VERITAS NetBackup™ 3.4

User's Guide

UNIX

VERĪTAS

Contents

Introduction to *NetBackup User's Guide - UNIX*

This guide describes how to use NetBackup for the UNIX platform to perform backups, archives, and restores. In this guide, VERITAS NetBackup is referred to as NetBackup.

The guide is intended for the system administrator and for the UNIX end user. It assumes a basic knowledge of UNIX commands and operations.

Organization of *NetBackup User's Guide - UNIX*

The following are guidelines for using this document:

◆ "Introduction to NetBackup," provides an overview of NetBackup, describes how the end user operates NetBackup, and describes technical terms and concepts. Read this chapter to become familiar with the world of NetBackup.

◆ "Using the Java Interface," explains how to use the NetBackup Java interface to perform backup, archive, and restore operations.

◆ "Using the Menu Interface," explains how to use the NetBackup menu interface, bp, to perform backup, archive, and restore operations.

◆ "Using the X-Windows Interface," explains how to use the graphical interface, xbp, to perform backup, archive and restore operations.

◆ "Reference Guide to xbp and bp," describes the various windows, screens, and menus associated with the xbp and bp user interface programs.

◆ Use the glossary for an explanation of terms used in this manual and in the NetBackup interfaces.

Related Documentation

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

◆ *NetBackup Installation Guide - PC Clients*

Explains how to install NetBackup PC client software. The PC clients are Windows NT/2000, Windows 95, Windows 98, Macintosh, OS/2 Warp, and Novell NetWare.

If you have a Unix 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 - UNIX*

Explains how to configure and manage NetBackup Datacenter on a UNIX system.

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

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

◆ *NetBackup Troubleshooting Guide - UNIX*

Provides troubleshooting information for UNIX based NetBackup products.

If you have a Windows NT/2000 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 - Windows NT/2000*

Explains how to configure and manage NetBackup Datacenter on a Windows NT/2000 server system.

◆ *NetBackup BusinesServer System Administrator's Guide - Windows NT/2000*

Explains how to configure and manage NetBackup BusinesServer on a Windows NT/2000 server.

◆ *NetBackup Troubleshooting Guide - Windows NT/2000*

Provides troubleshooting information for Windows NT/2000 based NetBackup products.

Conventions

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

Type Style

Table 1. 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.
Sans 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 and is used to call attention to information that makes it easier to use the product or helps you to avoid problems.

Caution This is a Caution and is used to warn you about situations that can cause data loss.

Key Combinations

Some keyboard command sequences use two or more keys at the same time. For example, you may have to hold down the Ctrl key before you press another key. When this type of command is referenced, the keys are connected by plus signs. 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.

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.veritas.com/
```

For product assistance, contact VERITAS Customer Support.

US and Canadian Customers: 1-800-342-0652

International Customers: +1 (650) 335-8555

VERITAS Customer Support can also be reached through electronic mail at:

```
support@veritas.com
```

Introduction to NetBackup 1

NetBackup lets you back up, archive, and restore files, directories, or raw partitions that reside on your client system. In NetBackup terminology, the system that needs the backup or restore is the *client* (or agent). The system that manages the storage and retrieval of the backup data is called the NetBackup *server*.

User-Directed Operations

User-directed operations are NetBackup operations the user can perform from the client. These operations can be performed without administrator intervention or logging into the NetBackup server.

User-directed operations include:

◆ Back up files, directories or raw partitions that reside on your local disk. A backup operation saves the data to a storage device on the NetBackup server.

◆ Archive files and directories that reside on your local disk. An archive operation saves the selected files and directories to a storage device on the NetBackup server and then deletes them from your local disk.

◆ Restore previously backed up or archived files, directories, or raw partitions to either the location from which they were backed up or to another location. You select what you want to restore and NetBackup automatically restores it to the disk.

After you start a user-directed operation, the server manages storage and retrieval of data. All file transfers occur in the background so there is no long wait for the operation to complete before regaining control of your terminal.

User Interfaces

NetBackup provides four user interfaces:

◆ Java interface

◆ Menu interface

◆ X-Windows graphical interface

◆ Command line interface

You can perform user-directed operations through any of these interfaces, but the Java and menu interfaces are the one that you will probably use most often:

◆ The Java graphical interface can be used on supported Solaris or HP-UX systems and on systems that have the NetBackup Java Windows Display Console installed. Refer to "Using the Java Interface" on page 9 for on using the Java interface.

◆ The character-based menu interface is used on virtually any terminal that can connect to a client system. The bp command starts the menu interface program. Refer to "Using the Menu Interface" on page 47 for details on using the bp menu interface.

◆ The X-Windows-based graphical interface is used on any X terminal or workstation with an X server program compatible with X11.R4 or later. The xbp command starts the graphical interface program. Refer to "Using the X-Windows Interface" on page 69 for details on using the xbp graphical interface.

◆ The command line interface lets you perform backup, archive, restore, and list operations by entering individual commands at the shell prompt.

The following commands are available in the command line interface.

bp

bparchive

bpbackup

bplist

bprestore

xbp

For descriptions of commands see the man pages. To view the man pages, enter, for example:

```
man bp
```

Note If the man pages are not installed on your system, contact your system administrator.

Information on the commands is also included in the *NetBackup System Administrator's Guide - UNIX*.

The Java, x-windows, and menu interfaces have all the options necessary to perform and monitor user-directed operations. An important feature of these interfaces is their built-in ability to browse for and select files and directories:

◆ During a backup or archive, you can browse the file system on your client to select files and directories.

◆ During a restore, you can browse the backup history for your client to select files and directories that you have previously saved. It is also possible to browse the backup history for other clients if the NetBackup administrator gives you the necessary permissions.

Progress Logs and Mail Notifications

NetBackup progress logs provide information on the progress of a NetBackup operation. These logs also indicate the success and failure of a NetBackup operation. For each user-directed operation, NetBackup can be configured to create a separate progress log file. You can delete the log files when they are no longer needed. For more details on creating log files, refer to "Checking Progress of Operations" on page 92 for xbp or "Checking Progress of Operations" on page 67 for bp. For more details on log files for jbp, refer to "Viewing the Progress of Backups and Restores" on page 29.

The NetBackup server can be configured to deliver the client user email notifications on the status of the client user's NetBackup operations. Refer to the *NetBackup System Administrator's Guide - UNIX* or the *NetBackup System Administrator's Guide - Windows NT/2000* for details on configuring the server for email notifications.

Backup and Archive Windows

NetBackup can be configured to allow user-directed backups or archives to occur only during specific time periods, usually referred to as *windows.* For example, if your window is from 8 am to 6 pm, you will not be able to back up or archive at other times. The NetBackup administrator defines these windows during server configuration.

Note The backup and archive windows do not affect user-directed restores. You can perform a restore at any time.

Automatic Backups

The NetBackup administrator can configure NetBackup to perform automatic full and incremental backups of your client system. These backups occur unattended and under control of the NetBackup server. If carefully scheduled, the automatic backups will meet most of the backup requirements for your client. NetBackup can also be configured to send mail on the success or failure of automatic backups to the administrator of your client system.

For more information on automatic backups and other administrator directed activities, refer to the *NetBackup System Administrator's Guide - UNIX* or the *NetBackup System Administrator's Guide - Windows NT/2000.*

Exclude and Include Lists

The NetBackup system administrator configures the exclude and include lists for your client.

The NetBackup exclude list contains a list of files and directories that will not be included in scheduled backups. Files and directories in the exclude list can still be backed up manually through the user interface.

In some cases, the system administrator may create an exclude list for a specific class or a class and schedule combination. The master server will use a single exclude list when performing a scheduled backup for all clients in the specified class or class and schedule combination. If, however, an individual client finds that a file or directory must be included in a scheduled backup, then an include file list can be created on the client.

The NetBackup include list contains a list of files and directories that will be included in a scheduled backup. This is also useful if, for example, you want to exclude an entire directory except for one file.

The *NetBackup System Administrator's Guide - UNIX* or the *NetBackup System Administrator's Guide - Windows NT/2000* provide instructions for creating the exclude and include lists.

Alternate Client Restores

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 another (alternate) client. This type of restore can be performed on any server and is called a server directed restore. The NetBackup administrator can direct file or raw partition restores to any client.

Read This Before Using NetBackup

Read the following before performing any user operations with NetBackup.

Cautions and Notes to Observe When Using NetBackup

◆ When performing backups and archives, remember that if a file is only a symbolic link to another file, NetBackup backs up or archives only the link, not the file itself. This eliminates multiple backups of a file when more than one directory contains a symbolic link to it. It also means you must be certain to back up or archive the source file.

◆ On a Hewlett Packard system, do not attempt to restore a file in a CDF directory if the CDF does not already exist. If you do, the directory is created without the directory mode bits necessary for it to be recognized as a CDF. The correct procedure is to restore the CDF itself thus restoring the files it contains. To restore only missing files in a CDF, ensure that you specify to *not* overwrite existing files.

◆ The maximum path length that you can specify for a file is 1023 characters.

◆ The overwrite option is ignored during raw partition restores. The device file must exist and the disk partition is overwritten whether this option is set or not.

Questions to Ask Your Administrator

During configuration, the administrator configures NetBackup to meet the backup and archiving requirements of your site. The following are some questions you should ask the administrator about your configuration before you use NetBackup. Knowing the answers to these questions can help you to avoid problems later:

◆ Which files and directories will NetBackup include in automatic backups of your client? The list that the administrator configures may not include everything on your local disk. If there are additional files that you want backed up, you can either ask the administrator to add them to the file list for automatic backups or back them up yourself.

◆ When do the automatic backups occur? By knowing the schedules, you can recognize when you must perform your own backups to preserve critical data.

◆ When are user-directed backups and archives permitted for your client? During configuration, the administrator determines when you can perform backup and archive operations. For example, if they are allowed between 8 am and 4 pm, you will be unable to perform a backup or archive at 6 pm.

◆ What is the retention period for your data? It is difficult to recover expired backups. Therefore, ensure that the retention time is long enough to suit your needs.

◆ (NetBackup DataCenter users) Can you back up, archive, and restore NFS mounted files? NetBackup allows this but your specific configuration may not. Remember that when you archive NFS files, you remove them from the system on which they reside.

◆ Does your configuration permit backups and archives of entire file paths even if they cross file systems? For example, if the backups and archives for your workstation are configured to cross file systems, specifying / (root) backs up the entire disk. Otherwise, specifying / backs up only the files and directories that are in the / file system and excludes files in other file systems.

◆ How do you restore files that were backed up or archived by another client? Normally, NetBackup allows you to restore files only for the original client. The administrator can override this if necessary.

◆ Is the NetBackup configuration set up to provide you with mail notifications on the results of your user-directed operations? These mail notifications can eliminate the need for you to monitor the progress logs. NetBackup can also send mail on the success or failure of automatic backups to the administrator of your client system.

File Permissions Required By NetBackup

You need UNIX read permission to back up a file and UNIX write permission to archive a file (since the archive operation removes the file from the disk).

Note During a backup or archive, NetBackup stores only the user ID and group ID that are assigned to the files. NetBackup does not store the user ID and group ID of the person performing the backup. For example, assume a user *uuu* and group *ggg* own a file and the root user backs it up. Regardless of who restores it, the restored file still shows user ID = *uuu* and group ID = *ggg*.

Listing and restoring files and directories require the following UNIX permissions:

◆ To list or restore files in a directory owned by someone else, you must have read and execute permission for the directory and all directories leading to it.

◆ 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).

Table 2. File Permissions

Type of Restore Attempted	Results
Restore a file that already exists and overwrite the existing file.	If you are a root user, NetBackup restores the file and sets file ownership to the same owner as the backup image.
	If you are not a root user, 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 you as the owner.
Restore a file that already exists and *not* overwrite the existing file.	For both root and nonroot users, NetBackup does not restore the file and places a message in the progress log.
Restore a file that doesn't exist.	If you are a root user, NetBackup restores the file and sets file ownership to the same owner as the backup.
	If you are a nonroot user, the file is created with you as the owner and restored only if permissions on the parent directory allow it.
Restore a file when a directory exists with the same name as the file.	For both root and nonroot users, NetBackup places an error message in the progress log and does not restore the file or remove the directory. This occurs regardless of whether you elect to overwrite existing files.
Restore a directory when a file exists with the same name as the directory.	NetBackup restores the directory and removes the file, providing that permissions allow it and you elect to overwrite existing files. Ownerships are set as follows.
	If you are a root user, NetBackup sets ownership of the directory to that of the original owner.
	If you are a nonroot user, the user name under which you are doing the restore is assigned ownership.

Table 2. File Permissions

Type of Restore Attempted	Results
Restore a file in a directory that does not exist.	NetBackup creates the directory with the user name and group of the user doing the restore and uses the mask bits 022 to set the mode of the directory. The file is then restored in the same manner as one that does not exist (see above).

Using the Java Interface 2

The NetBackup Java user interface (`jbpSA`) provides a graphical-user-interface through which users can perform backups, archives, and restores. The interface can be started and run on the following systems (see Figure 1):

◆ Supported Solaris or HP-UX systems.

◆ Windows NT/2000, 98, or 95 systems that have the NetBackup Java Windows Display Console installed. The display console makes it possible to use the Java interface when a Solaris or HP-UX system is not available.

Topics covered in this chapter:

◆ Starting the Java Interface

◆ Adjusting the Time Zone

◆ Helpful Hints on Locating and Marking Files

◆ Performing Backups and Archives

◆ Performing Restores

◆ Viewing the Progress of Backups and Restores

◆ Advanced Restore Procedures

◆ Tips and Troubleshooting

Figure 1. NetBackup Java User Interface

UNIX NetBackup Client
(other than Solaris or HP-UX)

```
tiger
```

UNIX NetBackup Client
(Solaris or HP-UX)

```
shark

  Backup, Archive, Restore
  interface
```

Windows NT/2000, 98, 95
system with NetBackup
Java Windows Display
Console software installed.

```
bear

  Backup, Archive, Restore
  interface
```

To start the interface on shark, log
in on shark and execute jbpSA.
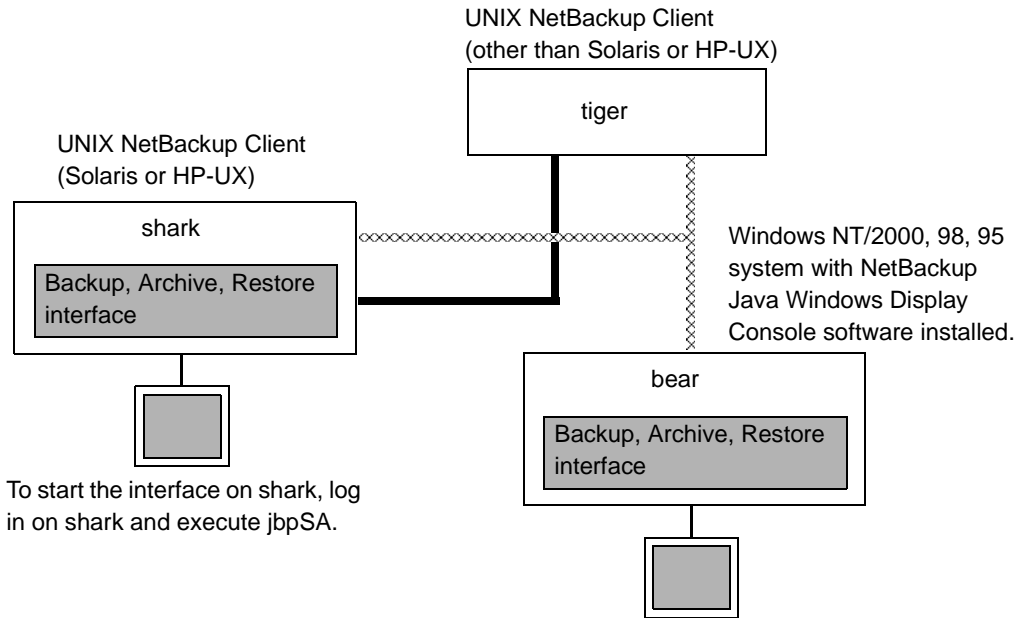
In the Login dialog box that appears when
starting the interface program, specify the client
where you want to perform the backup, archive,
or restore (shark or tiger in this example).

To start the interface on bear, choose
NetBackup - Java on *host* on the
Start->Program->NetBackup

Starting the Java Interface

From a UNIX Platform

1. Log in on the UNIX NetBackup computer where you are going to start the Backup, Archive, and Restore interface.

2. Start the Backup, Archive, and Restore interface by executing:

`/usr/openv/netbackup/bin/jbpSA &`

For additional usage information enter: **jbpSA -h**.

The Login dialog box appears.

3. Type the name of the client where you want to perform the backup, archive, or restore.

You must have a valid user account on that client, and have access to that client.

4. Specify the user name.

◆ For UNIX clients, type the client name.

◆ For Windows clients, type the domain and client name, using the format **domain\username**, for example:

ourcompany\gla

5. Specify the password.

6. Click Login.

The Backup, Archive, and Restore - NetBackup window appears.

Setting Up Your Window Manager for the Java Interface

Always set your window manager so windows become active only when you click inside the windows. Do not enable auto focus, which is when windows become active if you just move the mouse pointer over them. The NetBackup-Java interfaces do not run properly with auto focus enabled. The following are general instructions for correctly setting up the focus.

CDE (Common Desktop Environment)

The following explains how to set up a CDE (Common Desktop Environment) window manager, which is the preferred window manager for NetBackup-Java applications.

1. On the front panel in the CDE window, click the Style Manager control icon.

   The Style Manager toolbar appears.

2. On the Style Manager toolbar, click the Window control icon.

   The Style Manager - Window dialog box appears.

3. In the Style Manager-Window dialog box, click the Click In Window To Make Active button.

4. Click OK.

5. Click OK when asked to Restart the Workspace Manager.

Motif

When using the Motif window manager, set the `Mwm*keyboardFocusPolicy` X resource as follows:

```
Mwm*keyboardFocusPolicy:explicit
```

From a Windows Platform

You can also use the Java interface from a Windows platform, if you have installed the Windows Display Console.

1. Click Programs on the Start menu.

2. On the Programs menu, point to NetBackup and then click NetBackup - Java on *host* on the submenu.

   The Login dialog box appears. *Host* is the default NetBackup client where you perform user operations.

   To perform user operations on another client, type its name in the NetBackup host field.

3. Type your user name and password and click Login.

4. When login is complete, the NetBackup Administration - Java window appears.

5. Click the Backup, Archive, and Restore button to begin. The Backup, Archive, and Restore - NetBackup window appears with the Restore Files tab selected.

Adjusting the Time Zone

NetBackup gives you the ability to adjust the time zone settings for the current session (and for all future sessions, if you have administrative capabilities).

There are two situations where it would be necessary to change the time zone settings:

◆ You reside in a time zone that is not correctly translated by the underlying Java code in NetBackup. The Middle European time zone, for example, is interpreted as Middle Eastern Time. You will need to adjust the time zone settings so that backups receive the correct datetime stamps.

◆ You administer sites that are in different time zones. You may need to adjust the time zone settings before restoring files.

Example

Assume, for example:

◆ You have received a request to restore a backup made on March 3, 2000 at 12:00 a.m. Eastern Standard Time (EST), which is 5 hours behind Greenwich Mean Time (GMT).

◆ You reside in the Pacific Standard time zone (PST), which is 8 hours behind GMT.

If you do not change your time zone settings to EST and search for backups created on March 3, 2000, you will not be able to find the backup. According to your time zone settings (PST), the backup was created at 9:00 p.m. on March 2, 2000.

▼ **To Adjust the Time Zone Settings**

1. On the View menu, select Adjust Application Timezone.

Note If you launched `jbp` by executing `jnbSA`, the Adjust Application Timezone option is available from the Configure menu in the NetBackup Administration - Java window.

2. Adjust the time to reflect how many hours/minutes the server's time zone is behind or ahead of Greenwich Mean Time.

3. To use daylight savings time, select Use daylight savings time.

4. Indicate when Daylight Savings Time should begin.

   a. Select the method you wish to use for indicating when Daylight Savings Time should begin.

      ◆ To have DST begin on a specific date, select Absolute date and indicate the desired month and day.

◆ To have DST begin on the first occurrence of a day in a month, select First day of week in month and indicate the desired day of the week and the month.

◆ To have DST begin on the first occurrence of a day in a month and after a specific date, select First day of week in month after date and indicate the desired day of the week and the month and day.

◆ To have DST begin on the last occurrence of a day in a month, select Last day of week in month and indicate the desired day of the week and the month.

◆ To have DST begin on the last occurrence of a day in a month and before a specific date, select Last day of week in month after date and indicate the desired day of the week and the month and day.

b. Select the appropriate Day of week, Month, Day, and Time.

To have DST begin/end: **Enter this:**

April 5

First Monday in April

First Monday after April 5

Last Thursday in April

Last Thursday before April 30

5. As you did in step 4, indicate when Daylight Savings Time should end.

6. If you have administrative capabilities and wish to have the time zone settings applied to the current session and all future sessions, select Save as default timezone.

7. Click OK.

Helpful Hints on Locating and Marking Files

This section explains what you need to know to navigate in the directory trees and filter files on the Backup Files and Restore Files tabs and how to mark files and folders for backup or restore operations.

Navigating in the Directory Trees

To display the contents of a folder:

◆ Click on the folder name in the left pane. The right pane will show the contents of that folder.

◆ Folders that have subfolders have a plus sign (+) to the left of the folder. To display the subfolders, click on the plus sign or double-click on the folder. The left pane will display the subfolders within that folder.

◆ On the Restore Files tab, you can also display the contents of a folder by typing the directory path in the Browse directory box and pressing Enter.

◆ To collapse a folder, click on the minus sign (-) to the left of the folder or double-click on the folder.

File Icons

The following icons are used to indicate the file types displayed in the Contents of Selected Directory Pane.

Description	Icon
Represents a directory.	
Represents a Java file.	
Represents a Java class file.	
Represents a program file.	
Represents an HTML file.	
Represents a UNIX link.	
Represents a read-only file.	

Description	Icon
Represents a text file.	
Represents a bitmap, gif, or icon file.	
Represents a file that doesn't have an icon associated with it.	

Filtering Files

You can filter the files and folders shown in the Contents of Selected Directory pane. To display only filenames beginning with "sys," for example, type **sys*** in the Filename filter field and click Refresh. To display only files with the "txt" extension, fill in ***.txt**. This filter is case-insensitive.

When jbpSA starts, * appears in the Filename filter box; this will display all files.

Sorting Columns

The columns in the Contents of Selected Directory pane can be sorted by clicking on the column header. To sort by Modified date, for example, click on the Modified column header. Click on the column header again to sort in descending order.

Marking Files and Folders

- ◆ To mark a file for backup or restore, select the checkbox to left of a file or right-click on the file and select Mark.

- ◆ To select multiple contiguous files, click the checkbox to left of the file you wish to mark, hold down the Shift key, and click the checkbox to left of the last file in the group you wish to mark. To select non-contiguous files, hold down the Ctrl key as you make your selections.

    Right-click and select Mark to mark the files you selected.

- ◆ 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.

    Marking a folder automatically marks all its files and subfolders.

- ◆ To mark all of the files and folders shown in the right pane, click the Mark All button.

If more than one version of a file or folder is displayed (because the file or folder was backed up more than once during the date range selected), NetBackup will mark only the most recent version.

Unmarking Files and Folders

◆ To unmark a file, clear the checkbox to the left of the file or right-click on the file and select Unmark.

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

◆ To unmark all of the files and folders shown in the Contents of Selected Directory pane, click the Unmark All button.

Performing Backups and Archives

This section will step you through a simple backup procedure. The process would be the same if you choose to archive, except that the files you choose will be deleted after they are backed up.

This process assumes that you have already started the NetBackup Java console and are looking at the Backup, Archive, and Restore - NetBackup window as described in "Starting the Java Interface" on page 11.

1. Click on the Backup Files tab.

2. If necessary, change the NetBackup master server that will perform the backup.

    If there is more than one master server to which you can send your backups and archives, ensure that you are connected to the correct one. Ask your NetBackup administrator if you have questions about which master server to use.

    Normally, you will not have to switch master servers unless, for some reason, the administrator has temporarily moved the NetBackup backups (for example, because of a problem on the original master server). If the change becomes permanent, the administrator should change your default to reflect the other server.

    a. Click the browse button next to the NetBackup server box.

    b. Select the desired server from the list.

    c. Click OK.

        If you typed an invalid name, or if your client does not belong to a NetBackup class on that server, you will get an error. If this occurs, see your system administrator for assistance.

3. Mark the file or files to back up. In this example it is `sample.txt`.
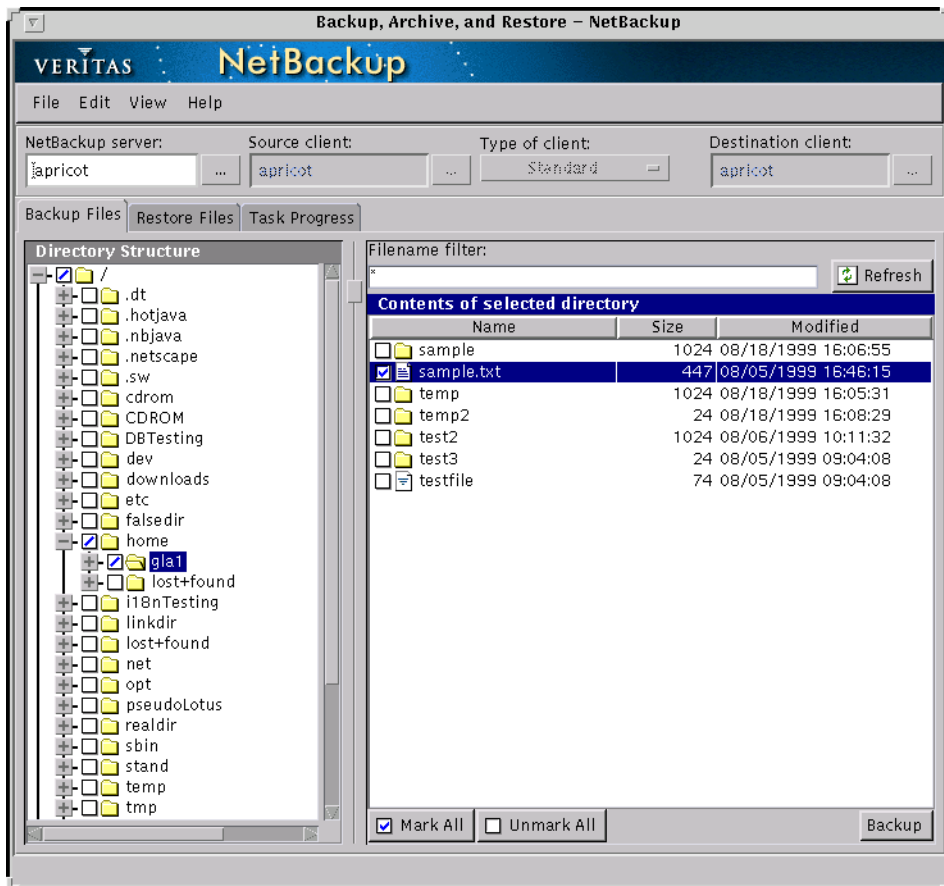
You can filter the files and folders shown in the Contents of Selected Directory pane. Click Refresh once you have entered the filter criteria. For more information, see "Filtering Files" on page 17.

4. Start the Backup operation by clicking Backup.

5. The Backup Files dialog box will appear.

6. To associate a keyword phrase with the backup or archive, type a keyword or phrase into the Keyword phrase to associate with this backup or archive box. You can then search for that keyword or phrase if you wish to restore this specific backup or archive.

In this example, the keyword phrase **test** will be used.
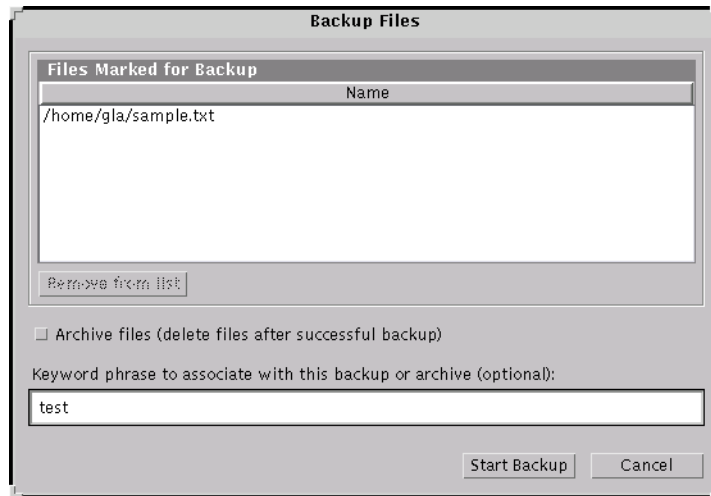
◆ To delete the file after it has been backed up, select Archive files.

◆ To remove a file from the list of files to back up, select the file and click Remove from list.

7. Click Start Backup to begin the backup operation.

Note The NetBackup operation may take a few minutes to complete.

8. You will be prompted to view the status of the backup operation. Click Yes to open the Task Progress tab.
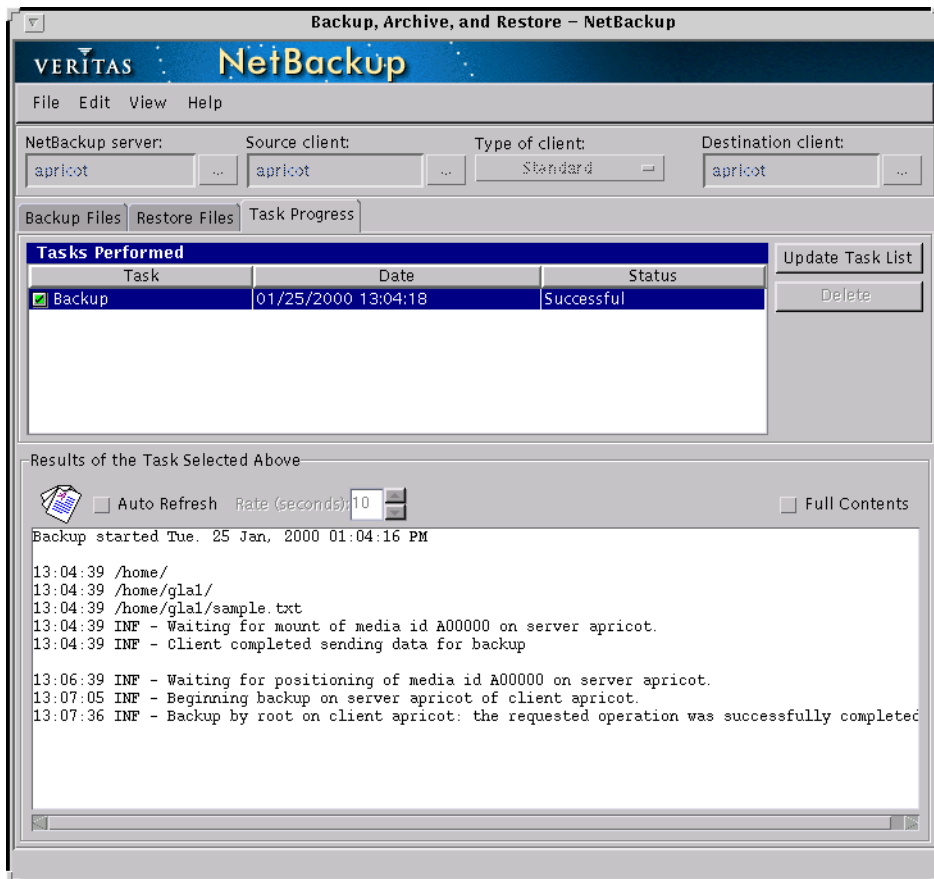
The Task Progress window allows you to view the progress report of a NetBackup operation. For more information, see "Viewing the Progress of Backups and Restores" on page 29.

Performing Restores

This section will step you through a simple restore process, using the same file that was backed up as an example in the previous section. It assumes that the NetBackup browser has already been started as described in "Starting the Java Interface" on page 11.

Notes on Performing Restores

◆ Before performing a restore, ensure that the correct or desired time zone settings have been set. See "Adjusting the Time Zone" on page 13.

◆ If there are any links in the path you are searching, NetBackup, by default, resolves the links so the path points to the actual file or directory. If you do not want to resolve links, deselect Use Actual Path If Browse Directory is Linked on the View menu before starting your search. See "Resolving Links" on page 42 for more information.

◆ NetBackup restores files according to the original file pathname. If the files you are restoring already exist, you must have the proper file permissions in order to overwrite the existing files with the backed-up files. See "File Permissions Required By NetBackup" on page 6 for an explanation of how NetBackup restores files in various situations.

Tips on Locating Files and Folders to Restore

Once you have filled in the information to narrow your search, click Refresh to update the right pane.

◆ If you know the exact directory you wish to browse, type the path to that directory in the Browse directory box. This will speed up your request.

◆ You can filter the files and folders shown in the Contents of Selected Directory pane. Click Refresh once you have entered the filter criteria. For more information, see "Filtering Files" on page 17.

◆ If you indicated a keyword phrase when you performed a backup, you can use that keyword or phrase to locate that backup by entering the keyword phrase in the Keyword phrase to search for field.

Performing a Basic Restore

1. Click on the Restore Files tab.
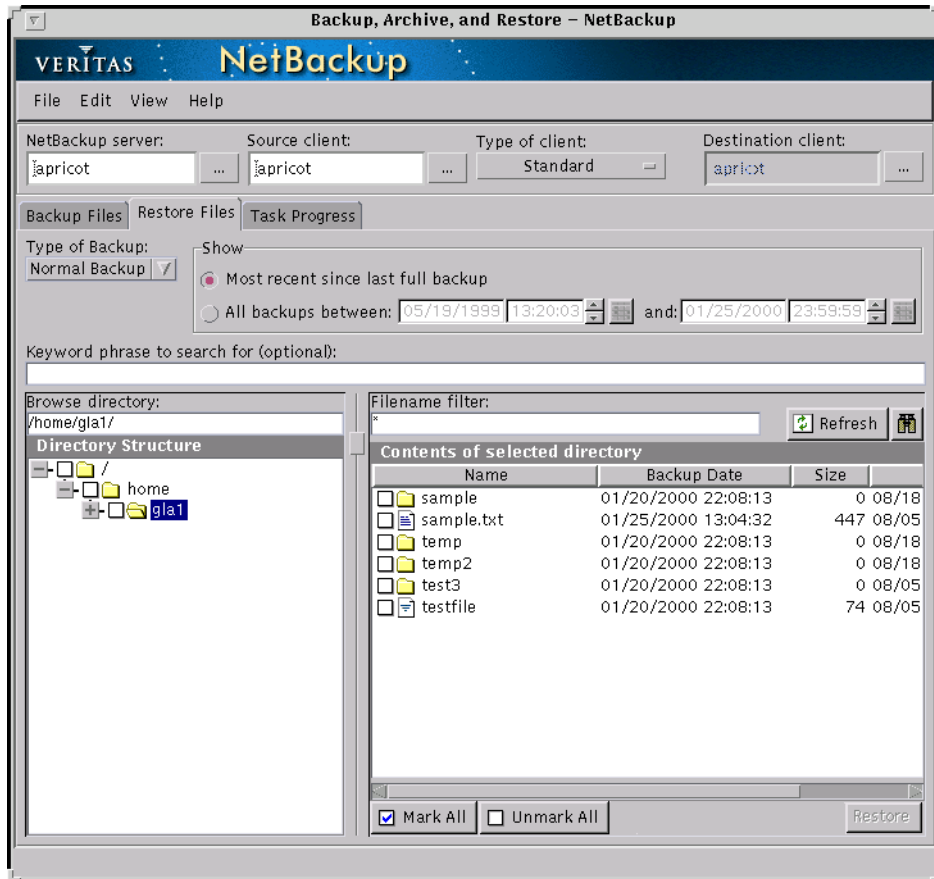
2. Change the NetBackup master server if necessary.

If there is more than one master server that can back up this client, ensure that you are connected to the one that performed the backup you are trying to restore. If you attempt to restore from another master server, the files will not be found. Ask your NetBackup administrator if you have questions about which master server to use.

    a. Click the browse button next to the NetBackup server box.

    b. Select the desired server from the list.

    c. Click OK.

If you typed an invalid name, or if your client does not belong to a NetBackup class on that server, you get will an error. If this occurs, see your system administrator for assistance.

3. From the Type of Backup drop-down list, select the type of restore to perform.
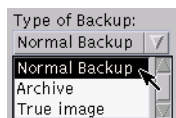
◆ To restore a backup, select Normal Backup.

◆ To restore an archive, select Archive.

◆ To restore a true image, select True image. For more information on restoring a true-image backup, see "Restoring a True Image of a Folder" on page 40.

4. Select the folder or file to restore.

You can filter the files and folders shown in the Contents of Selected Directory pane. Click Refresh once you have entered the filter criteria. For more information, see "Filtering Files" on page 17.

In this example we will use the keyword phrase feature to restore the `sample.txt` that was backed up in "Performing Backups and Archives" on page 19.

a. Type **test** in the Keyword phrase to search for box.

b. In the Browse directory box, type the path to backed up file. In this case the path is `/home/gla1`.

c. Click Refresh.

d. In the right pane, mark the checkbox to the left of the `sample.txt` file.
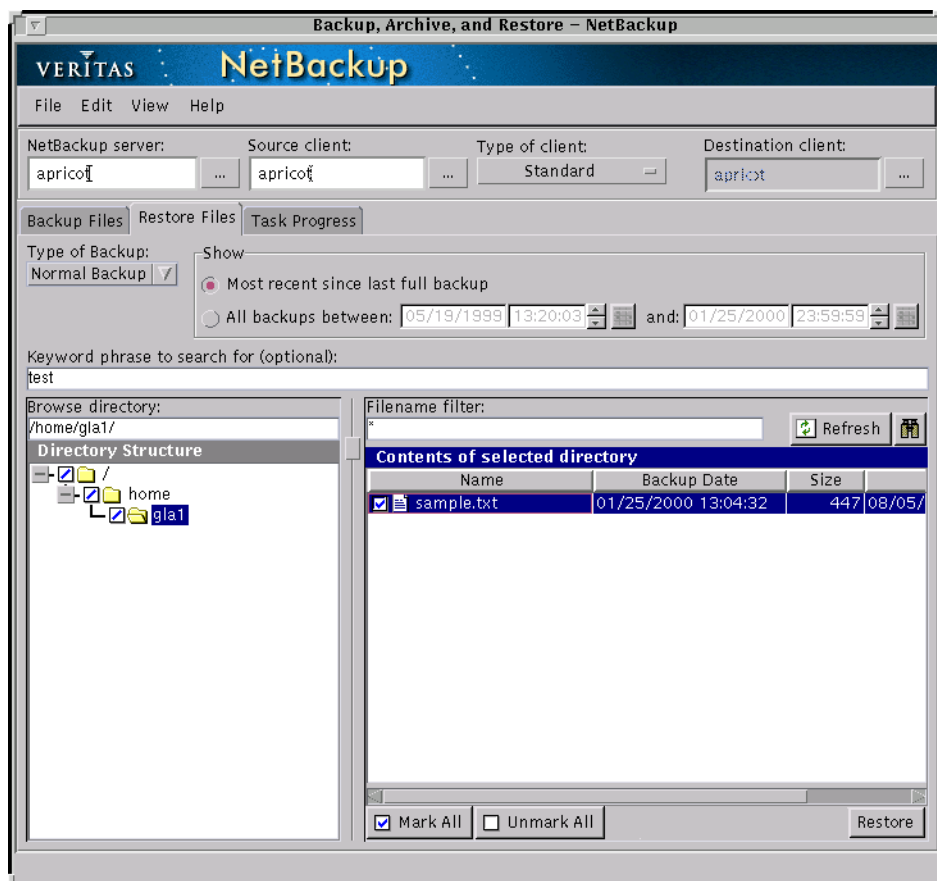
5. Click Restore.

6. The Restore Files dialog will appear.
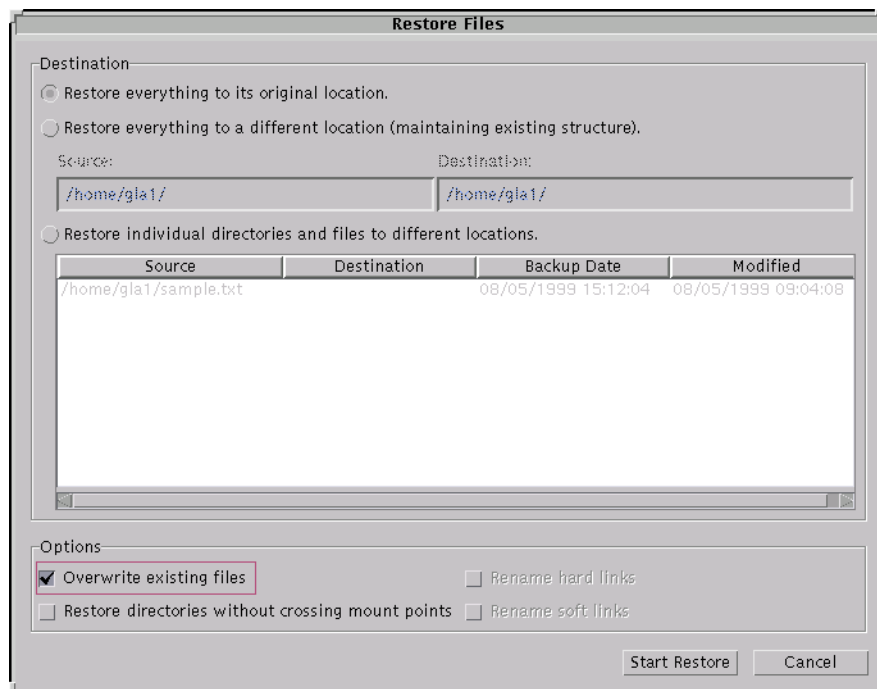
7. By default, files will be restored to their original location.

See "Restoring Files to an Alternate Path" on page 36 for information on restoring all files to an alternate destination or restoring individual files to multiple destinations.

8. Select Overwrite existing files. By default, NetBackup does not overwrite files.

9. To skip over file systems mounted in the selected directories, select Restore directories without crossing mount points. Clear this checkbox to restore file systems that are mounted in the selected directories.

Note Mount points inside will get restored whether or not the Restore directories without crossing mount points checkbox is selected.

10. Click Start Restore to begin the restore operation.

11. You will be prompted to view the status of the restore operation. Click Yes to open the Task Progress tab.
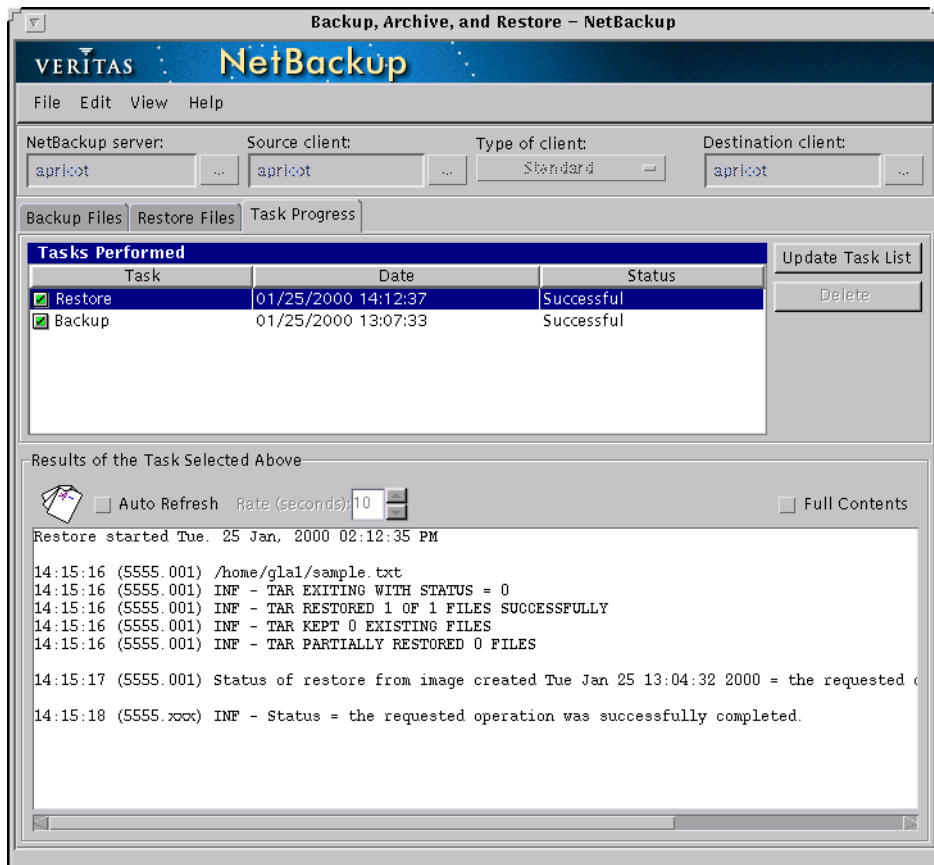
The Task Progress tab allows you to view the progress of a NetBackup operation. For more information, see "Viewing the Progress of Backups and Restores" on page 29.

Viewing the Progress of Backups and Restores

1. Click the Task Progress tab.

2. Click Update Task List to refresh the list of tasks being performed.

3. Click on the task that you want to check the progress of.

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

4. To automatically refresh the results of the tasks:

a. Click Auto Refresh.

b. Select a refresh interval. The default setting is 10 seconds. A smaller interval may negatively affect the server performance.
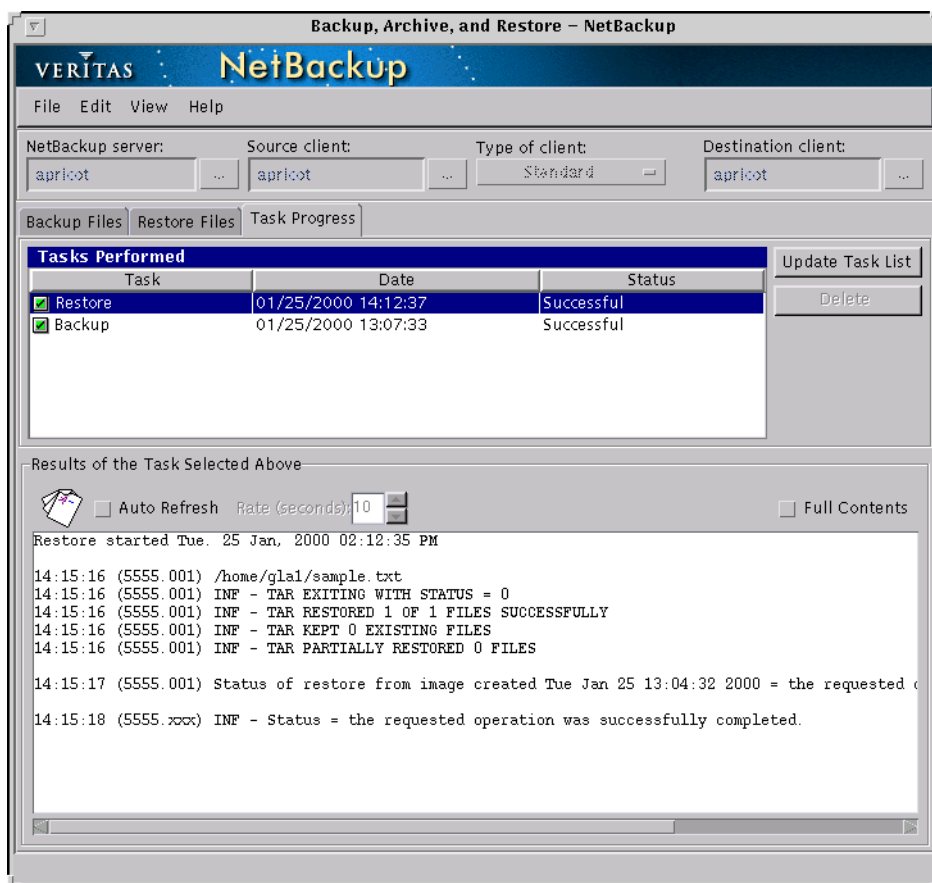
5. By default the progress file is displayed in an abbreviated form. If you wish to view the entire contents of the progress file, click Full Contents.

The NetBackup operation is finished when the Status changes to `Successful`. If the task failed, review the Results of task log and check with your NetBackup system administrator.

Advanced Restore Procedures

The following procedures provide detailed explanations for performing advanced restores.

Searching for Files to Restore

Occasionally, you might want to restore a file or directory, but you may not remember where it is, or was, located. The Find feature allows you to specify a file or directory name and search for it.

1. Click on the Restore Files tab.

2. Click . The Find Files window appears.

3. In the File or Directory Name box, enter the name of the directory or file you wish to search for.

   You can use the wildcard symbol (*) to search for a directory or file if you are unsure of the exact name or wish to display directories or files with similar names.

4. If you want to perform a case-insensitive search, check the box in front of that option. The default is case-sensitive, meaning the file name must match exactly as it was entered.

   For example, if you enter **sample.txt** and select case-sensitive, NetBackup will only find files that use that exact capitalization. The files `Sample.txt` and `SAMPLE.TXT` would not appear in the results.

5. Click Find Now. NetBackup will display all backups of the directory or file you entered.

Note It may take a few minutes for the list of files to refresh.
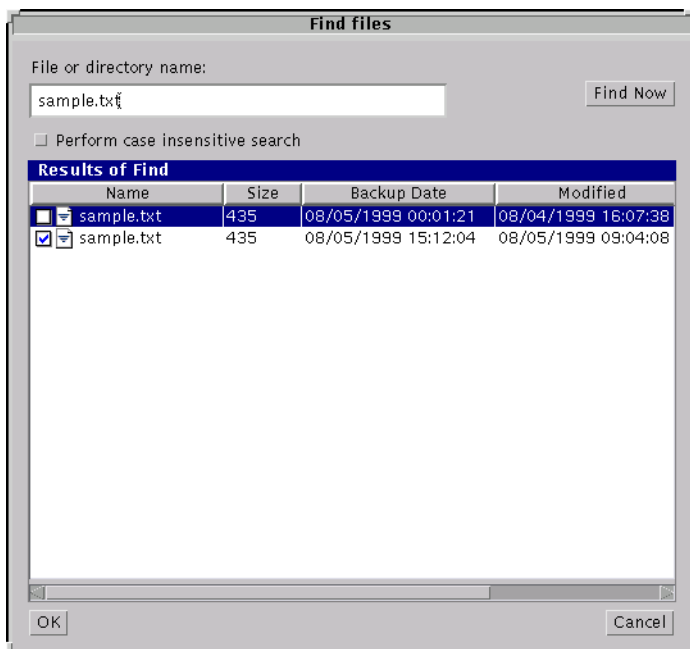
6. To select a file or folder, click on the checkbox to the left of the file or folder.

7. Click OK to return to the Restore dialog. The files or folders you selected are now marked to be restored.

8. To start the restore operation, click Restore.

Selecting Specific Backup Dates to Restore

By default, the NetBackup Restore window shows the files and folders that were backed up since the last full backup. The default range will satisfy the majority of your needs to restore files but there will be times 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 will not appear in the default display. In order to locate and backup up this file you would need to change the date range.

If the client belongs to more than one class, the starting date defaults to the last full backup that occurred first. For example, assume that: 1) a client belongs to ClassW1 and ClassW2, 2) Full backups occur for both of these classes, 3) ClassW1's most recent full

backup occurred on June 16 and ClassW2's most recent full backup occurred on June 24. NetBackup will display those files and folders that have been backed up since the ClassW1 full backup on June 16.

Note If you are searching a specific range of dates, selecting a directory will not necessarily restore all the files and subdirectories that were backed up during the last full backup. The Contents of Selected Directory pane will show only the files and subdirectories that were backed up during the range of dates indicated. If a file or folder was backed up more than once during the date range selected, multiple copies of that file or folder will appear in the right pane.

Setting the Date Range

There are three ways you can set the date range, by manually selecting the dates in the All backups between fields, by selecting the dates via the Calendar, or by selecting the dates via the Backup History.

Setting the Date Manually in the All backups between fields

1. On the Restore Files tab, choose All backups between.

2. To change the start date and time, select the part of the date or time you wish to change. Use the spinner controls to indicate an earlier or later date or time.

   To change the day, for example, select the day. Click the top arrow to indicate the next day, the bottom arrow to indicate the previous day.
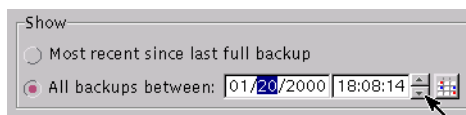
3. Modify the end date in the same way.

4. Click Refresh to refresh the list of files shown.

Setting the Date Via the Calendar

1. From the View menu, choose Use Calendar to set date.

2. On the Restore Files tab, choose All backups between.

3. Click on the Calendar button .

---

4. Select the desired start date on the Calendar.

   ◆ To change the month, select the desired month from the drop-down list in the upper-left corner of the dialog.

   ◆ To change the year, select the desired year from the drop-down list in the upper-left corner of the dialog.

   ◆ To change the time, select the part of the time you wish to change. Use the spinner controls to indicate an earlier or later time.
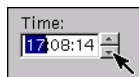
5. Click OK.

6. Modify the end date in the same way.

7. Click Refresh to refresh the list of files shown.

Setting the Date Via the Backup History

1. From the View menu, choose Use Backup History to set date.

2. On the Restore Files tab, choose All backups between.

3. Click on the Backup History button .

4. Select the desired backup image or images from the list.

	Date Range						
Backup Images							
Backup Date	Expires	Files	Size(KB)	Compressed	Schedule Type	Class	Keywo
01/26/2000 02:08:04	01/30/2000	278	377	No	Differential Incre...	kkp_tir	True Ima
01/26/2000 00:18:47	02/02/2000	47	160	No	Full Backup	jbp_fullY_qualified	
01/26/2000 00:08:26	01/29/2000	1	32	No	Differential Incre...	kkp_apricot_bkp	Do apric
01/25/2000 21:08:12	01/29/2000	2213	21509	No	Cumulative Incre...	kkp_tir	True Ima
01/25/2000 18:11:39	01/29/2000	16	32	No	Full Backup	ret_level_4	
01/25/2000 18:08:26	01/28/2000	16	32	No	Full Backup	ret_level_5	
01/25/2000 13:04:32	01/28/2000	4	32	No	User Backup	kkp_apricot_bkp	test
01/25/2000 02:08:04	01/29/2000	322	412	No	Differential Incre...	kkp_tir	True Ima
01/25/2000 00:19:21	02/01/2000	47	160	No	Full Backup	jbp_fullY_qualified	
01/25/2000 00:10:52	01/28/2000	7	32	No	Differential Incre...	kkp_apricot_bkp	Do apric
01/25/2000 00:08:32	02/03/2000	16	32	No	Full Backup	ret_level_7	
01/24/2000 20:08:10	02/07/2000	3	32	No	Full Backup	AMBW	
01/24/2000 18:08:33	02/24/2000	16	32	No	Full Backup	ret_level_3	
01/24/2000 02:08:12	01/28/2000	294	378	No	Differential Incre...	kkp_tir	True Ima
01/24/2000 00:20:08	01/31/2000	16	32	No	Full Backup	ret_level_0	
01/24/2000 00:16:53	01/31/2000	47	160	No	Full Backup	jbp_fullY_qualified	
01/24/2000 00:08:18	01/27/2000	1	32	No	Differential Incre...	kkp_apricot_bkp	Do apric
01/23/2000 18:11:11	01/27/2000	16	32	No	Full Backup	ret_level_4	
01/23/2000 18:08:14	01/26/2000	16	32	No	Full Backup	ret_level_5	

Start Date: 01/24/2000 18:08:33 End Date: 01/25/2000 00:10:52

OK   Cancel

Tip To select multiple contiguous backup images, select the first backup image, hold down the Shift key, and click the last image in the group you wish to select.

5. Click OK.

6. Click Refresh to refresh the list of files shown.

Restoring an Earlier Version of a Folder

Note The following procedure will restore all files that were backed up during the range of backup dates that you search for files to restore. This includes files that were deleted from your online directory after they were backed up. If you do not want the deleted files, use the procedure described in "Restoring a True Image of a Folder" on page 40.

1. Click on the Restore Files tab.

2. Set the start date and end date that includes the desired version of the directory.

3. Click Refresh.

4. Select the folder you wish to restore from the Directory Structure pane and the check the right pane to see if it shows the files you need.

Note By default, NetBackup restores the directory to its original location. To restore to an alternate location, see "Restoring Files to an Alternate Path."

5. Click Restore to begin the restore operation.

Restoring Files to an Alternate Path

In some instances, you may want to restore files to a backup or path other than the one from which they were backed up. This is called an alternate path restore.

Restoring Everything to a Different Location

1. Click on the Restore Files tab.

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

Note You will be able to restore files and folders differently depending on how you mark the files and folders for a restore. If you wish to back up an entire folder and all its contents to the same alternate location, mark the folder in the left pane. If you wish to back up the files in a folder to different locations, mark the files in the right pane.

3. Click Restore.

4. Select Restore everything to a different location.

5. In the Destination box, enter the alternate directory to which you want to restore the files or folders.

6. Select Overwrite existing files.

7. Select Restore directories without crossing mount points to skip over file systems mounted in the selected directories. Clear the Restore directories without crossing mount points checkbox to restore file systems that are mounted in the selected directories.

8. If restoring files that are links, choose whether to update those link pathnames.

   ◆ Select Rename hard links to rename the hard link pathnames. Clear the Rename hard links checkbox if you do not want to rename the hard link pathname.

   ◆ Select Rename soft links to rename the soft (symbolic) link pathnames. Clear the Rename soft links checkbox if you do not want to rename the soft link pathname.

Note If you are restoring system files to a disk other than the current system disk and plan on using the other disk as the system disk with the original file paths when the restore is completed, we suggest that you select the Rename hard links checkbox and clear the Rename soft links checkbox. This will let you use the other disk and have the correct file paths.

9. Click Start Restore.

Restoring Files and Directories to Different Locations

1. Click on the Restore Files tab.

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

Note You will be able to restore files and folders differently depending on how you mark the files and folders for a restore. If you wish to back up an entire folder and all its contents to the same alternate location, mark the folder in the left pane. If you wish to back up the files in a folder to different locations, mark the files in the right pane.

---

3. Click Restore.

4. Select Restore individual directories and files to different locations.
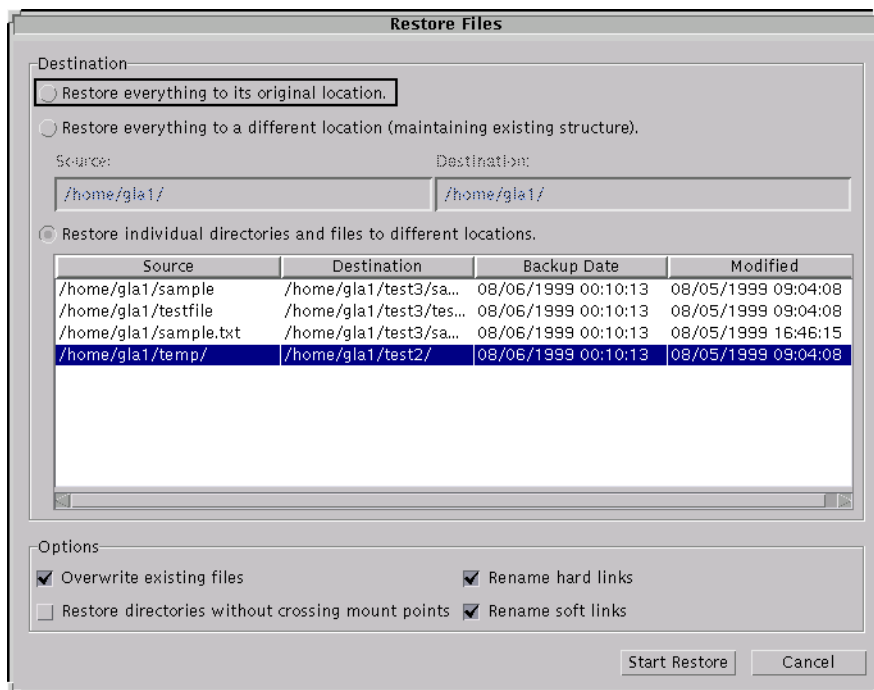
5. To change the destination for a file or folder, right-click on the file. You can select multiple files and folders using Ctrl + click or Shift + click (see "Marking Files and Folders" on page 17).

    a. From the shortcut menu, select one of the following:

- Select Change Selected Destinations to indicate a different destination for the file or files selected.

- Select Change All Destinations to apply a single destination location to all the files.

- Select Add Destination to restore a subset of files (e.g., a subdirectory) to a directory other than the alternate directory specified for other files.

- Select Remove Destinations to have the selected file or files restored to their original locations.

    b. If you have selected Change All Destinations or Add Destination, you can also specify which directory to apply the alternate destination to. Assume you had chosen to restore all files to `/home/gla1/temp`, for example, but wanted the subdirectory `/home/gla1/sample/` installed to a location other than `/home/gla1/temp`. In the Type of Backup box, you would enter `/home/gla1/sample/`. That folder would then be restored to a different alternate directory.

    c. In the Destination box, enter the destination for the file or files.

    d. Click OK.

6. Select Overwrite existing files.

7. Select Restore directories without crossing mount points to skip over file systems mounted in the selected directories. Clear the Restore directories without crossing mount points checkbox to restore file systems that are mounted in the selected directories.

8. If restoring files that are links, choose whether to update those link pathnames.

- Select Rename hard links to rename the hard link pathnames. Clear the Rename hard links checkbox if you do not want to rename the hard link pathname.

- Select Rename soft links to rename the soft (symbolic) link pathnames. Clear the Rename soft links checkbox if you do not want to rename the soft link pathname.

Note If you are restoring system files to a disk other than the current system disk and plan on using the other disk as the system disk with the original file paths when the restore is completed, we suggest that you select the Rename hard links checkbox and clear the Rename soft links checkbox. This will let you use the other disk and have the correct file paths.

---

9. Click Start Restore.

Restoring a True Image of a Folder

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, consider the following table, which shows the contents of a directory named:

```
home/abc/doc
```

during a series of backups performed between 12/01/95 and 12/04/95.

Day Type of Backup	12/01/95 (Full)	12/02/95 (Incr)	12/03/95 (Incr)	12/04/95 (User Back)	12/04/95 (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 12/01/95 (last full backup) through 12/04/95.

```
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 12/04/95.

```
file1
file2
file4
```

NetBackup does not restore anything deleted prior to the 12/04/95 incremental backup.

Notice that the restored directory does not include the dirA and dirC subdirectories, even though they were backed up on 12/04/95 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 Restore 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 12/04/95, 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)
```

True-Image Restore Procedure

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

Note NetBackup does not allow a true-image restore that is based on the time of a user-directed operation. However, NetBackup does use the data from a user-directed operation when performing a true-image restore if the user backup is more recent than the latest automatic full or incremental backup.

1. Click on the Restore Files tab.

2. Make sure that your root directory is selected.

3. Select True image from the Type of Backup drop-down list.

4. Click Refresh to refresh the list of backups available for restore.

5. Select the folder that you want to restore.

   Since you are restoring a directory in its entirety, as it existed on a specific date, NetBackup only allows you to select one version of the directory. For the same reason, the Mark All button is also disabled.

Note If NetBackup does not find any directories, check the range of dates and path. If these settings are correct and no directories are found, check with your administrator to see if the NetBackup class that is backing up your files and directories is configured to collect true-image restore information.

6. Click Restore. By default, the folder is restored to its original location.

Resolving Links

When searching for files to restore, you can choose whether to have NetBackup resolve links that may exist in the search path. If you resolve links, NetBackup automatically changes the path so it points to the actual file or directory. Otherwise, NetBackup uses the path you type in.

Note `jbpSA` resolves links by default, unless you deselect Use Actual Path If Browse Directory is Linked on the View menu before starting your search.

Note NetBackup does not resolve links if you use wildcard characters in the search directory path.

It is usually best to resolve links. There are exceptions such as the following:

◆ If you backed up a file that was not a link and, since then, the file path was linked to a different directory.

   For example, assume you backed up `/home/bjm` and this directory is now a link to `/home2/bjm`. If you resolve links during the restore, NetBackup will not find the file because it searches for `/home2/bjm` and `/home/bjm` was the path you backed up.

◆ If you are restoring a file to your machine that was backed up by another client. There will be a problem if the path exists as a link on your machine, but not on the other client.

For example, assume that the path /usr/openv/ is linked to /opt/openv on the local machine, but not on the other client machine. If you select Use Actual Path If Browse Directory is Linked, jbp will look for /opt/openv on the other client, even though the path doesn't exist on that client.

1. Backup File

/home/bjm ➝ (/home/bjm)

2. Link File

/home/bjm ⎯ In ⎯➝ home2/bjm

3. Restore File

If links are resolved:

User specifies /home/bjm, NetBackup resolves it to /home2/bjm and cannot find it. ◂⎯⎯ (/home/bjm)

If links are not resolved:

User specifies /home/bjm, NetBackup does not resolve it and is able to restore it from tape.
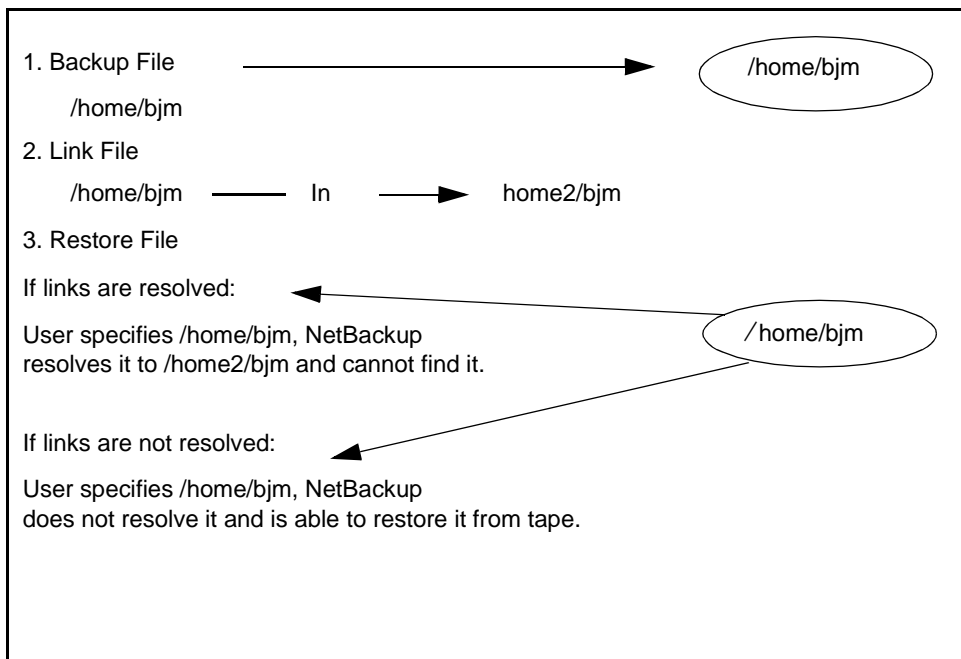
Tips and Troubleshooting

Right Mouse Button Does Not Invoke Pop-up Menu

On a Solaris x86 with a two-button mouse, right-clicking will not invoke the pop-up menu.

This problem affects alternate path restores, specifically restoring files to multiple locations, because the destination location can only be changed by selecting a command from the pop-up menu.

▼ **To invoke the pop-up menu**

1. Press and hold the right mouse button.

2. Press the Ctrl key.

3. Release the right mouse button.

4. Release the Ctrl key.

Differentiating Between Different Backups on the Same Day

By default the Restore Files tab only shows the latest file entries since the last *full* backup. This is designed to reduce the number of files displayed.

Sometimes it is useful to see all the available backups, perhaps to restore the version from three days ago. In this instance click on the All backups between option on the Restore Files tab and set the appropriate date (see "Selecting Specific Backup Dates to Restore" on page 32).

If a file or folder was backed up more than once during the date range selected, multiple entries will be shown for that file or folder. You can narrow the list by entering a smaller date range or by changing the time.

Restoring a File Not Initially Shown on the List

If a file is not initially shown in the list of files that can be restore, it is likely that the file was backed up by the user, and not in the last full backup. Select All backups between and then enter a new start date. Click Refresh to see if the file appears.

Unmarking a File Takes a Long Time

Sometimes when you unmark a file it may take a long time before control of the application is returned to you. This can happen when you have marked an entire directory (in the Directory Structure pane) and then you unmark a single file in the directory.

Selecting an Invalid Client Type Causes Problems

Although it is possible to change the "Type of client," in most situations the default client type is appropriate and should not be changed.

Symptoms of an invalid client type are:

◆ All attempts to backup files fail. The following error message appears in the Task Progress tab for each failed backup:

```
no active classes in the configuration database are of the
correct client type.
```

◆ Existing backups do not appear in the Directory Structure and Contents of Selected Directory panes.

If you suspect a problem is caused by an invalid client type setting, change the Type of Client to the value appropriate for your operating environment ("Standard" for UNIX). If problems persist, ask your NetBackup administrator for advice on setting client type to match your organization's NetBackup configuration.

Using the Menu Interface 3

This chapter explains how to use the NetBackup menu interface program, `bp`, to perform NetBackup operations. The menu interface is character-based (curses) so you can use it at any terminal (or terminal emulation window) for which you have a `termcap` or `terminfo` definition. You can also use the menu interface (`xbp`) or the Java interface (`jbp`) on any terminal with the proper prerequisites. The menu interface has the functionality of `xbp` and `jbp` but with a menu-driven presentation.

The purpose of this chapter is to provide step-by-step procedures for using the menu interface. If you need information about specific screens or menu options within the interface, refer to Chapter 5, "Reference Guide to xbp and bp."

The areas covered here are:

◆   Starting the Menu Interface

◆   Performing Backups or Archives

◆   Performing Restores

◆   Resolving Links

◆   Checking Progress of Operations

Starting the Menu Interface

Start the menu interface program by typing the `/usr/openv/netbackup/bin/bp` command.

When bp starts, the Main Menu appears on your screen as shown.

```
+--------------------------------------------------+-+-+
|-|                      windows                    |□|□|
+--------------------------------------------------+-+-+
||                 NetBackup 3.2                       |
||                                                     |
||           Master Server:  pear                      |
||                   Client:  pear                     |
||                                                     |
||              Main Menu                              |
||              ---- ----                              |
||           b) Backup...                              |
||           r) Restore...                             |
||                                                     |
||           h) Help                                   |
||           q) Quit                                   |
||■                                                    |
||■                                                    |
||            ENTER CHOICE: []                         |
+-----------------------------------------------------+
```
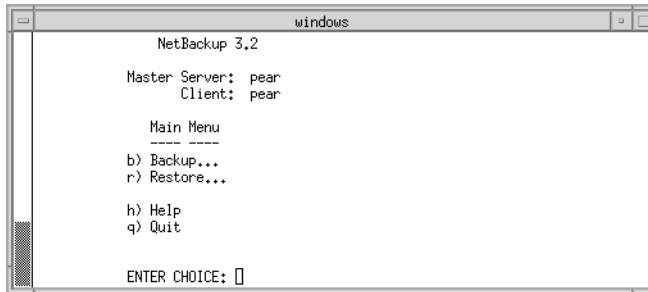
The name of your client and NetBackup master server are shown at the top of the menu. If more than one master server is available to your client, you can use the M (Change Master Server) option on the Backup Menu menu to select another server.

Performing Backups or Archives

The following procedure explains how to perform a backup of files, directories, or raw partitions or to archive files and directories. The main difference between backups and archives is that an archive deletes the designated directories and files from your disk after successfully backing them up.

1. Type the following command line:

   `/usr/openv/netbackup/bin/bp`

   The Main Menu will appear.

```
+--------------------------------------------------+-+-+
|-|                      windows                    |□|□|
+--------------------------------------------------+-+-+
||                 NetBackup 3.2                       |
||                                                     |
||           Master Server:  pear                      |
||                   Client:  pear                     |
||                                                     |
||              Main Menu                              |
||              ---- ----                              |
||           b) Backup...                              |
||           r) Restore...                             |
||                                                     |
||           h) Help                                   |
||           q) Quit                                   |
||■                                                    |
||■                                                    |
||            ENTER CHOICE: []                         |
+-----------------------------------------------------+
```
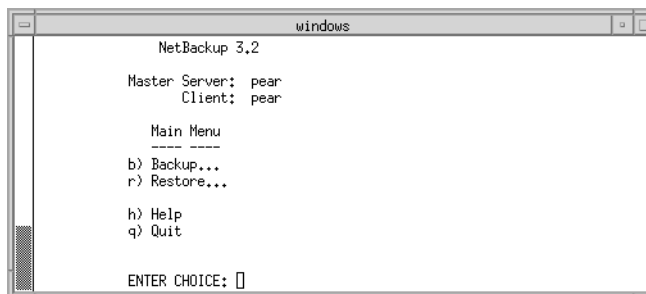
2. Select the B (Backup) option. The Backup Menu will appear.

```
┌─────────────────────────── windows ───────────────────────────┐
│           Master Server:  pear                                 │
│                   Client:  pear                                │
│                                                                │
│                                                                │
│               Backup Menu                                      │
│               ----------                                       │
│           b) Backup Files and Directories...                   │
│           a) Archive Files and Directories...                  │
│           o) Backup Oracle DB...                               │
│           i) Backup Informix DB...                             │
│           s) Backup Sybase DB...                               │
│           p) Backup SAP DB...                                  │
│           2) Backup DB2 DB...                                  │
│           t) Backup SQL-BackTrack DB...                        │
│                                                                │
│           m) Change Master Server...                           │
│           h) Help                                              │
│           q) Quit Menu                                         │
│                                                                │
│           ENTER CHOICE: []                                     │
└────────────────────────────────────────────────────────────────┘
```
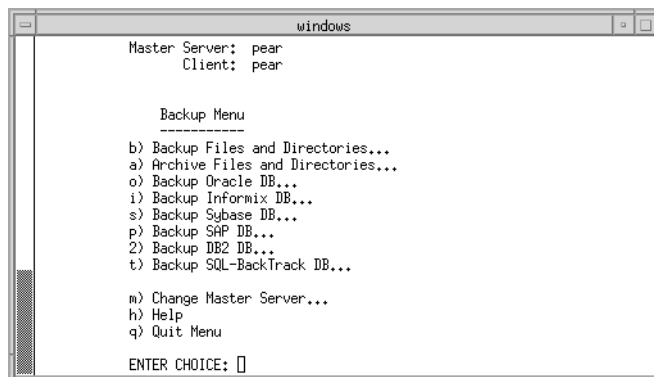
Refer to "Backup Menu" on page 124 for details on this menu.

Note The following menu items do not apply to BusinesServer: Backup SAP DB, Backup DB2 DB, and Backup SQL-BackTrack DB.

Check the name in the Master Server field. This field shows the name of the server to which NetBackup will send your backups. When you start the `bp` interface program, this field is set to the default for your client.

You should not have to switch master servers unless the administrator has moved the backups. If the change becomes permanent, the administrator should change your default to reflect the other master server.

To change master servers, choose the M (Change Master Server) option and type the name of the other server. If you type an invalid name or your client does not belong to a class on that server, you will get an error.

3. Select the B (Backup Files and Directories) option. The Backup of Files and Directories menu will appear.

```
┌─────────────────────────────────── windows ─────────────────────────────┬─┬─┐
│                          Path: /opt/openv32/netbackup/bin/                │
│                    Start Date: 01/01/70 00:00:00                          │
│                      End Date: 12/02/98 23:59:59                          │
│                 Master Server: pear                                       │
│                  Display Mode: Brief                                      │
│                Files selected: 0                                          │
│                Keyword Phrase:                                            │
│                                                                           │
│                     Backup of Files and Directories                       │
│                     --------------------------------                      │
│                     s) Select Files and Directories...                    │
│                     e) Edit/View Selected Files...                        │
│                     i) Initiate Backup                                    │
│                     p) Change Path...                                     │
│                     d) Change Date Range...                               │
│                     m) Change Master Server...                            │
│                     k) Change Keyword Phrase...                           │
│                     x) Change Display Mode to Verbose                     │
│                     h) Help                                               │
│                     q) Quit Menu                                          │
│                                                                           │
│                     ENTER CHOICE: []                                      │
└───────────────────────────────────────────────────────────────────────────┘
```

4. Check the Path field at the top of the menu to see if it is set to the directory where you want to start the search for the desired files. At start-up, NetBackup sets Path to your current working directory.

In this example, we are going to backup the `release_notes.txt` file located in the `/usr/openv/netbackup/` directory.

   a. To change the path, choose the P (Change Path) option from the Backup of Files and Directories menu. The following will appear.

```
┌─────────────────────────────────── windows ─────────────────────────────┬─┬─┐
│      Current File Path: /usr/openv/netbackup/bin/                         │
│          New File Path: []                                                │
└───────────────────────────────────────────────────────────────────────────┘
```
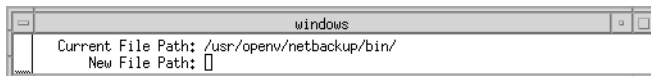
   b. Type the following for the New File Path.

   `/usr/openv/netbackup/`

   c. Press Enter to return to the Backup of Files and Directories menu.

5. Check that the Start Date and End Date fields include the last-modified dates of the files you want to back up.

   a. To change the range of dates, select the D (Change Date Range) option from the Backup of Files and Directories menu. The following will appear.
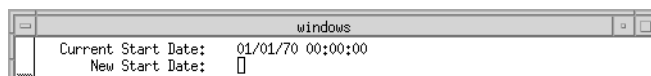
```
┌─────────────────────────────────── windows ─────────────────────────────┬─┬─┐
│      Current Start Date:    01/01/70 00:00:00                             │
│          New Start Date:    []                                            │
└───────────────────────────────────────────────────────────────────────────┘
```

   b. Type the new start date.

c. Press Enter. The following will appear.

```
┌─────────────────────────── windows ──────────────────────────────┐
│ ─                                                           □ │□ │
├─────────────────────────────────────────────────────────────────┤
│                                                                   │
│     Current End Date:    11/25/98 23:59:59                        │
│        New End Date:    []                                        │
│ ▓                                                                 │
└───────────────────────────────────────────────────────────────────┘
```
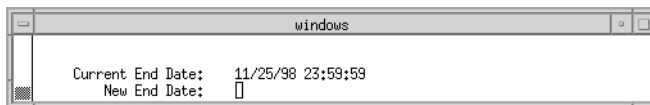
d. Type the new end date.

e. Press Enter to return to the Backup of Files and Directories menu.

6. Type the keyword phrase you want to use to identify the backup. In this example, we will use the keyword *bptest*.

a. Select the K (Change Keyword Phrase) option from the Backup of Files and Directories menu. The following will appear.

```
┌─────────────────────────── windows ──────────────────────────────┐
│ ─                                                           □ │□ │
├─────────────────────────────────────────────────────────────────┤
│ ▓ Enter keyword:  () []                                           │
└───────────────────────────────────────────────────────────────────┘
```
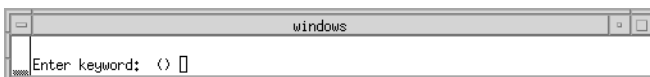
b. Type the keyword *bptest*.

c. Press Enter to return to the Backup of Files and Directories menu.

7. Select the files and directories you want to back up.

a. Select the from the Backup of Files and Directories menu. The following will appear.

```
┌─────────────────────────── windows ──────────────────────────────┐
│ ─                                                           □ │□ │
├─────────────────────────────────────────────────────────────────┤
│ Selections: 0    Current Path: /usr/openv/netbackup/             │
│                                                                   │
│ -[]/usr/openv/netbackup/                                          │
│    bin/                                                           │
│    bp.conf                                                        │
│    dbext/                                                         │
│    help/                                                          │
│    logs/                                                          │
│    release_notes.txt                                              │
│                                                                   │
│                                                                   │
│                                                                   │
│                                                                   │
│                                                                   │
│                                                                   │
│                                                                   │
│                                                                   │
│ Zoom(I)n (Z)oomOut (S)elect (B)ack (F)wd (U)p (D)n (L)eft (R)ight (O)k │
└───────────────────────────────────────────────────────────────────┘
```
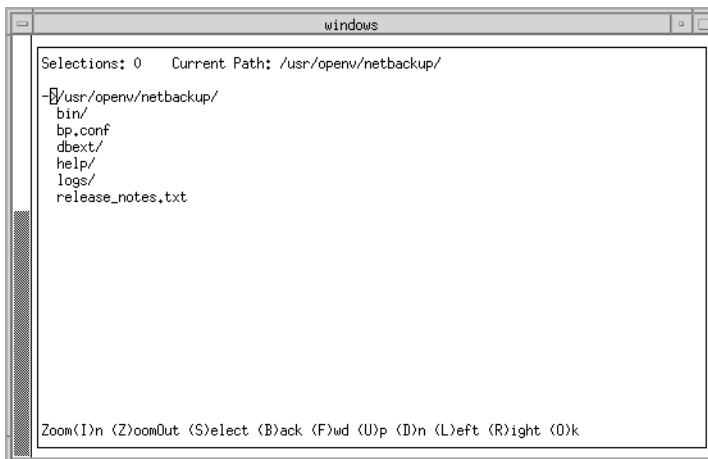
b. Use the menu options at the bottom of the screen to browse the file system and select the desired files and directories.

c. Choose the (S)elect option to select the `release_notes.txt` file. An asterisk (*) will appear to the left of the selected file.

```
windows
Selections: 1    Current Path: /usr/openv/netbackup/

  /usr/openv/netbackup/
  bin/
  bp.conf
  dbext/
  help/
  logs/
*□release_notes.txt
```
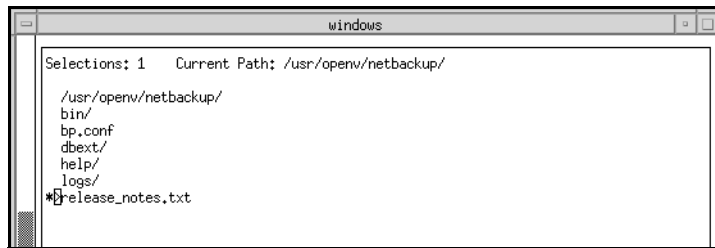
If you select a directory, all files and directories below the selected directory will be selected. An asterisk (*) will appear to the left of the selected directory.

d. Select the (O)k to return to the Backup of Files and Directories menu.

8. Preview the files and directories you have selected to back up.

a. Select the E (Edit/View Selected Files) option from the Backup of Files and Directories menu. The following will appear.

```
windows
                    Number of Selections = 1

->/usr/openv/netbackup/release_notes.txt
 □








(A)dd Selection Un(S)elect (C)lear (B)ack (F)wd (U)p (D)n (L)eft (R)ight (O)k
```

This screen lists your selections and lets you make changes.

b. Make sure the `release_notes.txt` file appears in the list.

c. Select the (O)k to return to the Backup of Files and Directories menu.

9. Start the backup operation.

Note You can return to the Backup of Files and Directories menu at any time up to starting the operation by pressing the Escape key.

a. Select the I (Initiate Backup) option from the Backup of Files and Directories menu. The following will appear.
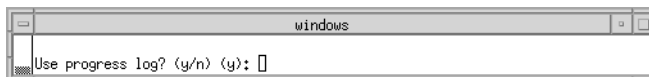
```
windows
Use progress log? (y/n) (y): []
```

b. Type Y to create a log file and write to this file as the operation progresses. The following will appear.

```
windows
Use progress log? (y/n) (y): y
Enter Progress File Path:  (/bplog.bkup.002) []
```
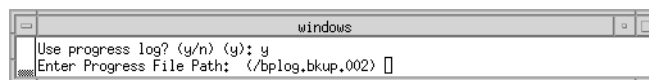
If you do not want logging, type N to start the operation and go to step d.

c. Press Enter to accept the default (shown in parentheses), or type a new path and press Enter. The operation begins when you press Enter. The following will appear.

```
windows
Use progress log? (y/n) (y): y
Enter Progress File Path:  (/bplog.bkup.002)

diagnostic output will be logged to /bplog.bkup.002


Initiating Backup . . .

The backup was successfully initiated.

Press any key to continue
[]
```
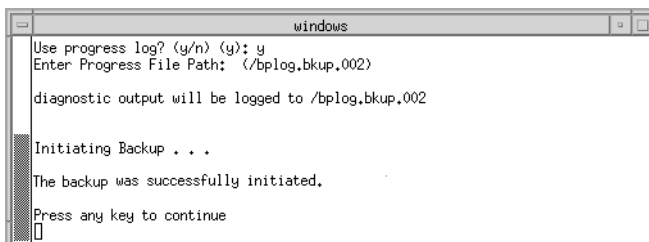
d. Press any key to return to the Backup of Files and Directories menu.

10. Select the Q (Quit Menu) to return to the Main Menu.

Performing Restores

NetBackup restores files according to the original file pathname. If current files have the same names as backed-up files, you can pick whether to overwrite the current files (file permissions must allow overwriting). See "File Permissions Required By NetBackup" on page 6 for an explanation of how NetBackup restores files in various situations.

Note When restoring NetWare backups, set the directory depth to a minimum of 6 to ensure that the backup image is displayed.

Note When restoring raw partitions, ensure that the partition is not mounted and not in use. Also ensure that the device file for the raw partition exists prior to the restore.

1. Type the following command line:

`/usr/openv/netbackup/bin/bp`

The Main Menu will appear.
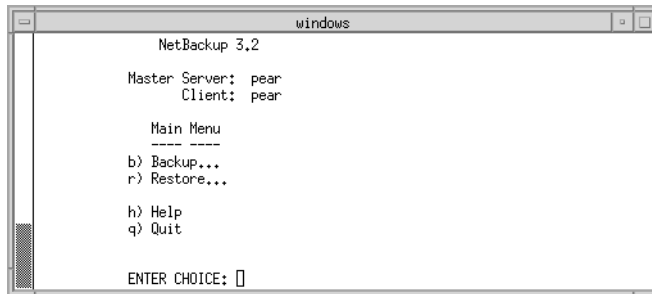
2. Choose the R (Restore) option from the Main Menu. The Restore Menu appears.
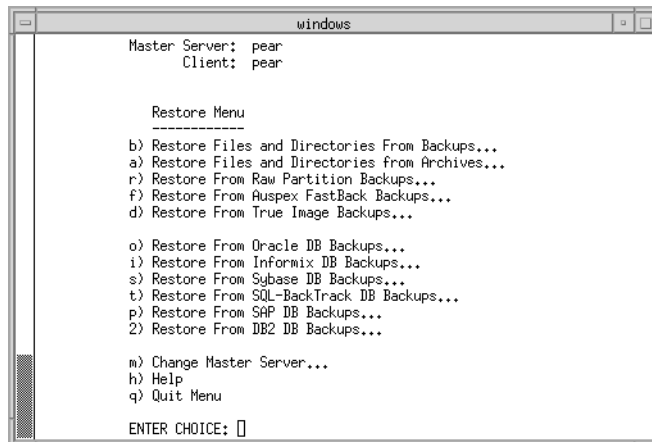
Refer to "Restore Menu" on page 128 for details on this menu.

Note The following menu items do not apply to BusinesServer: Restore From Auspex FasBack Backups, Restore From SQL-BackTrack DB Backups, Restore From SAP DB Backups, and Restore From DB2 DB Backups.

If your site supports more than one master server and you want to browse or restore files from another server, check the Master Server field at the top of the screen. When you start the bp interface program, the Master Server field shows the default for your client.

To browse a backup on another master server, choose the M (Change Master Server) option and type the name of the other server. If you type an invalid name or your client does not belong to a class on that server, you get an error.

3. Select the B (Restore Files and Directories from Backups) option. The Restore Backups menu will appear.

```
┌──────────────────────────── windows ───────────────────────┬─┬─┐
│ │            Path: /opt/openv32/netbackup/bin/                │ │ │
│ │                                                             └─┴─┘
│ │    Start Date: 12/02/98 07:09:39      Master Server: pear
│ │      End Date: 12/02/98 23:59:59      Source Client: pear
│ │ Files Selected: 0                 Destination Client: pear
│ │ Directory Depth: 1 level               Class Type: Standard
│ │   Display Mode: Brief               Keyword Phrase:
│ │
│ │                         Restore Backups
│ │                         ---------------
│ │ s) Select Files and Directories... p) Change Path...
│ │ e) Edit/View Selected Files...      d) Change Date Range...
│ │ i) Initiate Restore                 c) Change Directory Depth...
│ │ x) Change Display Mode to Verbose   m) Change Master Server...
│ │ l) List Backup Images...            b) Change Source Client...
│ │ a) Specify Alternate Path...        t) Change Destination Client
│ │ q) Quit Menu                        y) Change Class Type
│ │ h) Help                             k) Change Keyword Phrase
│ │
│ │ ENTER CHOICE: []
```

4. View the backups for your client.

a. Choose the L (List Backup Images) option from the Restore Backups menu.

```
┌──────────────────────────── windows ───────────────────────┬─┬─┐
│ │Backed Up       Expires    Files     KB    C  Sched Type   Class        Keywor│
│ │--------------- --------  -------- --------  -  -----------  -----------  ------│
│ │11/27/98 12:10  01/28/99      5       256   N  User Backup  production_w bptest│
│ │11/27/98 12:07  01/28/99      5       256   N  User Backup  production_w xbptes│
│ │11/26/98 20:40  12/29/98     26       258   N  Incr Backup  production_w NONE  │
│ │11/25/98 20:30  12/28/98    103      2064   N  Incr Backup  production_w NONE  │
│ │11/25/98 13:50  01/26/99      5       256   N  User Backup  production_w test  │
│ │11/25/98 13:39  01/26/99      5       256   N  User Backup  production_w test  │
│ │11/24/98 11:13  01/25/99      5       256   N  User Backup  production_w test  │
│ │11/24/98 11:11  01/25/99      5       256   N  User Backup  production_w test  │
│ │11/23/98 20:45  12/26/98     90       774   N  Incr Backup  production_w NONE  │
│ │11/20/98 19:09  12/23/98    133      2580   N  Incr Backup  production_w NONE  │
│ │11/19/98 04:02  12/22/98     41      2064   N  Incr Backup  production_w NONE  │
│ │11/17/98 22:43  12/20/98     76      2322   N  Incr Backup  production_w NONE  │
│ │11/16/98 22:15  12/19/98     74      2322   N  Incr Backup  production_w NONE  │
│ │11/14/98 23:16  12/17/98     24      1806   N  Incr Backup  production_w NONE  │
│ │11/13/98 21:50  12/16/98     59      2322   N  Incr Backup  production_w NONE  │
│ │11/13/98 00:18  12/16/98     46      2322   N  Incr Backup  production_w NONE  │
│ │11/12/98 00:44  12/15/98     71      2322   N  Incr Backup  production_w NONE  │
│ │11/10/98 23:14  12/13/98     33      1806   N  Incr Backup  production_w NONE  │
│ │11/09/98 22:25  12/12/98     72      2322   N  Incr Backup  production_w NONE  │
│ │11/08/98 18:29  12/11/98     34      1806   N  Incr Backup  production_w NONE  │
│ │                                                                              │
│ │[] (B)ack  (F)orward  (U)p  (D)own  (Q)uit                                    │
```
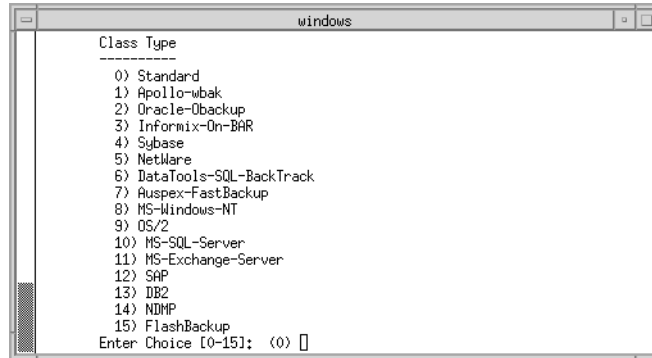
This screen shows the backups created. Notice that the keyword bptest, entered during the backup procedure described in "Performing Backups or Archives" on page 48, is displayed under the keyword column. For this example, we will be restoring from the backup with the bptest keyword.

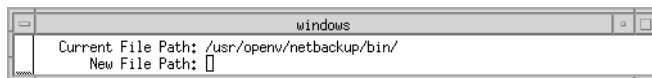**b.** Select (Q)uit to return to the Restore Backups menu.

5. Check the Class Type field to see if it is set correctly.

    a. To change the class type, select the Y (Change Client Type) option from the Restore Backups menu.

```
─                              windows                              □□
     Class Type
     ----------
     0) Standard
     1) Apollo-wbak
     2) Oracle-Obackup
     3) Informix-On-BAR
     4) Sybase
     5) NetWare
     6) DataTools-SQL-BackTrack
     7) Auspex-FastBackup
     8) MS-Windows-NT
     9) OS/2
     10) MS-SQL-Server
     11) MS-Exchange-Server
     12) SAP
     13) DB2
     14) NDMP
     15) FlashBackup
     Enter Choice [0-15]:  (0) []
```

The current class type appears in parenthesis.

Note The following class types do not apply to BusinesServer: Apollo-wbak, DataTools-SQL-BackTrack, Auspex-FastBackup, SAP, DB2, and FlashBackup.

---

    b. Type the number for the new class type.

    c. Press Enter to return to the Restore Backups menu.

6. Check the Path field at the top of the Restore Backups menu to see if it is set to the directory you want to start the search. At start-up, the current path is set to the directory from which you start the interface program.

    a. To change the path, select the P (Change Path) option. The following appears.

```
─                              windows                              □□
   Current File Path: /usr/openv/netbackup/bin/
      New File Path: []
```

For this example, we will be changing the path to `/usr/openv/netbackup`.

    b. Type the new file path.

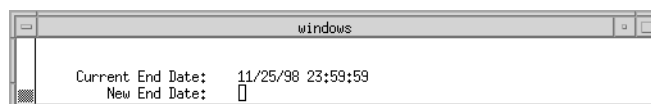   `/usr/openv/netbackup`

    The search begins in this directory and goes down the directory tree.

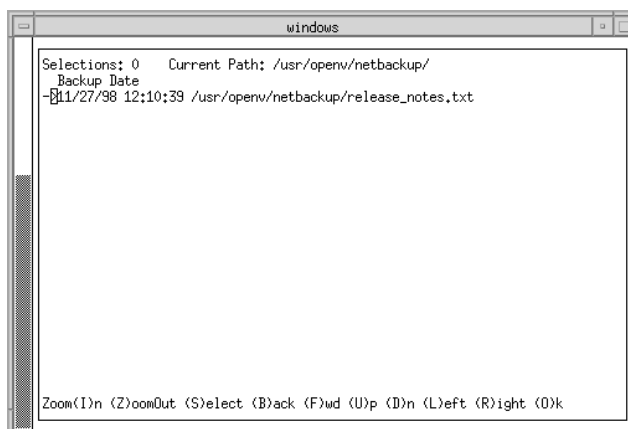   **c.** Press Enter to return to the Restore Backups menu.

7. Check the Start Date and End Date fields to see if the range of dates includes the backup dates of the files you want to restore.

   a. To change the range of dates, select the D (Change Date Range) option from the Restore Backups menu. The following will appear.

   ```
   ┌─┬──────────────────────────── windows ────────────────────────── ▫ □┐
   │                                                                      │
   │   Current Start Date:   01/01/70 00:00:00                            │
   │       New Start Date:   []                                           │
   └──────────────────────────────────────────────────────────────────┘
   ```

   b. Type the new start date.

   c. Press Enter. The following will appear.

   ```
   ┌─┬──────────────────────────── windows ────────────────────────── ▫ □┐
   │                                                                      │
   │   Current End Date:   11/25/98 23:59:59                              │
   │       New End Date:   []                                             │
   └──────────────────────────────────────────────────────────────────┘
   ```
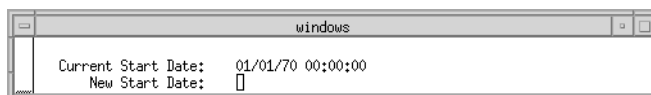
   d. Type the new end date.

   e. Press Enter to return to the Restore Backups menu.

8. Select the files and directories you want to restore.

   a. Select the S (Select Files and Directories) option from the Restore Backups menu to search for files and directories that belong to the client and meet the path and date criteria. The following will appear.

   ```
   ┌─┬──────────────────────────── windows ────────────────────────── ▫ □┐
   │ ┌──────────────────────────────────────────────────────────────┐   │
   │ │Selections: 0    Current Path: /usr/openv/netbackup/           │   │
   │ │  Backup Date                                                   │   │
   │ │-▓11/27/98 12:10:39 /usr/openv/netbackup/release_notes.txt      │   │
   │ │                                                                │   │
   │ │                                                                │   │
   │ │                                                                │   │
   │ │                                                                │   │
   │ │                                                                │   │
   │ │                                                                │   │
   │ │                                                                │   │
   │ │                                                                │   │
   │ │                                                                │   │
   │ │                                                                │   │
   │ │Zoom(I)n (Z)oomOut (S)elect (B)ack (F)wd (U)p (D)n (L)eft (R)ight (O)k│ │
   │ └──────────────────────────────────────────────────────────────┘   │
   └──────────────────────────────────────────────────────────────────┘
   ```

   If you are restoring an entire directory and the range of dates includes more than one backup date for files in the directory, NetBackup restores only the most-recent backups. To restore earlier versions, you can either:

Chapter 3, Using the Menu Interface

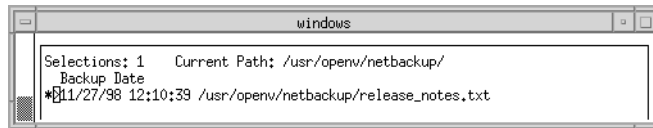◆ Restore by file rather than by directory and select the files with the desired backup date.

or

◆ Return to step 7 and specify only the backup dates you desire.

Here, you can restore the entire directory. Before proceeding, however, decide whether you want to overwrite all files in that directory with the earlier versions. If you do not want to overwrite existing files, you can restore the directory to an alternate path (see step 10 of this procedure).

You may also want to refer to "Shortcut Restore Procedures" on page 83 and "Restoring a True-Image of a Directory" on page 63.

b. Use the menu options at the bottom of this screen to move the display arrow to the line with the `release_notes.txt` file.

c. Select the (S)elect to select the `release_notes.txt` file. An asterisk (*) will appear to the left of the selected file.

```
┌─┐                          windows                        │ □ │□│
│ │ ┌──────────────────────────────────────────────────────────┐
│ │ │ Selections: 1    Current Path: /usr/openv/netbackup/        │
│ │ │   Backup Date                                               │
│▓│ │ *▓1/27/98 12:10:39 /usr/openv/netbackup/release_notes.txt   │
└─┘ └──────────────────────────────────────────────────────────┘
```

If you had selected a directory, all directories and files below the selected directory would have been implicitly selected. An asterisk (*) will appear to the left of the selected directory.

d. Select the (O)k to return to the Restore Backups menu.

9. Preview the files and directories you have selected to restore.

a. Select the E (Edit/View Selected Files) option from the Restore Backups menu. The following will appear.

```
┌─────────────────────────── windows ──────────────────────┐
│                                                           │
│  ┌────────────────────────────────────────────────────┐  │
│  │              Number of Selections = 1              │  │
│  │                                                    │  │
│  │ ->/usr/openv/netbackup/release_notes.txt           │  │
│  │                                                    │  │
│  │   []                                               │  │
│  │                                                    │  │
│  │                                                    │  │
│  │                                                    │  │
│  │                                                    │  │
│  │                                                    │  │
│  │                                                    │  │
│  │                                                    │  │
│  │ (A)dd Selection Un(S)elect (C)lear (B)ack (F)wd (U)p (D)n (L)eft (R)ight (O)k │  │
│  └────────────────────────────────────────────────────┘  │
└───────────────────────────────────────────────────────────┘
```
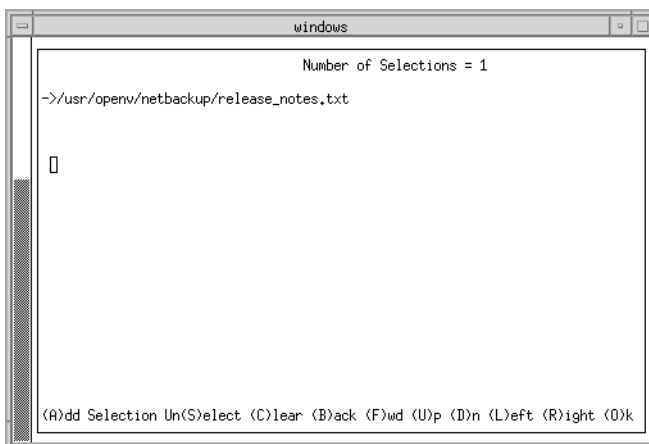
This screen lists your selections and lets you make changes.

b. Make sure the release_notes.txt file appears in the list.

c. Select the (O)k to return to the Restore Backups menu.

10. Set up an alternate restore path.

This is an optional step, used to restore files to a different path on the same client. In the following example, we will set up an alternate path restore from /usr/openv/netbackup to /usr/openv/netbackup/bin.

Note You cannot use NetBackup on the master server to restore a file to an alternate path on a NetBackup for Novell NetWare client. For those clients, you must perform the alternate path restore with the user interface on the NetWare client.

a. Choose the A (Specify Alternate Path) option from the Restore Backups menu. The following will appear.
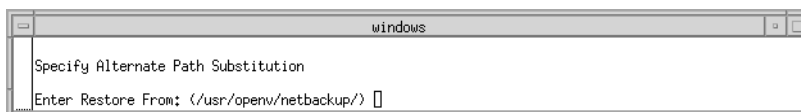
```
┌─────────────────────────── windows ──────────────────────┐
│                                                           │
│ Specify Alternate Path Substitution                       │
│                                                           │
│ Enter Restore From: (/usr/openv/netbackup/) []            │
│                                                           │
└───────────────────────────────────────────────────────────┘
```

b. Press Enter. The following will appear.

```
┌─────────────────────────────── windows ────────────────────────── □ □ ┐
│
│ Specify Alternate Path Substitution
│
│ Enter Restore From: (/usr/openv/netbackup/)
│ Enter Restore To: (/usr/openv/netbackup/) []
```

c. Type the following path in the Enter Restore To field.

```
/usr/openv/netbackup/bin
```

d. Press Enter. The following will appear.

```
┌─────────────────────────────── windows ────────────────────────── □ □ ┐
│ Specify Alternate Path Substitution
│
│ Enter Restore From: (/usr/openv/netbackup/)
│ Enter Restore To: (/usr/openv/netbackup/) /usr/openv/netbackup/bin
│ OK to use these paths?? (y/n) (y): []
```

e. Type Y to use the indicated Restore From and Restore To paths on the next restore. The following will appear.

```
┌─────────────────────────────── windows ────────────────────────── □ □ ┐
│ Specify Alternate Path Substitution
│
│ Enter Restore From: (/usr/openv/netbackup/)
│ Enter Restore To: (/usr/openv/netbackup/)
│ OK to use these paths?? (y/n) (y):
│
│
│ Note: the temporary file /var/tmp/AAA01pUAh will be used
│   to manage the restore.
│
│
│ Press any key to continue
│ []
```

Type N to cancel the changes so the previous paths are still used.

f. Press any key to return to the Restore Backups menu.

11. Start the restore operation.

a. Type I (Initiate Restore) option from the Restore Backups menu. The following will appear.

```
┌─────────────────────────────── windows ────────────────────────── □ □ ┐
│ Restoring the following files
│
│ /usr/openv/netbackup/release_notes.txt
│
│ Overwrite if file(s) exist? (y/n) (n): []
```

Caution The overwrite option is ignored during raw partition restores. The device file must exist and the disk partition is overwritten whether this option is set or not.

b. Type Y to overwrite existing files. The following will appear.

```
windows                                                          □ □
Restoring the following files

/usr/openv/netbackup/release_notes.txt

Overwrite if file(s) exist? (y/n) (n):y
Use progress log? (y/n) (y): □
```

Type N to if you do not want to overwrite existing files.

c. Type Y to create a log file and write to this file as the operation progresses. The following prompt will appear.

```
windows                                                          □ □
Restoring the following files

/usr/openv/netbackup/release_notes.txt

Overwrite if file(s) exist? (y/n) (n): y
Use progress log? (y/n) (y):
Enter Progress File Path:  (/bplog.rest.002) □
```

If you do not want logging, type N to start the operation and go to step d.

d. Press Enter to accept the default (shown in parentheses), or type a new path and press Enter. The operation begins when you press Enter.

If you have previously selected an alternate-restore path (see step 10) the Use alternate path substitution? prompt appears:

```
windows                                                          □ □
Restoring the following files

/usr/openv/netbackup/release_notes.txt

Overwrite if file(s) exist? (y/n) (n): y
Use progress log? (y/n) (y):
Enter Progress File Path:  (/bplog.rest.002)

diagnostic output will be logged to /bplog.rest.002

Use alternate path substitution? (y/n) (y): □
```

To cancel the restore to alternate path, type N to start the restore operation and ignore the alternate path.

e. Type Y to use an alternate path.

f. Press Enter. The following will appear.

```
windows                                      ▫ ▢
Restoring the following files

/usr/openv/netbackup/release_notes.txt

Overwrite if file(s) exist? (y/n) (n): y
Use progress log? (y/n) (y): y
Enter Progress File Path:  (/bplog.rest.002)

diagnostic output will be logged to /bplog.rest.002

Use alternate path substitution? (y/n) (y): y
Rename hard links relative to the alternate path? (y/n) (y): ▯
```

> **Note** If you are restoring system files to a disk other than the current system disk and
> plan on using the other disk as the system disk with the original file paths when the
> restore is completed, we suggest that you specify Y (yes) on Rename Hard Links and
> N (no) on Rename Soft Links. This will allow you use the other disk and have the
> correct file paths.

If there are links in the path you are searching, NetBackup prompts you as to
whether you want to resolve the links so the path points to the actual file or
directory. If you do not want to resolve links, answer N (no) to the prompt. See
"Resolving Links" on page 67 for more information.

g. Type N. The following will appear.

```
windows                                      ▫ ▢
Restoring the following files

/usr/openv/netbackup/release_notes.txt

Overwrite if file(s) exist? (y/n) (n): y
Use progress log? (y/n) (y): y
Enter Progress File Path:  (/bplog.rest.002)

diagnostic output will be logged to /bplog.rest.002

Use alternate path substitution? (y/n) (y): y
Rename hard links relative to the alternate path? (y/n) (y): n
Rename soft links relative to the alternate path? (y/n) (y): ▯
```

h. Type N. The restore operation begins when you press N. The following will appear.

```
 ─                              windows                              □ □
 │ Restoring the following files
 │
 │ /usr/openv/netbackup/release_notes.txt
 │
 │ Overwrite if file(s) exist? (y/n) (n): y
 │ Use progress log? (y/n) (y):
 │ Enter Progress File Path:  (/bplog.rest.002)
 │
 │ diagnostic output will be logged to /bplog.rest.002
 │
 │ Use alternate path substitution? (y/n) (y):
 │ Rename hard links relative to the alternate path? (y/n) (y): n
 │ Rename soft links relative to the alternate path? (y/n) (y): n
 │
 │ Initiating Restore . . .
 │
 │ The restore was successfully initiated.
 │
 │ Press any key to continue
 ▓ []
```

i. Press any key to return to the Restore Backups menu.

Restoring a True-Image of a Directory

A true-image restore will restore the contents of a directory to what it was at the time of a selected automatic full or incremental backup. See "Restoring a True Image of a Folder" on page 40 for an overview of true-image recovery. The concepts explained there for the Java interface also apply to the menu interface.

1. Select the D (Restore From True Image Backups) option from the Restore Menu. The Restore True Image Backups menu appears.

```
 ─                              windows                              □ □
 │                 Path: /opt/openv32/netbackup/bin/
 │
 │      Start Date: 12/02/98 07:09:39      Master Server: pear
 │        End Date: 12/02/98 23:59:59      Source Client: pear
 │  Files Selected: 0                 Destination Client: pear
 │ Directory Depth: 1 level                   Class Type: Standard
 │    Display Mode: Brief                  Keyword Phrase:
 │
 │                    Restore True Image Backups
 │                    --------------------------
 │ s) Select Files and Directories... p) Change Path...
 │ e) View/Delete Selected Files...   d) Change Date Range...
 │ i) Initiate Restore                c) Change Directory Depth...
 │ x) Change Display Mode to Verbose  m) Change Master Server...
 │ l) List TIR Backup Images...       b) Change Source Client...
 │ a) Specify Alternate Path...       t) Change Destination Client
 │ q) Quit Menu                       k) Change Keyword Phrase
 │ h) Help
 │
 │ ENTER CHOICE: []
```

2. Select the D (Change Date Range) option from the Restore True Image Backups menu.

◆ The default start date is the time of the last scheduled full backup of the class. Use the default unless you are restoring a version that existed before the latest full backup.

◆ The default end date is the current date. If necessary, change this value to the reflect the date that you want to recover.

In this example, we are recovering the most recent version of the directory so we leave the date range at the defaults.

3. To view the backup list for true-image restore backups, choose the L (List TIR Backup Images) from the Restore True Image Backups menu.

4. To change the path, Select the P (Change Path) option from the Restore True Image Backups menu.

Type the directory where you want to start searching for the desired backups. Searching begins in this directory and goes down the directory tree.

To search for a specific directory, type its complete path at the prompt.

5. Select the S (Select Files and Directories) option from the Restore True Image Backups menu to search for directories that belong to the client and meet the path and date criteria.

Individual files do not appear and cannot be selected because true-image restores are intended only for restoring entire directories. To list or select individual files in a true-image restore backup or range of backups, use the Restore Backups menu.

A true-image restore will restore files that existed in the directory *at the time* of the incremental backup. Files that did *not* exist at the time of the incremental backup will not be restored.

Note If NetBackup cannot find any directories, check your range of dates, path, and directory depth. If these settings are correct and no directories are found, check with the administrator on the master server to see if the NetBackup class that is backing up your files and directories is configured to collect true-image restore information.

6. Select the files or directories you want to restore.

a. Use the menu options at the bottom of the screen to find and select the desired directory.

b. When you are through selecting, select the (O)k to return to the Restore True Image Backups menu.

7. Preview the files and directories you selected to restore.

    a. Select the E (Edit/View Selected Files) option from the Restore True Image Backups menu.

    b. Check that the directories you selected appear in the list.

    c. Select the (O)k to return to the Restore True Image Backups menu.

8. If you want to restore to a directory other than the one from which the files were originally backed up, choose A (Specify Alternate Path) option from the Restore True Image Backups menu.

9. Type I (Initiate Restore) option to bring up the Initiate Restore screen.

10. Answer the prompts to start the restore.

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. See "True Image Restore and Overwriting" on page 41.

Alternate Client Restore

> **Note** You cannot use NetBackup on the master server to restore a file to an alternate path on a NetBackup for Novell NetWare client. For those clients, you must perform the alternate path restore with the user interface on the NetWare client.

1. Choose the R (Restore) option from the Main Menu. The Restore Menu appears.

2. Select the B (Restore Files and Directories from Backups) option. The Restore Backups menu will appear.

3. Change the source client.

    a. Select the B (Change Source Client) option from the Restore Backups menu. The following appears.


```
                            windows
Enter client to browse: (ferret) []
```
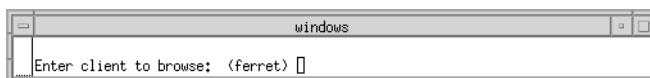
    The current client appears in parenthesis.

    b. Type the client name from which you want to browse and restore files.

    c. Press Enter to return to the Restore Backups menu.

4. Change the destination client.

    a. Select the T (Change Destination Client) from the Restore Backups menu. The following appears.


```
                              windows
Enter client to restore: (ferret) []
```
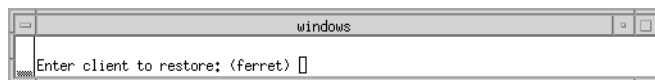
    The current client appears in parenthesis.

    b. Type the client name to which you want to restore files.

Note The destination client must be of the same class type as the source client.

    c. Press Enter to return to the Restore Backups menu.

5. Check the class type for the source client and the destination client.

    a. To change the class type, select the Y (Change Client Type) option from the Restore Backups menu. The current class type appears in parenthesis.

    b. Type the class type for the source client and the destination client.

    c. Press Enter to return to the Restore Backups menu.

6. Check the Path field at the top of the Restore Backups menu to see if it is set to the directory at which you want to start the search for the desired backups.

    a. To change the path, select the P (Change Path) option.

    b. Type the new file path.

    c. Press Enter to return to the Restore Backups menu.

7. Select the files and directories you want to restore.

    a. Select the S (Select Files and Directories) option from the Restore Backups menu to search for files and directories that belong to the source client and meet the path and date criteria.

    b. Use the menu options at the bottom of this screen to move the display arrow to the files or directories you want to restore to the destination client.

       c. Select the (S)elect to select the file or directory. An asterisk (*) will appear to the left of the selected file or directory.

       If you select a directory, all directories and files below the selected directory will be implicitly selected.

       d. Select the (O)k to return to the Restore Backups menu.

8. Preview the files and directories you have selected to restore.

       a. Select the E (Edit/View Selected Files) option from the Restore Backups menu. The resulting screen lists your selections and lets you make changes.

       b. Review your selections.

       c. Select the (O)k option to return to the Restore Backups menu.

9. Type I (Initiate Restore) option to start the restore operation.

10. Follow the prompts. The restore operation begins when you press Enter.

Resolving Links

When searching for files to restore, you can choose whether to have NetBackup resolve links that may exist in the search path. If you resolve links, NetBackup automatically changes the path so it points to the actual file or directory. Otherwise, NetBackup uses the path you type in. For more information, see "Resolving Links" on page 42.

Note In `bp`, if links exist in the selected path, you get a prompt at the time you elect to browse the backups.

Note NetBackup does not resolve links if you use wildcard characters in the search directory path.

Checking Progress of Operations

When you start a NetBackup operation, you can have NetBackup create a log file in a directory of your choice and write to this file during the course of the operation. By default, NetBackup creates a log file in your home directory of the form:

`bplog.bkup.`*n* (for backups)

`bplog.arch.`*n* (for archives)

`bplog.rest.`*n* (for restores)

Where *n* is a number that is unique for each file.

You can read log files by using the `more` command or a UNIX file editor. Delete the logs when you no longer need them. Since the log files can warn you of problems, it is usually best to read the log files before deleting them.

See "Interpreting Progress Logs" on page 93 for information on interpreting the logs.

Using the X-Windows Interface 4

This chapter explains how to use the graphical interface program, xbp, to perform NetBackup operations. This interface is X-Windows based and requires an X terminal or a workstation with an X server program compatible with release X11.R4 or later. The interface uses OSF and Motif conventions.

The purpose of this chapter is to provide step-by-step procedures for using the graphical interface. For information about specific windows or menu options within the interface, refer to Chapter 5, "Reference Guide to xbp and bp." Refer also to the online help facility.

The areas covered here are as follows:

◆ Starting the Graphical Interface

◆ Performing Backups and Archives

◆ Performing Restores

◆ Resolving Links

◆ Checking Progress of Operations

◆ Obtaining a List of Your Backups and Archives

◆ Finding and Selecting Files and Directories

Starting the Graphical Interface

1. Ensure that your X terminal or workstation X server is named according to X conventions.

2. Set your DISPLAY environment variable to the appropriate value.

   The most convenient method is to define the DISPLAY variable with your login procedure.

   The following example uses the `setenv` command after login to set up the display for an X terminal or server named orca:

   ```
   setenv DISPLAY orca.user.abc.com:0
   ```

   You can also use the `-d` option when you execute `xbp` command (see step 3).

3. Start the graphical interface by typing `xbp` command as shown in the following examples. The variation you use depends upon whether your DISPLAY environment variable is already set:

   ◆ If the DISPLAY variable is set, type:

   ```
   /usr/openv/netbackup/bin/xbp &
   ```

   ◆ If the DISPLAY variable is not set, use the -d option:

   ```
   /usr/openv/netbackup/bin/xbp -d orca.user.abc.com:0 &
   ```

   The & character puts the program in background mode so your original window stays active and is available for other activities.

When `xbp` starts, the xbp_main window appears on your screen.
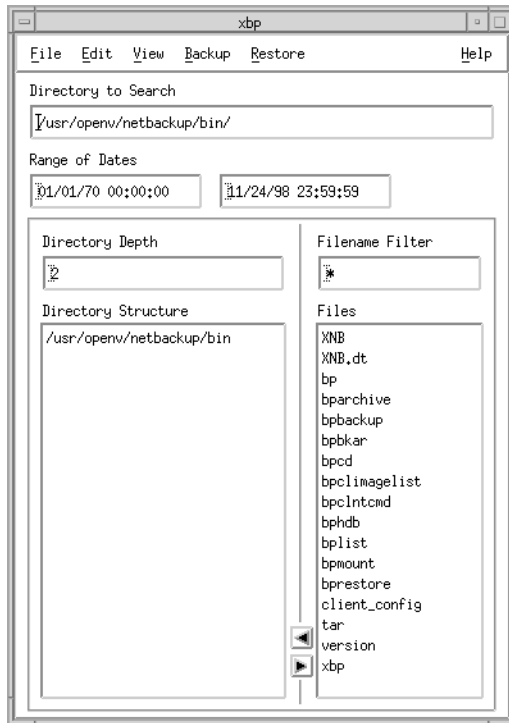
When you start `xbp`, the Browse File System (Backup or Archive) command from the File menu is selected by default. The Directory Structure pane and the Files pane show all directories and files in the directory specified in the Directory To Search box and the next two levels down. The Directory To Search box is set to the directory where you start `xbp`. You set the number of levels down in the Directory Depth box.

Refer to "xbp_main Window" on page 102 for details on this window.

Performing Backups and Archives

The following procedure explains how to perform a backup of files, directories, or raw partitions or to archive files and directories. The main difference between backups and archives is that an archive deletes the designated files and directories from your disk after successfully backing them up.

1. Change NetBackup master servers if necessary.

If there is more than one master server to which you can send your backups and archives, ensure that you are connected to the correct one. Ask your NetBackup administrator if you have questions about which master server to use.

Normally, you will not have to switch master servers unless, for some reason, the administrator has temporarily moved the NetBackup backups (for example, because of a problem on the original master server). If the change becomes permanent, the administrator should change your default to reflect the other server.

a. Click Configuration on the File menu.

```
⬆ Browse file system (backup or archive)
  Browse backups (restore)
  Browse backups (true image restore)
  Browse archives (restore)
  Browse backups (restore raw partitions)
  Browse backups (Auspex FastBackup raw partition)
  Browse file system for Oracle backup scripts
  Browse file system for Oracle restore scripts
  Browse file system for Informix backup scripts
  Browse file system for Informix restore scripts
  Browse file system for SQL-BackTrack backup scripts
  Browse file system for SQL-BackTrack restore scripts
  Browse file system for Sybase backup scripts
  Browse file system for Sybase restore scripts
  Browse file system for DB2 backup scripts
  Browse file system for DB2 restore scripts
  Browse file system for SAP backup scripts
  Browse file system for SAP restore scripts
  Configuration...
  Quit
```

Refer to "File Menu" on page 103 for details on this menu.

This opens the xbp_config dialog box.

The name of the current master server appears in the Server box. When you start xbp, the server is set to the default for your client.
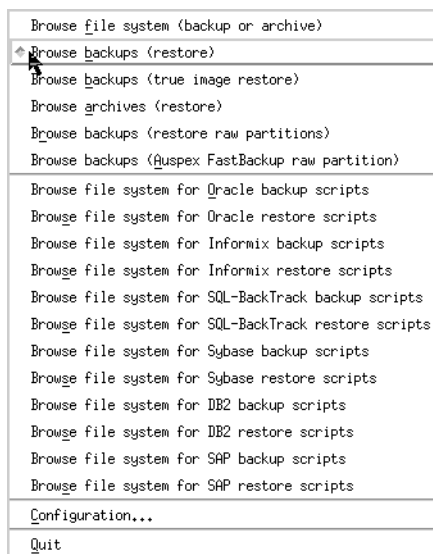
If you do not want to change the master server, click Cancel. If you want to change the master server, go to the next step.

b. Type the name of the other server in the Server box.
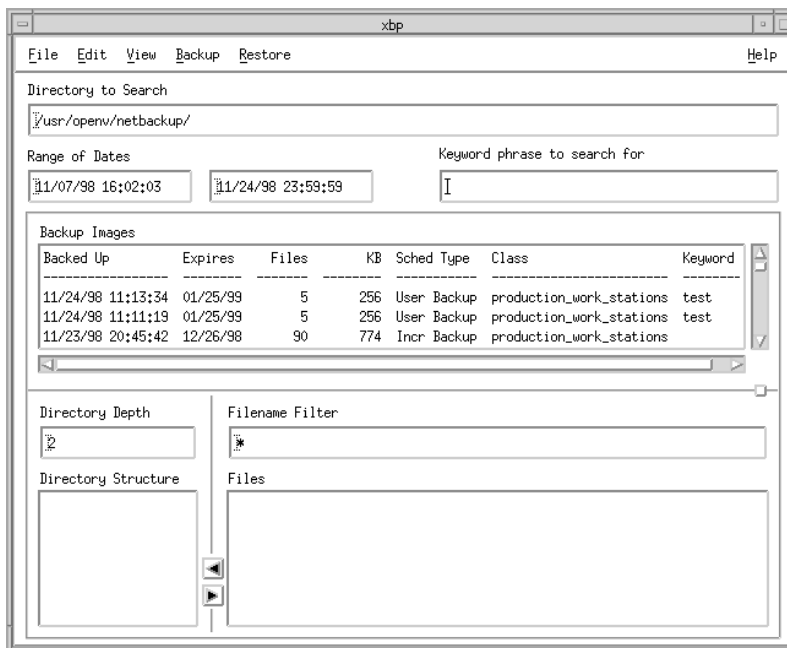
c. Click OK.

If you typed an invalid name, or if your client does not belong to a NetBackup class on that server, you get will an error. If this occurs, see your system administrator for assistance.

2. Find and select the desired files and directories.

If the desired files or directories are not currently displayed, find them by using the methods described under "Finding and Selecting Files and Directories" on page 94.

In this example we are going to select the release_notes.txt file.

a. Select the /usr/openv/netbackup directory in the Directory Structure pane.

When a directory is selected in the Directory Structure pane, all of the subdirectories and files listed in the Files pane are implicitly selected. These implicitly selected subdirectories and files will not appear highlighted in the Files pane.

b. Select release_notes.txt in the Files pane.
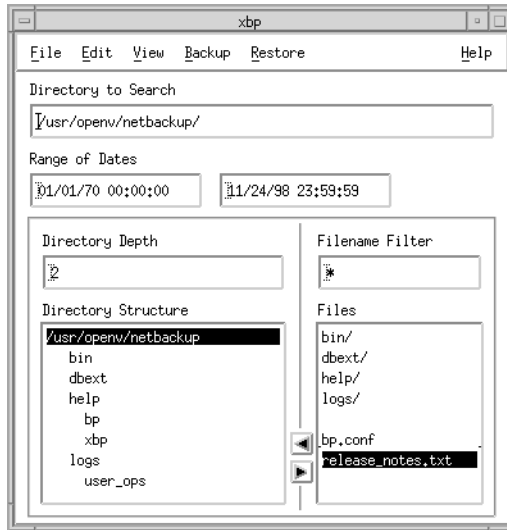
3. On the Backup menu, click Backup Selected Files and Directories.
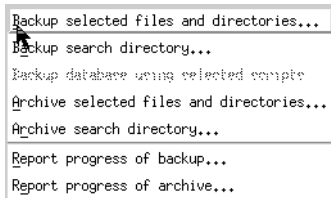
This opens the xbp_confirm dialog box.
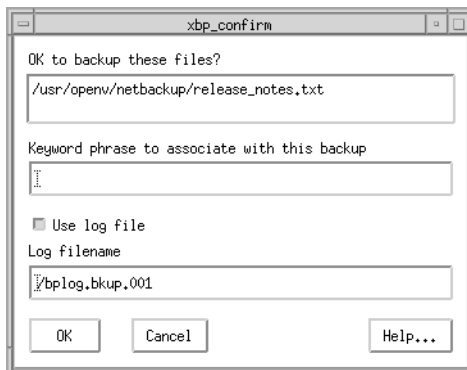
> **Note** If you click Archive Selected Files and Directories, NetBackup will back up the selected directory and all of its subdirectories, *then* delete the backed up directories from your system.

    a. Review your selections in the xbp_confirm dialog box.

    b. Choose whether to use the progress log file.

        Select the Use Log File checkbox to create a log file in your home directory and write to this file as the operation progresses. The checkbox is selected when highlighted.

        The name of the log file appears in the Log Filename box. For information on checking the log, see "Checking Progress of Operations" on page 92.

    c. Type a keyword in the Keyword phrase to associate with this backup box.

        The phrase you type in the Keyword phrase to associate with this backup box will be the key for finding this backup during the restore process. In this example we will use the keyword *test*. You will use this keyword during the restore operation in the following section.

    d. Click OK. This sends your backup request to the server. The main window will appear.

        To return to the main window without starting the backup or archive, click Cancel.

Performing Restores

The following topics explain how to restore files, directories, and raw partitions:

◆ Basic Restore Procedure - includes detailed instructions for restoring files.

◆ Shortcut Restore Procedures - abbreviated procedures for common operations.

◆ Advanced Restore Operations - information on performing true-image restores and alternate client restores.

Basic Restore Procedure

The following procedure is a detailed explanation of how to restore files, directories, and raw partitions to your client system.

Note When restoring NetWare backups, set the directory depth to a minimum of 6 to ensure that the backup image is displayed.

Note If you are restoring raw partitions, ensure that the partition is not mounted and not in use. Also ensure that the device file for the raw partition exists prior to the restore.

Note If you are restoring a directory, you may want to refer to "Shortcut Restore Procedures" on page 83 and "Restoring a True-Image of a Directory" on page 89.

---

1. Change NetBackup master servers if necessary.

If there is more than one master server that can back up this client, ensure that you are connected to the one that performed the backup you are trying to restore. If you attempt to restore from another master server, the files will not be found. Ask your NetBackup administrator if you have questions about which master server to use.

a. On the File menu, click Configuration.

Browse file system (backup or archive)
Browse backups (restore)
Browse backups (true image restore)
Browse archives (restore)
Browse backups (restore raw partitions)
Browse backups (Auspex FastBackup raw partition)
Browse file system for Oracle backup scripts
Browse file system for Oracle restore scripts
Browse file system for Informix backup scripts
Browse file system for Informix restore scripts
Browse file system for SQL-BackTrack backup scripts
Browse file system for SQL-BackTrack restore scripts
Browse file system for Sybase backup scripts
Browse file system for Sybase restore scripts
Browse file system for DB2 backup scripts
Browse file system for DB2 restore scripts
Browse file system for SAP backup scripts
Browse file system for SAP restore scripts
Configuration...
Quit

Refer to "File Menu" on page 103 for details on this menu.

This opens the xbp_config dialog box.

xbp_config

Server
your server

Client to browse for restores
your client

Client to restore to
(alternate client)

Class type of images to browse
Standard

OK   Cancel   Help...

The name of the current master server appears in the Server box. When you start xbp, the server is set to the default for your client.

If you do not want to change the master server, click Cancel. If you want to change the master server, go to the next step.

b. Type the name of the other server in the Server box.

c. Click OK.

If you typed an invalid name, or if your client does not belong to a NetBackup class on that server, you get will an error. If this occurs, see your system administrator for assistance.

2. Find the file and/or directory to restore.

    a. On the File menu, click Browse Backups (Restore).

```
Browse file system (backup or archive)
Browse backups (restore)
Browse backups (true image restore)
Browse archives (restore)
Browse backups (restore raw partitions)
Browse backups (Auspex FastBackup raw partition)
Browse file system for Oracle backup scripts
Browse file system for Oracle restore scripts
Browse file system for Informix backup scripts
Browse file system for Informix restore scripts
Browse file system for SQL-BackTrack backup scripts
Browse file system for SQL-BackTrack restore scripts
Browse file system for Sybase backup scripts
Browse file system for Sybase restore scripts
Browse file system for DB2 backup scripts
Browse file system for DB2 restore scripts
Browse file system for SAP backup scripts
Browse file system for SAP restore scripts
Configuration...
Quit
```

A main window similar to the following will appear.

Note If there are a large number of backups in your range of dates, a message box may appear to indicate that you cannot search for a specific path until you update the display. If this message appears, select Update Display from the Edit menu.

b. Specify the directory to search.

In this example, we are going to restore the release_notes.txt file backed up in "Performing Backups and Archives" on page 72. Type the following in the Directory To Search box:

```
/usr/openv/netbackup/
```

Note If there are any links in the path you are searching, NetBackup, by default, resolves the links so the path points to the actual file or directory. If you do not want to resolve links, click Do Not Resolve Links in Search Directory on the View menu before choosing a browse command from the File menu. See "Resolving Links" on page 91 for more information.

c. Specify the range of dates.

When you go from backup mode to restore mode, NetBackup normally changes the starting date so that it defaults to the time of the last full backup. If you type in a specific date before changing modes, your specification is used (see "Selecting Specific Backup Dates to Restore" on page 87 for more details).

d. Specify the keyword phrase to search for.

In step c on page 75 of the "Performing Backups and Archives" section, you typed **test** as the keyword. So, in the Keyword phrase to associate with this backup box, type **test**.

e. Type * .txt in the Filename Filter box.

f. On the File menu, click Browse Backups (Restore).

A main window similar to the following will appear.
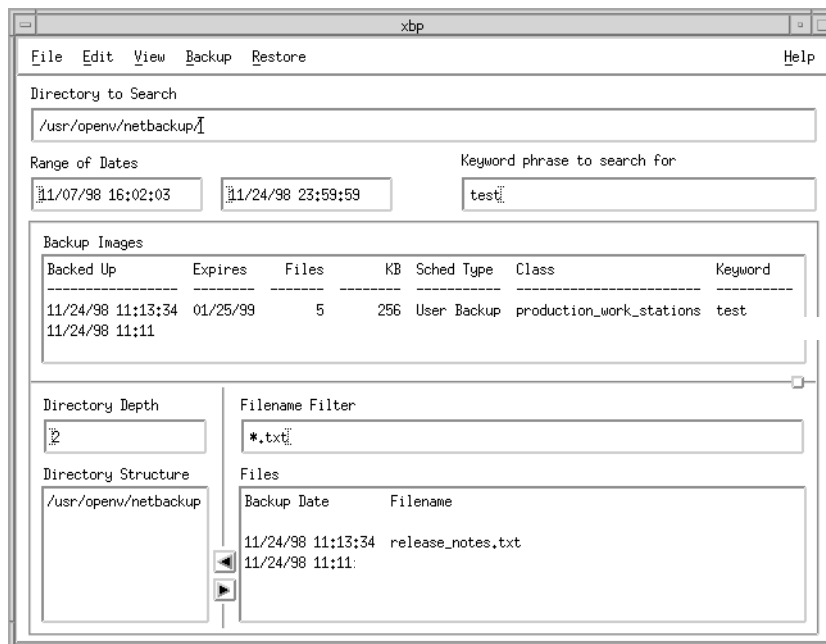
g. Select the files and directories that you want to restore.

If the desired files or directories are not currently displayed, find them by using the methods described under "Finding and Selecting Files and Directories" on page 94. You can also specify another range of backups to search (see "Selecting Specific Backup Dates to Restore" on page 87).

In the following figure, the /usr/openv/netbackup directory is selected in the
Directory Structure pane. This implicitly selects all directories and files that are
below /usr/openv/netbackup in the directory tree.
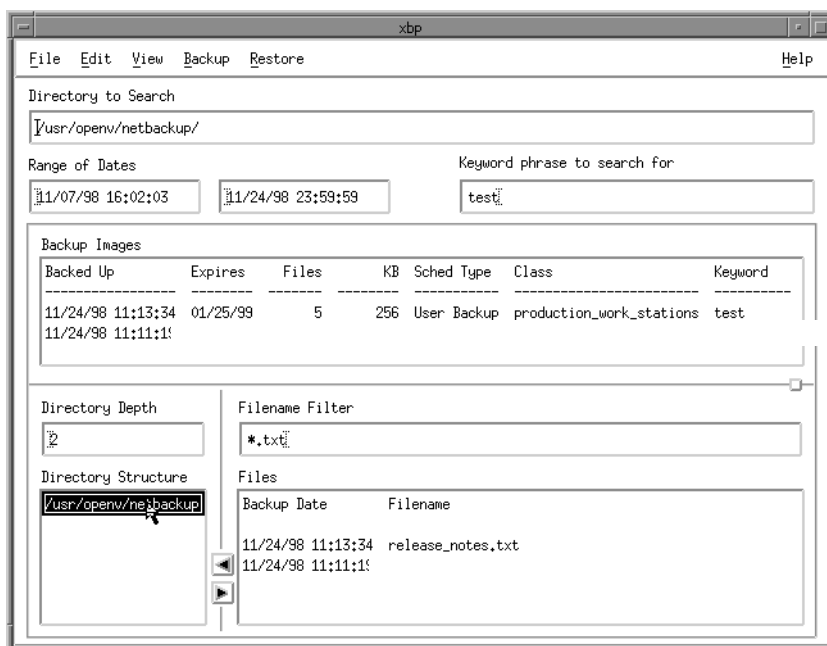
Note If you are selecting directories on the Files pane and then change your mind and
unselect a directory, it is not unselected until you have selected either Clear
Selection for Current Directory or Discard Selections for Previous Directories from
the Edit menu. If you use Inspect All Selections from the Edit menu, you can see
what is selected to be restored.

3. Start the restore.

a. Click Restore Search Directory from the Restore menu.

This opens the xbp_confirm dialog box.
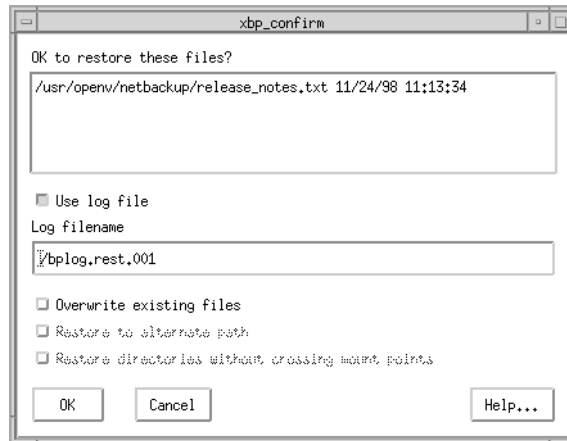
b. Choose whether to use the progress log file.

Select the Use Log File checkbox to create a log file in your home directory and write to this file as the operation progresses. The checkbox is selected when highlighted.

The name of the log file appears in the Log Filename box. For information on checking the log, see "Checking Progress of Operations" on page 92.

c. Select the Overwrite Existing Files checkbox.

Note The disk partition is overwritten whether this option is set or not. The device file must exist.

The Restore To Alternate Path checkbox and the Restore Directories Without Crossing Mount Points checkbox are enabled.

Note Mount points inside will get restored whether or not the Restore Directories Without Crossing Mount Points checkbox is selected.

NetBackup restores files according to the original file's pathname.

◆ Select the Overwrite Existing Files checkbox to overwrite an existing file with the restored file, providing file permissions allow it (see "File Permissions Required By NetBackup" on page 6). The checkbox is selected when highlighted.

◆ Clear the Overwrite Existing Files checkbox to prevent overwriting. The restore does not occur if a file with same pathname already exists.

> **d.** Review your selections.

4. Click OK. This will send your restore request to the server. The main window will appear.

To return to the main window without starting the restore, click Cancel.

Shortcut Restore Procedures

The following are abbreviated procedures for common types of restore operations.

Listing the Available Backups or Archives

If you are not sure of the dates when a file or directory was backed up, you can find out by browsing the backups.

1. Type the directory that you want to restore in the Directory To Search box.

2. Leave the range of dates at the defaults (01/01/70 to the current date).

or

If you know the approximate range, type it in to narrow the range that will be displayed. Doing this speeds up your request.

3. On the File menu, choose the desired browse for restore option.

NetBackup updates the Directory Structure pane and the Files pane to show all backups or archives for the specified directory path and date range.

Because NetBackup has to obtain the file information from the backups on the master server, there can be a noticeable delay before the panes appear in the restore window.

Note If there are a large number of backups in the date range, you may be prompted to use Update Display from the Edit menu before NetBackup will search for the specific path.

Restoring the Most Recent Backup

The following explains how to restore the most recent backup that has occurred since the last full backup of your client.

1. Type the directory that you want to restore in the Directory To Search box.

2. On the File menu, click Browse Backups (Restore).

NetBackup updates the Directory Structure pane and the Files pane to show only the files and directories that were backed up from the time of the last full backup through the most recent backup (either incremental or user directed).

Since NetBackup has to obtain the file information from the backups on the master server, there can be a noticeable delay before the panes appear in the restore window.

Note By default, NetBackup restores the file to its original location. To restore to an alternate location, use Specify Alternate Path from the Restore menu before starting the restore.

3. Select the most recent backup of the file you want to restore.

Note If you are selecting directories on the Files pane and then change your mind and unselect a directory, it is not unselected until you have selected either Clear Selection for Current Directory or Discard Selections for Previous Directories from the Edit menu. If you use Inspect All Selections from the Edit menu, you can see what is selected to be restored.

4. On the Restore menu, click Restore Selected Files and Directories.

This starts the restore.

Restoring the Most Recent Version of a Directory

Note The following procedure will restore *all* files that existed in the directory from the time of the last full backup through the most recent backup. Files that were deleted from your online directory during that time period are also restored. If you do not want the files that were deleted from your online directory, proceed to "Restoring a True-Image of a Directory" on page 89.

You can restore the latest version of a directory with just one restore operation. The steps are the same as explained under "Restoring the Most Recent Backup" on page 83, except that here you must select a directory from the Directory Structure pane and use Restore Search Directory from the Restore menu. The restored directory has the last full backup of that directory, updated with all subsequent incremental and user backups.

There are two important things to remember when restoring a directory:

1. The restored directory has only the files that are in the range of backups you selected with the start and end dates. Therefore, these dates must include the last full backup and all other backups through the latest date you are interested in. The best way to get the most recent backup is to use the date of the last full backup as start date and the current date as the end date (this is the default at the start of a browse).

2. It is usually best to select from the Directory Structure pane. Selecting from the Files pane restores only from the backup created at the backup date and time. If that backup is for an incremental, you will restore only the files in that incremental.

Advanced Restore Operations

The topics in this section explain how to perform more specialized restore operations. Also see the section on server directed restores in the *NetBackup System Administrator's Guide - UNIX* or the *NetBackup System Administrator's Guide - Windows NT/2000.*

Alternate Client Restore

The following explains how to restore a backup to an alternate client. Refer to "Basic Restore Procedure" on page 76 for a detailed restore procedure.

> **Note** You cannot use NetBackup on the master server to restore a file to an alternate path on a NetBackup for Novell NetWare client. For those clients, you must perform the alternate path restore with the user interface on the NetWare client.

1. Change NetBackup master servers if necessary.

   a. From the File menu, click Configuration.

      This opens the xbp_config dialog box.

   b. Type the name of the server in the Server box.

   c. Click OK.

      If you type an invalid name or your client does not belong to a NetBackup class on that server, you will get an error. See your system administrator for assistance.

2. From the Restore menu, click Specify Alternate Path.

   This opens the xbp_altpath dialog box.

   a. Type the paths in the Restore From box and the Restore To box.

      You can also use the Current Directory button to change paths to their default value, which is your current directory.

You cannot specify more than one alternate path. If you specify a path that does not exist, NetBackup creates it when restoring the file.

   b. Before restoring files that are links, choose whether to update those link pathnames:

◆ Select the Rename Hard Links checkbox to rename the hard link pathnames. Clear the Rename Hard Links checkbox if you do not want to rename the hard link pathname.

◆ Select the Rename Soft Links checkbox to rename the soft link pathnames. Clear the Rename Soft Links checkbox if you do not want to rename the soft link pathname.

Checkboxes are selected when highlighted.

Note If you are restoring system files to a disk other than the current system disk and plan on using the other disk as the system disk with the original file paths when the restore is completed, we suggest that you select the Rename Hard Links checkbox and clear the Rename Soft Links checkbox. This will let you use the other disk and have the correct file paths.

   c. Confirm or cancel the changes as follows:

◆ Click OK to use the paths indicated in the Restore From box and the Restore To box on the next restore.

or

◆ Click Cancel to cancel the changes so the previous paths are used.

3. On the File menu, click Browse Backups (Restore).

4. Specify the directory to search, the range of dates, the keyword phrase to search for, the directory depth, and the filename filter for the files you want to restore.

5. Find and select the files and directories that you want to restore.

6. Click the appropriate restore command on the Restore menu.

This opens the xbp_confirm dialog box.

   a. Select the Use Log File checkbox to create a log file in your home directory and write to this file as the operation progresses.

   b. Select the Overwrite Existing Files checkbox to overwrite an existing file with the restored file, providing file permissions allow it (see "File Permissions Required By NetBackup" on page 6). The checkbox is selected when highlighted.

Clear the Overwrite Existing Files checkbox to prevent overwriting. The restore does not occur if a file with same pathname already exists.

c. Select the Restore To Alternate Path checkbox to confirm the restore to alternate path. The checkbox is selected when highlighted.

Clear the Restore To Alternate Path checkbox to cancel.

d. Select the Restore Directories Without Crossing Mount Points checkbox to skip over file systems mounted in the selected directories. The checkbox is selected when highlighted.

Clear the Restore Directories Without Crossing Mount Points checkbox to restore file systems that are mounted in the selected directories.

e. Review your selections.

f. Click OK to start to start the restore. The main window will appear.

To return to the main window without starting the restore, click Cancel.

Selecting Specific Backup Dates to Restore

By default, the NetBackup Restore window shows the files and folders that were backed up since the last full backup. The default range will satisfy the majority of your needs to restore files but there will be times 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 will not appear in the default display. In order to locate and backup up this file you would need to change the date range.

If the client belongs to more than one class, the starting date defaults to the last full backup that occurred first. For example, assume that: 1) a client belongs to ClassW1 and ClassW2, 2) Full backups occur for both of these classes, 3) ClassW1's most recent full backup occurred on June 16 and ClassW2's most recent full backup occurred on June 24. NetBackup will display those files and folders that have been backed up since the ClassW1 full backup on June 16.

If the default display does not show the desired files or directories:

1. Specify the range of backup dates that you believe contains the desired files and directories:

◆ Type the desired backup dates in the Range of Dates boxes.

or

◆ Select backups from the Backup Images pane.

The Range of Dates boxes will now contain the oldest and newest backup dates in the range of backups that you selected.

Note Narrow the date range as much as possible to speed up your search.

2. Position the pointer over any of the boxes and press Enter (or click Update Display on the Edit menu).

NetBackup updates the Directory Structure pane and the Files pane to show only the files and directories that it finds in the range of backups that you specified. You can then select the backup you want and restore it.

Since NetBackup has to obtain the file information from the backups on the master server, there can be a noticeable delay before the panes appear in the restore window.

Restoring an Earlier Version of a Directory

Note The following procedure will restore all files that were backed up during the range of backup dates that you search for files to restore. This includes files that were deleted from your online directory after they were backed up. If you do not want the deleted files, use the procedure described in "Restoring a True-Image of a Directory" on page 89.

To restore a version of a directory that existed prior to the last full backup, select only the backups that include the desired version of the directory.

For example, assume that you want the `/home/hrp/` directory as it existed on 10/5/95.

1. Browse all dates and examine the Files pane and the Backup Images pane.

In our example, we find that the following backups occurred.

```
Backup Date and Time        Type of Backup
10/10/95  22:01:20  . . .   Full Backup  . . .
10/09/95  16:30:27  . . .   Incr Backup  . . .
10/02/95  18:05:41  . . .   Incr Backup  . . .
09/29/95  19:36:55  . . .   Incr Backup  . . .
09/25/95  18:06:15  . . .   Full Backup  . . .
09/20/95  16:06:21  . . .   Incr Backup  . . .
09/17/95  22:06:44  . . .   Full Backup  . . .
```

2. Set the start date and end date to include the required backups.

In this example, we set them as follows:

◆ Start date to 09/25/95. This the last full backup preceding 10/5/95.

◆ End date to 10/02/95. This is the incremental that includes the 10/5/95 version of the directory. The next date is 10/09/95, but that has changes we do not want.

3. Start another browse using Update Display from the Edit menu.

4. Select /home/hrp/ from the Directory Structure pane and the check the Files pane to see if it shows the files you need.

Note By default, NetBackup restores the directory to its original location. To restore to an alternate location, use Specify Alternate Path from the Restore menu before starting the restore.

Note If you are selecting directories on the Files pane and then change your mind and unselect a directory, it is not unselected until you have selected either Clear Selection for Current Directory or Discard Selections for Previous Directories from the Edit menu. If you use Inspect All Selections from the Edit menu, you can see what is selected to be restored.

5. On the Restore menu, click Restore Search Directory.

Restoring a True-Image of a Directory

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.

See "Restoring a True Image of a Folder" on page 40 for an overview of true-image recovery. The concepts explained there for the Java interface also apply to the menu interface.

True-Image Restore 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. An example is provided on page 41.

True-Image Restore Procedure

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

Note NetBackup does not allow a true-image restore that is based on the time of a user-directed operation. However, NetBackup does use the data from a user-directed operation when performing a true-image restore if the user backup is more recent than the latest automatic full or incremental backup.

Assume you are recovering `/home/abc/doc/` as it existed on 12/04/95. Also assume you just started the `xbp` interface, so Browse File System (Backup or Archive) is selected with all settings at the defaults.

1. On the File menu, click Browse Backups (True Image Restore).

The Directory Structure pane and the Files pane show the directories that are available for true-image restores. For our example, the default display shows the following.

```
Directory Structure                    Files
/home/abc
  doc                  12/04/95   20:05:22   doc/
    dirA               12/03/95   21:10:50   doc/
    dirB               12/02/95   20:10:34   doc/
                       12/01/95   20:15:34   doc/
```

Notice that the panes show only directories. Individual files do not appear because true-image restores are intended only for restoring entire directories. To list or select individual files, use the Browse Backups (Restore) mode.

Note If NetBackup does not find any directories, check the range of dates, path, and directory depth. If these settings are correct and no directories are found, check with the administrator on the master server to see if the NetBackup class that is backing up your files and directories is configured to collect true image restore information.

2. Select the desired range of dates.

The default start date is the time of the last scheduled full backup of the class. Use the default unless you are restoring a version that existed before the latest full backup.

The default end date is the current date. If necessary, change this value to reflect the date that you want to recover.

In this example, we are recovering the most recent version of the directory so we leave the date range at the defaults.

◆ Start date is 12/01/95

◆ End date is 12/04/95

3. If you changed the range of dates in step 2, click Update Display on the Edit menu to update the panes.

This step is unnecessary in our example, but is required if you change the range of dates.

4. From the Files pane, select the directory that you want to restore (NetBackup does not let you select from the Directory Structure pane for a true-image restore).

In our example, we select the 12/04/95 version of `/home/abc/doc/` from the Files pane.

Note If you are selecting directories on the Files pane and then change your mind and unselect a directory, it is not unselected until you have selected either Clear Selection for Current Directory or Discard Selections for Previous Directories from the Edit menu. If you use Inspect All Selections from the Edit menu, you can see what is selected to be restored.

Note By default, NetBackup restores the directory to its original location. To restore to an alternate location, use Specify Alternate Path from the Restore menu before starting the restore.

5. On the Restore menu, click Restore Selected Files and Directories (Restore Search Directory is not available for a true-image restore).

In our example, the restored directory has:

```
file1
file2
file4
```

This is the directory as it was at the time of the incremental backup that occurred on 12/04/95.

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.

Resolving Links

When searching for files to restore, you can choose whether to have NetBackup resolve links that may exist in the search path. If you resolve links, NetBackup automatically changes the path so it points to the actual file or directory. Otherwise, NetBackup uses the path you type in. For more information, see "Resolving Links" on page 42.

Note xbp resolves links by default, unless you click Do Not Resolve Links in Search Directory on the View menu before starting your search.

Note NetBackup does not resolve links if you use wildcard characters in the search directory path.

Checking Progress of Operations

When you start a NetBackup operation, you can have NetBackup create a log file in a directory of your choice and write to this file during the course of the operation. By default, NetBackup creates a log file in your home directory of the form:

`bplog.bkup.`*n* (for backups)

`bplog.arch.`*n* (for archives)

`bplog.rest.`*n* (for restores)

Where *n* is a number that is unique for each file.

The following figure illustrates a xbp_progress dialog box.
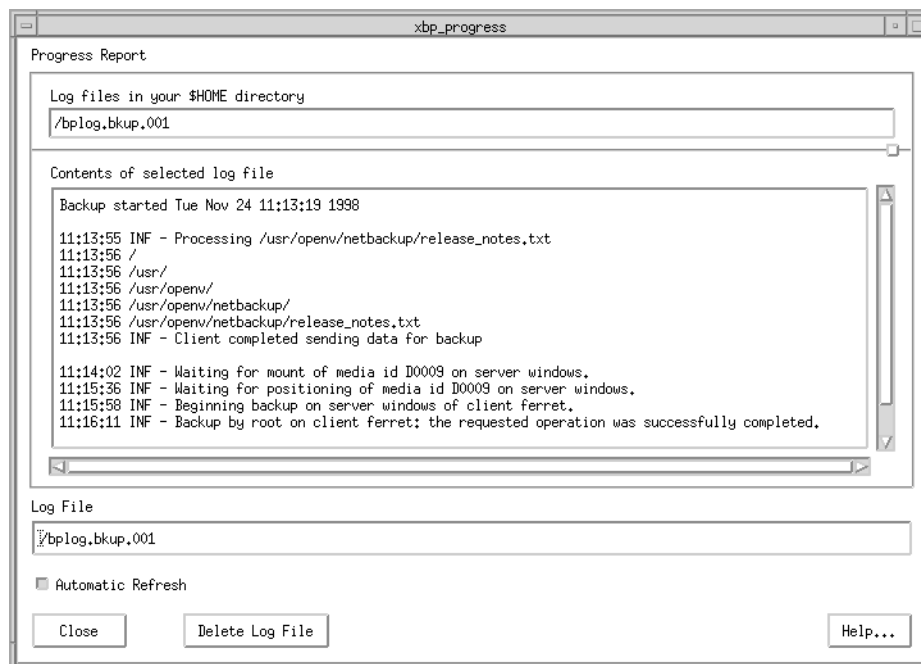
This dialog box lists the progress log files that are in your home directory and lets you view them. (You can also read log files by using the `more` command or a UNIX file editor.)

The log information is in two scrollable panes:

◆ Log files in your $HOME directory (upper section of dialog)

◆ Contents of selected log file (middle section of dialog)

View the contents of a log by selecting and highlighting its entry in the upper pane. The pane in the middle section displays any entries that NetBackup makes in the log file.

Select the Automatic Refresh checkbox for automatic refresh. You can force a refresh by reselecting the same log file. The checkbox is selected when highlighted.

When you are through checking progress, click Close to return to the xbp_main window.

Interpreting Progress Logs

The log messages notify you of important events that occur during the operation. These messages can have acronyms that specify the error level severity of an event.

The error level acronyms are as follows:

INF   Informational message (no error occurred)

TRV   Trivial error message

WRN   Warning error message

ERR   Error message

FTL   Fatal error message

Progress logs also list the media required for a NetBackup operation. For backups, the progress log lists the media IDs as NetBackup requests them during the course of the backup. For restores, the progress log begins by listing all the media IDs that NetBackup needs to recover the backups containing the files. If a backup or archive is split across more than one media ID, a restore log lists all the media but NetBackup uses only what it needs to restore the requested files.

Check the status at the end of the log to determine the final results of the NetBackup operation. If NetBackup was unable to backup or restore all the requested files, check the exit status that appears a few lines before the end of the log. This status will usually reveal the cause of the problem.

Mail Notifications

You can configure a bp.conf file in the client $HOME directory so the user will receive mail notifications on the results of user-directed operations. Refer to the *NetBackup System Administrator's Guide - UNIX* or the *NetBackup System Administrator's Guide - Windows NT/2000* for instructions on configuring that file.

Deleting Progress Log Files

To delete unnecessary log files from your directory, open the xbp_progress dialog box, select the log files and click Delete Log File. You can also delete logs manually by using system commands. Because they can warn you of problems, it is usually best to read the log files before deleting them.

Obtaining a List of Your Backups and Archives

You can use the `bplist` command to get a listing.

The `bplist` command lists backups and archives according to criteria, such as specific file or directory, client name, and range of dates. You can print a list by sending it to a file and then printing the file.

For detailed instructions on using this command, see the man pages. Information on the commands is also included in the *NetBackup System Administrator's Guide - UNIX*.

Finding and Selecting Files and Directories

This section explains what you need to know to find and select files and directories. See Chapter 5" for more information on menus, text boxes, and other items mentioned in the following descriptions.

Navigating in the Directory Tree

Go Lower in the Directory Tree

To go lower in the directory tree:

◆   Double click on a lower level directory in the Directory Structure pane.

    or

◆   Click the directory and press Enter.

The Directory To Search box now shows the selected directory and the Directory Structure pane and the Files pane are updated accordingly.

You can also type the directory path in the Directory To Search box and press Enter. This has the same effect as clicking the directory in the Directory Structure pane.

Go Higher in the Directory Tree

To go higher in the directory tree, type the path of the higher level directory in the Directory To Search box and press Enter. Pressing Enter updates the display (another way to update the display is to click Update Display on the Edit menu).

Show the Contents of a Directory

To see files that are in a directory, click the directory in the Directory Structure pane. The contents appear in the Files pane.

Filter by Date

To show only files that were modified or backed up within a certain date range, set the Range of Dates boxes to include those dates and press Enter to update the display:

◆   For a backup, specify the last modified dates.

◆   For a restore, specify backup dates.

You could set the range of dates to show only those modified before or after a certain date. For example, you could pick only today's files.

Filter by File Name

To show only specific file names that are under the Directory To Search box, use the Filename Filter box. This makes selection easier if you want only specific files but there are many files under Directory To Search box. For example, you can find files ending in `.doc` by using the filter expression `*.doc`. When `xbp` starts, the filter is set to `*` and displays everything.

Change the Number of Directory Levels Displayed

To set the number of directory levels displayed, change the number in the Directory Depth box (default is 2).

Selecting for Backup, Archive, or Restore

To select a file or directory in the Files pane, click its name to highlight it. Clear a file or directory by clicking it again:

◆   To select everything in the current directory, click Select All in Current Directory on the Edit menu. Clear an individual file or directory by clicking it again.

◆   To clear all selections for the current directory, click Clear Selection for Current Directory on the Edit menu.

Caution	If you click on Select All in Current Directory on the Edit menu to perform a NetBackup operation, and the directory you select is large, the operation can be very slow. Instead of selecting everything, consider using Restore Search Directory, Backup Search Directory or Archive Search Directory.

During a backup, selecting a directory from the Files pane implicitly selects everything in the directory, including subdirectories and files. During a restore, selecting a directory in the Files pane restores only the files and subdirectories that are in the backups that occurred during the indicated range of dates.

You select from the Directory Structure pane in the same manner as from the Files pane, except that you can select only one item at a time. When you select a directory to highlight it, the Files pane shows the directories and files in this directory.

When you are through selecting, start the NetBackup operation by choosing the appropriate option from the Backup menu or Restore menu. This opens the xbp_confirm dialog box and adds your selections to that dialog. If you made previous selections and opened the xbp_confirm dialog box but did not confirm your selections (and therefore did not perform the actual NetBackup operation), xbp remembers them and keeps them in the xbp_confirm dialog box. This lets you return to the main window and make changes before confirming.

To clear all selections from the xbp_confirm dialog box, click Discard Selections for Previous Directories on the Edit menu.

Previewing Selected Files

You can view the list of selected files at any time by clicking Inspect All Selections on the Edit menu. This opens a dialog box similar to xbp_confirm, except that it does not have an OK button.

Change Directory Structure Pane and the Files Pane Format

You can change the following aspects of how directories and files appear in the panes.

Show Directory Structure

To indent items in the Directory Structure pane to show the directory hierarchy, click Indented tree structure on the View menu. This is the default. To view the full pathnames of directories in the Directory Structure pane, click Full pathnames on the View menu.

Show Number of Directory Levels Shown

To modify the number of subdirectory levels that appear in the Directory Structure pane and the Files pane, modify the Directory Depth box.

Show Most Recent or All Backups

For a restore, you can choose from the View menu to display either All backup dates for each file or Only most recent backup dates.

Show File Details

To view file details (for example, file size and write permissions), click Verbose display of attributes and file names on the View menu. To view filenames without details, click Brief display of file names (default).

Update the Display

To update the NetBackup window to show the most recent changes (such as file additions or deletions), click Update Display on the Edit menu.

Reference Guide to xbp and bp   5

This chapter describes the various windows, screens, and menus associated with the `xbp` and `bp` user interface programs. Much of the information in this chapter is also available in the online help for the interfaces. Refer to Chapter 4, "Using the X-Windows Interface," or Chapter 3, "Using the Menu Interface," for instructions on using the interfaces. For information on the Java interface, refer to Chapter 2, "Using the Java Interface," or the online help for that application.

Graphical User Interface (xbp)

The `xbp` program provides a graphical interface for NetBackup users. This interface is X Windows based and uses the OSF/Motif conventions. A general description of Motif usage is available in the *OSF/Motif User's Guide*, authored by the Open Software Foundation and published by Prentice Hall (ISBN 0-13-640509-6). The following topics describe the windows, screens, and menus that you use to perform operations with `xbp`.

Special Symbols in Menus and Dialog Boxes

You will encounter the following symbols as you use the menus and dialog boxes:

◆ An ellipsis (...) to the right of a menu item means that when you select the item, a dialog box with additional choices appears. If there is no ellipsis in a menu item, the operation occurs as soon as you select it.

◆ A diamond shape to the left of a menu item means that two or more mutually exclusive modes exist and the mode set by this menu item is currently in effect. For example, if you intend to restore an archived file, you want the diamond to the left of Browse Archives (Restore).

◆ An underlined letter in a menu label means a keyboard shortcut. For example, on an NCD terminal, pressing ALT in conjunction with a shortcut key opens the associated menu. For example, pressing ALT-v opens the View menu. Note that some terminals may require a key other than ALT.

◆ Once a menu is opened, a letter (by itself) is sufficient to execute a menu item tagged with that letter (pressing i on the View menu changes the Directory Structure pane format to indented. You can use the up and down arrow keys to move the highlight through the various menu items and press Enter to execute the highlighted item. The Escape key closes a menu. The left and right arrow keys open adjacent menus.

◆ If the pointer is over the main window, its shape changes to a wristwatch shape while NetBackup is waiting for an operation to complete. For example, the pointer changes to a wristwatch shape when NetBackup is updating its displays and then changes back to an arrow when the update is complete.

`xbp` Configuration

Borders on windows may vary depending on the window manager used at your site (popular examples are twm and mwm). With some window managers, you may have to click the left mouse button to position the window if it does not appear in a few seconds. You can also use your window manager to resize the window.

The `xbp` program has enough space in its text fields to accommodate user-selected fonts up to the 10x20 size. The windows can also fit on a 1024x768 screen with some room for window manager borders.

There is no default font. If the XNB resource file is in the X search path, `xbp` uses the values set in XNB. On some systems, the default font might be unpleasantly small. On other systems, the default font has proportional spacing, causing column misalignment on certain fields that have columnar text.

For an explanation of how to specify X resources to force a particular font, look near the end of the Tutorial help files. For example

1. From the Help menu, click Tutorial. The Online Help Text for `xbp` dialog box will appear.

2. Scroll to the Customizing xbp section.

If your X server defaults to proportional fonts and you do not know which fonts are available for your system, try the generic font name *fixed*.

Because the default window sizes are small enough to fit on a 1024x768 screen, you may find that with larger fonts, the *verbose* display mode forces you to use a horizontal scrollbar to see all the information. Widening the window at runtime with the window manager may eliminate the scrollbar. You can also change X resources as described in the Customizing `xbp` section of the Tutorial help file to enlarge the default geometry and use a smaller font.

The `xbp` program depends upon the `/usr/lib/X11/XKeysymDB` file to correctly use editing keystrokes such as backspace and delete. The NetBackup installation procedures are designed to install a nominal version of this file if it does not already exist. An existing version of the file is not overwritten, thereby ensuring that user-customized versions of `XKeysymDB` are not destroyed.

Sun systems typically have a version of `XKeysymDB` that does not define some editing keys. Either you or the administrator must compare your current `XKeysymDB` file to the NetBackup standard version `/usr/openv/netbackup/bin/XKeysymDB` on NetBackup server machines. Then:

◆ Append the NetBackup version onto the existing one.

   or

◆ Replace the existing one with the NetBackup version.

   or

◆ Hand edit the existing version to achieve your preferred keyboard support.

xbp_main Window

The xbp_main window opens when you start the graphical interface program.
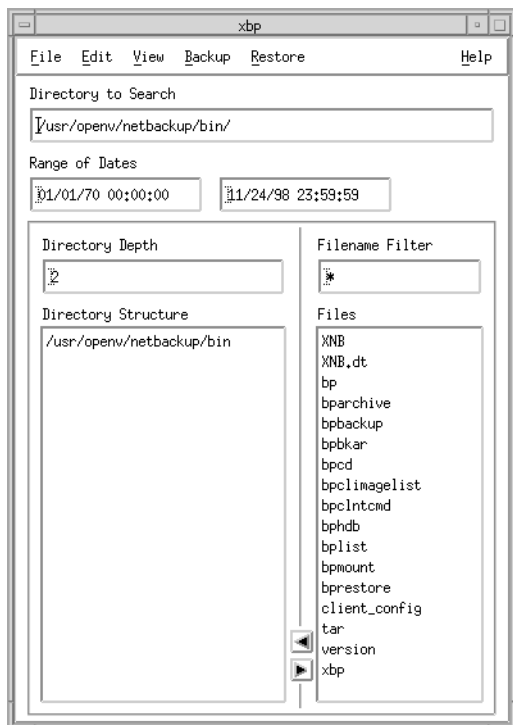
You can pull menus from the menu bar to start backup, archive, and restore operations. The text boxes let you enter specific values for finding and selecting directories and files. The lists show information about selected directories and files.

File Menu
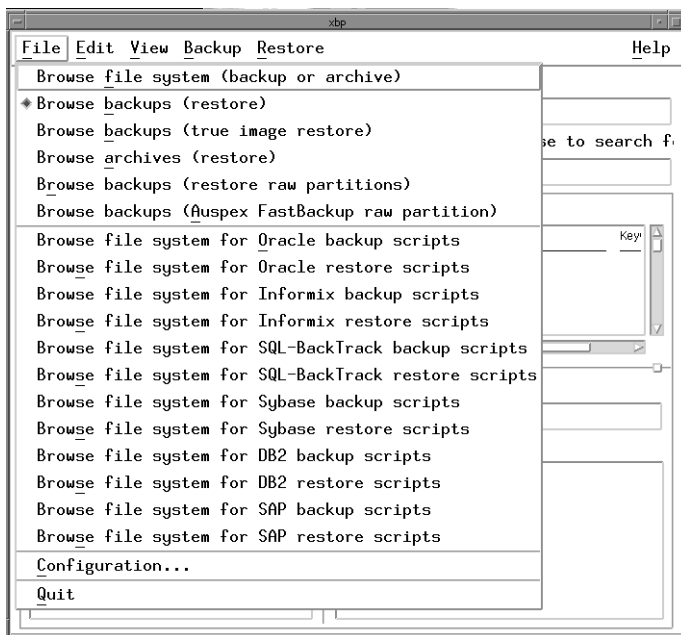
The File menu has commands for inding and selecting files for NetBackup operations. You can also browse for and select database scripts

---

Note The following are not supported for BusinesServer: Auspex FastBackup, SQL-BackTrack, DB2, and SAP.

Browse File System (Backup or Archive)	Causes NetBackup to update its Directory Structure pane and the Files pane with directories and files that meet the criteria entered in the Directory To Search box, the Range of Dates boxes, the Filename Filter box, and the Keyword phrase to associate with this backup box.
Browse Backups (Restore)	Causes NetBackup to build a list of the backups that exist for this client. The completed list appears in a Backup Images pane that opens in the main window.
Browse Backups (True Image Restore)	Causes NetBackup to build a list of the true-image backups that exist for this client. The completed list appears in a Backup Images pane that opens in the main window.
Browse Archives (Restore)	Causes NetBackup to build a list of the archives that exist for this client. The completed list appears in a Backup Images pane that opens in the main window.

Browse backups (restore raw partitions)	Causes NetBackup to build a list of the raw partition backups that exist for this client. The completed list appears in a Backup Images pane that opens in the main window.
Browse backups (Auspex FastBackup raw partition)	Causes NetBackup to build a list of the Auspex FastBackup raw partition backups that exist for this client. The completed list appears in a Backup Images pane that opens in the main window.
	Note: Auspex FastBackup is not supported for BusinesServer.
Browse File System for *database extension*	NetBackup offers database extensions that you can use, in conjunction with xbp, to back up and restore many of the most popular databases. These NetBackup for database extensions are separately priced products which must be installed, then configured to work with xbp. See the NetBackup for database extension system administrator guides for details.
	The Browse File System commands enable the NetBackup for database extension. They cause NetBackup to update its Directory Structure pane and the Files pane to show all directories and files that meet the criteria of the Directory To Search box, the Range of Dates boxes, Filename Filter box, and the Keyword phrase to associate with this backup box.
	Note: SQL-BackTrack, DB2, and SAP are not supported for BusinesServer.
Configuration	Opens the xbp_config dialog box from which you can specify the master server, the client to browse for restores, the client to restore to, and the class type of images to browse. For more information, see "xbp_config Dialog Box" on page 118.
Quit	Terminates the graphical interface program.

Edit Menu
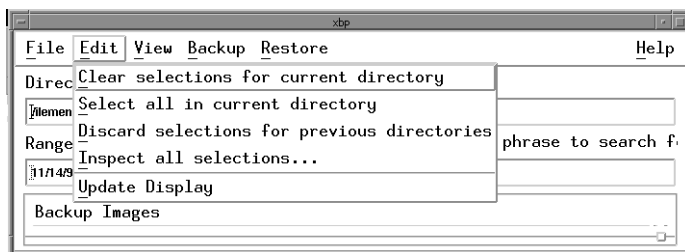
The Edit menu has commands to modify your selections.

Clear Selection for Current Directory	Clears file selections from the Files pane. You must use Discard Selections for Previous Directories to clear the xbp_confirm dialog box.
Select All in Current Directory	Selects all the files in the Files pane.

Discard Selections for Previous Directories	Clears file selections from the xbp_confirm dialog box.
Inspect All Selections	Opens the xbp_viewselect dialog box, which shows you the files that are currently selected. This dialog box has only information and no commands except to close the dialog box or to obtain help.
Update Display	Rereads your directory tree and updates the Directory Structure pane and the Files pane. This is equivalent to pressing Enter in any of the text boxes.

View Menu
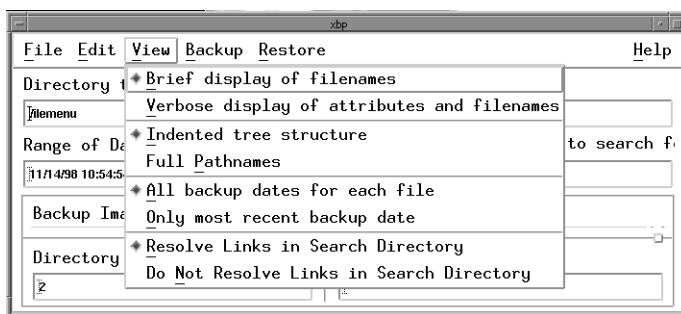
The View menu has commands that modify how NetBackup shows directory and file information in the Directory Structure pane and the Files pane.

Brief display of file names	Shows filenames without details. The display starts in brief mode.
Verbose display of attributes and file names	Shows file details such as size and file permissions.
Indented tree structure	Indents items in the Directory Structure pane to show the hierarchy of the directory tree. You can use either Indented tree structure or Full pathnames mode, but not both. The default is indented mode.
Full pathnames	Shows full pathnames in the Directory Structure pane. You can use either Full pathnames or Indented tree structure mode (see above), but not both. The graphical interface starts in the indented mode.
All backup dates for each file	Shows all backups for each file in the Files pane. You can execute this command only when the File menu is set to one of the browse backups mode or archives modes (diamond shape to the left of those entries). The choice is unavailable when you browse the file system. The All backup dates for each file and Only most recent backup dates choices are mutually exclusive. You can use either but not both. The graphical interface starts in the All backup dates for each file mode.

Only most recent backup dates	Shows only the most recent backup of a file in the Files pane. This command is useful if you lose a directory and want to get the most recent copy of all files (which may be spread across many backups). You can execute this command only when the File menu is set to one of the browse backups mode or archives modes (diamond shape to the left of those entries). The choice is unavailable when you are browsing the file system. The All backup dates for each file (see above) and Only most recent backup dates choices are mutually exclusive. You can use either but not both. The graphical interface starts in the All backup dates for each file mode.
Resolve Links in Search Directory	If you click this command, NetBackup automatically changes any links in your search path so the path points to the actual file or directory. This is the default.
Do Not Resolve Links in Search Directory	If you click this command, NetBackup searches for the path as you type it in, without resolving links.

Backup Menu
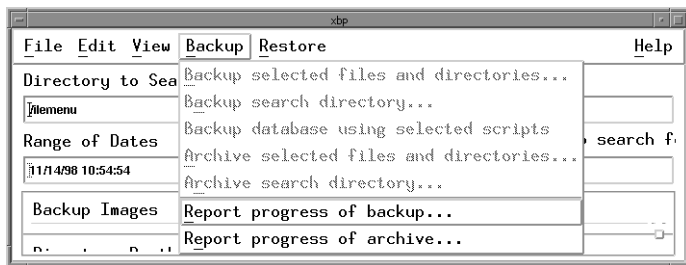
The Backup menu has commands to start a backup or archive of selected files and directories. You can also obtain a progress report on backups or archives. The File menu must be set to a browse file system mode (diamond shape to the left of the command) before you can execute any Backup menu commands, other than the report on progress. If the graphical interface is in a restore mode, when you pull down the Backup menu, the backup commands are unavailable.

Note If you click Backup Selected Files and Directories or Archive Selected Files and Directories but then close the xbp_confirm dialog box without confirming your selections, you are returned to the main window. Your file selections, however,

remain in the xbp_confirm dialog box. This feature is useful if you want to return to the main window to edit your selections. To clear previous file selections, click Discard Selections for Previous Directories on the Edit menu.

|	
Backup Selected Files and Directories	Starts a backup of the current selections from the Files pane by opening the xbp_confirm dialog box. This dialog box shows the current selections. Click OK to execute the backup. Click Cancel to abort and return to the main window.
Backup Search Directory	Starts a backup of the current selection from the Directory Structure pane by opening the xbp_confirm dialog box. This dialog box shows the current selection.Click OK to execute the backup. Click Cancel to abort and return to the main window.
Backup Database Using Selected Scripts	NetBackup offers database extensions that you can use, in conjunction with xbp, to back up and restore many of the most popular databases. These NetBackup for database extensions are separately priced products which must be installed, then configured to work with xbp. See the NetBackup for database extension system administrator guides for details.
	This command starts a backup of a database by opening the xbp_confirm dialog box. This dialog box shows the scripts you selected from the Files pane.Click OK to execute the backup. Click Cancel to abort and return to the main window.
Archive Selected Files and Directories	Starts an archive of the current selections from the Files pane by opening the xbp_confirm dialog box. This dialog box shows the current selections. Click OK to execute the backup. Click Cancel to abort and return to the main window.
Archive Search Directory	Starts an archive of the current selection from the Directory Structure pane by opening the xbp_confirm dialog box. This dialog box shows the current selection.Click OK to execute the backup. Click Cancel to abort and return to the main window.
Report Progress Of Backup	Opens the xbp_progress dialog box, which shows the log files pertaining to your backup operations. See "xbp_progress Dialog box" on page 121 for more information.
Report Progress Of Archive	Opens the xbp_progress dialog box, which shows the log files pertaining to your archive operations. See "xbp_progress Dialog box" on page 121 for more information.

Restore Menu
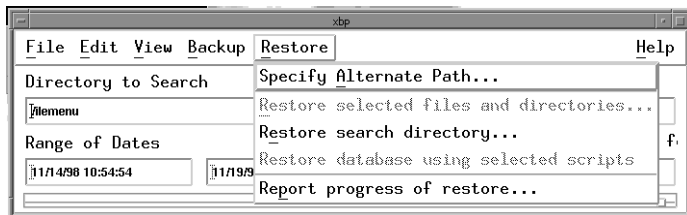
The Restore menu has commands to start a restore of selected files and directories. You can also obtain a progress report on restores. The File menu must be set to a browse for restore mode (diamond shape to the left of the command) before you can execute any Restore menu commands, other than the report on progress. Otherwise, when you pull down the Restore menu, those choices are unavailable.

Note If you click Restore Selected Files and Directories but then close the xbp_confirm dialog box without confirming your selections, you are returned to the main window. Your file selections remain in the xbp_confirm dialog box. This feature is useful if you want to return to the main window to edit your selections. To clear those previous file selections, click Discard Selections for Previous Directories on the Edit menu.

Specify Alternate Path	Opens the xbp_altpath dialog box. This dialog box lets you restore files to a directory other than the one from which they were backed up. If you specify a path that does not exist, NetBackup creates it when restoring the file. (Note that DomainOS clients do not support alternate path restores.) Refer to "xbp_altpath Dialog Box" on page 119 for more details.
Restore Selected Files and Directories	In all browse modes except true-image restore, this command starts a restore of current selections in the Files pane. In true-image restore mode, this command starts a true-image restore of the selected directory. In both cases the xbp_confirm dialog box opens to show the current selections. Click OK to execute the backup. Click Cancel to abort and return to the main window.
Restore Search Directory	Not available in Browse backups (true image restore) mode, this command starts a restore of the current selection in the Directory Structure pane by opening the xbp_confirm dialog box. This dialog box shows the current selections. Click OK to execute the backup. Click Cancel to abort and return to the main window.

Restore Database Using Selected Script	NetBackup offers database extensions that you can use, in conjunction with xbp, to back up and restore many of the most popular databases. These NetBackup for database extensions are separately priced products which must be installed, then configured to work with xbp. See the NetBackup for database extension system administrator guides for details
	These commands start a restore of their respective type of database by opening the xbp_confirm dialog box. This dialog box shows the scripts you selected from the Files pane. Click OK to execute the backup. Click Cancel to abort and return to the main window.
Report Progress Of Restore	Opens the xbp_progress dialog box, which shows the log files pertaining to your restore operations. See "xbp_progress Dialog box" on page 121 for more information.

Help Menu

The Help menu has online instructions for using the graphical interface.

Directory To Search Box
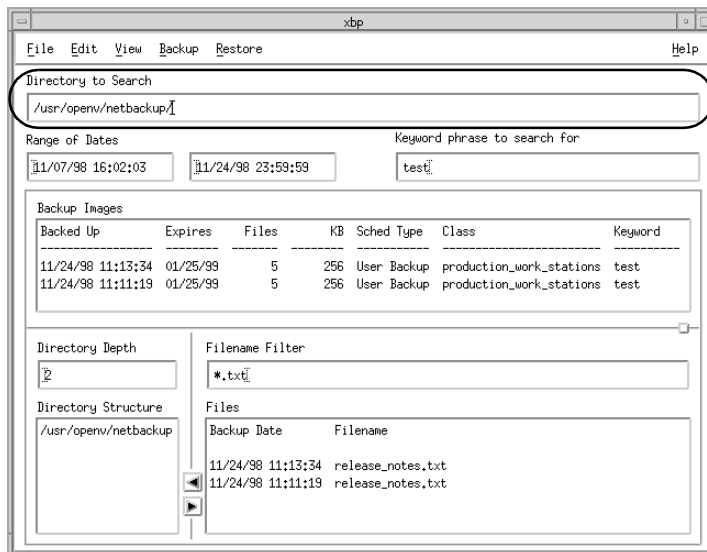
The directory to search is the starting point in a browse for files to back up, archive, or restore. The default is the directory you used to start the graphical interface. You can change the directory to search by typing a new directory path in the Directory To Search box and pressing Enter, or by double clicking on a directory in the Directory Structure pane.

When specifying the directory to search, you can also use the following wildcard characters

* ? []

For example:

```
/home/s*
/home/.??*
/home/[a-z]*
```

If you are backing up or restoring a file path that has a wildcard character used literally (that is, as a non-wildcard character), you must *escape* the wildcard using a backslash (\) character. For example, the following path uses brackets that are not being used as wildcards:

```
/home/abc/fun[ny]name
```

To back up or restore this file path, you must precede the brackets with backslashes as in

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

so NetBackup interprets the brackets literally.

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

The Directory To Search box automatically scrolls horizontally to allow entry of long pathnames. To view paths that do not fit in the window, a scroll bar allows you to scroll horizontally.

Range of Dates Boxes
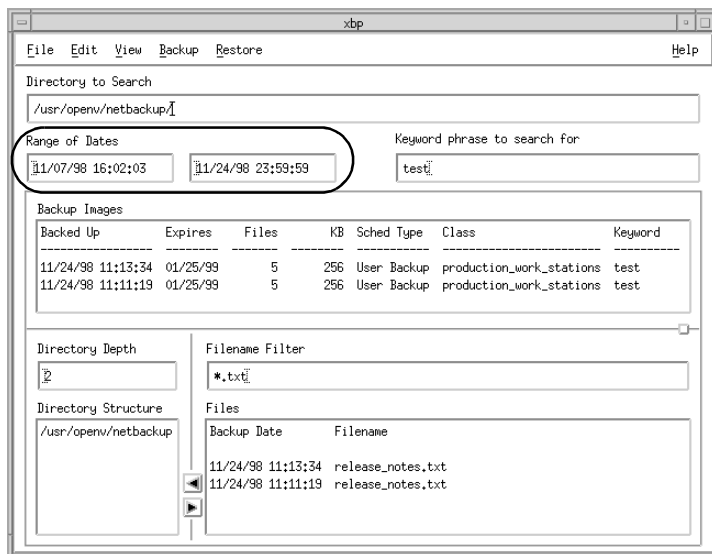
The Range of Dates boxes allow you to specify a date range for browsing and selecting files. The left box is start date and the right box is end date.

◆ For a restore, you type a range of dates that includes the times when you suspect the desired backups or archives occurred.

◆ For a backup or archive, you type the range of dates that includes the times when the desired files were last modified.

The Directory Structure pane and the Files pane will show only files that meet the date range criteria. The administrator can change the initial browse default to show a smaller range of dates by using the `INITIAL_BROWSE_SEARCH_LIMIT` option in the server and client `/usr/openv/netbackup/bp.conf` files.

Browse Mode

When you start the graphical interface, it is in backup mode and the default date range is from 01/01/70 to the current date. You can change this range by typing new values with the keyboard and pressing Enter. In the United States, the format for:

◆ dates is month/day/year. For example:

01/23/93.

◆ time is hours:minutes:seconds. Hours is expressed in terms of the 24 hour clock. For example:

12 am is 00:00:00, 12 pm is 12:00:00, and 11:30 pm is 23:30:00.

Leave the end date blank to search from the start date to the current date.

Restore Mode

When you switch from backup mode to restore mode, NetBackup normally changes the starting date so that it defaults to the most recent full backup. However, if you type a specific date just before changing modes, your specification is used.

If the client belongs to more than one class, the starting date defaults to the last full backup that occurred first. For example, assume that the client belongs to ClassW1 and ClassW2 and full backups occur for both of them. If the last full backup for ClassW1 occurred before the one for ClassW2, then the display shows files ranging from the time of the ClassW1 full backup.

Keyword phrase to associate with this backup Box
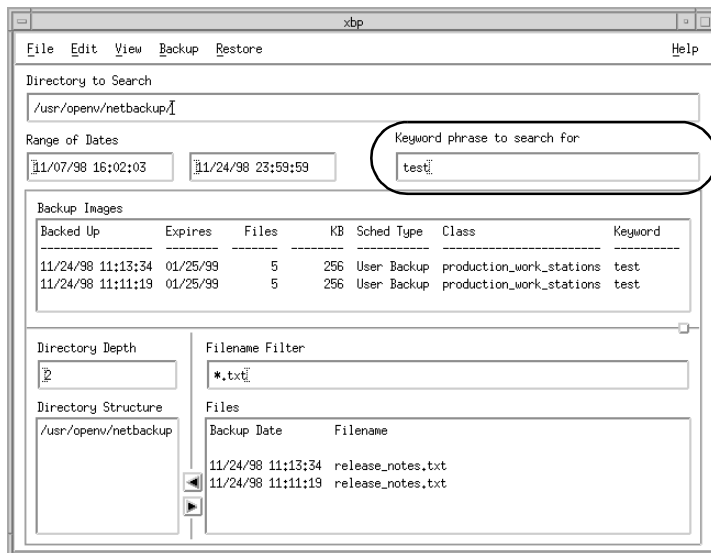
Specifies a keyword phrase that NetBackup will associate with the backup being created by a backup or archive operation. You can then restore the backup by specifying the keyword phrase.

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 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 ("."). You must 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.

Backup Images Pane
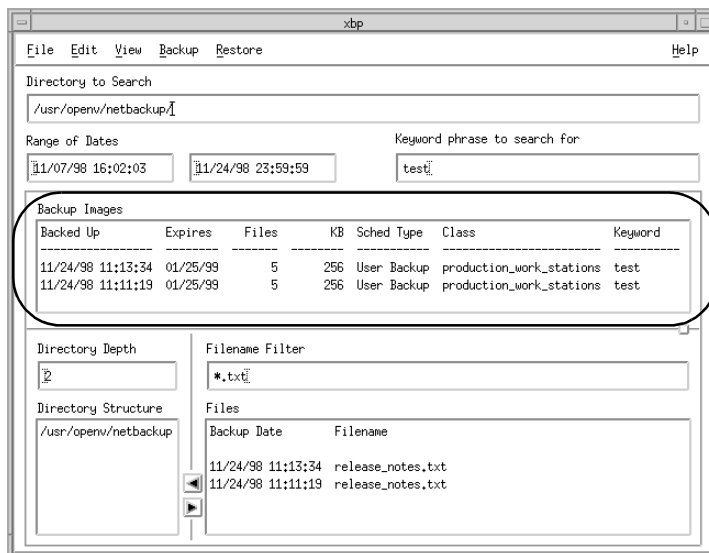
The Backup Images pane opens within the main window when you execute Browse Backups (Restore), Browse Backups (True Image Restore), or Browse Archives (Restore) from the File menu. This pane shows the backups or archives for your client. You can search either all or some of the backups to find directories and files that meet the values in the Directory To Search box, the Range of Dates boxes, the Directory Depth box, Filename Filter box, and the Keyword phrase to associate with this backup box.

The list starts with the most recent backup or archive. The list contains the following information on each backup:

Backed Up	Date and time at which the backup occurred.
Expires	Date and time at which NetBackup expires the backup and removes it from the Backup Images pane.
Files	Number of files in the backup.
KB	Size of the backup in kilobytes.
Sched Type	Shows the type of schedule as follows: - Full Backup - Incr Backup - User Backup - User Archive
Class	Backup class that created the backup. The system administrator configures the class names, as explained in the *NetBackup System Administrator's Guide - UNIX* or the *NetBackup System Administrator's Guide - Windows NT/2000*.

Keyword   Shows the keyword typed by the user when the backup was initiated.

The rules for selecting backups from the Backup Images pane are:

◆ Selecting a specific backup changes both dates to show the backed up time for the selected backup.

◆ Selecting a range of consecutive backups changes the date boxes to show the oldest and newest times in the selected range.

◆ Selecting another backup cancels previous selections. If the list is longer than the window, a vertical scroll bar appears along the right edge.

When you are satisfied with your selections, move the pointer over one of the text boxes and press Enter. This updates the Directory Structure pane and the Files pane to show the directories and files that are in the selected backups and meet your Directory To Search criteria, the Range of Dates criteria, the Directory Depth criteria, Filename Filter criteria, and the Keyword phrase to associate with this backup criteria.

Note There may be a noticeable delay before the update occurs because the client must obtain this information from the NetBackup master server.

Directory Depth Box
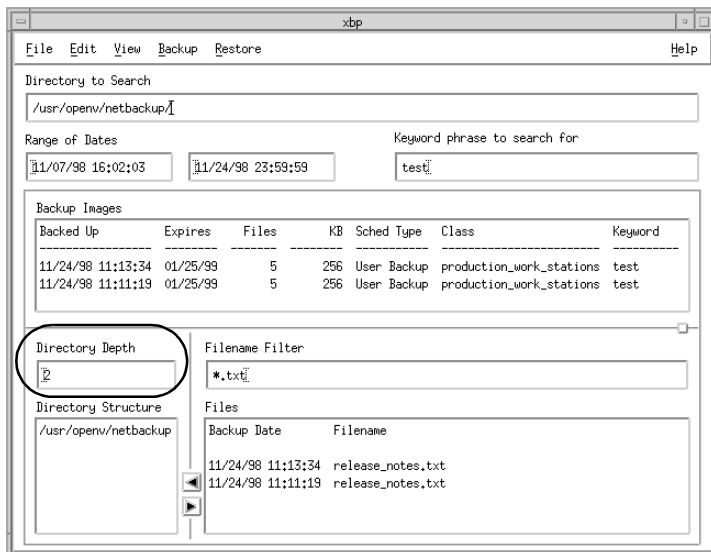
The Directory Depth box determines how deep to search the subdirectories of the current directory. It has no effect on the Files pane. Increment or decrement the depth by typing a new value with the keyboard and pressing Enter. The default is 2.

Filename Filter Box

```
┌─┬────────────────────────────── xbp ──────────────────────────── ┬─┬─┐
│─│                                                                 │ o│□│
│  File  Edit  View  Backup  Restore                          Help  │
│  Directory to Search                                              │
│  ┌──────────────────────────────────────────────────────────┐    │
│  │/usr/openv/netbackup/▯                                      │    │
│  └──────────────────────────────────────────────────────────┘    │
│  Range of Dates                    Keyword phrase to search for   │
│  ┌───────────────┐ ┌────────────────┐   ┌──────────────────────┐  │
│  │▯1/07/98 16:02:03│ │▯1/24/98 23:59:59│   │ test▯                │  │
│  └───────────────┘ └────────────────┘   └──────────────────────┘  │
│  ┌─ Backup Images ───────────────────────────────────────────┐    │
│  │ Backed Up       Expires    Files     KB  Sched Type  Class            Keyword │
│  │ ---------------  --------  ------   -------  ----------  ----------------------  ---------- │
│  │ 11/24/98 11:13:34  01/25/99      5      256  User Backup  production_work_stations  test │
│  │ 11/24/98 11:11:19  01/25/99      5      256  User Backup  production_work_stations  test │
│  └───────────────────────────────────────────────────────────┘    │
│                                                                    │
│  Directory Depth         ╭─ Filename Filter ─────────────────────╮ │
│  ┌──────────────────┐    │ ┌──────────────────────────────────┐  │ │
│  │▯2                 │    │ │ *.txt▯                            │  │ │
│  └──────────────────┘    ╰─└──────────────────────────────────┘──╯ │
│  Directory Structure      Files                                    │
│  ┌──────────────────┐    ┌──────────────────────────────────────┐ │
│  │/usr/openv/netbackup│  │ Backup Date      Filename             │ │
│  │                    │  │                                       │ │
│  │                    │◄ │ 11/24/98 11:13:34  release_notes.txt  │ │
│  │                    │  │ 11/24/98 11:11:19  release_notes.txt  │ │
│  │                    │► │                                       │ │
│  └──────────────────┘    └──────────────────────────────────────┘ │
└────────────────────────────────────────────────────────────────────┘
```

The Filename Filter box determines the files, of a selected directory, that NetBackup shows in the Files pane. When you start the graphical interface, the Filename Filter box has a value of * and the Files pane shows all files. You can change the filter to limit the files that NetBackup shows. In addition to specific file names, you can use the following types of expressions to filter filenames:

Asterisk (*) matches one or more characters. For example, a search for ***_log** matches all files that end with _log.

Question mark (?) matches a single character. For example, a search for **log?** matches the log1, log2, and log3 files.

Brackets ([]) specify any of the listed characters. For example, a search for **prog[1-4]** finds all five-character files that start with prog and end with a digit in the range 1 through 4.

Directory Structure Pane and the Files Pane
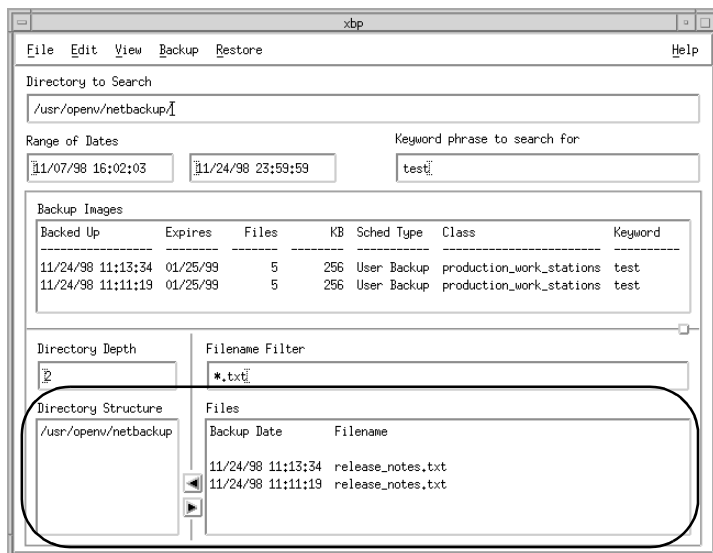
These panes show the directories and files that you can select for NetBackup operations. Directories in the Files pane are followed by a slash. The contents of these panes depends on the browse mode.

For more information on browsing directory trees and selecting files, see "Finding and Selecting Files and Directories" on page 94.

Browse File System (Backup or Archive) Mode

If you are in Browse File System (Backup or Archive) mode, the panes show the directories and files in the filesystem that:

◆   Are in the Directory To Search box or in subdirectories below it in the client's directory tree (the Directory Depth box determines number of levels shown).

◆   Have modified dates within the time frame specified in the Range of Dates boxes.

◆   Are in the currently selected directory which match the value in the Filename Filter box.

When you start the graphical interface, it is in the Browse File System (Backup or Archive) mode and shows all directories and files that reside under the directory from which you executed the xbp command.

Browse Backups (Restore) or Browse Archives (Restore) Mode

If you are in Browse Backups (Restore) or Browse Archives (Restore) mode, the panes show the directories and files that are in the selected backups or archives and meet the following criteria:

◆ Are in the Directory To Search box or in subdirectories below it in the client's directory tree (the Directory Depth box determines number of levels shown).

◆ Were backed up within the time frame specified by the Range of Dates boxes.

◆ Are in the currently selected directory which match the value in the Filename Filter box.

Browse Backups (True Image Restore) Mode

If you are in Browse Backups (True Image Restore) mode, the panes show the directories that are in the selected backups and meet the following criteria:

◆ Are in the Directory To Search box or in subdirectories below it in the client's directory tree (the Directory Depth box determines number of levels shown).

◆ Were backed up by a scheduled full or incremental backup within the time frame specified by the Range of Dates boxes.

◆ Are in the currently selected directory which match the value in the Filename Filter box.

Browse for Scripts Modes

When in the browse for scripts modes, the panes show the same type of information as when you browse the file system for backups or archives.

NetBackup offers database extensions that you can use, in conjunction with xbp, to back up and restore many of the most popular databases. These NetBackup for database extensions are separately priced products which must be installed, then configured to work with xbp. See the NetBackup for database extension system administrator guides for details

Browse backups (restore raw partitions) Mode

When in the browse backups (Restore Raw Partitions) mode, the panes show the same type of information as when you browse the file system for backups or archives.

Browse backups (Auspex FastBackup raw partition) Mode

Note Auspex FastBackup is not supported for BusinesServer.

When in the browse backups (Auspex FastBackup Raw Partitions) mode, the panes show the same type of information as when you browse the file system for backups or archives.

xbp_config Dialog Box

The xbp_config dialog box opens when you click Configuration on the File menu.
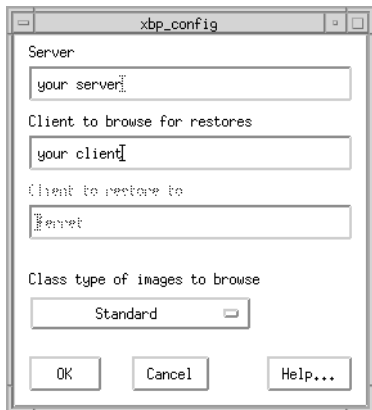
The xbp_config dialog box lets users change the following values. Use the mouse and keyboard to make the desired changes. After completing your changes:

◆   Click OK to use the new values.

or

◆   Click Cancel to cancel the changes so the previous values are still used.

Server   This is the current master server to which NetBackup sends backup and archive requests and also the server that has the backup you can browse for files to restore to your client. The master server is the first one listed under the SERVER option in the /usr/openv/netbackup/bp.conf file on the client. See the *NetBackup System Administrator's Guide - UNIX* or the *NetBackup System Administrator's Guide - Windows NT/2000* for more information on the bp.conf file.

When you start the graphical interface, this box shows the default master server configured for your client. You can change the name of the master server. If you specify an invalid name or your client does not belong to a configured class on that server, you get an error message.

Client To Browse
For Restores

Client whose backed up files you can currently browse. The administrator on
the master server can change this name to that of another client and can grant
you permission to do the same by making the necessary changes to the
`/usr/openv/netbackup/altnames` file on the master server.

When you start the graphical interface, this box shows the name of the client
on which you are running as specified by the CLIENT_NAME parameter in
the `/usr/openv/netbackup/bp.conf` file on the client.

See the *NetBackup System Administrator's Guide - UNIX* or the *NetBackup
System Administrator's Guide - Windows NT/2000* for more information on
the `altnames` file and the `bp.conf` file.

Client To Restore
To

When you start the graphical interface, this field shows the name of the client
on which you are running.

The administrator running the user interface on the master server can change
this name in order to direct files to another client. This ability is not available
to other users.

Class type of image
to browse

Type of client to which you are restoring files when you restore to an alternate
client.

The client type must match that in Client To Restore To box and the Client To
Browse For Restores box. You cannot restore clients from one type to another.

xbp_altpath Dialog Box

The xbp_altpath dialog box opens when you click Specify Alternate Path on the Restore
menu. This dialog box lets you set up a restore to a path other than the one from which
files were originally backed up.
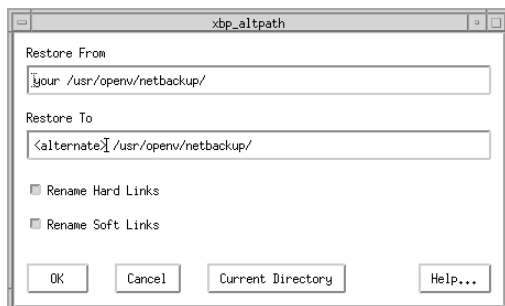
The text boxes at the top of the dialog box show the restore paths:

Restore From

Shows a full or partial pathname that NetBackup uses to find the
files to restore.

Restore To

Shows the path to which NetBackup restores the selected files.

When you start the graphical interface, these paths are set to your current directory to search.

Use the mouse and keyboard to change the paths in the Restore From box and the Restore To box. You can use the Current Directory button to change the values in both boxes to their default, which is your current directory to search. If you specify a path that does not currently exist, NetBackup creates it when restoring the file.

After completing your changes to the paths:

◆ Click OK to use the Restore From and Restore To paths on the next restore.

    or

◆ Click Cancel to cancel the changes so the previous paths are still used.

You can also rename soft (symbolic) and hard links to the files so those links show the Restore To pathname:

Rename Hard Links   Enable the button to rename hard links so they point to the new path. The button is enabled when highlighted.

Rename Soft Links   Enable the button to rename soft (symbolic) links so they point to the new path. The button is enabled when highlighted.

xbp_confirm Dialog Box

The xbp_confirm dialog box opens when you execute a NetBackup operation. This dialog box shows the items you picked in the Directory Structure pane or Files pane and lets you confirm them before continuing. If the list of selections is longer than the dialog box, a vertical scroll bar appears along the right edge.

Use Log File	The Use Log File checkbox lets you select whether you want NetBackup to create a progress log file in your home directory and write to this file as the operation progresses.
	Enable the Use Log File checkbox to use the log file (this is the default). The name of the log file appears in the Log Filename box. Use report progress commands from the Backup menu or the Restore menu to read these files (see the next topic, "xbp_progress Dialog box" on page 121).
Overwrite Existing Files	If you are restoring files or directories, the Overwrite Existing Files checkbox lets you choose whether you want to overwrite existing files.
	Select the Overwrite Existing Files checkbox to overwrite. See "File Permissions Required By NetBackup" on page 6 for an explanation of how file ownership and permissions affect overwriting of files and directories.
	Clear the Overwrite Existing Files checkbox if you do not want to overwrite existing files. The restore will not occur if the file exists.
Restore To Alternate Path	If you previously selected an alternate path, the Restore To Alternate Path checkbox is active and lets you restore files into a directory other than the one from which they were backed up (see "xbp_altpath Dialog Box" on page 119). If you did not previously select an alternate path, the checkbox is unavailable.
	Select the Restore To Alternate Path checkbox to restore the files to the alternate directory.
	Clear the Restore To Alternate Path checkbox to cancel the alternate path restore.
Restore Directories Without Crossing Mount Points	To skip over file systems mounted in the selected directories, select the Restore Directories Without Crossing Mount Points checkbox (this is the default).

Note Mount points inside will get restored whether or not the Restore directories without crossing mount points box is selected.

When you are satisfied with your selections, click OK to start the NetBackup operation.

To cancel and return to the main window without performing a NetBackup operation, click Cancel. The cancel does not affect your selections. After cancelling, you can either edit your selections or clear them by clicking Discard Selections for Previous Directories on the Edit menu.

xbp_progress Dialog box

The xbp_progress dialog box opens when you execute a Report Progress Of Backup, Report Progress Of Archive, or Report Progress Of Restore from the appropriate menu. This dialog box shows the related progress log files in your home directory and lets you view them in order to monitor the progress of the operation.

See "Checking Progress of Operations" on page 92 for information on using this dialog box.

```
xbp_progress

Progress Report

  Log files in your $HOME directory

  /bplog.bkup.001

  Contents of selected log file

  Backup started Tue Nov 24 11:13:19 1998

  11:13:55 INF - Processing /usr/openv/netbackup/release_notes.txt
  11:13:56 /
  11:13:56 /usr/
  11:13:56 /usr/openv/
  11:13:56 /usr/openv/netbackup/
  11:13:56 /usr/openv/netbackup/release_notes.txt
  11:13:56 INF - Client completed sending data for backup

  11:14:02 INF - Waiting for mount of media id D0009 on server windows.
  11:15:36 INF - Waiting for positioning of media id D0009 on server windows.
  11:15:58 INF - Beginning backup on server windows of client ferret.
  11:16:11 INF - Backup by root on client ferret; the requested operation was successfully completed.

Log File

/bplog.bkup.001

  ☐ Automatic Refresh

  [ Close ]      [ Delete Log File ]                          [ Help... ]
```

Menu Interface (bp)

The `bp` program is a menu driven user interface to NetBackup. When using the menus, you execute an operation by typing the letter to the left the related menu item. For example, typing B from the main menu takes you to the Backup menu (it is usually unnecessary to press Enter). An ellipsis (...) to the right of an option means that when you choose the option, another menu or screen appears from which you can make further choices. If there is no ellipsis, the operation occurs immediately.

Main Menu

```
 ─  ──                        windows                         □  □
│ ─                   NetBackup 3.2                                │
│ │                                                                │
│ │            Master Server:  pear                                │
│ │                   Client:  pear                                │
│ │                                                                │
│ │              Main Menu                                         │
│ │              ──── ────                                         │
│ │           b) Backup...                                         │
│▓│           r) Restore...                                        │
│▓│                                                                │
│ │           h) Help                                              │
│ │           q) Quit                                              │
│ │                                                                │
│ │           ENTER CHOICE: []                                     │
```
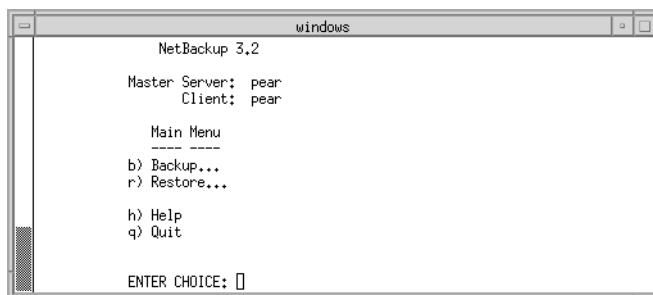
Master Server	Master server to which NetBackup sends operation requests. Use the M (Change Master Server) option from the Backup Menu or the Restore Menu to specify another master server.
Client	Displays the name of the client for which the backup or archive will be performed.
B (Backup)	Opens the Backup Menu.
R (Restore)	Opens the Restore Menu.
H (Help)	Help information for the main menu. Each secondary menu also has this option.
Q (Quit)	Terminates the program and returns to the shell prompt.

Backup Menu

```
┌─────────────────────────────── windows ───────────────────────[□][□]┐
│         Master Server:  pear                                          │
│                Client:  pear                                          │
│                                                                       │
│                                                                       │
│             Backup Menu                                               │
│             ----------                                                │
│         b) Backup Files and Directories...                            │
│         a) Archive Files and Directories...                           │
│         o) Backup Oracle DB...                                        │
│         i) Backup Informix DB...                                      │
│         s) Backup Sybase DB...                                        │
│         p) Backup SAP DB...                                           │
│         2) Backup DB2 DB...                                           │
│         t) Backup SQL-BackTrack DB...                                 │
│                                                                       │
│         m) Change Master Server...                                    │
│         h) Help                                                       │
│         q) Quit Menu                                                  │
│                                                                       │
│         ENTER CHOICE: []                                              │
└───────────────────────────────────────────────────────────────────────┘
```

Note The following menu items do not apply to BusinesServer: Backup SAP DB, Backup DB2 DB, and Backup SQL-BackTrack DB.

Master Server	This is the master server to which NetBackup sends backup and restore requests. You can use the M (Change Master Server) option to specify another master server.
Client	Displays the name for the client for which the backup or archive will be performed.
B (Backup Files and Directories)	Opens the Backup of Files and Directories menu.
A (Archive Files and Directories)	Opens the Archive of Files and Directories menu.
Backup database options	NetBackup offers database extensions that you can use, in conjunction with bp to back up and restore many of the most popular databases. These NetBackup for database extensions are separately priced products which must be installed. See the NetBackup for database extension system administrator guides for details.
O (Backup Oracle DB)	Opens the Backup Oracle DB menu.
I (Backup Informix DB)	Opens the Backup Informix DB menu.
S (Backup Sybase DB...)	Opens the Backup Sybase DB menu.
P (Backup SAP DB)	Opens the Backup SAP DB menu.
2 (Backup DB2 DB)	Opens the Backup DB2 DB menu.

T (Backup SQL-BackTrack DB)	Opens the Backup SQL-BackTrack DB menu.
M (Change Master Server)	Lets you change the master server to which NetBackup sends backup and restore requests. If it is an invalid server or the client does not belong to a user-directed backup class on that server, you receive an error message. The master server is set to the configured default for your client each time you start the menu interface.
H (Help)	Help information for the Backup Menu. Each secondary menu also has a Help option.
Q (Quit Menu)	Closes the Backup Menu and returns to the Main Menu.

Backup of Files and Directories Menu


```
                                      windows
                     Path: /opt/openv32/netbackup/bin/
               Start Date: 01/01/70 00:00:00
                 End Date: 12/02/98 23:59:59
            Master Server: pear
             Display Mode: Brief
           Files selected: 0
           Keyword Phrase:

                  Backup of Files and Directories
                  --------------------------------
                  s) Select Files and Directories...
                  e) Edit/View Selected Files...
                  i) Initiate Backup
                  p) Change Path...
                  d) Change Date Range...
                  m) Change Master Server...
                  k) Change Keyword Phrase...
                  x) Change Display Mode to Verbose
                  h) Help
                  q) Quit Menu

                  ENTER CHOICE: []
```

Path	This is the starting point for searches that you start with the S (Select Files and Directories)option. You can change the current directory with the P (Change Path) option from the menu.
Start Date	The Start Date and End Date (below) show the range of dates that the search will include. Start Date is the earliest *modified* date and time that a file can have for NetBackup to be included in the search. You can change the Start Date with the D (Change Date Range) option from the menu. When you start the menu interface, theStart Date is set to 01/01/70 00:00:00 for backups and archives.
End Date	The Start Date (above) and End Date show the range of dates that the search will include. End Date is the latest *modified* date and time that a file can have for NetBackup to be included in the search. You can change the End Date with the D (Change Date Range) option from the menu. When you start the menu interface, the End Date is set to 23:59:59 of the current day.

Master Server	This is the master server to which NetBackup sends NetBackup operation requests. You can use the M (Change Master Server) option to specify another master server.
Display Mode	Displays the display mode, verbose or brief. Refer to "X (Change Display Mode to Verbose)" on page 126 for more details.
Files Selected	Number of files currently selected for backup. This number changes as you select or deselect files with the S (Select Files and Directories)option or E (Edit/View Selected Files) option.
K (Change Keyword Phrase)	Displays the keyword phrase entered for the backup.
S (Select Files and Directories)	Displays the list of files and directories for the indicated path. Select files and/or directories from this list to back up.
E (Edit/View Selected Files...) option	Displays the list of files and directories previously selected for backup. You can also add or delete selections from the list. For more information, see "Edit/View Selections Screen" on page 138.
I (Initiate Backup)	Starts the backup operation. Selection I brings up prompts for creating a log file in your home directory and writing to this file as the operation proceeds.
P (Change Path)	Lets you change the directory at which subsequent search operations begin.
D (Change Date Range)	Lets you change the Start Date and End Date as shown at the top of the menu. These dates specify the range in which a file's *modification date* must be in order to be included in the search for files to back up. Typing D brings up prompts for typing new start and end dates. Some basic rules for typing dates are as follows: The format for dates is month/day/year. For example, 01/23/93. The format for time is *hours:minutes:seconds* and in terms of the 24 hour clock. For example, 12 am is 00:00:00, 12 pm is 12:00:00, and 11:30 pm is 23:30:00. To leave a date unchanged, press Enter at the prompt. If you change only part of the date or time and press Enter, NetBackup completes the entry.
M (Change Master Server)	Lets you change the master server to which NetBackup sends backup and restore requests. If an invalid server is selected, or the client does not belong to a user-directed backup class on that server, you will receive an error message. The master server is set to the configured default for your client each time you start the menu interface.
X (Change Display Mode to Verbose)	Selects whether the Search screen shows only names or also includes file details such as permissions. Toggle the Display Mode indication to *Verbose* for file details and to *Brief* to unselect them.
H (Help)	Help information for the Backup of Files and Directories menu. Each secondary menu also has a Help option.

Q (Quit Menu)   Closes the Backup of Files and Directories menu and returns to the Main Menu.

Archive of Files and Directories Menu

The Archive of Files and Directories menu has choices for archive operations. Archive and backup operations are the same except that an archive deletes the file after backing it up, thus freeing disk space.

```
                              windows
                Path: /opt/openv32/netbackup/bin/
          Start Date: 01/01/70 00:00:00
            End Date: 12/02/98 23:59:59
       Master Server: pear
        Display Mode: Brief
      Files selected: 0
      Keyword Phrase:

              Archive of Files and Directories
              --------------------------------
              s) Select Files and Directories...
              e) Edit/View Selected Files...
              i) Initiate Archive
              p) Change Path...
              d) Change Date Range...
              m) Change Master Server...
              k) Change Keyword Phrase...
              x) Change Display Mode to Verbose
              h) Help
              q) Quit Menu

              ENTER CHOICE: []
```

The information at the top of the menu, as well as the menu choices, are the same as the Backup of Files and Directories menu. The one exception is the I (Initiate Archive) option which starts the archive operation.

Database Backup Menus

The database backup menus have choices for their respective types of database backups. The following figure is an example of the Backup Oracle DB menu.

```
                              windows
                Path: /usr/openv/netbackup/bin/
          Start Date: 01/01/70 00:00:00
            End Date: 12/08/98 23:59:59
       Master Server: saturn
        Display Mode: Brief
     Scripts Selected: 0
      Keyword Phrase:

              Backup Oracle DB
              ----------------
              s) Select Scripts...
              e) Edit/View Selected Scripts...
              i) Initiate Oracle DB Backup Using Selected Script(s)
              p) Change Path...
              d) Change Date Range...
              m) Change Master Server...
              k) Change Keyword Phrase...
              x) Change Display Mode to Verbose
              h) Help
              q) Quit Menu

              ENTER CHOICE: []
```

The information at the top of the menu, as well as the menu choices, are the same as the Backup of Files and Directories menu. The one exception is the I (Initiate Oracle DB Backup Using Selected Script(s)) option. Choosing this option uses the scripts you selected with the S (Select Scripts) option and E (Edit/View Selected Scripts) option to back up Oracle databases. The other Backup DB menus are the same, except for the menu choice that starts the backup.

Refer to the appropriate NetBackup database System Administrator's Guide.

Restore Menu
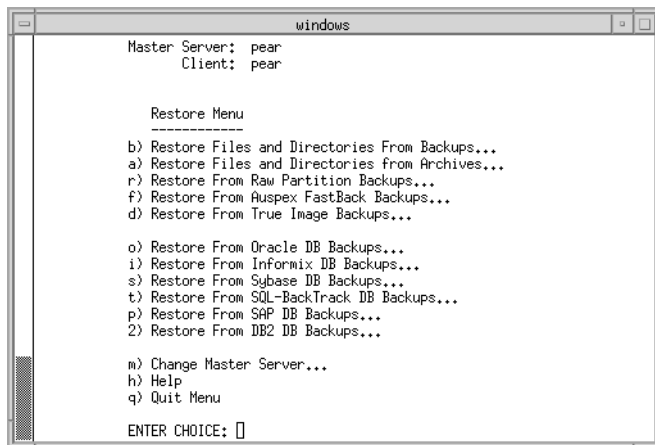
```
┌─────────────────────────── windows ───────────────────── □ □ ┐
│        Master Server:  pear                                   │
│               Client:  pear                                   │
│                                                               │
│                                                               │
│        Restore Menu                                           │
│        ------------                                           │
│     b) Restore Files and Directories From Backups...          │
│     a) Restore Files and Directories from Archives...         │
│     r) Restore From Raw Partition Backups...                  │
│     f) Restore From Auspex FastBack Backups...                │
│     d) Restore From True Image Backups...                     │
│                                                               │
│     o) Restore From Oracle DB Backups...                      │
│     i) Restore From Informix DB Backups...                    │
│     s) Restore From Sybase DB Backups...                      │
│     t) Restore From SQL-BackTrack DB Backups...               │
│     p) Restore From SAP DB Backups...                         │
│     2) Restore From DB2 DB Backups...                         │
│                                                               │
│     m) Change Master Server...                                │
│     h) Help                                                   │
│     q) Quit Menu                                              │
│                                                               │
│     ENTER CHOICE: []                                          │
└───────────────────────────────────────────────────────────────┘
```

Note The following menu items do not apply to BusinesServer: Restore From Auspex FasBack Backups, Restore From SQL-BackTrack DB Backups, Restore From SAP DB Backups, and Restore From DB2 DB Backups.

Master Server	This is the master server that has the backup for the files you are browsing. You can use the M (Change Master Server) option to select another master server.
Client	Client that backed up the files you are permitted to browse and restore.
B (Restore Files and Directories from Backups)	Opens the Restore Backups menu.
A (Restore FIles and Directories from Archives)	Opens the Restore Archives menu.
R (Restore From Raw Partitian Backups)	Opens the Restore Raw Partition Backups menu.

F (Restore From Auspex FastBack Backups)	Opens the Restore Auspex FastBackup Raw Partition Backups menu.
D (Restore From True Image Backups)	Opens the Restore True Image Backups menu.
Restore database options	NetBackup offers database extensions that you can use, in conjunction with bp to back up and restore many of the most popular databases. These NetBackup for database extensions are separately priced products which must be installed. See the NetBackup for database extension system administrator guides for details
O (Restore Oracle DB)	Opens the Restore Oracle DB menu.
I (Restore Informix DB)	Opens the Restore Informix DB menu.
S (Restore Sybase DB)	Opens the Restore Sybase DB menu.
T (Restore SQL-Backtrack DB)	Opens the Restore DB using SQL-BackTrack menu.
P (Restore SAP DB)	Opens the Restore SAP DB menu.
2 (Restore DB2 DB)	Opens the Restore DB2 DB menu.
M (Change Master Server)	Lets you change the master server to which NetBackup sends backup and restore requests. If it is an invalid server or the client does not belong to a user-directed backup class on that server, you receive an error message. The master server is set to the configured default for your client each time you start the menu interface.
H (Help)	Help information for the Restore Menu. Each secondary menu also has a H (Help).
Q (Quit Menu)	Closes the Restore Menu and returns to the Main Menu.

Restore Backups Menu

```
┌─┐                          windows                         ┌─┐┌─┐
│─│    Path: /opt/openv32/netbackup/bin/
│ │
│ │    Start Date: 12/02/98 07:09:39     Master Server: pear
│ │      End Date: 12/02/98 23:59:59     Source Client: pear
│ │   Files Selected: 0              Destination Client: pear
│ │  Directory Depth: 1 level                 Class Type: Standard
│ │     Display Mode: Brief              Keyword Phrase:
│ │
│ │                       Restore Backups
│ │                       ---------------
│ │   s) Select Files and Directories... p) Change Path...
│ │   e) Edit/View Selected Files...      d) Change Date Range...
│ │   i) Initiate Restore                 c) Change Directory Depth...
│ │   x) Change Display Mode to Verbose   m) Change Master Server...
│ │   l) List Backup Images...            b) Change Source Client...
│ │   a) Specify Alternate Path...        t) Change Destination Client
│ │   q) Quit Menu                        y) Change Class Type
│▓│   h) Help                             k) Change Keyword Phrase
│▓│
│▓│   ENTER CHOICE: []
└─┘
```

Path	This is the starting point for searches that you start with the S (Select Files and Directories). You can change the current directory with the P (Change Path) option from the menu.
Start Date	Start Date and End Date (below) show the range of backup dates NetBackup searches for files to restore. Start Date is the earliest backup date and time that NetBackup checks when searching backups. You can change this with the D (Change Date Range) option from the menu.
End Date	The Start Date (above) and End Date show the range of backup dates that NetBackup searches for files to restore. Start Date is the latest backup date and time that NetBackup checks when searching backups. You can change this with the D (Change Date Range) option from the menu.
Files Selected	Number of files currently selected. This number changes as you select or deselect files with the S (Select Files and Directories) or E (Edit/View Selected Files) option.
Directory Depth	This number indicates how many levels of directories and files NetBackup shows on the Search screen. You can increment or decrement the depth with the C (Change Directory Depth) option. The default is 1.
Display Mode	Displays the display mode, verbose or brief. Refer to "X (Change Display Mode to Verbose)" on page 126 for more details.
Master Server	Master server that has the backup for the files you are browsing. You can use the M (Change Master Server) option to select another master server.
Source Client	Client that backed up the files you are permitted to browse and restore. You can use the B (Change Source Client) option to select another client.
Destination Client	Client to which NetBackup will restore the selected files. This option will be displayed when you log in as root. Only the administrator on the master server can change this name to that of another client. See the T (Change Destination Client) option for information on changing this name.

Class Type	Your client type. This is Standard for all clients except those using the DomainOS operating system. DomainOS clients are Apollo_wbak.
	See the Y (Change Client Type) option for information on changing the class type.
K (Change Keyword Phrase)	Displays the keyword phrase entered for the backup.
S (Select Files and Directories)	Takes you to the Search screen from which you can browse the backup. From this screen, you can select files and directories to restore.
E (Edit/View Selected Files)	Shows the list of files and directories previously selected for restore. You can also add or delete selections from the list.
I (Initiate Restore)	Brings up the Initiate Restore screen from which you can start the operation. Typing an I brings up prompts for specifying whether:
	◆ NetBackup creates a log file in your home directory and writes to this file as the operation proceeds.
	◆ to overwrite existing files that have the same names as those you are restoring.
	If you selected A (Specify Alternate Path), you will be prompted to verify that you want to:
	◆ restore to an alternative path
	◆ rename hard links
	◆ rename soft links
X (Change Display Mode to Verbose)	Selects whether the Search screen shows only names (*Brief* mode) or also includes file details such as permissions (*Verbose* mode). Toggle the Display Mode indication to *Verbose* to select file details and *Brief* to unselect them.
L (List Backup Images)	Lists the backups for the client that meet the Directory To Search, the Range of Dates, the Directory Depth box, Filename Filter, and the Keyword phrase to associate with this backup criteria.
A (Specify Alternate Path)	Lets you restore files to a directory other than the one from which they were backed up. If you specify a path that does not currently exist, NetBackup creates it when restoring the file. (DomainOS clients do not support alternate path restores.)
Q (Quit Menu)	Closes the Restore Backups menu and returns to the Main Menu.
H (Help)	Help information for the Restore Backups menu. Each secondary menu also has a H (Help) option.
P (Change Path)	Lets you change the directory at which subsequent search operations begin. To find a specific file, type its complete pathname at the prompt. You also use wildcard characters *, ?, [, and] to find multiple files and directories.
D (Change Date Range)	Lets you change the Start Date and End Date at the top of the menu. These dates specify the range of backup dates that NetBackup searches during a restore. Typing D brings up prompts for typing new start and end dates.

C (Change Directory Depth)	Lets you change the number of levels of directories and files that appear on the Search screen. The new number appears in the Directory Depth field at the top of the screen. The default depth is 1. When restoring NetWare backups, set the directory depth to a minimum of 6 to ensure that the backup image is displayed.
M (Change Master Server)	Lets you specify the master server with the backup for the files you want to restore. If it is an invalid server or the client does not belong to a user-directed backup class on that server, you receive an error message. The master server is set to the configured default for your client each time you start the menu interface.
B (Change Source Client)	Lets the administrator on the master server browse and restore files for another client. The administrator can also change the configuration to give this ability to other users. When you start the menu interface this name is set to the default (normally the client on which you are running).
T (Change Destination Client)	Lets the administrator on the master server direct restored files to another client. When you start the menu interface, this name is set to the default (normally the client on which you are running).
Y (Change Client Type)	Lets the administrator on a server direct either standard client restores or Apollo_wbak restores. The class type must match that specified in the Source Client and Destination Client fields. You cannot restore files from one client type to another. **Note:** The following class types do not apply to BusinesServer: Apollo-wbak, DataTools-SQL-BackTrack, Auspex-FastBackup, SAP, DB2, and FlashBackup.
K (Change Keyword Phrase)	Lets you enter a keyword phrase for your search.

Restore Archives Menu

The Restore Archives menu is the same as the Restore Backups menu, except that you initiate the restore of archived files and directories.

```
 ┌─                               windows                               ▫ □
 │            Path: /opt/openv32/netbackup/bin/
 │
 │      Start Date: 01/01/70 00:00:00      Master Server: pear
 │        End Date: 12/02/98 23:59:59      Source Client: pear
 │   Files Selected: 0                Destination Client: pear
 │  Directory Depth: 1 level                   Class Type: Standard
 │      Display Mode: Brief               Keyword Phrase:
 │
 │                    Restore Archives
 │                    ----------------
 │  s) Select Files and Directories... p) Change Path...
 │  e) Edit/View Selected Files...      d) Change Date Range...
 │  i) Initiate Restore                 c) Change Directory Depth...
 │  x) Change Display Mode to Verbose   m) Change Master Server...
 │  l) List Archive Images...           b) Change Source Client...
 │  a) Specify Alternate Path...        y) Change Class Type
 │  q) Quit Menu                        k) Change Keyword Phrase
 │  h) Help                             k) Change Keyword Phrase
 │
 │  ENTER CHOICE: []
 └─
```

Restore Raw Partition Backups Menu

The following figure shows the Restore Raw Partition Backups menu. You use the choices on this menu to select and initiate restores of raw partition backups (see "Restore Backups Menu" on page 130 for an explanation of the menu items).

```
 ┌─                               windows                               ▫ □
 │            Path: /opt/openv32/netbackup/bin/
 │
 │      Start Date: 12/02/98 07:09:39      Master Server: pear
 │        End Date: 12/02/98 23:59:59      Source Client: pear
 │   Files Selected: 0                Destination Client: pear
 │  Directory Depth: 1 level                   Class Type: Standard
 │      Display Mode: Brief               Keyword Phrase:
 │
 │                Restore Raw Partition Backups
 │                -----------------------------
 │  s) Select Files and Directories... p) Change Path...
 │  e) Edit/View Selected Files...      d) Change Date Range...
 │  i) Initiate Restore                 c) Change Directory Depth...
 │  x) Change Display Mode to Verbose   m) Change Master Server...
 │  l) List Backup Images...            b) Change Source Client...
 │  a) Specify Alternate Path...        t) Change Destination Client
 │  q) Quit Menu                        k) Change Keyword Phrase
 │  h) Help
 │
 │  ENTER CHOICE: []
 └─
```

Restore Auspex FastBackup Raw Partition Backups Menu

Note Auspex FastBackup is not supported for BusinesServer.

The following figure shows the Restore Auspex FastBackup Raw Partition Backups menu. You use the choices on this menu to select and initiate restores of raw partition backups from Auspex FastBackup clients (see "Restore Backups Menu" on page 130 for an explanation of the menu items).

```
-                               windows                            □ □
        Path: /opt/openv32/netbackup/bin/

      Start Date: 12/02/98 07:09:39      Master Server: pear
        End Date: 12/02/98 23:59:59      Source Client: pear
  Files Selected: 0                 Destination Client: pear
 Directory Depth: 1 level                  Class Type: Auspex-FastBackup
    Display Mode: Brief                Keyword Phrase:

              Restore Auspex FastBackup Raw Partition Backups
              ------------------------------------------------
 s) Select Files and Directories... p) Change Path...
 e) Edit/View Selected Files...     d) Change Date Range...
 i) Initiate Restore                c) Change Directory Depth...
 x) Change Display Mode to Verbose  m) Change Master Server...
 l) List Backup Images...           b) Change Source Client...
 a) Specify Alternate Path...       t) Change Destination Client
 q) Quit Menu                       k) Change Keyword Phrase
 h) Help

 ENTER CHOICE: []
```

Restore True Image Backups Menu

Note NetBackup does not support true-image restores on DomainOS clients.

The following figure shows the Restore True Image Backups menu. You use the choices on this menu to select and initiate restores of true-image backups (see "Restore Backups Menu" on page 130 for an explanation of the menu items).

```
-                               windows                            □ □
        Path: /opt/openv32/netbackup/bin/

      Start Date: 12/02/98 07:09:39      Master Server: pear
        End Date: 12/02/98 23:59:59      Source Client: pear
  Files Selected: 0                 Destination Client: pear
 Directory Depth: 1 level                  Class Type: Standard
    Display Mode: Brief                Keyword Phrase:

                    Restore True Image Backups
                    ---------------------------
 s) Select Files and Directories... p) Change Path...
 e) View/Delete Selected Files...   d) Change Date Range...
 i) Initiate Restore                c) Change Directory Depth...
 x) Change Display Mode to Verbose  m) Change Master Server...
 l) List TIR Backup Images...       b) Change Source Client...
 a) Specify Alternate Path...       t) Change Destination Client
 q) Quit Menu                       k) Change Keyword Phrase
 h) Help

 ENTER CHOICE: []
```

Restore Database Menus

The Restore Menus for databases have choices for restoring their respective database backups. The following figure is an example of the Restore Oracle DB menu.

```
┌─────────────────────────────── windows ──────────────────────── □ □ ┐
│              Path: /usr/openv/netbackup/bin/                          │
│        Start Date: 01/01/70 00:00:00                                  │
│          End Date: 12/08/98 23:59:59                                  │
│     Master Server: saturn                                             │
│      Display Mode: Brief                                              │
│   Scripts Selected: 0                                                 │
│     Keyword Phrase:                                                   │
│                                                                       │
│           Restore Oracle DB                                           │
│           -----------------                                           │
│           s) Select Scripts...                                        │
│           e) Edit/View Selected Scripts...                            │
│           i) Initiate Oracle DB Restore Using Selected Script(s)      │
│           p) Change Path...                                           │
│           d) Change Date Range...                                     │
│           m) Change Master Server...                                  │
│           k) Change Keyword Phrase...                                 │
│           x) Change Display Mode to Verbose                           │
│           h) Help                                                     │
│           q) Quit Menu                                                │
│                                                                       │
│           ENTER CHOICE: []                                            │
└───────────────────────────────────────────────────────────────────────┘
```

The information at the top of the menu and the menu options have the same meaning as the corresponding lines and options on the Restore Backups menu. The one exception is the I (Initiate Archive) option which starts the archive operation.

When you choose the I (Initiate Oracle DB Backup Using Selected Script(s)) option, NetBackup uses the scripts you selected with the S (Select Scripts) option and the E (Edit/View Selected Scripts) option to restore Oracle databases. The other Restore DB menus are the same, except for the menu choice that starts the restore.

Refer to the appropriate NetBackup database *System Administrator's Guide* for more information.

Common Screens

The content of these screens varies depending on whether you are doing a backup, archive, or restore.

Backup or Archive Search Screen

During a backup or archive, the Search screen appears when you choose the S (Select Files and Directories) option from the archive or backup menu. Use this screen to select directories and files for archive or backup.

```
┌─┬────────────────────────────── windows ──────────────────────────── □ □ ┐
│                                                                           │
│  Selections: 0    Current Path: /usr/openv/netbackup/                     │
│                                                                           │
│  -▯/usr/openv/netbackup/                                                  │
│     bin/                                                                  │
│     bp.conf                                                               │
│     dbext/                                                                │
│     help/                                                                 │
│     logs/                                                                 │
│     release_notes.txt                                                     │
│                                                                           │
│                                                                           │
│                                                                           │
│                                                                           │
│  Zoom(I)n (Z)oomOut (S)elect (B)ack (F)wd (U)p (D)n (L)eft (R)ight (O)k    │
└───────────────────────────────────────────────────────────────────────┘
```
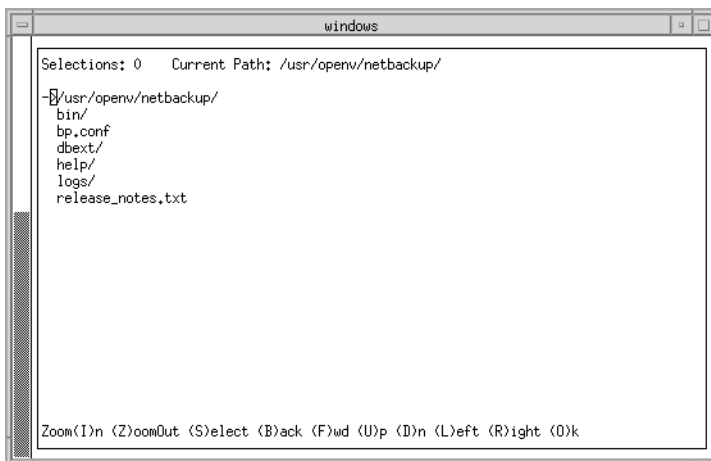
Selections	Number of files or directories previously selected. This number changes as you select or unselect files.
Current Path	Current directory. This is the directory where currently displayed files and directories reside and is the highest level directory that you can currently show on the screen. Use Zoom(I)n or(Z)oomOut to move up or down in the directory tree from the current directory.
File List	The file list shows directories and files that are in the current directory. The options at the bottom of the screen let you to browse the directory tree and to make selections (see "Search Screen Options" on page 137).
Q	(not shown on screen) Type Q to exit without making any changes.

Restore Search Screen

During restores, the Search screen appears when you choose the S (Select Files and Directories) option and NetBackup has completed its search for files and directories. Use this screen to select files and directories to restore.
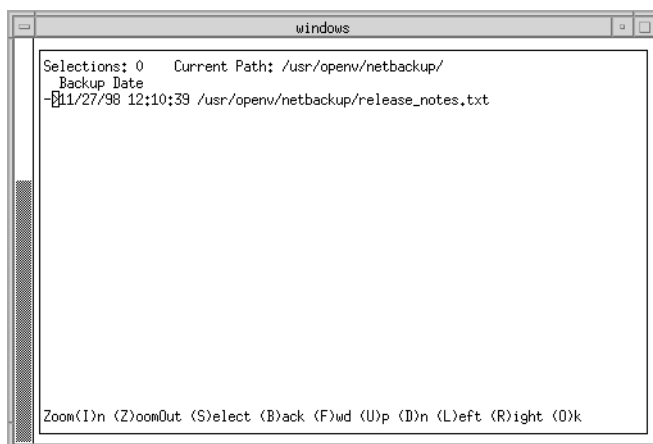
The information fields on the top line have the same meanings as the Backup or Archive Search screen. The list shows the contents of the current directory at the time that the backup or archive occurred.

◆ For a restore archive, the list contains files and directories from user-directed archives.

◆ For a restore backup, the list contains files and directories from user-directed and administrator scheduled backups.

◆ For a true-image restore, the list contains only the directories from scheduled full and incremental backups. Files do not appear, nor do the results of user-directed backups or archives.

Type Q (not shown on screen) to exit without making any changes.

Search Screen Options

The options at the bottom of the Search screen let you browse the directory tree and make selections. Remember, as you do this, that it usually takes longer to search the backup than the file system (as is done during a backup or archive).

Execute an option by typing the letter in parentheses. For example, Z moves you up to the parent of the current directory. Type Q (not shown on screen) to exit without making changes. You can use either upper or lower case letters.

Zoom(I)n   Moves you down one level in the tree to show the files and directories that are in the directory to which the arrow symbol currently points.

(Z)oomOut	Moves you up one level in the tree to show the files and directories that are in the parent of the current directory.
(S)elect	Selects the directory or file indicated by the current position of the pointer and adds an asterisk * to the left of the line. Pressing S again clears the item.
(B)ack	Shows the previous screen of information.
(F)wd	Shows the next screen of information.
(U)p	Moves the pointer up one item in the list.
(D)n	Moves the pointer down one item in the list.
(L)eft	Shifts the display to the left, if you had previously shifted it to the right in order to show lines that are too wide for the screen.
(R)ight	Shifts the display to the right in order to show lines that are too wide for the screen.
(O)k	Retains your current selections and returns to the previous menu.

Edit/View Selections Screen

The Edit/View Selections screen appears when you choose E (Edit/View Selected Files) option from a backup, archive, or restore (other than true-image) menu. This screen shows the directories and files that you have selected for backup, archive, or restore (depending on the operation you are performing).

```
                          windows                           
                  Number of Selections = 1

->/usr/openv/netbackup/release_notes.txt
  []




















(A)dd Selection Un(S)elect (C)lear (B)ack (F)wd (U)p (D)n (L)eft (R)ight (O)k
```
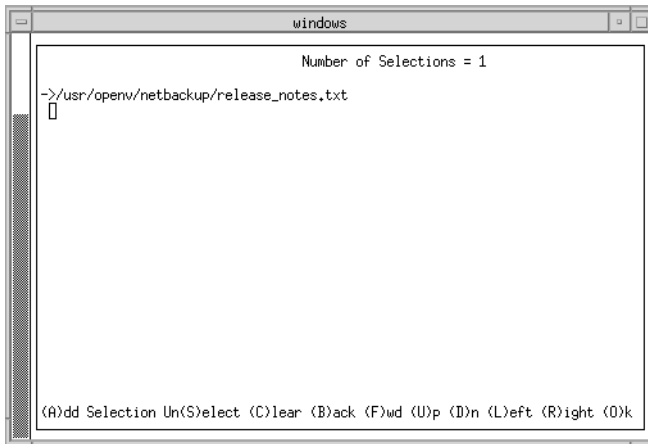
Note This screen is called View/Delete for true-image backups and restores and lets you delete but not add selections.

The top line on the screen shows the number of total selections. This number changes as you select or unselect files.

The options at the bottom of the screen let you alter your selections. Select an option by typing the letter in parentheses. You can use either upper or lower case letters. For example, B shows the previous screen. Type Q (not shown on screen) to exit without making any changes.

(A)dd Selection	This option does not appear on the View/Delete screen for true-image restores. Lets you add a selection to the list. Choosing this option shows a dialog box in which you type the pathname of the file or directory you are adding. Pressing Enter adds the new selection to the list.
	If you add a selection for a restore, bp uses the range of dates determined by the *current* values of Start Date and End Date when searching for files. This provides some added versatility when searching for backups. For example, if you want to add a file that is outside the date range used for existing selections, you can exit to the restore screen, change the date range, then return to the Edit/View Selections screen and add the extra file.
	You can also use wildcard characters *, ?, [, and] to specify multiple files and directories.
Un(S)elect	Unselects the directory or file to which the arrow symbol currently points and deletes it from the list.
(C)lear	Clears all previous selections.
(B)ack	Shows the previous screen of information.
(F)wd	Shows the next screen of information.
(U)p	Moves the pointer up one item in the list.
(D)n	Moves the pointer down one item in the list.
(L)eft	Shifts display to the left, if you had previously shifted it to the right in order to show lines that are too wide for the screen.
(R)ight	Shifts the display to the right in order to show lines that are too wide for the screen.
(O)k	Retains your current selections and returns you to the previous menu.

View/Delete Selections Screen

The View/Delete Selections screen appears when you choose E (View/Delete Selected Files) from the Restore True Image Backups menu. This screen shows the directories you have selected for the true-image restore.

System Administrators

This section contains additional information on the jbp interface for the NetBackup Administrator.

Alternate Client Restores

There are two types of alternate client restores, those that can be performed by the user, and those that can be performed by the system administrator.

User-Directed

Users can restore files to their client that were backed up by another client. The NetBackup Master server must be configured to allow alternate client restores, and the user must have authorization to perform the restore.

Server-Directed

Any administrator on any NetBackup server can direct a restore to the client that backed up the files. The administrator can also perform an alternate client restore—that is, files backed up from one NetBackup client can be restored to another NetBackup client, of the same type. Server-directed restores can be useful, for example, if users do not have permission to restore the files themselves.

Files or raw partitions can be restored to any client, of the same type, that backed up the files. It is not possible to perform a server directed restore through a database-extension product such as NetBackup for Oracle.

▼ **To perform an alternate client restore**

The following are general instructions for performing a server directed restore to a client.

1. Log on as root to the UNIX master server that backed up the files.

2. Start the NetBackup-Java Backup, Archive, and Restore program.

The NetBackup server text box shows the name of the UNIX master server on which you are currently operating.
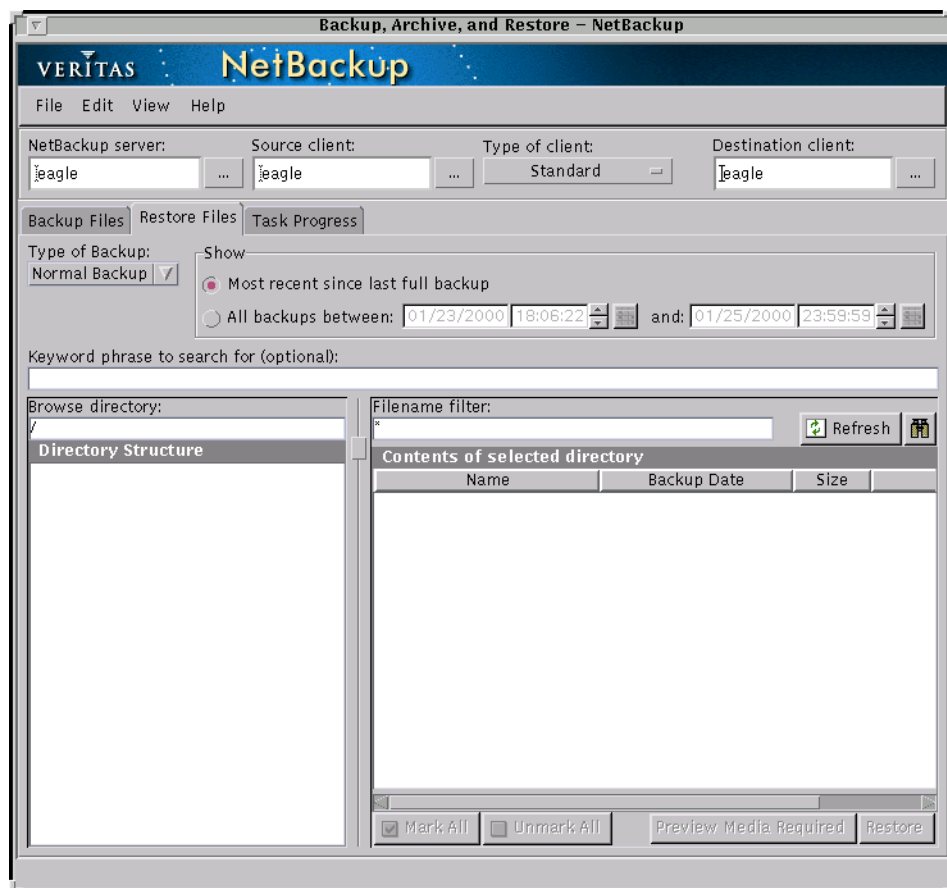
3. Specify the following:

   ◆ NetBackup server

   Specify the name of the NetBackup master server that backed up the files. This gives you access to the image catalog on that system so you can browse the desired backups.

   ◆ Source Client

   Specify the name of the client that originally backed up the files. This allows browsing and restoring files backed up from that client.

◆ Type of client

Specify a class type for the images that you are going to browse. This choice must match the type for the client that you are going to restore to (Destination client).

Note The Source and Destination client must always be the same type.

Refer to the following table for class settings for other clients.

Table 3. Class Settings for Clients

Client	Class
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

◆ Destination client

Change the name in the Destination client box to the client where you want to direct the file.

Note The Destination client field is enabled only if the user is root or a non-root administrator *and* the machine jbp is connected to is a server. jbp determines this by chekcing the name of the machine jbp is connected to against the server list.

The following example screen shows a restore of files that were backed up to eagle (NetBackup server) from spirea (source client) and are now being restored to an alternate client named mule (destination client). Both clients are standard.
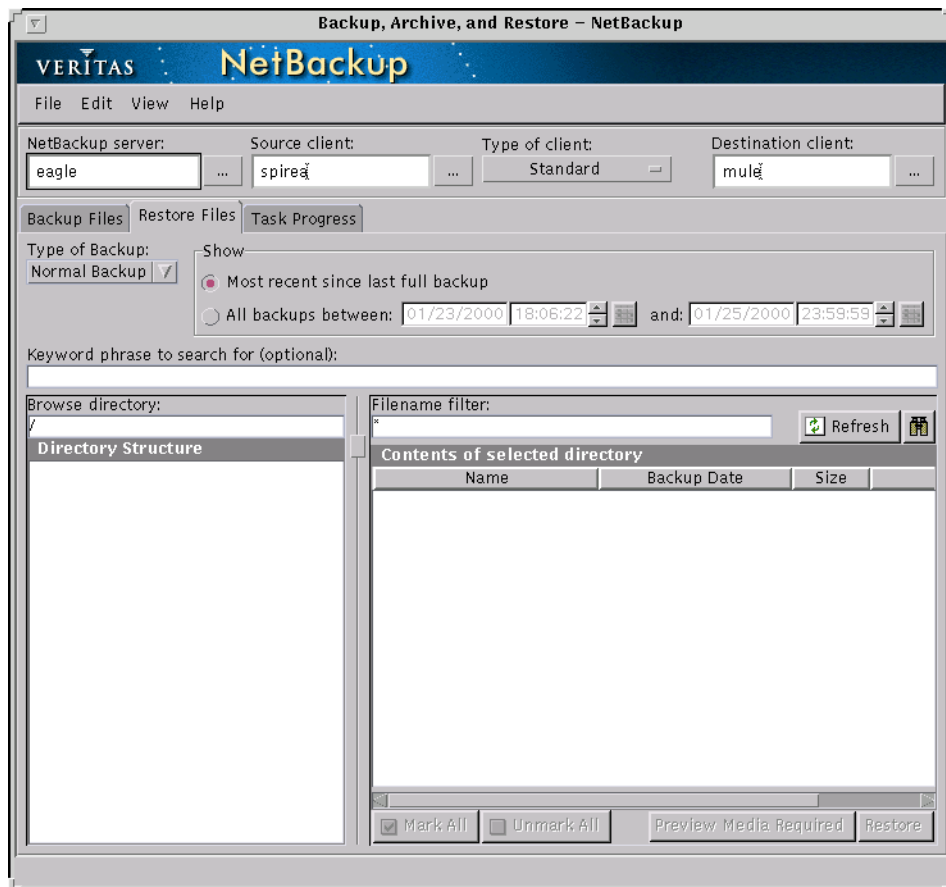
4. Click Refresh to refresh the list of items available for restore.

5. Select the files or folders you want to restore.

6. Click Restore.

The Restore Marked Files dialog box appears.

Restore Files

Destination
- ○ Restore everything to its original location.
- ○ Restore everything to a different location (maintaining existing structure).

Source:	Destination:
/home/gla1/	/home/gla1/

- ○ Restore individual directories and files to different locations.

Source	Destination	Backup Date	Modified
/home/gla1/sample.txt		08/05/1999 15:12:04	08/05/1999 09:04:08

Options
- ☑ Overwrite existing files   ☐ Rename hard links
- ☐ Restore directories without crossing mount points   ☐ Rename soft links

[Start Restore]   [Cancel]

7. Select the desired options in the Restore Files dialog box and click Start Restore.

Note If you restore to a different location, the paths you enter in the Source and Destination boxes must use the formats specified in Table 4. Notice that a restore to a Windows NT/2000 client, requires UNIX conventions.

Table 4. Restore Path Formats

Client	Path Format	Example
UNIX	/directory/	/usr/openv/netbackup/
Macintosh	folder/folder/	NetBackup Admin/Configuration Files Dist/
Microsoft Windows NetWare Non-Target	/drive/directory/	/C/VERITAS/NetBackup/
NetWare Target	/target/volume/data_path	/MARGE/SYS/veritas/netbackup/
IBM OS/2	drive:\directory	c:\veritas\netbackup

Preventing Server Directed Restores

To prevent server directed restores, either add or delete settings on the client as shown in the following table.

Client Type	Location of Setting	To Prevent Server Directed Restores
Microsoft Windows NT/2000, 98, or 95	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
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`

Restoring AFS Backups

> **Note** AFS does not apply to BusinesServer.

This section notes the differences in the interface that the user will encounter when restoring backups from an AFS client.

All restores must be performed by the administrator either on the NetBackup for AFS client or the master server. The administrator can use the NetBackup client interface on the master server to restore volumes to the same or an alternate NetBackup for AFS client (AFS file server).

Restores are performed on the basis of volumes. To restore a vice partition, the administrator must select all the volumes in that partition.

Browsing and Marking Volumes/Vice Partitions

When browsing for AFS backups, you cannot use the Browse directory field to enter a specific path. Instead, select the vice partition you wish to view in the Directory Structure pane and its contents will be displayed in the right pane.

> **Note** The full path is not displayed in the Directory Structure pane. For example, /vicepa/user.abc is displayed instead of /AFS/eagle/vicepa/user.abc.

Restoring to Alternate Volumes/Vice Partitions

The jbp interface provides a convenient mechanism for specifying an alternate name for a volume and/or vice partition. Specifying an alternate volume name prevents an existing volume from being overwritten by the restore.

◆ If you do not specify Overwrite existing files or an alternate name for the volume, then NetBackup adds an "R" to the name of the restored volume as follows:

    ◆ If the volume name is less than 22 characters long, NetBackup adds a leading "R" to the name of the restored volume. For example:

        If the volume name is: /vicepa/user.abc

        The restored name is: /vicepa/Ruser.abc

    ◆ If the volume name is 22 characters long (maximum allowable length for a volume name), the first character of the original volume name is replaced with an R. For example:

        If the volume name is: /vicepa/engineering.documents1

        The restored name is: /vicepa/Rngineering.documents1

◆ If you are restoring to an alternate path and specify an existing volume, you must select Overwrite existing files for the restore to succeed. In this case, the entire volume is overwritten. If you do not select the Overwrite existing files option, the restore will fail.

◆ When restoring a volume to an alternate vice partition, the vice partition must exist or the restore will fail.

Restoring Raw Partitions

A raw partition restore will restore a bit-by-bit backup of a partition of a disk drive on UNIX (on Windows NT/2000, this is called a disk-image backup). In order to restore a raw partition, you must have administrator capabilities on the master server or UNIX client. For further information on restoring FlashBackup raw partitions, refer to the *NetBackup FlashBackup System Administrator's Guide.* For information on restoring Auspex FastBackup raw partitions, refer to the *NetBackup System Administrator's Guide - UNIX.*

Note FlashBackup and Auspex FastBackup do not apply to BusinesServer.

Notes on Raw Partitions

◆ Ensure that the partition is not mounted and not in use (if the partition is being used by a database, make sure to shut down the database). The partition must be the same size as when it was backed up. Otherwise, the results of the restore are unpredictable.

◆ Ensure that the device file for the raw partition exists prior to the restore.

◆ The overwrite option is ignored during raw partition restores (except for Windows NT/2000 disk image restores). The device file must exist and the disk partition is overwritten whether this option is set or not.

◆ When restoring a Windows NT/2000 disk image, the Overwrite existing files option must be selected in the Restore Files dialog.

◆ If you performed a raw-partition backup of a disk partition used for file systems, you must restore the entire partition to recover a single file. To avoid overwriting the entire partition, use the alternate-path restore feature to restore the raw partition to another raw partition of the same size, and then copy individual files to the original file system.

▼ **To Restore an Entire Raw Partition**

Note An entire raw partition can only be restored from a full backup. (NetBackup does not distinguish between full and incremental backups when performing a standard raw partition backup.)

1. Click on the Restore Files tab.

2. Select the Type of client you are using. For most clients this is "Standard."

3. Select Raw partition from the Type of Backup drop-down list.

4. In the Browse directory specify the directory path to the device file, for example, `/dev/rdsk/`.

5. Click Refresh to refresh the list of raw partition backups available for restore.
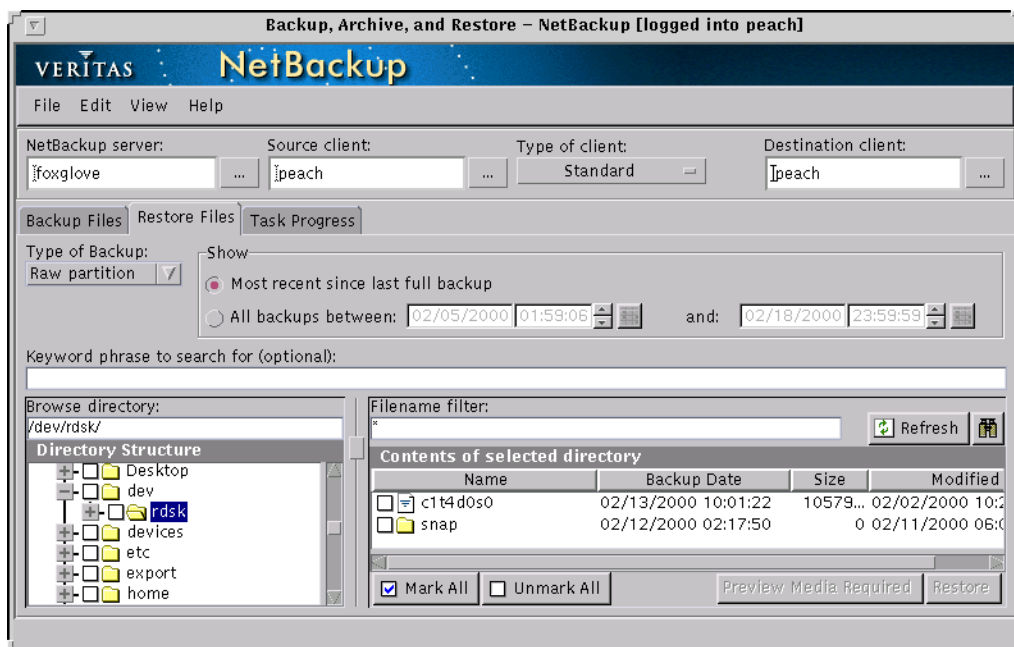
6. In the right pane, select the device file.

7. Click Restore.

▼ **To Restore Individual Directories or Files**

Note In order to restore individual directories or files from a raw partition backup, the client must be in a FlashBackup or Auspex-FastBackup class and the server must be configured to allow for individual file restores from raw partition backups.

1. Click on the Restore Files tab.

2. Select Backup from the Source drop-down list.

3. In the Browse directory field, specify the path to the backed up file or folder you wish to restore.

4. Click Refresh to refresh the list of backups available for restore.
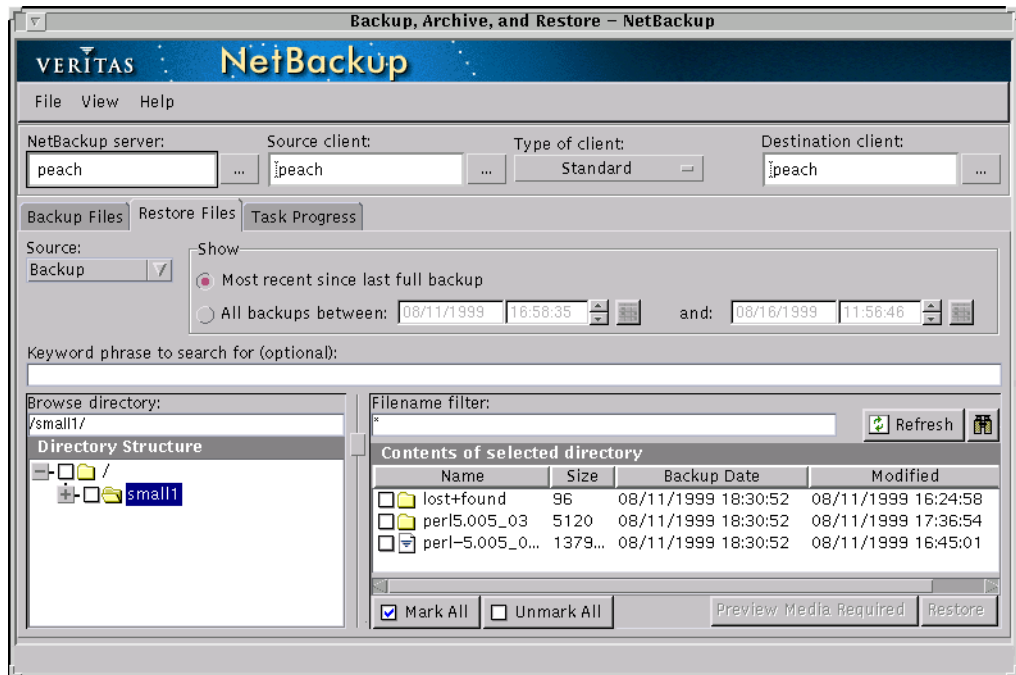
5. In the right pane, select the desired files or folders.

6. Click Restore.

▼ **To Restore a Windows NT/2000 Disk-Image Backup**

1. Click on the Restore Files tab.

2. Select the Type of client you are using. For most clients this is "Standard."

3. Click Refresh to refresh the list of items available for restore.

4. In the right pane, select the disk image, for example, \\.\c:.

5. Click Restore.

6. In the Restore Files dialog, be sure to select Overwrite existing files.

Previewing Required Media

The Preview Media Required allows you view a list of the media IDs which were used to backup or archive the selected files and directories. This feature is only available if your client is also a NetBackup server and if you have administrator capabilities.

1. Click on the Restore Files tab.

2. Select the files and folders that you want to restore.

3. Click Preview Required Media.

4. Click Restore to begin the restore operation.

Glossary

access control list (ACL)

Security information associated with files on some file systems.

ACS

Automated Cartridge System. This robot type is supported only by NetBackup DataCenter servers.

active job

A job for which NetBackup is currently processing backup or restore data.

activity logs

Logs that can be optionally enabled for specific NetBackup programs and processes and then used to investigate problems.

activity monitor

A NetBackup administration utility that displays information about NetBackup jobs and provides limited control over them.

administrator

A user that is granted special privileges to install, configure, and manage the operation of a system, network, or application

administration client

A Windows NT/2000 NetBackup client that has the administration interface software installed and can be used to administer NetBackup servers.

AIT

Sony Advanced Intelligent Tape, a type of tape drive or media type.

alternate-client restore

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).

alternate-target restore

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.

alternate path restore

Restores files to a different directory than the one from which they were backed up.

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 class

Configuration parameters that control the behavior of NetBackup during operations involving this class.

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 interface.

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 NT/2000 and the NetBackup Client daemon on UNIX.

bprd

> NetBackup Request Manager service on Windows NT/2000 and NetBackup Request daemon on UNIX.

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.

class

Defines the backup policy for a group of one or more clients that have similar backup requirements.

client

The system with the files to back up, archive, or restore.

client-user interface

The program used to perform user backups, archives, and restores.

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).

cpio

A UNIX command for formatting data on a 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 NT/2000 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

See "activity logs."

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 Media Manager host 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 Windows NT/2000.

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.

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

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. Entry and exit ports are sometimes called mailslots, or inports and outports.

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.

EVSN

External volume serial number. This is an identifier written on a media cartridge or canister so the operator can identify the volume before inserting it into a drive or robot. For labeled media, the EVSN must be the same as the RVSN (identifier recorded on the media). For all media, the EVSN is the same as the media ID.

FastBackup

A special type of raw-partition backup that can be performed only on an Auspex client (this option is available only for NetBackup DataCenter).

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 classes.

Global Data Manager

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 Master of Masters.

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.

gravity stacker

A robot that relies on gravity to advance to the next required tape.

GUI

Graphical user interface.

hard link

On UNIX, a hard link is a pointer to the inode for the data. On Windows NT/2000 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 mulitple 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."

inport

See "entry and exit ports."

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 NT/2000 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

      Terminating a job and removing it from the job queue.

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

      Refers to a robot and its accompanying software. A 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.

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 page at `www.support.veritas.com`. Choose NetBackup BusinesServer or NetBackup DataCenter in the VERITAS Support Product List and look under support options.

      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.

logs

> Files where a computer or application records information about its activities.

mailslot

> See "entry and exit ports."

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 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

A host where Media Manager software is installed.

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 (or slave 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.

MHD

See "multihosted drives."

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.

multihosted drives

A separately priced VERITAS option (Shared Storage Option or SSO) 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.

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 NT/2000 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 NT/2000 servers and Microsoft Windows clients, these settings are called properties and are made through the Backup, Archive, and Restore interface or the Configure - NetBackup window in the administration interface.

NetBackup databases

See catalogs.

NetBackup Database Manager service

NetBackup Windows NT/2000 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 NT/2000 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 NT/2000 service that runs on the master server and starts the scheduler and receives requests from clients.

NetBackup Volume Manager service

A NetBackup Windows NT/2000 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.

OSF and Motif

A set of specifications for user-interface design.

outport

See "entry and exit ports."

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 (NT/2000, 98, 95), Macintosh, or IBM OS/2 operating systems.

peername

> The name by which a computer identifies itself when establishing connections to other systems.

port

> A location used for transferring data in or out of a computer.

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.

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 NT/2000, this is called a disk-image backup.

---

rbak

> The program that Apollo clients use to read data from tape during a restore.

registry

> A Microsoft Windows 2000, NT, 98, and 95 database that has configuration information about hardware and user accounts.

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 an alternate directory).

> (noun) The process of restoring selected files and directories from a previous backup and returning them to their original directory locations (or to an alternate 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.

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 page at `www.support.veritas.com`. Choose NetBackup BusinesServer or NetBackup DataCenter in the VERITAS Support Product List and look under support options.

Also, a component of the Windows 2000 operating system that manages storage devices.

RVSN

Recorded volume serial number. This is an identifier recorded as part of the label on a volume and used by Media Manager to ensure that the correct volume is mounted. The RVSN is the same as the 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.

slave server

See Remote media server.

server directed restore

Using the client 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 NT/2000 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 NT/2000 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.

Shared Storage Option (SSO)

See "multihosted drives."

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.

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 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 NT/2000. 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.

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 page at `www.support.veritas.com`. Choose NetBackup BusinesServer or NetBackup DataCenter in the VERITAS Support Product List and look under support options.

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 page at `www.support.veritas.com`. Choose NetBackup BusinesServer or NetBackup DataCenter in the VERITAS Support Product List and look under support options.

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 page at `www.support.veritas.com`. Choose NetBackup BusinesServer or NetBackup DataCenter in the VERITAS Support Product List and look under support options.

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 page at `www.support.veritas.com`. Choose NetBackup BusinesServer or NetBackup DataCenter in the VERITAS Support Product List and look under support options.

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 page at `www.support.veritas.com`. Choose NetBackup BusinesServer or NetBackup DataCenter in the VERITAS Support Product List and look under support options.

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 and 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.

transfer rate

The rate at which computer information is transferred between a source and a destination.

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 page at `www.support.veritas.com`. Choose NetBackup BusinesServer or NetBackup DataCenter in the VERITAS Support Product List and look under support options.

TSA

"Target Service Agent."

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 page at `www.support.veritas.com`. Choose NetBackup BusinesServer or NetBackup DataCenter in the VERITAS Support Product List and look under support options.

This robot type is supported only by NetBackup DataCenter servers.

user operation

A backup, archive, or restore that is started by a person on a client system.

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 that do not have X Windows capabilities.

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 Media Manager hosts have a volume database. However, the database is empty unless the host is designated as a volume database host.

volume database host

The Media Manager host 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 the Media Manager host.

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.

wbak

> The program that Apollo clients use to write data on tape.

wildcard characters

> A character that can be used to represent other characters in searches.

WORM media

> Write-once, read-many media for optical disks. NetBackup BusinesServer does not support WORM media.

Windows Display Console

> A NetBackup-Java interface program that runs on Windows 2000, NT, 98, and 95 computers. Users and administrators 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 and administrator operations that their permissions allow.

xbp

> The X Windows-based backup, archive, and restore program for users on NetBackup UNIX clients.

xbpadm

> The X Windows-based NetBackup administration interface on UNIX. This interface is available only with NetBackup DataCenter.

xbpmon

> The X Windows-based NetBackup utility for monitoring jobs on UNIX. This utility is available only with NetBackup DataCenter.

xdevadm

> The X Windows-based Media Manager utility for managing devices on UNIX. This interface is available only with NetBackup DataCenter.

xvmadm

> The X Windows-based Media Manager utility for managing media on UNIX. This interface is available only with NetBackup DataCenter.

Index