

# Solstice Backup 4.2 User's Guide

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## *Preface*

---

The *Solstice Backup User's Guide* contains instructions on how to use Solstice™ Backup backup, archive, and recover software from a client workstation. The *User's Guide* shows how to back up files and directories to the Backup server on an as-needed basis using the Backup window. It also shows how to browse the online file index to recover files using the Recover window. Instructions for using the optional Solstice Backup Archive Application are also included in this guide.

For information on server configuration and administration, refer to the *Solstice Backup 4.2 Administration Guide*.

---

**Note** – In this document, the terms Solstice Backup, Backup, and NetWorker refer to the same product.

---

## *Audience*

Those who will benefit most from this manual are users and system administrators who use Backup to back up, recover, archive, and retrieve data from a client workstation.

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## What Typographic Changes Mean

The following table describes the typographic changes used in this book.

Table 0-1

Typeface or Symbol	Meaning	Example
AaBbCc123	The names of commands, files, and directories; on-screen computer output	Edit your <code>.login</code> file. Use <code>ls -a</code> to list all files. <code>machine_name%</code> You have mail.
<b>AaBbCc123</b>	What you type, contrasted with on-screen computer output	<code>machine_name%</code> <b>su</b> Password:
<i>AaBbCc123</i>	Command-line placeholder: replace with a real name or value	To delete a file, type <code>rm filename</code> .
<b><i>AaBbCc123</i></b>	Book titles, new words or terms, or words to be emphasized	Read Chapter 6 in <i>Solstice Backup 4.2 User Guide</i> . These are called <i>class</i> options. You <i>must</i> be root to do this.

---

## *Shell Prompts in Command Examples*

The following table shows the default system prompt and superuser prompt for the C shell, Bourne shell, and Korn shell.

*Table 0-2*

<b>Shell</b>	<b>Prompt</b>
C shell prompt	machine_name%
C shell superuser prompt	machine_name#
Bourne shell and Korn shell prompt	\$
Bourne shell and Korn shell superuser prompt	#



# *Introduction*

---



Solstice Backup is an easy-to-use network storage management software product. Backup performs automatic backups of your files, scheduled by your system administrator, to protect against the loss of valuable data. You can also perform backups on an as-needed basis and archive project-related data for additional protection.

With Backup, file recovery is fast and convenient, so you do not waste time re-creating lost files. Simply scroll through Backup's list of backed-up files and recover the files to your disk. Backup even shows multiple versions of a file, backed up over time, allowing you to select the version you want to recover. Backup provides access to these powerful features through an intuitive graphical user interface (GUI).

The optional Solstice Backup Archive Application provides the ability to take a snapshot of finished project files or directories residing on primary media (usually disk). You can choose to have archived files automatically removed from disk, after Backup verifies the snapshot is safely stored on removable media, to conserve disk space.

Unlike backed-up data, the media used for storing archived data is never recycled. Archived data is preserved for as long as you need it. Archiving data associated with a finished project frees up space for current projects, while assuring future access to mission-critical data.

To use the Archive Application, your system administrator simply enables the software on the Backup server and clicks a choice to revise your client setup. No additional installation procedures are required.

## Overview

The Backup *server* is a machine with a *backup device* that automatically backs up *all* the systems on a network. Once your system administrator installs Backup and configures the server to recognize your system as a Backup *client*:

- automatically backs up your files on a routine, scheduled basis
- backs up selected files at any time on an as-needed basis
- provides long-term storage of project data with the optional Archive Application

When you use Backup to back up your files, the files are saved to *backup volumes* on the Backup backup device. The Backup server keeps an online *index* of the backed-up files. You browse this online index to recover a single file or a complete directory.

*Archiving* involves long-term storage of data on media called *archive volumes*. Archive volumes are similar to backup volumes, but are stored for very long periods of time and are not automatically recycled.

---

## *About this Guide*

The *Solstice Backup 4.2 User's Guide* contains information on backing up and recovering data using the Backup and Recover windows. Instructions for using the Archive and Retrieve windows available through the Archive Application are also included.

This guide is organized into sections to help you locate the kind of information you need, including shortcuts, examples, and step procedures.

## *Using the Backup Programs*

After the Backup server is set up, your system administrator will install two programs: `nwbackup` and `nwrecover`. The system administrator will install the software on your system or configure your system to access Backup remotely.

If the optional Archive Application is enabled for your site, two additional programs are available for use: `nwarchive` and `nwretrieve`. The system administrator changes your client configuration to allow your system to use the Archive Application.



## Getting Started



This chapter describes how to start the Backup programs and navigate their windows. It provides a Quick Tour using Backup for Solaris to back up and recover files from a client system. To use Backup, your system must be configured as a Backup client.

---

**Note** – Also, you need to add the path `/usr/bin/nsr` to your `PATH` environment variable in order to use the Backup executables.

---

See Appendix C, “Requirements for Backup Clients,” for details on the requirements for Backup clients.

If your site has the optional Backup Archive Application, be sure to read Chapter 5, “Archiving and Retrieving Files,” for information on using the program windows.

When Backup is running on your system, you see the Backup icons or the Backup and Recover windows on your screen. The program icons include the “Backup knight” and the program caption. Click the icon to open the program window.



If you do not see the Backup icons or the Backup windows on your screen, start Backup from a command line on your system.

## Starting Backup

To start Backup from a command line, enter the `nwbackup` and `nwrecover` commands, followed by the server name, and an ampersand (&) to run Backup in the background:

```
# nwbackup -s server_name &  
# nwrecover -s server_name &
```

If you have a multi-server network and do not specify a server name, Backup chooses a backup server for you.

---

**Note** – You can start Backup from any directory. The directory Backup starts from will be the directory shown in the Backup or Recover directory display.

---

If you receive an error message while starting Backup, there may be problems with your network configuration. Refer to Appendix C, “Requirements for Backup Clients,” to confirm that your system is configured correctly as a Backup client. If you need further help, contact your system administrator.

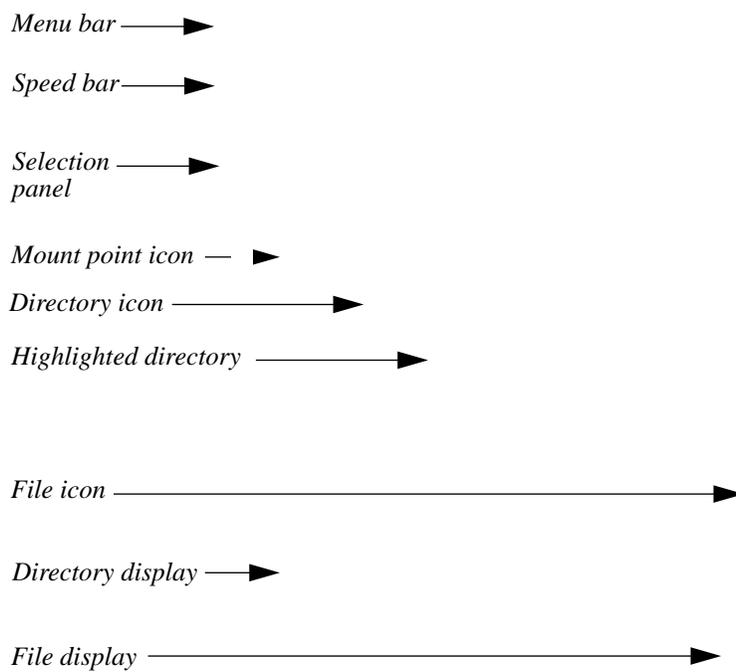
Backup uses windows, pull-down menus, and dialog boxes to guide you in backing up and recovering files.

## Using Backup Windows

Backup displays your files and directories using icons and windows. Backup windows provide an easy-to-use X Window System graphical user interface (GUI). This section shows you how to use Backup windows.

## *Window Components*

The following graphic shows the Backup window and its components.



## *Menu Bar*

The menu bars in the Backup and Recover windows contain the File, Tree, View, Change, Mark, Options, and Help pull-down menus.

There are two choices for navigating Backup menus. You can use the point and drag method with a mouse, or you can use the keyboard shortcuts.

- To pull down a menu using a mouse, move the mouse so its arrow points to your menu choice. Hold down the primary mouse button (usually on the left); the menu appears. With the mouse button still held down, drag the mouse arrow to the command in the menu, then release the button to make your choice.
- To pull down a menu using keyboard shortcuts:
  1. Hold down the [◆] key or the [Alt] key.
  2. Press the key that matches the underlined letter of the menu name.
  3. Release both keys, then press the key that matches the underlined letter in the command name.

---

**Note** – The left and right mouse button actions used in this manual are X Window System defaults. If you have problems using the mouse, your mouse buttons may be programmed differently. See your system administrator for help.

---

## *Online Help*

Select the online Help menu, available in any Backup main window, for help on using Backup. Online help is available for components of the selected window, menu items, and dialog boxes.

The Help pull-down menu provides commands that provide help on the current window, a list of help topics to browse, directions for using Help, and information about the version of Backup you are using.



Select the On Topic command in the Help pull-down menu to open the Topics Help dialog box, as shown.

To see more information about a topic, click its title in the Topics scrolling list. Help text for the selected topic appears at the top of the dialog box. The Topics scrolling list remains available in the bottom panel for selecting other topics.

For example, clicking the topic Backup produces the following dialog box.

To return to the Backup window, click the Cancel button.

### *Speedbar*

The five graphical buttons that appear on the speedbar serve as shortcuts for the following commands:

- Change Server – switches to a different Backup server
- Mark – marks directories or files
- Unmark – unmarks directories or files
- Search – searches for specific directories or files
- Start – starts the backup or recover operation

---

The speedbar is identical in the Backup, Recover, and Archive windows. Clicking a speedbar button produces the same result as selecting the command from a pull-down menu.

### *Selection Panel*

The selection panels in the Backup, Recover, and Archive windows show the current server and client selected. The selection panel in the Recover window also displays the current Browse Time.

The Selection field shows the full pathname of the currently-selected file or directory. Enter text in the Selection field or click a directory or file icon to select a different *pathname*.

### *Directory and File Display Areas*

The window is divided into two display areas: a directory display on the left side and a file display on the right side. Both display areas contain vertical and horizontal scrollbars that allow you to view complete directory and file information. You can adjust the window to fit more information in the display areas. The display areas contain icons that represent the files and directories in the path you select.

### *Window Controls*

*Slider* →  
*Scroll*  
*bar* →

Navigate vertically or horizontally in the directory and file displays by clicking the scrollbar or triangular endpoints, or by dragging the slider.

### *Icons*

Use the check box next to an icon to mark and unmark files and directories for backup or recover. The icons you see in the window are described below. (Some of the icons represent terms common to UNIX.)

Folder icons represent directories.

Open folder icons indicate that the tree structure of the directory, if any exists, appears in the directory display.

A check mark in the check box next to a folder icon for a subdirectory indicates that it is marked for backup or recover.

Shaded folder icons indicate a directory selected for menu actions. The folder contents appear in the file display.

Folder icons with this symbol represent mount points.

Sheet icons represent files.

Shaded sheet icons indicate files selected for menu actions.

Chain icons represent symbolic links.

Brick icons represent block devices.

Icons with this symbol represent character devices.

Clock icons replace the cursor when Backup is performing a task.

---

## *Exiting from a Window*

The Exit command is in the File menu of all Backup windows. Selecting the Exit command closes the current window, without backing up or recovering files, and quits the current program.



## *Quick Tour*

Follow the instructions in this section to become familiar with how Backup functions. The “Quick Tour” shows how to back up your current directory and recover a file using Backup. Chapter 3 and Chapter 4 provide detailed information about using Backup. Chapter 5 provides detailed information about using the optional Backup Archive Application.

## *Backing up Your Directory*

The Backup window displays a graphical representation of the path with the current directory highlighted. The Backup window lets you browse the filesystem to examine your directories and decide which files to mark for backup.

The Quick Tour takes you through the following steps to practice backing up a file:

- opening the Backup window
- expanding the current directory
- marking an entire subdirectory for backup
- excluding a file from the backup
- starting the backup

### *Opening the Backup Window*

Select the Backup icon to open the Backup window. The Backup window appears, as shown.

The Selection field displays the *pathname* of the directory where you originally started Backup. The directory display shows a graphical representation of the path with the current directory highlighted. A highlighted directory is represented as a shaded folder icon in the display. The file display shows the contents of the current directory. A highlighted file is displayed as a shaded sheet icon.

---

### *Expanding the Current Directory*

Expand the current directory one level to find a subdirectory to mark for backup. Select Expand One Level from the Tree menu.



The directory display changes to show the expanded directory, one level below, as shown.

### *Marking a Subdirectory*

To mark a subdirectory, click the check box next to the folder representing the subdirectory you want to back up. A check mark (✓) appears in the check box, as shown.



Click the folder to display its files. In the file display, the files and subdirectories contained in the marked subdirectory also appear marked, as shown.

When you mark a directory, its nested files and subdirectories are marked as well. The check boxes of the parent directories are shaded to indicate that a subdirectory has been marked.

---

**Note** – You can also mark a directory by clicking its folder in the directory display and clicking the Mark speedbar button. The effect is the same as clicking the check box next to its folder.

---

---

### *Excluding a File from the Backup*

You can exclude a file from the backup by unmarking it. Click the check box next to a file to unmark it in the file display. The check mark disappears, excluding the file from the backup.



---

**Note** – You can also unmark a file by clicking its folder in the file display and clicking the Unmark speedbar button. The effect is the same as clicking the check box next to its folder.

---

### *Starting the Backup*

After you finish marking files, you are ready to start the backup. Click the Start speedbar button to start the backup.

Before the backup starts, the Backup Options dialog box appears.

---

**Note** – You can exclude groups of files by entering UNIX shell pattern matching characters in the Backup Options dialog box. For information on excluding patterns, see Chapter 4, “Backing up and Recovering Files.”

---

Use the Backup Options dialog box to tell Backup whether or not to compress the files during backup. The default choice for Do you want to compress this backup? is already highlighted, as shown. Click the Ok button to continue the backup with file compression.

---

**Note** – Compressing your data during backup saves space on the backup media and reduces network traffic, but may slow down the backup operation. Check with your system administrator to find out if you should compress your data during a backup.

---

---

The Backup Status dialog box appears, so you can monitor the backup process.

---

**Note** – If you do not see files scrolling in the display, or if an error message appears, contact your system administrator. The server may be busy, have a configuration problem, or a backup volume may not be mounted in the device.

---

When your backup is complete, you see a message similar to the following in the Backup Status dialog box:

```
Backup Completion Time: Fri Nov 3 14:20:42 1995
```

Backup backs up marked files to the volume mounted in the server backup device. Backup also creates an entry in the index for each file it backs up, so you can find them for quick recovery.

Click the Cancel button to close the Backup Status window. Click the minimize button in the window header to reduce the Backup window and display the Backup icon. If you want to exit Backup (stop the program), select Exit from the File menu.

## *Recovering a File*

The Recover window displays the index entries Backup creates when it backs up the data on your system. Index entries are organized exactly like the filesystem displayed in the Backup window, so you can easily navigate through your directories and files.

The Quick Tour takes you through the following steps to practice recovering a file:

- opening the Recover window
- browsing the files contained in an index
- marking the files you want to recover
- starting the recover

### *Opening the Recover Window*

Click the Recover icon displayed on your screen. The Recover window appears, as shown.

---

**Note** – The Recover window displays index entries for the files on the Backup server. By contrast, the Backup window displays the actual files in your filesystem. The Recover window shows entries for files that have been backed up and are available for recovery. The entries are organized exactly like an actual filesystem, so it is easy for you to navigate the directories.

---

### ▼ Browsing the Index

You can browse the index to locate a file you want to recover.

**1. Notice that the current directory is highlighted.**

**a. Select Expand One Level from the Tree pull-down menu.**

The subdirectories are displayed in a tree structure in the directory display.

---

**Note** – Clicking a closed directory folder twice (double-clicking) expands or collapses it one level.

---

### ▼ Marking a File

To mark a file or directory for a recover:

**1. Click the directory folder that contains the file you want to recover.**

The file display shows the most recently backed-up version of the files contained in the directory.

**2. Click the check box in the file display next to the file you want to recover, as shown in the following example.**

If you want to recover an entire directory, mark its check box in the directory display.



### ▼ Starting the Recover

So far, you have browsed the index and marked files for recovery. The next step is to start the recover.

1. **Click the Start speedbar button to start the recover.**  
The Conflict Resolution dialog box appears, as shown.

---

Use the Conflict Resolution dialog box to resolve naming conflicts that might occur during recovery. Naming conflicts occur when the requested recover file has the same name as an existing file.

2. **Click No for Do you want to be prompted when conflict occurs?, so that Backup does not prompt you for each naming conflict.**
3. **Click one of the When conflict occurs, Backup should? choices. The default choice, Rename the recover file, is already selected.**  
This option adds an “.R” extension after the name of the recovered file when a naming conflict occurs.

---

**Note** – We recommend you select the default choice, Rename the recover file, to ensure that existing files are not accidentally overwritten.

---

4. **Click Ok to close the Conflict Resolution dialog box and continue the recover.**

The Recover Status dialog box appears, as shown, so you can monitor the recover process.

The Recover Status dialog box provides the following information:

- number of files to recover and their recover location
- estimated disk space needed
- name(s) of the backup volumes needed
- device location of the required backup volume(s)
- number of files being recovered and their names
- new file names, if you selected Rename the recover file

Click the Cancel button to cancel the recover or close the Recover Status dialog box when the recover is finished.

A message similar to the following appears when the file recover completes:

```
Recover completion time: 11/03/95 15:26:45
```

**5. Confirm your file recover by listing the contents of the directory from a UNIX command prompt.**

Since Rename the recover file was selected in the Conflict Resolution dialog box, the recovered file shown in the example has an “.R” file extension.

---

## *Quick Tour Review*

During the Quick Tour of Backup, you learned how to perform the following tasks:

- use the Backup GUI
- use the Backup window to back up a subdirectory to the Backup server
- exclude a file from the backup
- monitor the status of the backup
- use the Recover window to browse the index for your backed-up files
- mark a file for recover in the Recover window
- recover a file
- use the Conflict Resolution dialog box to resolve naming conflicts during recover
- monitor the status of the recover

The Quick Tour is meant to familiarize you with the Backup and Recover windows. Chapter 3 shows how to view and mark your files and directories. Chapter 4 provides detailed information on performing backups and recovers.

If you have the optional Backup Archive Application, see Chapter 5, “Archiving and Retrieving Files” for information specific to the Archive and Retrieve windows.



## *Browsing Filesystems*

---



This chapter shows how to browse filesystems in the Backup, Recover, and Archive windows. Backup filesystem displays allow you to view directories, mark and unmark files, search for files, view file details, and change the current directory displayed. When recovering files, the index of saved files is displayed exactly like your filesystem, making it convenient to select files for recover.

---

**Note** – This chapter describes browsing features common to all three windows. Features specific to the Backup and Recover windows are described in Chapter 4, “Backing up and Recovering Files.” See Chapter 5, “Archiving and Retrieving Files,” for features specific to the Archive and Retrieve windows.

---

## *Viewing Your Directories*

The Tree pull-down menu contains three commands for changing the level at which you view the directories in a filesystem: Expand One Level, Expand Branch, and Collapse Branch. You can expand a directory one level to view its subdirectories, or expand a branch to view all levels of a directory. This makes it easy to find files deeply embedded in your filesystem.

### ▼ Expanding One Level

The Expand One Level command displays the subdirectories one level below the selected directory. Subdirectories are graphically displayed as a tree structure. You can scroll the directory display to find the subdirectory containing the file you want.

To expand a directory one level:

- 1. Click a directory folder in the directory display.**
- 2. Select Expand One Level from the Tree pull-down menu or double-click the directory folder.**

### ▼ Expanding a Branch

The Expand Branch command displays all levels of subdirectories contained in a directory.

To expand a directory to view its branch:

- 1. Click a directory folder in the directory display.**
- 2. Select Expand Branch from the Tree pull-down menu.**

---

**Note** – Large directories and branches might take longer to expand.

---

## ▼ Collapsing a Branch

The Collapse Branch command closes all subdirectories and returns you to the level of the highlighted directory.

To collapse a branch (close all subdirectories):

1. **Click an expanded directory in the directory display.**
2. **Select Collapse Branch from the Tree pull-down menu, or double-click the directory folder.**

## ▼ Marking and Unmarking Files

You choose files and directories for backup and recover by marking them. The icons have a check box beside them that displays a check mark when the file is marked. To mark or unmark files and directories, use the Mark and Unmark speedbar buttons or click the check box next to the file or directory.

To mark (or unmark) a file or directory using the speedbar buttons:

1. **Click a file or directory icon.**
2. **Click the Mark speedbar button. This places a check mark in the check box beside the highlighted icon, marking it for backup or recover.**
3. **Click the Unmark speedbar button to remove the check mark. This removes the check mark and excludes the file from the backup or recover.**

---

**Note** – If you click the Mark or Unmark speedbar button without first selecting a directory or file icon, the directory displayed in the Selection field is the one marked or unmarked.

---

To mark (or unmark) a file using the check box next to the file icon:

1. **Click the check box next to the file. This places a check mark in the check box.**
2. **Click the check box to unmark a marked file.**

**Note** – Marking a directory also marks its subdirectories and nested files. The check boxes of parent directories are shaded to show that some or all of the directory contents are marked for backup or recover.

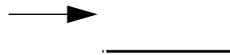
---

## Viewing Your Files

The View pull-down menu contains commands for searching directories for specific files and for changing the level of detail displayed for the directories and files.

### ▼ Searching for Files

If you know the name or partial name of a file or directory, you can use the Search command to locate it in the filesystem or index. Use the Search speedbar button to bring up the Search dialog box, or choose Search from the View pull-down menu, as shown.



To search for a file, specify the filename or partial filename and the *pathname* where you want to begin the search. Backup begins searching in that directory, then searches through the subdirectories and nested files within the *path*.

To search for files or directories by name:

- 1. Click the Search button in the speedbar to open the Search dialog box or select the Search command from the View pull-down menu.**  
The Search dialog box appears, as shown.

- 2. Enter the name of the file or directory in the Search for field. You can use standard UNIX shell pattern matching characters when specifying partial filenames.**

3. Enter a valid *pathname* for the desired directory in the **Begin search in field**. Backup will search through that directory and all nested subdirectories.
4. Click the **Ok** button. The *pathname* of the first match appears in the **Selection field** and is also highlighted in the file display.
5. Click the **Continue** button to highlight the next match and display it in the **Selection field**.  
You can continue the search until Backup finds the last match. If Backup cannot find a match for the selection, a dialog box message appears. Click **OK** to close the dialog box.
  
6. Click the **Cancel** button to close the **Search dialog box**.

### ▼ Viewing File Details

You can choose to view file names only or complete file details in the file display by selecting the **File Details** command in the **View** pull-down menu, as shown. Clicking the button for this command toggles between the two choices.



The default viewing selection displays file names only, listed in alphanumeric order. The **File Details** command changes the view to display the filename, number of blocks, permissions, number of symbolic links and where they point, owner, group, size, date, and time each file was last modified.

In the **Recover** window, the **File Details** command also displays the backup time for each file. Use this information to identify different backup versions of a file.

To display file details:

**1. Select File Details from the View pull-down menu.**

The file display in the Recover window changes to show file details. Notice the Backup time listed for each file.

**2. Adjust the size of the window or use the horizontal scrollbar at the bottom of the file display, if necessary, to display the contents of the window.**

To return the file display back to file names only, select the File Details command once more.

▼ **Changing a Selection**

The Backup, Recover, and Archive windows display the full *pathname* of the current directory in the Selection field. If you know the path of a directory or file, you can go directly to it by entering the full *pathname* in the Selection field.

---

To change the current selection:

1. Enter the full *pathname* for the new selection in the Selection field, as shown in the following example.

2. Press the [Return] key.

Both the directory and file displays change to show the new selection.



## *Backing up and Recovering Files*

---



This chapter describes the Backup and Recover windows. It includes the backup and recover functions unique to each window. See Chapter 3, “Browsing Filesystems,” for information on using functions common to both windows. For a quick tour of the backup and recover programs, see Chapter 2, “Getting Started.” If your site has the optional Backup Archive Application, be sure to read Chapter 5, “Archiving and Retrieving Files.”

### *Backing up Files*

This section assumes you already know how to mark files for a backup. For detailed instructions on viewing directories, marking and unmarking files, searching for files, or viewing file details, see Chapter 3, “Browsing Filesystems.”

If you are already familiar with the Backup window, see the shortcut instructions on page 41.

#### ▼ **Changing the Backup Server**

Backup backs up your data according to a backup schedule determined by your system administrator. Usually, a single Backup server backs up all the systems on a network. You may need to change servers if your Backup server is down or you are experiencing network difficulties.

If you have more than one Backup server available on the network, you may have a choice of servers for your backups. In order to switch to a different Backup server, your system must be listed as a client of that server. Check with your system administrator before you switch to a server other than the one that normally backs up your system.

To change Backup servers:

1. **Click the Change Server speedbar button, or select Server from the Change pull-down menu in the Backup window.**



The Change Server dialog box appears, as shown.

2. **Enter the *hostname* of the server in the Server field or click a name in the list of servers displayed.**

If you do not see the *hostname* of the server you need, click the Update Server List button to update the list of Backup servers available on your network.



---

**Caution** – When you click the Update Server List button, Backup searches for every server available to your machine. If you have a large network, this search could take awhile.

---

3. **Double-click the *hostname* to choose the new server or click Ok to choose the server shown in the Server field.**

---

**Note** – If you choose a Backup server that does not have your system listed as a client, you receive a notice similar to the following. If this occurs, contact your system administrator.

---

## ▼ Starting a Backup

Use the Start speedbar button to start a backup on marked files or choose Start Backup from the File pull-down menu, as shown.

To start a backup:

- 1. Mark the files you want to back up.**
- 2. Choose the Backup server (if necessary).**
- 3. Click the Start speedbar button.**

The Backup Options dialog box appears, with choices for the options Backup applies to your backup.

### *Choosing the Backup Options*

Backup displays the Backup Options dialog box before starting the backup. This gives you the opportunity to compress files and exclude patterns before the backup starts. Compressing data reduces network traffic and saves space on the backup media. Excluding patterns is convenient for specifying data you do not want to back up at all.

### *Compressing Files*

To choose whether to compress the files you back up, select a choice for Do you want to compress this backup? in the Backup Options dialog box. Notice that Yes is already highlighted as the default selection, as shown.

If you want Backup to compress your files during backup, you do not have to make a selection for the compression option, since Yes is the default selection.

If you back up to a device that compresses data, do not use the Backup file compression feature. Click No to continue the backup without file compression.

---

**Note** – Compressing your data during backup saves space on the backup media and reduces network traffic, but may slow down the backup operation. Check with your system administrator to find out if you should compress your data during a backup.

---

Notice that No is highlighted as the default selection for the Do you want to exclude any patterns from this backup? choice. If you do not want to exclude patterns of filenames from the backup, click Ok to continue the backup.

### ▼ Excluding Patterns

You can exclude files from the backup using the Pattern options provided in the Backup Options dialog box. This feature is useful, for example, if you are backing up an entire directory and do not need to back up certain files or subdirectories in that directory. Excluding files from the backup also reduces network traffic and saves space on backup media.

---

To exclude files from the backup, specify alphanumeric patterns that occur in the names of the files you want to exclude. Use UNIX shell pattern matching characters to specify any number of patterns you want to exclude.

To exclude patterns from the backup:

- 1. Click Yes for the Do you want to exclude any patterns from this backup? choice.**

This activates the lower half of the Backup Options dialog box.

- 2. Enter the first pattern in the Pattern field.**

- 3. Click Add to add the pattern to the list.**

The pattern appears in the pattern list display, as shown.

If you want to change a pattern, select it in the pattern list. The selected pattern appears in the Pattern field. Enter the new pattern and click Change. The new pattern replaces the old pattern in the pattern list.

If you want to delete a pattern, select it in the pattern list and click Delete.

- 4. Enter any remaining patterns and add them to the pattern list.**
- 5. Click Ok to continue the backup with the excluded file patterns and the compression choice.**

## *Monitoring the Backup Status*

The Backup Status dialog box appears after you complete your selections in the Backup Options dialog box and click Ok. Use the Backup Status dialog box to monitor the backup process.

The Backup Status dialog box provides the backup start time and the backup completion time. The names of the files and directories scroll across the Backup Status dialog box as the backup proceeds. The message at the bottom of the dialog box gives you information about the backup, including the full *pathname* of the directory, the amount of data, the amount of time it took, and the number of files saved.

If you do not see any progress messages in the Backup Status dialog box after a few minutes, the Backup server probably needs attention from the system administrator. Click the Cancel button to cancel the backup.

A message similar to the following appears in the Backup Status dialog box when the backup completes:

```
Backup completion time: Fri Nov 3 14:20:42 1995
```

---

Click the Cancel button to close the Backup Status dialog box.

### ▼ Shortcut

Read this section if you are already familiar with the Backup window.

To back up your directories or files:

1. **Click the Backup icon to open the Backup window.**
2. **Click the check boxes, or highlight the directory or file you want to back up, and click the Mark speedbar button.**
3. **Click the Start speedbar button.**
4. **Click the Ok button in the Backup Options dialog box.**
5. **Click the Cancel button in the Backup Status dialog box to close it after you check the backup completion message to make sure the backup is finished.**

## *Recovering Files*

This section assumes you have already marked your files for recovery in the Recover window. For detailed instructions on viewing directories, marking files, searching for files, or viewing file details, see Chapter 3, “Browsing Filesystems.” If you are already familiar with the Recover window, see the shortcut instructions on page 54.

Backup displays entries in the Recover window for the files it saved during a backup. Select the files you want to recover from this list of entries. Recover functions allow you to browse the index for previous backups, select various versions of the file to recover, view your marked files, relocate files upon recovery, and recover files from another authorized system.

---

**Note** – An authorized system is a client for which you have permission to recover data.

---

## *Starting a Recover*

Use the Start speedbar button to start a recover on marked files or choose Start Recover from the File pull-down menu, as shown.



Before starting a recover, read the following sections which explain the Recover features.

### ▼ Choosing the Recover Server

Normally you recover files from the Backup server designated by your system administrator. If you changed backup servers in the Backup window, you must select the same server in the Recover window to recover files backed up to that server.



---

**Caution** – The Change Server dialog box lists all the Backup servers on the network. You can only back up and recover files from a server that lists your system as a client.

---

To choose a recover server in the Recover window:

- 1. Click the Change Server speedbar button, or select Server from the Change pull-down menu.**

The Change Server dialog box appears.

---

**2. Click the Update Server List button to update the list of Backup servers on the network, if needed.**

Double-click the server name to choose the server that has the files you need to recover. The Server field changes to reflect the current selection.

**3. Click the Ok button after you select a server.**

Backup updates the directory and file displays in the Recover window.

---

**Note** – Select the recover server you want before marking the files to recover.

---

## ▼ Choosing the Recover Client

If you need to recover files for a client other than the system currently in use, select the Change Client command in the Change pull-down menu. The Change Client command opens a dialog box that lists all of the clients for the currently-selected Backup server. Check with your system administrator if you want to recover files other than your own. You may not be authorized to recover files for other client systems.

To choose a recover client:

**1. Choose Client from the Change pull-down menu in the Recover window.**

The Change Client dialog box appears, as shown.

**2. Click Update Client List button to update the list of Backup clients available on the selected server.**

**3. Choose a client for which you are authorized to recover files.**

The Client field changes to reflect the current selection.

**4. Click the Ok button after you select a client.**

## ▼ Selecting File Versions

The View pull-down menu in the Recover window contains two commands not found in the Backup window: Versions and Volumes. Details of the Volumes command are in “Listing the Backup Volumes for a Recover” on page 49.

The Versions dialog box lists all the versions of a file or directory that have been backed up by the Backup server. The dialog box also lists the backup volumes on which the files reside. Use the Versions command to view the backup history of a file and to mark a particular version of a file for recovery.



---

**Caution** – Backup displays versions of backed-up files and directories in the Versions dialog box. You can only mark *files* for recovery in the Versions dialog box. If you attempt to mark a directory in the Versions dialog box, you receive a warning similar to the following:

---

In addition to providing the backup time and location of all backed-up versions of the selected file, the Versions dialog box provides the following information: number of blocks, mode, permissions, number of links, owner, group, size in bytes, and last modified time. The filename, including the complete *path*, is displayed at the top of the dialog box. To identify different versions of a file, compare the Backup time indicated for each version.

The Location field includes the name of the backup volume and the device where the volume is mounted or the location of the backup volume (for example, offsite storage). If no device is listed, it means that the backup volume must be mounted before you can recover the file.

---

To view the backup history of a file or directory in the Recover window:

1. **Click a file or directory in the file display.**
2. **Select Versions from the View pull-down menu.**



Backup retrieves several versions of the highlighted file or directory from the index and lists them by backup time, beginning with the most recent. Use the scrollbars to view the complete backup history.

3. **Click More to retrieve additional versions from the index. The More button becomes inactive after all versions are retrieved.**

To mark a version of a file for recovery:

1. **Click the check box of the file version you want to recover.**
2. **Click Ok to place the marked versions in the file display.**

---

**Note** – When you mark a past version of a file in the Versions dialog box, it appears in the Recover window file display with the same name as the most recent version. Use the File Details command to display backup times to distinguish the multiple file versions displayed.

---

## ▼ Changing the Browse Time

The Browse Time field, shown below, displays the date and time you started the current Recover program session.



The Recover window displays the index entries for files backed up at the time shown in the Browse Time field. Use the Browse Time command in the Change menu to change the Browse Time displayed to another date. Changing the browse time displays the entries for files backed up *immediately before* the new browse time.

---

**Note** – If there are no entries for files backed up for the selected time in the Browse Time field, Backup displays files that were backed up *closest* to that time, but not immediately after. For example, if you change Browse Time to 10 a.m. on May 15, and the backup took place at 11 a.m. on May 15, Backup will not display the entries for the files backed up at 11 a.m.

---

Changing the browse time lets you view past versions of your files. This is useful if you do not remember the name or location of the files you want to recover, but do remember they existed at some time in the past. The Browse Time command in the Change pull-down menu also helps you find deleted files that no longer appear in the Versions dialog box. You can recover deleted files by changing the Browse Time to locate past versions of the files in the index.

---

**Note** – Use the Browse Time command to browse and mark past versions of directories. Marking a directory causes all its nested files and subdirectories to be marked.

---

---

To change the browse time to recover a past version of a file:

1. **Select Browse Time from the Change pull-down menu in the Recover window.**



The Change Browse Time dialog box appears, as shown.

The Previous, Today, and Next buttons control the month displayed. After choosing a month, click a day in the calendar to select the browse time.

---

**Note** – You can also change the browse time by entering a date and time in the Browse Time field and pressing [Return] or clicking Ok. The following formats are valid browse time entries:

---

hh:mm:ss (24 hour clock) *or* hh:mm:ss (am *or* pm) mm/dd/(yy) *or*  
monthname dd (yy)  
last Friday, next Friday, *or* third Friday  
+ *or* - 3 seconds, minutes, hours, weeks, months, *or* years  
now (the current date and time)

**2. Click Ok after choosing a browse time.**

The Browse Time field in the Recover window changes to reflect the new browse time. The file display and directory display of the Recover window show files that were backed up at or before that time. You may now mark past versions of files for recovery.

---

**Note** – Any files or directories you marked for recovery before changing the browse time remain marked.

---

▼ **Showing Marked Files**

List the files you marked for recovery by selecting the Show Marked command from the Mark pull-down menu. This command is only available in the Recover window. Use the Show Marked command to review files marked for recovery before starting the recover operation.

To show the files marked for recovery:

- 1. Select the Show Marked command from the Mark pull-down menu of the Recover window, as shown.**



---

The Files Marked for Recovery dialog box appears, listing the *pathnames* and backup time of all marked files.

**2. Click Cancel to close the dialog box.**

---

**Note** – The Files Marked for Recovery dialog box lets you verify that all the files you need to recover are marked before starting the recover.

---

▼ **Listing the Backup Volumes for a Recover**

After you mark your files for a recover, you can find out if the backup volumes Backup needs are available. If Backup cannot access the backup volume containing your file, it sends a message to the system administrator to load the volume. This request could take some time to fulfill. You may want to delay the start of the recover until the volume is available.

Use the Volumes command in the View pull-down menu to determine if the backup volume needed to recover a file is available.



To determine if the file you want to recover is immediately available for recovery:

1. **Mark the files or directories you want to recover in the Recover window.**
2. **Select the Volumes command from the View pull-down menu.**  
Backup displays a dialog box, similar to the following:

If the backup volume is available, which means the volume is mounted or in an autochanger, “all on-line” appears in the Recover Volumes Required dialog box. The dialog box displays the name(s) of the backup volume(s) and, if applicable, their location. In the example shown, the volume named “titania.006” is located in an autochanger device named `/dev/nsrt8`.

## ▼ Relocating Files

To recover files to a directory other than the one they were backed up from, use the Relocate command before you start the recover. The Relocate command creates the directory, if it does not already exist, and recovers your file to the new location.

To relocate recovered files into a new or existing directory:

1. **Select the Relocate command from the Options pull-down menu in the Recover window.**

---

**2. Enter the complete *pathname* of the directory where you want to place the recovered files in the Relocate to field.**

**3. Click Ok to relocate the files into the new directory.**

#### ▼ Renaming or Overwriting Recovered Files

When you start a recover, Backup displays the Conflict Resolution dialog box. You must decide whether to rename recovered files or overwrite existing files when a naming conflict occurs. A naming conflict occurs when a file you are recovering already exists or has the same name as a file in the current directory. Backup will not overwrite existing files unless requested to do so.

The Conflict Resolution dialog box has two sections requiring a selection for resolving naming conflicts, as shown.

- 1. Choose a response for the Do you want to be prompted when conflict occurs? question. The default choice, Yes, is already highlighted.**  
Clicking No allows you to resolve conflicts for the entire recover session without being prompted about individual files. If you choose No, you must also choose a response for the When conflict occurs, Backup should? question.

Clicking Yes allows you to resolve conflicts on a file-by-file basis. Backup prompts for instructions in the Filename Conflict dialog box every time it encounters a naming conflict. Each time this occurs, you must select a choice for the Do you want to? question in the Filename Conflict dialog box, as shown, then click the Ok button.

The following are choices for conflict resolution:

Rename the recover file – Backup renames the recover file with an “.R” extension. If the “.R” file already exists, Backup adds another “.R” extension to the recover file name.

Discard the recover file – Backup discards the recover file. The existing file remains current.

Overwrite the existing file – Backup replaces the existing file with the recovered file. The existing file is lost and the recovered file becomes current.

- 2. Click Ok to continue the recover after completing the Conflict Resolution dialog box or click Cancel to return to the Recover window.**

---

## *Monitoring the Recover Status*

After the Conflict Resolution dialog box closes, the Recover Status dialog box re-appears as the recover continues.

The Recover Status dialog box provides you with the following information about your recover session:

- The number of files to be recovered and where they will be relocated. If you specified a directory in the Relocate dialog box, it is listed.

```
Recovering 4 files within
/usr/export/home/jupiter/vbrown/ into
/usr/export/home/titania
```

- The estimated disk space required for the recover.

```
Total estimated disk space needed for recover is 16 KB.
```

- The name of the required backup volume and its location.

```
Volumes needed: (all on-line)
titania.015 at /dev/nrst8
```

- The name of the file or directory being recovered.

```
Requesting 4 files, this may take a while . . .
./home.html
```

- The new filenames, if you chose to rename recovered files.

```
renaming ./home.html to ./home.html.R
```

To cancel the recover or to close the Recover Status dialog box, click the Cancel button. When the recover completes, a message showing the recover completion time appears in the Recover Status dialog box.

## ▼ Shortcut

Read this section if you are already familiar with the Recover window.

To recover your directories or files:

1. **Select the Recover icon to open the Recover window.**
2. **Change servers, if necessary, by clicking the Change Server speedbar button. If applicable, change clients by choosing Client from the Change menu.**
3. **Use the mouse to highlight the icons for files or directories you want to recover, then click the Mark speedbar button.**
4. **Choose Volumes from the View pull-down menu to see if the backup volumes are immediately available for your recover.**
5. **Click the Start speedbar button to begin the recover.**
6. **Click the Ok button in the Conflict Resolution dialog box.**

- 
7. Click the **Cancel** button to close the **Recover Status** dialog box after the recover completion time message appears.

## Summary

To use Backup successfully, you must be able to perform the following tasks:

- back up files
- monitor the backup status
- view the backup volumes needed for a recover
- recover files
- relocate or rename files during a recover
- monitor the recover status

For information about configuring the Backup server, refer to the *Solstice Backup 4.2 Administration Guide* or ask your system administrator.

The next chapter, “Archiving and Retrieving Files,” explains how to use the optional Archive Application.



## *Archiving and Retrieving Files*

---

5 

This chapter describes how to archive and retrieve files and directories using the optional Archive Application.

### *Archiving Files*

The Backup and archive processes serve very different purposes. The backup process is short-term insurance against data loss. Backup keeps track of backups in the online file index to enable users to quickly recover lost or corrupted files. This online file index requires considerable disk space. Because archives theoretically are kept forever, Backup does not track them in the online file index – Backup only tracks archives in the online media index.

The Archive is a long-term strategy for preserving data on media called archive volumes. Archive volumes are similar to backup volumes, except they do not have an expiration date, which simply means that Backup will keep track of them forever.

Once files are safely stored on archive volumes, the archived files can be removed from local disk, freeing up space on your system. If you ever need to restore archived files to your system, you may do so at any time using the Retrieve window.

To a user, archiving files is like backing up files, except that the Archive Application allows you to automatically groom archived files and directories. Grooming means that files and directories are deleted from your filesystems after they have been successfully archived.

To a system administrator, backup has a different purpose than archive. The goal of backing up filesystems is to protect against loss of data due to hardware failure or user error. The goal of archiving is to make more space available on disk while maintaining a snapshot of removed files for quick retrieval in the future.

Since archived files are not tracked in the online file index, the Retrieve window does not display archived files and directories in the same manner as other Backup windows. Archives made on the server appear in alphabetical order in the Archives display of the Retrieve window.

---

**Note** – To remember what an archive contains, record the archive date and create a meaningful annotation. See “Starting an Archive” on page 60 for details.

---

### *Starting Backup Archive*

If the Archive Application is running on your system, you see the Archive icon or the Archive window on your screen. Click the icon, shown below, to open the window.

---

The Archive window appears, as shown..

If you do not see the Archive icon or the Archive window, start the application from a command line on your system.

To start the Archive Application from a command line, enter the `nwarchive` command, followed by the server name and an ampersand (&) to run the application in the background:

```
# nwarchive -s server_name &
```

If you have a multi-server network and do not specify a server name, Backup chooses an archive server for you.

## ▼ Starting an Archive

To start an archive:

- 1. Change archive servers, if needed.**

The Change Server command is described in Chapter 4, “Backing up and Recovering Files.”

- 2. Mark the directory or files you want to archive.**

---

**Note** – Marking a directory also marks all the subdirectories and files it contains. If you want to archive most (but not all) files in a directory, first mark the directory, then unmark files you do not want to archive.

---

- 3. Click the Start speedbar button, or choose Start Archive from the File pull-down menu.**

The Archive Options dialog box appears, as shown. The Archive Title field shows the *pathname* of the currently-selected directory or file.

- 4. Type a comment in the Annotation field that will help you remember the contents of the archive for future retrieval.**

When choosing a meaningful annotation, keep in mind that annotation searches are case-sensitive. The Annotation field accepts up to 1024 characters, including spaces and punctuation.

---

**Note** – If you do not enter an annotation before starting the archive, a dialog box appears, reminding you to enter an annotation.

---

**5. Specify a *volume pool* for your archive in the Archive Pool field.**

Click the arrow button next to the Archive Pool field to view a list of the choices available. Click the arrow button again to close the list. If an Archive Pool is not specified, the volume pool defaults to “Archive.” If you do not know which pool to choose, contact the system administrator.

**6. Click any of the available options in the Operations list.**

If the box next to an option is highlighted, the option is selected. The following choices are available options:

- Compress – to compress archive data, click Compress. If you have a compressing tape drive, do not choose the Compress option.
- Clone – to *clone* archive data on a different archive volume, click Clone. Backup makes a copy of your archived data.
- Verify – to verify that the data on archive media matches the data on local disk, click Verify.
- Groom – to remove files and directories from local disk after archiving is complete, click Groom.

See the sections following these instructions for an explanation of the Clone, Verify, and Groom options.

**7. Click the Archive button when you are ready to continue.**

The Archive Status dialog box appears, showing the archive process. Click Cancel if you need to stop the archive process. A dialog box appears, asking for confirmation. Click OK to kill the archive, or Cancel to continue.

### *Cloning Your Archive*

Cloning makes a duplicate copy of your archive. Two backup devices are required to make a clone. Each backup device must have a valid, writable archive volume mounted. Check with your system administrator before making clones of your archives.

When you select Clone in the Archive Options dialog box, Backup duplicates your archived data on another archive volume. If you specify a Clone Pool, the archive clone is sorted to a volume associated with that pool. Otherwise, the archive clone goes to “Archive Clone,” the default clone pool,

Click the arrow button next to the Clone Pool field to view a list of the choices available. Click the arrow button again to close the list.

### *Verifying Your Archive*

When you select Verify in the Archive Options dialog box, Backup checks the data written on the archive volume. If you also select Clone in the Archive Options dialog box, the clone volume is verified. The archive completion report in the Archive Status dialog box alerts you to any problems with the archived or cloned data.

### *Grooming Your Filesystem*

When you select Groom in the Archive Options dialog box, Backup deletes all marked files after the archive successfully completes. Select the Verify option when you choose Groom to ensure files are properly archived before they are groomed from your disk.



---

**Caution** – When you select the Groom option, be careful not to mark any files that you must retain on disk. Check with your system administrator before using the Groom option.

---

---

## *Monitoring the Archive Status*

Use the Archive Status dialog box to monitor the archive process.

The Archive Status dialog box provides the archive start time and the archive completion time. The names of the archived files and directories scroll across the Archive Status dialog box as the archive proceeds. When the archive completes, the full *pathname* of the directory, the amount of data, the amount of time it took, and the number of files archived are displayed. The Archive Completion Information gives you details about the archive, including the volume your *save set* was archived to and the Annotation you assigned to the archive.

---

**Note** – Write down the annotation and volume information and include it with your project documentation to make it easier to retrieve the data at a later date.

---

## Retrieving Files

Retrieval involves the copying of files back to local disk from archive volumes.

### *Starting Backup Retrieve*

If the retrieve utility for the Archive Application is running on your system, you see the Retrieve icon or the Retrieve window on your screen. Click the icon, shown below, to open the Retrieve window.

If you do not see the Retrieve icon or the Retrieve window, start the application from a command line on your system.

To start Retrieve from a command line, enter the `nwretrieve` command, followed by the server name and an ampersand (&) to run the application in the background:

```
# nwretrieve -s server_name &
```

If you have a multi-server network and do not specify a server name, Backup chooses a retrieval server for you.

### *The Retrieve Window*

The Retrieve window has fewer menus than the other Backup windows. Since archived save sets are not maintained in the online file index, the Tree, View, and Mark menus are not present. The File, Change, Options, and Help menus are navigated in the same manner described for the Backup, Recover, and Archive windows.

When you start the `nwretrieve` program, the Archives scrolling list is empty. The currently-selected server is indicated directly beneath the speedbar. To display a list of archive save sets available on the currently-selected server, click the Query button.

---

The window displays a list of the archived save sets available for retrieval.

To search for a particular save set using all or part of its annotation, enter all or part of the annotation in the Search annotation for field and click the Query button. All archive save sets with matching annotations appear highlighted in the Archives list.

---

**Note** – Since the search for annotations is case-sensitive, use regular expressions like **[Aa]** to search for upper or lower case.

---

### *Archive Save Set Details*

To see details about the currently-highlighted archive save set, click the Details button. The Retrieve Details dialog box appears.

The fields in this dialog box provide the following information:

name – full name of the save set (including *path*)

date – date the save set was archived

files – number of files in the save set

ssid – save set ID

size – file size, in bytes

The Retrieve Details dialog box also shows the archive annotation, which can be used in the Search annotation for field in the Retrieve window.

---

**Note** – The currently-highlighted save set is the only one whose details are displayed in the Retrieve Details dialog box. To view details on another save set without exiting the Retrieve Details dialog box, highlight the new save set in the Archives list.

---

## ▼ Retrieving a Save Set

To retrieve a save set to your system:

- 1. Click the line containing the required save set in the Archives list in the Retrieve window.**

---

**Note** – You may select multiple save sets for retrieval. To avoid overwriting later copies of files when the Overwrite existing files option is selected, Backup retrieves the files in chronological order.

---

- 2. Select Start Retrieve from the File menu.**

---

The Retrieve Status dialog box appears, as shown. The Archives list displays all archive save sets you selected for retrieval in the Retrieve window.

3. **Specify a new or existing directory in the Relocate to field, if needed. By default, retrieved files are copied to their original location.**
4. **Click Overwrite existing files, if you want Backup to replace existing files on the local disk with files retrieved from the archive volume. If you do not select this option, Backup prompts you to resolve naming conflicts.**
5. **Click the Ok button when you are ready to start the retrieve.**  
The appropriate archive volume(s) must be mounted (mounting is automatic in an *autochanger*).

During the retrieve operation, messages appear in the Status field to inform you of progress.

To stop a retrieve in progress, or to dismiss the Retrieve Status dialog box before retrieval has begun, click the Cancel button.

## *Summary*

Archiving files is like placing them into a bank safe deposit box. They are meant to remain safe and last forever. But just as paper in safe deposit boxes can age and yellow, tapes used to archive files do not last forever. Optical discs last longer, but are still vulnerable to fire. Choosing the Clone option, which makes an extra copy of the archive, increases the protection of vital data.

Deleting files from disk, using the Groom option, conserves the space for current projects. However, if your site policy is to move archives offsite for increased protection, retrieving archived files could take awhile. Contact your system administrator to find out whether the archive volume you need is available for immediate retrieval.

## *Error Messages*



Backup provides user-friendly error messages with instructions to help you solve most backup, archive, and recover problems you encounter.

### *Error Messages for Backup and Archive*

Backup displays an error message if a backup or archive cannot be completed.

<b>Message</b>	<b>Cause</b>	<b>Solution</b>
Nothing marked for backup.	You started a backup without marking any files.	Mark at least one file before starting the backup or archive.
Unable to start backup.	Backup was unable to execute the <b>save</b> command.	Contact the system administrator. There is a problem with the Backup software or your client configuration
Your system is not a registered client.	The server you selected does not have your system listed as a Backup client.	Contact the system administrator. Your system needs to be added to the list of recognized clients for the selected server.

## Error Messages for Recover and Retrieve

Backup displays an error message if it cannot recover or retrieve a file.

Message	Cause	Solution
These are files marked for recovery. Continue to ignore the marked files, or cancel to stay with this client.	You tried to change clients or filesystems after marking some files for recover or retrieve.	You have the option to continue changing the client. In this case, the marked files will not be recovered. Or you can cancel to stay with the current client and retain your marked files.
(For <i>root</i> users) Only 10 KBytes available to non-superusers (15 KBytes free) in <i>/directory</i> . Filesystem will be greater than 100% full after recover is complete. Proceed with recover command at this time? [n]  (For non- <i>root</i> users) No disk space available to non-superusers (15 KBytes free) in <i>/directory</i> . The estimated recover size of 10 KBytes will not fit on this filesystem. Proceed with recover command at this time? [n]	There is not enough free space in the filesystem to recover or retrieve the requested files.	Reduce the size of the recovery by reducing the number of marked files. Relocate the recovered files into another directory with more space. If you are recovering over existing directories, you may be able to proceed with the recovery since files will be overwritten.
Invalid time format.	The time you entered in the Browse Time field was an invalid format.	Enter the browse time using a valid format. Examples of valid browse time formats are shown on page 46 of this guide.

Message	Cause	Solution
Nothing in index at this time.	There are no entries in the index for the browse time that you specified, or no backups were done at that time.	Enter another browse time until you find the index entries for which you are looking.
Unable to relocate to <i>/directory</i> .	Backup was unable to relocate the recovered data to the path you specified.	Enter a valid <i>pathname</i> in the Relocate dialog box and start the recovery again. You must have write permission for the directory you wish to use.

## *Error Messages for All*

Some Backup error messages are the same for an unsuccessful backup, recover, archive, or retrieve.

Message	Cause	Solution
There are files marked for backup or recovery. Continue to ignore the marked files or cancel to stay with server.	You cannot change servers after you have marked files.	You have the option to continue changing servers. If you change servers, the marked files will not be backed up or recovered. You can cancel to stay with the current server and retain your marked files.
Bad start path.	You specified an invalid starting path for a search.	Enter a valid <i>pathname</i> as a starting point in the Search dialog box.
No match.	The Search command did not find any matches.	Enter a different search pattern or starting path.
Bad search pattern.	The search pattern you specified is not valid.	Use UNIX shell pattern matching characters to specify a search pattern.



---

Message	Cause	Solution
Unable to expand path.	The path you specified in the Selection field does not correspond to anything in the index or filesystem.	Enter a valid <i>pathname</i> in the Selection field.

## *Backup UNIX Shell Commands*

---



In addition to a graphical user interface (GUI), Backup has UNIX-like commands. These commands are entered from a UNIX shell to back up and recover data. You must have access to a Backup server and your system must be configured as a Backup client in order to use these commands.

Both the `save` and `recover` commands can be run from the command line with arguments. Refer to the `save` and `recover` man pages for more information about saving and recovering data from the command line.

Enter the `save` command at the system prompt to back up data:

```
# save -s server pathname
```

Enter the `recover` command at the system prompt to recover data:

```
# recover -s server -c client pathname
```

### *Table of Recover Commands*

The `recover` program provides an interface that allows you to browse files and control recovers. When you enter the `recover` command, the Backup prompt appears.

The following table provides `recover` program commands to enter at the Backup prompt.

Command	Description
<b>add</b> <i>filename</i>	add <i>filename</i> to the recover list
<b>cd</b> <i>dir</i>	change directory to <i>dir</i>
changetime	change the browse time of online index
<b>delete</b> <i>filename</i>	delete <i>filename</i> from the recover list
dest	verify destination directory for recovered files
force	overwrite existing files
<b>help</b> or '?'	display list of recover program commands
list	list the files in the recover list
<b>ls -f</b> (or <b>lf</b> ) <i>filename</i>	list <i>filename</i> with file type information
<b>ls -l</b> (or <b>ll</b> ) <i>filename</i>	list <i>filename</i> using long format
<b>ls</b> <i>filename</i>	list <i>filename</i>
noforce	do not overwrite existing files
nsrwatch	monitor Backup server activity
pwd	display name of current directory
quit	exit the recover program
recover	start the recover program when entered at the system prompt; start the recovery when entered at the <code>recover&gt;</code> prompt
<b>relocate</b> <i>dir</i>	specify new directory location for recovered files
verbose	toggle verbose or quiet mode for recover status messages
<b>versions</b> <i>filename</i>	display backup history of <i>filename</i> <i>filename</i> can be either a file or a directory
<b>volumes</b> <i>filename</i>	list volumes needed to recover marked files <i>filename</i> can be either a file or a directory

## *Requirements for Backup Clients*

---



Your system administrator is responsible for setting up your system to meet the requirements for Backup clients.

The following conditions must be met for a workstation to qualify as a Backup client:

- The Backup software is installed. For installation instructions, see the *Solstice Backup 4.2 Installation and Maintenance Guide*.
- The daemon `nsrexecd` is running on a Backup client. The daemon `nsrexecd` is used by `savegrp` to start saves on Backup client machines. To enable `nsrexecd`, the install script `nsr_ize` must be run on the client.
- The Backup server is configured to recognize the client. For directions on how to set up a client, see the *Solstice Backup 4.2 Administration Guide*.

If any one of the above conditions are not met, you will be unable to use Backup. Contact your system administrator before proceeding.



## *Glossary*

---

This glossary contains terms and definitions found in this manual. Most of the terms are specific to the Solstice Backup for Solaris product.

**archiving**

A snapshot of a file or directory as it currently exists. An unlimited expiration date allows for long-term storage and retrieval.

**archive volume**

Any type of storage media to which your server can archive data for long-term storage. For example, magnetic tape and optical disk.

**autochanger**

A robotic device with the ability to automatically move, load, and store a collection of volumes. This device allows Backup to use the volumes needed for backups and recovers without operator intervention.

**backup**

A copy of your workstation data stored on tape or optical disk.

**Backup client**

A system on your network that backs up and recovers data using Backup.

**backup device**

The device attached to the Backup server for backing up and recovering data. For example: 8mm and 4mm tape drives, optical drives, and autochangers.

---

<b>Backup server</b>	A system with a backup device that backs up systems configured as Backup clients across the network. The server backs up the systems according to a schedule set by the system administrator. The server maintains an index of all the backed-up data and the volumes the backed-up data is stored on.
<b>backup volume</b>	Any type of storage media to which your server can back up. For example, magnetic tape and optical disk.
<b>browse time</b>	Viewing specification for files backed up at a specific time. For example, a browse time of 09/13/95 24:00 yields a view of files backed up at midnight on 9/13/95 and before.
<b>cloning</b>	Making a duplicate copy of a file or volume.
<b>collapse</b>	Changing the display to show only the parent of a directory in the Backup, Recover, and Archive windows.
<b>expand</b>	Changing the view to display all levels of a directory in the Backup, Recover, and Archive windows.
<b>file index</b>	A database on the Backup server containing an entry for every backed-up file.
<b>media index</b>	A database on the Backup server containing entries for all the volumes backed up and archived by the Backup server.
<b>recover</b>	Replace a lost or damaged file from a copy stored on a Backup backup volume.
<b>save set</b>	A set of files backed up or archived by Backup on a backup or archive volume.
<b>selection</b>	The name of the volume, directory, or file highlighted in a Backup window.
<b>tree structure</b>	A display of files in the Backup, Recover, and Archive windows in hierarchical format.

---

**volume**

A unit of media used for backup, such as a magnetic tape or an optical disk.

**volume pool**

A feature that sorts your backup and archive data to selected volumes. A volume pool contains a collection of files sorted during the save process by criteria set by the system administrator.



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