This feature is available only with NetBackup DataCenter.

server list

The list of servers that a NetBackup client or server refers to when establishing or verifying connections to NetBackup servers. On a Windows server and Microsoft Windows clients, you update the list through a dialog box in the interface. On a UNIX server and UNIX and Macintosh clients, the list is in the `bp.conf` file. On NetWare target and OS/2 clients, the list is in the `bp.ini` file.

service

A program on a Windows server system that runs in the background and performs some task (for example, starting other programs when they are needed). Services are generally referred to as daemons on UNIX systems.

session

An instance of NetBackup checking its schedules for backups that are due, adding them to its worklist, and attempting to complete all jobs in the worklist. For user backups and archives, a session usually consists of a single backup or archive.

Session (Vault)

A vault session consists of executing a particular profile or profiles.

shared drives

See "Shared Storage Option (SSO)."

Shared Storage Option (SSO)

A separately priced VERITAS software option that allows tape drives (standalone or in a robotic library) to be dynamically shared among multiple NetBackup and Storage Migrator servers.

This option is supported only on NetBackup DataCenter servers.

SMDR

Storage management data requestor, a Novell NetWare program that provides its services transparently to all SMS modules and lets remote and local modules communicate with one another.

SMS

Novell NetWare storage management services.

source volume group

A volume group from which Vault can select backups to duplicate. This parameter is used to restrict the list of backups from all backups that reside on media in any volume group to backups that reside on media in a single volume group. Where a volume group corresponds to a particular robot, the profile will duplicate only backups on media in that robot. The Source Volume Group is normally only specified if you have multiple robots attached to the same server, for example you want to duplicate backups that reside in robot 0 to media that reside in robot 1.

SSO

See "Shared Storage Option (SSO)."

stacker

Usually a small robotic library that contains one drive only. See "robotic library."

standalone

A qualifier used with drives and media to indicate they are not associated with a robot. For example, a standalone tape drive is one where you must manually find and insert tapes before using them. A standalone volume is one that is located in a standalone drive or is stored outside of a drive and designated as standalone in the volume configuration.

status code

A numerical code, usually accompanied by a troubleshooting message, that indicates the outcome of an operation.

storage migrator

Refers to the VERITAS Storage Migrator line of hierarchical storage management products for UNIX and Windows. These products make extra room on a disk by transparently moving data to other storage and then transparently retrieving the data when it is needed by a user or application.

Storage Migrator is available only for NetBackup DataCenter servers.

storage unit

Refers to a storage device where NetBackup or Storage Migrator stores files. It can be a set of drives in a robot or consist of one or more single tape drives that connect to the same host.

SUSPENDED media state

If a volume is SUSPENDED, NetBackup can restore from it but cannot use it for backups. NetBackup retains a record of the media ID until the last backup image on the volume expires.

symbolic link

On a UNIX system, this is a pointer to the name of the file that has the source data.

TapeAlert

Allows reactive cleaning for most drive types and is a function of the tape drive.

tape format

The format that an application uses to write data on a tape.

tape marks

A mark that is recorded between backup images on a tape.

tape overhead

> The space required for data that is not part of the backup images. For example, tape marks and catalogs of what are on the tape are considered overhead.

tape spanning

> Using more than one tape to store a single backup image.

tar

> Tape Archive program that NetBackup uses to extract backup images during a restore.

target

> See "target service."

target service

> A Novell NetWare service that needs storage management. The SMS views all services (for example, print services, communication services, workstations) as targets.

Target Service Agent

> A Target-service agent is a Novell NetWare agent that prepares the target's data for SMS during a backup and for the target during a restore.

TLD - Tape Library DLT

> A Media Manager designation for a category of robot. For the specific vendor types and models in this category, see the VERITAS support web site.

TLH - Tape Library Half-inch

> A Media Manager designation for a category of robot. For the specific vendor types and models in this category, see the VERITAS support web site.
>
> This robot type is supported only by NetBackup DataCenter servers.

TLM - Tape Library Multimedia

> A Media Manager designation for a category of robot. For the specific vendor types and models in this category, see the VERITAS support web site.
>
> This robot type is supported only by NetBackup DataCenter servers.

TL4 - Tape Library 4MM

> A Media Manager designation for a category of robot. For the specific vendor types and models in this category, see the VERITAS support web site.

TL8 - Tape Library 8MM

A Media Manager designation for a category of robot. For the specific vendor types and models in this category, see the VERITAS support web site.

timeout period

The period of time that an application has allotted for an event to occur.

TIR

See "true image restore."

tpconfig

A Media Manager administration utility for configuring devices which is started from the command line. On UNIX, it has a character-based menu interface that can be run from terminals that do not have X Windows capabilities. tpconfig also has a command line interface.

transfer rate

The rate at which computer information is transferred between a source and a destination.

transport

See "robotic arm."

true image restore

Restores the contents of a directory to what it was at the time of any scheduled full or incremental backup. Previously deleted files are ignored.

TS8 - Tape Stacker 8MM

A Media Manager designation for a category of robot. For the specific vendor types and models in this category, see the VERITAS support web site.

TSA

See "Target Service Agent."

TSD - Tape Stacker DLT

A Media Manager designation for a category of robot. For the specific vendor types and models in this category, see the VERITAS support web site.

TSH - Tape Stacker Half-inch

A Media Manager designation for a category of robot. For the specific vendor types and models in this category, see the VERITAS support web site.

This robot type is supported only by NetBackup DataCenter servers.

unassigned media

Media that contain no valid images. A piece of unassigned media has an entry in the volumes database but no entries in the images database. Unassigned Media do not have a "time assigned" in the Media section of the GUI.

user interface

The program used to perform user backups, archives, and restores.

user operation

A backup, archive, or restore that is started by a person on a client system.

Vault

Vault is a separately-priced NetBackup option that provides offsite backup management. Vault automatically duplicates specified backup images, and automates the process of offsite media rotation (a critical component of any backup or disaster recovery strategy). Vault manages offsite storage and retrieval of media for original backups, duplicate backups, and catalog backups. Additionally, NetBackup Vault generates reports to track the location and content of each piece of media.

vault

In the context of the NetBackup Vault, a vault is logical entity associated with a particular robot that acts as a designated holding place for backups that will eventually be sent to a physical offsite vault. The term 'vault' is used to refer both to the process, and to the physical storage location of a set of tapes offsite.

vault process

Vaulting is the process of choosing backup images to duplicate or eject, optionally duplicating backups, ejecting duplicate or original media, storing it at an offsite location, and later returning expired media to your robot. Vaulting is an integral part of the disaster recovery process.

verbose flag

Configuration file entry that causes a higher level of detail to be written in the logs.

verify

An operation that compares the list of files that are actually on a volume with what NetBackup has recorded as being on it. The data that is on the media is not verified.

vmadm

A Media Manager administrator utility for managing volumes. It runs on UNIX and has a character-based, menu interface that can be run from terminals.

vm.conf

A Media Manager configuration file with entries that include the servers that can manage local devices and default media ID prefixes for media that do not contain barcodes.

volume

Media Manager volumes are logical units of data storage or cleaning capability on media that have been assigned media IDs and other attributes, which are recorded in the Media Manager volume database.

volume configuration

Refers to configuration information that is stored in the Media Manager volume database.

volume database

An internal database where Media Manager keeps information about volumes. All hosts (where Media Manager is installed) have a volume database. However, the database is empty unless the host is designated as a volume database host.

volume database host

The host (where Media Manager is installed) that contains information about the volumes that Media Manager uses in a device. Because NetBackup BusinesServer supports only a single server, the volume database host is always on the same server.

volume group

A set of volumes that are configured within Media Manager to reside at the same physical location (for example, in a specific robot).

volume pool

A set of volumes that are configured within Media Manager to be used by a single application and are protected from access by other applications and users.

wakeup interval

The time interval at which NetBackup checks for backups that are due.

wildcard characters

A character that can be used to represent other characters in searches.

Microsoft Windows

(noun) Describes a line of operating systems developed by Microsoft, Inc.

For more information on the Windows operating systems that NetBackup supports, refer to the VERITAS support web site at `http://www.support.veritas.com`.

Windows

(adjective) Used to describe a specific product or clarify a term. Some examples are: Windows 95, Windows 98, Windows NT, Windows 2000, Windows servers, Windows clients, Windows platforms, Windows hosts, and Windows GUI.

Windows servers

A term that defines the Windows server platforms that NetBackup supports; those platforms are: Windows NT and 2000.

Windows clients

A term that defines the Windows client platforms that NetBackup supports; those platforms are: Windows 95, 98, ME, NT, 2000, XP (for 32- and 64-bit versions), and LE.

Windows Display Console

A NetBackup-Java interface program that runs on Windows 2000, NT, 98, and 95 computers. Users can start this interface on their local system, connect to a UNIX system that has the NetBackup-Java software installed, and then perform any user operations that their permissions allow.

WORM media

Write-once, read-many media for optical disks. NetBackup BusinesServer does not support WORM media.

xbp

The X Windows-based backup, archive, and restore program for users on NetBackup UNIX clients.

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