

VERITAS NetBackup™ 4.5

User's Guide

for UNIX

March 2002
30-000517-011


VERITAS

Disclaimer

The information contained in this publication is subject to change without notice. VERITAS Software Corporation makes no warranty of any kind with regard to this manual, including, but not limited to, the implied warranties of merchantability and fitness for a particular purpose. VERITAS Software Corporation shall not be liable for errors contained herein or for incidental or consequential damages in connection with the furnishing, performance, or use of this manual.

Copyright

Copyright © 1993-2002 VERITAS Software Corporation. All Rights Reserved. VERITAS, VERITAS SOFTWARE, the VERITAS logo, *Business Without Interruption*, VERITAS The Data Availability Company, VERITAS NetBackup, VERITAS NetBackup BusinessServer, VERITAS Remote Storage for Microsoft Exchange, VERITAS Storage Migrator, and VERITAS Storage Migrator Remote are trademarks or registered trademarks of VERITAS Software Corporation in the U.S. and/or other countries. Other product names mentioned herein may be trademarks or registered trademarks of their respective companies.

Portions of this software are derived from the RSA Data Security, Inc. MD5 Message-Digest Algorithm. Copyright 1991-92, RSA Data Security, Inc. Created 1991. All rights reserved.

VERITAS Software Corporation
350 Ellis Street
Mountain View, CA 94043
USA
Phone 650-527-8000
Fax 650-527-8050
www.veritas.com



Contents

Preface	ix
Audience	ix
Organization	ix
Related Documentation	x
Accessibility	xi
Conventions	xi
Type Style	xi
Notes and Cautions	xii
Key Combinations	xii
Command Usage	xii
Terms	xiii
Getting Help	xiii
Chapter 1. Introduction to NetBackup	1
User-Directed Operations	2
Client Interfaces	2
Progress Logs and Email Notifications	4
Backup and Archive Windows	4
Automatic Backups	4
Exclude and Include Lists	5
Redirecting Restores to Different Clients	5
Read This Before Using NetBackup	5
Cautions and Notes to Observe When Using NetBackup	6
Questions to Ask Your Administrator	6



File Permissions Required By NetBackup	7
Chapter 2. Using the Backup, Archive, and Restore Interface	9
Starting the Backup, Archive, and Restore Interface	10
Setting Up Your Window Manager for the Backup, Archive, and Restore Inter- face	11
Starting from a Windows Platform	11
Adjusting the Time Zone	13
Helpful Hints on Locating and Marking Files	16
Navigating in the Directory Trees	16
File Icons	16
Filtering Files	17
Sorting Columns	17
Marking Files and Folders	17
Unmarking Files and Folders	18
Performing Backups and Archives	19
Performing Restores	23
Notes on Performing Restores	23
Tips on Locating Files and Folders to Restore	23
Viewing the Progress of Backups and Restores	30
Advanced Restore Procedures	31
Searching for Files to Restore	31
Selecting Specific Backup Dates to Restore	32
Setting the Date Range	33
Restoring an Earlier Version of a Directory	34
Restoring Backup Exec Images	35
Redirecting Files to a Different Path	36
Restoring Everything to a Different Path	36
Restoring Individual Items to Different Paths	38
Restoring a True Image of a Directory	40
Resolving Links	42



Tips and Troubleshooting	44
Right Mouse Button Does Not Invoke Pop-up Menu	44
Differentiating Between Different Backups on the Same Day	44
Restoring a File Not Initially Shown on the List	44
Unmarking a File Takes a Long Time	45
Selecting an Invalid Policy Type Causes Problems	45
Chapter 3. Using the Menu Interface	47
Starting the Menu Interface	48
Performing Backups or Archives	48
Performing Restores	56
Restoring a True Image of a Directory	69
Redirecting Restores to Different Clients	71
Resolving Links	73
Checking Progress of Operations	74
Chapter 4. Using the X-Windows Interface	75
Starting the xbp Interface	76
Performing Backups and Archives	78
Performing Restores	82
Basic Restore Procedure	82
Shortcut Restore Procedures	89
Listing the Available Backups or Archives	89
Restoring the Most Recent Backup	90
Restoring the Most Recent Version of a Directory	90
Advanced Restore Operations	91
Redirecting Restores to Different Clients	91
Selecting Specific Backup Dates to Restore	93
Restoring an Earlier Version of a Directory	94
Restoring a True Image of a Directory	95
Resolving Links	98



Checking Progress of Operations	98
Interpreting Progress Logs	100
Email Notifications	100
Deleting Progress Log Files	100
Obtaining a List of Your Backups and Archives	101
Finding and Selecting Files and Directories	101
Navigating in the Directory Tree	101
Go Lower in the Directory Tree	101
Go Higher in the Directory Tree	101
Show the Contents of a Directory	102
Filter by Date	102
Filter by File Name	102
Change the Number of Directory Levels Displayed	102
Selecting File or Directory for Backup, Archive, or Restore	102
Previewing Selected Files	103
Change Directory Structure Pane and the Files Pane Format	103
Show Directory Structure	103
Show Number of Directory Levels Shown	104
Show Most Recent or All Backups	104
Show File Details	104
Update the Display	104
Chapter 5. Reference Guide to xbp and bp	105
X-Windows Interface (xbp)	106
Special Symbols in Menus and Dialog Boxes	106
xbp Configuration	107
xbp Window	108
File Menu	109
Edit Menu	110
View Menu	111



Backup Menu	112
Restore Menu	114
Help Menu	115
Directory to Search Box	115
Range of Dates Boxes	117
Keyword phrase to search for Box	119
Backup Images Pane	120
Directory Depth Box	122
Filename Filter Box	123
Directory Structure Pane and the Files Pane	124
xbp_config Dialog Box	126
xbp_destpath Dialog Box	128
xbp_confirm Dialog Box	129
xbp_progress Dialog Box	130
Menu Interface (bp)	132
Main Menu	132
Backup Menu	133
Backup of Files and Directories Menu	134
Archive of Files and Directories Menu	137
Database Backup Menus	138
Restore Menu	139
Restore Backups Menu	141
Restore Archives Menu	144
Restore Raw Partition Backups Menu	144
Restore True Image Backups Menu	145
Restore Database Menus	145
Common Screens	146
Backup or Archive Search Screen	146
Restore Search Screen	147
Search Screen Options	148



Edit/View Selections Screen	149
View/Delete Selections Screen	150
Appendix A. System Administrators	151
Redirecting Restores to Different Clients	151
Preventing Server-Directed Restores	157
Restoring AFS Backups	158
Browsing and Marking Volumes/Vice Partitions	158
Restoring to Different Volumes/Vice Partitions	158
Restoring Raw Partitions	159
Notes on Raw Partitions	159
Previewing Required Media	162
Glossary	163
Index	191



Preface

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

Audience

This guide is intended for the system administrator and the UNIX end user. A basic knowledge of UNIX commands and operations is assumed.

Organization

This guide is organized as follows:

- ◆ Chapter 1, “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 NetBackup.
- ◆ Chapter 2, “Using the Backup, Archive, and Restore Interface,” explains how to use the NetBackup Java interface, `jbpsa`, to perform backup, archive, and restore operations.
- ◆ Chapter 3, “Using the Menu Interface,” explains how to use the NetBackup menu interface, `bp`, to perform backup, archive, and restore operations.
- ◆ Chapter 4, “Using the X-Windows Interface,” explains how to use the graphical interface, `xbp`, to perform backup, archive and restore operations.
- ◆ Chapter 5, “Reference Guide to `xbp` and `bp`,” describes the various windows, screens, and menus associated with the `xbp` and `bp` user interface programs.
- ◆ The Appendix “System Administrators” provides additional information on the `jbpsa` interface for the NetBackup Administrator.
- ◆ “Glossary” provides definitions 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 for PC Clients*

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

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

- ◆ *NetBackup Release Notes*

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

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

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

- ◆ *NetBackup BusinessServer System Administrator's Guide for UNIX*

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

- ◆ *NetBackup Troubleshooting Guide for UNIX*

Provides troubleshooting information for UNIX-based NetBackup products.

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

- ◆ *NetBackup Release Notes*

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

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

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

- ◆ *NetBackup BusinessServer System Administrator's Guide for Windows*

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

- ◆ *NetBackup Troubleshooting Guide for Windows*

Provides troubleshooting information for Windows-based NetBackup products.



Accessibility

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

- ◆ Support for assistive technologies such as screen readers and voice input (Windows servers only)
- ◆ Support for keyboard (mouseless) navigation using accelerator keys and mnemonic keys

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

Conventions

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

Type Style

Typographic Conventions

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



Notes and Cautions

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

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

Key Combinations

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

Press Ctrl+t

Command Usage

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

brackets []

The enclosed command line component is optional.

Vertical bar or pipe (|)

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

command *arg1* | *arg2*

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

Terms

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

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

Getting Help

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

<http://www.support.veritas.com/>

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



1. Open <http://www.support.veritas.com/> in your web browser.
2. Click **Contact Support**. The *Contacting Support Product List* page appears.
3. Select a product line and then a product from the lists that appear. The page will refresh with a list of technical support phone numbers that are specific to the product you just selected.



Introduction 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 that 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.

Client Interfaces

NetBackup provides four client interfaces:

- ◆ Backup, Archive, and Restore interface (for Java)
- ◆ Menu interface
- ◆ X-Windows graphical interface
- ◆ Command line interface

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

- ◆ The Backup, Archive, and Restore interface can be used on NetBackup-Java capable platforms. Refer to “Using the Backup, Archive, and Restore Interface” on page 9 for information on using this interface.
- ◆ The 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 interface is used on any X terminal or workstation with an X server program compatible with X11.R4 or later. The `xbp` command starts this interface. Refer to “Using the X-Windows Interface” on page 75 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 for UNIX*.

The Backup, Archive, and Restore, 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 Email 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 98 for xbp or “Checking Progress of Operations” on page 74 for bp. For more details on log files for the Backup, Archive, and Restore interface, refer to “Viewing the Progress of Backups and Restores” on page 30.

The NetBackup server can be configured to deliver email notifications to the client user on the status of the client user’s NetBackup operations. Refer to the *NetBackup System Administrator’s Guide for UNIX* or the *NetBackup System Administrator’s Guide for Windows* 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. For more information, refer to the *NetBackup System Administrator’s Guide for UNIX* or the *NetBackup System Administrator’s Guide for Windows*.

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 email 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 for UNIX* or the *NetBackup System Administrator’s Guide for Windows*.

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 policy or for a policy and schedule combination. The master server will use a single exclude list when performing a scheduled backup for all clients in the specified policy or policy 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 for UNIX* or the *NetBackup System Administrator's Guide for Windows* provide instructions for creating the exclude and include lists.

Redirecting Restores to Different Clients

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 a different 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. For more information refer to “System Administrators” on page 151.

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 or not this option is set.

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 email notifications on the results of your user-directed operations?

These email notifications can eliminate the need for you to monitor the progress logs. NetBackup can also send email 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).

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 <i>not</i> 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 or not 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.
Restore a file in a directory that does not exist.	NetBackup creates the directory with the user name and the name of the user group 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 Backup, Archive, and Restore Interface

2

The Backup, Archive, and Restore interface (jbpSA) provides a graphical user interface through which users can perform backups, archives, and restores. The interface can be started and run on all NetBackup-Java capable platforms.

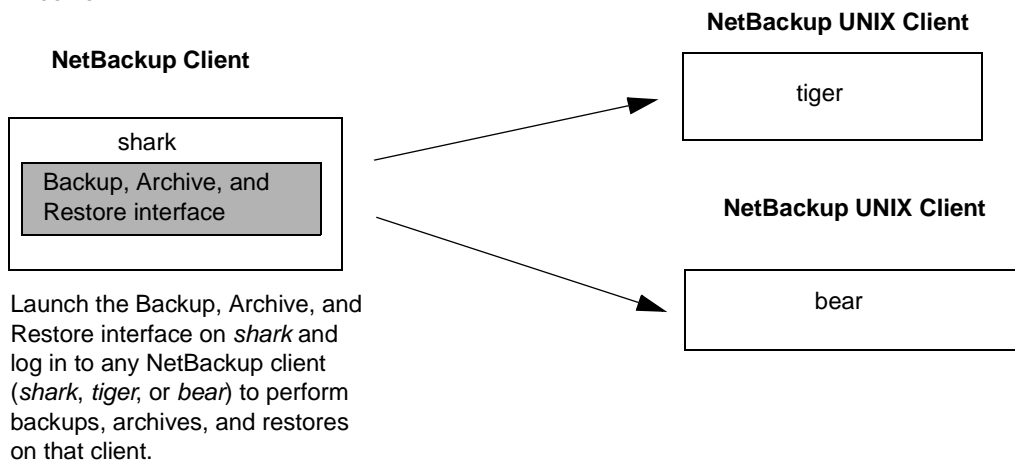
Topics covered in this chapter include:

- ◆ Starting the Backup, Archive, and Restore 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



Starting the Backup, Archive, and Restore Interface

Logging into a NetBackup client via the Backup, Archive, and Restore interface



With the Backup, Archive, and Restore interface you can perform backup, archive, and restore operations on any client from the NetBackup Client running this interface.

▼ To start the Backup, Archive, and Restore interface

1. Log in to the 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/opensv/netbackup/bin/jbpSA &
```

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

3. In the Login dialog box, 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.
5. Specify the password.
6. Click **Login**.

Setting Up Your Window Manager for the Backup, Archive, and Restore 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 interface does 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
```

Starting from a Windows Platform

You can also use the Backup, Archive, and Restore interface from a Windows platform, if you have installed the Windows Display Console. The WDC can only be used to log into a UNIX client.



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 Backup, Archive, and Restore interface appears.



Adjusting the Time Zone

When working with sites that have geographically dispersed NetBackup server and client machines, it may be necessary to adjust the time zone when restoring files. Set the time zone relative to the server's 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

- ◆ 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 **File** menu, click **Adjust Application Timezone**.

The Adjust Timezone dialog box appears.

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 (DST) should begin.
 - a. Select the method you wish to use for indicating when DST 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 on:

April 1

Enter this:

Daylight savings time starts
Use method:
Absolute date
Day of week: Sunday, Month: April, Day: 1, Time: 02:00

the first Monday in April

Daylight savings time starts
Use method:
First day of week in month
Day of week: Monday, Month: April, Day: 1, Time: 02:00

the first Monday after April 1

Daylight savings time starts
Use method:
First day of week in month after date
Day of week: Monday, Month: April, Day: 1, Time: 02:00

the last Thursday in April

Daylight savings time starts
Use method:
Last day of week in month
Day of week: Thursday, Month: April, Day: 1, Time: 02:00

the last Thursday before April 30

Daylight savings time starts
Use method:
Last day of week in month before date
Day of week: Thursday, Month: April, Day: 30, Time: 02:00

5. As you did in step 4, indicate when DST 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 on the **View** menu, click **Refresh**. To display only files with the “txt” extension, type in `*.txt`. This filter is case-insensitive.

When starting the Backup, Archive, and Restore interface, * appears in the **Filename filter** box. This will display all files.

Sorting Columns

The columns in the right 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 Selected Files**.
- ◆ To select multiple contiguous files, click on the first file you wish to mark, hold down the Shift key, and click on 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 Selected Files** 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 files displayed in the right pane, from the **Edit** menu, choose **Mark Displayed Files**.



If more than one version of a file is displayed (because the file 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 Selected Files**.
- ◆ To unmark a folder, and all the files and subfolders marked within that folder, clear the checkbox to the left of the folder.
- ◆ To unmark all backup or restore selections, choose **Unmark Displayed Files** from the **Edit** menu.

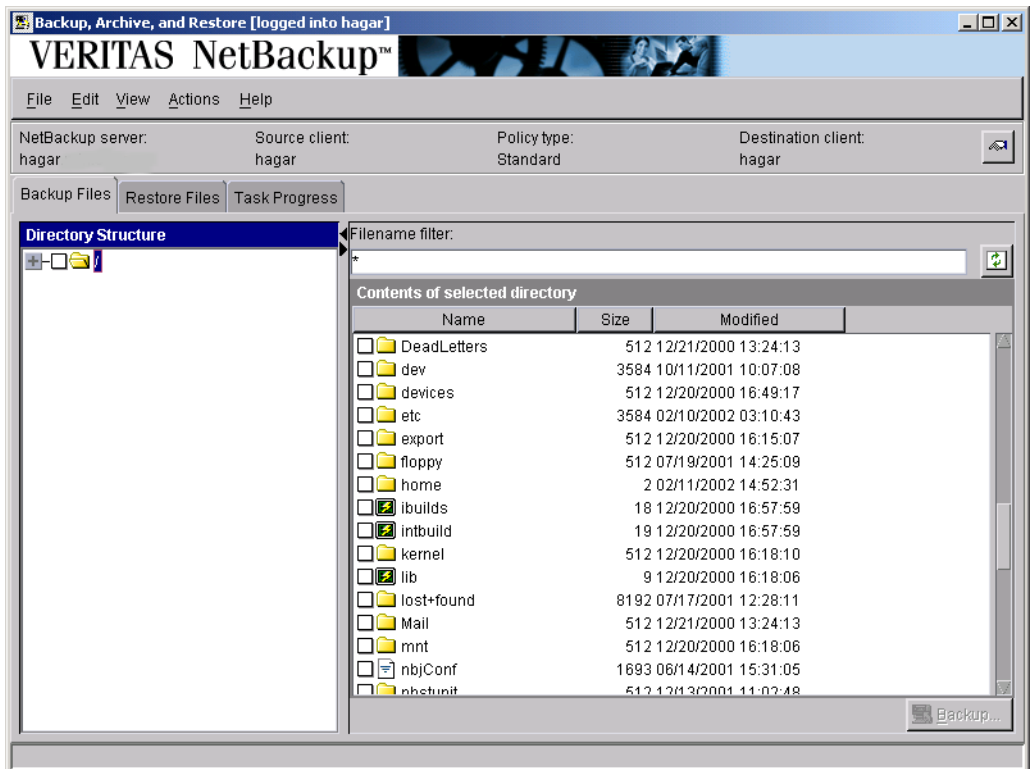
Performing Backups and Archives

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 Backup, Archive, and Restore interface as described in “Starting the Backup, Archive, and Restore Interface” on page 10.

▼ To perform a backup

1. Click 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.

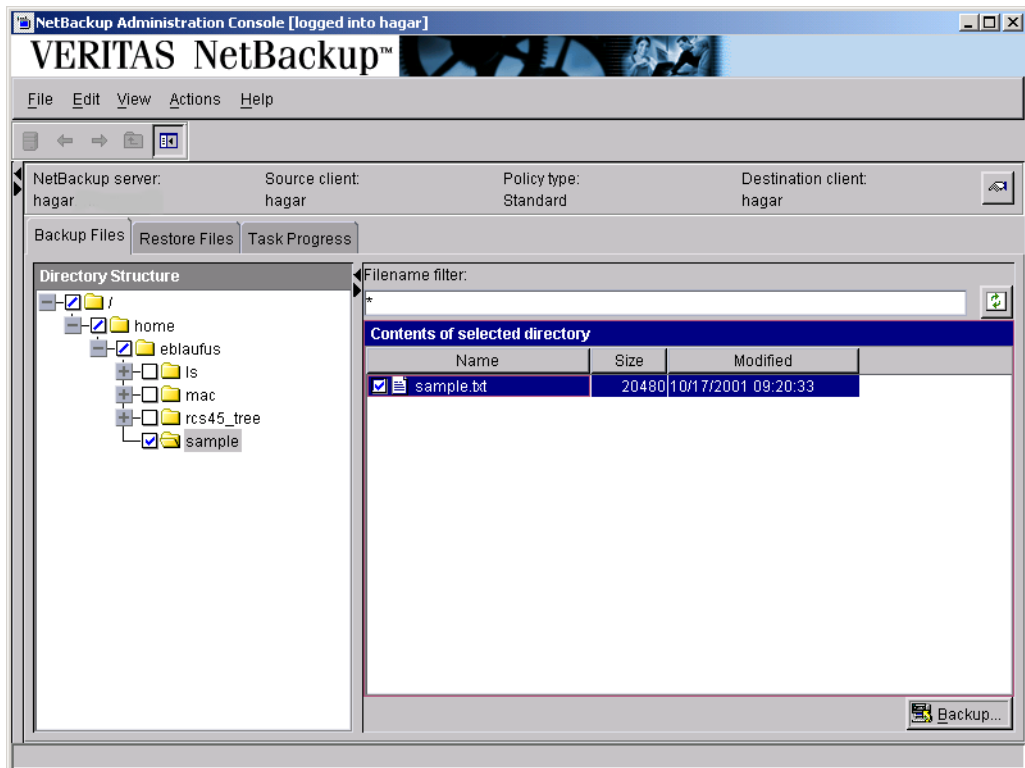
Normally, you will not have to switch master servers unless, for some reason, the administrator has temporarily moved the NetBackup backups (for example, because of a problem on the original master server). If the change becomes permanent, the administrator should change your default to reflect the other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

- a. On the **Actions** menu, click the **Specify NetBackup Machines**.
- b. Click on the **NetBackup server** tab.
- c. Select the desired server from the list.

If you indicate an invalid name, or if your client does not belong to a NetBackup policy on that server, you will get an error when the backup begins. If this occurs, see your system administrator for assistance.

- d. Click **OK**.

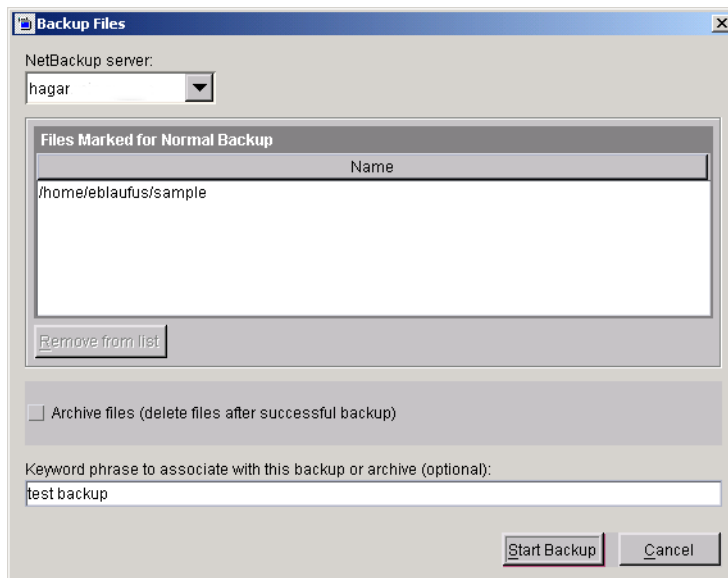
3. Select the file or files to back up. In this example the selected file is `sample.txt`.



You can filter the files and folders shown in the Contents of Selected Directory pane. Once you have entered the filter criteria, click **Refresh** from the **View** menu. For more information, see “Filtering Files” on page 17.

4. Click **Backup** to start the Backup operation.

The Backup Files dialog box is displayed.



5. 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 backup` is 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**.

6. Click **Start Backup** to begin the backup operation.

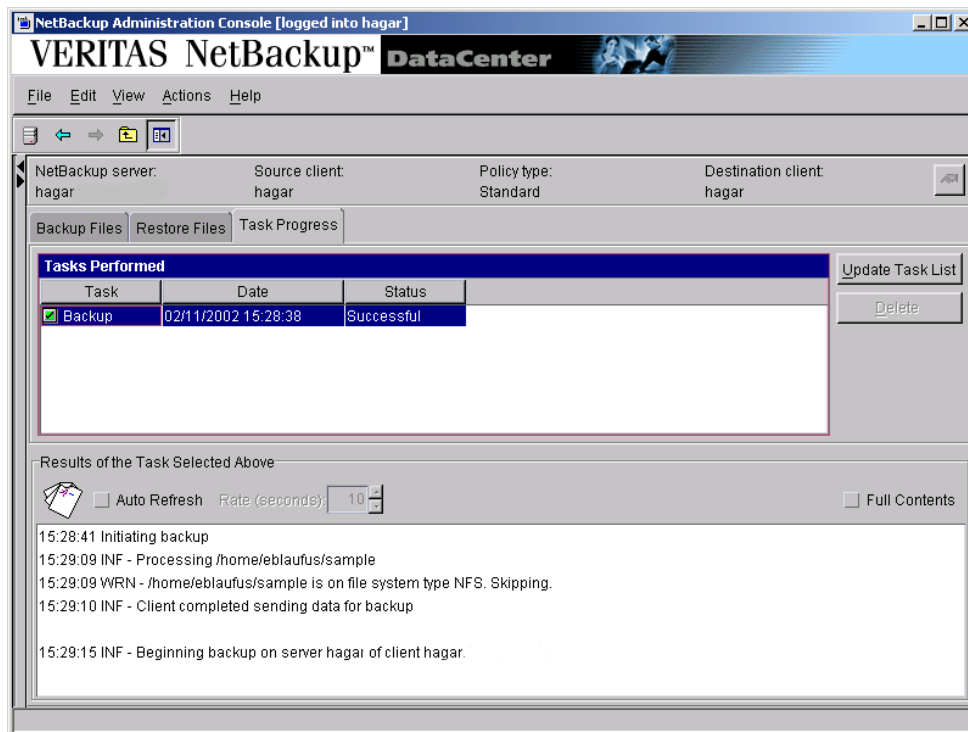
Note The NetBackup operation may take a few minutes to complete.

You will be prompted to view the status of the backup operation.

7. Click **Yes** to open the **Task Progress** tab.



The **Task Progress** tab allows you to view the progress report of a NetBackup operation. For more information, see “Viewing the Progress of Backups and Restores” on page 30.



Performing Restores

This section will step you through a simple restore process, using the same file that was backed up in the previous section. It assumes that the Backup, Archive, and Restore interface has already been started as described in “Starting the Backup, Archive, and Restore Interface” on page 10.

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 files that were backed up. See “File Permissions Required By NetBackup” on page 7 for an explanation of how NetBackup restores files in various situations.

Tips on Locating Files and Folders to Restore

You can narrow your search by indicating the following information. When finished, update the right pane by clicking **Refresh** on the **View** menu.

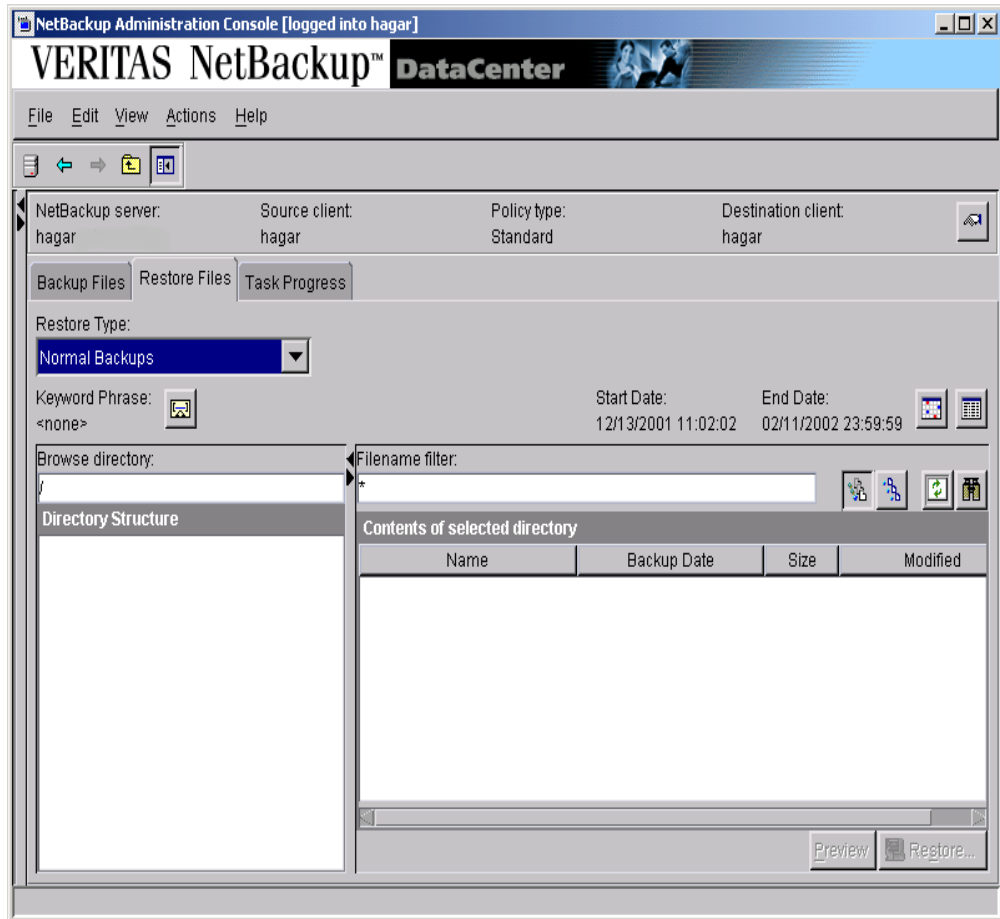
- ◆ If you know the exact directory you wish to browse, type the path to that directory in the **Browse directory** box.
- ◆ You can filter the files and folders shown in the Contents of Selected Directory pane. Once you have entered the filter criteria, from the **View** menu, click **Refresh**. For 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 specifying that keyword phrase (from the **Actions** menu, click **Set Keyword**).



▼ To perform a restore

1. Click the **Restore Files** tab.

Note When the **Restore Files** tab is displayed initially, nothing is shown in either pane.



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. On the **Actions** menu, click **Specify NetBackup Machines**.
- b. Click on the **NetBackup server** tab.
- c. Select the desired server from the list.
- d. Click **OK**.

If you indicate an invalid name, or if your client does not belong to a NetBackup policy on that server, you will get an error when attempting to browse for files to restore. If this occurs, see your system administrator for assistance.

3. Select the type of restore to perform. From the **Actions** menu, point to **Select Restore Type**, or select an option from the **Restore Type** list box.
 - To restore a backup, click **Normal Backup**.
 - To restore an archive, click **Archived Backups**.
 - To restore from a raw partition backup, click **Raw Partition Backups**. See “Restoring Raw Partitions” on page 159 for more information.
 - To restore a true image backup, click **True Image Backups**. For more information on restoring a true image backup, see “Restoring a True Image of a Directory” on page 40.
 - To restore a Backup Exec backup, click **Backup Exec Backups**. For more information on restoring a Backup Exec backup, see “Restoring Backup Exec Images” on page 35.
 - To restore both regular backups and Backup Exec backups, click **Normal and Backup Exec Backups**.
4. Select the folder or file to restore.

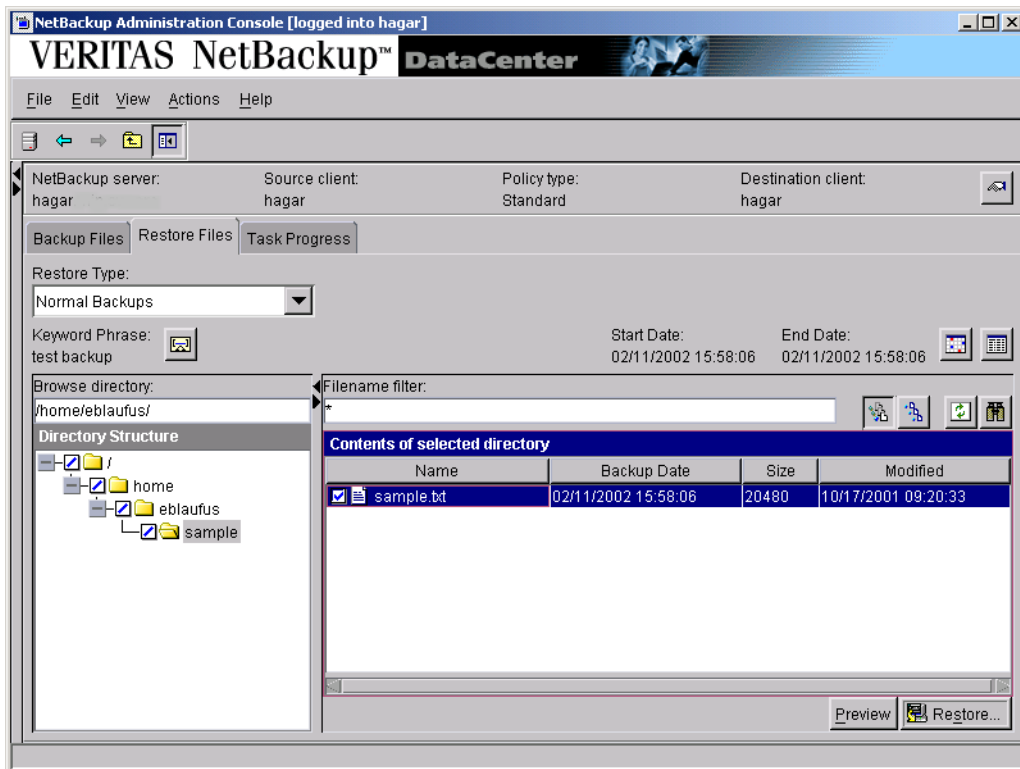
You can filter the files and folders shown in the Contents of Selected Directory pane. Once you have entered the filter criteria, click **Refresh** on the **View** menu. For more information, see “Filtering Files” on page 17.

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. From the **Actions** menu, click **Set Keyword**.
- b. Type `test backup` in the **New keyword phrase** box and click **OK**.

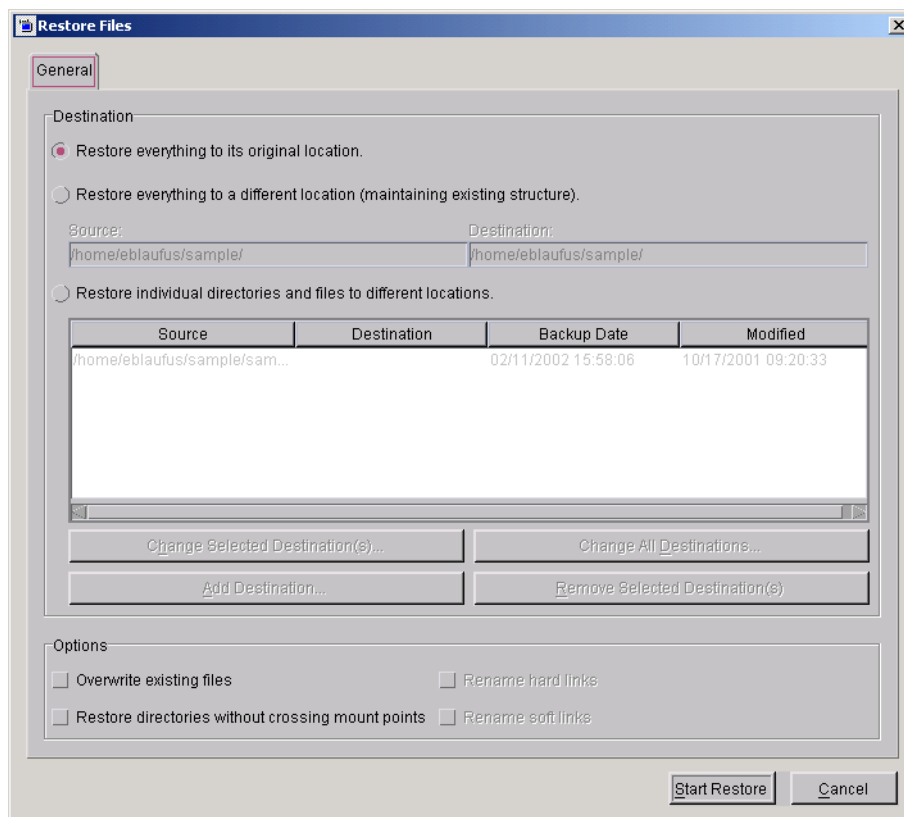


- c. In the right pane, select the checkbox to the left of the `sample.txt` file.



- 5. Click **Restore**.

The Restore Files dialog box is displayed.



By default, files will be restored to their original location. See “Redirecting Files to a Different Path” on page 36 for information on restoring all files to a different destination or restoring individual files to multiple destinations.

6. Select **Overwrite existing files**. By default, NetBackup does not overwrite files.
7. Select **Restore directories without crossing mount points** to skip over file systems mounted in the selected directories. 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.



8. If you are 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.

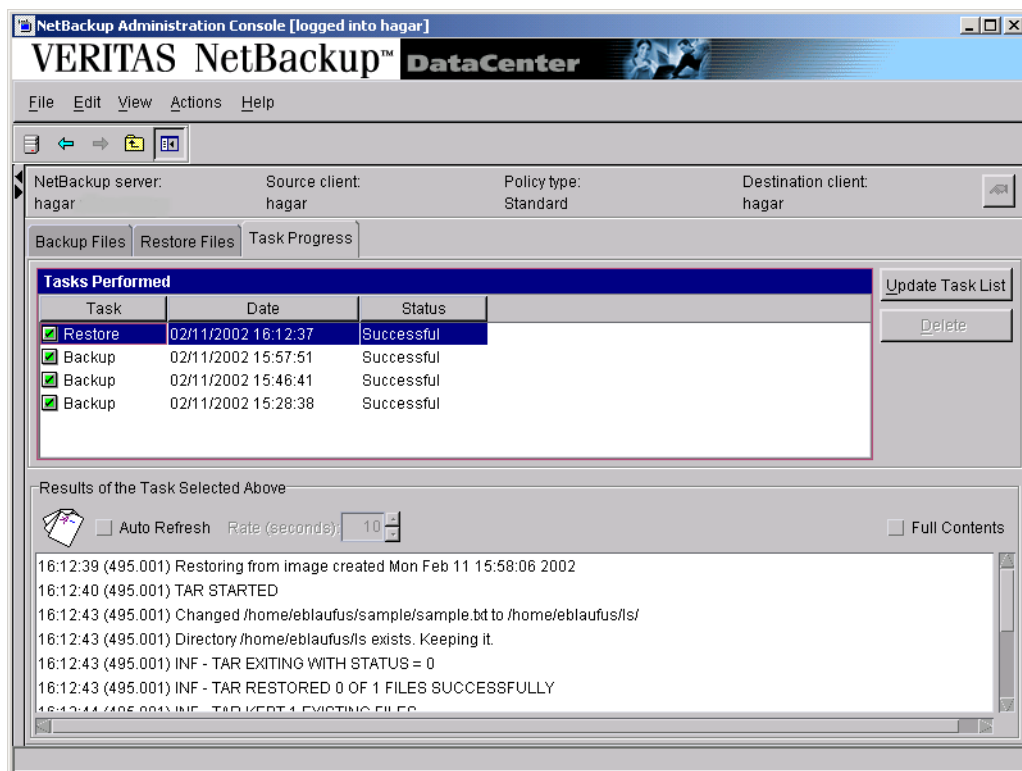
Note If you are restoring system files to a disk other than the current system disk and plan on using the other disk as the system disk with the original file paths when the restore is completed, we suggest that you select the **Rename hard links** checkbox and clear the **Rename soft links** checkbox.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

9. Click **Start Restore** to begin the restore operation.

You will be prompted to view the status of the restore operation.
10. 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 30 .



Viewing the Progress of Backups and Restores

▼ To view the progress of a backup or restore

1. Click the **Task Progress** tab.
2. Click **Update Task List** to refresh the list of tasks being performed.
3. Click on the task for which you want to check the progress.

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

4. To automatically refresh the results of the tasks, select **Auto Refresh** and select a refresh interval.

The default setting is 10 seconds. A smaller interval may negatively affect 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.

▼ To find a directory or file

1. In the Backup, Archive, and Restore interface, click on the **Restore Files** tab.
2. On the **Actions** menu, click **Search Backups**.

The Search Backups dialog box appears.

3. In the **File or directory name** box, type 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, select the **Perform case insensitive search** option. The default is case-sensitive, meaning the file name must match exactly as it was entered.

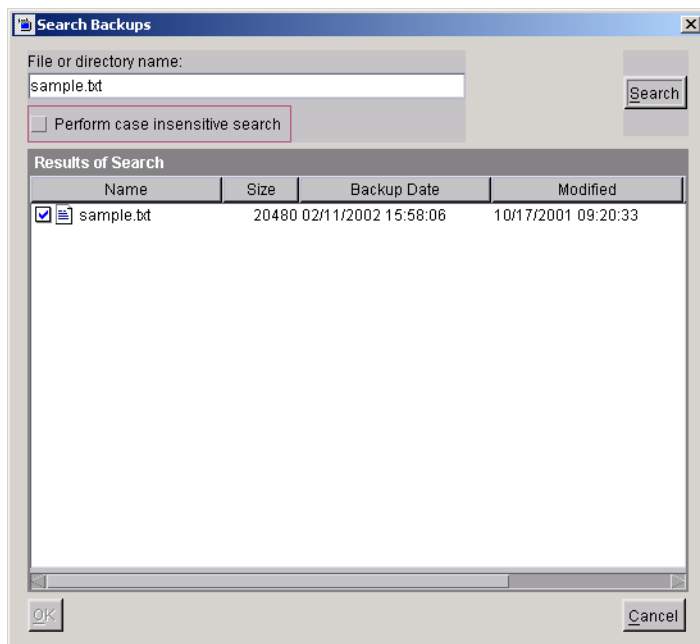
For example, if you type `sample.txt` and select case-sensitive, NetBackup will only find files that use that exact capitalization. The files `Sample.txt` and `SAMPLE.TXT` would not appear in the results.

5. Click **Search**.

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 Files** tab in the Backup, Archive, and Restore interface.
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. To locate and back up this file, you would need to change the date range.

If the client belongs to more than one policy, the starting date defaults to the last full backup that occurred first. For example, assume that: (1) a client belongs to PolicyW1 and PolicyW2, (2) Full backups occur for both of these policies, (3) PolicyW1's most recent full backup occurred on June 16 and PolicyW2's most recent full backup occurred on June 24. NetBackup will display those files and folders that have been backed up since the PolicyW1 full backup on June 16.

Note 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 directory 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

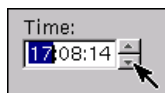
There are two ways you can set the date range: by selecting the dates using the Calendar, or by selecting the dates using the Backup History.

▼ To set the date via the Calendar

1. On the **Actions** menu, point to **Set Date Range**, and click **Calendar**.

The Date Range dialog box displays.

2. Click the **Start Date** tab.
3. 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-hand corner of the dialog.
 - To change the year, select the desired year from the drop-down list in the upper left-hand 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.

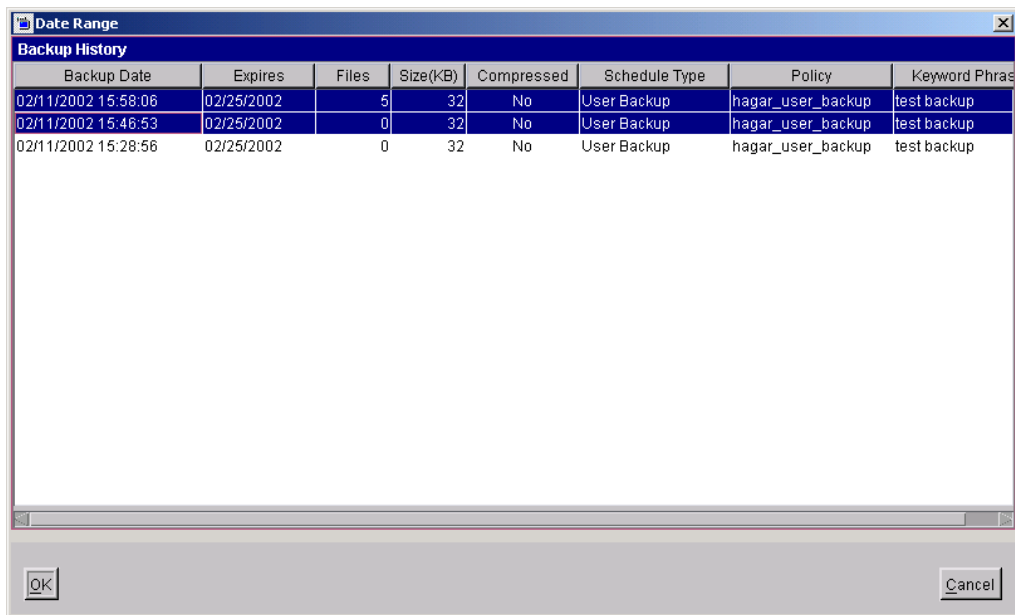


4. Click the **End Date** tab and choose the desired end date.
5. Click **OK**.



▼ **To set the date via the Backup History**

1. On the **Actions** menu, point to **Set Date Range**, and click **Backup History**.
The Date Range dialog box appears.
2. Select the desired backup image or images from the list.



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

3. Click **OK**.

Restoring an Earlier Version of a Directory

The following procedure will restore all files that were backed up during the range of backup dates that you searched 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 40.

▼ **To restore an earlier version of a directory**

1. Click the **Restore Files** tab.
2. Select the desired Restore Type. (On the **Actions** menu, point to **Select Restore Type** and choose the desired type of restore, or select a type from the **Restore Type** list box.)
3. Use the Calendar or Backup History list to select the date range that contains the version of the directory you wish to restore.
4. From the Directory Structure pane, select the directory you wish to restore. 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 a different location, see “Redirecting Files to a Different Path” on page 36.

5. Click **Restore**.
The Restore Files dialog box is displayed.
6. Click **Start Restore** to begin the restore operation.

Restoring Backup Exec Images

It is possible to restore Backup Exec images or both Backup Exec and NetBackup images in a single NetBackup restore job.

▼ **To restore from Backup Exec images**

1. Start the Backup, Archive, and Restore interface interface.
2. Click on the **Restore Files** tab.
3. Select the desired Restore Type.
 - To restore Backup Exec images, on the **Actions** menu, point to **Select Restore Type** and click **Backup Exec Backups**.
 - To restore Backup Exec and NetBackup images, on the **Actions** menu, point to **Select Restore Type** and click **Normal and Backup Exec Backups**.
4. Select the files or folders to restore.
5. Click **Restore**.



The Restore Files dialog box will open.

6. Select the desired restore options.

By default, files will be restored to their original location. See “Redirecting Files to a Different Path” on page 36 for information on restoring all files to a different destination or restoring individual files to multiple destinations.

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

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

Redirecting Files to a Different Path

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

Restoring Everything to a Different Path

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

▼ To restore everything to a different location

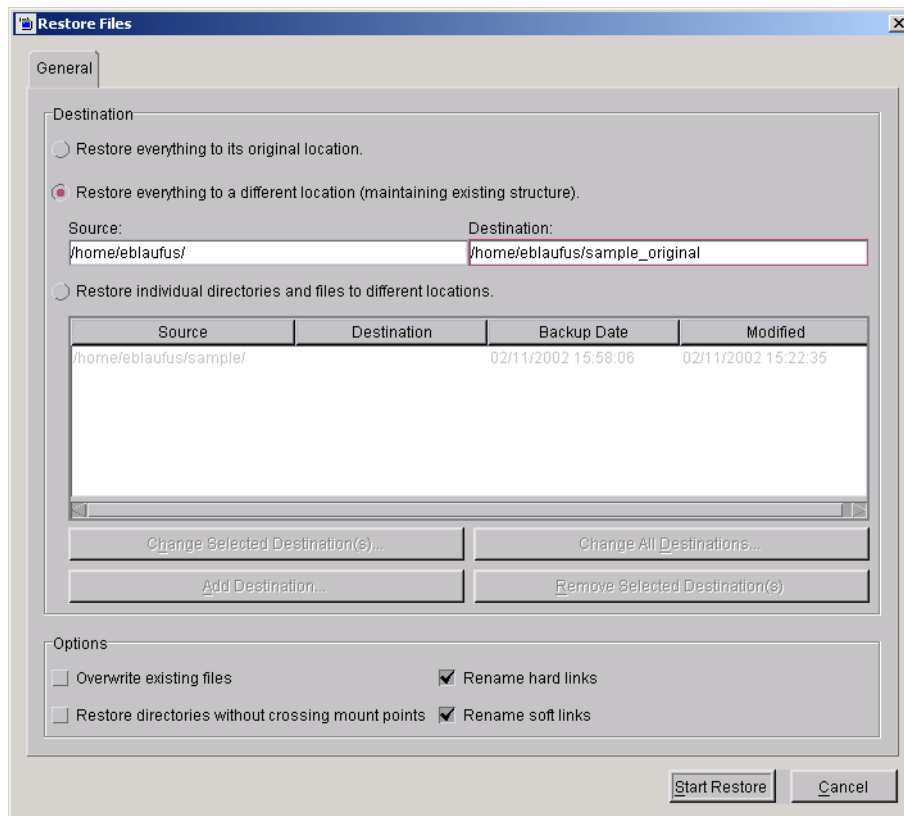
1. Click on the **Restore Files** tab.
2. On the **Actions** menu, point to **Select Restore Type** and choose the desired type of restore, or select the restore type from the **Restore Type** list box.
3. Select the files or folders you wish to restore.

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 restore an entire folder and all its contents to the same location, mark the folder in the left pane. If you wish to restore the files in a folder to different locations, mark the files in the right pane.

4. Click **Restore**.

The Restore Files dialog box is displayed.

5. Select **Restore everything to a different location**.
6. In the **Destination** box, enter the directory to which you want to restore the files or folders.



When restoring from Backup Exec images, files must be redirected to the export path, as defined in the `agent.cfg` file on the UNIX client (this file is a Backup Exec configuration file for the Backup Exec Unix client). Files can only be redirected to this path. For example, if the export path is defined as `export\dir1`, files can be redirected to the path `export\dir1` (or to `export\dir1\dir2`).

7. Select any other desired restore options. For information on these options, refer to “Performing Restores” on page 23.
8. Click **Start Restore**.



Restoring Individual Items to Different Paths

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

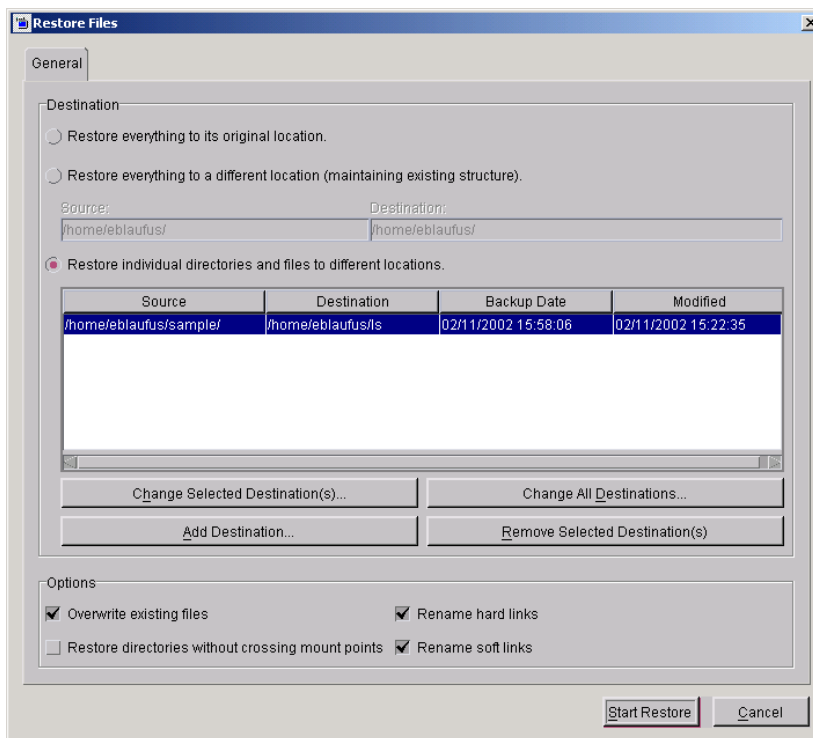
▼ **To restore files and directories to different locations**

1. Click on the **Restore Files** tab.
2. On the **Actions** menu, point to **Select Restore Type** and choose the desired type of restore, or select a restore type from the **Restore Type** list box.
3. 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 restore an entire folder and all its contents to the same location, mark the folder in the left pane. If you wish to restore the files in a folder to different locations, mark the files in the right pane.

4. Click **Restore**.

5. Select **Restore individual directories and files to different locations.**



6. Select the file or directory which you want to restore to a different location.

You can select multiple files and folders using Ctrl + click or Shift + click (see “Marking Files and Folders” on page 17).

7. Click **Change Selected Destinations.**

8. In the **Destination** field, enter the destination for the file or files.

9. Click **OK.**

10. Select any other desired restore options. For information on these options, refer to “Performing Restores” on page 23.

11. Select **Overwrite existing files.**

12. To begin the restore operation, click **Start Restore.**



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.

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 12/01/00 and 12/04/00.

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

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

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

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



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

```
file1  
file2  
file4
```

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

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

True Image 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 12/04/00, but before doing the restore, then the contents of the directory after the restore would have been:

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

▼ To restore a true image of a directory

Note You can restore a true image of a folder only if the NetBackup Policy 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. From the **Actions** menu, point to **Select Restore Type** and choose **True Image Backups**.



4. To refresh the list of backups available for restore, click **Refresh** on the **View** menu.
5. Select the directory 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 Policy that is backing up your files and directories is configured to collect true image restore information.

6. Click **Restore**.

The Restore Files dialog box is displayed.

7. To begin the restore operation, click **Start Restore**.

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

Resolving Links

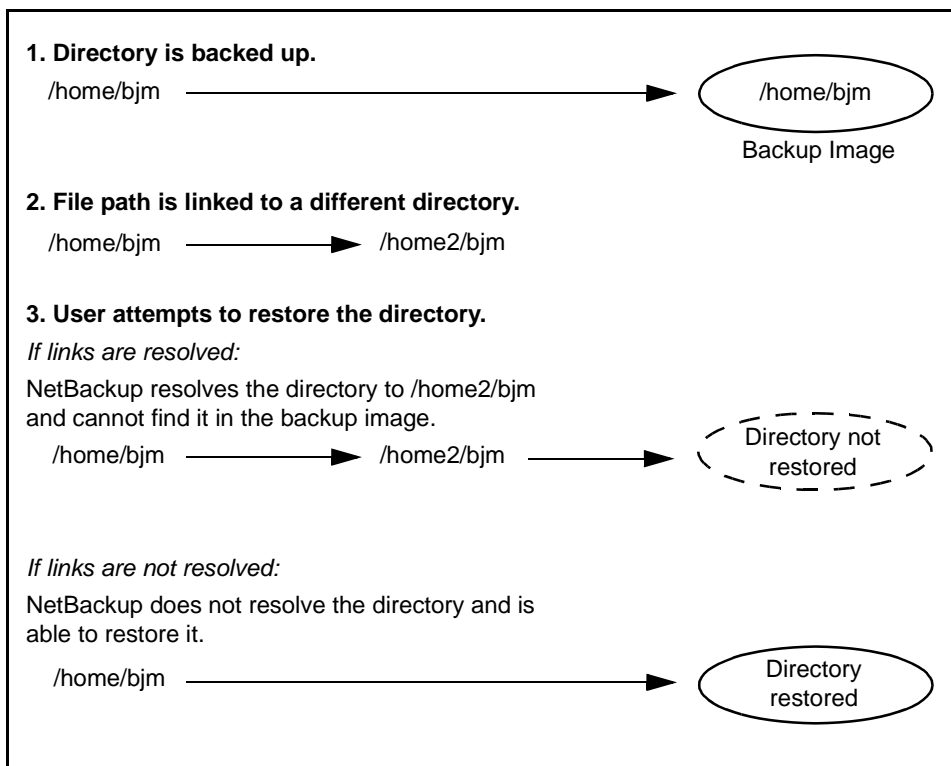
When searching for files to restore, you can choose whether to have NetBackup resolve links that may exist in the search path. If you resolve links, NetBackup automatically changes the path so it points to the actual file or directory. Otherwise, NetBackup uses the path you type in. `jbpsA` resolves 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 will search 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/opencv/` is linked to `/opt/opencv` on the local machine, but not on the other client machine. If you deselect **Use Actual Path If Browse Directory is Linked**, jbpSA will look for `/opt/opencv` on the other client, even though the path doesn't exist on that client.



Tips and Troubleshooting

The following sections provide information on some common issues.

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.

▼ 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, use the Calendar or Backup History list to select 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 restored, it is likely that the file was backed up by the user, and not in the last full backup. Use the Backup History list to select user backups for specific dates or use the Calendar to specify a new start date, then click **Refresh** on the **View** menu.

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 Policy Type Causes Problems

Although it is possible to change the Policy type, in most situations the default policy type is appropriate and should not be changed.

Symptoms of an invalid policy type are:

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

```
no active policies in the configuration database are of the correct policy 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 policy type setting, change the **Policy type** to the value appropriate for your operating environment (“Standard” for UNIX). If problems persist, ask your NetBackup administrator for advice on setting this to match your organization’s NetBackup configuration.





This chapter explains how to use the NetBackup menu interface program, `bp`, to perform NetBackup operations. The menu interface is character-based 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 X-Windows interface (`xbp`) or the Backup, Archive, and Restore interface (`jbpsA`) on any terminal with the proper prerequisites. The menu interface has the functionality of `xbp` and `jbpsA` 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`” on page 105.

The areas covered here are:

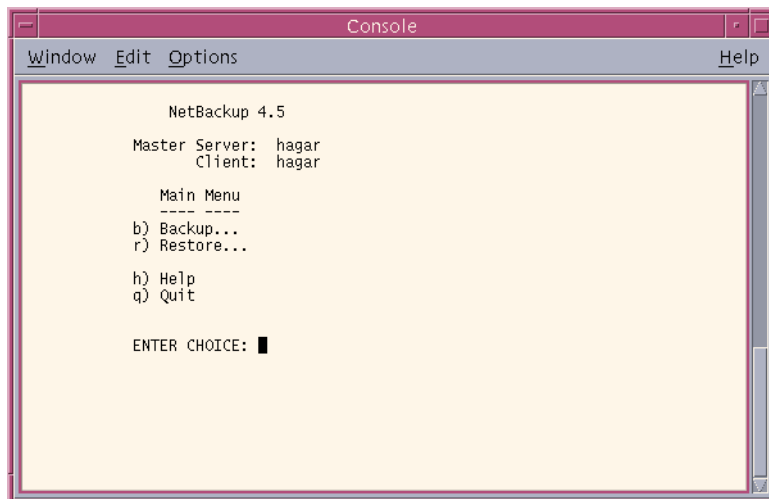
- ◆ Starting the Menu Interface
- ◆ Performing Backups or Archives
- ◆ Performing Restores
- ◆ Checking Progress of Operations



Starting the Menu Interface

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

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



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 to select another server.

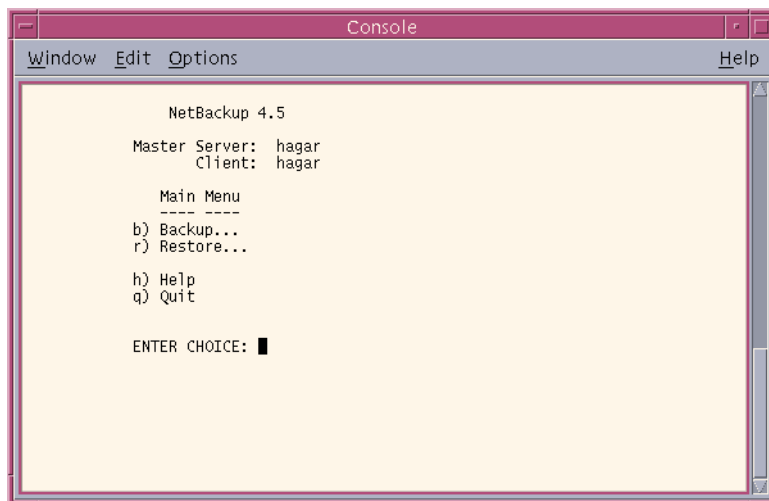
Performing Backups or Archives

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.

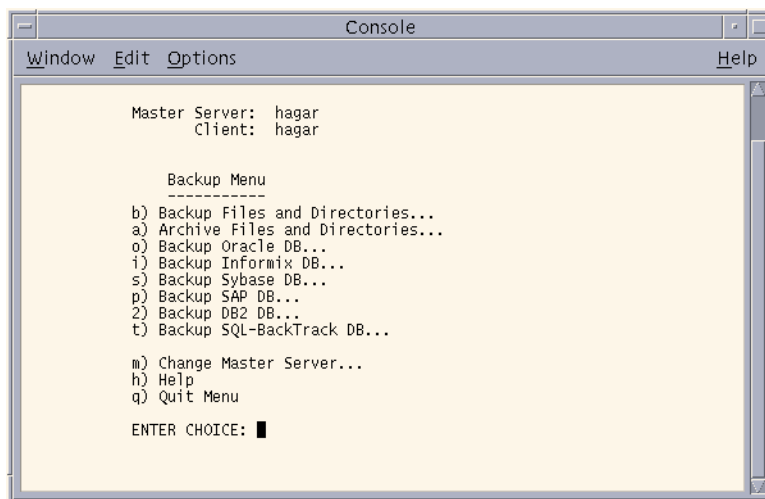
1. Type the following command line:

```
/usr/opensv/netbackup/bin/bp
```

The Main Menu displays.



2. Select the **b** (Backup) option. The Backup Menu displays.



Refer to “Backup Menu” on page 133 for details on this menu.

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

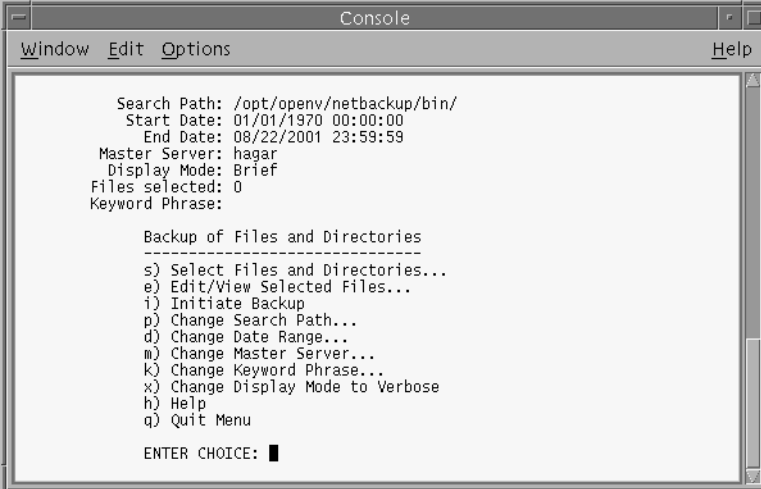


Check the name in the Master Server field. This field shows the name of the server to which NetBackup will send your backups. When you start the `bp` interface program, the default master server is your client.

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 policy 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.



```
Console
-----
Window Edit Options Help

Search Path: /opt/opensv/netbackup/bin/
Start Date: 01/01/1970 00:00:00
End Date: 08/22/2001 23:59:59
Master Server: hagar
Display Mode: Brief
Files selected: 0
Keyword Phrase:

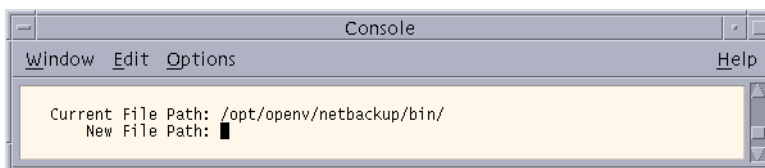
Backup of Files and Directories
-----
s) Select Files and Directories...
e) Edit/View Selected Files...
i) Initiate Backup
p) Change Search Path...
d) Change Date Range...
m) Change Master Server...
k) Change Keyword Phrase...
x) Change Display Mode to Verbose
h) Help
q) Quit Menu

ENTER CHOICE: █
```

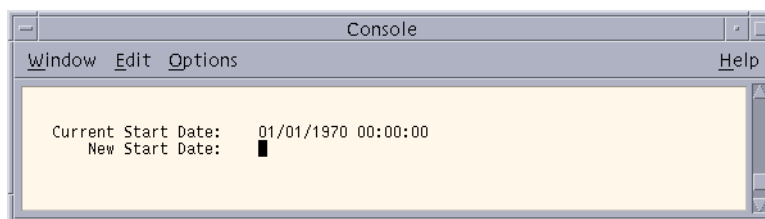
4. Check the Search Path field at the top of the menu to see if it is set to the directory where you want to start the search for the desired files. At start-up, NetBackup sets Search Path to your current working directory.

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

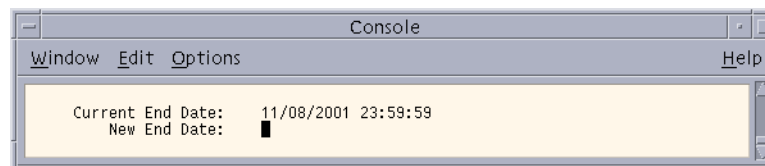
- a. To change the path, choose the **p** (Change Search Path) option from the Backup of Files and Directories menu. The following prompt displays.



- b. Type the following for the **New File Path**.
`/usr/opencv/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 prompt displays.



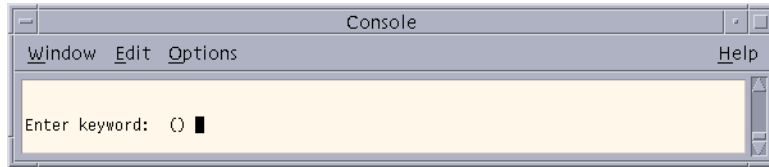
- b. Type the new Start Date.
- c. Press Enter. The following prompt displays.



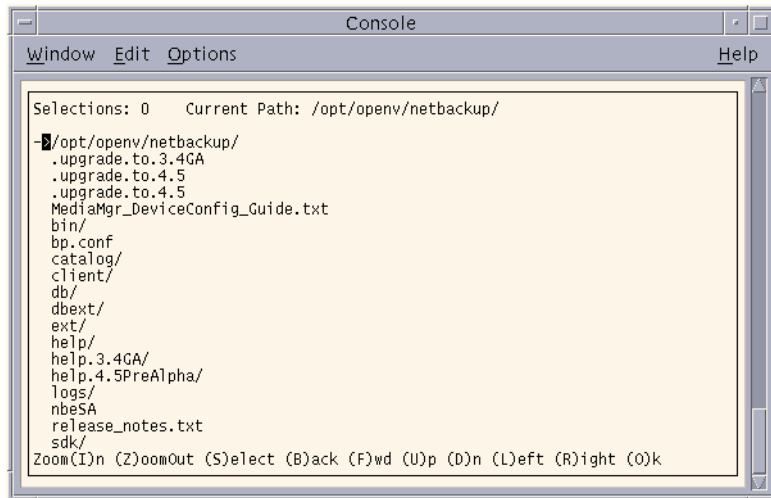
- d. Type the new End Date.
- e. Press Enter to return to the Backup of Files and Directories menu.



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 prompt displays.

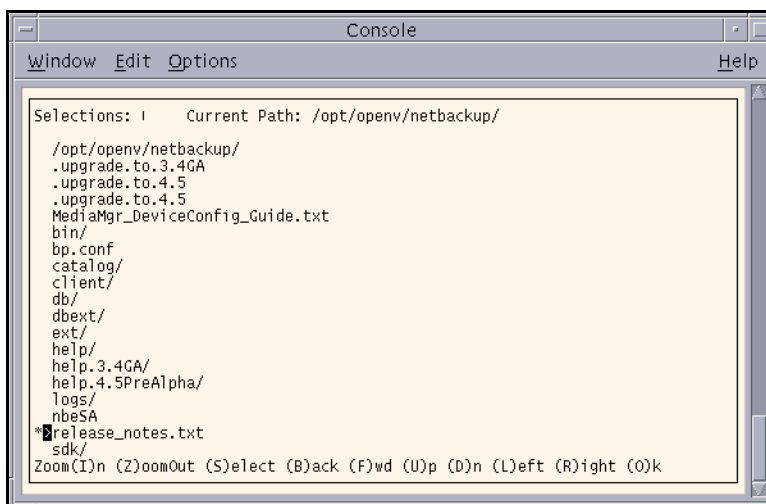


- b. Type the keyword *bptest*.
 - c. Press Enter to return to the Backup of Files and Directories menu.
7. Select the files and directories you want to back up.
 - a. Select the **s** (Select Files and Directories) option from the Backup of Files and Directories menu. The following prompt displays.



- 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 (*) displays to the left of the selected file.

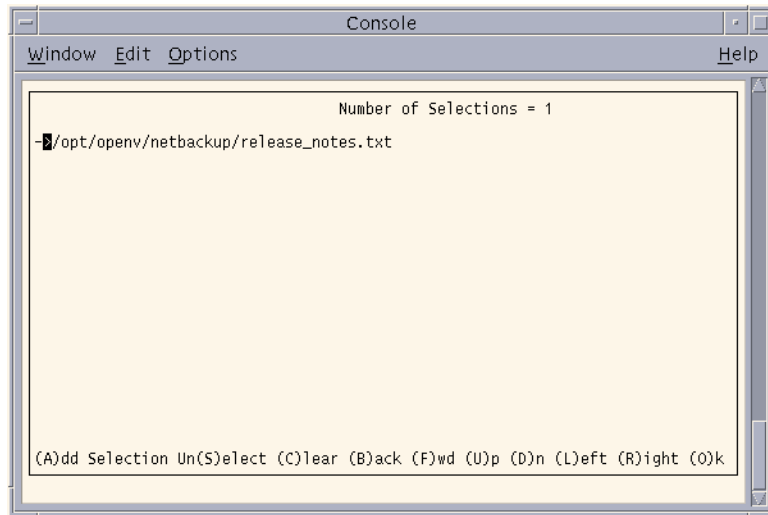


If you select a directory, all files and directories below the selected directory will be selected. An asterisk (*) will appear to the left of the selected directory.

- d. Select the **(O)**k option 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. A list of the selected files displays.

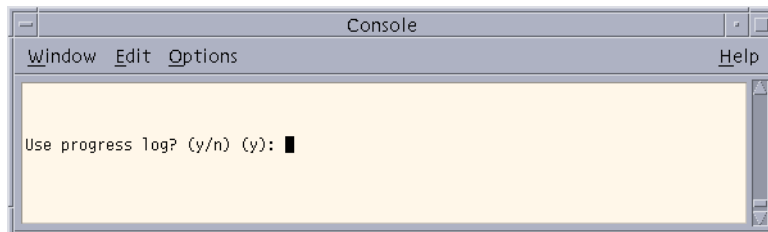


This screen lists your selections and lets you make changes.

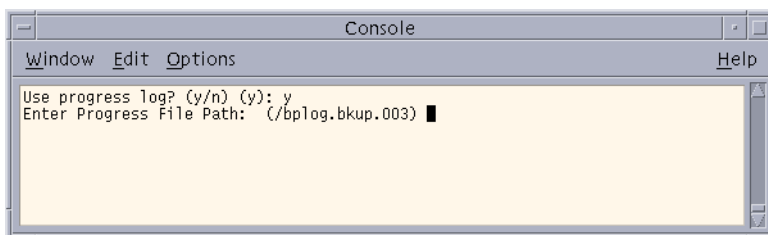
- b. Make sure the `release_notes.txt` file appears in the list.
 - c. Select the **(O)**k option to return to the Backup of Files and Directories menu.
9. Start the backup operation.

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 prompt displays.

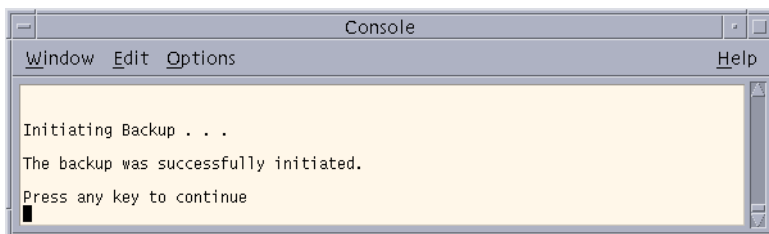


- b. Type **y** to create a log file and write to this file as the operation progresses. The following prompt displays.



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 prompt displays.



- d. Press any key to return to the Backup of Files and Directories menu.
10. Select the **Q** (Quit Menu) option 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 specify whether or not to overwrite the current files (file permissions must allow overwriting). See “File Permissions Required By NetBackup” on page 7 for an explanation of how NetBackup restores files in various situations.

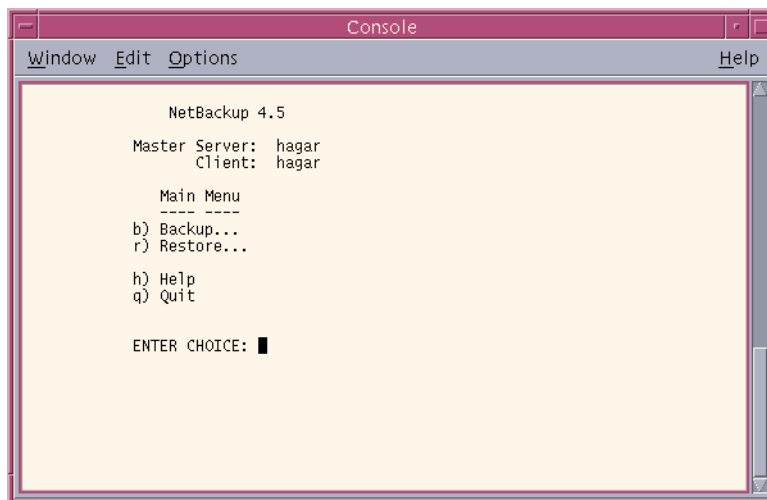
Note When restoring NetWare backups, set the directory depth to a minimum of 6 to ensure that the backup image is displayed.

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.

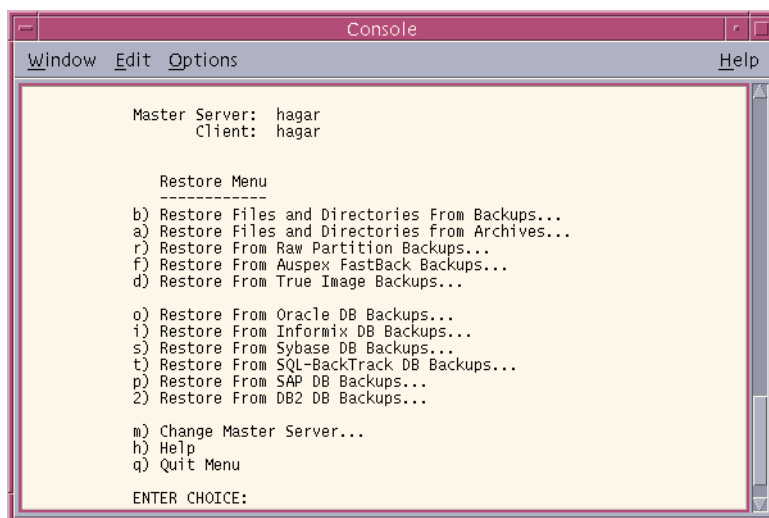
1. Type the following command line:

```
/usr/opensv/netbackup/bin/bp
```

The Main Menu displays.



2. Choose the **r** (Restore) option from the Main Menu. The Restore Menu displays.



Refer to “Restore Menu” on page 139 for details on this menu.

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

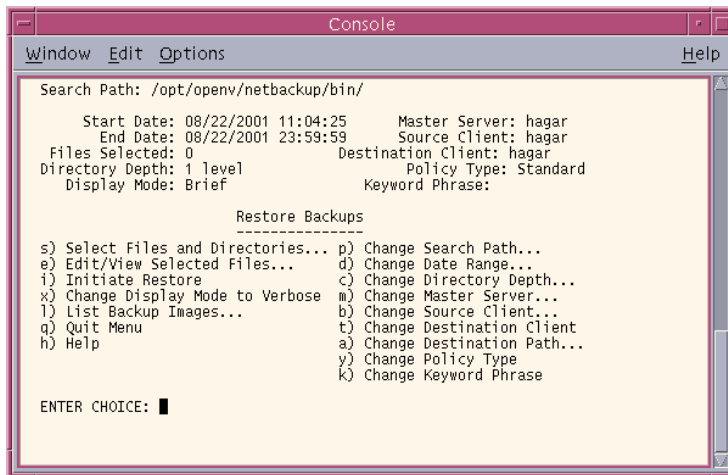
Note The **f** (Restore From Auspex FastBack Backups) option is not supported in NetBackup 4.5. This is no longer a valid client type.

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.

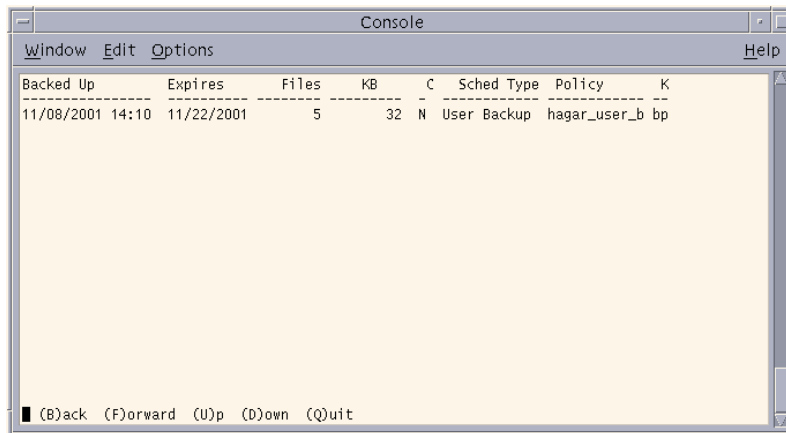
To browse a backup on another master server, choose the **m** (Change Master Server) option and type the name of the other server. If you type an invalid name or your client does not belong to a policy on that server, you will get an error.



3. Select the **b** (Restore Files and Directories From Backups) option. The Restore Backups menu will appear.



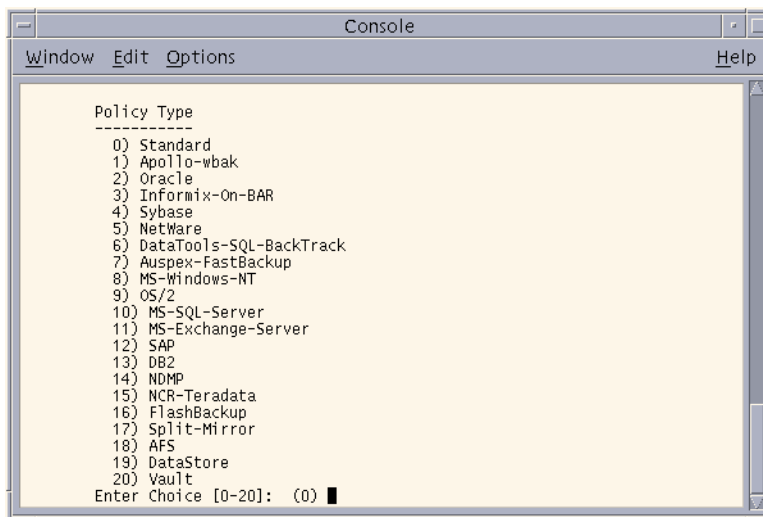
4. View the backups for your client.
 - a. Choose the **l** (List Backup Images) option from the Restore Backups menu.



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 Policy Type field to see if it is set correctly.
 - a. To change the policy type, select the y (Change Policy Type) option from the Restore Backups menu.



The current policy type appears in parenthesis.

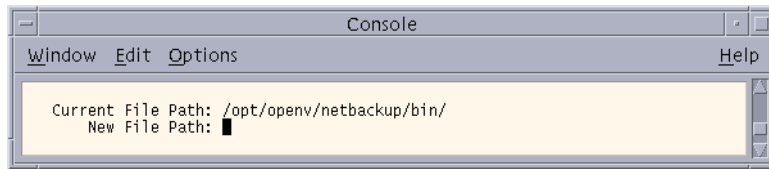
Note The following policy types do not apply to BusinessServer: DataTools-SQL-BackTrack, Auspex-FastBackup, SAP, DB2, NDMP, and FlashBackup.

Note The 7 (Restore From Auspex FastBack Backups) option is not supported in NetBackup 4.5. This is no longer a valid client type.

- b. Type the number for the new policy type.
 - c. Press Enter to return to the Restore Backups menu.
6. Check the Search Path field at the top of the Restore Backups menu to see if it is set to the directory in which you want to start the search. At start up, the current path is set to the directory from which you start the interface program.

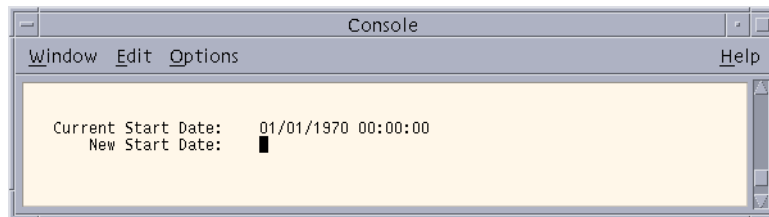


- a. To change the path, select the **p** (Change Search Path) option. The following prompt displays.

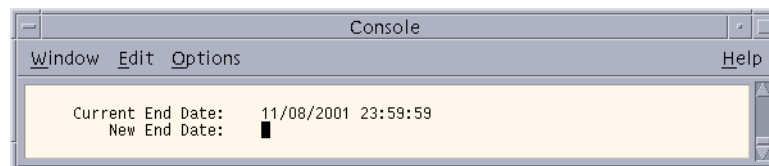


For this example, we will be changing the path to `/usr/opencv/netbackup`.

- b. Type the new file path.
`/usr/opencv/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 prompt displays.

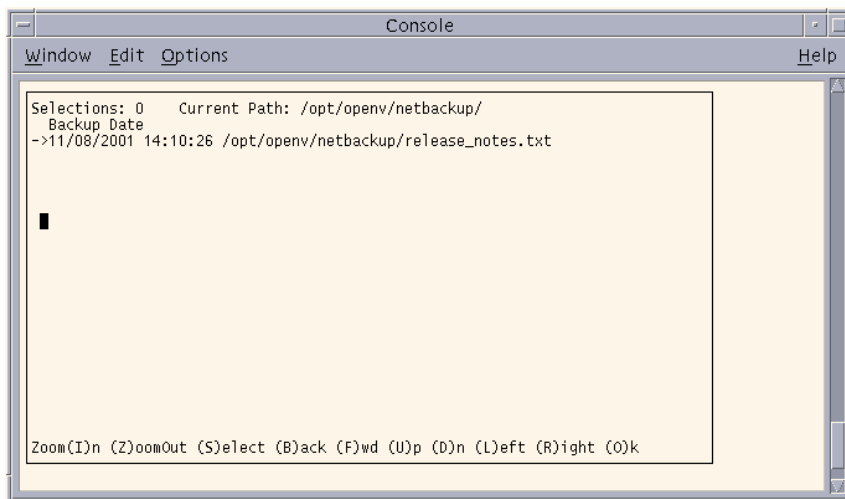


- b. Type the new Start Date.
- c. Press Enter. The following prompt displays.



- 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 list of files and directories displays.



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:

- 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.

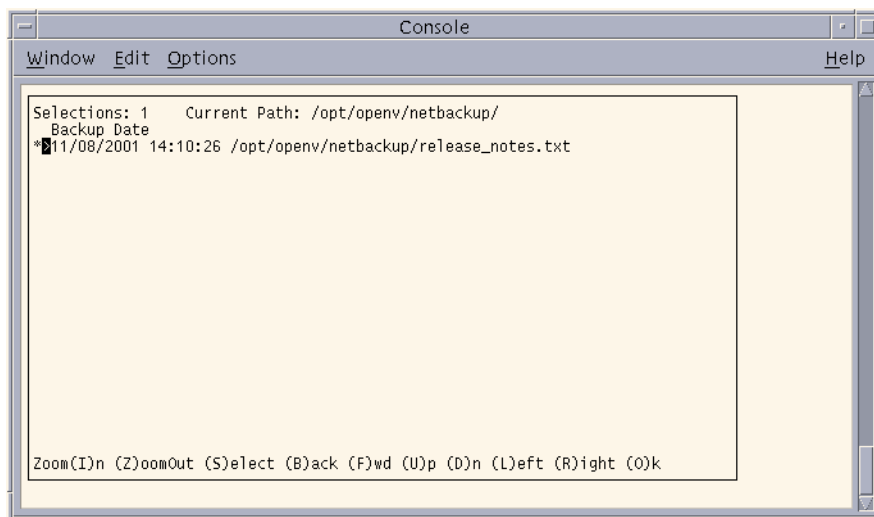
Here, you can restore the entire directory. Before proceeding, however, decide whether you want to overwrite all files in that directory with the earlier versions. If you do not want to overwrite existing files, you can restore the directory to a different path (see step 10 of this procedure).

You may also want to refer to “Shortcut Restore Procedures” on page 89 and “Restoring a True Image of a Directory” on page 69.

- 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.



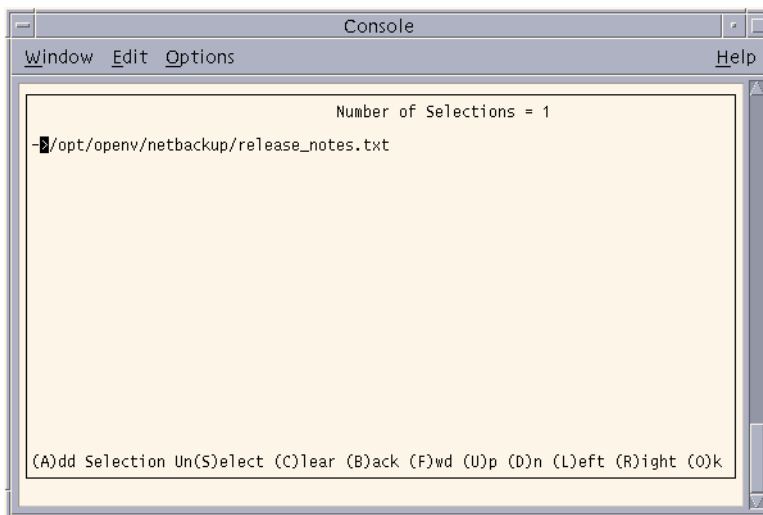
- c. Select the **(S)**elect to select the `release_notes.txt` file. An asterisk (*) displays to the left of the selected file.



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

- d. Select the **(O)**k option 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 list of selected files displays.



This screen lists your selections and lets you make changes.

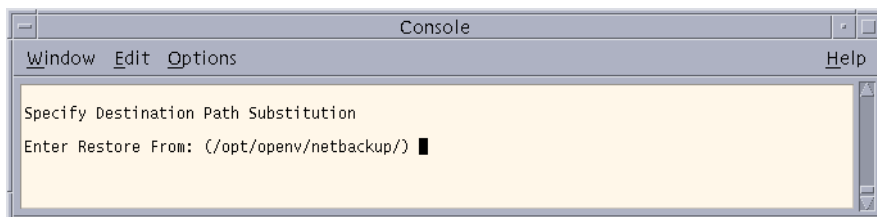
- b. Make sure the `release_notes.txt` file appears in the list.
 - c. Select the **(O)k** option to return to the Restore Backups menu.
- 10.** Set up a redirected restore to a different path.

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 a redirected restore from `/usr/opencv/netbackup` to `/usr/opencv/netbackup/bin`.

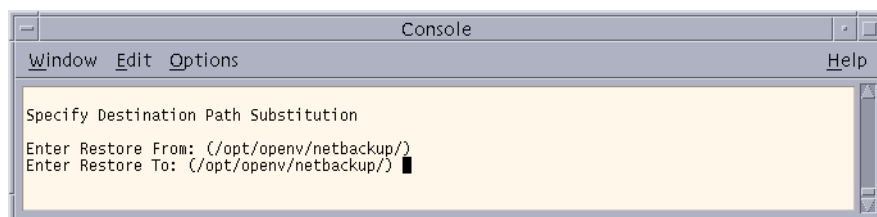
Note You cannot use NetBackup on the master server to redirect restores of a file to a different path on a NetBackup Novell NetWare client. For those clients, you must perform the redirected restore with the user interface on the NetWare client.



- a. Choose the **a** (Change Destination Path) option from the Restore Backups menu. The following prompt displays.



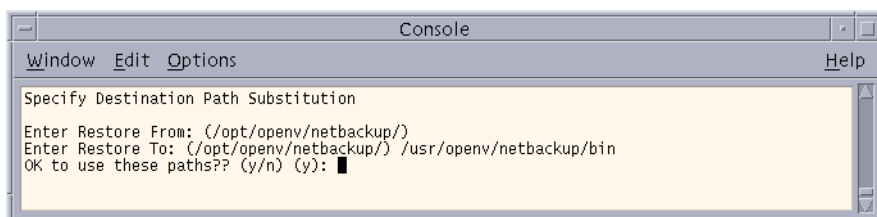
- b. Press Enter. The following prompt displays.



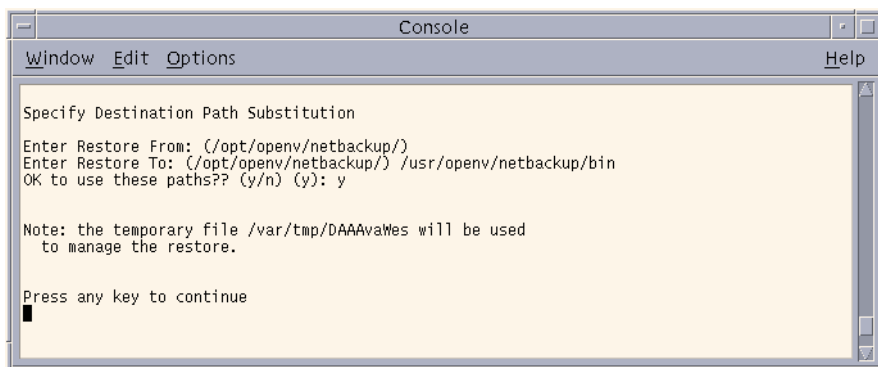
- c. Type the following path in the Enter Restore To field.

`/usr/opencv/netbackup/bin`

- d. Press Enter. The following prompt displays.



- e. Type **y** to use the indicated Enter Restore From and Enter Restore To paths on the next restore. The following prompt displays.



```
Console
Window Edit Options Help
Specify Destination Path Substitution
Enter Restore From: (/opt/opensv/netbackup/)
Enter Restore To: (/opt/opensv/netbackup/) /usr/opensv/netbackup/bin
OK to use these paths?? (y/n) (y): y

Note: the temporary file /var/tmp/DAAAvM6s will be used
to manage the restore.

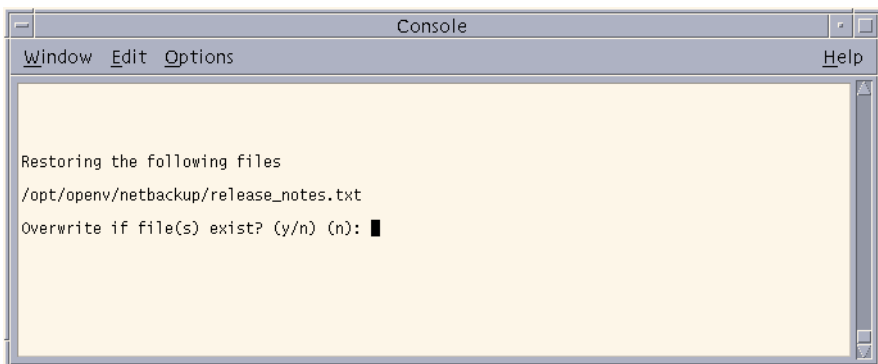
Press any key to continue
█
```

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. Select the **i** (Initiate Restore) option from the Restore Backups menu. The following prompt displays.



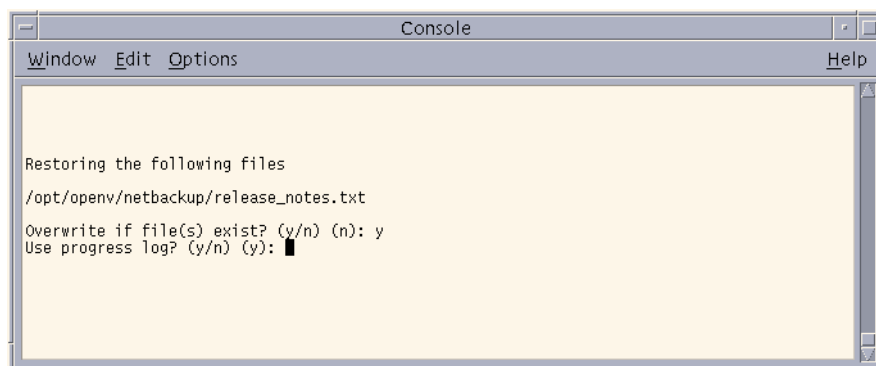
```
Console
Window Edit Options Help

Restoring the following files
/opt/opensv/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 prompt displays.

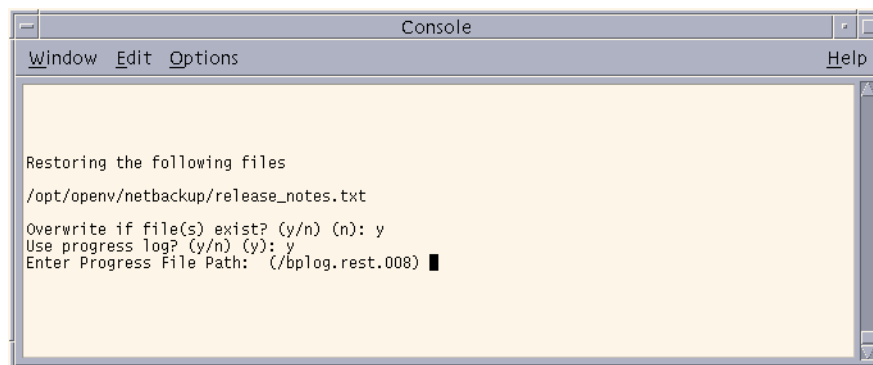


```
Console
Window Edit Options Help

Restoring the following files
/opt/opensv/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 displays.



```
Console
Window Edit Options Help

Restoring the following files
/opt/opensv/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.008) █
```

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 changed the destination path (see step 10) the OK to Use destination path substitution? prompt displays:

```

Console
Window Edit Options Help

Restoring the following files
/opt/opencv/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.008)
diagnostic output will be logged to /bplog.rest.008
Use destination path substitution? (y/n) (y): █

```

Type **n** to start the restore operation and ignore the destination path entered.

- e. Type **y** to use the destination path entered.
- f. Press Enter. The following prompt displays.

```

Console
Window Edit Options Help

Restoring the following files
/opt/opencv/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.008)
diagnostic output will be logged to /bplog.rest.008
Use destination path substitution? (y/n) (y): y
Rename hard links relative to the destination 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) when prompted to rename hard links and **n** (no) when prompted to 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 to specify 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 73 for more information.



- g.** Type **n**. The following prompt displays.

```

Console
Window Edit Options Help

Restoring the following files
/opt/opencv/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.008)

diagnostic output will be logged to /bplog.rest.008

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

- h.** Type **n**. The restore operation begins. The following prompt displays.

```

Console
Window Edit Options Help

Restoring the following files
/opt/opencv/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.008)

diagnostic output will be logged to /bplog.rest.008

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

Initiating Restore . . .

The restore was successfully initiated.

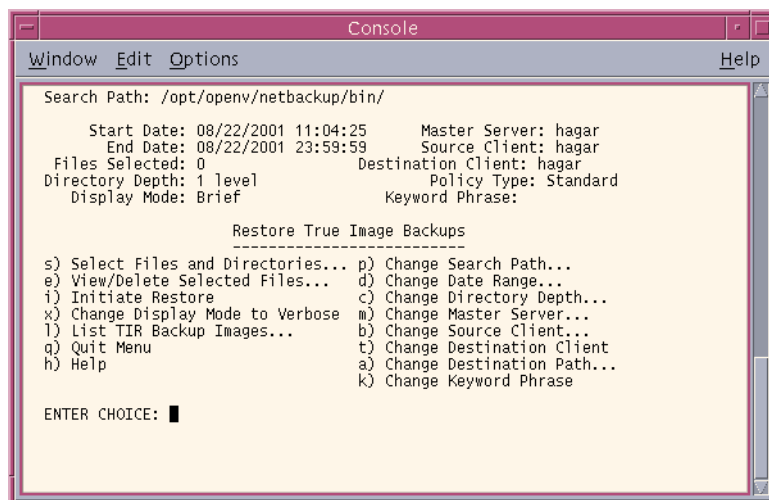
Press any key to continue
█
    
```

- 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 Directory” on page 40 for an overview of true image recovery. The concepts explained there for the Backup, Archive, and Restore 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.



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 policy. 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 the default date range is not changed.

3. To view the backup list for true image restore backups, choose the **l** (List TIR Backup Images) option from the Restore True Image Backups menu.
4. To change the path, Select the **p** (Change Search Path) option from the Restore True Image Backups menu.

Type the directory which contains 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 policy that is backing up your files and directories is configured to collect true image restore information.

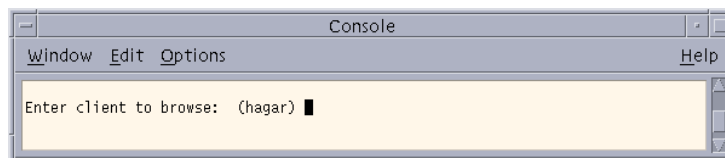
6. Select the files or directories you want to restore.
 - a. Use the menu options at the bottom of the screen to find and select the desired directory.
 - b. When you are through selecting, select the **(O)k** option to return to the Restore True Image Backups menu.
7. Preview the files and directories you selected to restore.
 - a. Select the **e** (View/Delete 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** option 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** (Change Destination Path) option from the Restore True Image Backups menu.
9. Select the **i** (Initiate Restore) option to display 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.

Redirecting Restores to Different Clients

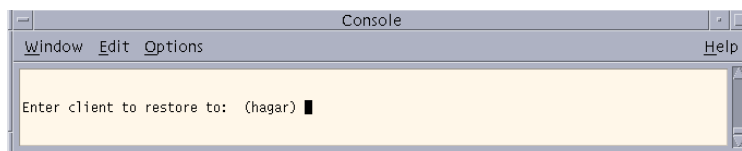
Note You cannot use NetBackup on the master server to redirect restores of a file to a different path on a NetBackup Novell NetWare client. For those clients, you must perform the redirected restore with the user interface on the NetWare client.

1. Choose the **r** (Restore) option from the Main Menu. The Restore Menu displays.
2. Select the **b** (Restore Files and Directories From Backups) option. The Restore Backups menu displays.
3. Change the source client.
 - a. Select the **b** (Change Source Client) option from the Restore Backups menu. The following prompt displays.



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) option from the Restore Backups menu. The following prompt displays.



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 policy type as the source client.

- c. Press Enter to return to the Restore Backups menu.
5. Check the policy type for the source client and the destination client.
 - a. To change the policy type, select the **y** (Change Policy Type) option from the Restore Backups menu. The current policy type appears in parenthesis.
 - b. Type the policy 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 Search 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 option 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 option 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 option to return to the Restore Backups menu.
9. Select the **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 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.

Note Before deleting the log files, be sure to verify that they do not contain warnings or error messages.

See “Interpreting Progress Logs” on page 100 for information on interpreting the logs.



Using the X-Windows Interface

4

This chapter explains how to use the `xbp` interface 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 `xbp` interface. For information about specific windows or menu options within this interface, refer to Chapter 5, “Reference Guide to `xbp` and `bp`” on page 105. Refer also to the online help facility.

The areas covered here are as follows:

- ◆ Starting the `xbp` 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 xbp 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 the `xbp` command (see step 3).

3. Start the `xbp` interface by typing the `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/opensv/netbackup/bin/xbp &
```

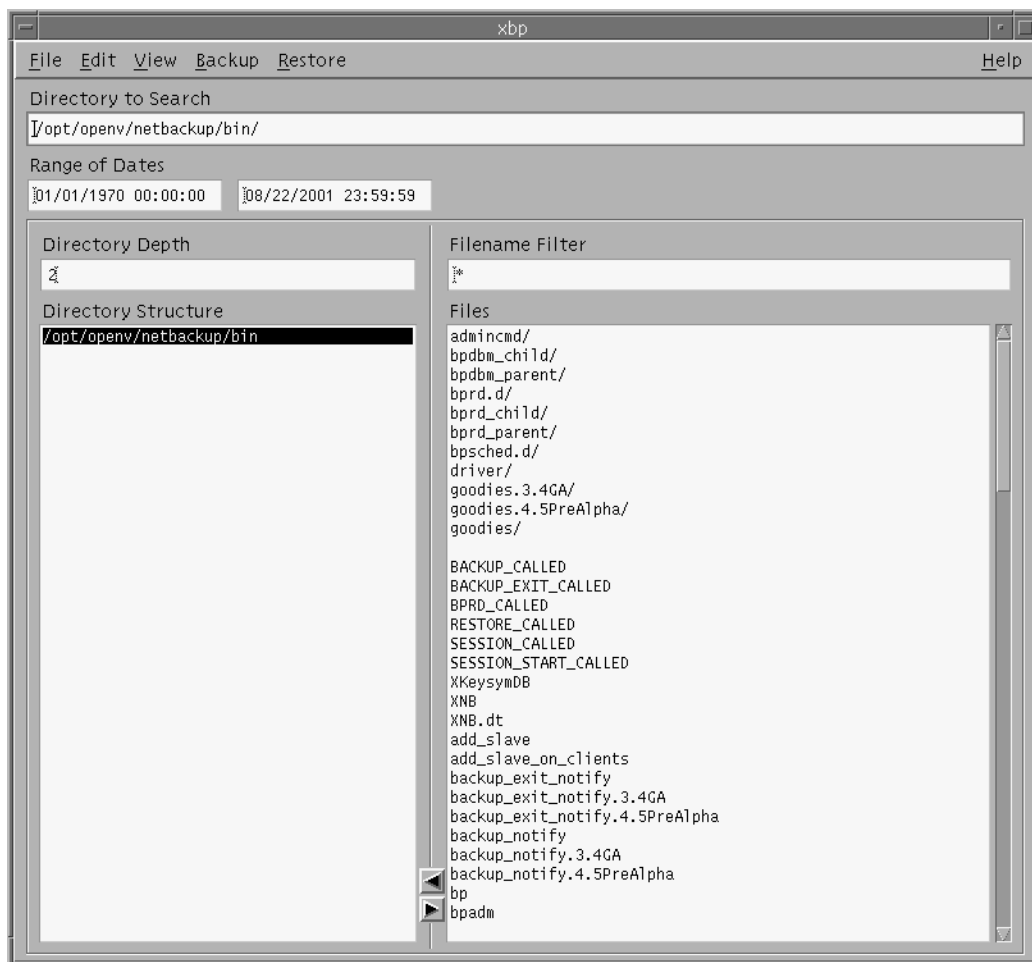
- If the DISPLAY variable is not set, use the `-d` option:

```
/usr/opensv/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 window displays 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 down to the level specified in the **Directory Depth** box. 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 Window” on page 108 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.

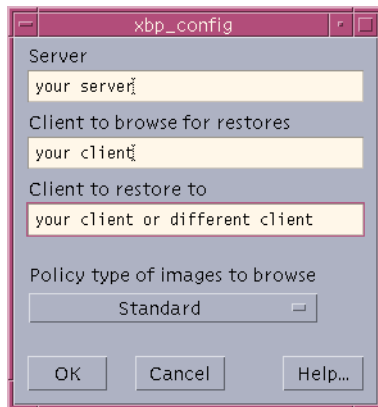
1. Change NetBackup master servers if necessary.

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.

The the xbp_config dialog box displays.



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 policy on that server, you will get an error. If this occurs, see your system administrator for assistance.

2. Find and select the desired files and directories.

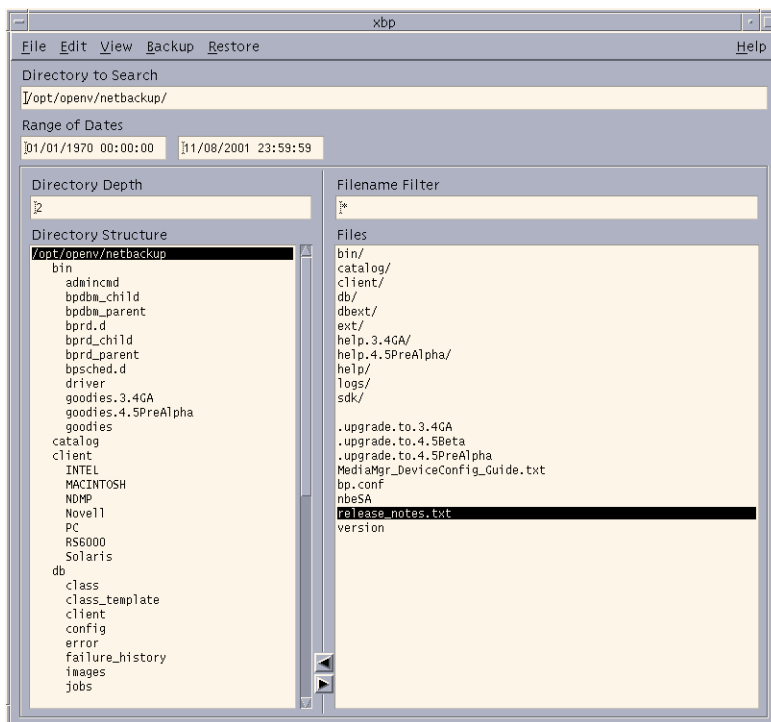
If the desired files or directories are not currently displayed, find them by using the methods described under “Finding and Selecting Files and Directories” on page 101.

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

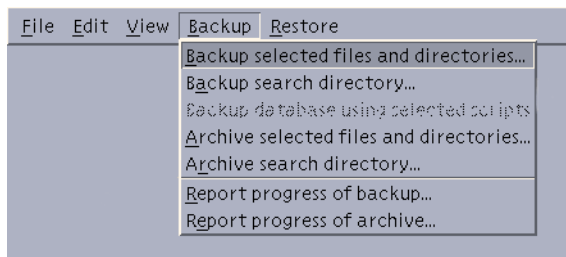
a. Select the `/usr/opensv/netbackup` directory in the Directory Structure pane.

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.

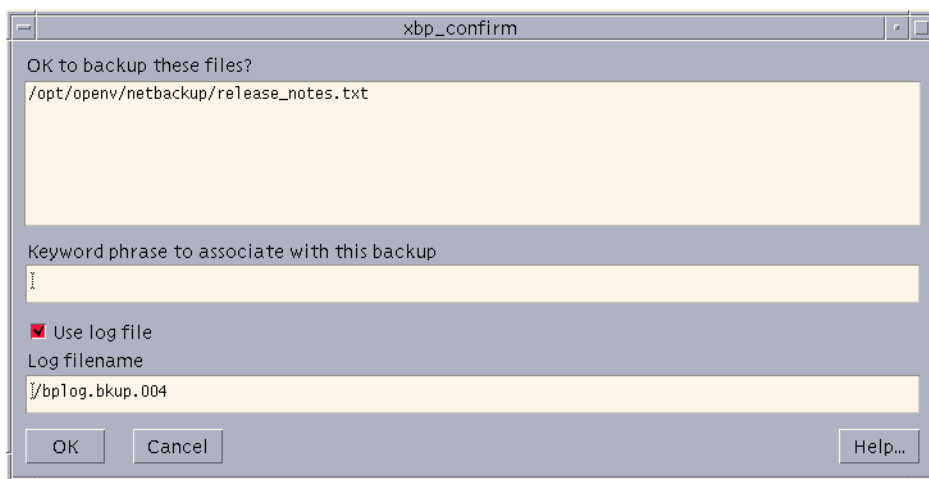
b. Select `release_notes.txt` in the Files pane.



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 name of the log file appears in the **Log Filename** box. For information on checking the log, see “Checking Progress of Operations” on page 98.
- 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 redirecting a restore to a different client.

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 Novell 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.

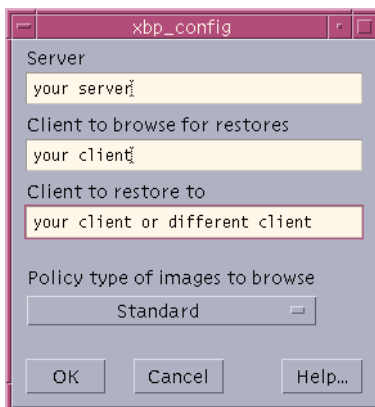
Note If you are restoring a directory, you may want to refer to “Shortcut Restore Procedures” on page 89 and “Restoring a True Image of a Directory” on page 95.

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**. Refer to “File Menu” on page 109 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**.

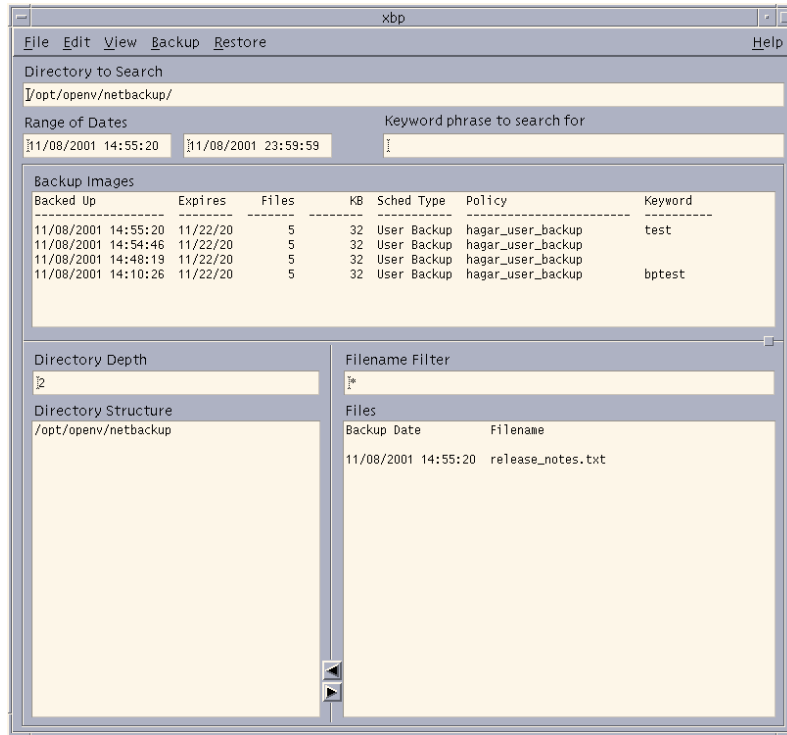
If you typed an invalid name, or if your client does not belong to a NetBackup policy on that server, you will get an error. If this occurs, see your system administrator for assistance.

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



- a. On the **File** menu, click **Browse backups (restore)**.

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 display, indicating 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 78. 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 98 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 93 for more details.

- d. Specify the keyword phrase to search for.

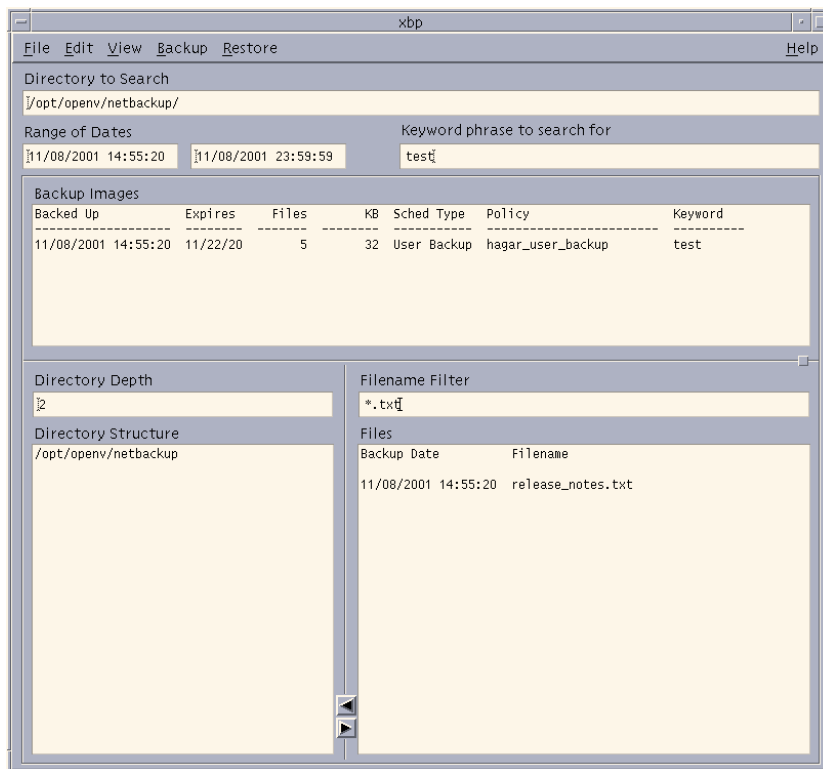
In step c on page 80 of the “Performing Backups and Archives” section, `test` was entered as the keyword. So, in the **Keyword phrase to search for** box, type `test`.

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

- f. On the **File** menu, click **Browse backups (restore)**.



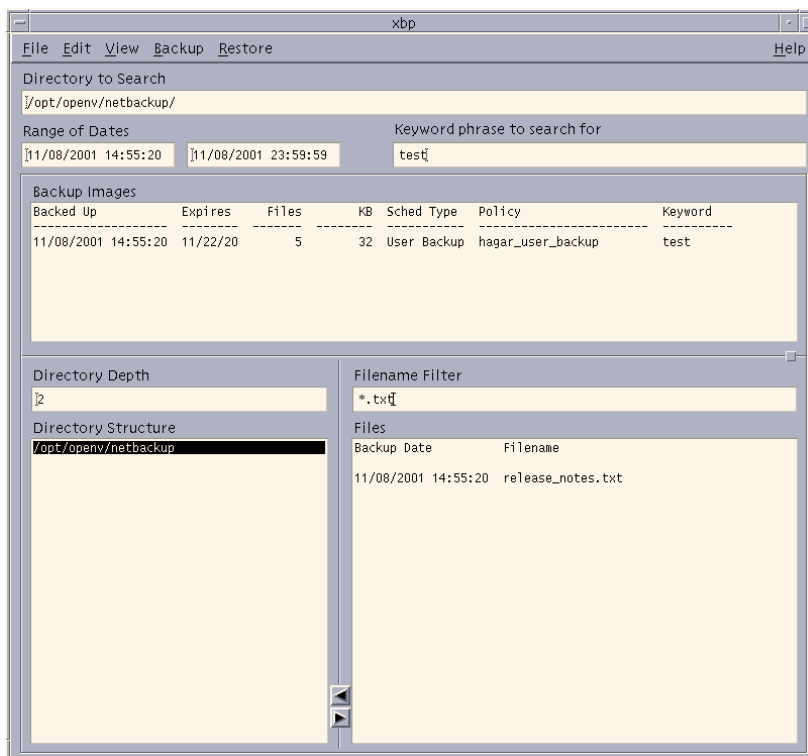
A main window similar to the following will appear.



- 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 101. You can also specify another range of backups to search. (See “Selecting Specific Backup Dates to Restore” on page 93.)

In the following figure, the `/usr/opensv/netbackup` directory is selected in the Directory Structure pane. This implicitly selects all directories and files that are below `/usr/opensv/netbackup` in the directory tree.



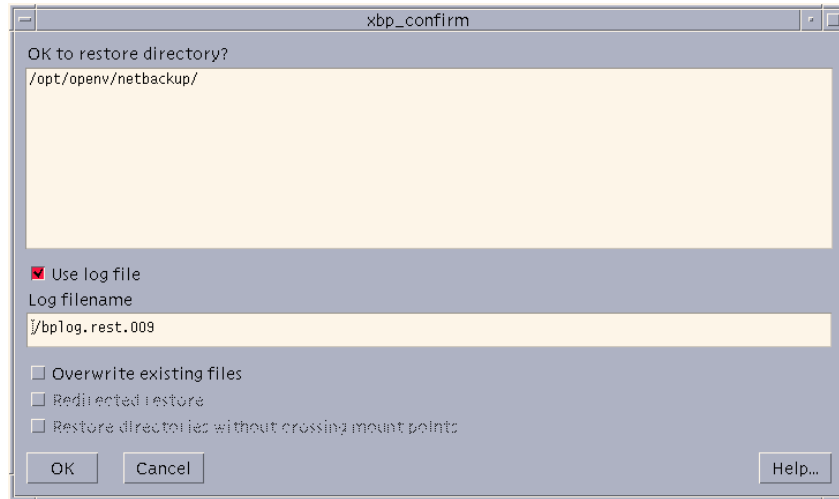
Note If you are selecting directories on the Files pane and then change your mind and deselect a directory, it is not deselected until you have selected either **Clear selections for current directory** or **Discard selections for previous directories** from the **Edit** menu. If you use **Inspect all 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 name of the log file appears in the **Log Filename** box. For information on checking the log, see “Checking Progress of Operations” on page 98.

- 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 **Redirected restore** 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 7.)

- 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 a different path, use **Specify Destination 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 deselect a directory, it is not deselected until you have selected either **Clear selections 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 95.

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 90, 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 User's Guide for UNIX* or the *NetBackup User's Guide for Windows*.

Redirecting Restores to Different Clients

The following explains how to redirect a restore to a different client. Refer to “Basic Restore Procedure” on page 82 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 policy on that server, you will get an error. See your system administrator for assistance.
2. From the **Restore** menu, click **Specify Destination Path**.
This opens the `xbp_destpath` 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 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.

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 7). 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 **Redirected restore** checkbox to confirm the restore to a different path. The checkbox is selected when highlighted.
Clear the **Redirected restore** checkbox to cancel the redirection action.
- 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 displays.
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. To locate and back up this file, you would need to change the date range.

If the client belongs to more than one policy, the starting date defaults to the last full backup that occurred first. For example, assume that: (1) a client belongs to PolicyW1 and PolicyW2, (2) Full backups occur for both of these policies, (3) PolicyW1’s most recent full backup occurred on June 16 and PolicyW2’s most recent full backup occurred on June 24. NetBackup will display those files and folders that have been backed up since the PolicyW1 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 searched 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 95.

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 10/5/00.

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
10/10/00 22:01:20 . . .	Full Backup . . .
10/09/00 16:30:27 . . .	Incr Backup . . .
10/02/00 18:05:41 . . .	Incr Backup . . .
09/29/00 19:36:55 . . .	Incr Backup . . .

```

09/25/00  18:06:15  . . .  Full Backup  . . .
09/20/00  16:06:21  . . .  Incr Backup  . . .
09/17/00  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 09/25/00. This the last full backup preceding 10/5/00.
- End date to 10/02/00. This is the incremental that includes the 10/5/00 version of the directory. The next date is 10/09/00, 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 a different path, use **Specify Destination 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 deselect a directory, it is not deselected until you have selected either **Clear selections 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 Directory” on page 40 for an overview of true image recovery. The concepts explained there for the Backup, Archive, and Restore 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 in “True Image Restore and Overwriting” on page 41.

▼ To restore a true image of a directory

Note You can restore a true image of a directory only if the NetBackup policy that is backing up your files and directories is configured to collect true image restore information. 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 12/04/00. 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	12/04/00 20:05:22 doc/
dirA	12/03/00 21:10:50 doc/
dirB	12/02/00 20:10:34 doc/
	12/01/00 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 policy 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 policy. 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 12/01/00
- End date is 12/04/00

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 12/04/00 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 deselect a directory, it is not deselected until you have selected either **Clear selections 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 a different location, use **Specify Destination 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 12/04/00.

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:

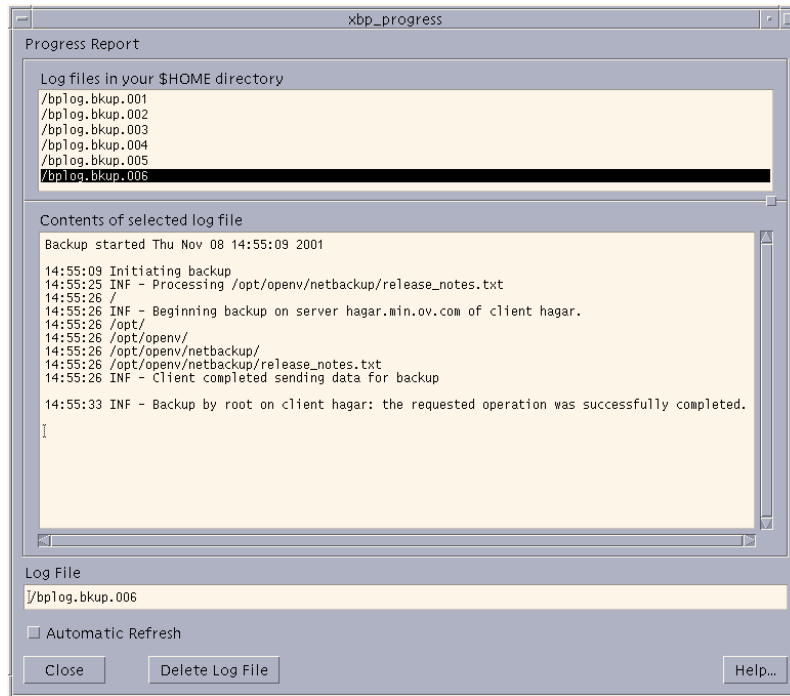
`bplog.bkup.n` (for backups)

`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 an `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 back up 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.

Email Notifications

You can configure a `bp.conf` file in the client `$HOME` directory so the user will receive email notifications on the results of user-directed operations. Refer to the *NetBackup System Administrator's Guide for UNIX*.

Deleting Progress Log Files

To delete 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.

Note Before deleting the log files, verify that they do not contain warnings or error messages.

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 for 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, “Reference Guide to `xbp` and `bp`” on page 105 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 will show 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 File or Directory 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 selections 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 date**.

Show File Details

To view file details (for example, file size and write permissions), click **Verbose display of attributes and filenames** on the **View** menu. To view filenames without details, click **Brief display of filenames** (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 interfaces. 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” on page 75 or Chapter 3 “Using the Menu Interface” on page 47 for instructions on using the interfaces. For information on the Java interface, refer to Chapter 2 “Using the Backup, Archive, and Restore Interface” on page 9 or the online help for that application.



X-Windows 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`.

Note The current X-Windows interface does not support AFS restores. This restore can be accomplished through the Backup, Archive, and Restore interface.

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 in the xbp main window, 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/opensv/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.

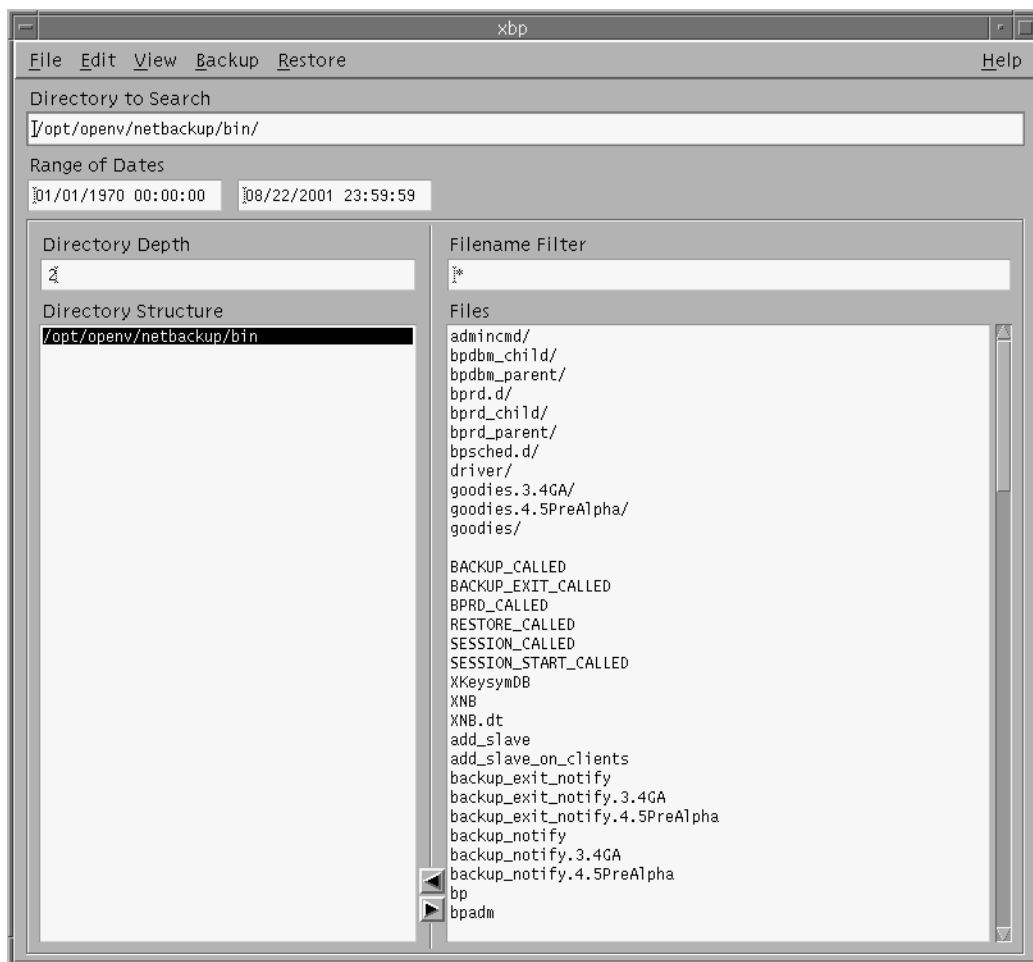


or

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

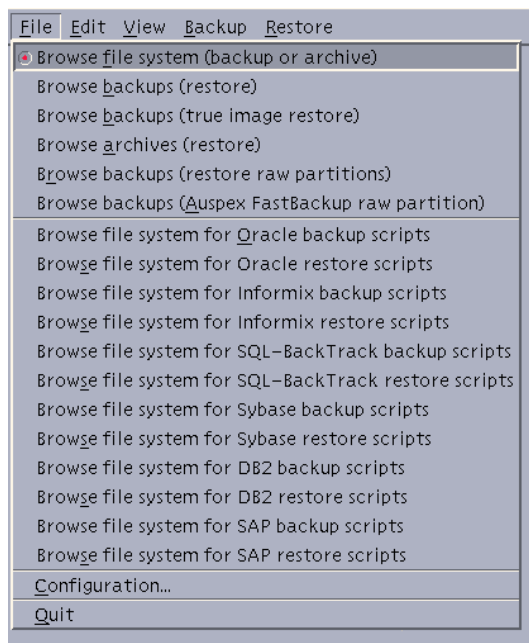
xbp Window

The xbp window opens when you start the X-Windows interface.



You can open 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 finding and selecting files for NetBackup operations. You can also browse for and select database scripts.

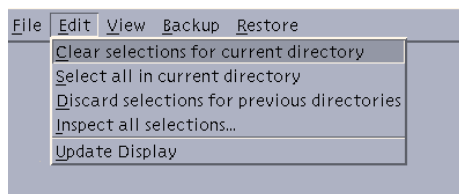
Note The following are not supported for BusinessServer: Auspex FastBackup, SQL-BackTrack, DB2, and SAP.

- | | |
|---|---|
| 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 search for 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)** Auspex FastBackup is not supported in NetBackup 4.5.
- 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 System Administrator Guides* for the database extension 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 search for** box.
- Note:** SQL-BackTrack, DB2, and SAP are not supported for BusinessServer.
- 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 policy type of images to browse. For more information, see “xbp_config Dialog Box” on page 126.
- Quit** Terminates the X-Windows interface.

Edit Menu

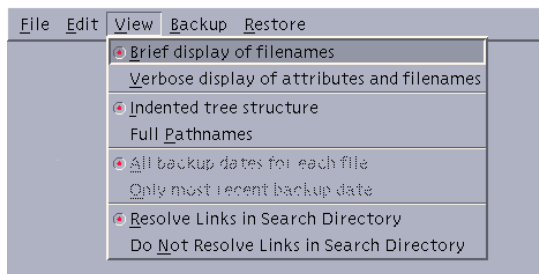


The **Edit** menu has commands to modify your selections.

- Clear selections 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



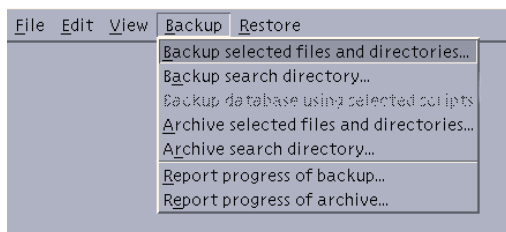
The **View** menu has commands that modify how NetBackup shows directory and file information in the Directory Structure pane and the Files pane.

- Brief display of filenames** Shows filenames without details. The display starts in brief mode.
- Verbose display of attributes and filenames** 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 X-Windows 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 date** choices are mutually exclusive. You can use either but not both. The X-Windows interface starts in the **All backup dates for each file** mode.



- Only most recent backup date** 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** and **Only most recent backup date** choices are mutually exclusive. You can use either but not both. The X-Windows 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



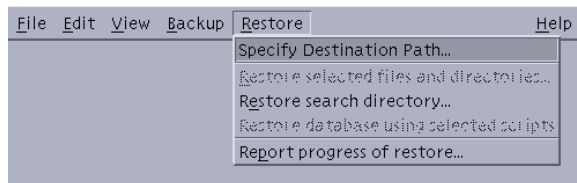
The **Backup** menu has commands to start a backup or archive of selected files and directories. You can also obtain a progress report on backups or archives. The **File** menu must be set to a browse file system mode (diamond shape to the left of the command) before you can execute any **Backup** menu commands, other than the report on progress. If the X-Windows 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 System Administrator Guides* for the database extension 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 130 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 130 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** 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.

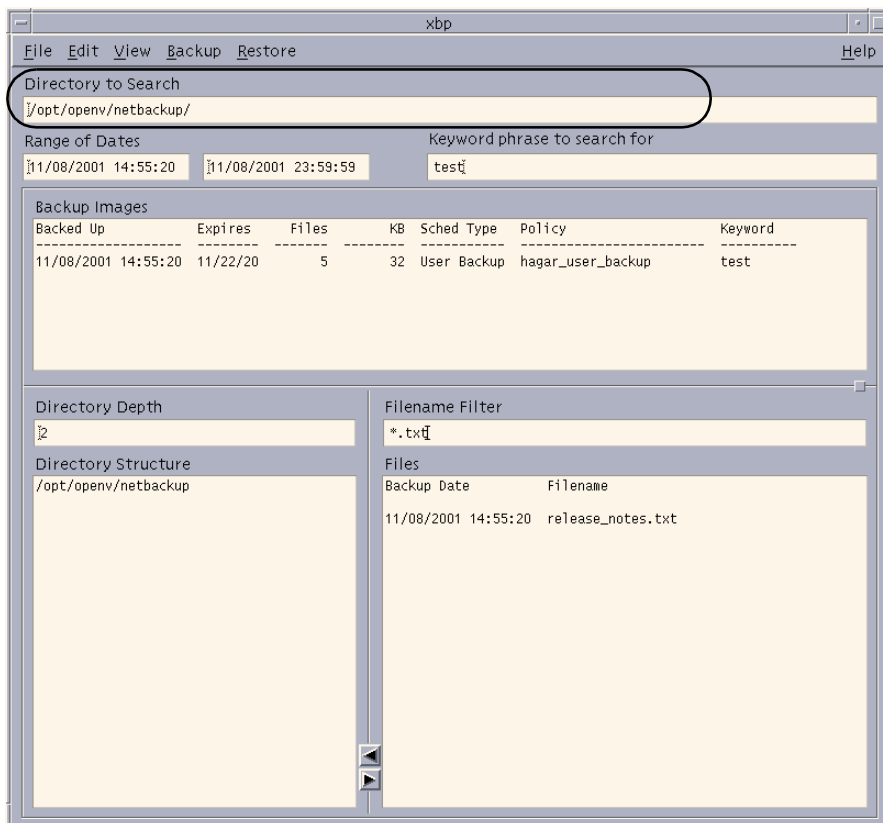
Specify Destination Path	Opens the <code>xbp_destpath</code> dialog box. This dialog box lets you redirect the restore to a directory other than the one from which they were backed up. If you specify a path that does not exist, NetBackup creates it when restoring the file.
Restore selected files and 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 <code>xbp_confirm</code> 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	This command starts a restore of the current selection in the Directory Structure pane by opening the <code>xbp_confirm</code> 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. This command is not available in Browse backups (true image restore) mode.
Restore database using selected scripts	These commands start a restore of their respective type of database by opening the <code>xbp_confirm</code> 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. NetBackup offers database extensions that you can use, in conjunction with <code>xbp</code> , to back up and restore many of the most popular databases. These NetBackup for database extensions are separately priced products which must be installed and configured to work with <code>xbp</code> . See the <i>NetBackup System Administrator Guide</i> for the specific database extension for details.

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 130 for more information.

Help Menu

The **Help** menu has online instructions for using the X-Windows interface.

Directory to Search Box



Specifying the directory to search is the starting point when browsing for files to back up, archive, or restore. The default is the directory you used to start the X-Windows 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
```

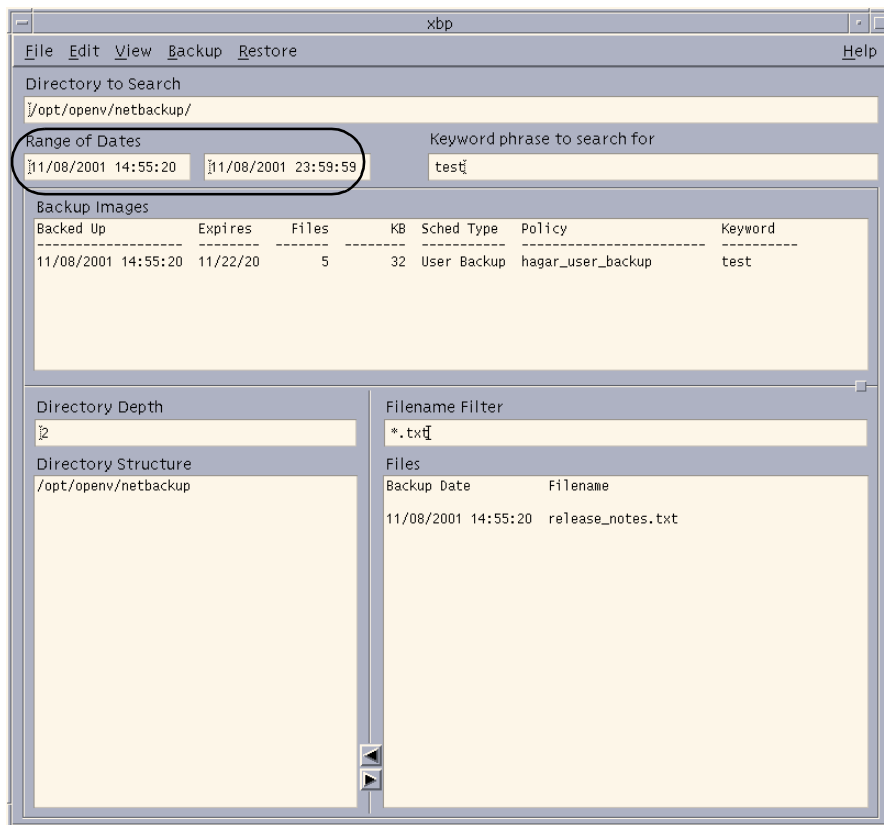
so NetBackup interprets the brackets literally.

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 the start date and the right box is the end date.

- ◆ For a restore, enter the range of dates that includes the times when you suspect the desired backups or archives occurred.
- ◆ For a backup or archive, enter 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 those 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 X-Windows 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

01/23/93

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

12 am is 00:00:00

12 pm is 12:00:00

11:30 pm is 23:30:00.

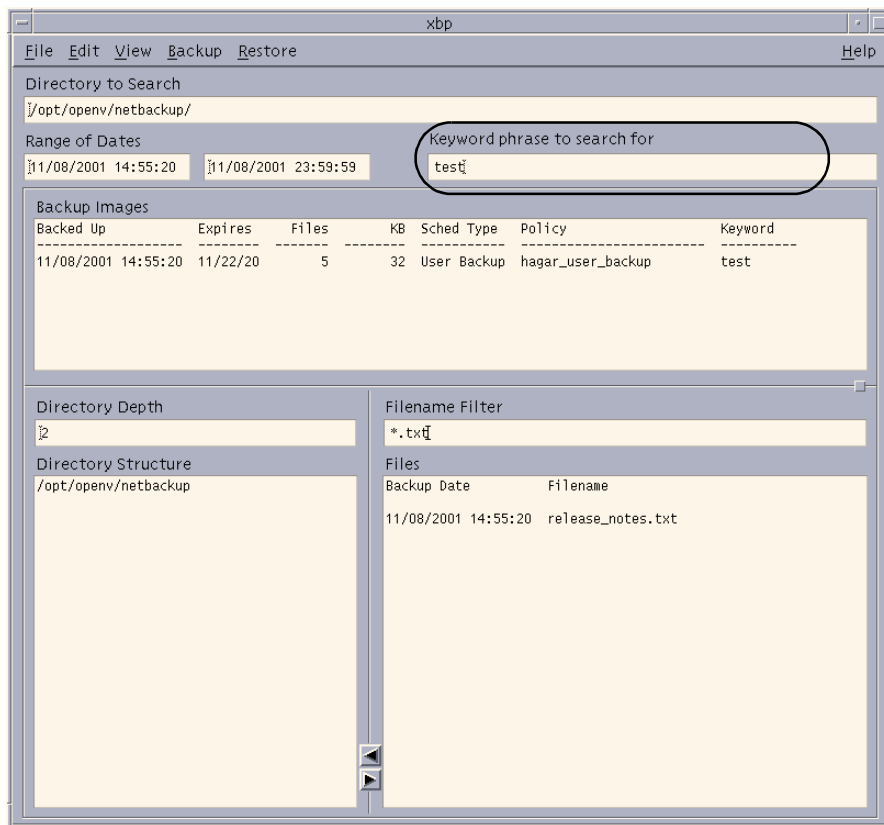
Leave the end date blank to search from the start date to the current date.

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 policy, the start date defaults to the last full backup that occurred first. For example, assume that the client belongs to PolicyW1 and PolicyW2 and full backups occur for both of them. If the last full backup for PolicyW1 occurred before the one for PolicyW2, then the display shows files ranging from the time of the PolicyW1 full backup.

Keyword phrase to search for Box



Enter 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:

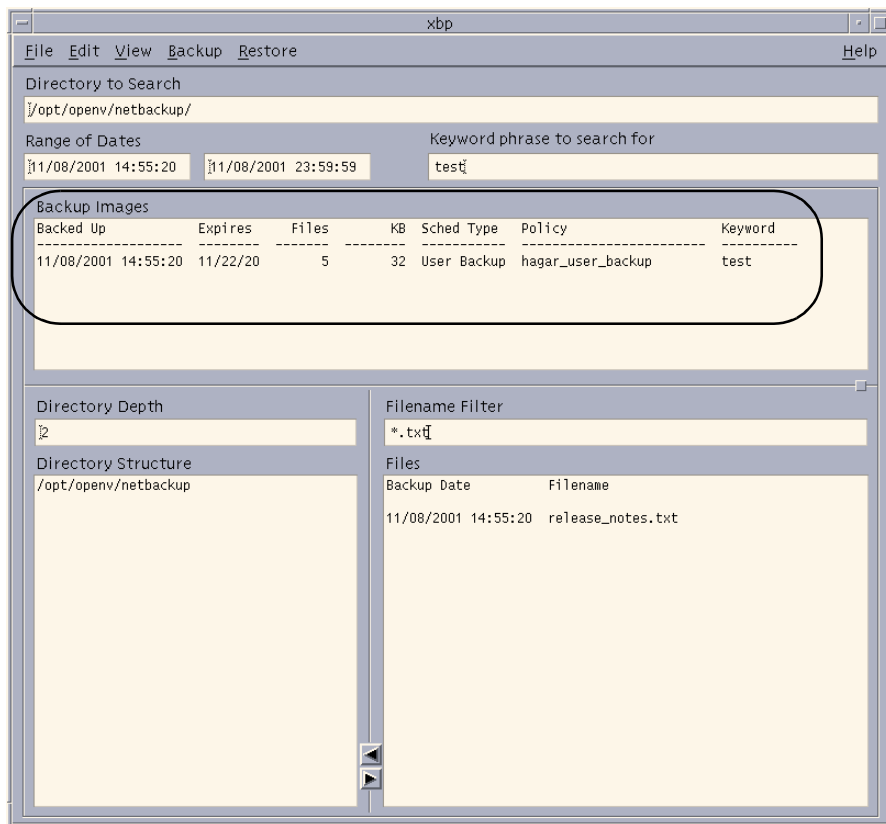
- * matches any string of characters.
- ? matches any single character.
- [] matches one of the sequence of characters specified within the brackets.
- [-] matches one of the range of characters separated by the “-”.



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 search for** 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
Policy	Backup policy that created the backup. The system administrator configures the policy names, as explained in the <i>NetBackup System Administrator's Guide for UNIX</i> or the <i>NetBackup System Administrator's Guide for Windows</i> .
Keyword	Shows the keyword entered by the user when the backup was initiated.

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

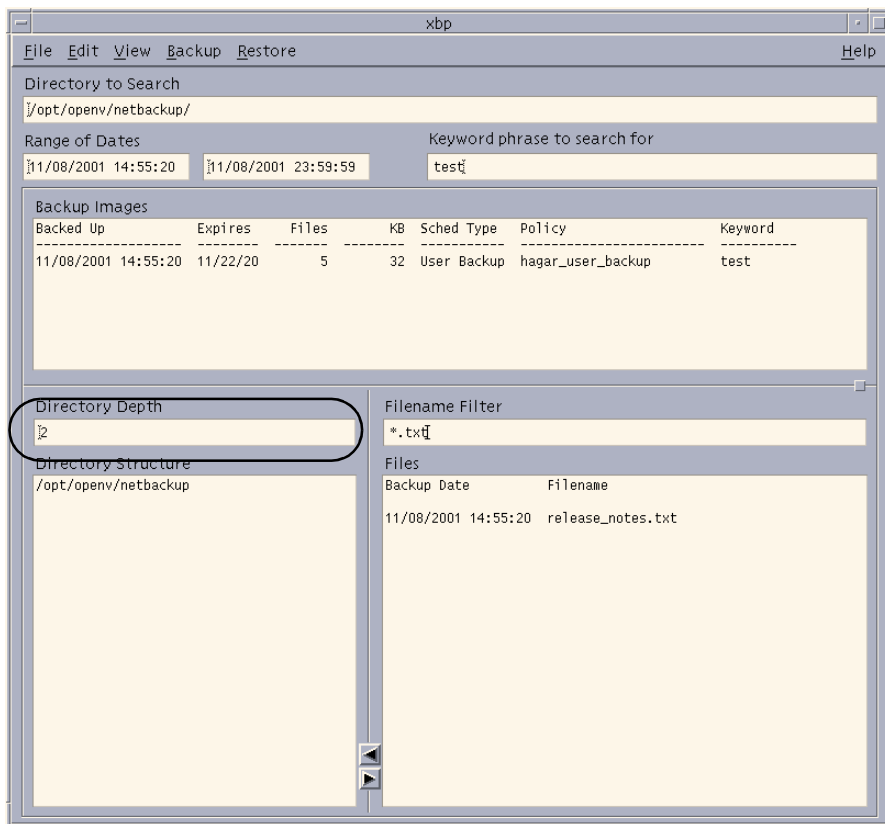
- ◆ Selecting a specific backup changes both dates to show the backed up time for the selected backup.
- ◆ Selecting a range of consecutive backups changes the date boxes to show the oldest and newest times in the selected range.
- ◆ Selecting another backup cancels previous selections. If the list is 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 that match the entries made in the **Directory to Search** box, the **Range of Dates** boxes, the **Directory Depth** box, **Filename Filter** box, and the **Keyword phrase to search for** box.

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

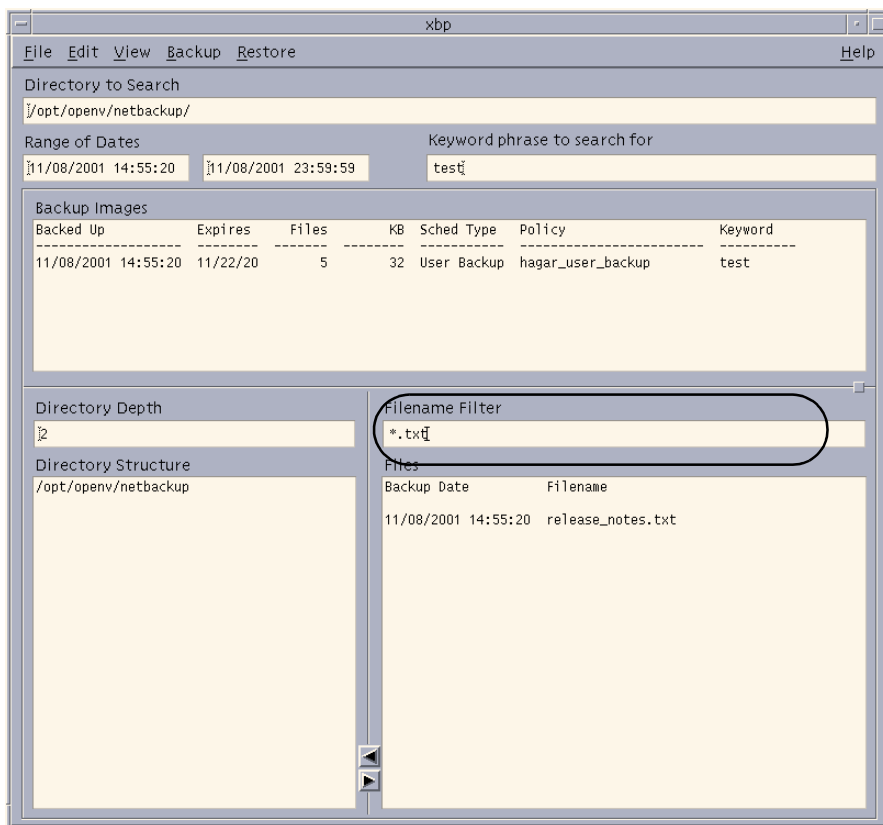


Directory Depth Box



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

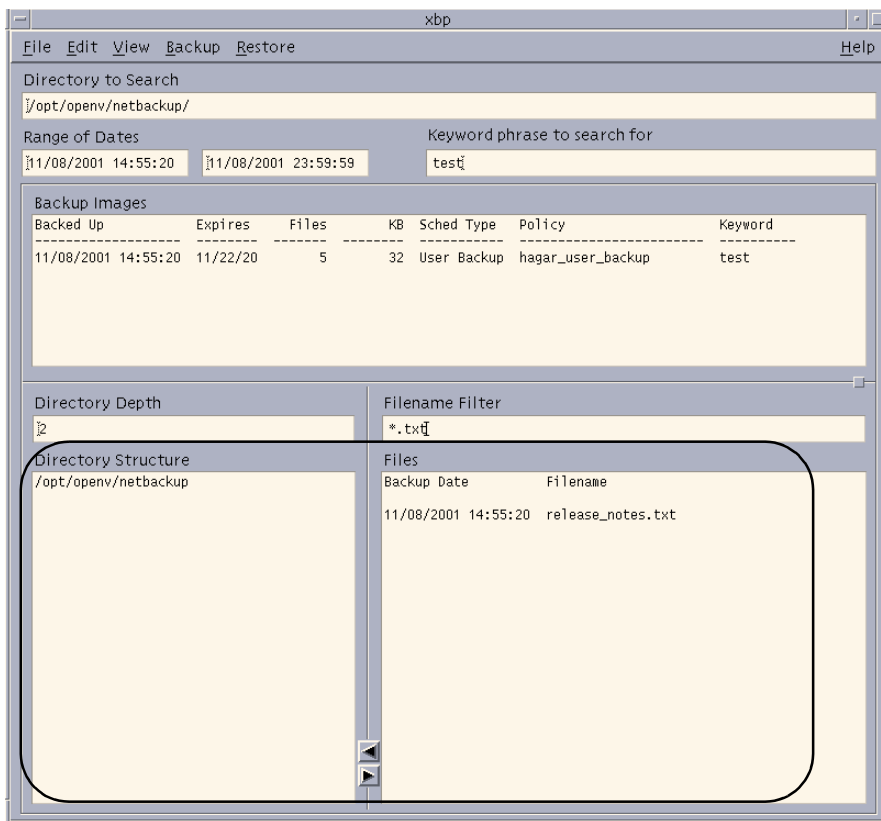


The **Filename Filter** box determines the files of a selected directory that NetBackup shows in the Files pane. When you start the X-Windows interface, the **Filename Filter** box has a value of * and the Files pane shows all files. You can change the filter to limit the files that NetBackup shows. 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 101.

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 X-Windows 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 matches 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 matches 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 and configured to work with `xbp`. See the *NetBackup System Administrator Guide* for the specific database for details.



Browse backups (restore raw partitions) Mode

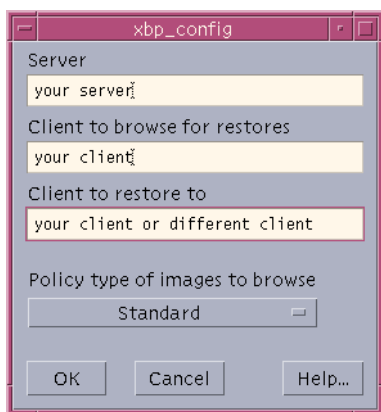
When in the **Browse backups (restore raw partitions)** mode, the panes show the same type of information as when you browse the file system for backups or archives.

Browse backups (Auspex FastBackup raw partition) Mode

Note Auspex FastBackup is not supported in NetBackup 4.5.

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. After completing your changes:

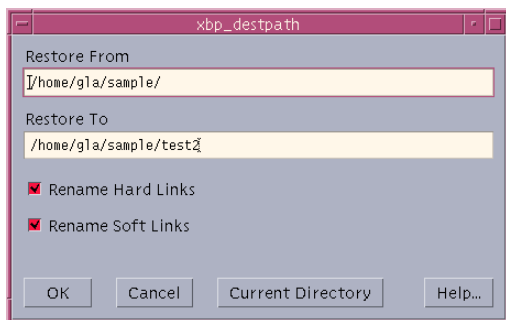
- ◆ Click **OK** to use the new values.
- or
- ◆ Click **Cancel** to cancel the changes so the previous values are still used.

Server	<p>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 line listed under the <code>SERVER</code> option in the <code>/usr/opensv/netbackup/bp.conf</code> file on the client. See the <i>NetBackup System Administrator's Guide for UNIX</i> for more information on the <code>bp.conf</code> file.</p> <p>When you start the X-Windows 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 policy on that server, you get an error message.</p>
Client to browse for restores	<p>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 <code>/usr/opensv/netbackup/altnames</code> file on the master server.</p> <p>When you start the X-Windows interface, this box shows the name of the client on which you are running as specified by the <code>CLIENT_NAME</code> parameter in the <code>/usr/opensv/netbackup/bp.conf</code> file on the client.</p> <p>See the <i>NetBackup System Administrator's Guide for UNIX</i> for more information on the <code>altnames</code> file and the <code>bp.conf</code> file.</p>
Client to restore to	<p>When you start the X-Windows interface, this field shows the name of the client on which you are running.</p> <p>The administrator running the X-Windows 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.</p>
Policy type of images to browse	<p>Type of client to which you are restoring files when you redirect a restore to a different client.</p> <p>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.</p>



xbp_destpath Dialog Box

The xbp_destpath dialog box opens when you click **Specify Destination 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 Full or partial pathname that NetBackup uses to find the files to restore.

Restore To The path to which you want NetBackup to restore the selected files.

When you start the X-Windows 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 click 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.

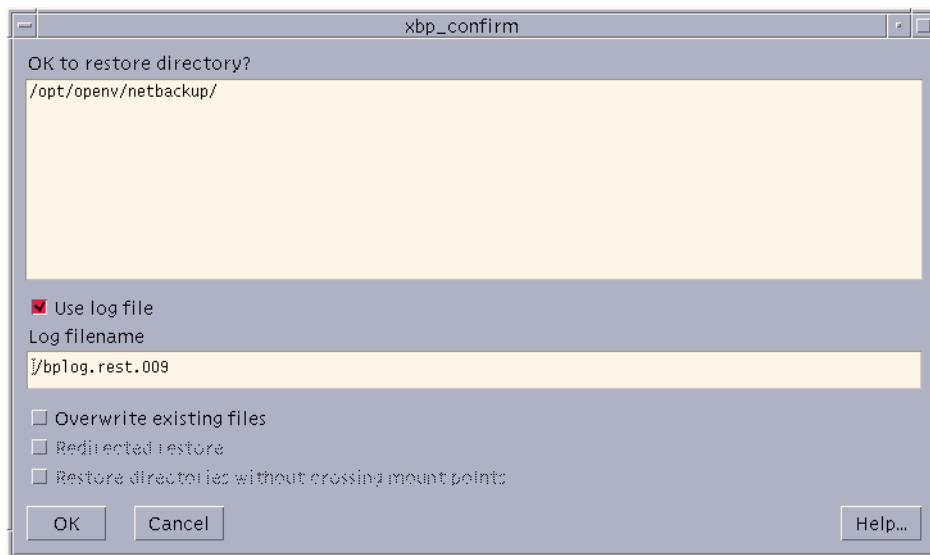
You can also rename soft (symbolic) and hard links to the files so those links show the **Restore To** pathname:

Rename Hard Links Select to rename hard links so they point to the new path. The button is enabled when highlighted.

Rename Soft Links Select 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 “xbp_progress Dialog Box” on page 130 for more information.)

Log Filename

When the **Use log file** checkbox is selected, the default log file name displays in the **Log Filename** box. Use report progress commands from the **Backup** menu or the **Restore** menu to read these files. (See “xbp_progress Dialog Box” on page 130 for more information.)

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 7 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.



Redirected restore If you previously changed the destination path, the **Redirected restore** checkbox is active and lets you restore files into a directory other than the one from which they were backed up (see “xbp_destpath Dialog Box” on page 128). If you did not change the destination path, the checkbox is unavailable.

Select the **Redirected restore** checkbox to restore the files to the alternate directory.

Clear the **Redirected restore** checkbox to cancel the redirected restore to a different path.

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 option is selected by default).

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

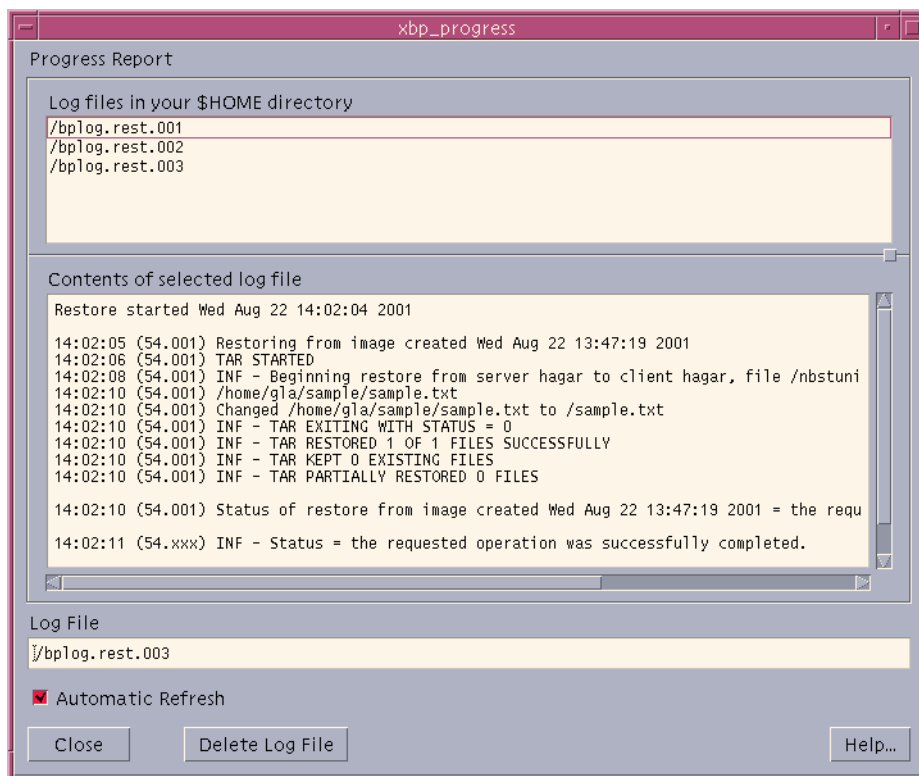
When you are satisfied with your selections, click **OK** to start the NetBackup operation.

To cancel and return to the main window without performing a NetBackup operation, click **Cancel**. The cancel does not affect your selections. After canceling, 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.

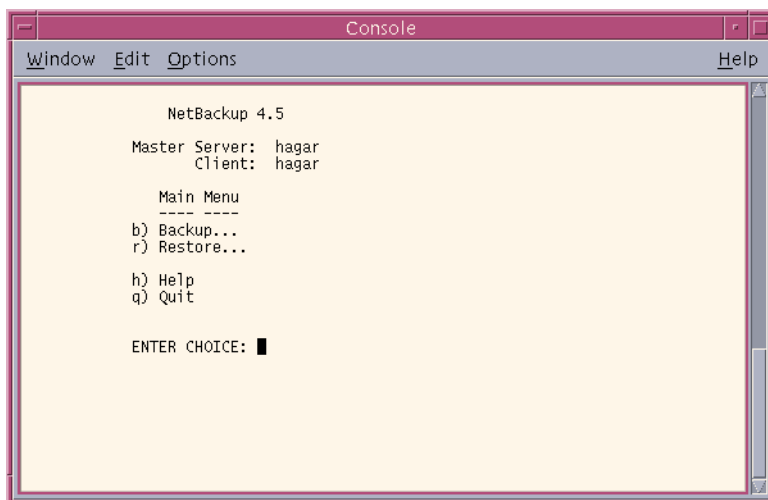
See “Checking Progress of Operations” on page 98 for information on using this dialog box.



Menu Interface (bp)

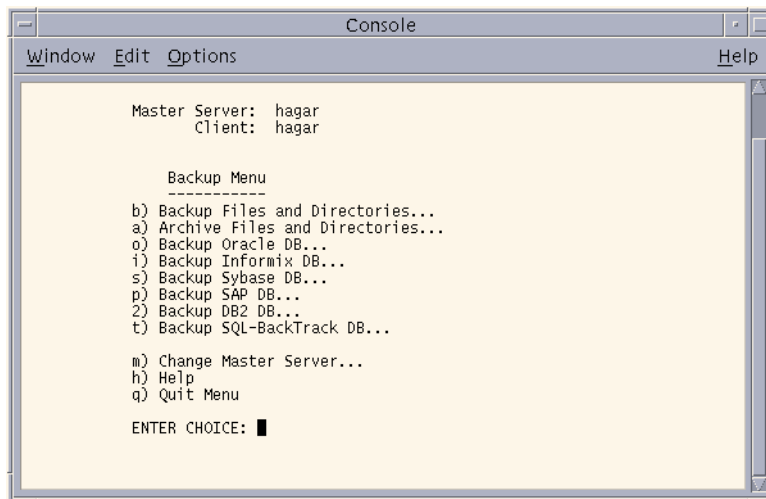
The `bp` program is a menu-driven user interface to NetBackup. When using the menus, execute an operation by typing the letter to the left the related menu item. For example, typing **b** from the main menu takes you to the Backup Menu (it is usually unnecessary to press Enter). An ellipsis (...) to 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



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



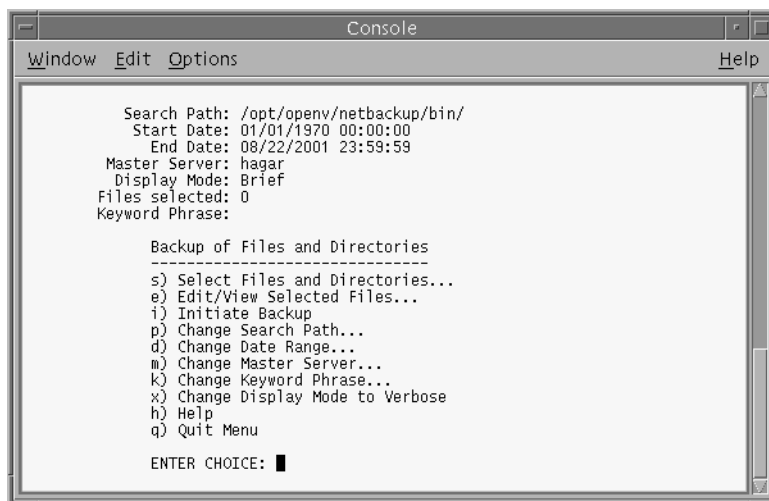
Note The following menu items do not apply to BusinessServer: Backup SAP DB, Backup DB2 DB, and Backup SQL-BackTrack DB.

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 <i>NetBackup System Administrator Guide</i> for the specific database 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 policy 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



- | | |
|--------------------|---|
| Search 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 Search Path) option from the menu. |
|--------------------|---|

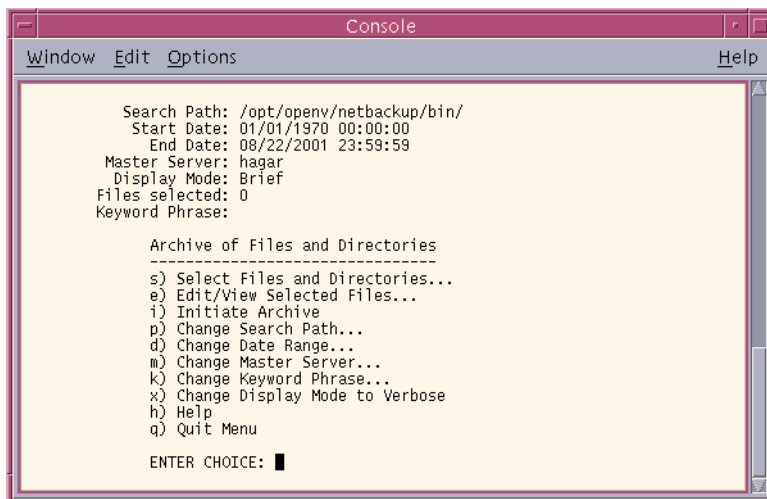
Start Date	The Start Date and End Date show the range of dates that the search will include. Start Date is the earliest <i>modified</i> date and time that a file can have for NetBackup to be included in the search. You can change the Start Date with the d (Change Date Range) option from the menu. When you start the menu interface, the Start Date is set to 01/01/70 00:00:00 for backups and archives.
End Date	The Start Date and End Date show the range of dates that the search will include. End Date is the latest <i>modified</i> 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, either verbose or brief. Refer to “x (Change Display Mode to Verbose)” on page 136 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.
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)	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 149.
i (Initiate Backup)	Starts the backup operation. Prompts for creating a log file in your home directory and writing to this file as the operation proceed are displayed.
p (Change Search Path)	Changes the directory at which subsequent search operations begin.
d (Change Date Range)	<p>Changes the Start Date and End Date as shown at the top of the menu. These dates specify the range in which a file's <i>modification date</i> must be in order to be included in the search for files to back up. Entering this option displays prompts for typing new start and end dates.</p> <p>Some basic rules for typing dates are as follows:</p> <p>The format for dates is month/day/year. For example, 01/23/93.</p> <p>The format for time is <i>hours:minutes:seconds</i> 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.</p> <p>To leave a date unchanged, press Enter at the prompt.</p> <p>If you change only part of the date or time and press Enter, NetBackup completes the entry.</p>



- m** (Change Master Server) Changes 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 policy 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.
- k** (Change Keyword Phrase) Changes the keyword phrase entered for the backup.
- 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 deselect 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.

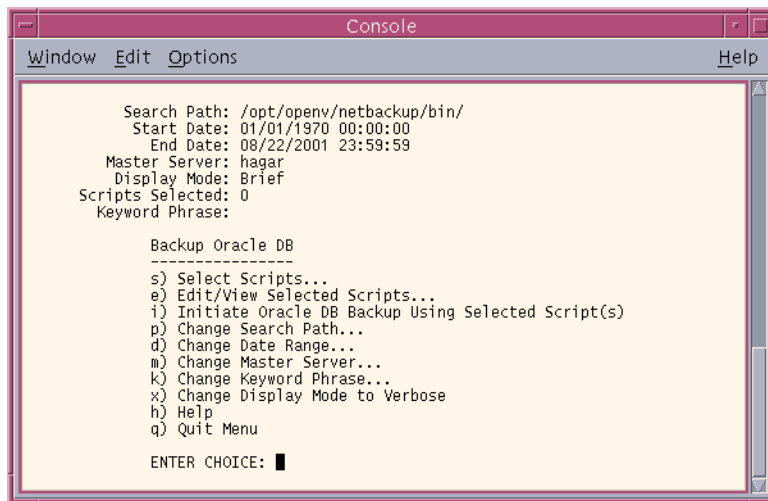


The information at the top of the menu, as well as the menu choices, are the same as the Backup of Files and Directories menu. The one exception is the **i** (Initiate Archive) option, which starts the archive operation.



Database Backup Menus

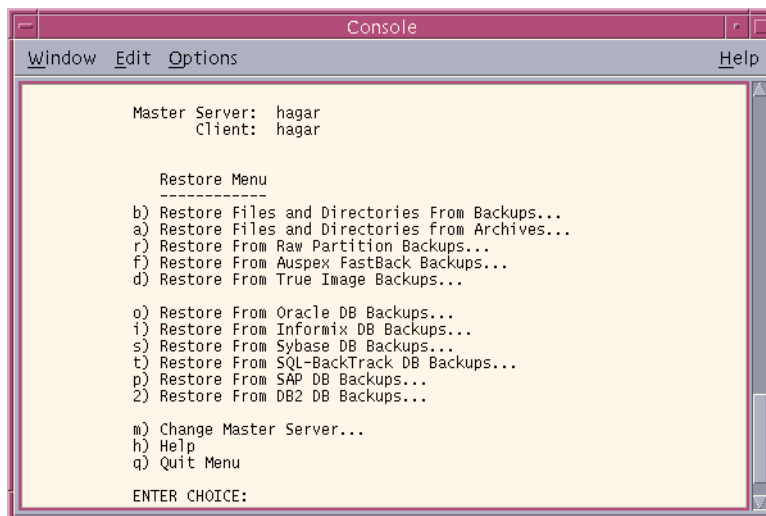
The database backup menus have choices for their respective types of database backups. The following figure is an example of the Backup Oracle DB menu.



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 *NetBackup System Administrator's Guide* for the specific database for more information.

Restore Menu



Note Auspex FastBack Backups is not supported in NetBackup 4.5.

Note The following menu items do not apply to BusinessServer: Restore From Auspex FastBack 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.

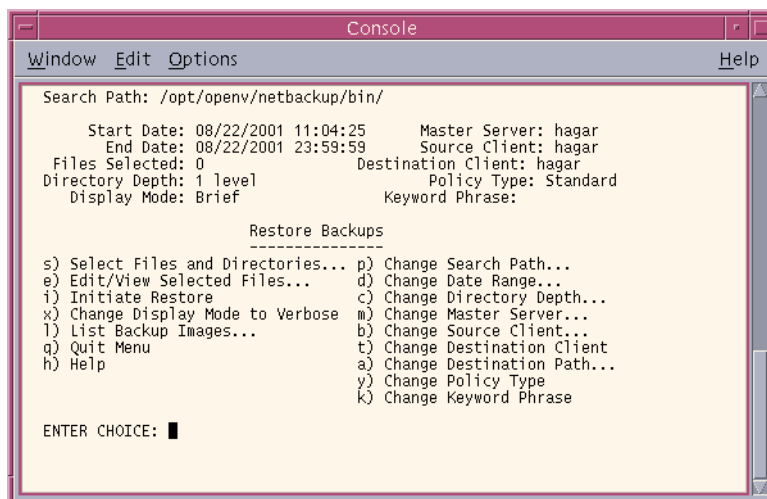
r (Restore From Raw Partition Backups) Opens the Restore Raw Partition Backups menu.

f (Restore From Auspex FastBack Backups) Auspex FastBack Backups is not supported in NetBackup 4.5.



- 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 System Administrator Guide* for the specific database for details.
 - o** (Restore From Oracle DB Backups) Opens the Restore Oracle DB menu.
 - i** (Restore From Informix DB Backups) Opens the Restore Informix DB menu.
 - s** (Restore From Sybase DB Backups) Opens the Restore Sybase DB menu.
 - t** (Restore From SQL-BackTrack DB Backups) Opens the Restore DB using SQL-BackTrack menu.
 - p** (Restore From SAP DB Backups) Opens the Restore SAP DB menu.
 - z** (Restore From DB2 DB Backups) Opens the Restore DB2 DB menu.
- m** (Change Master Server) Allows you to 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 policy 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.
- q** (Quit Menu) Closes the Restore Menu and returns to the Main Menu.

Restore Backups Menu



Search Path	This is the starting point for searches that you start by choosing the s (Select Files and Directories). You can change the current directory with the p (Change Search Path) option from the menu.
Start Date	Start Date and End Date 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 and End Date show the range of backup dates that NetBackup searches for files to restore. 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 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, either verbose or brief. Refer to “x (Change Display Mode to Verbose)” on page 136 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.



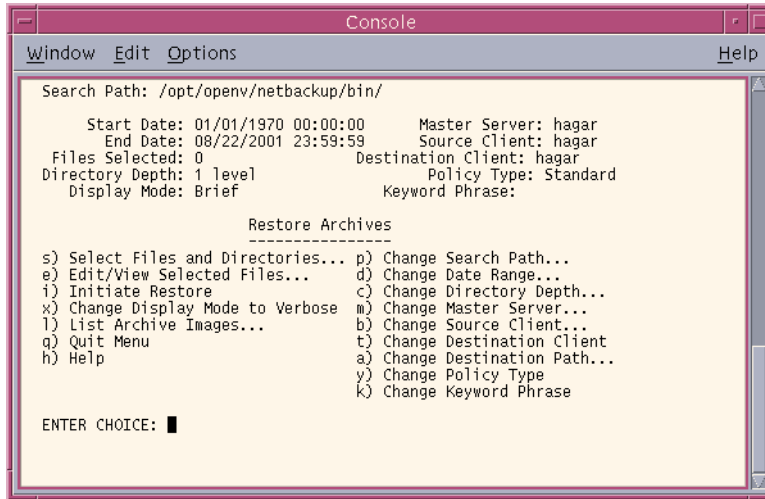
D estination Client	Client to which NetBackup will restore the selected files. This option will be displayed when you log in as root. Only the administrator on the master server can change this name to that of another client. See the t (Change Destination Client) option for information on changing this name.
P olicy Type	Your client type. See the y (Change Policy Type) option for information on changing the policy type.
K eyword 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. Prompts for specifying the following display: <ul style="list-style-type: none"> - NetBackup creates a log file in your home directory and writes to this file as the operation proceeds. - existing files that have the same names as those you are restoring should be overwritten. <p>If you selected a (Change Destination Path), you will be prompted to verify that you want to:</p> <ul style="list-style-type: none"> - 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 (<i>Brief</i> mode) or also includes file details such as permissions (<i>Verbose</i> mode). Toggle the Display Mode indication to <i>Verbose</i> to select file details and <i>Brief</i> to deselect them.
l (List Backup Images)	Lists the backups for the client that meet the entries in the Search Path, Start Date, End Date, Directory Depth, and the Keyword Phrase fields.
q (Quit Menu)	Closes the Restore Backups menu and returns to the Main Menu.
h (Help)	Help information for the Restore Backups menu.
p (Change Search Path)	Changes the directory at which subsequent search operations begin. To find a specific file, type its complete pathname at the prompt. You can also use wildcard characters *, ?, [, and] to find multiple files and directories.
d (Change Date Range)	Changes 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. Entering this option displays prompts for typing new start and end dates.
c (Change Directory Depth)	Changes 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.

-
- m** (Change Master Server) Specifies 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 policy 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).
- a** (Change Destination Path) Restores 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.
- y** (Change Policy Type) Lets the administrator on a server direct client restores. The policy 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 policy types do not apply to BusinessServer:
DataTools-SQL-BackTrack, Auspex-FastBackup, SAP, DB2, and FlashBackup.
- k** (Change Keyword Phrase) Change or enter the keyword phrase for your search.



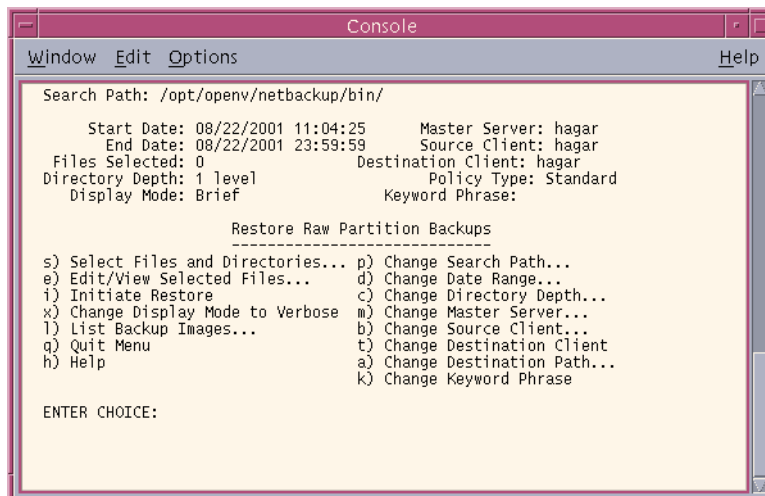
Restore Archives Menu

The Restore Archives menu is the same as the Restore Backups menu, except that the restore of archived files and directories can be initiated.



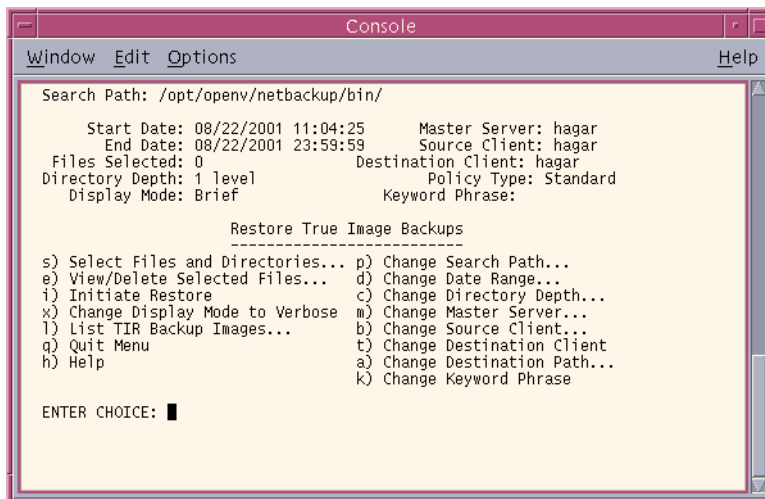
Restore Raw Partition Backups Menu

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 141 for an explanation of the menu items.



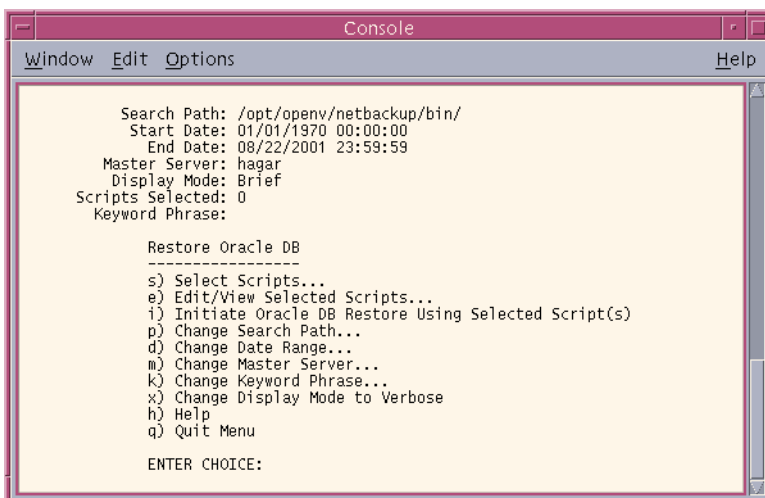
Restore True Image Backups Menu

The following figure shows the Restore True Image Backups menu. The menu options can be used to select and initiate restores of true image backups. See “Restore Backups Menu” on page 141 for an explanation of the menu items.



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.



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...) option which starts the restore operation for the selected database.

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.

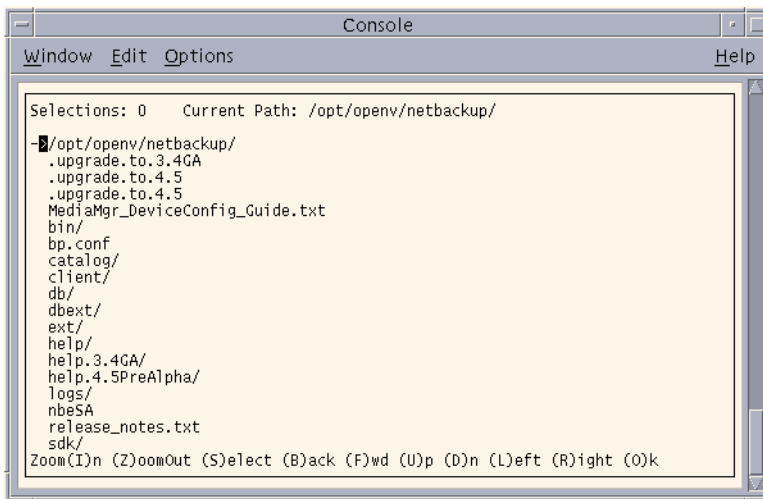
Refer to the *NetBackup System Administrator's Guide* for the specific database for more information.

Common Screens

The content of these screens varies depending on whether you are doing a backup, archive, or restore.

Backup or Archive Search Screen

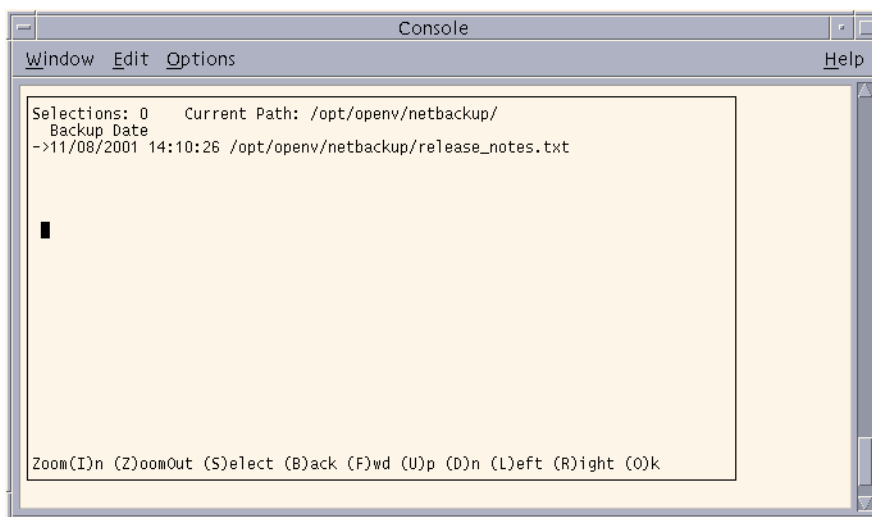
During a backup or archive, the Search screen appears when you choose the **s** (Select Files and Directories) option from the archive or backup menu. Use this screen to select directories and files for archive or backup.



Selections	Number of files or directories previously selected. This number changes as you select or deselect 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 Z oom(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 browse the directory tree and to make selections (see “Search Screen Options” on page 148).
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

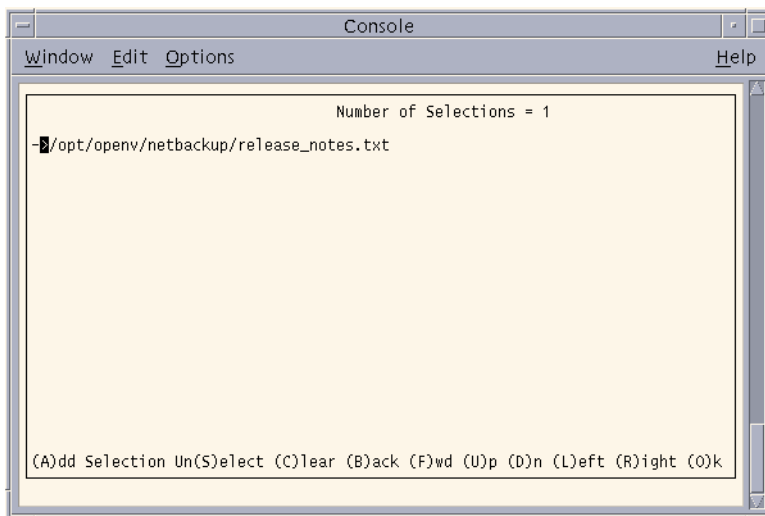
The options at the bottom of the Search screen let you browse the directory tree and make selections. Remember that it usually takes longer to search the backups than the file system (as is done during a backup or archive).

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.

Z oom(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 the **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).



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 deselect 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.

This section contains additional information on the Backup, Archive, and Restore interface for the NetBackup Administrator.

Redirecting Restores to Different Clients

There are two types of redirected 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 a redirected restore to a different client, 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 a redirected restore to a different client—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.



Policy Type Settings

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

Policy Settings for Clients

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

Restore Path Formats

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

Restore Path Formats

Client	Path Format	Example
UNIX (from a Normal Backup image)	/directory/	/usr/opencv/netbackup/
UNIX (from a Backup Exec image)	export_path\directory	exported_path\netbackup (where exported_path is defined in the agent.cfg file)
Macintosh	folder/folder/	NetBackup Admin/Configuration Files Dist/
Microsoft Windows (from a Normal Backup image)	drive:\directory\	C:\VERITAS\NetBackup\
Microsoft Windows (from a Backup Exec image)	\NT_share_name\directory\	\CS\VERITAS\NetBackup



Restore Path Formats

Client	Path Format	Example
NetWare NonTarget	/drive/directory/	/C/VERITAS/NetBackup/
NetWare Target	/target/volume/data_path	/MARGE/SYS/veritas/netbackup/
IBM OS/2	drive:\directory	c:\veritas\netbackup

Redirecting a Restore from a Backup Exec Image

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

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

◆ Redirecting a Restore to a Windows Client

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

`\share_name\dir1`

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

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

◆ Redirecting a Restore to a UNIX Client

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

`export_path\dir1`

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



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

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

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

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

◆ Redirecting a Restore to a NetWare Client

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

▼ To redirect a restore to a different client

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 Backup, Archive, and Restore interface.
3. Click the **Restore Files** tab.
4. From the **Actions** menu, choose **Specify NetBackup Machines**.
5. Click on the **NetBackup server** tab.
6. Select the NetBackup master server that backed up the files and click **Make Current**. This gives you access to the image catalog on that system so you can browse the desired backups.
7. Click on the **Source client/Policy type** tab.

- a. Select the client that originally backed up the files and click **Make Current**. This allows browsing and restoring files backed up from that client.
- b. Select the policy type for the images that you are going to browse. Refer to the table “Policy Settings for Clients” on page 152.

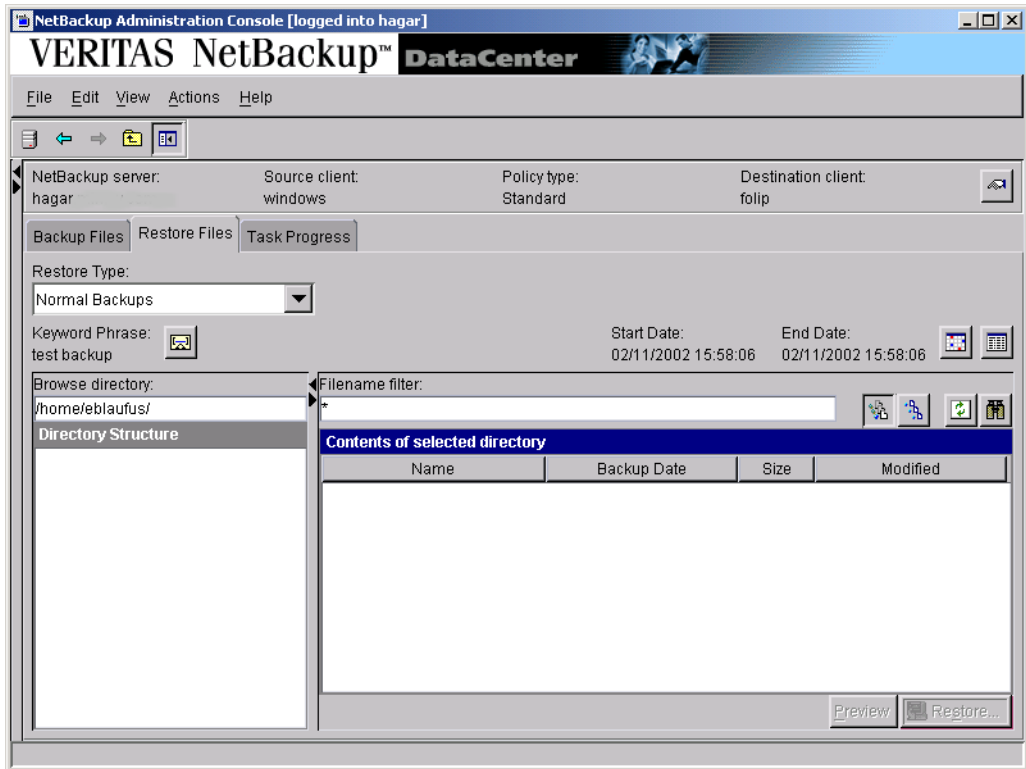
Note The Source and Destination client must always be of the same type.

Note The **Destination Client** tab is enabled only if the user is root or a non-root administrator *and* the machine jbpSA is connected to is a server. jbpSA determines this by checking the name of the machine jbpSA is connected to against the server list.

8. Click on the **Destination Client** tab.
9. Select the client to which to redirect the files.



The following example screen shows a restore of files that were backed up to hagar (NetBackup server) from windows (source client) and are now being restored to a client named folip (destination client). Both clients are standard.



10. On the **Actions** menu, point to **Select Restore Type** and choose the desired restore type, or select a type from the **Restore Type** list box.
11. To refresh the list of items available for restore, click **Refresh** on the **View** menu.
12. Select the files or folders you want to restore.

Note The Browse directory box is unavailable when browsing Windows, Lotus Notes, or MS Exchange clients.

13. Click **Restore**.

The Restore Marked Files dialog box appears.

14. Select the desired **Destination** to which to restore the files.

For more information on redirecting restores to different paths, see “Redirecting Files to a Different Path” on page 36.

The paths in the **Source** and **Destination** boxes must use the formats required by the clients as shown in the table “Restore Path Formats” on page 152.

15. Select the desired restore Options.

16. To begin the restore, click **Start Restore**.

Preventing Server-Directed Restores

To prevent server-directed restores, either add or delete settings on the client as shown in the following table:

Settings to Prevent Server-Directed Restores

Client Type	Location of Setting	To Prevent Server-Directed Restores
Microsoft Windows	General tab in NetBackup Client Properties dialog box on the client (click NetBackup Client Properties on the Files menu to display this dialog box)	Clear Allow server directed restores box
UNIX	/usr/opensv/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



Restoring AFS Backups

Note AFS does not apply to BusinessServer.

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 Backup, Archive, and Restore interface on the master server to restore volumes to the same or to redirect the restore to a different 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 Different Volumes/Vice Partitions

The Backup, Archive, and Restore interface provides a convenient mechanism for specifying a different name for a volume and/or vice partition. Specifying a different volume name prevents an existing volume from being overwritten by the restore.

- ◆ If you do not specify **Overwrite existing files** or a different 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 redirecting the restore to a different path and specify an existing volume, you must select the **Overwrite existing files** option 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 redirecting a restore of a volume to a different 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 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*.

Note FlashBackup does not apply to BusinessServer.

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 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 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, redirect the restore to a different path, restoring 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. Log on as root to the UNIX master server that backed up the files.
2. Start the Backup, Archive, and Restore interface.
3. Click on the **Restore Files** tab.
4. Select the Policy type.
 - a. From the **Actions** menu, choose **Specify NetBackup Machines**.
 - b. Click the **Source Clients** tab.
 - c. Select the **Policy type**. For most clients this is “Standard.”
 - d. Click **OK**.
5. From the **Actions** menu, point to **Select Restore Type** and choose **Raw Partition Backups**.
6. In the **Browse directory** box specify the directory path to the device file, for example, `/dev/rdisk/`.
7. Click the **Refresh** button to refresh the list of raw partition backups available for restore.
8. In the right pane, select the device file.
9. To begin the restore operation, 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 policy and the server must be configured to allow for individual file restores from raw partition backups.

1. Log on as root to the UNIX master server that backed up the files.
2. Start the Backup, Archive, and Restore interface.

3. Click on the **Restore Files** tab.
 4. Select the Policy type.
 - a. From the **Actions** menu, choose **Specify NetBackup Machines**.
 - b. Click the **Source Clients** tab.
 - c. Select the **Policy type**. For most clients this is “Standard.”
 - d. Click **OK**.
 5. On the **Actions** menu, point to **Select Restore Type** and choose **Normal Backups**.
 6. In the **Browse directory** specify the directory path to the device file.
 7. Click the **Refresh** button to refresh the list of raw partition backups available for restore.
 8. In the right pane, select the desired files or folders.
 9. To begin the restore operation, click **Restore**.
- ▼ **To restore a Windows NT or Windows 2000 disk-image backup**
1. Click on the **Restore Files** tab.
 2. Select the Policy type.
 - a. From the **Actions** menu, choose **Specify NetBackup Machines**.
 - b. Click the **Source Clients** tab.
 - c. From the **Policy type** list, choose **MS-Windows-NT**.
 - d. Click **OK**.
 3. From the **Actions** menu, point to **Select Restore Type** and choose **Normal Backups**.
 4. Click **Refresh** to refresh the list of items available for restore.
 5. In the right pane, select the disk image, for example, \\.\c:.
 6. To begin the restore operation, click **Restore**.



7. In the Restore Files dialog, be sure to select **Overwrite existing files**.

Previewing Required Media

The **Preview Media Required** option 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 the **Restore Files** tab.
2. Select the files and folders that you want to restore.
3. Click **Preview**.
4. To begin the restore operation, click **Restore**.

Glossary

access control list (ACL)

Security information associated with files on some file systems.

ACS

Automated Cartridge System. ACS can refer to any of the following:

- ◆ A type of Media Manager robotic control. This robot type is supported only by NetBackup DataCenter servers.
- ◆ The StorageTek (STK) system for robotic control.
- ◆ The highest-level component under STK's ACS library software, which refers to a specific standalone robotic library or to multiple libraries connected with a media passthru mechanism.

active job

A job for which NetBackup is currently processing backup or restore data.

activity logs

See “debug logs.”

activity monitor

A NetBackup administration utility that displays information about NetBackup jobs and provides limited control over them.

administration client

See “remote administration console.”

administrator

A user that is granted special privileges to install, configure, and manage the operation of a system, network, or application



AIT

Sony Advanced Intelligent Tape, a type of tape drive or media type.

alternate-client restore

See “redirected restore (different client).”

alternate-target restore

See “redirected restore (different target).”

alternate path restore

See “redirected restore (different path).”

alternate read server

A server used to read a backup image which was originally written by a different media server. The media server specified as Alternate Read Server must have access to the media containing the backup image or images it is configured to read.

archive

A special kind of backup where NetBackup backs up the selected files, and if the backup is successful, deletes the files from the local disk. In this manual, references to backups also apply to the backup portion of archive operations except where otherwise noted.

archive bit

A file-status bit that the Microsoft based operating system sets when it writes a file, thereby indicating that the file has changed.

attributes for a policy

Configuration parameters that control the behavior of NetBackup during operations involving this policy.

autochanger

See “robotic library.”

autoloader

See “robotic library.”

automatic backup

A scheduled backup by the master server.



back up

The act of copying and saving files and folders to storage media.

backup

Refers to the process of copying and saving files and directories to storage media. For example, *the backup is complete*. This term can also refer to the collection of data that NetBackup saves for a client during a backup or archive. For example, *duplicate the backup*.

Backup is two words when used as a verb. For example, *back up the file*.

backup, archive, and restore interface

The name of the NetBackup Microsoft Windows and Java based user interfaces for clients. On servers, these interfaces can be started through the NetBackup Administration Console.

backup window

The period of time during which backups can begin.

block size

The number of bytes in each block of data written on the media during a backup.

bp

A backup, archive, and restore utility for users on NetBackup UNIX clients. It has a character-based, menu interface that can be run from terminals that do not have X Windows capabilities.

bpadm

An administrator utility that runs on NetBackup UNIX servers. It has a character-based, menu interface that can be run from terminals that do not have X Windows capabilities.

bp.conf file

A NetBackup configuration file on UNIX servers and also on UNIX, Macintosh, and OS/2 clients.

bp.ini file

NetBackup initialization file for Novell NetWare target clients.

bpcd

NetBackup Client service on Windows and the NetBackup Client daemon on UNIX.



bprd

NetBackup Request Manager service on Windows and NetBackup Request daemon on UNIX.

cancel a job

Terminating a job and removing it from the job queue.

carousel

See “robotic library.”

catalogs

Internal NetBackup and Media Manager databases. These catalogs contain information about configuration, media, devices, status, errors, and the files and directories in the stored backup images.

CDF

Context-dependent file, which is a type of directory structure on a Hewlett-Packard system.

changer

See “robotic library.”

class

See “policy.”

client

The system with the files to back up, archive, or restore.

client-user interface

See “user interface.”

cluster

See master and media server cluster.

command lines

Commands that users can execute either from the system prompt or in scripts.

compression

The process of compacting data to enable more efficient transmission and storage.



configuration

The parameters that govern the behavior of an application. This term can also refer to the manner in which a network or system is laid out or connected (for example, a network configuration).

consolidated eject

A process of ejecting media for more than one Vault session at a time. A Consolidated Eject can be performed for one or more logical vaults at one time.

consolidated report

A process of generating reports for more than one Vault session at a time. A Consolidated Report can be performed for one or more logical vaults at one time. Consolidated reports are organized by report title, not by vault.

cpio

A UNIX command that can be used for copying files to or from a cpio archive on disk or tape.

ctime

The time that a UNIX inode was changed.

cumulative-incremental backup

A backup that is scheduled by the administrator on the master server and backs up files that have changed since the last successful full backup. All files are backed up if no prior backup has been done. Also see “differential-incremental backup.”

daemon

A program on a UNIX system that runs in the background and performs some task (for example, starting other programs when they are needed). Daemons are generally referred to as services or processes on Windows server systems.

database-agent clients

Clients with additional NetBackup software that is designed to back up relational databases.

database-extension clients

See “database-agent clients.”



debug logs

Logs that can be optionally enabled for specific NetBackup and Media Manager programs and processes and then used to investigate problems.

destination storage unit

A storage unit to which Vault sends the data from a duplication operation. If the duplicated backup images are to be vaulted, then the destination storage unit must correspond to the robotic volume group.

device delays

Delays caused by the device that are beyond the control of the storage application. An example is the time required to position tape under the read and write heads.

device host

A host (that has Media Manager installed) where a drive or robotic control is attached or is defined.

device monitor

A Media Manager administration utility that provides monitoring and manual control of Media Manager storage devices. For example, an administrator or computer room operator can use this utility to manually reset devices or set them to the UP or DOWN state.

DHCP

Dynamic host configuration protocol. This TCP/IP protocol automatically assigns temporary IP addresses to hosts when they connect to the network.

differential-incremental backup

Scheduled by the administrator on the master server and backs up files that have changed since the last successful incremental or full backup. All files are backed up if no prior backup has been done. Also see “cumulative-incremental backup.”

directory depth

The number of levels below the current directory level that the NetBackup interfaces show in their directory and file list displays.

directory tree

The hierarchical structure in which files are organized on a disk. Each directory lists the files and directories that are directly below it in the tree. On UNIX, the topmost directory is called the root directory.



disaster recovery

Recovering data from backups after a disk crash or other catastrophe.

disk

Magnetic or optical disk storage media.

disk-image backup

A bit-by-bit rather than a file system backup of a disk drive on a Windows platform.

DLT

Digital-linear tape or tape drive type.

Domain Name Service (DNS)

A program that handles name translation for network communications.

drive cleaning

The use of a special cleaning tape to clean the heads on a drive.

duplicate image

A copy of a backup image.

eject

Move media out of a robotic library.

encryption

Provides additional security by encrypting backup data on the client. This capability is available only with the NetBackup Encryption option.

entry and exit ports

See “media access port.”

exclude list

A list that designates files or directories to exclude from automatic backups.

expiration (image)

The date and time when NetBackup stops tracking a backup image.



expiration (volume)

The date and time when the physical media (tape) is considered to be no longer usable.

external media ID

This is an identifier written on a media cartridge or canister to help the operator identify the volume before inserting it into a drive or robot. For labeled media, the external media ID should be the same as the media ID recorded on the media.

EVSN

See “external media ID.”

FlashBackup

A special type of raw-partition backup that requires the NetBackup FlashBackup separately-priced option (this option is available only for NetBackup DataCenter).

flush level

Controls how often Netbackup clears its log files on a Novell NetWare or Microsoft Windows client platform.

fragment

A part of a backup or archive image. NetBackup can be configured to divide images into fragments when they exceed a certain size or span tapes.

frequency (backup)

How often NetBackup performs scheduled backups. For example, if the frequency is seven days then backups occur once a week.

FROZEN media state

If a volume is FROZEN, NetBackup keeps it indefinitely and can restore from it but not use it for further backups or archives.

full backup

A backup that copies, to a storage unit, all files and directories that are beneath a specified directory.

FULL media state

If this appears in a report or listing, it indicates the volume is FULL and cannot hold more data or be used for further backups.



global attributes

NetBackup configuration attributes that affect all policies.

GDM Dashboard

The name for the Global Data Manager interface. The Dashboard enables monitoring job and drive activity on multiple master servers, as well as providing alerts to problem conditions.

GDM Managed Server

A NetBackup master server that appears as a managed master server in the left pane of the GDM Dashboard.

GDM Server

A NetBackup master server that has the Global Data Manager license activated. When logging into this host, the user can monitor the activity on multiple master servers using the GDM Dashboard interface. If the host has installed the Advanced Reporter option, the reports show information on multiple master servers.

Global Data Manager (GDM)

A separately-priced option (for UNIX servers) that provides an interface with a tree view where the administrator can view and administer multiple master servers. The server where the option is installed is called a GDM Server.

Global Device Database

A single host that serves as the repository for global device configuration information. When you install NetBackup, by default the master server is configured as the global device database host.

GNU tar

A public domain version of the UNIX tar program.

goodies directory

A directory containing programs, scripts, and other files that are not formally supported.

GUI

Graphical user interface.



hard link

On UNIX, a hard link is a pointer to the inode for the data. On a Windows server, a hard link is a directory entry for a file. Every file can be considered to have at least one hard link. On NTFS volumes each file can have multiple hard links, and a single file can appear in many directories (or even in the same directory with different names).

heap level

A parameter for memory-heap debugging on a Novell NetWare or Windows NetBackup client.

hierarchical storage management

The process of automatically migrating selected files from a managed file system to specified migration levels on secondary storage, while maintaining transparent access to those files.

host

A computer that executes application programs.

host name

Name by which a host computer is identified by programs and other computers in the network.

HSM

See storage migrator.

image

The collection of data that NetBackup saves for an individual client during each backup or archive. The image contains all the files, directories, and catalog information associated with the backup or archive.

import

The process of recreating NetBackup records of images so the images can be restored.

include list

A list that designates files or directories to add back in from the exclude list.

incremental backup

See “cumulative-incremental backup” and “differential-incremental backup.”



inject

Move media into a robotic library.

inport

See “media access port.”

inode

A UNIX data structure that defines the existence of a single file.

install_path

Directory where NetBackup and Media Manager software is installed. The default on Windows servers is `C:\Program Files\VERITAS` and on UNIX it is `/usr/opensv`.

jbpSA

The Java-based NetBackup interface for performing user backups, archives, and restores.

jnbSA

The Java-based NetBackup interface for administrators.

job

A parcel of work submitted to a computer. NetBackup jobs are backups, archives, or restores.

kernel

The nucleus of an operating system.

keyword phrase

A textual description of a backup.

kill a job

See “cancel a job.”

label

Identifier of a tape or optical disk volume. A recorded label includes a media ID. A barcode label allows a barcode scanner to be used for media tracking.

library

See “robotic library.”



link

See “hard link” or “symbolic link.”

LMF - Library Management Facility

A Media Manager designation for a category of robot. For the specific vendor types and models in this category, see the VERITAS support web site.

This robot type is supported only by NetBackup DataCenter servers.

load

(noun) Amount of work that is being performed by a system or the level of traffic on a network. For example, network load affects performance.

(verb) Copy data to internal memory. For example, load the installation program.

(verb) Used to indicate tape drive initialization done when new media is being added.

logs

Files where a computer or application records information about its activities.

mailslot

See “media access port.”

man pages

Online documentation provided with UNIX computer systems and applications.

Master and media server cluster

A NetBackup master server and the remote media servers that it is using for additional storage. It is possible to configure clusters only with NetBackup DataCenter servers. NetBackup BusinessServer 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 BusinessServer supports only a single server and it is the master.



media

Physical magnetic tapes, optical disks, or magnetic disks where data are stored.

media access port

A slot or other opening in a robot where you can insert or remove a tape without having to access the interior of the robot. After inserting a tape, you move it to a slot by using an inject command. Prior to removing a tape, you move it to the port by using an eject command. The inject and eject commands are supported through the add and move screens in the Media Manager administration interface.

media host

NetBackup server to which the job (client) is sending the data.

media ID

An identifier that is written on a volume as part of the recorded label.

Media Manager

Software that is part of NetBackup and manages the storage devices and removable media.

Media Manager Host

Host where Media Manager is installed (may have devices attached)

media server

A NetBackup server that provides storage within a master and media server cluster. The master can also be a media server. A media server that is not the master is called a remote media server. NetBackup BusinessServer does not support remote media servers.

menu interface

A character-based interface for use on terminals that do not have graphical capabilities.

mount

Make a volume available for reading or writing.

mount point

The point where a file system on a disk logically connects to a system's directory structure so the file system is available to users and applications.



MPX

See “multiplexing.”

mtime

The point in time when a UNIX or NTFS file is modified.

multiplexing

The process of sending concurrent-multiple backups from one or more clients to a single storage device and interleaving those images onto the media.

multiplexed group

A set of backups that were multiplexed together in a single multiplexing session.

NDMP

Network data management protocol. NetBackup requires the NetBackup for NDMP separately-priced option to support NDMP.

NetBackup Client service

NetBackup Windows service that runs on clients and servers and listens for connections from NetBackup servers and clients in the network. When a connection is made, this service starts the necessary programs.

NetBackup configuration options

On UNIX servers and on UNIX and Macintosh, clients, these settings are made in the `bp.conf` file. On NetWare target and OS/2 clients, they are in the `bp.ini` file. On Windows servers and Windows clients, these settings are called properties and are made through the Backup, Archive, and Restore interface or the Host Properties dialog in the NetBackup Administration Console.

NetBackup databases

See catalogs.

NetBackup Database Manager service

NetBackup Windows service that runs on the master server and manages the NetBackup internal databases (called catalogs). This service must be running on the master server during all NetBackup administrative operations.



NetBackup Device Manager service

The NetBackup Windows service that runs on a NetBackup server and starts the robotic control processes and controls the reservation and assignment of volumes. This service runs only if the server has devices under Media Manager control. The process is `ltd`.

NetBackup properties

Same as NetBackup configuration options but are called NetBackup properties on Microsoft Windows platforms.

NetBackup Request Manager service

The NetBackup Windows service that runs on the master server and starts the scheduler and receives requests from clients.

NetBackup Volume Manager service

A NetBackup Windows service that runs on a NetBackup server, allows remote administration of Media Manager, and manages volume information. The process is `vmc`.

NIS

Network information service.

NLM

NetWare loadable module.

NFS

Network file system.

nonrobotic

See “standalone.”

ODL

Optical disk library. This robot type is supported only by NetBackup DataCenter servers.

offsite volume group

A volume group in which media will appear after having been ejected from the robot for vaulting. When Vault ejects media it is moved from the robotic volume group to the off-site volume group.



offsite volume pool

A volume pool that contains media that is to be ejected and vaulted. Backup images written to an off-site volume pool by an original NetBackup backup policy or by Vault's duplication feature will be ejected and vaulted. More than one off-site volume pool can be specified for the Eject step of a Vault profile.

original backup

A backup image created by a backup job. A single backup image or all backup images created by an Inline Tape Copy (multiple copy) configuration are considered original backups. A backup image created by a duplication job is not an original backup.

outport

See "media access port."

partitions

The logical partitions into which a magnetic disk is divided.

patch

A program that corrects a problem or adds a feature to an existing release of software.

path length

Number of characters in a pathname.

pathname

The list of directories in the path to a destination directory or file.

PC clients

NetBackup clients that have Microsoft Windows, Macintosh, or IBM OS/2 operating systems.

peername

The name by which a computer identifies itself when establishing connections to other systems.

policy

Defines the backup characteristics for a group of one or more clients that have similar backup requirements.



port

A location used for transferring data in or out of a computer.

Also see “media access port.”

primary copy

The copy of an image that NetBackup uses to satisfy restores. When NetBackup duplicates an image, the original is designated as the primary copy.

privileges

The tasks or functions that a user, system, or application is authorized to perform.

profile

A vault profile is a way to save configuration settings. Specific parameters for duplication, catalog backup, eject, and report or any combination of these steps, are configured within a profile.

progress report

Log where NetBackup records events that occur during user operations.

proxy restore

A proxy restore allows the user to restore files that he has write access to, on a machine other than his desktop. The files must be in a backup of the machine to which they are being restored.

QIC

Quarter-inch-cartridge tape.

queued job

A job that has been added to the list of jobs to be performed.

raw-partition backup

Bit-by-bit backup of a partition of a disk drive on UNIX. On Windows, this is called a disk-image backup.

rbak

The program that Apollo clients use to read data from tape during a restore.



recorded media ID

This is an identifier written as part of the label on a volume and used by Media Manager to ensure that the correct volume is mounted. The recorded media ID should match the external media ID.

redirected restore (different client)

Restoring files to your client when they were originally backed up from a different client. The administrator using the interface on the master server can direct a restore to any client (this variation is called a server directed restore).

redirected restore (different target)

On a Novell NetWare server platform running the NetBackup target version of client software, this operation restores files to a different target than the one from which they were backed up.

redirected restore (different path)

Restores files to a different directory than the one from which they were backed up.

registry

A Microsoft Windows database that has configuration information about hardware and user accounts.

remote administration console

A Windows NetBackup client that has the administration interface software installed and can be used to administer NetBackup servers.

remote media server

A media server that is not the master. Note that only NetBackup DataCenter supports remote media servers. NetBackup BusinessServer supports only a single server, the master.

residence

In Media Manager, information about the location of each volume is stored in a volume database. This residence entry contains information, such as robot number, robot host, robot type, and media type.

resource

A Novell NetWare term that refers to a data set on the target. For example, in DOS, resources are drives, directories, and files. Also see “target service.”



restore

(verb) The act of restoring selected files and directories from a previous backup or archive and returning them to their original directory locations (or to a different directory).

(noun) The process of restoring selected files and directories from a previous backup and returning them to their original directory locations (or to a different directory).

retention level

An index number that corresponds to a user-defined retention period. There are 10 levels from which to choose (0 through 9) and the retention period associated with each is configurable. Also see “retention period.”

retention period

The length of time that NetBackup keeps backup and archive images. The retention period is specified on the schedule.

robotic arm

The component of a robotic library that physically selects the media (tape or optical disk).

robotic library

Refers to a robot and its accompanying software. A robotic library includes a collection of tapes or optical platters used for data storage and retrieval. For example, a Tape Library DLT (TLD) refers to a robot that has TLD robotic control.

robotic volume group

A volume group from which media will be ejected and vaulted. When Vault duplicates backups, they are duplicated to media in the robotic volume group.

root

The highest level directory in a hierarchical directory structure. In MS-DOS, the root directory on a drive is designated by a backslash (for example, the root on drive C is C:\). On UNIX, the root directory is designated by a slash (/).

Also, a UNIX user name having administration capability.

RS-232

An industry-standard interface for serial communications and sometimes used for communicating with storage peripherals.



RSM Interface

Application in Windows 2000 used to manage Removable Storage Manager (RSM) devices.

RSM - Removable Storage Manager

A Media Manager designation for a category of robot. For the specific vendor types and models in this category, see the VERITAS support web site.

Also, a component of the Windows 2000 operating system that manages storage devices.

RVSN

See “recorded media ID.”

schedules

Controls when backups can occur in addition to other aspects of the backup, such as: the type of backup (full, incremental) and how long NetBackup retains the image.

SCSI

Small computer system interface. This is a type of parallel interface that is frequently used for communicating with storage peripherals.

server-directed restore

Using the user interface on the master server to restore files to any client. Only the administrator can perform this operation.

server independent restore

Restoring files by using a NetBackup server other than the one that was used to write the backup. This feature is available only with NetBackup DataCenter.

server list

The list of servers that a NetBackup client or server refers to when establishing or verifying connections to NetBackup servers. On a Windows server and Microsoft Windows clients, you update the list through a dialog box in the interface. On a UNIX server and UNIX and Macintosh clients, the list is in the `bp.conf` file. On NetWare target and OS/2 clients, the list is in the `bp.ini` file.

service

A program on a Windows server system that runs in the background and performs some task (for example, starting other programs when they are needed). Services are generally referred to as daemons on UNIX systems.

session

An instance of NetBackup checking its schedules for backups that are due, adding them to its worklist, and attempting to complete all jobs in the worklist. For user backups and archives, a session usually consists of a single backup or archive.

Session (Vault)

A vault session consists of executing a particular profile or profiles.

shared drives

See “Shared Storage Option (SSO).”

Shared Storage Option (SSO)

A separately priced VERITAS software option that allows tape drives (standalone or in a robotic library) to be dynamically shared among multiple NetBackup and Storage Migrator servers.

This option is supported only on NetBackup DataCenter servers.

SMDR

Storage management data requestor, a Novell NetWare program that provides its services transparently to all SMS modules and lets remote and local modules communicate with one another.

SMS

Novell NetWare storage management services.

source volume group

A volume group from which Vault can select backups to duplicate. This parameter is used to restrict the list of backups from all backups that reside on media in any volume group to backups that reside on media in a single volume group. Where a volume group corresponds to a particular robot, the profile will duplicate only backups on media in that robot. The Source Volume Group is normally only specified if you have multiple robots attached to the same server, for example you want to duplicate backups that reside in robot 0 to media that reside in robot 1.

SSO

See “Shared Storage Option (SSO).”

stacker

Usually a small robotic library that contains one drive only. See “robotic library.”



standalone

A qualifier used with drives and media to indicate they are not associated with a robot. For example, a standalone tape drive is one where you must manually find and insert tapes before using them. A standalone volume is one that is located in a standalone drive or is stored outside of a drive and designated as standalone in the volume configuration.

status code

A numerical code, usually accompanied by a troubleshooting message, that indicates the outcome of an operation.

storage migrator

Refers to the VERITAS Storage Migrator line of hierarchical storage management products for UNIX and Windows. These products make extra room on a disk by transparently moving data to other storage and then transparently retrieving the data when it is needed by a user or application.

Storage Migrator is available only for NetBackup DataCenter servers.

storage unit

Refers to a storage device where NetBackup or Storage Migrator stores files. It can be a set of drives in a robot or consist of one or more single tape drives that connect to the same host.

SUSPENDED media state

If a volume is SUSPENDED, NetBackup can restore from it but cannot use it for backups. NetBackup retains a record of the media ID until the last backup image on the volume expires.

symbolic link

On a UNIX system, this is a pointer to the name of the file that has the source data.

TapeAlert

Allows reactive cleaning for most drive types and is a function of the tape drive.

tape format

The format that an application uses to write data on a tape.

tape marks

A mark that is recorded between backup images on a tape.



tape overhead

The space required for data that is not part of the backup images. For example, tape marks and catalogs of what are on the tape are considered overhead.

tape spanning

Using more than one tape to store a single backup image.

tar

Tape Archive program that NetBackup uses to extract backup images during a restore.

target

See “target service.”

target service

A Novell NetWare service that needs storage management. The SMS views all services (for example, print services, communication services, workstations) as targets.

Target Service Agent

A Target-service agent is a Novell NetWare agent that prepares the target's data for SMS during a backup and for the target during a restore.

TLD - Tape Library DLT

A Media Manager designation for a category of robot. For the specific vendor types and models in this category, see the VERITAS support web site.

TLH - Tape Library Half-inch

A Media Manager designation for a category of robot. For the specific vendor types and models in this category, see the VERITAS support web site.

This robot type is supported only by NetBackup DataCenter servers.

TLM - Tape Library Multimedia

A Media Manager designation for a category of robot. For the specific vendor types and models in this category, see the VERITAS support web site.

This robot type is supported only by NetBackup DataCenter servers.

TL4 - Tape Library 4MM

A Media Manager designation for a category of robot. For the specific vendor types and models in this category, see the VERITAS support web site.



TL8 - Tape Library 8MM

A Media Manager designation for a category of robot. For the specific vendor types and models in this category, see the VERITAS support web site.

timeout period

The period of time that an application has allotted for an event to occur.

TIR

See “true image restore.”

tpconfig

A Media Manager administration utility for configuring devices which is started from the command line. On UNIX, it has a character-based menu interface that can be run from terminals that do not have X Windows capabilities. tpconfig also has a command line interface.

transfer rate

The rate at which computer information is transferred between a source and a destination.

transport

See “robotic arm.”

true image restore

Restores the contents of a directory to what it was at the time of any scheduled full or incremental backup. Previously deleted files are ignored.

TS8 - Tape Stacker 8MM

A Media Manager designation for a category of robot. For the specific vendor types and models in this category, see the VERITAS support web site.

TSA

See “Target Service Agent.”

TSD - Tape Stacker DLT

A Media Manager designation for a category of robot. For the specific vendor types and models in this category, see the VERITAS support web site.

TSH - Tape Stacker Half-inch

A Media Manager designation for a category of robot. For the specific vendor types and models in this category, see the VERITAS support web site.

This robot type is supported only by NetBackup DataCenter servers.

unassigned media

Media that contain no valid images. A piece of unassigned media has an entry in the volumes database but no entries in the images database. Unassigned Media do not have a “time assigned” in the Media section of the GUI.

user interface

The program used to perform user backups, archives, and restores.

user operation

A backup, archive, or restore that is started by a person on a client system.

Vault

Vault is a separately-priced NetBackup option that provides offsite backup management. Vault automatically duplicates specified backup images, and automates the process of offsite media rotation (a critical component of any backup or disaster recovery strategy). Vault manages offsite storage and retrieval of media for original backups, duplicate backups, and catalog backups. Additionally, NetBackup Vault generates reports to track the location and content of each piece of media.

vault

In the context of the NetBackup Vault, a vault is logical entity associated with a particular robot that acts as a designated holding place for backups that will eventually be sent to a physical offsite vault. The term ‘vault’ is used to refer both to the process, and to the physical storage location of a set of tapes offsite.

vault process

Vaulting is the process of choosing backup images to duplicate or eject, optionally duplicating backups, ejecting duplicate or original media, storing it at an offsite location, and later returning expired media to your robot. Vaulting is an integral part of the disaster recovery process.

verbose flag

Configuration file entry that causes a higher level of detail to be written in the logs.



verify

An operation that compares the list of files that are actually on a volume with what NetBackup has recorded as being on it. The data that is on the media is not verified.

vmadm

A Media Manager administrator utility for managing volumes. It runs on UNIX and has a character-based, menu interface that can be run from terminals.

vm.conf

A Media Manager configuration file with entries that include the servers that can manage local devices and default media ID prefixes for media that do not contain barcodes.

volume

Media Manager volumes are logical units of data storage or cleaning capability on media that have been assigned media IDs and other attributes, which are recorded in the Media Manager volume database.

volume configuration

Refers to configuration information that is stored in the Media Manager volume database.

volume database

An internal database where Media Manager keeps information about volumes. All hosts (where Media Manager is installed) have a volume database. However, the database is empty unless the host is designated as a volume database host.

volume database host

The host (where Media Manager is installed) that contains information about the volumes that Media Manager uses in a device. Because NetBackup BusinessServer supports only a single server, the volume database host is always on the same server.

volume group

A set of volumes that are configured within Media Manager to reside at the same physical location (for example, in a specific robot).

volume pool

A set of volumes that are configured within Media Manager to be used by a single application and are protected from access by other applications and users.

wakeup interval

The time interval at which NetBackup checks for backups that are due.



wildcard characters

A character that can be used to represent other characters in searches.

Microsoft Windows

(noun) Describes a line of operating systems developed by Microsoft, Inc.

For more information on the Windows operating systems that NetBackup supports, refer to the VERITAS support web site at <http://www.support.veritas.com>.

Windows

(adjective) Used to describe a specific product or clarify a term. Some examples are: Windows 95, Windows 98, Windows NT, Windows 2000, Windows servers, Windows clients, Windows platforms, Windows hosts, and Windows GUI.

Windows servers

A term that defines the Windows server platforms that NetBackup supports; those platforms are: Windows NT and 2000.

Windows clients

A term that defines the Windows client platforms that NetBackup supports; those platforms are: Windows 95, 98, ME, NT, 2000, XP (for 32- and 64-bit versions), and LE.

Windows Display Console

A NetBackup-Java interface program that runs on Windows 2000, NT, 98, and 95 computers. Users can start this interface on their local system, connect to a UNIX system that has the NetBackup-Java software installed, and then perform any user operations that their permissions allow.

WORM media

Write-once, read-many media for optical disks. NetBackup Business Server does not support WORM media.

xbp

The X Windows-based backup, archive, and restore program for users on NetBackup UNIX clients.





Index

A

- Administrator
 - configure
 - automatic backups 4
 - backup and archive windows 4
 - browse default 117
 - browse permissions 127
 - class name 121
 - destination client 142, 143
 - source client 143
 - directed restores 5
 - exclude and include lists 5
 - permission to browse other clients 3
 - questions to ask the administrator 6
 - scheduled backup 147
 - server-directed restores 143
- AFS backups
 - restoring in jbpSA 158
- Agent
 - definition 1
- Alternate client restores
 - See* Redirected restores
- Alternate path restore
 - See* Redirected restores
- Alternate target restore
 - See* Redirected restores
- altnames file 127
- Archives
 - bp
 - Archive of files and directories 137
 - initiating 137
 - of selected files/directories 137
 - procedure 48
 - progress log 74
 - restoring 144
 - search screen 146
 - jbpSA
 - procedure 21

- restoring 25
- symbolic links 6
- UNIX write permissions required 7
- xbp
 - bplist 101
 - browse all backups 111
 - browse for restore 109
 - browse recent 112
 - listing 89
 - procedure 78
 - progress log 98
 - report progress of option 113
 - schedule type 121
 - search directory 113
 - selected files/directories option 113
 - split across media id 100

- Auspex FastBackup
 - browse to restore 110
 - xbp restore 110
- Automatic backup 4
- Automatic refresh
 - xbp 99

B

- Backup windows 4
- Backups
 - bp
 - backup menu 133
 - database backup menus 138
 - option 132
 - procedure 48
 - progress log 74
 - search options 146
 - search screen 146
 - browse redirected restore 3
 - browse to restore 109
 - Auspex Fastbackup 110
 - raw partition 110
 - true-image backups 109



- jbpSA
 - procedure 19
- scheduled 4
- symbolic links 6
- xbp
 - backup menu 112
 - bplist command 101
 - database script 113
 - display 104
 - filter by date 102
 - images pane 120
 - keyword phrase 119
 - listing 89
 - media IDs 100
 - most recent 112
 - procedure 78
 - progress log 98
 - report progress of 113
 - schedule type 121
 - search directory 113
 - selected files/directories 113
 - selecting a directory 103
 - show all backups 111
 - split across media id 100
- bp
 - backup SQL-BackTrack DB Backup option 134
 - backup/archive procedure 48
 - basic restore procedure 56
 - progress logs 74
 - resolving links 73
 - restore SQL-BackTrack DB option 140
 - starting 48
- bp.conf command
 - CLIENT_NAME option 127
 - initial browse default 117
 - mail notifications 100
- bplist command 101
- Brief display
 - backup of files/directories menu 135
 - change on backup files/directories menu 136
 - change on Restore Backups menu 142
 - Restore Backups menu 141
- Browse
 - backup images 120
 - bp menu options 52
 - class type of image 127
 - directory depth 122
 - directory structure 124
 - directroy to search 115
 - filename filter 123
 - files 124
 - keyword phrase 119
 - mode 118
 - range of dates 117
 - search screen 146
 - source client 127, 141, 143
 - user interfaces 3
 - xbp file menu 109
- C**
 - CDE (Common Desktop Environment)
 - set up for NetBackup-Java 11
 - CDF directories 6
 - Client
 - bp
 - change destination client 143
 - change source client 143
 - destination client 142
 - source client 141
 - definition 1
 - jbpSA
 - redirected restore 151
 - redirected restore 5
 - xbp
 - client to browse for restore 127
 - client to restore to 127
 - redirected restore 91
 - Commands
 - bp 2, 48, 132
 - bp.conf 100, 117, 127
 - setenv 76
 - Cross mount points
 - restore 27, 88, 130
- D**
 - Database
 - backup database 113
 - backup menu 138
 - restore database 114
 - restore menu 145
 - script 114
 - scripts 109
 - Date
 - bp
 - change date range
 - backup 135
 - restore 142



- end date
 - backup 135
 - restore 141
 - start date
 - backup 135
 - restore 141
- jbpSA
 - selecting dates to restore 32
- xbp
 - date backup expires 121
 - date backup occurred 121
 - filter by date 102
 - range of dates 117
 - selecting dates to restore 93
- Delete
 - bp
 - archive files/directories 137
 - progress log files 74
 - jbpSA
 - archive files/directories 21
 - restore deleted files 25
 - progress log files 4
 - xbp
 - archive files/directories 80
 - restore deleted files 90
- Directory
 - bp
 - change directory depth option 142
 - change path option 135, 142
 - directory depth 141
 - path field 50, 59
 - resolve links 67
 - restoring true-image backups 69
 - search 60
 - selecting to backup 52, 53
 - selecting to restore 62
 - CDF 6
 - jbpSA
 - resolving links 42
 - restoring true image backups 40
 - symbolic link 6
 - UNIX permissions 7
 - xbp
 - archive directroy structure pane selections 113
 - backup directory structure pane selections 113
 - deleting 80
 - directory depth 102, 104
 - directory depth box 122
 - directory structure pane 124
 - directory to search box 115
 - discard selections 110
 - display contents 102
 - indented tree struction 111
 - navigating the directory tree 101
 - progress log file written to 80, 88
 - redirect the restore 114
 - redirected restore 91
 - resolving links 98, 112
 - restore directory structure pane selections 114
 - restore earlier version 94
 - restore most recent version 90
 - restoring true-image backups 95
 - search 84
 - selecting to backup 79
 - selecting to restore 83
 - show structure 103
 - unselecting 87
 - update display 111
 - xbp_altpath dialog 128
- Disk partition 6
 - bp 65
 - xbp 88
- Disk-image backup
 - jbpSA restore 160, 161
- Display mode
 - bp
 - backup of files/directories menu 135
 - change 136
 - restore menu 141
 - bp change on restore menu 142
 - font size 107
- Display update
 - edit menu 111
 - restore procedure 84
- DISPLAY, setenv variable 76
- E**
- Exclude list 5
- F**
- File list
 - bp 147
 - exclude and include lists 5
- File permissions 7
- Filename filter



- description 123
 - jbpSA 17, 21
 - xbp 102, 123
 - procedure 85
- Fonts
 - changing in xbp 107
- G**
 - Graphical user interface
 - description 106
 - using 75
- H**
 - Help, online
 - bp help option 132
 - specify X resources 107
 - xbp 75
 - xbp help menu 115
 - HP (Hewlett Packard)
 - restoring CDF directories 6
- I**
 - Include list 5
 - Interface
 - command line 3
 - graphical 3
 - description 106
 - using 75
 - java 9
 - menu 2
 - description 132
 - using 47
- J**
 - Java interface (jbpSA) 9
- K**
 - Keyboard shortcut 106
 - Keyword phrase
 - bp
 - backup files/directories menu 136
 - backup procedure 52
 - Restore Backups menu 142
 - restore files and directories menu 143
 - restore procedure 58
 - jbpSA
 - associating with backups 21
 - using when restoring 25
 - xbp
 - associating with backups 119
 - backup procedure 80
 - restore procedure 85
- L**
 - Legal character 116
 - Linked files
 - resolving links
 - bp 73
 - jbpSA 42
 - xbp 98
 - Listing backups and archives
 - bp procedure 58
 - bplist 101
 - UNIX permissions 7
 - xbp procedure 89
 - Listing media id 100
- M**
 - Mail notifications 4, 7, 100
 - Master server
 - altnames 127
 - bp
 - backup menu 133
 - backup of files/directories menu 135
 - change for backup 50, 134, 136
 - change for restore 57, 140, 143
 - main menu 132
 - name displayed 48
 - Restore Backups menu 141
 - restore menu 139
 - directed restores 5
 - exclude, include lists 5
 - jbpSA
 - change for backup 19
 - change for restore 24
 - Novell NetWare client 63
 - xbp
 - cbp_config dialog 127
 - change for backup 78
 - change for restore 82, 83
 - configuration 110
 - current 78
 - Maximum path length 6
 - Media IDs 100
 - listing in jbpSA 162
 - Menu interface 2
 - description 132
 - using 47
 - Menus

-
- bp
 - archive of files/directories 137
 - backup 133
 - backup database 138
 - main 132
 - restore 139
 - restore archives 144
 - restore database 145
 - restore raw partition backups 144
 - restore true image backups 145
 - xbp
 - backup 112
 - edit 110
 - file 109
 - help 115
 - restore 114
 - view 111
 - Mount points 27, 88, 130
 - Mwm*keyboardFocusPolicy X resource 11
 - N**
 - NFS mounted files 7
 - O**
 - Overwriting
 - bp
 - prompt 142
 - raw partition restores 65
 - restore procedure 61
 - true-image restore 71
 - CDF 6
 - disk partition 88
 - raw partition restores 6
 - xbp
 - overwrite existing files
 - checkbox 129
 - procedure 88
 - XKeysymDB 107
 - P**
 - Path
 - bp
 - alternate restore 63
 - cancel redirected restore 67
 - change after a backup is initiated 55, 66
 - change for a backup 50
 - change for a restore 59
 - change path option 142
 - current path on search screen 147
 - redirect the restore 143
 - resolving links 67, 73
 - jbpSA
 - resolving links 23
 - maximum length 6
 - xbp
 - directory to search box 115
 - links 85
 - navigating the directory tree 101
 - redirect the restore 114
 - redirected restore 93
 - Redirected restore checkbox 130
 - search path links 112
 - xbp_altpath dialog 128
 - Pathname
 - legal characters 116
 - restore linked 92
 - xbp
 - full pathnames 111
 - Permission
 - bp file permissions for restore 56
 - to browse backup on redirected restore 3
 - UNIX file permissions 7
 - user-directed restore 151
 - xbp
 - client to browse for restores 127
 - client to restore to 127
 - overwrite existing file 88
 - Progress log
 - checking 74
 - jbpSA 30
 - xbp
 - creating 129
 - deleting 100
 - interpreting 100
 - xbp_progress dialog 99, 130
 - R**
 - Range of dates boxes 117
 - Raw partition
 - bp restore
 - device file 56
 - mounted directory 56
 - overwrite option 65
 - jbpSA restore
 - device file 159
 - mounted directory 159
 - procedure 160, 161



-
- restore
 - overwrite option 6
 - xbp restore
 - browse backups
 - Auspex FastBackup raw partition 110
 - restore raw partitions 110
 - device file 82
 - mounted directory 82
 - Redirected restores
 - bp
 - links in path 67
 - procedure 63
 - specify 143
 - jbpSA
 - procedure 36, 151
 - server-directed 5
 - xbp 130
 - procedure 91
 - specify 114
 - Refresh display
 - xbp 104
 - if large number of backups shown 84
 - update display on edit menu 111
 - Resolving links
 - bp 73
 - jbpSA 42
 - wildcard characters 42
 - xbp 98
 - do not resolve links in search directory 112
 - resolve links in search directory 112
 - wildcard characters 98
 - Restore
 - bp
 - option 132
 - procedure 56
 - restore archives menu 144
 - restore database menu 145
 - restore menu 139
 - restore raw partition backups menu 144
 - restore search options 147
 - restore true image backups menu 145
 - true image 69
 - CDF directories 6
 - jbpSA
 - AFS backups 158
 - archives 25
 - procedure 24
 - raw partitions 160, 161
 - redirected 151
 - redirected restore 36
 - resolving links 23
 - search option 31
 - specific date range 32
 - true image 40
 - server-directed 151
 - server-directed to another client 5
 - xbp
 - Auspex FastBackup
 - restore xbp 110
 - browse archives 109
 - browse backups 109
 - browse true-image backups 109
 - client to browse for restore 127
 - client to restore to 127
 - deleted files 90
 - directories without cross mount points 130
 - mode 118
 - procedure 82
 - progress log 98
 - raw partitions 82, 110
 - redirected restore 128, 130
 - report progress 115
 - resolving links 85
 - restore menu 114
 - selected files/directories 114
 - specific date range 93
 - true image 95
 - Retention period 6
- S**
- Schedule
 - types 121
 - Scheduled backups
 - administrator scheduled backup 147
 - exclude list 5
 - for automatic backup 6
 - include list 5
 - Search directory
 - xbp 114
 - Search screen
 - bp
 - backup or archive 146



-
- options 148
 - restore 147
 - Selections screen
 - edit/view 149
 - view/delete 150
 - Server directed restore 5, 151
 - setenv command 76
 - Special symbols in xbp 106
 - Status codes in xbp 100
- T**
- Time Zone, adjusting in jbpSA 13
 - True image restore
 - bp
 - menu 145
 - procedure 69
 - view/delete selections screen 150
 - jbpSA 40
 - xbp
 - browse backups 109
 - procedure 96
- U**
- User-directed operations 2
- V**
- Verbose display
 - backup of files/directories menu 135
 - change on backup files/directories menu 136
- change on Restore Backups menu 142
 - Restore Backups menu 141
- W**
- Wildcard characters
 - bp change path option 142
 - jbpSA
 - filtering files 17
 - in links 42
 - xbp
 - links 98
 - search 116
 - Windows
 - user-directed operations 4
 - Write permissions
 - viewing in xbp 104
- X**
- X resources
 - changing 107
 - xbp
 - backup/archive procedure 78
 - basic restore procedure 82
 - progress logs 98
 - redirected restore procedure 91
 - starting 76
 - true-image restore procedure 96
 - XKeysymDB 107



