

# Backup Exec for NetWare

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## Administrator's Guide

*January 2002*  
*Part Number 30-000135-011*

  
VERITAS

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Printed in the USA, January 2002.

*VERITAS Backup Exec for NetWare Administrator's Guide*

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# Using Backup Exec for NetWare Documentation

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This comprehensive manual provides detailed information and procedures for using Backup Exec for NetWare®. Topics covered in this manual require the reader to have a working knowledge of the NetWare operating environment.

## Conventions

The following conventions are used in this manual:

<b>Steps</b>	Numbered steps are listed as <b>1, 2, ...etc.</b>
<b>Text that you type</b>	Text that you are required to type on the keyboard is shown in a lowercase font similar to what you would see on your screen. The text to be typed is preceded by the word <i>Type</i> and followed by the key(s) to press. For example: Type: <b>a:install</b> and press <Enter>.
<b>Selections that you make</b>	Selections you need to make from the user interface appear in both upper and lowercase in bold. For example: From the <b>Jobs</b> menu, click <b>Backup</b> .
<b>Keys</b>	Keys appear in angle brackets (< >). For example, <Enter>, <Esc>, <Del>, etc. When two or more keys need to be pressed simultaneously to perform a function, they appear in angle brackets with a plus sign. For example, <Shift + F1>.
<b>Hot keys or accelerator keys</b>	If there is a shortcut key, it is shown in the application next to the menu choice. If there is a toolbar button or another shortcut, it will be noted in the documentation as a tip.



## Understanding Manual Organization

This manual is for network administrators responsible for protecting data on the network. Here is an organizational view of this manual:

- |                   |   |
|-------------------|---|
| <b>Chapter 1</b>  | <i>Understanding Backup Exec</i> contains general information about Backup Exec for NetWare, how it works, and what it can do for you.  |
| <b>Chapter 2</b>  | <i>Installing Backup Exec</i> includes information about hardware and software requirements and directions for installing and starting Backup Exec.   |
| <b>Chapter 3</b>  | <i>Backing Up Data</i> provides in-depth information on backing up local and network devices with Backup Exec and on running an archive job.  |
| <b>Chapter 4</b>  | <i>Restoring Data</i> presents the steps for restoring files to local and remote devices.   |
| <b>Chapter 5</b>  | <i>Administrating Jobs, Alerts, and Reports</i> provides information on how to monitor jobs and job histories or logs, how to respond to alerts, and how to generate reports in .html format.                           |
| <b>Chapter 6</b>  | <i>Configuring Backup Exec</i> describes how to set default options for the media server, Administration Console, and Administration Console for NetWare.   |
| <b>Chapter 7</b>  | <i>Managing Devices, Drive Pools, and Partitions</i> presents steps for performing device operations and information about using drive pools if in media management mode or partitions if in partition management mode. |
| <b>Chapter 8</b>  | <i>Managing Media</i> presents steps for performing media operations and setting up automated media rotation.   |
| <b>Chapter 9</b>  | <i>Manual Disaster Preparation and Recovery</i> describes how to recover a NetWare server.  |
| <b>Chapter 10</b> | <i>Troubleshooting Backup Exec</i> lists common questions and answers and error messages.   |
| <b>Appendix A</b> | <i>Using the Remote Agent for NetWare</i> explains how to install and use the Backup Exec Remote Agent for NetWare to back up and restore remote NetWare systems.   |



- Appendix B**      *Using the Remote Agent for Windows NT and Windows 2000* describes how to install and use this agent to back up and restore Windows NT, Windows 2000, and Windows XP systems on the network.
- Appendix C**      *Using the Library Expansion Option* presents steps for installing the Library Expansion Option, using library partitions, setting up automatic job re-scheduling for multi-drive libraries, and using Backup Exec to perform library device operations.
- Appendix D**      *Using the Open File Option* details how to use this option to back up open files on NetWare servers.
- Appendix E**      *Using the SAN Shared Storage Option* explains how to install and use the Backup Exec for NetWare SAN Shared Storage Option.
- Appendix F**      *Using Backup Exec with Novell Cluster Services* provides information on using Backup Exec in a cluster environment.
- Appendix G**      *Management Portal Plug-In* provides steps for installing and starting the plug-in and viewing information from the plug-in.
- Appendix H**      *Using Intelligent Disaster Recovery* describes the requirements for using Intelligent Disaster Recovery (IDR), as well as steps for installing and using IDR.
- Appendix I**      *Using Tape Alert and Hewlett Packard OpenView Software* describes how Backup Exec for NetWare supports Tape Alert plug-ins for Hewlett Packard's OpenView SNMP Management Consoles, as well as HP's OpenView for Windows and Unix programs.



## Using Backup Exec Online Documentation (CD-ROM)

Online documentation, marketing literature, and other information are included on the installation CD. These documents can be displayed with the Adobe® Acrobat® for Windows reader, which is included on the CD.

### ▼ To view an online document:

1. Insert the CD into a Windows workstation's CD-ROM drive, or mount the CD as a volume on the file server.

The manual file is located in the DOCS directory on the CD (e.g., `\netware\docs\[LANGUAGE]`).

If you do not already have the Adobe Acrobat reader installed on your workstation, you can download the latest version of the program from Adobe's web site ([www.adobe.com](http://www.adobe.com)).

2. Open the manual by double-clicking the **admin.pdf** icon located in the `\netware\docs\[LANGUAGE]` directory on the CD. You can also open the manual file from the **File | Open** menu while running Adobe Acrobat.

In addition to Adobe Acrobat's powerful search tools, you can use the manual's hypertext table of contents and index sections to quickly find information.

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**Tip** If you have installed the Backup Exec documentation to your local workstation, you can view the Administrator's Guide by clicking **Start**, pointing to **Programs**, pointing to **Backup Exec for NetWare**, and clicking **Backup Exec Administrator's Guide**.

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## Using Online Help

When you click **Help** on the Administration Console menu bar, a drop-down menu containing more options is displayed. These options include:

- ◆ **Administration Console Help.** Displays the Help window for Backup Exec for NetWare's Administration Console.
- ◆ **View Readme.** Displays the Backup Exec Readme.html file.
- ◆ **Tip of the Day.** Displays key information, or tips, on using Backup Exec for NetWare.
- ◆ **VERITAS on the Web.** Displays the VERITAS Technical Support web site url.
- ◆ **View Diagnostics.** Allows you to view the following:
  - Media Engine Support Log
  - Media Server Support Log
  - BEP Server Support Log
  - Java Server Support Log
  - Administration Console Support Log

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**Note** Support logs will only exist if, under the advice of Technical Support, you are running Backup Exec in debug mode.

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- ◆ **About Administration Console.** Displays version and build information for the Backup Exec software installed on the local workstation. You can also retrieve information about your local workstation by selecting this option, and then selecting **System info**.

Backup Exec also features context-sensitive online help. When <F1> is pressed on either the Administration Console or the Administration Console for NetWare, the information that appears in the help window relates directly to the part of the software you are using. Help is also available on many of the Administration Console's dialog boxes by clicking **Help**.



# Understanding Backup Exec

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This section introduces you to Backup Exec for NetWare, a high-performance data management solution for Novell networks.

*Understanding Backup Exec* includes the following topics:

Section	Describes
<a href="#">“Introducing Backup Exec”</a> on page 2	Features of Backup Exec for NetWare, editions available, and additional options that are available.
<a href="#">“How Backup Exec Works”</a> on page 4	How Backup Exec works, what the major components are, and how these components work together.
<a href="#">“Understanding the Administration Console”</a> on page 6	How the Java-based user interface works and the look and functions of this user interface.
<a href="#">“The Backup Exec Assistant and Wizards”</a> on page 23	What the Backup Exec Assistant is, what Assistants and wizards are available, and how the wizards work.
<a href="#">“Understanding the Administration Console for NetWare”</a> on page 25	How the server-based user interface works and the look and functions of this user interface.
<a href="#">“Features and Benefits”</a> on page 27	Features included in this release and the benefits of Backup Exec.



## Introducing Backup Exec

Backup Exec provides fast, reliable network backup of NetWare server volumes, workstations drives, and non-volume objects associated with both servers and workstations (such as NDS and registries). The Administration Console, a Java™ based user interface, allows you to access your NetWare server from a Windows workstation.

There is also an Administration Console for NetWare. The Administration Console for NetWare, a server-based user interface, is designed for use:

- ◆ If you have client connectivity problems or prefer not to use the Java-based user interface.
- ◆ When troubleshooting with VERITAS technical support.
- ◆ During disaster recovery.

The Administration Console for NetWare does not have some of the Administration Console's advanced features, such as reports and wizards.

## Available Editions

Backup Exec is available in licensing configurations to accommodate networks of all sizes. The available editions include:

- ◆ *Backup Exec for NetWare Server Edition.* Protects one media server and all DOS; Windows 95, 98, Me, NT, 2000, and XP; Unix; Linux; and Macintosh workstations attached to that server. If you want to use Backup Exec with multiple media servers, additional copies of Backup Exec are required.

The Server Edition supports unlimited stand-alone drives and one single-drive robotic library. Backup Exec's Library Expansion Option, which is purchased separately, provides support for multi-drive robots. You must purchase a Library Expansion Option for each additional robot or robot drive that you intend to use.

- ◆ *Backup Exec for NetWare QuickStart Edition.* Protects one media server with one storage device attached. In the QuickStart Edition, you will be able to see options that are available only in the Server edition; however, you will not be able to access these options. The online documentation and help included with this product describe these options in detail, so you can determine the ideal Backup Exec for NetWare solution for your network environment when you are ready to upgrade.

Support for additional NetWare servers; Windows 2000, NT, and XP Professional servers; databases; open files; and other options can be purchased separately (see "[Additional Backup Exec Options](#)" on page 3), and Backup Exec can be configured to work with additional software applications (see "[Additional Software Supported by Backup Exec](#)" on page 3).

## Additional Backup Exec Options

You can add the following options to your Backup Exec configuration:

- ◆ *Backup Exec Remote Agent for NetWare.* This option is required to back up remote NetWare servers across a network.
- ◆ *Backup Exec Remote Agent for Windows NT and Windows 2000.* This agent allows you to perform backup and restore operations on Windows NT and Windows 2000 systems as well as Windows XP Professional systems that are connected to a network. This agent also allows Backup Exec for NetWare to support the Backup Exec for Windows NT and Windows 2000 Open File Option.
- ◆ *Library Expansion Option.* This option provides single-drive and multi-drive robotic library support for Backup Exec. Without this option, Backup Exec for NetWare supports only a single drive in a single library. To support multiple single-drive libraries or a multi-drive library, the Library Expansion Option must be purchased for each additional drive you want to support. With this option, maximum benefits are obtained from libraries, including devices that have bar code readers and portals.
- ◆ *Intelligent Disaster Recovery Option.* This option provides a fast, automated method of restoring local or remote NetWare 4.x or 5.x servers in their entirety.
- ◆ *Open File Option.* This option allows you to safely and completely back up files in use without having to lock files during the backup.
- ◆ *SAN Shared Storage Option.* This option supports the sharing of secondary storage devices that are connected to a storage area network (SAN) rather than physically connected to a single server.

## Additional Software Supported by Backup Exec

Backup Exec can be configured to work with other software applications, including:

- ◆ *Novell NetWare Cluster Services.* Allows Backup Exec to protect data on the cluster volumes by backing up and restoring data stored on any node in the cluster.
- ◆ *Novell Management Portal Utility Plug-In.* Allows you to monitor the status of your Backup Exec servers remotely from any web browser.
- ◆ *Tape Alert and Hewlett Packard OpenView Software.* Allows Backup Exec to support Tape Alert plug-ins for Hewlett Packard's OpenView SNMP Management Consoles and HP's OpenView for Windows and Unix programs.





## How Backup Exec Works

Backup Exec allows you to protect your network resources, perform utility functions, or restore data to your protected resources using the Administration Console that can run on Windows XP, Windows 2000, Windows NT, Windows Me, Windows 98, and Windows 95 systems.

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**Note** The Administration Console for NetWare, a server-based Administration Console, is also provided for those users who have client connectivity problems and as an interface to use during disaster recovery. The Administration Console for NetWare does not have some of the Administration Console's advanced features, such as reports and wizards. For more information about the Administration Console for NetWare, see "[Understanding the Administration Console for NetWare](#)" on page 25.

---

From the Administration Console, you launch backup, restore, and utility operations, called *jobs*. The jobs are processed by the job engine, which runs on the *media server*, the server to which media devices are connected.

The Administration Console also allows you to:

- ◆ Configure default options for your media server.
- ◆ Manage your devices and media.
- ◆ View scheduled and active jobs.
- ◆ Obtain histories of completed jobs.
- ◆ View catalog data.
- ◆ Run reports.

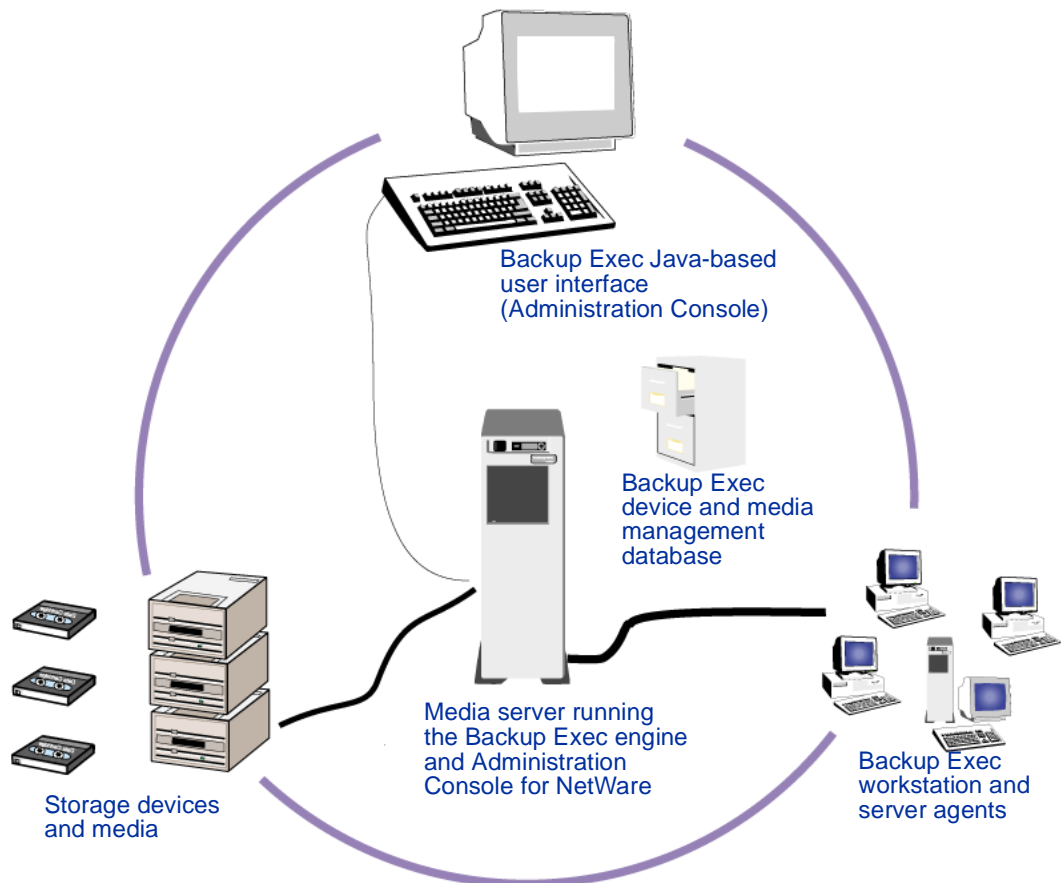
By allowing policy-based backups, Backup Exec lets you save all backup job settings, except for files and target devices, as a *policy*, and apply this policy to specific resources, simplifying the creation of new backup jobs. From either the Administration Console or the Administration Console for NetWare, you can submit jobs for workstations running the Backup Exec Agent software, monitor jobs as they are running, and determine what jobs are scheduled to run.

When a job is completed, you can view the *job log*, a report of what happened during the processing of the job, and the *catalog*, the record of the data that was backed up.

If an error is encountered during job processing, the media server provides an error message to help you determine the cause of the error.

Policy, job schedule, job log, partition, and device and media management databases are maintained on the media server. Information from these databases is used in various reports you generate from the Administration Console.

## How Backup Exec Works



## Administrators and Users

There are three user levels for Backup Exec access:

- ◆ *NetWare supervisors* have full rights to Backup Exec.
- ◆ *Users* can submit operations for their own workstations and other volumes to which they have sufficient rights. Certain Backup Exec functions are available only to Administrators, and appear only in the Administration Console or Administration Console for NetWare when you are attached to the media server under an account that has Backup Exec Administrator or NetWare supervisory status.

Administrators can view all jobs, access all job logs, and view all backup policies. Users can view only their jobs, job logs for their jobs, and their backup policies.

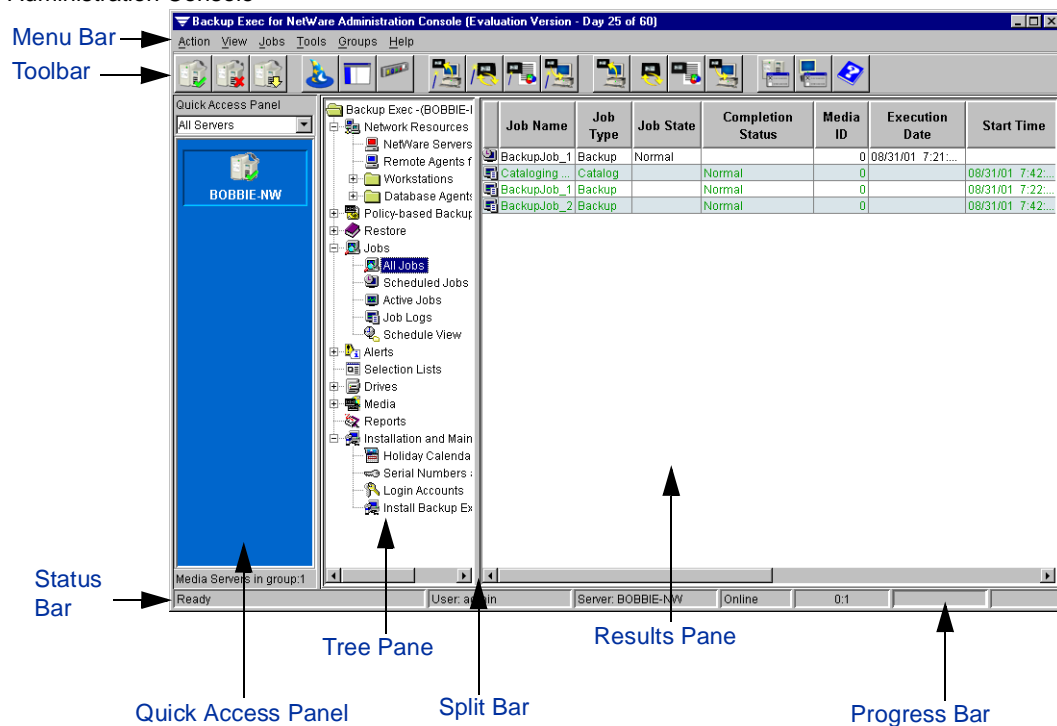


## Understanding the Administration Console

The Administration Console consists of three panes (or panels), a menu bar, a toolbar, a status bar, and a progress bar.

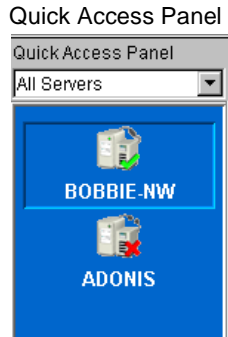
The left pane is called the *quick access panel*, the center pane is called the *tree pane*, and the right pane is called the *results pane*. The tree and results panes can be resized by clicking and holding down the left mouse button on the vertical split bar separating the two panes, and then moving the split bar to the left or right.

Administration Console



## Using the Quick Access Panel

To the left of the tree pane is the *quick access panel*, which allows you to select the server group to manage.



When you first start the Administration Console, you must provide the name of the media server, a valid user name and password for accessing the server, and the name of the server group to which this server is to be added. The default server group name is **All Servers**.

You can add additional servers to a group or create another server group to manage by using the **Connect to media server** option.

For each server added to a server group, a shortcut icon is created in the quick access panel, which allows you to quickly switch the server you are managing. For more information about groups, also refer to “[Using the Groups Menu](#)” on page 14 and “[Working with Server Groups](#)” on page 281.

### ▼ To connect to a media server or add a new server group:

1. From the Administration Console, click **Action**.
2. Click **Connect**.

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**Tip** You can also click the **Connect to a Media Server** icon from the Administration Console toolbar, or right-click inside the quick access panel and select **Connect**.

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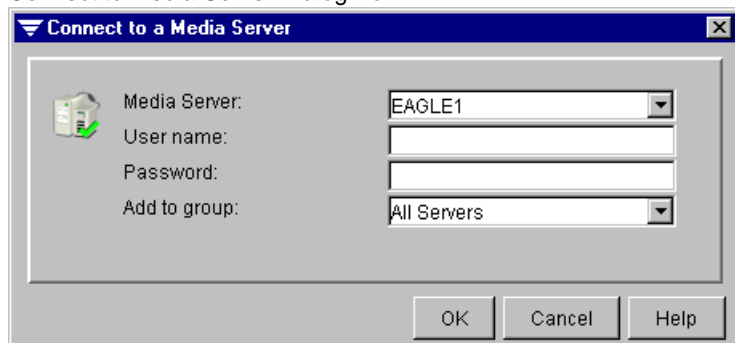
3. Enter information in the Connect to a Media Server dialog box. Options for this dialog box are described in “[Connect to a Media Server Options](#)” on page 8.
4. Click **OK**.



## Connect to a Media Server Options

The Connect to a Media Server dialog box allows you to establish a network connection with the media server you want to manage. With Backup Exec, you can log on as an administrator or as a user (see “[Administrators and Users](#)” on page 5).

Connect to Media Server Dialog Box



This dialog box contains the following options:

- ◆ **Media server.** Enter a media server name or select the media server you want to manage from the drop-down list.
- ◆ **User name.** Enter the user name that allows access this server.
- ◆ **Password.** Enter the password that allows access to this server.
- ◆ **Add to group.** Enter a name for this server group or select a name from the drop-down list.

You can also add a new group or edit an existing group (see “[Working with Server Groups](#)” on page 281).

## Using the Toolbar and Menu Bar

Above the tree and results panes are the console toolbar and menu bar, which allow you to access commands used in the user interface. From the toolbar, you access the commands, or operations, by clicking the appropriate icon.

Toolbar



### Customizing the Toolbar

You can customize your toolbar, selecting the icons you want, the order in which you want the icons to appear, and whether you want small or large icons to display.

#### ▼ To customize your toolbar:

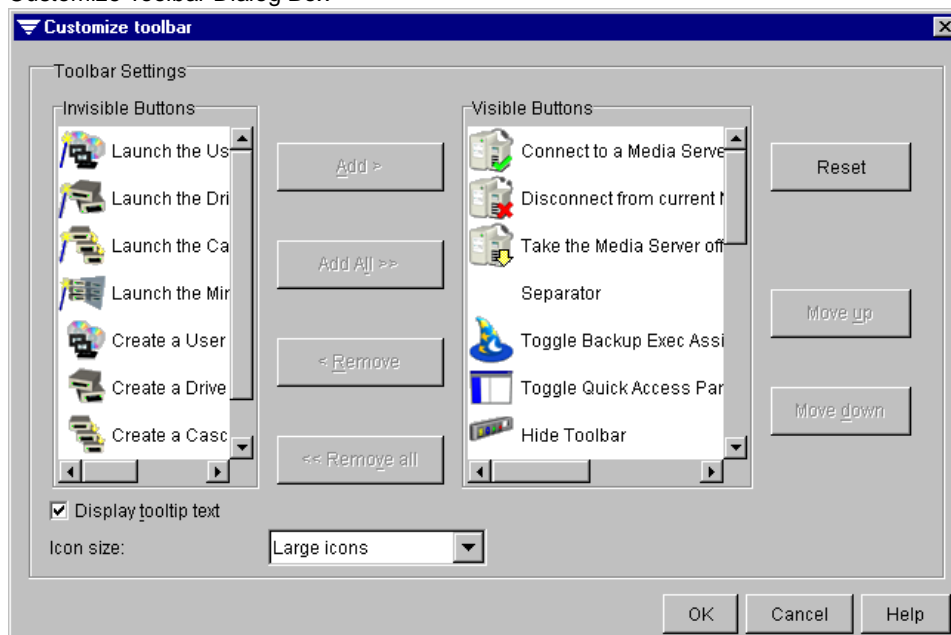
1. From the Administration Console, right-click any area of the toolbar *not* containing an icon.
2. Click **Customize**.
3. Complete options on the Customize Toolbar dialog box. Options are described in “[Customize Toolbar Dialog Box](#)” on page 10.
4. After you have made all the changes you want, click **OK**.



## Customize Toolbar Dialog Box

The Customize Toolbar dialog box allows you to select which icons you want displayed on the toolbar.

### Customize Toolbar Dialog Box



Options on this dialog box are:

- ◆ **Invisible Buttons.** Displays all icons that can appear on the toolbar and provides a brief description of what each icon means.
- ◆ **Add.** Click this button to add an icon selected in the **Invisible Buttons** list to the **Visible Buttons** list.
- ◆ **Add All.** Click this button to add all icons in the **Invisible Buttons** list to the **Visible Buttons** list.
- ◆ **Remove.** Click this button to remove a selected icon from the **Visible Buttons** list.
- ◆ **Remove all.** Click this button to remove all icons from the **Visible Buttons** list.
- ◆ **Visible Buttons.** Displays the icons currently selected to appear on the toolbar.
- ◆ **Reset.** Click to reset the toolbar to the defaults provided when Backup Exec was first installed.
- ◆ **Move up.** Moves a selected icon up in the **Visible Buttons** list. This determines the order in which icons display on the toolbar.

- ◆ **Move down.** Moves a selected icon down in the **Visible Buttons** list. This determines the order in which icons display on the toolbar.
- ◆ **Display tooltip text.** Select this option if you want tooltip text to appear when the cursor is over an icon.
- ◆ **Icon size.** Select whether you want small or large icons to appear in the toolbar.

## Available Menus and Menu Options

From the menu bar, you can click the appropriate menu to view the drop-down list of menu options.

Menu Bar

Action View Jobs Tools Groups Help

Available menus include:

- ◆ **Action** (see [“Using the Action Menu”](#) on page 11)
- ◆ **View** (see [“Using the View Menu”](#) on page 12)
- ◆ **Jobs** (see [“Using the Jobs Menu”](#) on page 12)
- ◆ **Tools** (see [“Using the Tools Menu”](#) on page 13)
- ◆ **Groups** (see [“Using the Groups Menu”](#) on page 14)
- ◆ **Help** (see [“Using the Help Menu”](#) on page 15)

## Using the Action Menu

The **Action** menu includes the following options:

- ◆ **Connect.** Use this option to connect to another media server or to create a new media server group (see [“Using the Quick Access Panel”](#) on page 7 and [“Working with Server Groups”](#) on page 281).
- ◆ **Disconnect.** Use this option to disconnect from the media server.
- ◆ **Pause.** Use this option to take the media server offline. If the server is already paused, this option will be unavailable.
- ◆ **Resume.** Use this option to place the media server online. If the server is already online, this option will be unavailable.
- ◆ **Exit.** Use this option to exit the Administration Console.





## Using the View Menu

The **View** menu includes the following options:

- ◆ **View Backup Exec Assistant.** Select this option to display or hide the Backup Exec Assistant (see “[The Backup Exec Assistant and Wizards](#)” on page 23).
- ◆ **View Toolbar.** Select this option to display or hide the toolbar (see “[Using the Toolbar and Menu Bar](#)” on page 9).
- ◆ **View Quick Access Panel.** Select this option to display or hide the quick access panel (see “[Using the Quick Access Panel](#)” on page 7).
- ◆ **Refresh.** Select this option to refresh the screen view.

A check mark appears beside an option selected for display.

### ▼ To display or hide an Administration Console component:

- ❖ From the **View** menu, click the item you want to display or hide.

## Using the Jobs Menu

Use the **Jobs** menu to perform many of Backup Exec operations, including launching backup, restore, media rotation, and utility jobs.

Options available from the **Jobs** menu include:

- ◆ **Backup.** Select this option to create a backup job.
- ◆ **Media Rotation.** Select this option to create a media rotation job.
- ◆ **Policy.** Select this option to create a policy.
- ◆ **Restore.** Select this option to create a restore job.
- ◆ **Utilities.** Select this option to display available utilities that can be performed on media or drives. Utilities include:
  - **Inventory** (see “[Performing Inventory on Media in a Drive](#)” on page 302)
  - **Clean** (see “[Cleaning the Device](#)” on page 304)
  - **Catalog** (see “[Cataloging Media in a Drive](#)” on page 307)
  - **Erase** (see “[Erasing Media in a Drive](#)” on page 309)
  - **Retension** (see “[Retensioning Media](#)” on page 312)
  - **Eject** (see “[Ejecting Media from a Drive](#)” on page 314)
  - **Rewind** (see “[Rewinding Media](#)” on page 315)
  - **Verify** (see “[Verifying the Media](#)” on page 316)

- **Initialize** (see [“Initializing a Robot”](#) on page 491)
- **Scan** (see [“Scanning the Robot’s Memory”](#) on page 491)
- **Import** (see [“Importing Media”](#) on page 492)
- **Export** (see [“Exporting Media”](#) on page 494)

## Using the Tools Menu

Use the **Tools** menu to search catalogs; create a user media set; create normal, cascaded, or mirrored drive pools; set default options for the Administration Console and media server; and launch the Backup Exec wizards.

Options available from the **Tools** menu include:

- ◆ **Include Subdirectories.** Select this option to include subdirectories in backup, restore, or media rotation jobs when the parent node is selected.
- ◆ **Search Catalogs.** Select this option to search for a single file or group of files to restore from the list of files included in each backup. (For more information, see [“Searching a Catalog”](#) on page 139.)
- ◆ **User Media Set.** Select this option to create a user-defined media set. (For more information, see [“Using Media Operations”](#) on page 375.)
- ◆ **Drive Pool.** Select this option to create a normal drive pool. (For more information, see [“Performing Drive Pool Operations”](#) on page 329.)
- ◆ **Cascaded Drive Pool.** Select this option to create a cascaded, or chained, drive pool. (For more information, see [“Using Cascaded Drive Pools”](#) on page 337.)
- ◆ **Mirrored Drive Pool.** Select this option to create a mirrored drive pool, which can be used to create multiple copies of backups without creating multiple backup jobs. (For more information, see [“Using Mirrored Drive Pools”](#) on page 343.)
- ◆ **Scan for Devices.** Select this option to have Backup Exec scan for all devices connected to the media server (see [“Scan for Devices”](#) on page 318).
- ◆ **Options.** Select this option to set default options for the Administration Console and media server. (For more information see, [“Configuring Backup Exec”](#) on page 239.)
- ◆ **Wizards.** Select this option to view a list of available Backup Exec wizards (see [“The Backup Exec Assistant and Wizards”](#) on page 23). Wizards include:
  - **Startup Wizard.** Guides you through the setting of default options for your media server. Allows you to start the Intelligent Disaster Preparation process and launch the inventory of your drives.
  - **Intelligent Disaster Recovery Wizard.** Guides you through Intelligent Disaster Recovery preparation.



- **Backup Job Wizard.** Guides you through the creation of a backup job.
- **Media Rotation Wizard.** Guides you through the creation of a media rotation job.
- **Policy Wizard.** Guides you through the creation of a backup policy.
- **Restore Job Wizard.** Guides you through the creation of a restore job.
- **User Media Set Wizard.** Guides you through the creation of a user media set.
- **Drive Pool Wizard.** Guides you through the creation of a normal drive pool.
- **Cascaded Drive Pool Wizard.** Guides you through the creation of a cascaded drive pool.
- **Mirrored Drive Pool Wizard.** Guides you through the creation of a mirrored drive pool.

## Using the Groups Menu

Use the **Groups** menu to change the appearance of server groups in the quick access panel, to change the group being accessed from the Administration Console, and to perform maintenance activities on groups.

Options available from the **Groups** menu include:

- ◆ **Small icons.** Select this option to have small icons appear for the servers in the quick access panel. Using small icons allows you to display a larger number of servers inside the quick access panel.
- ◆ **Large icons.** Select this option to have large icons appear for the servers in the quick access panel.
- ◆ **Add new group.** Select this option to create a new server group to manage from the Administration Console.
- ◆ **Edit groups.** Select this option to edit server groups.
- ◆ **All Servers.** Select this option to perform maintenance on the default server group. Operations include:
  - **Select group.** Select this option to select another server group.
  - **Rename group.** Select this option to rename the server group.
  - **Remove group.** Select this option to remove this server group from the list of server groups managed by the Administration Console.

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**Note** If the default server group has been renamed, **All Servers** will be replaced by the new name for the group. Also, any additional groups created will appear below the default server group in the **Groups** menu. You can perform maintenance on a server group by pointing to that group and then selecting the option you want from the menu that appears.

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For more information about managing groups, see [“Using the Quick Access Panel”](#) on page 7 and [“Working with Server Groups”](#) on page 281.

## Using the Help Menu

When you click **Help** on the Administration Console menu bar, a drop-down menu containing additional options appears. These options include:

- ◆ **Administration Console Help.** Displays the Help window for Backup Exec for NetWare’s Administration Console.
- ◆ **View Readme.** Displays the Backup Exec Readme.html file.
- ◆ **Tip of the Day.** Displays key information, or tips, on how to maximize the use of the Administration Console.
- ◆ **VERITAS on the Web.** Displays the VERITAS Technical Support web site address.
- ◆ **View Diagnostics.** Allows you to view the following:
  - Media Engine Support Log
  - Media Server Support Log
  - BEP Server Support Log
  - Java Server Support Log
  - Administration Console Support Log

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**Note** Support logs will only exist if, under the advice of Technical Support, you are running Backup Exec in debug mode.

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- ◆ **About Administration Console.** Displays version and build information for the Backup Exec software installed on the local workstation. You can also retrieve information about your local workstation by selecting this option, and then selecting **System info** (see [“Viewing Administration Console Properties”](#) on page 288).

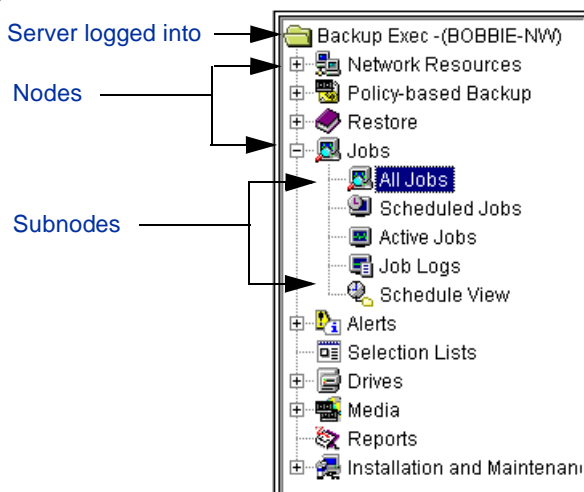


## Using the Tree Pane

The tree pane uses a tree hierarchy to display elements of the Backup Exec system. Each element, or *node*, contains associated elements, or *subnodes*, which help define the node. For example, Backup Exec has a node named **Jobs**. The **Jobs** node owns subnodes called **All Jobs**, **Scheduled Jobs**, **Active Jobs**, **Job Logs**, and **Schedule View**. These subnodes are used to organize and differentiate between the job views. The **Jobs** node can be expanded to display the subnodes by either double-clicking **Jobs** or by clicking the plus sign (+).

Right-clicking each of the nodes or subnodes displays a shortcut menu that allows you to perform tasks on each section.

Tree Pane



### Backup Exec - (<Server Name>)

At the top of the tree pane is a node named **Backup Exec - (<Server Name>)**. This is the primary node of the Administration Console, and identifies the media server you are logged on to. To log on to another media server, select another server from the **Server Groups** list in the quick access panel (see “[Using the Quick Access Panel](#)” on page 7 or “[Working with Server Groups](#)” on page 281), or from the **Action** menu, select **Connect**. You can also select the **Connect** icon from the toolbar.

## Network Resources

The **Network Resources** node is used to select the resources you want to protect. The **Network Resources** node includes the following subnodes that contain the resources detected by the media server:

- ◆ **NetWare Servers.** All NetWare servers that can be backed up or restored to are contained in this subnode.
- ◆ **Remote Agents for NT/2000.** All Windows NT, Windows 2000, and Windows XP Professional servers and workstations that can be backed up or restored are contained in this subnode.
- ◆ **Workstations.** All workstations hosting a Backup Exec agent and that can be protected by Backup Exec are contained in this subnode.
- ◆ **Database Agents.** All databases protected by a Backup Exec database agent, such as the Agent for Oracle Server on Novell NetWare, are contained in this subnode.

## Policy-based Backup

The **Policy-based Backup** node contains a subnode called **Policy Definitions**. All backup policies can be accessed through this subnode.

## Restore

The **Restore** node is used to initiate Backup Exec restore operations. The **Restore** node contains a subnode **Catalogs**, which displays a view of all catalogs created by backup operations that can be used for restore and verify operations. You can also access the Restore Wizard through the Restore node's results pane (see "[The Backup Exec Assistant and Wizards](#)" on page 23).

## Jobs

The **Jobs** node contains listings of all jobs submitted to the media server and a log of the results of processed jobs. Subnodes contained under the **Jobs** node are:

- ◆ **All Jobs.** By default, this subnode lists all scheduled and active Backup Exec jobs submitted to the job queue from the media server you are currently logged on to, as well as all job logs. Job types include backup, restore, verify, and utility operations. You can select to hide scheduled jobs, active jobs, or job logs by right-clicking **All Jobs**, and then clicking one or more of the options. For example, if you do not want to display job logs, right-click **All Jobs**, and then click **View Job Logs**.



**Note** Users can view only the jobs they have created; administrators can view all jobs or only the jobs they have created. For users, the jobs they created appear when **All jobs** is selected; for administrators, all jobs created for the server being monitored appear. For more information about how Backup Exec handles users and administrators, see “[Administrators and Users](#)” on page 5.

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- ◆ **Scheduled Jobs.** The **Scheduled Jobs** subnode lists all jobs currently scheduled to run at the media server. These scheduled jobs can include backup, restore, verify and utility operations. Any jobs not yet running will appear here.
- ◆ **Active Jobs.** Jobs being processed are listed in the **Active Jobs** subnode. These jobs can include backup, restore, verify, and utility operations.
- ◆ **Job Logs.** Results, or histories, of all jobs that completed processing are available under this subnode.
- ◆ **Schedule View.** A calendar-based view of all jobs and the **Holiday Calendar** option are available under this subnode. For more information, see “[Using the Schedule View](#)” on page 202 and “[Defining a Holiday](#)” on page 213.

## Alerts

Information about events that need your attention appear under the **Alerts** node in the following subnodes:

- ◆ **Active Alerts.** This subnode includes messages for alerts that require operator intervention. For more information, see “[Viewing Active Alerts](#)” on page 216.
- ◆ **Alert Logs.** Historical and response information about Backup Exec alerts appear under this subnode. For more information, see “[Viewing Alert Logs](#)” on page 220.

## Selection Lists

You can choose devices, directories, and files that you want to back up and save these choices as *selection lists*. The **Selection Lists** node allows you to quickly view the selection lists you have created.

## Drives

The **Drives** node allows you to view:

- ◆ Physical robots and stand-alone drives attached to your media server.
- ◆ Drive pools or partitions that contain these devices.

All groupings of physical drives are displayed under **Drive Pools**, **Cascaded Drive Pools**, and **Mirrored Drive Pools**. (Cascaded drive pools and mirrored drive pools are displayed under the server because they act as a single device under the server.)

From the **Drives** node, you can run device operations, perform utility operations on the media in the drives, and perform utility operations on robots. If you are in the partition management mode, you can create and modify partitions through the **Drives** node. Cascaded and mirrored partitions appear under partitions.

## Media

From the **Media** node, you can display:

- ◆ **All Media.** This subnode contains all the media that has been introduced into Backup Exec.
- ◆ **System Media.** This subnode contains all system media sets, which are sets containing blank media, retired media, and media already containing data that has been introduced to the system. System media includes scratch, foreign, imported, and retired media.
- ◆ **User Media Sets.** This subnode contains all media that has been assigned to media sets either manually or as a result of the execution of jobs. Through this subnode, overwrite protection specifications are set.
- ◆ **Media Rotation Sets.** This subnode contains all media rotation sets that have been created as a result of the execution of media rotation jobs.

## Reports

The **Reports** node contains a list of reports that can be accessed to gain specific information about your Backup Exec operations. Available reports include:

- ◆ **Completed Jobs - 1 Day.** Lists all jobs that have run in the past day.
- ◆ **Completed Jobs - 7 Days.** Lists all jobs that have run in the past seven days.
- ◆ **All Completed Jobs.** Lists all completed jobs.
- ◆ **Failed Jobs - 1 Day.** Lists all jobs that failed in the past day.
- ◆ **Failed Jobs - 7 Days.** Lists all jobs that failed in the past seven days.
- ◆ **Job Queue Status.** Lists all jobs in the job queue. Jobs are arranged by status.
- ◆ **Policy Definitions.** Lists details about each backup policy that has been created.
- ◆ **Policy Usage.** Lists all backup policies and the resources being protected by these policies.





- ◆ **Protected Resources.** Lists protected resources and the policies protecting these resources.
- ◆ **Media.** Lists details about all media known to the media server.
- ◆ **Recently Written Media - 1 Day.** Lists media that have been modified within the past day.
- ◆ **Device Summary.** Lists all devices and statistics for these devices.
- ◆ **Robot Inventory.** Lists the slot inventory of each attached robot.

## Installation and Maintenance

The **Installation and Maintenance** node includes the following subnodes:

- ◆ **Holiday Calendar.** Provides access to the holiday calendar feature (see [“Defining a Holiday”](#) on page 213).
- ◆ **Serial Numbers and Options.** Allows you to view the serial numbers and options installed on the media server being monitored.
- ◆ **Login Accounts.** Allows you to update passwords used to perform backup and restore operations.
- ◆ **Install Backup Exec.** Launches Backup Exec installation. Use this link if you want to install additional serial numbers or options.



## Using the Results Pane

The results pane and the tree pane work together. When a node in the tree pane is selected, either details about the selected node or the Backup Exec Assistant, a taskpad of wizards available for that node, appear in the results pane. For example, selecting **Policy-based Backup** displays the Policy Backup Assistant and the wizards available for performing policy-based backup operations, such as creating a policy definition (see “[The Backup Exec Assistant and Wizards](#)” on page 23).

Selecting **Reports** in the tree pane displays all reports that are available in Backup Exec in the results pane. Right-clicking non-wizard items in the results pane displays shortcut menus offering various commands and options.

You can also customize the results pane for some subnodes, selecting which columns will display as well as the order in which they will appear. Use **Hide Column** if you want to remove some of the columns. Use **Customize** if you want to remove some columns, select additional columns to display, or change the order of the columns.

### ▼ To hide a column:

1. On the Administration Console’s results pane, right-click the heading of the column you want to hide.
2. Click **Hide Column**.

### ▼ To fully customize the results pane view:

1. On the Administration Console’s results pane, right-click a column heading.
2. Click **Customize**.
3. Complete options on the Customize Column Visibility dialog box. Options are described in “[Customize Column Visibility Dialog Box](#)” on page 22.
4. Click **OK**.

---

**Tip** You can change the order of columns in the results pane by clicking on the column you want to move, and then while holding down the mouse button, drag the column to the area where you want it to appear.

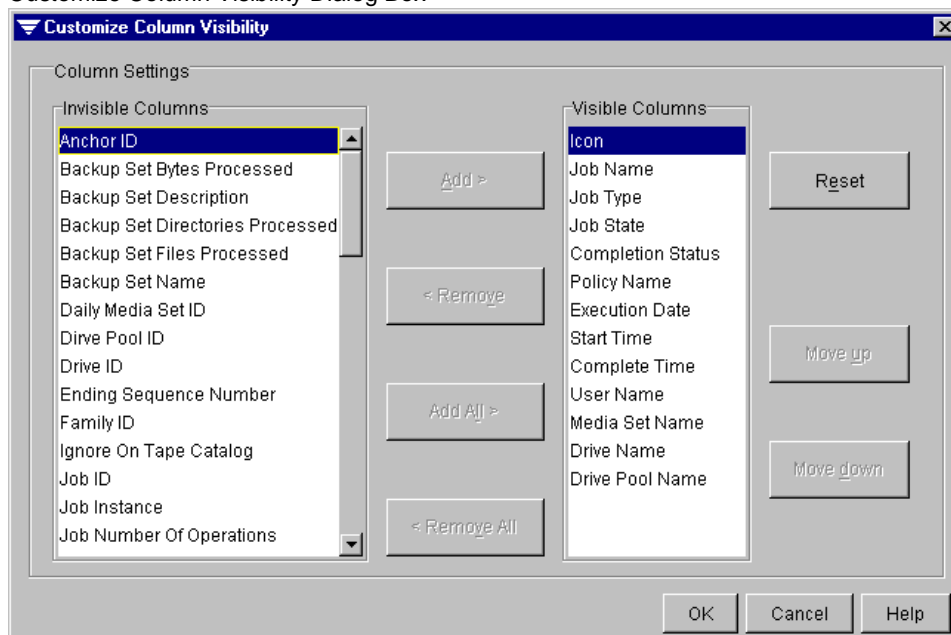
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## Customize Column Visibility Dialog Box

The Customize Column Visibility dialog box allows you to select which columns will appear in the results pane for a node or subnode.

Customize Column Visibility Dialog Box



Options on this dialog include:

- ◆ **Invisible Columns.** Displays columns that will not appear on the results pane. To display a column, select the column from this list, and then click **Add**.
- ◆ **Visible Columns.** Displays columns that appear on the results pane. To remove a column from the results pane, select the column from this list and then click **Remove**.
- ◆ **Add.** Click to add a selected column to the list of **Visible Columns**.
- ◆ **Remove.** Click to remove a selected column from the list of **Visible Columns**.
- ◆ **Add All.** Click to add all **Invisible Columns** to the **Visible Columns** list.
- ◆ **Remove All.** Click to remove all **Visible Columns**.
- ◆ **Reset.** Click to reset the list of **Visible Columns** to the defaults set by Backup Exec.
- ◆ **Move up.** Click to move a selected column up in the **Visible Columns** list. This determines the order in which columns display in the results pane.
- ◆ **Move down.** Click to move a selected column down in the **Visible Columns** list. This determines the order in which columns display in the results pane.

## The Backup Exec Assistant and Wizards

Backup Exec provides the Backup Exec Assistant and wizards to assist you in performing Backup Exec operations from the Administration Console.

When the Administration Console is first started, the **Startup Wizard** launches. This wizard guides you through setting default options for your media server. Backup Exec will use these default settings unless you elect to change the options when creating jobs. The Startup Wizard also allows you to start the Intelligent Disaster Preparation process and launch the inventory of your drives.

The Backup Exec Assistant, which is active by default, can be toggled on or off by selecting **View Backup Exec Assistant** from the **View** menu found on the Administration Console's menu bar.

Different assistants appear in the results pane when you select different nodes in the tree pane. From these assistants, you can launch wizards that guide you through various Backup Exec operations, such as creating a policy definition or a backup job. All wizards can be launched from the Backup Exec Assistant, which appears when the node **Backup Exec <Server Name>** is selected.

The following table displays the wizards available from each node.

### Node Locations of Wizards

Node Name	Available Wizards
<b>Backup Exec &lt;Server Name&gt;</b>	Launch the Backup Job Wizard Launch the Policy Wizard Launch the Restore Job Wizard Launch the User Media Set Wizard Launch the Drive Pool Wizard Launch the Cascaded Drive Pool Wizard Launch the Mirrored Drive Pool Wizard Launch the Media Rotation Wizard Launch the Startup Wizard Launch the Intelligent Disaster Recovery Wizard Launch the Installation Program
<b>Network Resources</b>	Launch the Backup Job Wizard Launch the Media Rotation Wizard



Node Locations of Wizards (continued)

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<b>Node Name</b>	<b>Available Wizards</b>
<b>Policy-based Backup</b>	Launch the Backup Job Wizard Launch the Media Rotation Wizard Launch the Policy Wizard
<b>Restore</b>	Launch the Restore Job Wizard
<b>Drives</b>	Launch the Drive Pool Wizard Launch the Cascaded Drive Pool Wizard Launch the Mirrored Drive Pool Wizard
<b>Media</b>	Launch the User Media Set Wizard
<b>Installation and Maintenance</b>	Launch the Startup Wizard Launch the Intelligent Disaster Recovery Wizard Launch the Installation Program

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## Understanding the Administration Console for NetWare

The Administration Console for NetWare that appears on the media server contains a status bar and a menu bar on the top of the screen and a list of available actions for this media server on the bottom of the screen. The status bar allows you to quickly determine if your media server is online.

Administration Console for NetWare



You can use several keys, which are displayed in the following table, to navigate through the software.

Key	Function
<Arrows>	Allows you to navigate through the menus.
<Esc>	Exits to the previous menu.
<Enter>	Begins the highlighted menu action or shows the available options.
<Spacebar>	Selects subdirectories, files, or options.
<F2>	Accepts selections.

Most functions in Backup Exec have shortcut key commands that allow you to perform operations without scrolling through the menus.



## Using the Menu Bar

The menu bar on the Administration Console for NetWare contains six menus:

- ◆ **Administration.** Use this menu to view jobs, job logs, and alerts, or to exit the Administration Console for NetWare.
- ◆ **Media.** Use this menu to view the media and media sets associated with the media server being monitored. You also can define new media sets, move media from one media set to another, and select to view all data available for restore from either a catalog or volume-based view.
- ◆ **Jobs.** Use this menu to launch a backup, restore, media rotation, or utility job, or to create a policy.
- ◆ **Drives.** Use this menu to view your drive pool, robot, stand-alone drives, or partitions. Through this menu's options you can also manage the storage devices attached to the media server by performing tasks such as deleting devices, pausing or resuming devices, creating drive pools, and scanning for devices.
- ◆ **Options.** Use this menu to change defaults for the Administration Console for NetWare or the media server, or to view, add, or delete serial numbers for the media server or agents.
- ◆ **About.** Use this menu to obtain information about the version and build of Backup Exec loaded on your server and view diagnostic files.

To display a menu, use the arrow keys to move the cursor over the menu name.

Selecting a menu item may display another menu or a dialog box. For example, selecting **Utilities** from the **Jobs** menu displays the **Utilities** menu. However, selecting **Policy** from the **Jobs** menu displays the Backup Policies dialog box.

In some cases, a dialog box may include a set of options that correspond with the tabs on a dialog box appearing in the Java-based Administration Console. For example, the Create Policy dialog box on the Administration Console for NetWare contains a list of options that match the tabs on the Create New Policy dialog box appearing in the Java-based Administration Console. Selecting an option, and then pressing <Enter> displays a dialog box similar to what appears on the Java-based Administration Console if you click the corresponding tab.

## Features and Benefits

This release of Backup Exec offers many features and benefits as described in the following table.

### Features and Benefits

Feature	Benefit
<b>User-friendly Administration Console</b>	A Java-based Administration Console offers you the flexibility of managing your media server remotely from a system running the Java Runtime Environment. Features of the Administration Console include the use of nodes and subnodes, right mouse button context menus, tabbed property pages, and wizards for common operations.
<b>User-friendly Administration Console for NetWare</b>	For those users who prefer to manage their server from a server console, the Administration Console for NetWare combines many of the features and functions formerly included in the Job Manager and NetWare Client in an easy to use, menu-based interface.
<b>NetWare 6.x support</b>	Backup Exec protects your media and remote servers running NetWare versions 6.x, 5.x, and 4.x.
<b>Backing up and restoring Windows 2000 and Windows XP systems</b>	The media server can now back up Microsoft Windows 2000 and Windows XP Professional systems and restore data through the use of the Remote Agent for Windows NT/2000.
<b>Policy-based backup</b>	You can now store all settings for a job, with the exception of the file selections and target device, in a policy that can be reused to protect multiple network resources.
<b>Enhanced device management</b>	Device management simplifies how you organize and allocate the storage devices attached to your media server. You can select the media management mode, in which your storage devices are organized in physical and logical units called drive pools, or you can elect to use the more traditional partition management mode, in which you can assign one or more drives to a partition for processing jobs by type (backup, restore, etc.). For more information about the two management modes, see <a href="#">“Managing Devices in Backup Exec”</a> on page 286.
<b>Robust media management</b>	Backup Exec automates the tasks of categorizing and tracking media as it is used. To ensure that media is not accidentally overwritten, Backup Exec allows you to set the criteria for overwrite and append jobs.





Features and Benefits (continued)

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<b>Feature</b>	<b>Benefit</b>
<b>Enhanced media overwrite protection</b>	Two different levels of media overwrite protection are available, depending on whether you choose to use the media management mode or the partition management mode. With the traditional partition management mode, overwrite protection periods are assigned to the partition. With the media management mode, overwrite protection is associated with the media.
<b>Creating of utility jobs</b>	Creating utility jobs, such as cleaning a drive on a robot or cataloging media, is now permitted.
<b>Multiple catalog views</b>	Backup Exec now provides the ability to choose a catalog-based (tape) view or a volume-based (device) view of the data that has been backed up.

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# Installing Backup Exec

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This section provides detailed information on how to install Backup Exec and additional options on your NetWare media server, how to install the Remote Agent for NetWare and additional options on your remote server, and how to install the Administration Console on your local Windows workstation.

*Installing Backup Exec for NetWare* includes the following topics:

Section	Describes
<a href="#">“Installation Overview”</a> on page 30	An overview of the Backup Exec installation process.
<a href="#">“Requirements”</a> on page 31	The hardware and software requirements for installing and running Backup Exec.
<a href="#">“Installing All Serialized Backup Exec Software”</a> on page 33	The steps for installing all Backup Exec software components.
<a href="#">“Installing to the Media Server Only”</a> on page 40	The steps for installing only the media server component software.
<a href="#">“Installing to Remote Servers Only”</a> on page 43	The steps for installing only the remote server software.
<a href="#">“Installing the Administration Console to the Local System”</a> on page 46	The steps for installing only the Administration Console to the local workstation.
<a href="#">“Installing Backup Exec Options”</a> on page 48	What additional options can be installed to either the media or remote servers.
<a href="#">“Starting Backup Exec for NetWare on the Media Server”</a> on page 50	The steps for starting Backup Exec on the media server and launching the Administration Console for NetWare.



Section	Describes
<a href="#">“Starting the Administration Console” on page 55</a>	The steps for launching the Administration Console from the local Windows workstation.
<a href="#">“Installing Windows 95/98/Me, Unix, and Macintosh Agents” on page 57</a>	The steps for installing and configuring the agents that allow Backup Exec to back up and restore Windows 95/98/Me, Unix, and Macintosh systems.
<a href="#">“Uninstalling the Administration Console” on page 72</a>	The steps for removing the Administration Console from your local workstation.
<a href="#">“Uninstalling Backup Exec from a NetWare Server” on page 72</a>	The steps for removing Backup Exec from the media server using the system console.
<a href="#">“Uninstalling Backup Exec Using a Windows Workstation” on page 73</a>	The steps for using a Windows workstation to remove Backup Exec from the media server.

## Installation Overview

The Backup Exec for NetWare installation is performed from a Windows workstation and allows you to install:

- ◆ Backup Exec and licensed options to your media server.
- ◆ Licensed agents and options to the remote systems you want to protect.
- ◆ A user interface and additional options to your local Windows workstation.

Or, you can install only specific components. For example, you can run the installation process and install only the Administration Console, the Java-based user interface, to a Windows workstation.

If you want to install all Backup Exec and options software, see [“Installing All Serialized Backup Exec Software” on page 33](#).



## Requirements

This version of Backup Exec for NetWare includes the following three components:

- ◆ Media server
- ◆ Remote servers
- ◆ Administration Console

The media server is the only component that must be installed. However, without the remote server component, you cannot protect remote NetWare servers, and without the Java-based Administration Console, you will need to use the Administration Console for NetWare, the server-based user interface, to administer Backup Exec.

### Media Server Requirements

The following are the minimum requirements for installing Backup Exec to the NetWare media server:

- ◆ Novell NetWare 4.2x or later.
- ◆ 8 MB RAM over server requirements.
- ◆ 30 MB disk space.
- ◆ Compatible tape device and controller.
- ◆ Java Run-Time Environment (JRE) version 1.1.7b or later must be installed and loaded if you want to run the Java-based Administration Console from your media server.
- ◆ LONG name space should be added to the volume where the Backup Exec files will be installed. LONG name space must be installed and loaded for log files and for running the Java-based Administration Console from your media server.
- ◆ IP Protocol must be installed and configured correctly.

### Media Server Memory Requirements

Backup Exec requires a minimum of 8MB of memory over NetWare system requirements. The amount of memory required increases as additional tape devices are added.

#### ▼ To verify that you have sufficient memory:

1. At the server console, type:  
`load MONITOR.NLM.`
2. Press <Enter>.



3. Select the menu option **Resource Utilization**, or if using NetWare 5.x, select **System Resources**.

The window at the top of the screen will change to *Server Memory Statistics*. At the end of the Cache Buffers line, a percentage number appears. This number should be above 65%. A number below 65% can result in various problems.

To increase this number, unload some other NLMs that may be using memory, or add more memory (RAM) to the system. During initialization, Backup Exec's SureStart module will check the available memory and display a warning when cache buffers are below 65%. Backup Exec will not load if cache buffers are below 40%.

## Remote Server Requirements

The following are the minimum requirements for installing the Remote Agent for NetWare and additional options to the remote server:

- ◆ Novell NetWare 4.2x or later.
- ◆ 8 MB RAM over server requirements.
- ◆ 14 MB disk space.
- ◆ IP Protocol must be installed and configured correctly.

Because the media server requires only compatible versions of certain Novell system files, all other servers targeted for Backup Exec operations must also use the same updated Novell files. These files allow the media server to communicate effectively with all remote servers.

Like support packs for like versions of NetWare are required. For example, all NetWare 4.2 systems must be running the same support packs.

## Administration Console Requirements

The following are minimum requirements for installing the Administration Console:

- ◆ Windows 95/98/Me/NT/2000/XP Professional.
- ◆ 64 MB RAM.
- ◆ 30 MB disk space.
- ◆ IP Protocol must be installed and configured correctly.
- ◆ Minimum desktop area of 1024 X 768 pixels.

## Installing All Serialized Backup Exec Software

Backup Exec for NetWare is installed to the NetWare server remotely from a Windows workstation. You can also install the Remote Agent for NetWare and additional options to remote servers and the Java-based Administration Console and additional options to the local Windows workstation. Before starting this installation, refer to “[Requirements](#)” on page 31 to ensure your components meet the minimum system requirements needed.

### ▼ To install Backup Exec:

1. Insert the installation CD into the local system’s CD-ROM drive.
2. From the installation CD browser, select **Backup Exec Installation**.
3. Select **Start Backup Exec Installation**.  
The Welcome window appears.
4. Click **Next** to proceed with the installation.  
The Software License Agreement appears.
5. After reading this information, select **I accept the terms of the license agreement**, and then click **Next**.
6. From the Select Components window, select **Serialized install**.

---

**Note** If you are installing an evaluation copy of Backup Exec or any of its options, select **Evaluation Install** and select only the components you want to install.

---

7. Select all of the components you want to install at this time. Options are:
  - **NetWare Media Server**. Select this option to install Backup Exec for NetWare and additional options to the NetWare server that will be the media server.
  - **NetWare Remote Server**. Select this option to install the Remote Agent for NetWare to NetWare servers you want to protect through the media server and if you want to install additional options to a remote NetWare server.

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**Note** The Backup Exec Remote Agent for NetWare or the Backup Exec Remote Agent for Windows NT and 2000 must be installed on the systems being protected by the Open File Option.

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- **Local Workstation**. Select this option to install the Administration Console and additional options to your local system.



8. Click **Next**.
9. Select the components you want to install on your media server. Options include:
  - **Backup Exec.** Select this option to install Backup Exec for NetWare on your media server. All Backup Exec program files and agent modules for Windows 95/98/Me, Macintosh, and Unix systems will be installed.
  - **Open File Option.** Select this option if you have purchased and want to install the Open File Option. This option allows you to safely and completely back up files in use without having to lock files when a backup operation is performed.
  - **SAN Shared Storage Option.** Select this option if you have purchased and want to install the SAN Shared Storage Option. This option supports the sharing of secondary storage devices that are not directly connected to a single server but, as an example, could be attached to a Fibre Channel network, a high speed storage network in which all devices are linked together in a switched Fibre Channel network.
  - **Library Expansion Option.** Select this option if you have purchased and want to install the Library Expansion Option. This option provides single-drive and multi-drive robotic library support for Backup Exec. A Library Expansion Option is not required for the first drive in a robotic library. For each additional robot drive you want to use, whether for a multiple drive robot or for multiple single drive robots, you must purchase and install a licensed copy of the Library Expansion Option. In a shared storage environment, shared drives require only one Library Expansion Option per drive. The Library Expansion Option must be purchased for each additional robot drive you want to support. With this option, maximum benefits are obtained from libraries, including devices that have bar code readers and portals.
  - **Intelligent Disaster Recovery.** Select this option if you have purchased and want to install the Intelligent Disaster Recovery option. This option provides a fast and automated method of restoring a NetWare server in its entirety.
  - **NetWare Management Portal Plug-in.** Select this option if you want to install the NetWare Management Portal Plug-in. With the Backup Exec plug-in, you can monitor your NetWare 5.1 or later media servers remotely from any web browser.
  - **Administration Console for NetWare.** This option is selected by default to automatically activate the Administration Console for NetWare on the server's startup. The Administration Console for NetWare is a user interface that operates on the server and can be used instead of the Java-based Administration Console to create and manage your Backup Exec jobs. If you do not want to have this user interface started automatically, clear this option.

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**Note** You must have valid serial numbers for all options that are selected. If you have not purchased options such as the **Open File Option**, **Library Expansion Option**, or **SAN Shared Storage Option**, you should clear these options before continuing with the installation procedures.

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10. After selecting the components you want to install, click **Next**.
11. Select the NetWare system that will serve as your media server.
  - a. If the system appears in the list of **Available Servers**, select the server and click the right arrow key to move the server to the **Destination Systems** list.
  - b. If you want to add an additional system that does not appear in the list, click **Manually add additional systems**, and then type the name of the system.
12. Click **Next**.
13. If you are not already connected to the media server, click the **server** icon, enter the Administrator user name and password for accessing the media server, and then click **Connect**.
14. Click **Next**.
15. Enter all serial numbers for Backup Exec and the options being installed, clicking **Add** as each serial number is typed.
16. After all serial numbers have been entered, click **Next**.

---

**Note** If you do not meet the minimum system requirements for the components being installed, a message will appear. You can click **OK**, and then click **Cancel** if you want to stop the installation procedures and install the latest patches or service packs. Or, you can click **OK** and proceed with the installation for those components that can be installed at this time.

---





17. Select the media handling mode you want the media server to use, and then click **Next**.

---

**Note** This version of Backup Exec can use the traditional **Partition Management Mode**, in which overwrite protection periods are set for a partition, or the **Media Management Mode**. The **Media Management Mode**, which is new in this release, provides a more robust media overwrite protection that is set for individual media rather than the partition the media resides in. Also with the **Media Management Mode**, you can specify append and overwrite periods. For more information about the differences between the two modes, see “[Media Management Mode vs. Partition Management Mode](#)” on page 286.

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18. If you want to manage the media server using the Administration Console running on a remote Windows system, ensure the **Administration Console support** option is selected, and then click **Next**.

This option is selected by default to automatically enable communications between the media server and the local workstation where the Administration Console is being installed. If you do not want to use the Administration Console to create and manage your Backup Exec jobs, clear this option.

19. Verify the settings that have been selected for the media server. To change settings, click **Back** and reselect. If you are satisfied with the selected settings, click **Next**.
20. Click **Yes** if you want Backup Exec to load automatically when the server starts; otherwise, click **No**.
21. If you are installing to a remote server, select the remote server components you want to install. Options include:
  - **Remote Agent for NetWare**. Select this option to install the Backup Exec Remote Agent for NetWare. The Remote Agent must be installed to all remote systems being protected by the Backup Exec for NetWare Open File Option.
  - **Open File Option**. Select this option if you have purchased and want to install the Open File Option to this remote server.
  - **Intelligent Disaster Recovery**. Select this option if you have purchased and want to install the Intelligent Disaster Recovery option to this remote server. This option provides a fast and automated method of restoring a NetWare server in its entirety.
22. Click **Next**.
23. Select the systems where you want to install the remote server files.

- a. If the system appears in the list of **Available Servers**, select the server and click the right arrow key to move the server to the **Destination Systems** list.
  - b. If you want to add an additional system that does not appear in the list, click **Manually add additional systems**, and then type the name of the system.
24. Click **Next**.
25. If you are not already connected to the remote server, click the **server** icon, enter the Administrator user name and password for accessing the remote server, and then click **Connect**.
26. Click **Next**.
27. Enter all serial numbers for the remote server, and then click **Next**.
28. If setup was unable to detect the IP Address for the remote server, you will need to manually enter it, and then click **Next**.
29. Verify the settings that have been selected for the remote server. To change settings, click **Back** and reselect. If you are satisfied with the selected settings, click **Next**.  
You will be able to monitor the progress of the remote server installation.
30. Click **Yes** if you want Backup Exec to load automatically when the server starts; otherwise, click **No**.
31. Select the media server that will protect the remote server.
  - a. If the system appears in the list of **Available Servers**, select the media server and click the right arrow key to move the server to the **Destination Systems** list.
  - b. If you want to add an additional system that does not appear in the list, click **Manually add additional systems**, and then type the name of the media server.
32. Click **Next**.
33. If you are not already connected to the media server, click the **server** icon, enter the Administrator user name and password for accessing the media server, and then click **Connect**.
34. Click **Next**.
35. If you are installing to more than one remote server, repeat step 28 through step 35.



- 36.** If you are installing Backup Exec software to this local workstation, select the local workstation components. Options include:
- **Administration Console.** This option installs the Java-based user interface and JRE to this local system. Before the Administration Console can access your media server, Backup Exec for NetWare version 9.0 must be installed and running on the NetWare server. (For information on starting Backup Exec, see “[Starting Backup Exec for NetWare on the Media Server](#)” on page 50.)
  - **Backup Exec for NetWare Documentation.** This option installs an electronic copy of the Backup Exec for NetWare Administrator’s Guide to this local workstation.
  - **Remote Agent for Windows NT/2000.** This option installs the Remote Agent for Windows NT/2000 on your local workstation, which allows you to back up this local workstation from your media server.
  - **Open File Option.** This option installs the Open File Option for Windows NT/2000 to the local workstation provided you have purchased this option. This option is not displayed if you are installing to a Windows 95, Windows 98, or Windows Me system.

**37.** Click **Next**.

**38.** If you are installing the **Remote Agent for Windows NT/2000** or **Open File Option** to a Windows server, enter a serial number, and then click **Next**.

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**Note** If you are installing the **Remote Agent for Windows NT/2000** to a Windows workstation, you will not be prompted for a serial number.

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**39.** Ensure the correct installation path is selected for the Administration Console to be installed on your workstation, and then click **Next**.

**40.** Ensure the program folder where you want the Backup Exec program icons to be added is selected, and then click **Next**.

**41.** If you are installing the **Remote Agent for Windows NT/2000**, you must enter the IP address if Backup Exec was unable to detect it. If Backup Exec detects an IP address, verify that this is the IP address for your local system.

**42.** Verify the settings that have been selected for the local workstation. To change settings, click **Back** and reselect. If you are satisfied with the selected settings, click **Next**.

You can monitor the status of the local workstation installation.

**43.** If you are installing the Remote Agent for Windows NT/2000, select the NetWare server that will protect the remote server.



- a. If the system appears in the list of **Available Servers**, select the media server and click the right arrow key to move the server to the **Destination Systems** list.
- b. If you want to add an additional system that does not appear in the list, click **Manually add additional systems**, and then type the name of the media server.

44. Click **Next**.

45. If you are not already connected to the media server, click the **server** icon, enter the Administrator user name and password for accessing the media server, and then click **Connect**.

46. Click **Next**.

---

**Note** If you are installing the **Administration Console**, you will be notified that the IP addresses for the servers you want to communicate with must be included in the local workstation's Hosts file. For steps on adding the IP address to the Hosts file, see "[Starting the Administration Console](#)" on page 55.

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47. Click **Next**.

48. Click **Finish** to view the readme and complete the installation.

You are now ready to use Backup Exec. For information about starting this application, see "[Starting the Administration Console](#)" on page 55.



## Installing to the Media Server Only

If you want to install only Backup Exec and additional options to your media server, use the following procedures to install Backup Exec remotely from a Windows 95/98/Me/NT/2000/XP Professional system.

▼ **To install Backup Exec and additional options to the media server:**

1. Insert the installation CD into the local system's CD-ROM drive.
2. From the installation CD browser, select **Backup Exec Installation**.
3. Select **Start Backup Exec Installation**.  
The Welcome window appears.
4. Click **Next** to proceed with the installation.  
The Software License Agreement appears.
5. After reading this information, select **I accept the terms of the license agreement**, and then click **Next**.
6. From the Select Components window, select **Serialized install**.

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**Note** If you are installing an evaluation copy of Backup Exec or any of its options, select **Evaluation Install** and select only the components you want to install.

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7. Select **NetWare Media Server**, and then click **Next**.
8. Select the components you want to install on your media server. Options include:
  - **Backup Exec**. Select this option to install Backup Exec for NetWare on your media server. All Backup Exec program files and agent modules for Windows 95/98/Me, Macintosh, and Unix systems will be installed.
  - **Open File Option**. Select this option if you have purchased and want to install the Open File Option. This option allows you to safely and completely back up files in use without having to lock files during the backup.
  - **SAN Shared Storage Option**. Select this option if you have purchased and want to install the SAN Shared Storage Option. This option supports the sharing of secondary storage devices that are not directly connected to a single server but, as an example, could be attached to a Fibre Channel network, a high speed storage network in which all devices are linked together in a switched Fibre Channel network.

- **Library Expansion Option.** Select this option if you have purchased and want to install the Library Expansion Option. This option provides single-drive and multi-drive robotic library support for Backup Exec. A Library Expansion Option is not required for the first drive in a robotic library. For each additional robot drive you want to use, whether for a multiple drive robot or for multiple single drive robots, you must purchase and install a licensed copy of the Library Expansion Option. In a shared storage environment, shared drives require only one Library Expansion Option per drive. The Library Expansion Option must be purchased for each additional drive you want to support. With this add-on option, maximum benefits are obtained from libraries, including devices that have bar code readers and portals.
- **Intelligent Disaster Recovery.** Select this option if you have purchased and want to install the Intelligent Disaster Recovery option. This option provides a fast and automated method of restoring a NetWare server in its entirety.
- **NetWare Management Portal Plug-in.** Select this option if you want to install the NetWare Management Portal Plug-in. With the Backup Exec plug-in, you can monitor status of your Backup Exec servers remotely from any web browser.
- **Administration Console for NetWare.** This option is selected by default to automatically activate the Administration Console for NetWare on the server startup. The Administration Console for NetWare is a user interface that operates on the server and can be used instead of the Java-based Administration Console to create and manage your Backup Exec jobs. If you do not want to have this user interface started automatically, clear this option.

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**Note** You must have valid serial numbers for all options that are selected. If you have not purchased options such as the Open File Option, Library Expansion Option, or SAN Shared Storage Option, you should clear these options before continuing with the installation procedures.

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9. After selecting the components you want to install, click **Next**.
10. Select the NetWare system that will serve as your media server.
  - a. If the system appears in the list of **Available Systems**, select the server and click the right arrow key to move the server to the **Destination Systems** list.
  - b. If you want to add an additional system that does not appear in the list, click **Manually add additional systems**, and then type the name of the system.
11. Click **Next**.



12. If you are not already connected to the media server, click the **server** icon, enter the Administrator user name and password for accessing the media server, and then click **Connect**.
13. Click **Next**.
14. Enter all serial numbers for Backup Exec and the options being installed, clicking **Add** as each serial number is typed.
15. After all serial numbers have been entered, click **Next**.
16. Ensure the volume and path for where you want to install Backup Exec on your server are selected, and then click **Next**.

---

**Note** If your system does not meet the minimum requirements for the components being installed, a message appears. To stop the installation procedures and install the latest patches or service packs, click **OK**, and then click **Cancel**. Or, you can click **OK** and proceed with the installation for those components that can be installed at this time.

---

17. Select the media handling mode you want the media server to use.

---

**Note** This version of Backup Exec can use the traditional **Partition Management Mode**, in which overwrite protection periods are set for a partition, or the **Media Management Mode**. The **Media Management Mode**, which is new in this release, provides a more robust media overwrite protection that is set for individual media rather than the partition the media resides in. Also with the **Media Management Mode**, you can specify append and overwrite periods. For more information on media handling modes, see “[Media Management Mode vs. Partition Management Mode](#)” on page 286.

---

18. If you want to manage the media server using the Administration Console running on a remote Windows system, ensure the **Administration Console support** option is selected, and then click **Next**.

This option is selected by default to automatically enable communications between the media server and the local workstation where the Administration Console is being installed. If you do not want to use the Administration Console to create and manage your Backup Exec jobs, clear this option.

19. Verify the settings that have been selected for the media server. To change settings, click **Back** and reselect. If you are satisfied with the selected settings, click **Next**.

You can monitor the status of the media server installation.

20. Click **Finish** to view the readme and complete the installation.

For information about starting this application, see “[Starting the Administration Console](#)” on page 55.

## Installing to Remote Servers Only

If you want to install the Remote Agent for NetWare or additional options to a remote server, use the following procedures to install remotely from a Windows 95/98/Me/NT/2000/XP Professional system.

### ▼ To install to a remote server:

1. Insert the installation CD into the local system’s CD-ROM drive.
2. From the installation CD browser, select **Backup Exec Installation**.
3. Select **Start Backup Exec Installation**.  
The Welcome window appears.
4. Click **Next** to proceed with the installation.  
The Software License Agreement appears.
5. After reading this information, select **I accept the terms of the license agreement**, and then click **Next**.
6. From the Select Components window, select **Serialized install**.

---

**Note** If you are installing an evaluation copy of Backup Exec or any of its options, select **Evaluation Install** and select only the components you want to install.

---

7. Select **NetWare Remote Server**, and then click **Next**.
8. Select the components you want to install on your media server. Options include:
  - **Remote Agent for NetWare**. Select this option to install the Backup Exec Remote Agent for NetWare. The Remote Agent must be installed to all remote systems being protected by the Backup Exec for NetWare Open File Option.





- **Open File Option.** Select this option if you have purchased and want to install the Open File Option to the remote server.
  - **Intelligent Disaster Recovery.** Select this option if you have purchased and want to install the Intelligent Disaster Recovery option to the remote server. This option provides a fast and automated method of restoring a NetWare server in its entirety.
9. Click **Next**.
  10. Select the systems where you want to install the remote server files.
    - a. If the system appears in the list of **Available Systems**, select the server and click the right arrow key to move the server to the **Destination Systems** list.
    - b. If you want to add an additional system that does not appear in the list, click **Manually add additional systems**, and then type the name of the system.
  11. Click **Next**.
  12. If you are not already connected to the media server, click the **server** icon, enter the Administrator user name and password for accessing the media server, and then click **Connect**.
  13. Enter the serial number for the Remote Agent or options.
  14. Click **Next**.
  15. Ensure the volume and path for where you want to install Backup Exec for NetWare on your remote server are selected, and then click **Next**.
  16. If setup is not able to detect the IP Address for the remote server, you will need to manually enter it, and then click **Next**.
  17. Verify the settings that have been selected for the remote server. To change settings, click **Back** and reselect. If you are satisfied with the selected settings, click **Next**.

You will be able to monitor the progress of the remote server installation.
  18. Click **Yes** if you want Backup Exec to load automatically when the server starts; otherwise, click **No**.
  19. Select the NetWare server that will protect the remote server.

- a. If the system appears in the list of **Available Systems**, select the media server and click the right arrow key to move the server to the **Destination Systems** list.
  - b. If you want to add an additional system that does not appear in the list, click **Manually add additional systems**, and then type the name of the media server.
20. Click **Next**.
21. If you are not already connected to the media server, click the **server** icon, enter the Administrator user name and password for accessing the media server, and then click **Connect**.
22. Click **Next**.
23. If you are installing to more than one remote server, repeat step 13 through step 22.
24. Click **Finish** to view the readme and complete the installation.

You can now protect your remote server with Backup Exec.



## Installing the Administration Console to the Local System

JRE and the Java-based Administration Console can be installed to a Windows workstation, provided one of the following operating system versions is installed on the workstation:

- ◆ Windows 95
- ◆ Windows 98
- ◆ Windows Me
- ◆ Windows NT 4.0
- ◆ Windows 2000
- ◆ Windows XP Professional

Before you can use the Administration Console to access the media server, however, Backup Exec for NetWare version 9.0 must be installed on the media server (see [“Installing All Serialized Backup Exec Software”](#) on page 33 or [“Installing to the Media Server Only”](#) on page 40).

### ▼ To install the Administration Console to the local workstation:

1. Insert the installation CD into the local system’s CD-ROM drive.
2. From the installation CD browser, select **Backup Exec Installation**.
3. Select **Start Backup Exec Installation**.  
The Welcome window appears.
4. Click **Next** to proceed with the installation.  
The Software License Agreement appears.
5. After reading this information, select **I accept the terms of the license agreement**, and then click **Next**.
6. From the Select Components window, select **Serialized install**.
7. Select **Administration Console**.  
You can also select to install **Backup Exec for NetWare Documentation**.
8. Click **Next**.
9. Ensure the correct installation path for the Administration Console to be installed on your workstation is selected, and then click **Next**.



10. Ensure the program folder where you want the Backup Exec program icons to be added is selected, and then click **Next**.
11. Verify the settings that have been selected for the local workstation. To change settings, click **Back** and reselect. If you are satisfied with the selected settings, click **Next**.

You can monitor the status of the local workstation installation.

If you are installing the **Administration Console**, you will be notified that the IP addresses for the servers you want to communicate with must be included in the local workstation's Hosts file.

12. Click **Next**.
13. Click **Finish** to view the readme and complete the installation.

You are now ready to use Backup Exec. For information about starting this application, see "[Starting the Administration Console](#)" on page 55.



## Installing Backup Exec Options

Backup Exec provides several options to ensure complete protection of your network data. Among these are options that:

- ◆ Enhance protection of data on the media server (see [“Installing Options on the Media Server”](#) on page 48).
- ◆ Ensure protection of your NetWare remote servers (see [“Installing Options to NetWare Remote Servers”](#) on page 49).
- ◆ Allow you to fully protect your Windows NT, Windows 2000, and Windows XP Professional systems through your NetWare media server (see [“Installing Options on a Windows Server or Workstation”](#) on page 49).

### Installing Options on the Media Server

From your local Windows workstation, you can install the following Backup Exec options remotely to your media server:

---

**Note** Serial numbers are required for all of the following options except the NetWare Management Portal Plug-in.

---

- ◆ Open File Option
- ◆ SAN Shared Storage Option
- ◆ Library Expansion Option
- ◆ Intelligent Disaster Recovery
- ◆ NetWare Management Portal Plug-in

For detailed steps on installing any of these additional options to the media server, see [“Installing to the Media Server Only”](#) on page 40.

## Installing Options to NetWare Remote Servers

You can install the following options to a NetWare remote server, provided you have the required serial numbers:

- ◆ Remote Agent for NetWare
- ◆ Open File Option
- ◆ Intelligent Disaster Recovery

For detailed steps on installing any of these remote server options, see [“Installing to Remote Servers Only”](#) on page 43.

## Installing Options on a Windows Server or Workstation

You can install the following Backup Exec options locally to a Windows workstation or server, provided you have the required serial numbers:

- ◆ Remote Agent for Windows NT and Windows 2000
- ◆ Open File Option

The Remote Agent for Windows NT and Windows 2000 must be installed if you are installing Open File Option on a Windows server or workstation.

For information about the Open File Option, refer to *VERITAS Backup Exec for Windows NT and Windows 2000 Open File Option*, which came with your Backup Exec for Windows NT and Windows 2000 documentation.



## Starting Backup Exec for NetWare on the Media Server

The Administration Console for NetWare is the user interface that runs on the media server.

### ▼ To start the Administration Console for NetWare:

1. From your system console prompt, type:

**bestart**

The BESTART command executes the SureStart Initialization utility.

2. Press <Enter>.

---

**Note** If BESTART is included in the AUTOEXEC.NCF file, the Administration Console for NetWare will automatically load when the system starts.

---

When logging in to the SureStart Initialization utility, you must provide a *fully distinguished* and *typeless* name, such as `.admin.novell`.

A fully distinguished, or complete, name consists of different object types, such as common name (CN), Organizational Unit (OU) objects, and Organization (O) objects. When the abbreviations for these objects are *not* included as part of the object's complete name, the naming is referred to as a typeless name. For more information about complete, partial, typeful, or typeless names, refer to your Novell NetWare documentation.

After starting Backup Exec on the media server, you can start the Administration Console on the local workstation.

## SureStart

SureStart is a concept using BKUPEXEC.NLM with built-in intelligence for loading Backup Exec and all required components to the media server. Other housekeeping steps are performed during startup, including NDS account management and trustee assignments. This module automatically detects mismatched NLMs or NLMs that have known compatibility problems.

SureStart performs several necessary startup tasks, including:

- ◆ Notifying you when the product fails to load due to a missing module.
- ◆ Notifying you during insufficient memory situations, such as not enough RAM for cache or tape buffers.
- ◆ Making the required trustee assignments to various system paths.
- ◆ Creating, validating, and maintaining the Backup Exec system account.

- ◆ Loading all NetWare OS patches required by Backup Exec.
- ◆ Alerting you when outdated or incompatible NLM versions are encountered.
- ◆ Updating existing Backup Exec databases to the format needed by this version of Backup Exec

SureStart is automatically loaded when the BESTART command is executed.

## SureStart Initialization Procedure

The startup procedure for Backup Exec consists of the following steps:

- ◆ Initialize Product.
- ◆ Initialize NDS.
- ◆ Check schema extensions.
- ◆ Create account.
- ◆ Check system integrity.
- ◆ Check available cache memory.
- ◆ Check available tape buffer memory.
- ◆ Determine if an upgrade is required and automatically start BEUPGRAD.NLM.
- ◆ Load and verify NLMs.

## Automatic Upgrading from Earlier Versions

The SureStart module automatically detects that a prior version of Backup Exec was installed, and invokes the upgrade utility (BEUPGRAD.NLM).

Your Backup Exec for NetWare 8.x and 7.x databases will automatically be upgraded for you the first time Backup Exec is loaded on the media server.

The upgrade utility converts old databases and jobs to the new format required by Backup Exec. If any errors occur during the update process, they are logged to the BEUPGRAD.LOG file in `SYS:BKUPEXEC`, and a corresponding alert is generated within the SureStart module to call your attention to this situation. If Backup Exec for NetWare 5.x partition management databases are encountered, they cannot be upgraded but their contents will be dumped to the BEUPGRAD.LOG file. The BEUPGRAD.LOG file can be printed to help you redefine your partitions.





## Restarting the SureStart Startup Module (BKUPEXEC)

BKUPEXEC.NLM remains in memory while all Backup Exec components are loaded. This is required in order to support using BESTART.NCF to load the product, even if part of the product is still in memory. For example, if you exit the Administration Console for NetWare with <Ctrl + X>, and then type BESTART at the system console, BKUPEXEC will be loaded re-entrantly. It will pick up and load the required NLMs to restart Backup Exec on the media server.

## SureStart Command Line Switches

BKUPEXEC uses command line switches to determine how to load Backup Exec. The installation program creates the BESTART.NCF file with the appropriate switches specified to BKUPEXEC. However, in some instances, you may need to add, change, or delete the switches for a certain situation. Following are switches that can be used:

### Command Line Switches

---

Switch	Description
-A<A>	This switch is used to specify the use of an ASPI-compliant controller.
-D<Y >	-DY should only be specified if the controller supports DMA above 16 MB. Not all PCI and EISA controllers support DMA above 16MB. The -DY parameter makes it appear as if they do.
-S	-S is used to load the driver in synchronous mode (AD_ASPI only).

---

## Command Line Switches (continued)

Switch	Description
-T<B C J L N O P R Z >	<p>-T is used to specify the component to load. There are 10 supported types:</p> <ul style="list-style-type: none"> <li>-TB loads the BEPSVR only (for troubleshooting only).</li> <li>-TC loads the client.</li> <li>-TJ loads the Java components.</li> <li>-TL loads the media server.</li> <li>-TN loads the NRLTLI only (for troubleshooting only).</li> <li>-TO loads the Open File Option</li> <li>-TP loads the Management Portal Plug-in.</li> <li>-TR loads the remote backup engine.</li> <li>-TZ loads the Novell SMS components only.</li> </ul> <p>The -TL and -TC commands may be combined when loading BKUPEXEC. This is useful for automatically loading the Job Manager and the NetWare client when you start your server.</p> <p>-TR overrides all other switches. If -TR is used, the server will function only as a remote server.</p>
-B	-B forces the use of BECDM as the ASPI manager. This is the default if no switch is provided.
-N	-N forces the use of NWASPI as the NWPA Interface Layer (ASPI manager).
!Q	!Q deletes the job queue. Using this switch deletes all jobs.



Command Line Switches (continued)

---

Switch	Description
-V<B I M V>	<p>-V is used to enable specialized device support modes or override the validation of specific parts of the load process.</p> <p>-VB disables virtual bus mode for the controller.</p> <p>-VI is required to support older ADIC 1200 loaders that only have the ability to set one SCSI ID.</p> <p>-VM overrides validating memory requirements. When the -VM switch is used, a warning message will not appear if the server does not have enough memory to properly run Backup Exec or outdated system NLMs encountered.</p> <p>-VV overrides validating NLM versions.</p> <p>Loading Backup Exec with insufficient memory or with incompatible system NLMs can result in unpredictable Backup Exec performance.</p>
-X[T]	<p>-X overrides autoloading specific NLMs.</p> <p>-XT overrides autoloading NetWare TSAs.</p>

---

| = or    <> = one of    [] optional



## Starting the Administration Console

The Java-based Administration Console allows you to access your media server from a Windows workstation.

You must add the IP address for your media server to the Hosts file on the system you are using for the Administration Console. If you will be accessing multiple media servers from your Administration Console, the IP addresses for each server must be added to the Hosts file. For Windows NT, Windows 2000, and Windows XP systems, the Hosts file is located in your local workstation's system32\drivers\etc directory in the drive where Windows is installed. For Windows 95/98/Me systems, the Hosts file is in the drive and directory where Windows is installed. After updating the Hosts file, you may need to reboot the workstation for this update to take effect.

### ▼ To add your media server's address to the local workstation Hosts file:

1. Open the Hosts file in Notepad.
2. On a blank line, type the IP address of the media server, followed by at least one space, and then the server's name.
3. Save the Hosts file.

---

**Note** The Hosts file should *not* have a file name extension.

---

### ▼ To start the Administration Console:

1. From your Windows workstation, click **Start**.
2. Point to **Programs**, point to **Backup Exec for NetWare**, and then click **Backup Exec Administration Console**.
3. Select or enter the server to which you want the Administration Console to connect, enter the network user name and password, and then click **OK**.

For information about how to use the Administration Console, see "[Understanding the Administration Console](#)" on page 6.

For information about adding a new server group, see "[Using the Quick Access Panel](#)" on page 7.



## Launching the Startup Wizard

The first time the Administration Console is started, the Startup Wizard launches. This wizard guides you through setting default options for your media server and performing some processes, such as performing inventory on your drives. The default options can be changed when creating jobs or by configuring media server options through either the Administration Console or the Administration Console for NetWare (see [“Setting Media Server Options”](#) on page 240). The Startup Wizard aids you in:

- ◆ Setting overwrite protection level. (For more information, see [“Media Options for the Server”](#) on page 249.)
- ◆ Setting preferred overwrite media type. (For more information, see [“Media Options for the Server”](#) on page 249.)
- ◆ Setting Quick Check options. (For more information, see [“Quick Check Options for the Media Server”](#) on page 258.)
- ◆ Setting SMTP options. (For more information, see [“SMTP Options for the Media Server”](#) on page 253.)
- ◆ Setting SNMP options. (For more information, see [“SNMP Options for the Media Server”](#) on page 255.)
- ◆ Setting Broadcast options. (For more information, see [“Broadcast Options for the Media Server”](#) on page 254.)
- ◆ Setting Shared Devices options. (For more information, see [“Shared Devices Options for the Media Server”](#) on page 261.)
- ◆ Starting the IDR preparation. (For more about the IDR preparation process, see [“Pre-Disaster Preparation”](#) on page 568.)
- ◆ Launching the inventory of drives. (For more information, see [“Performing Inventory on Media in a Drive”](#) on page 302.)

## Installing Windows 95/98/Me, Unix, and Macintosh Agents

Installing and running the workstation agent software allows Backup Exec to detect the workstations so files can be backed up. There are two ways to publish workstations for Backup Exec operations:

- ◆ With the agent components included in Backup Exec.
- ◆ With NetWare's SMS Target Service Agents if available for the workstation operating system.

Backup Exec agents are memory resident programs that make workstations running them visible to Backup Exec. With the Backup Exec agents, you can publish directories you want to run on your drives and assign aliases to describe what is being published. You also can assign passwords to restrict the data being published.

Included with Backup Exec are agents for peer-to-peer operations on Windows 95/98/Me, Unix, and Macintosh workstations.

## Requirements for Windows, Unix, and Macintosh Agents

System requirements for the Windows, Unix, and Macintosh agents are described in the following table:

Agent	Requirements
Windows 95/98/Me	486/25 MHz-base system 8 MB RAM 1 MB disk space
Unix	2 MB disk space
Macintosh	System 7.x, 8.x, or 9.x using AppleTalk protocol PowerPC or 68K processor 200 KB disk space



## Installing and Configuring the Windows 95/98/Me Agent

You install the Windows 95/98/Me agent to your workstation using the **Start | Run** option.

### ▼ To install the Windows 95/98/Me agent:

1. On your Windows workstation, ensure a drive letter has been mapped to the media server's SYS volume.
2. Click **Start**, and then click **Run**.
3. Type the drive letter mapped to the media server's SYS volume, followed by `\bkupexec\agents\win_ws\\setup`. For example:

**f : \bkupexec\agents\win\_ws\\setup**

4. Press <Enter>.

---

**Tip** If you are installing from the Backup Exec installation CD, insert the CD into the workstation's CD-ROM drive. Click **Start**, and then select **Run**. Type the CD-ROM's drive letter followed by `\NetWare\agents\win_ws\\setup`, and then press <Enter>.

---

5. Follow the on-screen instructions.
6. When you have completed the instructions, you are prompted to reboot the Windows 95/98/Me workstation. You should reboot the workstation for the agent to run properly.

When the agent is installed, it defaults to publishing all local drives without password protection. Use the Backup Exec Agent Properties dialog box to configure agent options for your Windows 95/98/Me workstation.

### ▼ To change configuration settings:

1. Right-click **Network Neighborhood** on the workstation desktop.
2. Click **Properties**.
3. Double-click the Backup Exec Agent in the network components window.

The Backup Exec Agent Properties dialog box appears. Options for this dialog box are described in "[Backup Exec Agent Properties - General Dialog Box](#)" on page 60 and "[Backup Exec Agent Properties - Protocol Dialog Box](#)" on page 61.

4. To add a published folder:
  - a. From the General dialog box, click **Add**.
  - b. Select a folder to publish, and then click **OK**.
5. To delete a published folder:
  - a. From the General dialog box, select the folder you want to delete from the Published Folders group box.
  - b. Click **Remove**.
6. To view or change access controls:
  - a. From the General dialog box, select the folder.
  - b. Click **Details**.
  - c. From the Folder Details dialog box, click **Requires Password** and enter the new password if you want to control access through the use of a password.
  - d. To limit the folder to backup jobs only, click **Read Only**.
7. To select the protocol the agent will use:
  - a. Click **Protocol**.
  - b. Select the protocol the agent will use. Options include:
    - **SPX/IPX**
    - **TCP/IP**
8. Click **OK**.

After installing and configuring the agent, you must also configure Agent options for the media server (see “[Agents Options for the Media Server](#)” on page 247).





## Backup Exec Agent Properties - General Dialog Box

The General dialog box for Backup Exec Agent Properties includes the following options:

- ◆ **Disable network backup.** Select this option to prevent the agent software from being loaded on system startup. If this option is selected while the agent is running, the agent will be stopped, making the workstation unavailable for backup and restore options.
- ◆ **Enable network backup.** Select this option to enable the Backup Exec Windows 95/98/Me Agent and allow Backup Exec operations to be performed on the workstation.
- ◆ **Computer Name.** Type the name that identifies the agent workstation. Up to 36 alphanumeric characters (including underscores) can be entered.
- ◆ **Password.** Select this option to require a password for backing up or restoring this workstation. When this option is selected, you can enter a password containing up to 32 characters. To change a password, select this option, enter the old password, and then enter the new password.
- ◆ **Display Status Screen.** Select this option to display a window containing agent status and statistics on the current operation. Normally, the Agent Status window is hidden but it can be viewed by clicking the **Backup Exec Agent** icon on the Windows 95/98/Me taskbar.
- ◆ **Allow Registry to be restored.** Select this option to allow the Windows Registry to be restored.
- ◆ **Published Folders.** The following information appears for drives or folders that can be backed up or restored by Backup Exec:
  - **Name.** Name of the drive or folder.
  - **Path.** Path of the drive or folder.
  - **Access Control.** Indicates if access has been restricted by requiring a password (PW) or designating the drive or folder as read only (RO). If access is not restricted, **None** appears in this field.

## Backup Exec Agent Properties - Protocol Dialog Box

The Protocol dialog box for Backup Exec Agent Properties includes the following options:

- ◆ **SPX/IPX.** Select this option if you are using SPX/IPS as the protocol to communicate with Backup Exec.
- ◆ **TCP/IP.** Select this option if you are using TCP/IP as the protocol to communicate with Backup Exec.
- ◆ **Configured Media Servers.** Lists the media servers configured for the selected protocol.

## Installing the Unix Agent

Backup Exec's Unix agent allows Novell NetWare administrators to perform backup and restore operations on Unix workstations connected to the network. The agent supports the following Unix operating system versions:

- ◆ SCO Release 3.x, 3.2x, 4.x
- ◆ SCO Open Server Release 5.0
- ◆ Interactive Release 3.x
- ◆ HP-UX 9.05 or greater, 10.x
- ◆ AIX 3.2.5, 4.1
- ◆ RedHat Linux 5.1, 5.2, 6.0
- ◆ UnixWare 1.0, 1.1, 2.x
- ◆ SunOS Release 4.1x, 5.3, 5.4
- ◆ Solaris (SparcStation) 2.3, 2.4, 2.5
- ◆ Solaris (Intel architecture) 2.4, 2.5
- ◆ Caldera OpenLinux 1.3, 2.2
- ◆ S.u.S.E. Linux 6.0, 6.1

To use the Unix agent, you must:

- ◆ Have ROOT privileges during the installation process.
- ◆ Ensure the Unix workstation has a minimum of .15MB of free hard disk space.

After the installation is complete, you must reboot the Unix workstation.



**Note** Due to differences in terminology and commands among the various versions of Unix supported by Backup Exec for NetWare, it is not possible to cover exact instructions for each version. The information presented here is an example from SCO Unix and is offered as an example only. Consult the documentation for the version of Unix running on the workstation for exact terminology.

---

The Backup Exec Unix Agent is distributed as a .tar format file (be\_agnt.tar). Before installing the agent, this file must be copied to the /tmp directory on the Unix workstation. There are three ways to copy the be\_agnt.tar file:

- ◆ From the Backup Exec Unix Agent installation diskette (requested separately).
- ◆ From the media server where Backup Exec was installed.
- ◆ From the installation CD.

After copying the be\_agnt.tar file to the workstation's /tmp directory, use the following command to extract the files:

```
#tar -xvf be_agnt.tar
```

▼ **To install the Unix agent:**

**Note** Make sure you have ROOT privileges before beginning the installation procedure.

---

1. Copy #tar -xvf be\_agnt.tar to the workstation's /tmp directory, and run the installation script from the directory.

For example:

```
# ./INSTALL
```

2. Enter the full directory path where the Backup Exec agent should be installed.

For example:

```
/etc/bkupexec
```

**Note** If the full directory path that you specify does not exist, you will be prompted to have it created.

---

3. When prompted, enter the name of the Unix workstation.

**Note** The workstation name uses the network node name as a default. If you select to use a different name, make sure it is a unique name not used by other Backup Exec agents.

---

4. When prompted, press <Y> if a password is required for the workstation; otherwise, press <N>.
5. If a password is required, enter the password.
6. When prompted, enter a directory path you want to publish.

---

**Note** If you want to back up the workstation's entire hard drive, define a directory path as "/" to allow the network administrator to select the entire disk for backup.

---

7. Enter a resource name.

---

**Note** The resource name is used by Backup Exec to identify the contents of each published path.

---

8. When prompted, press <Y> if you want to allow files to be restored to this published path, or press <N> if you do not want restore privileges for this published path.
9. Press <Y> if you require a password for this published path; otherwise, press <N>.
10. If a password is required, enter the password.

This password will be required before anyone using Backup Exec can perform operations on this workstation.

11. When prompted, press <Y> if you want to define more directory paths; otherwise, press <N>.

---

**Note** You can create and publish up to eight unique directory paths. To publish more directory paths, repeat step 6 through step 11.

---

12. Enter the names of the media servers that access this workstation.

---

**Note** You can add an unlimited number of media servers to your Unix agent configuration file.

---

13. Enter the frequency (in seconds) that advertisement messages should be sent to the media servers.

Advertisement messages let the media servers know that the workstation is accessible. It is recommended that you use the default frequency.

14. Select the method to use for backing up symbolically linked directories. Options are:



**Method 1.** The symbolically linked directory is handled as a special file and only the information required to create the symbolic link is backed up.

**Method 2.** The symbolically linked directory is backed up as a normal directory. All files and subdirectories within the symbolically linked directory are also backed up.

---

**Note** You may edit the agent.cfg file to change your agent configuration at any time. Changes to the configuration file take effect after the Unix agent is restarted.

---

## Configuring the Unix Agent

Each Unix workstation set up as a Backup Exec agent contains all of its configuration information in a text file called agent.cfg. By default, agent.cfg is installed on each Unix agent workstation in the /etc/bkupexec subdirectory.

You can use any text editor to make changes to the agent.cfg file.

Sample AGENT.CFG Configuration

```

Workstation Name  ───► name MY_UNIX_WORKSTATION
Password         ───► password boston
Published Paths  ───┬──► export / as root write protected
                   ───┴──► export /tmp as restore_dest password
                               massachusetts
Tell Command     ───► tell production_server
Advertisement Interval ───► tell_interval 30
  
```

Terminology used in the Backup Exec Unix agent configuration file includes:

- ◆ **name <workstation name>**. The workstation name appears in the Backup Exec resource selection lists. This item is optional. If a workstation name is not provided, the agent program will use the workstation network node name, such as `uname -n`.
- ◆ **password <passwd>**. This password must be used to access this workstation from Backup Exec. This item is optional. If a password is not provided during installation, you must press <Enter> when prompted for a password.
- ◆ **export**. Specifies the directory tree to publish so that it may be accessed by Backup Exec.
- ◆ **resourcename**. Name that appears in the Backup Exec resource lists and identifies the export paths of the agent workstation.

- ◆ **write\_protected**. If `write_protected` is specified, the published path can be accessed for backup operations but not for restore operations.
- ◆ **password**. If `password` is specified, you must enter the password before Backup Exec can access the published path.
- ◆ **include\_remote**. If `include_remote` is specified, remote mounted (NFS) file systems will be accessible through their normal mount ports.
- ◆ **tell <machine\_name>**. The media server listed as `<machine name>` will be added to the list of machines that advertisements will be sent to. This machine name must be found in the `/etc/Hosts` file.
- ◆ **tell\_interval <number\_of\_seconds>**. Specifies the time delay between advertisements. If you enter a number other than the default setting (30 seconds), the number should not be more than a few minutes or less than 30 seconds. Longer intervals cause a delay in the workstation's network broadcast verification and shorter numbers cause excessive network traffic. Each advertisement transaction requires eight (8) network packets.
- ◆ **follow\_symlinks**. By default, symbolically linked directories are not backed up. Only the link itself is backed up. If `follow_symlinks` is specified, the link itself is not backed up; instead, the entire linked directory tree is backed up.
- ◆ **log\_file <filename>**. Specifies the file name where error and warning messages will be written. This command is optional.
- ◆ **exclude\_file <filename>**. Specifies individual files that should never be backed up. The `<filename>` must include a fully specified path. No wildcards are permitted.
- ◆ **exclude\_dir <directory\_path>**. Excludes individual directories or directory trees from being backed up. The `<directory_path>` must be fully specified.



## Installing the Macintosh Agent

Backup Exec's Macintosh module consists of two software components:

- ◆ Backup Exec Agent
- ◆ Agent Publisher control panel

These files are found on the installation CD.

The Backup Exec Agent is the component that communicates with Backup Exec and allows you to submit Backup Exec jobs for Macintosh workstations. The agent *must* be running on the Macintosh workstation before backup or restore operations can be performed.

After the software is successfully installed, the agent must be configured and the Macintosh workstation is restarted before the workstation is accessible for Backup Exec operations. Because the Backup Exec agent is a system extension, it is loaded whenever the system is booted.

---

**Note** Backup Exec's Macintosh Agent supports Macintosh Operating Systems 7.x, 8.x, and 9.x; Macintosh Operating System 6.x is not supported.

---

To use Backup Exec's Macintosh Agent, the following requirements must be met:

- ◆ The NetWare server must be configured to run the AppleTalk communications protocol. The NetWare server uses AppleTalk to communicate with the Macintosh workstation.
- ◆ If the ZONEINCL.DAT file exists in the media server's \BKUPEXEC directory, only the AppleTalk zones listed in this file will be scanned for Macintosh agents. This file is created when Backup Exec is started on a media server that has Macintosh support enabled. This text file can be edited to remove any AppleTalk zones that you do not want to scan.

---

**Note** The Macintosh workstation running the Backup Exec Agent Publisher must be physically connected to a Novell network through LocalTalk or EtherTalk. However, it does not need to be logged into the media server for operations to be performed on it.

---

The Backup Exec Macintosh Agent can be installed directly from the server. You must have the BinHex v.5.0 utility installed on the Macintosh computer.

▼ **To install the agent from the media server:**

1. Copy the `fagntpubl.bin` and `beagent.bin` files from either the media server or installation CD to a temporary folder on the Macintosh system. On the media server, these files are in the `[media_server]\[volume]:\bkupexec\agents\mac_ws\  
<language>` directory. On the CD, the files are in the `\NetWare\agents\mac\  
<language>` directory.
2. Expand the files.

If you are using the StuffIt Expander, drag the files to the StuffIt Expander to expand them.

If you are using BinHex 5.0:

  - a. Launch BinHex v5.0.
  - b. From the BinHex v5.0 menu, select **File**, and then select **Download Application**.
  - c. Select the Macintosh Agent files.
  - d. Select a file (either the `AGNTPUBL.BIN` file or the `BEAGENT.BIN` file) to be converted, and click **Open**.
  - e. Save the file to your destination folder, or click **New** to create one.
  - f. When the file conversion has successfully completed, repeat step b through step e for all remaining files.
3. If a previous version of the Backup Exec Macintosh Agent is installed, you must disable it before installing the new agent. To disable the previous version:
  - a. Click **Control Panels** from the **Apple** menu, then double-click **Agent Publisher**.
  - b. Click **Enable** on the Agent Publisher dialog box to change the agent status to Disable.
4. To install the agent on the workstation, drag both the Backup Exec Agent Publisher control panel and the Backup Exec Agent extension from the source that contains the Backup Exec Macintosh Agent files, to the CLOSED System folder on the workstation.

Do *not* drag the files to an open System folder. This places the files in the System folder and *not* in the Extensions and Control Panels folders within the System folder.
5. Click **OK** when prompted to place the files in the appropriate folders.





The Backup Exec Agent file is automatically placed in the Extensions folder and the Agent Publisher is placed in the Control Panels folder.

## Configuring the Macintosh Agent

Before the Macintosh agent workstation can be backed up, the agent must be configured. The Agent Publisher control panel is used to configure the Macintosh agent software to your specific needs.

To open the Agent Publisher window, double-click the **Agent Publisher** icon, which can be found in the control panels folder.

Options for Agent Publisher window include:

- ◆ **Macintosh Name.** Identifies the published Macintosh workstation in Backup Exec's resource lists. Each Macintosh Agent *must* have a unique name. Backup Exec defaults to using the Macintosh name found under the **Control Panels - Sharing Setup Network Identity** option. If you want to publish the workstation under another name for Backup Exec operations, enter another name here.

- ◆ **Workstation Password Protection.** Prevents unauthorized users from gaining access to your Macintosh workstation. A **Padlock** icon is used to indicate which Agent Publisher fields are password-protected.

If the field is not password-protected, the **Open padlock** icon appears. If the field is password-protected, the **Closed padlock** icon appears.

When accessing the Macintosh workstation from Backup Exec, you will be prompted to enter a password. If the workstation is not password-protected, press <Enter> when prompted for the password.

- ◆ **Disable/Enable.** Allows you to turn the Backup Exec agent off and on. When **Disable** is selected, the agent software will not be loaded upon system startup. If the **Disable** feature is selected while the agent is running, the agent will be unloaded and no backup or restore operations will occur.
- ◆ **Agent Status.** Lists the agent's current status. Possible statuses include:
  - **Running.** The Macintosh agent software is running in the background.
  - **Active.** A job is being performed on the workstation.
  - **Disabled.** The Backup Exec agent is not running, and no backup and restore operations will occur.
- ◆ **Resource Names.** Description or label that identifies the contents of a folder or set of folders that have been assigned as **Shared Folders**. The Agent Publisher publishes all local drives by default.

- ◆ **Shared Folders.** Folders on the workstation on which Backup Exec operations can be performed. This is similar to the Sharing feature of LocalTalk. Only drives and folders assigned as **Shared Folders** are eligible for backup or restore operations. Individual files cannot be specified. You can publish up to eight folders.
- ◆ **Add.** Click to publish additional **Shared Folders** (see “[Adding Resource Names and Shared Folders](#)” on page 69).
- ◆ **Remove.** Click to delete shared folder entries from the Agent Publisher dialog box.
- ◆ **Advanced Features.** Click to configure more specific options for the agent publisher.

## Adding Resource Names and Shared Folders

Clicking **Add** from the Agent Publisher window brings up a dialog box that allows you to add resource names and shared folders to the Agent Publisher. Options on this dialog box include:

- ◆ **Folder.** Shows the name of the folder assigned as a shared folder. All subfolders and files found underneath it can be included in the backup. Only folders configured as shared folders can be backed up.
- ◆ **Set Folder.** Click to display a directory listing that allows you to scan the drives and folders on your Macintosh. To select a folder, move through the folder listing and click on the folder you want to publish. Click **Select** to publish the folder.
- ◆ **Name.** Enter a short description of the contents of the folder listed in the **Folder** field. This name appears in the Backup Exec backup or restore selection screen.
- ◆ **Folder Password Protection.** Prevents unauthorized users from gaining access to the folder. When accessing the Macintosh workstation through Backup Exec, you will always be asked to enter a password. If you did not specify a folder password, press <Enter> when Backup Exec prompts for the password.
- ◆ **Share.** Select this option to publish or share the folder listed in the **Folder** field. Backup Exec can only back up or restore folders when this option is selected.
- ◆ **Write Protect.** Select this option if you want to allow only backup jobs to be processed on this folder. If you want to restore data to this folder, make sure this option is not selected.



## Password Protection

There are two types of optional passwords that you can supply to protect against unauthorized backups and restores of your Macintosh Agent:

- ◆ **Workstation Name protection.** Prevents unauthorized users from gaining access to your Macintosh workstation.
- ◆ **Shared Folder protection.** Prevents unauthorized users from backing up or restoring to specific shared folders defined within the Agent Publisher.

A **Padlock** icon is used to indicate which Agent Publisher fields are password-protected. If the padlock is closed, the folder is password-protected. If the padlock is open, the folder is not password-protected.

### ▼ To add or change a password:

1. Click the **Padlock** icon.
2. Type a new password, and then click **OK**.
3. Type the password again, and then click **OK**.

If you lose or forget a password, you can delete the existing password.

### ▼ To delete an existing password:

1. Click the **Padlock** icon.
2. When prompted for a new password, leave the dialog box empty, and then click **OK**.
3. When prompted to confirm the new password, leave the dialog box empty, and then click **OK**.

## Setting Priorities and Creator Types

When **Advanced Features** is selected from the Agent Publisher window, the Advanced Features dialog box appears. This dialog box allows you to set the backup performance of the Macintosh agent and to assign a Default Creator Type, which allows you to open files that were created on other operating systems such as DOS, OS/2, or Unix, and restore to the Macintosh workstation.

Options on the Advanced Features dialog box include:

- ◆ **Priority.** High priority is the default. Backup Exec backs up your Macintosh in the background, allowing you to still use your Macintosh while the backup is running. The **Priority** selected directly affects the performance of the Macintosh workstation during a backup or restore operation. Options include:



- **High.** Allows the best possible background performance but degrades the foreground performance of the Macintosh during the Backup Exec operation.
- **Medium.** Allows average background performance and average foreground performance during the Backup Exec operation.
- **Low.** Allows limited background performance and the best possible foreground performance.

It is recommended that you schedule your Macintosh Agent backups during evening hours or during times of light Macintosh activity to avoid the machine degradation that is normal when performing background operations.

- ◆ **Default Creator Type.** When files created on other operating systems, such as DOS, OS/2, or Unix, are restored to the Macintosh workstation, a **Default Creator Type** must be assigned to the files so they can be opened. The Backup Exec Macintosh Agent defaults to using TeachText as the **Default Creator Type** application. To select a different application, click **Set**, and then select the application you want to use from the folder listing.

## Reconfiguring the Agent

The Backup Exec Macintosh Agent stores its configuration information in the **Preferences** folder (located in the **System Folder**). To reset the Backup Exec Agent Publisher to its default configuration, remove the Backup Exec Agent preferences file, and then run the Agent Publisher control panel.

When changes are made to the Agent, you must restart the Macintosh workstation to activate the changes.



## Uninstalling the Administration Console

You can remove the Administration Console from a workstation by using the Windows **Add/Remove Programs** option. Before beginning the following uninstall procedures, exit the Administration Console.

### ▼ To uninstall the Administration Console:

1. On the local Windows workstation, click **Start**, point to **Settings**, and then click **Control Panel**.
2. Double-click **Add/Remove Programs**.
3. Do one of the following:
  - For Windows XP/2000/Me, at the Add/Remove Programs dialog box, select **Backup Exec for NetWare Administration Console**, and then click **Change/Remove**.
  - For Windows 95/98/NT, on the **Install/Uninstall** tab on the Add/Remove Programs dialog box, select **Backup Exec for NetWare Administration Console**, and then click **Add/Remove**.
4. Click **OK**.

## Uninstalling Backup Exec from a NetWare Server

Before uninstalling Backup Exec from either the media or remote server, ensure that there are no active jobs and exit the Administration Console or the Administration Console for NetWare.

### ▼ To uninstall Backup Exec from a Netware Server:

1. From your system console prompt, type **BESTOP** , and then press <Enter>.
2. Type **load NETBASIC**, and press <Enter>.
3. Type **SHELL**, and press <Enter>.
4. Type **CD system**.
5. For each of the following files, type **del <file\_name>**, and press <Enter>:
  - Benw.dir

- Bestart.ncf
  - Bestop.ncf
  - Bestartj.ncf
6. Rename or delete the `sys:\bkupexec` directory and all its associated subdirectories and files.

---

**Note** If you are not sure whether you will need any of the files in the `bkupexec` directory in the future, you should rename the directory instead of deleting it.

---

- To rename the directory, type **REN BKUPEXEC <new\_name>**, and press <Enter>.
  - To delete the directory, type **DEL <directory\_name>/ \*.\***, and press <Enter> for each directory. Then type **RD BKUPEXEC**, and press <Enter>.
7. Type **EXIT**, and then press <Enter>.

## Uninstalling Backup Exec Using a Windows Workstation

1. From your system console prompt, type **BESTOP** , and then press <Enter>.
2. Map an available network drive to the NetWare media server's sys volume, for example `\\nwserver\sys`.
3. Delete the following files from the System folder:
  - Benw.dir
  - Bestart.ncf
  - Bestop.ncf
  - Bestartj.ncf
4. Right-click the `Bkupexec` folder, and click **Delete** if you want to remove this folder, or click **Rename** if you want to rename the folder.

---

**Note** If you are not sure whether you will need any of the files in the `bkupexec` folder in the future, you should rename the directory instead of deleting it.

---



## Backing Up Data

This section includes detailed information about effectively using Backup Exec to protect the data on your network. If you need to submit a backup job from your backup server before learning about Backup Exec's flexible backup features, use the Backup Wizard (see ["Creating a Backup Job from the Administration Console"](#) on page 105).

Before submitting backups, you may want to perform one or more of the following tasks to help you manage storage hardware and media most effectively:

- ◆ Select options for your media server (see ["Setting Media Server Options"](#) on page 240).
- ◆ Set up drive pools for systems with more than one storage device if you are running in media management mode (see ["Creating Drive Pools"](#) on page 330).
- ◆ Create media sets (see ["Creating User Media Sets"](#) on page 384).

You may also want to look at information about backup strategies (see ["Choosing a Backup Strategy"](#) on page 390) or at information about creating media rotation jobs (see ["Using Backup Exec's Automated Media Rotation"](#) on page 397).

*Backing Up Data* includes the following topics:

Section	Describes
<a href="#">"Overview of the Backup Process"</a> on page 76	The options Backup Exec provides for backing up data and general information about backup and archive jobs.
<a href="#">"Using Backup Policies"</a> on page 81	What policies are and how Backup Exec uses them with backup jobs, and the steps for creating, modifying, deleting, and viewing properties of a policy.
<a href="#">"Creating a Backup Job from the Administration Console"</a> on page 105	The steps for creating a backup job from the Administration Console.



Section	Describes
<a href="#">“Creating a Backup Job from the Administration Console for NetWare”</a> on page 115	The steps for creating a backup job from the Administration Console for NetWare.
<a href="#">“Using Selection Lists to Create a Backup or Archive Job”</a> on page 121	The steps for creating, using, and deleting selection lists.

## Overview of the Backup Process

Backup Exec allows you to select an entire server or workstation for backup, or to create backups of only selected directories or groups of files. With Backup Exec, you also can choose to back up all data, or only those directories or files modified since the last backup (see [“Backup Methods”](#) on page 77). In addition, Backup Exec simplifies the creation of backup strategies (see [“Choosing a Backup Strategy”](#) on page 390) and media rotation (see [“Using Backup Exec’s Automated Media Rotation”](#) on page 397).

Backing up an entire server or workstation is the easiest and most comprehensive way of protecting your data; however, there are some instances where you may want to back up a directory or group of files rather than an entire device. These can include:

- ◆ If you have certain directories or files that contain critical data that needs to be backed up frequently.
- ◆ If you are backing up groups of files or directories to be copied to another volume.
- ◆ If you find that one of your backup sets exceeds the capacity of one media, and you want to reduce the size of the backup set so it can be contained on a single media.

From the Administration Console, you can create a backup job quickly by launching the Backup Job Wizard and following the on-screen prompts. From both the Administration Console and the Administration Console for NetWare, you can create a backup job through a series of menu selections and dialog boxes (see [“Creating a Backup Job from the Administration Console”](#) on page 105 and [“Creating a Backup Job from the Administration Console for NetWare”](#) on page 115).

You can save all backup job settings, except for data selections and target devices, as a *policy*, and apply this policy to specific resources, simplifying the creation of new backup jobs (see [“Using Backup Policies”](#) on page 81).

Backup Exec allows you to monitor the progress of the backup (see [“Monitoring Jobs”](#) on page 175) and view results of the job (see [“Using Job Logs”](#) on page 193).



## Backup Methods

When creating your policy-based backup jobs, you must select a backup method. Backup Exec uses six backup methods:

- ◆ Full (see “[Full Backups](#)” on page 78)
- ◆ Differential (see “[Differential Backups](#)” on page 78)
- ◆ Incremental (see “[Incremental Backups](#)” on page 79)
- ◆ Copy (see “[Copy Backups](#)” on page 79)
- ◆ Working set (see “[Working Set Backups](#)” on page 80)
- ◆ Archive (see “[Archive Backups](#)” on page 80)

Before you can develop your backup strategy, you must decide whether you want to perform full, incremental, or differential backups, or a combination.

To understand how each backup method works, you need to understand how Backup Exec determines if a file has been backed up, and the advantages and disadvantages of each backup method.

### Using the Archive Bit

When a file is created or changed, the operating system activates the *archive bit*. Backup Exec uses this bit to determine whether a file has been backed up. When a file has been backed up using either the full or incremental backup method, the bit is turned *off* indicating to the system that the file has been backed up. If the file is changed again before the next backup, the bit will be turned *on* again, and Backup Exec will back up that file in the next full or incremental backup.

Differential backups include only files that were created or modified since the last full or incremental backup. When a differential backup is performed, the archive bit is left intact.

---

**Note** Some systems, such as Unix servers, Macintosh systems, and Novell’s NDS, do not utilize the archive bit as a part of the file systems; therefore, backups that rely on the archive bit status cannot be performed on these systems.

---



## Full Backups

Full backups include all selected files. With this backup method, the archive bit is switched off so that the files appear to the system as having been backed up.

Advantages:

- ◆ *Files are easy to find.* Since full backups include all selected files, you only have to search through the media that contain the latest backup to find a file that you need to restore.
- ◆ *There is always a current backup of your entire system.* If you should need to restore your entire system, all of the most current information is located on the last full backup.

Disadvantages:

- ◆ *Redundant backups.* Since most of the files on your file server rarely change, each full backup following the first is merely a copy of what has already been backed up.
- ◆ *Full backups take longer to perform.* Full backups can be time consuming, especially when you have other devices on the network, such as agent workstations and remote servers, that need to be backed up.

---

**Note** It is recommended that you perform a full backup of your server (including the Directory Services information) at regular intervals to establish a baseline for disaster recovery and to create milestones from which a full restore of current data can be done.

---

## Differential Backups

Differential backups include backing up all files changed since the last full or incremental backup. The difference between differential and incremental backups is that incremental backups reset the archive bit; the archive bit is *not* reset with differential backups. In most schemes, differential backups are recommended over incremental backups since the requirement of fewer media decreases the risk of not being able to restore important data because of media errors.

Advantages:

- ◆ *Files are easy to find.* Restoring a system backed up with a differential strategy requires a maximum of two media (or families): the latest full backup media and the latest differential backup media. This is less time-consuming than backup strategies that require the latest full backup media and all incremental backup media created since the full backup.
- ◆ *Less time required for backup.* Differential backups take less time to run than full backups.

Disadvantage:

*Redundant backups.* All of the files created or modified since the last full or incremental backup are included on each media, which creates redundant backups.

## Incremental Backups

Incremental backups include only the files that have changed since the last full or incremental backup. With this type of backup, the archive bit is reset.

Advantages:

- ◆ *Better use of media.* Only files that have changed since the last full or incremental backup are included, so there is much less data storage space required.
- ◆ *Less time required for backup.* Incremental backups take much less time than full or differential backups to complete.

Disadvantages:

- ◆ *Files are more difficult to find.* Files backed up incrementally can be spread across multiple media.
- ◆ *Recovery may take longer.* Since multiple media are required in a disaster situation, recovery of a device may take longer. In addition, the media must be restored in the correct order to bring the system up to date.

## Copy Backups

Copy backups include all selected data and do not affect any media rotation scheme because the archive bit is not reset. Copy backups are useful when you need to:

- ◆ Back up data for a special purpose (for example, to send to another site or when downtime for upgrades is planned).
- ◆ Back up specific data.
- ◆ Perform an additional backup to take off-site.



## Working Set Backups

Like differential backups, working set backups include backing up all selected files since the last full or incremental backup without resetting the archive bit. In addition, working set backups allow you to include data that has been accessed within a specified number of days.

---

**Note** Backup Exec performs working set operations only on volumes that support last accessed date for files (such as NetWare volumes, OS/2 HPFS volumes, NTFS volumes, and Unix NFS volumes).

---

Advantages:

- ◆ *Quick to restore only the necessary files.* Restoring a system backed up with a working set method requires a maximum of two media (or families): the latest working set backup media and the latest full backup media. Also, working set backups are restored first, allowing you to get the network up and running in less time. A full backup can then be restored at a more convenient time.
- ◆ *Less time required for backup.* Working set backups take less time to run than full backups.

Disadvantages:

- ◆ *Redundant backups.* All of the files accessed since the last full or incremental backups are included on each media, thus creating redundant backups.
- ◆ *Not available with automated media rotation.* This backup method is not used with the automated media rotation feature, but can be used with any manual media rotation scheme.

## Archive Backups

With the archive backup method, you can free valuable server disk space by migrating files that have not been accessed within a specified period of time to media. The files that you select are backed up, the backup is verified, and then the files are removed from the hard disk.

---

**Caution** Be careful when you submit an archive job for the SYS volume of a NetWare server. Do not archive the SYSTEM or PUBLIC directories on the SYS volume since doing so could remove system files required by the operating system.

---

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**Note** Backup Exec performs archive operations only on volumes that support last accessed date for files (such as NetWare volumes, OS/2 HPFS volumes, NTFS volumes, and Unix NFS volumes). This backup method is not available for Media Rotation jobs.

---

If you select individual files within a directory to be archived but you do not select the option **Preserve tree on archiving** when creating the backup policy, only the files within that directory are deleted when the job is completed (see [“Restore Default Policy. Click this option to restore the original options to the default policy. This option is available on the Administration Console’s Policy dialog box only. To restore defaults from the Administration Console for NetWare, on the Backup Policies dialog box, press <Ctrl + D>.”](#) on page 88).

## Using Backup Policies

By allowing policy-based backups, Backup Exec lets you save all backup job settings, except for data selections and target devices, as a *policy*. You can apply this policy to specific resources, simplifying the creation of new backup jobs.

### Viewing Policies

You can view a list of policies and information about the policy from the Administration Console’s results pane or from the Administration Console for NetWare’s Backup Policies dialog box.

#### ▼ To view policies from the Administration Console:

1. Click **Policy-based Backup**.
2. Click **Policy Definitions**.

A list of policies and information about these policies appears in the results pane. Information appearing is described in [“Results Pane View of Policies”](#) on page 82.

#### ▼ To view policies from the Administration Console for NetWare:

1. Select **Jobs**.
2. Select **Policy**.

The Backup Policies dialog box appears. Information about this dialog is described in [“Results Pane View of Policies”](#) on page 82.



## Results Pane View of Policies

You can select information appearing in the results pane for **Policy Definitions** by following the procedures described in “[Using the Results Pane](#)” on page 21. For a detailed description of the information appearing for a policy, see “[Viewing and Editing Properties of a Policy](#)” on page 103.

Results Pane View of Policies

Policy Name	Repeat Type	Repeat Interval	Week Of Month	Backup Method	Media Usage
DEFAULT POLICY	Once/ only	0	0	Full	Append to media; overwrite if no

Default information appearing includes:

- ◆ **Policy Name.** The name of the policy.
- ◆ **Repeat Type.** The repeat type set for the policy, such as **Once only**.
- ◆ **Repeat Interval.** The repeat interval set for the policy if the policy is for a recurring job.
- ◆ **Week of the Month.** The week of the month when the job in this policy is scheduled to run, if the policy is set up for recurring jobs.
- ◆ **Backup Method.** The backup method selected for this policy.
- ◆ **Media Usage.** The media usage option set for this policy.
- ◆ **Job Log Detail Level.** The level of job log detail set for this policy.
- ◆ **Use Open File Options.** A check mark appears if the Open File Option is to be used; otherwise, this field is blank.
- ◆ **Process Open Files.** The default treatment of open files selected for this policy.
- ◆ **Pre-Command.** The console command to run before the job. If the policy does not include a command to execute before the job runs, this field is blank.
- ◆ **Delay After Pre-Command.** The number of seconds Backup Exec is to delay between the time the command is executed and the start of the job using this policy.
- ◆ **Post-Command.** The console command to run after the job. If the policy does not include a command to execute after the job runs, this field is blank.
- ◆ **Delay After Post-Command.** The number of seconds Backup Exec is to delay between the time the post command is executed and the next set starts.
- ◆ **Pre-Scan.** A check mark appears if Backup Exec is to scan the backup selections to estimate backup size before the job runs; otherwise, this field is blank.



- ◆ **Eject Media.** A check mark appears if Backup Exec is to eject the media after the job runs; otherwise, this field is blank.
- ◆ **Verify After.** A check mark appears if Backup Exec is to verify that the backed up data can be read; otherwise, this field is blank.
- ◆ **Use Quick Check.** A check mark appears if Backup Exec is to perform a Quick Check after the job runs; otherwise, this field is blank.
- ◆ **Preserve Tree.** A check mark appears if this policy is being applied to an archive job and the **Preserve tree on archiving** option was selected for this policy; otherwise, this field is blank.
- ◆ **Back Up in Alphabetical Order.** A check mark appears if the devices are to be backed up in alphabetical order; otherwise, this field is blank.
- ◆ **Process Hidden Files.** A check mark appears if hidden files are to be backed up; otherwise, this field is blank.
- ◆ **Process Special Files.** A check mark appears if special files are to be backed up; otherwise, this field is blank.
- ◆ **Migrated Files.** A check mark appears if the option to back up migrated files was selected; otherwise, this field is blank.
- ◆ **Compressed Files.** A check mark appears if the option to back up compressed files as expanded files was selected; otherwise, this field is blank.
- ◆ **Process CD-ROMs.** A check mark appears if the option to back up mounted CD-ROMs was selected; otherwise, this field is blank.
- ◆ **Limit Backup Scan Rights.** A check mark appears if the option to limit backup scan rights was selected; otherwise, this field is blank.
- ◆ **Following Links.** A check mark appears if the option to back up files and directories by following links and junctures was selected; otherwise, this field is blank.
- ◆ **Remote Storage.** A check mark appears if the option to back up data in remote storage was selected; otherwise, this field is blank.
- ◆ **Time Stamp.** The date and time when the policy was created.
- ◆ **User Name.** The name of the user who created the policy. For the default policy, the name appears as Job Scheduler.
- ◆ **Policy Notes.** The notes associated with the policy.

Additional columns that can be displayed include:

- ◆ **Access Days.** If the backup method is Working Set Backup or Archive, displays the setting for **Files accessed in x days**.
- ◆ **Open File Delay.** The number of seconds set in the **Back up if closed within x seconds** option.



- ◆ **Policy ID.** The ID assigned to the policy.
- ◆ **Policy Type.** The type of policy, such as **Backup** or **Media Rotation**.

## Backup Policies Dialog Box

The Backup Policies dialog box appears when **Policies** is selected from the Administration Console for NetWare's **Jobs** menu.

Backup Policies Dialog Box

Policy name	Repeat type
▶DEFAULT POLICY	Schedules the job to run Once Only

06/22/2001 04:20:29 AM

This dialog box displays:

- ◆ **Policy name.** Name of the policy.
- ◆ **Repeat type.** The **Repeat Interval** options selected for this policy.



## Creating a Policy

You can create a policy from either the Administration Console or the Administration Console for NetWare. A policy can be created during the creation of a backup job (see [“Creating a Backup Job from the Administration Console”](#) on page 105 or [“Creating a Backup Job from the Administration Console for NetWare”](#) on page 115), or you can create a policy using either the Policy Wizard or by completing the Create Policy dialog box.

---

**Note** The Policy Wizard is only available from the Administration Console.

---

### ▼ To run the Policy Wizard:

1. From the Administration Console, click **Tools**.
2. Point to **Wizards**, and then click **Launch the Policy Wizard**.

---

**Tip** You can also launch the wizard by clicking the wizard icon from the toolbar (see [“Using the Toolbar and Menu Bar”](#) on page 9) or from the Backup Exec Assistant (see [“The Backup Exec Assistant and Wizards”](#) on page 23).

---

3. Follow the on-screen instructions to complete the wizard.

### ▼ To create a policy without using the wizard:

1. From the Administration Console menu bar, click **Jobs**, and then click **Policy**.

---

**Tip** You can also click the **Policy** icon from the Administration Console’s toolbar, or press <Ctrl + P>.

---

From the Administration Console for NetWare, select **Jobs**, select **Policy**, and then press <Ins>.

The Create New Policy dialog box appears as tabbed pages on the Administration Console. On the Administration Console for NetWare, a series of options appear. These options correspond to the tabs on the Administration Console’s dialog box. Dialog boxes appear when a tab is clicked from the Administration Console or an option is selected on the Administration Console for NetWare. The dialog boxes and their options are described in the following sections:

- [“Policy Options”](#) on page 87
- [“Restore Default Policy. Click this option to restore the original options to the default policy. This option is available on the Administration Console’s Policy dialog box only. To restore defaults from the Administration Console for NetWare, on the Backup Policies dialog box, press <Ctrl + D>.”](#) on page 88



- [“Repeat Interval Options for a Policy”](#) on page 89
  - [“Backup Method Options for a Policy”](#) on page 90
  - [“Media Usage Options for a Policy”](#) on page 91
  - [“Job Log Options for a Policy”](#) on page 93
  - [“Pre/Post Options for a Policy”](#) on page 95
  - [“Open Files Options for a Policy”](#) on page 97
  - [“NetWare Options for a Policy”](#) on page 99
  - [“Windows 2000 Options for a Policy”](#) on page 100
  - [“Broadcast/E-mail Options for a Policy”](#) on page 102
- 2.** From the Administration Console, enter or select options from the tabs on the dialog box.

From the Administration Console for NetWare, select an option, press <Enter>, and then enter the selections you want.

- 3.** After entering all options from the various dialog boxes, click **OK** from the Administration Console.

From the Administration Console for NetWare, press <F2>.



## Policy Options

The Policy dialog box appears when creating, viewing, or modifying a policy.

Policy Dialog Box



This dialog box contains the following options:

- ◆ **Name.** Enter a name for this policy or accept the default name provided by Backup Exec.
- ◆ **Notes.** Enter information, such as a summary of the policy or the resources that will be protected by this policy.

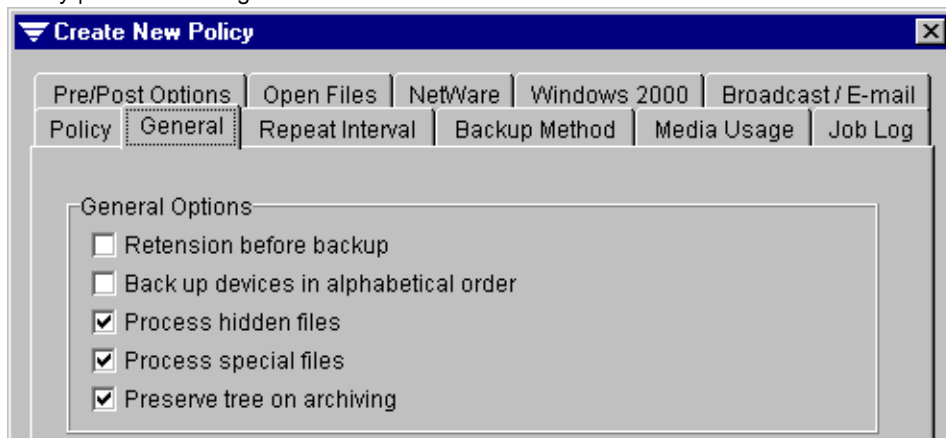


- ◆ **Restore Default Policy.** Click this option to restore the original options to the default policy. This option is available on the Administration Console's Policy dialog box only. To restore defaults from the Administration Console for NetWare, on the Backup Policies dialog box, press <Ctrl + D>.

## General Options for a Policy

The General dialog box appears when creating, viewing, or modifying a policy.

Policy | General Dialog Box



This dialog box contains the following options:

- ◆ **Retention before backup.** Select this option to have Backup Exec run the media in the drive from beginning to end at a fast speed before the backup job begins. Retensioning the media ensures that the tape winds evenly and runs more smoothly past the drive heads.
- ◆ **Back up devices in alphabetical order.** Select this option to have selected devices (servers and workstations) backed up in alphabetical order. If this option is not selected, devices are backed up in the order in which they were selected.
- ◆ **Process hidden files.** Select this option if you want to back up hidden files, which are files used by DOS and some applications that do not appear when you view a directory with DOS's DIR command. If this option is not selected, hidden files will not be backed up unless they are selected individually for backup in the Backup Source window.
- ◆ **Process special files.** Select this option to back up files that are marked with any combination of system <S> or read-only <R> attributes. If this option is not selected, special files will not be backed up unless they are selected individually for backup in the Backup Source window. This option is not supported on NetWare volumes and applies to workstation agents only.

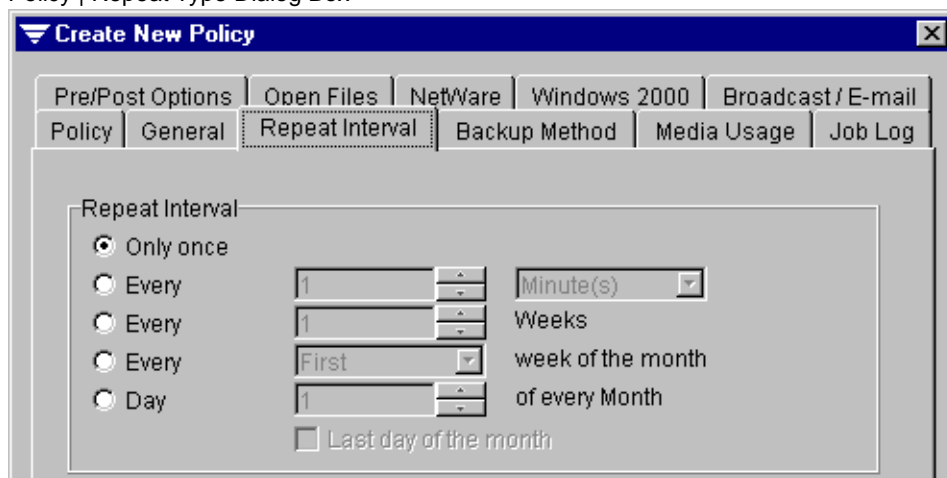
- ◆ **Preserve tree on archiving.** Select this option to archive data without deleting the original directory from the resource you are protecting.

## Repeat Interval Options for a Policy

The Repeat Interval dialog box that appears when creating, viewing, or modifying a policy allows you to select whether the file selections you have made are to be backed up once (default) or on a regular basis.

This dialog works in conjunction with the Backup Method dialog box. For example, if you want to set up a full backup to run on the last day of the month, you would select **Last day of the month** from this dialog box and select **Full** from the Backup Method dialog box. If you wanted to set up an incremental backup to run each day, you would select **Every 1 Days** from this dialog box and **Incremental** from the Backup Method dialog box.

Policy | Repeat Type Dialog Box



This dialog box contains the following options:

- ◆ **Only once.** Select this option to create a one-time job. The job will no longer be in the job queue.
- ◆ **Every [ ] <time period>.** Select this option to resubmit the job every specified number of minutes, hours, days, or months. Enter the number, and then select the period of time you want to use.
- ◆ **Every [ ] weeks.** Select this option to resubmit the job every specified number of weeks.
- ◆ **Every [ ] week of the month.** Select this option to resubmit the job for a specific week of the month, and then select or enter the week you want the job to run.



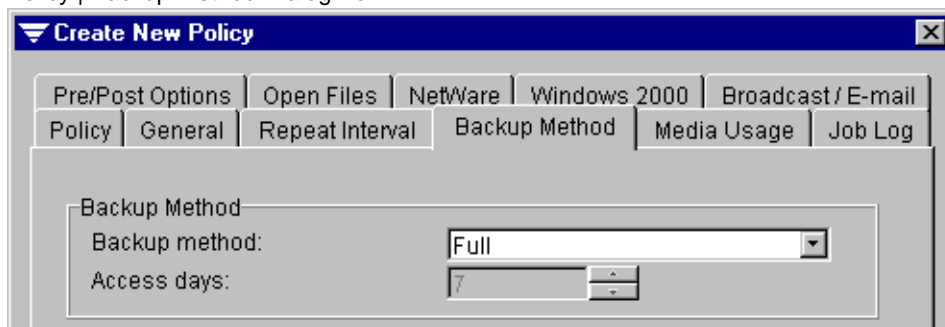
- ◆ **Day [ ] of every month.** Select this option to resubmit the job for a specific day of the month, and then select or enter the day of the month on which you want the job to run.
- ◆ **Last day of the month.** Select this option to have the job run on the last day of the month. This option is only available if the **Day [ ] of every month** option has been selected.

## Backup Method Options for a Policy

The Backup Method dialog box that appears when creating, viewing, or modifying a policy allows you to specify the backup method used for jobs to which the policy is applied. If working set or archive is selected as a backup method, you can include files that have been accessed within a specified number of days.

This dialog works in conjunction with the Repeat Interval dialog box. For example, if you want to set up a full backup to run on the last day of the month, you would select **Full** from this dialog box and select **Last day of the month** from the Repeat Interval dialog box. If you wanted to set up an incremental backup to run each day, you would select **Incremental** from this dialog box and select **Every 1 Days** from the Repeat Interval dialog box.

Policy | Backup Method Dialog Box



The **Backup Method** options include:

- ◆ **Backup method.** Select one of the following backup methods:
  - **Full.** Backs up all selected files and changes the files' archive bits to indicate that the files have been backed up.
  - **Copy.** Backs up all selected files, but does not change the archive bits.
  - **Incremental.** Backs up selected files that were modified or created since the last full or incremental backup, and switches the archive bits off so the files will appear to the system as having been backed up.

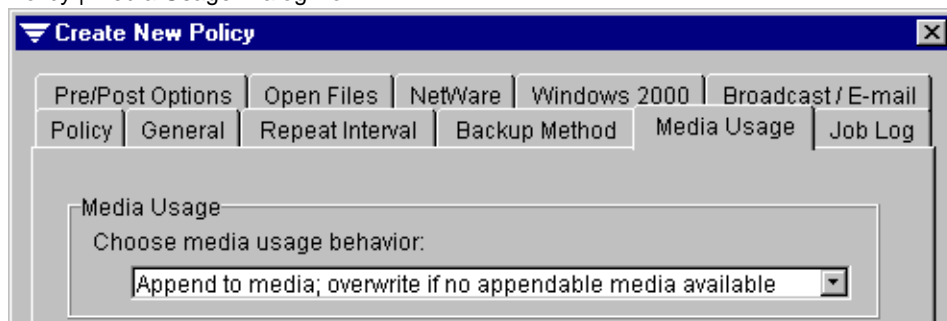
- **Differential.** Backs up selected files that were modified or created since the last full or incremental backup. The archive bits are left on, so the files will appear to the system as not having been backed up.
  - **Working set.** Backs up all selected files that were modified since the last full or incremental backup without changing the files' archive bits. Also backs up those files that have been accessed within a number of days you specify in the **Files accessed in [ ] days** option.
  - **Archive.** Backs up selected files, verifies the backup, and then removes the files from the hard disk.
- ◆ **Access days.** If working set or archive is selected as the backup method, enter a number of days since files were last accessed to include in this backup. For example, if you have been doing a full backup weekly but you want to include all files that were accessed in the past two months as part of your working set backup, you would enter 60 here.

For more information about selecting a backup method, see “[Backup Methods](#)” on page 77.

## Media Usage Options for a Policy

The Media Usage dialog box that appears when creating, viewing, or modifying a policy allows you to specify how media will be treated when the job begins.

Policy | Media Usage Dialog Box



From the **Choose media usage behavior** drop-down list, select one of the following options

- ◆ **Overwrite media.** Select this option to place this backup on an overwritable media. Make sure that appropriate media is available to the drive or partition you select as the destination when creating the job.



The media in the drive is overwritten if the media is scratch or recyclable (its overwrite protection period has expired). If allocated or imported media are in the drive, they may also be overwritten depending on the media overwrite protection level that is set.

If the media in the drive is not overwritable, a message appears requesting that you insert overwritable media, such as scratch or imported media.

- ◆ **Append to media; overwrite if no appendable media available.** This is the default option. Select this option to append this backup to the media set selected when creating the backup job. The backup set is appended if an appendable media is available in the selected media set; if not, an overwritable media is used and added to the media set.

If an append job fills a media, the job continues on another piece of overwritable media.

Depending on your configuration, overwritable media is selected from scratch media or recyclable media.

If the media in the drive is not overwritable, a message appears requesting that you insert overwritable media, such as scratch or imported media.

- ◆ **Append to media; terminate job if no appendable media available.** Select this option to append this backup to the media set selected when creating the backup job. The backup set is appended if an appendable media is available in the selected media set; if not, the job is terminated and placed on hold. Media must belong to a user media set, not a system media set, in order to be appendable.

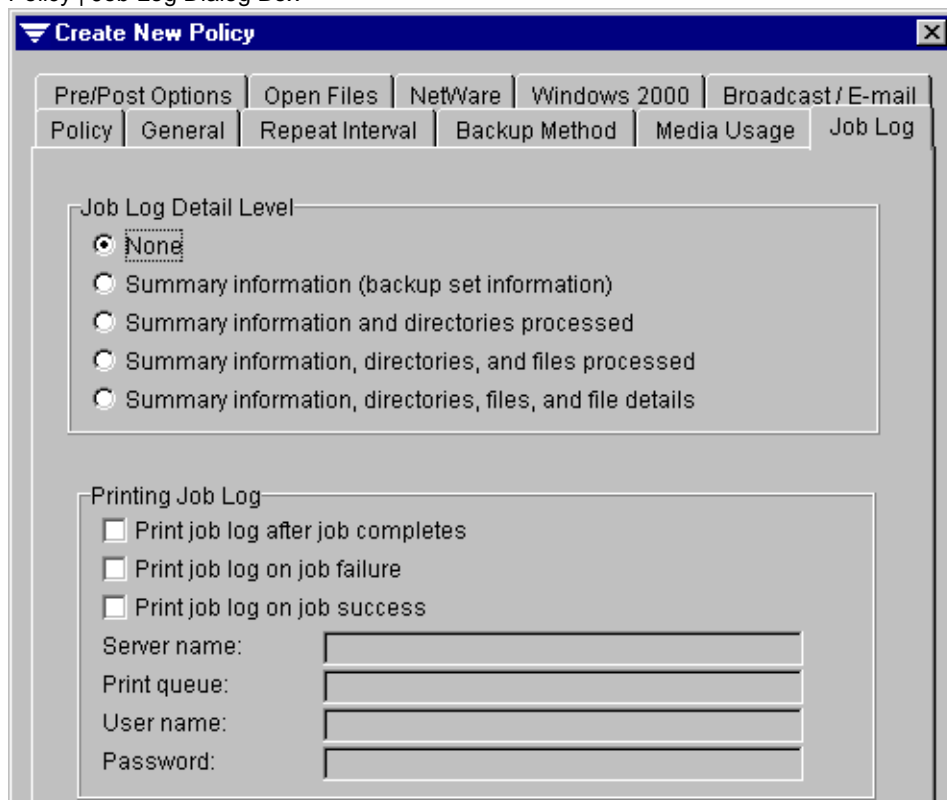


## Job Log Options for a Policy

The Job Log dialog box that appears when creating, viewing, or modifying a policy allows you to specify the level of detail presented in the user job logs for jobs using this policy and select when a job log should be automatically printed.

The highest possible level of detail is set in the **Job Logs** options for the media server. Jobs created using different policies could report a different level of detail based on the settings in the policies, but no job can report a higher level than the setting set as the server default. For information about setting the **Job Log** options at the media server, see “[Job Log Options for the Media Server](#)” on page 245.

Policy | Job Log Dialog Box



The **Job Log Detail Level** options include:

- ◆ **None.** Select this level to turn the logging feature off. A log record will be kept, but there will be no associated log file.



- ◆ **Summary information (backup set information).** This level of detail includes a NetWare network server/volume specification or agent alias, the backup set number on the media, the media number, the media name, the starting date and time, any errors encountered, ending date and time, and completion statistics.
- ◆ **Summary information and directories processed.** This level includes a NetWare network server/volume specification or agent alias, the backup set number on the media, the media number, the media name, the starting date and time, any errors encountered, ending date and time, and completion statistics plus a list of all processed subdirectories.
- ◆ **Summary information, directories, and files processed.** This level includes a NetWare network server/volume specification or agent alias, the backup set number on the media, the media number, the media name, the starting date and time, any errors encountered, ending date and time, and completion statistics, a list of all processed subdirectories, and a listing of all files processed.
- ◆ **Summary information, directories, files, and file details.** This level includes a NetWare network server/volume specification or agent alias, the backup set number on the media, the media number, the media name, the starting date and time, any errors encountered, ending date and time, and completion statistics, a list of all processed subdirectories, a listing of all files processed, plus file sizes, file date/time, and file attributes.

---

**Note** Changing the detail level will not add information to or remove information from job logs already created using this policy.

---

The **Printing Job Log** options include:

- ◆ **Print job log after job completes.** Select this option to have Backup Exec automatically print the job log after a job using this policy completes successfully, fails, or is canceled.
- ◆ **Print job log on job failure.** Select this option to have Backup Exec automatically print the job log if a job using this policy fails.
- ◆ **Print job log on job success.** Select this option to have Backup Exec automatically print the job log if a job using this policy completes successfully.
- ◆ **Server name.** Enter the name of the file server controlling one or more printers used by the network.
- ◆ **Print queue.** Enter the name of the print queue.
- ◆ **User name.** Enter your user name.
- ◆ **Password.** Enter your network access password.

**Note** For a job log to print, there must be a default printer selected for the system running the Administration Console and the printing options must be set on the media server (see “[Job Log Options for the Administration Console](#)” on page 271).

## Pre/Post Options for a Policy

The Pre/Post Options dialog box that appears when creating, viewing, or modifying a policy allows you to specify console commands that Backup Exec will execute and to have Backup Exec perform certain functions before or after each backup set.

Policy | Pre/Post Options Dialog Box

The screenshot shows the 'Create New Policy' dialog box with the 'Pre/Post Options' tab selected. The dialog is divided into two main sections:

- Pre/Post Commands:** This section contains four input fields:
  - 'Execute before backup:' followed by a text input field.
  - 'Delay after command (seconds):' followed by a numeric spinner box set to '0'.
  - 'Execute after backup:' followed by a text input field.
  - 'Delay after command (seconds):' followed by a numeric spinner box set to '0'.
- Pre/Post Options:** This section contains four checkboxes:
  - Pre-scan backup sets to estimate size
  - Eject media after job completes
  - Verify after each backup
  - Quick Check

The **Pre/Post Commands** options include:

- ◆ **Execute before backup.** Enter a console command that you want the server to execute just before each backup set starts. This option is useful for closing database applications before backing them up.
- ◆ **Delay after command (seconds).** Specify the number of seconds you want Backup Exec to delay between the time the command is executed and the start of the job.
- ◆ **Execute after backup.** Enter a console command that you want the server to execute immediately after each backup set.
- ◆ **Delay after command (seconds).** Specify the number of seconds you want Backup Exec to delay between the time the command is executed and the start of the next job.



The **Pre/Post Options** portion of this dialog box includes the following options:

- ◆ **Pre-scan backup sets to estimate size.** Select this option to have Backup Exec estimate the number of bytes to be backed up when the backup operation begins. This option may cause the backup to take longer, but it allows you to monitor the progress of the operation by percentage complete.
- ◆ **Eject media after the job completes.** Select this option to have Backup Exec automatically eject the media in the drive when the job completes. The drive must support the eject media feature. This option can be used in single and multiple drive configurations and with robots.
- ◆ **Verify after each backup.** Select this option to verify the data backed up. Verifying the media ensures that no errors were encountered during the backup and that the data on the media can be restored by Backup Exec. For more information about performing verifies or Quick Check, see [“Performing Verifies and Quick Checks”](#) on page 96.
- ◆ **Quick Check.** Select this option to have Backup Exec perform a Quick Check to confirm that data backed up during the job can be restored. When this option is selected, one file from each backup set is checked. Quick Check must also be enabled on the media server, or this setting will be ignored when the job runs (see [“Quick Check Options for the Media Server”](#) on page 258). For more information about performing verifies or Quick Check, see [“Performing Verifies and Quick Checks”](#) on page 96.

### Performing Verifies and Quick Checks

You can select to have Backup Exec verify all or at least part of the data backed up by using the **Verify after each backup** or **Quick Check** options selected from the Policy’s Pre/Post Options dialog box.

If you select the **Verify after each backup** option, a Cyclic Redundancy Check (CRC) is run on each file on the media. A connection to the device from which the file originated is not needed for the verify operation.

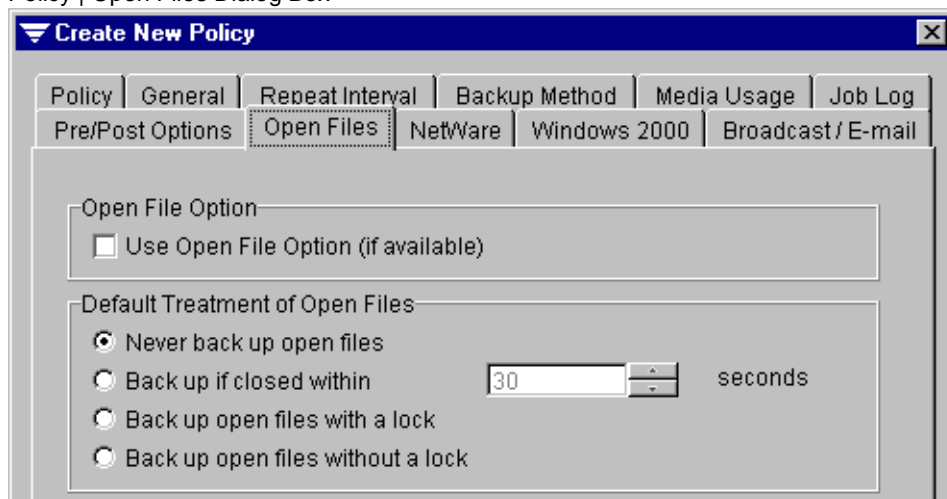
If you have large backups, you may elect to perform a Quick Check, which is significantly faster than a full verify. Unlike the verify, the **Quick Check** option does not read all of the data on the media, but instead randomly selects a file in the backup set to verify. You can select to have this file restored to a temporary location on the media server or have Backup Exec run a CRC test on the file without actually restoring it to a temporary location (see [“Quick Check Options for the Media Server”](#) on page 258). If you select to have the file restored to a temporary directory, the data is automatically removed from this temporary directory after the restore is complete.

To use the **Quick Check** option, you must enable it at the server by selecting **Enable Quick Check for backups** in the media server **Quick Check** dialog box (see [“Quick Check Options for the Media Server”](#) on page 258). You can set the Quick Check option when a policy is created or modified (see [“Pre/Post Options for a Policy”](#) on page 95).

## Open Files Options for a Policy

The Open Files dialog box that appears when creating, viewing, or modifying a policy allows you to choose how Backup Exec will treat open files when running a backup job using this policy.

Policy | Open Files Dialog Box



This dialog box contains the following options:

- ◆ **Use Open File Option (if available).** Select this option if you have purchased and want to use the Open File Option for jobs using this policy. The Open File Option must be installed on the server you want to back up using this option. For information about how the Open File Option works, see [“About the Open File Option”](#) on page 510.
- ◆ **Default Treatment of Open Files.** Select how Backup Exec is to treat open files when performing a backup if the Open File Option is not available. Select from one of the following options:
  - **Never back up open files.** Select this option if you want files that are in use on the server or workstation to be excluded from the backup.
  - **Back up if closed within [ ] seconds.** Select this option if you want Backup Exec to wait a specified number of seconds for the file to close before skipping the file. Enter or select the number of seconds you want Backup Exec to wait. If the file is not closed when that interval elapses, the file will not be backed up.
  - **Back up open files with a lock.** Select this option to include open files in the backup.



When this option is selected Backup Exec *locks* open files while they are being backed up with a deny write lock that prevents users and other applications from modifying files while the backup is in progress. Larger files take longer to process. If an application running on a user's workstation attempts to write to a file locked by Backup Exec, typically a *write error* will result in that application. The handling of this condition is strictly dependent on the application program attempting to write to the file. After the file is backed up, it will be unlocked and a warning message will be displayed and logged, indicating that the open file was backed up.

If a file was open for *exclusive use* or *deny read* by another workstation, Backup Exec will be unable to back up the file, and it will be skipped.

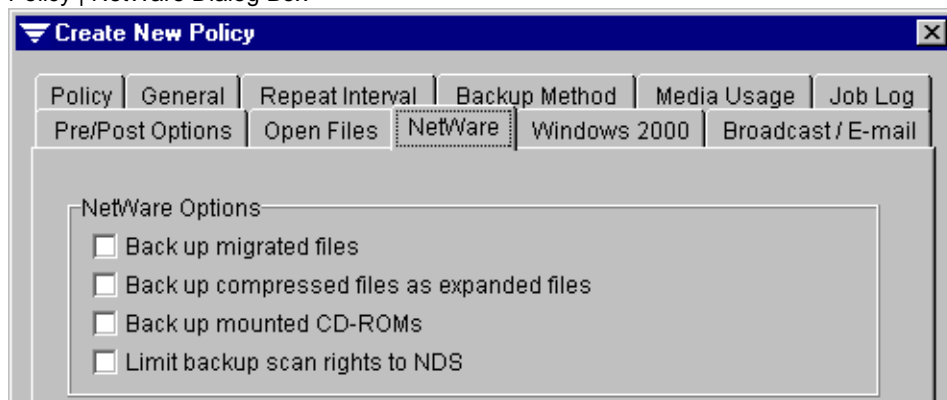
- **Back up open files without a lock.** Select this option to have Backup Exec include open files in the backup without locking these open files. Users or other applications can modify files while the backup is in process, creating a backup file that is old or corrupted. This type of backup is strongly discouraged. If you select this option, a warning appears.



## NetWare Options for a Policy

The NetWare dialog box that appears when creating, viewing, or modifying a policy allows you to select how Backup Exec treats your NetWare servers when running a backup.

Policy | NetWare Dialog Box



This dialog box contains the following options:

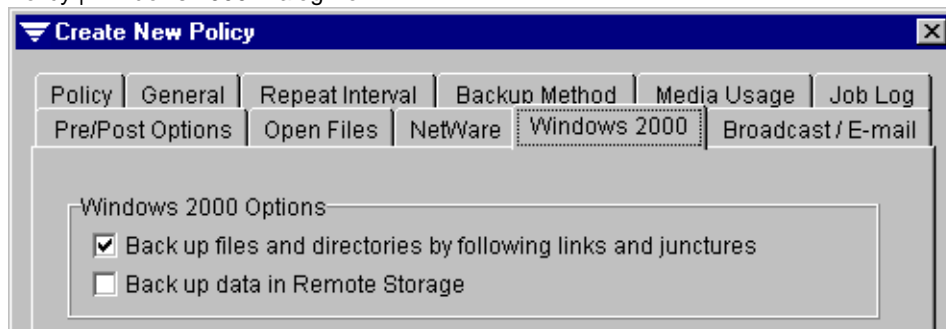
- ◆ **Back up migrated files.** Select this option to have Backup Exec back up *migrated files*, files that have been moved using Novell's File Migration feature to an alternative storage media such as an optical disk. Selecting this option requires the server to access the alternative media. Depending on the transfer rate of the media you are backing up, selecting this option could slow processing time considerably. A warning message appears if you enable this option due to the potential for media unavailability.
- ◆ **Back up compressed files as expanded files.** Select this option to have Backup Exec expand compressed files before they are backed up. The compressed files remain on the hard disk. The backup operation will take longer due to the extra time involved in file decompression. In most cases, this option should not be selected.
- ◆ **Back up mounted CD-ROMs.** Select this option to back up CD-ROMs mounted as NetWare volumes. Choosing to back up CD-ROMs increases the amount of media and time needed to perform the backup operation. However, you may want to back up CD-ROMs to create a copy of data or programs stored on the CD-ROMs.
- ◆ **Limit backup scan rights to NDS.** Select this option if you want to limit the viewing and backing up of NetWare Directory Services objects to only those for which you also have restore rights. Attempts to restore Directory Services objects for which you do not have the proper rights will result in a job completion status of Error and SMS errors will be generated for each object that you do not have the rights to restore.



## Windows 2000 Options for a Policy

The Windows 2000 dialog box that appears when creating, viewing, or modifying a policy allows you to select options for backing up the contents of Windows 2000 mounted drives and offline files when using the Remote Agent for Windows NT/2000.

Policy | Windows 2000 Dialog Box



This dialog box contains the following options:

- **Back up files and directories by following links and junctures.** Select this option to back up information for the junction points and files and directories to which they are linked. If this option is not selected, then only the information for junction points will be backed up; the files and directories to which they are linked will not be backed up.

---

**Note** In some cases, clearing this option may have no effect. If software other than Microsoft's linkd.exe created the symbolic links, the actual files and directories to which the junction points are linked will also be backed up.

Since mounted drives that have no drive letter assigned to them cannot be selected through the user interface, the files and directories to which they are linked are backed up regardless of whether this option is selected.

If this option is selected and the actual files and directories to which the junction points are linked are also included in the backup selections, then the files and directories will be backed up twice--once during the normal file and directory backup, and again via the junction point.

---

**Caution** If a junction point is linked to a location that encompasses it, then recursion (a situation where data is backed up repeatedly) will occur, resulting in an error and job failure. For example, if c:\junctionpoint is linked to c:\, recursion will occur when attempting to back up c:\junctionpoint, and the backup job will fail.

---



- ◆ **Back up data in Remote Storage.** Select this option to back up data that has been migrated from primary storage to secondary storage. The data will not be recalled to its original location; it will be backed up directly to the backup media.

If this option is selected, you should not run a backup of your entire system because Backup Exec will have to load the data that has been migrated to the secondary storage and additional time will be required for any set that includes migrated data.

If this option is not selected, only the placeholder that stores the location of the data on secondary storage will be backed up, not the data itself.

---

**Note** This option should not be selected if the device used for secondary storage and backups contains only one drive because Remote Storage and Backup Exec will compete for use of the drive.

---

To back up the Removable Storage database in the `\Ntmsda` subdirectory, the WMI repository in the `wbem\Repository` subdirectory, and the Terminal Services database in the default `\LServer` subdirectory, select the `<Systemroot>\System32` directory.

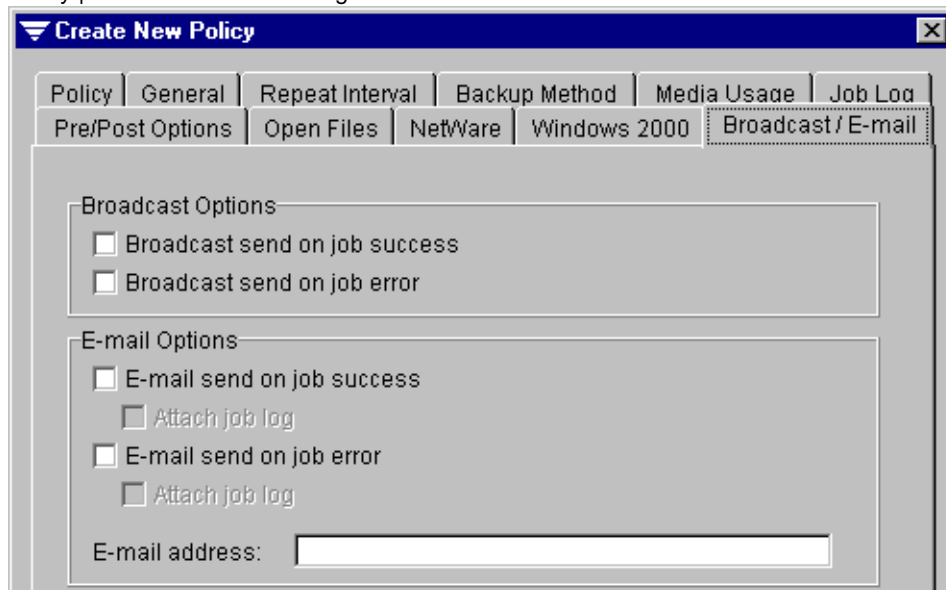
Files that you place in the `<Systemroot>\System32\Ntmsdata` subdirectory, the `\wbem\Repository` subdirectory, or the default `\LServer` subdirectory may not be backed up; only system files are included in the backup. It is recommended that you do not place user files in the `<Systemroot>\System32` directory or subdirectories.



## Broadcast/E-mail Options for a Policy

The Broadcast/E-mail dialog box that appears when creating, viewing, or modifying a policy allows you to specify when Backup Exec sends broadcast or e-mail messages. Broadcast options must be configured for the media server before this option will work (see “Broadcast Options for the Media Server” on page 254). Broadcast messages are sent via the NetWare broadcast utility.

Policy | Broadcast/E-mail Dialog Box



**Broadcast Options** include:

- ◆ **Broadcast send on job success.** Select this option if you want to receive a message when a job completes with a *Normal* status. The message appears at the workstation to which the user who created the job is logged in.
- ◆ **Broadcast send on job error.** Select this option if you want to receive a message when a job completes with an *Error* or *Aborted* status. The message appears at the workstation to which the user who created the job is logged in.

**E-mail Options** include:

- ◆ **E-mail send on job success.** Select this option if you want Backup Exec to send an e-mail message when a job completes with a *Normal* status.
  - **Attach job log.** Select this option if you want Backup Exec to attach the job log to e-mail messages sent for jobs completing with a *Normal* status.
- ◆ **E-mail send on job error.** Select this option if you want Backup Exec to send an e-mail message when a job completes with an *Error* or *Aborted* status.

- **Attach job log.** Select this option if you want Backup Exec to attach the job log to e-mail messages sent for jobs completing with an *Error* or *Aborted* status.
- ◆ **E-mail Address.** Enter the e-mail address where the messages are to be sent. Make sure the proper addresses are entered using the correct syntax; otherwise, you will not receive Backup Exec e-mail messages.

## Viewing and Editing Properties of a Policy

You can view properties of and modify an existing policy from both the Administration Console and the Administration Console for NetWare through the View/Edit Policy dialog box.

If you want to use an existing policy as a template for the creation of a new policy, you can also use the View/Edit Policy dialog box, or launch the Create Policy Wizard and elect to use an existing policy as a template.

---

**Note** The Create Policy Wizard is only available from the Administration Console.

---

### ▼ To view or edit properties of a policy:

1. From the Administration Console, click **Policy-based Backup**, and then click **Policy Definitions**. From the results pane, right-click the policy you want, and then click **View/Edit**.

---

**Tip** From the Administration Console, you can also double-click the policy that you want to edit.

---

From the Administration Console for NetWare, select **Jobs**, select **Policy**, select the policy you want to view or edit, and then press <Enter>.

2. From the View/Edit Policy dialog box, select the options you want to view or modify. The dialog boxes and their options are described in the following sections:
  - “[Policy Options](#)” on page 87
  - “[Restore Default Policy. Click this option to restore the original options to the default policy. This option is available on the Administration Console’s Policy dialog box only. To restore defaults from the Administration Console for NetWare, on the Backup Policies dialog box, press <Ctrl + D>.](#)” on page 88
  - “[Repeat Interval Options for a Policy](#)” on page 89
  - “[Backup Method Options for a Policy](#)” on page 90
  - “[Media Usage Options for a Policy](#)” on page 91



- “Job Log Options for a Policy” on page 93
  - “Pre/Post Options for a Policy” on page 95
  - “Open Files Options for a Policy” on page 97
  - “NetWare Options for a Policy” on page 99
  - “Windows 2000 Options for a Policy” on page 100
  - “Broadcast/E-mail Options for a Policy” on page 102
3. After viewing or modifying all options you want from the various dialog boxes, click **OK** from the Administration Console.

From the Administration Console for NetWare, press <F2>.

## Deleting a Policy

You can delete an unwanted policy from either the Administration Console or the Administration Console for NetWare, provided the policy is not the default policy or not being used by a job.

### ▼ To delete a policy:

1. From the Administration Console, expand the **Policy-based Backup** node, and click **Policy Definitions**. From the results pane, right-click the policy you want to remove, and then click **Delete**.

From the Administration Console for NetWare, select **Jobs**, select **Policy**, select the policy you want to delete, and then press <Del>.

2. From the Administration Console, click **Yes** when prompted.

From the Administration Console for NetWare, press <Y>.

## Creating a Backup Job from the Administration Console

You can create a backup job from the Administration Console by launching the Backup Job Wizard, or you can complete the Backup Job dialog box from either the Administration Console or the Administration Console for NetWare. The steps for creating a backup job differ slightly between the two consoles. For information on creating a backup job using the Administration Console for NetWare, see [“Creating a Backup Job from the Administration Console for NetWare”](#) on page 115.

If you do *not* elect to use the default policy or a policy you have already created, you can create a new policy while creating the backup job. For more information about policies, see [“Using Backup Policies”](#) on page 81.

---

**Note** The Backup Job Wizard and the Policy Wizard are only available from the Administration Console. If you are in the Backup Job Wizard and elect to create a new policy, you will be taken to the Policy Wizard. After the new policy is created, the Backup Job Wizard resumes. If you are creating a backup job through the Backup Job dialog box and elect to create a new policy, the Create Policy dialog box appears. After you create the new policy, the Backup Job dialog box reappears.

---

### ▼ To run the Backup Job Wizard:

1. From the Administration Console, click **Tools**.
2. Point to **Wizards**, and then click **Launch the Backup Job Wizard**.

---

**Tip** You can also launch the wizard by clicking the wizard icon from the toolbar (see [“Using the Toolbar and Menu Bar”](#) on page 9) or from the Backup Exec Assistant (see [“The Backup Exec Assistant and Wizards”](#) on page 23).

---

3. Follow the on-screen instructions to complete the wizard.

### ▼ To create a backup job from the Administration Console without using the wizard:

1. From the Administration Console toolbar, click **Jobs**, and then click **Backup**.

---

**Tip** You can also click the **Create a Backup Job** icon from the Administration Console’s toolbar, press <Ctrl + B>, or use the **Schedule View** subnode under the **Jobs** node for creating a backup job. For information about using **Schedule View** to create a backup job, see [“Creating a Job from the Schedule View”](#) on page 207.

---

2. Enter options for the General, Media, and Policy dialog boxes.



Options for the General dialog box are described in [“General Options for Backup Job Properties”](#) on page 106.

Options for the Media dialog box are described in [“Media Options for Backup Job Properties”](#) on page 108.

Options for the Policy dialog box are described in [“Policy Options for Backup Job Properties”](#) on page 109.

**3. Select Selections.**

Options for this dialog box and procedures for making selections are described in [“Making Backup Selections from the Administration Console”](#) on page 110.

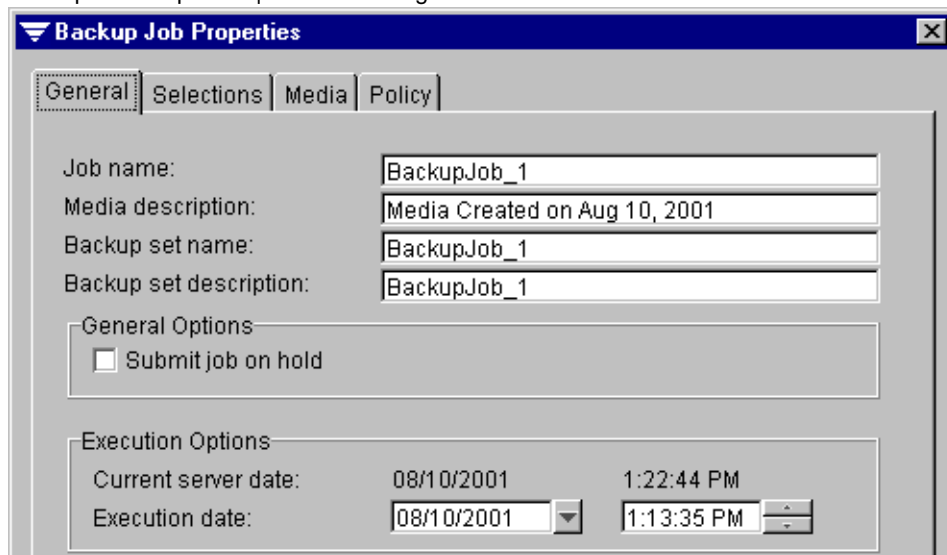
**4. Click OK.**

You can monitor the job using the **Jobs** node in the Administration Console or from the Administration Console for NetWare’s **Administration** menu (see [“Monitoring Jobs”](#) on page 175).

## General Options for Backup Job Properties

The General dialog box appears when creating, viewing, or modifying a backup job from the Administration Console.

Backup Job Properties | General Dialog Box



This dialog box contains the following options:

- ◆ **Job name.** Enter a job name or use the default name created by Backup Exec. The name will differentiate this backup from others in your job log records.
- ◆ **Media description.** Specify a description for the new or overwriteable media. This description identifies the media appearing in the results pane when the **Media** node and subnodes are selected and identifies the media when making restore selections. The **Media description** defaults to **Tape created on <date the job was initialized>**.
- ◆ **Backup set name.** Enter a name for all of the backup sets in this job.
- ◆ **Backup set description.** Enter a description of the contents being backed up or accept the default. The default for this field is the same as the default for **Job name**.
- ◆ **Submit job on hold.** Select this option to have the job placed on hold.
- ◆ **Current server date.** Displays the current date and time of the media server. This option only appears if **Select to use media server time** is selected as the **Server/Client Time Options** on the Administration Console Options General dialog box (see [“General Options for the Administration Console”](#) on page 269).
- ◆ **Current workstation date.** Displays the current date and time of the local workstation. This option only appears if **Select to use client workstation time** is selected as the **Server/Client Time Options** on the Administration Console Options General dialog box (see [“General Options for the Administration Console”](#) on page 269).
- ◆ **Execution date.** Enter or select the date and time you want the job to begin processing.



## Media Options for Backup Job Properties

The Media dialog box that appears when creating, viewing, or modifying a backup job from the Administration Console contains the options for setting a media password and selecting the destination partition or drive and the destination media set.

Backup Job Properties | Media Options Dialog Box

The **Media Password on Overwrite** options include:

- ◆ **Password.** Enter a media password if you are overwriting the media and you want to password protect it. This option is not required. When a password protected media is taken to another location, such as another media server, the password is required to read the data on the media.

---

**Note** Password protected media can be erased without requiring the password.

---

- ◆ **Confirm password.** Verify the password by re-typing it.

The **Destination** options include:

- ◆ **Partition.** This option is only active if you are in the partition management mode. Select the partition where this backup job is to be run.
- ◆ **Drive.** This option is only active if you are in the media management mode. Select the drive where this backup job is to be run.
- ◆ **Media set.** This option is only active if you are in media management mode. Select the media set for the backup.



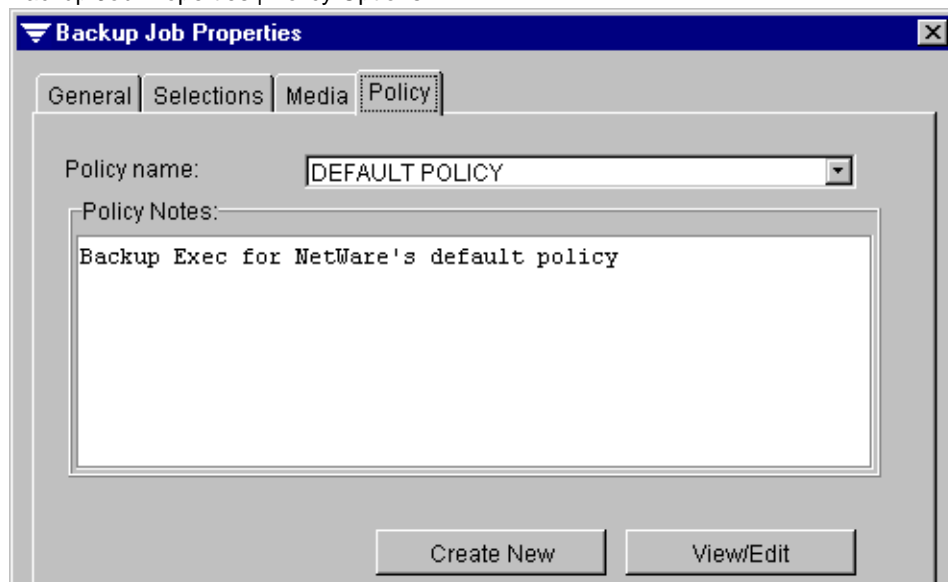
If **Overwrite media** was selected as the **Media Usage** option for the policy to be used for this backup, the media in the drive or partition is overwritten if the media is Scratch, or if its overwrite protection period has expired. See [“Media Usage Options for a Policy”](#) on page 91 for information about the **Media Usage** options.

If allocated or imported media are in the drive, they may also be overwritten depending on the Media Overwrite Protection Level set in the media server default options (see [“Configuring Backup Exec”](#) on page 239).

## Policy Options for Backup Job Properties

The Policy dialog box that appears when creating, viewing, or modifying a backup job from the Administration Console allows you to select the policy to be used for this backup job.

Backup Job Properties | Policy Options



This dialog box contains the following options:

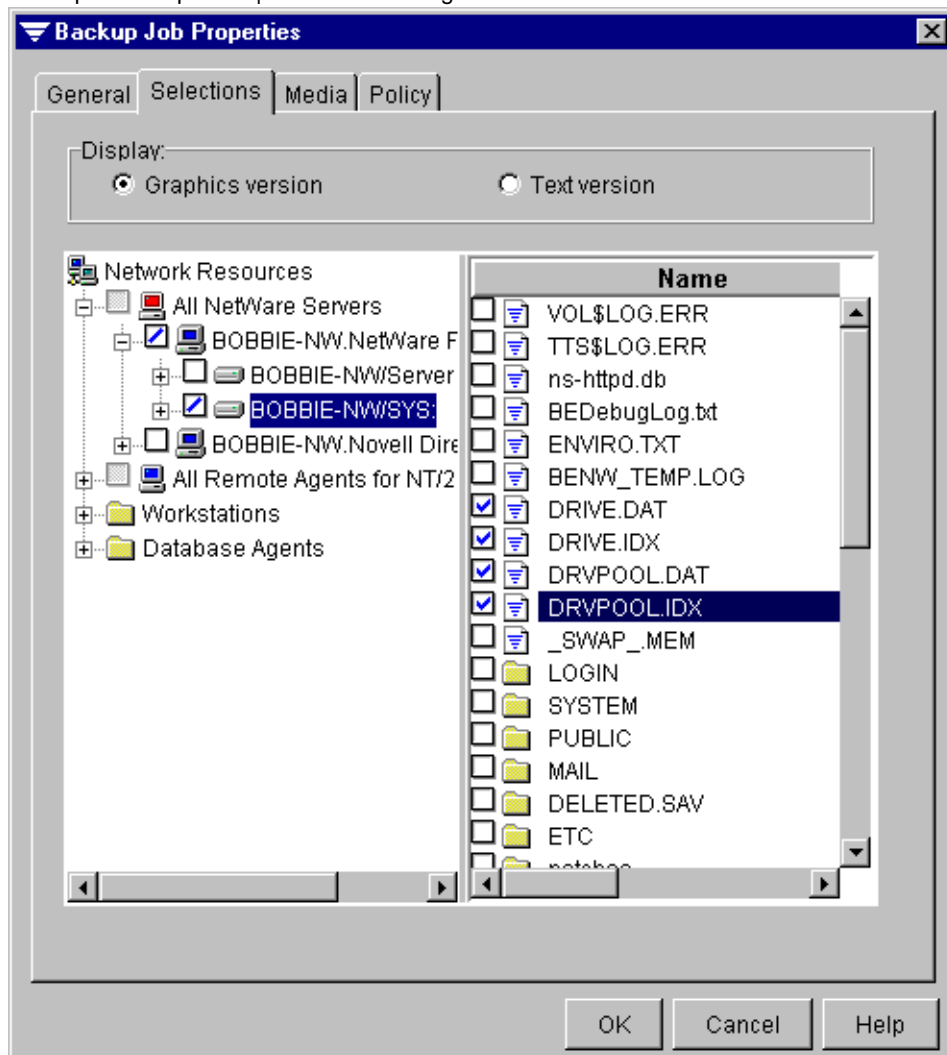
- ◆ **Policy name.** If you want to use an existing policy, select a policy from the drop-down list of available policies.
- ◆ **Policy Notes.** Notes entered for the policy listed in the **Policy name** field appear here.
- ◆ **Create New.** Click this button to create a new policy to use for this backup job. The Create Policy dialog box appears (see [“Creating a Policy”](#) on page 85).
- ◆ **View/Edit.** Click this button to view or modify properties of an existing policy (see [“Viewing and Editing Properties of a Policy”](#) on page 103).



## Making Backup Selections from the Administration Console

In the Administration Console, similar procedures are used to select data for backup operations whether you are running the Backup Job Wizard or are creating a backup job through the **Backup** option.

Backup Job Properties | Selections Dialog Box



You must first select a resource type. Available resource types include:

- ◆ NetWare Servers
- ◆ NT Remote Agents

- ◆ DOS Workstations
- ◆ OS/2 Workstations
- ◆ Macintosh Workstations
- ◆ Unix/Linux Workstations
- ◆ Windows 95/98/Me Workstations
- ◆ Windows NT/2000 Servers/Workstations

If the **Graphics** version is selected as the **Display** option, double-click the icon or resource type appearing in the left pane of the dialog box to display a list of all available systems for that resource type, and select the device you want to protect.

---

**Note** If the account to which you are logged in does not have sufficient rights, or if this is the first time the agent has been accessed, you are required to supply the user name and password unless the **Auto Login** option is enabled. Click **Default logon** to have Backup Exec automatically provide the user name and password the next time you access this device. For more information about Auto Login, see [“Using the Auto Login Feature”](#) on page 260.

---

You can use the **Advanced File Selections** option to quickly select groups of files to be included in or excluded from the backup (see [“Using Advanced File Selections”](#) on page 112).

To expand the view for a device, click the adjacent box that contains the plus sign (+) or double-click the resource name. To collapse the view, click the minus sign (-) or double-click the resource name.

To view the contents of a device, click the device’s icon. To select data, select the check box next to the directory or file you want to back up. To deselect data, clear the check box.

A slash in a check box means that some items below the device or directory level are selected, but the item itself is not selected. If you select the device or directory level but then deselect one or more items within the device or directory, a slash appears in the directory or volume check box.

If **Text version** is selected as the **Display** option, click **Insert** to make file selections from the Advanced File Selections dialog box (see [“Advanced File Selection Options”](#) on page 113).



## Using Advanced File Selections

You can use the **Advanced File Selection** option to select groups of files to be included or excluded from your backup operations.

### ▼ To make your Advanced File Selections:

1. From the Administration Console menu bar, click **Jobs**, and then click **Backup**.

---

**Tip** You can also click the **Create a Backup Job** icon from the Administration Console's toolbar, press <Ctrl + B>, or use the **Schedule View** subnode under the **Jobs** node for creating a backup job. For information about using **Schedule View** to create a backup job, see "[Creating a Job from the Schedule View](#)" on page 207.

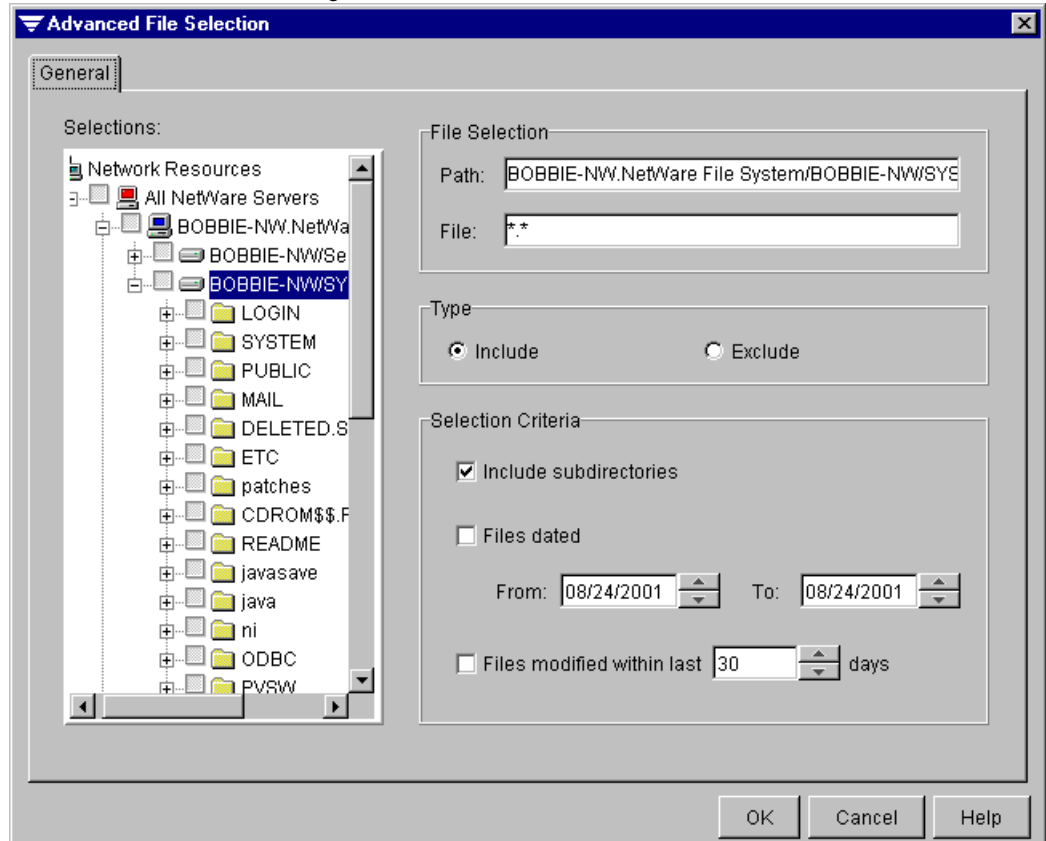
---

2. Click **Selections**.
3. Expand one of the resource types in the tree.
4. Right-click on a system appearing under a resource type in the tree view.
5. Click **Advanced File Selection**.
6. From the Advanced File Selection dialog box, select the options you want. Options are described in "[Advanced File Selection Options](#)" on page 113.
7. Click **OK**.
8. Continue selecting options for this backup job, and then click **OK**.

## Advanced File Selection Options

The Advanced File Selection dialog box can be accessed when creating a backup, restore, or media job by right-clicking a node in the Selections dialog box or when right-clicking a selected **Network Resource** on the tree or results panes (see [“Creating a Backup Job from the Administration Console”](#) on page 105 and [“Using Advanced File Selections”](#) on page 112).

Advanced File Selection Dialog Box



This dialog contains the following options:

- ◆ **Selections.** Select the resource containing the files you want to include or exclude. The default view is what was selected from the Selections dialog box.
- ◆ **Path.** Current directory or subdirectory information appears.
- ◆ **File.** Specify any files to be included or excluded. Wildcard characters are permitted. The asterisk (\*) in a file name or extension is a wildcard character that represents all characters occupying any remaining position in the file name or extension. The question mark (?), the wildcard for a single character, is also supported.

- ◆ **Include.** Select this option if you want Backup Exec to include all files that meet your file specification.
- ◆ **Exclude.** Select this option if you want Backup Exec to exclude all files that meet your file specification.
- ◆ **Include subdirectories.** Select this option if you want to include all subdirectories contained within all directories that are part of your selections.

If the backup is beginning at the root level of a disk (such as drive C:), all directories and subdirectories on that disk will be included. If you entered a specific path (directory), all files and directories that match the file selection criteria will be included. By default, this is all files and directories (\*.\*)

- ◆ **Files dated.** Select this option if you want to include or exclude all files that were changed or created within a specified range of dates.
  - **From.** Select the starting date of the range for including or excluding files.
  - **To.** Select the ending date of the range for including or excluding files.
- ◆ **Files modified within last x days.** Select this option to include or exclude files that have been modified within the specified number of days. Specify the number of days you want Backup Exec to use for this option.

## Editing a Backup Job

You can edit a scheduled backup job, provided the job is not active or is not already being edited. For information on editing jobs, see “[Viewing or Editing a Job](#)” on page 188.

## Deleting a Backup Job

You can delete a scheduled backup job, provided the job is not active or is not already being edited. For information on deleting jobs, see “[Deleting a Job](#)” on page 191.

## Creating a Backup Job from the Administration Console for NetWare

You can create a backup job using the Backup Job dialog box from either the Administration Console for NetWare or the Administration Console. The steps for creating a backup job differ slightly between the two consoles. For information on creating a backup job using the Administration Console, see [“Creating a Backup Job from the Administration Console”](#) on page 105.

If you do *not* elect to use the default policy or a policy you have already created, you can create a new policy while creating the backup job. For more information about policies, see [“Using Backup Policies”](#) on page 81.

---

**Note** If you are creating a backup job through the Backup Job dialog box and elect to create a new policy, the Create Policy dialog box appears. After you create the new policy, the Backup Job dialog box reappears.

---

### ▼ To create a backup job from the Administration Console for NetWare:

1. From the Administration Console for NetWare, select **Jobs**, and then select **Backup**.

2. Select **Make Selections**.

The Backup Source window appears. Backup Exec displays published servers and workstations. You can select devices to be backed up or use the selection arrows to select a device from which you want to select files or directories. For information on selecting devices or directories and files to be backed up, see [“Making Backup Selections from the Administration Console for NetWare”](#) on page 116.

3. Select what is to be backed up, and press <F2>.

4. From the **Backup** menu, select **Submit**.

5. Provide the details for your job in the Backup Job dialog box. Options for this dialog box are described in [“Backup Job Properties Dialog Options”](#) on page 117.

6. Press <F2>.

A message that the job was submitted to the media server appears.

7. Press any key to return to the **Backup** menu.



## Making Backup Selections from the Administration Console for NetWare

Backup Exec displays published servers and workstations in the Backup Source window that appears when making selections for a backup job from the Administration Console for NetWare.

Backup Source



Indicators appear in brackets ([ ]) next to the name of the devices. These include:

- ◆ [None]. No data is selected on the device for backup.
- ◆ [Some]. Some data has been selected for backup.
- ◆ [All]. All of the information on the device has been selected.

To select an entire device for backup, move the selection arrows next to the device and press <Spacebar>. The selection will be highlighted.

When you first select a device, you must supply the user name and password for accessing this device, unless the **Auto login** option is enabled (see “[Configuring Backup Exec](#)” on page 239). Select **Save in password database** to have Backup Exec automatically provide the user name and password the next time you access this device. This option is unavailable if Backup Exec’s **Auto login** is enabled.

If you prefer to select directories or files in the device to be backed up, rather than the entire device, ensure the selection arrows are next to the device from which you want to make directory or file selections and press <Enter>.

Continue pressing <Enter> until you reach the Directory Listing window. Use <Spacebar> to select the directories and files you want to back up.



**Note** If you mark individual files in a directory, only those files are backed up. Files added to the directory after the backup job was submitted are not backed up. If you mark the entire directory, all files within that directory are backed up, including any files added after the backup job was initially submitted.

You can move quickly among directories and filenames by pressing the first letter of the filename. For example, pressing <C> moves the cursor over the first file that begins with the letter C.

When your selections are complete, press <F2> to return to the **Backup** menu. You can now select **Submit** to complete the steps for submitting a job (see “[Backup Job Properties Dialog Options](#)” on page 117).

## Backup Job Properties Dialog Options

The Backup Job Properties dialog box that appears when creating a backup job from the Administration Console for NetWare allows you to:

- ◆ Enter general options for this backup job.
- ◆ Select the policy to use for this backup job.
- ◆ Save the backup selections as a script or selection list that can be used for other backup jobs. For more information about creating and using scripts, or selection lists, see “[Using Selection Lists to Create a Backup or Archive Job](#)” on page 121.
- ◆ Target the job to a specific drive or partition.

Backup Job Properties Dialog Box

```

Backup Job Properties
Job name:           [BackupJob_1]
Media description:  [Media Created on Jul 19, 2001]
Backup set name:    [BackupJob_1]
Backup set description: [BackupJob_1]

Execution date:     [07/19/2001]   Time: [03:17] AM
[ ] Submit job on hold

Policy name:        [DEFAULT POLICY]
Media management:  [Press <Enter> for MM-Mode]
    
```

General options appearing on this dialog box include:

- ◆ **Job name.** Enter a job name or use the default name created by Backup Exec. The name will differentiate this backup from others in your job log records.
- ◆ **Media description.** Enter a description for the new or overwriteable media. This description identifies the media appearing in the results pane when the **Media** node and subnodes are selected and identifies the media when making restore selections.



- ◆ **Backup set name.** Enter a name for this backup set.
- ◆ **Backup set description.** Enter a description of the contents being backed up or accept the default. The default for this field is the same as the default for **Job name**.
- ◆ **Execution date and time.** Enter the date and time you want the job to begin processing.
- ◆ **Submit job on hold.** Select this option to have the job placed on hold.

▼ **To select the policy for this backup job:**

1. Select **Policy name**.
2. Press <Enter>.
3. Either select an existing policy from the list that appears, or select <**Create Policy**>. If you elect to create a new policy, the Create Policy dialog box appears (see “[Creating a Policy](#)” on page 85).
4. Press <F2>.

▼ **To select the target for this backup:**

1. If you are in the partition management mode, select **Partition Management**. If you are in the media management mode, select **Media Management**.
2. Press <Enter>.
3. If you are in the partition management mode, enter the **Target partition** and **Media password**, and then press <F2>. For more information about these options, see “[Partition Management Options](#)” on page 120.  
If you are in the media management mode, enter the **Target drive**, **Media set**, and **Media password**, and then press <F2>. For more information about these options, see “[Media Management Options](#)” on page 119.

## Media Management Options

The Media Management dialog box appears on the Administration Console for NetWare when creating a backup job in the media management mode (see “[Media Management Mode vs. Partition Management Mode](#)” on page 286).

Media Management Dialog Box

Media Management	
Target drive:	[HA:0 ID:1 LUN:0 ARCHIVE PYTHON 0468 ▼]
Media set:	[Default ▼]
Media password:	[ ]

This dialog box contains the following options:

- ◆ **Target drive.** This option is only active if you are in the media management mode. Select the drive where this backup job is to be run.
- ◆ **Media set.** This option is only active if you are in media management mode. Select the media set for the backup.

If **Overwrite media** was selected as the **Media Usage** option for the policy to be used for this backup, the media in the drive or partition is overwritten if the media is scratch, or if its overwrite protection period has expired. See “[Media Usage Options for a Policy](#)” on page 91 for information about the **Media Usage** options.

If allocated or imported media are in the drive, they may also be overwritten depending on the Media Overwrite Protection Level set in the media server default options (see “[Configuring Backup Exec](#)” on page 239).

- ◆ **Media password.** Enter a media password if you are overwriting the media and you want to password protect it. When a password protected media is taken to another location, such as another media server, the password is required to read the data on the media.

---

**Note** Password protected media can be erased without requiring the password.

---



## Partition Management Options

The Partition Management dialog box that appears on the Administration Console for NetWare when creating a backup job in the partition management mode (see “[Media Management Mode vs. Partition Management Mode](#)” on page 286) contains the following options:

- ◆ **Target partition.** This option is only active if you are in the partition management mode. Select the partition where this backup job is to be run.
- ◆ **Media password.** Enter a media password if you are overwriting the media and you want to password protect it. When a password protected media is taken to another location, such as another media server, the password is required to read the data on the media.

---

**Note** Password protected media can be erased without requiring the password.

---

## Editing a Backup Job from the Media Server

You can edit a scheduled backup job, provided the job is not active or is not already being edited. For information on editing jobs, see “[Viewing or Editing a Job](#)” on page 188.

## Deleting a Backup Job from the Media Server

You can delete a scheduled backup job, provided the job is not active or is not already being edited. For information on deleting jobs, see “[Deleting a Job](#)” on page 191.

## Using Selection Lists to Create a Backup or Archive Job

Selection lists, or scripts, provide a way of saving a list of resources and files that you frequently back up. You can use a previously created selection list for another job.

For example, if you have used a selection list for a full backup to run on Fridays, you can use those same selections for an incremental backup job to run Monday through Thursday by using the same selection list when creating the incremental backup.

When creating a backup or media rotation job, you can create a selection list that can be loaded later and assign it a name that specifically describes the information you are backing up. For example, you can select files needed for your payroll department and call the selection list `PAYROLL_DATA`.

There is no limit to the number of selection lists you can create.

### Creating Selection Lists

You can create a selection list from the **Network Resources** node or from the Backup Job Properties' Selections dialog box in the Administration Console, or from the **Jobs** menu in the Administration Console for NetWare.

#### ▼ To create a selection list from the Administration Console:

1. Either click **Network Resources** and expand the appropriate subnodes until you can make the selections you want, or click **Jobs**, click **Backup**, click **Selections**, and then make the selections you want.
2. Right-click a selection, and then click **Save Selection List**.
3. Enter a name for the selection list, and then click **OK**.

#### ▼ To create a selection list from the Administration Console for NetWare:

1. Select **Jobs**.
2. Select **Backup**.
3. Select **Make Selections**.
4. Select the data you want to back up, and then press <F2>.
5. Select **Selection Lists**.



6. Select **Save Selections As**.
7. Enter a name for the selection list, and then press <F2>.

## Viewing Existing Selection Lists

You can view existing selection lists from either the Administration Console or the Administration Console for NetWare. When you view the information from the Administration Console, you can see both the selection list name and the name of the user who created the selection list. On the Administration Console for NetWare, only the name of the selection list appears.

---

**Note** Selection lists will not appear if you have not selected items to be backed up or created a backup job.

---

### ▼ To view selection lists from the Administration Console:

- ❖ Click **Selection Lists**.

Selection lists appear in the results pane (see “[Results Pane View of Selection Lists](#)” on page 123).

### ▼ To view selection lists from the Administration Console for NetWare:

1. Select **Jobs**.
2. Select **Backup**.
3. Select **Selection Lists**.
4. Select **Load/View/Delete**.

Selection lists appear in the Load/View/Delete dialog box (see “[Load/View/Delete Dialog Box](#)” on page 123).

## Results Pane View of Selection Lists

You can select information appearing in the results pane for **Selections** by following the procedures described in “Using the Results Pane” on page 21.

Results Pane View of Selection Lists

Creator User	Selection List
ADMIN.QA	SCRIPT_BK_992865879
ADMIN.QA	DATABASE_AND_INDEX_...

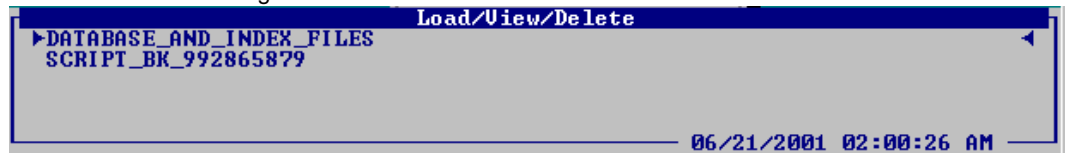
Information appearing on this dialog box includes:

- ◆ **Creator User.** Name of user who created the selection list.
- ◆ **Selection List.** Name of the selection list.

## Load/View/Delete Dialog Box

The Load/View/Delete dialog box that appears on the Administration Console for NetWare allows you to view information about a selection of files and directories for backup jobs. Through this dialog box you can load the selection list, saving time when creating a job. You can also view the list of items selected for backup or delete the selection list.

Load/View/Delete Dialog Box



## Viewing Contents of a Selection List

You can view the contents of a selection list using the Administration Console's **Load** option or using the **View script** option on the Administration Console for NetWare.

### ▼ To view a selection list's contents from the Administration Console:

1. Click **Selection Lists**.
2. From the results pane, right-click the selection list.
3. Click **Load**.

The results pane divides and displays the list of the resources, directories, and files included in the selection list. You can change how information appears in the results pane using the procedures described in "[Using the Results Pane](#)" on page 21.

Default information appearing includes:

- **Name.** Name of the device, file, or directory.
- **Size.** Size of the file.
- **Type.** Selection type, such as **Device**, **Folder**, or **File**.
- **Modified Date.** Date the file was last modified.
- **Attributes.** Special attributes for the selections, such as R for read only and H for hidden.

### ▼ To view a selection list's contents from the Administration Console for NetWare:

1. Select **Jobs**.
2. Select **Backup**.
3. Select **Selection Lists**.
4. Select **Load/View/Delete**.
5. Use the arrow keys to select the selection list you want to view, and then press <F4>. The View Script dialog box appears.



View Script Dialog Box

```
View Script: DATABASE_AND_INDEX_FILES
/OS_TYPE:9
/USERNAME:"BOBBIE-NW.NetWare File System:ADMIN"
"++BOBBIE-NW.NetWare File System/BOBBIE-NW/SYS:\DRIVE.DAT"
"++BOBBIE-NW.NetWare File System/BOBBIE-NW/SYS:\DRIVE.IDX"
"++BOBBIE-NW.NetWare File System/BOBBIE-NW/SYS:\DRUPOOL.DAT"
"++BOBBIE-NW.NetWare File System/BOBBIE-NW/SYS:\DRUPOOL.IDX"
```

This dialog lists the files included in the selection list.

## Deleting Selection Lists

You can delete selection lists that are no longer needed.

### ▼ To delete a selection list using the Administration Console:

1. Click **Selections**.
2. From the results pane, right-click the selection list.
3. Click **Delete**.

### ▼ To delete a selection list using the Administration Console for NetWare:

1. Select **Jobs**.
2. Select **Backup**.
3. Select **Selection Lists**.
4. Select **Load/View/Delete**.
5. Use the arrow keys to select the selection list you want to delete, and then press <Del>.
6. When prompted, press <Y>.



# Restoring Data

---

This section describes how you can retrieve complete resources or individual files from a storage media and restore to any server volume or remote workstation.

*Restoring Data* includes the following topics:

Section	Describes
<a href="#">“Overview of the Restore Process”</a> on page 128	How Backup Exec allows you to restore data from media to its original location or redirect the restore to a different location on your network.
<a href="#">“Creating a Restore Job from the Administration Console”</a> on page 131	The steps for creating a restore job from the Administration Console.
<a href="#">“Creating a Restore Job from the Administration Console for NetWare”</a> on page 153	The steps for creating a restore job from the Administration Console for NetWare.
<a href="#">“Redirecting Resources”</a> on page 164	The steps for redirecting a restore operation to another resource.
<a href="#">“Media Compatibility”</a> on page 167	How media backed up with other software products can be restored by Backup Exec.
<a href="#">“Restoring ARCserve Media”</a> on page 169	The steps for restoring data backed up with ARCserve.
<a href="#">“Restoring System Independent Data Format (SIDF) Media”</a> on page 171	The steps for restoring data backed up with SIDF.



## Overview of the Restore Process

Backup Exec allows you to retrieve information from storage media and restore it to its original location or to redirect these restore items to different locations on your network.

In most cases, you will only need to restore one file, but there may be times when directories, groups of files, or (in a disaster situation) an entire server or workstation will need to be restored. You can create a restore job from the Administration Console by using the Restore Wizard, which guides you through a step-by-step process when making your restore selections.

You also can create a restore job through the use of dialogs from either the Administration Console or the Administration Console for NetWare. The restore dialogs offer minimal guidance and allow you to have complete control over your restore job selections.

Several convenient methods are available in Backup Exec to find the files you need to restore, including:

- ◆ *Volume view.* The volume view lists data by the device from which it was backed up. This feature is useful for finding files that were located on a specific server or workstation. For more information, see [“Using the Volume View”](#) on page 130.
- ◆ *Media view.* In the Administration Console, the media view lists the data that is contained on a piece of media. This feature is useful for viewing the contents of media that was backed up from another media server. For more information, see [“Using the Media View”](#) on page 130.

In the Administration Console for NetWare, selecting the media view from the **Media** menu provides the same functionality as selecting the **Media** node in the Administration Console. For more information, see [“Media”](#) on page 19.

- ◆ *Catalog view.* The catalog view, which is only available on the Administration Console for NetWare, is the equivalent of the Administration Console’s media view, and lists the data that is contained on a piece of media. This feature is useful for viewing the contents of media that was backed up from another media server. For more information, see [“Using the Catalog View”](#) on page 130.
- ◆ *Advanced file selection.* The **Advanced File Selection** option allows you to specify file and date attributes for the data you want to restore. For more information, see [“Advanced File Selection”](#) on page 137.
- ◆ *Search catalogs.* The **Search Catalogs** option allows you to search on-media catalogs for specific files to restore. For more information, see [“Searching a Catalog”](#) on page 139.



## Restore Operations and the Catalog

While backing up data from a server or workstation, Backup Exec creates a set of catalog files that reside on the media server. These catalog files contain information about the contents of each media and are used when selections are made for restore jobs. Data cannot be restored from an uncataloged media. To catalog media, use the **Catalog** utility (see “[Cataloging Media in a Drive](#)” on page 307).

### Setting Catalog Defaults

You can have Backup Exec automatically remove catalogs if they are not accessed in a specified number of days by setting the Media Server’s default catalog options. For information about setting the catalog options, see “[Catalog Options for the Media Server](#)” on page 244.

## Using the Media, Volume, and Catalog Views

You can make restore selections from Backup Exec’s catalogs using the media, volume, or catalog views. By default, Backup Exec uses the media view.

For more information about making restore selections, see “[Making Restore Selections](#)” on page 135.

#### ▼ To change views:

1. From the Administration Console, click **Restore**, and then right-click **Catalogs**.  
From the Administration Console for NetWare, select **Media**.
2. Select the view you want.

---

**Tip** You can change views when creating a restore job from the Administration Console by right-clicking the **All Volumes** or **All Media** icon on the **Selections** tab or Selections dialog, and then selecting the view you want. You can also change views by right-clicking **Catalogs** or either the **All Volumes** or **All Media** icon on the results pane, and then selecting the view you want.

---



## Using the Media View

The media view allows you to view and make restore selections from all cataloged media in the system.

To expand the view for a piece of media in the Administration Console, click the plus sign (+). To collapse the view, click the minus sign (-).

## Using the Volume View

In the volume view, restore selections are listed by the resource from which they were backed up.

To expand the view in the Administration Console, click the plus sign (+). To collapse the view, click the minus sign (-).

## Using the Catalog View

In the Administration Console for NetWare's catalog view, restore selections are listed by the media catalogs. To expand the view, press <Enter>.



## Creating a Restore Job from the Administration Console

You can create a restore job from the Administration Console by launching the Restore Job Wizard, or you can complete the Restore Job dialog box from either the Administration Console or the Administration Console for NetWare. The steps for creating a restore job using the dialog box differ slightly between the two consoles. For information on creating a restore job using the Administration Console for NetWare, see [“Creating a Restore Job from the Administration Console for NetWare”](#) on page 153.

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**Note** The Restore Job Wizard is available only through the Administration Console.

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▼ **To run the Restore Job Wizard:**

1. From the Administration Console, click **Tools**.
2. Point to **Wizards**, and then click **Launch the Restore Job Wizard**.

---

**Tip** You also can launch the wizard from the toolbar (see [“Using the Toolbar and Menu Bar”](#) on page 9) or from the taskpad (see [“The Backup Exec Assistant and Wizards”](#) on page 23).

---

3. Follow the on-screen prompts to complete the wizard.

▼ **To create a restore job from the Administration Console without using the wizard:**

1. From the Administration Console, click **Jobs**.
2. Click **Restore**.

---

**Tip** You can also press <Ctrl + R> to display the Restore Job Properties dialog box.

---

3. Select options that pertain to all restore jobs. These options are selected on the following dialog boxes:
  - General dialog box (see [“General Options for Restore”](#) on page 133)
  - Selections dialog box (see [“Making Restore Selections”](#) on page 135)
  - Advanced dialog box (see [“Advanced Options for Restore”](#) on page 141)
4. If you are restoring to a different location than from where the data was backed up, specify options on the **Redirection** dialog box. Options for this dialog box are described in [“Redirection Options for Restore”](#) on page 143.



5. If you want to specify a different level of detail for this job's log than what is set at the media server, select the level you want from the **Job Log** tab. Options for this tab are described in "[Job Log Options for Restore](#)" on page 150.
6. If you want Backup Exec to use the NetWare broadcast utility to send broadcasts or e-mail messages when a job completes, enter options in the Broadcast/E-mail dialog box.

Options for this dialog box are described in "[Broadcast/E-mail Options for Restore](#)" on page 152.

7. If you are restoring a specific type of data, specify the options for that data type. Special types of data that can be restored include:
  - NetWare server data (see "[Novell NetWare Options for Restore](#)" on page 145)
  - Windows NT data (see "[Windows NT Options for Restore](#)" on page 146)
  - Windows 2000 data (see "[Windows 2000 Options for Restore](#)" on page 147)
8. After entering the information for your restore job, click **OK**.

You can monitor the job using the **Jobs** node in the Administration Console or from the Administration Console for NetWare's **Administration** menu (see "[Monitoring Jobs](#)" on page 175).

## General Options for Restore

The **General** dialog box appears when creating, viewing, or modifying a restore job from the Administration Console.

Restore Job Properties | General Dialog Box

The screenshot shows the 'Restore Job Properties' dialog box with the 'General' tab selected. The 'Job name' field contains 'RestoreJob\_1'. Under 'Options', the 'Submit job on hold' checkbox is unchecked. The 'Target' section shows a dropdown menu for 'Drive' with the selected value 'HA:0 ID:4 LUN:0 HP C1553A(Drive)'. The 'Schedule' section shows the 'Current server date' as 09/06/2001 8:35:20 AM and the 'Execution date' as 09/06/2001 8:21:00 AM. The dialog has 'OK', 'Cancel', and 'Help' buttons at the bottom.

This dialog box contains the following options:

- ◆ **Job name.** Enter a job name or use the default name created by Backup Exec. The name will differentiate this job from others in your job log records.
- ◆ **Submit job on hold.** Select this option to have the job placed on hold.



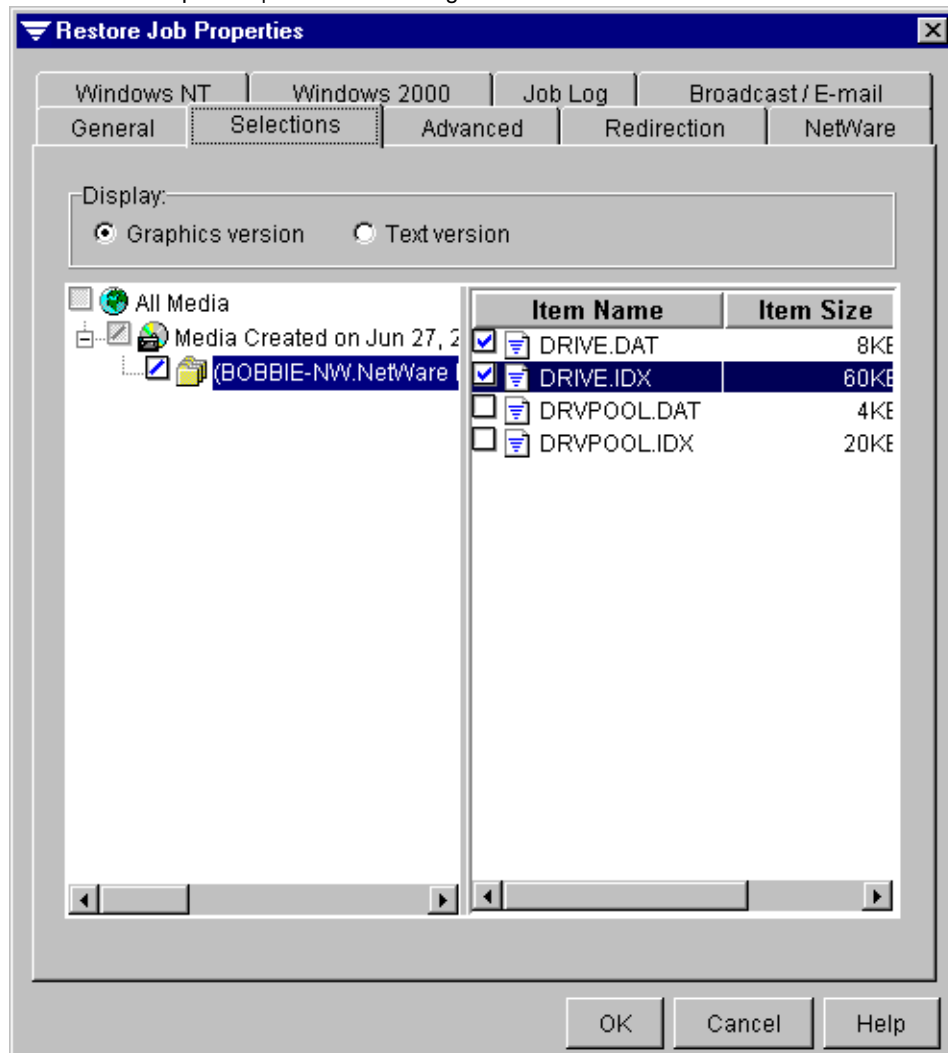


- ◆ **Drive.** Select the drive in which the media containing the data to be restored resides. This option is only available if you are running in media management mode (see [“Media Management Mode vs. Partition Management Mode”](#) on page 286).
- ◆ **Partition.** Select the partition in which the media containing the data to be restored resides. This option is only available if you are running in partition management mode (see [“Media Management Mode vs. Partition Management Mode”](#) on page 286).
- ◆ **Current server date.** Displays the current date and time of the media server. This option only appears if **Select to use media server time** is selected as the **Server/Client Time Options** on the Administration Console Options General dialog box (see [“General Options for the Administration Console”](#) on page 269).
- ◆ **Current workstation date.** Displays the current date and time of the local workstation. This option only appears if **Select to use client workstation time** is selected as the **Server/Client Time Options** on the Administration Console Options General dialog box (see [“General Options for the Administration Console”](#) on page 269).
- ◆ **Execution date.** Enter or select the date and time you want the job to begin processing. You can select whether to use the server time or the Administration Console’s time (see [“General Options for the Administration Console”](#) on page 269).

## Making Restore Selections

The Selections dialog box that appears when creating, viewing, or modifying a restore job through the Administration Console allows you to view data to restore through the volume or media view. For information on using or changing views, see [“Using the Media, Volume, and Catalog Views”](#) on page 129.

Restore Job Properties | Selections Dialog Box



To expand the view for a system (server or workstation) or piece of media when **Graphics version** is selected as the **Display** option, click on the adjacent box that contains the plus sign (+). To collapse the view, click the minus sign (-).

When the view is expanded, backup sets contained on the system or media are displayed. You can expand the backup set to view the data included in the backup. The data that has been backed up appears in the right pane.

Only data cataloged or backed up from the media server you are connected to appears in the Selections dialog box.

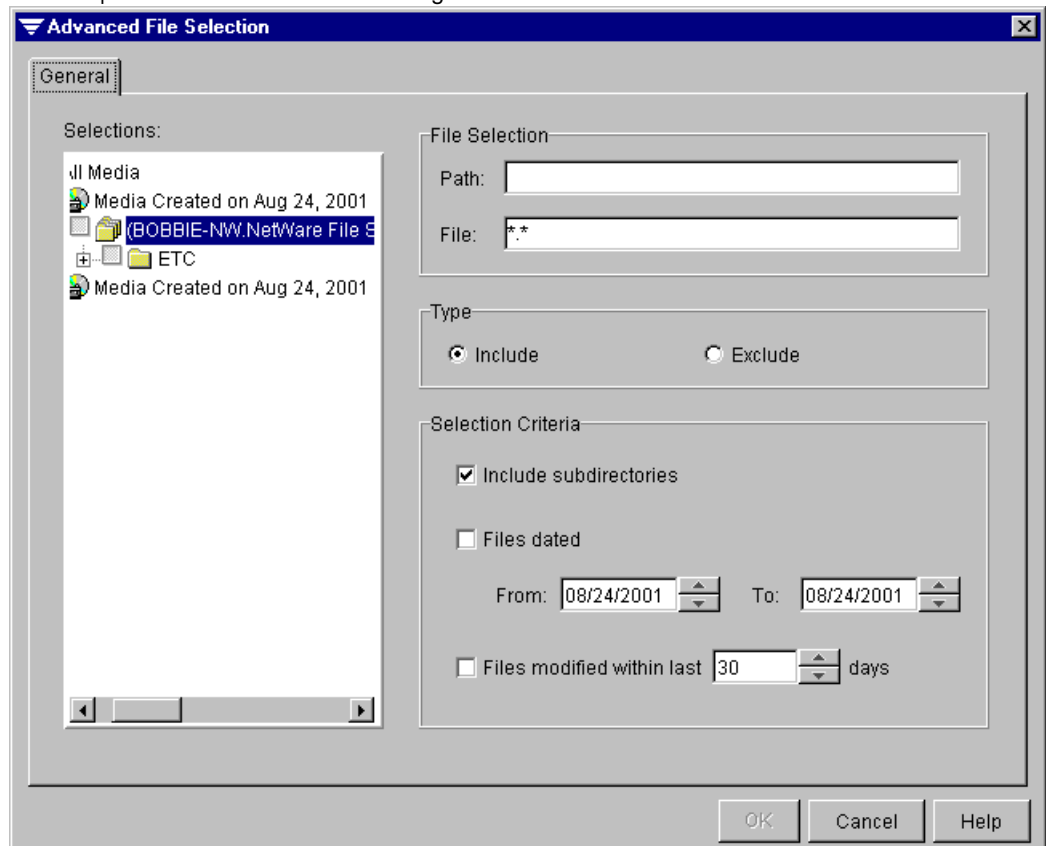
You can traverse file levels from either side of the dialog box by clicking folders and subfolders as they appear.

If **Text version** is selected as the **Display** option, click **Insert** to make file selections from the Advanced File Selections dialog box (see “[Advanced File Selection](#)” on page 137).

## Advanced File Selection

The Advanced File Selection dialog box can be accessed when creating a backup, restore, or media job by right-clicking a node in the Selections dialog box or when right-clicking a selected item under catalogs on the tree or results panes (see “Making Restore Selections” on page 135).

Restore | Advanced File Selection Dialog Box



This dialog contains the following options:

- ◆ **Selections.** Select the resource containing the files you want to include or exclude. The default view is what was selected from the Selections dialog box.
- ◆ **Path.** Directory or subdirectory where data is to be restored.
- ◆ **File.** Specify any files to be included or excluded. Wildcard characters are permitted. The asterisk (\*) in a file name or extension is a wildcard character that represents all characters occupying any remaining position in the file name or extension. The question mark (?), the wildcard for a single character, is also supported.



- ◆ **Include.** Select this option if you want Backup Exec to include all files that meet your file specification.
- ◆ **Exclude.** Select this option if you want Backup Exec to exclude all files that meet your file specification.
- ◆ **Include subdirectories.** Select this option if you want to include all subdirectories contained within all directories that are part of your selections.

If the restore is beginning at the root level of a disk (such as drive C:), all directories and subdirectories on that disk will be included. If you entered a specific path (directory), all files and directories that match the file selection criteria will be included. By default, this is all files and directories (\*.\*)

- ◆ **Files dated.** Select this option if you want to include or exclude all files that were changed or created within a specified range of dates.
  - **From.** Select the starting date of the range for including or excluding files.
  - **To.** Select the ending date of the range for including or excluding files.
- ◆ **Files modified within last x days.** Select this option to include or exclude files modified within the specified number of days. Specify the number of days you want Backup Exec to use for this option.

## Searching a Catalog

Backup Exec maintains a list of the files included in each backup in its catalog. Finding a single file or a group of files among many backup sets can be difficult and time consuming. To speed this process, Backup Exec has a **Search Catalogs** option that allows you to search for specific files by name and location or to search for recently modified files.

### ▼ To search a catalog:

1. From the Administration Console, click **Tools**.
2. Click **Search Catalogs**.
3. Select options from the Name & Location dialog box. Options are described in “[Name & Location Dialog Box](#)” on page 139.
4. If you want to limit your search to files created or modified within a specified date click **Date Modified**, and select options. Options are described in “[Date Modified](#)” on page 140.
5. Click **Find Now**.

### Name & Location Dialog Box

The Name & Location dialog box appears when using the **Search Catalogs** option.

Name & Location Dialog Box



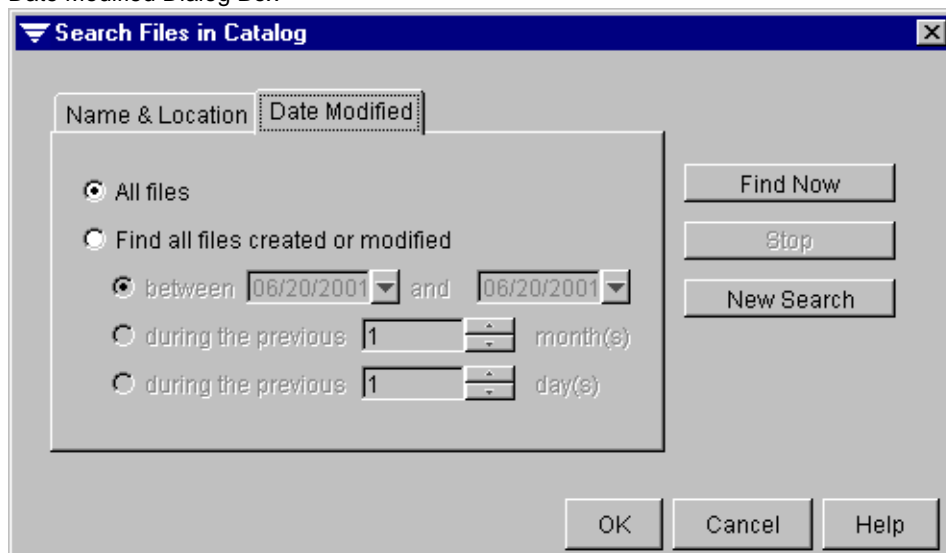
Options for this dialog box include:

- ◆ **Resource.** The server or workstation from which the data was originally backed up.
- ◆ **Path.** Path of the data's original location.
- ◆ **File name.** Name of the file or files you want to locate. You can use wildcards, such as \*. For example, if you wanted to find all files ending with a .exe extension, you can enter \*.exe for this option.
- ◆ **Media.** Name of the media containing the data.
- ◆ **Find Dirs.** Select this option if you want to find the directories containing these files.
- ◆ **Include subfolders.** Select this option if you want to include the contents of subfolders in the search.

### Date Modified

The Date Modified dialog box appears when using the **Search Catalogs** option and can be used to limit your search to only files created or modified during a specific time period. This option can be useful if you have multiple files with the same name and want to restore the most recent.

Date Modified Dialog Box



Options on this dialog box include:

- ◆ **All files.** Select this option to include all files meeting the criteria specified in the Name & Location dialog box.

- ◆ **Find all files created or modified.** Select this option if you want to limit the search to files created or modified during a specific period.
  - **between x and x.** Select this option if you want to include only files created or modified during specific dates. Select the beginning and ending dates.
  - **during the previous x month(s).** Select this option if you want to limit the search to files created or modified within a specified number of months.
  - **during the previous x day(s).** Select this option if you want to limit the search to files created or modified within a specified number of days.

## Advanced Options for Restore

The Advanced dialog box appears when creating, viewing, or modifying a restore job from the Administration Console.

Restore Job Properties | Advanced Dialog Box

The screenshot shows the 'Restore Job Properties' dialog box with the 'Advanced' tab selected. The dialog is divided into several sections:

- Restoring Existing Files:** Three radio button options are present:
  - Restore over existing files
  - Skip if file exists
  - Skip if existing file is more recent
- Commands:** Four input fields are provided for:
  - Execute before: [text box]
  - Delay after command: [text box] with up/down arrows
  - Execute after: [text box]
  - Delay after command: [text box] with up/down arrows
- Corrupt Files:** A checkbox labeled 'Restore corrupt files' is currently unchecked.





This dialog box contains the following options:

- ◆ **Restore over existing files.** Select this option to have Backup Exec overwrite files on the target workstation or server that have the same name as files that are being restored. Use this option only when you are sure that you want to restore an existing version of a file.
- ◆ **Skip if file exists.** Select this option to prevent Backup Exec from overwriting files on the target workstation or server with files that have the same names that are included in the restore operation.
- ◆ **Skip if existing file is more recent.** Select this option to prevent Backup Exec from restoring over files that exist on the target workstation or server if those files are more recent than the files included in the restore operation.

This option is useful if you are rebuilding a system. For example, after installing the operating system on a crashed server, you could restore a previous full backup of the system without worrying about overwriting later versions of operating system files.

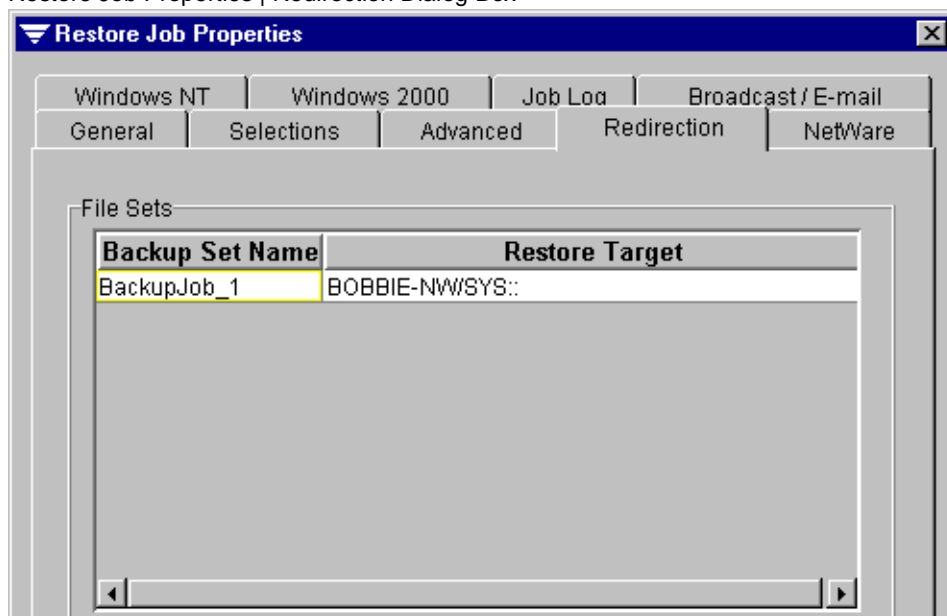
- ◆ **Execute before.** Use this option to specify a console command to be run on the restore target before each backup set is restored. This option is useful for closing database applications before restoring data.
- ◆ **Delay after command.** If you have entered an **Execute before** command, specify how long Backup Exec is to wait after the command is executed before starting the job.
- ◆ **Execute after.** Use this option to specify a console command to be run on the restore target after each backup set is restored.
- ◆ **Delay after command.** If you have entered an **Execute after** command, specify how long Backup Exec is to wait after the command is executed before starting the next job.
- ◆ **Restore corrupt files.** Select this option only if you do not want Backup Exec to automatically exclude corrupt files from the restore process.

This option is only recommended if a job has failed because a catalog query could not determine the corrupt files on the media. Normally, when a restore job is run, Backup Exec queries the catalog to determine if any corrupt files are on the media and excludes them from the restore job. If, during the query process, Backup Exec cannot determine if a file is corrupt, the Restore job will not continue and will be marked as **Failed**. If the automatic exclusion of corrupt files cannot be accomplished, you can manually exclude corrupt files in the Restore selections window and run the job with the **Restore corrupt files** option enabled.

## Redirection Options for Restore

Backup Exec defaults to restoring data to the system from which the data originated. The Redirection dialog box that appears when creating, viewing, or modifying a restore job allows you to restore data to any protected server, share, or Backup Exec agent workstation.

Restore Job Properties | Redirection Dialog Box



Options on this dialog box include:

- ◆ **Backup Set Name.** Lists the backup set name containing the data being restored.
- ◆ **Restore Target.** Specify the target path where the data is to be restored.

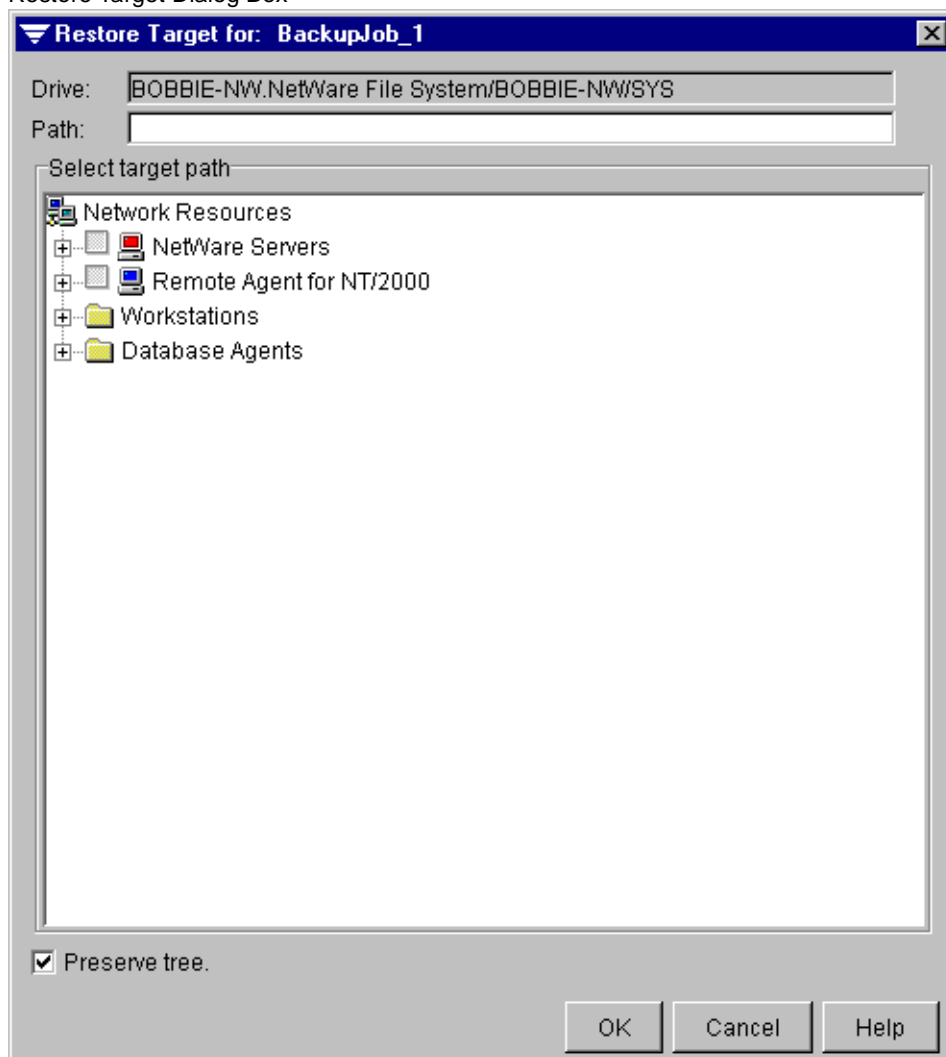
Right-click on a **File Set** and click **Redirect** to select a different restore target from the Restore Target dialog box (see “[Redirection Options for Restore](#)” on page 143).



## Restore Target Dialog Box

The Restore Target dialog box allows you to select where data will be redirected.

Restore Target Dialog Box



Options on this dialog include:

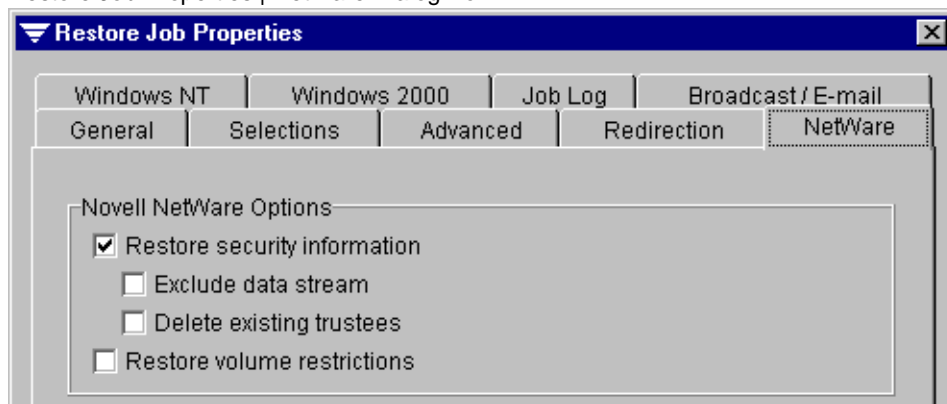
- ◆ **Drive.** Displays the drive containing the data to be restored.
- ◆ **Path.** Enter the path or use the **Select target path** tree to select where data is to be restored. After a selection is made in the **Select target path**, the **Path** field is automatically filled in.

- ◆ **Select target path.** Select where you want the data to be restored. To expand the view for a system (server or workstation), volume, or directory, click the adjacent box that contains the plus sign (+). To collapse the view, click the minus sign (-).
- ◆ **Preserve tree.** Select this option to restore the data with its original directory structure intact. If you do not select this option, all data (including the data in subdirectories) is restored to the path you specify in the **Path** option.

## Novell NetWare Options for Restore

The NetWare dialog box that appears when creating, viewing, or modifying a restore job allows you to select how security information and volume restrictions are to be handled when restoring a NetWare system.

Restore Job Properties | NetWare Dialog Box



Options on this dialog box include:

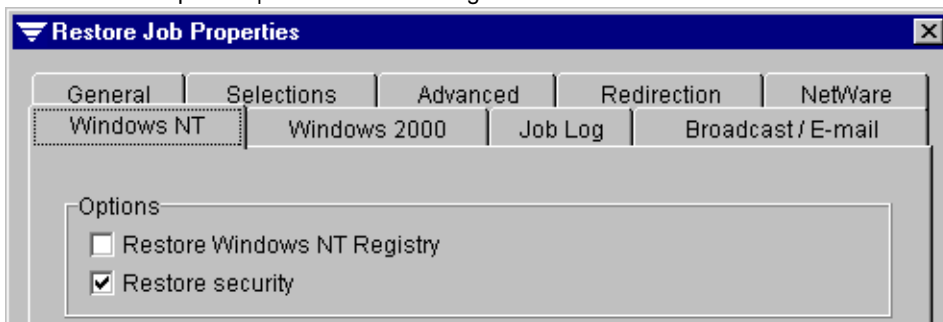
- ◆ **Restore security information.** Select this option if you want Backup Exec to restore NetWare trustee information for files and directories.
  - **Exclude data stream.** Select this option if you want Backup Exec to exclude the data streams when restoring a file. This option is inactive unless you have selected to restore security information.
  - **Delete existing trustees.** Select this option if you want Backup Exec to delete the existing trustee information for a file when restoring it. This option is inactive unless you have selected to restore security information.
- ◆ **Restore volume restrictions.** Select this option to have Backup Exec restore NetWare volume restriction information. Restoring volume restrictions is not recommended unless you are performing a disaster recovery operation.



## Windows NT Options for Restore

The Windows NT dialog box that appears when creating, viewing, or modifying a restore job allows you to select how Windows NT data is to be treated when being restored by your NetWare media server.

Restore Job Properties | Windows NT Dialog Box



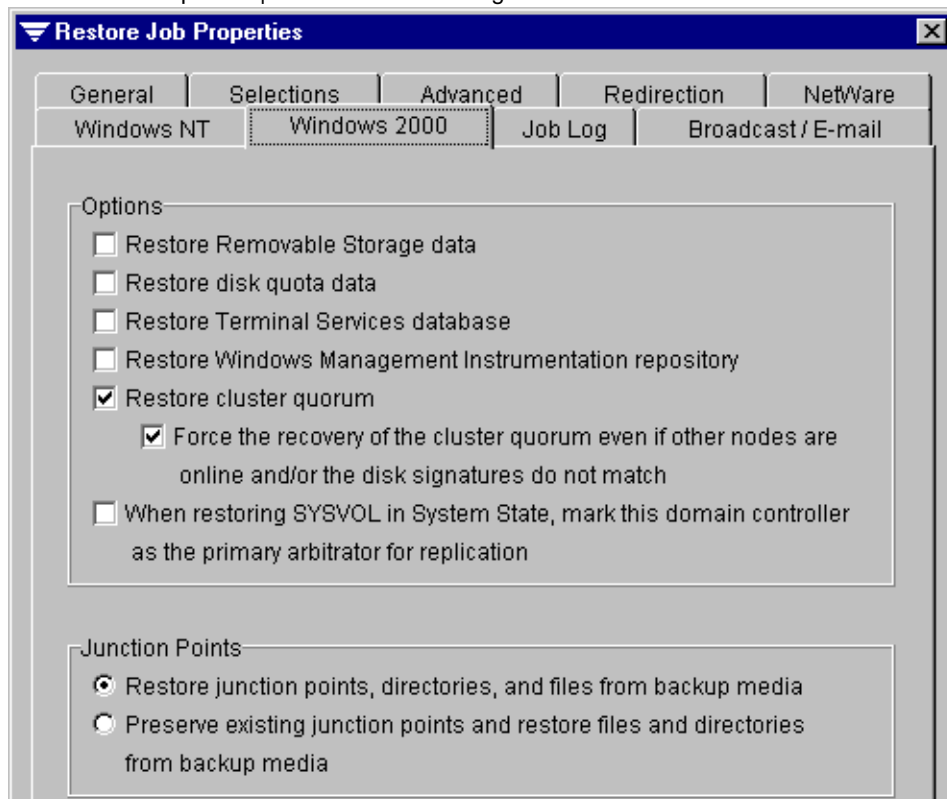
Options on this dialog box include:

- ◆ **Restore Windows NT Registry.** Select this option to restore Windows NT system database, or registry, information.
- ◆ **Restore security.** Select this option to restore file level security information on NTFS partitions if it exists in the data you selected.

## Windows 2000 Options for Restore

The Windows 2000 dialog box that appears when creating, viewing, or modifying a restore job allows you to select how Windows 2000 data is to be treated when being restored by your NetWare media server.

Restore Job Properties | Windows 2000 Dialog Box



Options on this dialog box include:

- ◆ **Restore Removable Storage data.** Select this option to restore the Removable Storage database. The Removable Storage database is stored in the `Systemroot\System32\Ntmsdata` directory and is automatically backed up when the system directory is selected for backup.

Removable Storage is a service used to manage removable media and storage devices; it allows applications to access and share the same media resources.

- ◆ **Restore disk quota data.** Select this option to restore disk quota data, which is automatically backed up when the root directory of a volume is selected for a backup.



Disk quotas track and control disk usage on a per user, per volume basis; the values can be restored to the limits that were set before the backup.

- ◆ **Restore Terminal Services database.** Select this option to restore the Terminal Services database. The default location for the Terminal Services database, which contains licensing data for client licenses, is the `Systemroot\System32\LServer` directory and is automatically backed up when the system directory is selected for backup.

Terminal Services allow client applications to be run on a server so that client computers can function as terminals rather than independent systems.

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**Note** This option is not supported if Terminal Services is running in Shared Application mode.

---

- ◆ **Restore Windows Management Instrumentation repository.** Select this option to restore the Windows Management Instrumentation (WMI) repository. The WMI repository is stored in the `Systemroot\System32\wbem\Repository` directory and is automatically backed up when the system directory is selected for backup.

The Windows Management Instrumentation repository provides support for monitoring and controlling system resources and provides a consistent view of your managed environment.

- ◆ **Restore cluster quorum.** Select this option to restore the cluster configuration.
  - **Force the recovery of the cluster quorum even if other nodes are online and/or the disk signatures do not match.** Select this option to restore cluster configuration even if other nodes in the cluster are online, the disk signatures do not match, or both.

Any changes made to the cluster quorum after the last backup will be lost.

This option is only available if **Restore cluster quorum** is selected.

- ◆ **When restoring SYSVOL in System State, mark this domain controller as the primary arbitrator for replication.** Select this check box if all the domain controllers in the domain are being restored and you want to designate this server as the primary arbitrator. If this option is not selected, replication may not function.

Use this option when you perform a restore of a domain controller in a domain that does not have any other domain controllers.

- ◆ **Restore junction points, directories, and files from backup media.** Select this option to restore the information for the junction points and the files and directories to which they are linked. Selecting this option overwrites existing junction points on your system being restored.

If a junction point was originally backed up without **Back up files and directories by following links and junctures** selected (see “[Windows 2000 Options for a Policy](#)” on page 100), then the files and directories to which the junction point is linked will not be restored, unless the junction point was linked to a mounted drive that did not have an assigned drive letter.

- ◆ **Preserve existing junction points and restore files and directories from backup media.** Select this option to restore files and directories backed up from junction point links while retaining the system’s current junction points. This option keeps current junction points from being overwritten with the junction point information restored from the backup media.

When this option is selected and identical junction points or directory names exist on both the target system and the media, the files and directories are restored to the target system’s junction point or directory.

If a junction point or directory does not already exist in the same location and with the same name as the junction point to be restored, then the information for the junction point and the files and directories to which they point will be restored.

If a junction point was originally backed up without the **Back up files and directories by following links and junctures** option selected (see “[Windows 2000 Options for a Policy](#)” on page 100), then the files and directories to which the junction point is linked will not be restored, unless the junction point was linked to a mounted drive that did not have an assigned drive letter.

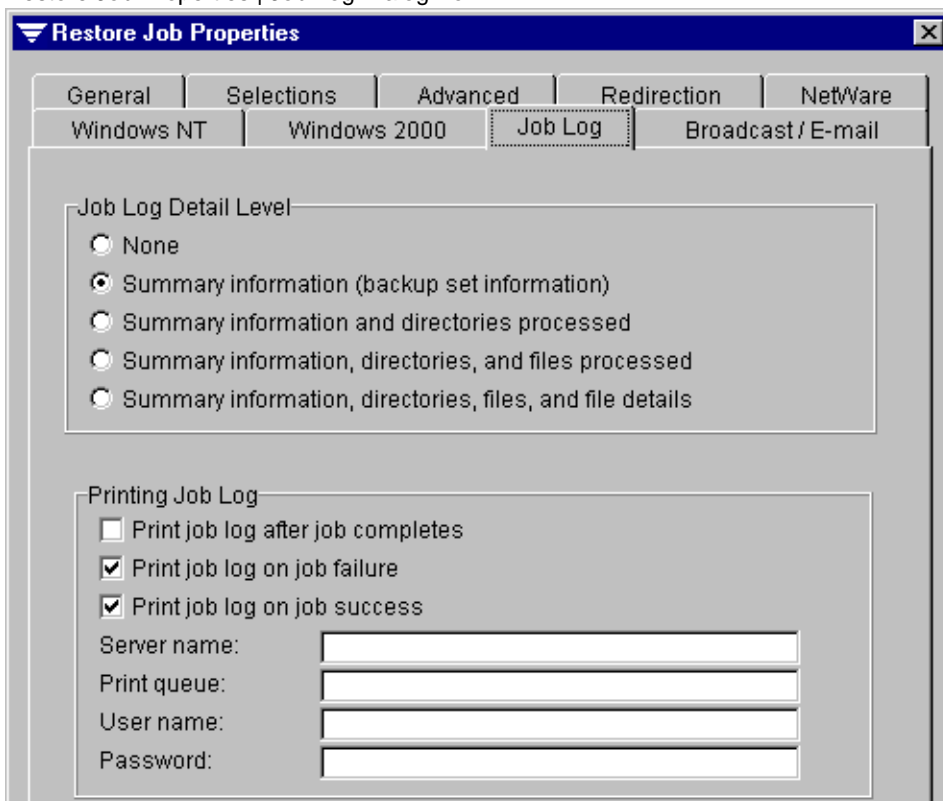




## Job Log Options for Restore

The Job Log dialog box that appears when creating, viewing, or modifying a restore job allows you to specify the level of detail for this job's log file. The job cannot report a higher level than the setting set as the server default (see "Job Log Options for the Media Server" on page 245); however, you can set a lower level than that set as the server default.

Restore Job Properties | Job Log Dialog Box



Options available on this dialog box include:

- ◆ **None.** Select this level to turn the logging feature off. A log record will be kept, but there will be no associated log file.
- ◆ **Summary information (backup set information).** This level of detail includes a NetWare network server/volume specification or Agent alias, the backup set number on the media, the media number, the media label, the starting date and time, any errors encountered, ending date and time, and completion statistics.

- ◆ **Summary information and directories processed.** This level includes a NetWare network server/volume specification or Agent alias, the backup set number on the media, the media number, the media description, the starting date and time, any errors encountered, ending date and time, and completion statistics plus a list of all processed subdirectories.
- ◆ **Summary information, directories, and files processed.** This level includes a NetWare network server/volume specification or Agent alias, the backup set number on the media, the media number, the media label, the starting date and time, any errors encountered, ending date and time, and completion statistics, a list of all processed subdirectories, and a listing of all files processed.
- ◆ **Summary information, directories, files, and file details.** This level includes a NetWare network server/volume specification or Agent alias, the backup set number on the media, the media number, the media label, the starting date and time, any errors encountered, ending date and time, and completion statistics, a list of all processed subdirectories, a listing of all files processed, plus file sizes, file date/time, and file attributes.
- ◆ **Print job log after job completes.** Select this option to have Backup Exec automatically print the job log after the job completes successfully, fails, or is canceled.
- ◆ **Print job log on job failure.** Select this option to have Backup Exec automatically print the job log if the job fails.
- ◆ **Print job log on job success.** Select this option to have Backup Exec automatically print the job log if the job completes successfully.
- ◆ **Server name.** Enter the name of the file server controlling one or more printers used by the network.
- ◆ **Print queue.** Enter the name of the print queue.
- ◆ **User name.** Enter your user name.
- ◆ **Password.** Enter your network access password.

---

**Note** For a job log to print, there must be a default printer selected for the system running the Administration Console and the printing options must be set on the media server (see [“Job Log Options for the Administration Console”](#) on page 271).

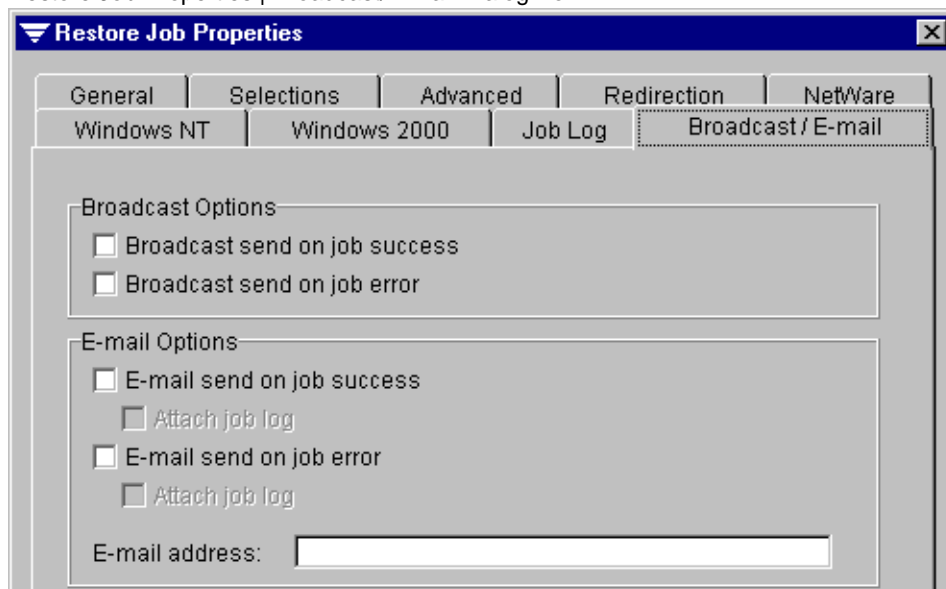
---



## Broadcast/E-mail Options for Restore

The Broadcast/E-mail dialog box that appears when creating, viewing, or modifying a restore job from the Administration Console allows you to specify when Backup Exec sends broadcast or e-mail messages. Broadcast messages are sent via the NetWare broadcast utility. For these options to work, the Broadcast options must be set for the media server (see “[Broadcast Options for the Media Server](#)” on page 254).

Restore Job Properties | Broadcast/E-mail Dialog Box



Broadcast options include:

- ◆ **Broadcast send on job success.** Select this option if you want to receive a message when a job completes with a *Normal* status. The message will appear at the workstation to which you are logged in.
- ◆ **Broadcast send on job error.** Select this option if you want to receive a message when a job completes with an *Error* or *Aborted* status. The message will appear at the workstation to which you are logged in.

E-mail options include:

- ◆ **E-mail send on job success.** Select this option if you want Backup Exec to send an e-mail message when a job completes with a *Normal* status.
  - **Attach job log.** Select this option if you want Backup Exec to attach the job log to e-mail messages sent for jobs completing with a *Normal* status.
- ◆ **E-mail send on job error.** Select this option if you want Backup Exec to send an e-mail message when a job completes with an *Error* or *Aborted* status.

- **Attach job log.** Select this option if you want Backup Exec to attach the job log to e-mail messages sent for jobs completing with an *Error* or *Aborted* status.
- ◆ **E-mail Address.** Enter the e-mail address where the messages are to be sent. Make sure the proper addresses are entered using the correct syntax; otherwise, you will not receive Backup Exec e-mail messages.

## Creating a Restore Job from the Administration Console for NetWare

You can create a restore job by completing the Restore Job dialog box from either the Administration Console for NetWare or the Administration Console. The steps for creating a restore job using the dialog box differ slightly between the two consoles. For information on creating a restore job using the Administration Console, see [“Creating a Restore Job from the Administration Console”](#) on page 131.

When using the Administration Console for NetWare to create a restore job, the process involves two steps:

- ◆ Selecting what is to be restored (see [“Making Restore Selections by File”](#) on page 153 or [“Making Restore Selections by Device”](#) on page 157).
- ◆ Submitting the restore job for processing (see [“Submitting a Restore Job from the Administration Console for NetWare”](#) on page 158).

Backup Exec’s Administration Console for NetWare offers two methods for selecting files for restore:

- ◆ By file (see [“Making Restore Selections by File”](#) on page 153).
- ◆ By device (see [“Making Restore Selections by Device”](#) on page 157).

### Making Restore Selections by File

You can make restore selections either by file or by device. Make selections by file if:

- ◆ You need to restore only a few files.
- ◆ The names of the files are known.
- ◆ The approximate date of the backup file is known.

Otherwise, you may want to make your restore selections by device (see [“Making Restore Selections by Device”](#) on page 157).



▼ **To make selections by file:**

1. From the Administration Console for NetWare, select **Jobs**.
2. Select **Restore**.
3. Select **Make Selections by File**.
4. Enter options on the Restore Source dialog box. Options are described in “[Restore Source Dialog Box](#)” on page 154.
5. Press <F2>.

If you use wildcards, such as \*, and more than one file meets the criteria you set on the Restore Source dialog box, the **Search Found List** appears. Options for this dialog box are described in “[Search Found List Dialog Box](#)” on page 155.

6. If the Search Found List dialog box appears, select the files you want to restore, and then press <F2>.

If you want additional information about the backed up files, select the file, and then press <Enter>. The File Details dialog box appears (see “[File Details Dialog Box](#)” on page 155).

You can now submit the restore job (see “[Submitting a Restore Job from the Administration Console for NetWare](#)” on page 158).

## Restore Source Dialog Box

The Restore Source dialog box appears in the Administration Console for NetWare when you are making restore selections by file.

Restore Source Dialog Box



Options for this dialog box include:

- ◆ **Path.** Enter the path the file was in when it was backed up.
- ◆ **File name.** Enter the name of the file to be restored. You can use wildcards in this option. For example, you can search for all files with the .exe extension by entering \*.exe in this field.
- ◆ **Search subdirectories.** Select this option to search subdirectories in the **Path**.

## Search Found List Dialog Box

The Search Found List dialog box appears when restoring a specific file and more than one file was found to match the criteria set in the Restore Source dialog box.

Search Found List

Search Found List			
File Name	Attributes	Date	Path
▶ AIODGCK.TXT	R	05/14/96	\SYSTEM
AIODGEM.TXT	R	05/24/96	\SYSTEM
AIODGXI.TXT	R	02/07/96	\SYSTEM
AIOEPCFG.TXT	R	05/02/95	\SYSTEM
AIOEQNX.TXT	R	02/06/97	\SYSTEM
AIOISIX.TXT	R	10/21/94	\SYSTEM
AIONDCX.TXT	R	05/02/96	\SYSTEM
AIONETAC.TXT	R	12/13/96	\SYSTEM
AIORCKT.TXT	R	11/18/97	\SYSTEM
AIOTCL_1.TXT	R	03/30/98	\SYSTEM
BEDebugLo...		05/03/01	\
CAP1300.TXT	R	09/15/97	\SYSTEM
CertManag...	R	02/07/00	\PUBLIC\mgmt\ConsoleOne\1.2\bin
		More...	

Fields on this dialog box include:

- ◆ **File Name.** Name of the file that was backed up.
- ◆ **Attributes.** Special attributes, such as read-only.
- ◆ **Date.** Date the file was last modified.
- ◆ **Path.** Full path of the backed up file.

To view additional details about the backed up files, select the file and press <Enter>.

## File Details Dialog Box

The File Details dialog box provides detailed information about the file available for restore.

File Details Dialog Box

File Details	
File name:	DRIVE.DAT
Size:	8192
Date and time:	04/26/01 06:47a
Attributes:	
Path:	\
Media name: Media Created on Jul 25, 2001	
Media number:	1
Bar code:	
Set number:	1
Set name:	BackupJob_1
Set description:	BackupJob_1
Set date:	07/25/01
Source device:	BOBBIE-NW.NetWare File System/BOBB.../SYS:
Backup type:	Full



Information appearing on this dialog box includes:

- ◆ **File name.** Name of the file that was backed up.
- ◆ **Size.** Size of the file.
- ◆ **Date and Time.** Date and time the file was last modified.
- ◆ **Attributes.** Special attributes, such as read-only.
- ◆ **Path.** Full path of the backed up file.
- ◆ **Media name.** Name of the media on which the file was backed up.
- ◆ **Media number.** Number of the media if the backup spanned more than one media.
- ◆ **Bar code.** Bar code label (if applicable) of the media.
- ◆ **Set number.** Order in which the backup set is included on the media.
- ◆ **Set name.** Name of the backup set.
- ◆ **Set description.** Description of the backup set.
- ◆ **Set date.** Date the backup set was created.
- ◆ **Source device.** System from which the file was backed up.
- ◆ **Backup type.** Method used for backup (see [“Backup Methods”](#) on page 77).

## Making Restore Selections by Device

You may want to use this method for making restore selections if you know from which device the data was backed up. You can view the catalogs in a device-centric view (see “Using the Media, Volume, and Catalog Views” on page 129). The backup sets are organized in the same structure as the devices, so all you have to do is view the directory listing until you find the backup set that contains the data you want to restore.

### ▼ To make selections by device:

1. From the Administration Console for NetWare, select **Jobs**.
2. Select **Restore**.
3. Select **Make Selections by Device**.  
A list all of the devices that have been backed up appears.
4. Move the selection arrows next to the source from which you want to restore files and press <Enter>.
5. Ensure the volume that contains the data you want to restore is selected, and then press <Enter> to view all of the backup sets for that volume.
6. You can select either an entire backup set, or press <Enter> to display a list of directories and files in a backup set. Mark your selections by pressing <Spacebar>.
7. Press <F2> to accept the selections.

You can now submit the restore job.





## Submitting a Restore Job from the Administration Console for NetWare

While the Administration Console allows you to select the data to be restored when creating the restore job, when you create a restore job from the Administration Console for NetWare, you must first make the data selections, and then submit, or create, the restore job. For information about selecting data to be restored from the Administration Console for NetWare, see “[Making Restore Selections by File](#)” on page 153.

### ▼ To submit a restore job from the Administration Console for NetWare:

---

**Tip** When you make restore selections from the Administration Console for NetWare, the system returns you to the **Restore** menu. Therefore, these first two steps are necessary only if you have made selections earlier and exited the **Restore** menu without submitting the job.

---

1. From the Administration Console for NetWare, select **Jobs**.
2. Select **Restore**.
3. Select **Submit**.
4. From the Submit Restore Job dialog box, enter or select the options you want. The options are described in “[Submit Restore Job Options](#)” on page 159.
5. Press <F2> to submit the job.

You can monitor the job from the Administration Console for NetWare’s **Administration** menu or by using the **Jobs** node in the Administration Console (see “[Monitoring Jobs](#)” on page 175).

## Submit Restore Job Options

The Submit Restore Job dialog box appears when creating a restore job from the Administration Console for NetWare.

Submit Restore Job Dialog Box

```

Restore Job Properties
Job name:      [RestoreJob_1]
Execution date: [08/15/2001]   Time:[08:26] AM [ ] PM [ ]
[ ] Submit job on hold
Commands:     [Press <Enter>...▼]  Windows NT:      [Press <Enter>...▼]
Redirection:  [Press <Enter>...▼]  Windows 2000:   [Press <Enter>...▼]
Advanced:     [Press <Enter>...▼]  Job log:         [Press <Enter>...▼]
NetWare:      [Press <Enter>...▼]  Broadcast/E-mail: [Press <Enter>...▼]
Target partition:[ ]
Target drive:  [HA:0 ID:1 LUN:0 ARCHIVE PYTHON 046▼]
  
```

This dialog box contains the following options:

- ◆ **Job name.** Enter a job name or use the default name created by Backup Exec. The name will differentiate this job from others in your job log records.
- ◆ **Execution date.** Enter the date you want the job to begin processing.
- ◆ **Time.** Enter the time you want the job to begin processing.

**Note** A default printer must be set up for this option to work.

- ◆ **Submit job on hold.** Select this option to have the job placed on hold.
- ◆ **Commands.** Select this option and press <Enter> to set console commands to run before or after the job (see “[Commands Options for a Restore Job \(Administration Console for NetWare\)](#)” on page 160).
- ◆ **Redirection.** Select this option and press <Enter> to restore files to a location other than where they were originally backed up (see “[Redirection Options for Restore Job \(Administration Console for NetWare\)](#)” on page 161).
- ◆ **Advanced.** Select this option and press <Enter> to specify how existing and corrupt files are to be treated (see “[Advanced Options for a Restore Job \(Administration Console for NetWare\)](#)” on page 162).
- ◆ **NetWare.** Select this option and press <Enter> to specify how security information and volume restrictions are to be treated when restoring NetWare data (see “[Novell NetWare Options for Restore](#)” on page 145).
- ◆ **Windows NT.** Select this option and press <Enter> to select how Windows NT data is to be treated when it is being restored by your NetWare media server (see “[Windows NT Options for Restore](#)” on page 146).

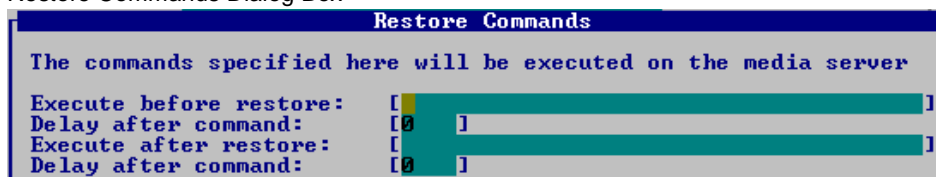


- ◆ **Windows 2000.** Select this option and press <Enter> to select how Windows 2000 data is to be treated when it is being restored by your NetWare media server (see “[Windows 2000 Options for Restore](#)” on page 147).
- ◆ **Job log.** Select this option and press <Enter> to specify the level of detail for this job’s log file (see “[Job Log Options for Restore](#)” on page 150).
- ◆ **Broadcast/E-mail.** Select this option and press <Enter> to configure the NetWare broadcast utility to send broadcasts or e-mail messages when a job completes (see “[Broadcast/E-mail Options for Restore](#)” on page 152).
- ◆ **Target partition.** Select this option and press <Enter> to select the partition from which this restore job will be run. This option is only available if running in the partition management mode.
- ◆ **Target drive.** Select this option and press <Enter> to select the drive from which this restore job is to be run. This option is only available if running in the media management mode.

## Commands Options for a Restore Job (Administration Console for NetWare)

The Restore Commands dialog box appears when submitting a restore job from the Administration Console for NetWare.

Restore Commands Dialog Box



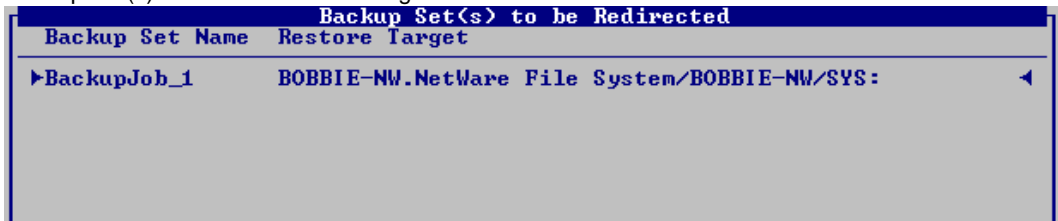
This dialog box contains the following options:

- ◆ **Execute before restore.** Use this option to specify a console command to be run on the restore target before each backup set is restored. This option is useful for closing database applications before restoring data.
- ◆ **Delay after command.** If you have entered an **Execute before restore** command, specify how long Backup Exec is to wait after the command is executed before starting the job.
- ◆ **Execute after restore.** Use this option to specify a console command to be run on the restore target after each backup set is restored.
- ◆ **Delay after command.** If you have entered an **Execute after restore** command, specify how long Backup Exec is to wait after the command is executed before starting the next job.

## Backup Set(s) to be Redirected

The Backup Set(s) to be Redirected dialog box appears when submitting a redirected restore from the Administration Console for NetWare.

Backup Set(s) to be Redirected Dialog Box



This dialog box displays:

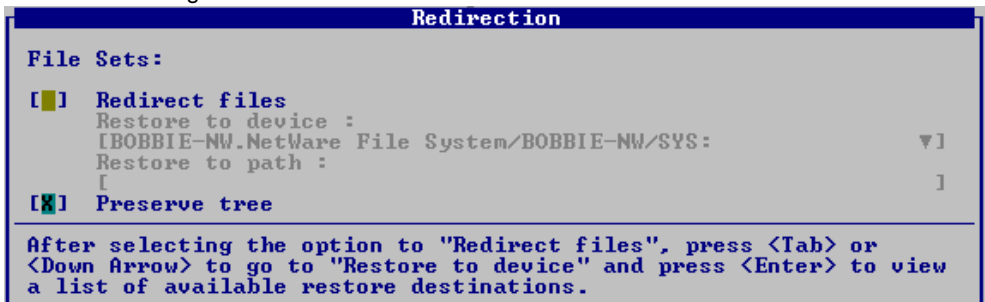
- ◆ **Backup Set Name.** Name of the backup set containing the restore selections you made.
- ◆ **Restore Target.** Original location from which the files were backed up.

If you want to redirect this restore, select the backup set and press <Enter> to view the Redirection dialog box.

## Redirection Options for Restore Job (Administration Console for NetWare)

The Redirection dialog box appears when submitting a redirected restore job from the Administration Console for NetWare.

Redirection Dialog Box



This dialog box contains the following options:

- ◆ **Redirect files.** Select this option to restore files to a location other than where they were originally backed up.
- ◆ **Restore to device.** Enter the device where the files are to be restored.



- ◆ **Restore path.** Enter the path to which the files are to be restored.
- ◆ **Preserve tree.** Select this option to restore the data with its original directory structure intact. If you do not select this option, all data (including the data in subdirectories) is restored to the path you specify in the **Restore to path** option.

## Advanced Options for a Restore Job (Administration Console for NetWare)

The Advanced dialog box appears when submitting a restore job from the Administration Console for NetWare.

Advanced Dialog Box



This dialog box contains the following options:

- ◆ **Restore over existing files.** Select this option to have Backup Exec overwrite files on the target workstation or server that have the same name as files that are being restored. Use this option only when you are sure that you want to restore over an existing version of a file.
- ◆ **Skip if file exists.** Select this option to prevent Backup Exec from overwriting files on the target workstation or server with files that have the same names that are included in the restore operation.
- ◆ **Skip if existing file is more recent.** Select this option to prevent Backup Exec from restoring over files that exist on the target workstation or server if those files are more recent than the files included in the restore operation.

This option is useful if you are rebuilding a system. For example, after installing the operating system on a crashed server, you could restore a previous full backup of the system without overwriting later versions of operating system files.

- ◆ **Restore corrupt files.** Select this option only if you do not want Backup Exec to automatically exclude corrupt files from the restore process.

This option is only recommended if a job has failed because a catalog query could not determine if there were corrupt files on the media. Normally, when a restore job is run, Backup Exec queries the catalog to determine if any corrupt files are on the media and excludes them from the restore job. If during the query process Backup Exec

cannot determine whether a file is corrupt, the Restore job will not continue and will be marked as **Failed**. If the automatic exclusion of corrupt files cannot be accomplished, you can manually exclude corrupt files in the Restore selections window and run the job with the **Restore corrupt files** option enabled.

## Clearing Selections for a Restore Job

If you have made selections for a restore job from the Administration Console for NetWare, but do not want to submit the job, you can use the **Clear Selections** option.

### ▼ To clear restore job selections:

---

**Tip** When you make restore selections from the Administration Console for NetWare, the system returns you to the **Restore** menu. Therefore, these first two steps are necessary only if you have made selections earlier and exited the **Restore** menu without submitting the job.

---

1. From the Administration Console for NetWare, select **Jobs**.
2. Select **Restore**.
3. Select **Clear Selections**.
4. When prompted, press <Y>.



## Redirecting Resources

Backup Exec for Netware is fully compliant with Novell's Storage Management System (SMS) architecture. Therefore, NetWare is able to pass a variety of different types of data, including all of the various attributes for each type of data, to Backup Exec. The data is received in a consistent format and can be restored with all its attributes. All backups of a NetWare server using Backup Exec are done through a Target Service Agent (TSA) and are, therefore, SMS backups.

However, backups of non-NetWare devices, such as workstations that are running the Backup Exec agent, are not SMS compliant. NetWare Server backups completed with a workstation-based solution (or with a non-SMS-compliant server-based solution) are also not SMS-compliant.

Backup Exec for NetWare cannot directly restore NetWare volume data that does not contain the SMS data the TSA will require. This presents a problem when there is a need to restore files to the server from foreign media not created with an SMS-compliant application or files that did not originally reside on a NetWare server. A similar difficulty exists if there is a need to restore file server data to a device that is not a NetWare server because Backup Exec for NetWare will not directly allow the server data to be restored to a non-SMS device.

The procedures covered in the next two sections address these situations.

### Restoring Server Files to Non-SMS Devices

To restore data backed up by Backup Exec for NetWare to a non-SMS device, you may make the device SMS-compliant by loading the appropriate TSAs and support modules. Novell has released TSAs for DOS/Windows and OS/2 workstations, so these are the only possible targets for this operation. You can also redirect to a GRFS or Remote Agent for Windows NT and Windows 2000 system. Only data stream information is restored.

#### ▼ To make a workstation SMS-compliant:

1. At the server, load TSADOS.NLM, which should autoload WSMAN.NLM. If these NLMs are not on the server and cannot be located on the Novell diskettes, they are available in a Novell update file called SMSUPx.EXE (where x is a hexadecimal digit) available on any Novell Web site.
2. At the workstation, edit AUTOEXEC.BAT and put a REM statement in front of the load lines for the two Backup Exec agent TSRs DOS\_SPX and DOS\_AGNT. After the restore completes, the REM statement in front of these agents can be removed.

3. Insert a line to call the file TSASMS.COM. After the restore is completed, this line can be removed or disabled with a REM statement until the next time it is needed. This TSA cannot be used at the same time Backup Exec agent TSRs are running. The syntax for loading the TSASMS.COM is:

```
tsasms/d=drives[/n=name][/p=password][se=server]
```

d=the local drive you want to restore to

n=the name of the workstation you want to see when selecting the restore destination

p=optional password

se=the name of the server to connect to

---

**Note** Use the above parameters even if they are left blank (i.e., tsasms/d=c:/n=test/p=/se=Server01).

---

4. Verify TSASMS.COM is on the workstation. If it is not there, it can be copied from the server or from the Novell file SMSUPx.EXE.
5. Reboot the workstation.
6. Select the files for restore and submit the restore job (see [“Creating a Restore Job from the Administration Console”](#) on page 131 or [“Creating a Restore Job from the Administration Console for NetWare”](#) on page 153).
7. When the Restore Destination window appears, the server that was the source of the backup will be the default destination. Select this field and press <Enter> to select the workstation. The files should then restore to the workstation as desired.
8. Return the workstation’s AUTOEXEC.BAT and the server to their original configurations.





## Restoring Non-SMS Files to the Server

If the media being used for the restore is a foreign media, you must first catalog it. If the Catalog Media operation completes successfully, the media was written in a format that Backup Exec for NetWare can read.

▼ **To restore Non-SMS files to the server:**

1. From a workstation, map a drive to the server volume (and directory, if desired) where files are to be restored.
2. Modify the workstation publisher to recognize the newly created mapped drive as a resource on the workstation.

---

**Note** Mapped drives cannot be published without the Windows NT agent.

---

- a. Click **Start**, point to **Settings**, click **Control Panel**, and then click **Network**.
  - b. From the **Network Configuration** tab, highlight the Backup Exec agent and select **Properties**.
  - c. Click **Add**.
  - d. Add the mapped drive letter.
  - e. Restart the Windows 95/98 system.
3. From Backup Exec, select **Update Agent List <F5>**.
  4. Select the files to be restored.
  5. Select the workstation published with the mapped drive letter as the restore destination.
  6. Select the mapped drive letter as the specific restore device. The files from the non-SMS media will be transmitted to the workstation in non-SMS format and then will be redirected to the mapped drive of the server.

## Media Compatibility

Media backed up with the following software products can be read with this version of Backup Exec and restored to the device from which they were backed up.

### Media Backup Exec Can Restore

Manufacturer	Product
VERITAS Software	Backup Exec for NetWare v8.5
Seagate Software	Backup Exec for NetWare v7.x and 8.0.
Arcada Software	Backup Exec for NetWare v4.x, 5.x and 7.x
Conner Peripherals	Backup Exec for NetWare v4.x

SIDF media created with the following software products can be read with this version of Backup Exec and restored to the network volume or from a TSA client running on a workstation.

**Note** Files originating from workstations can be restored either to a NetWare volume or to a workstation running the appropriate TSA if available from Novell. Only database files--not NDS, binderies, or registry--can be restored.

### SIDF Media Backup Exec Can Restore

Manufacturer	Product
Novell	SBACKUP v3.12g for 3.1x
Novell	SBACKUP v4.13 for 4.1x
Palindrome	Network Archivist v4.0 SMS
Palindrome	Storage Manager for NetWare v4.x
Palindrome	Storage Manager for Windows NT v4.x
Palindrome	Backup Director for NetWare v4.x
Palindrome	Backup Director for Windows NT v4.x
Seagate Software	Storage Exec for NetWare v5.x



## SIDF Media Backup Exec Can Restore (continued)

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<b>Manufacturer</b>	<b>Product</b>
Seagate Software	Storage Exec for Windows NT v5.x

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## Media that Can Be Restored to Backup Exec Workstations

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<b>Manufacturer</b>	<b>Product</b>
Seagate Software	Backup Exec for Windows Backup Exec for NetWare Backup Exec for Windows NT
Arcada Software	Backup Exec for Windows Backup Exec for NetWare Backup Exec for Windows NT
Cheyenne Software	ARCserve 4.x, 5.x, 6.x
Archive Corporation	Archive Information Manager (A.I.M.) for DOS v3.1 A.I.M. for Windows v3.1 A.I.M. NLM v3.1
Maynard Electronics	MaynStream for DOS v3.1 MaynStream NLM v3.1 MaynStream for Windows v3.1 QICstream for DOS v4.0
Conner Peripherals	Backup Exec for DOS Backup Exec for Windows Backup Exec for NetWare v3.x Backup Exec for Windows NT

---

**Note** Backup Exec also reads SIDF media that are written to the ECMA-208 standard (see “[Restoring System Independent Data Format \(SIDF\) Media](#)” on page 171). Applications that use this media format include: Palindrome Network Archivist V4.0 SMS, Novell's SBACKUP v3.12g for NetWare 3.x and Novell's SBACKUP v4.13 for NetWare 4.x.

---

## Restoring ARCserve Media

Backup Exec for NetWare allows you to restore data from media backed up with Cheyenne's ARCserve versions 4.x, 5.x, and 6.x.

### ▼ To restore data from an ARCserve media:

1. Catalog the media using Backup Exec's **Catalog** option (see "[Cataloging Media in a Drive](#)" on page 307). During cataloging, the translator only reports file formats that it can read. Files that cannot be read do not appear in the catalogs. The backup set name that appears in the Backup Exec catalog comes from the session description used by ARCserve. Only administrators can view the catalogs created from ARCserve media.

---

**Note** On-media catalogs are not supported on media created by other vendors' backup products. Because of this, cataloging ARCserve media takes considerably longer than cataloging a media made with Backup Exec.

---

2. Using one of the client modules, set up a restore job targeted to a workstation on the network. After the data is restored on the workstation, it can then be copied to the server. The restore job cannot be targeted directly to a server; however, you can restore the data to a workstation drive that is mapped to the server. Although routing the restore job through the workstation will increase restore time, it allows you to restore data to the server without taking up disk space on the workstation's local drive.

For detailed steps on non-SMS restore, see "[Redirecting Resources](#)" on page 164.

## Data Format Support

Following are limitations and restrictions for different platforms when restoring ARCserve media with Backup Exec.

### Limitations and Restrictions

Platform	Limitations
DOS	Files in the DOS name space can be cataloged and restored.
OS/2	Files in the OS/2 name space can be cataloged and restored. Long filenames and Extended Attributes for OS/2 files are not restored.
Macintosh	Files in the Macintosh name space can be cataloged and restored. Long filenames and resource forks for Macintosh files are not restored.



Limitations and Restrictions (continued)

---

<b>Platform</b>	<b>Limitations</b>
Windows NT	Backups of Windows NT workstations are not supported.
SMS	ARCserve supports the use of SMS to back up data. Files backed up using ARCserve's SMS option cannot be restored. ARCserve can be configured so that backup sets contain files in both ARCserve format and SMS format. When this option is used, all files that are ARCserve format appear in the catalog and can be restored. Backup Exec does not support restoring software compressed sets.
Databases	ARCserve databases cannot be restored.
Interleaving	Interleaved backups are not supported.

---

## Notes on Restoring ARCserve Media

*Supported Operations.* Media containing ARCserve backups can be overwritten; however, backup append operations are not supported. All Backup Exec media utility functions (except for verify) can be performed on ARCserve media.

*Trustee Information.* This information is not restored, so there is no chance of overwriting existing trustee information.

*File Attributes.* Only DOS file attributes are restored. Those attributes are READ ONLY, HIDDEN and SYSTEM.



## Restoring System Independent Data Format (SIDF) Media

Backup Exec provides users the ability to restore data from their existing library of SIDF media. This feature is intended to allow the restoration of selected files from SIDF media; it is not intended for a full server recovery in a disaster situation. This document provides specific details about the features and limitations of the SIDF read feature that has been built into Backup Exec.

### ▼ To restore data from a SIDF media:

1. Catalog the media using Backup Exec's Catalog option (see “[Cataloging Media in a Drive](#)” on page 307). During cataloging, the translator only reports file formats that it can read. Files that cannot be read do not appear in the catalogs. The backup set name that appears in the Backup Exec catalog comes from the session description used by the SIDF backup application used to create the media. Only administrators can view the catalogs created from SIDF media.

---

**Note** On-media catalogs are not supported on media created by other vendors' backup products. Because of this, cataloging SIDF media takes considerably longer than cataloging a media made with Backup Exec.

---

2. Using one of the client modules, set up a restore job targeted to a server or workstation running a Novell TSA.

## Supported SIDF Data Formats

The System Independent Data Format (SIDF) media read feature refers to the international standard ECMA-208. Only media written to ECMA-208 will be recognized. Previous versions of SIDF media cannot be restored by Backup Exec.

All media generated by products that write to the SIDF standard should be restorable by Backup Exec for NetWare.

---

**Note** Do not select NetWare Directory Services data when restoring SIDF media backed up with Palindrome Network Archivist v4.0 SMS, Palindrome Storage Manager for NetWare v4.x, Palindrome Storage Manager for NT v4.x, Palindrome Backup Director for NetWare v4.x, Palindrome Backup Director for NT v4.x, Seagate Software Storage Exec for NetWare v5.x, or Seagate Software Storage Exec for NT v5.x. Although this data appears in the catalog listing, the Directory Services files cannot be restored. If an attempt is made to restore these files, a restore destination will not be available.

---



# Administrating Jobs, Alerts, and Reports

# 5

This section explains how Backup Exec allows you to monitor and edit jobs, monitor job logs, respond to alerts or error messages, and run reports.

*Administrating Jobs, Alerts, and Reports* includes the following topics:

Section	Describes
<a href="#">“Overview of Jobs, Alerts, and Reports”</a> on page 174	How Backup Exec allows you to monitor jobs and job results (job log), respond to alerts and error messages, and print reports.
<a href="#">“Monitoring Jobs”</a> on page 175	The steps for monitoring active, scheduled, and completed jobs and what details can be monitored.
<a href="#">“Using Job Logs”</a> on page 193	What the job log is and the steps for accessing the job log for a completed job.
<a href="#">“Using the Schedule View”</a> on page 202	The steps for using the Schedule View to monitor or launch jobs and for using the Holiday Calendar feature to take the scheduler offline.
<a href="#">“Viewing and Responding to Alerts”</a> on page 215	The alerts that display, including the use of colors and the various messages that may appear, and how to respond to alerts.
<a href="#">“Using Reports”</a> on page 225	The reports that are available in Backup Exec and the procedures for generating and viewing reports.



## Overview of Jobs, Alerts, and Reports

A *job* is a task that is available for processing by Backup Exec. For example, if you select a resource, such as a NetWare server and request a backup of that resource, you have created a job. The types of jobs include:

- ◆ Backups, which can include full, incremental, differential, working set, copy, or archive backups of a server or workstation or of specific files or directories.
- ◆ Restores, which restore to disk the complete resources or individual files that were backed up to media.
- ◆ Media rotation jobs, which are backup jobs that use Backup Exec's feature for automating the rotation and management of media (see "[Using Backup Exec's Automated Media Rotation](#)" on page 397).
- ◆ Utility processes, which include such operations as cataloging or erasing media.
- ◆ Library utility processes, which include such operations as importing media from library portals to slots.

Anything occurring in Backup Exec that is considered important enough to present a message to the user or to require a response from the user is called an *alert*. Examples of alerts include: media will be overwritten, a job has failed, and media needs to be mounted. Alerts also include device and media errors.

Alerts fall into three categories:

- ◆ Errors
- ◆ Warnings
- ◆ Operator Intervention

Backup Exec displays all active alerts and maintains a history, or log, of all responses to alerts.

You can set Backup Exec to automatically notify a person or group of people when the media server needs attention or a job has completed successfully using either Simple Mail Transport Protocol (SMTP) or Broadcast options. You can also enable Simple Network Management Protocol (SNMP) support so that status and error conditions are forwarded from Backup Exec to a central console.

Backup Exec also allows you to generate *reports* in HyperText Markup Language (HTML) format that show detailed information about your Backup Exec operations. You can view these reports from your Administration Console or save these reports to view or print at a later time. Because they are in HTML format, the saved reports also can be attached to e-mails.



## Monitoring Jobs

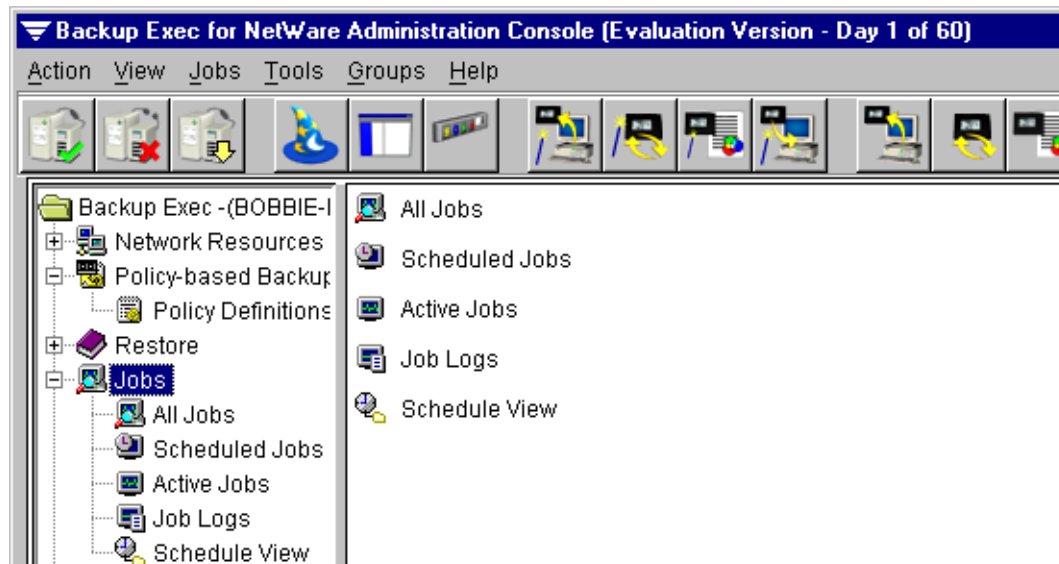
The **Jobs** node in the Administration Console and the **Administration** menu in the Administration Console for NetWare give you an instant look at the Backup Exec job queue; all jobs submitted can be found through this node or menu. You can also use the **Jobs** node or the **Administration** menu to view a job's properties, edit a job, and view job logs for completed jobs.

### Viewing Jobs in the Administration Console

Jobs are listed in one or more of the following categories in the Administration Console:

- ◆ All Jobs
- ◆ Scheduled Jobs
- ◆ Active Jobs
- ◆ Job Logs
- ◆ Schedule View

Administration Console - Jobs Node



By default, all scheduled, active, and completed jobs appear in the **All Jobs** subnode. Jobs scheduled for processing at a specific date and time also appear in the **Scheduled Jobs** subnode. Jobs that are actively being processed appear in the **All Jobs** and in the **Active**



**Jobs** subnode. Because Backup Exec keeps a master list of all jobs in the **All Jobs** subnode, regardless of their job status, you can review the status of a job even if you are unsure about the stage of processing.

---

**Note** Users can view only the jobs they have created; administrators can view all jobs or only the jobs they have created. For users, the jobs they created appear when **All jobs** is selected; for administrators, all jobs created for the server being monitored appear.

---

Through the **Jobs** node, you can:

- ◆ Monitor an active job (see “[Results Pane View of Active Jobs](#)” on page 182).
- ◆ Place a job on hold (see “[Holding and Releasing Jobs](#)” on page 187).
- ◆ Release a job to run (see “[Holding and Releasing Jobs](#)” on page 187).
- ◆ View job properties (see “[Viewing or Editing a Job](#)” on page 188).
- ◆ Edit a job (see “[Viewing or Editing a Job](#)” on page 188).
- ◆ Delete a job (see “[Deleting a Job](#)” on page 191).

## Viewing Jobs from the Administration Console’s Results Pane

Jobs for each subnode display in the Administration Console’s results pane. By default, Backup Exec uses colors to distinguish active jobs from scheduled jobs as well as to distinguish the job logs for successfully completed jobs from the logs of failed jobs. For information on changing the colors for jobs and job logs, see “[Job Colors Options for the Administration Console](#)” on page 273 and “[Job Log Options for the Administration Console](#)” on page 271.

### ▼ To view jobs for a subnode:

1. From the Administration Console, double-click the **Jobs** node.
2. Click the subnode for which you want to view the job listings.

For example, to view a listing of all jobs, click **All Jobs**.

Descriptions of what is displayed in the results pane for each job are included in “[Job Information Presented in the Administration Console](#)” on page 177.

## Job Information Presented in the Administration Console

Detailed information about jobs appears in the Administration Console's results pane when one of the following subnodes is selected from the **Jobs** node:

- ◆ **All Jobs**
- ◆ **Scheduled Jobs**
- ◆ **Job Logs**

### Results Pane View of All Jobs

You can select information appearing in the results pane for **All Jobs** by following the procedures described in [“Using the Results Pane”](#) on page 21.

#### Results Pane View of All Jobs

Job Name	Job Type	Job State	Completion Status	Media ID	Execution Date	Start Time
RestoreJob...	Restore	Normal		3	7/19/01 5:47 AM	
NewRestore	Restore	Normal		3	7/19/01 5:58 AM	
NewRestore	Restore		Cancel			7/19/01 5:58 AM
RestoreJob...	Restore		Cancel			7/19/01 5:48 AM
BackupJob_1	Backup		Normal			7/19/01 5:24 AM
drives	Backup		Normal			7/19/01 5:24 AM

Default information appearing in the Administration Console's results pane when **All Jobs** is selected includes:

- ◆ **Job Name.** Name the user gives to the job when it is created or edited. There can be no duplication of job names.
- ◆ **Job Type.** Type of job, such as backup or catalog.
- ◆ **Job State.** Displays **Active** if the job is running; otherwise, this field is blank.
- ◆ **Completion Status.** Overall results of the job. Values include:
  - **Normal.** The job completed with no critical errors.
  - **Error.** The operation completed, but one or more significant errors occurred. The job log will indicate what caused the errors.
  - **Canceled.** The operation was canceled by the administrator or by Backup Exec.
- ◆ **Media ID.** ID assigned by Backup Exec for the media on which the job was run.
- ◆ **Execution Date.** Date and time the job is scheduled to start for active or scheduled jobs and for jobs placed on hold. For completed jobs that are not scheduled to run again, this field is blank.



- ◆ **Start Time.** For completed jobs, displays the date and time the job started; otherwise, this field is blank.
- ◆ **Complete Time.** Date and time when the job completed.
- ◆ **User Name.** Name of the user who ran the job.
- ◆ **Media Set Name.** Name of the media set used or to be used for the job.
- ◆ **Drive Name.** Name of the drive the job is targeted to or that the job ran on.
- ◆ **Drive Pool Name.** Name of the drive pool to which the job was sent or will be sent.

Icons will also indicate if the job is active, scheduled, or completed.

Available columns that can be displayed for **All Jobs** include:

- ◆ **Anchor ID.** ID used in drive mirroring to indicate the controlling drive.
- ◆ **Backup Set Bytes Processed.** For completed jobs, total number of backup set bytes processed.
- ◆ **Backup Set Description.** Description of the backup set.
- ◆ **Backup Set Directories Processed.** For completed jobs, the total number of backup set directories processed.
- ◆ **Backup Set Files Processed.** For completed jobs, the total number of backup set files processed.
- ◆ **Backup Set Name.** Name of the backup set.
- ◆ **Daily Media Set ID.** For media rotation jobs, the ID of the daily media set.
- ◆ **Drive Pool ID.** ID assigned by Backup Exec to the drive pool on which this job ran or is scheduled to run.
- ◆ **Drive ID.** ID assigned by Backup Exec to the drive on which this job ran or is scheduled to run.
- ◆ **Ending Sequence Number.** Sequence number of the media family on which the job ended if the job spanned multiple media.
- ◆ **Family ID.** ID assigned by Backup Exec for the media family on which this job ran.
- ◆ **Ignore On Tape Catalog.** Displays a check mark if the job is to ignore the on-tape catalog; otherwise, this field is blank.
- ◆ **Job ID.** ID Backup Exec assigned to the job.
- ◆ **Job Instance.** Unique ID for each run of a regularly scheduled job.
- ◆ **Job Number of Operations.** Number of operations performed. For example, if you perform a backup operation, verify operation, and a delete operation for an archive job, this field displays 3.

- ◆ **Job On Hold Flag.** For jobs placed on hold, a check mark appears in this field; otherwise, the field is blank.
- ◆ **Job Total Idle Time.** Amount of time during the job that data was not actually written to tape. For example, the time spent maintaining media or waiting for user intervention.
- ◆ **Media Description.** Description to be written to the media to allow the user to identify it.
- ◆ **Media Rotation Job.** Displays a check mark if the job is a media rotation job; otherwise, this field is blank.
- ◆ **Media Rotation Run Number.** Number of times the media rotation job has run.
- ◆ **Media Set ID.** Unique media set ID assigned by Backup Exec.
- ◆ **Monthly Media Set ID.** For media rotation jobs, ID of the monthly media set.
- ◆ **Number of Backup Sets.** The total number of backup sets used in this job.
- ◆ **Partition ID.** If running in partition management mode, the partition to which the job is targeted.
- ◆ **Partition Name.** If running in partition management mode, name of the partition on which the job was run.
- ◆ **Partition On Hold Flag.** Displays a check mark if the partition has been placed on hold; otherwise, this field is blank.
- ◆ **Password.** Displays a check mark if a password is associated with this job.
- ◆ **Policy Name.** Name of the policy being used by the job if the job is a backup job; otherwise, this field is blank.
- ◆ **Print Log Flag.** Displays a check mark if the job log is to be printed after the job completes; otherwise, this field is blank.
- ◆ **Robot ID.** ID assigned by Backup Exec for the robot on which this job ran or is scheduled to run.
- ◆ **Selection File Name.** Name of the selection file used for the job.
- ◆ **Session ID.** Session assigned to the drive or to the mirrored or cascaded drive pool. The number of sessions determines the number of concurrent jobs that can be run.
- ◆ **Start Sequence Number.** First media in the media family used for the job.
- ◆ **Submission Date.** Date and time the job was submitted.
- ◆ **Total Bytes to be Processed.** Estimated number of bytes to be processed.
- ◆ **Total Devices Processed.** Total devices processed by the job.
- ◆ **Total Devices to be Processed.** Total estimated devices to be processed by the job.





- ◆ **Total Directories to be Processed.** Total estimated directories to be processed by the job.
- ◆ **Total Elapsed Time.** Total time that elapsed since the job began.
- ◆ **Total Files Bad.** Total number of bad, or corrupt, files encountered during the job.
- ◆ **Total Files in Use.** Total number of in-use files encountered during the job.
- ◆ **Total Files Skipped.** Total number of files skipped during the job.
- ◆ **Total Files to be Processed.** Total number of files processed during the job.
- ◆ **Total Media Left.** Total number of media left after the job.
- ◆ **Total Media Used.** Total number of media used during the job.
- ◆ **Total Start Time.** Time the job started.
- ◆ **Weekly Media Set ID.** For media rotation jobs, ID of the weekly media set.

### Results Pane View of Scheduled Jobs

You can select information appearing in the results pane for **Scheduled Jobs** by following the procedures described in [“Using the Results Pane”](#) on page 21.

Results Pane View of Scheduled Jobs

	Job Name	Job Type	Job on Hold Flag	Job State	Execution Date	Selection List
	RestoreJob...	Restore	On Hold	Nor...	7/19/01 5:47 AM	RS995557261
	NewRestore	Restore	On Hold	Nor...	7/19/01 5:58 AM	RS995557888

Default information appearing in the Administration Console’s results pane when **Scheduled Jobs** is selected includes:

- ◆ **Job Name.** Name the user gives to the job when it is created or edited. There can be no duplication of job names.
- ◆ **Job Type.** Type of job, such as backup or catalog.
- ◆ **Job on Hold Flag.** A check mark appears if the job is on hold; otherwise, this field is blank.
- ◆ **Job State.** Displays **Active** if the job is running; otherwise, this field is blank.
- ◆ **Execution Date.** Date and time the job is scheduled to start.
- ◆ **Selection List.** Name of the selection list to be used for this job, if applicable.
- ◆ **Media Set Name.** Name of the media set to be used by this job.
- ◆ **Drive Name.** Name of the drive or drive pool on which the job will be run.

- ◆ **Drive Pool Name.** Name of the drive pool on which the job will be run.
- ◆ **User name.** User name used to submit the job.
- ◆ **Policy Name.** Name of the backup policy to be used if the job is a backup job; otherwise, this field is blank.

Available columns that can be displayed for **Scheduled Jobs** include:

- ◆ **Backup Set Description.** Description of the backup set.
- ◆ **Backup Set Name.** Name assigned to the backup set.
- ◆ **Daily Media Set ID.** Identifies the media set used for daily backups. Used for media rotation only.
- ◆ **Drive ID.** Drive to which the job is assigned, if it is not assigned to a drive pool.
- ◆ **Drive Pool ID.** Pool to which the job is assigned, if it is not assigned to a drive.
- ◆ **Ignore On Tape Catalog.** Displays a check mark if the job is to ignore the on-tape catalog; otherwise, this field is blank.
- ◆ **Job ID.** ID Backup Exec assigned to the job.
- ◆ **Media Description.** Description to be written to the media to allow the user to identify it.
- ◆ **Media ID.** ID assigned by Backup Exec for the media on which the job was run.
- ◆ **Media Set ID.** Unique media set ID assigned by Backup Exec.
- ◆ **Monthly Media Set ID.** For media rotation jobs, ID of the monthly media set.
- ◆ **Partition ID.** If running in partition management mode, ID assigned by Backup Exec to the partition on which the job was run.
- ◆ **Partition Name.** If running in partition management mode, name of the partition on which the job was run.
- ◆ **Partition On Hold Flag.** Displays a check mark if the partition has been placed on hold; otherwise, this field is blank.
- ◆ **Password.** Displays a check mark if a password is associated with this job.
- ◆ **Print Log Flag.** Displays a check mark if the job log is to be printed after the job completes; otherwise, this field is blank.
- ◆ **Robot ID.** ID assigned by Backup Exec for the robot on which this job ran or is scheduled to run.
- ◆ **Weekly Media Set ID.** For media rotation jobs, ID of the weekly media set.



### Results Pane View of Active Jobs

You can select information appearing in the results pane for **Active Jobs** by following the procedures described in “[Using the Results Pane](#)” on page 21.

Default information appearing in the Administration Console’s results pane when **Active Jobs** is selected includes:

- ◆ **User Name.** User name used to submit the job
- ◆ **Job Name.** Name the user gives to the job when it is created or edited. There can be no duplication of job names.
- ◆ **Job Type.** Type of job, such as backup or catalog.
- ◆ **Execution Date.** Date and time the job is scheduled to start.
- ◆ **Drive Name.** Name of the drive on which the job is being processed.

Available columns that can be displayed for **Active Jobs** include:

- ◆ **Anchor ID.** ID used in drive mirroring to indicate the controlling drive.
- ◆ **Drive Pool ID.** ID assigned by Backup Exec to the drive pool on which this job is being run.
- ◆ **Job ID.** ID Backup Exec assigned to the job.
- ◆ **Media ID.** ID assigned by Backup Exec for the media on which the job was run.
- ◆ **Media Set ID.** Unique media set ID assigned by Backup Exec.
- ◆ **Partition ID.** If running in partition management mode, ID assigned by Backup Exec to the partition on which the job was run.
- ◆ **Partition Name.** If running in partition management mode, name of the partition on which the job was run.
- ◆ **Policy Name.** Name of the backup policy used if the job is a backup job; otherwise, this field is blank.
- ◆ **Session ID.** Session assigned to the drive or mirrored or cascaded drive pool. The number of sessions determines the number of concurrent jobs that can be run.
- ◆ **Submission Date.** Date and time the job was submitted.



## Using the Active Job Monitor

You can view an active job by right-clicking on the job from the results pane and clicking **View active job monitor**.

Active Job Monitor



For all jobs, the active job monitor displays the following information:

- ◆ **Job type.** Type of job, such as backup.
- ◆ **Submitted by.** User name used to submit the job.
- ◆ **Started.** Date and time the job started.
- ◆ **Elapsed time.** Length of time that has passed since the operation started.
- ◆ **Status.** Informational messages sent while the job is processing.
- ◆ **Partition.** If running in partition management mode, name of the partition on which the job was run.
- ◆ **Drive.** Drive on which the operation is running.
- ◆ **Media description.** Description to be written to the media to allow the user to identify it.
- ◆ **Family ID.** ID assigned by Backup Exec for the media on which the job was run.

Additional information appears for backup, restore, and media rotation jobs. Information displayed includes:

- ◆ **Media number.** Sequence of the media being used.
- ◆ **Set on media.** Sequence of the backup set being used.
- ◆ **Operation.** The type of operation currently being performed (such as backup, restore, or media rotation).
- ◆ **Device.** Name of the storage device processing the job.
- ◆ **Dir.** Current directory being processed, if applicable.
- ◆ **File.** Current file being processed, if applicable.
- ◆ **Directories.** Number of directories processed.
- ◆ **Files.** Number of files processed.
- ◆ **Bytes.** Number of bytes processed.
- ◆ **Screen refresh delay.** Select the number of seconds before the screen is refreshed automatically. To reduce traffic on your network, you may want to lengthen the amount of time the screen refreshes.

---

## Viewing Jobs through the Administration Console for NetWare

From the **Administration** menu on the media server's Administration Console for NetWare, job information can be viewed by selecting:

- ◆ Scheduled Jobs
- ◆ Job Logs
- ◆ Active Jobs

For scheduled jobs, you can:

- ◆ Place a job on hold (see [“Holding and Releasing Jobs”](#) on page 187).
- ◆ Release a job to run (see [“Holding and Releasing Jobs”](#) on page 187).
- ◆ View job details (see [“Viewing or Editing a Job”](#) on page 188).
- ◆ Edit a job (see [“Viewing or Editing a Job”](#) on page 188).
- ◆ Delete a job (see [“Deleting a Job”](#) on page 191).

### ▼ To view jobs through the Administration Console for NetWare

1. From the Administration Console for NetWare, select **Administration**.
2. To view scheduled jobs, select **Scheduled Jobs**.  
To view job logs, select **Job Logs**.  
To view active jobs, select **Active Jobs**.
3. If you selected to view scheduled jobs, and want to view just your jobs, select **Your jobs only**.  
To view all scheduled jobs, select **View all jobs**.

Descriptions of what appears are described in [“Viewing Scheduled Job Listings on the Administration Console for NetWare”](#) on page 186, [“Viewing Active Jobs on the Administration Console for NetWare”](#) on page 186, and [“Job Log Listings on the Administration Console for NetWare”](#) on page 196.

---

**Note** Users can view only the jobs they have created; administrators can view all jobs or just the jobs they have created. For users, the jobs they created appear when **All jobs** is selected; for administrators, all jobs created for the server being monitored appear. For administrators to view only the jobs they have created, they should use the **Your jobs only** option.

---



## Viewing Scheduled Job Listings on the Administration Console for NetWare

The Current Job Schedule dialog box appears when viewing the scheduled job listings on the Administration Console for NetWare (see [“Viewing Jobs through the Administration Console for NetWare”](#) on page 185). Information displayed includes:

- ◆ **Job Name.** Name the user gives to the job when it is created or edited. There can be no duplication of job names.
- ◆ **Job Type.** Type of operation to be performed, such as backup or catalog.
- ◆ **User Name.** Name of the user who submitted the job.
- ◆ **Execution Date.** Date and time the job is to run.
- ◆ **Status.** Status of the job in the queue. Options are:
  - **Ready.** The job is ready to be processed when the appropriate time is reached in the queue and a session becomes available to service it.
  - **Active.** The job is currently being processed.
  - **Hold.** The user has placed the job on hold or a once-only job has been placed on hold because it did not run successfully. Jobs submitted to partitions or storage devices that are on hold will be placed on hold.

## Viewing Active Jobs on the Administration Console for NetWare

The Active Jobs dialog box appears when viewing the active job listings on the Administration Console for NetWare (see [“Viewing Jobs from the Administration Console’s Results Pane”](#) on page 176). Information displayed includes:

- ◆ **Job Name.** Name the user gives to the job when it is created or edited. There can be no duplication of job names.
- ◆ **Operation.** Type of operation being performed, such as backup.
- ◆ **User Name.** Name of the user who submitted the job.
- ◆ **Execution Time.** Date and time the job started.
- ◆ **Session ID.** Session being used to run the job. A session is defined for each drive that can run a backup, restore, or media rotation job.

---

## Holding and Releasing Jobs

You can place a scheduled job on hold through the Administration Console or through the Administration Console for NetWare. You can also release a job that has been placed on hold.

▼ **To hold or release a job using the Administration Console:**

1. From the Administration Console, double-click the **Jobs** node.
2. Click either **All jobs** or **Scheduled jobs**.
3. From the results pane, right-click the job.
4. Click **Toggle hold** from the shortcut menu.

---

**Note** Multiple jobs in the same subnode can be placed on hold or released by holding the <Ctrl> key while right-clicking on each job you want to place on hold or release.

---

▼ **To hold or release a job using the Administration Console for NetWare:**

1. From the Administration Console for NetWare, select **Administration**.
2. Select **Scheduled Jobs**.
3. Select either **Your jobs only** or **View all jobs**.
4. Select the job you want to hold or release, and then press <Ctrl + T>.

---

**Note** Multiple jobs can be placed on hold or released by using the <Spacebar> to select each job you want to hold or release, and then pressing <Ctrl + T>.

---



## Canceling a Job

Most utility jobs cannot be canceled after they have started. However, you can cancel active backup, restore, and media rotation jobs from either the Administration Console or the Administration Console for NetWare.

### ▼ To cancel a job from the Administration Console:

1. Double-click the **Jobs** node.
2. Click **Active Jobs** or **All Jobs**.
3. From the results pane, right-click the active job you want to cancel.
4. Click **Cancel active job**.

### ▼ To cancel a job from the Administration Console for NetWare:

1. Select **Administration**.
2. Select **Active Jobs**.
3. Select the job you want to cancel, and then press <Enter>.
4. Press <Ctrl + C>.

## Viewing or Editing a Job

You can view properties for any Backup Exec job in either the **All Jobs**, **Scheduled Jobs**, or **Active Jobs** subnodes on the Administration Console. From the Administration Console for NetWare, job properties can be viewed through the **Administration** menu.

You can edit scheduled backup, restore, and utility jobs through job **Properties** from either the Administration Console or the Administration Console for NetWare provided the job is not active.

You can also edit a job from the Administration Console by selecting the **View/Edit** option.

### ▼ To view or edit a job from the Administration Console:

1. From the Administration Console, double-click the **Jobs** node.
2. Click the subnode in which the job appears.

3. In the results pane, right-click the job.
4. From the shortcut menu, click **Properties** or click **View/edit job**.

If you are viewing or editing a backup job, the Backup Job Properties dialog box appears. Options for this dialog box are described in:

- [“General Options for Backup Job Properties”](#) on page 106
- [“Making Backup Selections from the Administration Console”](#) on page 110
- [“Media Options for Backup Job Properties”](#) on page 108
- [“Policy Options for Backup Job Properties”](#) on page 109

If you are viewing or editing a restore job, the Restore Job Properties dialog box appears. Options for this dialog box are described in:

- [“General Options for Restore”](#) on page 133
- [“Making Restore Selections”](#) on page 135
- [“Advanced Options for Restore”](#) on page 141
- [“Redirection Options for Restore”](#) on page 143
- [“Novell NetWare Options for Restore”](#) on page 145
- [“Windows NT Options for Restore”](#) on page 146
- [“Windows 2000 Options for Restore”](#) on page 147
- [“Job Log Options for Restore”](#) on page 150
- [“Broadcast/E-mail Options for Restore”](#) on page 152

If you are viewing or editing a media rotation job, the Media Rotation Job Properties dialog box appears. Options for this dialog box are described in:

- [“General Options for Media Rotation Job Properties”](#) on page 400
- [“Making Media Rotation Selections from the Administration Console”](#) on page 401
- [“Media Options for Media Rotation Job Properties”](#) on page 404
- [“Process Options for Media Rotation Jobs”](#) on page 405
- [“Backup Method Options for Media Rotation Jobs”](#) on page 406
- [“Job Log Options for Media Rotation Job Properties”](#) on page 407
- [“Pre/Post Options for Media Rotation Job Properties”](#) on page 409
- [“Open Files Options for Media Rotation Job Properties”](#) on page 411
- [“NetWare Options for Media Rotation Job Properties”](#) on page 413



- [“Windows 2000 Options for Media Rotation Job Properties”](#) on page 414
- [“Broadcast/E-mail Options for Media Rotation Job Properties”](#) on page 416

If you are viewing or editing a utility job, the appropriate dialog box appears. Options for the utility jobs are described in the following sections:

- [“Inventory Options”](#) on page 303
- [“Drive Clean | General Options”](#) on page 305
- [“Media Catalog Options”](#) on page 308
- [“Media Erase Options”](#) on page 311
- [“Media Retension Options”](#) on page 313
- [“Media Eject Options”](#) on page 314
- [“Media Rewind Options”](#) on page 315
- [“Media Verify Options”](#) on page 317

For information about viewing or editing library utility jobs, refer to [“Using the Library Expansion Option”](#) on page 481.

5. After viewing or modifying the job’s properties, click **OK**.

▼ **To view or edit job properties from the Administration Console for NetWare:**

1. From the Administration Console for NetWare, select **Administration**.
2. To view properties of an active job, select **Active Jobs**.  
To view properties of a scheduled job, select **Scheduled Jobs**.
3. For **Scheduled Jobs**, select either **Your jobs only** or **View all jobs**.
4. Select the job, and then press <Enter>.

If you are viewing or editing a backup job, the Backup Job dialog box appears. Options for this dialog are described in [“Backup Job Properties Dialog Options”](#) on page 117.

If you are viewing or editing a restore job, the Submit Restore dialog box appears. Options for this dialog box are described in [“Submit Restore Job Options”](#) on page 159.

If you are viewing or editing a media rotation job, the Media Rotation Job dialog box appears. Options for this dialog are described in [“Media Rotation Job Dialog Options”](#) on page 419.





If you are viewing or editing a utility job, the appropriate dialog box appears. Options for the utility jobs are described in the following sections:

- [“Inventory Options”](#) on page 303
- [“Drive Clean | General Options”](#) on page 305
- [“Media Catalog Options”](#) on page 308
- [“Media Erase Options”](#) on page 311
- [“Media Retension Options”](#) on page 313
- [“Media Eject Options”](#) on page 314
- [“Media Rewind Options”](#) on page 315
- [“Media Verify Options”](#) on page 317

For information about viewing or editing library utility jobs, refer to [“Using the Library Expansion Option”](#) on page 481.

5. After viewing or modifying the job information, press <F2>.

## Deleting a Job

You can delete scheduled jobs, provided they are not active, through either the Administration Console or the Administration Console for NetWare.

### ▼ To delete a job using the Administration Console:

1. From the Administration Console, double-click the **Jobs** node.
2. Click either **All Jobs** or **Scheduled Jobs**.
3. In the results pane, right-click the job.
4. From the shortcut menu, click **Delete job**.
5. Click **OK** to confirm the deletion of this job.

### ▼ To delete a job using the Administration Console for NetWare:

1. From the Administration Console for NetWare, select **Administration**.
2. Select **Scheduled Jobs**.



3. Select either **Your jobs only** or **View all jobs**.
4. Select the job, and then press <Del>.

---

**Note** You can use <Spacebar> to select multiple jobs for deletion.

---

5. Press <Y> to confirm that you want to delete this job, or if deleting multiple jobs, press <A> to confirm all.

## Using Job Logs

The **Job Logs** subnode on the Administration Console and the **Job Logs** option on the Administration Console for NetWare display job histories, or results, for all completed jobs. Through **Job Logs**, you can:

- ◆ View a list of job logs (see [“Viewing the Job Log List”](#) on page 193).
- ◆ Set filters for the job logs (see [“Filtering Job Logs”](#) on page 197).
- ◆ View a job log’s properties (see [“Viewing Job Log Details”](#) on page 199).
- ◆ Delete a job log (see [“Deleting a Job Log”](#) on page 202).

By default, color-coding is used to distinguish job logs for successful and failed jobs. For information on selecting the colors used for displaying job logs, see [“Job Log Options for the Administration Console”](#) on page 271 or [“Job Log Options for the Administration Console for NetWare”](#) on page 278.

### Viewing the Job Log List

Log entries for each job display in the results pane of the Administration Console and in the Job Log dialog box on the Administration Console for NetWare.

#### ▼ To view the Job Log list:

1. From the Administration Console, double-click the **Jobs** node.

From the Administration Console for NetWare, select **Administration**.

2. Select **Job Logs**.

A listing of available job logs appears in the results pane of the Administration Console. Information about this list is described in [“Job Log Listings on the Administration Console”](#) on page 194.





On the Administration Console for NetWare, a list of available job logs appears in the Job Log dialog box. Information about this dialog box appears in [“Job Log Listings on the Administration Console for NetWare”](#) on page 196.



## Job Log Listings on the Administration Console

You can select information appearing in the results pane for **Job Logs** by following the procedures described in “[Using the Results Pane](#)” on page 21.

Results Pane View of Job Logs

	Job Name	Operation	Completion Status	Start Time	Complete Time	User Name
	Cataloging ...	9	Normal	6/28/01 4:57 AM	6/28/01 4:58 AM	ADMIN.QA
	Cataloging ...	9	Normal	6/28/01 4:57 AM	6/28/01 4:58 AM	ADMIN.QA
	Cataloging ...	9	Cancel	6/28/01 4:57 AM	6/28/01 5:14 AM	ADMIN.QA
	BackupJob_1	11	Normal	6/28/01 5:14 AM	6/28/01 5:16 AM	ADMIN.QA

The default information appearing in the Administration Console’s results pane when **Job Logs** is selected includes:

- ◆ **Job Name.** Name the user gives to the job when it is created or edited.
- ◆ **Operation.** Type of job, such as backup or restore, performed.
- ◆ **Complete Status.** Overall results of the job. Values include:
  - **Normal.** The job completed with no critical errors.
  - **Error.** The operation completed, but one or more significant errors occurred. The job log will indicate what caused the errors.
  - **Cancel.** The operation was canceled by the administrator or by Backup Exec.

For more information about understanding job completion status, see “[Understanding Job Completion Status](#)” on page 201.

- ◆ **Start Time.** Date and time the job started processing.
- ◆ **Complete Time.** Date and time the job completed.
- ◆ **User Name.** Name of the user who submitted the job.

Available columns that can be displayed for **Job Logs** include:

- ◆ **Backup Set Bytes Processed.** Total number of bytes processed for the backup set.
- ◆ **Backup Set Directories Processed.** Total number of directories processed for the backup set.
- ◆ **Backup Set Files Processed.** Total number of files processed for the backup set.
- ◆ **Drive Name.** Name of the drive on which the job ran.
- ◆ **Ending Sequence Number.** Sequence number of the media family on which the job ended if the job spanned multiple media.

- ◆ **Family ID.** ID assigned by Backup Exec for the media family on which this job ran.
- ◆ **Job ID.** ID Backup Exec assigned to the job.
- ◆ **Job Instance.** Unique ID for each run of a regularly scheduled job.
- ◆ **Media Description.** Description to be written to the media to allow the user to identify it.
- ◆ **Media Rotation Job.** Displays a check mark if the job is a media rotation job; otherwise, this field is blank.
- ◆ **Media Rotation Run Number.** Number of times the media rotation job has run.
- ◆ **Media Set Name.** Name of the media set to be used by this job.
- ◆ **Number of Backup Sets.** The total number of backup sets used in this job.
- ◆ **Number of Operations.** Total number of operations performed with this job.
- ◆ **Start Sequence Number.** Sequence number of the media family on which the job started if the job spanned multiple media.
- ◆ **Total Bytes To Be Processed.** Estimated number of bytes to be processed.
- ◆ **Total Devices Processed.** Total devices processed by the job.
- ◆ **Total Devices To Be Processed.** Total estimated devices to be processed by the job.
- ◆ **Total Directories To Be Processed.** Total estimated directories to be processed by the job.
- ◆ **Total Elapsed Time.** Total time that elapsed since the job began.
- ◆ **Total Files Bad.** Total number of bad, or corrupt, files encountered during the job.
- ◆ **Total Files Skipped.** Total number of files skipped during the job.
- ◆ **Total Files To Be Processed.** Total number of files processed during the job.
- ◆ **Total Idle Time.** Amount of time data was not actually written to tape. For example, the amount of time spent on maintaining media and waiting for user intervention.
- ◆ **Total In Use Files.** Total number of in-use files encountered during job processing.
- ◆ **Total Media Left.** Media capacity remaining on the media used for the job.
- ◆ **Total Media Used.** Total number of media used for the job.
- ◆ **Total Start Time.** Time the job started.



## Job Log Listings on the Administration Console for NetWare

The Job Log listings appear when viewing job logs on the Administration Console for NetWare.

### Job Log Listings

Job Log					
Job Name	Operation	User Name	Completion Time	Status	
BackupJob_1	BACKUP	ADMIN.QA	06/12/01 06:40a	Normal	
Cataloging media_	CATALOG	ADMIN.QA	06/12/01 06:38a	Cancel	
▶ Cataloging media_	CATALOG	ADMIN.QA	06/12/01 06:37a	Normal	◀
BackupJob_1	BACKUP	ADMIN.QA	06/12/01 06:37a	Cancel	
BackupJob_1	BACKUP	ADMIN.QA	06/12/01 06:36a	Cancel	

06/12/2001 06:54:21

The Job Log listings contain the following information:

- ◆ **Job Name.** Name the user gives to the job when it is created or edited. There can be no duplication of job names.
- ◆ **Operation.** Type of job, such as backup or catalog.
- ◆ **User Name.** Name of the user who submitted the job.
- ◆ **Completion Time.** Date and time the job completed.
- ◆ **Status.** Overall results of the job. Values include:
  - **Normal.** The job completed with no critical errors.
  - **Error.** The operation completed, but one or more significant errors occurred. The job log will indicate what caused the errors.
  - **Cancel.** The operation was canceled by the administrator or by Backup Exec.

For more information about understanding job completion status, see [“Understanding Job Completion Status”](#) on page 201.

## Filtering Job Logs

You can limit what job logs are displayed by filtering the job logs based on users, job type, job status, or job name.

### ▼ To set the job log filter from the Administration Console:

1. Click **Jobs**.
2. Right-click **Job Logs**, and then click **Custom Filter**.
3. On the Job Log Filter Settings dialog, select the criteria you want used when displaying job logs. Options for this dialog are described in “[Job Log Filter Settings](#)” on page 198.
4. Click **OK**.

### ▼ To set the job log filter from the Administration Console for NetWare:

1. Select **Administration**.
2. Select **Job Logs**.
3. Press <F5>.
4. On the Selection Filters dialog box, select the criteria you want used when displaying job logs. Options for this dialog are described in “[Job Log Filter Settings](#)” on page 198.
5. Press <F2>.



## Job Log Filter Settings

The Job Log Filter Settings dialog allows you to select the criteria used for displaying job logs.

Job Log Filter Settings

Options for this dialog include:

- ◆ **Users.** Select whether to view job log entries for all users or for one user. If you only want to view logs for a specific user, select **Specific user only** and enter the user's name.
- ◆ **Job type.** Select the specific types of jobs for which job logs are displayed. You can select to view all types of jobs, or any combination of backup, restore, media rotation, or utility jobs.



- ◆ **Job status.** Select whether you want to view logs for all jobs, jobs that ended successfully, jobs that were cancelled or jobs that ended in error. You can select combinations of job status, such as jobs that were cancelled and jobs that ended in error.
- ◆ **Job name.** Select All if you want to view logs for all jobs that meet the **User**, **Job type**, and **Job status** criteria, or select **Specific job name** and enter the name of the job.

---

**Note** Filter settings are combined with one another. For example, if you select a certain user in the **User** filter field and **Backup** under the **Job type** filter, you would only see results for the backup jobs processed for that particular user.

---

The filter settings you choose are only in effect for this viewing of the Job Log window. When you close the window and return to it, the default settings will be used. The default settings show all jobs if you are an administrator. Users will see *only* the jobs they have submitted.

## Viewing Job Log Details

The Job Log offers detailed information for each completed job.

---

**Note** Job Log properties are not available for jobs listed in the Administration Console's **Active** and **Scheduled** subnodes unless the job has run before.

---

### ▼ To view a Job Log:

1. From the Administration Console, double-click the **Jobs** node.  
From the Administration Console for NetWare, select **Administration**.
2. Select **Job Logs**.
3. In the Administration Console's results pane, right-click the job, and then select **View job log**.

From the Administration Console for NetWare's Job Log dialog box, select the job, and then press <Enter>.

Job log information is described in "[Job Log Information](#)" on page 200.



## Job Log Information

The level of detail presented in the job log is determined by the level set for the policy used to create the job and the maximum detail level set for the media server (see “[Job Log Options for the Media Server](#)” on page 245). For setting the level of detail for a backup policy, see “[Job Log Options for a Policy](#)” on page 93.

Job log information is color-coded. For information about changing the color-coded options, see “[Job Log Options for the Administration Console](#)” on page 271 or “[Job Log Options for the Administration Console for NetWare](#)” on page 278.

The job log information contains the following information:

- ◆ **Job server.** Name of the media server where the job was processed.
- ◆ **Job name.** Name the user gives to the job when it is created or edited. There can be no duplication of job names.
- ◆ **User name.** Name of the user who submitted the job.
- ◆ **Job type.** Type of job, such as backup or restore, performed.
- ◆ **Operation.** Type of operation, such as backup or restore, performed.
- ◆ **Submitted.** Date and time the job was submitted.

---

**Note** If the job was a backup job, the **Backup method** (such as full or incremental) appears.

---

- ◆ **Backup set started.** Date and time the operation started.
- ◆ **Total devices.** Number of devices included in the operation.
- ◆ **Total bytes.** Amount of data processed in bytes.
- ◆ **Total time.** Amount of time the operation took to complete.
- ◆ **Throughput.** Amount of bytes per second processed.
- ◆ **Operation ended.** Date and time the operation ended.
- ◆ **Job Summary Information.** The following summary information appears at the end of the log:
  - **Job name.** Name the user gives to the job when it is created or edited.
  - **Job run number.** Number of times this job ran.
  - **Job type.** Type of job, such as backup or restore, performed.
  - **Backup method.** Type of backup, such as Full, if the job was a backup job.
  - **Submitted.** Date and time the job was submitted.

- **Job completed.** How the job completed, such as successfully. If the job completed in error or was canceled, a description of why it failed or was canceled appears. Information about whether the job has been rescheduled, deleted, or placed on hold appears. If the job is rescheduled, the next date and time for the job to run appears.
- **Policy name.** Name of the policy used if the job was a backup job.
- **Job was scheduled to run.** Frequency job was scheduled.

## Understanding Job Completion Status

There are three possible job completion statuses: *Normal*, *Canceled*, and *Error*.

*Normal* means that your job completed successfully.

*Canceled* means that the job did not complete. Reasons a job might be canceled include:

- ◆ Errors were found processing the device information associated with the job.
- ◆ No devices specified by the job were available when the job was run.
- ◆ Errors were found with the login information associated with the job.
- ◆ There was a problem with the storage device when the job was run.
- ◆ The job information was corrupted.
- ◆ The administrator terminated the operation as it was running.
- ◆ The user powered off the device being backed up or restored.

*Error* means that the operation took place, but one or more significant errors occurred. The job log should indicate what caused the errors, and then you can decide if you want to run the job again. For example, an error will be reported if the connection to a device is lost while the device was having an operation performed on it. Depending on the importance of the job, you may choose not to run it again.

A once-only job that ends in a *Canceled* or an *Error* status will be put back in the queue on hold, so that if you want to try running the job again you can take the job off hold (see [“Holding and Releasing Jobs”](#) on page 187). If you do not want the job to run again, delete the job (see [“Deleting a Job”](#) on page 191).

A recurring job that ends in *Canceled* or *Error* status will be rescheduled for its next execution time. If you want to run this iteration of the job again, edit the job, modifying the execution time (see [“Viewing or Editing a Job”](#) on page 188).



## Deleting a Job Log

You can delete job logs from either the Administration Console or the Administration Console for NetWare.

### ▼ To delete a job log:

1. From the Administration Console, double-click the **Jobs** node.

From the Administration Console for NetWare, select **Administration**.

2. Select **Job Logs**.

A listing of available job logs appears in the results pane of the Administration Console. Information about this list is described in “[Job Log Listings on the Administration Console](#)” on page 194.

On the Administration Console for NetWare, a list of available job logs appears in the Job Log dialog box. Information about this dialog box appears in “[Job Log Listings on the Administration Console for NetWare](#)” on page 196.

3. From the Administration Console, right-click the job log you want to delete, and then click **Delete job log**.

From the Administration Console for NetWare, select the job log you want to delete, and then press <Del>. You can select multiple jobs to delete by using the <Spacebar>.

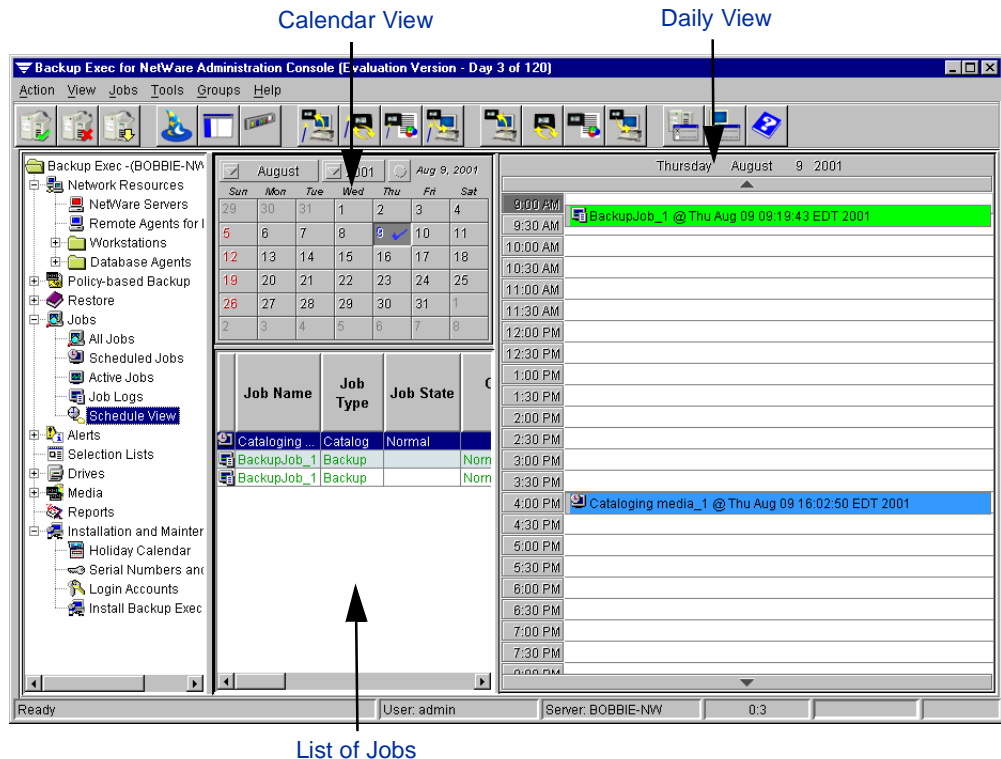
4. When prompted, click **OK** from the Administration Console, or press <Y> from the Administration Console for NetWare.

## Using the Schedule View

Backup Exec’s Administration Console provides a calendar view of all jobs and scheduled holidays. You can use the **Schedule View** option to view jobs that have run or are scheduled to run on a specific date and time. The **Schedule View** option also allows you to create a backup, restore, or media rotation job for a specific date and time.



## Schedule View



By default, Backup Exec uses colors to distinguish between scheduled, active, and completed jobs. For information about setting the colors that are used in the **Schedule View**, see “[Job Colors Options for the Administration Console](#)” on page 273. You can use the **Customize View** option to select the colors used to display jobs and set the day view and display options (see “[Customizing the Schedule View](#)” on page 204).

You can also use the **Schedule View** to define holidays and prevent jobs from running during times when there will be no one in your office. You can select to have Backup Exec reschedule or postpone jobs that were slated to run during holidays.

**Note** The **Schedule View** and **Holiday Calendar** features are only available on the Administration Console.

## Viewing Jobs from the Schedule View

If you select **Schedule View** from the Administration Console, the results pane changes to a calendar view that allows you to quickly see what jobs have run or are scheduled to run for a specific day.



▼ **To view jobs for a specific day:**

1. From the Administration Console, double-click the **Jobs** node.

2. Click **Schedule View**.

The calendar view will display a calendar for the current month and year, a view of the current day in 30 minute increments, and a list of the jobs scheduled for the current day.

3. To change the month displayed, click the down arrow appearing next to the month, and then select the month you want from the drop-down list box.

4. To change the year displayed, click the down arrow appearing next to the year, and then select the year you want from the drop-down list box.

5. To change the daily view, click on the day you want from the calendar.

## Customizing the Schedule View

You can change the daily view and the colors of scheduled, active, completed, and projected jobs as well as job logs in the Schedule View by using the **Customize view** option.

▼ **To customize the Schedule View:**

1. From the Administration Console, double-click the **Jobs** node.

2. Click **Schedule View**.

3. Right-click the daily view section, and then click **Customize view**.

4. If you want to change the way the daily view shows times, select options from the Day View Options tab. Options are described in "[Day View Options](#)" on page 205.

5. If you want to change the colors used to designate jobs, job logs, and holidays, select **Job Colors** and select the options you want. Options are described in "[Job Colors Options for the Administration Console](#)" on page 273.

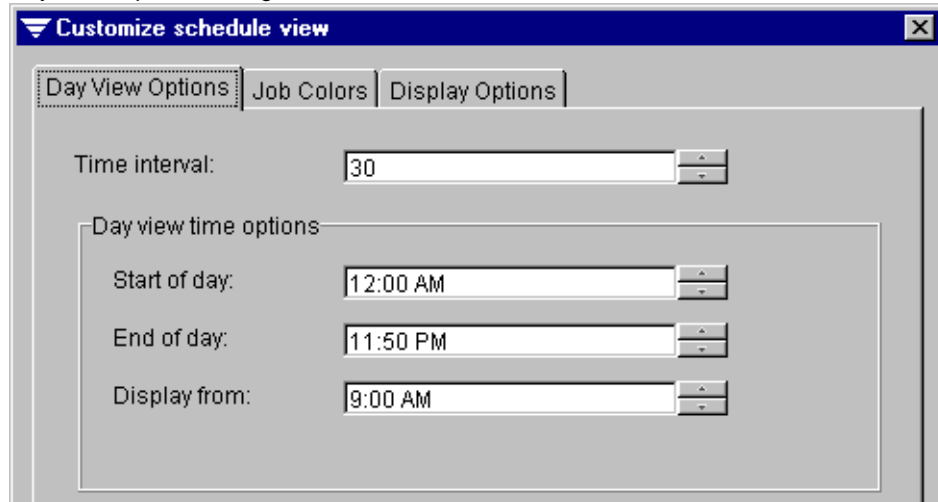
6. If you want to change the types of jobs and job logs displayed, select **Display Options** and select the options you want. Options are described in "[Display Options](#)" on page 205.

7. Click **OK**.

## Day View Options

The Day View Options dialog box appears when customizing the Schedule View.

Day View Options Dialog Box



Options for this dialog box are:

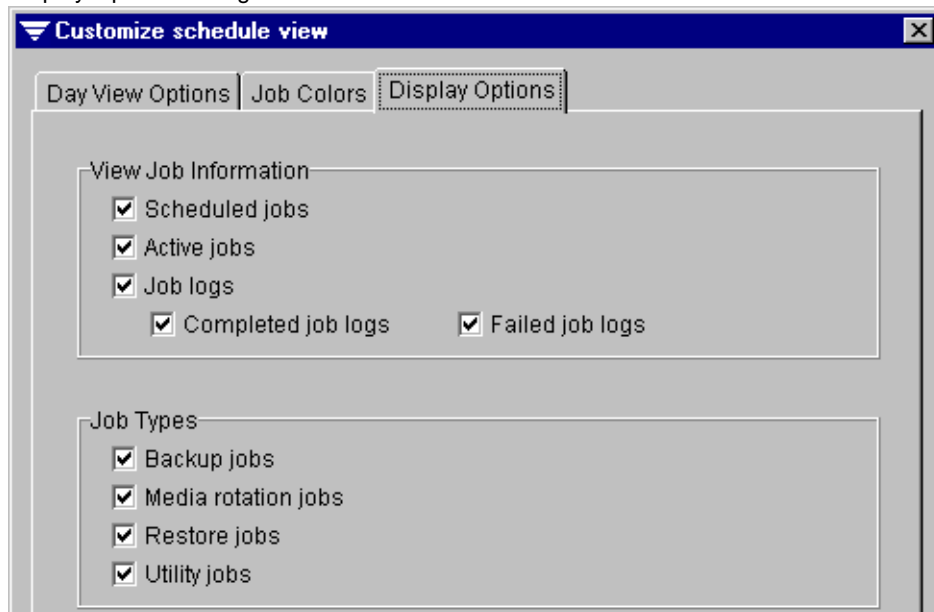
- ◆ **Time interval.** Enter or select the time interval in minutes that you want to use for the daily view section. For example, if you want the daily view to display the time by the hour, select 60. The time interval can be from 5 minutes to 60 minutes.
- ◆ **Start of day.** Enter or select the start time for the daily view. For example, if your office has no jobs running before 6 A.M., you would probably want to use 6:00 A.M. as the **Start of day**.
- ◆ **End of day.** Enter or select the end time for the daily view. For example, if your office has no jobs running after midnight, you may want to use 12:00 AM as the **End of day**.
- ◆ **Display from.** Enter or select the first time to appear in the daily view. For example, you may have jobs that run as early as 6:00 A.M., but you want your daily view to display only from 9:00 A.M. to 6:00 P.M. In this case, you would set your **Display from** to 9:00 A.M. If the **Start of day** is set at 6:00 A.M., you can scroll to view jobs that occurred between 6:00 A.M. to 9:00 A.M., but, in this scenario, the daily view would always start at 9:00 A.M.

## Display Options

The Display Options dialog box appears when customizing the Schedule View.



Display Options Dialog Box



Options for this dialog box are:

- ◆ **Scheduled jobs.** Select this option if you want scheduled jobs to appear in the Schedule View.
- ◆ **Active jobs.** Select this option if you want active jobs to appear in the Schedule View.
- ◆ **Job logs.** Select this option if you want the Schedule View to list job logs.
  - **Completed job logs.** Select this option if you want to access logs for completed jobs through the Schedule View.
  - **Failed job logs.** Select this option if you want to access logs for failed jobs through the Schedule View.
- ◆ **Backup jobs.** Select this option if you want backup jobs to appear in the Schedule View.
- ◆ **Media rotation jobs.** Select this option if you want media rotation jobs to appear in the Schedule View.
- ◆ **Restore jobs.** Select this option if you want restore jobs to appear in the Schedule View.
- ◆ **Utility jobs.** Select this option if you want utility jobs, such as catalog jobs, to appear in the Schedule View.



## Running a Scheduled Job from the Schedule View

You can launch a scheduled job using the **Schedule View** option available from the Administration Console.

### ▼ To launch a scheduled job:

1. From the Administration Console, double-click the **Jobs** node.
2. Click **Schedule View**.
3. Select the month, year, and day the job is scheduled to run from the calendar.
4. From the job list section, right-click the job you want to run, and then click **Run job now**.

## Creating a Job from the Schedule View

You can create a backup, restore, or media rotation job using the **Schedule View** option available from the Administration Console.

### ▼ To create a job:

1. From the Administration Console, double-click the **Jobs** node.
2. Click **Schedule View**.
3. Select the month, year, and day you want the job to run from the calendar.
4. From the daily view section, right-click the time you want the job to execute.
5. Click the type of job you want to create.

If you are creating a backup job, the Backup Job Properties dialog box appears. For information on completing the options on this dialog box's tab sections, see:

- [“General Options for Backup Job Properties”](#) on page 106
- [“Making Backup Selections from the Administration Console”](#) on page 110
- [“Media Options for Backup Job Properties”](#) on page 108
- [“Policy Options for Backup Job Properties”](#) on page 109

If you are creating a restore job, the Restore Job Properties dialog box appears. For information on completing the options on this dialog box's tab sections, see:



- [“General Options for Restore”](#) on page 133
- [“Making Restore Selections”](#) on page 135
- [“Advanced Options for Restore”](#) on page 141
- [“Redirection Options for Restore”](#) on page 143
- [“Novell NetWare Options for Restore”](#) on page 145
- [“Windows NT Options for Restore”](#) on page 146
- [“Windows 2000 Options for Restore”](#) on page 147
- [“Job Log Options for Restore”](#) on page 150
- [“Broadcast/E-mail Options for Restore”](#) on page 152

If you are creating a media rotation job, the Media Rotation Job Properties dialog appears. For information on completing the options on this dialog box's tab sections, see:

- [“General Options for Media Rotation Job Properties”](#) on page 400
- [“Making Media Rotation Selections from the Administration Console”](#) on page 401
- [“Media Options for Media Rotation Job Properties”](#) on page 404
- [“Process Options for Media Rotation Jobs”](#) on page 405
- [“Backup Method Options for Media Rotation Jobs”](#) on page 406
- [“Job Log Options for Media Rotation Job Properties”](#) on page 407
- [“Pre/Post Options for Media Rotation Job Properties”](#) on page 409
- [“Open Files Options for Media Rotation Job Properties”](#) on page 411
- [“NetWare Options for Media Rotation Job Properties”](#) on page 413
- [“Windows 2000 Options for Media Rotation Job Properties”](#) on page 414
- [“Broadcast/E-mail Options for Media Rotation Job Properties”](#) on page 416

6. After entering the options you want, click **OK**.

## Monitoring an Active Job

You can monitor an active job using the **Schedule View** option available from the Administration Console.



---

▼ **To monitor an active job:**

1. From the Administration Console, double-click the **Jobs** node.
2. Click **Schedule View**.
3. Select the month, year, and day the job is scheduled to run from the calendar.
4. From the job list section, right-click the job you want to run, and then click **View active job monitor**.
5. When finished viewing the Active Job Monitor, click **OK**.

## Deleting a Job Using the Schedule View

You can delete a scheduled job using the **Schedule View** option in the Administration Console.

▼ **To delete a scheduled job:**

1. From the Administration Console, double-click the **Jobs** node.
2. Click **Schedule View**.
3. Select the month, year, and day the job is scheduled to run from the calendar.
4. Right-click the job you want to delete from the list of jobs, and then click **Delete job**.
5. Click **OK** to confirm that you want to delete this job.



## Canceling an Active Job through the Schedule View

You can cancel an active job using the **Schedule View** option in the Administration Console.

### ▼ To cancel an active job:

1. From the Administration Console, double-click the **Jobs** node.
2. Click **Schedule View**.
3. Select the month, year, and day the job is scheduled to run from the calendar.
4. From the job list section, right-click the job you want to cancel, and then click **Cancel active job**.
5. Click **OK**.

## Viewing and Editing a Job from the Schedule View

You can view and edit a scheduled job using the **Schedule View** option available from the Administration Console.

### ▼ To view or edit a job:

1. From the Administration Console, double-click the **Jobs** node.
2. Click **Schedule View**.
3. Select the month, year, and day the job is scheduled to run from the calendar.
4. Right-click the job you want to view or edit from the list of jobs or from the daily view of scheduled jobs, and then click **View/edit job**.

---

**Tip** You can also view or edit a job by selecting **Properties** from the shortcut menu that appears when you right-click a job from the Schedule View's job listings.

---

If you are viewing or editing a backup job, the Backup Job Properties dialog box appears. Options for the tabs in this dialog box are described in:

- [“General Options for Backup Job Properties”](#) on page 106
- [“Making Backup Selections from the Administration Console”](#) on page 110
- [“Media Options for Backup Job Properties”](#) on page 108

- [“Policy Options for Backup Job Properties”](#) on page 109

If you are viewing or editing a restore job, the Restore Job Properties dialog box appears. Options for the tabs in this dialog box are described in:

- [“General Options for Restore”](#) on page 133
- [“Making Restore Selections”](#) on page 135
- [“Advanced Options for Restore”](#) on page 141
- [“Redirection Options for Restore”](#) on page 143
- [“Novell NetWare Options for Restore”](#) on page 145
- [“Windows NT Options for Restore”](#) on page 146
- [“Windows 2000 Options for Restore”](#) on page 147
- [“Job Log Options for Restore”](#) on page 150
- [“Broadcast/E-mail Options for Restore”](#) on page 152

If you are viewing or editing a media rotation job, the appropriate dialog box appears. Options for media rotation jobs are described in the following sections:

- [“General Options for Media Rotation Job Properties”](#) on page 400
- [“Making Media Rotation Selections from the Administration Console”](#) on page 401
- [“Media Options for Media Rotation Job Properties”](#) on page 404
- [“Process Options for Media Rotation Jobs”](#) on page 405
- [“Backup Method Options for Media Rotation Jobs”](#) on page 406
- [“Job Log Options for Media Rotation Job Properties”](#) on page 407
- [“Pre/Post Options for Media Rotation Job Properties”](#) on page 409
- [“Open Files Options for Media Rotation Job Properties”](#) on page 411
- [“NetWare Options for Media Rotation Job Properties”](#) on page 413
- [“Windows 2000 Options for Media Rotation Job Properties”](#) on page 414
- [“Broadcast/E-mail Options for Media Rotation Job Properties”](#) on page 416

If you are viewing or editing a utility job, the appropriate dialog box appears. Options for the utility jobs are described in the following sections:

- [“Inventory Options”](#) on page 303
- [“Drive Clean | General Options”](#) on page 305
- [“Media Catalog Options”](#) on page 308



- [“Media Erase Options”](#) on page 311
- [“Media Retension Options”](#) on page 313
- [“Media Eject Options”](#) on page 314
- [“Media Rewind Options”](#) on page 315
- [“Media Verify Options”](#) on page 317

For information about viewing or editing library utility jobs, refer to [“Using the Library Expansion Option”](#) on page 481.

5. After viewing or modifying the job’s properties, click **OK**.

## Holding or Releasing a Job from the Schedule View

You can hold or release a scheduled job using the **Schedule View** option in the Administration Console.

### ▼ To hold or release a job:

1. From the Administration Console, double-click the **Jobs** node.
2. Click **Schedule View**.
3. Select the month, year, and day the job is scheduled to run from the calendar.
4. Right-click the job you want to place on hold or release from hold from the list of jobs, and then click **Toggle hold**.

## Viewing Job Logs from the Schedule View

You can view job logs for completed jobs using the **Schedule View** option available from the Administration Console.

### ▼ To view a job log:

1. From the Administration Console, double-click the **Jobs** node.
2. Click **Schedule View**.
3. Select the month, year, and day the job is scheduled to run from the calendar.
4. Right-click the job you want to view the job log for from the list of jobs or from the daily view of scheduled jobs, and then click **View job log**.

The information that appears in the job log is described in “[Job Log Information](#)” on page 200.

## Defining a Holiday

You can plan for holiday events and have Backup Exec prevent jobs from running during holidays by using the **New Holiday** option available from the **Schedule View** subnode. Defining a holiday allows you to specify days, or even portions of a day, when jobs will not run, ensuring Backup Exec does not require attention during times when no one is in the office.

### ▼ To specify a holiday:

1. From the Administration Console, double-click the **Jobs** node.
2. Click **Schedule View**.
3. Select the month, year, and day the job is scheduled to run from the calendar.
4. Right-click on the daily view, and then click **New Holiday**.
5. Enter options on the Holiday Information dialog box. Options for this dialog box are described in “[Holiday Information Dialog Options](#)” on page 214.
6. Click **OK**.



## Holiday Information Dialog Options

The Holiday Information dialog box appears when using the **New Holiday** option on the Administration Console.

Holiday Information Dialog Box

The screenshot shows a standard Windows-style dialog box titled "Holiday Information Dialog". It features a title bar with a close button (X) on the right. The main area contains several input fields and options:

- Start Date:** A date picker field showing "06/12/2001".
- Start Time:** A time picker field showing "12:00:00 AM".
- End Time:** A time picker field showing "11:59:59 PM".
- Delay Option:** Two radio buttons. The first, "Rescheduled for the next execution.", is selected. The second, "Postpone until after the holiday.", is unselected.
- Description:** A large, empty text area for entering a description.
- Buttons:** "OK", "Cancel", and "Help" buttons are located at the bottom of the dialog.

This dialog box includes the following options:

- ◆ **Start date.** Enter or select the date for the holiday.
- ◆ **Start time.** Enter or select the time the holiday starts.
- ◆ **End time.** Enter or select the time the holiday ends.
- ◆ **Reschedule for the next execution.** Select this option if you want Backup Exec to have the job wait to run on its next execution date and time. This option is not available for once-only jobs.
- ◆ **Postpone until after the holiday.** Select this option if you want Backup Exec to reschedule the job to run when the holiday ends.



- ◆ **Description.** Enter a description for the holiday. For example, if you are closing for New Year's Day, you might want to enter **New Year's Day holiday**.

## Viewing and Responding to Alerts

The **Alerts** node on the Administration Console and the **Alerts** option on the Administration Console for NetWare's **Administration** menu allow you to access a list of system event messages and alerts that need to be brought to your attention. Examples of alerts include:

- ◆ Media will be overwritten.
- ◆ Are you sure you want to erase media?
- ◆ Media needs to be mounted.

Alerts also include device and media errors.

The Administration Console's **Alerts** node contains two subnodes:

- ◆ **Active Alerts.** This subnode displays a list in the results pane of current alerts that require your attention. Job status conditions such as *Please insert media* and *Would you like to erase this media* are examples of alerts. You can view, respond to, and clear active alerts through this subnode.

By default, a popup dialog window appears when an active alert is received. To change this default, see "[General Options for the Administration Console](#)" on page 269.

- ◆ **Alert Logs.** This subnode displays historical and response information for all alerts generated by Backup Exec.

On the Administration Console for NetWare an **Alert** icon flashes in the top right corner when an alert is reported; you can select the following options from the **Administration** menu:

- ◆ **Alerts.** Selecting this option displays the Active Alerts dialog box, which is described in "[Active Alerts Dialog Box](#)" on page 217.
- ◆ **Alert Logs.** Selecting this option displays the Alerts Logs dialog box, which is described in "[Alert Logs Dialog Box](#)" on page 223.



## Viewing Active Alerts

Backup Exec displays all active alerts, which are any events occurring in Backup Exec that are considered important enough to present a message to the user or to require a response from the user.

---

**Note** Alerts are not necessarily related to a job. Some alerts require you to only click **OK** to acknowledge the message.

---

### ▼ To view active alerts:

- ❖ From the Administration Console, double-click **Alerts**, and then click **Active Alerts**.  
From the Administration Console for NetWare, select **Administration**, and then select **Active Alerts**.

On the Administration Console alerts appears in the results pane. Information displayed for each alert is described in “[Results Pane View of Active Alerts](#)” on page 216.

On the Administration Console for NetWare, the Alert List dialog box appears. Information for this dialog box is described in “[Active Alerts Dialog Box](#)” on page 217.

## Results Pane View of Active Alerts

- If there are active alerts and you click **Active Alerts** on the Administration Console, information about the active alerts appears in the results pane. You can select information appearing in the results pane for **Active Alerts** by following the procedures described in “[Using the Results Pane](#)” on page 21.

Results Pane View of Active Alerts

Occurrence Time	Job Name	Title	Response Received	User Name
7/19/01 9:57 AM		Restore.Job...		

The information appearing in the results pane includes:

- ◆ **Occurrence Time.** Date and time the alert was received.
- ◆ **Job name.** Name of the job that generated the alert. If the **Job name** is blank, the alert is not associated with a job.
- ◆ **Title.** Title of the alert.



- ◆ **Response Received.** Response, if any, that has been received for the alert.
- ◆ **User Name.** Name of the user who submitted the job.

Available columns that can be displayed for **Active Alerts** include:

- ◆ **Media Server Name.** Name of the media server reporting the alert.
- ◆ **Time Responded.** Date and time when the user responded to the alert.
- ◆ **Response Session.** Session on which the job ran.
- ◆ **Session ID.** Session that generated the alert. Each drive that can run a job has a session created for it.

## Active Alerts Dialog Box

If there are active alerts and you select **Active Alerts** from the Administration Console for NetWare's **Administration** menu, the Active Alerts dialog box appears.

Active Alerts Dialog Box

Active Alerts			
Session Id	Job Name	Date	Media Server Name
08	Erasing media_2	08/09/01 04:14p	BOBBIE-NW

08/09/2001 04:15:36 PM

Information displayed on this dialog box includes:

- ◆ **Session ID.** Session that generated the alert. Each drive that can run a job has a session created for it.
- ◆ **Job Name.** Name of the job that generated the alert.
- ◆ **Date.** Date and time the alert occurred.
- ◆ **Media Server Name.** Name of the media server reporting the alert.

## Responding to Alerts

You can respond to an active alert from either the Administration Console or the Administration Console for NetWare.



▼ **To respond to an active alert:**

1. From the Administration Console, double-click **Alerts**, and then click **Active Alerts**.  
From the Administration Console for NetWare, select **Administration**, and then select **Active Alerts**.
2. From the Administration Console's results pane, right-click the alert to which you want to respond, and then click **View** or **Properties**.  
The Media Server Active Alerts dialog box appears. Information appearing on this dialog box is described in "[Media Server Active Alerts](#)" on page 219.  
From the Administration Console for NetWare, select the alert you want to respond to, and then press <Enter>.  
An alert message appears.
3. Select the response you want.

---

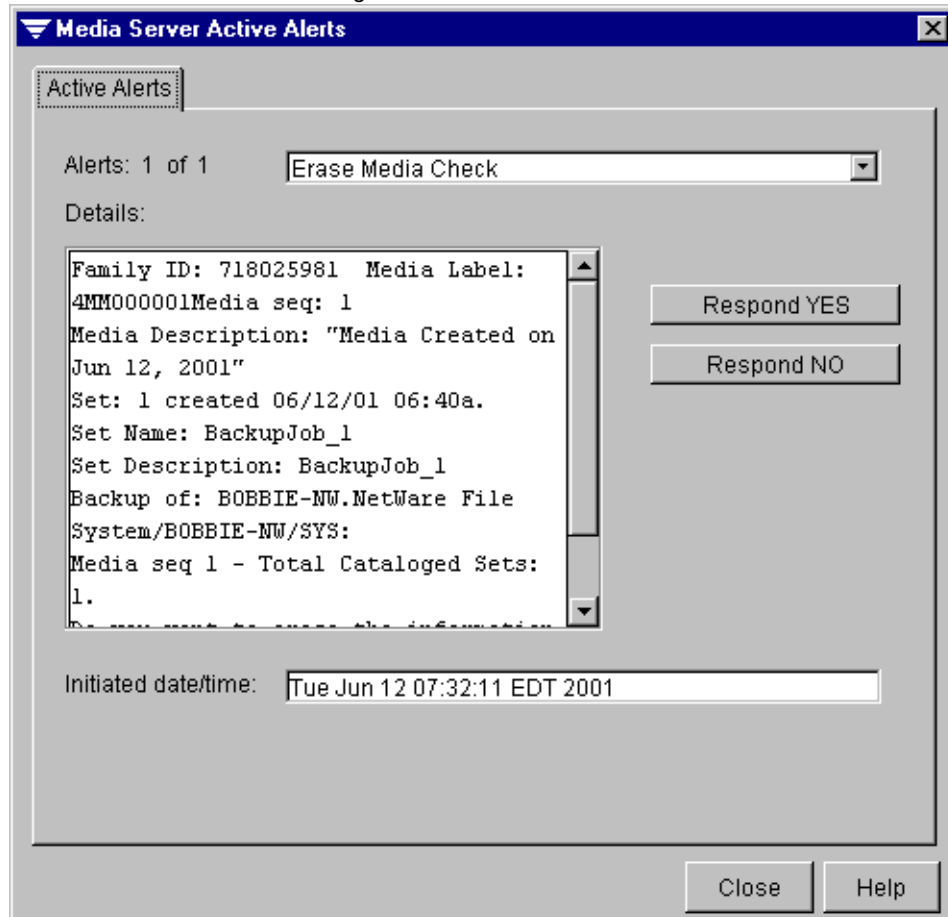
**Note** Some alerts may require just an **OK** to acknowledge the message.

---

## Media Server Active Alerts

The Media Server Active Alerts dialog box appears when viewing details for an alert from the Administration Console.

Media Server Active Alerts Dialog Box



This dialog includes the following information:

- ◆ **Alerts.** Title for the alert, such as Media Request, that also displays on the server where the alert occurred. If you are viewing alerts for a server or server group, the number of alert conditions for this server or server group also appears.
- ◆ **Details.** Actual alert message that displays on the server where the alert occurred.
- ◆ **Response Buttons.** Different response buttons appear, depending on the type of response required. The possible response buttons are:
  - **Respond Yes**



- **Respond No**
- ◆ **Initiated date/time.** Day, date, and time the alert originally occurred.

## Viewing Alert Logs

You can view alerts that have been responded to or cleared from the **Alert Logs** subnode on the Administration Console or by selecting the **Alerts Logs** option from the Administration Console for NetWare. You can also set the maximum number of alert logs for Backup Exec to keep (see “[General Options for the Media Server](#)” on page 242). From the Administration Console, you can also delete an alert log.

### ▼ To view alert logs:

1. From the Administration Console, double-click **Alerts**, and then click **Alert Logs**.

Alert log information displayed in the Administration Console’s results pane is described in “[Results Pane View of Alert Logs](#)” on page 221.

From the Administration Console for NetWare, select **Administration**, and then select **Alert Logs**.

Alert log information displayed in the Administration Console for NetWare is described in “[Alert Logs Dialog Box](#)” on page 223.

2. From the Administration Console, right-click an alert log, and then click **View** or **Properties** to display the Media Server Alert Logs dialog box. Information appearing on this dialog box is described in “[Media Server Alert Logs Dialog Box](#)” on page 222.

From the Administration Console for NetWare, select an alert log, and then press <Enter> to display the Message dialog box.

3. From the Administration Console, click **Close**.

From the Administration Console for NetWare, press <Esc> to return to the Alert History list.

## Results Pane View of Alert Logs

If there are alert logs and you click **Alert Logs** on the Administration Console, information appears in the results pane. You can select information appearing in the results pane for **Alert Logs** by following the procedures described in “[Using the Results Pane](#)” on page 21.

Results Pane View of Alert Logs

Occurrence Time	Job Name	Title	Response Received	User Name
8/9/01 9:04 AM	BackupJob...	BackupJob...	<Unknown>	
8/9/01 9:04 AM	BackupJob...	BackupJob...	<Unknown>	

The default information appearing in the results pane includes:

- ◆ **Occurrence Time.** Date and time that the alert occurred.
- ◆ **Job Name.** Name of the job that generated the alert.
- ◆ **Title.** Title of the alert.
- ◆ **Response Received.** Response received for the alert.
- ◆ **User Name.** Name of the user who responded to the alert.

Available columns that can be displayed for **Alert Logs** include:

- ◆ **Media Server Name.** Name of the media server reporting the alert.
- ◆ **Response Session.** Session on which the job ran.
- ◆ **Session ID.** Session that generated the alert. Each drive that can run a job has a session created for it.
- ◆ **Time Responded.** Date and time when the user responded to the alert.



## Media Server Alert Logs Dialog Box

The Media Server Alert Logs dialog box appears when viewing details for an alert log from the Administration Console.

Media Server Alert Logs Dialog Box

**Media Server Alert Logs**

Alerts: 2 of 2    Erase Media Check

Details:

Family ID: 718025981    Media Label: 4MM000001Media seq: 1  
 Media Description: "Media Created on Jun 12, 2001"  
 Set: 1 created 06/12/01 06:40a.  
 Set Name: BackupJob\_1  
 Set Description: BackupJob\_1  
 Backup of: BOBBIE-NW.NetWare File System/BOBBIE-NW/SYS:  
 Media seq 1 - Total Cataloged Sets: 1.  
 Do you want to erase the information on the media in Slot 1  
 in HA:0 ID:4 LUN:1 HP C1553A? (Y/N) N

Occurrence time: Tue Jun 12 07:32:11 EDT 2001  
 Responded by: ADMIN.QA  
 Response received: Yes  
 Response date/time: Wed Jun 13 03:29:07 EDT 2001  
 Job Name: EraseJob\_1

Close    Help

This dialog box includes the following information:

- ◆ **Alerts.** Title for the alert, such as Media Request, that also displays on the server where the alert occurred. If you are viewing alerts for a server or server group, the number of alert conditions for this server or server group also appears.



- ◆ **Details.** Actual alert message that displayed on the server where the alert occurred.
- ◆ **Occurrence time.** Day, date, and time the alert originally occurred.
- ◆ **Responded by.** User who responded to the alert.
- ◆ **Response received.** Response made to the alert.
- ◆ **Response date/time.** Day, date, and time the response was made.
- ◆ **Job name.** Name of the job that caused the alert.

## Alert Logs Dialog Box

If there are alert logs and you select **Alert Logs** from the Administration Console for NetWare's **Administration** menu, the Alert Logs dialog box appears.

Alert Logs Dialog Box

Alert Logs					
Job Name	Date	Media Server Name	User Name	Response	
▶Erasing media_2	08/09/01 04:17p	BOBBIE-NW	ADMIN.QA	YES	◀
BackupJob_1	08/09/01 09:21a	BOBBIE-NW	ADMIN.QA	YES	
BackupJob_1	08/09/01 09:04a	BOBBIE-NW		NOT	...
BackupJob_1	08/09/01 09:04a	BOBBIE-NW		NOT	...
BackupJob_1	08/09/01 09:04a	BOBBIE-NW		NOT	...
BackupJob_1	08/09/01 09:04a	BOBBIE-NW		NOT	...
BackupJob_1	08/09/01 09:04a	BOBBIE-NW		NOT	...
BackupJob_1	08/09/01 09:04a	BOBBIE-NW		NOT	...
BackupJob_1	08/09/01 09:04a	BOBBIE-NW		NOT	...
		More...	08/09/2001 04:23:35	PM	

Information displayed on this dialog box includes:

- ◆ **Job Name.** Name of the job that generated the alert.
- ◆ **Date.** Date and time the alert occurred.
- ◆ **Media Server Name.** Name of the media server reporting the alert.
- ◆ **User Name.** Name of the user who responded to the alert.
- ◆ **Response.** The response that was made, such as **Yes** or **No**.

## Deleting Entries from the Alert Log

By default, Backup Exec displays the last 255 alerts that have occurred in the alert log unless specific alert log entries have been deleted or you have changed the maximum number of alerts that Backup Exec displays (see “[General Options for the Media Server](#)” on page 242).



▼ **To remove an entry from the Alert Log:**

1. From the Administration Console, double-click **Alerts**.

From the Administration Console for NetWare, select **Administration**.

2. Select **Alert Logs**.

3. From the Administration Console's results pane, right-click the entry you want to delete, and then click **Delete**.

From the Administration Console for NetWare, use the <Spacebar> to select the log you want to delete, and then press <Del>

4. On the Administration Console, click **Yes** to verify you want to delete this alert log, or if deleting multiple items, click **Yes to All**.

On the Administration Console for NetWare, press **Y** to verify you want to delete this alert log, or if deleting multiple items, press **A**.

## Using Reports

You can generate *reports* in HTML format that show detailed information about your Backup Exec operations. You can view these reports from your Administration Console or save these reports for later viewing or printing. Because they are in HTML format, the saved reports also can be attached to e-mails.

---

**Note** The reports feature is not available from the Administration Console for NetWare. The Administration Console's desktop area must be set for at least 1024 X 768 pixels for reports to correctly display.

---

The reports that can be generated include:

- ◆ Completed Jobs - 1 Day (see "[Completed Jobs - 1 Day](#)" on page 227)
- ◆ Completed Jobs - 7 Days (see "[Completed Jobs - 7 Days](#)" on page 229)
- ◆ All Completed Jobs (see "[All Completed Jobs](#)" on page 230)
- ◆ Failed Jobs - 1 Day (see "[Failed Jobs - 1 Day](#)" on page 231)
- ◆ Failed Jobs - 7 Days (see "[Failed Jobs - 7 Days](#)" on page 232)
- ◆ Job Queue Status (see "[Job Queue Status](#)" on page 233)
- ◆ Policy Definitions (see "[Policy Definition](#)" on page 234)
- ◆ Policy Usage (see "[Policy Usage](#)" on page 235)
- ◆ Protected Resources (see "[Protected Resources](#)" on page 235)
- ◆ Media (see "[Media](#)" on page 236)
- ◆ Recently Written Media - 1 Day (see "[Recently Written Media - 1 Day](#)" on page 236)
- ◆ Device Summary (see "[Device Summary](#)" on page 237)
- ◆ Robot Inventory (see "[Robot Inventory](#)" on page 238)

## Results Pane View of Reports

When the **Reports** node is selected, the following information appears in the results pane:

- ◆ **Report Name.** Name of the report.
- ◆ **Report Description.** Brief summary of what appears in the report.
- ◆ **Last Time Viewed.** The last time this report was viewed for this Backup Exec server.
- ◆ **Last Time Generated.** The last time this report was generated for this Backup Exec server.



You can also select to have the **Report ID** appear in the results pane view (see “[Using the Results Pane](#)” on page 21 for information about customizing the results pane view).

## Generating Reports

Use the **ReGenerate report** option to create a report or to recreate it since the report was last generated.

### ▼ To create or regenerate a report:

1. From the Administration Console, click **Reports**.
2. From the list of reports appearing in the results pane, right-click the report you want to create or update data for.
3. Click **ReGenerate report**.

---

**Tip** You can also double-click on a report in the results pane to display the report. If this is the first time the report is being viewed, it will be generated.

---

## Viewing Reports

Use the **View report** option to view a report. By default, the built-in browser supplied with Backup Exec is used to display the reports. You can select which browser you want to use through the Administration Console’s Job Log options (see “[Job Log Options for the Administration Console](#)” on page 271). Supported browsers include Internet Explorer 5.0 or later, Netscape Navigator 4.76, or Netscape Communicator 6.0 or later. You can use all standard browser options to print or e-mail the report.

When viewing the reports, you can click the VERITAS logo and be linked to the VERITAS web site.

### ▼ To view a report on-screen:

1. From the Administration Console, click **Reports**.
2. From the list of reports appearing in the results pane, right-click the report you want to create or update data for.
3. Click **View report**.

**Tip** You can also double-click a report in the results pane to display the report. If this is the first time the report is being viewed, it will be generated.

4. After viewing the report, click **OK**.

## Completed Jobs - 1 Day

The Completed Jobs - 1 Day report lists the successful, failed, and canceled jobs that ran in the past day.

### Completed Jobs - 1 Day Report

**Backup Exec - Completed Jobs - 1 Day**

**Report Generated On** Wednesday June 13, 2001 07:17  
**Server Name** BOBBIE-NW

Job Name	Run #	Job Type	Status	Start Time	End Time	Total Bytes	Total Files
<a href="#">BackupJob_2</a>	1	Backup	Normal	06/13/01 03:30	06/13/01 03:46	101,086,764	7,078
EraseJob_1	2	Quick Erase	Normal	06/12/01 07:31	06/13/01 03:30	0	0
<a href="#">BackupJob_3</a>	1	Backup	Aborted	06/12/01 07:31	06/12/01 07:31	0	0
Inventory_5	1	Inventory	Normal	06/12/01 07:29	06/12/01 07:30	0	0
Cataloging media_4	1	Catalog	Aborted	06/12/01 07:29	06/12/01 07:29	0	0
EraseJob_1	1	Quick Erase	Aborted	06/12/01 07:28	06/12/01 07:28	0	0

**Job Name - BackupJob\_2 Run # 1**

Information appearing on this report includes:

- ◆ **Report Generated On.** Day, date, and time the report was generated.
- ◆ **Server Name.** Name of the server on which the report was generated.

For each job that completed, the following information appears:

- ◆ **Job Name.** Name the user gives to the job when it is created or edited.



- ◆ **Run #.** The number of times the job has executed since it was submitted. The number is incremented each time the job is run.
- ◆ **Job Type.** Type of job, such as Backup, Erase, or Restore.
- ◆ **Status.** Status of the operation. Possible statuses include:
  - **Normal.** The job completed with no critical errors.
  - **Error.** The operation completed, but one or more significant errors occurred. The job log will indicate what caused the errors.
  - **Canceled.** The operation was canceled by the administrator or by Backup Exec.
- ◆ **Start Time.** Date and time the job started.
- ◆ **End Time.** Date and time the job completed.
- ◆ **Total Bytes.** Total number of bytes processed.
- ◆ **Total Files.** Total number of files processed.

For each job completed, a separate section of the report displays:

- ◆ **Resource.** Name of the resource processed, such as SYS.
- ◆ **Status.** Status of the operation, such as Normal, Canceled, or Error.
- ◆ **Start Time.** Date and time the backup of the specific resource started.
- ◆ **End Time.** Date and time the backup of the specific resource completed.
- ◆ **Total Bytes.** Number of bytes written.
- ◆ **Total Files.** Number of files backed up or restored.
- ◆ **Total Directories.** Number of directories backed up or restored.
- ◆ **Files Skipped.** Number of files skipped.
- ◆ **Files Corrupt.** Number of corrupt files encountered.
- ◆ **Files In Use.** Number of files in use during the job.

## Completed Jobs - 7 Days

The Completed Jobs - 7 Days report lists the jobs that have completed in the past seven days. Information appearing on this report includes:

- ◆ **Report Generated On.** Day, date, and time the report was generated.
- ◆ **Server Name.** Name of the server on which the report was generated.

For each job that completed, the following information appears:

- ◆ **Job Name.** Name the user gives to the job when it is created or edited.
- ◆ **Run #.** The number of times the job has executed since it was submitted. The number is incremented each time the job is run.
- ◆ **Job Type.** Type of job, such as Backup, Erase, or Restore.
- ◆ **Status.** Status of the operation. Possible statuses include:
  - **Normal.** The job completed with no critical errors.
  - **Error.** The operation completed, but one or more significant errors occurred. The job log will indicate what caused the errors.
  - **Canceled.** The operation was canceled by the administrator or by Backup Exec.
- ◆ **Start Time.** Date and time the job started.
- ◆ **End Time.** Date and time the job completed.
- ◆ **Total Bytes.** Total number of bytes processed.
- ◆ **Total Files.** Total number of files processed.

For each job completed, a separate section of the report displays:

- ◆ **Resource.** Name of the resource processed, such as SYS.
- ◆ **Status.** Status of the operation, such as **Normal** or **Failed**.
- ◆ **Start Time.** Date and time the backup of the specific resource started.
- ◆ **End Time.** Date and time the backup of the specific resource completed.
- ◆ **Total Bytes.** Number of bytes written.
- ◆ **Total Files.** Number of files backed up or restored.
- ◆ **Total Directories.** Number of directories backed up or restored.
- ◆ **Files Skipped.** Number of files skipped.
- ◆ **Files Corrupt.** Number of corrupt files encountered.
- ◆ **Files In Use.** Number of files in use during the job.



## All Completed Jobs

The All Completed Jobs report lists all completed jobs. Information appearing on this report includes:

- ◆ **Report Generated On.** Day, date, and time the report was generated.
- ◆ **Server Name.** Name of the server on which the report was generated.

For each job that completed, the following information appears:

- ◆ **Job Name.** Name the user gives to the job when it is created or edited.
- ◆ **Run #.** The number of times the job has executed since it was submitted. The number is incremented each time the job is run.
- ◆ **Job Type.** Type of job, such as Backup, Erase, or Restore.
- ◆ **Status.** Status of the operation. Possible statuses include:
  - **Normal.** The job completed with no critical errors.
  - **Error.** The operation completed, but one or more significant errors occurred. The job log will indicate what caused the errors.
  - **Canceled.** The operation was canceled by the administrator or by Backup Exec.

For more information about job status, see [“Understanding Job Completion Status”](#) on page 201.

- ◆ **Start Time.** Date and time the job started.
- ◆ **End Time.** Date and time the job completed.
- ◆ **Total Bytes.** Total number of bytes processed.
- ◆ **Total Files.** Total number of files processed.

For each job completed, a separate section of the report displays:

- ◆ **Resource.** Name of the resource processed, such as SYS.
- ◆ **Status.** Status of the operation, such as **Normal** or **Failed**.
- ◆ **Start Time.** Date and time the backup of the specific resource started.
- ◆ **End Time.** Date and time the backup of the specific resource completed.
- ◆ **Total Bytes.** Number of bytes written.
- ◆ **Total Files.** Number of files backed up or restored.
- ◆ **Total Directories.** Number of directories backed up or restored.
- ◆ **Files Skipped.** Number of files skipped.
- ◆ **Files Corrupt.** Number of corrupt files encountered.



- ◆ **Files In Use.** Number of files in use during the job.

## Failed Jobs - 1 Day

The Failed Jobs - 1 Day report lists all jobs that have failed within the past day. Information appearing on this report includes:

- ◆ **Report Generated On.** Day, date, and time the report was generated.
- ◆ **Server Name.** Name of the server on which the report was generated.

For each job that completed, the following information appears:

- ◆ **Job Name.** Name the user gives to the job when it is created or edited.
- ◆ **Run #.** The number of times the job has executed since it was submitted. The number is incremented each time the job is run.
- ◆ **Job Type.** Type of job, such as Backup, Erase, or Restore.
- ◆ **Status.** Status of the operation. Possible statuses include:
  - **Error.** The operation completed, but one or more significant errors occurred. The job log will indicate what caused the errors.
  - **Canceled.** The operation was canceled by the administrator or by Backup Exec.

For more information about job status, see “[Understanding Job Completion Status](#)” on page 201.

- ◆ **Start Time.** Date and time the job started.
- ◆ **End Time.** Date and time the job completed.
- ◆ **Total Bytes.** Total number of bytes processed.
- ◆ **Total Files.** Total number of files processed.



## Failed Jobs - 7 Days

The Failed Jobs - 7 Days report lists all jobs that have failed within the past seven days.

### Failed Jobs - 7 Days Report

**Backup Exec - Failed Jobs - 7 Days**

**Report Generated On** Wednesday June 13, 2001 07:21  
**Server Name** BOBBIE-NW

Job Name	Run #	Job Type	Status	Start Time	End Time	Total Bytes	Total Files
<a href="#">BackupJob_3</a>	1	Backup	Aborted	06/12/01 07:31	06/12/01 07:31	0	0
Cataloging media_4	1	Catalog	Aborted	06/12/01 07:29	06/12/01 07:29	0	0
EraseJob_1	1	Quick Erase	Aborted	06/12/01 07:28	06/12/01 07:28	0	0
Cataloging media_2	2	Catalog	Aborted	06/12/01 06:38	06/12/01 06:38	0	0
<a href="#">BackupJob_1</a>	2	Backup	Aborted	06/12/01 06:37	06/12/01 06:37	0	0
<a href="#">BackupJob_1</a>	1	Backup	Aborted	06/12/01 06:35	06/12/01 06:36	0	0

**Job Name - BackupJob\_3 Run # 1**

Resource	Status	Start Time	End Time	Total Bytes	Total Files	Total Dirs	Files Skipped	Files Corrupt	Files In Use
No Resources Processed									

[<Top>](#)

Information appearing on this report includes:

- ◆ **Report Generated On.** Day, date, and time the report was generated.
- ◆ **Server Name.** Name of the server on which the report was generated.

For each job that completed, the following information appears:

- ◆ **Job Name.** Name the user gives to the job when it is created or edited.
- ◆ **Run #.** The number of times the job has executed since it was submitted. The number is incremented each time the job is run.
- ◆ **Job Type.** Type of job, such as **Backup**, **Erase**, or **Restore**.
- ◆ **Status.** Status of the operation. Possible statuses include:
  - **Error.** The operation completed, but one or more significant errors occurred. The job log will indicate what caused the errors.

- **Canceled.** The operation was canceled by the administrator or by Backup Exec.

For more information about job status, see “[Understanding Job Completion Status](#)” on page 201.

- ◆ **Start Time.** Date and time the job started.
- ◆ **End Time.** Date and time the job completed.
- ◆ **Total Bytes.** Total number of bytes processed.
- ◆ **Total Files.** Total number of files processed.

## Job Queue Status

The Job Queue Status report lists all jobs in the job queue. Jobs are arranged by status. Information appearing on this report includes:

- ◆ **Report Generated On.** Day, date, and time the report was generated.
- ◆ **Server Name.** Name of the server on which the report was generated.

For each job in the queue, the following information appears:

- ◆ **Job Name.** Name the user gives to the job when it is created or edited. There can be no duplication of job names.
- ◆ **Job Status.** Status of the job, such as ready, hold, or active.
- ◆ **Operation.** Type of operation, such as backup, restore, or erase.
- ◆ **User Name.** Name of the user who created the job.
- ◆ **Start time.** Date and time the job is scheduled to run.
- ◆ **Policy Name.** Name of the policy slated to be used for this job if the job is a backup job.



## Policy Definition

The Policy Definition report lists details about each backup policy that has been created.

### Policy Definition Report

Report Generated On: Wednesday June 13, 2001 07:25  
 Server Name: BOBBIE-NW

Policy Names	Description
<a href="#">DEFAULT POLICY</a>	Backup Exec for NetWare's default policy
<a href="#">WeeklyWorkstationBackups</a>	

**Policy Details - DEFAULT POLICY**

**General Options**

<a href="#">Preserve tree on archiving</a>	No
<a href="#">Backup devices in alphabetical order</a>	No
<a href="#">Process hidden files</a>	Yes
<a href="#">Process special files</a>	Yes
<a href="#">Process empty directories</a>	No
<a href="#">Use Open File Option (if available)</a>	No

Information appearing on this report includes:

- ◆ **Report Generated On.** Date and time the report was generated.
- ◆ **Server Name.** Name of the server on which the report was generated.
- ◆ **Policy Names.** Names of policies. If you click a name, you will be hyperlinked to the policy details.
- ◆ **Description.** Description entered in the **Notes** field when this policy was created or modified.

For each policy, a listing of the options selected when the policy was created or modified appear. For information about policy options, refer to “[Viewing and Editing Properties of a Policy](#)” on page 103.

## Policy Usage

The Policy Usage report lists the backup policies that have resources associated with them and the resources being protected by these policies. Information appearing on this report includes:

- ◆ **Report Generated On.** Day, date, and time the report was generated.
- ◆ **Server Name.** Name of the server on which the report was generated.
- ◆ **Policy Name.** Name of the policy.
- ◆ **Description.** Description entered in the **Notes** field when this policy was created or modified.

For each backup policy, the following information appears:

- ◆ **Server.** Name of the server being protected by this policy.
- ◆ **Protected Resource.** Name of the resource being protected, such as SYS:, or a directory.
- ◆ **Job Name.** Name of the backup job that is protecting this resource.

## Protected Resources

The Protected Resources report lists protected resources and the backup policies protecting these resources. Information appearing on this report includes:

- ◆ **Report Generated On.** Day, date, and time the report was generated.
- ◆ **Server Name.** Name of the Backup Exec server on which the report was generated.
- ◆ **Server.** Name of the protected server.
- ◆ **Resource.** Name of the resource on the server being protected.
- ◆ **Policy Name.** Name of the backup policy protecting the resource.
- ◆ **Job Name.** Name of the backup job that is protecting this resource.
- ◆ **Next Start Time.** Date and time the job is next scheduled to start.



## Media

The Media report lists details about all media known to the media server. Information appearing on this report includes:

- ◆ **Report Generated On.** Day, date, and time the report was generated.
- ◆ **Server Name.** Name of the server on which the report was generated.
- ◆ **Set Name.** Name of the user media set or type of system media.
- ◆ **Media Name.** Name assigned to the media.
- ◆ **Type.** Type of media cartridge, such as 4mm, 8mm, DLT, etc.
- ◆ **Creation Date.** Date media was first entered into the Backup Exec system.
- ◆ **Modify Date.** Date data was last written to the media.
- ◆ **Hrs Used.** Total number of hours that this media has been in use.
- ◆ **Soft Errors.** Number of recoverable read errors encountered.
- ◆ **Hard Errors.** Number of unrecoverable read errors encountered.
- ◆ **Rem. Bytes.** Estimated number of bytes remaining on this media.

## Recently Written Media - 1 Day

The Recently Written Media - 1 Day report lists media that have been modified within the past day. Information appearing on this report includes:

- ◆ **Report Generated On.** Day, date, and time the report was generated.
- ◆ **Server Name.** Name of the server on which the report was generated.
- ◆ **Set Name.** Name of user media set or type of system media.
- ◆ **Media Name.** Name assigned to the media.
- ◆ **Location.** Where media physically resided when it was selected to be written to (for example, slot 1).
- ◆ **Modify Date.** Date data was last written to this media.
- ◆ **Hrs Used.** Total number of hours that this media has been in use.
- ◆ **Rem. Bytes.** Estimated number of bytes remaining on this media.

## Device Summary

The Device Summary report lists all devices and the statistics for these devices. Information appearing in this report includes:

- ◆ **Report Generated On.** Day, date, and time the report was generated.
- ◆ **Server Name.** Name of the server on which the report was generated.
- ◆ **Drive.** Name of the drive. If you click on this name, you will be hyperlinked to detailed information on the device statistics.
- ◆ **Device.** Type of device, such as stand-alone.
- ◆ **Installed.** Date the device went into service.

For each drive, the following information appears:

- ◆ **Vendor.** The name of the vendor for the drive.
- ◆ **Product ID.** The product ID from the SCSI Inquiry string.
- ◆ **Firmware Number.** The version of firmware used in the drive.
- ◆ **Firmware Revision.** The revision number of the firmware used in the drive.
- ◆ **Serial Number.** The serial number of the drive.
- ◆ **Bus.** The operating system's reference number for the SCSI controller.
- ◆ **Target.** Unique SCSI ID number (physical unit number).
- ◆ **LUN.** Logical Unit Number of the drive.
- ◆ **Shared.** Displays **Yes** if the drive is in a shared storage environment; otherwise, displays **No**.
- ◆ **Bridge Name.** If the device is in a shared storage environment, the bridge name appears. Otherwise, N.A. appears in this field.
- ◆ **Last Cleaned.** Hours since the device was last cleaned.
- ◆ **Hours in Use.** Total number of hours that this drive has been in use (performing read, write, mount, and seek operations).
- ◆ **Total Mounts.** Number of times media has been mounted by this drive.
- ◆ **Hard Read Errors.** Number of unrecoverable read errors encountered.
- ◆ **Soft Read Errors.** Number of recoverable read errors encountered.
- ◆ **Hard Write Errors.** Number of unrecoverable write errors encountered.
- ◆ **Soft Write Errors.** Number of recoverable write errors encountered.



## Robot Inventory

The Robot Inventory report lists the slot inventory of each attached robot. Information appearing in this report includes:

- ◆ **Report Generated On.** Day, date, and time the report was generated.
- ◆ **Server Name.** Name of the server on which the jobs ran.
- ◆ **Device Name.** Name of the robot.
- ◆ **Slot Number.** Slot number inside the robot.
- ◆ **Media Name.** Name of the media appearing in the slot.

---

**Note** **Slot Number** and **Media Name** will appear for each slot in the robot.

---

## Saving Reports

You can save reports as HTML files, which can then be printed or attached to e-mail messages.

▼ **To save a report as an HTML file:**

1. From the Administration Console, click **Reports**.
2. From the list of reports appearing in the results pane, right-click the report for which you want to create or update data.
3. Click **Save report**.
4. Select where this report is to be saved, and accept the default name or enter a name for this report in the **File name** option.
5. Click **Save**.



## Configuring Backup Exec

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This section describes procedures for setting media server options, setting Administration Console options, setting Administration Console for NetWare options, and for working with server groups on the Administration Console.

*Configuring Backup Exec* includes the following topics:

Section	Describes
<a href="#">“Setting Media Server Options”</a> on page 240	The procedures for setting media options and descriptions of the media server options.
<a href="#">“Setting the Administration Console Options”</a> on page 268	The procedures for setting options for the Administration Console.
<a href="#">“Setting Administration Console for NetWare Options”</a> on page 277	The procedures for setting options for the user interface provided on the media server.
<a href="#">“Working with Server Groups”</a> on page 281	The procedures for adding a new server group, editing groups, and performing maintenance on server groups.



## Setting Media Server Options

Backup Exec allows you to tailor its configuration for your particular network requirements through the use of media server options. You can set or change these options from either the Administration Console or the Administration Console for NetWare. These options will then be used by the media server no matter which user interface you are using.

### ▼ To set media server options:

1. From the Administration Console, click **Tools**, point to **Options**, and then click **Media Server**.

---

**Tip** You also can access the server options by selecting the **View/Edit Media Server Options** icon on the Administration Console toolbar (see [“Using the Toolbar and Menu Bar”](#) on page 9).

---

From the Administration Console for NetWare, select **Options**, and then select **Media Server**.

The Server Options dialog box appears as a tabbed page on the Administration Console. On the Administration Console for NetWare, a series of Media Server options appear. These options correspond to the tabs on the Administration Console’s dialog box. Dialog boxes appear when a tab is clicked from the Administration Console or an option is selected on the Administration Console for NetWare. The dialog boxes and their options are described in the following sections:

- [“General Options for the Media Server”](#) on page 242
- [“Catalog Options for the Media Server”](#) on page 244
- [“Job Log Options for the Media Server”](#) on page 245
- [“Agents Options for the Media Server”](#) on page 247
- [“Media Options for the Server”](#) on page 249
- [“ExecView Option for the Media Server”](#) on page 253
- [“SMTP Options for the Media Server”](#) on page 253
- [“Broadcast Options for the Media Server”](#) on page 254
- [“SNMP Options for the Media Server”](#) on page 255
- [“Quick Check Options for the Media Server”](#) on page 258
- [“Auto Login User Options for the Media Server”](#) on page 259
- [“Shared Devices Options for the Media Server”](#) on page 261
- [“Bootable Tape Options for the Media Server”](#) on page 262



2. From the Administration Console, enter or select options from the tabbed dialog box.

From the Administration Console for NetWare, select an option, press <Enter>, and then enter the selections you want.

3. After entering all options from the various dialog boxes, click **OK** from the Administration Console.

From the Administration Console for NetWare, press <F2>.

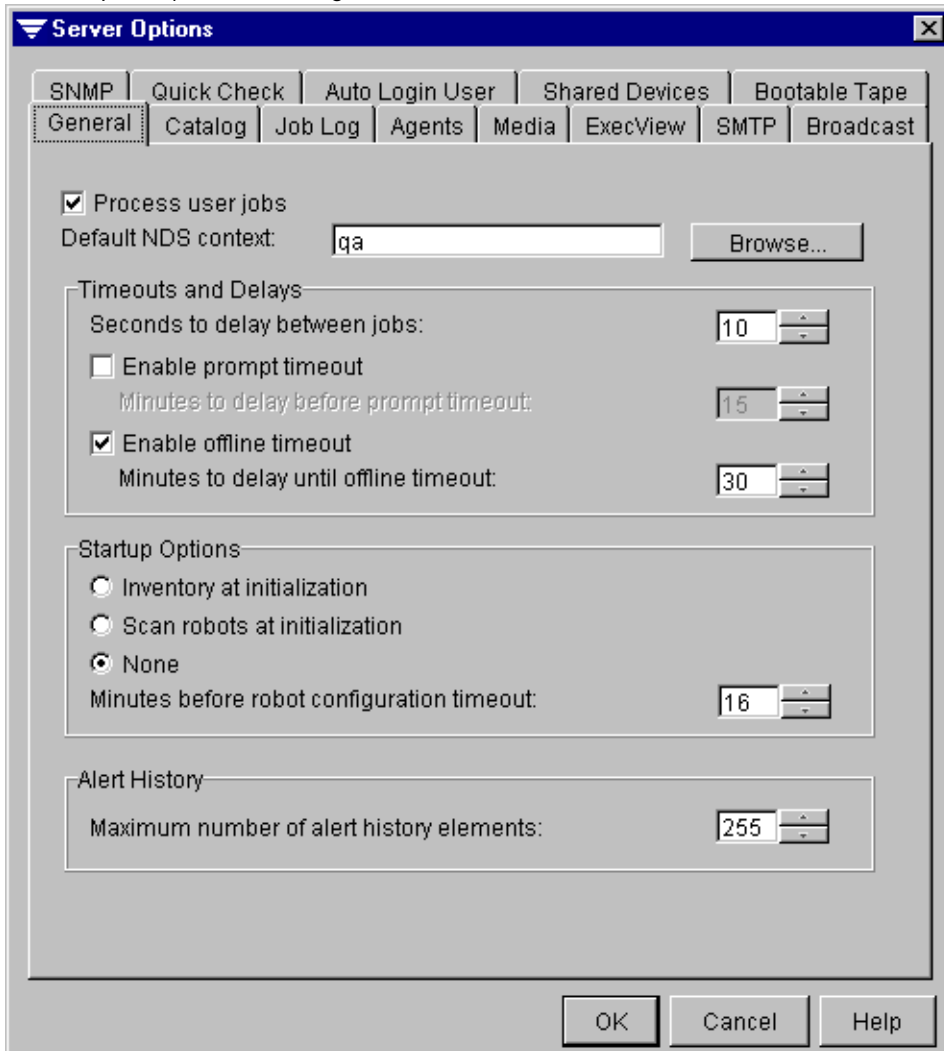
Saving changes to the media server options causes Backup Exec to reinitialize. Active jobs will complete before the initialization occurs; scheduled jobs will run after the initialization completes.



## General Options for the Media Server

The General dialog box that appears when setting options for the media server allows you to select whether the jobs submitted by those with user-level access will be processed, set the default NDS context, set time outs and delays, set robot options, and set the maximum number of alert logs to display.

Server Options | General Dialog Box



The screenshot shows the 'Server Options' dialog box with the 'General' tab selected. The dialog has a title bar with a close button. Below the title bar are several tabs: 'SNMP', 'Quick Check', 'Auto Login User', 'Shared Devices', 'Bootable Tape', 'General', 'Catalog', 'Job Log', 'Agents', 'Media', 'ExecView', 'SMTP', and 'Broadcast'. The 'General' tab is active and contains the following settings:

- Process user jobs
- Default NDS context:
- Timeouts and Delays:
  - Seconds to delay between jobs:
  - Enable prompt timeout
    - Minutes to delay before prompt timeout:
  - Enable offline timeout
    - Minutes to delay until offline timeout:
- Startup Options:
  - Inventory at initialization
  - Scan robots at initialization
  - None
  - Minutes before robot configuration timeout:
- Alert History:
  - Maximum number of alert history elements:

At the bottom of the dialog are three buttons: 'OK', 'Cancel', and 'Help'.

This dialog box contains the following options:

- ◆ **Process user jobs.** Select this option to allow the processing of jobs submitted by those with user-level access. If this option is not selected, jobs submitted by those with user-level access rights will begin at their scheduled time, but no backup or restore operations will take place. The job log will be recorded so the user can see that the job was denied due to this option not being selected. Clearing this option is useful when you need to perform a priority restore operation and you do not want user jobs to interrupt the restore operation.
- ◆ **Default NDS context.** This option allows you to traverse the Directory Tree to select the default context when running Backup Exec in NDS mode. The selected context is used when performing logins to the server. During login operations, if the user login exists in the default context, a relative name can be used. If the user exists in a different context, a fully distinguished name must be used. For example, if user `.CN=BACKUP_USER.OU=OPERATIONS.O=COMPANY_NAME` needs to provide a login and the default context is `OPERATIONS.COMPANY_NAME`, the user would only need to provide `BACKUP_USER`. If the default context is `COMPANY_NAME`, then `.BACKUP_USER.OPERATIONS` must be provided as the user name.

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**Note** When the default NDS context is changed, workstations running the Administration Console will need to be restarted.

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- ◆ **Seconds to delay between jobs.** Enter the number of seconds you want Backup Exec to wait between when one job ends and the next job begins.
- ◆ **Enable prompt timeout.** Select this option to have Backup Exec automatically answer a prompt after a specified amount of time elapses. When this option is selected, the **Minutes to delay before prompt timeout** option becomes available.
  - **Minutes to delay before prompt timeout.** Enter the number of minutes you want Backup Exec to wait before automatically answering a prompt. This option is only available if **Enable prompt timeout** is selected.
- ◆ **Enable offline timeout.** Select this option to have Backup Exec automatically place the scheduler back online if it is left offline for the amount of time specified. If this option is not selected, the scheduler will remain offline until manually placed back online. When this option is selected, the **Minutes to delay until offline timeout** option becomes available.
  - **Minutes to delay until offline timeout.** Enter the number of minutes you want Backup Exec to wait before automatically placing the scheduler back online. This option is only available if **Enable offline timeout** is selected.
- ◆ **Inventory at initialization.** Select this option if you want Backup Exec to inventory all media in the system when Backup Exec is started. This process may take several minutes if you have a robot with many slots, and is only recommended if you are using a robot where tapes and magazines are interchanged frequently.

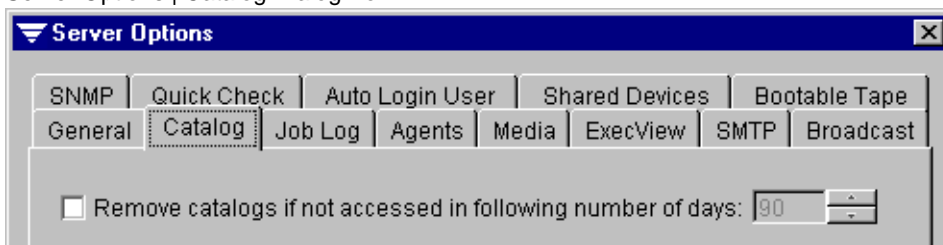


- ◆ **Scan robots at initialization.** Select this option if you are using a robot and want Backup Exec to retrieve the current media inventory from the robot's memory when Backup Exec is started.
- ◆ **None.** Select this option if you do not want Backup Exec to perform either an inventory or scan operation on startup.
- ◆ **Minutes before robot configuration timeout.** Enter the number of seconds Backup Exec should wait to obtain robot configuration information. This configuration information includes the number of slots and drives in the robot. For most robots, three minutes is ample time to obtain this information. For more advanced robots, a longer time interval may be required. If configuration information is not received in the specified time, it could be because of a hardware error, such as the robot door being left open. Consult your robot's documentation for more information on hardware troubleshooting.
- ◆ **Maximum number of alert history elements.** Enter the maximum number of alert logs to keep. When this maximum number is reached, Backup Exec will automatically delete the oldest alert log records from its database.

## Catalog Options for the Media Server

The Catalog dialog box that appears when setting options for the media server allows you to have Backup Exec automatically delete catalogs for tape families that have not been accessed in a specified number of days.

Server Options | Catalog Dialog Box



The option appearing on this dialog box is:

**Remove catalogs if not accessed in following number of days.** Select this option if you want Backup Exec to automatically delete catalogs if they have not been accessed in a specified number of days. After selecting this option, you can specify the number of days. Enabling this feature may save disk space on the catalog volume. However, after the catalog files for a media family have been removed, the media must be re-cataloged before they can be used for a restore operation. The media access date is updated each time data is restored from the media or when data is backed up to the media.

## Job Log Options for the Media Server

The Job Log dialog box that appears when setting options for the media server allows you to:

- ◆ Set the maximum job log records to keep per administrator and per user.
- ◆ Set the maximum level of detail to be maintained in non-supervisor users' job logs.
- ◆ Allow printing of job logs for administrators or for users.

Server Options | Job Log Dialog Box

Options for this dialog include:

- ◆ **Maximum number of records to keep per administrator.** Select or enter the maximum number of supervisor or administrator log files to remain on the server.
- ◆ **Maximum number of records to keep per user.** Select or enter the maximum number of user log files to remain on the server for each user without supervisor or administrator rights.

**Note** If the amount of job log records is reduced for the administrator or for the user, existing job logs that exceed that amount will be deleted in order of age.



- ◆ **Maximum Detail Level for Users.** Select the highest level of information requested by non-supervisor users that will be allowed in the users' job logs. This sets the highest possible level. A similar setting is set when creating a policy that controls the log detail levels for jobs created using that policy (see "[Job Log Options for a Policy](#)" on page 93), when creating a restore job (see "[Job Log Options for Restore](#)" on page 150), and when creating a media rotation job (see "[Job Log Options for Media Rotation Job Properties](#)" on page 407). Jobs created using different settings could report a different level of detail based on the settings in the policy, restore job, or media rotation job, but no job can report a higher level than the server's default setting. Select from one of the following:
  - **None.** Selecting this level turns the logging feature off. A log record will be kept, but there will be no associated log file.
  - **Summary information (backup set information).** This level of detail includes a NetWare network server/volume specification or Agent alias, the backup set number on the media, the media number, the media label, the starting date and time, any errors encountered, ending date and time, and completion statistics.
  - **Summary information and directories processed.** This level includes a NetWare network server/volume specification or Agent alias, the backup set number on the media, the media number, the media label, the starting date and time, any errors encountered, ending date and time, and completion statistics plus a list of all processed subdirectories.
  - **Summary information, directories, and files processed.** This level includes a NetWare network server/volume specification or Agent alias, the backup set number on the media, the media number, the media label, the starting date and time, any errors encountered, ending date and time, and completion statistics, a list of all processed subdirectories, and a listing of all files processed.
  - **Summary information, directories, files, and file details.** This level includes a NetWare network server/volume specification or Agent alias, the backup set number on the media, the media number, the media label, the starting date and time, any errors encountered, ending date and time, and completion statistics, a list of all processed subdirectories, a listing of all files processed, plus file sizes, file date/time, and file attributes.

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**Note** Changing the detail level will not add to, or remove information from job logs already created.

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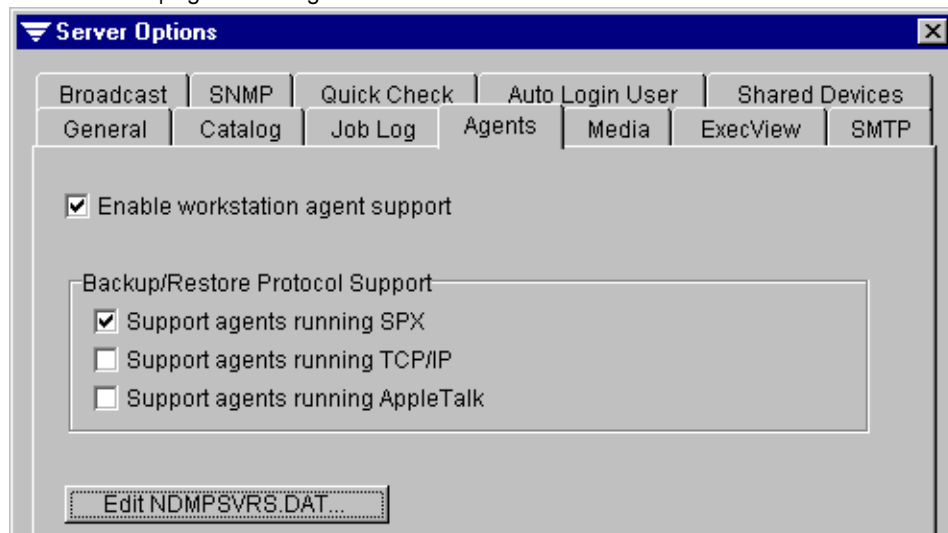
- ◆ **Allow job log printing for administrators.** Select this option to allow those with supervisor or administrator rights to print job logs.
- ◆ **Allow job log printing for users.** Select this option to allow those with user rights to print job logs.



## Agents Options for the Media Server

The Agents dialog box appears when setting options for the media server.

Media Server | Agents Dialog Box



This dialog box includes the following options for both the Administration Console and the Administration Console for NetWare:

- ◆ **Enable workstation agent support.** Select this option to make published agents visible so they can be backed up or have data restored to them. After enabling workstation agent support, select the types of agents you want to support from the **Backup/Restore Protocol Support** section of this dialog.
- ◆ **Backup/Restore Protocol Support.** If you enable workstation agent support, you must select the protocol that supported agents will run. Options include:
  - **Support agents running SPX.** Select this if you want to support agents running the SPX protocol. These could include DOS, Windows 95, Windows 98, and OS/2 agents. This is the default protocol support option.
  - **Support agents running TCP/IP.** Select this option if you want to use the Backup Exec UNIX agent. Agents running TCP/IP can also include Windows 2000, Windows NT, Windows Me, Windows 98, and Windows 95.
  - **Support agents running AppleTalk.** Select this option if you want to use the Backup Exec Macintosh agent using AppleTalk as its protocol.

The Administration Console's **Agents** tab also includes **Edit NDMP SVRS.DAT**. Select this option to edit the NDMP SVRS.DAT file to include only those servers you want to access (see [“Editing NDMP SVRS.DAT”](#) on page 248).



## Editing NDMPSVRS.DAT

The NDMPSVRS.DAT file includes information on systems using the Backup Exec for NetWare or Backup Exec for Windows NT and Windows 2000 Remote Agents. If you want to add another Remote Agent or add an option to a Remote Agent system without using the install process, you can edit your NDMPSVRS.DAT file. For information about viewing and adding agent serial numbers through the Administration Console for NetWare, see “[Viewing, Adding, and Deleting Agent Serial Numbers](#)” on page 265.

### ▼ To edit NDMPSVRS.DAT:

1. From the Administration Console, click **Tools**.
2. Point to **Options**, and then click **Media Server**.
3. Click **Agents**.
4. Click **Edit NDMPSVRS.DAT**.
5. To add a Remote Agent:
6. Click **Add**.
7. Enter the **Agent name** and the **IP address**, and then add the serial number for the remote agent or for the option.

---

**Note** A serial number is not required if you are adding an evaluation version of the Remote Agent. If you are adding a serial number to an agent that appears on the list, the IP address is optional.

---

8. Click **OK**.

## Media Options for the Server

From the Media dialog box that appears when setting options for the media server you can:

- ◆ Select to protect all, some, or no media from being automatically overwritten (see “[Setting Media Overwrite Protection Level](#)” on page 250).
- ◆ Select whether scratch or recyclable media is to be overwritten first (see “[Selecting Media Overwrite Options](#)” on page 251).
- ◆ Specify a label prefix and number to be assigned for a type of media (see “[Selecting Media Overwrite Default Label Options](#)” on page 252).

**Note** If the media was first used in a library with a bar code reader, the cartridge label consists of a pre-assigned bar code label.

Server Options | Media Dialog Box

The screenshot shows the 'Server Options' dialog box with the 'Media' tab selected. The dialog is divided into several sections:

- Media Overwrite Protection Level:**
  - Full - Protect allocated and imported media
  - Partial - Protect only allocated media
    - Prompt before overwriting imported media
  - None
    - Prompt before overwriting allocated or imported media
- Media Overwrite Options:**
  - Overwrite scratch media before overwriting recyclable media contained in the targeted media set
  - Overwrite recyclable media contained in the targeted media set before overwriting scratch media
- Media Overwrite Default Label:**
  - Cartridge type:
  - Prefix:  Next value:  Digits:



## Setting Media Overwrite Protection Level

You can select to protect all, some, or no media from being automatically overwritten by selecting the appropriate **Media Overwrite Protection Level** from the Media dialog box.

**Media Overwrite Protection Level** options include:

- ◆ **Full - Protect allocated and imported media.** Selecting this option protects media created by a product other than this release of Backup Exec and media that belongs to an allocated media set from being overwritten. This is the safest option to choose because the media being protected cannot be overwritten until:
  - The overwrite protection period expires.
  - You move media (see [“Moving Media”](#) on page 377) that belongs to an active media set to **Scratch** media.
  - You erase, format, or label the media.
  - You move media from **Imported** Media to **Scratch** Media.

To understand which media is automatically selected for overwrite when **Full** is selected, see [“Choosing Full Media Overwrite Protection”](#) on page 369.

- ◆ **Partial - Protect only allocated media.** Selecting this option allows imported and scratch media to be overwritten. Media that has an overwrite protection period that has not been expired (allocated media) cannot be overwritten.

This option is recommended if you have media from an earlier version of Backup Exec or another product (imported media) that you want to reuse.

To understand which media is automatically selected for overwrite when **Partial - Protect only allocated media** is selected, see [“Choosing Partial Media Overwrite Protection”](#) on page 370.

If you select **Partial** for your **Media Overwrite Protection Level**, you can also select **Prompt before overwriting imported media**. Backup Exec will then prompt you before the media is overwritten and wait for a response before continuing with the job.

- ◆ **None.** Selecting this option disables the **Media Overwrite Protection Level**. With this option selected, you are responsible for ensuring that the media in your storage devices are not accidentally overwritten.

If you select **None** for your **Media Overwrite Protection Level**, you can also select **Prompt before overwriting allocated or imported media** to have Backup Exec prompt you before continuing with the job.

To understand which media is automatically selected for overwrite when **None** is selected, see [“Choosing No Media Overwrite Protection”](#) on page 371.



---

## Selecting Media Overwrite Options

On the Media dialog box, you can choose whether scratch or recyclable media is to be overwritten first through the **Media Overwrite Options**. These options include:

- ◆ **Overwrite scratch media before overwriting recyclable media contained in the targeted media set**
- ◆ **Overwrite recyclable media contained in the targeted media set before overwriting scratch media**

If you select to overwrite scratch media and an overwrite job occurs, Backup Exec will overwrite scratch media in the targeted media set first. If there are no scratch media in the storage devices, Backup Exec overwrites recyclable media in the targeted media set.

Using the overwrite scratch option may result in more media being required for the same number of jobs than if you had chosen to overwrite recyclable media first. Choosing to overwrite scratch media first may allow the recyclable media to be preserved longer for possible recovery.

If you select to overwrite recyclable media first and an overwrite job occurs, Backup Exec will search for recyclable media to use. If no recyclable media are available, Backup Exec will then search for scratch media.

If you select to overwrite recyclable media first, you will re-use the same media more frequently than if you had chosen to have Backup Exec use scratch media first.

With both options, if neither recyclable nor scratch media are available, Backup Exec searches for other media based on the **Media Overwrite Protection Level** that you set.

---

**Note** If you selected the partition management mode, the media overwrite protection is defined for the partition, not the media. Therefore, media moved to another partition without overwrite protection will no longer be protected from being overwritten.

---



## Selecting Media Overwrite Default Label Options

Media used in Backup Exec is identified by its *cartridge label*, which consists of a prefix that identifies the type of media and an incrementing number. You can specify the label prefix and number through the Media dialog box's **Media Overwrite Default Label** section.

---

**Note** If the media was first used in a library with a bar code reader, the cartridge label consists of a pre-assigned bar code label.

---

There are four options in the **Media Overwrite Default Label** section:

- ◆ **Cartridge type.** From the drop-down list, select the type of media for which you want to create default labels. For example, if you select **4 mm**, then all 4 mm-type media that are entered for the first time into this installation of Backup Exec are assigned the label you specify through the other options in this section.
- ◆ **Prefix.** Displays the current prefix default for the selected cartridge type. To specify a new prefix on the label, enter from 1 to 8 alpha-numeric characters.
- ◆ **Next value.** Displays the number that will be included in the label of the next media that matches the selected cartridge type. This number is incremented by one each time a media that matches the selected cartridge type is entered into this release of Backup Exec.

For example, if **Cartridge type** is set to 4 mm and **Next value** is set to 1, the first time a 4 mm is entered into this installation of Backup Exec, its label will include the number 1. The label on the next 4 mm media entered will include the number 2.

To enter a new number, enter from 1 to 8 numeric characters. This number must not exceed the number specified in **Digits**.

- ◆ **Digits.** Displays the length of **Next Value**, including placeholder zones.

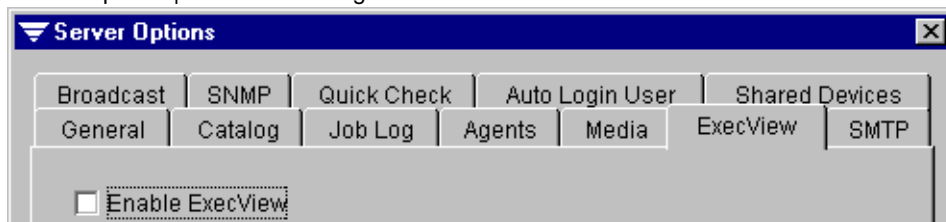
For example, if **Next value** is set to 1 and **Digits** is set to 6, then the **Next value** for the media label is 000001, 000002, 000003, and so on. If the next value exceeds the digits field, the extra digit is added. Using the previous example, if the label number continued until 999,999, the next label would be 1,000,000 even though the value specified in **Digits** is 6.

The number entered for **Digits** must be in the range of 3 to 8.

## ExecView Option for the Media Server

The ExecView dialog box that appears when setting options for the media server contains the **Enable ExecView** option. Select this option if you want your media server to be monitored by ExecView.

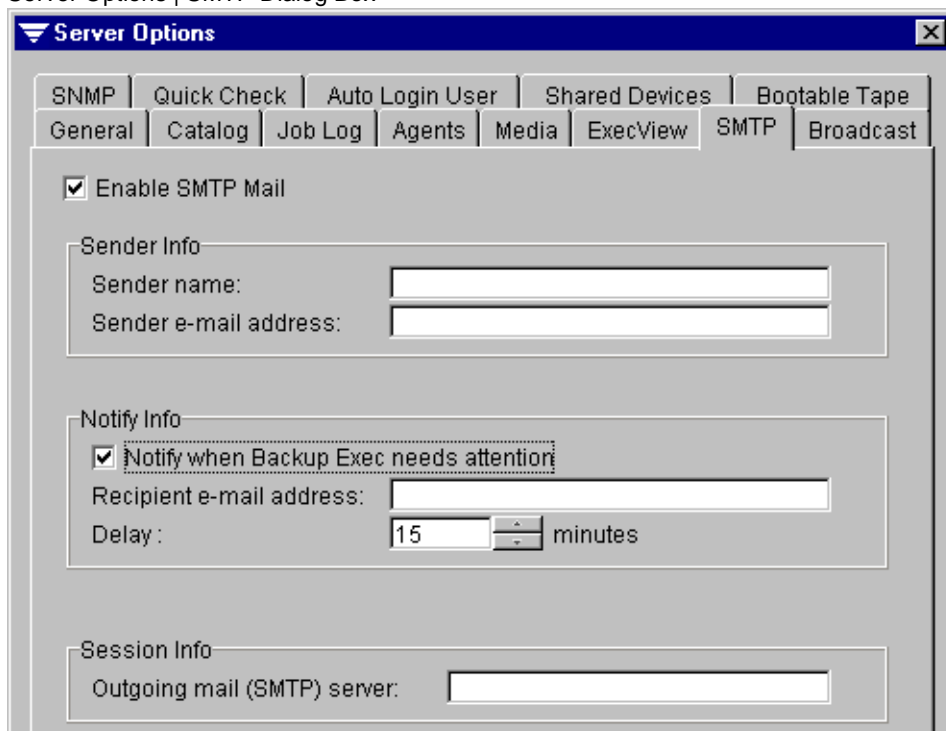
Server Options | ExecView Dialog Box



## SMTP Options for the Media Server

Alerts can be forwarded over e-mail using Simple Mail Transport Protocol (SMTP) by setting options on the SMTP dialog box that appears when setting options for the media server.

Server Options | SMTP Dialog Box



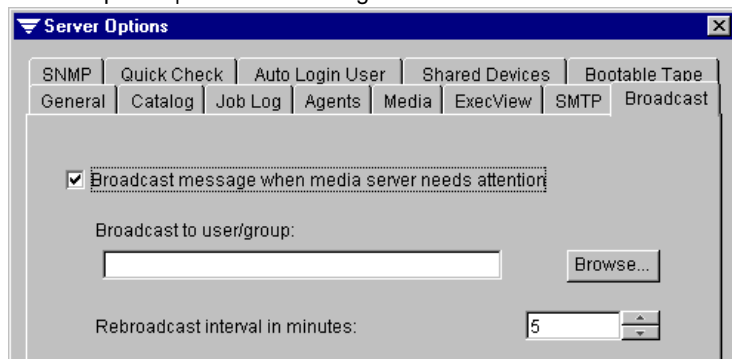
Options for this dialog box are:

- ◆ **Enable SMTP Mail.** Select this option to activate this notification method.
- ◆ **Sender name.** Enter the name of the person to appear as the sender of the e-mail notification. The name can be up to 64 characters in length.
- ◆ **Sender e-mail address.** Enter the sender's e-mail address.
- ◆ **Notify when Backup Exec needs attention.** Select this option to send e-mail notification when Backup Exec requires user intervention.
- ◆ **Recipient e-mail address.** Enter the e-mail address of the person to receive event notification. The address can be up to 64 characters in length.
- ◆ **Delay.** Enter the number of minutes Backup Exec is to delay before sending an e-mail notification.
- ◆ **Outgoing mail (SMTP) server.** Enter the DNS name of your SMTP mail server. If DNS is not configured for the NetWare server, then the IP address of the SMTP server must be entered in the NetWare server's hosts file. Or, you can enter the IP address of the SMTP server in this option.

## Broadcast Options for the Media Server

The Broadcast dialog box that appears when setting options for the media server allows you to configure Backup Exec to send messages when the media server needs attention. The messages are sent via the NetWare broadcast utility.

Server Options | Broadcast Dialog Box



Options on this dialog box include:

- ◆ **Broadcast message when media server needs attention.** Select this option to enable the broadcast feature.
- ◆ **Broadcast to user/group.** Enter or select the name of the user or group that will receive the broadcast.

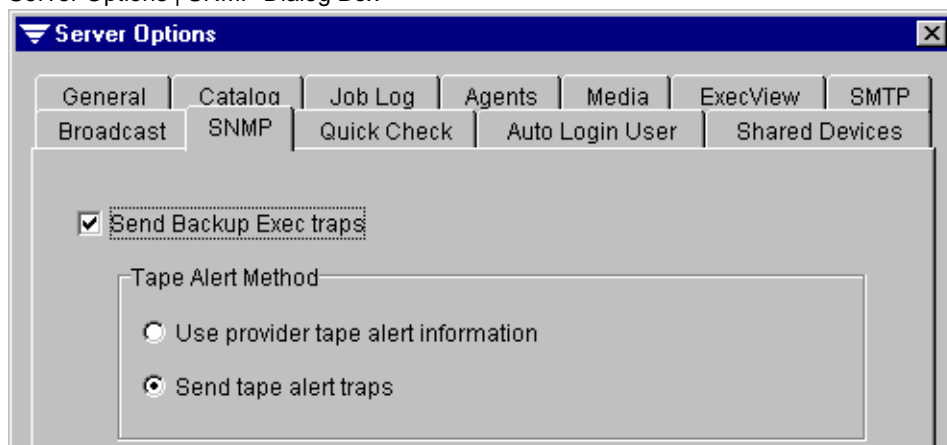


- ◆ **Rebroadcast interval in minutes.** Enter the number of minutes before Backup Exec automatically rebroadcasts the message.

## SNMP Options for the Media Server

The SNMP dialog box that appears when setting options for the media server allows you to enable Backup Exec for Simple Network Management Protocol (SNMP), a method by which a network can be managed from a central location. Backup Exec can then report status and error conditions to an SNMP Console (see “Using SNMP” on page 256).

Server Options | SNMP Dialog Box



Options on this dialog include:

- ◆ **Send Backup Exec traps.** Select this option to have Backup Exec send SNMP alerts regarding job completion status and scheduler online/offline events.
- ◆ **Use provider tape alert information.** Select this option to have Backup Exec notify Tape Alert of the number of drives that are being used, what type of drives they are, the current media in the drive, and other information.
- ◆ **Send tape alert traps.** Select this option to have Backup Exec send SNMP alerts when error conditions have been detected from a Tape Alert compatible media drive. Do not select this option if none of your media drives support Tape Alert. This option can also be enabled and disabled from within Tape Alert itself via SNMP. However, to allow this option to be changed from within Tape Alert, the SNMP.NLM must be loaded with the following case sensitive option:

```
load snmp control=public
```

**Note** Backup Exec does not autoloading SNMP.NLM. If SNMP.NLM is not loaded, messages will not be sent.



For details on using Backup Exec with the Tape Alert plug-in, see [“Using Tape Alert and Hewlett Packard OpenView Software”](#) on page 593.

## Using SNMP

SNMP allows a network to be managed from a central location. SNMP enabled applications like Backup Exec report messages regarding status and error conditions to an SNMP Console (a management workstation).

Backup Exec’s Management Information Block (BKUPEXEC.MIB) is an ASCII text file that teaches the SNMP Console how to understand the messages sent by Backup Exec. Before Backup Exec can send SNMP messages, the SNMP Console must process this file so that it will understand the messages. For information on this procedure, refer to your SNMP documentation. BKUPEXEC.MIB is located in the directory on the media server where Backup Exec’s program files are installed (for example, \BKUPEXEC).

SNMP.NLM version 2.08 or greater must be running. This NLM is included with NetWare 4.x.

TRAPTARG.CFG is part of the SNMP configuration, which tells SNMP.NLM where to send the messages. See your SNMP documentation for information on how to configure this file.

The SNMP messages sent by Backup Exec include:

### SNMP messages

Messages	Description
<b>Trap Level 1: Blocking Error Messages</b>	Operation attention required. Backup Exec has failed to load. Unit failed to initialize. Job routing process did not initialize.
<b>Trap Level 2: Error Messages</b>	<Session number> has started rerouting jobs. A Directory/File error has occurred. Job completion status: Error
<b>Trap Level 3: Blocking messages</b>	Backup Exec has been taken offline.

---

 SNMP messages (continued)
 

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Messages	Description
<b>Trap Level 4: Warning Messages</b>	<p>Job &lt;job name&gt; rerouted to server &lt;server name&gt; partition &lt;partition name&gt;.</p> <p>Job &lt;job name&gt; rerouted to server &lt;server name&gt; drive &lt;drive name&gt;.</p> <p>Backup Exec has been unloaded from the media server.</p> <p>Job completion status: Cancel</p>
<b>Trap Level 5: Informational Messages</b>	<p>Job completion status: Normal</p> <p>Backup Exec has been taken offline.</p>

---

## Using HP OpenView with Backup Exec

When using HP OpenView, the BKUPEXEC.TDF file should be used instead of BKUPEXEC.MIB. This file is found in the BKUPEXEC directory. This is the Trap Definition File required by HP OpenView to receive SNMP traps from Backup Exec.

### ▼ To replace BKUPEXEC.MIB with BKUPEXEC.TDF:

1. Open the **Monitor** menu in HP OpenView and select **Customize Traps**.
2. Select **Load Traps**.
3. Select **BKUPEXEC.TDF**, and then click **OK**.
4. From the Customize Trap Alarms dialog, click **OK**. Backup Exec SNMP traps will now appear in the Alarm Log.

For more information on using Backup Exec with HP OpenView, see [“Using Tape Alert and Hewlett Packard OpenView Software”](#) on page 593.



## Quick Check Options for the Media Server

The Quick Check feature allows Backup Exec to randomly verify that a file can be restored from a backup set (see “Performing Verifies and Quick Checks” on page 96). To use the Quick Check feature, you must enable it for the media server using the Quick Check dialog box that appears when setting options for the media server. You can select or clear the Quick Check option when creating a policy to use for specific backup jobs (see “Performing Verifies and Quick Checks” on page 96).

Server Options | Quick Check Dialog Box

The screenshot shows the 'Server Options' dialog box with the 'Quick Check' tab selected. The 'Enable Quick Check for backups' checkbox is checked. The 'Maximum size of file to select in MB' is set to 1. The 'Generate error if no files meet Quick Check criteria' checkbox is also checked, while 'Only verify (do not restore to target)' is unchecked. The 'Restore Target' section includes a text box for 'Destination' containing 'SYS:BKUPEXEC\CHECK', and empty text boxes for 'User name', 'Password', and 'Confirm Password'.

Options for this dialog box are:

- ◆ **Enable Quick Check for backups.** Select this option to enable Quick Check, a feature that allows Backup Exec to randomly restore or verify a file from a backup, based on parameters that you set.
- ◆ **Maximum size of file to select in MB.** Enter or select the maximum size of a file that Backup Exec can use to perform the Quick Check restore audit.

- ◆ **Generate error if no files meet Quick Check criteria.** Select this option if you want Backup Exec to flag the job as completing in error if there are no files in the backup set that meet the criteria set for Quick Check.
- ◆ **Only verify (do not restore to target).** Select this option if you want Backup Exec to perform only a verification that the file can be read. A restore is not completed if this option is selected.
- ◆ **Destination.** Enter the location where the file is to be restored. After the Quick Check restore completes, the data is removed from the temporary restore directory.

---

**Note** Ensure the restore path location you specify has enough disk space for the temporary restore.

---

- ◆ **User name.** Enter a user name for accessing this restore target.
- ◆ **Password.** Enter a password for accessing this restore target.
- ◆ **Confirm Password.** Re-enter the password.

## Auto Login User Options for the Media Server

The Auto Login User dialog box that appears when setting options for the media server allows you to create a single user name and password combination that administrators can use to access agents (see “Using the Auto Login Feature” on page 260).

Server Options | Auto Login User Dialog Box

The screenshot shows a dialog box titled "Server Options" with a close button in the top right corner. The "Auto Login User" tab is selected among several other tabs (General, Catalog, Job Log, Agents, Media, ExecView, SMTP, Broadcast, SNMP, Quick Check, Shared Devices, Bootable Tape). Under the "Auto Login" section, there is a checked checkbox labeled "Auto login enabled:". Below this checkbox are three text input fields: "User name:", "Password:", and "Confirm Password:".

Options on this dialog box are:

- ◆ **Auto login enabled.** Select this option to enable the Auto Login feature, which allows NetWare Supervisors and Backup Exec Administrators to use one user name and password combination for agent logins.



- ◆ **User name.** Enter the user name that will be used for accessing agents.
- ◆ **Password.** Enter the password that will be used for accessing agents.
- ◆ **Confirm password.** Re-enter the password.

## Using the Auto Login Feature

The Auto Login feature allows you to create a single user name and password combination that those with administrator rights can use for accessing agents. The user name and password combination can be easily changed at any time through the Media server options, making the Auto Login feature particularly useful in environments that require frequent network password changes. Any jobs submitted will use the latest user name and password entered on the Auto Login dialog box (see “[Auto Login User Options for the Media Server](#)” on page 259). If the device does not require a user name, only the password is used.

---

**Note** Jobs submitted without Auto Login enabled will continue using the user name and password used when the job was created.

---

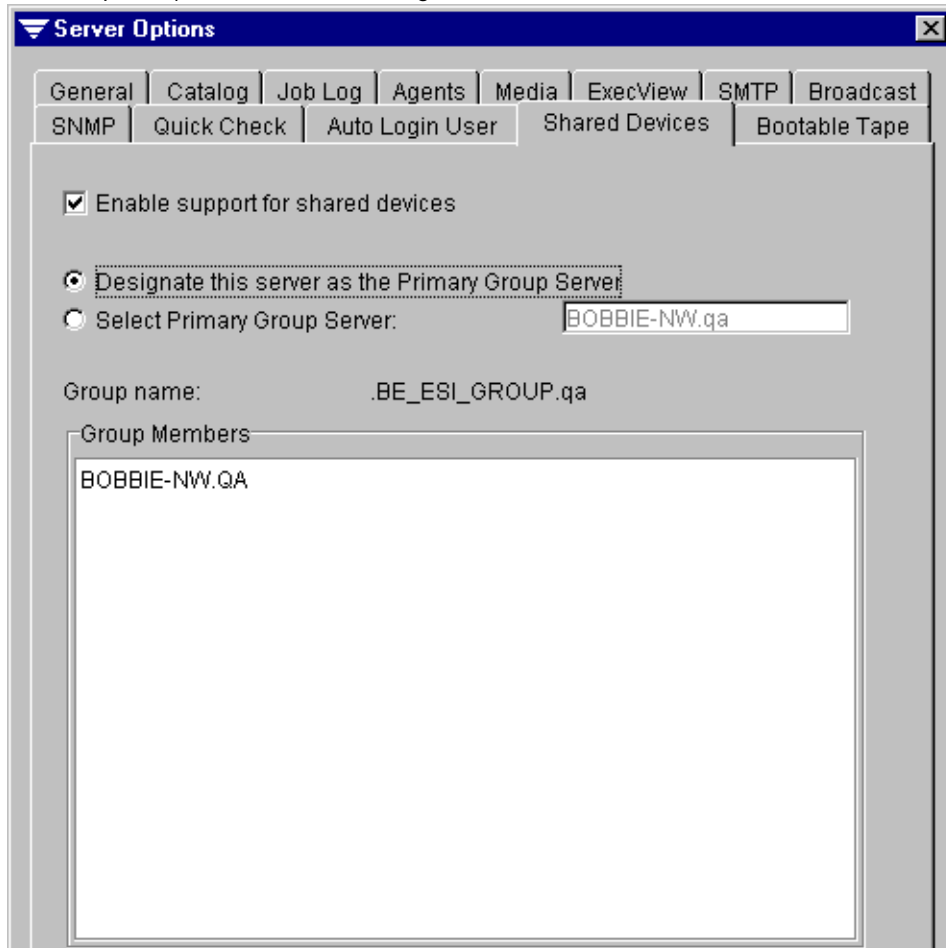
When Auto Login is enabled, users can submit jobs without having to enter a user name and password. The Auto Login user name and password are used during the browsing and selection phase of job submission. If the Auto Login user name and password are not valid on a particular device, you are prompted to enter a user name and password for the device. Jobs may contain both Auto Login and normal login information. If the user who submitted the job using Auto Login loses NetWare Supervisor or Backup Exec Administrator rights, the Auto Login user information will no longer be available for the job when it executes.

If you turn off Auto Login, the jobs involving devices using Auto Login will fail because the login information for those devices will not be available. Any portions of the job involving devices not using Auto Login will execute.

## Shared Devices Options for the Media Server

The Shared Devices dialog box that appears when setting options for the media server allows you to enable support for Backup Exec's SAN Shared Storage Option and designate the Primary Group Server.

Server Options | Shared Devices Dialog Box



Options on this dialog box are:

- ◆ **Enable support for shared devices.** Select this option to enable support for Backup Exec's Shared Storage Option.
- ◆ **Designate this server as the Primary Group Server.** Select this option to designate this media server as the Primary Group Server. The Primary Group Server is responsible for coordinating access to the shared devices by the other media servers.



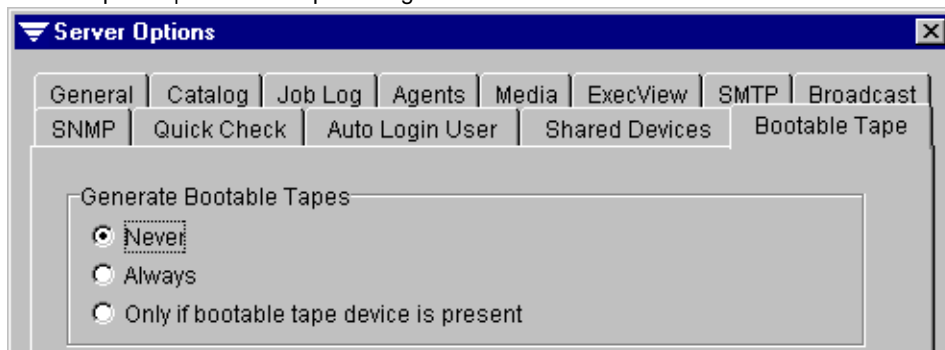
- ◆ **Select Primary Group Server.** If this media server will not serve as the Primary Group Server, select the Primary Group Server that will coordinate access to shared devices for the group containing this media server.
- ◆ **Group name.** Displays the name of the group.
- ◆ **Backup Group Members.** Lists the names of the group servers whose access to shared devices is managed by the Primary Group Server listed in **Select Primary Group Server**.

For more information about the SAN Shared Storage Option and the roles of the Primary Group Server and Group Servers, see “[Using the SAN Shared Storage Option](#)” on page 525.

## Bootable Tape Options for the Media Server

The Bootable Tape dialog box that appears when setting options for the media server, allows you to designate when Backup Exec’s Intelligent Disaster Recovery Option writes an ISO9660 bootable image file to media. Backup Exec can use this image file to generate a bootable tape when an overwrite job is processed or when a new tape is used. The backup media can then be used in a bootable tape device to recover your NetWare server in the event of a disaster.

Server Options | Bootable Tape Dialog Box



Options on this dialog box are:

- ◆ **Never.** This is the default option. Select this option if you do *not* want all overwritten or new tapes created to be bootable. When this option is selected, the bootable image file is not copied to tapes.
- ◆ **Always.** Select this option if you want Backup Exec to copy the bootable image file to all overwritten or new tapes.
- ◆ **Only if bootable tape device is present.** Select this option if you want Backup Exec to copy the bootable image file to tapes only if Backup Exec detects a bootable tape device.



---

**Note** While a bootable tape device that emulates booting from a SCSI CD-ROM is required when recovering a system using bootable tape, the bootable tape device is *not* required when creating the bootable tape.

---

For more information about the Intelligent Disaster Recovery and the use of bootable media, see “[Using Intelligent Disaster Recovery](#)” on page 561.

## Viewing Server Serial Numbers

You can view serial numbers for the Backup Exec software, including options, installed on your media server.

### ▼ To view serial numbers from the Administration Console:

1. Click **Installation and Maintenance**.
2. Click **Serial Numbers and Options**.

A list of all serial numbers and additional information about the Backup Exec software appears in the results pane. Information displayed includes:

- **Serial Number.** Serial number for the Backup Exec edition or option.
- **Type.** Type of software, such as the edition of Backup Exec or the option.
- **Evaluation Expiration Date.** Expiration date for software if the software is an evaluation version.

### ▼ To view serial numbers from the Administration Console for NetWare:

1. Select **Options**.
2. Select **Serial Numbers**.
3. Select **Media Server**.

The Serial Numbers dialog box appears (see “[Serial Numbers Dialog Box](#)” on page 264).

4. After viewing the list of serial numbers, press <Esc> to return to the **Serial Numbers** menu.



## Serial Numbers Dialog Box

This Administration Console for NetWare dialog box displays the following information:

- **Serial Number.** Serial number for the Backup Exec edition or option.
- **Type.** Type of software, such as the edition of Backup Exec or the option.
- **Expiration Date.** Expiration date for software if the software is an evaluation version.

## Adding and Deleting Serial Numbers

You can add new serial numbers for any additional options you want to install on the media server and delete old serial numbers.

### ▼ To add serial numbers from the Administration Console:

1. Click **Installation and Maintenance**.
2. Right-click **Serial Numbers and Options**, and then click **Add**.
3. On the Add Serial Number dialog box, enter the new serial number, and then click **OK**.

### ▼ To add serial numbers from the Administration Console for NetWare:

1. Select **Options**.
2. Select **Serial Numbers**.
3. Select **Media Server**.
4. Press <Ins>.
5. On the Add Serial Number dialog box, enter the new serial number, and then press <F2>.

### ▼ To delete serial numbers from the Administration Console:

1. Click **Installation and Maintenance**.
2. Click **Serial Numbers and Options**.
3. Right-click the serial number you want to remove, and click **Delete**.



4. When prompted, click **Yes**.

▼ **To delete serial numbers from the Administration Console for NetWare:**

1. Select **Options**.
2. Select **Serial Numbers**.
3. Select **Media Server**.
4. Select the serial number you want to delete, and press <Del>.
5. When prompted, press <Y>.

## Viewing, Adding, and Deleting Agent Serial Numbers

You can view information on systems using the Backup Exec for NetWare or Backup Exec for Windows NT and Windows 2000 Remote Agents from the Administration Console for NetWare through the **Options** menu. (For information about viewing and adding agent serial numbers from the Administration Console, see “[Editing NDMPSVRS.DAT](#)” on page 248). You can also add new serial numbers for any additional agents and delete old serial numbers.

▼ **To view agent serial numbers:**

1. From the Administration Console for NetWare, select **Options**.
2. Select **Serial Numbers**.
3. Select **Agent**.

The Agent Serial Numbers dialog box appears. This dialog box is described in “[Agent Serial Numbers Dialog Box](#)” on page 267.

▼ **To add an agent:**

1. From the Administration Console for NetWare, select **Options**.
2. Select **Serial Numbers**.
3. Select **Agent**.
4. At the Agent Serial Numbers dialog box, press <Ins>.



5. On the Add Agent dialog box, enter the **Agent name**, **IP address**, and **Serial number** for the agent being added.

---

**Note** The serial number is not required if you are installing evaluation software.

---

6. Press <F2>.

▼ **To add a serial number to an existing agent:**

1. From the Administration Console for NetWare, select **Options**.
2. Select **Serial Numbers**.
3. Select **Agent**.
4. At the Agent Serial Numbers dialog box, select the agent you want to add a serial number for and press <Ctrl + A>.
5. On the Add Agent Serial Number dialog box, enter the **Serial number**.
6. Press <F2>.

▼ **To delete an agent serial number:**

1. From the Administration Console for NetWare, select **Options**.
2. Select **Serial Numbers**.
3. Select **Agent**.
4. At the Agent Serial Numbers dialog box, select the agent serial number you want to delete and press <Ctrl + D>.
5. When prompted, press <Y>.

▼ **To delete an agent and all its associated serial numbers:**

1. From the Administration Console for NetWare, select **Options**.
2. Select **Serial Numbers**.
3. Select **Agent**.



4. At the Agent Serial Numbers dialog box, select the agent you want to delete and press <Del>.
5. When prompted, press <Y>.

## Agent Serial Numbers Dialog Box

The Agent Serial Numbers dialog box contains the following information:

- ◆ **Agent Name.** Name of the computer hosting the Backup Exec agent.
- ◆ **IP Address.** IP address of the agent computer.
- ◆ **Serial Number.** Serial number of the agent.

## Viewing Agent Serial Number Properties

You view the following information about an agent serial number by pressing <F4> on the Agent Serial Numbers dialog box:

- ◆ **Agent name.** Name of the computer hosting the agent.
- ◆ **IP address.** IP address of the agent computer.
- ◆ **Serial number.** Serial number of the agent.
- ◆ **Type.** Type of agent, such as NT Agent (Backup Exec's Remote Agent for Windows NT and Windows 2000) or NetWare (Backup Exec's Remote Agent for NetWare).



## Setting the Administration Console Options

Backup Exec allows you to configure the Administration Console to either require a user name and password each time you log in to servers or attach to agent workstations or save the passwords you enter into a password database. You can also set options for how job logs, jobs, dates, and times appear in the Administration Console.

### ▼ To set Administration Console Options:

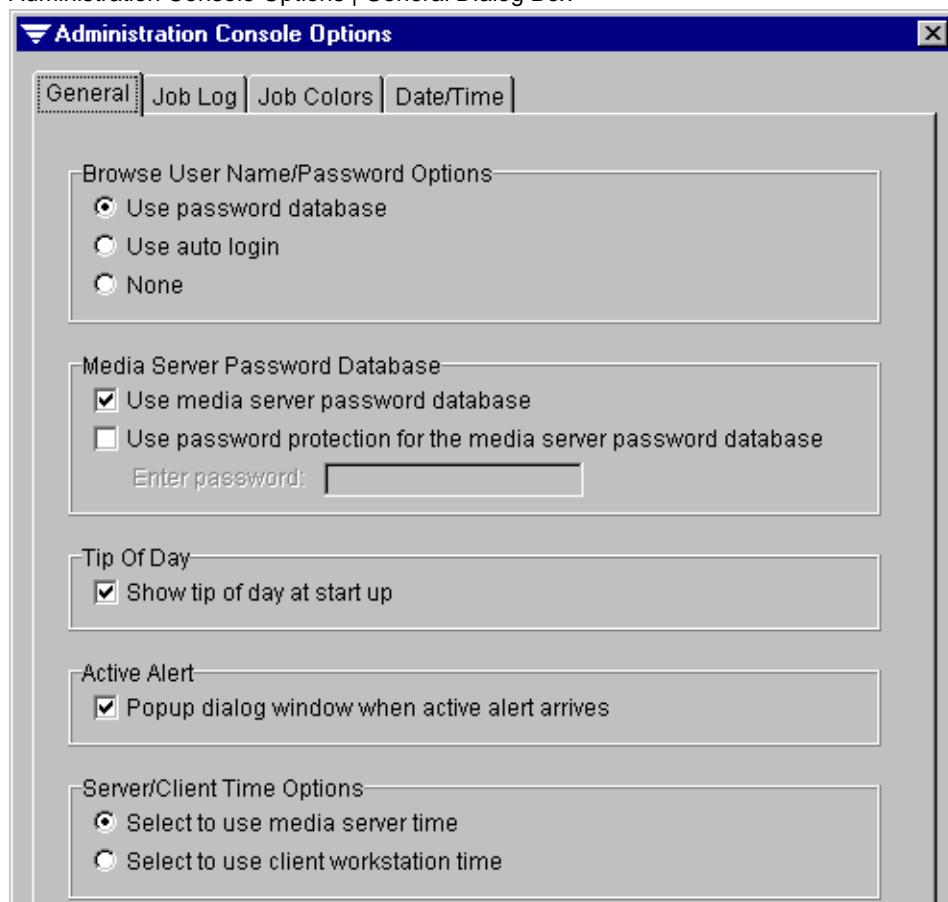
1. From the Administration Console, click **Tools**, point to **Options**, and then click **Administration Console**.
2. Select options from the Administration Console Options General dialog box. These options are described in “[General Options for the Administration Console](#)” on page 269.
3. Click **Job Log** and set options from the Administration Console Options Job Log dialog box. These options are described in “[Job Log Options for the Administration Console](#)” on page 271.
4. Click **Job Colors** and set options from the Administration Console Options Job Colors dialog box. These options are described in “[Job Colors Options for the Administration Console](#)” on page 273.
5. Click **Date/Time** and set the date and time format settings for the Administration Console. These options are described in “[Date and Time Formats for the Administration Console](#)” on page 275.
6. Click **OK**.



## General Options for the Administration Console

The General dialog box that appears when setting options for the Administration Console includes options for using passwords to access the media server and remote servers from the Administration Console. This dialog box also allows you to select whether the tip of the day will be shown when the Administration Console is started, whether Backup Exec displays a popup dialog box when an active alert occurs, or whether the media server or workstation time will be used.

Administration Console Options | General Dialog Box



This dialog box includes the following options:

- ◆ **Use password database.** Select this option to have Backup Exec store the passwords you enter to gain access to remote servers and workstations in a password database. By selecting this option, the next time you view the device the password will automatically be entered for you. If this option is not selected, each time you try to



view the contents of a device or submit a restore to a device, you will be prompted to enter the password. The contents of the password database are encrypted for security purposes.

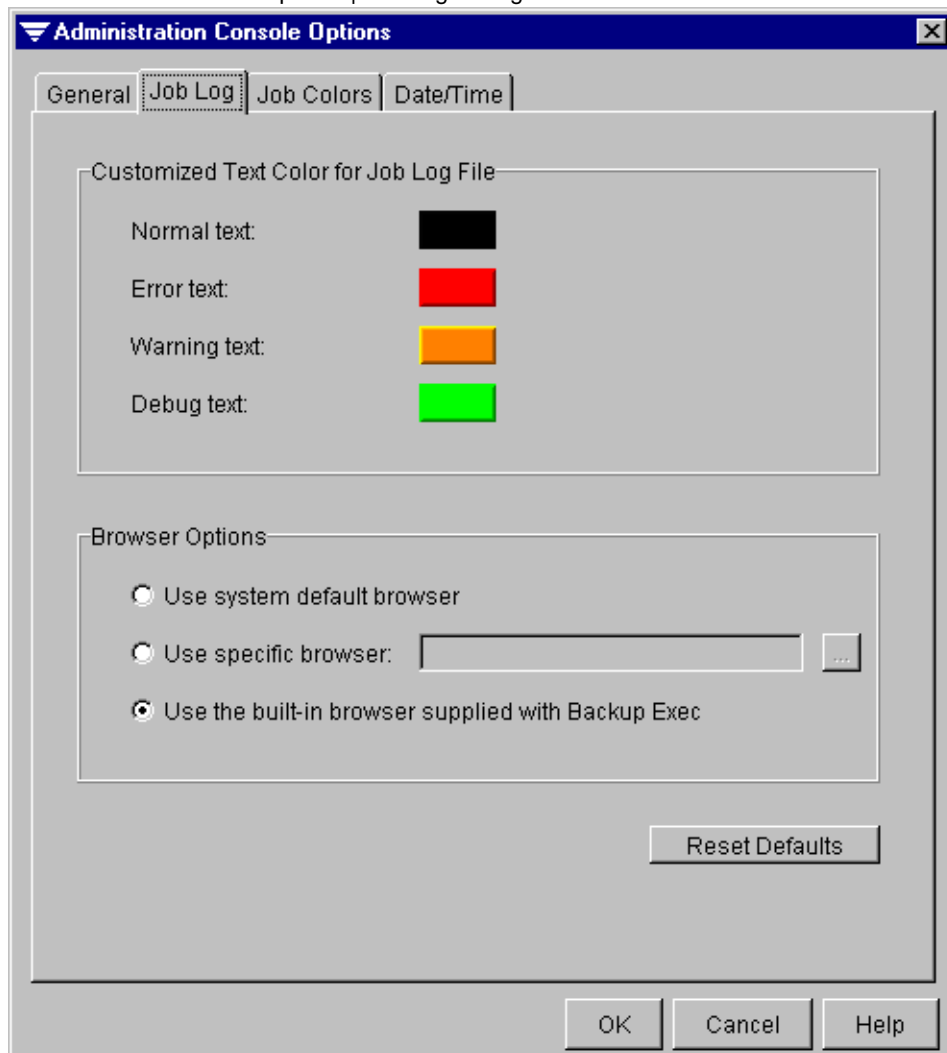
- ◆ **Use media server password database.** Select this option to have your Administration Console use the media server password database created on your local workstation to use the previously saved media server's user name and password.
- ◆ **Use password protection for the media server password database.** Select this option if you want to password protect the password database (the list of user names and passwords used to log in to servers). If this option is selected, you must enter a password when starting the Administration Console. If the password is not provided, the password database will not be accessed and user names and passwords will be required for each media server that is accessed.
- ◆ **Enter password.** Enter the password used to protect the media server password database.
- ◆ **Show tip of the day at start up.** Select this option if you want Backup Exec to display key information on how to maximize the use of the Administration Console when the Administration Console is started.
- ◆ **Popup dialog window when active alert arrives.** Select this option if you want Backup Exec to display a dialog window when an active alert is reported by the server.
- ◆ **Select to use media server time.** Select this option if you want the media server's time to be used for the submission of jobs.
- ◆ **Select to use client workstation time.** Select this option if you want the local workstation's time to be used for the submission of jobs.



## Job Log Options for the Administration Console

The Job Log dialog box that is available when setting options for the Administration Console allows you to select the colors that will appear on the screen when viewing the job log and to select browser options for running the Administration Console.

Administration Console Options | Job Log Dialog Box



Options for this dialog box include:

- ◆ **Customized Text Color for Job Log File.** This section of the dialog box includes a sampling of the colors used for the following job log text:
  - **Normal text.** Normal text messages in the on-screen job log will appear in the color next to this option. The default color is black.
  - **Error text.** Error messages in the on-screen job log will appear in the color next to this option. The default color is red.
  - **Warning text.** Warning messages in the on-screen job log will appear in the color next to this option. The default color is orange.
  - **Debug text.** Debug text in the on-screen job log will appear in the color next to this option. The default color is green.

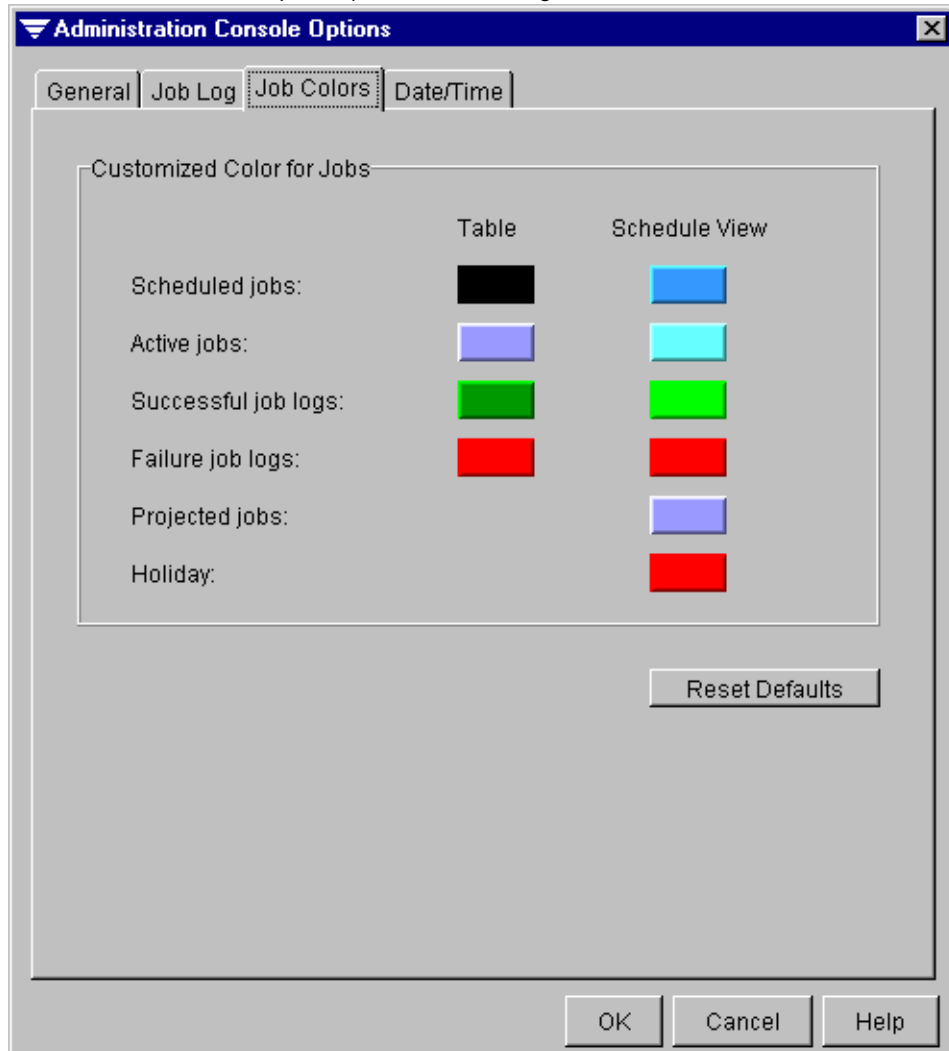
To change a text color, click on the color sample you want to change, and then select the color you want from the Select Color dialog box that appears.

- ◆ **Browser Options.** This section of the dialog box includes three options for selecting the browser that is used to display the Administration Console:
  - **Use system default browser.** Select this option to use the browser that has been set up as the default browser for your local workstation.
  - **Use specific browser.** Select this option, and then enter or select a specific browser.
  - **Use the built-in browser from the software.** Select this option to use the browser that is supplied with the Backup Exec software.
- ◆ **Reset Defaults.** Click to reset all defaults for this dialog box.

## Job Colors Options for the Administration Console

The Job Colors dialog box available when setting options for the Administration Console or when setting options for the **Schedule View** allows you to select the colors that will appear for jobs in the results pane table (see “[Monitoring Jobs](#)” on page 175) and in the **Schedule View** (see “[Using the Schedule View](#)” on page 202).

Administration Console Options | Job Colors Dialog Box



Options for this dialog box include:

- ◆ **Scheduled jobs.** Scheduled jobs will appear in the results pane in the color shown under **Table** and in Backup Exec's calendar view in the color shown under **Schedule View**.
- ◆ **Active jobs.** Active jobs will appear in the results pane in the color shown under **Table** and in Backup Exec's calendar view in the color shown under **Schedule View**.
- ◆ **Successful job logs.** Successful job logs will appear in the results pane in the color shown under **Table** and in Backup Exec's calendar view in the color shown under **Schedule View**.
- ◆ **Failure job logs.** Job logs for failed jobs will appear in the results pane in the color shown under **Table** and in Backup Exec's calendar view in the color shown under **Schedule View**.
- ◆ **Projected jobs.** Jobs projected for the future will appear in Backup Exec's calendar view in the color shown under **Schedule View**.
- ◆ **Holiday.** Holidays set by the user will appear in Backup Exec's calendar view in the color shown under **Schedule View**.
- ◆ **Reset Defaults.** Click to reset all defaults for this dialog box.

▼ **To change colors for jobs:**

1. From the Job Colors dialog box, click on a the color you want to change.
2. Select the color you want from the Swatches dialog box, and then click **OK**.

## Date and Time Formats for the Administration Console

The Date/Time dialog box that is available when setting options for the Administration Console allows you to select the formats used for displaying dates and times in the Administration Console.

Administration Console Options | Date/Time Dialog Box

Options appearing on the Date/Time dialog box include:

- ◆ **Use short date format.** Select this option if you want to have the names of months abbreviated or the date to appear in numeric format, such as 10/23/01. If this option is selected, you must then select:
  - **Short date format.** Select the format you want to use for displaying dates.
  - **Date separator.** Select the character that will be used to separate the date entries.
- ◆ **Use long date format.** Select this option if you want the names of months to be fully spelled out and to use a four-digit format for displaying the year.
  - **Long date format.** Select the format you want to use for displaying dates.



- ◆ **Time format.** Select the format you want to use for displaying time.
- ◆ **Time separator.** Select the character that will be used to separate the time entries.

The following symbols are used in the selection lists for the date and time formats:

---

Symbol	Description
y	How the year appears. For example, selecting yyyy would result in the year appearing as 2001.
M	How the month of the year appears. The month can be displayed as text, using either the full name or an abbreviation, or as a number. For example, December can appear as December, Dec, or 12.
d	How the day of the month appears. When d is used, the day appears as a number. For example, the first day of the month would appear as 1.
h	How the hour appears using a 12-hour format. Noon would appear as 12.
H	How the hour in a 24-hour day appears. For example, 2 p.m. would appear as 14.
m	How minutes appear.
s	How seconds appear.
E	Used if days in the week are to appear. For example, selecting EEEE would result in the day of the week, such as Tuesday, appearing in the <b>Long date format</b> .
a	Used if AM or PM appears in the <b>Time format</b> .

---

## Setting Administration Console for NetWare Options

You can set Login Assistance options as well as display options for the Administration Console for NetWare.

### ▼ To set Administration Console for NetWare Options:

1. From the Administration Console for NetWare, select **Options**.
2. Select **Administration Console**.
3. Select from the following menu selections:
  - **General** (see “[General Options for the Administration Console for NetWare](#)” on page 278)
  - **Job Log** (see “[Job Log Options for the Administration Console for NetWare](#)” on page 278)
  - **Display** (see “[Display Options for the Administration Console for NetWare](#)” on page 279)
  - **Date/Time** (see “[Date/Time Options for the Administration Console for NetWare](#)” on page 280)
  - **Numeric Format** (see “[Numeric Format Options for the Administration Console for NetWare](#)” on page 280)
4. After selecting the options you want from a menu, press <F2>.



## General Options for the Administration Console for NetWare

The General dialog box that appears when setting options for the Administration Console for NetWare allows you to select the type of login assistance you want to use.

Administration Console for NetWare | General Options



Options on this dialog box include:

- ◆ **Use password database.** Select this option if you want the passwords you enter to gain access to remote servers and workstations to be kept in a database. If this option is selected, the next time you want to view the server or workstation, the password will automatically be entered for you.
- ◆ **Use auto login.** Select this option if you want Backup Exec to use the media server's auto login user name and password for attaching to remote servers and workstations. Auto Login must be enabled through the media server options (see "[Auto Login User Options for the Media Server](#)" on page 259).
- ◆ **None.** Select this option if you do not want to maintain a password database or use the Auto Login feature. If this option is selected, you will be prompted for a user name and password each time you try to access a remote server or workstation.

## Job Log Options for the Administration Console for NetWare

The Color-coded Job Log dialog box that appears when setting options for the Administration Console for NetWare allows you to select the colors that will appear on the screen when viewing the job log.

Administration Console for NetWare | Job Log Options



You can select colors for the following text using the drop-down list:

- ◆ **Normal.** The default color for normal text is blue.
- ◆ **Error.** The default color for error messages is red.



- ◆ **Warning.** The default color for warning messages is yellow.
- ◆ **Debug.** The default color for debug messages is green.

You can select from the following color options:

- ◆ Black
- ◆ Blue
- ◆ Green
- ◆ Cyan
- ◆ Red

## Display Options for the Administration Console for NetWare

The Display dialog box appears when setting options for the Administration Console for NetWare.

Administration Console for NetWare | Display Options



Options for this dialog box are:

- ◆ **Color.** Select this option if you are using a color monitor.
- ◆ **Monochrome.** Select this option if you are using a monochrome monitor.
- ◆ **Auto-determine.** Select this option if you want Backup Exec to automatically determine your monitor type.



## Date/Time Options for the Administration Console for NetWare

The Date/Time dialog box that appears when setting options for the Administration Console for NetWare allows you to configure how Backup Exec displays dates and times.

Administration Console for NetWare | Date/Time Options

```

Date/Time
Date Format
< > Month-Day-Year      09/29/98
< > Day-Month-Year      29/09/98
< > Year-Month-Day      98/09/29
Date separator: [ / ]

Time Format
< > 12 hours             12:00 - 11:59
< > 24 hours             00:00 - 23:59
Time separator: [ : ]
  
```

Options on this dialog box include:

- ◆ **Date Format.** Select how date information is to be displayed in Backup Exec.
- ◆ **Date separator.** Type the character that will be used to separate the date entries.
- ◆ **Time Format.** Select either 12 or 24 hours as the time format.
- ◆ **Time separator.** Type the character that will be used to separate the time entries.

## Numeric Format Options for the Administration Console for NetWare

The Numeric Format dialog box that appears when setting options for the Administration Console for NetWare allows you to configure how Backup Exec displays numbers.

Administration Console for NetWare | Numeric Format Options

```

Numeric Format
1000 separator: [ , ]   1,325.25
Decimal separator: [ . ] 1.325.25
  
```

Options on this dialog box include:

- ◆ **1000 separator.** Type the character that will be used to separate thousands when displaying numbers.
- ◆ **Decimal separator.** Type the character that will be used to separate decimals when displaying numbers.

## Working with Server Groups

The Administration Console allows you to group media servers for viewing in your quick access panel. By assigning servers to groups, you can quickly disconnect from one media server and connect to another.

---

**Note** While multiple servers can be assigned to a group, you can only create jobs and manage jobs and storage devices for one server at a time.

---

### Adding a New Group

When Backup Exec's Administration Console is first started, you will be asked to select a media server to which you want the Administration Console to connect. By default, this server is added to the **All Servers group**, unless you enter a new group name on the Connect to a Media Server dialog box (see "[Starting the Administration Console](#)" on page 55). The names of available server groups will appear at the end of the **Groups** menu.

You can add a new group to monitor and select servers for that group by using the **Add new group** option.

▼ **To add a new group:**

1. From the Administration Console, click **Groups**.
2. Click **Add new group**.
3. Enter the name for this group, and then click **OK**.

This new group will appear in the drop-down list on the quick access panel and on the end of the **Groups** menu. To add servers to this group, you must use the **Edit groups** option.



## Editing a Server Group

When you first create a server group using the **Add new group** option, there will be no servers in the group. To add a server to a group, you must use the **Edit groups** option. You can also use this option to remove a server from a server group.

▼ **To edit a group:**

1. From the Administration Console, click **Groups**.
2. Click **Edit groups**.
3. From the Edit Server Groups dialog box, ensure the group you want to edit is selected in the **Choose a group to edit** option.
4. To add a media server to this group, select the server or servers you want to add from the **All Media Servers** list, and then click **Add**.

---

**Tip** Multiple servers can be selected by holding down the <Shift> or <Ctrl> keys while selecting the servers.

---

5. If a server does not appear in the **All Media Servers** list, you can add it by entering the **Name** and **Address** of that server in the **Add specified server** fields, and then clicking **Add**.
6. To remove a server from the group, select the servers you want to delete from the group from the **In this group** list, and then click **Remove** or **Remove All**.
7. When completed with adding or removing servers from the group, click **OK**.
8. You can connect to a server in a group by ensuring the group name is selected in the quick access panel, and then clicking on the icon representing the server you want to manage.

## Managing a Server Group

You can select which server group you want to manage by either selecting the group from the quick access panel's drop-down list or by using the **Groups** menu. You can also use the **Groups** menu to rename or remove a group.

### ▼ To select a group using the Groups menu:

1. From the Administration Console, click **Groups**.
2. Point to the group you want to select, and then click **Select group**.

### ▼ To rename a group:

1. From the Administration Console, click **Groups**.
2. Point to the group you want to rename, and then click **Rename group**.
3. Enter the new name for the group, and then click **OK**.

### ▼ To delete a server from a group:

1. From the Administration Console, click **Groups**.
2. Point to the group containing the server you want to remove.
3. Point to the server you want to delete from the group, and then click **Delete from group**.

---

**Tip** You can also delete a server from a group by ensuring the group is selected in the quick access panel's drop-down list, right-clicking the server you want to remove from the group, and then clicking **Delete from group**.

---

---

**Note** A media server can belong to multiple groups; deleting a server from a group does not delete that server from other groups.

---



▼ **To delete a group:**

---

**Note** You cannot remove a server group until all servers have been deleted from the group.

---

1. From the Administration Console, ensure that there are no servers in the group you want to delete.
2. Click **Groups**.
3. Point to the group you want to delete, and then click **Remove group**.

You can copy a server to another group or move a server from one group to another.

▼ **To copy a server to another group:**

1. From the Administration Console, click **Groups**.
2. Point to the server group containing the server you want to copy, point to the server, and then click **Copy to group**.

---

**Tip** You can also copy a server in a group by ensuring the group is selected in the quick access panel's drop-down list, right-clicking the server you want to copy, and then clicking **Copy to group**.

---

3. Select the group you want to copy this server to, and then click **OK**.

▼ **To move a server from one group to another:**

1. From the Administration Console, click **Groups**.
2. Point to the server group containing the server you want to move, point to the server, and then click **Move to group**.

---

**Tip** You can also move a server in a group by ensuring the group is selected in the quick access panel's drop-down list, right-clicking the server you want to move, and then clicking **Move to group**.

---

3. Select the group you want to move this server to, and then click **OK**.

# Managing Devices, Drive Pools, and Partitions

---

With Backup Exec you can select to have your storage devices organized in physical and logical units called drive pools, or to assign one or more drives to a partition for processing jobs by type (backup, restore, media rotation, and utilities).

This section explains how Backup Exec allows you to configure and manage your devices, and, depending on whether you are in partition management mode or media management mode, your drive pools or partitions.

*Managing Devices, Drive Pools, and Partitions* includes the following topics:

Section	Describes
<a href="#">“Managing Devices in Backup Exec”</a> on page 286	An overview of how storage devices are viewed and managed in Backup Exec.
<a href="#">“Viewing Administration Console Properties”</a> on page 288	How to verify information about your local workstation being used as the Administration Console.
<a href="#">“Managing the Media Server”</a> on page 292	How to prevent jobs from running on a server during maintenance activities, return a server to a non-paused state, view server properties, and view server diagnostics.
<a href="#">“Performing Device Operations”</a> on page 300	Procedures for managing the physical drives attached to the media servers and for performing utilities on the media in the drives.
<a href="#">“Performing Drive Pool Operations”</a> on page 329	An overview of how Backup Exec uses drive pools in media management mode and detailed procedures for creating and managing your drive pools.
<a href="#">“Performing Partition Operations”</a> on page 349	An overview of how Backup Exec uses partitions in partition management mode and procedures for creating and managing partitions.



## Managing Devices in Backup Exec

Device management in Backup Exec simplifies how you organize and allocate the storage devices attached to your media server. If you are in media management mode, drives can be organized in *drive pools*, in which drives are grouped so that jobs assigned to the drive are run on the first available drive, or *cascaded drive pools*, in which drives from the same vendor and with the same product ID are linked together and appear logically as one group. The latter allows large backup jobs that exceed the capacity of the media in one drive to automatically continue on the media in the next drive in the cascaded drive pool.

You can also create *mirrored drive pools*, in which two or more similar drives are bundled, or grouped, so that you can create multiple copies of a backup without having to create multiple jobs.

After Backup Exec is installed, all configured storage devices connected to the media server are automatically recognized as either robots (changers or autoloaders) or stand-alone drives.

If you are in partition management mode, drives are organized into partitions. After installation, each storage device connected to the backup server is automatically assigned its own partition. Robots have one partition per drive and the slots are divided equally between the partitions; however, multi-drive support is only provided through the Library Expansion Option.

---

**Note** For multi-drive support, the Library Expansion Option must be purchased for each additional drive you want to support. For more information about robots and the Library Expansion Option, refer to “[Using the Library Expansion Option](#)” on page 481. If you are using multi-drive robots without the Library Expansion Option you will be repeatedly notified that Backup Exec has detected unlicensed robotic drives.

---

## Media Management Mode vs. Partition Management Mode

When you install Backup Exec, you select whether your server will run in media management mode or partition management mode.

In media management mode, the tree pane of the Administration Console displays how devices are organized logically in drive pools, and how drives are arranged physically on servers. All devices appearing under the **Drives** node are available to you, including drive pools, stand-alone drives, robotic libraries, and cascaded drive pools.

All of the logical groupings of the physical drives are displayed under **Drive Pools**, **Cascaded Drive Pools**, or **Mirrored Drive Pools**. Cascaded and mirrored drive pools are displayed under servers because they consist of only drives from that server; they effectively act as a single device under that server.



If the SAN Shared Storage Option is also installed, Backup Exec automatically creates a default drive pool named **Shared Storage Drives** that appears under the **Drive Pools** subnode and contains the secondary storage devices such as robots on the Storage Area Network (SAN). The SAN Shared Storage Option allows multiple media servers to share secondary storage devices on the SAN and to access the Shared Storage Drives drive pool (see “[Managing Devices in the Shared Storage Environment](#)” on page 532).

In partition management mode, the tree pane of the Administration Console displays **Partitions** rather than **Drive Pools**.

In the Administration Console for NetWare, device operations are accessed through the **Drives** menu, which includes the options:

- ◆ **Drive Pools**
- ◆ **Robots**
- ◆ **Stand-alone Drives**
- ◆ **Partitions**

---

**Note** **Drive Pools** only appear if you are running in media management mode; **Partitions** only appear if you are running in partition management mode.

---

From the Administration Console, you can manage your media server, including preventing a server from running jobs while maintenance activities are being run (see “[Managing the Media Server](#)” on page 292).

Through the Administration Console’s **Drives** node or the Administration Console for NetWare’s **Drives** menu, you can:

- ◆ Perform device operations, which allow you to manage the physical drives attached to the media server and perform utilities on media in the drives (see “[Performing Device Operations](#)” on page 300).
- ◆ Perform drive pool operations, which allow you to create and manage your drive pools (see “[Performing Drive Pool Operations](#)” on page 329), provided you are in media management mode.
- ◆ Create, modify, and delete partitions, provided you are in partition management mode (see “[Performing Partition Operations](#)” on page 349).



## Viewing Administration Console Properties

You can view information about your local workstation running the Administration Console through the **System info** option.

### ▼ To view information about your Administration Console:

1. From the Administration Console, click **Help**.
2. Click **About Administration Console**.
3. Click **System info**.

The System Properties dialog box appears. This dialog box contains three tabs:

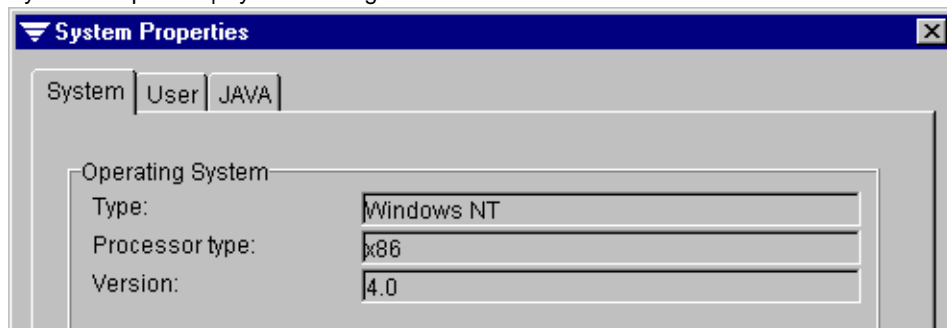
- System (see “[System Dialog Box for the Administration Console](#)” on page 288)
- User (see “[User Dialog Box for the Administration Console](#)” on page 289)
- JAVA (see “[Java Dialog Box for the Administration Console](#)” on page 290)

4. After viewing information, click **OK**.

## System Dialog Box for the Administration Console

The System dialog box that appears when viewing system information for the Administration Console provides information about the local workstation’s operating system.

System Properties | System Dialog Box



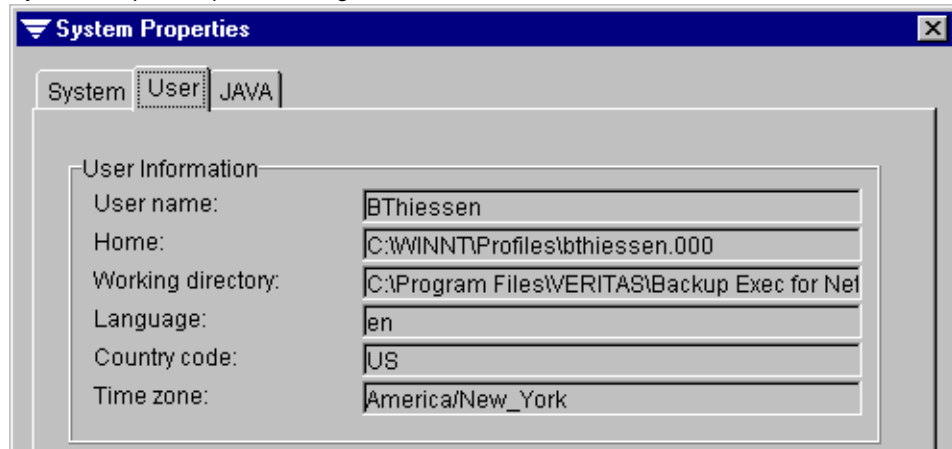
This dialog box displays the following information:

- ◆ **Type.** Type of operating system, such as Windows NT.
- ◆ **Processor type.** Type of processor, such as x86.
- ◆ **Version.** Operating system version, such as 4.0.

## User Dialog Box for the Administration Console

The User dialog box that appears when viewing system information for the Administration Console provides information about the user logged on to the system and regional settings for the local workstation.

System Properties | User Dialog Box



Information appearing on this dialog box includes:

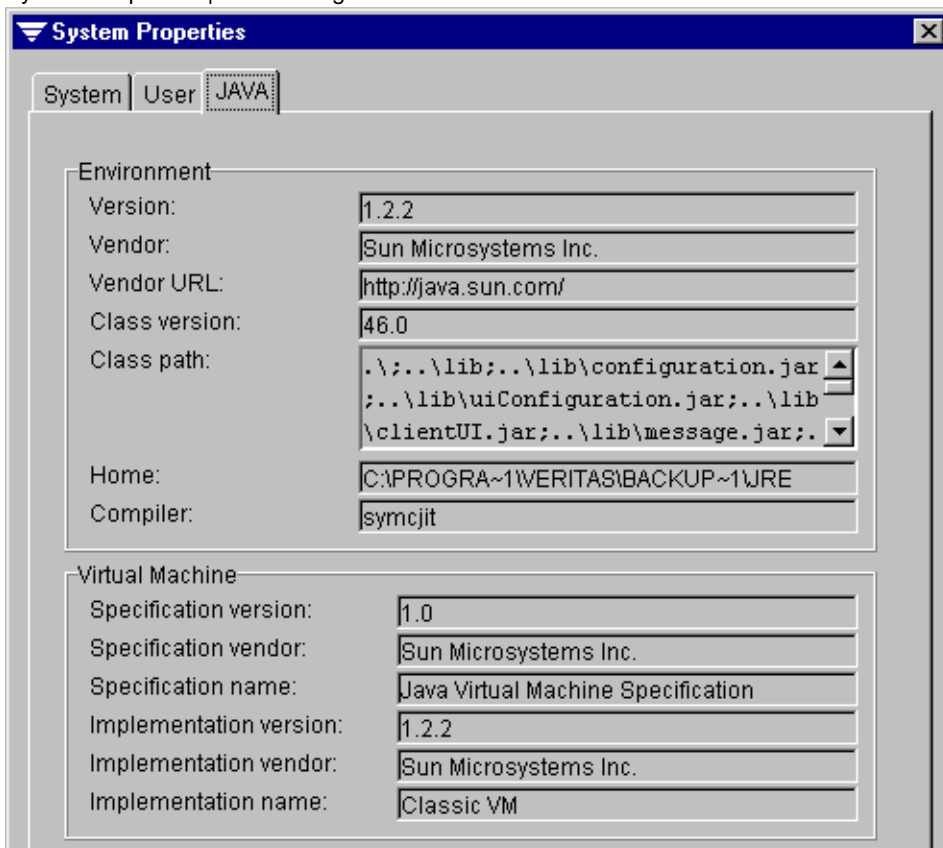
- ◆ **User name.** Name of the user logged on to the Administration Console.
- ◆ **Home.** Directory established as the default directory for the user.
- ◆ **Working directory.** Directory from which the Administration Console is running.
- ◆ **Language.** Language the local workstation is using, such as en for English.
- ◆ **Country code.** Code for the country the local workstation is set for, such as US for United States.
- ◆ **Time zone.** Time zone used by the local workstation, such as EST for Eastern Standard Time.



## Java Dialog Box for the Administration Console

The Java dialog box that appears when viewing system information for the Administration Console provides information about the version of Java Virtual Machine being used by the local workstation.

System Properties | Java Dialog Box



Environment information appearing on this dialog box includes:

- ◆ **Version.** Version of Java installed on the local workstation.
- ◆ **Vendor.** Name of the vendor.
- ◆ **Vendor URL.** Web site address for the vendor.
- ◆ **Class version.** Version of Java class used.
- ◆ **Class path.** Path used to search for Java classes during program execution.
- ◆ **Home.** Directory established as the base for the Java application and data.

- ◆ **Compiler.** Version of the Java compiler installed.

Virtual Machine information appearing on this dialog box includes:

- ◆ **Specification version.** The specification version used for designing the Java Runtime Environment (JRE) installed on this system.
- ◆ **Specification vendor.** The specification vendor used for designing the JRE installed on this system.
- ◆ **Specification name.** The specification name used for designing the JRE installed on this system.
- ◆ **Implementation version.** The version used for the implementation of the JRE specification.
- ◆ **Implementation vendor.** The vendor used for the implementation of the JRE specification.
- ◆ **Implementation name.** The implementation name.



## Managing the Media Server

You can perform certain server management tasks from the Administration Console, including:

- ◆ Pausing and resuming the server (see “[Pausing and Resuming the Server](#)” on page 292).
- ◆ Viewing server properties (see “[Viewing Server Properties](#)” on page 293).
- ◆ Viewing diagnostics (see “[Viewing Diagnostics](#)” on page 299).

You can also pause and resume the job scheduler and view diagnostics from the Administration Console for NetWare.

From the status bar that appears on either the Administration Console or the Administration Console for NetWare, you can quickly determine if the media server is online.

### Pausing and Resuming the Server

You can pause and resume a media server from the Administration Console or the Administration Console for NetWare. This option is useful if you need to perform maintenance on the server or its storage devices.

#### ▼ To pause or resume the server:

1. From the Administration Console, click **Action**.  
From the Administration Console for NetWare, select **Administration**.
2. From the Administration Console, click **Pause** to take the server offline; click **Resume** to place the server online.

---

**Note** If the server is already paused, the **Pause** option is unavailable. If the server is online, the **Resume** option is unavailable.

---

From the Administration Console for NetWare, select **Pause/Resume Scheduler**.

---

**Note** You can also pause the server from the Administration Console for NetWare, by pressing <Ctrl + P> from the console’s main screen.

---



## Viewing Server Properties

Use **Properties** to view information about your server, including the version of Backup Exec installed, options enabled and installed, and system information. The IP Address and logon information can be modified through this option.

### ▼ To view server properties:

1. From the Administration Console's tree pane, right-click **Backup Exec - (<Server\_Name>)**.

---

**Tip** You can also right-click the server icon in the quick access panel.

---

2. From the shortcut menu, click **Properties**.

The server's Properties dialog box that appears contains five tabs:

- Server (see "[Server Dialog Box](#)" on page 294)
- Statistics (see "[Statistics Dialog Box](#)" on page 296)
- System (see "[System Dialog Box](#)" on page 297)
- Hosts (see "[Host Dialog Box](#)" on page 297)
- Java (see "[Java Dialog Box](#)" on page 298)

3. After viewing the server's properties, click **OK**.



## Server Dialog Box

The Server dialog box that appears when viewing server properties from the Administration Console displays information about the media server, including which version of Backup Exec is installed.

Server Properties | Server Dialog Box

The screenshot shows a window titled "Server Properties" with a close button in the top right corner. Below the title bar is a tabbed interface with tabs for "Server", "Statistics", "System", "Host", and "Java". The "Server" tab is selected. On the left side of the main area is a server rack icon. The main area contains several sections:

- Basic Information:**
  - Name: BOBBIE-NW
  - IP Address: 10.67.81.46
  - Description: Backup Exec Server
  - Version: (empty field)
  - Status: (empty field)
- Media Server Time:**

Start date and time:	06/14/2001	8:56:56 AM
Current date and time:	06/14/2001	8:57:01 AM
- Workstation Time:**

Last attached:	06/14/2001	10:27:38 AM
Current date and time:	06/14/2001	2:51:32 PM
- Login information:**
  - User name: admin
  - Password: \*\*\*\*\*



Fields appearing on this tab include:

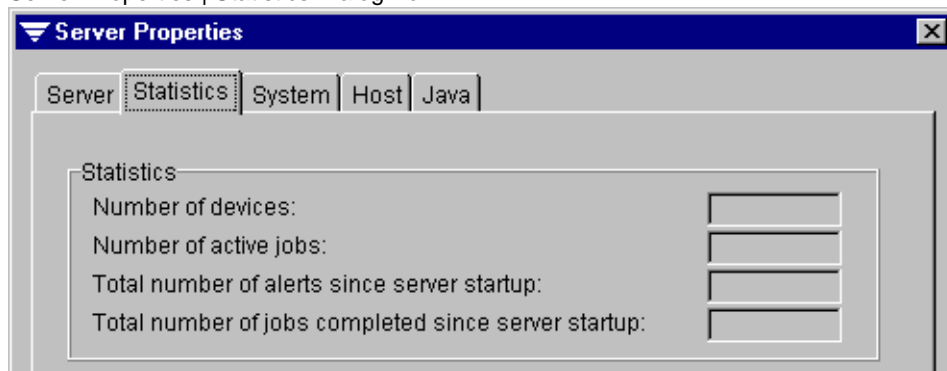
- ◆ **Name.** Name of the server.
- ◆ **IP Address.** IP address for the server. You can edit this field.
- ◆ **Description.** Type of server, such as Backup Exec Server.
- ◆ **Version.** Version of Backup Exec being run.
- ◆ **Status.** Status of the server, such as Running.
- ◆ **Media Server Time.** The following information about the media server time appears:
  - **Start date and time.** Date and time the server was started. The media server's time, not the time set on the Administration Console, is reported.
  - **Current date and time.** Media server's current date and time.
- ◆ **Workstation Time.** The following information about the workstation time appears:
  - **Last attached.** Date and time the Administration Console began communications with the media server. The media server's time, not the time set on the Administration Console, is reported.
  - **Current date and time.** Administration Console's current date and time.
- ◆ **User name.** Current user logged on to the server. You can enter a new user name if you want to change the login information, provided the user name being provided has sufficient rights to access the media server.
- ◆ **Password.** The password used in combination with the user name is encrypted. However, you can type a new password if you are changing the user that is logged on, provided the user name and password combination being provided has access to the media server.



## Statistics Dialog Box

The Statistics dialog box that appears when viewing the server properties from the Administration Console displays information about the storage devices attached to the server and information about jobs and alerts.

Server Properties | Statistics Dialog Box



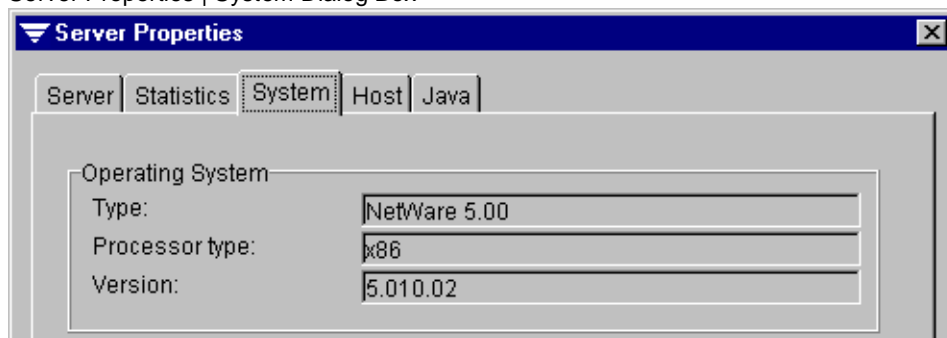
Information appearing on this dialog box includes:

- ◆ **Number of devices.** Number of storage devices attached to the media server.
- ◆ **Number of active jobs.** Number of jobs running on the media server.
- ◆ **Total number of alerts since server startup.** Total alerts that have occurred since the server was last started.
- ◆ **Total number of jobs completed since server startup.** Total number of jobs completed since the server was last started.

## System Dialog Box

The System dialog box that appears when viewing the server properties from the Administration Console displays operating system information.

Server Properties | System Dialog Box



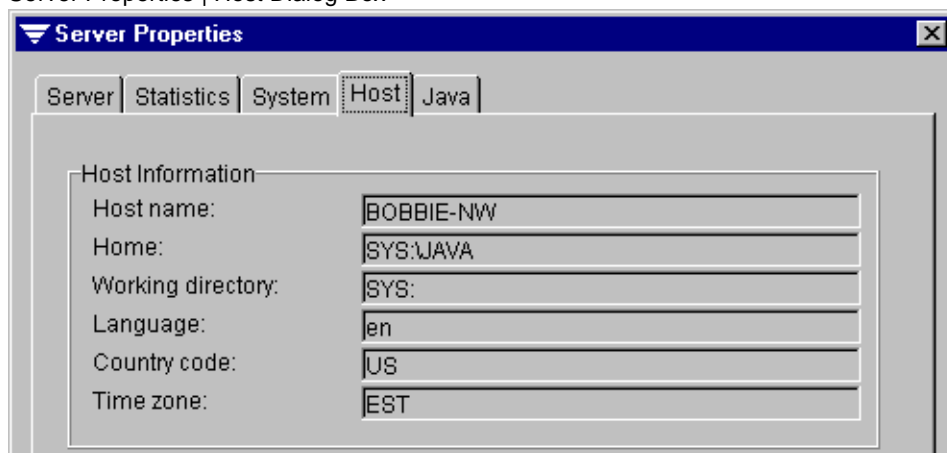
Fields on this dialog box include:

- ◆ **Type.** Type of operating system, such as NetWare.
- ◆ **Processor type.** Type of processor, such as x86.
- ◆ **Version.** Operating system version, such as 5.010.02.

## Host Dialog Box

The Host dialog box for the server properties displays information about the media server and its regional settings.

Server Properties | Host Dialog Box



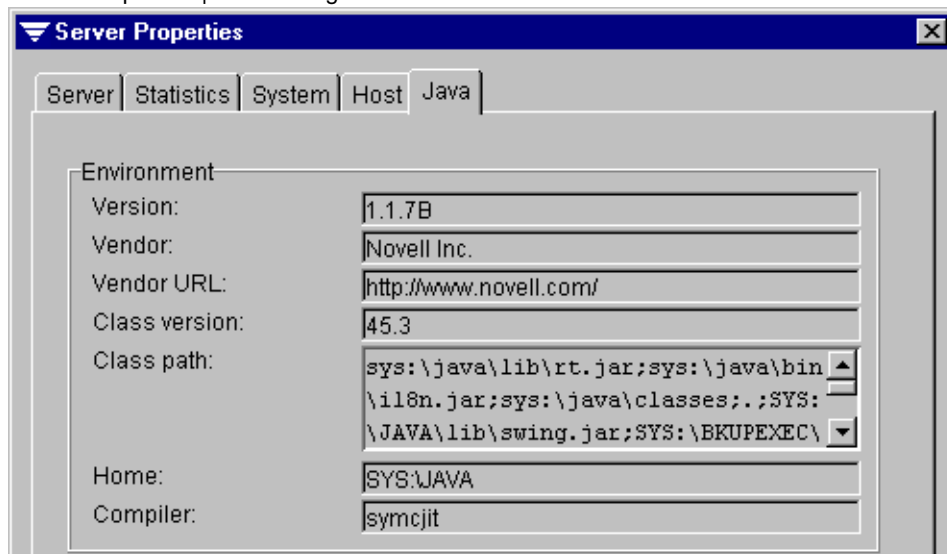
Information appearing on this dialog box includes:

- ◆ **Host name.** Name of the server.
- ◆ **Home.** Directory established as the base for the Java application and data.
- ◆ **Working directory.** Directory from which the Java server is running.
- ◆ **Language.** Language the server is using, such as en for English.
- ◆ **Country code.** Code for country the product is registered in, such as US for United States.
- ◆ **Time zone.** Time zone used by the server, such as EST for Eastern Standard Time.

## Java Dialog Box

The Java dialog box for the server properties displays information about the version of Java Virtual Machine being used on the media server.

Server Properties | Java Dialog Box



Environment information appearing on this dialog box includes:

- ◆ **Version.** Version of Java installed on the server.
- ◆ **Vendor.** Name of the vendor.
- ◆ **Vendor URL.** Web site address for the vendor.
- ◆ **Class version.** Version of the Java class used.
- ◆ **Class path.** Path used to search for Java classes during program execution.

- ◆ **Home.** Directory established as the base for the Java application and data.
- ◆ **Compiler.** Version of the Java compiler installed.

## Viewing Diagnostics

You can view technical support logs from both the Administration Console and the Administration Console for NetWare.

These reports will only be available if you have been instructed by Technical Support to run in debug mode.

### ▼ To view a support log from the Administration Console:

1. From the **Help** menu, point to **View Diagnostics**.
2. Select the support log you want to view.

### ▼ To view a support log from the Administration Console for NetWare:

1. From the **About** menu, select **Tech Support Logs**.
2. Select the support log you want to review.



## Performing Device Operations

Device operations allow you to manage the physical drives attached to the media server and to perform utilities on the media in the drives. A robot is handled differently than a stand-alone drive. For information about performing device operations on a robot, see [“Using the Library Expansion Option”](#) on page 481.

The following table lists the available device operations and where to find detailed information about each operation.

---

<b>For information on:</b>	<b>See:</b>
Deleting drives from the media server	<a href="#">“Deleting a Drive”</a> on page 301
Renaming a drive	<a href="#">“Renaming a Drive”</a> on page 302
Displaying the media in a drive	<a href="#">“Performing Inventory on Media in a Drive”</a> on page 302
Cleaning the drive	<a href="#">“Cleaning the Device”</a> on page 304
Cataloging media	<a href="#">“Cataloging Media in a Drive”</a> on page 307
Erasing media	<a href="#">“Erasing Media in a Drive”</a> on page 309
Retensioning media	<a href="#">“Retensioning Media”</a> on page 312
Ejecting media	<a href="#">“Ejecting Media from a Drive”</a> on page 314
Rewinding media	<a href="#">“Rewinding Media”</a> on page 315
Verifying media	<a href="#">“Verifying the Media”</a> on page 316
Scanning for new devices	<a href="#">“Scan for Devices”</a> on page 318
Viewing drive properties and statistics	<a href="#">“Viewing Drive Properties and Statistics”</a> on page 319
Pausing a drive	<a href="#">“Pausing and Resuming a Drive”</a> on page 326
Resuming a drive	<a href="#">“Pausing and Resuming a Drive”</a> on page 326
Enabling or disabling a drive for Backup Exec	<a href="#">“Enabling and Disabling a Drive for Use with Backup Exec”</a> on page 327

---

## Deleting a Drive

If you disconnect a drive from the media server, you can use the **Delete** option to remove that drive from your Backup Exec database.

### ▼ To delete a stand-alone drive from Backup Exec:

1. From the Administration Console, click **Drives**, click the server, and then click either **Robots** or **Stand-alone Drives**.

From the Administration Console for NetWare, select **Drives**, and then select either **Robots** or **Stand-alone Drives**.

---

**Note** Make sure you select the drive from the list of **Robots** or **Stand-alone Drives** and not from under the **Drive Pools** subnode or menu. If you delete a drive under **Drive Pools**, the drive is deleted from the drive pool, not the database. For information about removing drives from pools, see [“Deleting Drives from a Drive Pool”](#) on page 334, [“Deleting Drives from a Cascaded Drive Pool”](#) on page 341, or [“Deleting Drives from a Mirrored Drive Pool”](#) on page 346.

---

2. Locate the drive you want to delete.
3. From the Administration Console, right-click the drive, and then click **Delete**.  
From the Administration Console for NetWare, select the drive you want to delete, and then press <Del>.
4. From the Administration Console, click **OK**.  
From the Administration Console for NetWare, press <Y>.



## Renaming a Drive

The default name Backup Exec assigns to any devices it finds is the vendor name followed by a number. The first drive encountered is assigned the number 1, the second drive is assigned the number 2, and so on. You can assign a different name to the drive from the media server or remotely through the Administration Console using drive **Properties**.

Names given to the drives must be unique.

### ▼ To rename a drive:

1. From the Administration Console, click **Drives**, click the server to which the drive is attached, and then click either **Robots**, **Stand-alone Drives**, or **All-Drives**.

From the Administration Console for NetWare, select **Drives**, and then select either **Robots** or **Stand-alone Drives**.

2. Locate the drive you want to rename.

3. From the Administration Console, right-click the drive, and then click **Properties**.

From the Administration Console for NetWare, select the drive you want to rename, and then press <F4>.

4. Enter a new name for the drive in the **Drive name** option.

5. From the Administration Console, click **OK**.

From the Administration Console for NetWare, press <F2>.

## Performing Inventory on Media in a Drive

Run **Inventory** to mount the media in the drive and read the cartridge label. This label can then be viewed under both the **Drives** and **Media** nodes. If you change the media in the drive, run this utility again; otherwise, the previous media still appears as being in the drive.

### ▼ To inventory media in a drive:

1. From the Administration Console, click **Jobs**, and then point to **Utilities**.

---

**Tip** From the Administration Console's tree pane, you can also create an inventory job by right-clicking a drive from the **Robots**, **Stand-alone Drives**, or **All-Drives** subnodes, and then clicking **Inventory**.

---

From the Administration Console for NetWare, select **Jobs**, and then select **Utilities**.



2. Select **Inventory**.
3. Select options from the Inventory dialog box. Options are described in “[Inventory Options](#)” on page 303
4. From the Administration Console, click **OK**.

From the Administration Console for NetWare, press <F2>.

You can monitor or cancel an inventory job from the Administration Console’s **Jobs** node or from the Administration Console for NetWare’s **Administration** menu (see “[Monitoring Jobs](#)” on page 175).

## Inventory Options

The Inventory dialog box appears when creating an inventory job.

Inventory Dialog Box

The screenshot shows a dialog box titled "Inventory". It contains the following fields and controls:

- Job name:** A text input field containing "Inventory\_1".
- Drive name:** A dropdown menu showing "HA:0 ID:1 LUN:0 ARCHIV...".
- Robot name:** A text input field containing "1 ARCHIVE Python 04377-XXX".
- Select slot range:** A list box containing the numbers 1, 2, 3, and 4.

At the bottom of the dialog box are three buttons: "OK", "Cancel", and "Help".



This dialog box includes the following options:

- ◆ **Job name.** Enter a name for this job or accept the default name provided by Backup Exec.
- ◆ **Drive name or Partition name.** Select the name of the drive (if in media management mode) or the partition (if in partition management mode) containing the media to be inventoried, or select the **By name** option.
- ◆ **Robot name.** If in media management mode, displays the name of the robot, or if the selected drive is a stand-alone drive, **Stand-alone** appears.
- ◆ **Select slot range.** If in media management mode and using a robot, select the slots to be included in the inventory. Cleaning slots will not be available for inventory.

## Cleaning the Device

Use **Clean** to run or schedule a cleaning job for a robotic library provided you have purchased and installed the Library Expansion Option. You must designate a slot as a cleaning slot before creating a cleaning job. For information about designating a cleaning slot, see “[Designating a Cleaning Slot](#)” on page 505.

---

**Note** This option is *not* available for stand-alone drives.

---

### ▼ To schedule or run a cleaning job:

1. From the Administration Console, click **Jobs**, and then point to **Utilities**.  
From the Administration Console for NetWare, select **Jobs**, and then select **Utilities**.
2. Select **Clean**.

---

**Tip** From the Administration Console, you can also create a cleaning job by clicking **Drives**, clicking the server to which the drive is attached, and clicking **Robots**. Then, click the robot you are creating the cleaning job for, right-click the drive you are creating the cleaning job for, and click **Clean**.

---

3. Select options from the Drive Clean | General dialog box. Options are described in “[Drive Clean | General Options](#)” on page 305.
4. From the Administration Console, click **Repeat Interval** and select options.  
From the Administration Console for NetWare, select **Repeat Interval**, press <Enter>, and select options.

The Repeat Interval dialog box allows you to schedule a recurring cleaning job. Options are described in “[Drive Clean | Repeat Interval](#)” on page 306.

5. From the Administration Console, click **OK**.

From the Administration Console for NetWare, press <F2>.

You can monitor a cleaning job from the Administration Console’s **Jobs** node or from the Administration Console for NetWare’s **Administration** menu (see “[Monitoring Jobs](#)” on page 175).

## Drive Clean | General Options

The Drive Clean | General dialog box appears when creating a cleaning job for a robotic drive.

Drive Clean | General Dialog Box

This dialog box includes the following options:

- ◆ **Job name.** Enter a name for this job or accept the default name provided by Backup Exec.

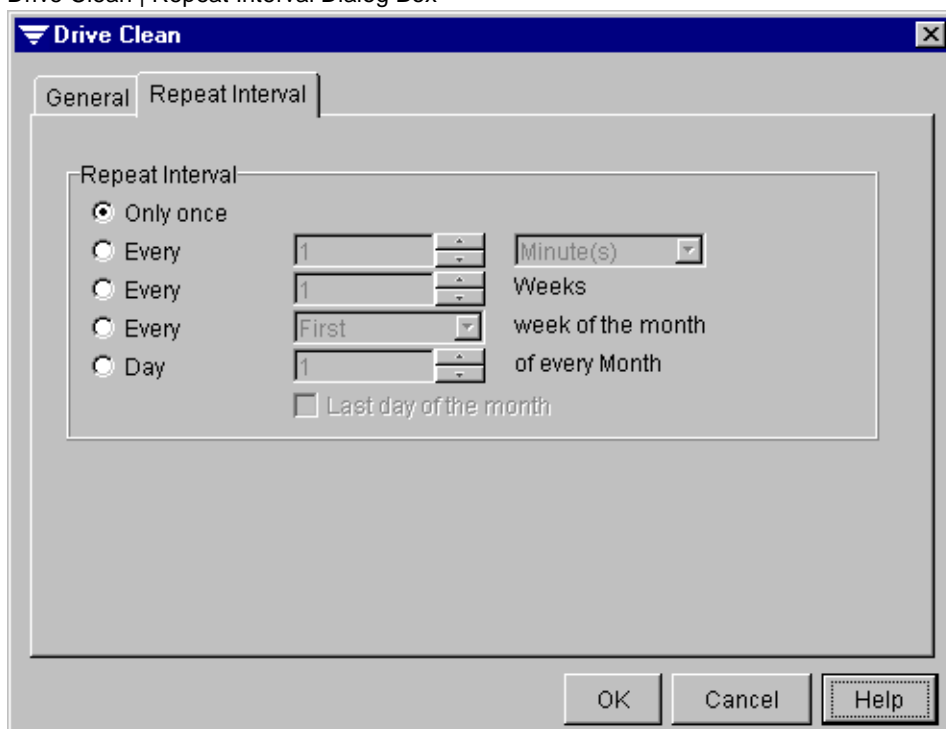


- ◆ **Drive name or Partition name.** Select the name of the drive (if in media management mode) or the partition (if in partition management mode) where the cleaning job is to be run, or select the **By name** option.
- ◆ **Robot name.** Displays the name of the robot.
- ◆ **Select the cleaning slot.** If in media management mode, select this option if you want to select the cleaning media slot, and then select the slot where the cleaning media resides from the drop-down list.
- ◆ **Execution date.** Select the date and time you want the cleaning job to run.

## Drive Clean | Repeat Interval

The Drive Clean | Repeat Interval dialog box appears when creating a cleaning job for a robotic drive and allows you to schedule a recurring job.

Drive Clean | Repeat Interval Dialog Box



This dialog box includes the following options:

- ◆ **Only once.** Select this option to create a one-time job.

- ◆ **Every [ ] <time period>**. Select this option to resubmit the job every specified number of minutes, hours, days, or months. Enter the number and then select the period of time you want to use.
- ◆ **Every [ ] weeks**. Select this option to resubmit the job every specified number of weeks. If you select this option, the job will run on a Sunday.
- ◆ **Every [ ] week of the month**. Select this option to resubmit the job for a specific week of the month, and then select which week you want the job to be run.
- ◆ **Day [ ] of every month**. Select this option to resubmit the job for a specific day of the month, and then select or enter the day of the month on which you want the job to run.

## Cataloging Media in a Drive

Use **Catalog** to log the contents of a media. You can also use this option to create a new catalog entry for media, which may need to be done when transferring media from another location or if the catalog entry was removed for any reason. You can have Backup Exec use an existing on-media catalog, which allows cataloging to take significantly less time than cataloging the media with the file-by-file method. When cataloging SIFD and ARCserve media, you must use the file-by-file method.

---

**Note** Media must be cataloged before data can be restored from it.

---

### ▼ To catalog media:

1. Insert the media into the drive.
2. From the Administration Console, click **Jobs**, and then point to **Utilities**.  
From the Administration Console for NetWare, select **Jobs**, and then select **Utilities**.
3. Select **Catalog**.

---

**Tip** From the Administration Console's tree pane, you can also create a catalog job by clicking **Media**, clicking **All Media**, right-clicking the media that you want to catalog from the results pane, and then clicking **Catalog**. Or, right-click a drive from the **Robots**, **Stand-alone Drives**, or **All-Drives** subnodes, and then click **Catalog**.

---

4. Select the options you want from the Media Catalog dialog box. Options are described in "[Media Catalog Options](#)" on page 308.
5. From the Administration Console, click **OK**.



From the Administration Console for NetWare, press <F2>.

You can monitor or cancel a catalog operation from the Administration Console's **Jobs** node or from the Administration Console for NetWare's **Administration** menu (see "[Monitoring Jobs](#)" on page 175).

## Media Catalog Options

The Media Catalog dialog box appears when creating a catalog job from either the Administration Console or the Administration Console for NetWare.

Media Catalog Dialog Box

Options on this dialog box are:

- ◆ **Job name.** Enter a name for this job or accept the default name provided by Backup Exec.
- ◆ **Media password.** If the media being cataloged is password protected, enter the password.

- ◆ **Drive name or Partition Name.** Select the name of the drive (if in media management mode) or the partition (if in partition management mode) containing the media to be cataloged, or select the **By name** option.
- ◆ **In robot slot, In drive or In partition.** Select this option if you know the robot slot, drive (media management mode) or partition (partition management mode) in which the media being cataloged resides, and ensure that drive or partition name is selected in the **Drive name** or **Partition name** option.
- ◆ **By name.** Select this option and then select the name of the specific media you want to catalog.
- ◆ **Use on-media catalog.** Select this option if you want Backup Exec to use an existing on-media catalog. If this option is selected, cataloging will take significantly less time than cataloging the media with the file-by-file method. However, if the media was created by another software product, or if the media's on-media catalogs may have become corrupted, this option should not be selected.

## Erasing Media in a Drive

You can choose to erase media using either **Quick erase** or **Long erase**. Not all drives support a long erase; those that do not will always perform a quick erase.

---

**Note** Running a **Long erase** during business hours is not recommended.

---

**Quick erase** writes an indicator at the beginning of the media that makes the data contained on the media inaccessible. For most uses, a quick erase is sufficient.

**Long erase** instructs the drive to physically erase the entire media. If you have sensitive information on the media and you want to dispose of it, use a long erase. Running a long erase on media can take several minutes to several hours to complete, depending on the drive and the media capacity.

---

**Note** **Quick erase** and **Long erase** do not change the cartridge label.

---

### ▼ To erase media in a drive:

1. From the Administration Console, click **Jobs**, and then point to **Utilities**.  
From the Administration Console for NetWare, select **Jobs**, and then select **Utilities**.
2. Select **Erase**.



**Tip** From the Administration Console's tree pane, you can also create an erase job by clicking **Media**, clicking **All Media**, right-clicking the media that you want to erase from the results pane, and then clicking **Erase**. Or, right-click a drive from the **Robots**, **Stand-alone Drives**, or **All-Drives** subnodes, and then click **Erase**.

---

3. Select options from the Media Erase dialog box. Options are described in "[Media Erase Options](#)" on page 311.
4. From the Administration Console, click **OK**.

From the Administration Console for NetWare, press <F2>.

You can monitor the erase operation from the Administration Console's **Jobs** node or from the Administration Console for NetWare's **Administration** menu (see "[Monitoring Jobs](#)" on page 175).

---

**Note** You *cannot* cancel an erase operation after it has started; however, you can cancel a pending erase operation (see "[Canceling a Job](#)" on page 188).

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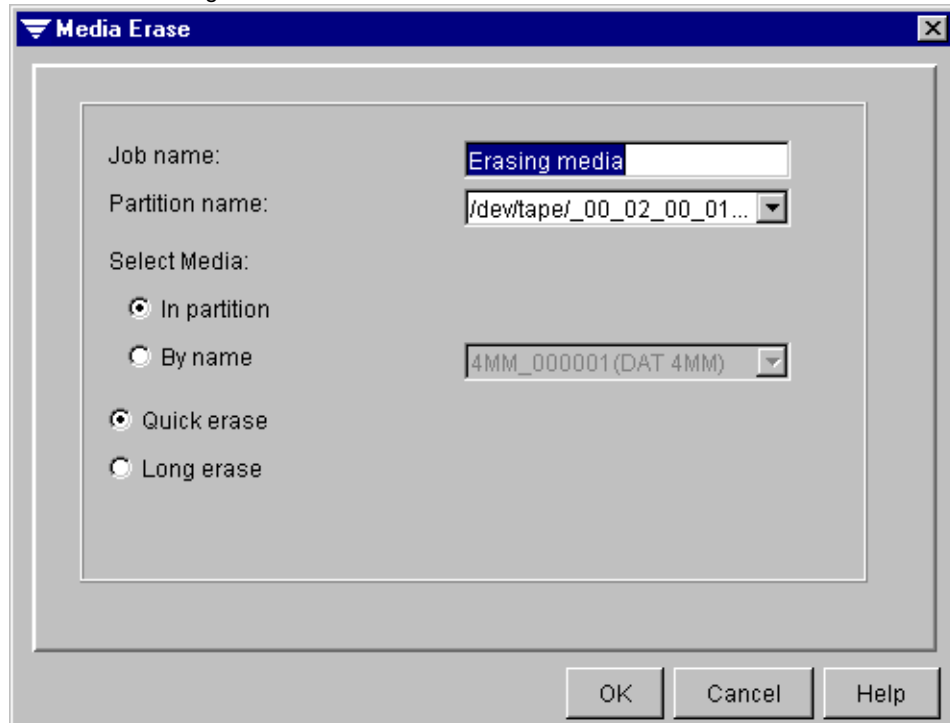




## Media Erase Options

The Media Erase dialog box appears when creating an erase job from either the Administration Console or the Administration Console for NetWare.

Media Erase Dialog Box



Options on this dialog box are:

- ◆ **Job name.** Enter a name for this job or accept the default name provided by Backup Exec.
- ◆ **Drive name or Partition Name.** Select the name of the drive (if in media management mode) or the partition (if in partition management mode) containing the media to be erased, or select the **By name** option.
- ◆ **In robot slot, In drive or In partition.** Select this option if you know the robot slot, drive (media management mode) or partition (partition management mode) the media being erased resides in, and then ensure the drive or partition appears in the **Drive name or Partition name** option or select the robot slot from the drop-down list.
- ◆ **By name.** Select this option and then select the name of the specific media you want to erase.



- ◆ **Quick erase.** Select this option if you want to perform a quick erase. Quick erase writes an indicator at the beginning of the media that makes the data contained on the media inaccessible.
- ◆ **Long erase.** Select this option if you want to perform a long erase. Long erase instructs the drive to physically erase the entire media. Not all drives support a long erase.

## Retensioning Media

Use **Retension** to run the media in the drive from beginning to end at a fast speed so that the tape winds evenly and runs more smoothly past the drive heads.

Refer to the documentation that came with your media drive to see how often this utility should be performed.

Retensioning is necessary for mini-cartridge and quarter-inch cartridge media but not for most other types of media.

### ▼ To retension a media:

1. From the Administration Console, click **Jobs**, and then point to **Utilities**.  
From the Administration Console for NetWare, select **Jobs**, and then select **Utilities**.
2. Select **Retension**.

---

**Tip** From the Administration Console's tree pane, you can also create a retension job by clicking **Media**, clicking **All Media**, right-clicking the media that you want to retension from the results pane, and then clicking **Retension**. Or, right-click a drive from the **Robots**, **Stand-alone Drives**, or **All-Drives** subnodes, and then click **Retension**.

---

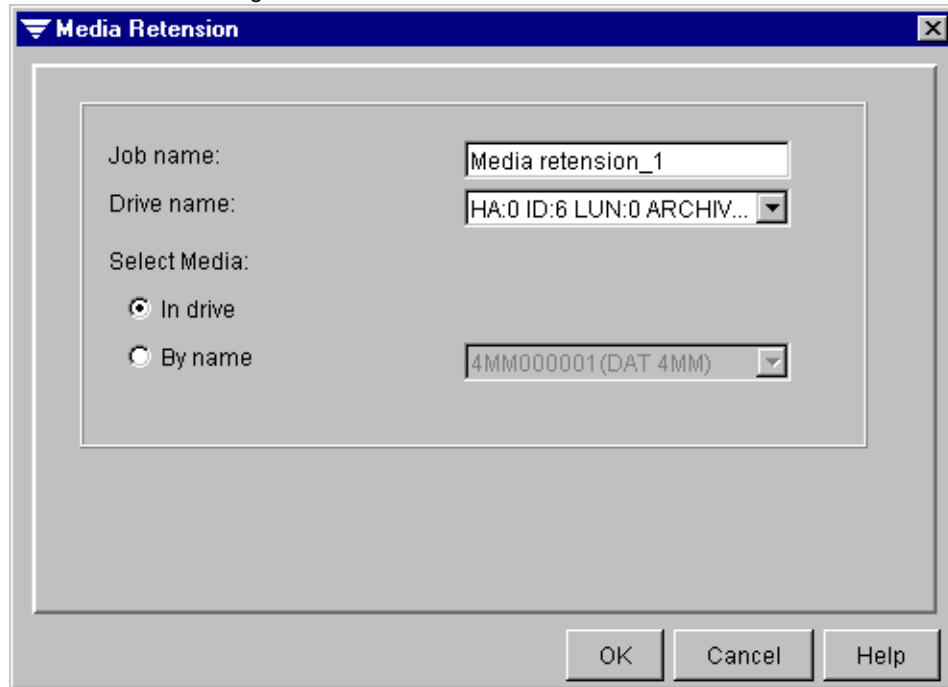
3. Select options from the Media Retension dialog box. Options are described in "[Media Retension Options](#)" on page 313.
4. From the Administration Console, click **OK**.  
From the Administration Console for NetWare, press <F2>.

You can monitor or cancel a Retension job from the Administration Console's **Jobs** node or from the Administration Console for NetWare's **Administration** menu (see "[Monitoring Jobs](#)" on page 175).

## Media Retension Options

The Media Retension dialog box appears when creating a retention job from either the Administration Console or the Administration Console for NetWare.

Media Retension Dialog Box



Options on this dialog box are:

- ◆ **Job name.** Enter a name for this job or accept the default name provided by Backup Exec.
- ◆ **Drive name or Partition name.** Select the name of the drive (if in media management mode) or the partition (if in partition management mode) containing the media you want to retention, or select the **By name** option.
- ◆ **In robot slot, In drive or In partition.** Select this option if you know the robot slot, drive (media management mode) or partition (partition management mode) the media being retensed resides in, and then ensure the drive or partition is selected in the **Drive name or Partition name** option.
- ◆ **By name.** Select this option and then select the name of the specific media you want to retention.



## Ejecting Media from a Drive

Use **Eject** to eject the media currently in the drive. If the media is a tape, **Eject** rewinds the tape before ejecting it.

Some drives do not support a software-driven media eject. If the media is a tape, the tape is rewound and you may be instructed to manually remove the media.

### ▼ To eject media from a drive:

1. From the Administration Console, click **Jobs**, and then point to **Utilities**.  
From the Administration Console for NetWare, select **Jobs**, and then select **Utilities**.
2. Select **Eject**.

---

**Tip** From the Administration Console's tree pane, you can also create an eject job by right-clicking a drive from the **Robots**, **Stand-alone Drives**, or **All-Drives** subnodes, and then clicking **Eject**.

---

3. Select options from the Media Eject dialog box. Options are described in "[Media Eject Options](#)" on page 314.
4. From the Administration Console, click **OK**.  
From the Administration Console for NetWare, press <F2>.

You can monitor or cancel an eject job from the Administration Console's **Jobs** node or from the Administration Console for NetWare's **Administration** menu (see "[Monitoring Jobs](#)" on page 175).

## Media Eject Options

The Media Eject dialog box appears when creating an eject job from either the Administration Console or the Administration Console for NetWare.

Options on this dialog box are:

- ◆ **Job name.** Enter a name for this job or accept the default name provided by Backup Exec.
- ◆ **Drive name.** Select the name of the drive where the media to be ejected resides.

## Rewinding Media

Use **Rewind** to have the drive rewind the media loaded in the drive.

---

**Note** Most drives automatically rewind the media before it is ejected. Therefore, this utility is not usually necessary.

---

▼ **To rewind media in a drive:**

1. From the Administration Console, click **Jobs**, and then point to **Utilities**.  
From the Administration Console for NetWare, select **Jobs**, and then select **Utilities**.
2. Select **Rewind**.

---

**Tip** From the Administration Console's tree pane, you can also create a rewind job by right-clicking a drive from the **Robots**, **Stand-alone Drives**, or **All-Drives** subnodes, and then clicking **Rewind**.

---

3. Select options from the Media Rewind dialog box. Options are described in "[Media Eject Options](#)" on page 314.
4. From the Administration Console, click **OK**.  
From the Administration Console for NetWare, press <F2>.

You can monitor or cancel a rewind operation from the Administration Console's **Jobs** node or from the Administration Console for NetWare's **Administration** menu (see "[Monitoring Jobs](#)" on page 175).

## Media Rewind Options

The Media Rewind dialog box appears when creating a rewind job from either the Administration Console or the Administration Console for NetWare.

Options on this dialog box are:

- ◆ **Job name.** Enter a name for this job or accept the default name provided by Backup Exec.
- ◆ **Drive name.** Select the name of the drive where the media to be ejected resides.



## Verifying the Media

You can have Backup Exec verify that the data backed up can be read (see “[Performing Verifies and Quick Checks](#)” on page 96). You can also submit verify jobs to test the integrity of the media.

▼ **To create a verify job:**

1. From the Administration Console, click **Jobs**, and then point to **Utilities**.  
From the Administration Console for NetWare, select **Jobs**, and then select **Utilities**.

2. Select **Verify**.

---

**Tip** From the Administration Console’s tree pane, you can also create a verify job by clicking **Media**, clicking **All Media**, right-clicking the media that you want to verify data on from the results pane, and then clicking **Verify**. Or, right-click a drive from the **Robots**, **Stand-alone Drives**, or **All-Drives** subnodes, and then click **Verify**.

---

3. Select options from the Drive Clean dialog box. Options are described in “[Media Verify Options](#)” on page 317.
4. From the Administration Console, click **OK**.

From the Administration Console for NetWare, press <F2>.

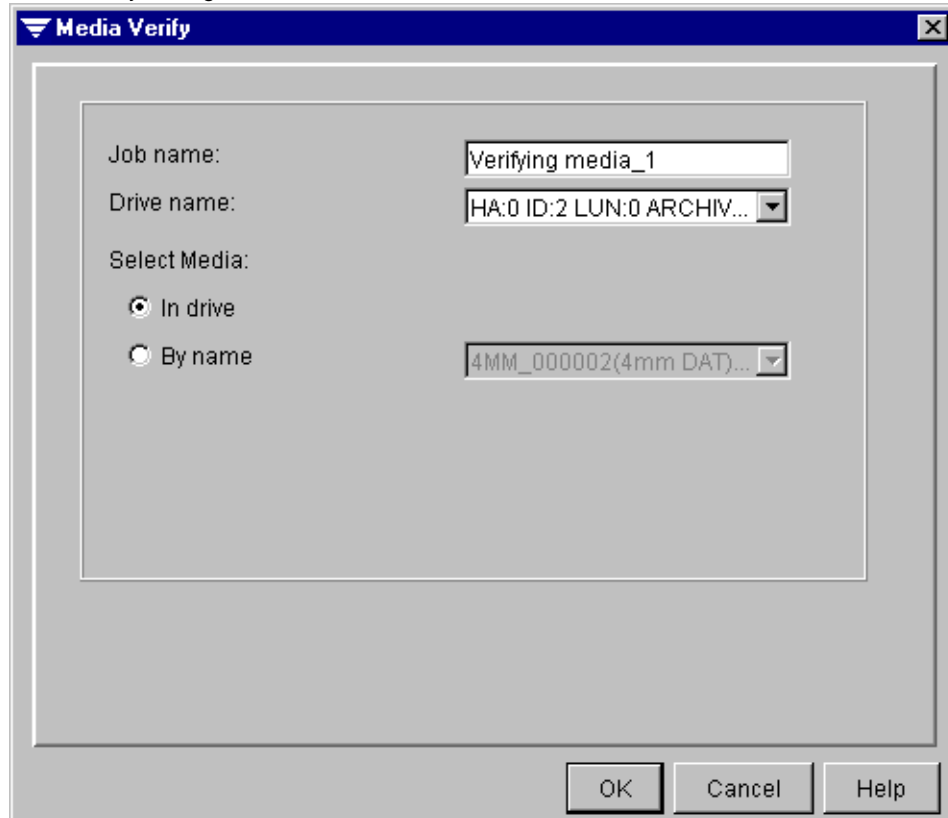
You can monitor or cancel a verify job from the Administration Console’s **Jobs** node or from the Administration Console for NetWare’s **Administration** menu (see “[Monitoring Jobs](#)” on page 175).



## Media Verify Options

The Media Verify dialog box appears when creating a verify job.

Media Verify Dialog Box



This dialog box includes the following options:

- ◆ **Job name.** Enter a name for this job or accept the default name provided by Backup Exec.
- ◆ **Drive name.** Select the drive where the media on which you are running a verify operation resides.
- ◆ **In robot slot, In drive or In partition.** Select this option if you know the robot slot, drive (media management mode) or partition (partition management mode) in which the media resides. Select this option to perform a verify on the media in the drive appearing in the **Drive name** option.
- ◆ **By name.** Select this option and then select the name of the media you are verifying if you want to run a verify operation on a specific media.



## Scan for Devices

Use **Scan for Devices** to have Backup Exec scan for all devices connected to the media server.

▼ **To scan for devices:**

1. From the Administration Console, click **Tools**.  
From the Administration Console for NetWare, select **Drives**.

2. Select **Scan for Devices**.

---

**Tip** From the Administration Console, you can also right-click **Drives** and click **Scan for Devices**.

---

A message appears when the scan is complete, notifying you if the scan found any device changes.

3. From the Administration Console, click **OK**.  
From the Administration Console for NetWare, press any key to exit the message screen.



## Viewing Drive Properties and Statistics

Backup Exec provides general, configuration, SCSI Information, statistical, and cleaning details on each drive connected to the media server. The drive Properties dialog box also allows you to:

- ◆ Pause or resume a drive (see [“Pausing and Resuming a Drive”](#) on page 326).
- ◆ Enable or disable a drive for Backup Exec (see [“Enabling and Disabling a Drive for Use with Backup Exec”](#) on page 327).
- ◆ Change the preferred block size configuration (see [“Changing Preferred Configuration Settings for a Drive”](#) on page 328).
- ◆ Change the preferred compression method for the drive.

---

**Caution** Preferred Configuration settings are used to tune the performance of backup and restore operations. Changing these settings is not generally recommended and may have a negative effect on your backup, restore, and system performance. Any changes should be thoroughly tested to ensure system performance does not deteriorate before being put into general use.

---

### ▼ To view device properties and statistics:

1. From the Administration Console, click **Drives**. Then, click either **All drives**, or click the server to which the drive is attached and select either **Stand-alone Drives** or **Robots**.

From the Administration Console for NetWare, select **Drives**, and then select either **Drive Pools**, **Robots**, or **Stand-alone Drives**.

2. Locate the drive you want to view information on.
3. From the Administration Console, right-click the drive, and then click **Properties**.

From the Administration Console for NetWare, press <F4>.

The Properties dialog box contains five tabs or dialog boxes:

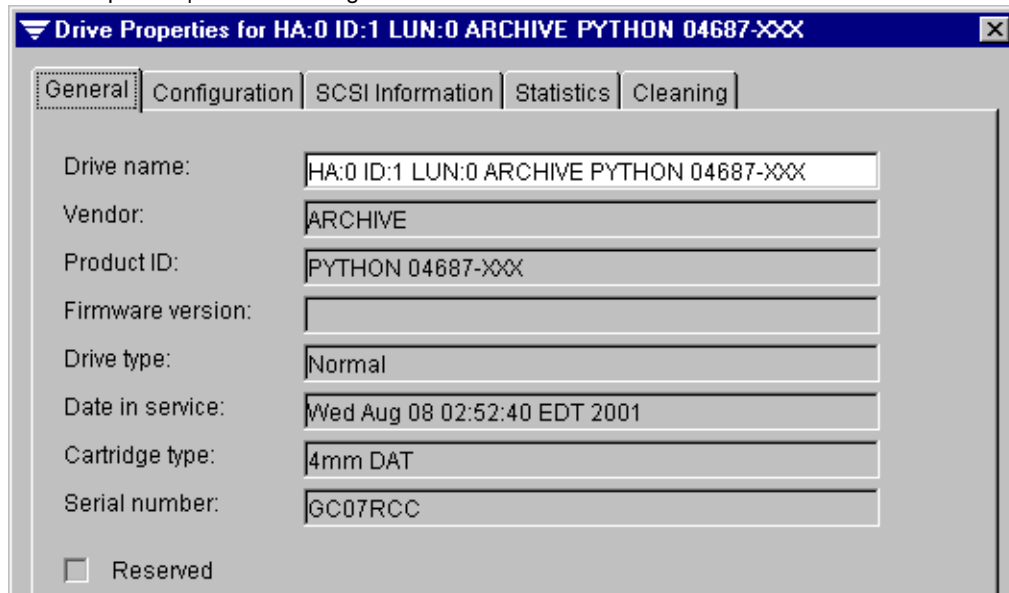
- General (see [“General Dialog Box for Drive Properties”](#) on page 320)
- Configuration (see [“Configuration Dialog Box for Drive Properties”](#) on page 321)
- SCSI Information (see [“SCSI Information Dialog Box for Drive Properties”](#) on page 322)
- Statistics (see [“Statistics Dialog Box for Drive Properties”](#) on page 323)
- Cleaning (see [“Cleaning Dialog Box for Drive Properties”](#) on page 324)



## General Dialog Box for Drive Properties

The **General** dialog box for a drive appears when viewing drive properties.

Drive Properties | General Dialog Box



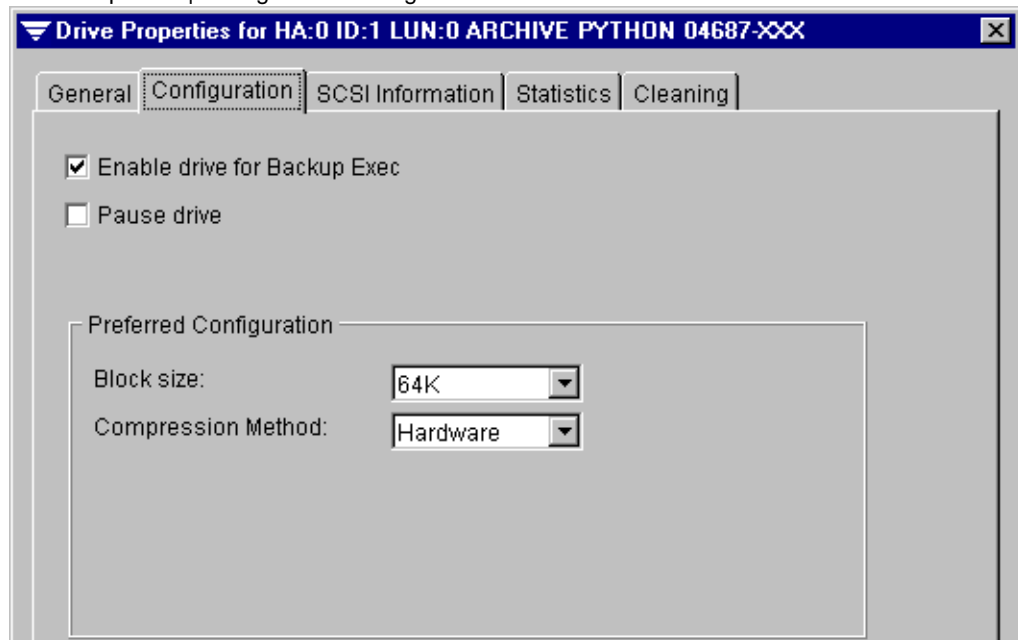
This dialog box allows you to view:

- ◆ **Drive name.** The name of the drive for which you are viewing properties. You can change the name of the drive through this **Properties** dialog box.
- ◆ **Vendor.** The name of the vendor for the drive.
- ◆ **Product ID.** The brand name and version.
- ◆ **Firmware version.** The version of firmware used in the drive.
- ◆ **Drive Type.** Displays either Normal, Cascaded, or Mirrored, depending on the type of drive pool the drive is in.
- ◆ **Date in service.** The date this drive was first detected by this installation of Backup Exec.
- ◆ **Cartridge type.** The type of media used by this drive.
- ◆ **Serial number.** The serial number of the drive. Not all drives have serial numbers, so this field may appear blank.
- ◆ **Reserved.** This option will only be selected if you are using this drive in a shared storage environment and the drive is being reserved. You cannot manually select or clear this option.

## Configuration Dialog Box for Drive Properties

The Configuration dialog box for a drive allows you to set some configurations for using this drive with Backup Exec and to pause the drive.

Drive Properties | Configuration Dialog Box



This dialog box contains the following options:

- ◆ **Enable drive for Backup Exec.** This option must be selected for Backup Exec to use this drive. Clear this box to disable the drive for use by Backup Exec and to allow it to be available for other applications.
- ◆ **Pause drive.** Select this option to pause the drive. To resume the drive, clear the box. For more information about pausing and resuming drives, see [“Pausing and Resuming a Drive”](#) on page 326.
- ◆ **Block size.** The preferred size of the blocks of data written to new media in this device. You can change the block size by selecting another size from the scroll list. For more information about changing block size, see [“Changing Preferred Configuration Settings for a Drive”](#) on page 328.
- ◆ **Compression method.** The preferred data compression method to use. Options include:
  - **None.** No data compression will be performed.
  - **Hardware.** Hardware compression will be performed.



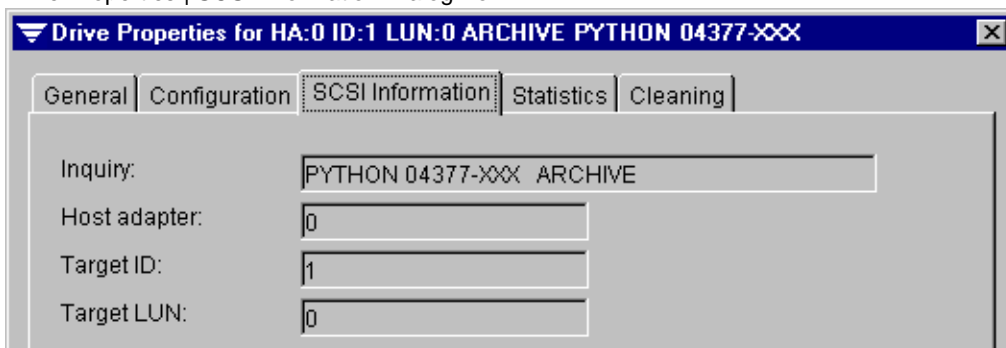
- **Software.** Use the software data compression included with Backup Exec.

**Note** All drives in a robot or in a partition must use the same compression method. Also, all drives in a mirrored or cascaded drive pool must use the same setting.

## SCSI Information Dialog Box for Drive Properties

The SCSI Information dialog box for a drive appears when viewing drive properties.

Drive Properties | SCSI Information Dialog Box



This dialog contains the following information:

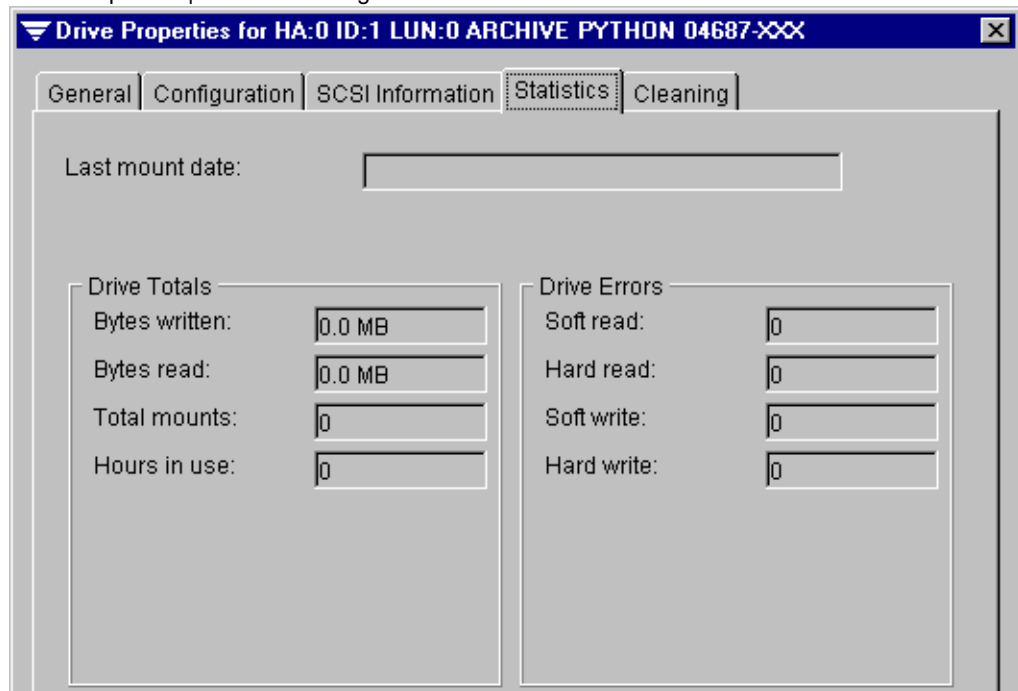
- ◆ **Inquiry.** The drive information read from the device firmware.
- ◆ **Host adapter.** The operating system's reference number for the SCSI controller.
- ◆ **Target ID.** Unique SCSI ID number (physical unit number).
- ◆ **Target LUN.** Logical Unit Number of the drive.

## Statistics Dialog Box for Drive Properties

The Statistics dialog box for a drive provides the date the drive was last mounted, drive totals such as the total number of bytes written and read, and drive errors. Error rates are affected by media, head cleaning, and head wear.

The documentation included with your drive should list the acceptable limits for hard and soft errors; if not, check with the hardware manufacturer.

Drive Properties | Statistics Dialog Box



The fields on the Statistics dialog box include:

- ◆ **Last mount date.** Last date that the media was mounted by this drive.
- ◆ **Bytes written.** Number of bytes that have been written by this drive.
- ◆ **Bytes read.** Number of bytes that have been read by this drive.
- ◆ **Total mounts.** Number of times media has been mounted by this drive.
- ◆ **Hours in use.** Total number of hours that this drive has been in use (performing read, write, mount, and seek operations).
- ◆ **Soft read.** Number of recoverable read errors encountered.
- ◆ **Hard read.** Number of unrecoverable read errors encountered.
- ◆ **Soft write.** Number of recoverable write errors encountered.



- ◆ **Hard write.** Number of unrecoverable write errors encountered.

Soft errors may indicate the beginning of a problem. If you receive excessive soft errors for your environment, or if you receive hard errors:

- ◆ Check the drive.
- ◆ Perform maintenance on the drive.
- ◆ Check the media for damage.

## Cleaning Dialog Box for Drive Properties

The Cleaning dialog box for a drive provides statistics on totals and errors since the last cleaning. The documentation included with your drive should list the acceptable limits for hard and soft errors; if not, check with the hardware manufacturer.

Drive Properties | Cleaning Dialog Box

The screenshot shows a window titled "Drive Properties for HA:0 ID:1 LUN:0 ARCHIVE PYTHON 04687-XXX". The "Cleaning" tab is selected. It contains the following fields:

- Last cleaning date: [Empty text box]
- Hours since last cleaning: [Empty text box]
- Total**
  - Bytes written: [0.0 MB]
  - Bytes read: [0.0 MB]
  - Total mounts: [0]
  - Hours in use: [0]
- Errors**
  - Soft read: [0]
  - Hard read: [0]
  - Soft write: [0]
  - Hard write: [0]

**Note** Standalone drives will not have this data reset after a cleaning; cleaning jobs run only on loaders (see “Cleaning the Device” on page 304).

The Cleaning dialog box provides the following information:

- ◆ **Last cleaning date.** Last time a cleaning operation was performed on the drive.

- ◆ **Hours since last cleaning.** Number of hours that the drive has been in use since the last cleaning.
- ◆ **Bytes written.** Number of bytes that have been written by this drive since the last cleaning.
- ◆ **Bytes read.** Number of bytes that have been read by this drive since the last cleaning.
- ◆ **Total mounts.** Number of times media has been mounted by this drive since the last cleaning.
- ◆ **Hours in use.** Number of hours that this drive has been in use (performing read, write, mount, and seek operations) since the last cleaning.
- ◆ **Soft read.** Number of recoverable read errors encountered since the last cleaning.
- ◆ **Hard read.** Number of unrecoverable read errors encountered since the last cleaning.
- ◆ **Soft write.** Number of recoverable write errors encountered since the last cleaning.
- ◆ **Hard write.** Number of unrecoverable write errors encountered since the last cleaning.

Soft errors may indicate the beginning of a problem. If you receive excessive soft errors for your environment, or if you receive hard errors:

- ◆ Check the drive.
- ◆ Perform maintenance on the drive.
- ◆ Check the media for damage.



## Pausing and Resuming a Drive

You may need to pause a drive while performing maintenance such as changing a hardware component or manually cleaning the drive with a cleaning tape. If a job is running on the drive when you pause it, the job will complete before the drive is paused. If you pause a drive in a cascaded or mirrored drive pool, then all drives in that pool are paused.

### ▼ To pause a drive:

1. From the Administration Console, click **Drives**. Then, click either **All drives**, or click the server to which the drive is attached and select either **Stand-alone Drives** or **Robots**.

From the Administration Console for NetWare, select **Drives**, and then select either **Drive Pools**, **Robots**, or **Stand-alone Drives**.

2. Locate the drive you want to pause.
3. From the Administration Console:
  - a. Right-click the drive and click **Properties**.
  - b. From the **Configuration** tab, click **Pause**.

From the Administration Console for NetWare:

- a. Select the drive.
- b. Press <Ctrl + P>.

The device remains paused until you resume it.

A drive that has been paused remains in that state, and jobs that were scheduled to run on the drive will not run until you resume the drive.

### ▼ To resume a drive:

1. From the Administration Console, click **Drives**. Then, click either **All drives**, or click the server to which the drive is attached and select either **Stand-alone Drives** or **Robots**.

From the Administration Console for NetWare, select **Drives**, and then select either **Drive Pools**, **Robots**, or **Stand-alone Drives**.

2. Locate the drive you want to resume.



3. From the Administration Console:
  - a. Right-click the drive and click **Properties**.
  - b. From the **Configuration** tab, click **Pause drive** to remove the check mark.

From the Administration Console for NetWare:

- a. Select the drive.
- b. Press <Ctrl + P>.

## Enabling and Disabling a Drive for Use with Backup Exec

You can enable or disable a drive for Backup Exec through the drive's **Properties**, or from the **Enable/Disable** options available.

### ▼ To enable or disable a drive:

1. From the Administration Console, click **Drives**. Then, click either **All drives**, or click the server to which the drive is attached and select either **Stand-alone Drives** or **Robots**.

From the Administration Console for NetWare, select **Drives**, and then select either **Drive Pools**, **Robots**, or **Stand-alone Drives**.

2. Locate the drive you want to enable or disable.
3. From the Administration Console either right-click the drive and click **Enable** or **Disable**, or:
  - a. Right-click the drive and click **Properties**.
  - b. From the **Configuration** tab, click **Enable drive for Backup Exec** to enable the drive; clear this selection to disable the drive.
  - c. Click **OK**.

---

**Note** If the drive is enabled, the option **Disable** appears in the menu. The option **Enable** appears only if the drive has been disabled.

---



From the Administration Console for NetWare either select the drive from any drive list and press <Ctrl + E>, or:

- a. Select the drive.
- b. Press <F4>.
- c. Select **Configuration**, and press <Enter>.
- d. Select **Enable drive for Backup Exec** to enable a drive; clear this selection to disable the drive.
- e. Press <F2>.

If the drive is enabled, a check mark or X appears next to the **Enable drive for Backup Exec** option. To disable a drive, click the option from the Administration Console to remove the check mark, or from the Administration Console for NetWare, press <Spacebar>. If a drive is disabled for Backup Exec, scheduled jobs will not run on that drive and the drive will be unavailable when creating new jobs.

## Changing Preferred Configuration Settings for a Drive

You can change the preferred size of the blocks of data written to new media by a drive and the compression method through the drive's **Properties**.

### ▼ To change the preferred configuration for a drive:

1. From the Administration Console, click **Drives**. Then, click either **All drives**, or click the server to which the drive is attached and select either **Stand-alone Drives** or **Robots**.

From the Administration Console for NetWare, select **Drives**, and then select either **Drive Pools**, **Robots**, or **Stand-alone Drives**.

2. Locate the drive for which you want to change the preferred configurations.
3. From the Administration Console:
  - a. Right-click the drive and click **Properties**.
  - b. From the **Configuration** tab, select the preferred **Block size** and **Compression method**.
  - c. Click **OK**.

From the Administration Console for NetWare:



- a. Select the drive.
- b. Press <F4>.
- c. Select **Configuration**, and press <Enter>.
- d. Select the preferred **Block size** and **Compression method**.
- e. Press <F2>.

## Performing Drive Pool Operations

Groupings of drives for Backup Exec operations are called drive pools. Drives can belong to more than one drive pool, and except for cascaded or mirrored drive pools, can contain different types of drives, including specific drives in a library.

When you submit a job to a drive pool, the job is automatically sent to the least recently used storage device in that pool. As other jobs are created and started, they can run concurrently on other storage devices in the drive pool (except for cascaded and mirrored drive pools), allowing jobs to process quickly and efficiently.

You can submit jobs to a specific drive in a drive pool. However, if that drive is busy, the job is not automatically routed to another available drive but instead must wait until the specified drive becomes available.

### Related Topics:

[“Using Cascaded Drive Pools”](#) on page 337

[“Using Mirrored Drive Pools”](#) on page 343

The following table lists the available drive pool operations and where to find detailed information about each operation.

<b>For information on:</b>	<b>See:</b>
Creating a drive pool	<a href="#">“Creating Drive Pools”</a> on page 330
Adding a drive to an existing drive pool	<a href="#">“Adding Drives to a Drive Pool”</a> on page 332
Renaming a drive pool	<a href="#">“Renaming Drive Pools”</a> on page 334
Deleting a drive from a drive pool	<a href="#">“Deleting Drives from a Drive Pool”</a> on page 334
Deleting a drive pool	<a href="#">“Deleting Drive Pools”</a> on page 335



## Creating Drive Pools

You can place any stand-alone drives and any drives in robots into a drive pool unless the drive is in a cascaded drive pool (see [“Using Cascaded Drive Pools”](#) on page 337) or mirrored drive pool (see [“Using Mirrored Drive Pools”](#) on page 343).

You can create a drive pool from the Administration Console using the Drive Pool Wizard or from either the Administration Console or the Administration Console for NetWare using a series of dialog boxes.

---

**Note** The Drive Pool Wizard is only available from the Administration Console.

---

### ▼ To run the Drive Pool Wizard:

1. From the Administration Console, click **Tools**.
2. Point to **Wizards**, and then click **Launch the Drive Pool Wizard**.

---

**Tip** You can also launch the wizard by clicking the wizard icon from the toolbar (see [“Using the Toolbar and Menu Bar”](#) on page 9) or from the taskbar (see [“The Backup Exec Assistant and Wizards”](#) on page 23).

---

3. Follow the on-screen instructions to complete the wizard.

### ▼ To create a drive pool without using the wizard:

1. From the Administration Console, click **Drives**, right-click **Drive Pools**, and then click **New Drive Pool**.

From the Administration Console for NetWare, select **Drives**, select **Drive Pools**, and then press <Ins>.

2. From the New Normal Drive Pool dialog box that appears in the Administration Console, select the options you want, and then click **OK**. Options are described in [“New Normal Drive Pool Dialog Box”](#) on page 331.

From the Administration Console for NetWare:

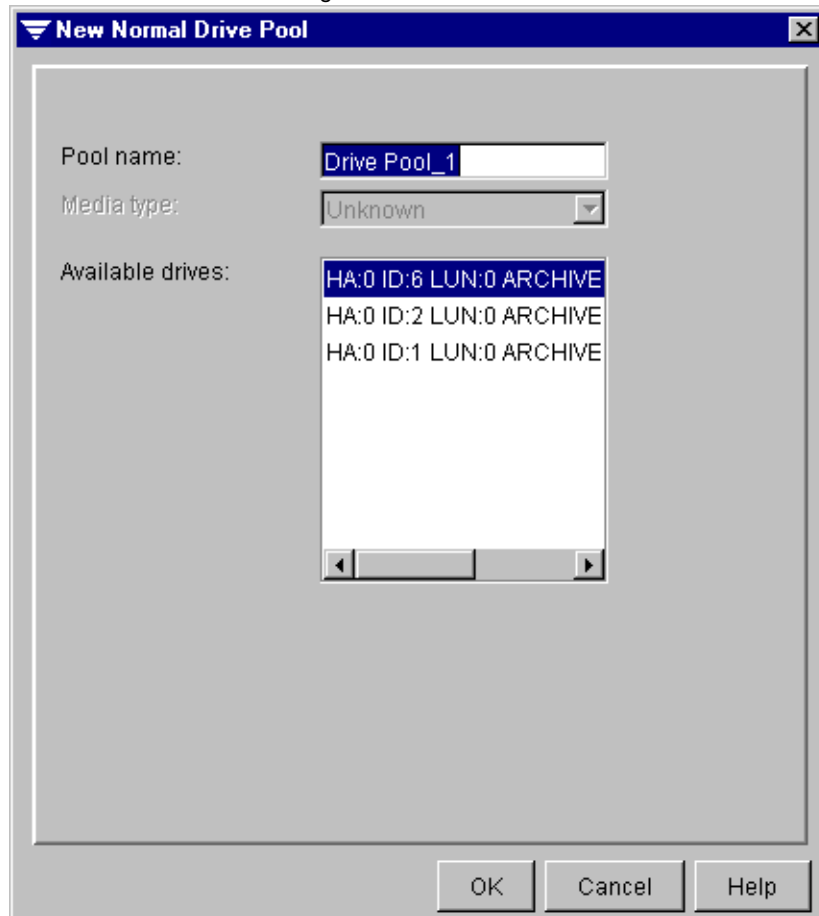
- a. Enter **Drive pool name**, and ensure **Normal** is selected as the **Drive pool type**.
- b. Press <F2>.
- c. Use <Spacebar> to select drives from the **Available Drives** list that you want to have in this drive pool, and then press <Enter>.

The new drive pool appears under the **Drive Pools** subnode in the Administration Console and the Drives Pool dialog box on the Administration Console for NetWare.

## New Normal Drive Pool Dialog Box

The New Normal Drive Pool dialog box allows you to name the drive pool and select the drive that will be in the drive pool.

New Normal Drive Pool Dialog Box



This dialog box contains the following options:

- ◆ **Pool name.** Enter the name for this new drive pool.
- ◆ **Media type.** This option is unavailable when creating a normal drive pool.
- ◆ **Available drives.** Displays a list of drives that can be added to this drive pool.



## Adding Drives to a Drive Pool

You can add a drive to an existing drive pool from either the Administration Console or the Administration Console for NetWare.

Drives that are in a cascaded or mirrored drive pool are not available to be placed in another drive pool.

### ▼ To add a drive to a drive pool from the Administration Console:

1. Click **Drives**.
2. Click **Drive Pools**.
3. Right-click the drive pool to which you want to add a drive.
4. Click **Add Drive**.
5. Select the drive or drives from the list of available drives, and then press <Enter>.
6. Click **OK**.

### ▼ To add a drive to a drive pool from the Administration Console for NetWare:

1. Select **Drives**.
2. Select **Drive Pools**.
3. Select the drive pool to which you want to add a drive and press <Enter>.
4. Press <Ins>.
5. Use <Spacebar> to select a drive or drives from the list of available drives, and then press <Enter>.

## Moving Drives

You can move a drive from one drive pool to another by using the **Move Drive** option available through the Administration Console.

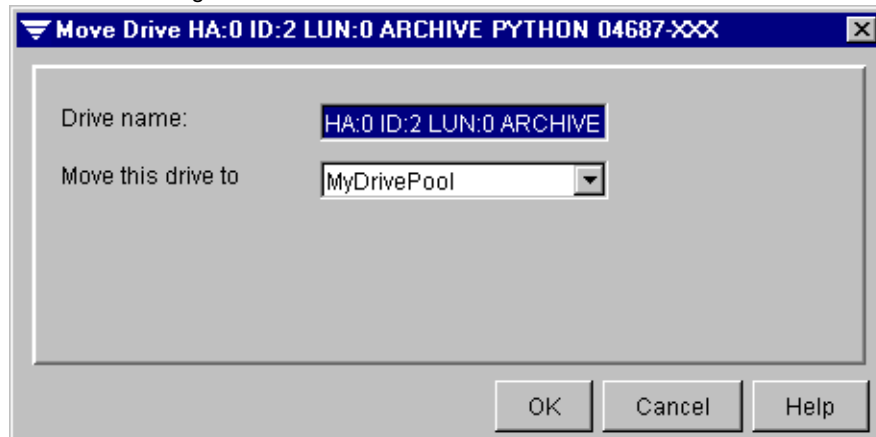
### ▼ To move a drive:

1. From the Administration Console, click **Drives**.
2. Click **Drive Pools**.
3. Click the drive pool containing the drive you want to move.
4. Right-click the drive you want to move, and then click **Move Drive**.
5. Complete the options on the Move Drive dialog box (see ), and then click **OK**.

### Move Drive Dialog Box

The Move Drive dialog box allows you to move a drive from one drive pool to another.

Move Drive Dialog Box



This dialog box contains the following options:

- ◆ **Drive name.** Displays the name of the drive to be moved.
- ◆ **Move this drive to.** Select the drive pool to which this drive is to be moved.



## Renaming Drive Pools

You can assign a new name to a drive pool from either the Administration Console or the Administration Console for NetWare using the Drive Pool Properties dialog box (see “[Viewing Drive Pool Properties](#)” on page 336). From the Administration Console, you can also rename a drive pool by using the **Rename** option.

### ▼ To rename a drive pool:

1. From the Administration Console, click **Drives**, click **Drive Pools**, right-click the drive pool you want to rename, and then click **Properties**.

From the Administration Console for NetWare, select **Drives**, select **Drive Pools**, select the drive pool you want to rename, and then press <F4>.

2. Type the new name of the drive pool in the **Drive pool name** option.

---

**Tip** To rename the drive pool from the Administration Console, you can also click **Drives**, click **Drive Pools**, right-click the drive pool you want to rename, and then click **Rename**. Enter the new name on the Rename Drive Pool dialog box.

---

The new drive pool name will now appear in place of the old in the **Drive Pools** list as well as in any policies or jobs that were created with the old drive pool name.

## Deleting Drives from a Drive Pool

You can remove a drive from a drive pool from either the Administration Console or the Administration Console for NetWare. The drive will be deleted from the drive pool only, not from the Backup Exec device database.

### ▼ To delete a drive from a drive pool using the Administration Console:

1. From the Administration Console, click **Drives**.
2. Click **Drive Pools**.
3. Click the drive pool containing the drive you want to delete.
4. Right-click the drive, and then click **Remove from Pool**.
5. Click **OK**.



---

▼ **To delete a drive from a drive pool using the Administration Console for NetWare:**

1. Select **Drives**.
2. Select **Drive Pools**.
3. Select the drive pool from which you want to remove a drive and press <Enter>.
4. Select the drive or drives you want to remove, and then press <Del>.
5. When prompted, press <Y>, or if deleting multiple drives, press <A>.

## Deleting Drive Pools

Use **Delete** to remove a drive pool from the Backup Exec database. You *must* delete all drives from a drive pool before you delete that pool. If there are scheduled jobs assigned to the drive pool being deleted, you are prompted to redirect them to another drive pool.

▼ **To delete a drive pool using the Administration Console:**

1. From the Administration Console, click **Drives**.
2. Click **Drive Pools**.
3. Right-click the drive pool you want to delete.
4. Click **Delete**.

---

**Note** If there are drives in the drive pool, the **Delete** option will be unavailable. For information on deleting drives from a drive pool, see [“Renaming Drive Pools”](#) on page 334.

---

▼ **To delete a drive pool using the Administration Console for NetWare:**

1. Select **Drives**.
2. Select **Drive Pools**.
3. Select the drive pool you want to delete, and then press <Del>.
4. When prompted, press <Y>.



## Viewing Drive Pool Properties

Use **Properties** to view information on a drive pool or to rename the drive pool.

### ▼ To view properties for a drive pool:

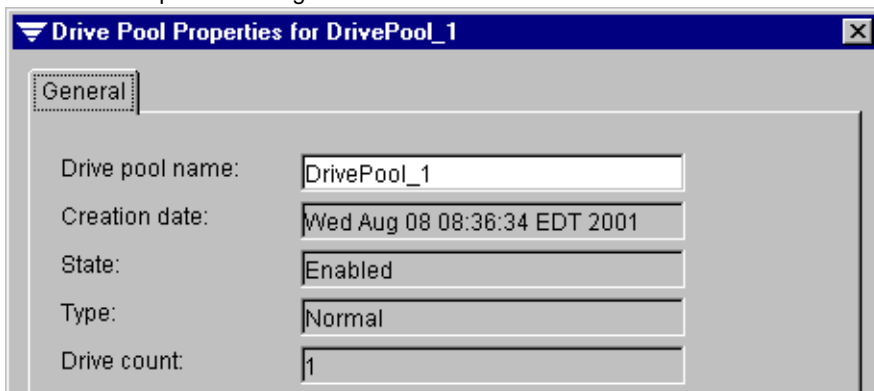
- ❖ From the Administration Console, click **Drives**, click **Drive Pools**, right-click the drive pool you want to view properties of, and then click **Properties**.

From the Administration Console for NetWare, select **Drives**, select **Drive Pools**, select the drive pool for which you want to view properties, and then press <F4>.

## Drive Pool Properties Dialog Box

The Properties dialog box for a drive pool displays information about the drive pool.

Drive Pool Properties Dialog Box



This dialog box includes the following options:

- ◆ **Drive pool name.** Displays the name of this drive pool. You can rename the drive pool by entering a new name here.
- ◆ **Creation date.** Displays the date this drive pool was created.
- ◆ **State.** Displays if the drive pool is enabled or mismatched. A mismatched state exists if a mirrored or cascaded drive pool was created using drives of different media types.
- ◆ **Type.** Displays the type of drive pool. Types include:
  - **Normal** (see [“Performing Drive Pool Operations”](#) on page 329)
  - **Cascaded** (see [“Using Cascaded Drive Pools”](#) on page 337)
  - **Mirrored** (see [“Using Mirrored Drive Pools”](#) on page 343)
- ◆ **Drive count.** Displays the number of drives in this drive pool.

## Using Cascaded Drive Pools

You can cascade or chain multiple stand-alone drives residing on the media server together to create one logical drive. Drives in a cascaded drive pool are not available for concurrent processing; only one drive is used at a time.

Although multiple drives are linked to form the cascaded drive pool, only the name of the cascaded drive pool is listed as the **Destination Drive** when a job is created. A job sent to a cascaded drive pool will begin processing on the first drive in the pool, unless the job requires a different media than the media residing in the first drive. If the job fills the media in the first drive, it automatically continues on the next drive.

Use cascaded drive pools to run unattended backup jobs or to ensure that a large backup job completes without operator intervention. You may also use cascaded drive pools if you want data from a job or group of jobs to reside on the same media family.

### Requirements for Cascaded Drive Pools

To create a cascaded drive pool, the drives must be:

- ◆ Attached to the same media server.
- ◆ The same *drive type*, meaning the drives must be from the same vendor and have the same product ID.
- ◆ Stand-alone drives; robotic drives cannot be used to create a cascaded drive pool.

The firmware on the drives does *not* need to match. You can determine a device's drive through the drive's **Properties** (see "[Viewing Drive Properties and Statistics](#)" on page 319).

---

**Caution** If a drive that does not support hardware compression is added to a cascaded drive pool, the hardware compression option on all other drives in that pool is automatically disabled.

---

### Creating a Cascaded Drive Pool

When you select drives for a cascaded drive pool, only drives of the same drive type are displayed for selection. The first drive you select to include in the cascaded drive pool is the first drive to which a job is submitted. If the job fills the media in that drive, it will continue on the next drive in the cascaded drive pool.

If you select multiple drives at the same time, the drives are added to the cascaded pool in the order shown in the list box and are used in the cascaded drive pool in that same order. You can reorder the drives by deleting them from the cascaded drive pool, and then reselecting drives in the order that you want them used.



You can create a cascaded drive pool from the Administration Console using the Cascaded Drive Pool Wizard or from either the Administration Console or the Administration Console for NetWare using a series of dialog boxes.

---

**Note** The Cascaded Drive Pool Wizard is only available from the Administration Console.

---

▼ **To run the Cascaded Drive Pool Wizard:**

1. From the Administration Console, click **Tools**.
2. Point to **Wizards**, and then click **Launch the Cascaded Drive Pool Wizard**.

---

**Tip** You can also launch the wizard by clicking the wizard icon from the toolbar (see “[Using the Toolbar and Menu Bar](#)” on page 9) or from the taskbar (see “[The Backup Exec Assistant and Wizards](#)” on page 23).

---

3. Follow the on-screen instructions to complete the wizard.

▼ **To create a cascaded drive pool without using the wizard:**

1. From the Administration Console, click **Drives**, click the server you are creating the cascaded drive pool for, right-click **Cascaded Drive Pools**, and then click **New Cascaded Drive Pool**.

From the Administration Console for NetWare, select **Drives**, select **Drive Pools**, and then press <Ins>.

2. From the New Cascaded Drive Pool dialog box that appears in the Administration Console, select the options you want, and then click **OK**. Options for this dialog are described in “[New Cascaded Drive Pool Dialog Box](#)” on page 339.

From the Administration Console for NetWare:

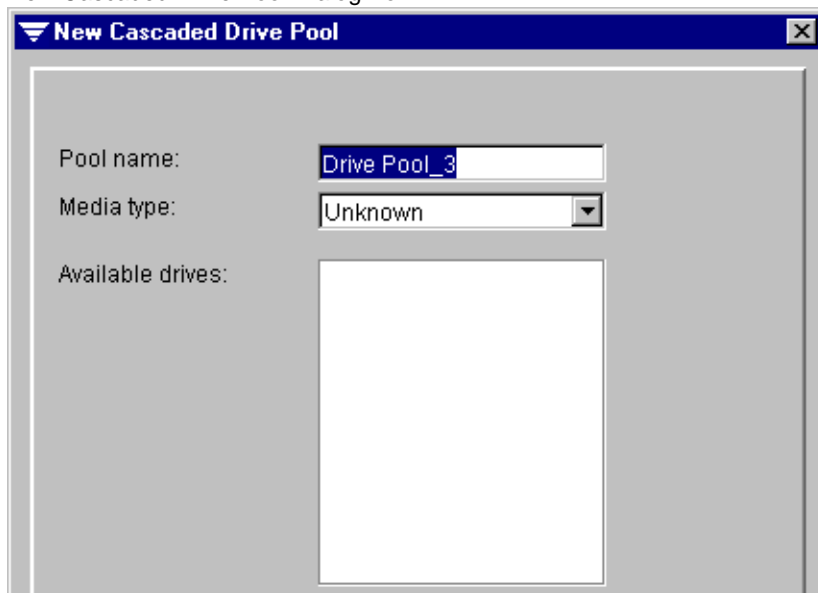
- a. Enter **Drive pool name**, and ensure **Cascaded** is selected as the **Drive pool type**.
- b. Select the media type.
- c. Press <F2>.
- d. Use <Spacebar> to select drives from the **Available Drives** list that you want to have in this drive pool, and then press <Enter>.

The new cascaded drive pool appears under the **Cascaded Drive Pools** subnode for the server in the Administration Console and the Drives Pool dialog box on the Administration Console for NetWare.

### New Cascaded Drive Pool Dialog Box

The New Cascaded Drive Pool dialog box is similar to the New Normal Drive Pool and New Mirror Drive Pool dialog boxes.

New Cascaded Drive Pool Dialog Box



This dialog box contains the following options:

- ◆ **Pool name.** Enter the name for this new cascaded drive pool.
- ◆ **Media type.** Select the type of media to be used by this cascaded drive pool.
- ◆ **Available drives.** After the type of media is selected, this field displays a list of drives that can be added to this drive pool.



## Adding Drives to a Cascaded Drive Pool

You can add drives to an existing cascaded drive pool from either the Administration Console or the Administration Console for NetWare.

### ▼ To add a drive to a cascaded drive pool from the Administration Console:

1. Click **Drives**.
2. Click the server containing the cascaded drive pool.
3. Click **Cascaded Drive Pools**.
4. Right-click the drive pool to which you want to add a drive.
5. Click **Add Drive**.
6. Select the drive or drives from the list of available drives, and then press <Enter>.
7. Click **OK**.

### ▼ To add a drive to a cascaded drive pool from the Administration Console for NetWare:

1. Select **Drives**.
2. Select **Drive Pools**.
3. Select the drive pool to which you want to add a drive and press <Enter>.
4. Press <Ins>.
5. Use <Spacebar> to select a drive or drives from the list of available drives, and then press <Enter>.

## Renaming a Cascaded Drive Pool

You can assign a new name to a cascaded drive pool from either the Administration Console or the Administration Console for NetWare using the Drive Pool Properties dialog box (see “[Viewing Drive Pool Properties](#)” on page 336). From the Administration Console, you can also rename a drive pool by using the **Rename** option.

### ▼ To rename a cascaded drive pool:

1. From the Administration Console, click **Drives**, click the server containing the cascaded drive pool, select **Cascaded Drive Pools**, right-click the drive pool you want to rename, and then click **Properties**.

From the Administration Console for NetWare, select **Drives**, select **Drive Pools**, select the cascaded drive pool you want to rename, and then press <F4>.

2. Type the new name of the drive pool in the **Drive pool name** option.

---

**Tip** To rename the drive pool from the Administration Console, you can also click **Drives**, and click the server containing the cascaded drive pool. Then, right-click the drive pool you want to rename, and click **Rename**. Enter the new name on the Rename Drive Pool dialog box.

---

The new drive pool name will now appear in place of the old in the **Cascaded Drive Pools** list as well as in any policies or jobs that were created with the old drive pool name.

## Deleting Drives from a Cascaded Drive Pool

You can remove a drive from a cascaded drive pool using either the Administration Console or the Administration Console for NetWare.

---

**Note** You *must* delete all drives from a cascaded drive pool before you can delete the pool.

---

### ▼ To delete a drive from a cascaded drive pool:

1. From the Administration Console, click **Drives**, click the server containing the cascaded drive pool, and then click **Cascaded Drive Pools**.

From the Administration Console for NetWare, select **Drives**, and then select **Drive Pools**.

2. From the Administration Console:



- a. Click the cascaded drive pool containing the drive being deleted.
- b. Right-click the drive you want to delete, and then click **Remove from Pool**.

From the Administration Console for NetWare:

- a. Select the cascaded drive pool containing the drive you want to delete.
  - b. Press <Enter>.
  - c. Select the drive you want to delete, and then press <Del>.
3. Confirm that this is the drive you want to delete.

## Deleting a Cascaded Drive Pool

You must delete all drives from a cascaded drive pool before deleting the pool. If there are scheduled jobs assigned to the cascaded drive pool you are deleting, you are prompted to redirect them to another device or drive pool.

You can delete a cascaded drive pool using either the Administration Console or the Administration Console for NetWare.

### ▼ To delete a cascaded drive pool:

1. From the Administration Console, click **Drives**, click the server containing the cascaded drive pool you want to delete, and then click **Cascaded Drive Pools**.

From the Administration Console for NetWare, select **Drives**, and then select **Drive Pools**.

2. From the Administration Console, right-click the cascaded drive pool you want to delete, and then click **Delete**.

From the Administration Console for NetWare, select the cascaded drive pool you want to delete, and then press <Del>.

3. Confirm that you want to delete this cascaded drive pool.



## Viewing Drive Pool Properties for a Cascaded Drive Pool

Use **Properties** to view information on a drive pool or to rename the drive pool.

### ▼ To view properties for a drive pool:

- ❖ From the Administration Console, click **Drives**, click the server containing the cascaded drive pool, right-click the drive pool for which you want to view properties, and then click **Properties**.

From the Administration Console for NetWare, select **Drives**, select **Drive Pools**, select the drive pool you want to view properties of, and then press <F4>.

## Using Mirrored Drive Pools

Using mirrored drive pools allows you to make multiple copies of a media family without having to create multiple jobs. This mirroring allows easy creation of media for offsite storage and provides increased tolerance in case of drive failure.

### Creating a Mirrored Drive Pool

A mirrored drive pool can include two or more similar drives that are *bundled*, or grouped in such a way that they can be treated as a single drive. The drives must use the same type of media (for example, a DAT drive and an 8mm drive cannot be assigned to the same drive pool), and using drives of the same capacity and vendor is strongly recommended. There can be no chaining or cascading of drives in a bundled partition.

Exercise caution when bundling drives of different compression densities. For example, if you bundle DDS-1 and DDS-2 media devices, you should turn off hardware compression to ensure the data media created can be interchanged for restore purposes. Otherwise, since DDS-2 tapes that are hardware compressed cannot be read in DDS-1 drives, you may have to manually track which media set was inserted into which drive in the bundle.

---

**Note** The Mirrored Drive Pool feature does not support Quarter Inch Cartridge (QIC) drives that do not support logical block positioning. These drives usually have capacities of 2 GB or less. The Mirrored Drive Pool feature also does not support media libraries.

---

You can create a mirrored drive pool from the Administration Console using the Mirrored Drive Pool Wizard or from either the Administration Console or the Administration Console for NetWare using a series of dialog boxes.

---

**Note** The Mirrored Drive Pool Wizard is only available from the Administration Console.

---



▼ **To run the Mirrored Drive Pool Wizard:**

1. From the Administration Console, click **Tools**.
2. Point to **Wizards**, and then click **Launch the Mirrored Drive Pool Wizard**.

---

**Tip** You can also launch the wizard by clicking the wizard icon from the toolbar (see “[Using the Toolbar and Menu Bar](#)” on page 9) or from the taskbar (see “[The Backup Exec Assistant and Wizards](#)” on page 23).

---

3. Follow the on-screen instructions to complete the wizard.

▼ **To create a mirrored drive pool without using the wizard:**

1. From the Administration Console, click **Drives**, click the server you are creating the mirrored drive pool for, right-click **Mirrored Drive Pools**, and then click **New Mirrored Drive Pool**.

From the Administration Console for NetWare, select **Drives**, select **Drive Pools**, and then press <Ins>.

2. From the New Mirrored Drive Pool dialog box that appears in the Administration Console, select the options you want, and then click **OK**. Options for this dialog are described in “[New Mirrored Drive Pool Dialog Box](#)” on page 345.

From the Administration Console for NetWare:

- a. Enter **Drive pool name**, and ensure **Mirrored** is selected as the **Drive pool type**.
- b. Select the media type.
- c. Press <F2>.
- d. Use <Spacebar> to select drives from the **Available Drives** list that you want to have in this drive pool, and then press <Enter>.

The new mirrored drive pool appears under the **Mirrored Drive Pools** subnode for the server in the Administration Console and the Drives Pool dialog box on the Administration Console for NetWare.

### New Mirrored Drive Pool Dialog Box

The New Mirrored Drive Pool dialog box contains the following options:

- ◆ **Pool name.** Enter the name for this new mirrored drive pool.
- ◆ **Media type.** Select the type of media to be used by this mirrored drive pool.
- ◆ **Available drives.** After the type of media is selected, this field displays a list of drives that can be added to this drive pool.

### Adding Drives to a Mirrored Drive Pool

You can add drives to an existing mirrored drive pool from either the Administration Console or the Administration Console for NetWare.

#### ▼ To add a drive to a mirrored drive pool from the Administration Console:

1. Click **Drives**.
2. Click the server containing the mirrored drive pool.
3. Click **Mirrored Drive Pools**.
4. Right-click the drive pool to which you want to add a drive.
5. Click **Add Drive**.
6. Select the drive or drives from the list of available drives, and then press <Enter>.
7. Click **OK**.

#### ▼ To add a drive to a mirrored drive pool from the Administration Console for NetWare:

1. Select **Drives**.
2. Select **Drive Pools**.
3. Select the drive pool to which you want to add a drive and press <Enter>.
4. Press <Ins>.
5. Use <Spacebar> to select a drive or drives from the list of available drives, and then press <Enter>.



## Renaming a Mirrored Drive Pool

You can assign a new name to a mirrored drive pool from either the Administration Console or the Administration Console for NetWare using the Drive Pool Properties dialog box (see “[Viewing Drive Pool Properties](#)” on page 336). From the Administration Console, you can also rename a drive pool by using the **Rename** option.

### ▼ To rename a mirrored drive pool:

1. From the Administration Console, click **Drives**, click the server containing the mirrored drive pool, select **Mirrored Drive Pools**, right-click the drive pool, and then click **Properties**.

From the Administration Console for NetWare, select **Drives**, select **Drive Pools**, select the mirrored drive pool you want to rename, and then press <F4>.

2. Type the new name of the drive pool in the **Drive pool name** option.

---

**Tip** To rename the drive pool from the Administration Console, you can also click **Drives**, and click the server containing the mirrored drive pool. Then, right-click the drive pool you want to rename, and click **Rename**. Enter the new name on the Rename Drive Pool dialog box.

---

The new drive pool name will now appear in place of the old in the **Mirrored Drive Pools** list as well as in any policies or jobs that were created with the old drive pool name.

## Deleting Drives from a Mirrored Drive Pool

You can remove a drive from a mirrored drive pool using either the Administration Console or the Administration Console for NetWare.

---

**Note** You *must* delete all drives from a mirrored drive pool before you can delete the pool.

---

### ▼ To delete a drive from a mirrored drive pool:

1. From the Administration Console, click **Drives**, click the server containing the mirrored drive pool, and then click **Mirrored Drive Pools**.

From the Administration Console for NetWare, select **Drives**, and then select **Drive Pools**.

2. From the Administration Console:

- a. Click the mirrored drive pool containing the drive being deleted.
- b. Right-click the drive you want to delete, and then click **Remove from Pool**.

From the Administration Console for NetWare:

- a. Select the mirrored drive pool containing the drive you want to delete.
  - b. Press <Enter>.
  - c. Select the drive you want to delete, and then press <Del>.
3. Confirm that this is the drive you want to delete.

## Deleting a Mirrored Drive Pool

You must delete all drives from a mirrored drive pool before deleting the pool. If there are scheduled jobs assigned to the mirrored drive pool you are deleting, you are prompted to redirect them to another device or drive pool.

You can delete a mirrored drive pool using either the Administration Console or the Administration Console for NetWare.

### ▼ To delete a mirrored drive pool:

1. From the Administration Console, click **Drives**, click the server containing the mirrored drive pool you want to delete, and then click **Mirrored Drive Pools**.

From the Administration Console for NetWare, select **Drives**, and then select **Drive Pools**.

2. From the Administration Console, right-click the mirrored drive pool you want to delete, and then click **Delete**.

From the Administration Console for NetWare, select the mirrored drive pool you want to delete, and then press <Del>.

3. Confirm that you want to delete this mirrored drive pool.



## Viewing Drive Pool Properties for a Mirrored Drive Pool

Use **Properties** to view information on a mirrored drive pool or to rename the drive pool.

### ▼ To view properties for a mirrored drive pool:

1. From the Administration Console, click **Drives**, click the sever containing the mirrored drive pool, and then click **Mirrored Drive Pools**.

From the Administration Console for NetWare, select **Drives**, and then select **Drive Pools**.

2. Right-click the drive pool for which you want to view properties, and then click **Properties**.

From the Administration Console for NetWare, select **Drives**, select **Drive Pools**, select the drive pool you want to view properties of, and then press <F4>.

## Performing Utilities on Mirrored Drive Pools

One drive in the bundle, usually the drive with the lowest SCSI ID, is the *anchor* drive.

Erase and Inventory operations are performed on all drives sequentially. Restore, catalog, Quick Check, and verify operations are only performed on the anchor drive. However, if you select the **Verify after backup** option, all media in the bundle are verified simultaneously. During verification, each block read from each drive is compared to all of the others. If the blocks fail to match across all drives, then the verify after operation fails. You must then verify each media individually to determine which media contain usable data. For more information on the **Verify after backup** option, see “[Pre/Post Options for a Policy](#)” on page 95. For more information on utilities, see “[Performing Device Operations](#)” on page 300.

Media in the drive bundles should be identical during all media operations, and it is best to start with blank media in all drives. If the media are not identical, append backup operations will write only to media whose ID matches the media in the anchor drive. During the backup, you will be given the option to change the media that do not match that in the anchor drive or to continue the process without using the drive.

If the media are not identical, overwrite backup operations will go to all media, but the catalogs of the media that differ from the media in the anchor drive will not be automatically deleted. When the end of media is reached, all media in the partition must be changed. Having media with a large difference in capacity will result in wasted space on the media with the larger capacity.

If a drive other than the anchor drive fails, the job continues on the other drives in the mirrored drive pool, increasing the chance of at least one viable backup being created. For example, suppose you create a mirrored drive pool with four drives, and target a backup job to this pool. If a drive other than the anchor drive fails, you would still have three identical backups created on the remaining drives. If the anchor drive fails, the job fails.

If an error occurs during a backup on a drive in the bundle, backups will no longer be made to that drive until an overwrite job is performed, or the media are erased or replaced. The jobs will run to completion on the drives that did not error, and verify after and quick check operations, if selected, will be performed on media in those drives. However, the job status appears as failure, indicating that there is something wrong with either the drive that failed or the media in that drive. All backup jobs targeted to this bundle will end with a status of **Error** until the problem with the drive is resolved.

## Performing Partition Operations

When you install Backup Exec, you select whether your server will run in media management mode or partition management mode. In partition management mode, the tree pane of the Administration Console displays **Partitions** rather than **Drive Pools**.

For more information about using Backup Exec in partition management mode, see [“Media Management Mode vs. Partition Management Mode”](#) on page 286.

If you selected to install Backup Exec in partition management mode, Backup Exec automatically assigns each drive connected to the media server to its own partition.

---

**Note** Any errors reported when Backup Exec is started such as Device Driver Load Failure or Partition Management Conflict errors will generally be the result of changes in hardware, such as a loader replacing multiple media drives or faulty SCSI connections. If the error is not the result of a configuration change, check your hardware carefully to ensure everything is properly connected and powered on. Make sure the proper driver for your SCSI controller and the proper ASPI Manager are loaded. Use the Novell command **Scan for New Devices**.

---

Robots have one partition per drive and the slots are divided equally between the partitions; however, multi-drive support is only provided through the Library Expansion Option.

---

**Note** For multi-drive support, the Library Expansion Option must be purchased for each additional drive you want to support. For more information about robotic libraries and the Library Expansion Option, refer to [“Using the Library Expansion Option”](#) on page 481. If you are using multi-drive robots without the Library Expansion Option you will be repeatedly notified that Backup Exec has detected unlicensed robotic drives.

---



Partitions for robots will be automatically defined, but you must create the cleaning partition for robots with dedicated cleaning slots.

Backup Exec classifies a single-drive partition as a *Normal* partition. If you want to include more than one drive in some or all of your partitions, you must create either a *Mirrored* or *Cascaded* partition.

A mirrored partition can include two or more similar drives that are *bundled*, or grouped in such a way that they can be treated as a single drive. The drives must use the same type of media (for example, a DAT drive and an 8mm drive cannot be assigned to the same drive pool), and using drives of the same capacity and vendor is strongly recommended. There can be no chaining or cascading of drives in a bundled partition.

By creating a mirrored partition, you can make multiple copies of a media family without having to create multiple jobs. This mirroring allows easy creation of media for offsite storage and provides increased tolerance in case of drive failure.

Cascaded partitions allow you to group stand-alone drives together so jobs can span from one drive to the next when end of media is reached.

## Viewing Partitions

You can view information about partitions from the Administration Console's results pane or the Administration Console for NetWare's Partitions dialog box.

### ▼ To view partitions:

1. From either the Administration Console or the Administration Console for NetWare, select **Drives**.
2. Select **Partitions**.

Information appearing in the Administration Console's results pane is described in "[Results Pane View of Partitions](#)" on page 351.

Information appearing on the Administration Console for NetWare's Partitions dialog box is described in "[Partitions Dialog Box](#)" on page 351.



## Results Pane View of Partitions

A list of partitions and information about the partitions appears in the results pane of the Administration Console whenever Partitions is selected from the tree pane. You can select the information to appear by following procedures described in “Using the Results Pane” on page 21.

Results Pane View of Partitions

Partition Name	Number of Drives	Creation Date	First Slot	Last Slot
HA:0 ID:4 L...	1	6/19/01 9:5...	1	1
HA:0 ID:2 L...	0	6/20/01 3:0...	-1	-1
HA:0 ID:1 L...	0	6/20/01 3:0...	-1	-1

Default information appearing includes:

- ◆ **Partition Name.** Name of the partition.
- ◆ **Number of Drives.** Number of drives assigned to the partition.
- ◆ **Creation Date.** Date the partition was created.
- ◆ **First Slot.** First slot assigned to the partition.
- ◆ **Last Slot.** Last slot assigned to the partition.

## Partitions Dialog Box

From the Administration Console for NetWare, select **Drives**, and then select **Partitions** to view a list of all partitions for the media server.

Partition Dialog Box

Partitions		
Partition Name	Type	State
HA:0 ID:1 LUN:0 ARCHIVE PYTHON 0	Normal	Enabled
HA:0 ID:2 LUN:0 ARCHIVE PYTHON 0	Normal	Enabled
▶HA:0 ID:4 LUN:1 HP C1553A	Normal	Enabled

06/20/2001 04:31:57 AM

Information appearing on this dialog box includes:

- ◆ **Partition Name.** Name of the partition.
- ◆ **Type.** Type of partition, such as Normal.
- ◆ **State.** Displays **Enabled** if the partition is enabled for Backup Exec; otherwise, displays **Disabled**.



## Viewing Partition Properties

You can view information about a partition or redefine a partition through the **Properties** option.

### ▼ To view or redefine a partition's properties:

1. From either the Administration Console or the Administration Console for NetWare, select **Drives**.
2. Select **Partitions**.
3. From the Administration Console's results pane, right-click the partition, and then click **Properties**.

From the Administration Console for NetWare, select the partition, and then press <F4>.

Information about the Partition Properties dialog boxes is described in:

- "[General Dialog Box for Partition Properties](#)" on page 358
  - "[Configuration Dialog Box for Partition Properties](#)" on page 359
  - "[Advanced Configuration Dialog Box for Partition Properties](#)" on page 361
4. After viewing or making changes to the partition, click **OK** from the Administration Console, or from the Administration Console for NetWare, press <F2>.

## Deleting Partitions

Before you can create a new partition, you must first delete existing partitions that you want to re-define.

### ▼ To delete a partition from the Administration Console:

1. Click **Drives**.
2. Click **Partitions**.
3. Right-click the partition you want to delete, and click **Delete**.
4. When prompted, click **OK**.
5. Repeat step 3 and step 4 for each partition you want to delete.



▼ **To delete a partition from the Administration Console for NetWare:**

1. Select **Drives**.
2. Select **Partitions**.
3. Select the partition you want to delete, and press <Del>.
4. When prompted, press <Y>.
5. Repeat step 3 and step 4 for each partition you want to delete.

## Creating Partitions

Before you can create a new partition, you must have at least one available drive that can be included in the partition. Refer to “[Deleting Partitions](#)” on page 352 for steps on deleting any existing partitions.

▼ **To create a partition from the Administration Console:**

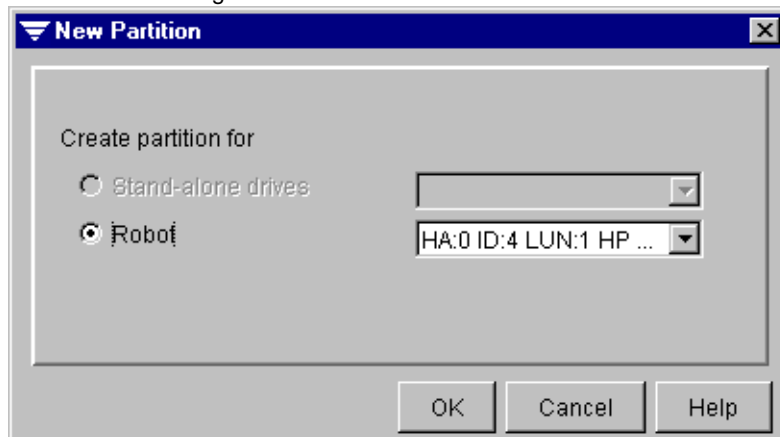
1. From the Administration Console, click **Drives**.
2. Right-click **Partitions**.
3. Click **New Partition**.
4. Enter options on the New Partition dialog box. Options are described in “[New Partition Dialog Box](#)” on page 354.
5. Click **OK**.
6. Enter options in the New Partition General dialog box. Options are described in “[New Partition General Dialog Box](#)” on page 354.
7. Enter options in the New Partition Configuration dialog box. Options are described in “[New Partition Configuration Dialog Box](#)” on page 355.
8. Click **OK**.



## New Partition Dialog Box

The New Partition dialog box appears when creating a partition from the Administration Console.

New Partition Dialog Box



This dialog box contains the following options:

- ◆ **Stand-alone drives.** Select this option if you are creating a partition for a stand-alone drive, and then select the drive to include in this partition.
- ◆ **Robots.** Select this option if you are creating a partition for a robot, and then select the drive to include in this partition.

## New Partition General Dialog Box

The New Partition General dialog box appears when creating a partition from the Administration Console.

New Partition General Dialog Box



This dialog box contains the following options:

- ◆ **Partition name.** Enter a name for this new partition or accept the default.

- ◆ **Creation date.** Displays the date and time this partition was created.
- ◆ **Partition type.** If you are creating a partition for a robot, displays the type of partition, such as normal, cascaded, or mirrored. For partitions involving stand-alone drives, this option does not appear.

## New Partition Configuration Dialog Box

The New Partition Configuration dialog box appears when creating a partition from the Administration Console.

New Partition Configuration Dialog Box - Robot

**New Partition**

General Configuration

Robot name: HA:0 ID:4 LUN:1 HP C1553

Starting slot: 1

Number of slots: 1

Operations

Backup  Restore

Dedicate to cleaning

Media set: Default

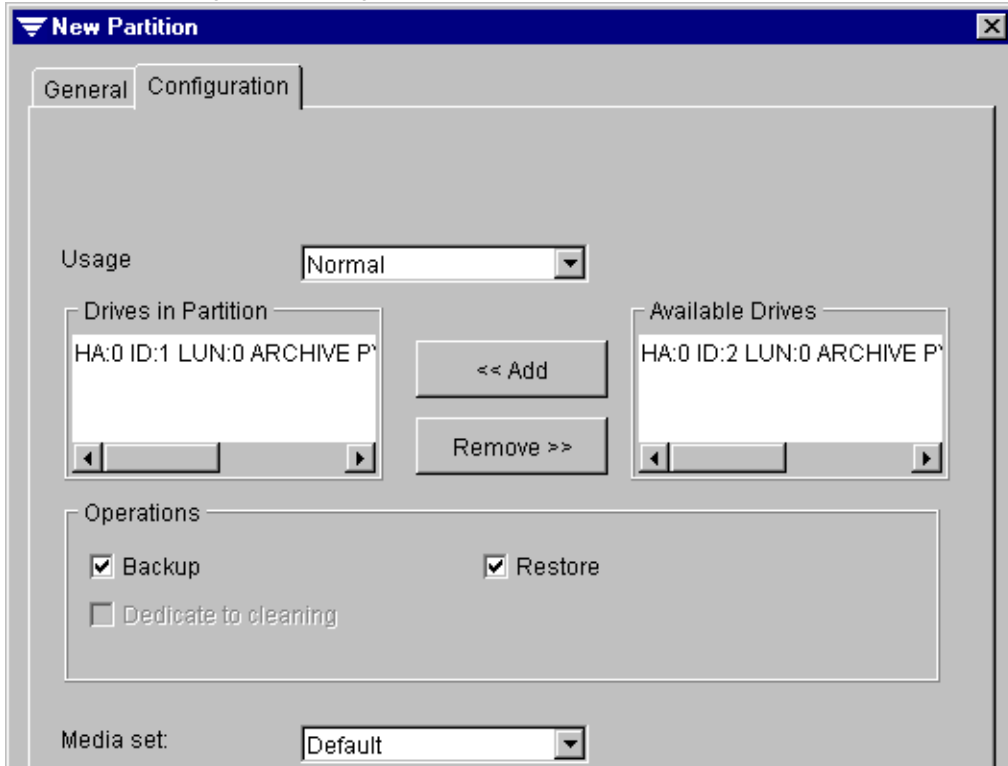
OK Cancel Help



If the new partition is for robots, options for this dialog box include:

- ◆ **Robot name.** Displays the name of the robot.
- ◆ **Starting slot.** Select the starting slot for the partition.
- ◆ **Number of slots.** Select the total number of slots for this partition.
- ◆ **Backup.** Select this option if the partition is to be used for backup operations.
- ◆ **Restore.** Select this option if the partition is to be used for restore operations.
- ◆ **Dedicate to cleaning.** Select this option if the partition is to be used for cleaning operations. Partitions dedicated to cleaning cannot be used for backup or restore operations.
- ◆ **Media set.** Select the media set to be used for this partition.

New Partition Configuration Dialog Box - Stand-alone



If the new partition is for stand-alone drives, options include:

- ◆ **Usage.** Select the type of partition. Types include Normal, Cascaded, and Mirrored.
- ◆ **Drives in Partition.** Displays the drives in the partition.

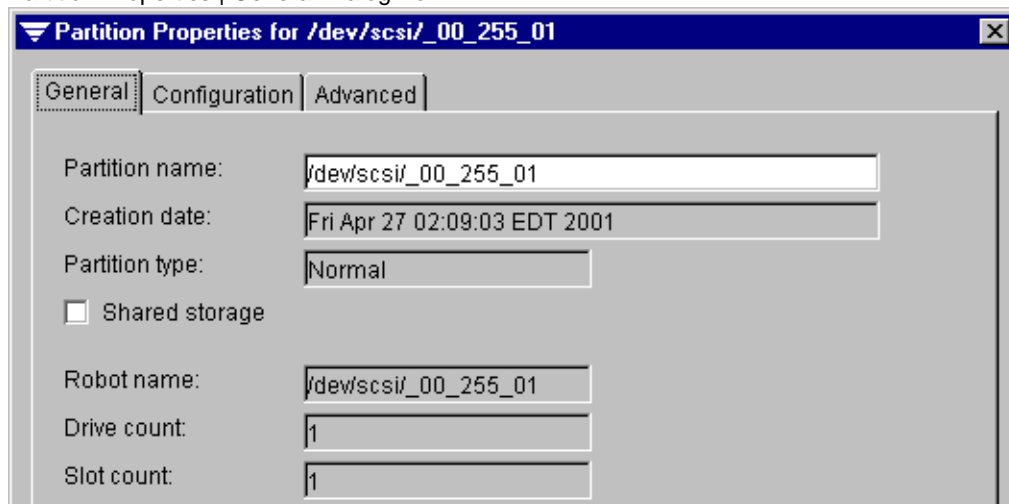
- ◆ **Available Drives.** Displays drives that are available for the partition.
  - ◆ **Backup.** Select this option if the partition is to be used for backup operations.
  - ◆ **Restore.** Select this option if the partition is to be used for restore operations.
  - ◆ **Dedicate to cleaning.** Select this option if the partition is to be used for cleaning operations. Partitions dedicated to cleaning cannot be used for backup or restore operations.
  - ◆ **Media set.** Select the media set to be used for this partition.
- ▼ **To create a partition from the Administration Console for NetWare:**
1. From the Administration Console for NetWare, select **Drives**.
  2. Select **Partitions**.
  3. Press <Ins>.
  4. Select a drive to be included in this partition.  
The General dialog box option appears. For information about this dialog box, see [“General Dialog Box for Partition Properties”](#) on page 358.
  5. Ensure **Configuration** is selected, and press <Enter> to view or edit options on the Configuration dialog box. Options are described in [“Configuration Dialog Box for Partition Properties”](#) on page 359.
  6. Press <F2> to return to the General dialog box.
  7. Select **Advanced Configuration** and then press <Enter> to view or edit options on the Advanced Configuration dialog box. Options are described in [“Advanced Configuration Dialog Box for Partition Properties”](#) on page 361.
  8. Press <F2> to return to the General dialog box.
  9. Press <F2>.



## General Dialog Box for Partition Properties

The General dialog box appears when creating or viewing a partition from the Administration Console for NetWare or when viewing a partition from the Administration Console.

Partition Properties | General Dialog Box



This dialog includes the following information:

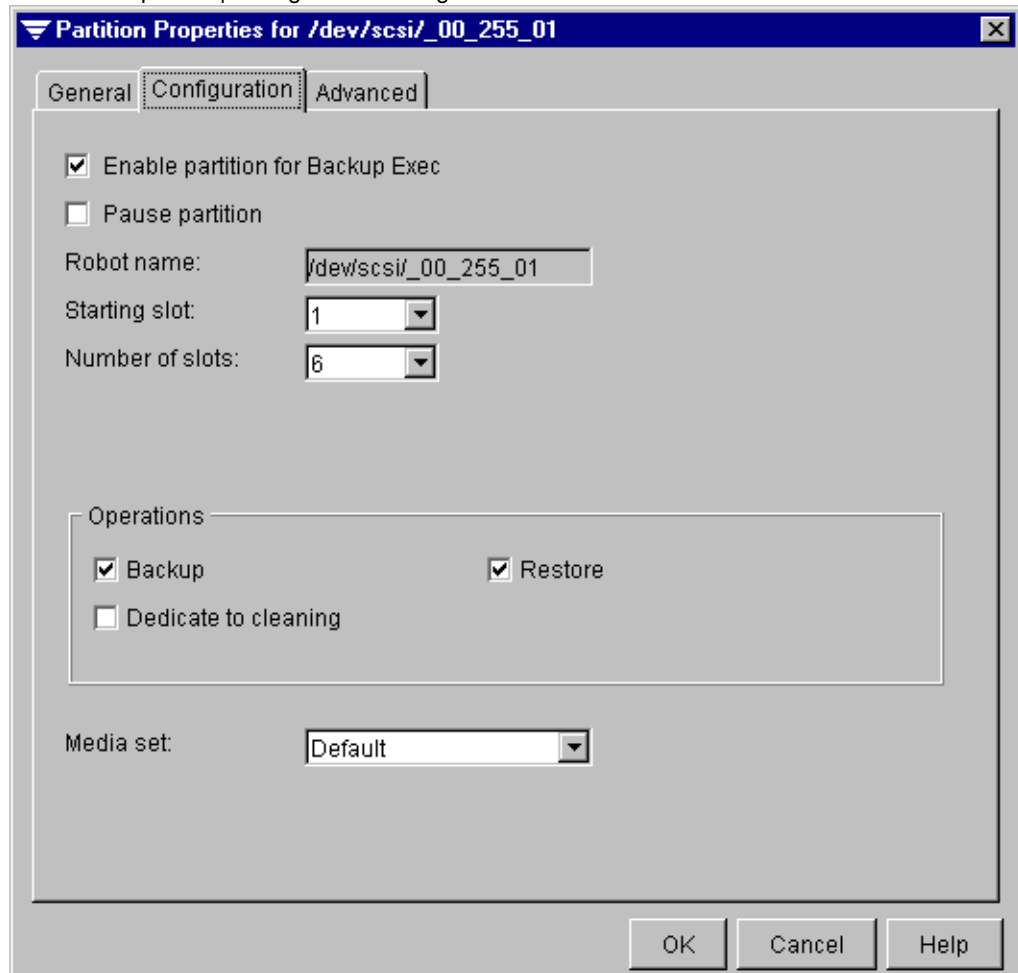
- ◆ **Partition name.** Name of the partition.
- ◆ **Creation date.** Date and time this partition was created.
- ◆ **Partition type.** Type of partition, such as Normal, Cascaded, or Mirrored.
- ◆ **Shared storage.** Displays a check mark if this partition is configured for the SAN Shared Storage Option.
- ◆ **Robot name.** Displays the name of the robot.
- ◆ **Drive count.** Number of drives in the partition.
- ◆ **Slot count.** Number of slots in the partition.
- ◆ **Configuration.** (For the Administration Console for NetWare) Press <Enter> to view or edit the Configuration dialog box.
- ◆ **Advanced Configuration.** (For the Administration Console for NetWare) Press <Enter> to view or edit the Advanced Configuration dialog box.



## Configuration Dialog Box for Partition Properties

The Configuration dialog box appears when creating or viewing a partition from the Administration Console for NetWare or when viewing partition properties from the Administration Console.

Partition Properties | Configuration Dialog Box



If the partition is for a robot, this dialog box includes the following options:

- ◆ **Enable partition for Backup Exec.** Select this option to enable this partition for Backup Exec operations.
- ◆ **Pause partition.** Select this option to pause the partition. This option is useful if you need to take a drive down for maintenance. Jobs scheduled to run will resume after the partition has been resumed.



- ◆ **Robot name.** Displays the name of the robot.
- ◆ **Starting slot.** Enter or select the starting slot for the partition.
- ◆ **Number of slots.** Enter or select the total number of slots for the partition.
- ◆ **Backup.** Select this option if the partition is to be used for backup operations.
- ◆ **Restore.** Select this option if the partition is to be used for restore operations.
- ◆ **Dedicate to cleaning.** Select this option if the partition is to be used for cleaning operations. Partitions dedicated to cleaning cannot be used for backup or restore operations.
- ◆ **Media set.** Select the media set the partition will use.

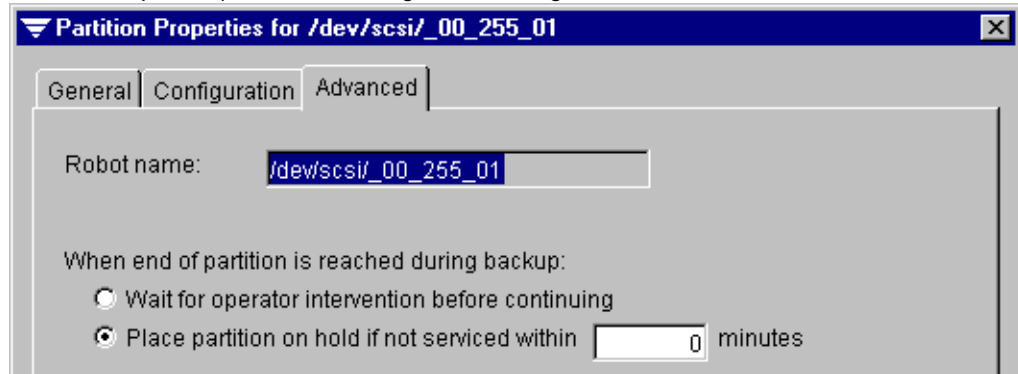
If the partition is for stand-alone drives, options include:

- ◆ **Usage.** Select the type of partition. Types include Normal, Cascaded, and Mirrored.
- ◆ **Drives in Partition.** Displays the drives in the partition.
- ◆ **Available Drives.** Displays drives that are available for the partition.
- ◆ **Backup.** Select this option if the partition is to be used for backup operations.
- ◆ **Restore.** Select this option if the partition is to be used for restore operations.
- ◆ **Dedicate to cleaning.** Select this option if the partition is to be used for cleaning operations. Partitions dedicated to cleaning cannot be used for backup or restore operations.
- ◆ **Media set.** Select the media set to be used for this partition.

## Advanced Configuration Dialog Box for Partition Properties

The Advanced Configuration dialog box appears when creating or viewing a partition from the Administration Console for NetWare or when viewing partition properties from the Administration Console.

Partition Properties | Advanced Configuration Dialog Box



This dialog box includes the following options:

- ◆ **Robot name.** Displays the name of the robot if the partition is for a robot. This option does not appear if the partition is for a stand-alone drive.
- ◆ **Wait for operator intervention before continuing.** Select this option if you want Backup Exec to prompt you for new media at the end of the partition and suspend all job processing for this partition until you respond.
- ◆ **Place partition on hold if not serviced within [ ] minutes.** Select this option if you want Backup Exec to place the partition on hold if you do not respond to the request for new media within the specified time. If 0 is entered, the partition will be immediately placed on hold and Backup Exec will process jobs assigned to other partitions. You can specify a wait time of up to 999 minutes.

---

**Note** If you select **Place partition on hold if not serviced within [ ] minutes**, and the partition is placed on hold, the job that was running will be restarted from the beginning when the hold is removed unless it is deleted. The media family in the partition can no longer have backups appended to it.

---



This section describes how Backup Exec manages media and the steps for performing media utilities. For information about performing utilities such as inventory, erase, retention, and format, see “[Performing Device Operations](#)” on page 300. This section also includes information about implementing a media rotation strategy and the steps for creating a media rotation job.

*Managing Media* includes the following topics:

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Section	Describes
“ <a href="#">About Media Management</a> ” on page 364	How Backup Exec automates media management tasks.
“ <a href="#">How Backup Exec Categorizes Media</a> ” on page 365	How Backup Exec categorizes media and defines the media types used by Backup Exec.
“ <a href="#">Setting Media Overwrite Options</a> ” on page 368	How Backup Exec uses the media options and procedures for setting the default options.
“ <a href="#">Media Labeling</a> ” on page 373	How Backup Exec uses media labeling to identify media.
“ <a href="#">Using Media Operations</a> ” on page 375	Procedures for the various utilities available under the <b>Media</b> node in the Administration Console or from the <b>Media</b> menu in the Administration Console for NetWare.
“ <a href="#">Using Media Sets</a> ” on page 383	Procedures for creating, deleting, renaming, and changing attributes of media sets.
“ <a href="#">Using Media Rotation</a> ” on page 390	How to select a backup strategy and details for implementing a manual media rotation strategy.

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Section	Describes
<a href="#">“Using Backup Exec’s Automated Media Rotation”</a> on page 397	Procedures for using Backup Exec’s automated Media Rotation feature.

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## About Media Management

In most environments, you are responsible for keeping track of media, making sure backups are written to the appropriate media, and ensuring media is not accidentally overwritten. Backup Exec automates these tasks by categorizing media and tracking media as it is used. Backup Exec uses media in storage devices for overwrite and append jobs according to criteria that you configure, including:

- ◆ *Overwrite protection period.* The length of time that data is retained on a specific media before the media is available for overwriting.
- ◆ *Append period.* The length of time that data can be added to a media.
- ◆ *Media overwrite protection level.* The level of overwrite protection that you assign to your media sets (see [“Using Media Sets”](#) on page 383).

When you submit a backup or archive job, you select the drive or drive pool or, if in partition management mode, the partition that the job will run on, and the media set to which the job will be written. A media set is a grouping of media that have the same overwrite protection period and append period. For information about setting up drive pools, see [“Performing Drive Pool Operations”](#) on page 329. For information about setting up partitions, see [“Performing Partition Operations”](#) on page 349. For information about creating backup or archive jobs, refer to [“Creating a Backup Job from the Administration Console”](#) on page 105, or [“Creating a Backup Job from the Administration Console for NetWare”](#) on page 115.



## How Backup Exec Categorizes Media

Backup Exec recognizes and categorizes media that is inserted into storage devices. These media categories are:

- ◆ *All Media*. All media that have been introduced into the Backup Exec system.
- ◆ *System Media*. All media that have been introduced into Backup Exec but have not been assigned to a user media set.
- ◆ *User Media Sets*. All media that have been assigned to a user media set.

### System Media

System media, which includes all media introduced to Backup Exec but not assigned to a user media set, is categorized into four types of media:

- ◆ Scratch media
- ◆ Foreign media
- ◆ Imported media
- ◆ Retired media

You cannot target a backup or media rotation job to system media.

### Scratch Media

*Scratch media* are media that are not allocated to a user media set and can be overwritten, including:

- ◆ New or blank media.
- ◆ Media that you have moved from another group, such as a user media set or imported media, to scratch media.
- ◆ Erased media.

When an overwrite backup job runs with **Partial** overwrite protection (see “[Choosing Partial Media Overwrite Protection](#)” on page 370), Backup Exec defaults to overwriting scratch media first. If no scratch media are available, Backup Exec selects recyclable media that is in the targeted media set for overwriting. You can change this default order on the Media dialog box accessed through the Media Server Options (see “[Media Options for the Server](#)” on page 249).

You *do not* have to move scratch media to a media set. Instead, target the job to a media set that has the overwrite protection and append periods you want to use for that job. Backup Exec automatically searches the storage devices for the appropriate media.



## Foreign Media

*Foreign media* are media that contain data that is not recognized by Backup Exec and that cannot be overwritten or appended to. If you are attempting to write to media that has been created by a product other than Backup Exec, ARCserve, or SIDF formatted media, then Backup Exec will classify the media as foreign. Backup Exec categorizes ARCserve and SIDF formatted media as imported. Also, if you are doing an inventory, catalog, or restore, then Backup Exec will classify the media created by all products other than this installation of Backup Exec as imported media.

## Imported Media

*Imported media* are media created by a product other than this installation of Backup Exec. Imported media includes media created by previous versions of Backup Exec, ARCserve, and SIDF formatted media.

By default, imported media have an overwrite protection period of **Infinite**, but can still be overwritten if the Media Overwrite Protection Level is set to **Partial** or **None** (see [“Setting Media Overwrite Protection Level”](#) on page 250).

You can overwrite imported media using several methods (see [“Overwriting Imported Media”](#) on page 372). Data can be restored from imported media until that media is overwritten.

## Retired Media

*Retired media* are media that you have taken out of service. One reason for retiring media is if it has an excessive number of errors. After a media has been categorized as retired, Backup Exec will not select it for use in a media set. The media is still available for restore operations, provided it has not been damaged.

You can delete media that is in the **Retired Media** subnode to remove it from Backup Exec’s database. For example, you may want to delete media if you have a lot of offsite media that you do not plan to recycle or if you throw away the media.

If you want to use media that has been deleted, Backup Exec will recognize it as imported media. It must be cataloged before you can restore from it.

## Removing Damaged Media

Media that meets or exceeds the discard thresholds determined by the media manufacturer should be moved to **Retired Media**.

To decide which media to retire, right-click the media to view properties for a specific media (see [“Viewing Media Properties and Statistics”](#) on page 379).

Move any media with an unacceptable level of errors to **Retired Media** so that you are protected from using defective media before critical backup operations begin. After you mark media as retired, it will not be used by Backup Exec for further backups. The media is still available to be restored from if it is not damaged.

Media can only be deleted from **Retired Media** (see “[Deleting Media](#)” on page 375).

## User Media Sets

Media belonging to a user media set includes:

- ◆ Allocated media
- ◆ Recyclable media

### Allocated Media

*Allocated media* are media that belong to a user media set. A user media set defines:

- ◆ *The overwrite protection period.* The length of time you want to keep the data before allowing it to be overwritten.
- ◆ *The append period.* The length of time data can be added to this media.

You can create different media sets, each with different data overwrite protection and append periods (see “[Creating User Media Sets](#)” on page 384). When a backup or archive job is created, you assign it to a specific media set that defines the particular data overwrite protection and append periods you want applied to the backup job.

Allocated media are always displayed in the assigned media set, even after the data overwrite protection date expires, until the media are overwritten.

### Recyclable Media

*Recyclable media* are media that are assigned to a media set but that have expired data overwrite protection periods.

You can move recyclable media to scratch media, or you can let it remain in the media set list. By default, Backup Exec uses scratch media first when a job runs. If no scratch media are available, Backup Exec selects recyclable media that are in the targeted media set for overwriting. You can change this default through the Media dialog box’s **Media Overwrite Options** (see “[Selecting Media Overwrite Options](#)” on page 251).





## Setting Media Overwrite Options

The **Media** options selected for your server become the criteria used by Backup Exec's media management feature to determine which media are available for particular jobs. You can change these selections at any time, and the changes become effective immediately.

Media Options Dialog Box

**Server Options**

Broadcast | SNMP | Quick Check | Auto Login User | Shared Devices  
General | Catalog | Job Log | Agents | **Media** | ExecView | SMTP

Media Overwrite Protection Level

- Full - Protect allocated and imported media
- Partial - Protect only allocated media
  - Prompt before overwriting imported media
- None
  - Prompt before overwriting allocated or imported media

Media Overwrite Options

- Overwrite scratch media before overwriting recyclable media contained in the targeted media set
- Overwrite recyclable media contained in the targeted media set before overwriting scratch media

Media Overwrite Default Label

Cartridge type: Unknown

Prefix: \*\*    Next value: 1    Digits: 6

OK    Cancel    Help

### ▼ To set media options:

1. From the Administration Console, click **Tools**, point to **Options**, click **Media Server**, and then click **Media**.

If using the Administration Console for NetWare, select **Options**, select **Media Server** and then select **Media**.

Three sets of options are available on the Media dialog box:

- **Media Overwrite Protection Level** (see “[Setting Media Overwrite Protection Level](#)” on page 250).
- **Media Overwrite Options** (see “[Selecting Media Overwrite Options](#)” on page 251).
- **Media Overwrite Default Label** (see “[Selecting Media Overwrite Default Label Options](#)” on page 252).

2. Select the media options you want Backup Exec to use, and then click **OK**.

If using the Administration Console for NetWare, press <F2>.

## Choosing Full Media Overwrite Protection

If you want the most protection against overwriting media used in Backup Exec, select **Full** as the **Media Overwrite Protection Level** and **Overwrite scratch media before overwriting recyclable media contained in the targeted media set** as the **Media Overwrite Option**.

**Caution** It is recommended that you physically write-protect media containing critical data by using the write-protect tab on the media cartridge to protect against unintentional move or erase operations, or expired overwrite protection periods.

The following table shows how Backup Exec automatically searches the storage devices for media to overwrite, depending on the combination of options selected.

#### Full - Protect allocated and imported media and overwrite scratch media first

Media is overwritten in the following order:

1. Scratch media.
2. Recyclable media in the targeted media set.
3. Recyclable media in any media set.

#### Full - Protect allocated and imported media and overwrite recyclable media first

Media is overwritten in the following order:

1. Recyclable media in the targeted media set.
2. Scratch media.
3. Recyclable media in any media set.



## Choosing Partial Media Overwrite Protection

If you have media from a previous version of Backup Exec or another product that Backup Exec can read, and you want Backup Exec to automatically overwrite that media, choose **Partial - Protect only allocated media** as the **Media Overwrite Protection Level**.

If you want to be notified before Backup Exec overwrites imported media, make sure you also select **Prompt before overwriting imported media**. And, if you want recyclable media to be preserved longer for possible recovery, select **Overwrite scratch media before overwriting recyclable media contained in the targeted media set** as the **Media Overwrite Option**.

---

**Caution** It is recommended that you physically write-protect media containing critical data by using the write-protect tab on the media cartridge to protect against unintentional move or erase operations, or expired overwrite protection periods.

---

The following table shows how Backup Exec automatically searches the storage devices for media to overwrite, depending on the combination of options selected.

---

### **Partial - Protect only allocated media and overwrite scratch media first**

Media is overwritten in the following order:

1. Scratch media.
2. Recyclable media in the targeted media set.
3. Recyclable media in any media set.
4. Imported media (if you chose to be prompted before imported media can be overwritten, you must reply to the prompt before overwriting can occur).

---

### **Partial - Protect only allocated media and overwrite recyclable media first**

Media is overwritten in the following order:

1. Recyclable media in the targeted media set.
  2. Scratch media.
  3. Recyclable media in any media set.
  4. Imported media (if you chose to be prompted before imported media can be overwritten, you must reply to the prompt before overwriting can occur).
- 



## Choosing No Media Overwrite Protection

If you do not need protection against overwriting media used in Backup Exec, choose **None** with **Prompt before overwriting allocated or imported media** and **Overwrite scratch media before overwriting recyclable media contained in the targeted media set**. Choosing to be prompted before overwriting allocated or imported media is highly recommended when you select **None**.

---

**Caution** Selecting **None** is not recommended because it does not protect data from being overwritten.

---



---

**Note** The overwrite protection period assigned to a media set is ignored when the overwrite protection level is set to **None**.

---



---

**Caution** It is recommended that you physically write-protect media containing critical data by using the write-protect tab on the media cartridge to protect against unintentional move or erase operations, or expired overwrite protection periods.

---

The following table shows how Backup Exec automatically searches the storage devices for media to overwrite, depending on the combination of options selected.

---

### **None and overwrite scratch media first**

Media is overwritten in the following order:

1. Scratch media.
2. Recyclable media in the targeted media set.
3. Recyclable media in any media set.
4. Imported media (if you chose to be prompted before imported media can be overwritten, you must reply to the prompt before overwriting can occur).
5. Allocated media in any media set (if you choose to be prompted before allocated media can be overwritten, you must reply to the prompt before overwriting can occur).

---

### **None and overwrite recyclable media first**

Media is overwritten in the following order:

1. Recyclable media in the targeted media set.
  2. Scratch media.
  3. Recyclable media in any media set.
  4. Imported media (if you chose to be prompted before imported media can be overwritten, you must reply to the prompt before overwriting can occur).
  5. Allocated media in any media set (if you choose to be prompted before allocated media can be overwritten, you must reply to the prompt before overwriting can occur).
- 



## Overwriting Allocated Media

Backup Exec protects allocated media from overwriting when **Full** or **Partial** overwrite protection is used (see “[Setting Media Overwrite Protection Level](#)” on page 250). However, if necessary, you can allow allocated media to be overwritten by Backup Exec before the overwrite protection period ends and without setting the **Overwrite Protection Level** to **None**. Several methods are available, including:

- ◆ Move the allocated media to scratch media (see “[Moving Media](#)” on page 377). The media is overwritten when it is selected for a backup operation.
- ◆ Erase the media (see “[Ejecting Media from a Drive](#)” on page 314). Erased media is automatically recognized as scratch media and will be overwritten when it is selected for a backup operation.
- ◆ Change the **Overwrite Protection Period** for the media set to none (see “[Viewing and Changing Media Set Properties](#)” on page 387).

## Overwriting Imported Media

You can allow imported media to be available for overwrite any time. Several methods are available, including:

- ◆ Move the imported media to scratch media (see “[Moving Media](#)” on page 377). The media is overwritten when it is selected for a backup operation.
- ◆ Erase the media (see “[Erasing Media in a Drive](#)” on page 309). Erased media is automatically recognized as scratch media and will be overwritten when it is selected for a backup operation.
- ◆ Set the **Media Overwrite Protection Level** to **Partial** or **None** (see “[Setting Media Overwrite Protection Level](#)” on page 250).

---

**Caution** It is recommended that you physically write-protect media containing critical data by using the write-protect tab on the media cartridge to protect against unintentional move or erase operations, or expired overwrite protection periods.

---

## Media Labeling

Media used by Backup Exec is identified by its *media name*. The media name can be assigned automatically by Backup Exec, or you can specify a label prefix and number to be assigned for a type of media unless the media was first used in a library with a bar code reader (see [“Selecting Media Overwrite Default Label Options”](#) on page 252).

In addition to media names, Backup Exec tracks media internally by using a Media ID. The Media ID allows Backup Exec to keep extensive records on media even after the media name is changed.

See the following topics for more information:

- ◆ [“Automatic Media Labeling”](#) on page 373.
- ◆ [“Manual Media Labeling”](#) on page 374.
- ◆ [“Bar Code Labeling”](#) on page 374.
- ◆ [“Labeling Imported Media”](#) on page 374.

### Automatic Media Labeling

When new, blank, or unlabeled media is used during a backup or archive operation, Backup Exec automatically labels the media. This label, called a media name, consists of a prefix that identifies the type of media and an incrementing number (see [“Selecting Media Overwrite Default Label Options”](#) on page 252).

Duplicate labels can be automatically generated. For example, reinstalling Backup Exec or bringing media from another Backup Exec installation could cause duplication in labels. To prevent duplicate labels, you may want to set **Next value** to a higher number (see [“Selecting Media Overwrite Default Label Options”](#) on page 252).

You should write the media name on a label fixed to the outside of the physical media.

---

**Note** If a bar code is available, then the media name automatically defaults to that bar code (see [“Bar Code Labeling”](#) on page 374).

---



## Manual Media Labeling

If you prefer to design your own labeling scheme, you can specify label prefixes and numbering for different types of media. For example, you can specify that all 4 mm media that are entered for the first time into this installation of Backup Exec are labeled with a prefix of ACCT, and with the numbering starting from 1,000. You can specify another media type to be labeled with a prefix of FIN, and with numbering starting at 10,000.

Customizing labels in this manner can help you recognize and organize media. See [“Selecting Media Overwrite Default Label Options”](#) on page 252 for details on how to specify media labeling.

## Bar Code Labeling

If there is a bar code label on the physical cartridge and the cartridge is in a robot that has a bar code reader, the bar code label automatically becomes the media name.

You can change the media name in Backup Exec, but as long as the media has a bar code label that can be read, the bar code label takes precedence over the media name. To use the media name, you must remove the physical bar code label from the media cartridge or use the media in a device without a bar code reader.

## Labeling Imported Media

Backup Exec does not automatically re-label imported media unless the media is being overwritten. The imported media’s original media name is read and displayed under the **Imported** media subnodes.

However, if the Media Overwrite Protection Level is set to **Partial** or **None**, the imported media may be selected for a job and overwritten (see [“Setting Media Overwrite Protection Level”](#) on page 250). Then, the imported media is automatically labeled when it is overwritten during a job operation.

## Using Media Operations

Some of the media operations available in the Administration Console for NetWare are run from the **Jobs** menu; other media operations are accessed through selecting **Media**, and then selecting **Media View**.

You can run some media operations by right-clicking the media in the Administration Console's results pane and displaying the shortcut menu. Other utility operations are available from the **Drives** node in the Administration Console.

---

<b>For information on:</b>	<b>See:</b>
Delete	<a href="#">"Deleting Media"</a> on page 375
Catalog	<a href="#">"Cataloging Media in a Drive"</a> on page 307
Move	<a href="#">"Moving Media"</a> on page 377
Properties	<a href="#">"Viewing Media Properties and Statistics"</a> on page 379
Inventory	<a href="#">"Performing Inventory on Media in a Drive"</a> on page 302
Erase	<a href="#">"Erasing Media in a Drive"</a> on page 309
Retention	<a href="#">"Retentioning Media"</a> on page 312

---

## Deleting Media

You may want to delete media from the Backup Exec database when:

- ◆ You have a lot of offsite media that you do not want to recycle.
- ◆ You discard damaged or old media (see ["Removing Damaged Media"](#) on page 366).

Media can only be deleted from **Retired** media.

When deleted media is reused in Backup Exec, it is recognized as **Imported** media. Before you can restore from the media, it must be cataloged (see ["Cataloging Media in a Drive"](#) on page 307).

---

**Note** Deleting media from Backup Exec is *not* the same as erasing media (see ["Erasing Media in a Drive"](#) on page 309). Deleting the media removes the media from the Backup Exec database but does not delete the data on the media.

---





▼ **To delete media:**

1. If the media is not already in **Retired** media, you must move it there (see “[Moving Media](#)” on page 377).
2. From the Administration Console:
  - a. Double-click **Media**.
  - b. Double-click **System Media**.
  - c. Click **Retired**.
  - d. From the results pane, right-click the media you want to delete, and then click **Delete**.

---

**Tip** You can also double-click the **All Media** subnode, and then from the results pane, right-click the media you want to delete and click **Delete**. If **Delete** is not available, the media has not been moved to **Retired** media, and, therefore, cannot be deleted.

---

From the Administration Console for NetWare:

- a. Select **Media**.
  - b. Select **Media View**.
  - c. Move the selection arrows to either **All media** or **Retired** and press <Enter>.
  - d. Select the media you want to delete and press <Del>.
3. When prompted, either click **Yes** if you are in the Administration Console, or press <Y> if you are in the Administration Console for NetWare.



## Moving Media

You may want to move media when:

- ◆ Media is reported as generating too many errors and needs to be retired.
- ◆ You no longer want to keep the data on imported media and want to re-use the media.

---

**Note** Moving scratch or imported media to a user media set is not recommended.

---

### ▼ To move media:

1. From the Administration Console, double-click **Media**, and then double-click the subnode containing the media you want to move.

From the Administration Console for NetWare, select **Media**, select **Media View**, select the subnode containing the media you want to move, and press <Enter>.

2. From the Administration Console's results pane, right-click the media, and then click **Move Media**.

From the Administration Console for NetWare, select the media you want to move, press <Ctrl + V>, and when prompted press <Y>.

From the Move Media dialog box, select the media list or media set where you want to move this media. Options for this dialog box are described in "[Move Media Dialog Box](#)" on page 378.

3. From the Administration Console, click **OK**.

From the Administration Console for NetWare, select the destination media set, press <Enter>, and then press <F2>.

---

**Tip** In the Administration Console, you can use the drag-and-drop method to move media. From the results pane of the **Media** node, drag the media to a subnode under the **System Media** or **User Media Set** subnodes. If the move is allowed, a small gray box appears.

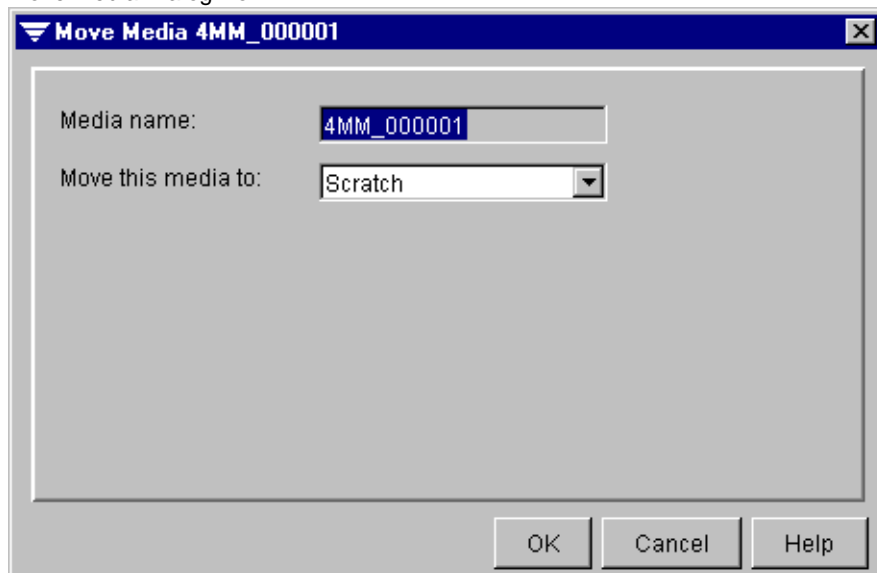
---



## Move Media Dialog Box

The Move Media dialog box allows you to move media from one media set to another.

Move Media Dialog Box



This dialog box includes the following options:

- ◆ **Media name.** Displays the name of the media.
- ◆ **Move this media to.** The drop-down list displays the possible locations where media may be moved. On the Administration Console for NetWare, press <Enter> to view this list.

## Viewing Media Properties and Statistics

Backup Exec provides general, management, and statistical information on each media. You can view this information through either the Administration Console or the Administration Console for NetWare.

### ▼ To view media properties and statistics:

1. From the Administration Console, double-click **Media**, and then double-click the subnode containing the media for which you want to view information.

From the Administration Console for NetWare, select **Media**, select **Media View**, and then select the subnode containing the media for which you want to view information.

2. In the Administration Console's results pane, right-click the media, and then click **Properties**.

In the Administration Console for NetWare, select the media, and then press <F4>.

The Properties dialog box includes the following sections:

- **General** (see "[Media Properties - General](#)" on page 380).
- **Management** (see "[Media Properties - Management](#)" on page 381).
- **Statistics** (see "[Media Properties - Statistics](#)" on page 382).

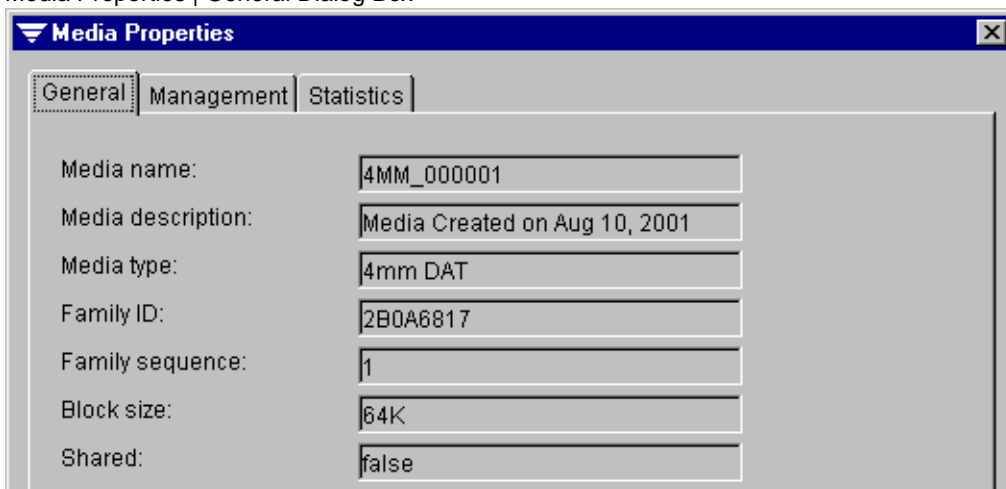
3. After viewing information, click **OK** from the Administration Console or <Esc> from the Administration Console for NetWare.



## Media Properties - General

The General dialog box accessed when viewing media properties provides information about the media label.

Media Properties | General Dialog Box



The screenshot shows a dialog box titled "Media Properties" with three tabs: "General", "Management", and "Statistics". The "General" tab is selected. It contains several fields with labels and values:

Media name:	4MM_000001
Media description:	Media Created on Aug 10, 2001
Media type:	4mm DAT
Family ID:	2B0A6817
Family sequence:	1
Block size:	64K
Shared:	false

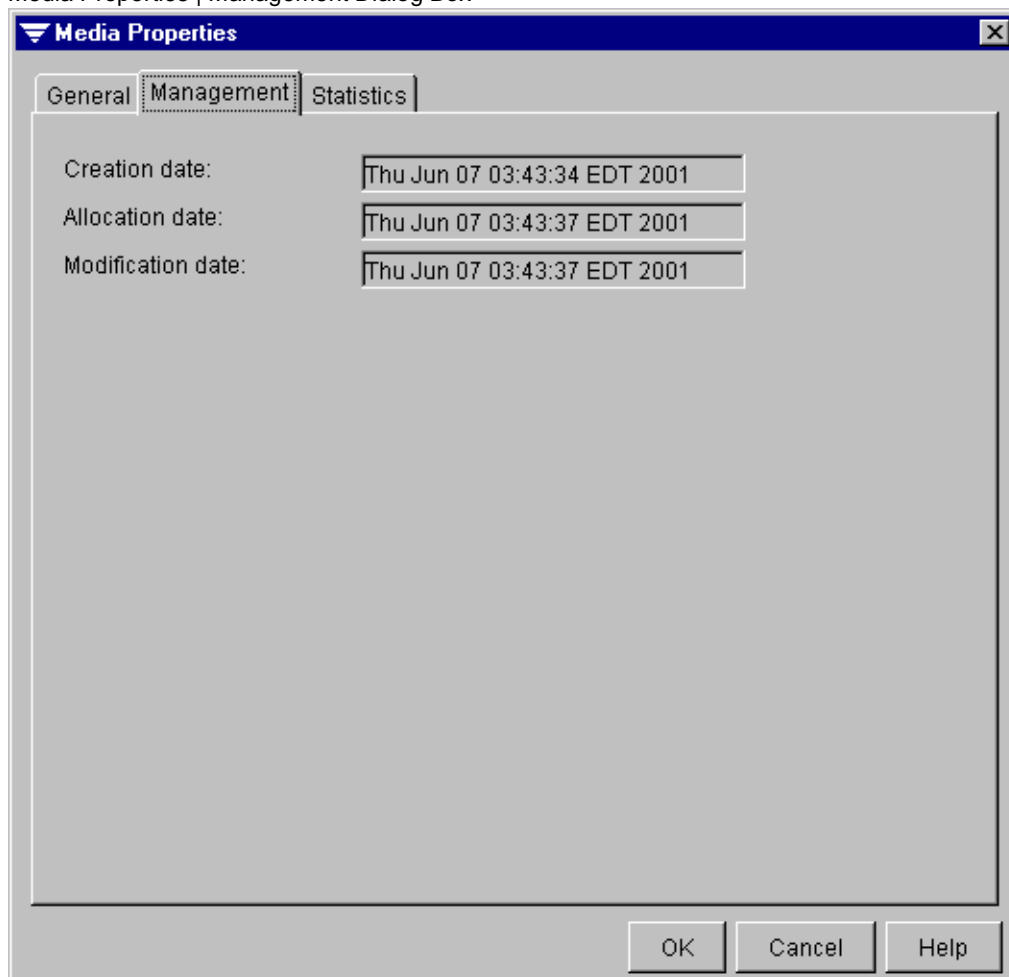
Information displayed on this dialog box includes:

- ◆ **Media name.** The name of the media.
- ◆ **Media description.** A description of the media, such as the backup set the media is in.
- ◆ **Retire Media.** Select this option from the Administration Console for NetWare if you want to retire this media.
- ◆ **Media type.** The type of media, such as DAT 4MM.
- ◆ **Family ID.** The unique identification number Backup Exec assigns to each tape family.
- ◆ **Family sequence.** The number of the media in the media family.
- ◆ **Block size.** The preferred size of the blocks of data that will be written to this media. The block size is determined by the preferred configuration set in the properties for the drive where the media resides (see "[Viewing Drive Properties and Statistics](#)" on page 319).
- ◆ **Shared.** Indicates if the media is being used in a shared storage environment.

## Media Properties - Management

The Management dialog box accessed when viewing media properties provides information about when data was written to the media.

Media Properties | Management Dialog Box



Information that can be viewed, but not edited, on this dialog box includes:

- ◆ **Creation date.** The date and time the media was first entered into the Backup Exec system.
- ◆ **Allocation date.** The date and time that the media was allocated to a media set as a result of an overwrite operation. This date is the start date for the append period.
- ◆ **Modification date.** The date and time when data was last written to the media. This date is the start of the overwrite protection period.

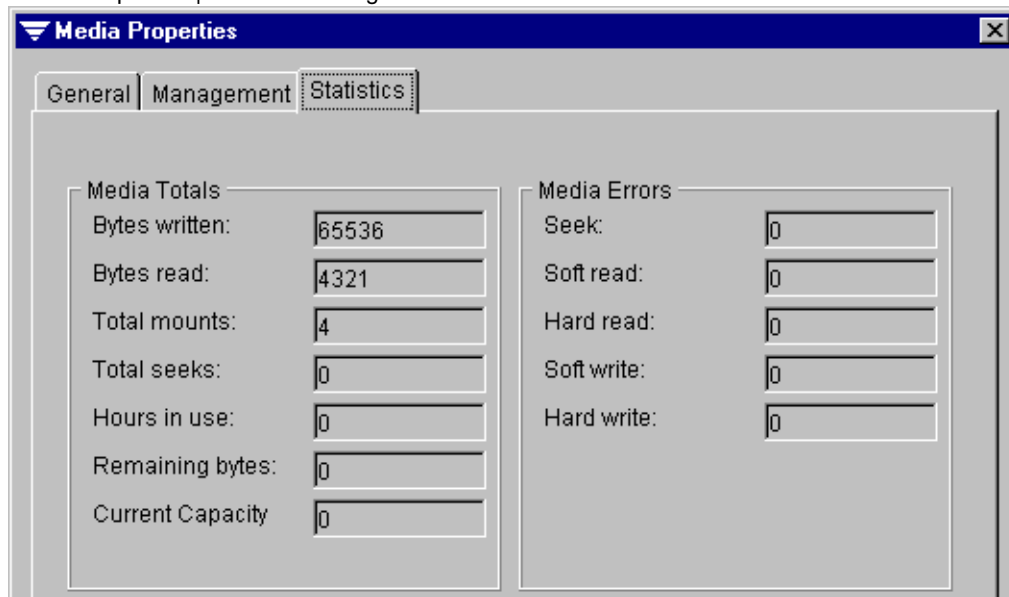


## Media Properties - Statistics

The Statistics dialog box accessed when viewing media properties provides information about usage totals and errors.

**Note** If your drive does not support this feature, some fields may appear as zero (0).

Media Properties | Statistics Dialog Box



Information that can be viewed, but not edited, on this dialog box includes:

- ◆ **Bytes written.** Number of bytes that have been written to this media.
- ◆ **Bytes read.** Number of bytes that have been read from this media.
- ◆ **Total mounts.** Number of times this media has been mounted.
- ◆ **Total seeks.** Number of seek operations (performed when a specific piece of information is being located) that have been performed on this media.
- ◆ **Hours in use.** Number of hours that this media has been in use.
- ◆ **Remaining bytes.** Number of free bytes on this media.
- ◆ **Current capacity.** Number of total bytes that can be held on this media.
- ◆ **Seek.** Number of errors encountered while trying to locate data.
- ◆ **Soft read.** Number of recoverable read errors encountered.
- ◆ **Hard read.** Number of unrecoverable read errors encountered.

- ◆ **Soft write.** Number of recoverable write errors encountered.
- ◆ **Hard write.** Number of unrecoverable write errors encountered.

## Using Media Sets

When you submit a backup job, you must select the device and the media set that the job will run on.

Media sets control:

- ◆ *Overwrite protection period.* The length of time that the data is retained on a specific media before being overwritten.
- ◆ *Append period.* The length of time that data can be appended to a media assigned to a media set.

---

**Note** If media is moved to another media set with different overwrite protection and append periods, the media assumes the overwrite protection and append periods of the new media set.

---

Backup Exec determines which media are available for overwrite or append jobs by tracking the overwrite protection and append periods assigned to the media by the media set. If the media's overwrite protection period has not expired, the media is considered allocated (see "[Allocated Media](#)" on page 367). The media is write protected unless the **Media Overwrite Protection Level** is set to **None** (see "[Setting Media Overwrite Protection Level](#)" on page 250).

When a media's overwrite protection period expires, the media becomes recyclable and can be overwritten (see "[Recyclable Media](#)" on page 367).

After you submit a backup or archive job to a media set that has the overwrite protection and append periods you want to use for that job, Backup Exec automatically selects the media to append to or overwrite. You do not need to move scratch media to the media set.





## Using the Default Media Set

You can assign jobs to a media set that you create, or you can let Backup Exec automatically assign them to the default media set created when Backup Exec is installed.

By default, the overwrite protection and append periods for the default media set are set to **Infinite - Don't Allow Overwrite** and **Infinite - Allow Append**. Media assigned to a media set that has infinite (99 years) overwrite protection and append periods do not become recyclable media and can only be overwritten when:

- ◆ You move the media to **Scratch** media.
- ◆ You erase the media.
- ◆ You set the **Media Overwrite Protection Level** to **None**.

You can change the overwrite protection and append periods for the default media set, or you can create other media sets to fit specific requirements. For example, you can create a media set for Differential backup jobs and create another media set for Full backup jobs.

## Creating User Media Sets

You can create a media set for specific jobs or specific policies using either the User Media Set Wizard in the Administration Console or a dialog box available in both the Administration Console and the Administration Console for NetWare.

---

**Note** The User Media Set Wizard is only available from the Administration Console.

---

### ▼ To run the User Media Set Wizard:

1. From the Administration Console, click **Tools**.
2. Point to **Wizards**, and then click **Launch the User Media Set Wizard**.

---

**Tip** You can also launch the wizard by clicking the wizard icon from the toolbar (see “[Using the Toolbar and Menu Bar](#)” on page 9) or from the taskbar (see “[The Backup Exec Assistant and Wizards](#)” on page 23).

---

3. Follow the screen instructions to complete the wizard.

### ▼ To create a user media set without using the wizard:

1. From the Administration Console, click **Tools**, and then click **User Media Set**.

From the Administration Console for NetWare, select **Media**, select **Media View**, and then press <Ins>.

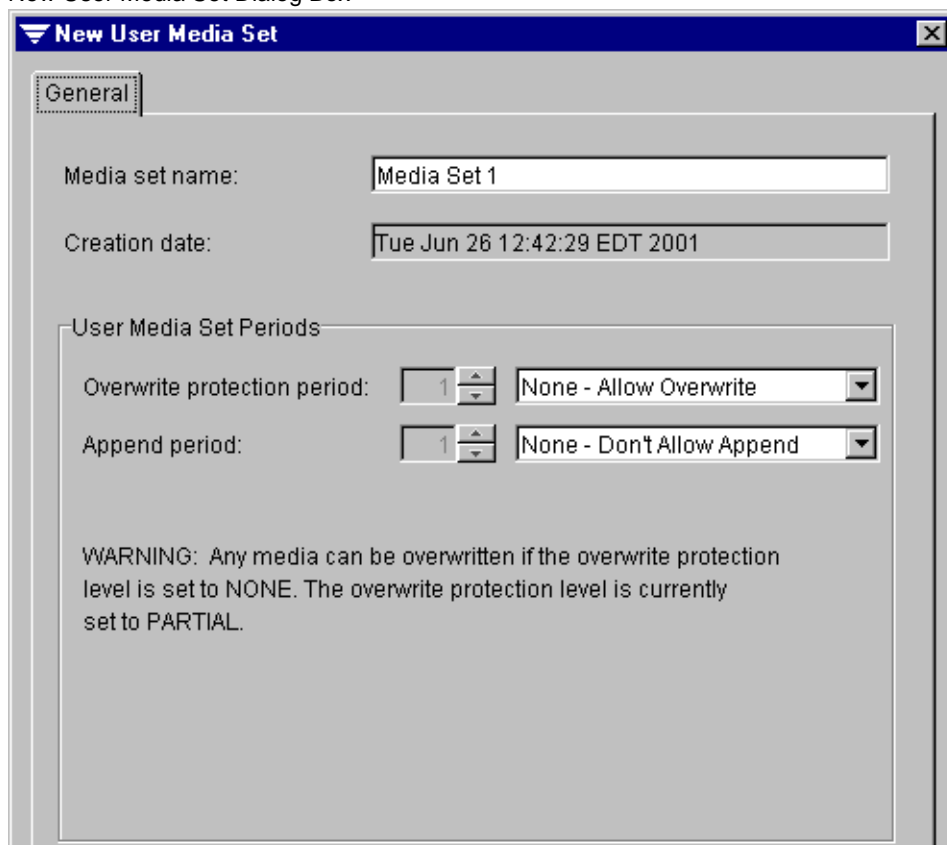
**Tip** From the Administration Console, you can also click on the **User Media Set** icon in the toolbar, or right-click the **User Media Set** node and click **New User Media Set**.

2. Enter or select options on the New User Media Set dialog box. Options are described in “[Media Set Properties](#)” on page 385.
3. From the Administration Console, click **OK**.  
From the Administration Console for NetWare, press <F2>.

## Media Set Properties

The New User Media Set dialog box that appears when creating a user media set and the User Media Set Properties dialog box that appears when viewing properties of an existing media set contain the same options.

New User Media Set Dialog Box



**New User Media Set**

**General**

Media set name:

Creation date:

User Media Set Periods

Overwrite protection period:

Append period:

WARNING: Any media can be overwritten if the overwrite protection level is set to NONE. The overwrite protection level is currently set to PARTIAL.



These dialog boxes contain the following options:

- ◆ **Media set name.** Enter a name for this user media set.

---

**Note** The user media set name must be unique; two Backup Exec media sets cannot have the same name.

---

- ◆ **Creation date.** Displays the date the media set was created. If the media set is being created, this date will be the current date.
- ◆ **Overwrite protection period.** The default is **Infinite - Don't Allow Overwrite**, which protects the media from being overwritten for 99 years, unless the media is erased, moved to **Scratch** media, or if the **Media Overwrite Protection Level** is set to **None** (see “[Choosing No Media Overwrite Protection](#)” on page 371). To set the overwrite protection period, select **Hours**, **Days**, **Weeks**, or **Years**, and then enter the length of time to retain data on the media before the media can be overwritten (unless the media is erased, moved to **Scratch** media, or if the **Media Overwrite Protection Level** is set to **None**).

The overwrite protection period is measured from the last time data was appended to the media. For example, setting the overwrite protection period for seven days and the append period for four days ensures that data will not be overwritten for at least seven days, and that data can be appended to the media for the next four days. The last data appended to this media is retained for at least seven days.

Because of the method Backup Exec uses to compute time, the unit of time that you enter may be converted. For example, if you enter 14 days, the next time you view properties for this media set, the time appears as 2 weeks. Note that 1 day equals 24 hours.

- ◆ **Append period.** The default is **Infinite - Allow append**, which allows data to be appended until the media capacity is reached. To set the append period, select a time unit (hours, days, weeks, or years), and then enter the length of time that data may be added to media.

Because of the method Backup Exec uses to compute time, the unit of time that you enter may be converted. For example, if you enter 14 days, the next time you view properties for this media set, the time appears as 2 weeks. Note that 1 day equals 24 hours.

## Viewing and Changing Media Set Properties

You can view properties for any media set from either the Administration Console or the Administration Console for NetWare. The media set properties dialog can also be used to rename the media set or to edit the overwrite protection and append periods for the media set.

### ▼ To view or change properties for a media set:

1. From the Administration Console:
  - a. Double-click **User Media Set**.
  - b. Right-click the media set you want to view properties for.
  - c. Click **Properties**.

From the Administration Console for NetWare:

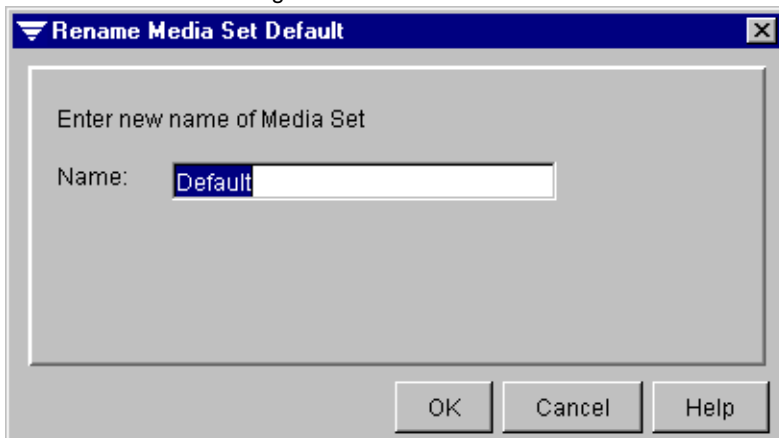
- a. Select **Media**.
  - b. Select **Media View**.
  - c. Select the media set you want to view properties for.
  - d. Press <F4>.
2. After viewing or changing properties from the Administration Console, click **OK**.  
From the Administration Console for NetWare, press <F2>.



## Renaming a Media Set

You can rename a media set by entering a new name on the media set's properties page in either the Administration Console or the Administration Console for NetWare (see "[Viewing and Changing Media Set Properties](#)" on page 387), or by using the **Rename** option in the Administration Console.

Rename Media Set Dialog Box



▼ **To rename a media set using the Rename option:**

1. From the Administration Console, double-click **Media**.
2. Double-click **User Media Sets**.
3. Right-click the media set you want to rename, and then click **Rename**.
4. Enter a new name on the Rename Media Set dialog box, and then click **OK**.

## Deleting a Media Set

You can delete a user media set, including the default media set, provided the media set does not contain media; to delete a media set that contains media, you must move the media to another media set first (see “[Moving Media](#)” on page 377).

---

**Caution** Media that is moved from one media set to another will take on the overwrite protection and append periods of the media set to which they are being moved.

---

### ▼ To delete a media set:

1. From the Administration Console:
  - a. Double-click **Media**
  - b. Double-click **User Media Sets**.
  - c. Right-click the media set you want to delete.
  - d. Click **Delete**.

From the Administration Console for NetWare:

- a. Select **Media**.
  - b. Select **Media View**.
  - c. Select the media set you want to delete.
  - d. Press <Del>.
2. From the Administration Console, click **OK**.

When prompted from the Administration Console for NetWare, press <Y>.



## Using Media Rotation

Backup Exec offers flexible solutions for protecting the data on your network. Use the media rotation feature and let Backup Exec do all of the administrative work for you, or design and manage your own media rotation strategy that meets your exact specifications.

### Choosing a Backup Strategy

Before you can have a secure and effective plan for managing your data, you must incorporate a strategy that includes the following information:

- ◆ The importance of the data you are backing up.
- ◆ How often you should back up your system.
- ◆ How much storage media will you use.
- ◆ When you will use certain storage media.
- ◆ How you will keep track of your backup information.

Before choosing a strategy to use, you should note these considerations:

#### How often should I back up?

While there is no requirement on how often to back up your data, you should consider the cost of re-creating data that was added or modified since the last backup. Calculate the manpower, lost time, sales and other costs that would be incurred if the file server or workstation crashed right before the next back up was to run. If the cost is excessive, the strategy should be adjusted accordingly.

For example, the cost to recreate an extensive database that is continually updated by several database operators would be substantial. Yet, the cost to recreate the data for a user creating one or two inter-office memos would be considerably less. In this scenario, the network administrator would probably opt to back up the database several times daily, and set up daily jobs for the user's workstation.

In an ideal environment, one Full backup should be performed on workstations every day and servers should be fully backed up more often. Because of time and media constraints, this type of backup strategy may not be feasible for many environments, so a schedule including incremental or differential backs must be implemented. For safety reasons, a full backup should always be performed before adding new applications or changing the server configuration.

### How much data must be backed up?

The amount of data to be backed up is a key determinant of the media rotation strategy you choose. If you are backing up large amounts of data that need to be retained on media for long periods of time, you will need to select a strategy that is suitable for these requirements.

### How long does the media need to be stored?

The amount of time the data needs to be stored is directly related to the media rotation scheme you choose. For example, if you use one media and back up every day, your backup will never be more than a day old.

Since storage media is relatively inexpensive when compared to the value of your data, it is a good idea to periodically back up your system on media not used in the media rotation scheme and store it permanently. Some administrators may choose to do this every week, while others may choose to store only one permanent backup per month.

The threat of viruses is an issue also. Some viruses take effect immediately, while others may take days or weeks to cause noticeable damage. Because of this, you should have at least the following backups available to restore at any time:

- ◆ A one-week-old Full backup.
- ◆ A one-month old Full backup.

Having these backups available should allow you to restore your system to the state it was in prior to when it became infected.

### Which devices am I backing up?

Since Backup Exec can back up servers, workstations, and databases, this needs to be considered when choosing a media rotation strategy. You will need to coordinate times that are suitable to back up different devices. For example, you may want to back up file servers during the evening, and back up workstations at lunchtime.

### Should I include more than one system in each job?

When you are setting up jobs for the network, you will have to decide if you want to create one job that includes many devices, or a job for each device. There are advantages and disadvantages with each method.

- ◆ One job per device:
  - Advantages:
    - If a job fails, you know immediately which device did not get backed up.
    - If a device is turned off or moved, backups of other devices will not be affected.





- When devices are added to the network, you can set up new jobs for each device.
- Disadvantage:
  - You have more jobs to keep track of (for example, reviewing job logs)
- ◆ Multiple devices per job:
  - Advantages:
    - There are fewer jobs to create and to keep track of.
    - You know the order in which the data gets backed up.
    - You could make the job an overwrite job and use the same names for the media and the job.
  - Disadvantage:
    - If any of the devices in the job are not available during the backup or if there is an error associated with only one of the devices, the job will result in a non-normal completion status. In such a case, you must search through a larger history to determine the cause of the abnormal completion.



## Choosing a Media Rotation Strategy

If you do not use Backup Exec's automated media rotation, you can choose from many different manual media rotation strategies designed to protect your data. These strategies differ mostly by the number of media required and the *backup horizon*, how long media is kept before it is rotated back into the schedule.

### Backup Strategy: Father/Son

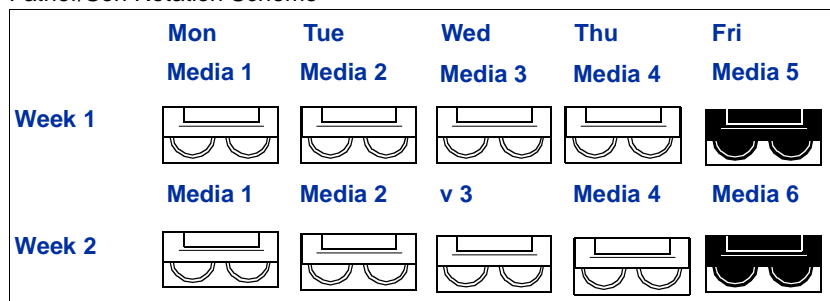
*Number of media required:* 6 (minimum)

*Backup horizon:* Two weeks

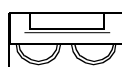
The Father/Son media rotation scheme uses a combination of full and differential or incremental backups for a two-week schedule.

In the Father/Son scenario, four media are used Monday through Thursday for differential or incremental backups. The other two media containing full backups are rotated out and stored off-site every Friday as shown in the following figure:

Father/Son Rotation Scheme



= Full Backup



Incremental or  
= Differential  
Backup

**Note** When this backup strategy is first implemented, you must start with a full backup.

The Father/Son strategy is easy to administer and allows you to keep data longer than if you run daily full backups on the same media, but is not suitable for the stringent data protection needs of most network environments.



## Backup Strategy: Grandfather

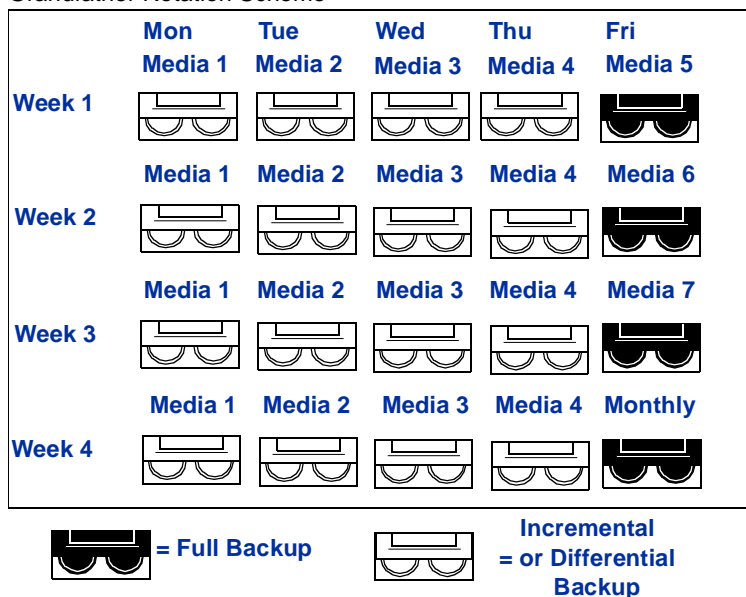
*Number of media required:* 19 (minimum)

*Backup horizon:* One year

The Grandfather method is one of the most common media rotation schemes. It is simple to administer and comprehensive enough to allow easy location of files when they need to be restored.

In the Grandfather scenario, four media are used Monday through Thursday for incremental or differential backups; another three media are used every Friday for full backups. The remaining 12 media are used for monthly full backups and are kept off-site as shown in the following figure.

Grandfather Rotation Scheme



The Grandfather strategy is recommended because it offers a good media number to storage life ratio (19 media/1 year). It is also easy to modify should you want to incorporate more media. For example, you could perform a full backup on the last Saturday of the month to archive permanently.

## Grandfather/Father/Son

*Number of media required:* 11 (minimum)

*Backup horizon:* 12 weeks

Some backup schedules result in excessive wear on the media that are used most often in the schedule. For example, a schedule may require that the same four media are to be used to do incremental or differential backups on Monday through Thursday, every week. The Grandfather/ Father/Son strategy eliminates this by rotating media in a way that allows each tape to be used the same number of times over a 40 week period. The cycle begins with a full backup on each Friday, with incremental or differential backups Monday through Thursday. On the fourth Friday of each month, a full backup is performed and rotated off-site.

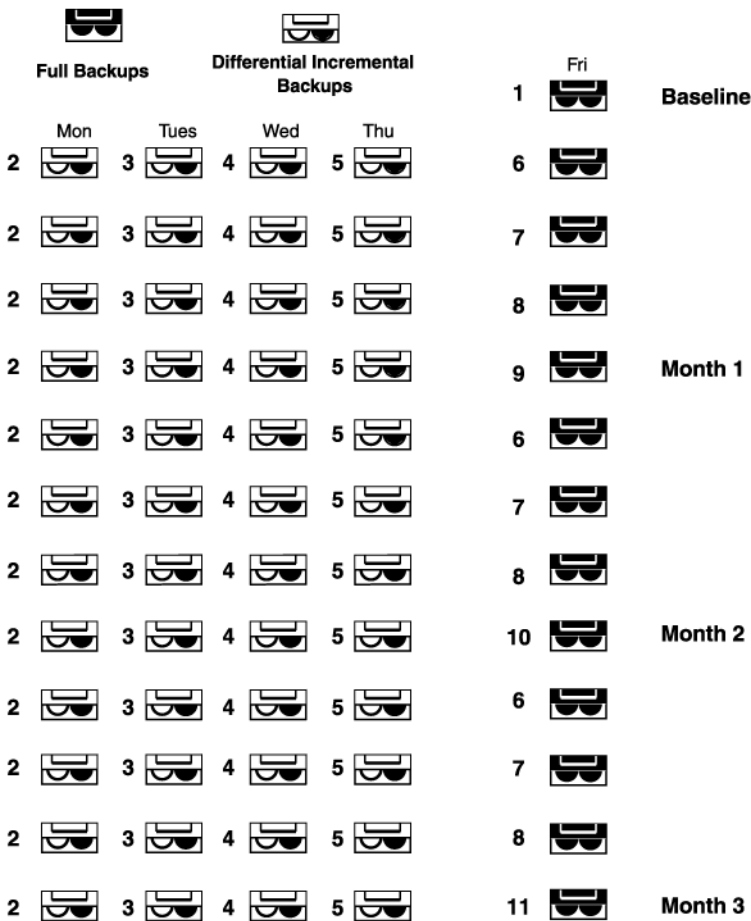
The strategy is divided into 10 four-week intervals. The same four media are used Monday through Thursday in a given month, but change the next month. A different tape is used each Friday of the month.

When you first implement the Grandfather/Father/Son strategy, you will perform a full backup on Tape 10 before backing up to Tape 1 on Monday. This will ensure that you have a four-week-old copy of your data at the end of the first four-week cycle.

The main benefit of the Grandfather/Father/Son strategy is that all media are used equally during the cycle. This strategy is more difficult to administrate than others listed in this chapter, and although fewer media are required than the Grandfather strategy, storage life is reduced to 12 weeks as shown in the following figure.



Grandfather/Father/Son



Second quarter daily backups will be media 1, 2, 3, 4

Weekly media will be 5, 6, 7

Monthly media will be 8, 9, 10

Third quarter daily backups will be media 11, 1, 2, 3

Weekly media will be 4, 5, 6

Monthly media will be 7, 8, 9

Fourth quarter daily backups will be media 10, 11, 1, 2

Weekly media will be 3, 4, 5

Monthly media will be 6, 7, 8



## Using Backup Exec's Automated Media Rotation

Media rotation is an optional feature that makes the job of protecting vital data easier for you. The media rotation feature offers the following benefits:

- ◆ *Reliability.* Jobs are scheduled and tracked for you. You can manage your daily, weekly, and monthly backups by creating a single job.
- ◆ *Enhanced job tracking.* There are no longer multiple jobs to track.

You can create a media rotation job from either the Administration Console (see [“Creating a Media Rotation Job from the Administration Console”](#) on page 398) or from the Administration Console for NetWare (see [“Creating a Media Rotation Job from the Administration Console for Netware”](#) on page 417).

Creating a media rotation job differs somewhat from creating a regular backup job. When you create a backup job, you can be in either the media management mode or the partition management mode. When the backup job is created, you target a specific media set and drive/drive pool or partition, and select a policy to be used with the job.

A media rotation job can only be created when in the media management mode, and you do *not* specify a policy to be used when creating a media rotation job. Instead of targeting a specific media set, a media rotation job creates three media sets:

- ◆ **Daily media set.** The overwrite protection period for media in this media set is seven days. This media set would be used for non-full backups performed, such as daily incremental backups.
- ◆ **Weekly media set.** The overwrite protection period for media in this media set is one month. Full backups that need to be retained for more than 30 days but less than one year would be run on media in this media set.
- ◆ **Monthly media set.** The overwrite protection period for media in this media set is one year. Full backups that need to be retained for one year or longer would be run on media in this media set.

---

**Caution** For the overwrite and append periods to protect media properly, the Media Overwrite Protection Level must be set to Partial or Full (see [“Setting Media Overwrite Options”](#) on page 368).

---

The minimum amount of media needed to perform a media rotation scheme can vary depending on:

- ◆ *The amount of data being backed up.* The data being backed up could require more than one media for each job instance.



- ◆ *The drive or drive pool selected as the destination.* If you have selected a drive pool that includes different types of drives, the media rotation job could require one type of media for one day and then a second type of media the next time it runs. If the destination is a single drive or contains only drives of one type, then the same media can be used.
- ◆ *The backup methods selected.* If you select to run full and differential backups, you will need more media than if you run full and incremental backups; differential backups include all files created or modified since the last full or incremental backup on each backup, creating redundant backups (see [“Backup Methods”](#) on page 77).

## Creating a Media Rotation Job from the Administration Console

Creating a media rotation job can be done from the Administration Console using the Media Rotation Wizard or by completing a series of dialog boxes, provided you are running in the media management mode.

### ▼ To run the Media Rotation Wizard:

1. From the Administration Console, click **Tools**.
2. Point to **Wizards**, and then click **Launch the Media Rotation Job Wizard**.

---

**Tip** You can also launch the wizard by clicking the wizard icon from the toolbar (see [“Using the Toolbar and Menu Bar”](#) on page 9) or from the taskpad (see [“The Backup Exec Assistant and Wizards”](#) on page 23).

---

3. Follow the on-screen instructions to complete the wizard.

### ▼ To create a media rotation job from the Administration Console without the wizard:

1. From the Administration Console toolbar, click **Jobs**, and then click **Media Rotation**.

---

**Tip** You can also click the **Create a Media Rotation Job** icon from the Administration Console's toolbar or use the Schedule View subnode under the Jobs node for creating a media rotation job. For information about using Schedule View to create a media rotation job, see [“Creating a Job from the Schedule View”](#) on page 207.

---

2. Enter options for the **General** dialog box.

Options for the General dialog box are described in [“General Options for Media Rotation Job Properties”](#) on page 400.

**3. Click Selections.**

Options for this dialog box and procedures for making selections are described in [“Making Media Rotation Selections from the Administration Console”](#) on page 401.

**4. Enter the options you want for the following dialog boxes, if applicable to this media rotation job:**

- **Media** (see [“Media Options for Media Rotation Job Properties”](#) on page 404)
- **Process Options** (see [“Process Options for Media Rotation Jobs”](#) on page 405)
- **Backup Method** (see [“Backup Method Options for Media Rotation Jobs”](#) on page 406)
- **Job Log** (see [“Job Log Options for Media Rotation Job Properties”](#) on page 407)
- **Pre/Post Options** (see [“Pre/Post Options for Media Rotation Job Properties”](#) on page 409)
- **Open Files** (see [“Open Files Options for Media Rotation Job Properties”](#) on page 411)
- **NetWare** (see [“NetWare Options for Media Rotation Job Properties”](#) on page 413)
- **Windows 2000** (see [“Windows 2000 Options for Media Rotation Job Properties”](#) on page 414)
- **Broadcast/E-mail** (see [“Broadcast/E-mail Options for Media Rotation Job Properties”](#) on page 416)

**5. Click OK.**

**6. When prompted, click **Yes** to continue the submission or **No** to reschedule the date and time the job will run.**

You can monitor the job using the **Jobs** node in the Administration Console or from the Administration Console for NetWare's **Administration** menu (see [“Monitoring Jobs”](#) on page 175).

For information about editing a media rotation job, see [“Viewing or Editing a Job”](#) on page 188.

For information about deleting a media rotation job, see [“Deleting a Job”](#) on page 191.





## General Options for Media Rotation Job Properties

The General dialog box appears when creating, viewing, or modifying a media rotation job from the Administration Console.

Media Rotation | General Dialog Box

The screenshot shows the 'Media Rotation Job Properties' dialog box with the 'General' tab selected. The dialog has a title bar with a close button (X) and a menu icon. Below the title bar are several tabs: 'Pre/Post Options', 'Open Files', 'NetWare', 'Windows 2000', 'Broadcast / E-mail', 'General', 'Selections', 'Media', 'Process Options', 'Backup Method', and 'Job Log'. The 'General' tab is active and contains the following fields and options:

- Job name:** MRJob\_1
- Media description:** Media Created on Aug 10, 2001
- Backup set name:** (empty field)
- Backup set description:** MRJob\_1
- General Options:**
  - Submit job on hold
- Execution Options:**
  - Current server date:** 08/10/2001 1:25:31 PM
  - Execution date:** 08/10/2001 1:24:52 PM

This dialog box contains the following options:

- ◆ **Job name.** Enter a job name or use the default name created by Backup Exec. The name will differentiate this job from others in your job log records.
- ◆ **Media description.** Specify a label for the new or overwritable media. This label identifies the media appearing in the results pane when the **Media** node and subnodes are selected and identifies the media when making restore selections.  
The **Media description** defaults to “Media created on <date the job was initialized>”.
- ◆ **Backup set name.** Enter a name for this backup set.
- ◆ **Backup set description.** Enter a description of the contents being backed up or accept the default. The default for this field is the same as the default for **Job name**.
- ◆ **Submit job on hold.** Select this option to have the job placed on hold.
- ◆ **Current server date.** Displays the current date and time of the media server. This option only appears if **Select to use media server time** is selected as the **Server/Client Time Options** on the Administration Console Options General dialog box (see “[General Options for the Administration Console](#)” on page 269).

- ◆ **Current workstation date.** Displays the current date and time of the local workstation. This option only appears if **Select to use client workstation time** is selected as the **Server/Client Time Options** on the Administration Console Options General dialog box (see “[General Options for the Administration Console](#)” on page 269).
- ◆ **Execution date.** Enter or select the date and time you want the job to begin processing.

## Making Media Rotation Selections from the Administration Console

In the Administration Console, similar procedures are used to select data for media rotation operations whether you are running the Media Rotation Job Wizard or are creating a media rotation job through the **Media Rotation** option. You must first select a resource type. Available resource types include:

- ◆ NetWare Servers
- ◆ Remote Agents for NT/2000
- ◆ DOS Workstations
- ◆ OS/2 Workstations
- ◆ Macintosh Workstations
- ◆ Unix/Linux Workstations
- ◆ Windows 95/98/Me Workstations
- ◆ Windows NT/2000 Servers/Workstations
- ◆ Database Agents

If the **Graphics** version is selected as the **Display** option, double-click the icon or resource type appearing in the left pane of the dialog box to display a list of all available systems for that resource type, and select the device you want to protect.

---

**Note** If the account to which you are logged in does not have sufficient rights, or if this is the first time the agent has been accessed, you are required to supply the user name and password.

---

To expand the view for a device, click the adjacent box that contains the plus sign (+) or double-click the resource name. To collapse the view, click the minus sign (-) or double-click the resource name. To view the contents of a device, click the device's icon. To select data, select the check box next to the directory or file you want to back up.

A slash in a check box means that some items below the directory level are selected, but the item itself is not selected.

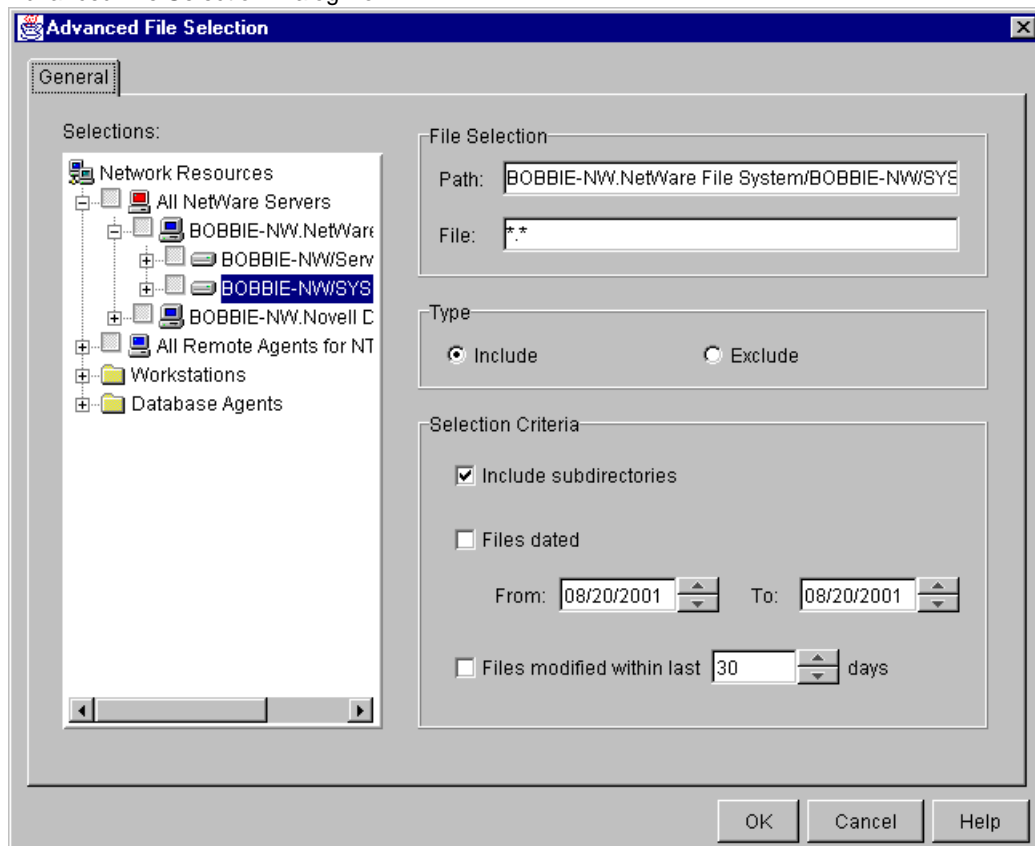


If **Text version** is selected as the **Display** option, click **Insert** to make file selections from the Advanced File Selections dialog box (see “[Advanced File Selection Options](#)” on page 402).

### Advanced File Selection Options

The Advanced File Selection dialog box can be accessed when creating a backup, restore, or media job by right-clicking a node in the Selections dialog box or when right-clicking a selected **Network Resource** on the tree or results panes (see “[Making Media Rotation Selections from the Administration Console](#)” on page 401).

Advanced File Selection Dialog Box



This dialog contains the following options:

- ◆ **Selections.** Select the resource containing the files you want to include or exclude. The default view is what was selected from the Selections dialog box.
- ◆ **Path.** Current directory or subdirectory information appears.

- ◆ **File.** Specify any files to be included or excluded. Wildcard characters are permitted. The asterisk (\*) in a file name or extension is a wildcard character that represents all characters occupying any remaining position in the file name or extension. The question mark (?), the wildcard for a single character, is also supported.
- ◆ **Include.** Select this option if you want Backup Exec to include all files that meet your file specification.
- ◆ **Exclude.** Select this option if you want Backup Exec to exclude all files that meet your file specification.
- ◆ **Include subdirectories.** Select this option if you want to include all subdirectories contained within all directories that are part of your selections.

If the backup is beginning at the root level of a disk (such as drive C:), all directories and subdirectories on that disk will be included. If you entered a specific path (directory), all files and directories that match the file selection criteria will be included. By default, this is all files and directories (\*.\*)

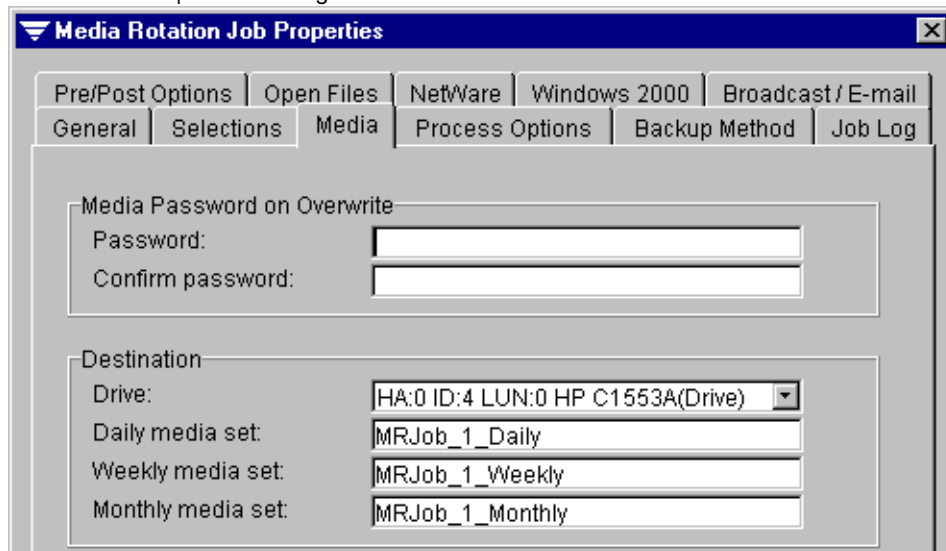
- ◆ **Files dated.** Select this option if you want to include or exclude all files that were changed or created within a specified range of dates.
  - **From.** Select the starting date of the range for including or excluding files.
  - **To.** Select the ending date of the range for including or excluding files.
- ◆ **Files modified within last x days.** Select this option to include or exclude files that have been modified within the specified number of days. Specify the number of days you want Backup Exec to use for this option.



## Media Options for Media Rotation Job Properties

The Media dialog box that appears when creating, viewing, or modifying a media rotation job is similar to the Media dialog box that appears when creating a backup job; it contains the options for setting a media password and selecting the destination drive. When creating a backup job, however, you designate only one media set, while with media rotation jobs, you designate the destination weekly, monthly, and yearly media sets.

Media Rotation | Media Dialog Box



The **Media Password on Overwrite** options include:

- ◆ **Password.** Enter a media password if you are overwriting the media and you want to password protect it. A password is *not* required. When a password protected media is taken to another location, such as another media server, the password is required to read the data on the media.

---

**Note** Password protected media can be erased without requiring the password.

---

- ◆ **Confirm password.** Verify the password by re-typing it.

The **Destination** options include:

- ◆ **Drive.** Select the drive where this backup job is to be run.
- ◆ **Daily media set.** Enter a name or use the default for the media set that has a seven-day (weekly) overwrite protection period.
- ◆ **Weekly media set.** Enter a name or use the default for the media set that has a monthly overwrite protection period.

- ◆ **Monthly media set.** Enter a name or use the default for the media set that has a yearly overwrite protection period.

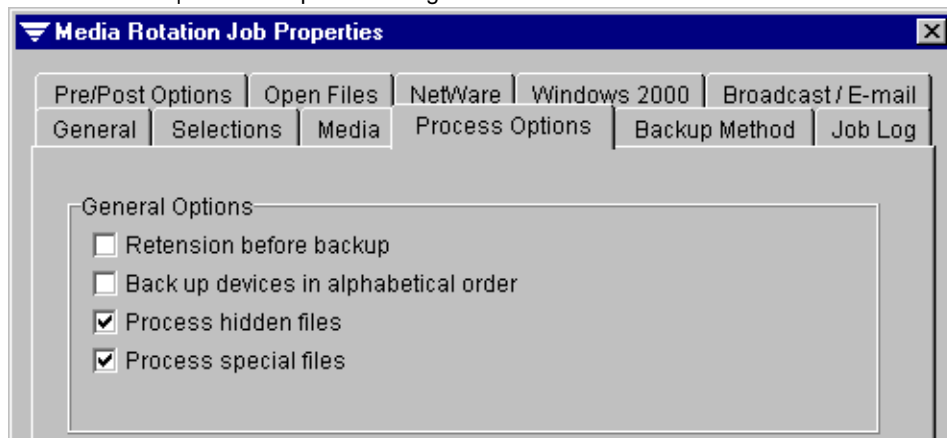
The daily, weekly, and monthly media sets created by the media rotation job appear under the Administration Console's **Media Rotation Sets** node (see "Media" on page 19).

If allocated or imported media are in the drive, they may also be overwritten depending on the Media Overwrite Protection Level set in the media server default options (see "Configuring Backup Exec" on page 239).

## Process Options for Media Rotation Jobs

The Process Options dialog box appears when creating, viewing, or modifying a media rotation job.

Media Rotation | Process Options Dialog Box



This dialog box contains the following options:

- ◆ **Retension before backup.** Select this option to have Backup Exec run the media in the drive from beginning to end at a fast speed before the media rotation job begins. Retensioning the media ensures that the tape winds evenly and runs more smoothly past the drive heads.
- ◆ **Back up devices in alphabetical order.** Select this option to have selected devices backed up in alphabetical order. If this option is not selected, devices are backed up in the order in which they were selected.
- ◆ **Process hidden files.** Select this option if you want to back up hidden files, which are files used by DOS and some applications that do not appear when you view a directory with DOS's DIR command. If this option is not selected, hidden files will not be backed up unless they are selected individually for backup in the Backup Source window.

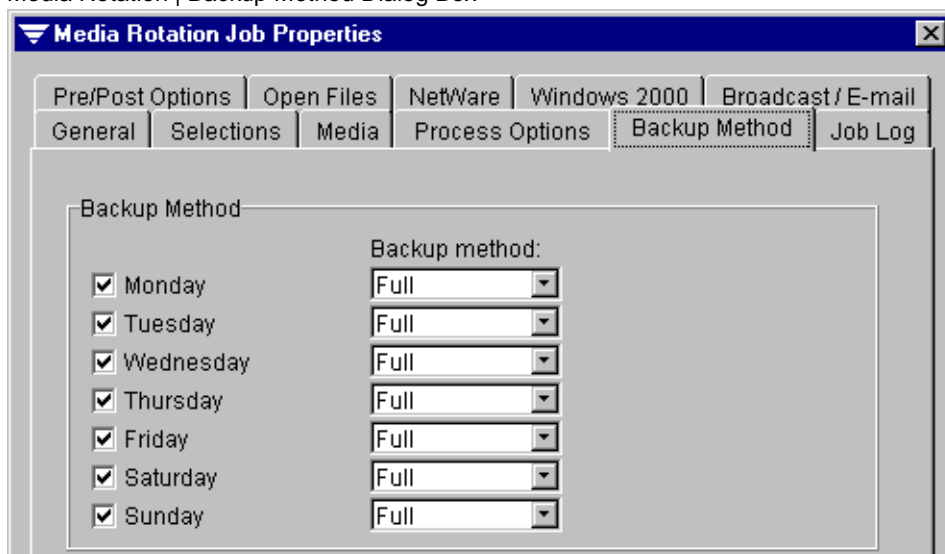


- ◆ **Process special files.** Select this option to back up files that are marked with any combination of system <S> or read-only <R> attributes. If this option is not selected, special files will not be backed up unless selected individually for backup in the Backup Source window.

## Backup Method Options for Media Rotation Jobs

The Backup Methods dialog box that appears when creating, viewing, or modifying a media rotation job allows you to select the day of the week you want the media rotation job to run and to specify the type of backup that is to be performed for the selected day.

Media Rotation | Backup Method Dialog Box



The backup method options include:

- ◆ **Day.** Click on the check box next to each day of the week you want the media rotation job to run.
- ◆ **Backup method.** For each day selected, select one of the following backup methods:
  - **Full.** Backs up all selected files and changes the files' archive bits to indicate that the files have been backed up.
  - **Differential.** Backs up selected files that were modified or created since the last full or incremental backup. The archive bit is left on, so the files will appear to the system as not having been backed up.

- **Incremental.** Backs up selected files that were modified or created since the last full or incremental backup, and switches the archive bit off so the files will appear to the system as having been backed up.
- **Copy.** Backs up all selected files, but does not change the archive bit.

## Job Log Options for Media Rotation Job Properties

The Job Log dialog box that appears when creating, viewing, or modifying a media rotation job allows you to specify the level of detail presented in the user job logs for this media rotation job. The highest possible level of detail is set in the **Job Logs** options set for the media server. This job cannot report a higher level than the setting set as the server default. For information about setting the Job Log options at the media server, see “[Job Log Options for the Media Server](#)” on page 245.

Media Rotation | Job Log Dialog Box

The screenshot shows the 'Media Rotation Job Properties' dialog box with the 'Job Log' tab selected. The dialog has a title bar with a close button. Below the title bar are several tabs: 'Pre/Post Options', 'Open Files', 'NetWare', 'Windows 2000', 'Broadcast / E-mail', 'General', 'Selections', 'Media', 'Process Options', 'Backup Method', and 'Job Log'. The 'Job Log' tab is active and contains the following settings:

- Job Log Detail Level:** A group box containing five radio button options:
  - None
  - Summary information (backup set information)
  - Summary information and directories processed
  - Summary information, directories, and files processed
  - Summary information, directories, files, and file details
- Printing Job Log:** A group box containing three checked checkboxes:
  - Print job log after job completes
  - Print job log on job failure
  - Print job log on job success
- Server name:** A text input field.
- Print queue:** A text input field.
- User name:** A text input field.
- Password:** A text input field.

Options for the **Job Log Detail Level** include:

- ◆ **None.** Selecting this level turns the logging feature off. A log record will be kept, but there will be no associated log file.





- ◆ **Summary information (backup set information).** This level of detail includes a NetWare network server/volume specification or Agent alias, the backup set number on the media, the media number, the media label, the starting date and time, any errors encountered, ending date and time, and completion statistics.
- ◆ **Summary information and directories processed.** This level includes a NetWare network server/volume specification or Agent alias, the backup set number on the media, the media number, the media label, the starting date and time, any errors encountered, ending date and time, and completion statistics plus a list of all processed subdirectories.
- ◆ **Summary information, directories, and files processed.** This level includes a NetWare network server/volume specification or Agent alias, the backup set number on the media, the media number, the media label, the starting date and time, any errors encountered, ending date and time, and completion statistics, a list of all processed subdirectories, and a listing of all files processed.
- ◆ **Summary information, directories, files, and file details.** This level includes a NetWare network server/volume specification or Agent alias, the backup set number on the media, the media number, the media label, the starting date and time, any errors encountered, ending date and time, and completion statistics, a list of all processed subdirectories, a listing of all files processed, plus file sizes, file date/time, and file attributes.

---

**Note** Changing the detail level will neither add to nor remove information from job logs already created for this media rotation job.

---

**Print Options** include:

- ◆ **Print job log after job completes.** Select this option to have Backup Exec automatically print the job log after the job completes.
- ◆ **Print job log on job failure.** Select this option to have Backup Exec automatically print the job log if the job fails.
- ◆ **Print job log on job success.** Select this option to have Backup Exec automatically print the job log if the job completes successfully.
- ◆ **Server name.** Enter the name of the file server controlling one or more printers used by the network.
- ◆ **Print queue.** Enter the name of the print queue.
- ◆ **User name.** Enter your user name.
- ◆ **Password.** Enter your network access password.

---

**Note** For a job log to print, the printing options must be set on the media server (see “[Job Log Options for the Administration Console](#)” on page 271).

---

## Pre/Post Options for Media Rotation Job Properties

The Pre/Post Options dialog box that appears when creating, viewing, or modifying a media rotation job allows you to specify console commands that Backup Exec will execute and to have Backup Exec perform certain functions before or after the media rotation job runs.

Media Rotation | Pre/Post Options Dialog Box

The screenshot shows the 'Media Rotation Job Properties' dialog box with the 'Pre/Post Options' tab selected. The dialog has a title bar with a close button and a menu icon. Below the title bar are several tabs: 'General', 'Selections', 'Media', 'Process Options', 'Backup Method', 'Job Log', 'Pre/Post Options', 'Open Files', 'NetWare', 'Windows 2000', and 'Broadcast / E-mail'. The 'Pre/Post Options' tab is active and contains two sections: 'Pre/Post Commands' and 'Pre/Post Options'. The 'Pre/Post Commands' section has four fields: 'Execute before backup:' with an empty text box, 'Delay after command (seconds):' with a spinner box set to '0', 'Execute after backup:' with an empty text box, and 'Delay after command (seconds):' with a spinner box set to '0'. The 'Pre/Post Options' section has four checkboxes: 'Pre-scan backup sets to estimate size' (unchecked), 'Eject media after job completes' (unchecked), 'Verify after each backup' (checked), and 'Quick Check' (unchecked). At the bottom of the dialog are three buttons: 'OK', 'Cancel', and 'Help'.

Tab	Value
Execute before backup:	
Delay after command (seconds):	0
Execute after backup:	
Delay after command (seconds):	0

- Pre-scan backup sets to estimate size
- Eject media after job completes
- Verify after each backup
- Quick Check



The **Pre/Post Commands** include the following options:

- ◆ **Execute before backup.** Enter a console command that you want the server to execute just before each device is backed up. This option is useful for closing database applications before backing them up.
- ◆ **Delay after command (seconds).** Specify the number of seconds you want Backup Exec to delay between the time the command is executed and the start of the job.
- ◆ **Execute after backup.** Enter a console command that you want the server to execute immediately after each device is backed up.
- ◆ **Delay after command (seconds).** Specify the number of seconds you want Backup Exec to delay between the time the command is executed and the start of the next job.

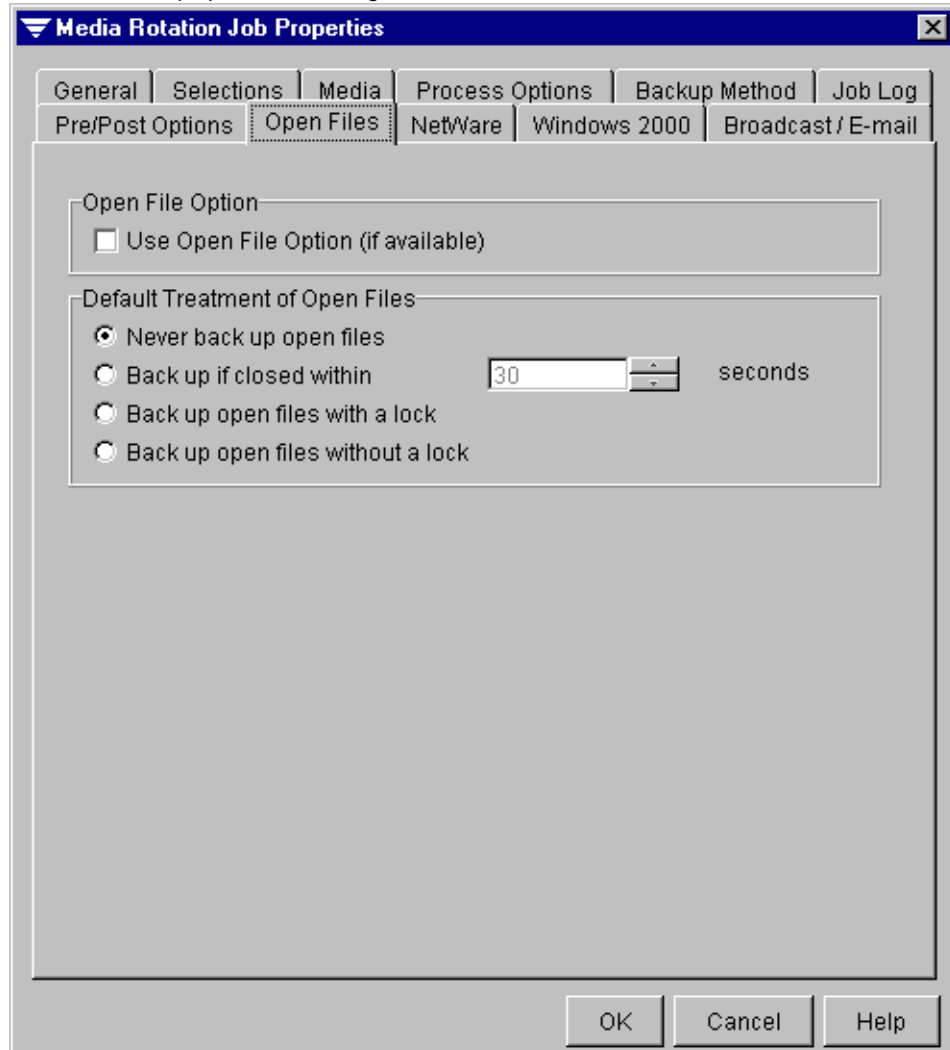
The **Pre/Post Options** include the following options:

- ◆ **Pre-scan backup sets to estimate size.** Select this option to have Backup Exec estimate the number of bytes to be backed up when the media rotation operation begins. This option may cause the job to take a little longer, but it allows you to monitor the progress of the operation by percentage complete.
- ◆ **Eject media after the job completes.** Select this option to have Backup Exec automatically eject the media in the drive when the job completes. The drive must support the eject media feature. This option can be used in single and multiple drive configurations and with robots.
- ◆ **Verify after each backup.** Select this option to verify the data backed up. Verifying the media ensures that no errors were encountered during the media rotation job and that the data on the media can be restored by Backup Exec. For more information about performing verifies or Quick Check, see [“Performing Verifies and Quick Checks”](#) on page 96.
- ◆ **Quick Check.** Select this option to have Backup Exec perform a Quick Check to confirm that data backed up during the media rotation job can be restored. When this option is selected, one file from each backup set is checked. Quick Check must also be enabled on the media server, or this setting will be ignored when the job runs (see [“Quick Check Options for the Media Server”](#) on page 258). For more information about performing verifies or Quick Check, see [“Performing Verifies and Quick Checks”](#) on page 96.

## Open Files Options for Media Rotation Job Properties

The Open Files dialog box that appears when creating, viewing, or modifying a media rotation job allows you to choose how Backup Exec will treat open files it encounters when running the media rotation job.

Media Rotation | Open Files Dialog Box



These options include:

- ◆ **Use Open File Option (if available).** Select this option if you have purchased and want to use the Open File Option for this job. The Open File Option must be installed on the server you want to back up using this option. For information about how the Open File Option works, see “[About the Open File Option](#)” on page 510.
- ◆ **Default Treatment of Open Files.** Select how Backup Exec is to treat open files when performing the media rotation job if the Open File Option is not available. Select from one of the following options:
  - **Never back up open files.** Select this option if you want files that are in-use on the server or workstation to be excluded from the backup.
  - **Back up if closed within [ ] seconds.** Select this option if you want Backup Exec to wait a specified number of seconds for the file to close before skipping the file. Enter or select the number of seconds you want Backup Exec to wait. If the file is not closed when that interval elapses, the file will not be backed up.
  - **Back up open files with a lock.** Select this option to include open files in the backup.

When this option is selected Backup Exec *locks* open files while they are being backed up with a deny write lock that prevents users and other applications from modifying files while the backup is in progress. Larger files take longer to process. If an application running on a user's workstation attempts to write to a file locked by Backup Exec, typically a *write error* will result in that application. The handling of this condition is strictly dependent on the application attempting to write to the file. After the file is backed up, it will be unlocked and a warning message will be displayed and logged, indicating that the open file was backed up.

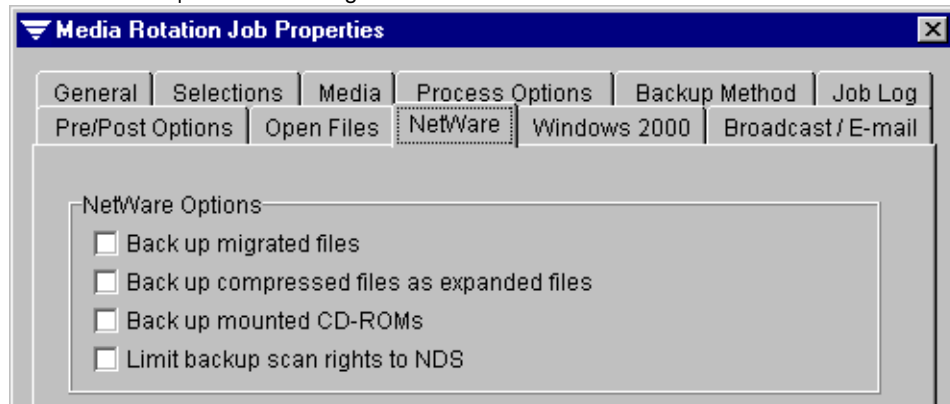
If a file was open for *exclusive use* or *deny read* by another workstation, Backup Exec will be unable to back up the file, and it will be skipped.

- **Back up open files without a lock.** Select this option to have Backup Exec include open files in the media rotation job without locking these open files. Users or other applications can modify files while the media rotation job is in progress, creating a backup file that is old or corrupted. This type of backup is strongly discouraged. If you select this option, a warning appears.

## NetWare Options for Media Rotation Job Properties

The NetWare dialog box that appears when creating, viewing, or modifying a media rotation job allows you to select how Backup Exec treats your NetWare servers when running the job.

Media Rotation | NetWare Dialog Box



Options include:

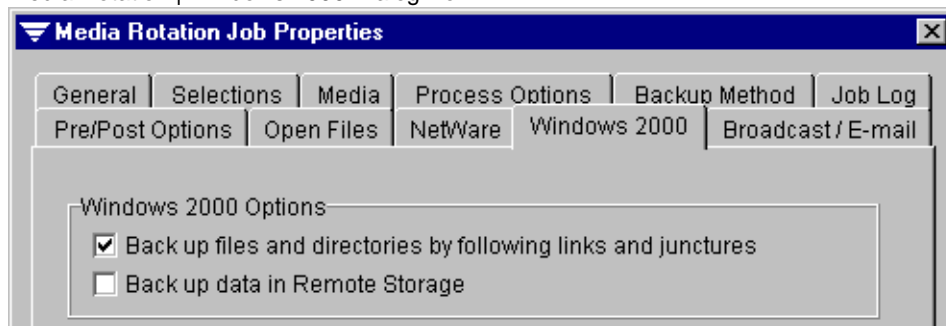
- ◆ **Back up migrated files.** Select this option to have Backup Exec back up *migrated files*, which are files that have been moved using Novell's File Migration feature to an alternative storage media such as an optical disk. Selecting this option requires the server to access the alternative media. Depending on the transfer rate of the media you are backing up, selecting this option could slow processing time considerably. A warning message appears if you enable this option due to the potential for media unavailability.
- ◆ **Back up compressed files as expanded files.** Select this option to have Backup Exec expand compressed files before they are backed up. The compressed files remain on the hard disk. The backup operation will take longer due to the extra time involved in file decompression. In most cases, this option should be left unmarked.
- ◆ **Back up mounted CD-ROMs.** Select this option to back up CD-ROMs mounted as NetWare volumes. Choosing to back up CD-ROMs increases the amount of media and time needed to perform the backup operation. However, you may want to back up CD-ROMs to create a copy of data or programs stored on the CD-ROMs.
- ◆ **Limit backup scan rights to NDS.** Select this option if you want to limit the NetWare Directory Services objects you can view and back up to only those for which you also have restore rights. Attempts to restore Directory Services objects for which you do not have the proper rights will result in a job completion status of Error and SMS errors will be generated for each object that you do not have the rights to restore.



## Windows 2000 Options for Media Rotation Job Properties

The Windows 2000 dialog box that appears when creating, viewing, or modifying a media rotation job allows you to select options for backing up the contents of Windows 2000 mounted drives and offline files when using the Remote Agent for Windows NT/2000.

Media Rotation | Windows 2000 Dialog Box



Options include:

- ◆ **Back up files and directories by following links and junctures.** Select this option to back up information for the junction points and the files and directories to which they are linked. If this option is not selected, then only the information for junction points will be backed up; the files and directories to which they are linked will not be backed up.

**Note** In some cases, clearing this option may have no effect. If software other than Microsoft's linkd.exe created the symbolic links, the actual files and directories to which the junction points are linked will also be backed up.

Since mounted drives that have no drive letter assigned to them cannot be selected through the user interface, the files and directories to which they are linked are backed up regardless of whether this option is selected.

If this option is selected and the actual files and directories to which the junction points are linked are also included in the backup selections, then the files and directories will be backed up once during the normal file and directory backup, and again via the junction point.

**Caution** If a junction point is linked to a location that encompasses it, then recursion (a situation where data is backed up repeatedly) occurs, resulting in an error and job failure. For example, if C:\junctionpoint is linked to C:\, recursion will occur when attempting to back up C:\junctionpoint, and the backup job will fail.

- ◆ **Back up data in Remote Storage.** Select this option to back up data that has been migrated from primary storage to secondary storage. The data will not be recalled to its original location; it will be backed up directly to the backup media.

If this option is selected, you should not run a backup of your entire system because Backup Exec will have to load the data that has been migrated to the secondary storage and additional time will be required for any set that includes migrated data.

If this option is not selected, only the placeholder that stores the location of the data on secondary storage will be backed up, not the data itself.

---

**Note** This option should not be selected if the device used for secondary storage and backups contains only one drive because Remote Storage and Backup Exec will compete for use of the drive.

To back up the Removable Storage database in the `\Ntmsda` subdirectory, the WMI repository in the `wbem\Repository` subdirectory, and the Terminal Services database in the default `\LServer` subdirectory, select the `<Systemroot>\System32` directory.

Files that you place in the `<Systemroot>\System32\Ntmsdata` subdirectory, the `\wbem\Repository` subdirectory, or the default `\LServer` subdirectory may not be backed up; only system files are included in the backup. It is recommended that you do not place user files in the `<Systemroot>\System32` directory or subdirectories.

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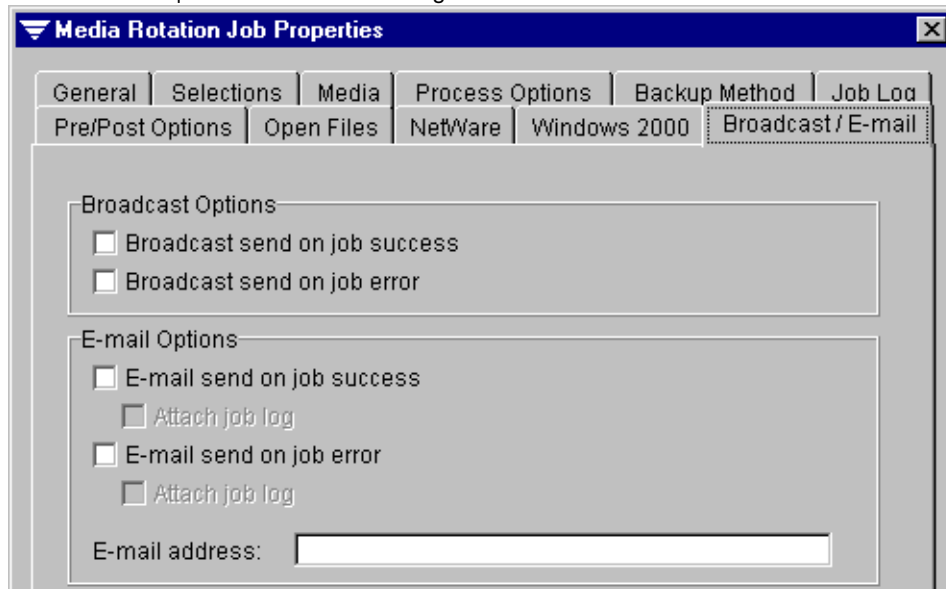




## Broadcast/E-mail Options for Media Rotation Job Properties

The Broadcast/E-mail dialog box that appears when creating, viewing, or modifying a media rotation job allows you to specify when Backup Exec sends broadcast or e-mail messages. Broadcast messages are sent via the NetWare broadcast utility. Broadcast options must be configured for the media server (see “Broadcast Options for the Media Server” on page 254).

Media Rotation | Broadcast/E-mail Dialog Box



**Broadcast Options** include:

- ◆ **Broadcast send on job success.** Select this option if you want to receive a message when a job completes with a *Normal* status. The message will appear at the workstation to which you are logged in.
- ◆ **Broadcast send on job error.** Select this option if you want to receive a message when a job completes with an *Error* or *Aborted* status. The message appears at the workstation to which you are logged in.

**E-mail Options** include:

- ◆ **E-mail send on job success.** Select this option if you want Backup Exec to send an e-mail message when a job completes with a *Normal* status.
  - **Attach job log.** Select this option if you want Backup Exec to attach the job log to e-mail messages sent for jobs completing with a *Normal* status.
- ◆ **E-mail send on job error.** Select this option if you want Backup Exec to send an e-mail message when a job completes with an *Error* or *Aborted* status.

- **Attach job log.** Select this option if you want Backup Exec to attach the job log to e-mail messages sent for jobs completing with an *Error* or *Aborted* status.
- ◆ **E-mail Address.** Enter the e-mail address where the messages are to be sent. Make sure the proper addresses are entered using the correct syntax; otherwise, you will not receive Backup Exec e-mail messages.

## Creating a Media Rotation Job from the Administration Console for Netware

You can create a media rotation job from the Administration Console for Netware by completing a series of dialog boxes.

### ▼ To Create A Media Rotation Job:

1. From the Administration Console for Netware, select **Jobs**.
2. Select **Media Rotation**.
3. Select **Make Selections**.

The Media Rotation Source window appears.

Backup Exec displays published servers and workstations. You can select devices to be backed up or use the selection arrows to select a device from which you want to select files or directories. For information on selecting devices or directories and files to be backed up, see [“Making Media Rotation Selections from the Administration Console for Netware”](#) on page 418.

4. Select what is to be backed up, and press <F2>.
5. From the **Backup** menu, select **Submit**.
6. Provide the details for your job in the backup job dialog box. Options for this dialog box are described in [“Media Rotation Job Dialog Options”](#) on page 419.
7. Press <F2>.

A message that the job was submitted to the media server appears.

8. Press any key to return to the **Backup** menu.

You can monitor the job using the Administration Console for Netware's **Administration** menu or from the **Jobs** node in the Administration Console (see [“Monitoring Jobs”](#) on page 175).



For information about editing a media rotation job, see “[Viewing or Editing a Job](#)” on page 188.

For information about deleting a media rotation job, see “[Deleting a Job](#)” on page 191.

## Making Media Rotation Selections from the Administration Console for Netware

Backup Exec displays published servers and workstations in the Media Rotation Source window that appears when making selections for a media rotation job from the Administration Console for Netware.

Indicators appear in brackets ([ ]) next to the name of the devices . These include:

- ◆ [None]. No data is selected on the device for backup.
- ◆ [Some]. Some data has been selected for backup.
- ◆ [All]. All of the information on the device has been selected.

To select an entire device for back up, move the selection arrows next to the device, and press <Spacebar>. The selection will be highlighted.

When you first select a device, you must supply the user name and password for accessing this device, unless the **Auto Login** option is enabled (see “[Configuring Backup Exec](#)” on page 239). Select **Save in password database** to have Backup Exec automatically provide the user name and password the next time you access this device. This option is unavailable if Backup Exec's **Auto Login** option is disabled.

If you prefer to select directories or files in the device to be backed up, rather than the entire device, ensure the selection arrows are next to the device from which you want to make directory or file selections and press <Enter>.

Continue pressing <Enter> until you reach the Directory Listing window. Use <Spacebar> to select the directories and files you want to back up.

**Note** If you mark individual files in a directory, only those files are backed up. Files added to the directory after the media rotation job was submitted are not backed up. If you mark the entire directory, all files within that directory are backed up, including any files added after the media rotation job was initially submitted.

You can move quickly among directories and filenames by pressing the first letter of the filename. For example, pressing <C> moves the cursor over the first file that begins with the letter C.

When your selections are complete, press <F2> to return to the **Media Rotation** menu. You can now select **Submit** to complete the steps for submitting the media rotation job (see “[Media Rotation Job Dialog Options](#)” on page 419).

## Media Rotation Job Dialog Options

The Media Rotation Job dialog box that appears when creating a media rotation job from the Administration Console for Netware allows you to:

- ◆ Enter general options for this media rotation job.
- ◆ Enter advanced options for this media rotation job.
- ◆ Target the job to a specific drive.

Media Rotation Job Dialog Box

```

Media Rotation Job Properties
-----
Job name:                [MRJob_1]
Media description:       [Media Created on Sep 06, 2001]
Backup set name:         [MRJob_1]
Backup set description:  [MRJob_1]

Execution date:  [09/06/2001]   Time:  [11:32] AM <•> PM <◁>

[ ] Submit job on hold

Advanced options:        [Press <Enter> for Advanced Options]
Media management:       [Press to select device/media set name]
  
```

General options appearing on this dialog box include:

- ◆ **Job name.** Enter a job name or use the default name created by Backup Exec. The name will differentiate this job from others in your job log records.
- ◆ **Media description.** Specify a media description for the new or overwritable media. This description identifies the media appearing in the results pane when the **Media** node and subnodes are selected and identifies the media when making restore selections.
- ◆ **Backup set name.** Enter a name for this backup set.



- ◆ **Backup set description.** Enter a description of the contents being backed up or accept the default. The default for this field is the same as the default for **Job name**.
- ◆ **Execution date and time.** Enter the date and time you want the job to begin processing.
- ◆ **Submit job on hold.** Select this option to submit the job on hold.

▼ **To select the advanced options:**

1. Select **Advanced options**.
2. Press <Enter>.
3. Enter the options you want for the following dialog boxes, if applicable to this media rotation job:
  - **Process Options** (see "[Process Options for Media Rotation Jobs](#)" on page 405)
  - **Backup Method** (see "[Backup Method Options for Media Rotation Jobs](#)" on page 406)
  - **Job Log** (see "[Job Log Options for Media Rotation Job Properties](#)" on page 407)
  - **Pre/Post Options** (see "[Pre/Post Options for Media Rotation Job Properties](#)" on page 409)
  - **Open Files** (see "[Open Files Options for Media Rotation Job Properties](#)" on page 411)
  - **NetWare** (see "[NetWare Options for Media Rotation Job Properties](#)" on page 413)
  - **Windows 2000** (see "[Windows 2000 Options for Media Rotation Job Properties](#)" on page 414)
  - **Broadcast/E-mail** (see "[Broadcast/E-mail Options for Media Rotation Job Properties](#)" on page 416)

▼ **To select the target for this media rotation job:**

1. If you are in the media management mode, select **Media Management**.
2. Press <Enter>.
3. If you are in the media management mode, enter the target drive, media set, and media password, and then press <F2>.

For more information about these options, see "[Media Management Options](#)" on page 421.

## Media Management Options

The Media Management dialog box that appears on the Administration Console for NetWare when creating a backup job in the media management mode contains the following options:

- ◆ **Target drive.** This option is only active if you are in the media management mode. Select the drive where this backup job is to be run.
- ◆ **Media password.** Enter a media password if you are overwriting the media and you want to password protect it. When a password protected media is taken to another location, such as another media server, the password is required to read the data on the media.

---

**Note** Password protected media can be erased without requiring the password.

---

- ◆ **Daily media set name.** Enter a name or use the default for the media set that has a seven-day (weekly) overwrite protection period.
- ◆ **Weekly media set name.** Enter a name or use the default for the media set that has a monthly overwrite protection period.
- ◆ **Monthly media set name.** Enter a name or use the default for the media set that has a yearly overwrite protection period.



# Manual Disaster Preparation and Recovery

# 9

This section explains how to protect your operating system and data files and how to fully recover these files if a system crash or disaster occurs. While this section provides the steps for manually protecting and recovering your system, Backup Exec's Intelligent Disaster Recovery (IDR), which is purchased separately, provides a faster, automated solution for disaster recovery. It is highly recommended that you purchase and use IDR. For more information about IDR, see ["Using Intelligent Disaster Recovery"](#) on page 561.

*Manual Disaster Preparation and Recovery* includes the following topics:

Section	Describes
<a href="#">"What is a Disaster?"</a> on page 424	What a disaster is and what is involved in developing a Disaster Preparation Plan.
<a href="#">"Backing Up Your Backup Exec Databases"</a> on page 426	What Backup Exec databases are created and used, where these databases are located, and how to protect these databases by creating and running backup jobs.
<a href="#">"Recovering Your Media Server"</a> on page 429	The steps for restoring your media server to its pre-disaster state.
<a href="#">"Saving Configuration Information for the NetWare Server"</a> on page 430	The steps for saving configuration information for your NetWare server.



## What is a Disaster?

A disaster is any event that interrupts a company's computer operations. Disasters include such events as earthquakes, hurricanes, fires, floods, and tornadoes, as well as system disasters such as a hard disk failure. You cannot prevent a disaster from occurring, but precautions presented in this section can make recovering from them much easier.

## Disaster Preparation Planning and Its Key Elements

Disaster preparation planning is the implementation of strategies and procedures that will minimize damage in the event a catastrophe destroys your data. Precautions can be taken to minimize the effects of a disaster, such as UPS devices, password protection, and offsite backups.

A Disaster Preparation Plan (DPP) can help return your system to an operational status as soon as possible. Backup Exec is a crucial component of the DPP.

The DPP you put in place with your Backup Exec system should be tailored to your network environment. While network environments vary, there are five elements to consider when creating a comprehensive DPP. They are:

- ◆ Hardware protection
- ◆ Continuance of business operations
- ◆ Sound backup strategy
- ◆ Off-site storage of backups
- ◆ Effective DPP management

### Hardware Protection

The hardware devices on your network (CPUs, drives, video) are susceptible to damage from many disaster situations.

Equipment used most often to protect hardware includes:

- ◆ Uninterruptible power supplies (UPS)
- ◆ Surge protectors
- ◆ Security monitoring devices

If you do not already have these items in place, you should consider installing them. The initial investment can be justified many times over in the event of a disaster.



## Continuance of Business Operations

Ensure that proper precautions are taken to implement plans for network interruptions. For example, the telephones in a sales department will not stop ringing when a server goes down, so orders may have to be handwritten until the server is up again.

Each department should develop strategies for maintaining business operations if a server goes down or if network communications are disrupted.

## Sound Backup Strategy

A well-designed backup strategy plays a key role in quickly restoring your file server. You can use Backup Exec's media rotation scheme or design and manage a strategy that meets your business needs. For more information, see ["Using Backup Exec's Automated Media Rotation"](#) on page 397.

## Off-site Storage of Backups

It is imperative that your backed up data be moved off-site regularly. Using off-site storage ensures that if something happens to your facility, all of your backups will not be destroyed. Depending on the importance of your data, you may choose to use several off-site storage facilities. There are companies that provide off-site storage services and will pick up and deliver media when they are to be rotated.

## Effective DPP Management

The last, and possibly most important, element is proper management of your DPP strategy. A person or group of people should be charged with constantly supervising your organization's disaster preparation efforts. Someone should:

- ◆ Install and maintain hardware protection devices.
- ◆ Ensure all departments have a plan for when the server goes down temporarily.
- ◆ Ensure that backups are made and rotated off-site regularly.

It is also a good idea to document your DPP for reference purposes.



## Backing Up Your Backup Exec Databases

You may need to recover your Backup Exec database files on the media server in a disaster situation or if an error occurs that corrupts one of the databases. Backup Exec keeps device and media information, job definitions, policy definitions, job logs, password definitions, and slot and portal definitions in database files. These database files end with the **.dat** and **.idx** extensions and can be protected by creating a backup job that regularly backs up these files.

The database files are in subdirectories in the BKUPEXEC directory. You can protect these files by creating a backup job for the entire BKUPEXEC directory or by creating separate backup jobs for the specific subdirectories or **.dat** and **.idx** files that you want to protect. Data files end with the **.dat** extension while the corresponding index file for the data file ends with the **.idx** extension.

For information about the various database files and the directories in which they are contained, see:

- ◆ [“Protecting Job Data”](#) on page 426
- ◆ [“Protecting Log Data”](#) on page 427
- ◆ [“Protecting Media and Device Management Data”](#) on page 427

For information about creating backup jobs to protect your data, see:

- ◆ [“Creating a Backup Job from the Administration Console”](#) on page 105
- ◆ [“Creating a Backup Job from the Administration Console for NetWare”](#) on page 115

### Protecting Job Data

The BKUPEXEC\JOBDATA subdirectory on your media server contains the following data files:

- ◆ *Jobqueue.\**. These files contain information about scheduled jobs. If you have invested time and effort into scheduling a large number of jobs, you will want to ensure that you can quickly restore the job queue in the event of a disaster. This file should be backed up whenever you add new jobs or modify the schedule for existing jobs.
- ◆ *Policy.\**. These files contain the data for all policies that have been created. You should back up this file each time you create new policies.
- ◆ *Slotport.\**. These files contain information about portals and slots, which is needed to run the robot utilities.
- ◆ *Userpass.\**. These files contain data on user names and passwords saved in your Media Server Password Database. If the Media Server Password Database feature is not enabled, you must enter the user name and password each time you want to access a system. If you are protecting a large number of servers and workstations, you will

probably want to use this feature (see [“Making Backup Selections from the Administration Console”](#) on page 110 or [“Making Backup Selections from the Administration Console for NetWare”](#) on page 116) and will want to ensure that the database is backed up.

- ◆ \*.scr. These files contain all selection lists created for backup, restore, and media rotation jobs.

You can protect this information by creating a recurring backup job that backs up all data files in the JOBDATA subdirectory, or you can create separate backup jobs for each data file using a schedule that will best suit your needs. For example, if you seldom create or modify policies but have spent considerable time scheduling jobs, you may not need to back up the policy.dat file as often as you would want to back up the jobqueue.dat file.

## Protecting Log Data

The BKUPEXEC\LOG subdirectory on your media server contains the following data files:

- ◆ *Alrthist.\**. Contain alert history, or alert log, data. For more information on alerts, see [“Viewing and Responding to Alerts”](#) on page 215 and [“Viewing Alert Logs”](#) on page 220.
- ◆ *Ev\_his.\**. Contain event history, or log, data. While alerts are considered events important enough for user interaction or notification, not all events are alerts. For example, the starting of your Administration Console is an event, but not an alert.
- ◆ *Jljob.\**. Contain information about completed jobs, including the job’s instance number or Job ID and run number, start time, completion times, job name, policy name, drive the job was run on, and job statistics.
- ◆ *Jloper.\**. Contain records for each backup set for completed jobs.

You can protect this information by creating a recurring backup job that backs up all data files in the LOG subdirectory, or you can create separate backup jobs for each data file using a schedule that will best suit your needs.

## Protecting Media and Device Management Data

The BKUPEXEC\MM subdirectory on your media server contains the following data files:

- ◆ *Drive.\**. Contain information about each media drive known to the system.
- ◆ *Drvpld.\**. Contain information about each drive and drive pool combination.
- ◆ *Drvpool.\**. Contain information about each drive pool defined.



- ◆ *Media.\**. Contain information about each media known to the system.
- ◆ *Medialbl.\**. Contain information about each media label known to the system.
- ◆ *Mediaset.\**. Contain information about each media set known to the system.
- ◆ *Part.\**. Contain information about each partition defined.
- ◆ *Partdrv.\**. Contain information about each partition and drive combination.
- ◆ *Portal.\**. Contain information about each portal known to the system.
- ◆ *Robot.\**. Contain information about each robot known to the system.
- ◆ *Slot.\**. Contain information about each slot known to the system.

---

**Note** If you are using the Shared Storage Option, there will also be *smedia.\**, *smedset.\**, *spart.\** and *spartdrv.\** files that include information about shared media, media sets, and devices.

---

You can protect this information by creating a recurring backup job that backs up all data files in the MM subdirectory, or you can create separate backup jobs for each data file using a schedule that will best suit your needs. Regardless of whether you are in media management or partition management mode, you will want to back up all .dat and .idx files in this subdirectory.

## Protecting Catalog Data

The BKUPEXEC\CATALOGS subdirectory on your media server contains all catalogs for your Backup Exec media. If this information is not restored to your media server, you must catalog all media.

## Protecting the Remote Agents List

If you are protecting systems using the Remote Agent for NetWare or the Remote Agent for Windows NT and Windows 2000, you will want to back up your NDMPSVR.dat file. This file contains a list of all systems running the remote agents and includes the remote agents' names, IP addresses and serial numbers. If you do not restore this file, your recovered media server will be unable to recognize the remote agents.

## Recovering Your Media Server

If a system crash or disaster occurs and you need to recover your media server, you must restore your operating system, including all support packs and patches; reinstall Backup Exec, and restore your Backup Exec databases.

▼ **To recover your media server:**

1. Restore your media server's operating system.

---

**Note** If you encounter problems restoring your operating system, contact Novell's technical support.

---

2. Install Backup Exec using the procedures described in "[Installing to the Media Server Only](#)" on page 40.
3. Catalog the first media containing your Backup Exec database files.
4. Create a directory in BKUPEXEC called TEMP.
5. Perform a redirected restore of your Backup Exec databases you saved to media to the TEMP directory following procedures described in "[Creating a Restore Job from the Administration Console](#)" on page 131 or "[Creating a Restore Job from the Administration Console for NetWare](#)" on page 153.
6. Stop Backup Exec.
7. Manually replace your Backup Exec database files in the BKUPEXEC directory with the files in the TEMP directory.
8. Restart Backup Exec.

After Backup Exec is fully restored, you can delete the TEMP directory.



## Saving Configuration Information for the NetWare Server

Use the BEDIAG.NLM utility to create an ASCII file (BEDIAG.FAX) that includes useful configuration information for your server. Keep a printout of this file with your server recovery media. You should run the BEDIAG.NLM utility whenever you make a change to your hardware or software.

Use the DCDIAG.NLM utility to create an ASCII file (DCDIAG.FAX) that includes all database information for your server. Also keep a printout of this file with your server recovery media.

Also, keep a copy of the BEDIAG.FAX and the DCDIAG.FAX available so that if you need to contact Technical Support, you can quickly provide system configuration information.

### ▼ To create the BEDIAG.FAX file:

1. At the NetWare system console prompt, type:

```
load BKUPEXEC\NLMS\BEDIAG
```

The BEDIAG.FAX file is created.

---

**Note** You can use the following options when loading BEDIAG.NLM (for example, load bediag /c):

- /c - Outputs the file to the screen.
- /s - Gathers information for SCSI devices only.
- /n - Excludes information for SCSI devices.

---

2. View the BEDIAG.FAX file with a text editor or word processor.

The information listed in this file includes:

- The contents of your CONFIG.SYS and AUTOEXEC.BAT files.
- The contents of the STARTUP.NCF file.
- The amount of memory available.
- The contents of your AUTOEXEC.NCF file.
- A listing of the NLMs that are currently loaded on your server, including the version numbers and the date stamp.
- The configuration settings for your server, including volumes and individual namespace support.

3. On the printout of the BEDIAG.FAX, write the Supervisor user name and password.

---

**Note** Keep this printout locked in a secure place.

---

▼ **To create the DCDIAG.FAX file:**

1. At the NetWare system console prompt, type:

```
load BKUPEXEC\NLMS\DCDIAG
```

The DCDIAG.FAX file is created.

2. View the DCDIAG.FAX file with a text editor or word processor.

The information listed in this file includes database information for your media server.

3. On the printout of the DCDIAG.FAX, write the Supervisor user name and password.

---

**Note** Keep this printout locked in a secure place.

---



# Troubleshooting Backup Exec

# 10

This section is designed to assist you with problems you may encounter while using Backup Exec. If you want to troubleshoot the problem yourself, this section includes most of the problems you may encounter and their solutions. For additional help, contact Technical Support at <http://support.veritas.com>.

If your problem is hardware-related (for example, if your tape drive stops working), refer to the documentation that came with your hardware.

Troubleshooting contains the following topics:

Section	Describes
<a href="#">“Commonly Asked Questions”</a> on page 434	Some of the most frequently asked questions and answers about running Backup Exec.
<a href="#">“Using the BEDIAG.NLM Utility”</a> on page 441	Procedures for using the BEDIAG.NLM utility, a diagnostic tool that creates an ASCII file containing configuration information for your media server.
<a href="#">“Error Message Lists”</a> on page 442	Some of the possible errors that could be reported while installing or using Backup Exec for NetWare.
<a href="#">“Memory Configuration”</a> on page 455	Procedures for notifying the operating system when adding memory to a server beyond the 16 MB level.
<a href="#">“Checking NDS Time Synchronization”</a> on page 458	Procedures for checking NDS time synchronization.
<a href="#">“Performing a Complete NDS Health Check”</a> on page 459	Procedures for running a complete NDS health check.





## Commonly Asked Questions

The following sections include some of the most commonly asked questions that could arise when using Backup Exec. The questions and answers are grouped into the following categories:

- ◆ [“General Questions”](#) on page 434
- ◆ [“Installation-related Questions”](#) on page 435
- ◆ [“Login-related Questions”](#) on page 436
- ◆ [“Hardware-related Questions”](#) on page 437
- ◆ [“Backup Questions”](#) on page 437

### General Questions

#### How can I determine version and build information for my Backup Exec for NetWare installations?

Version and build information can be viewed from either user interface.

▼ **To view version and build information from the Administration Console:**

1. Click **Help**.
2. Click **About Administration Console**.

▼ **To view version and build information from the Administration Console for NetWare:**

1. Select **About**.
2. Select **Administration Console**.

#### How do I determine which of my media servers my Administration Console is currently monitoring?

The name of the server you are monitoring from the Administration Console will appear in the quick access panel with a green check mark. The name will also appear in the top node of your tree pane. If you suspect you may have lost the connection with the media server, use the **Connect** option (see [“Using the Quick Access Panel”](#) on page 7).

## Installation-related Questions

**While attempting to log into my media server during the installation process, I received an error message that I was not logged in as a user with Administrator rights. What does this mean?**

You were attempting to connect to your media server as a user who does not have Administrator rights to that server. You can either try to log in using an Administrator user name and password or have your login account changed to an Administrator account.

**During the installation procedure, I received the message that my server does not have long name space enabled. Why is long name space required, and how do I enable this?**

Long name space must be installed and loaded for log files.

▼ **To install and enable long name space:**

1. At your media server's system console, type:  
`load long`
2. Press <Enter>.
3. Type:  
`add name space long to volume <volume_name>`
4. For <volume\_name>, enter the volume where the Backup Exec files will be installed.

**I already have Java on my media server, but when installing Backup Exec I received the message that I must upgrade my existing version of Java. What version does Backup Exec require:**

Backup Exec requires that Java 1.1.7b, build 01012614 or later be installed on the media server.

▼ **To determine which version is loaded on your system:**

1. At your system console, type:  
`Load java`
2. Press <Enter>.
3. Type:  
`modules java`



To install Java, run **setup.exe** from the installation CD's NetWare\Utils\JDK directory.

## Login-related Questions

### I installed Backup Exec, but when I try connecting to my media server from the Administration Console, I receive the following message. What does this mean?

```
The UnknownHostException was thrown, a java.net
UnknownHostException occurs while creating a connection to the
remote host for a remote method call.
```

You must add the IP address for your media server to the hosts file on the system you are using for the Administration Console. If you will be accessing multiple media servers from your Administration Console, the IP addresses for each server must be added to the hosts file. The hosts file is located in your local workstation's system32\drivers\etc directory. After updating the hosts file, you may need to reboot the workstation for this update to take effect.

### When I try connecting to my media server from the Administration Console, I receive the following error message. What does this mean?

```
Couldn't locate remote object Registry on the specified host and
port. Server Name =<Server_Name>, Server IP Address=10.67.xx.xx,
Port=10002.
```

This error message could mean either you are having network problems that prevent your local system from being able to ping the NetWare server, or you could be missing either the Java server or BEPSVR.NLM on the media server. At your media server's console command, type:

**BESTART**

If the Java components or BEPSVR.NLM do not load, reinstall Backup Exec to the media server and be sure to select the option that allows your media server to be managed from an Administration Console.

If the problem appears to be hardware-related, ensure you have the correct gateway address and troubleshoot any other network IP issues.

## Hardware-related Questions

### How can I find out if my storage devices are supported by Backup Exec?

The VERITAS support web site (<http://support.veritas.com>) has a Compatibility Lists link that displays all device and media types that work with Backup Exec for NetWare.

### How do I get the latest device drivers for my hardware?

The latest hardware device drivers are available on the VERITAS web site at <http://support.veritas.com>.

### Why is Backup Exec showing my robot as a stand-alone device?

Backup Exec displays Logical Unit Number (LUN) enabled robots as stand-alone devices. For Adaptec controllers you should make the following edit to your STARTUP.NCF file:

```
LOAD <drivername.xxx>LUN_ENABLE=FFFF
```

For other SCSI controller models, consult your hardware documentation.

## Backup Questions

### Backup Exec is telling me that I don't have appendable media, but I think I do. Why is this?

Backup Exec calculates the media overwrite protection period from the allocate date of the media. Backup Exec adds the overwrite protection period to the allocation date. If that date is in the past, the media is beyond the overwrite protection period and can be overwritten. For a better understanding of how Backup Exec computes the overwrite protection and append periods, consider the following examples.

#### *Example 1:*

Suppose you only have one piece of media and you set your overwrite protection period at 7 days and your append period to 4 days. The media is overwritten on Monday, March 7, at 5:35 P.M., setting the allocation date to Monday, March 7, at 5:35 P.M. The overwrite protection period for this media now expires on Monday, March 14 at 5:35 P.M. (7 days from the allocation date). The append period expires on Friday, March 11, at 5:35 P.M. (4 days from the allocation date).

The media is appended to on Tuesday, March 8, at 6:40 P.M. At this point, the overwrite protection period is updated to expire on Tuesday, March 15, at 6:40 P.M.; the append period does not change.

On Friday, March 11, at 5:36 P.M., a job tries to append to the media. The job will not append to the media because the append period, which was set at 5:35 P.M., March 11, has expired.



On Monday, March 14, at 6:00 P.M., an overwrite job starts. The job will not overwrite to the media because the overwrite protection period, which is set for Tuesday, March 15, at 6:40 P.M., has not expired. However, an overwrite job that runs on Tuesday, March 15, at 6:41 P.M. will overwrite the media.

*Example 2:*

Suppose you have only one piece of media in the Backup Exec database and you have set the overwrite protection period at 1 day and the append period at 1 day. The media is overwritten on Monday, March 7, at 5:35 P.M. This sets the allocation date to Monday, March 7, at 5:35 P.M. The overwrite protection period expires on Tuesday, March 8, at 5:35 P.M. (1 day from the allocation date), and the append period expires on Tuesday, March 8, at 5:35 P.M. (1 day from the allocation date).

The next day, an overwrite job runs at 10:00 A.M. Even though the date has changed to March 8 and the overwrite protection period is 1 day, the media cannot be overwritten. Backup Exec measures one day as 24 hours. Therefore, if the job runs at 6:00 P.M., the media can be overwritten.

### **I am unable to back up certain files on my system that are being used by other processes. Why is that?**

When Backup Exec encounters a file that is in use by another process, it either skips the file, waits for the file to become available, locks the file while it is being backed up so other applications cannot modify it, or allows the open file to be backed up without locking it. How Backup Exec treats open files depends on the **Default Treatment of Open Files** option set in the policy used by your backup job (see [“Open Files Options for a Policy”](#) on page 97) or in the properties of your media rotation job (see [“Open Files Options for Media Rotation Job Properties”](#) on page 411).

If you want to back up open files on your NetWare servers, Backup Exec for NetWare’s Open File Option (sold separately) provides uninterrupted data protection for network environments. Using Backup Exec for Windows NT and Windows 2000 Open File Option and the Remote Agent for Windows NT and Windows 2000 allows you to use your NetWare servers to back up your Windows systems, even with files that are in use.

### **I cannot see my remote servers when making backup selections. Why?**

Previous versions of the Remote Agent for NetWare and the Backup Exec for NetWare Windows NT Agent are not compatible with this release of Backup Exec. You must purchase and install the Remote Agent for NetWare to protect remote NetWare servers and the Remote Agent for Windows NT and Windows 2000 to protect Windows NT and Windows 2000 systems.

## Remote Agent for Windows NT and Windows 2000 Questions

### Why are my pre/post commands not working for systems protected by the Remote Agent for Windows NT and Windows 2000? Can I enable these commands?

By default, the Remote Agent will not execute any pre/post commands which need the Administration Console or the system console to ensure that unauthorized access to the system is prohibited when no one is logged on.

#### ▼ To run pre/post commands for jobs using Remote Agent:

1. On the local system being protected by the Remote Agent, click **Start**, and then click **Run**.
2. Type:  
`regedt32`
3. Click **OK**.
4. Select **HKEY\_LOCAL\_MACHINE** on **Local Machine**.
5. Select **SYSTEM**, and then select **CurrentControlSet**.
6. Select **Control**, and then select **Windows**.
7. Change **NoInteractiveServices** to **0**.
8. Ensure no job using the Remote Agent is running.
9. Click **Start**, point to **Settings**, and then click **Control Panel**.
10. From a Windows NT system, select **Services**.  
From a Windows 2000 system, select **Administrative Tools**, and then click **Services**.
11. Right-click **Backup Exec Remote Agent for Windows NT/2000**, and then click **Stop**.
12. After the service stops, double-click **Backup Exec Remote Agent for Windows NT/2000**, and then click **Logon**.
13. Select **Allow service to interact with desktop**, and then click **OK**.
14. Right-click **Backup Exec Remote Agent for Windows NT/2000**, and then select **Start**.



**I am using the Backup Exec for Windows NT and Windows 2000 Open File Option with the Remote Agent for Windows NT and Windows 2000. The default configuration does not work for me. How do I update this default configuration?**

To update the configuration information for the Open File Option (OFO), you must edit the registry.

▼ **To edit the OFO Configuration:**

1. On the local system being protected by the Remote Agent, click **Start**, and then click **Run**.
2. Type:  
`regedt32`
3. Click **OK**.
4. Select **HKEY\_LOCAL\_MACHINE on Local Machine**.
5. Select **SOFTWARE**, and then select **VERITAS**.
6. Select **Open File Option**, and then select **Config**.
7. Modify the values to meet your requirements. Values that can be modified include:
  - **BufferFileSize**. The amount of free disk space that OFO uses to create the static volume and for incremental growth of the backup. If you receive an error stating that OFO is out of disk space, increase the **BufferFileSize** to allow additional free space on the volume to be used during the backup.
  - **DiskFullLimit**. The maximum size allocated for the static volume. If the static volume exceeds the size you provide here, the job will fail and the error will be listed in the job log.
  - **MinQuietTime**. The minimum amount of time that the disk must be inactive before the static volume is created. If you have an active system, decrease this setting to allow the static volume to be created before reaching the maximum length of quiet time.
  - **MaxQuietTime**. The maximum amount of time the application will wait for disk inactivity. If the **MinQuietTime** is not reached during this time, the job will fail. Increase this setting if backups fail repeatedly. Increasing this setting may increase the time needed to create the static volume.
  - **Path**. Used to redirect the static volume to another disk.



## Using the BEDIAG.NLM Utility

The BEDIAG.NLM utility creates an ASCII file (BEDIAG.FAX) that includes configuration information for your media server. A printout of this file should be kept with your restoration diskettes. Also, create a new BEDIAG.FAX and have this file available before contacting Technical Support.

The BEDIAG.NLM is installed on the `SYS:\BKUPEXEC\NLM` directory during installation.

If you have trouble installing Backup Exec, a copy of BEDIAG.NLM is on the installation CD.

### ▼ To create the BEDIAG.FAX file:

1. From the media server's system console, type:

```
load BEDIAG
```

2. Press <Enter>.

The BEDIAG.FAX file will be created and placed into the `\BKUPEXEC` directory in your `SYS: volume`.

---

**Note** You can use the following command line switches when loading BEDIAG.FAX (for example, `load bediag /c`):

`/c` - Outputs the file to the screen.

`/s` - Gathers information for SCSI devices only.

`/n` - Excludes information for SCSI devices.

`/l<language>` where language can be (E)nglish, (F)rancais, or (D)eutsche

---

3. View the BEDIAG.FAX file with a text editor or word processor.

Information listed in this file includes:

- Contents of your CONFIG.SYS and AUTOEXEC.BAT files.
- Contents of the STARTUP.NCF file.
- Amount of memory available as server memory.
- Contents of your AUTOEXEC.NCF file.
- List of the NLMs loaded on your server, including the version numbers and the date stamp.
- Configuration settings for your server, including volumes and individual namespace support.





## Error Message Lists

The following tables list problems and error messages you may encounter, and their solutions.

### Backup Exec Installation Error Messages

The following error messages could occur during installation of Backup Exec.

#### Error Messages

---

Error Message	You are not logged in as a user with Administrator rights to <server name>. Please go back and remove any client connections to this server and then CONNECT as a user with Administrator rights. Would you like to login as another user?
---------------	---

Description	The user gets this error message if they have logged into a server without Administrative like rights. The user will need to have write rights to the SYS volume and SYSTEM directory so that files can be copied and created. If the user doesn't have the rights Backup Exec for NetWare install cannot continue.
-------------	---

Error Message	Server <name> does not have long name space enabled. The server volumes must have long name space enabled. To enable long name space: At the server LOAD LONG Type ADD LONG NAME SPACE TO VOLUME <volume name>. Press YES after the name space has been enabled.
---------------	---

Description	This error occurs if the selected server doesn't have LONG NAME SPACE enabled. The user should be able to activate the LONG NAME SPACE feature from the console on the server without having to cancel the current install.
-------------	---

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**Error Messages (continued)**

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Error Message	<p>To use the Administration Console, you must upgrade your existing version of Java on this media server.</p> <p>Backup Exec requires that Java 1.1.7b or later be installed on this media server. After a newer version of Java is installed, you must reinstall Backup Exec. To install Java, run Setup.exe from the installation CD's \NetWare\Utils\JDK directory.</p>
Description	<p>The user wants to use the workstation Administration Console but we have detected that they don't have the minimum required JDK version 1.1.7b. They need to install the version on the install CD at the location specified in the message or a version later from another location.</p>
Error Message	<p>To use the Administration Console, Backup Exec requires that Java 1.1.7b or later be installed on this media server. After Java is installed, you must reinstall Backup Exec. To install Java, run Setup.exe from the installation CD's \NetWare\Utils\JDK directory.</p>
Description	<p>The user wants to use the workstation Administration Console but we couldn't find any version of the JDK. They need to install the JDK version found on the install CD at the location specified in the message or a version later from another location.</p>

---



## SureStart Message Identifiers

This section provides detailed information on the various messages written to the BKUPEXEC.FAX file.

### SureStart Messages

---

Identifier	1001
Classification	Error
Description	The referenced NLM is outdated and cannot be used with Backup Exec. Backup Exec requires that certain NLMs meet specified minimum versions to operate correctly. Running Backup Exec with outdated NLMs can cause undesirable results.
Recommended Resolution	Contact the NLM vendor and apply the latest update.
Identifier	1002
Classification	Warning
Description	The referenced NLM is outdated, however it can be used with Backup Exec.
Recommended Resolution	For optimum results, use the recommended minimum version (or a newer version) of each system NLM.
Identifier	1003
Classification	Note
Description	The referenced NLM is newer than the version required by Backup Exec. This is normally caused when a Novell or 3rd party supplied system component is updated on your server. In most configurations, this should not cause problems with Backup Exec.
Recommended Resolution	This is an informational message, and can be ignored unless you are experiencing problems with Backup Exec. If you are experiencing problems and suspect that this NLM may be the cause, contact Technical Support to verify that the NLM does not cause compatibility problems with Backup Exec.

---

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**SureStart Messages (continued)**

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Identifier	1004
Classification	Error
Description	The referenced NLM is incompatible with Backup Exec. Attempting to load Backup Exec while this NLM is running will more than likely cause undesirable results.
Recommended Resolution	Unload the referenced NLM, run BESTOP, and then rerun BESTART.NCF to continue the Backup Exec initialization process.
Identifier	1005
Classification	Warning
Description	The referenced NLM is recommended, but not loaded. In most cases, this message is displayed due to a missing Novell patch NLM, which is required by Backup Exec. Although Backup Exec will continue to load when this problem is encountered, it is highly recommended that you obtain and install the specified NLM. Failure to do so may cause compatibility problems with Backup Exec.
Recommended Resolution	Obtain the specified NLM, and copy it to the backup server's SYS:SYSTEM directory (or any directory specified in the server's SEARCH path). Exit Backup Exec by running BESTOP. Restart Backup Exec by running BESTART.NCF, and the SureStart module will automatically load the specified NLM.
Identifier	1006
Classification	Error
Description	The referenced NLM is required but not loaded. The SureStart module attempted to load it, but was unsuccessful at doing so. Backup Exec will not load without the referenced NLM. This might be caused by a missing or corrupted NLM.
Recommended Resolution	Obtain the specified NLM and install it to your server's SYS:SYSTEM directory, run BESTOP, and then rerun BESTART.NCF to continue the Backup Exec initialization process.

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SureStart Messages (continued)

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Identifier	1007
Classification	Error
Description	The SureStart module did not detect an ASPI Manager loaded in memory. In order for Backup Exec to load, an ASPI Manager must be loaded.
Recommended Resolution	Ensure your controller type is compatible with Backup Exec for NetWare. Obtain the ASPI Manager provided by your adapter manufacturer, and load it before you load Backup Exec (preferably in the STARTUP.NCF or AUTOEXEC.NCF file). Some common ASPI Managers are: ASPITRAN.NLM - For Adaptec controllers BECDM.CDM - For controllers using HAM drivers (recommended) CPQSASPI.NLM - For Compaq embedded SCSI controllers
Identifier	1008
Classification	Note
Description	The amount of memory available to the free cache buffer pool has dropped below 65%. Novell recommends a minimum of 65% available cache memory for optimum server performance.
Recommended Resolution	Add more memory to your server.
Identifier	1009
Classification	Warning
Description	The amount of memory available to the free cache buffer pool has dropped below 40%. A minimum of 40% available cache memory is recommended when using Backup Exec. For optimum server performance, at least 65% of total system memory should be available to the cache free pool.
Recommended Resolution	Add memory to your server, so that 65% of the total system memory pool will be available after the system initializes and all NLMs are loaded.

---



## SureStart Messages (continued)

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Identifier	1010
Classification	Error
Description	The amount of memory available to the free cache buffer pool has dropped below 20%. Backup Exec cannot operate and load correctly on a server this low on memory resources. A minimum of 40% available cache memory is recommended when using Backup Exec. For optimum server performance, at least 65% of total system memory should be available to the cache free pool.
Recommended Resolution	Add memory to your server, so that 65% of the total system memory pool will be available after the system initializes and all NLMs are loaded.

Identifier	1011
Classification	Error
Description	<p>The SureStart module was unable to allocate the minimum amount of memory below the 16 MB boundary required to initialize the drivers. If your SCSI controller supports DMA above 16 MB, Backup Exec is not limited to allocating tape buffers out of the memory below 16 MB and this will not be an issue.</p> <p>This problem is most likely caused by insufficient buffers being allocated by the NetWare SET command:</p>

```
SET RESERVED BUFFERS BELOW 16 MEG
```

Recommended Resolution	Using the Novell EDIT.NLM (C:\NWSERVER\STARTUP.NCF), edit your server's STARTUP.NCF file and check to see if this command is currently there. If it is not, add it using the following syntax:
------------------------	--

```
SET RESERVED BUFFERS BELOW 16 MEG = 300
```

If it is there, check the number of buffers being allocated to make sure the value is at least 300.

After changing this value to 300 in your STARTUP.NCF, reboot your server, and run BESTART again to load Backup Exec



SureStart Messages (continued)

---

Identifier	1012
Classification	Warning
Description	The SureStart module detected that the NDS context for the Backup Exec account is invalid. This can occur in several situations, including when the container where the account is located is renamed or if the container where the account is located is moved to another location within the NDS tree.
Recommended Resolution	The SureStart module will automatically recover from this condition by resetting the account context to the container where the server object is located.

Identifier	1014
Classification	Warning
Description	The SureStart module detected that the application's default NDS context is invalid. This will most likely occur if you manually edit the BESRVR.CFG file in SYS:BKUPEXEC, and place an invalid context on the line: Default_NDS_Context = value
Recommended Resolution	This value can be changed in the user interface. The SureStart module will try to correct this situation by parsing the value, and converting it to a typeless name, if possible. If it is unable to correct it, it will set the value to [Root], which will require that full NDS context be supplied in all application login boxes.

---

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**SureStart Messages (continued)**

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Identifier	1015
Classification	Warning
Description	The SureStart module determined that the control file is corrupt. This might be caused if the volume was very low on disk space during the initial product load.
Recommended Resolution	Backup Exec will automatically correct this condition by renaming the existing control file and recreating it with the default values. This should not affect the product in any way. However, if you have moved the server object to a new container since Backup Exec was installed, the account will be recreated in the context where the server is currently located in the NDS tree.
Identifier	1016
Classification	Warning
Description	The SureStart module has detected a conflict between the load time parameters for Backup Exec and the drivers. This can be caused by manually loading the driver (AD_ASPI.NLM), and not supplying the correct parameters on the load line. Note that the SureStart module automatically passes the correct parameters to the driver, based on how you configured Backup Exec during installation.
Recommended Resolution	Check the DMA setting on the BKUPEXEC line in BESTART.NCF. If the -D switch is set to yes (Y), then make sure you load AD_ASPI with the /BELOW16=N parameter.

---





SureStart Messages (continued)

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Identifier	1017
Classification	Warning
Description	The SureStart module has detected a conflict between the load time parameters for Backup Exec and the drivers. This can be caused by manually loading the driver (AD_ASPI.NLM), and not supplying the correct parameters on the load line. Note that the SureStart module automatically passes the correct parameters to the driver, based on how you configured Backup Exec during installation.
Recommended Resolution	Check the synchronous mode setting on the BKUPEXEC line in BESTART.NCF. If the -S switch has been specified, make sure you load AD_ASPI with the -S switch. If the -S switch was not specified, make sure the -S switch is not present on the BKUPEXEC line.
Identifier	1018
Classification	Warning
Description	The SureStart module has determined that the controller type was not specified, and is defaulting to ASPI-compliant support.
Recommended Resolution	Check the -A switch in BESTART, and ensure that it is set to a valid controller type. Refer to the <a href="#">“SureStart Command Line Switches”</a> on page 52 for a list of all valid controller types.
Identifier	1019
Classification	Note
Description	The SureStart module detected that the upgrade utility has encountered minor issues during the upgrade process.
Recommended Resolution	Review the log file written by the upgrade utility (SYS : BKUPEXEC / BEUPGRAD . LOG), for messages regarding the upgrade process. This type of message is purely informational, and usually doesn't require administrator attention.

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## SureStart Messages (continued)

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Identifier	1020
Classification	Warning
Description	The SureStart module detected that the upgrade utility has encountered intermediate problems during the migration process. The upgrade utility has made the necessary corrections, and execution can continue, but the upgrade log should be reviewed for specific details on the situation.
Recommended Resolution	Review the log file written by the upgrade utility (SYS:BKUPEXEC/BEUPGRAD.LOG), for messages regarding the upgrade process. Based on the type of problems encountered, the administrator may or may not be required to take corrective action.
Identifier	1021
Classification	Error
Description	The SureStart module has detected that the upgrade utility encountered problems during the migration process. The upgrade utility was unable to correct the problem(s) for you.
Recommended Resolution	Review the log file written by the upgrade utility (SYS:BKUPEXEC/BEUPGRAD.LOG), for messages regarding the upgrade process. Take whatever action is necessary to resolve the problem, and then restart Backup Exec by typing <b>BESTART</b> at the system console prompt.
Identifier	1022
Classification	Error
Description	The SureStart module was unable to determine the directory context of the server. This can be caused by partition replicas that are not fully synchronized.
Recommended Resolution	Retry the BESTART operation. If this message is still encountered, synchronize partition replicas on the local server using DSREPAIR.NLM on the server where the master replica is kept.

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SureStart Messages (continued)

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Identifier	1023
Classification	Error
Description	The SureStart module was unable to obtain the server bindery context setting due to a failure of one or more functions with the DSAPI.NLM.
Recommended Resolution	Check the versions of DSAPI.NLM, DS.NLM and CLIB.NLM to ensure they are all up to date. Check the server's bindery context setting using the SET BINDERY CONTEXT console command. Retry the BESTART command.
Identifier	1024
Classification	Error
Description	The SureStart module has determined that the bindery context is invalid, or is not set at all.
Recommended Resolution	Check your server's current bindery emulation setting using the SET BINDERY CONTEXT console command, and ensure it is set to a valid container and that a writable replica of the partition holding that container is stored on the local server. Retry the BESTART command after setting a valid bindery context on the server.
Identifier	1025
Classification	Warning
Description	The SureStart module was unable to obtain object information about the first container listed in your server's bindery context setting.
Recommended Resolution	Check your server's current bindery emulation setting using the SET BINDERY CONTEXT console command, and ensure it is set to a valid container, and that a writable replica of the partition holding that container is stored on the local server. Retry the BESTART command after setting a valid bindery context on the server.

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## SureStart Messages (continued)

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Identifier	1026
Classification	Error
Description	The SureStart module has determined that the upgrade utility needs to run, but has noted that there is currently no bindery context set, or it is set to an invalid container.
Recommended Resolution	Bindery context is required in order to run the BEUPGRAD NLM. Check your server's current bindery emulation setting using the <code>SET BINDERY CONTEXT</code> console command, and ensure it set to a valid container and that a writable replica of the partition holding that container is stored on the local server. Retry the <code>BESTART</code> command after setting a valid bindery context on the server.
Identifier	1050
Classification	Error
Description	The media server was unable to initialize.
Recommended Resolution	At the system console, type <b>BESTOP</b> . Then type <b>LOAD EDIT SYS:\BKUPEXEC\BKUPEXEC.FAX</b> . Read the message logged in this file to determine why the media server was unable to initialize. Correct the problem and rerun <code>BESTART</code> . Sometimes this error is caused by the Novell module <code>SMDR.NLM</code> not having been configured correctly prior to running <code>BESTART</code> . The message <code>Error 1050 - Unknown device driver init error</code> may sometimes indicate this condition. From the <code>SMDR</code> Parameter Screen, configure <code>SMDR.NLM</code> . Consult your NetWare documentation for details on configuring <code>SMDR.NLM</code> . (Note: <code>SMDR.NLM</code> is the NetWare SMS Data Requestor.)

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SureStart Messages (continued)

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Identifier	1051
Classification	Warning
Description	The media server encountered a problem during initialization.
Recommended Resolution	The media server was able to continue and should be able to function normally. At the system console, type: <b>LOAD EDIT SYS:\BKUPEXEC.BKUPEXEC.fax</b> and read the messages in the log file to determine what warnings were given. Take appropriate corrective actions to avoid future warnings.
Identifier	1052
Classification	Note
Description	The media server is in the initialization stage.
Recommended Resolution	None.
Identifier	1053
Classification	Note
Description	The media server successfully completed initialization.
Recommended Resolution	None.
Identifier	1054
Classification	Note
Description	The media server is performing an inventory at initialization. The inventory may take several minutes, depending on the number of stand-alone drives and slots in the robots.
Recommended Resolution	If the delay is undesirable, the option to inventory at initialization can be turned off from the Media Options   General dialog box.

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## SureStart Messages (continued)

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Identifier	1056
Classification	Error
Description	The media server was unable to initialize in the appropriate time frame.
Recommended Resolution	The media server may have encountered a problem during initialization. Contact technical support. The problem may have been caused by the Novell module SMDR.NLM not having been configured correctly prior to running BESTART. At the SMDR Parameter Screen, configure SMDR.NLM. Consult your NetWare documentation for details on configuring SMDR.NLM. (Note: SMDR.NLM is the NetWare SMS Data Requestor.)

---

## Memory Configuration

Due to possible limitations of the hardware and how the amount of memory available is communicated to the operating system, it may be necessary to notify the operating system when adding memory beyond the 16 MB level to a server.

▼ **To determine if a server automatically registers memory:**

1. Boot to DOS with no CONFIG.SYS.
2. Run `server -ns` to start the server without running STARTUP.NCF or AUTOEXEC.NCF.
3. Enter the media server name and an internal ipx number when prompted. (These entries do not need to be accurate.)
4. At the server prompt, type:  
**MEMORY**
5. Press <Enter>.

If the value returned is correct, go to “[Memory Configuration Procedure 1](#)” on page 456. If the value returned does not match the amount of memory installed on the server, go to “[Memory Configuration Procedure 2](#)” on page 456.



## Memory Configuration Procedure 1

The memory value returned shows that Novell's autoregister statement may be used to register the server's memory. For NetWare version 4.x, edit the Novell AUTOEXEC.NCF and STARTUP.NCF files using an editor or by loading **Install** and selecting the option to edit the configuration files. Follow the patterns listed below:

### STARTUP.NCF

Set autoregister memory above 16 megabytes = on

Set reserved buffers below 16 meg=?? (Requirements are 20 buffers for each SCSI device including the SCSI adapter itself, or a minimum of 40. If using Backup Exec and an ISA or VLB SCSI adapter, reserved buffers below 16 meg should be set to 300.)

load [SCSI driver] port=xxx (For Adaptec 154x and 1640, you should get the latest drivers and the `above 16=y` switch is not needed any more.)

NetWare patches should follow set statements and driver load commands.

## Memory Configuration Procedure 2

The memory value returned shows that Novell's autoregister statement cannot be used to register the server's memory. Memory must be registered manually. For Novell NetWare version 4.x, edit the Novell configuration files (NCF files) using an editor or by loading **Install** and selecting the option to edit the configuration files. Follow the patterns listed below:

### AUTOEXEC.NCF

No changes are needed for the AUTOEXEC.NCF, which can be found on `SYS:Volume`.

### STARTUP.NCF

set auto register memory above 16 megabytes=off

set reserved buffers below 16 meg=?? (Requirements are 20 buffers for each SCSI device including the SCSI adapter itself, or a minimum of 40. If using Backup Exec and an ISA or VLB SCSI adapter, reserved buffers below 16 meg should be set to 300.)

register memory 1000000 ?????? (See "[Memory Registration Values](#)" on page 457 to determine the value replacing ??????.)

load [SCSI driver] port=xxx

load [SCSI driver] port=xxx

NetWare patches should follow set statements and driver load commands.

scan for new devices (optional if you have a problem with drive(s) not mounting)

## Memory Registration Values

▼ To determine the value for the amount of memory installed in the server:

- ❖ At the system console, type:

```
register memory <startaddress> <range>
```

(Both numbers are in hexadecimal.)

If you have 24 MB of memory, you need to register the 8 MB that are above the 16 MB boundary.

If your memory is:	<start address> =	<range> =
24 MB	1000000	800000
32 MB	1000000	1000000
40 MB	1000000	1800000
48 MB	1000000	2000000
64 MB	1000000	3000000





## Checking NDS Time Synchronization

Verify that the servers running NDS on your company's network are maintaining accurate time and that these servers are synchronized to the same time. Checking NDS time synchronization is important because the replica synchronization process uses timestamps to keep track of the order in which particular NDS events occur. An NDS event occurs when you create or modify an NDS object or property.

Each NDS object is automatically assigned two timestamps: one that indicates when the object was created and one that indicates when the object was last modified. In addition, each property of an NDS object is assigned one timestamp that indicates when the property was last modified.

Timestamps ensure that the replica synchronization process performs updates in the correct order for each NDS object and property in a partition. NDS uses timestamps to determine when objects and properties in the partition's replicas were last updated. NDS can then determine which replicas need to be synchronized.

### ▼ To check NDS time synchronization:

1. Load the **DSREPAIR.NLM** at the server console.
2. From the **Available Options** menu, select **Time Synchronization**.

The Time Synchronization screen appears, displaying a list of every server running NDS on the tree.

If a server is maintaining the same time as the other servers in this list, the word **Yes** appears in the **Time Is in Sync** column.

If a server is maintaining a time that differs from the other servers in this list, the word **No** appears.

If a server's time is not synchronized, you should not perform any partition operations until you correct the problem. For more information about time synchronization, refer to your Novell documentation.

## Performing a Complete NDS Health Check

You should perform a basic NDS health check before you begin any partition operation and perform a complete NDS health check on a regular basis.

### ▼ To perform a complete NDS health check:

1. Check the NDS version and NDS time synchronization.
2. Check the following:
  - NDS partition continuity (see “[Check NDS Partition Continuity](#)” on page 459)
  - NDS background processes (see “[Checking NDS Background Processes](#)” on page 461)
  - NDS SET parameters (see “[Check NDS SET Parameters](#)” on page 470)

## Check NDS Partition Continuity

Randomly select several partitions on which to check NDS partition continuity. NDS partition continuity ensures that all servers holding a replica of the same partition are available to participate in a partition operation.

If any of these servers are not available, synchronization errors may occur. For example, if a server went down, it could not synchronize with other servers in the replica ring. A *replica ring* includes every server that holds a replica of a particular partition. Each server in the replica ring maintains a list of all other servers in this replica ring.

### ▼ To check NDS partition continuity for a partition:

1. Launch the NDS Manager utility from your workstation.
2. From the **View** menu, select **Partitions and Servers**.
3. Select the partition whose synchronization status you want to view.
4. From the **Object** menu, select **Partition Continuity**.

If an exclamation point appears next to a server’s icon on the Partition Continuity screen, a synchronization error exists.

5. Double-click the icon to view a context-sensitive help screen that provides information about the synchronization error.



With the Partition Continuity option, you can perform operations that were previously available only in the DSREPAIR utility. When you perform the following NDS Manager operations, the DSREPAIR utility automatically launches on a server to perform these operations:

- ◆ Synchronize Immediately
- ◆ Receive Updates
- ◆ Send Updates

The NDS Manager utility then displays the status of each operation, so you can determine whether a particular operation was successfully completed. The NDS Manager utility displays a log file for some operations performed by the DSREPAIR utility.

You can also use the NDS Trace feature, which is part of Novell's SET utility, to check NDS partition continuity. With NDS Trace, you can force the replica synchronization process to begin, and you can then monitor this process to determine whether any servers are unavailable.

### ▼ To use NDS Trace to check NDS partition continuity:

1. At the server console, type **SET DSTRACE = ON** to enable NDS Trace.
2. Type **SET DSTRACE = +S** to display debug error messages for any errors that occur during the replica synchronization process.
3. Type **SET DSTRACE = \*H** to prompt NDS to transmit a signal, or heartbeat. This heartbeat, which NDS transmits every 30 minutes by default, prompts each server that holds a replica to begin the replica synchronization process.
4. To view NDS Trace messages, press <Alt + Esc> until the Directory Services screen appears.

The message `All Processed = Yes` indicates that the replica synchronization process was successfully completed.

The message `All Processed = No` indicates that a synchronization error occurred. (For information about error messages and suggested solutions, refer to Novell's Systems Messages manual.)

5. Press <Alt + Esc> to return to the server console prompt.
6. Enter the **SET DSTRACE = OFF** command to disable NDS Trace.

## Checking NDS Background Processes

Next, you should check NDS background processes. As the name implies, these processes run in the background, performing various tasks that are necessary to keep the NDS tree functioning properly. If an NDS background process fails, the NDS tree may experience synchronization or performance problems.

To ensure that NDS background processes are running smoothly, you should check the following:

- ◆ External references
- ◆ Obituaries
- ◆ Remote server IDs
- ◆ Unknown NDS objects
- ◆ The NDS schema
- ◆ All NDS background processes

## Checking External References

You should randomly select several servers on which to check external references. When a server refers to an NDS object that does not reside in any of the replicas on this server, NDS creates an external reference that points to the object. By checking external references, you can determine whether the NDS objects to which the external references point still exist in your company's NDS tree. If some of these NDS objects no longer exist, the network may experience performance problems. You can minimize the number of external references by following the guidelines for NDS tree design.

### ▼ To check external references on a server:

1. Load the DSREPAIR NLM at the server console.
2. From the **Available Options** menu, select **Advanced Options Menu**, and then select **Check External References**.

This option prompts the DSREPAIR utility to check all external references contained in the server's external reference partition. (An external reference partition is a list of every external reference on this server.)

To check external references, the DSREPAIR utility locates the backlink of each NDS object to which an external reference points. (NDS uses a backlink to track all references to an NDS object. For example, a User object contains a backlink to each Group object to which the User object belongs.) Using the information listed in this backlink, the DSREPAIR utility performs the backlink process by locating the actual NDS object.



3. After the DSREPAIR utility verifies all external references contained in the server's external reference partition, a log file appears. This log file displays the number of external references on the server and the number of errors that occurred when the DSREPAIR utility checked external references.

If the DSREPAIR utility finds external reference errors on this server, you can use NDS Trace to monitor the backlink process and determine why these errors occurred.

▼ **To use NDS Trace to view information about errors on a particular server:**

1. At the server console, type **SET TTF = ON** and press <Enter> to create the DSTRACE.DBG log file in the server's SYS:\SYSTEM directory.
2. Type **SET DSTRACE = ON** and press <Enter> to enable NDS Trace.
3. If a DSTRACE.DBG log file already exists, type **SET DSTRACE = \*R** and press <Enter> to prompt NDS Trace to clear the log file. This log file will then contain only new NDS activity.
4. Type **SET DSTRACE = +BLINK** and press <Enter> to enable NDS Trace to display debug error messages for any errors that occur during the backlink process.
5. Type **SET DSTRACE = \*B** and press <Enter> to prompt the backlink process to begin.
6. To view NDS Trace messages, press <Alt + Esc> until the Directory Services screen appears.
7. Press <Alt + Esc> to return to the server console prompt.
8. Type **SET TTF = OFF** and press <Enter> to save the DSTRACE.DBG log file to the server's SYS:\SYSTEM directory.
9. Type **SET DSTRACE = OFF** and press <Enter> to disable NDS Trace.

You can open the DSTRACE.DBG log file to view any errors that occurred during the backlink process. For example, an error would occur if an external reference pointed to a particular NDS object but the server on which this object resides did not respond to the NDS Trace query. In this case, the following error message would appear in the DSTRACE.DBG log file:

```
-626 all referrals failed
```

## Checking Obituaries

You should randomly select several servers running NDS on your company's network and verify that obituaries are being purged on these servers. (An obituary is an attribute created for an NDS object that has been moved, renamed, or deleted.) Because all servers do not receive updates simultaneously, these changes take some time to be replicated throughout the network.

An obituary ensures that NDS retains outdated information for a particular NDS object until the updated information for this object has been replicated throughout the network. As soon as the update is replicated throughout the network and the replica synchronization process is completed, the obituary is purged.

An obituary can have the following values, or states:

- ◆ 0 - Initial
- ◆ 1 - Notified
- ◆ 2 - OK to purge
- ◆ 4 - Purgeable

For example, suppose that you deleted a User object from your company's NDS tree. NDS would create an obituary for the User object and assign this object a value of 0.

The replica synchronization process would notify all of the servers holding a replica of the partition in which the User object resides that this object had been deleted. NDS would then change the obituary's value to 1. After every server had deleted the User object, NDS would change the obituary's value to 2. After all updates were replicated throughout the network, NDS would change the obituary's value to 4, and the janitor process would purge this obituary.

If obituaries are not being purged on a particular server, the server may be experiencing communication problems. For example, if you were filtering Service Advertising Protocol (SAP) type 278, the servers running NDS on your company's network could not exchange NDS information, and obituaries would not be purged.

### ▼ To check obituaries on a server:

1. Load the DSREPAIR NLM at the server console.
2. From the **Available Options** menu, select **Advanced Options Menu**, and then select **Check External References**. This option prompts the DSREPAIR utility to display a list of external references and obituaries that have not been purged on the server.

If this server contains obituaries that have not been purged, you can use NDS Trace to purge these obituaries.



▼ **To force NDS to purge the obituaries on a server:**

1. At the server console, type **SET TTF = ON** and press <Enter> to create the DSTRACE.DBG log file in the server's SYS:\SYSTEM directory.
2. Type **SET DSTRACE = ON** and press <Enter> to enable NDS Trace.
3. If a DSTRACE.DBG log file already exists, type **SET DSTRACE = \*R** and press <Enter> to prompt NDS Trace to clear the log file. This log file will then contain only new NDS activity.
4. Type **SET DSTRACE = +J** and press <Enter> to enable NDS Trace to display debug error messages for any errors that occur during the janitor process.
5. Type **SET DSTRACE = \*J** and press <Enter> to begin the janitor process.
6. To view NDS Trace messages, press <Alt + Esc> until the Directory Services screen appears.
7. Press <Alt + Esc> to return to the server console prompt.
8. Type **SET TTF = OFF** and press <Enter> to save the DSTRACE.DBG log file to the server's SYS:\SYSTEM directory.
9. Type **SET DSTRACE = OFF** and press <Enter> to disable NDS Trace.

## Check Remote Server IDs

If your company's network includes more than one server, you should check the remote server IDs on several servers running NDS on your company's network. Checking remote server IDs verifies that all servers on the network can communicate with one another. (A remote server ID is the network address of any server to which another server is authenticated.)

▼ **To check remote server IDs on a server:**

1. Load the DSREPAIR NLM at the server console.
2. From the **Available Options** menu, select **Advanced Options Menu**, and then select **View Remote Server ID List**.
3. When the Local ID to Remote ID List screen appears, press <Enter>. The **Remote Server ID Options** menu appears.

4. Select **Verify All Remote Server IDs**. This option prompts the server to refer to its remote server ID table, which stores the remote server IDs of all other servers in the network. Using these remote server IDs, the server tries to authenticate to each server listed in its remote server ID table to verify that the remote server IDs are correct. If a remote server ID is incorrect, the DSREPAIR utility tries to repair it.

## Check Unknown NDS Objects

You should check your company's NDS tree to determine how many unknown NDS objects it contains. If an NDS object is missing one of its mandatory attributes, NDS does not know how to classify the object and cannot perform any updates for this object. The NDS object then becomes an unknown NDS object. Unknown NDS objects may appear in your company's NDS tree after you have upgraded from NetWare 4.x to NetWare 5.x or later or to IntranetWare. Unknown NDS objects may also appear if you have deleted an NDS object's mandatory property or if the NDS database has been corrupted.

Because NDS eventually resolves many unknown NDS objects by finding the missing mandatory attribute, these objects do not usually cause critical problems. However, the number of unknown NDS objects may indicate the overall health of your company's NDS tree. For example, suppose that you recently upgraded from NetWare 4.x to IntranetWare. If more than 25 percent of the NDS objects in the NDS tree are unknown, the upgrade process may not have gone smoothly, and other, more serious problems may exist.

### ▼ To check unknown NDS objects in the NDS tree:

1. Launch the NWADMIN utility from your workstation.
2. From the **Object** pull-down menu, select **Search**.  
The Search screen appears.
3. Type **[Root ]** in the **Start From** option, or browse for the NDS tree's [Root] object by clicking the browser icon. Then click **Search Entire Subtree**.
4. In the **Search For** option, scroll down the list of NDS object types, and select **Unknown**.
5. Click **OK**.  
A message appears, indicating that searching the entire NDS tree could take a long time.
6. Click **Yes** if you want to perform the search. After the search is completed, a list of unknown NDS objects in the NDS tree appears.





If the NWADMIN utility finds any unknown NDS objects, check the NDS object type before deleting these objects.

If the NWADMIN utility finds an unknown container object, such as a Server object, do not delete the object because you could cause a serious problem. For example, if you deleted an unknown Server object for a server that holds partitions or replicas, that server would not be able to participate in the replica synchronization process and might maintain outdated information.

Before you delete any unknown container object, you should call Novell Technical Services for help.

If the NWADMIN utility finds an unknown leaf object, such as a User object, you can simply delete the object. If this object reappears, a replica ring mismatch may exist. (A replica ring mismatch occurs when one of a partition's replicas contains a particular NDS object, while another replica of the same partition does not contain the object.)

If you cannot resolve this synchronization problem, you should call Novell Technical Services for help.

To delete an unknown leaf object, you should use the NWADMIN utility rather than the DSREPAIR utility. If you select the DSREPAIR utility's **Delete Unknown Class Leaf Objects** option, this utility deletes every unknown NDS object that does not hold other objects. To determine which NDS objects are unknown, the DSREPAIR utility uses only the information from the server on which you run this utility.

For example, suppose that you ran the DSREPAIR utility on a particular server and selected the **Delete Unknown Class Leaf Objects** option. If the server held a replica that contains an unknown Server object, the DSREPAIR utility would delete this object. However, the Server object might be marked as Unknown only in this replica, remaining valid on all other servers that hold a replica of the same partition. When the DSREPAIR utility deleted this Server object, NDS would create an obituary to ensure that all other servers would also delete the object. Because the Server object might be valid on these servers, deleting this object could damage your company's NDS tree.

## Checking the NDS Schema

You should check the NDS schema on several servers running NDS in your company's network to verify that all servers are running the same NDS schema. If these servers are not running the same NDS schema, the replica synchronization process may be unable to perform a particular update.

For example, suppose that you modified the NDS schema by adding a Job Title property to the User object type and that you then entered a job title for User object John. If a replica containing User object John resided on a server that was running an NDS schema without the Job Title property, the job title you entered would not be replicated to the server. A server may be running a different NDS schema if an error occurred during the schema synchronization process.

When you modify the NDS schema, NDS updates this schema on every server running NDS on your company's network. As with the replica synchronization process, however, the schema synchronization process cannot replicate updates throughout the network if certain errors occur, such as a server going down.

### ▼ To check the NDS schema:

1. At the server console, type **SET TTF = ON** and press <Enter> to create the DSTRACE.DBG log file in the server's `SYS:\SYSTEM` directory.
2. Type **SET DSTRACE = ON** and press <Enter> to enable NDS Trace.
3. If a DSTRACE.DBG file already exists, type **SET DSTRACE = \*R** and press <Enter> to prompt NDS Trace to clear the log file. This log file will then contain only new NDS activity.
4. Type **SET DSTRACE = +SCHEMA** and press <Enter> to enable NDS Trace to display a schema message whenever an update to the NDS schema is synchronized.
5. Type **SET DSTRACE = \*SS** and press <Enter> to prompt NDS to begin the schema synchronization process for the entire NDS schema.
6. To view NDS Trace messages, press <Alt + Esc> until the Directory Services screen appears.

The message `All Processed = Yes` indicates that the schema synchronization process was successfully completed.

The message `All Processed = No` indicates that a synchronization error occurred.

7. Press <Alt + Esc> to return to the server console prompt.



8. Type **SET TTF = OFF** and press <Enter> to save the DSTRACE.DBG log file to the server's `SYS:\SYSTEM` directory.
9. Type **SET DSTRACE = OFF** and press <Enter> command to disable NDS Trace.

## Checking All NDS Background Processes

You should randomly select several partitions in your company's NDS tree and verify that NDS is properly performing each of its background processes. By checking all NDS background processes, you can view the "normal" NDS errors that occur. Rather than causing problems, normal NDS errors help ensure that all NDS background processes, such as the login process and the replica synchronization process, are successfully completed. For example, a DSA common request error would occur if you tried to log in to the network using the wrong context. A collision error, on the other hand, would occur if NDS tried to replicate an update to a particular server when the WAN link was down. In this case, a second server would take over, replicating the update to the first server via a different link. When the WAN link became available, NDS would again try to replicate the update, causing a collision error. This error would prompt the first server to ignore the duplicate replication request.

### ▼ To check all NDS background processes for a partition:

1. At the server console, type **SET TTF = ON** to create the DSTRACE.DBG log file in the server's `SYS:\SYSTEM` directory.
2. Type **SET DSTRACE = ON** and press <Enter> to enable NDS Trace.
3. If a DSTRACE.DBG log file already exists, type **SET DSTRACE = \*R** and press <Enter> to prompt NDS Trace to clear the log file. This log file will then contain only new NDS activity.
4. Type **SET DSTRACE = +IN** and press <Enter> to enable NDS Trace to display debug error messages for synchronization information that is being received by the server. This synchronization information is indicated by an asterisk (\*).
5. Type **SET DSTRACE = +S** and press <Enter> to enable NDS Trace to display debug error messages for NDS objects that are being synchronized between servers.
6. Type **SET DSTRACE = +SCHEMA** and press <Enter> to enable NDS Trace to display a schema message whenever an update to the NDS schema is synchronized.

7. Type **SET DSTRACE = +LIMBER** and press <Enter> to enable NDS Trace to display debug error messages for the limber process. This process verifies the server's name, its internal IPX address, and its connectivity with all other servers holding a replica of any partition that resides on this server.
8. Type **SET DSTRACE = +MISC** and press <Enter> to enable NDS Trace to display debug error messages for all other NDS background processes, such as the bagging process. This process flags NDS information that is ready to be overwritten.

For example, suppose that you changed a subordinate reference replica to a read-write replica. Unlike master replicas and read-write replicas, subordinate reference replicas do not contain actual NDS objects. Rather, subordinate reference replicas contain pointers that point to these NDS objects. If you changed a subordinate reference replica to a read-write replica, the bagging process would flag the pointers contained in the subordinate reference replica so NDS could overwrite these pointers, replacing them with actual NDS objects. NDS would also overwrite any external references to reflect this change.

9. Type **SET DSTRACE = +AGENT** and press <Enter> to enable NDS Trace to display a debug trace screen. This command also sets the BACKLINK, DSAGENT, JANITOR, RESNAME, and VCLIENT debug trace message flags. You can then view debug error messages for various NDS background processes while NDS performs the replica synchronization process.
10. Type **SET DSTRACE = \*H** and press <Enter> to prompt NDS to transmit a heartbeat that triggers the replica synchronization process.
11. To view NDS Trace messages, press <Alt + Esc> until the Directory Services screen appears.

The message `All Processed = Yes` indicates that the replica synchronization process was successfully completed.

The message `All Processed = No` indicates that a synchronization error occurred.
12. Press <Alt + Esc> to return to the server console prompt.
13. Type **SET TTF = OFF** and press <Enter> to save the DSTRACE.DBG file to the server's `SYS:\SYSTEM` directory.
14. Type **SET DSTRACE = OFF** and press <Enter> to disable NDS Trace.



## Check NDS SET Parameters

Finally, you should check NDS SET parameters, which define how the DS NLM behaves. Because many NDS SET parameters are tunable, you can change their value to meet the needs of your company's network. However, the default value of NDS SET parameters should be adequate for most networks.

### ▼ To check tunable NDS SET parameters:

1. At the server console, type **SET TTF = ON** and press <Enter> to create the DSTRACE.DBG log file in the server's `SYS:\SYSTEM` directory.
2. Type **SET DSTRACE = ON** and press <Enter> to enable NDS Trace.
3. If a DSTRACE.DBG log file already exists, type **SET DSTRACE = \*R** and press <Enter> to prompt NDS Trace to clear the log file. This log file will then contain only new NDS activity.
4. Type **SET DSTRACE = \*P** and press <Enter> to prompt NDS Trace to display the current value of each tunable NDS SET parameter.
5. To view NDS Trace messages, press <Alt + Esc> until the Directory Services screen appears.
6. Press <Alt + Esc> to return to the server console prompt.
7. Type **SET TTF = OFF** and press <Enter> to save the DSTRACE.DBG log file to the server's `SYS:\SYSTEM` directory.
8. Type **SET DSTRACE = OFF** and press <Enter> to disable NDS Trace.

If you want to change the value of a particular NDS SET parameter, you can use the SET utility at the server console to enter a new value. You can also use Novell's SERVMAN utility to modify an NDS SET parameter.

# Using the Remote Agent for NetWare

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This section describes how to install, configure, and use the Remote Agent for NetWare, a separately purchased option that provides faster backup and restore of remote systems.

The Remote Agent increases data throughput when backing up or restoring remote NetWare servers.

The Remote Agent for NetWare *must* be installed to all remote NetWare systems being protected by Backup Exec for NetWare.

*Using the Remote Agent for NetWare* contains the following topics:

Section	Describes
<a href="#">“About the Remote Agent for NetWare”</a> on page 471	What the Remote Agent for NetWare does and how to maximize performance.
<a href="#">“Installing the Remote Agent for NetWare”</a> on page 472	How to install the Remote Agent.

## About the Remote Agent for NetWare

The Remote Agent for NetWare allows you to back up and restore files, directories, volumes and any resource on the server supported by the Task Service Agent (TSA) from remote servers.

When installing the Remote Agent, you must enter a Remote Agent serial number for each remote server that you want to protect.

The Remote Agent for NetWare provides faster backup processing by locally performing tasks that in typical backup technologies require extensive network interaction. For example, the Remote Agent does not wait for requests and data packets to be sent between the remote NetWare server and the media server each time a file is selected for



backup. Instead, the Remote Agent processes backup data into continuous streams that use Novell's Storage Management Services (SMS) and which the media server then processes as a single task.

The Remote Agent is comprised of a NetWare Loadable Module (NLM) that is loaded on remote file servers to increase backup throughput. The Remote Agent is SMS-compliant and runs on NetWare 4.2x and 5.x operating systems.

## Installing the Remote Agent for NetWare

Use the following procedures to install the Remote Agent for NetWare from a Windows 95/98/Me/NT/2000 system to your remote NetWare server.

### ▼ To install the Remote Agent for NetWare:

1. Insert the installation CD into the local system's CD-ROM drive.
2. From the installation CD browser, select **Backup Exec Installation**.
3. Select **Start Backup Exec Installation**.  
The Welcome window appears.
4. Click **Next** to proceed with the installation.  
The Software License Agreement appears.
5. After reading this information, select **I accept the terms of the license agreement**, and then click **Next**.
6. From the Select Components window that appears next, select **Serialized install**.

---

**Note** If you are installing an evaluation copy of Backup Exec or any of its options, select **Evaluation Install** and select only the components you want to install.

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7. Select **NetWare Remote Server**, and then click **Next**.
8. Select **Remote Agent for NetWare**.

---

**Note** The Remote Agent must be installed to all remote systems being protected by the Backup Exec for NetWare.

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9. Click **Next**.

10. Select the systems where you want the Remote Agent to be installed.
  - a. If the system appears in the list of **Available Systems**, select the server and click the right arrow key to move the server to the **Destination Systems** list.
  - b. If you want to add an additional system that does not appear in the list, click **Manually add additional systems**, and then type the name or IP address of the system.
11. Click **Next**.
12. If you are not already connected to the NetWare server, click the server icon, enter the Administrative username and password for accessing the server, and then click **Connect**.
13. Enter the serial number for the Remote Agent or options.
14. Click **Next**.
15. If setup was unable to detect the IP Address for the remote server, you will need to manually enter it, and then click **Next**.
16. Verify the settings that have been selected for the remote server. To change settings, click **Back** and reselect. If you are satisfied with the selected settings, click **Next**.

You will be able to monitor the progress of the remote server installation.
17. Click **Yes** if you want Backup Exec to load automatically when the server starts; otherwise, click **No**.
18. Select the NetWare server that will protect the remote server.
  - a. If the system appears in the list of **Available Systems**, select the media server and click the right arrow key to move the server to the **Destination Systems** list.
  - b. If you want to add an additional system that does not appear in the list, click **Manually add additional systems**, and then type the name or IP address of the media server.
19. Click **Next**.
20. If you are not already connected to the media server, click the server icon, enter the Administrative username and password for accessing the media server, and then click **Connect**.





21. Click **Next**.
22. Click **Finish** to view the readme and complete the installation.

## Editing the AUTOEXEC.NCF File on the Remote Server

After installing the Remote Agent on the remote NetWare system, you should load the latest Novell patches. You can also add the BESTART command, which loads the Remote Agent for NetWare whenever the server is booted, to the AUTOEXEC.NCF file. After editing the AUTOEXEC.NCF file, save the file, and then reboot the remote server for the changes to take effect.

## Loading and Unloading the Remote Agent

If you add the BESTART command to the AUTOEXEC.NCF file, the Remote Agent is automatically loaded when BESTART.NCF is executed on the remote server.

### ▼ To unload the Remote Agent:

1. At the remote server's console prompt, type:  
**bestop**
2. Press <Enter>.

# Using the Remote Agent for Windows NT and Windows 2000

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**B**

This section describes how to install and use the Remote Agent for Windows NT and Windows 2000, a separately purchased option that allows Backup Exec for NetWare to backup and restore Windows NT, Windows 2000, and Windows XP Professional systems.

The Remote Agent for Windows NT and Windows 2000 is required if you want to use the Backup Exec for Windows NT and Windows 2000 Open File Option to protect data on a Windows system with your NetWare media server.

*Using the Remote Agent for Windows NT and Windows 2000* contains the following topics:

<b>Section</b>	<b>Describes</b>
<a href="#">“About the Remote Agent for Windows NT/2000”</a> on page 476	What the Remote Agent is, how it works, what the requirements for using it are, and how to maximize performance.
<a href="#">“Installing the Remote Agent for Windows NT/2000”</a> on page 477	How to install the Remote Agent, how to upgrade the Remote Agent, and how to stop and start services.
<a href="#">“Backing Up Using the Remote Agent”</a> on page 480	How data can be backed up using the Remote Agent.
<a href="#">“Restoring with the Remote Agent”</a> on page 480	How data can be restored using the Remote Agent.



## About the Remote Agent for Windows NT/2000

The Remote Agent for Windows NT and Windows 2000 is a system service that runs on Windows servers and workstations and can be used with either Backup Exec for Windows NT, Windows 2000, Windows XP Professional, or Backup Exec for NetWare. This agent adds complete Windows NT, Windows 2000, and Windows XP support to Backup Exec, allowing you to perform backup and restore operations on Windows NT, Windows 2000, and Windows XP Professional systems that are connected to a network.

When used with Backup Exec for NetWare, the Remote Agent supports backing up and restoring the following types of data:

- ◆ FAT
- ◆ NTFS, including:
  - Encrypted files
  - SIS files
  - Disk quota data
  - Removable Storage data
  - Remote Storage data
  - Mount points
  - Sparse files
- ◆ System State
  - COM+ Class Registration database
  - Boot and system files
  - Registry
  - Certification Services database (if the server is operating as a certificate server)
  - Active Directory (if the server is a domain controller)
  - SYSVOL (if the server is a domain controller)
  - Cluster quorum

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**Note** You can select System State for backup on a system running Windows 2000 or Windows XP only when the Remote Agent is installed on the Windows 2000 or Windows XP system. If you are backing up System State data, only a full backup is allowed.

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The Remote Agent also supports backing up with Backup Exec's Open File Option for Windows NT and Windows 2000.

## Remote Agent Requirements

The Remote Agent is installed locally to the Windows NT, Windows 2000, or Windows XP Professional systems you want to protect using the **Local Workstation** installation option (see “[Installing the Remote Agent for Windows NT/2000](#)” on page 477.) A separate Remote Agent license and serial number is required for each Windows NT, Windows 2000, or Windows XP system you want to protect using your NetWare media server. Each licensed remote system can be protected by multiple media servers without requiring additional licensing.

## Installing the Remote Agent for Windows NT/2000

The Remote Agent must be installed locally to each Windows NT, Windows 2000, and Windows XP system you want to fully protect using your NetWare media server.

### ▼ To install the Administration Console to the local workstation:

1. Insert the installation CD into the local system’s CD-ROM drive.
2. From the installation CD browser, select **Backup Exec Installation**.
3. Select **Start Backup Exec Installation**.  
The Welcome window appears.
4. Click **Next** to proceed with the installation.  
The Software License Agreement appears.
5. After reading this information, select **I accept the terms of the license agreement**, and then click **Next**.
6. From the Select Components window that appears next, select **Serialized install** and **Local Workstation**, and then click **Next**.

---

**Note** If you are installing an evaluation copy of Backup Exec or any of its options, select **Evaluation Install** and select only the components you want to install.

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7. Select **Remote Agent for Windows NT/2000**.
8. Click **Next**.
9. Enter the Remote Agent serial number, and then click **Add**.



**10.** Click **Next**.

**11.** Enter the **IP Address** for this local system, and then click **Next**.

The IP Address is not required for remote accessing of this system by your Backup Exec for NetWare media server unless you are manually adding the name of a server that does not appear in the **Available Systems** list.

**12.** Verify the settings that have been selected for the local workstation. To change settings, click **Back** and reselect. If you are satisfied with the selected settings, click **Next**.

**13.** Select the NetWare server that will protect the remote server.

- a.** If the system appears in the list of **Available Systems**, select the media server and click the right arrow key to move the server to the **Destination Systems** list.
- b.** If you want to add an additional system that does not appear in the list, click **Manually add additional systems**, and then type the name of the media server.

**14.** Click **Next**.

**15.** If you are not already connected to the media server, click the server icon, enter the Administrative user name and password for accessing the media server, and then click **Connect**.

**16.** Click **Next**.

**17.** Click **Finish** to view the readme and complete the installation.

You can now protect your remote server with Backup Exec.



## Upgrading the Remote Agent for Windows NT/2000

To upgrade the Remote Agent, reinstall it to the remote systems on which previous versions exist. To reinstall the option, repeat the steps in “[Installing the Remote Agent for Windows NT/2000](#)” on page 477.

You *must* replace the Backup Exec for NetWare Windows NT Agent with this release of the Remote Agent for Windows NT and Windows 2000 to fully protect your Windows NT, Windows 2000, and Windows XP systems, including System State. Uninstall the Windows NT Agent before installing this release of the Remote Agent for Windows NT and Windows 2000.

## Stopping and Starting the Remote Agent

The Remote Agent is automatically started as a service when Windows NT or Windows 2000 is started on the remote server. However, you can stop and then restart the service manually.

- ▼ **To stop and start the Remote Agent on a Windows 2000 or Windows XP system:**
  1. Click **Start**, point to **Settings**, and then click **Control Panel**.
  2. Double-click **Administrative Tools**.
  3. Double-click **Services**.
  4. Right-click **Backup Exec Remote Agent for Windows NT/2000**, and then click **Stop** if you want to stop services, or **Start** if you want to start services.
  
- ▼ **To stop and start the Remote Agent on a Windows NT system:**
  1. Click **Start**, point to **Settings**, and then click **Control Panel**.
  2. Double-click **Services**.
  3. Select **Backup Exec Remote Agent for Windows NT/2000**, and then click **Stop** if you want to stop services, or **Start** if you want to start services.



## Backing Up Using the Remote Agent

**Note** The Remote Agent for Windows NT and Windows 2000 is compatible with this release of Backup Exec for NetWare and Backup Exec for Windows NT 8.6.

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If you are using the Administration Console to protect a remote Windows NT/2000/XP system, ensure the Remote Agent has been installed on the remote system (see [“Installing the Remote Agent for Windows NT/2000”](#) on page 477). Then, follow the steps for creating a backup job (see [“Creating a Backup Job from the Administration Console”](#) on page 105), ensuring that NT Remote Agents has been selected as the resource type when making selections (see [“Making Backup Selections from the Administration Console”](#) on page 110).

If you are using the Administration Console for NetWare to protect a remote system, follow the steps for creating a backup job (see [“Creating a Backup Job from the Administration Console for NetWare”](#) on page 115).

If you are protecting a Windows 2000 or Windows XP system, you will want to ensure that the policy being used for the backup has the Windows 2000 options that you want selected (see [“Windows 2000 Options for a Policy”](#) on page 100).

## Restoring with the Remote Agent

Data backed up using the Remote Agent can be retrieved from storage media and restored to its original location, or you can redirect these restore items to different locations on your network.

To restore data, follow the steps outlined in [“Creating a Restore Job from the Administration Console”](#) on page 131 or [“Creating a Restore Job from the Administration Console for NetWare”](#) on page 153.

When restoring data to a Windows NT system, you will want to ensure that the Windows NT options you want have been selected (see [“Windows NT Options for Restore”](#) on page 146). When restoring data to a Windows 2000 or Windows XP system, you will want to ensure that the Windows 2000 options you want have been selected (see [“Windows 2000 Options for Restore”](#) on page 147).

# Using the Library Expansion Option

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C

This section details how to install, set up, and use the Library Expansion Option, a separately purchased option that enables multi-drive robotic library support for Backup Exec.

*Using the Library Expansion Option* contains the following topics:

Section	Describes
<a href="#">“About the Library Expansion Option”</a> on page 482	What the Library Expansion Option provides for Backup Exec users.
<a href="#">“Installing the Library Expansion Option”</a> on page 482	The requirements for running the Library Expansion Option and the steps for installing this option.
<a href="#">“Viewing Robots”</a> on page 485	How libraries appear in the <b>Devices</b> node.
<a href="#">“Performing Device Operations”</a> on page 488	Procedures for performing device operations on robots, robot drives, slots, and portals.





## About the Library Expansion Option

The Library Expansion Option provides advanced robotic library support for Backup Exec and offers the following features:

- ◆ Support for multiple drive libraries.
- ◆ Concurrent processing on multiple drive libraries.
- ◆ Ability to set up cleaning jobs on a regular basis.
- ◆ Support for libraries with bar code labeling systems.
- ◆ Support for libraries with portals.

The Library Expansion Option is designed for use with multiple drive robots or with multiple single-drive robots attached to the same media server.

## Installing the Library Expansion Option

A Library Expansion Option is not required for the first drive in a robotic library. For each additional robot drive you want to use, whether for a multiple drive robot or for multiple single drive robots, you must purchase and install a licensed copy of the Library Expansion Option. In a shared storage environment, shared drives require only one Library Expansion Option per drive. For more information about the SAN Shared Storage Option, see [“Using the SAN Shared Storage Option”](#) on page 525.

Before installing Backup Exec’s Library Expansion Option, you must ensure the robot hardware is configured properly (see [“Setting Up Robot Hardware”](#) on page 482) and that installation requirements are met (see [“Requirements”](#) on page 31).

## Setting Up Robot Hardware

The SCSI ID of the robot arm should precede the SCSI address of the drives in the robot. If you are using a robot and stand-alone drives on the same media server, the robot should be connected to the media server first, and the SCSI IDs of the loader arm and loader drives should precede the SCSI address of the stand-alone drives.

## Installation Procedures

You can install the Library Expansion Option while installing Backup Exec to the media server (see “[Installing All Serialized Backup Exec Software](#)” on page 33), or you can install the Library Expansion Option to a media server that already has Backup Exec installed by using the following procedure.

### ▼ To install the Library Expansion Option:

1. Insert the installation CD into the local system’s CD-ROM drive.
2. From the installation CD browser, select **Backup Exec Installation**.
3. Select **Start Backup Exec Installation**.  
The Welcome window appears.
4. Click **Next** to proceed with the installation.  
The Software License Agreement appears.
5. After reading this information, select **I accept the terms of the license agreement**, and then click **Next**.
6. From the Select Components window that appears next, select **Serialized install**.
7. Select **NetWare Media Server**, and then click **Next**.
8. Select the **Library Expansion Option**.
9. After selecting the components you want to install, click **Next**.
10. Select the NetWare system that will serve as your media server.
  - a. If the system appears in the list of **Available Systems**, select the server and click the right arrow key to move the server to the **Destination Systems** list.
  - b. If you want to add an additional system that does not appear in the list, click **Manually add additional systems**, and then type the name of the system.
11. Click **Next**.
12. If you are not already connected to the media server, click the server icon, enter the Administrator username and password for accessing the media server, and then click **Connect**.



13. Click **Next**.
14. Enter a serial number for each Library Expansion Option being installed, and click **Add** after each serial number is typed.
15. After all serial numbers have been entered, click **Next**.

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**Note** If you do not meet the minimum system requirements for the components being installed, a message appears. To stop the installation procedures and install the latest patches or service packs, click **OK**, and then click **Cancel**. Or, you can click **OK** and proceed with the installation for those components that can be installed at this time.

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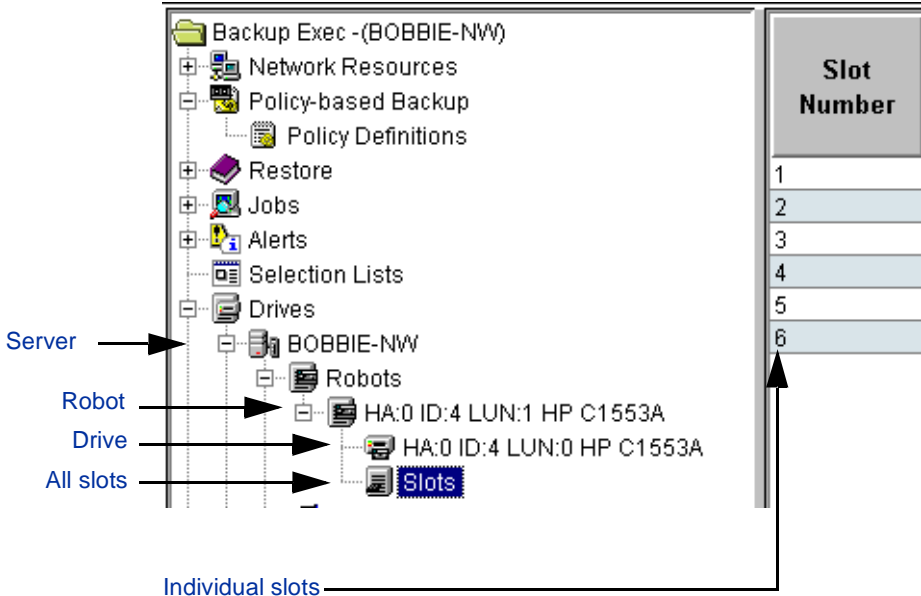
16. Verify the settings that have been selected for the media server. To change settings, click **Back** and reselect. If you are satisfied with the selected settings, click **Next**.  
You can monitor the status of the media server installation.
17. Click **Finish** to view the readme and complete the installation.

# Viewing Robots

When Backup Exec is installed in the media management mode with the Library Expansion Option, robots can be viewed under the **Drives** node in the Administration Console and through the **Drives** menu in the Administration Console for NetWare.

In the **Drives** node, each licensed robot appears under the server subnode. If the robot is a multi-drive robot, each drive has a subnode. There is also a subnode for all slots. When the **Slot** subnode is selected in the tree pane, information about the individual slots for a robot appears in the results pane.

Drives Node View of Robots, Drives, and Slots



In the Administration Console for NetWare, information about robots and the individual components for a robot appear in a series of dialog boxes. If you select **Robots** from the **Drives** menu, the Robot dialog box appears, displaying the following information:

- ◆ **Robot Name.** Name of the robots attached to the media server.
- ◆ **Type.** Robot type, such as **Normal**.
- ◆ **State.** Whether the robot is enabled or disabled for Backup Exec operations.

Robots Dialog Box

Robots		
Robot Name	Type	State
▶HA:0 ID:3 LUN:1 ARCHIVE Python 04377-XXX	Normal	Enabled ◀
HA:0 ID:4 LUN:1 HP C1553A	Normal	Enabled

05/14/2001 07:23:05

You can view information about the robot's components by selecting a robot, and then pressing <Enter>. The Robot Components dialog box appears.

Robot Components Dialog Box

Robot Components	
Robot name: HA:0 ID:3 LUN:1 ARCHIVE Python 04377-XXX	
Drives:	[Press <Enter>... ▼]
Portals:	[Press <Enter>... ▼]
Slots:	[Press <Enter>... ▼]

From the Robot Components dialog box you can select to view information about the robot's drives, portals, and slots. If you select a component and press <Enter>, a dialog box with information about that component appears (see "[Viewing Robot Drives in the Administration Console for NetWare:](#)" on page 487).

## Viewing Robot Drives in the Administration Console for NetWare:

### ▼ To view information about a robot's component:

1. From the Administration Console for NetWare, select **Drives**.
2. Select **Robots**.
3. Select the robot you want to view information on.
4. To view information about a robot's drives, select **Drives** and press <Enter>. Information about the drives in a robot is described in "[Drives in Robot Dialog Box](#)" on page 487.
5. To view information about a robot's slots, select **Slots** and press <Enter>. Information about the slots in a robot is described in "[Slots in Robot Dialog Box](#)" on page 500.
6. To view information about a robot's portals, select **Portals**, and press <Enter>. Information about the portals in a robot is described in "[Portals in Robot Dialog Box](#)" on page 507.

### Drives in Robot Dialog Box

The Drives in Robot dialog box appears on the Administration Console for NetWare when **Drives** is selected from the Robot Components dialog box.

This dialog contains the following information:

- ◆ **Drive Name.** Name of the drive.
- ◆ **Media Type.** Type of media to be used by this drive.
- ◆ **Drive State.** Displays **Enabled** if the drive is enabled for Backup Exec; otherwise displays **Disabled**.
- ◆ **Shared Storage.** Indicates if the robot drive is being used in a shared storage environment.



## Performing Device Operations

Device operations allow you to manage the physical storage devices attached to the media server and to perform utility operations on the media in these storage devices. If you have installed the Library Expansion Option, you can perform device operations on:

- ◆ Robots (see [“Performing Device Operations on the Robot”](#) on page 488).
- ◆ Robot drives (see [“Performing Device Operations”](#) on page 300).
- ◆ Robot partitions (see [“Performing Partition Operations”](#) on page 349).
- ◆ Individual slots (see [“Designating a Cleaning Slot”](#) on page 505).

Device operations are performed through the **Drives** node in the Administration Console and through the **Drives** menu in the Administration Console for NetWare. You can also launch utility operations through the **Jobs** menu from either user interface.

### Performing Device Operations on the Robot

The following table lists device operations that can be performed on the robot and where to find detailed information about each operation. For information about performing device operations on robot drives, refer to [“Performing Device Operations”](#) on page 300. For information on performing operations on robot partitions, see [“Performing Partition Operations”](#) on page 349.

<b>For information on:</b>	<b>See:</b>
Enabling or disabling a robot	<a href="#">“Enabling and Disabling a Robot for Use with Backup Exec”</a> on page 489
Renaming a robot	<a href="#">“Renaming a Robot”</a> on page 490
Initializing a robot	<a href="#">“Initializing a Robot”</a> on page 491
Scanning a robot’s memory	<a href="#">“Scanning the Robot’s Memory”</a> on page 491
Importing media	<a href="#">“Importing Media”</a> on page 492
Exporting media	<a href="#">“Exporting Media”</a> on page 494
Viewing robot properties	<a href="#">“Viewing and Changing Robot Properties”</a> on page 495

## Enabling and Disabling a Robot for Use with Backup Exec

You can enable or disable a drive for Backup Exec through the drive's **Properties**, or from the **Enable/Disable** options available.

### ▼ To enable or disable a drive:

1. From the Administration Console, click **Drives**. Then, click either **All drives**, or click the server to which the robot is attached and select either **Robots**.

From the Administration Console for NetWare, select **Drives**, and then select either **Robots**.

2. Locate the robot you want to enable or disable.
3. From the Administration Console either right-click the drive and click **Enable** or **Disable**, or:
  - a. Right-click the drive and click **Properties**.
  - b. From the **Configuration** tab, click **Enable robot for Backup Exec** to enable the robot; clear this selection to disable the robot.
  - c. Click **OK**.

---

**Note** If the robot is enabled, the option **Disable** appears in the popup menu. The option **Enable** appears only if the robot has been disabled.

---

From the Administration Console for NetWare either select the robot from the robot list and press <Ctrl + E>, or:

- a. Select the robot.
- b. Press <F4>.
- c. Select **Configuration**, and press <Enter>.
- d. Select **Enable robot for Backup Exec** to enable a robot; clear this selection to disable the robot.
- e. Press <F2>.





If the robot is enabled, a check mark or X appears next to the **Enable robot for Backup Exec** option. To disable a robot, click the option from the Administration Console to remove the check mark, or from the Administration Console for NetWare, press <Spacebar>. If a robot is disabled for Backup Exec, scheduled jobs will not run on that robot and the robot will be unavailable when creating new jobs.

## Renaming a Robot

The name that Backup Exec assigns to any devices it finds when it starts is the vendor name followed by a number. Since this name may not be descriptive enough, you can rename the robot through the robot's **Properties**. From the Administration Console for NetWare, you can also use the **Rename** option.

### ▼ To rename a robot from its Properties pages:

1. From the Administration Console, click **Drives**, click the server to which the drive is attached, and then click **Robots**.

From the Administration Console for NetWare, select **Drives**, and then select **Robots**.

2. Locate the robot you want to rename.
3. From the Administration Console, right-click the robot, and then click either **Properties** or **Rename**.

From the Administration Console for NetWare, select the drive you want to rename, and then press <F4>.

4. Enter a new name for the drive in the **Name** or the **Robot name** option.
5. From the Administration Console, click **OK**.

From the Administration Console for NetWare, press <F2>.

## Initializing a Robot

The **Initialize** operation uses the robot's bar code reader to verify empty slots and to quickly rescan the bar codes of each media in the robot. Use this utility if you have manually moved media or if your robot does not perform a scan during media import.

---

**Note** This utility is designed only for robots equipped with bar code readers. Unlike the **Inventory** utility, the **Initialize** utility does not add media to the media database.

---

### ▼ To initialize a robot:

1. Select the **Jobs** menu.
2. From the Administration Console, point to **Utilities**, and then click **Initialize**.

From the Administration Console for NetWare, select **Utilities**, and then select **Initialize**.

The robot's bar code reader will update inventory information, without requiring media to be inserted into the drive, by physically visiting each slot. If a bar code label is present, the media label on the bar code label will be added to the inventory information.

---

**Tip** From the Administration Console, you can initialize a robot by right-clicking on the robot in the tree pane, and then clicking **Initialize**.

---

## Scanning the Robot's Memory

The **Scan** operation retrieves current media inventory from the robot's memory and updates Backup Exec's media inventory. It is recommended that you not use the robot's control panel to move media. If you use the robot's control panel to move media rather than Backup Exec's Import and Export utilities, the memory in the robot and Backup Exec's media inventory will be different.

---

**Note** Unlike the **Inventory** utility, the **Initialize** utility does not add media to the media database.

---

### ▼ To perform a Scan utility:

1. Select the **Jobs** menu.
2. From the Administration Console, point to **Utilities**, and then click **Scan**.

From the Administration Console for NetWare, select **Utilities**, and then select **Scan**.



The Scanning Status window appears. Information displayed in this window is described in “[Scanning Status Dialog Box](#)” on page 492.

When the scan is complete, the **Utilities** menu appears.

---

**Tip** From the Administration Console, you can launch a scan operation by right-clicking on the robot in the tree pane, and then clicking **Scan**.

---

### Scanning Status Dialog Box

The Scanning Status window displays the following information:

- ◆ **Started.** Displays the time the utility started processing.
- ◆ **Status.** Displays messages coming from the drive reporting the operation.
- ◆ **Elapsed time.** Displays the time since the utility actually started processing.

## Importing Media

Media can be imported from a portal to an empty slot using the **Import** utility. An Import job will be created and can be monitored using procedures described in “[Monitoring Jobs](#)” on page 175.

### ▼ To import media from a portal:

1. Select the **Jobs** menu.
2. From the Administration Console, point to **Utilities** and click **Import**.  
From the Administration Console for NetWare, select **Utilities**, select **Import**, and then select the robot you want to perform the **Import** utility on.
3. From the Administration Console, select options on the Importing dialog box. Options are described in “[Importing Dialog Box](#)” on page 493.  
From the Administration Console for NetWare, select options on the Import dialog box. Options are described in “[Import Dialog Box](#)” on page 493.
4. From the Administration Console, click **OK**.  
From the Administration Console for NetWare, press <F2>.

If your robot supports bar code operations and performs a scan during import, Backup Exec’s media inventory will be updated with bar code information. If your robot does not perform a scan during import, you should use the **Initialize** utility to update the media inventory (see “[Initializing a Robot](#)” on page 491).

### Importing Dialog Box

The following options appear on the Administration Console's Importing dialog box:

- ◆ **Job name.** Name of the job.
- ◆ **Robot name.** Name of the robot for which the job is being created.
- ◆ **From Portals.** Select the portal from which media is being imported or moved.
- ◆ **To Slots.** Select the slot to which media is being imported or moved.
- ◆ **Add.** Click this button to add the move from a portal to a slot to the **Importing Task List**.
- ◆ **Remove.** Click this button to remove an import task from the **Importing Task List**.
- ◆ **Importing Task List.** Displays which portal the media is being imported from and which slot the media is being imported to.

### Import Dialog Box

The following options appear on the Administration Console for NetWare's Import dialog box:

- ◆ **Job name.** Name of the job.
- ◆ **Robot name.** Name of the robot for which the job is being created.
- ◆ **Slots.** Press <Enter> to select the slots to which you want to import media. The Select Slots To Import To dialog box appears. This dialog box is described in "[Select Slots To Import To](#)" on page 493.
- ◆ **Importing.** Number of slots to which media is being imported.

### Select Slots To Import To

The dialog box that appears when creating an import job from the Administration Console for NetWare contains the following information:

- ◆ **Slot Number.** Number of the slot.
- ◆ **Robot Name.** Name of the robot to which media is being imported.
- ◆ **Slot Status.** Status of the slot, such as Empty.
- ◆ **Media Name.** Name of the media residing in the slot.
- ◆ **Portal Number.** Number of portal media from which media is being imported.

Select the slot you want to import media to, and then press <Enter>.



## Exporting Media

Use the **Export** utility when removing media from a robot to a storage area or when swapping out media so that other media can be used for jobs. For example, if you have completed a monthly backup and want to permanently store the backup media offsite, you would use the **Export** utility to move the media from slots to portals. You would then retrieve the media from the portals and place them in storage.

### ▼ To export media to a portal:

1. Select the **Jobs** menu.
2. From the Administration Console, point to **Utilities** and click **Export**.  
From the Administration Console for NetWare, select **Utilities**, select **Export**, and then select the robot you want to perform the **Export** utility on.
3. From the Administration Console, select options on the Exporting dialog box. Options are described in “[Exporting Dialog Box](#)” on page 494.  
From the Administration Console for NetWare, select options on the Export dialog box. Options are described in “[Export Dialog Box](#)” on page 495.
4. From the Administration Console, click **OK**.  
From the Administration Console for NetWare, press <F2>.

### Exporting Dialog Box

The following options appear on the Administration Console’s Importing dialog box:

- ◆ **Job name.** Name of the job.
- ◆ **Robot name.** Name of the robot for which the job is being created.
- ◆ **From Slots.** Select the slot from which media is being exported or moved.
- ◆ **To Portals.** Select the portal to which media is being exported or moved.
- ◆ **Add.** Click this button to add the move from a portal to a slot to the **Exporting Task List**.
- ◆ **Remove.** Click this button to remove an import task from the **Exporting Task List**.

## Export Dialog Box

The following options appear on the Administration Console for NetWare's Export dialog box:

- ◆ **Job name.** Name of the job.
- ◆ **Robot name.** Name of the robot for which the job is being created.
- ◆ **Slots.** Press <Enter> to select the slots to which you want to import media. The Select Slots To Export To dialog box appears. This dialog box is described in "[Select Slots To Export](#)" on page 495.
- ◆ **Exporting.** Number of slots to which media is being imported.

## Select Slots To Export

This dialog box that appears when creating an export job from the Administration Console for NetWare contains the following information:

- ◆ **Slot Number.** Number of the slot.
- ◆ **Robot Name.** Name of the robot to which media is being imported.
- ◆ **Slot Status.** Status of the slot, such as Empty.
- ◆ **Media Name.** Name of the media residing in the slot.
- ◆ **Portal Number.** Number of the portal from which media is being imported.

Select the slot you want to export media from, and then press <Enter>.

## Viewing and Changing Robot Properties

Through the robot Properties dialog box, you can view robot specifications, configuration information, SCSI information, and status. You can also rename the robot, enable or disable the robot for use with Backup Exec, and specify the appropriate slot base number.

### ▼ To view or change robot properties:

1. From the Administration Console, click **Drives**, click the server to which the robot is attached, click **Robots**, right-click the robot, and then click **Properties**.

From the Administration Console for NetWare, select **Drives**, select **Robots**, select the robot for which you want to view properties, and press <F4>.

The Properties dialog box that appears on the Administration Console contains four tabs:

- General tab (see "[Robot Properties | General Dialog Box](#)" on page 497).



- Configuration tab (see “[Robot Properties | Configuration Dialog Box](#)” on page 498).
- SCSI Information (see “[Robot Properties | SCSI Information Dialog Box](#)” on page 499).
- Statistics (see “[Robot Properties | Status Dialog Box](#)” on page 499).

The Robot Properties dialog box appears on the Administration Console for NetWare. This dialog box is described in “[Robot Properties Dialog Box for the Administration Console for NetWare](#)” on page 496.

2. View and make any needed changes.
3. From the Administration Console, click **OK**.

From the Administration Console for NetWare, press <F2>.

### **Robot Properties Dialog Box for the Administration Console for NetWare**

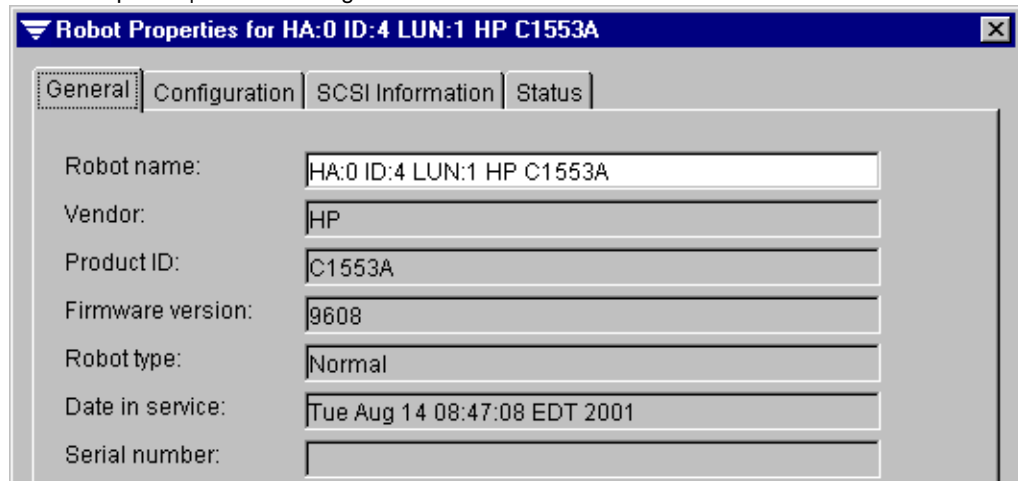
The Robot Properties dialog box that appears when viewing robot properties on the Administration Console for NetWare contains the following options:

- ◆ **Robot name.** Name of the robot. To change the name, replace the name in this field with the new name.
- ◆ **General.** Press <Enter> to view the General dialog box. Options for this dialog box are described in “[Robot Properties | General Dialog Box](#)” on page 497.
- ◆ **Configuration.** Press <Enter> to view the Configuration dialog box. Options for this dialog box are described in “[Robot Properties | Configuration Dialog Box](#)” on page 498.
- ◆ **SCSI Information.** Press <Enter> to view the SCSI Information dialog box. Options for this dialog box are described in “[Robot Properties | SCSI Information Dialog Box](#)” on page 499.
- ◆ **Status.** Press <Enter> to view the Status dialog box. Options for this dialog box are described in “[Robot Properties | Status Dialog Box](#)” on page 499.

## Robot Properties | General Dialog Box

From the Robot Properties | General dialog box you can view information about your robot. On the Administration Console, you can also use this dialog box to change the name of the robot.

Robot Properties|General Dialog Box



Field	Value
Robot name:	HA:0 ID:4 LUN:1 HP C1553A
Vendor:	HP
Product ID:	C1553A
Firmware version:	9608
Robot type:	Normal
Date in service:	Tue Aug 14 08:47:08 EDT 2001
Serial number:	

This dialog box contains the following information:

- ◆ **Robot name.** Name of the robot. Enter a new name if you want to rename the robot.

**Note** On the Administration Console for NetWare, the **Robot name** is a view only field.

- ◆ **Vendor.** Name of the robot's vendor.
- ◆ **Product ID.** Robot's product identification name and number.
- ◆ **Firmware version.** Version of firmware loaded on the robot.
- ◆ **Robot type.** Type of robot, such as normal.
- ◆ **Date in service.** Date this robot was first placed in service with Backup Exec.
- ◆ **Serial number.** Serial number of the robot; not all robots will have a serial number.

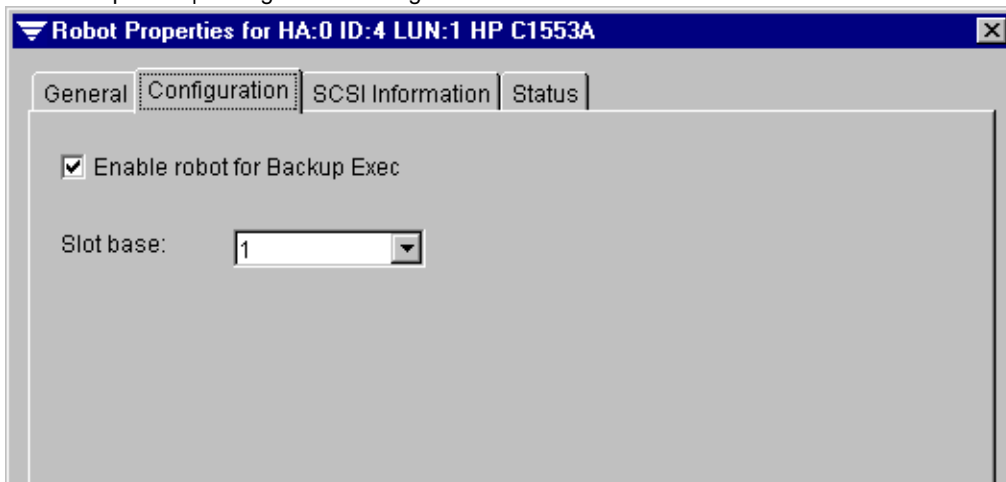




## Robot Properties | Configuration Dialog Box

From the Robot Properties | Configuration dialog box you can enable or disable the device for use by Backup Exec and set base numbering for your slot. If you are using the SAN Shared Storage Option, this dialog box also allows you to specify which slots are reserved for NetWare servers.

Robot Properties | Configuration Dialog Box



Options for this dialog box are:

- ◆ **Enable robot for Backup Exec.** Select this option to allow Backup Exec to use this device.
- ◆ **Slot base.** Specify whether your robot begins slot numbering at 0 or 1.

If you are using the SAN Shared Storage Option, this dialog box also includes the following options for reserving slots on a shared device that is being used by both Backup Exec for NetWare and Backup Exec for Windows NT and Windows 2000:

- ◆ **Starting slot.** Select the starting slot for the NetWare servers to use. This option can only be changed through the Primary Group Server.
- ◆ **Number of slot(s).** Enter the total number of slots to be used by the NetWare servers. This option can only be changed through the Primary Group Server.

### Robot Properties | SCSI Information Dialog Box

The SCSI Information dialog box for a robot contains the following information:

- ◆ **Inquiry.** The drive information read from the device firmware.
- ◆ **Host adapter.** The operating system's reference number for the SCSI controller.
- ◆ **Target ID.** Unique SCSI ID number (physical unit number).
- ◆ **Target LUN.** Logical Unit Number of the robot.

### Robot Properties | Status Dialog Box

The Status dialog box for a robot contains the following information:

- ◆ **Portal count.** Number of portals in the robot.
- ◆ **Slot count.** Number of slots in the robot.
- ◆ **Drive element count.** Number of drives in the robot.
- ◆ **Total mounts.** Number of times media has been mounted by this robot.
- ◆ **Mount errors.** Number of errors encountered while mounting media.

## Viewing Slot Properties

You can view the properties of an individual slot. The slot's Properties dialog box also allows you to designate a slot as a cleaning slot (see "[Designating a Cleaning Slot](#)" on page 505).

### ▼ To view a slot's properties from the Administration Console:

1. Click **Devices**.
2. Click the server to which the robot is attached.
3. Click **Robots**.
4. Click the robot for which you want to designate a cleaning slot, and then click **Slots**.
5. From the results pane, right-click the slot you want to designate as a cleaning slot, and then click **Properties**.

The slot Properties dialog box contains four tabbed pages:

- Slot Information (see "[Slot Properties | Slot Information Dialog Box](#)" on page 501)
- General (see "[Slot Properties | General Dialog Box](#)" on page 502)



- Management (see “[Slot Properties | Management Dialog Box](#)” on page 503)
- Statistics (see “[Slot Properties | Statistics Dialog Box](#)” on page 504)

6. After viewing information for the slot, click **OK**.

▼ **To view a slot’s properties from the Administration Console for NetWare:**

1. From the Administration Console for NetWare, select **Drives**.
2. Select **Robots**.
3. Select the robot for which you want to designate a cleaning slot, and press <Enter>.
4. Select **Slots**.

The Slots in Robot dialog box appears. For information on this dialog, see “[Slots in Robot Dialog Box](#)” on page 500).

5. Select the slot for which you want to view properties, and then press <F4>.

The Slot Properties dialog box appears (see “[Slot Properties Dialog Box](#)” on page 501).

## Slots in Robot Dialog Box

The Slots in Robot dialog box appears on the Administration Console for NetWare when **Slots** is selected from the Robot Components dialog box.

This dialog contains the following information:

- ◆ **Slot Number.** Number assigned to this slot.
- ◆ **Media Label.** Label assigned to the media residing in this slot.
- ◆ **Media description.** A description of the media, such as the backup set the media is in.

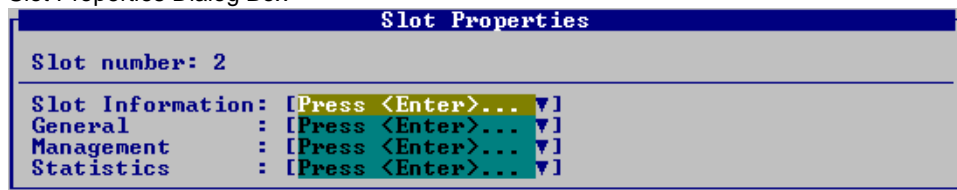
To view properties of a slot, select the slot and press <F4>. The Slot Properties dialog box appears.



## Slot Properties Dialog Box

The Slot Properties dialog box appears on the Administration Console for NetWare, when viewing properties of an individual slot.

Slot Properties Dialog Box



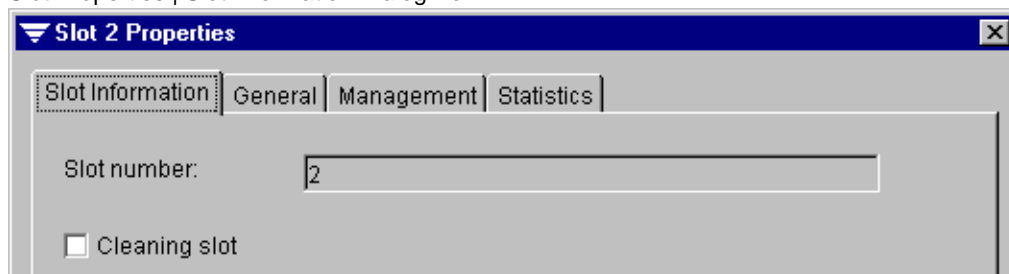
This dialog box contains the following information:

- ◆ **Slot number.** Number of slot.
- ◆ **Slot Information.** Select this option and press <Enter> to view the Slot Information dialog box (see “[Slot Properties | Slot Information Dialog Box](#)” on page 501).
- ◆ **General.** Select this option and press <Enter> to view the General dialog box (see “[Slot Properties | General Dialog Box](#)” on page 502).
- ◆ **Management.** Select this option and press <Enter> to view the Management dialog box (see “[Slot Properties | Management Dialog Box](#)” on page 503).
- ◆ **Statistics.** Select this option and press <Enter> to view the Statistics dialog box (see “[Slot Properties | Statistics Dialog Box](#)” on page 504).

## Slot Properties | Slot Information Dialog Box

The Slot Information dialog box appears when viewing properties of an individual slot.

Slot Properties | Slot Information Dialog Box



This dialog box contains the following options:

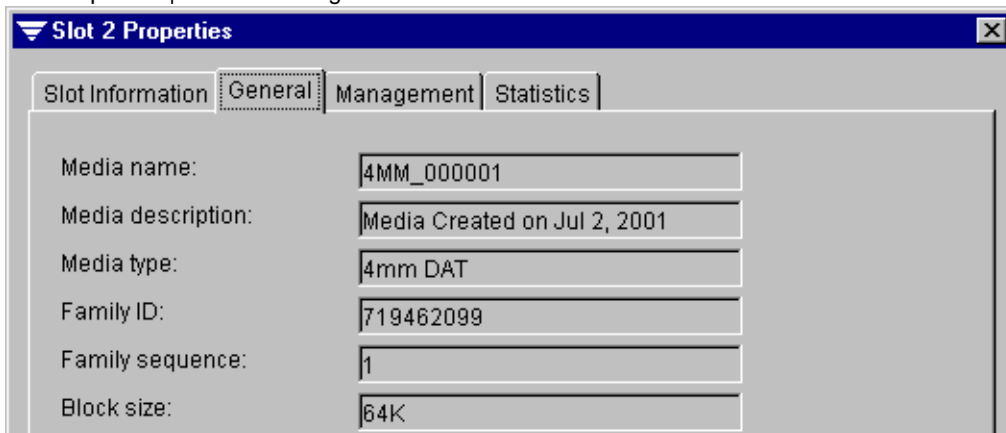
- ◆ **Slot number.** Displays the slot’s number.
- ◆ **Cleaning slot.** Select this option to designate this slot as a cleaning slot.



## Slot Properties | General Dialog Box

The General dialog box that appears when viewing properties of an individual slot provides information about the media contained in the slot.

Slot Properties | General Dialog Box



The screenshot shows a dialog box titled "Slot 2 Properties" with a close button in the top right corner. It has four tabs: "Slot Information", "General", "Management", and "Statistics". The "General" tab is selected. The dialog displays the following information:

Media name:	4MM_000001
Media description:	Media Created on Jul 2, 2001
Media type:	4mm DAT
Family ID:	719462099
Family sequence:	1
Block size:	64K

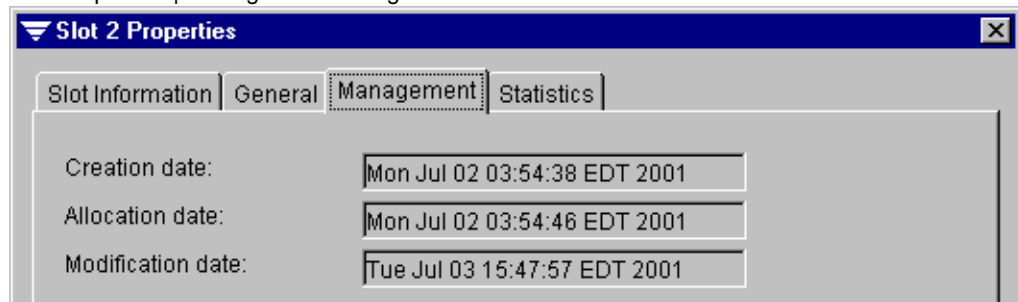
Information appearing on this dialog box includes:

- ◆ **Media description.** A description of the media, such as the backup set the media is in.
- ◆ **Media type.** The type of media, such as DAT 4MM.
- ◆ **Family ID.** The unique identification number Backup Exec assigns to each tape family.
- ◆ **Family sequence.** The number of the media in the media family.
- ◆ **Block size.** The preferred size of the blocks of data that will be written to this media.

## Slot Properties | Management Dialog Box

The Management dialog box that appears when viewing properties of an individual slot provides information about when data was written to the media residing in that slot.

Slot Properties | Management Dialog Box



This dialog box contains the following information:

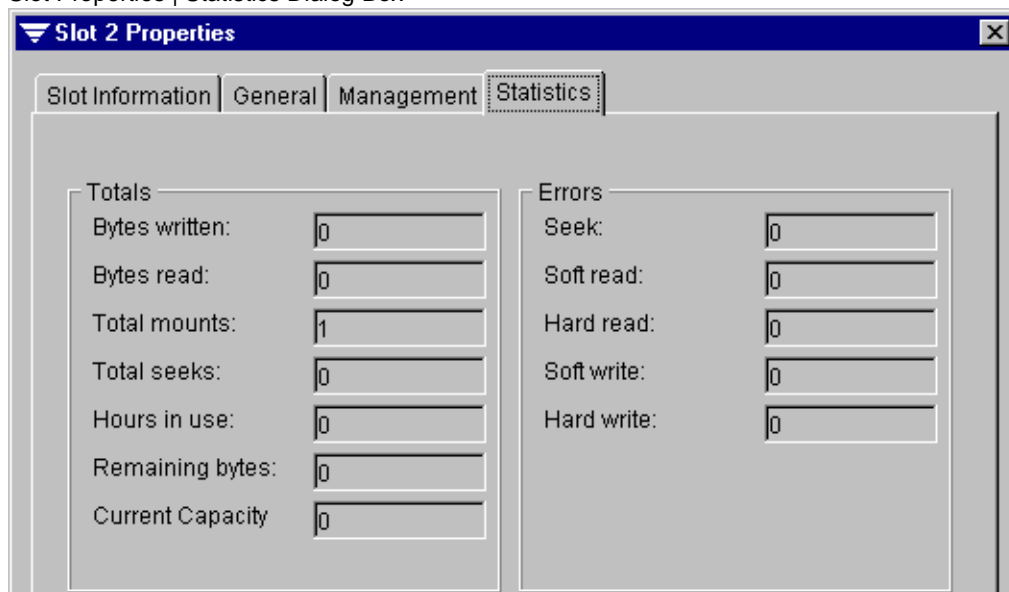
- ◆ **Creation date.** The date and time the media was first entered into the Backup Exec system.
- ◆ **Allocation date.** The date and time that the media was allocated to a media set as a result of an overwrite operation. This date is the start date for the append period.
- ◆ **Modification date.** The date and time when data was last written to the media. This date is the start of the overwrite protection period.



## Slot Properties | Statistics Dialog Box

The Statistics dialog box that appears when viewing properties of an individual slot provides information about usage totals and errors for the media residing in that slot.

Slot Properties | Statistics Dialog Box



Information appearing on this dialog box includes:

- ◆ **Bytes written.** Number of bytes that have been written to this media.
- ◆ **Bytes read.** Number of bytes that have been read from this media.
- ◆ **Total mounts.** Number of times this media has been mounted.
- ◆ **Total seeks.** Number of seek operations (performed when a specific piece of information is being located) that have been performed on this media.
- ◆ **Hours in use.** Number of hours that this media has been in use.
- ◆ **Remaining bytes.** Number of free bytes on this media.
- ◆ **Current capacity.** Number of total bytes that can be held on this media.
- ◆ **Seek errors.** Number of errors encountered while trying to locate data.
- ◆ **Soft read errors.** Number of recoverable read errors encountered.
- ◆ **Hard read errors.** Number of unrecoverable read errors encountered.
- ◆ **Soft write errors.** Number of recoverable write errors encountered.
- ◆ **Hard write errors.** Number of unrecoverable write errors encountered.

## Designating a Cleaning Slot

You can designate a slot as a cleaning slot through the slot's **Properties**. You must designate a slot as a cleaning slot before creating a cleaning job (see “[Cleaning the Device](#)” on page 304).

### ▼ To designate a cleaning slot from the Administration Console:

1. From the Administration Console, click **Devices**.
2. Click the server to which the robot is attached.
3. Click **Robots**.
4. Click the robot for which you want to designate a cleaning slot, and then click **Slots**.
5. From the results pane, right-click the slot you want to designate as a cleaning slot, and then click **Properties**.
6. From the Slot Information dialog box, select **Cleaning Slot**.
7. Click **OK**.

### ▼ To designate a cleaning slot from the Administration Console for NetWare:

1. From the Administration Console for NetWare, select **Drives**.
2. Select **Robots**.
3. Select the robot for which you want to designate a cleaning slot, and press <Enter>.
4. Select **Slots**.
5. Select the slot you want to designate as a cleaning slot, and then press <F4>.
6. From the Slot Properties dialog box, select **Slot Information** and press <Enter>.
7. Select **Cleaning Slot**, and then press <F2>.





## Viewing Portal Properties

You can determine the portal number through the portal's **Properties**.

### ▼ To view portal properties from the Administration Console:

1. From the Administration Console, click **Devices**.
2. Click the server to which the robot is attached.
3. Click **Robots**.
4. Click the robot which contains the portal, and then click **Portals**.
5. From the results pane, right-click the portal, and then click **Properties**.

The Portal Properties dialog box appears (see "[Portal Properties Dialog Box](#)" on page 507).

### ▼ To view portal properties from the Administration Console for NetWare:

1. From the Administration Console for NetWare, select **Drives**.
2. Select **Robots**.
3. Select the robot for which contains the portal, and press <Enter>.
4. Select **Portals**

The Portals in Robot dialog box appears (see "[Portals in Robot Dialog Box](#)" on page 507).

5. Select the portal for which you want to view properties and press <F4>.

The Portal Properties dialog box appears (see "[Portal Properties Dialog Box](#)" on page 507).



## Portals in Robot Dialog Box

This dialog box appears when Portals is selected from the Robot Components dialog box.

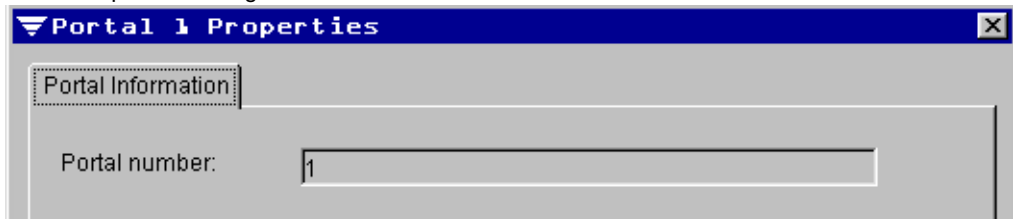
Information appearing on this dialog box includes:

- ◆ **Portal Number.** Number assigned to this portal.
- ◆ **Media Label.** Label assigned to the media residing in this portal.
- ◆ **Media description.** A description of the media, such as the backup set the media is in.

## Portal Properties Dialog Box

The Portal Properties dialog appears when viewing properties for a robot's portal.

Portal Properties Dialog Box



This dialog provides the **Portal number**.



## Using Robot Partitions

If you are running in partition management mode, you can group one or more loader slots into a **Partition**, which provides you with more control of which media is used for backup jobs. Jobs targeted to a partition run on the media located in the partition's slots. For example, if you set up a partition that contains slots 1 and 2 and you want to run a weekly backup only on the media in these slots, you would submit the job to the partition that contains slots 1 and 2.

For information on creating partitions, see [“Creating Partitions”](#) on page 353.

## Redefining and Removing Partitions

You can reassign slots to different partitions or even delete partitions from a partition drive pool. If the redefined partitions maintain the same identity, you do not have to retarget jobs. However, if you delete a partition, any jobs submitted to that partition drive pool would have to be retargeted since the drive pool no longer exists.

For information on removing partitions, see [“Deleting Partitions”](#) on page 352. For information on redefining partitions, see [“Viewing and Changing Robot Properties”](#) on page 495.

## Restore Jobs and Libraries

During a restore job, if Backup Exec cannot find the media needed, an alert is issued requesting the media necessary to complete the operation. If your robot has a portal, you should use the **Import** and **Export** utilities to move the media to the specified slot (see [“Importing Media”](#) on page 492 or [“Exporting Media”](#) on page 494).

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**Note** Backup Exec searches for media in a specific slot. If Backup Exec's inventory database is incorrect, it will not find the media required for a restore job even though the media may be physically in the media library. If the media is in the library, you may need to move the required media to the specified slot.

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# Using the Open File Option

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# D

This section details how to install and use the Backup Exec for NetWare Open File Option, a separately purchased option that allows you to back up open files and live databases, such as GroupWise, on NetWare servers.

*Using the Open File Option* contains the following topics:

Section	Describes
<a href="#">“About the Open File Option”</a> on page 510	What the Open File Option is and how it works when an open file or live database is being backed up.
<a href="#">“Installing the Open File Option”</a> on page 511	Requirements and procedures for installing the Open File Option on the media server, remote NetWare servers, and Windows systems you want to protect.
<a href="#">“Uninstalling the Open File Option”</a> on page 519	Steps for removing the Open File Option from your media server, remote NetWare server, and Windows systems.
<a href="#">“Configuring OFO for NetWare Settings”</a> on page 520	Default Open File Option settings and instructions for changing them.
<a href="#">“Selecting to Use the Open File Option”</a> on page 522	How to select the Open File Option when creating a backup job.
<a href="#">“Checking the Job Log”</a> on page 522	What appears in the job log for a job using the Open File Option.



## About the Open File Option

Backup Exec provides two Open File Options. The Backup Exec for NetWare Open File Option allows you to back up open files from your media server or remote NetWare servers. The Backup Exec for Windows NT and Windows 2000 Open File Option allows you to back up open files on remote Windows NT and Windows 2000 systems. Together, these options allow you to protect open files and live databases in a mixed environment.

The Backup Exec for NetWare Open File Option must be installed on each NetWare system you want to protect. The Remote Agent for NetWare must also be installed on each remote NetWare system you want to protect using the Open File Option. The Remote Agent for Windows NT and Windows 2000 must also be installed on each Windows NT or Windows 2000 system you want to protect using the Open File Option.

For more information about Backup Exec for Windows NT and Windows 2000 Open File Option, refer to your *Backup Exec for Windows NT and Windows 2000 Options Manual*.

For more information about using the Remote Agent for NetWare, see [“Using the Remote Agent for NetWare”](#) on page 471. For more information about using the Remote Agent on Windows systems, see [“Using the Remote Agent for Windows NT and Windows 2000”](#) on page 475.

## How the Open File Option Works

After the Open File Option is installed, it runs in the background of the server, waiting for a job using a policy with the **Use Open File Option if available** option selected (see [“Open Files Options for a Policy”](#) on page 97). When a backup job using the Open File Option starts, a point-in-time or *static* view of the volume is created. This static, unchanging view of the volume is then backed up and released when the backup completes.

During a backup using the Open File Option, if changes are made to the original data, the Open File Option makes a duplicate of the original data before it is changed and stores this duplicate in a buffer. This buffer, combined with the unchanged portions of the volume, gives you the *static* view of the volume when the backup started. By default, the buffered data is stored in a file named `SYS:\SYSTEM\OTM01`; however, you can designate another file, directory, and volume for this data to be stored (see [“Configuring OFO for NetWare Settings”](#) on page 520). The files are stored on the server’s volume you designate.

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**Note** Even though the static view is of the entire volume, only the files specified in the backup job are backed up from the static volume.

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Renaming OTM01 is strongly discouraged. If the file is renamed and the server is backed up without using the Open File Option, the renamed buffered data is backed up resulting in wasted space on the storage media.

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When the backup is complete, the static volume is automatically dismounted. If the files selected for backup are on more than one volume, only one static volume is created at a time. After the selected files have been backed up from the static volume, the volume is dismounted before the next static volume is created, and its associated buffer file can be reused. For example, when a backup using the Open File Option is completed, and the static volume is dismounted, the OTM01 file can be reused by the Open File Option.

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**Caution** Buffer files (OTM01) should not be manually removed unless all backup activity is done.

---

## Installing the Open File Option

The Backup Exec for NetWare Open File Option must be installed on the media server and on each NetWare server you want to back up using the Open File Option. In addition, you can install the Open File Option for Windows NT and Windows 2000 to your Windows NT and Windows 2000 systems, provided they also have the Remote Agent for Windows NT and Windows 2000 installed.

Before you install the Open File Option:

- ◆ Backup Exec for NetWare 9.0 must already be installed on the media server, or you must be installing Backup Exec along with the Open File Option (see “[Installing Backup Exec Options](#)” on page 48).
- ◆ The Remote Agent for NetWare must already be installed on each remote NetWare server on which you want to use the Open File Option, or you must be installing the Remote Agent along with the Open File Option.
- ◆ The Remote Agent for Windows NT and Windows 2000 must already be installed on each Windows system you want to protect using the Open File Option, or you must be installing the Remote Agent along with the Open File Option.



## Requirements for Using the Open File Option

No other open file backup solution can be loaded or running while the Backup Exec Open File Option driver is loaded.

### Media Server Requirements

The media server must have:

- ◆ Backup Exec for NetWare version 9.0.
- ◆ Novell NetWare 4.2x or later.
- ◆ Latest NetWare patches applied to the server. (Specific recommendations can be found on Novell's Support Website at <http://www.support.novell.com>.)
- ◆ 4 MB RAM over server requirements.
- ◆ 14 MB disk space.
- ◆ 65% cache buffer.
- ◆ Compatible tape device and controller.

### Requirements for NetWare Computers Being Protected

The server you want to back up with the Open File Option must have:

- ◆ Open File Option installed.
- ◆ Remote Agent installed (unless the computer is the local media server).
- ◆ Novell NetWare version 4.2x or later.
- ◆ Sufficient free space on the volume containing the cache file (This amount depends on the amount of file changes that occur during a backup; a minimum of 40 MB of free disk space is required after installation.)
- ◆ Sufficient memory on the system being protected to mount a duplicate of the volumes that are being protected.
- ◆ 16K free space on the DOS partition for the OTMDSK.DSK driver if you are using DSK disk drivers.
- ◆ Volumes that are IDE or SCSI devices; I20 and SSA drives are not supported.

The volumes you want to back up with the Open File Option must be traditional NetWare volumes; NSS volumes are not supported.

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**Note** The Open File Option cannot be used on CD-ROM drives, floppy diskette drives, or the media server's DOS partitions.

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The volume containing the cache file must have at least 40 MB of available space. For information about changing the location of the cache file, see “[Configuring OFO for NetWare Settings](#)” on page 520.

## Requirements for Windows NT and Windows 2000 Computers Being Protected

The Windows systems you want to back up from your NetWare media server using the Open File Option must have:

- ◆ Windows NT Workstation or Server (version 4.x) or Windows 2000.
- ◆ Pentium processor; Alpha processors are not supported.
- ◆ Backup Exec for Windows NT and Windows 2000 Open File Option installed.
- ◆ Remote Agent for Windows NT and Windows 2000 installed.

## The Open File License

Backup Exec for NetWare Open File Option is licensed on a per-server basis, which means that a unique serial number is required for each NetWare server you want to protect using the Open File Option.





## Installing the Open File Option to the Media Server

You can install the Open File Option to your media server when installing Backup Exec (see “[Installing All Serialized Backup Exec Software](#)” on page 33 or “[Installing to the Media Server Only](#)” on page 40). Or, you can remotely install the Open File Option to the media server after Backup Exec has been installed from a local Windows workstation.

▼ **To install the Open File Option to the media server:**

1. Insert the installation CD into the local system’s CD-ROM drive.
2. From the installation CD browser, select **Backup Exec Installation**.
3. Select **Start Backup Exec Installation**.  
The Welcome window appears.
4. Click **Next** to proceed with the installation.  
The Software License Agreement appears.
5. After reading this information, select **I accept the terms of the license agreement**, and then click **Next**.
6. From the Select Components window that appears next, select **Serialized install**.

---

**Note** If you are installing an evaluation copy of Backup Exec or any of its options, select **Evaluation Install** and select only the components you want to install.

---

7. Select **NetWare Media Server**, and then click **Next**.
8. Select **Open File Option**, and then click **Next**.
9. Select the NetWare system that will serve as your media server.
  - a. If the system appears in the list of **Available Systems**, select the server and click the right arrow key to move the server to the **Destination Systems** list.
  - b. If you want to add an additional system that does not appear in the list, click **Manually add additional systems**, and then type the name or IP address of the system.
10. Click **Next**.

11. If you are not already connected to the media server, click the server icon, enter the Administrative user name and password for accessing the media server, and then click **Connect**.
12. Click **Next**.
13. Enter the Open File Option serial number, and click **Add**.
14. Click **Next**.
15. If the Remote Agent for NetWare is also being installed, ensure the volume and path for where you want to install the programs on your server are selected, and then click **Next**.

---

**Note** If you do not meet the minimum system requirements for the components being installed, a message appears. Click **OK**, and then click **Cancel** if you want to stop the installation procedures in order to install the latest patches or service packs. Or, click **OK** and proceed with the installation of those components that can be installed at this time.

---

16. Verify the settings that have been selected for the media server. To change settings, click **Back** and reselect. If you are satisfied with the selected settings, click **Next**.  
You can monitor the status of the installation.
17. Click **Finish** to view the readme and complete the installation.



## Installing the Open File Option to a Remote NetWare Server

You can install the Open File Option to a remote NetWare server while installing the Remote Agent for NetWare and other options (see “[Installing to Remote Servers Only](#)” on page 43), or you can complete the following steps to install the Open File Option to a remote NetWare server that already has the Remote Agent installed.

▼ **To install the Open File Option to a remote NetWare server:**

1. Insert the installation CD into the local system’s CD-ROM drive.
2. From the installation CD browser, select **Backup Exec Installation**.
3. Select **Start Backup Exec Installation**.  
The Welcome window appears.
4. Click **Next** to proceed with the installation.  
The Software License Agreement appears.
5. After reading this information, select **I accept the terms of the license agreement**, and then click **Next**.
6. From the Select Components window that appears next, select **Serialized install**.

---

**Note** If you are installing an evaluation copy of Backup Exec or any of its options, select **Evaluation Install** and select only the components you want to install.

---

7. Select **NetWare Remote Server**, and then click **Next**.
8. Select **Open File Option**.
9. Click **Next**.
10. Select the systems where you want the Open File Option to be installed.
  - a. If the system appears in the list of **Available Systems**, select the server and click the right arrow key to move the server to the **Destination Systems** list.
  - b. If you want to add an additional system that does not appear in the list, click **Manually add additional systems**, and then type the name or IP address of the system.
11. Click **Next**.



12. If you are not already connected to the remote server, click the server icon, enter the Administrative user name and password for accessing the server, and then click **Connect**.
13. Enter the serial number for the Open File Option.
14. Click **Next**.
15. If the Remote Agent for NetWare is also being installed, ensure the volume and path for where you want to install the Open File Option on your remote server are selected, and then click **Next**.
16. Verify the settings that have been selected for the remote server. To change settings, click **Back** and reselect. If you are satisfied with the selected settings, click **Next**.  
You will be able to monitor the progress of the remote server installation.
17. Select the NetWare server that will protect the remote server.
  - a. If the system appears in the list of **Available Systems**, select the media server and click the right arrow key to move the server to the **Destination Systems** list.
  - b. If you want to add an additional system that does not appear in the list, click **Manually add additional systems**, and then type the name of the media server.
18. Click **Next**.
19. If you are not already connected to the media server, click the server icon, enter the Administrative user name and password for accessing the media server, and then click **Connect**.
20. Click **Next**.
21. Click **Finish** to view the readme and complete the installation.



## Installing the Open File Option to Windows Systems

You can back up open files and live databases on Windows systems provided the Backup Exec for NetWare Open File Option is installed on your NetWare media server and you install the Backup Exec for Windows NT and Windows 2000 Open File Option locally to the Windows systems you want to protect. Using the Open File Option to protect a Windows system through your NetWare server requires that the Remote Agent for Windows NT and Windows 2000 also be installed.

### ▼ To install the Open File Option to a Windows system:

1. Insert the installation CD into the local system's CD-ROM drive.
2. From the installation CD browser, select **Backup Exec Installation**.
3. Select **Start Backup Exec Installation**.  
The Welcome window appears.
4. Click **Next** to proceed with the installation.  
The Software License Agreement appears.
5. After reading this information, select **I accept the terms of the license agreement**, and then click **Next**.
6. From the Select Components window that appears next, select **Serialized install** and **Local Workstation**, and then click **Next**.
7. Select **Open File Option**.
8. Click **Next**.
9. Enter the Open File Option serial number, and then click **Add**.
10. Click **Next**.
11. Verify the settings that have been selected for the local workstation. To change settings, click **Back** and reselect. If you are satisfied with the selected settings, click **Next**.
12. Click **Finish** to view the readme and complete the installation.

## Uninstalling the Open File Option

You may want to remove the Open File Option from either the media server or a remote server using the system console. You can also uninstall the Open File Option from your Windows NT and Windows 2000 systems using the **Add/Remove Programs** option.

### ▼ To uninstall the Open File Option from the NetWare server:

1. At the system console, open `SYS:\SYSTEM\BESTART.NCF`.
2. Delete `-to` from the command line for `BKUPEXEC.NLM`.
3. Save and close the file.
4. If you are using DSK disk drivers with a NetWare 4.2x server, edit the `STARTUP.NCF` file, removing `LOAD OTMDSK.DSK` using the following steps:
  - a. From the NetWare 4.2x server, type `LOAD INSTALL` at the system console prompt.
  - b. Select **NCF Files Options**, and then press `<Enter>`.
  - c. Select **Edit Startup.NCF file**, and then press `<Enter>`.
  - d. Delete the line `LOAD OTMDSK.DSK`.
  - e. Save and close the file.
5. Restart your server.

### ▼ To uninstall the Open File Option from your Windows systems:

1. At the Windows system, click **Start**, point to **Settings**, and then click **Control Panel**.
2. Double-click **Add/Remove Programs**.
3. Do one of the following:
  - For Windows 2000, at the Add/Remove Programs dialog box, select **Backup Exec Open File Option** and then click **Change**.
  - For Windows NT, on the **Install/Uninstall** tab on the Add/Remove Programs Properties dialog box, select **Backup Exec Open File Option**, and then click **Add/Remove**.

To completely remove the Open File Option, you must reboot your Windows system.



4. Click **Yes** to reboot, or **No** if you want to reboot later.
5. Click **OK**.

## Configuring OFO for NetWare Settings

It is strongly recommended that you use the default settings for the Open File Option. However, if these default settings are not appropriate for the environment your server or volume is in, you can change the OFO configuration file settings in the BESRVR.CFG file in the `<SERVER NAME>\SYS:\BKUPEXEC` directory. The settings are described in the following tables.

You may elect to change the following options:

Setting	Option
<p><b>Note</b> All numeric values are in hexadecimal format. The value appearing in parentheses is the corresponding decimal value.</p>	
Otm_CacheFileName=<vol:\path>	Name and location of the Open File Option buffered data file. The default is <code>SYS:\SYSTEM\OTM01</code> . This option could be used to move the cache file to a volume containing more disk space.
Otm_SizeOfCacheFileMB=n	Size of the cache file buffer that will be used for the capture of the volume for backup. The default is 28 (40) MB. This value must be smaller than the setting for <code>Otm_MaxSizeOfCacheFileMB</code> and should be increased if you are repeatedly seeing error messages that there is not enough disk space. The maximum is FFF (4095).
Otm_MaxSizeOfCacheFileMB=n	Maximum allowable size of the buffered cache file. This value must be larger than the setting for <code>OTM_SizeOfCacheFileMB</code> . The default is 64 (100) MB. (For this release, this option is not used.)
Otm_PreOpenFileName=<filename>	Name of the NCF file to execute immediately before the Open File Option captures a volume. This NCF file may have commands instructing other applications to cease writes for a moment. The default is PREOPEN.
Otm_PostOpenFileName=<filename>	Name of the NCF file to execute immediately after the Open File Option has captured a volume. This NCF file can restart the writes of applications ceased by the PREOPEN NCF file. The default is POSTOPEN.



Setting	Option
Otm_PostCloseFileName=<filename>	Name of the NCF file to execute immediately after the Open File Option has released the captured volume. The default is POSTCLSE.
Otm_QuiescentWait=n	Number of seconds that a volume has to be quiet before it will be captured for backup. A volume is considered quiet if no writes occur during the waiting period. The default waiting period is 5 (5) seconds. Reducing this value increases the likelihood that a quiet period occurs, but decreases the chance that open files on the volume are captured in a usable state. Increasing this value makes it less likely that VREPAIR will run. You may make the value 0 on systems that are having trouble meeting the quiescent wait, but this may cause VREPAIR to load.
Otm_QuiescentTimeout=n	Number of seconds that should pass before the Open File Option stops trying to capture a volume for backup. If the volume cannot be captured during this time, then the capture will abort and a timeout error will be issued. The default is 258 (600).

The following options should only be changed at the direction of technical support:

Setting	Option
Otm_Flags=n	For internal use only. The default is 3 (3).
Otm_MinimumThreadCount=n	Minimum number of threads that can be created to handle disk writes during an Open File Option backup. The default is A (10).
Otm_MaximumThreadCount=n	Maximum allowable threads that can be created to handle disk writes during an Open File Option backup. The default is 1E (30).
Otm_ThreadStartupDelay=n	Number of seconds Open File Option will delay before creating another thread to handle outstanding disk write operations. The default is 2 (2).





Setting	Option
Otm_DeadlockTimeout=n	Number of seconds before a deadlock situation is diagnosed and identified. When a deadlock situation is encountered, all virtual volumes that are being backed up with the Open File Option are terminated and released. The default is 1E (30).
Otm_Username=n	For internal use only. The default is <nothing>.
Otm_Password=<password>	For internal use only. This field is blank by default.

---

## Selecting to Use the Open File Option

To use the Open File Option for a backup job, you must ensure that you are using a policy that has **Use Open File Option (if available)** selected.

The policy options are set when creating a policy using the Administration Console's Launch the Policy Wizard or from the Open File Option dialog box that appears when creating a policy from either the Administration Console or Administration Console for NetWare.

To use the Open File Option for a media rotation job, you must ensure that you have selected **Use Open File Option (if available)** on the Media Rotation Job Properties Open Files dialog box.

For more information about selecting to use the Open File Option for a backup job, see [“Open Files Options for a Policy”](#) on page 97. For more information about using the Open File Option for a media rotation job, see [“Open Files Options for Media Rotation Job Properties”](#) on page 411.

## Checking the Job Log

If the Open File Option was applied to a backup, the job log displays the following information:

- ◆ **Job server.** Name of the media server on which the job ran.
- ◆ **Job name.** Name of the job.
- ◆ **User name.** User name used to submit the job.
- ◆ **Job type.** Type of job, such as backup or media rotation.
- ◆ **Operation.** Type of job, such as backup or catalog.

- ◆ **Submitted.** Date and time the job was submitted.
- ◆ **Backup operation started.** Date and time the job started.
- ◆ **Backup method.** Type of backup operation performed, such as full or differential.
- ◆ **Backup set started.** Date and time the backup set started.
- ◆ **Media ID.** ID assigned by Backup Exec for the media on which the job was run.
- ◆ **Media Description.** Description of the media on which the job was run or is scheduled to run.
- ◆ **Set name.** Name of the backup set.
- ◆ **Set description.** Description of the backup set.
- ◆ **Backup of <volume name>.** Name of the volume being backed up.
- ◆ **Drive.** Name of the drive on which the backup ran.



## Using the SAN Shared Storage Option

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This section details how to install and use the Backup Exec for NetWare SAN Shared Storage Option, a separately purchased option that allows Backup Exec servers to share secondary storage devices such as robotic libraries in a storage area network (SAN).

*Using the SAN Shared Storage Option* contains the following topics:

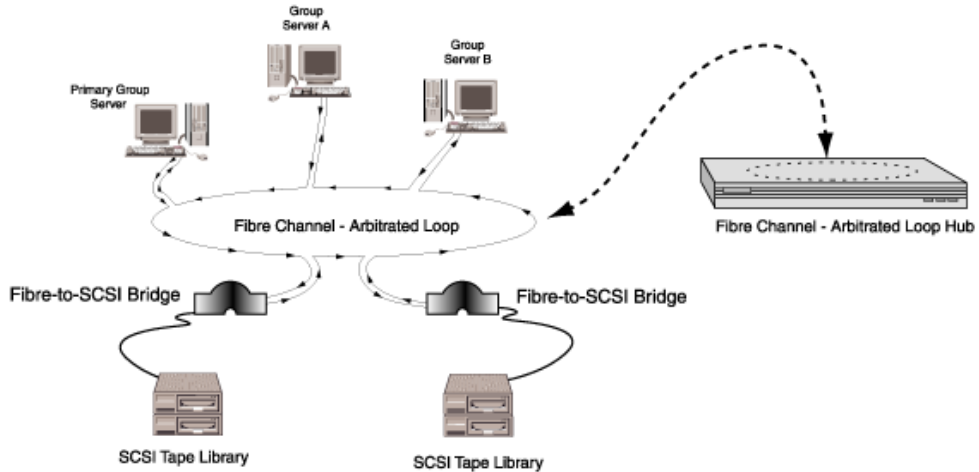
Section	Describes
<a href="#">“About the SAN Shared Storage Option”</a> on page 526	What the SAN Shared Storage Option is and how it allows media servers to share storage devices in a SAN.
<a href="#">“Installing the SAN Shared Storage Option”</a> on page 527	Steps for installing the SAN Shared Storage Option.
<a href="#">“Starting the Primary and Group Servers”</a> on page 530	Procedures for starting the primary and group servers.
<a href="#">“Changing the Primary Group Server”</a> on page 531	Procedures for changing which media server serves as the primary group server.
<a href="#">“Managing Devices in the Shared Storage Environment”</a> on page 532	How Backup Exec’s media management works in a shared storage environment.
<a href="#">“Sharing Robotic Libraries Between Windows and NetWare”</a> on page 534	How to share robotic libraries between Backup Exec for NetWare and Backup Exec for Windows NT and Windows 2000 media servers.



## About the SAN Shared Storage Option

The SAN Shared Storage Option supports the sharing of secondary storage devices that are not directly connected to a single server, but, as an example, could be attached to a Fibre Channel loop, a high speed storage network in which all devices are linked together in a group.

Example of the SAN Shared Storage Option Using FC-AL



In a shared storage environment, all media servers have access to all of the backup devices on the shared storage network. This allows for much greater flexibility for secondary storage operations. However, it also means that the media servers need to coordinate their activities. To aid in this coordination, one server is designated as the *Primary Group Server*. This Primary Group Server is responsible for coordinating access by the other Backup Exec servers, or *Group Servers*.

The servers cooperate primarily through a *reserve and release mechanism*, which ensures orderly access to the devices and partitions. Just as a hotel uses reservations to ensure two guests aren't assigned to the same room at the same time, the Group Servers reserve devices and partitions before using them.

If you are in partition management mode, the partition definitions for the shared devices are centralized on the Primary Group Server so that all Group Servers connected to this database see a single, unified view of all partitions and devices that are being shared.

If you are in the media management mode, the shared storage devices appear under a subnode called **Shared Storage Drives**.

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**Note** Performance is limited to the slowest device in the chain, normally the media drive.

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You can share robotic libraries between Backup Exec for NetWare and Backup Exec for Windows NT and Windows 2000 (see “[Sharing Robotic Libraries Between Windows and NetWare](#)” on page 534).

## Installing the SAN Shared Storage Option

You can install the SAN Shared Storage Option on a server that already has Backup Exec for NetWare installed (see “[Installing the SAN Shared Storage Option to a Media Server](#)” on page 528), or you can enter the SAN Shared Storage Option serial number as part of the initial installation of Backup Exec for NetWare (see “[Installing All Serialized Backup Exec Software](#)” on page 33).

When *installing Backup Exec in a shared storage environment, you must first install the Primary Group Server*. The first time you start Backup Exec on the Primary Group Server, you are prompted to add the server to a backup group. Select this server as the Primary Group Server. For the other media servers, select the first server as the Primary Group Server.

---

**Note** When installing the Backup Exec software on group servers, you should perform a complete install of the software. The Remote Server installation does not make a server a media server. This installation is used to install the Remote Agent for NetWare on a server that does not have access to a backup device. A separate Backup Exec for NetWare license is required for each server.

---

## Requirements

Requirements for running the SAN Shared Storage Option include:

- ◆ Backup Exec for NetWare must be installed on the Primary Group Server and on each Group Server. The version of Backup Exec for NetWare installed on all of the servers in the group must match.
- ◆ All servers must be running in the same media handling mode. Either install all NetWare servers in the partition management mode, or install all in the media management mode.
- ◆ All of the servers in the group must be in the same NDS tree.
- ◆ Backup Exec must be started on the Primary Group Server first. Backup Exec can then be started on each of the Group Servers in any order (see “[Starting the Primary and Group Servers](#)” on page 530).
- ◆ All servers in the group must be on the same shared storage network.
- ◆ All servers in the group must be able to communicate via a network connection with the Primary Group Server.



- ◆ Backup devices qualified by VERITAS for the shared storage environment must be present on the shared storage network.

## Installing Backup Exec and the SAN Shared Storage Option Together

If Backup Exec for NetWare has not already been installed on a server, you can install both Backup Exec and the SAN Shared Storage Option at the same time. For installation steps, see “[Installing All Serialized Backup Exec Software](#)” on page 33.

## Installing the SAN Shared Storage Option to a Media Server

You can remotely install the SAN Shared Storage Option to a Backup Exec media server from a local Windows workstation.

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**Note** Backup Exec for NetWare must not be running during the SAN Shared Storage Option installation.

---

You must have a supported backup device to run the Backup Exec software. The backup device does not have to be attached to the server, but does need to have a shared storage network connection to the server. The device does not have to be present during installation.

### ▼ To install the SAN Shared Storage Option:

1. Insert the installation CD into the local system’s CD-ROM drive.
2. From the installation CD browser, select **Backup Exec Installation**.
3. Select **Start Backup Exec Installation**.  
The Welcome window appears.
4. Click **Next** to proceed with the installation.  
The Software License Agreement appears.
5. After reading this information, select **I accept the terms of the license agreement**, and then click **Next**.
6. From the Select Components window that appears next, select **Serialized install**.
7. Select **NetWare Media Server**, and then click **Next**.

8. Select **SAN Shared Storage Option**, and then click **Next**.
9. Select the NetWare system that will serve as your media server.
  - a. If the system appears in the list of **Available Systems**, highlight the server and click the right arrow key to move the server to the **Destination Systems** list.
  - b. If you want to add an additional system that does not appear in the list, click **Manually add additional systems**, and then type the name of the system.
10. Click **Next**.
11. If you are not already connected to the media server, click the server icon, enter the Administrative user name and password for accessing the media server, and then click **Connect**.
12. Click **Next**.
13. Enter the SAN Shared Storage Option serial number, and click **Add**.
14. Click **Next**.

---

**Note** If you do not meet the minimum system requirements for the components being installed, a message will appear. You can click **OK**, and then click **Cancel** if you want to stop the installation procedures in order to install the latest patches or service packs. Or, you can click **OK** and proceed with the installation for those components that can be installed at this time.

---

15. Verify the settings that have been selected for the media server. To change settings, click **Back** and reselect. If you are satisfied with the selected settings, click **Next**.  
You can monitor the status of the installation.
16. Click **Finish** to view the readme and complete the installation.



## Starting the Primary and Group Servers

*You must start Backup Exec on the Primary Group Server first, and then start Backup Exec on the Group Servers. Otherwise, the Group Servers will not be able to communicate with the Primary Group Server.*

---

**Note** If the Group Server cannot communicate with the Primary Group Server, the Group Servers will not run.

If you have problems running Backup Exec, you may be encountering NetWare Directory Services time synchronization problems. Use the DSREPAIR.NLM to restore time synchronization (see “[Checking NDS Time Synchronization](#)” on page 458).

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▼ **To enable shared devices:**

1. From the Administration Console, click **Tools**, point to **Options**, and then click **Media Server**.

From the Administration Console for NetWare, select **Options**, and then select **Media Server**.

2. Select **Shared Devices**.
3. On the Shared Devices dialog box, select **Enable support for shared devices**, and complete the options. Options for this dialog are described in “[Shared Devices Options for the Media Server](#)” on page 261.
4. On the Administration Console, click **OK**.  
On the Administration Console for NetWare, press <F2>.



## Changing the Primary Group Server

If the server that is acting as the Primary Group Server is not available or is being removed from the shared storage environment, another server needs to be designated as the Primary Group Server to continue using the shared devices. You may want to pause all servers before completing the following steps.

### ▼ To change the Primary Group Server:

1. From the Administration Console, connect to the Group Server that will now serve as the Primary Group Server.

If you want to make the change using the Administration Console for NetWare, go to the Administration Console for NetWare at the Group Server that you want to designate as the Primary Group Server.

2. From the Administration Console, click **Tools**, point to **Options**, and click **Media Server**.

From the Administration Console for NetWare, select **Options**, and then select **Media Server**.

3. Select **Shared Devices**.
4. From the Shared Devices dialog box, ensure **Enable support for shared devices** is selected, and then select **Designate this server as the Primary Group Server**.
5. Ensure the former Primary Group Server is selected as **Backup Group Member** for the **Group name** selected.
6. From the Administration Console, click **OK**.

From the Administration Console for NetWare, press <F2>.



## Managing Devices in the Shared Storage Environment

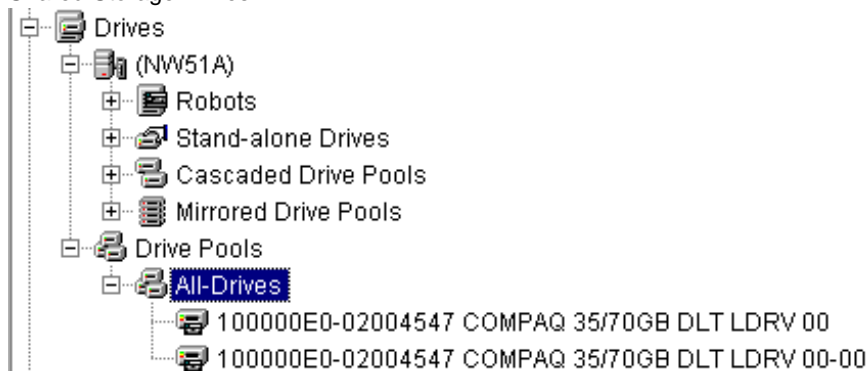
Backup Exec's device management feature provides the following functionality for the secondary storage units on a SAN:

- ◆ *Device allocation.* Jobs must first *reserve* the shared secondary backup devices before they can be used. The job that gains a reservation on a drive keeps it *reserved* during the entire job. After a job completes, the drive is released, which allows other jobs to compete for it.
- ◆ *Drive pools.* If you are in media management mode, you can assign the drives to drive pools in which one or more devices are combined as a backup target. Jobs submitted to a particular drive pool run on the first available drive in that pool. You can also submit a job to a selected individual drive in the drive pool.
- ◆ *Partitions.* If you are in partition management mode, Backup Exec will automatically create a partition for each drive running in the shared storage environment as well as a partition for each drive attached to the media server.

### Using Drive Pools with the SAN Shared Storage Option

When Backup Exec is installed in media management mode, the drive pool All Drives is created by default. This drive pool contains the storage devices on the SAN.

Shared Storage Drives



Drive pools belong to the media server on which they are created. If you change the default **All Drives** pool on one media server in the shared storage environment, that change will *not* be reflected on the other media servers.

You can create other drive pools to meet your particular requirements. For example, you may want to create a drive pool for high-performance drives and create a second drive pool for lower-performance drives. High-priority jobs can then be sent to the high-performance drive pool for quicker completion.

Drives can belong to more than one drive pool, and drive pools can contain different types of drives.

## Viewing Shared Storage Drives

All drive pools are displayed in the Administration Console under the **Drives** node in the **Drive Pools** subnode.

In the Administration Console for NetWare, all drive pools can be viewed by selecting **Drives**, and then selecting **Drive Pools**.

## Using Partitions with the SAN Shared Storage Option

If you are running in partition management mode, by default one partition is created for each drive in the shared robotic library. Partition definitions are shared across all servers in the shared environment, but can only be defined at the Primary Group Server.

## Sharing Media

The Group Servers can share media, but not simultaneously. For example, Group Server A can write a backup to a media, and when that job is finished, Group Server B can write (append) another backup to the same media.

Full catalogs are only available on the server that ran the backup job; to restore to another server, you must first catalog the media.



## Sharing Robotic Libraries Between Windows and NetWare

Backup Exec for NetWare and Backup Exec for Windows NT and Windows 2000 SAN Shared Storage Options inside the same fibre environment can share libraries, lowering hardware costs. With library sharing, you first create partitions on the libraries, or changers, for use with Backup Exec for Windows NT and Windows 2000. Additional partitions can then be created on the same libraries for use with Backup Exec for NetWare.

### Library Sharing Prerequisites

In order to share libraries between Backup Exec for NetWare and Backup Exec for Windows NT and Windows 2000, certain prerequisites must be met.

For each Windows NT or Windows 2000 media server that you want to operate in the shared environment, the following must be installed:

- ◆ Backup Exec for Windows NT and Windows 2000 version 8.0 or later
- ◆ Backup Exec for Windows NT and Windows 2000 SAN Shared Storage Option
- ◆ Backup Exec for Windows NT and Windows 2000 Library Expansion Option

For each NetWare media server that you want to operate in the shared environment, the following must be installed:

- ◆ Backup Exec for NetWare
- ◆ Backup Exec for NetWare SAN Shared Storage Option
- ◆ Backup Exec for NetWare Library Expansion Option

---

**Note** The drive licenses you purchase for your library are not platform specific for this implementation. For example, if you are planning on sharing a ten-drive library, you can purchase nine Backup Exec for Windows NT and Windows 2000 or Backup Exec for NetWare drive licenses (Library Expansion Option). (A Library Expansion Option is not required for the first robotic drive.)

---

In addition to the software requirements, you must:

- ◆ Have a working knowledge of Backup Exec for NetWare and of Backup Exec for Windows NT and Windows 2000.
- ◆ Have complete access to hardware and have the ability to restart Backup Exec servers.
- ◆ Ensure no backup activity is occurring during library sharing configuration.

Before proceeding with the library sharing configuration, plan how you want to use your library in this shared environment. For example, if you have a library that has 100 slots in it, you may want to partition your library so Backup Exec for NetWare uses 50 slots and Backup Exec for Windows NT and Windows 2000 uses 50 slots. Factors affecting how many slots you use for each operating system include:

- ◆ Media rotation schemes
- ◆ Number of servers being protected
- ◆ Types of data stored on each server

Label your media according to operating system of Backup Exec type. Color-coded or unique bar codes identifying whether the media is being used with Backup Exec for NetWare or Backup Exec for Windows NT and Windows 2000 is recommended. Using distinguishing labels will help you identify the media when you need to restore data or rotate media back into your media rotation scheme.

## Configuring Media Servers for Library Sharing

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**Note** You must set up the partitions on Backup Exec for Windows NT and Windows 2000 systems *before* configuring Backup Exec for NetWare systems.

All Backup Exec for NetWare media servers in the shared storage environment must be installed in the same media handling mode.

---

### ▼ To configure Backup Exec for Windows NT and Windows 2000 for library sharing:

1. At the Windows NT or Windows 2000 server where the SAN Shared Storage Option is installed, start the Backup Exec client.
2. Click the **Devices** tab.  
The left pane will contain a list of any fibre-attached storage devices.
3. Right-click the robot you want to share, and configure partitions for Backup Exec for Windows NT and Windows 2000 (see *VERITAS Backup Exec for Windows NT/2000 Autoloader/Library Expansion Option*).
4. To ensure no jobs run to the unused partition, right-click a drive in this partition and click **Delete**. Repeat this step for all drives in unused partitions.
5. For each drive connected to the shared library:



**Note** Backup Exec for NetWare does not support writing media higher than 32K block size. Some higher performance devices (such as DLT drives) support block sizes of 64K or higher. Backup Exec for NetWare cannot read media written to this block size. If you mix your media up and try to read a Backup Exec for Windows NT and Windows 2000 media written with the 64K block size in Backup Exec for NetWare, it will appear empty and could be overwritten, resulting in data loss. Because of this potential danger, it is recommended that you keep the block size set to no higher than 32K. This change only needs to be made at the Backup Exec for Windows NT and Windows 2000 database server.

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- a. From the **Devices** tab, right-click a drive included in the partition you will be using.
  - b. Select **Properties**.
  - c. From the **Configuration** tab, check the block size. If it is larger than 32K, change it to 32K, and click **OK** to save.
6. If you plan to share more than one library, repeat the above steps for each library.
  7. Reboot all other Windows NT and Windows 2000 servers and make sure you can see the shared library on each server.

**Note** No fibre activity or backup jobs should be run until all Backup Exec for Windows NT and Windows 2000 and all Backup Exec for NetWare servers are configured for library sharing.

---

▼ **To configure Backup Exec for NetWare running in the partition management mode:**

1. From the Administration Console, ensure you are connected to the Primary Group Server and that you are running in partition management mode.  
From the Administration Console for NetWare at the Primary Group Server, ensure you are running in partition management mode.
2. Delete existing partitions, following the steps described in “[Deleting Partitions](#)” on page 352.
3. Create the partitions in the shared library to be used by Backup Exec for NetWare, following the steps described in “[Creating Partitions](#)” on page 353.
4. If you plan to share more than one library, repeat step 2 and step 3 for each library that will be shared.

5. Reboot all Backup Exec for NetWare Group Servers and make sure you can see the shared library on each server.

▼ **To configure Backup Exec for NetWare running in the media management mode:**

1. From the Administration Console, ensure you are connected to the Primary Group Server and that you are running in media management mode.

From the Administration Console for NetWare at the Primary Group Server, ensure you are running in media management mode.

2. Select **Drives**.
3. Select **Drive Pools**.
4. Select **All Drives**.
5. From the Administration Console, right-click the robot you want to share, and then click **Properties**.  
From the Administration Console for NetWare, select the robot you want to share, and press <F4>.
6. Select **Configuration**.
7. Enter the starting slot and number of slots to be used by NetWare servers.
8. From the Administration Console, click **OK**.  
From the Administration Console for NetWare, press <F2>.
9. Repeat step 2 through step 8 for each Group Server.
10. Reboot all Backup Exec for NetWare Group Servers and make sure you can see the shared library on each server.



## Performing Import/Export Operations in a Shared Library

With library sharing, it is recommended that import and export operations be done through Backup Exec for Windows NT and Windows 2000.

In a shared library, Backup Exec for Windows NT and Windows 2000 does a library lock. To perform an import or export operation from Backup Exec for NetWare, the library must first be unlocked through the Backup Exec for Windows NT and Windows 2000 user interface. After the import or export operation is completed, you would then need to return the library to a locked state using Backup Exec for Windows NT and Windows 2000.

It is also recommended that you perform an inventory operation after an import or export operation is done using Backup Exec for Windows NT and Windows 2000 (see [“Performing Inventory on Media in a Drive”](#) on page 302).





# Using Backup Exec with Novell Cluster Services

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This section details how to use Backup Exec with Novell Cluster Services.

*Using Backup Exec with Novell Cluster Services* contains the following topics:

Section	Describes
<a href="#">“About Server Clusters”</a> on page 540	The benefits of server clusters and how they work.
<a href="#">“How Backup Exec Works in a Cluster”</a> on page 540	How Backup Exec is installed in a cluster and how backup and restore operations work in a cluster.
<a href="#">“Configurations for Backup Exec and Clusters”</a> on page 541	The cluster configurations supported by Backup Exec.
<a href="#">“Backing Up in a Cluster”</a> on page 544	How to use Backup Exec to fully back up your servers in a cluster.
<a href="#">“Restoring in a Cluster”</a> on page 547	How Backup Exec’s restore operations work in a cluster.



## About Server Clusters

Server clusters provide high availability and manageability of critical network resources, including data (volumes), applications, server licenses, and services. In a server cluster, two or more servers (called *nodes*) are linked in a network, and run cluster software that allows network resources to be tied to a cluster rather than to individual network servers. With cluster-enabled volumes, your data and applications appear to be provided by a single system, even though the cluster may be composed of several network servers.

When one node fails, the failed node's applications and volumes are transparently restarted on a surviving node (called *failover*). During failover, most users will not even be aware of the failure.

When the node that failed returns to service, the volumes newly acquired by the failover node migrate to the controlling node (called *failback*).

Backup Exec protects data on the cluster volumes by allowing you to back up and restore data stored on any node in the cluster.

## How Backup Exec Works in a Cluster

In a cluster environment, Backup Exec is installed on each node in the cluster. For installation requirements and procedures, see "[Installing Backup Exec](#)" on page 29.

All nodes must be in the same NetWare Directory Services (NDS) tree, must be configured with the IP protocol, and must be on the same IP subnet.

Cluster volumes are mounted on a single physical server. When a node failover occurs, the cluster volume automatically remounts on another node in the cluster.

Backup Exec is server volume-centric, meaning these clients only display volumes that are mounted on, or "owned by", a server. When you create a job, you can only back up volumes that are owned by the server. Backup Exec offers two ways of protecting volumes on a cluster. In both cases, you create backup jobs for each node in the cluster. In creating these jobs, you can either:

- ◆ Create backup jobs for each node in the cluster that protects the entire NetWare File System. With this approach, any volumes mounted on the node at the time the job starts will be backed up.
- ◆ Create backup jobs for each node in the cluster for only the volumes normally mounted to the node. To automatically protect all volumes during a failover, you then create another backup job for each node that protects all volumes that *could* mount on the node during failover.

With the first method, you will get an error if a non-clustered volume is not mounted, and therefore, does not get backed up. A disadvantage with this method, however, is that the backup job containing the clustered volume will always fail except during failover (when the volume is actually mounted on the node).

With creating backup jobs that protect the entire NetWare File System, your jobs will end in success even if the cluster volume is not mounted. The disadvantage with this approach, however, is that you will not be notified if a non-clustered volume is not mounted.

When restoring in a cluster environment, you restore the same as you would in a non-clustered environment.

## Configurations for Backup Exec and Clusters

Normally, NetWare clusters reside in a shared storage environment. In this scenario, a clustered node can also share a fibre-attached robotic library. You can use Backup Exec for NetWare's SAN Shared Storage Option to support this cluster scenario. Backup Exec also supports clusters with locally-attached storage devices. For more information about a specific cluster configuration supported by Backup Exec, see:

- ◆ [“Clusters on a Fibre Channel with the SAN Shared Storage Option”](#) on page 541.
- ◆ [“Cluster with Locally-attached Storage Devices”](#) on page 543

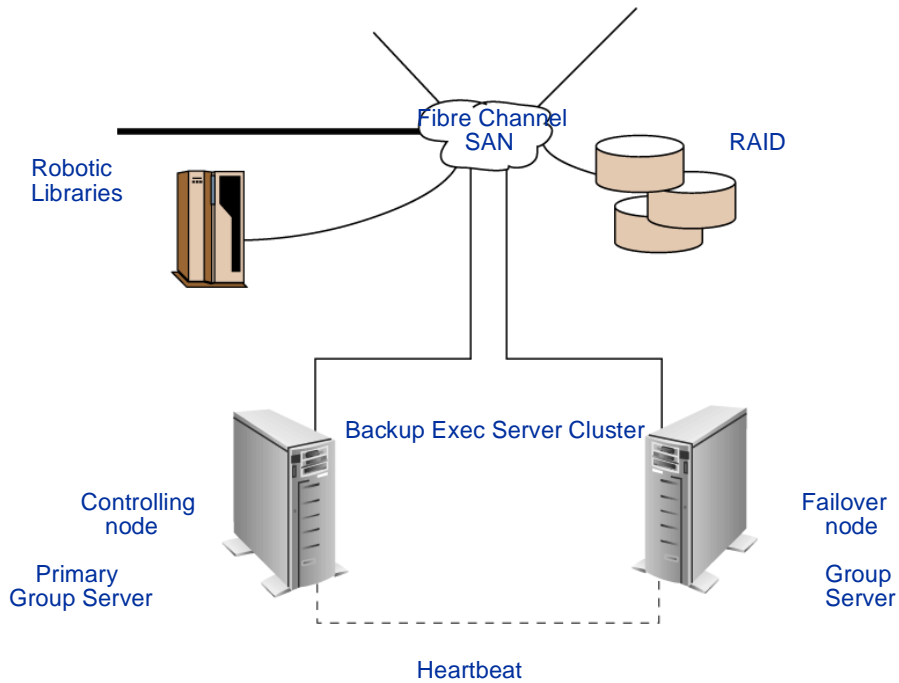
### Clusters on a Fibre Channel with the SAN Shared Storage Option

In this configuration, clusters are attached to a fibre channel storage area network (SAN), with Backup Exec and the SAN Shared Storage Option (SAN SSO) installed on the controlling nodes and on the failover nodes. Failover occurs to a designated node in the cluster.

Shared robots are attached to the fibre channel. When the SAN SSO is installed, Backup Exec creates default drive pools or partitions that contain all of the robots on the SAN. When failover occurs, the failover node can access the devices in the shared storage drives, and jobs can continue to run.



Clusters on a Fibre Channel with Backup Exec and the SAN SSO



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**Note** You can designate any group server on the fibre channel SAN as the SAN SSO primary group server.

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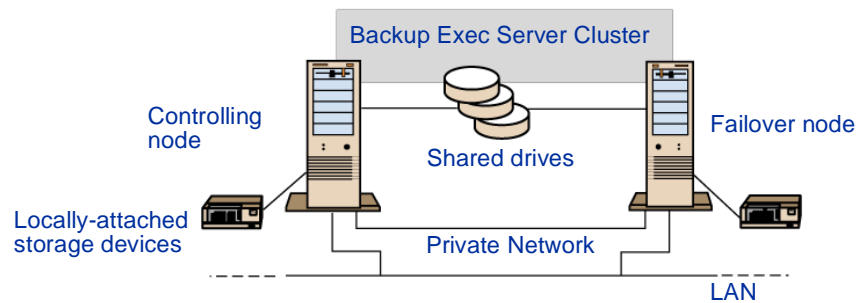
For details on installing the SAN SSO, see “[Installing Backup Exec Options](#)” on page 48.

For supported SAN SSO devices, visit the VERITAS website at <http://www.veritas.com>.

## Cluster with Locally-attached Storage Devices

In this configuration, Backup Exec is installed on the controlling nodes and on the failover nodes. Failover occurs to a designated node in the cluster, and storage devices are locally attached to each node.

Cluster with Backup Exec and Locally-attached Storage Devices



Each node's locally-attached storage devices will be used when you create backup or restore jobs.



## Backing Up in a Cluster

Because Backup Exec is server volume-centric, it only displays volumes that are mounted on, or "owned by", a server. Therefore, when you create a job, you can only back up volumes that are owned by the server.

To protect all volumes on the cluster, you can create backup jobs for each node in the cluster. You can either create a backup job that backs up the entire NetWare File System, therefore backing up any volumes mounted on the system when the backup starts, or you can create a job for each node that backs up volumes mounted on the server.

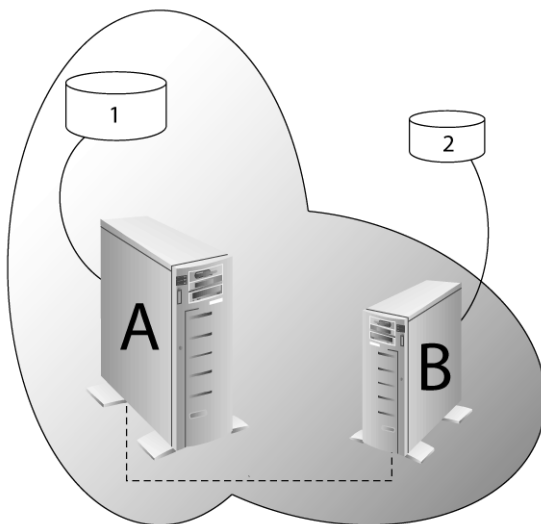
To automatically protect all cluster volumes during a failover if the latter method is used, you must also create another backup job that protects all volumes that could mount on the server during failover.

There are two ways to protect a cluster volume:

- ◆ Create a backup job to protect the entire volume file system. This job will protect any volumes mounted on the server, including cluster volumes. You need to create a backup job for each node in the cluster.
- ◆ Use ConsoleOne to migrate the volumes to a node, set up your job at that node, and then repeat this process for all nodes in the cluster.

If you create a job that protects the entire NetWare File System, you only have to create one job per node. When the job runs, all volumes currently mounted on the node will be backed up. If the cluster volume is not mounted, the job would still end successfully and the backup would include only the volumes residing on the server. In the case of failover, the cluster volume would be mounted and would be included in the back up of the NetWare File System.

## Failover Job When Protecting Entire NFS



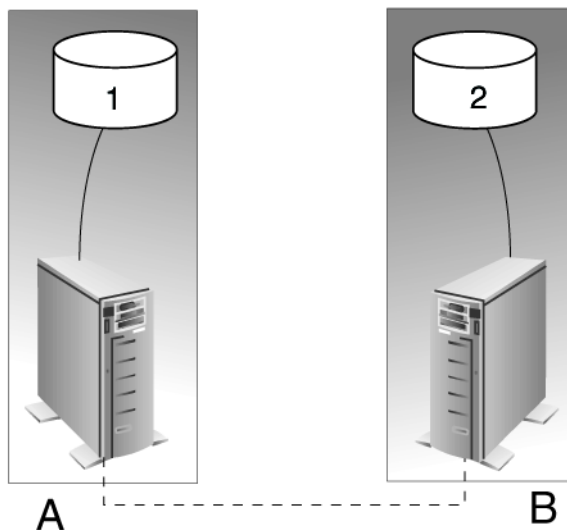
For information on creating backup jobs, see [“Creating a Backup Job from the Administration Console”](#) on page 105. For information on editing a backup job, see [“Editing a Backup Job from the Media Server”](#) on page 120. For information on using ConsoleOne to migrate volumes, refer to your Novell documentation.

If you want to create a backup job to protect the volume file system, you can create the job at the node, either at the server or remotely using the Administration Console. Then, manually edit the backup job to add the cluster volumes not mounted on the node where the job was created. The backup job can then protect all volumes on the nodes. This process must be done on all nodes in the cluster.

For example, suppose you want to protect volume 1 mounted on Node A and volume 2 mounted on Node B. At Node A, you create a job to back up volume 1. At Node B, you create a job to back up volume 2.

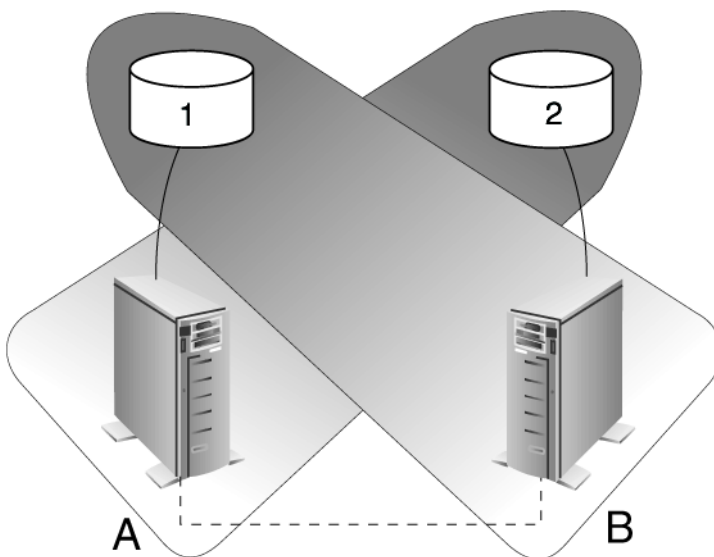


Normal Backup Jobs for Nodes A and B



To ensure that all volumes are protected during failover, you need to create two failover jobs. At Node A, the failover job would back up volume 2. At Node B, the failover job would back up volume 1.

Failover Jobs for Nodes A and B





You can place the failover job on hold until a failover occurs, and then manually start the job. Or, you can allow the failover jobs to always run. Unless a failover occurs, the failover jobs end in error because the volumes are not mounted. If the volumes are not mounted, they are not available for backup. If a failover occurs, the volumes are mounted to the surviving node and the failover job for that node could successfully complete.

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**Note** It is highly recommended that you name the failover jobs so that they can be distinguished from normal backup jobs and so that you will know the reason the failover jobs ended in error.

---

## Restoring in a Cluster

When restoring in a cluster environment, restores are performed in the same way as in a non-clustered environment. The catalogs will only exist at the node where the backup job was run. If you want to restore from a node that did not perform the backup job, you must catalog the media.

When selecting the volume to restore, remember that the volume could have been backed up from the normal node, the failover node, or both nodes.



# Management Portal Plug-In



This section details how to install and use Backup Exec for NetWare's plug-in for Novell's NetWare Management Portal. The Management Portal is a tool that allows you to manage NetWare servers through an Internet browser on a client workstation. By using Backup Exec's Management Portal Plug-in, you can view and monitor your media server's health from any location on your network where an Internet browser is available. You can also use the Management Portal Plug-in to view job logs, scheduled jobs, session status, and blocking alerts.

*Management Portal Plug-in* contains the following topics:

Section	Describes
<a href="#">“About the NetWare Management Portal and Backup Exec’s Plug-in”</a> on page 550	The functionality of the NetWare Management Portal and the Backup Exec Management Portal Plug-in.
<a href="#">“Installing Backup Exec’s Management Portal Plug-in”</a> on page 551	Steps for installing the Management Portal Plug-in on your media server.
<a href="#">“Starting the Management Portal Plug-in”</a> on page 552	Steps for starting the Management Portal Plug-in.
<a href="#">“Viewing Job Logs through the Portal Plug-in”</a> on page 553	Steps for viewing Backup Exec job logs through the Management Portal Plug-in.
<a href="#">“Viewing Scheduled Jobs from the Portal Plug-in”</a> on page 553	Steps for viewing scheduled Backup Exec jobs through the Management Portal Plug-in.
<a href="#">“Viewing Session Status”</a> on page 554	How to view session status and information about the type of session status information available for viewing.



Section	Describes
<a href="#">“Viewing Blocking Alerts”</a> on page 555	Steps for viewing blocking alerts occurring on your media server.
<a href="#">“Running and Viewing Backup Exec Diagnostics”</a> on page 556	Steps for viewing BEDIAG.FAX, BKUPEXEC.FAX, BESTART.NCF, and BESTOP.NCF.

## About the NetWare Management Portal and Backup Exec's Plug-in

Novell's NetWare Management Portal utility lets you manage NetWare servers from any location on your network where an Internet browser is available. With the Backup Exec Management Portal Plug-in, you can monitor the health of your Backup Exec servers through the Management Portal's Health Monitor.

When running the Backup Management Portal Plug-in, there appears a section in the Novell NetWare Management Portal called **VERITAS Backup Exec**. Some of the Backup Exec functionality provided through this section of portal includes:

- ◆ Viewing job logs.
- ◆ Viewing scheduled jobs.
- ◆ Viewing the session status for active jobs.
- ◆ Viewing alerts that are blocking Backup Exec.
- ◆ Running Backup Exec diagnostics and viewing the BE Diagnostics text files.

## NetWare Management Portal and Backup Exec Plug-in Requirements

To use the NetWare Management Portal and Backup Exec's Management Portal Plug-in, your media server must be running NetWare 5.1 or later. Minimum browser requirements are Netscape 4.5 or Internet Explorer 5.

## Installing Backup Exec's Management Portal Plug-in

Backup Exec's Management Portal Plug-in is installed to the media server from a Windows workstation. The Management Portal Plug-in cannot be installed to your remote servers.

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**Note** Backup Exec should not be running on the media server when installing the Management Portal Plug-in.

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▼ **To install Backup Exec's Management Portal Plug-in to your media server:**

1. Insert the installation CD into your workstation's CD-ROM drive.
2. From the installation CD browser, select **Backup Exec Installation**.
3. Select **Start Backup Exec Installation**.  
The Welcome window appears.
4. Click **Next** to proceed with the installation.  
The Software License Agreement appears.
5. After reading this information, select **I accept the terms of the license agreement**, and then click **Next**.
6. From the Select Components window that appears next, select **Serialized install** or **Evaluation install**.
7. Select **NetWare Media Server**, and then click **Next**.
8. Select **NetWare Management Portal Plug-in**, and then click **Next**.
9. Select the NetWare system that will serve as your media server.
  - a. If the system appears in the list of **Available Systems**, highlight the server and click the right arrow key to move the server to the **Destination Systems** list.
  - b. If you want to add an additional system that does not appear in the list, click **Manually add additional systems**, and then type the name of the system.
10. Click **Next**.



11. If you are not already connected to the media server, click the server icon, enter the Administrative user name and password for accessing the media server, and then click **Connect**.
12. Click **Next**.
13. Ensure the volume and path for where you want to install the NetWare Management Portal Plug-in on your server are selected.
14. Verify the settings that have been selected for the media server. To change settings, click **Back** and reselect. If you are satisfied with the selected settings, click **Next**.  
You can monitor the status of the installation.

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**Note** If you do not meet the minimum system requirements for the components being installed, a warning message will appear. You can click **OK**, and then click **Cancel** if you want to stop the installation procedures in order to install the latest patches or service packs. Or, you can click **OK** and proceed with the installation for those components that can be installed at this time.

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15. Click **Finish** to view the readme and complete the installation.

## Starting the Management Portal Plug-in

Use your Internet browser and the IP Address of your media server to launch the Management Portal Plug-in.

▼ **To start the Management Portal Plug-in:**

1. Open your Internet browser.
2. In the address (URL) field, type:  
**http://<server's TCP/IP Address>**

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**Note** The port number used to communicate with the NetWare server will be appended to the IP address portion of the URL.

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3. Click **Login**.
4. Login as an Administrator to have access to all plug-in features.

## Viewing Job Logs through the Portal Plug-in

You can view a list of job logs through Backup Exec's Management Portal Plug-in.

### ▼ To view job logs:

- ❖ From **VERITAS Backup Exec**, click **Job Log**.

For each job log, the following information appears:

- ◆ **Job Name.** Name the user gives to the job when it is created or edited. There can be no duplication of job names.
- ◆ **Operation.** Type of job, such as backup or catalog.
- ◆ **User Name.** Name of the user who submitted the job.
- ◆ **Completion Time.** Date and time the job completed.
- ◆ **Status.** Overall results of the job. Values include:
  - **Normal.** The job completed with no critical errors.
  - **Error.** The operation completed, but one or more significant errors occurred. The job log will indicate what caused the errors.
  - **Canceled.** The operation was canceled by the user, the administrator, or Backup Exec.

For more information about understanding job completion status, see "[Understanding Job Completion Status](#)" on page 201.

## Viewing Scheduled Jobs from the Portal Plug-in

You can view a list jobs scheduled for processing through Backup Exec's Management Portal Plug-in.

### ▼ To view scheduled jobs:

- ❖ From **VERITAS Backup Exec**, click **Job Schedule**.

For each scheduled job, the following information appears:

- ◆ **Job Name.** Name the user gives to the job when it is created or edited. There can be no duplication of job names.
- ◆ **Operation.** Type of operation to be performed, such as backup or catalog.
- ◆ **User Name.** Name of the user who submitted the job.
- ◆ **Start Date.** Date the job is to run.



- ◆ **Start Time.** Time the job is to run.
- ◆ **Status.** Status of the job in the queue. Options are:
  - **Ready.** The job is ready to be processed when the appropriate time is reached in the queue and a session becomes available to service it.
  - **Active.** The job is currently being processed.
  - **Hold.** The user has placed the job on hold, or the job has been placed on hold because it did not run successfully. Jobs submitted to partitions or storage devices that are on hold will also be placed on hold.

## Viewing Session Status

Backup Exec defines a session for each drive that can run a backup, restore, or media rotation job. Through Backup Exec's Management Portal Plug-in, you can view the status of each session.

### ▼ To view session status:

- ❖ From **VERITAS Backup Exec**, click **Session Status**.

For each session, the following information appears:

- ◆ **Job Name.** Name of the job being processed (if the session is **Active**).
- ◆ **Operation.** Type of operation being run (if the session is **Active**).
- ◆ **User name.** Name of user who created the job.
- ◆ **Execution time.** Date and time the job was executed.
- ◆ **Session ID.** Session being used to run the job.

## Viewing Blocking Alerts

*Blocking alerts* are events that prevent a Backup Exec operation from continuing. One example of a blocking alert is when a media needs to be inserted in the media drive so that a backup job can continue.

With Backup Exec's Management Portal Plug-in, there are two ways to view blocking alerts:

- ◆ Through the **Health Monitors**.
- ◆ Through the **VERITAS Backup Exec** menu entry.

### ▼ To view blocking alerts through the Health Monitors:

1. From the **Health Monitors** menu, click **VERITAS Backup Exec**.
2. Select **Blocking Alerts**.

### ▼ To view blocking alerts through the VERITAS Backup Exec menu:

- ❖ From the **VERITAS Backup Exec** menu, click **Blocking Alerts**.

When viewing blocking alerts, the following information appears:

- ◆ Total number of alerts.
- ◆ Session number in which the alert is occurring.
- ◆ Description of the alert.





## Running and Viewing Backup Exec Diagnostics

Through **Backup Exec Diagnostics**, you can view:

- ◆ BEDIAG.FAX (see “[Using BEDIAG.FAX](#)” on page 556)
- ◆ BKUPEXEC.FAX (see “[Using BKUPEXEC.FAX](#)” on page 557)
- ◆ BESTOP.NCF (see “[Using BESTOP.NCF](#)” on page 558)
- ◆ BESTART.NCF (see “[Using BESTART.NCF](#)” on page 558)

### Using BEDIAG.FAX

The BEDIAG.NLM utility creates an ASCII file (BEDIAG.FAX) that includes useful configuration information for your server. You should run this utility and print out this file before contacting Technical Support so that your problems can be resolved quickly.

#### ▼ To run and view BEDIAG from the Management Portal Plug-in:

1. From **Health Monitors**, click **VERITAS Backup Exec**.
2. Select **Backup Exec Diagnostics**.

---

**Tip** You can also click **Backup Exec Diagnostics** under **VERITAS Backup Exec**.

---

3. Click **Run Backup Exec Diagnostics**.

#### ▼ To view Backup Exec Diagnostics:

1. Click **VERITAS Backup Exec** from **Health Monitors**.
2. Select **Backup Exec Diagnostics**.

---

**Tip** You can also click **Backup Exec Diagnostics** under **VERITAS Backup Exec**.

---

3. Click **BEDIAG.FAX**.

BEDIAG.FAX contains the following information:

- ◆ Contents of the CONFIG.SYS and AUTOEXEC.BAT files.
- ◆ Contents of the STARTUP.NCF file.
- ◆ Amount of memory available as server memory.
- ◆ Contents of the AUTOEXEC.NCF file.

- ◆ List of NLMs that are loaded on the media server, including the version numbers and the date stamp.
- ◆ Configuration settings for the media server, including volumes and individual name space support.
- ◆ Contents of the DCDIAG.FAX file, which includes:
  - *Drive.dat*. This file contains information about each media drive known to the system.
  - *Drvpool.dat*. This file contains information about each drive pool defined.
  - *Drvpld.dat*. This file contains information about each drive and drive pool combination.
  - *Media.dat*. This file contains information about each media known to the system.
  - *Mediaset.dat*. This file contains information about each media set known to the system.
  - *Part.dat*. This file contains information about each partition defined.
  - *Partdrv.dat*. This file contains information about each partition and drive combination.
  - *Portal.dat*. This file contains information about each portal known to the system.
  - *Robot.dat*. This file contains information about each robot known to the system.
  - *Slot.dat*. This file contains information about each slot known to the system.
- ◆ Contents of the BESTARTJ.NCF file.

## Using BKUPEXEC.FAX

The BKUPEXEC.FAX file documents the first run of Backup Exec's SureStart, but does not get created until the second time Backup Exec is started.

### ▼ To view the BKUPEXEC.FAX file:

1. Click **VERITAS Backup Exec** from **Health Monitors**.
2. Select **Backup Exec Diagnostics**.

---

**Tip** You can also click **Backup Exec Diagnostics** under **VERITAS Backup Exec**.

---

3. Click **View BKUPEXEC.FAX**.

For more information about Backup Exec's SureStart, see "[SureStart](#)" on page 50.



## Using BESTART.NCF

BESTART.NCF is a file that contains commands used to load Backup Exec on your media server. During installation, Backup Exec automatically determines the version of NetWare running on your media server and adds the necessary lines to the BESTART.NCF file that is created during the initial installation process. This file resides in your media server's \SYSTEM directory.

Through Backup Exec's Management Portal Plug-in, you can view the contents of the BESTART.NCF residing on your media server.

▼ **To view the BESTART.NCF file:**

1. Click **VERITAS Backup Exec** from **Health Monitors**.
2. Select **Backup Exec Diagnostics**.

---

**Tip** You can also click **Backup Exec Diagnostics** under **VERITAS Backup Exec**.

---

3. Click **View BESTART.NCF**.

The BESTART.NCF file contains lines similar to the following:

```
SEARCH AD SYS:\BKUPEXEC\NLMS  
LOAD BKUPEXEC.NLM -tf -aa -dy -tc -tp -tj -s
```

For information about the command line switches, see "[SureStart Command Line Switches](#)" on page 52.

## Using BESTOP.NCF

The BESTOP.NCF file is used to completely remove Backup Exec from the media server's memory. It is recommended that you run BESTOP before shutting down your server.

BESTOP does not unload the Administration Console or the Administration Console for NetWare. You must exit these user interfaces before running BESTOP.

▼ **To view the BESTOP.NCF file:**

1. Click **VERITAS Backup Exec** from **Health Monitors**.
2. Select **Backup Exec Diagnostics**.

---

**Tip** You can also click **Backup Exec Diagnostics** under **VERITAS Backup Exec**.

---

**3.** Click **View BESTOP.NCF**.

The BESTOP.NCF file contains lines similar to the following:

```
SEARCH ADD SYS:\BKUPEXEC\NLMS  
LOAD BESTOP.NLM
```



# Using Intelligent Disaster Recovery

---



This section details how to install and use the Intelligent Disaster Recovery (IDR) Option, a separately purchased option designed to help you quickly and efficiently recover your Novell NetWare servers after a catastrophic disaster.

*Using Intelligent Disaster Recovery* contains the following topics:

<b>Section</b>	<b>Describes</b>
<a href="#">“About the Intelligent Disaster Recovery Option”</a> on page 562	Key benefits and features of the IDR option.
<a href="#">“Requirements for Using IDR”</a> on page 563	Requirements for installing and using IDR.
<a href="#">“Installing IDR to the Media Server”</a> on page 564	Procedures for installing IDR to a media server.
<a href="#">“Installing IDR to a Remote NetWare Server”</a> on page 566	Procedures for installing IDR to a remote server.
<a href="#">“Pre-Disaster Preparation”</a> on page 568	An overview of the IDR preparation steps and how to launch the Intelligent Disaster Recovery Wizard.
<a href="#">“Recovering from a Disaster”</a> on page 573	Procedures for recovering your NetWare servers after a disaster occurs.
<a href="#">“Tips for Maximizing Protection”</a> on page 576	Suggestions for ensuring the maximum protection for your NetWare servers.
<a href="#">“NDS Preparation and Recovery Notes”</a> on page 581	Information on NDS disaster preparation and recovery.



Section	Describes
<a href="#">“Command Line Parameters”</a> on page 583	The command line parameters used with IDR.
<a href="#">“Using Other Media Types”</a> on page 589	Which media types can be used to protect your data.
<a href="#">“Frequently Asked Questions”</a> on page 590	Questions frequently asked about IDR, disaster planning, and disaster recovery.

## About the Intelligent Disaster Recovery Option

IDR provides a fully automated disaster recovery solution that allows you to quickly and efficiently recover your Novell NetWare servers running Backup Exec as well as remote NetWare servers protected by Backup Exec.

IDR supports NSS volumes, allowing you to quickly get your whole NetWare server up and running again in the event of a disaster.

IDR also supports the creation of a CD bootable image file that can be used with a CD burner to create bootable CDs, or you can recover a system directly from a bootable auxiliary storage device, such as a bootable tape drive, that emulates a SCSI CD-ROM device. This disaster recovery solution is intended to recover the Backup Exec server and requires only the latest full backup media to completely recover a system.

You can also generate floppy disks from the CD bootable image on a local workstation, cutting down on floppy creation time.

If you do not elect to create and use CD bootable images, you can create floppy disks at the server. This disaster preparation effort requires you to down your server, format some floppy disks, install and run the software, and then insert those floppy disks when the on-screen instructions prompts for them.

### Choosing the Bootable Media

When creating bootable media through IDR, you can create:

- ◆ Floppy disks
- ◆ CD-Recordable (CD-R) or CD-Rewritable (CD-RW)
- ◆ Bootable tape

Consider your available hardware and your system BIOS when selecting the type of bootable media you create.

For example, bootable CDs require a BIOS that supports booting from a CD-ROM and third-party CD writing hardware and software to allow burning of ISO 9660 CD images.

Bootable tape requires a BIOS that supports booting from a SCSI CD-ROM and a bootable tape device that emulates a SCSI CD-ROM device.

Both bootable CDs and bootable tape provide faster preparation and recovery than floppy disks; however, floppy disks work on most systems. You can also generate floppy disks on a local workstation from the CD bootable image file `BEDRCD.ISO`, which resides in the `SYS:\BKUPEXEC\IDR` directory, eliminating the need to down the server for IDR preparation.

## Requirements for Using IDR

The following requirements are necessary to protect your servers:

- ◆ Your system must be running NetWare versions 4.2x or 5.x with the latest service packs.
- ◆ One current full backup of the NetWare server made with Backup Exec must be available from which to restore.
- ◆ `Format.com` must be available.

---

**Note** If using NetWare 5.x, you may need to copy `format.com` from your license disk.

---

Additional requirements for using CD-R or CD-RW as the bootable media include:

- ◆ A BIOS that supports booting from a CD-ROM.
- ◆ Third-party CD writing hardware and software to allow burning of ISO 9660 CD images.

Additional requirements for using bootable tape as the bootable media include:

- ◆ A BIOS that supports booting from a SCSI CD-ROM.
- ◆ A bootable tape device that emulates a SCSI CD-ROM device.

Additional requirements for using floppy disks as the bootable media include:

- ◆ Floppy disks must be available during the preparation of this protection scheme.

---

**Note** It is strongly recommended that you run `chkdsk/scandisk` on the floppy disks to verify their integrity.

---

- ◆ The DOS program `Format.com` must reside on the bootable DOS system disk.



You may also want to have:

- ◆ One current full backup of the NetWare server's DOS partition made with Backup Exec using the included Novell TSADOSP.NLM.
- ◆ A backup made of the BEDRCD.ISO file after it is created. (You could also copy this file to a local workstation.)
- ◆ An alternative removable media, such as Superfloppy, Jaz, or Zip disk to speed up the preparation and recovery processes if not using bootable CD or bootable tape.

## Installing IDR to the Media Server

You can install the Intelligent Disaster Recovery option to a NetWare server while installing the Backup Exec for NetWare and other options (see “[Installing All Serialized Backup Exec Software](#)” on page 33), or you can complete the following steps to install Intelligent Disaster Recovery to a media server that has already has Backup Exec for NetWare installed.

### ▼ To install the Intelligent Disaster Recovery Option to the media server:

1. Insert the installation CD into the local system's CD-ROM drive.
2. From the installation CD browser, select **Backup Exec Installation**.
3. Select **Start Backup Exec Installation**.  
The Welcome window appears.
4. Click **Next** to proceed with the installation.  
The Software License Agreement appears.
5. After reading this information, select **I accept the terms of the license agreement**, and then click **Next**.  
From the Select Components window that appears next, select **Serialized install**.
6. Select **NetWare Media Server**, and then click **Next**.
7. Select **Intelligent Disaster Recovery**, and then click **Next**.
8. Select the NetWare system that will serve as your media server.



- a. If the system appears in the list of **Available Systems**, highlight the server and click the right arrow key to move the server to the **Destination Systems** list.
  - b. If you want to add an additional system that does not appear in the list, click **Manually add additional systems**, and then type the name of the system.
9. Click **Next**.
10. If you are not already connected to the media server, click the server icon, enter the Administrative user name and password for accessing the media server, and then click **Connect**.
11. Click **Next**.
12. Enter the Intelligent Disaster Recovery serial number, and click **Add**.
13. Click **Next**.

---

**Note** If you do not meet the minimum system requirements for the components being installed, a message will appear. You can click **OK**, and then click **Cancel** if you want to stop in the installation procedures in order to install the latest patches or service packs. Or, you can click **OK** and proceed with the installation for those components that can be installed at this time.

---

14. Verify the settings that have been selected for the media server. To change settings, click **Back** and reselect. If you are satisfied with the selected settings, click **Next**.  
You can monitor the status of the installation.
15. Click **Finish** to view the readme and complete the installation.



## Installing IDR to a Remote NetWare Server

You can install the Intelligent Disaster Recovery option to a remote NetWare server while installing the Remote Agent for NetWare and other options (see “[Installing to Remote Servers Only](#)” on page 43), or you can complete the following steps to install Intelligent Disaster Recovery to a remote NetWare server that already has the Remote Agent installed.

▼ **To install Intelligent Disaster Recovery to a remote NetWare server:**

1. Insert the installation CD into the local system’s CD-ROM drive.
2. From the installation CD browser, select **Backup Exec Installation**.
3. Select **Start Backup Exec Installation**.  
The Welcome window appears.
4. Click **Next** to proceed with the installation.  
The Software License Agreement appears.
5. After reading this information, select **I accept the terms of the license agreement**, and then click **Next**.  
From the Select Components window that appears next, select **Serialized install**.

---

**Note** If you are installing an evaluation copy of Backup Exec or any of its options, select **Evaluation Install** and select only the components you want to install.

---

6. Select **NetWare Remote Server**, and then click **Next**.
7. Select **Intelligent Disaster Recovery**.
8. Click **Next**.
9. Select the systems where you want Intelligent Disaster Recovery to be installed.
  - a. If the system appears in the list of **Available Systems**, highlight the server and click the right arrow key to move the server to the **Destination Systems** list.
  - b. If you want to add an additional system that does not appear in the list, click **Manually add additional systems**, and then type the name of the system.
10. Click **Next**.



11. If you are not already connected to the remote server, click the server icon, enter the Administrative user name and password for accessing the server, and then click **Connect**.
12. Enter the serial number for Intelligent Disaster Recovery.
13. Click **Next**.
14. Verify the settings that have been selected for the remote server. To change settings, click **Back** and reselect. If you are satisfied with the selected settings, click **Next**.  
You will be able to monitor the process of the remote server installation.
15. Click **Next**.
16. If you are not already connected to the media server, click the server icon, enter the Administrative user name and password for accessing the media server, and then click **Connect**.
17. Click **Next**.
18. Click **Finish** to view the readme and complete the installation.



## Pre-Disaster Preparation

To successfully recover from a disaster, you must properly prepare for it ahead of time. No matter which bootable media you plan to use, the pre-disaster preparation steps should be performed whenever you:

- ◆ Add new support packs.
- ◆ Upgrade your system's operating system.
- ◆ Modify your hardware configuration.
- ◆ Add or modify volumes on your server.

---

**Note** If the REMOVE DOS command has been executed from your system console, the Intelligent Disaster Recovery preparation will not work. Down the server and reboot; do not issue the REMOVE DOS command; if the command is found in the AUTOEXEC.NCF file, edit the file and remove the command. Down the server and reboot it.

If Backup Exec is installed on your server, it must be loaded but not actively running jobs.

---

If you are running the Administration Console, you can perform part of the IDR preparation using the Intelligent Disaster Recovery Wizard.

▼ **To launch the Intelligent Disaster Recovery Wizard:**

1. From the Administration Console, click **Tools**.
2. Point to **Wizards**, and then click **Launch the Intelligent Disaster Recovery Wizard**.

---

**Tip** You can also launch the Intelligent Disaster Recovery Wizard by clicking the Intelligent Disaster Recovery icon from either the toolbar or Backup Exec Assistant.

---

3. Follow on-screen prompts.

## Pre-Disaster Preparation for Bootable CD

If you plan to use a CD as your bootable media, you must create the CD bootable image file, and then use third-party software and hardware to place that file on a CD. Your bootable CD and your most recent backups can then allow you to restore your server to its pre-disaster state.

### ▼ To run IDR preparation for bootable CD:

1. Start Backup Exec at your system console.
2. At the system prompt:

```
load bedr -b -a
```

The preparation process creates the CD bootable image file, BEDRCD.ISO, in the SYS:\BKUPEXEC\IDR directory.

---

**Note** You must use third party CD writing hardware and software to allow burning of this ISO file on the CD.

---

You should ensure your computer is capable of booting from the CD (see [“Recovering Using a Bootable CD”](#) on page 573).

## Pre-Disaster Preparation for Bootable Tape

If you plan to use tape as your bootable media, you must first create the CD bootable image file, and then ensure the image is properly copied to your backup tapes. While a bootable tape device that emulates booting from a SCSI CD-ROM is required when recovering a system using bootable tape, the bootable tape device *is not* required when creating the bootable tape.

### ▼ To run IDR preparation for bootable tape:

1. Start Backup Exec at your system console.
2. At the system prompt:

```
load bedr -b -a
```

The preparation process creates the CD bootable image file, BEDRCD.ISO, in the SYS:\BKUPEXEC\IDR directory.

3. To configure Backup Exec to write the bootable image file to the tape drive during overwrite jobs, follow the steps for setting media server options and select the option you want for on the Bootable Tape dialog box.



The options on the Bootable Tape dialog box are described in “[Bootable Tape Options for the Media Server](#)” on page 262.

4. Use the Administration Console or the Administration Console for NetWare to submit an overwrite job that backs all server data to either a partition or drive pool with the bootable tape device.

---

**Note** The bootable image file is only written to tapes as the tapes are overwritten; therefore, your first full backup should be done as an overwrite job. You may redirect the ISO file to a different volume using `-A<volume name>`, but the image *must* be in the `SYS:\BKUPEXEC\IDR` directory in order for Backup Exec to create bootable tapes from the image file.

---

You should ensure your computer is capable of booting from the tape drive (see “[Recovering Using a Bootable Tape](#)” on page 574).

## Pre-Disaster Preparation for Floppy Disks

If you plan to use floppy disks for your bootable media, run pre-disaster preparation steps at the server that include first creating a boot disk and then copying information required to protect your server on floppy disks.

You will need a number of blank, formatted disks if you want to use disks as your bootable media. This number will vary depending on the version of NetWare and other software you have installed in your server.

Number of Disks Required

---

<b>MINIMUM # OF DISKS REQUIRED FOR THE MEDIA SERVER</b>	<b>MINIMUM # OF DISKS REQUIRED FOR THE REMOTE NETWARE SERVER</b>
NetWare 5.x - 13 disks	NetWare 5.x - 11 disks
NetWare 4.x - 9 disks	NetWare 4.x - 6 disks

---

Label the disks as requested by the preparation process.

---

**Note** You can substitute alternative media such as Zip, Jaz, or hard disk space (not containing the NetWare partition) in place of floppy disks during the server-based pre-disaster preparation phase. For instructions on using these alternative media types, see “[Using Other Media Types](#)” on page 589.

---

If you elect to generate floppy disks as your bootable media, the first step is to create a boot disk that is used to start the recovery process.

---

**Note** It is critical that the boot disk be created properly, and that the server can be successfully booted to DOS when it is used.

---

▼ **To create the boot disk:**

1. Label the floppy disk *Disaster Recovery System disk*.
2. To format the disk as a system disk, down the server and format the disk using the following command:

```
Format A: /s
```

3. Copy the DOS programs FORMAT.COM and FDISK.EXE to the disk.

---

**Note** The safest way to create the Disaster Recovery System disk is to follow these steps. By creating the disk at the server, you are ensuring that the correct version of DOS is placed on the disk, and that the appropriate versions of FORMAT.COM and FDISK.EXE are used. Additionally, not all disk drives are identical although it is more likely that disks created in the drive can be read by that drive; however, we understand that there are servers that you cannot afford to arbitrarily bring down. If this is the case, you can create the Disaster Recovery System disk at another workstation as long as you are using the same versions of DOS, FORMAT.COM, and FDISK.EXE that are on the server you want to protect. *Do not* use Windows 95/98 DOS.

---

Now that you have a system disk, along with blank disks, it is time to collect the information required to protect your server.

---

**Note** If the REMOVE DOS command has been executed from your system console, the Intelligent Disaster Recovery preparation will not work. Down the server and reboot; do not issue the REMOVE DOS command; if the command is found in the AUTOEXEC.NCF file, edit the file and remove the command. Down the server and reboot it.

---

---

**Note** Backup Exec must be running on the server in order to allow the preparation utility to detect the appropriate Backup Exec files necessary to recover the server data. If you have not installed Backup Exec, install it and do a full backup of your server before continuing.

---



▼ **To continue server-based IDR preparation using floppy disks:**

1. Start Backup Exec at your system console.
2. Start Intelligent Disaster Recovery for NetWare by typing, at the system console prompt:  

```
load bedr -b
```
3. Insert each disk as prompted.
4. After all disks are created, the verification process begins automatically. It is important that you verify the disks.

---

**Note** If you cannot verify the disks at this time, you should run the command `LOAD BEDR -C` as soon as possible. This option allows you to verify the contents of the IDR preparation disks.

---

In the event of a disaster, the disaster recovery disks and your most current backup media (Full and Differential or Incrementals) are the only items required to perform a complete and automated recovery of your server. For more information about restoring your server using your disaster recovery disks, see [“Recovering Using Floppy Disks”](#) on page 574.



---

## Recovering from a Disaster

If your server were to crash right now, you would need the following in order to recover it with Intelligent Disaster Recovery for NetWare:

- ◆ The backup of basic DOS, NetWare, and NDS information generated by Intelligent Disaster Recovery for NetWare.
- ◆ A full backup of the server's data.
- ◆ Any DOS device drivers required to access the media containing the Intelligent Disaster Recovery information, such as Zip device drivers, SCSI drivers, etc. (see [“Using Other Media Types”](#) on page 589).

### Recovering Using a Bootable CD

Disaster Recover using a bootable CD requires only the bootable CD and the most recent backups.

▼ **To boot a computer using a bootable CD:**

1. At the computer being recovered, ensure the bootable CD created by IDR for NetWare is inserted into the CD-ROM.
2. Follow on-screen instructions.

---

**Note** If you are testing your bootable media, do not continue when prompted that the Disaster Recovery process will begin. Instead, remove the CD, press <F3>, and reboot the server.

---



## Recovering Using a Bootable Tape

Disaster Recovery using a bootable tape performs all the disaster recovery steps needed from one tape.

### ▼ To boot a computer using a bootable tape drive:

1. At the computer being recovered, ensure the last full backup media containing the bootable image is inserted into the tape device that is capable of emulating a CD-ROM drive.
2. Follow your bootable tape drive manufacturer's instructions for booting from the tape drive. You may have to change the SCSI BIOS settings to enable boot from a SCSI CD-ROM. Some bootable tape drives require that you hold the eject button while powering up the tape drive.
3. Follow on-screen instructions.

---

**Note** If you are testing your bootable media, do not continue when prompted that the Disaster Recovery process will begin. Instead, press <F3> to quit, eject the tape and power cycle the tape drive.

---

## Recovering Using Floppy Disks

If you experience a catastrophic disaster, restore the hardware to a working state and then boot your server using the *Disaster Recovery System Disk*. After the system initializes, follow the on-screen directions. Intelligent Disaster Recovery for NetWare automatically rebuilds both partitions and volumes, and installs a copy of Backup Exec for NetWare, which enables you to restore all data from your media.

After reaching this point, simply recatalog your media using Backup Exec and begin the restore process.

---

**Note** It is important to understand that Intelligent Disaster Recovery for NetWare leaves your NetWare server in a minimal system state. This means that only the files necessary for NetWare to run have been restored. Everything else must be restored (using Backup Exec) from the media containing the Full backup job, or reinstalled manually.

---

## Recovery Notes

- ◆ During a recovery, your system must have the same number of hard drives installed as it did during the disaster recovery preparation phase. If you are restoring to a server with a different hard drive configuration, see “[Frequently Asked Questions](#)” on page 590.
- ◆ If Intelligent Disaster Recovery for NetWare cannot repartition the DOS partition, you can manually repartition and format it using the FDISK.EXE and FORMAT.COM programs found on the Disaster Recovery System disk.

After rebuilding the DOS partition, run `BEDRAPP -F` at the DOS prompt from the Disaster Recovery System disk.

---

**Note** The -F parameter begins the recovery operation at the point where the DOS files are restored.

---

- ◆ If, after a catastrophic disaster, you rebuild your server with a larger hard drive or drives, Intelligent Disaster Recovery will, during the recovery process, recognize the extra space and prompt you to allocate the extra space to the original non-mirrored NetWare partition. Answer **Yes** to the prompt to increase the NetWare partition size by the amount of extra disk space found by the Intelligent Disaster Recovery procedure.
- ◆ If you use a Boot Manager (System Commander, NT, OS/2, etc.), only the current (DOS) configuration will be recovered.
- ◆ If you replace a protected drive with one that already contains a DOS partition and the new drive’s DOS partition is not the same size as the original, Intelligent Disaster Recovery will want to repartition the new drive to match the original drive’s partition size. If you do not want this done, then use FDISK along with FORMAT to manually create the DOS partition size you want.

After manually creating the DOS partition, start BEDRAPP using the -F parameter to restore the DOS Disaster Recovery Files disk(s).

---

**Note** When manually repartitioning the DOS partition on the new hard drive, make sure there is enough unpartitioned space left on the drive for the NetWare partition.

---

- ◆ If you are using an IBM computer and the drive containing the system’s configuration information fails, you must reconfigure the system using the IBM Reference disk prior to running recovery.
- ◆ If you are using a Compaq computer and the drive containing the System Configuration Partition fails, Intelligent Disaster Recovery will re-create the partition on the new hard drive; however, you must use the Compaq SmartStart utilities to update the system partition.



## Tips for Maximizing Protection

This section offers you tips on gaining additional protection for your NetWare server data by allowing you to modify specific components of Intelligent Disaster Recovery for NetWare. These tips include:

- ◆ Automatic protection of your system's NetWare Directory Services
- ◆ Modifying certain .INI files to include additional files for protection
- ◆ Protecting your server's *entire* DOS partition using Novell's TSADOSP.NLM

It also offers details about Intelligent Disaster Recovery for NetWare's LOG file and the role it plays in the disaster recovery process.

### Automatic Protection of NDS

By adding a simple console command to run after any Backup Exec job, Intelligent Disaster Recovery for NetWare automatically updates your NDS Recovery Files disk each time a backup job finishes.

---

**Tip** Adding the following after-backup command to a regularly scheduled, once-a-week Full backup job ensures regular updates to the NDS Recovery disk on a weekly basis.

---

#### ▼ To set up automatic protection:

1. Place the NDS Recovery disk 1 in the server's disk drive.
2. Create a backup job using either the Administration Console or the Administration Console for NetWare, and selecting to create a new policy for this job (see "[Creating a Backup Job from the Administration Console](#)" on page 105 or "[Creating a Backup Job from the Administration Console for NetWare](#)" on page 115).
3. On the policy's Pre/Post Options dialog box add the following command in the **Execute after backup** field:

```
load bedr -n
```

---

**Note** To maintain peak server efficiency and to ensure a complete update to the NDS Recovery disk, enter a value of five minutes in the **Delay after command (seconds)** field on the policy's Pre/Post Options dialog box (for example, 300).

---

After the backup job runs, Intelligent Disaster Recovery for NetWare starts and the NDS Recovery Files disk 1 update begins.

## NDS Considerations

If your system's NDS information changes often, consider leaving the NDS Recovery Files disk 1 in the server's floppy drive, and configure all backup jobs with the post-backup command mentioned earlier.

However, because the typical NDS Recovery Files disk is not bootable, the server will not reboot to NetWare after a power outage with this disk in its floppy drive. To bypass the floppy drive during the boot sequence, consider using one of the following recommendations:

- ◆ Adjust the server's BIOS to disable the floppy drive **as the first boot device**. If the BIOS supports it, change it to *boot to the hard disk first* and then to the floppy drive **as the second device**.
- ◆ If the server BIOS only supports changing the boot sequence from the floppy drive to hard drive, change it to hard drive.

If the server does not support BIOS adjustments, make another bootable system disk using the server's version of DOS and name it NDS Recovery Files disk 1. Create a simple AUTOEXEC.BAT file on it, containing the following lines. Modify them as needed, based on your environment.

```
echo off
SET COMSPEC=C:\COMMAND.COM
C:
CD \NWSERVER
SERVER
```

Use this bootable NDS Recovery Files disk 1 in the server's floppy drive, in place of the original. If the server does lose power, using this disk ensures that the server will reboot to NetWare.

## NDS Single Server Tree Size

**Note** If an NDS Single Server Tree will not fit on one disk, do not use this automatic protection option in an after-hours backup environment; instead, manually update the NDS Recovery Files disk 1 by typing the following command at the system console prompt:

```
load bedr -n
```

Follow the on-screen prompts, replacing floppy disks as needed.



## Modifying the .INI Files

Intelligent Disaster Recovery for NetWare uses three .INI files to create a set of recovery disks for your server. These files, installed in the server's SYS:\BKUPEXEC directory, include:

- ◆ *SYFILES.INI*. Used to create the Disaster Recovery System disk.
- ◆ *DOSFILES.INI*. Used to create the DOS Recovery Files disks. It specifies the recovery-critical files to be backed up from the server's *DOS partition*.
- ◆ *NETFILES.INI*. Used to create the NetWare Disaster Recovery Files disks. It specifies the recovery-critical files to be backed up from your server's *SYS: volume*.

Each file is a template used by Intelligent Disaster Recovery for NetWare to back up the default file configurations needed to get your server up and running in a minimal state.

You can edit these files to add files and directories you want to protect; however, the SYFILES.INI and the NETFILES.INI are designed to cover a wide range of environments so it is not necessary to customize them for your server.

If you want to add other files to the protection process, edit the .INI files and add their path and filename designations.

For example, to add all files residing in the C:\SCSI directory on your DOS partition to DOSFILES.INI, edit the file and add the directory location to the existing path and filename designations.

**Example** Editing the DOSFILES.INI presents you with the following structure. Add the desired path at the end of the DOS file area.

```
[DOS]
FILE=C:\AUTOEXEC.BAT
FILE=C:\CONFIG.SYS
FILE=C:\DOS\EDIT*. *
FILE=C:\DOS\FORMAT. *
FILE=C:\DOS\HIMEM.SYS
FILE=C:\DOS\QBASIC.EXE
FILE=C:\DOS\SYS. *
FILE=C:\SCSI\*. *

[NETWARE]
FILE=%BOOT_DIR%\ETHERTSM.NLM
FILE=%BOOT_DIR%\FDDITSM.NLM
FILE=%BOOT_DIR%\ICMD.NLM
etc...
```

Make sure that as you add filenames, you spell them correctly. Intelligent Disaster Recovery for NetWare will not notify you of an error if it cannot find the specified file.



Certain files, by default, are not backed up, although they are listed in the .INI files.

For example, the PATCH directories for NetWare versions prior to 4.2 are not backed up in the DOSFILES.INI file by default because adding them increases the number of disks required during the disaster recovery preparation phase. However, you may decide that these files are important and must also be protected.

To include them, edit the file and add the following:

### Example

```
FILE=%BOOT_DIR%\PATCHES\NATIVE\*.*
```

---

**Note** If you did not install the patches to the %BOOT\_DIR%\PATCHES\NATIVE directory, you must change the FILE= line to reflect where the patches were installed.

There are placeholders in DOSFILES.INI designated as %BOOT\_DIR%. These placeholders are replaced by the actual boot directory when Intelligent Disaster Recovery for NetWare runs.

*Do not edit these placeholders.*

---

**Note** During installation, Intelligent Disaster Recovery for NetWare places the .INI files in the SYS: BKUPEXEC directory. Review the .INI files to ensure the correct path locations for the specified files. For example, C:\DOS is the path DOSFILES.INI looks for when backing up DOS files on your system; however, if you installed DOS files elsewhere, the path location needs to be updated to reflect this.

---

## Using TSADOSP.NLM

Included with Intelligent Disaster Recovery for NetWare is a Novell-supplied TSA named TSADOSP.NLM. Using this TSA allows you to completely backup and restore your server's DOS partition using Backup Exec.

After loading this TSA, perform a full backup of your server, including the complete DOS partition. To include the DOS partition in your backup job, select the DOS Server Partition TSA agent, which appears in the backup sources list under the name SERVER\_NAME.DOS Server Partition TSA.

---

**Note** This TSA switches the processor into *real mode* to access the DOS partition data. This causes a degradation in server performance during the backup operation. Backups of the DOS partition should be reserved for times when the server is not being heavily used.

---



Because Backup Exec must run in *synchronous mode* when using TSADOSP, the Intelligent Disaster Recovery installation program automatically adds the -s (synchronous mode) switch to the BESTART.NCF file for you.

This switch should only be removed if you *do not* plan on performing operations with TSADOSP or plan to use post commands to run the disaster recovery preparation of NDS.

## The Intelligent Disaster Recovery Log File

The Intelligent Disaster Recovery Log file is found in the SYS:BKUPEXEC directory. The file, named BEDR.LOG is an ASCII text file that is created during the initial Intelligent Disaster Recovery for NetWare preparation process. Information is appended to the file as subsequent disaster recovery updates are completed.

---

**Note** During the recovery of a server, a BEDR.LOG file is created in the server boot directory on the DOS partition. This file can be viewed to review the disaster recovery process after the NetWare server has been recovered. The BEDR.LOG file is also copied to the system control disk and *should* be reviewed to ensure everything you will need during a recovery was gathered.

---

The log file contains four sections, each detailing information contained on the set of disaster recovery disks created earlier. Refer to the following example:

### Example

```
#
MON Mar 10 12:29:28 1997
#

-----
SYS:BKUPEXEC/SYSFILES.INI
-----

SYS:BKUPEXEC\BEDIAG.FAX
SYS:BKUPEXEC\BEDRAPP.EXE
SYS:BKUPEXEC\BEDREPP.RES
SYS:BKUPEXEC\NLMS\BEDR.NLM
etc...

-----

SYS:BKUPEXEC/DOSFILES.INI
-----

C:\AUTOEXEC.BAT
C:\CONFIG.SYS
C:\DOS\HIMEM.SYS
C:\DOS\QBASIC.EXE
```



C:\NWSERVER\ETHERTSM.NLM  
etc...

-----  
SYS:BKUPEXEC/NETFILES.INI  
-----

SYS:SYSTEM\BESTART.NCF  
SYS:SYSTEM\BESTOP.NCF  
SYS:BKUPEXEC\BKUPEXEC.BIN  
SYS:BKUPEXEC\ADSMCFG.BIN  
etc...

-----  
[Server Specific Data --> Single-Server Tree  
-----

## NDS Preparation and Recovery Notes

One of two NDS Tree Types that may reside on your server determines the preparation contents of the NDS Recovery Files disk(s). The two tree types are:

- ◆ Multiple-Server Tree (Replication present)
- ◆ Single-Server Tree (No replication present)

### Multiple-Server Tree (Replication present)

In this environment, only the Server Specific Information contained in the file SERVDATA.NDS is updated, compressed and copied to the NDS Recovery Files disk. The data contained in this file allows for the recreation of the Directory Services Database in the event the hard disk(s) containing the SYS volume fails. Because this is an automatic process, the only intervention on your part will be to log in to the directory. Because the Multiple-Server Tree environment uses replication to update NDS, it is important to understand that once you restore the Server Specific Information from the NDS Recovery Files disk, you should *not* restore Directory Services from media.

---

**Note** If your server held a master replica of any partition, use DSREPAIR to designate a new master replica on a different server in the replica ring. Intelligent Disaster Recovery for NetWare prompts you to perform this at the appropriate time during the recovery process (you can also perform this operation prior to performing the recovery). A list of servers in the replica ring is contained in the BEDIAG.FAX file on the *Disaster Recovery System* disk.

---



## Changing the Replica Type

To change the replica type, run DSREPAIR on another server in the replica ring that has an active read/write replica of the partition. Use the following steps:

1. Load DSREPAIR.  
The **Available Options** menu is displayed.
2. Select the **Advanced Options** menu.
3. Select **Replica and Partition Operations**.
4. Choose the partition to edit.
5. Select **Designate this server as the new master replica**.
6. Then, to make sure that time synchronization is set properly, enter the following commands on the server designated to contain the master replica:

```
set default time server type = single
set timesync type = single
set timesync restart flag = on
```

---

**Note** If you intend to leave the master replica on this server, enter the following line in the AUTOEXEC.NCF file:

```
set default time server type = single
```

---

## Single-Server Tree (No replication present)

In this environment, the entire Directory Services database is compressed and copied to the NDS Recovery Files disk. Because the entire database is placed on the disk, it is extremely important to keep the information on the disk(s) up-to-date. For example, whenever you add or remove replicas, partitions, volumes, users, and printers.

After this information is restored and the database is opened, NetWare Directory Services is returned to the state it was in at the time of the last NDS Recovery Files disk preparation. You should only have to restore from media those individual objects that had been added since the last preparation. Likewise, you may also have to delete any objects (using the NWAdmin or NetAdmin programs) that were deleted since the last preparation.

## Command Line Parameters

The following tables explain the command line parameters that can be used with Intelligent Disaster Recovery for NetWare.

Some switches may be combined. For example, to do a restore of NDS only, while using a zip drive for the IDR media, you would need to use either the **-E** or the **-I** and **-T<drive>** switches with the LOAD BEDR command.

### BEDR.NLM Server Preparation/Recovery Application Commands

Switch	Operation	Description
-A	Perform disaster recovery image file creation or recover from a bootable CD or bootable tape.	This option creates the bootable image file BEDRCD.ISO in the SYS:\BKUPEXEC\IDR directory or performs disaster recovery from a bootable CD or bootable tape.
-A<volume>	Redirect the ISO and data files to another volume.	This option redirects the ISO and data files to another volume. This option may be used if there are free space issues with the SYS volume. <b>Note</b> There must be at least 55 MB free space on the SYS volume for the ISO image to be copied from the alternate volume back to the SYS:\BKUPEXEC\IDR directory. If the ISO file does not reside on the SYS directory, it will not be copied to tapes.
- B	Perform disaster recovery preparation	This performs a Full disaster recovery preparation. For example, <code>load bedr -b.</code>
- C	Perform a verification of prepared disks	This option allows you to verify the contents of the Intelligent Disaster Recovery preparation disks whenever you desire.
- D	Perform DOS Partition disaster recovery preparation only	This backs up only the files listed in the DOSFILES.INI file.



## BEDR.NLM Server Preparation/Recovery Application Commands (continued)

Switch	Operation	Description
- E	Perform EMERGENCY NDS Disaster Recovery	Used only with NetWare version 4.1x or greater, this is used only as a last resort if NDS becomes corrupt and used only for single server trees.  Using the command <code>LOAD BEDR -E</code> , allows you to manually restore your NDS information from the NDS Disaster Recovery disk.
- F	Restore DOS and NetWare recovery files	This restores DOS and NetWare recovery files.
- I	Force use of Only Server in NDS Tree	Used only with NetWare 4.2 or greater, this is used only when the software incorrectly determines that the server is in a multi-server tree. This is denoted during NDS file preparation as [Server Specific Data --> Multi-Server Tree].
- L <language>	Language-specific parameter where <Language> = (E)nglish, (F)rançais, (D)eutsch and E(s)pañol	This is used to select the English, French, German, and Spanish languages.
- M	Use monochrome display	This forces the system to use monochrome instead of color.
- N	Perform NDS disaster recovery preparation only	Used only with NetWare 4.2 or greater, this backs up only the server-specific information required to recover NDS.



## BEDR.NLM Server Preparation/Recovery Application Commands (continued)

Switch	Operation	Description
-P<path>	Specify path where FORMAT.COM file resides.	<p>Used during the creation of the bootable image file to specify the path where your FORMAT.COM file resides. If Backup Exec finds more than one FORMAT.COM on your system, you will be prompted to choose the correct one to use. This option allows you to specify which FORMAT.COM file to use without being prompted. If you do not have a copy of FORMAT.COM for your server on the boot disk, which would occur if you installed from a Novell bootable CD, you can specify a path on a floppy disk (LOAD BEDR -B -A -PA:\).</p> <p><b>Note</b> Novell's NetWare 5 license disk contains a copy of FORMAT.COM.</p>
-R	Perform Disaster Recovery	<p>This performs the actual recovery of a server, and this parameter is normally issued only from the application.</p> <p><b>Note</b> If you lose a drive that does not contain any portion of the SYS: volume, you can use the -R option to recover just the affected partitions and volumes: Enter <b>No</b> when prompted to delete existing partition(s). Next, abort the operation when the first recovery files disk is requested. Next, if running NetWare 4.2, restore the volume information by first restoring the volume object from an NDS backup. Then restore the data.</p>



BEDR.NLM Server Preparation/Recovery Application Commands (continued)

Switch	Operation	Description
- S	Update Storage Environment only	This updates the information on the Disaster Recovery System disk after you add additional drives and volumes to the system.
- T<drive>	Allows you to use any DOS-recognized device to recover your Intelligent Disaster Recovery data files (see <a href="#">“Using Other Media Types”</a> on page 589).	Using the - T<drive> parameter specifies where all data files normally written to the disaster recovery support disks (DOS Recovery disks, NetWare Recovery Files disks, and the NDS Recovery Files disks) are to be recovered from.
- U	Update Disaster Recovery System disk only	This includes the storage information (partitions and volumes), and the files listed in the SYSFILES.INI file.
- V	A viewing parameter	This enables the viewing of the storage information contained in the Control File (BEDR.BIN), located on the Disaster Recovery System Disk.
- Z	For use with <i>bootable</i> Zip drives and other similar <i>bootable</i> devices	- z tells Intelligent Disaster Recovery that Drive A: is a bootable Zip drive or other similar device.

BEDRAPP.EXE Command Line Parameters

Switch	Operation	Description
-A	Start disaster recovery process from a bootable CD or bootable tape device.	This option starts the disaster recovery process using a bootable CD or bootable tape device.
- F	Restore DOS and NetWare recovery files	This restores DOS and NetWare recovery files.
- M	Use monochrome display	This forces the system to use monochrome instead of color.



## BEDRAPP.EXE Command Line Parameters (continued)

Switch	Operation	Description
- T<drive>	Allows you to use any DOS-recognized device to recover your Intelligent Disaster Recovery data files (see <a href="#">“Using Other Media Types”</a> on page 589).	Using the - T<drive> parameter uses all data files normally written to the disaster recovery support disks (DOS Recovery disks, NetWare Recovery Files disks, and the NDS Recovery Files disks) on the DOS-recognized drive specified as part of the parameter.
- Z	For use with <i>bootable</i> Zip drives and other similar <i>bootable</i> devices	- z tells Intelligent Disaster Recovery that Drive A: is a bootable Zip drive or other similar device.

The following table explains the commands that can be used with the disk creation utility, MKIDRDSK.EXE.

## MKIDRDSK Command Switches

Switch	Operation	Description
/D	Generate only the DOS images , or when used in with the /F command, generate only the DOS images and disks.	This command creates images of the DOS floppy disks needed for disaster recovery from the image file, and places these images on the media server.
/F	Generate floppy disks.	This command creates and verifies all floppy disk images from the bootable image required to run disaster recovery.
/FO	Create floppy disks from the existing floppy disk images.	This command creates floppy disks from the current floppy disk images without generating the floppy images again.
/H	Display this help screen.	This command displays the help file.



## MKIDRDSK Command Switches (continued)

Switch	Operation	Description
/L <language>	Language-specific parameter where <Language> = (E)nglish, (F)rançais, (D)eutsch and E(s)pañol	This is used to select the English, French, German, and Spanish languages.
/N	Generate only images of NetWare floppy disks. If used with the /F command, generate images and floppy disks of the NetWare floppy disks only.	This command creates images of the NetWare floppy disks needed for disaster recovery from the image file, and places these images on the media server.
/S	Generate only an image of the <i>Disaster Recovery System</i> disk. If used with the /F command, generate image and floppy disk of the <i>Disaster Recovery System</i> disk only.	This command creates an image of the Disaster Recovery System disk from the image file, and places this image on the media server.
/T	Generate only images of NDS floppy disks. If used with the /F command, generate images and floppy disks of the NDS floppy disks only.	This command creates an image of the NDS floppy disks, and places this image on the media server.
/V	Verify disk images.	This command verifies the disk images.
/Z	Turn on debug.	This command places the MKIDRDSK utility in debug mode.
/ZL	Turn on debug with logging.	This command places the MKIDRDSK utility in debug mode and create a log file.

---



## Using Other Media Types

This section discusses the most common Disaster Recovery preparation procedures using media other than disks. Instead of using disks to create the Intelligent Disaster Recovery disks, you can use the following media types if you have them installed on your system:

- ◆ Iomega Zip drives
- ◆ Iomega Jaz drives
- ◆ Hard disk drives that contain a DOS partition but do not contain a NetWare partition

Using these devices speeds up Intelligent Disaster Recovery for NetWare's disaster recovery preparation and collection process.

### Using Zip, Jaz, or Hard Disk Space

Rather than using a set of floppy disks during pre-disaster preparation and server information collection phase, you can use Zip or Jaz cartridges, or hard disk space; however these devices must be seen under DOS, and be assigned a DOS drive letter.

You will still need to create a Disaster Recovery System disk. After creating this system disk, make sure ALL drivers required for the Zip, Jaz, or hard disk drives are copied to the system disk.

1. Create a bootable Disaster Recovery System disk by downing the server and formatting a floppy disk with the following command:
2. Copy FORMAT.COM and FDISK.EXE to the system disk.
3. Copy all required Zip, Jaz or hard disk drivers to the bootable system disk.
4. Reboot the server with the Disaster Recovery System disk, making sure all devices appear under DOS when the boot procedure finishes.
5. Down the server and reboot it to NetWare.
6. At the System Console, type:

```
FORMAT A: /S
```

```
load BEDR -B -T<Alternative media drive letter>
```

For example,

```
load BEDR -B -TE
```

where E is the drive letter assigned to a Zip drive under DOS.



Intelligent Disaster Recovery now collects all pertinent server recovery data and places it on the alternative media specified with the -T switch, instead of on floppy disks.

## Frequently Asked Questions

**I used to have three 1GB hard drives on my server when it crashed. I've replaced them with a single 3GB hard drive. How do I use Intelligent Disaster Recovery to restore my system?**

You will need to boot from the *Disaster Recovery System disk* and once loaded, press <F3> to exit to DOS. Run FDISK.EXE from the floppy and recreate the DOS Partition(s) manually.

---

**Note** If you don't remember the size of the DOS Partition(s) you can run BEDRAPP -Z to display the partition information.

---

After the system reboots and BEDRAPP is reloaded, press <F3> to exit to DOS. Run FORMAT.COM from the floppy to format the DOS Partition(s).

Next run BEDRAPP -F to recover the DOS Data Files from the DOS Recovery Files disk(s) and allow the recovery process to continue to bring up NetWare. After the server is restarted and BEDR.NLM is loaded, you are informed that *There are too few Hard Disks! Original = #, Current = #*. Press a key to exit the application. From the system console, load INSTALL and manually recreate the NetWare Partition(s) and Volume(s)

---

**Note** Don't forget to add the Name Spaces back to the Volume(s). If you don't remember the size of the NetWare Partition(s) or Volume(s), load BEDR -V to display the partition information and volume information.

---

Next, load BEDR -F to recover the NetWare Data Files. If running NetWare 4.2 or greater, load BEDR -E to recover Directory Services. Once this is complete you can execute BESTART.NCF to start Backup Exec for NetWare. After it loads, catalog and restore the media required to get back your data.

**I used to have an IDE hard drive in my server and now I am upgrading to a SCSI drive that is a bit bigger. How do I use Intelligent Disaster Recovery to restore my server?**

Make sure the BIOS is enabled for the SCSI card (so DOS will recognize the drive without the need for additional drivers) and just perform a normal recovery. During the NetWare Partition recovery process, a prompt states that additional space is available for NetWare and gives you the option of using it.

---

**Note** If you don't use it you will NOT be able to allocate it to NetWare later.

---

The recovery process proceeds normally from this point.

### **The hard disk controller in my system has changed. How do I use Intelligent Disaster Recovery to restore my system?**

Before performing the Intelligent Disaster Recover Preparation, add the additional SCSI drivers (for the new controller) to the DOSFILES.INI file in the [NetWare] section.

If you haven't done this and are using floppy disks for the recovery, reboot from the system floppy disk, and then press <F3> to exit to DOS.

If you are using bootable tape, the error `No DEVICE objects found` occurs. Press any key to continue and reboot to tape again. At the first screen, press <F3> to exit to DOS.

Next, copy the required drivers to the server boot directory (nwserver) and edit the STARTUP.NCF file and add the new drivers.

Manually copy the AUTOEXEC.NCF from the floppy to the server boot directory and execute SERVER.EXE.

Recovery should continue normally from this point.

### **The server I am restoring is not the media server. How do I use Intelligent Disaster Recovery to restore my system?**

There is no difference between installing Intelligent Disaster Recovery remotely on a remote server or locally on a media server. Make sure, however, you have a full backup of the remote server on the media server's tape drive. After the remote server backup is done, perform the Intelligent Disaster Recovery installation and preparation process on the actual remote server.

If a disaster does occur, simply perform Intelligent Disaster Recovery for NetWare's recovery process on the remote server. After the disaster recovery process completes, restore the server's data from your backup tapes.

### **Why do I need to have Backup Exec for NetWare loaded in order to prepare the disaster recovery floppy disks?**

This only occurs when you are doing a Disaster Recovery Preparation on a server that has Backup Exec installed. The Disaster Recovery process restores a minimal Backup Exec installation as well as getting your NetWare system to a running state. The preparation process needs Backup Exec loaded in order to determine which NLMs should be saved on the Disaster Recovery disks.

### **Just the drive that has the SYS: volume failed on my server. How do I use Intelligent Disaster Recovery to restore my system?**

Run the Intelligent Disaster Recovery normally. When prompted to delete existing partitions (this happens once BEDR.NLM is loaded and determines NetWare partitions already exist) say "No." Recovery will proceed normally.



**The tape drive that I am using to restore my system is not the same as the one that was being used when the Disaster Recovery Preparation was done for the media server. How do I restore my system?**

If the tape drive requires a media type different than what was used to do the original backup of the server, you will not be able to perform a restore.

However, if the same media can be used but the tape drives are housed in a different manner (stand-alone versus autoloader), then Backup Exec for NetWare must be re-installed before restoring the data. If you do not re-install the software, the recovery will still work, but you will get an error stating that no tape drives are found when Backup Exec is launched.

For example, if you've replaced a stand-alone 4mm DAT tape drive with a 4mm autoloader device, you will need to re-install Backup Exec for NetWare on your server before restoring the data.



# Using Tape Alert and Hewlett Packard OpenView Software

---

This section describes how Backup Exec for NetWare supports Tape Alert plug-ins for Hewlett Packard's OpenView SNMP Management Consoles as well as HP's OpenView for Windows and Unix programs.

*Using Tape Alert and Hewlett Packard OpenView Software* contains the following topics:

Section	Describes
<a href="#">"About the Tape Alert Plug-In"</a> on page 594	How the Tape Alert plug-in software allows you to view error history for devices managed by Backup Exec through the HP OpenView SNMP Management Console.
<a href="#">"Requirements"</a> on page 594	Software and hardware requirements for using the Tape Alert plug-in.
<a href="#">"Tape Alert File"</a> on page 595	The three files included with Backup Exec to support Tape Alert.
<a href="#">"Tape Alert Errors"</a> on page 595	The tape alert error messages that can be broadcast by the Tape Alert plug-in.
<a href="#">"Using HP OpenView for Windows with Backup Exec for NetWare"</a> on page 598	How to use HP OpenView for Windows to receive SNMP trap information from Backup Exec for NetWare.



## About the Tape Alert Plug-In

Using Tape Alert plug-in software, you can view Tape Alert error history information for any Tape Alert-enabled tape drives and Tape Alert-enabled robotic libraries managed by Backup Exec from HP's OpenView SNMP Management Console.

Examples of Tape Alert errors that can be reported include the following:

- ◆ Drive needs cleaning.
- ◆ Media is worn out.
- ◆ Tape is not data grade.

For a complete list of Tape Alert errors, see "[Tape Alert Errors](#)" on page 595.

The Tape Alert plug-in also gathers tape drive configuration information from any tape drive managed by Backup Exec, regardless of whether they are Tape Alert-enabled or not. This configuration information can be viewed using any SNMP management console.

The following tape drive configuration information is available from the OpenView SNMP Management Console using the Tape Alert plug-in:

- ◆ Name
- ◆ Tape Alert (enabled, Yes/No)
- ◆ Type
- ◆ Serial Number
- ◆ Firmware
- ◆ HBA Type
- ◆ Compression (enable/disable)
- ◆ Current Media (media label)

## Requirements

Your NetWare server must have the following software and hardware installed in order to use the Tape Alert plug-in:

- ◆ Novell's SNMP NLM
- ◆ Backup Exec for NetWare
- ◆ Tape Alert-enabled tape drives
- ◆ Hewlett Packard OpenView for Windows (optional)



## Tape Alert File

The TAPEALERT.MIB file is included with Backup Exec for NetWare to support Tape Alert. This file is used by SNMP management consoles to translate all Tape Alert SNMP information into a viewable format.

---

**Note** Backup Exec is compatible with version 2.0 of the Tape Alert Management Information Block (MIB).

---

TAPEALERT.MIB resides in the server's SYS:BKUPEXEC directory.

## Tape Alert Errors

The following Tape Alert error messages can be broadcast by a Tape Alert plug-in.

- ◆ Attempt To Read To/Write From a Cleaning Tape
- ◆ Attempt To Write To a Write Protected Tape
- ◆ Autoloader Door Open
- ◆ Autoloader Communications Fault
- ◆ Autoloader Hardware Fault
- ◆ Autoloader Magazine Not Loaded
- ◆ Autoloader Mechanism Fault
- ◆ Autoloader Predictive Failure
- ◆ Autoloader Stray Tape
- ◆ Diagnostics Needed
- ◆ Drive Humidity Limits Exceeded
- ◆ Drive Maintenance (Not Cleaning) Needed
- ◆ Drive Temperature Limits Exceeded
- ◆ Drive Voltage Limits Exceeded
- ◆ Eject Attempted When Media Locked
- ◆ Eject Media Request
- ◆ Firmware Download Fault
- ◆ Hardware Fault – Call Helpline
- ◆ Hardware Fault – Reset Drive



- ◆ Host Interface Problem
- ◆ Invalid Cleaning Tape
- ◆ Media Ejected Needed To Recover From Media Error
- ◆ Media Loaded Is Not Data Grade
- ◆ Media Loaded Which Is Read-Only In This Drive
- ◆ Media Manually Ejected While Tape Drive Was Actively Reading/Writing
- ◆ Memory Chip In Cartridge Failure
- ◆ Needs Cleaning
- ◆ Possible Read Fault – Call Helpline
- ◆ Possible Write Fault – Call Helpline
- ◆ Predictive Failure Of Hardware
- ◆ Problems Reading Data/Problems Writing Data
- ◆ Read or Write Data Error
- ◆ Routine Cleaning Request
- ◆ SCSI Interface Fault
- ◆ Snapped Tape Detected
- ◆ Suspect Media
- ◆ Tape Directory Corrupted
- ◆ Tried Backup/Restore To Cleaning Tape
- ◆ Tried Backup To Write-Protected Tape
- ◆ Unsupported Media Loaded
- ◆ Used Worn Out Cleaning Cartridge
- ◆ Worn Out Media



## Tape Library Errors

The following Tape Library errors can be broadcast by Tape Alert plug-ins.

- ◆ Illegal Library Operation Attempted
- ◆ Library Cannot Communicate With Drive
- ◆ Library Diagnostics Required
- ◆ Library Door Open
- ◆ Library Humidity Limits Exceeded
- ◆ Library Door Opened And Then Closed During An Operation
- ◆ Library Drive Taken Off Line
- ◆ Library Interface Problem
- ◆ Library Inventory Inconsistency
- ◆ Library Load Retry (Problems Loading a Tape Into a Drive)
- ◆ Library Maintenance Needed
- ◆ Library Mechanism Failure - Call the Helpline
- ◆ Library Mechanism Failure - Recoverable
- ◆ Library Pick Retry (Problems Picking Up a Cartridge)
- ◆ Library Place Retry (Problems Returning a Cartridge To a Slot)
- ◆ Library Scan Retry
- ◆ Library Stray Cartridge
- ◆ Library Placed In Secure Mode Or Taken Out of Secure Mode (Door Locked/Unlocked)
- ◆ Library Taken Offline
- ◆ Library Temperature Limits Exceeded
- ◆ Library Voltage Limits Exceeded
- ◆ Mechanical Problem With Library Media Import/Export Mailslot (Portal)
- ◆ No Magazine Loaded



## Using HP OpenView for Windows with Backup Exec for NetWare

To receive SNMP trap information from Backup Exec using HP OpenView for Windows, you must install and use VERITAS' Backup Exec SNMP MIB file, BKUPEXEC.MIB.

▼ **To install and use the file:**

1. From HP OpenView, open the **Options** menu.
2. Select **Load/Unload MIBs:SNMP**.
3. Click **Load**.
4. Browse to your Backup Exec installation directory and select **TAPEALRT.MIB**.
5. Click **OK**.
6. Exit the dialog box by clicking **OK**.

Backup Exec SNMP information will now appear in the Alarm Log.

# Glossary of Terms

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## Administration Console

A Java™ based user interface that allows you to access your NetWare server from a Windows workstation.

## Administration Console for NetWare

A server-based user interface that allows you to create and manage Backup Exec jobs. The Administration Console for NetWare does not have some of the Administration Console's advanced features, such as reports and wizards.

## Administrator

A user with extended rights to the Backup Exec system. By default, all NetWare supervisor-equivalent users (those with supervisor rights to the server object) are Backup Exec Administrators, but not all Backup Exec Administrators have NetWare supervisor-equivalence.

## Agent

The component that allows workstations or other servers to interact with the media server. There are two kinds of agents: 1) those supplied with Backup Exec, and 2) Task Service Agents "TSAs" provided with NetWare.

## Agent Login

The login the job uses to log onto a device when it runs. You have the option to save this login in the password database. When you save the login, Backup Exec will perform the agent login for you the next time the agent is accessed.

## Alert

An event that usually requires some form of user interaction or acknowledgment.



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## Allocated Media

Media that belong to a user media set, which defines the overwrite protection period (amount of time data is to be kept before it can be overwritten) and append period (amount of time other jobs can be appended to this media).

## Anchor Drive

One drive in a mirrored (or bundled) partition or drive pool, usually the drive with the lowest SCSI ID, on which some utilities are performed. When bundling drives, the drives must use the same type of media (for example, a DAT drive and an 8mm drive cannot be assigned to the same drive pool), and using drives of the same capacity and vendor is strongly recommended.

## Append

When performing a backup operation, choosing **Append** will add backup sets after the last backup set on the media.

## Append Period

The length of time that data may be added to the media. The append period starts when the first backup job is written to this media.

## Archive Backup

Backs up all selected files based on last access date, verifies the backup, and then removes the files from the hard disk. Using this backup method for the system directory is *not* recommended.

## Archive Bit

Whenever a file has been updated, the operating system sets what is called an *archive bit*. This bit is changed whenever a file is modified. For full and incremental backups, this bit is turned *off* after the backup completes, indicating to the system that the file has been backed up. If the file is changed again prior to the next incremental backup, the bit will be turned *on* and Backup Exec will back up the file.

## Backup

A process where files on a server or workstation drive are copied and stored on a reliable form of media.

## Backup Exec Agent

A Backup Exec Agent is a component supplied with Backup Exec that allows remote workstation access.



---

## Backup Job

File selections made from one or more devices that are submitted for backup.

## Backup Method

When you run a backup, you can specify how you want Backup Exec to use and set the file's backup status. This is necessary when you incorporate a backup strategy. There are six backup methods:

**Full** (*default*). Backs up all selected files and changes the files' status to *backed up*.

**Incremental**. Only backs up selected files that were modified or created (based on the archive bit) since the last full or incremental backup. Selecting Incremental will also change the files' status to *backed up*.

**Differential**. Only backs up selected files that were modified or created (based on the archive bit) since the last full or incremental backup. Selecting **Differential** does not affect a file's backup status.

**Working Set**. Like differential backups, working set backups include backing up all selected files since the last full or incremental backup without resetting the archive bit. In addition, working set backups allow you to include data that has been accessed within a specified number of days. The default is 30 days. Backup Exec performs working set operations only on volumes that support last accessed date for files (such as NetWare volumes, OS/2 HPFS volumes, NTFS volumes, and Unix NFS volumes).

**Copy**. Backs up all selected files, but does not change their backup status.

**Archive**. Backs up all selected files based on last accessed date, verifies the backup, and then removes the files from the hard disk. Using this backup method for the system directory is *not* recommended. Backup Exec performs archive operations only on volumes that support last accessed date for files (such as NetWare volumes, OS/2 HPFS volumes, NTFS volumes, and Unix NFS volumes). This backup method is not available for Media Rotation jobs.

## Backup Set

When a backup job is run, the data selected for the backup is placed together on media in a *backup set*. For example, when you do a full backup of your server volume SYS:, all of the files and directories are placed on media as a backup set. Backup sets contain files from one resource only (e.g., a server volume or client workstation drive). Files selected from multiple devices create multiple backup sets.

## Backup Strategy

The procedures you implement for backing up your network. A good backup strategy allows minimal time to get a system up and running in the event of a disaster.



---

## Backup Window

The amount of time you have to complete a backup (i.e., overnight, or at lunch time).

## Baseline Backup

The initial full backup that takes place the day a media rotation job is set up.

## Branches

This is a segment of the directory tree, representing a directory and any subdirectories it contains.

## Bundle

Two or more similar drives grouped in such a way that they can be treated as a single drive.

## Cascaded Drive Pool

The grouping of drives from the same vendor and with the same product ID so they appear to Backup Exec logically as one group. In a cascaded drive pool, large backup jobs that exceed the capacity of the media in one drive automatically continue on the media in the next drive in the cascaded drive pool.

## Catalog

Keeps track of the contents of media created during a backup or archive operation. You can only restore information from fully cataloged media.

## Collapse

To hide additional directory levels below a selected directory or to hide subnodes below a selected node in the directory tree.

## Confirmation Dialog

If you perform an action that can be destructive to data (for example, deleting a job), Backup Exec gives you a chance to change your mind before it acts on your request. A confirmation dialog box asks you to verify that you want to carry out the action. Click **Yes** if you want to proceed or **No** if you decide not to proceed.

## Continual or Recurring Job

A job that is scheduled to run on a recurring basis. With Backup Exec, you can schedule jobs to occur at a specified hourly, daily, weekly, or monthly interval. When aborted, recurring jobs reschedule themselves to run on the next interval.



---

## Copy Backup

Backs up all selected files, but does not affect the file's backup status (does not reset the archive bit).

## Device

A media drive or library.

## Differential Backup

Only backs up selected files that were modified or created (based on the archive bit) since the last full or incremental backup. Selecting **Differential** does not affect a file's backup status.

## Directory Tree Window

A graphic display of a disk's or catalog's directory structure. The directories on the disk or media are shown as a branching structure. Directories are shown as branches extending from the top-level directory known as the root directory.

## Drive Pool

A grouping of drives for Backup Exec operations. In a normal drive pool, jobs assigned to the drive pool are run on the first available drive.

## Expand

To show hidden directory levels in the directory tree or subnodes in a node. With Backup Exec, you can expand a single directory level, one branch of the directory tree, or all branches at once.

## Foreign Media

Media that contain data that is not recognized by Backup Exec and that cannot be overwritten or appended to. If you are attempting to write to media that has been created by a product other than Backup Exec, ARCserve, or SIDF formatted media, then Backup Exec will classify the media as foreign.

## Full Backup

A full backup backs up all selected files and changes the file's status to *backed up* (resets the archive bit after the files are backed up). This is the default backup method.



---

## Fully Cataloged Backup Sets

A fully cataloged backup set is the norm for Backup Exec. Backup sets are always fully cataloged unless a job is aborted or, if using the SAN Shared Storage Option and viewing the catalog from a server that did *not* process the backup. If this happens, the last backup job will be a partially cataloged backup set.

## Group Server

A media server that is not the primary but is in a group of servers sharing backup devices with the SAN Shared Storage Option.

## Highlight

Highlighted text identifies an item, such as a disk, directory, file, server, volume, media, or job, that is selected. Highlighted text appears with a colored background. For example, text may appear as white on a black background, or, on color monitors, as black with a colored background.

## Imported Media

Media created by another installation of Backup Exec for NetWare. Imported media includes media created by previous versions of Backup Exec, ARCserve, and SIDF formatted media.

## Incremental Backup

Only backs up selected files that were modified or created (based on the archive bit) since the last full or incremental backup. Selecting **Incremental** will also change the files' status to *backed up*.

## Job

A job is a task that has been scheduled for processing by the media server. For example, if you make selections and submit a backup based on those selections, you have created a backup job.

## Job Log

Created when a job runs, the job log contains the results from the job. You can review the job log to find out if your job was completed successfully.

## Job Schedule

The job schedule is a view of the jobs waiting to be processed.





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## Media Description

The description that a user assigns to the media. Each media must receive a media description. Media descriptions allow you to track the media; however, Backup Exec tracks media by the media ID.

## Media Family

When a backup spans media, the media that contain the backup are referred to as a *media family*. Media families share the same media ID.

## Media ID

A unique label assigned by Backup Exec to individual media or a media family the first time that data is written to the media. Catalog numbers coincide with the media IDs. Media IDs are independent of media names.

## Media Name

The name that is provided either by a bar code reader or generated by Backup Exec using the default label prefix set in the media server options.

## Media Server

A NetWare file server on which the backup software and hardware is installed.

## Menu Bar

A row of on-screen menu options, appearing at the top of the computer screen or window.

## Mirrored Drive Pool

The bundling or grouping of two or more similar drives so that multiple copies of a backup can be created without having to create multiple jobs

## NetWare Agent

A NetWare Agent, also known as a TSA, is a component supplied with Novell's NetWare that allows remote workstation access. In the application, you see these agents under the NetWare Agents branch in the Backup Sources and Restore Sources.

## Object

An object is any type of entity contained within a network service. These include file servers, print servers, user groups, or volumes. In Backup Exec, most objects are volumes. Objects are always the final level of the Tree; any items contained within expanded objects are displayed in the Directory window. An object can also refer to an NDS object.



---

## Once-Only Job

A job that is scheduled to run one time only. After a once-only job has processed, Backup Exec deletes it. In order for a similar job to occur again, it must be submitted again. If a once-only job is aborted, you are prompted if you would like to place the job on hold.

## Overwrite

When performing a Backup operation, choosing **Overwrite** will start the backup at the beginning of the media, and will replace the data on the media with the data being backed up.

## Overwrite Protection Period

The length of time to retain the data on the media before the media can be overwritten (unless the media is erased, formatted, moved to scratch media, or if the Media Overwrite Protection Level is set to None). The overwrite protection period is measured from the last time data was appended to the media.

## Partially Cataloged Backup Sets

A partially cataloged backup set results from an aborted job or in the SAN Shared Storage Option (SAN SSO) when another server performs the backup. In Backup Exec, you cannot select individual files from a partially cataloged backup set, but you can restore the entire set. In order to fully catalog the backup set, you must perform a full catalog of the media (do not use on-media catalogs). If using SAN SSO, the server that processed the backup will have a full catalog of the backup set; the other servers in SAN SSO network will have partially cataloged backup sets.

## Partition

A partition is one or more media drives (or loader slots) assigned to run jobs by type (e.g., backup, cleaning, etc.).

## Password Database

Backup Exec allows you to use an online password database to store login information. If you use this database, you will be prompted for login information (password and user ID) the first time you access an agent that is protected by password security. Your login information is then stored in the database and automatically supplied the next time you attach to the server.

## Password Database Usage

The password database is a collection of passwords required for access to various devices from the Administration Console. Backup Exec makes use of this database when:



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*Users are accessing devices in the directory tree that require a password. Initially, users are prompted to enter a password and a user ID for the device. The system adds this information to the password database. After this initial access, users are no longer prompted for security information when accessing the device.*

*Users load saved selections. If the database is used, the system does not prompt for a password for each device included in the selection set. Therefore, usage of the database streamlines the use of selection sets.*

Backup Exec enables you to protect the database itself through a password. If your database is password protected, Backup Exec prompts you for the database password when you start the application. If you enter the correct password, the password database is opened for use during the session. If you enter an incorrect password, Backup Exec displays an error message and gives you another opportunity to enter a correct password. You have three chances to enter a correct password; if all three tries are unsuccessful, Backup Exec starts with the password database locked. You cannot enable the password database or work with it in any way while it is locked. You must restart the application using a correct database password to unlock the database.

## **Permanent Backup**

A backup that is intended to never be overwritten.

## **Primary Group Server**

The media server that is in charge of arbitrating access to a group of shared backup devices when using the SAN Shared Storage Option.

## **Policy**

A reusable collection of attributes, including job options and the job frequency, that are defined by the user and can be assigned to multiple resources.

## **Publish**

In order for Backup Exec to recognize a workstation volume, the volume must be published through the Backup Exec Agent. Publishing a volume *advertises* the existence of that volume to the Administration Console or Administration Console for NetWare. Until the volume is published, clients cannot access it. To publish a volume, use the Agent Publisher program furnished with Backup Exec.

## **Recurring or Continual Job**

A job that is scheduled to run on a recurring basis. With Backup Exec, you can schedule jobs to occur at a specified hourly, daily, weekly, or monthly interval. When aborted, recurring jobs reschedule themselves to run on the next interval.



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## Recyclable Media

Media that is assigned to a media set but has expired data overwrite protection periods.

## Resource

A server volume or workstation share that can be selected for backup protection.

## Restore

A process by which data that has been backed up to media is returned to disk.

## Retired Media

Media that has been taken out of service, usually because of an excessive number of errors. Media that is retired is available for restore but backups will not run to it. Media must be retired before it can be deleted. If you want to use media that has been deleted, Backup Exec will recognize it as imported media. It must be cataloged before you can restore from it.

## Scratch Media

Media that do not belong to a media set and can be overwritten, including new or blank media, erased media, and media moved from another group to scratch media.

## Scroll Bar

A bar that appears at the right and/or bottom edge of a window whose contents are not completely visible. Each scroll bar contains two scroll arrows and a scroll box, which allows you to scroll within the window.

## SCSI

Small Computer Systems Interface is a hardware interface that allows for the connection of multiple peripheral devices to a single expansion board that plugs into the computer. The interface is widely used to connect personal computers to peripheral devices such as disk and media drives.

## Selection Lists

A selection list is a template of file selections you save that can be reused for future backup operations. These file selections identify a set of specific drives, directories and files that you want to perform operations upon.

## Service

A group of objects within a NetWare agent. An object includes file servers, workstation groups, etc.



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## Split Bar

When you are in a directory tree window, the window is split into multiple parts. Use your cursor to move the split bar and adjust the size of each window portion as needed.

## Toolbar

The bar at the top of the Administration Console window containing buttons representing Backup Exec functions. To quickly access one of these functions, click the appropriate icon.

## TSA

A Task Service Agent (TSA) is a program within Novell's SMS that provides access to a specific object. For example, if you want to perform operations on a DOS workstation through SMS, you will have to install the DOS TSA on that workstation.

## User

A user is anyone who does not have NetWare supervisor-equivalence and has not been granted Backup Exec Administrator status.

## Volume

A volume is a defined amount of hard disk storage space. It is considered to be the highest level of the directory structure, similar in concept to the root directory in DOS. Volumes can be divided into directories, which can be subdivided into subdirectories.

## Wildcards

Backup Exec supports the use of wildcard characters to include groups of files in an operation. Use a question mark (?) to identify any single character, and an asterisk (\*) to identify any number of characters.

### Examples:

\*.DOC includes all files with an extension of .DOC.

?????.B\* includes all files whose extensions begin with B and whose names contain precisely five characters. File 12345.B2 would be included, but 1234.BBB or 12.B would not, because their names do not contain exactly five characters.

If you are searching for a file using the Catalog Search function, it is recommended that you try to specify the first character or two of the file name. This will speed the search process.



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## Working Set Backup

Backs up all files that were accessed or created since a user specified date or number of days. Similar to the differential backup, the Working Set backup should be used in conjunction with a full backup. Unlike a differential backup, however, the Working Set backup allows you to quickly restore active files first. A full restore can then be done, not allowing file overwrites to occur, for a full restoration of the user's data.



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