

ARCserve 6 for Windows NT User Guide

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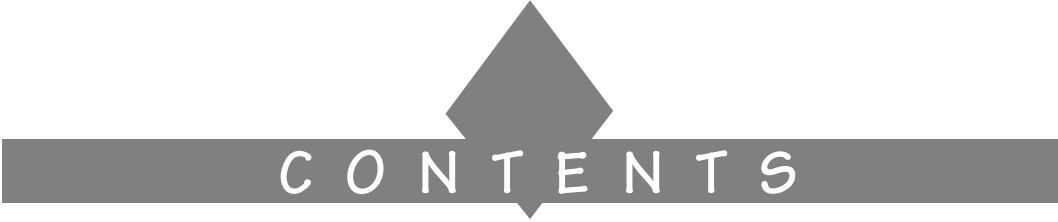
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1

Chapter

GETTING STARTED

This chapter describes ARCserve products and explains how to get started using ARCserve for Windows NT.

In this chapter, you will learn about:

Page	
1-2 >	The ARCserve family of products and how ARCserve works
1-8 >	New features in ARCserve for NT v6.0
1-15 >	Installing ARCserve on your machine
1-20 >	How to use tape devices that were installed through <i>Windows NT Setup</i>
1-22 >	Starting ARCserve
1-23 >	How to back up your machine - a tutorial

The ARCserve family of products

ARCserve for Windows NT is available in the following versions:

Version	Description
Enterprise - Windows NT servers and workstations	Perform immediate, scheduled, or automated backups of your local and remote Windows NT machines attached to your network. Back up remote machines using the enterprise client agents.
Single Server	Back up only the host server and any additional share points that are mapped to that server.
Workstation	Back up only the host machine and any additional share points that are mapped to that workstation.

Restoring data back to your machines on the network is easy and flexible with ARCserve. Each restore job requires a source.

All ARCserve for Windows NT versions can work together.

Note: This manual is designed for all versions of this product. If you are using the Single Server or Workstation version, not all the functions described herein may be operational.

What is ARCserve for Windows NT?

1

ARCserve for Windows NT is a data management and backup program that allows you to back up data from your Windows NT workstation or other machines attached to your network.

ARCserve's advantages include:

- **Scheduled backups:** schedule repeating backup jobs that are custom-made for your environment.
- **Tape Rotation:** plan your tape rotation schemes using a friendly interface.
- **Tape spanning:** large jobs automatically span multiple tapes until the job is complete.
- **Parallel streaming:** run jobs concurrently when using multiple tape devices.
- **Reports:** view job history and activity on the machines, directories, and tapes.
- **Cheyenne AntiVirus integration:** automatically scan files during a backup operation.
- **User-defined scripts:** configure jobs once and re-use them when needed.
- **Intelligent restore:** the ARCserve database system allows you to quickly locate and restore your archived data.
- **Tape support:** back up your files to a wide variety of SCSI 4mm, 8mm, DLT, and QIC tape drives.
- **Single Server:** reduces network traffic because the data can stay locally.
- **Remote Management of ARCserve Servers:** the Enterprise version allows you to manage multiple servers from a single machine. Gives you the ability to back up, copy, and restore any Windows NT machine and Novell NetWare servers in your network.

-
- **Event-driven notification system:** the Cheyenne Alert notification system informs you of key events in your operations.
 - **Enterprise client agent support:** back up remote machines using the Cheyenne client agents (such as Client Agent for NetWare), which employ the latest PUSH technology.
 - **Applications agents:** allow you to backup complex databases and groupware such as MS-Exchange and Lotus Notes.
 - **Windows NT 3.51 support:** back up compressed files, directories, and drives on Windows NT File System (NTFS) formatted drives. Also supports Service Security Impersonation.
 - **Auto Changer (optional):** use an autochanger with your backup rotation.
 - **NetWare compatibility:** back up, copy, and restore any Windows NT machine and Novell NetWare server in your network.
 - **Easy-to-use interface.**

How does ARCserve work?

ARCserve consists of two main components that work together to back up, copy, and restore your data. The components are:

- The ARCserve Manager
- The ARCserve Server

The ARCserve Manager

The ARCserve Manager enables you to control all operations of ARCserve from a single machine. Use the ARCserve Manager to submit your backup and restore jobs, manage your database, search reports, etc.

1

The ARCserve Server

Using the information you specified in an ARCserve Manager window, the ARCserve Server is the module that performs the operations you set up. The ARCserve Server directly manages the backup procedure controlling the job, tape, and database engines.

The Job Engine

The Job Engine is responsible for processing your jobs at their designated date and time. It constantly scans the job queue. When it finds a job that is ready to run, the job engine sends it to the appropriate handler.

The Tape Engine

The Tape Engine is responsible for communicating with and controlling your tape devices. When a tape device is needed for an ARCserve job, the Tape Engine lets your hardware know it is needed.

The Database Engine

This engine is responsible for maintaining the history of several things:

- Files, directories, drives, and machines that ARCserve has backed up or copied.
- Information about jobs that have been processed by ARCserve, such as the type, the final result, the start and end time, etc.
- Tapes used by ARCserve, such as the name, date it was first formatted, date it expires, sessions on it, etc.

By default, everything that happens within ARCserve is recorded by the Database Engine.

Software Preview

The main software components of ARCserve are as follows:

Backup

Back up data to tape. ARCserve allows you to perform a complete system backup of all Windows NT machines. The Windows-NT system information (such as registry information for each machine) is backed up intact, allowing you to completely restore the machine in the event of system failure.

The optional Client Agent for Netware is available for backing up NetWare file servers. Without the agent, NetWare-specific files (such as bindery and NDS information) are backed up as DOS files. With the agent, all NetWare-specific files are backed up intact, ensuring complete backup/restore of the NetWare file server. Client agent software is also available for other operating systems.

Information about each backup job (such as the path and name of each file, as well as the tape used) is logged in the ARCserve database.

Restore

Restore data from tape using a variety of intelligent restore techniques, including rapid lookup and retrieval of lost data.

Data Management for Tapes and Disks

Manage data on tapes by comparing files on a tape to files on a machine, scanning a tape for information about one or more tape backup sessions, and adding information

from a tape to your existing ARCserve database. Manage data on disks by copying files and directories from one drive to another, counting and deleting files on a machine.

1

Job Status

Monitor all pending, completed, and active jobs from the Job Status Manager window. Reschedule pending or completed jobs. Submit new jobs, delete jobs, and stop active jobs. Log information is provided for each completed job.

Device

View information about your tape devices and tapes, change a tape drive's compression mode, and perform tape maintenance functions such as formatting, erasing, and retensioning.

Database

View information from the ARCserve database, such as the jobs processed by ARCserve, the tapes used by ARCserve, and the devices you are using with ARCserve. Generate reports from the database.

New features overview

This section provides an overview of the new features for ARCserve for Windows NT v6.0.

Scheduling and tape rotation

The job scheduler is now accessed by selecting the new Schedule tab in the job submission manager windows (such as Backup, Restore, or Copy). You no longer have to click the *Run* button to specify scheduling information.

A *Rotation Scheme* option has been added to the Backup manager Schedule tab, allowing you to implement a tape rotation scheme for backing up files to tape.

Refer to the section, 'Scheduling a job' in Chapter 6, "Customizing Your Jobs", for more information about scheduling jobs using a tape rotation scheme.

Automated media management

The new Media Pool Manager window allows you to create and maintain media pools for a logical grouping of media. The following features are included:

- Flexible and Customizable Media Rotation Schemes including Grandfather-Father-Son (GFS).
- Media serial number and bar code support with autochangers.
- Easy-to-use interface including calendar view to handle scheduling and exceptions.

Enterprise-wide Job Status view

1

The new Job Status manager window allows you to more easily manage the jobs in your enterprise networking environment. The following features are included:

- Explorer-like tree view and property dialog consistent with Windows NT 4.0 and Windows 95 interface.
- Easy to manage enterprise network: all ARCserve Servers on the network can be browsed through a tree view display. Users can group preferred ARCserve Servers and view job status, monitor active jobs as well as view activity logs.
- User configurable column list view display: column list layout including column width, position/ordering and sorting order can be memorized.
- Drag-and-drop support.

To view the new Job Status manager window, either:

- > Click on the Job Status button on the toolbar.
- > Choose Job Status from the Manager menu.

RAID Option support

The ARCserve RAID option allows you to utilize a Tape RAID system for high speed backups. Refer to the *ARCserve for Windows NT RAID Option User Guide* for further information. This option must be purchased separately.

Image Option support

The ARCserve Image Option allows you to perform high-speed *image* backups.

The Image Option achieves high backup speeds by connecting directly to the volume you want to backup, bypassing the file systems and reading in data directly. In this way it creates an “image” of the volume and achieves high speeds by writing this volume image to tape rather than backing up the volume file by file.

The ARCserve Image Option must be purchased separately. For more information about this option, refer to the *ARCserve for Windows NT Image Option User Guide*.

Automatic server discovery

ARCserve automatically discovers all other ARCserve Servers on your network.

Client Agent support

ARCserve’s Client Agents allow to efficiently back up and restore complete system information for all platforms.

Client Agents are available for the following operating systems:

- Windows NT
- Windows 95 and Windows 3.1 (Client Agent Beta)
- NetWare
- UNIX
- OS/2 (beta)
- Macintosh (beta)
- Compression - data was compressed by client agents before sending through the wire to increase throughput.

- Encryption - provide security of data transmission and data on the tape.
- Multi-stream processing - One client agent can handle different requests and perform multiple jobs at the same time.
- Integrated Authentication - Use existing NT security for remote authentication.
- Client agents auto-discovery - discover all client agents on the network manually input by user.

Database Agent support

ARCserve's Database Agents (DBagents) allow you to backup and restore complete databases using ARCserve for Windows NT. The DBagent acts as a 'go-between' for ARCserve and the database system, enabling data to be smoothly passed between them.

ARCserve v6.0 supports the following Database Agents:

- DBagent for SQL 6.0
- DBagent for Oracle
- DBagent for SAP R/3
- DBagent for Exchange Server
- DBagent for Lotus Notes

Database Agents are sold separately. For more information about any Database Agent, refer to the User Guide for that agent.

Windows NT 4.0 support

ARCserve for Windows NT v6.0 runs on Windows NT 4.0 Beta systems.

The following enhancements are included in the ARCserve v6.0 release:

- Fully integrate ARCserve with Windows NT 4.0 through Shell Extensions:
 - Context Menu Handler - Instance backup of drives from context menu by just right click on drives. Submit pre-saved jobs from context menu item by right click on job scripts.
 - Icon Handler - display different icon for each job type for ARCserve job scripts.
 - Property Sheet Handler - Display Cheyenne-ARCserve backup status on properties of drives. Display job information from properties of job scripts.

New utilities

The following new utilities are available:

- ARCBatch - Command line job scheduling utility to enhance remote job management.
- Tape Copy/Compare Utility- provides the following advantages:
 - Tape to tape copy operation to enhance protection for data.
 - Tape session copy/compare operation.
- RDS Utilities for ARCserve Database maintenance.
- **Improved Alert notification:** wildcard pattern matching for error messages as an Alert event, per event and per job based Alert notify methods and recipients configurable through ARCserve.

- **Enhanced pre/post execution:** conditional pre-execution, job execution and post-execution based on previous results (exit codes). Pre/post execution not only is supported for before/after job execution but also before/after execution on machines.
- **Capability to submit Registry as job:** partial and full backup and restore of Registry.



1

Installing ARCserve

The following checklist summarizes the steps you need to take to install and start using ARCserve

Action	For more information refer to:
Make sure your machine has at least one SCSI board supported by Windows NT and by ARCserve -ARCserve supports up to 8 installed SCSI boards	For a list of certified SCSI boards, refer to Cheyenne's list of approved devices.
Attach a certified tape drive -You must make sure the tape drive is initialized before turning on your machine, otherwise Windows NT and ARCserve will not register its presence.	For a list of certified tape drives, refer to Cheyenne's list of approved devices.
Evaluate ARCserve hardware and software requirements	This chapter.
Install ARCserve	This chapter.
Start ARCserve Manager	This chapter.
Insert a tape into the tape drive	
Configure your tape groups -If you have more than one tape drive, you can separate your drives into different groups to allow parallel streaming. -If you have two or more of the same type of tape drive, you can include them in the same group to allow automated tape spanning.	Chapter 7, "Managing Devices and Media".
Back up your files -Open the Backup Manager. -Select an ARCserve Server if you are running ARCserve Manager remotely. -Select your source (the files you want to back up). -Select your destination (the tape you inserted into the tape drive). -Run the job.	Chapter 3, "Backing up Data".

Hardware and software requirements

To install and use ARCserve, you will need the following hardware and software:

Processor Type	80386 DX or higher computer
Operating System	Windows NT version 3.5 or higher
System Memory	A minimum of 16 megabytes
Disk Space	20-25 megabytes (16 MB for ARCserve files and 5-10 MB for database when jobs are running)

1

Installation

ARCserve has the following installation options:

- Full Setup - install all components of ARCserve on a single machine.
- Custom Setup - install one or more components of ARCserve on a single machine.
- Uninstall - uninstall ARCserve for Windows NT.

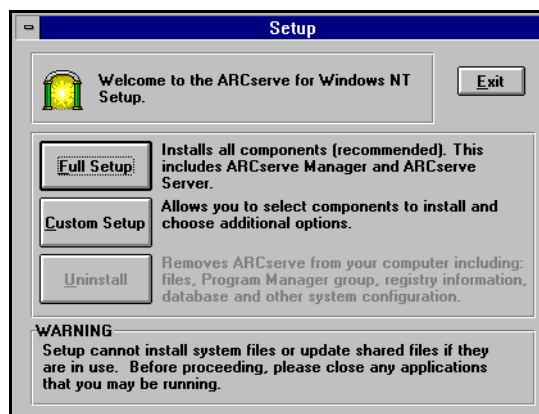
Note: When you enter a username and password during Setup, a new user is automatically added to your Windows NT server during installation. Refer to the section, 'The automatically created User Account' later in this chapter.

Full setup

Follow these instructions to install ARCserve on a Windows NT machine:

-
1. Log on to Windows NT as an Administrator or as a user in the Administrator group.
 2. Insert the ARCserve 6 for Windows NT CD-ROM into a CD-ROM drive.
 3. Run *setup.exe* from the ARCserve CD-ROM.

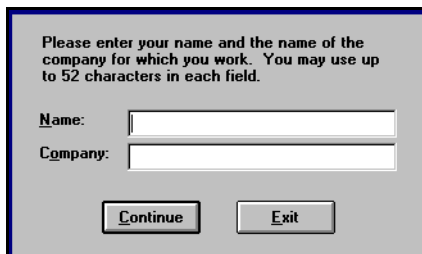
The Setup dialog box opens:



Choose one of the following options:

- **Full Setup** - all components of ARCserve are installed. Go to the next step to continue.
 - **Custom Setup** - select the components of ARCserve that you wish to install. Refer to the 'Custom Setup' section on page 1-20.
4. For a full setup, click the Full Setup button.

The following dialog box opens:



Enter your name and company name. Verify the information when prompted.

5. Click Continue, verify that this information is correct.

The Setup license dialog box appears:

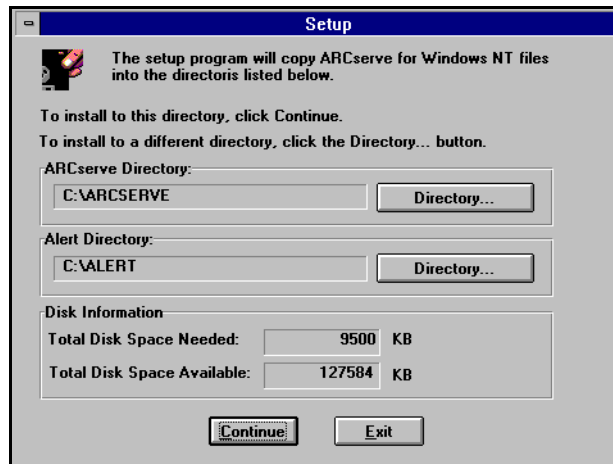


6. Enter your 20-digit CD Key (license) in the spaces provided.

You can find this number on the sticker on the back of your CD case.

7. Click Continue.

The following dialog box opens:



8. Select your installation directories.

Specify the directories where you wish to install ARCserve and Alert. To change a default directory, click the Directory button next to the directory you wish to change.

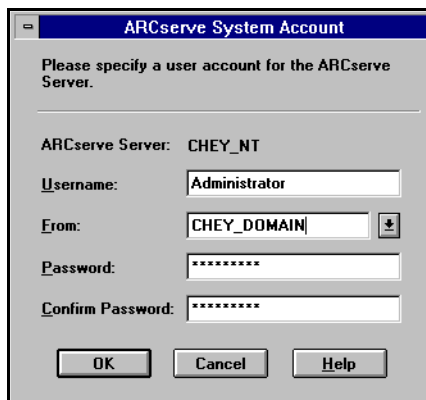
Follow these guidelines when choosing a directory:

- ARCserve and Alert files must be installed in separate directories on a local drive. Don't install files on a network drive or to a root directory.
- The directory path can be any File Allocation Table (FAT), High Performance File System (HPFS), or Windows NT File System (NTFS) drive. For security reasons, however, we recommend you select an NTFS drive.
- If the specified directory does not exist, it will be created for you.

9. Click Continue.

The ARCserve system is installed and all files are copied to the specified directories.

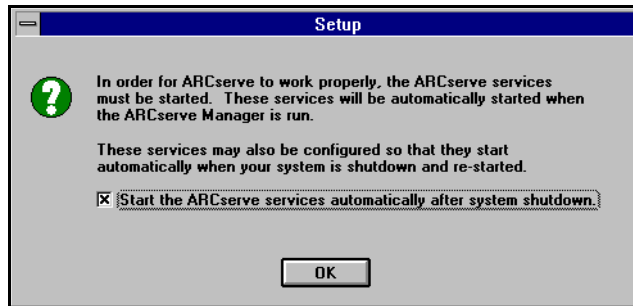
Next, the ARCserve System Account dialog box opens:



Enter a valid username and password for the Windows NT machine on which the ARCserve Server is installed. Setup automatically creates the user (For more information, see the section below, 'The automatically added User').

10. Click OK.

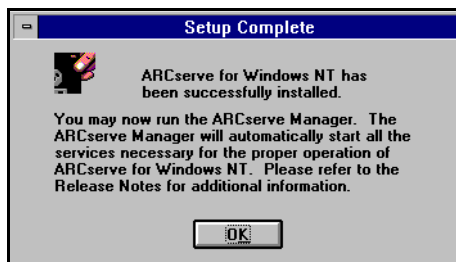
Setup creates the ARCserve program group and the following dialog box opens:



Select or clear the available option.

11. Click OK.

The following message is displayed.



12. Click OK.

Your installation is complete.

13. Read the important information in the following sections before you run ARCserve:

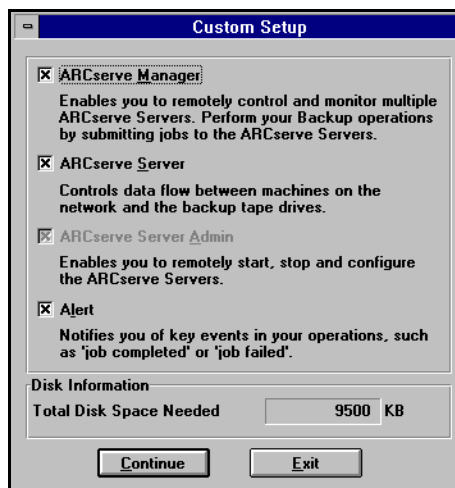
- 'Using tape devices installed through Windows NT Setup'
- 'The automatically added user'

Custom Setup

To install only selected components of ARCserve Server on a machine, follow these instructions:

1. Follow steps 1-3 in the 'Full setup' section on page 1-15.
2. From the Setup dialog box, click the Custom Setup button.

The Custom Setup dialog box opens:



3. Select the components that you wish to install.
4. Click the Continue button.
5. Follow steps 6-9 in the 'Full setup' section on page 1-15.

Using tape devices installed through Windows NT Setup

During ARCserve's installation you will see a dialog box that lists any tape devices that were installed through *Windows NT Setup*.

Because they were installed through *Windows NT Setup*, the devices on this list are dedicated to other applications (such as Microsoft Windows NT Backup) and cannot be used by ARCserve.

1

Note: You will only see this list if you have tape devices that were installed through *Windows NT Setup*. You will not see this list if you've simply plugged your tape device into its board and then run the ARCserve Setup program.

After installation you must disable the device

In order for ARCserve to be able to recognize and use a tape device from this list, you must do one of the following:

- Disable the tape device through *Control Panel - Devices* and then reboot your machine.
- Remove the tape device through *Windows NT Setup - Options - Add/Remove Tape Devices*.

Refer to your Windows NT manuals for more information about using these features.

The automatically added user

When you install ARCserve and enter a username and password, Setup automatically creates the user for you and adds it to your User Account Database. This user is also added to the Administrators group and the Backup Operators group. For the Backup Operators group, the following advanced user rights are enabled:

- Act as part of operating system
- Log on as a service

Refer to your Windows NT manuals for more information about using these features.

Starting ARCserve

To start the ARCserve Manager:

1. Double-click the ARCserve Manager icon.

The ARCserve Quick Access window appears. From here you select the ARCserve operation you want to perform.



Backing up your machine - a tutorial

ARCserve has powerful backup capabilities that are easy to use. You can back up shared Windows NT files and directories, as well as entire drives, to tape. In addition, you can back up files stored on NetWare file servers.

For this tutorial we are going to do three things:

- Select a server (to use an ARCserve Server running on a remote machine)
- Format a tape
- Back up your entire machine

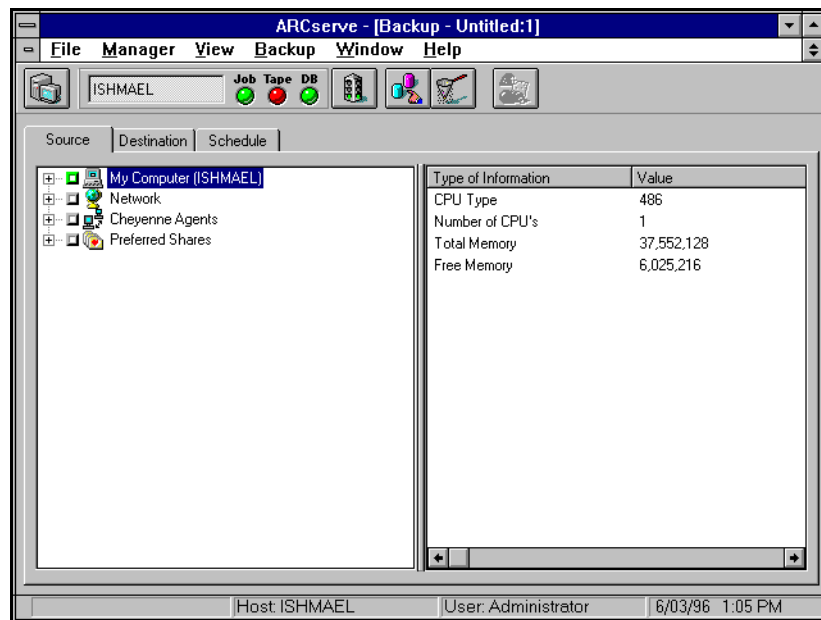
1

Beginning the tutorial

To complete the tutorial:



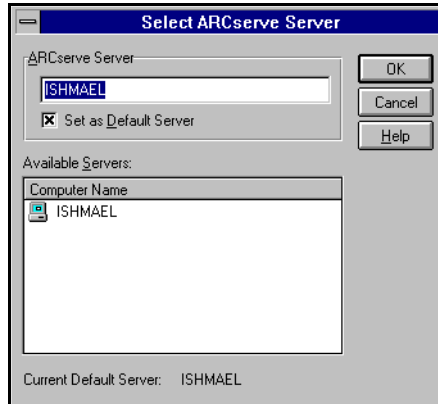
1. Click the Backup button from the Quick Access window. The Backup Manager appears.



If you wish to select a remote ARCserve Server for this backup job, go to the next step. Otherwise (if you are using the ARCserve Server that is installed on this machine) go to step 8.

2. Click the Select Server button. 

The Select ARCserve Server dialog box opens:



3. Select a server from the Available Servers list.
4. Select the option *Set as Default Server* to make this your default server.
5. Click OK.

A new server is selected for this Backup window.

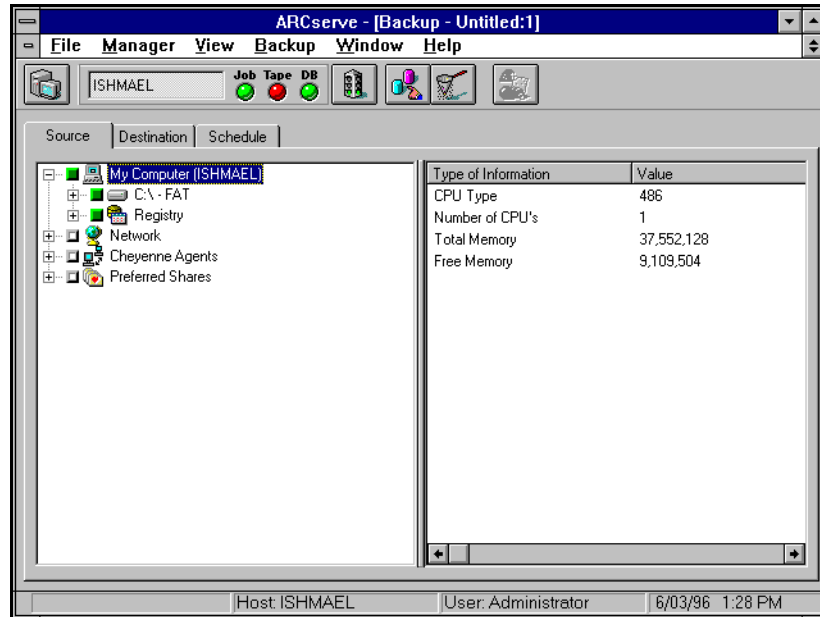
6. From the Backup window, select the Source tab (if it is not already selected).

The Browser displays the machine tree from which you can select machines, volumes (drives), and directories for backup.

7. From the Browser, select “My Computer”.

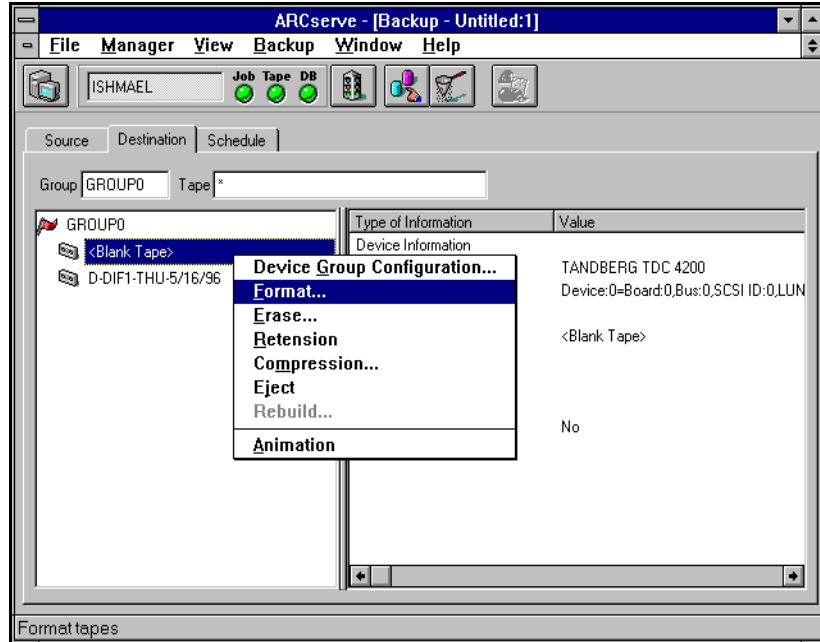
Click the green box next to “My Computer” so that it looks like . This selects all of the drives, directories, and files on your machine.

Your screen should now look similar to the following:



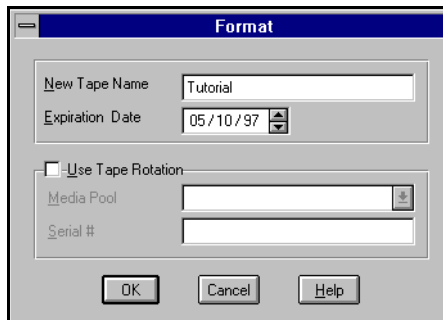
1

8. Select the Destination tab.
The Browser now displays the tape groups and tapes you can select for your destination.
9. Highlight <Blank tape> and click your right mouse button.
A menu appears in the Browser:



10. Select *Format* from this menu.

The Format dialog box appears:



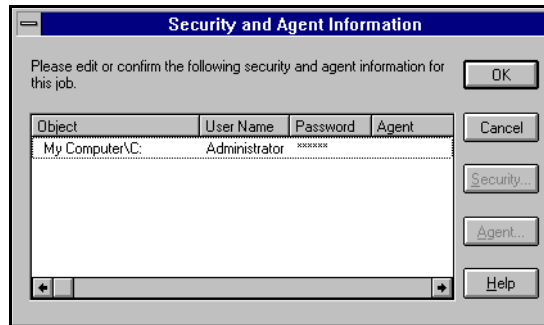
11. Type in the name of the tape and click OK.

ARCserve formats the blank tape, giving it the name you entered

12. With the newly formatted tape selected, click the Run button.



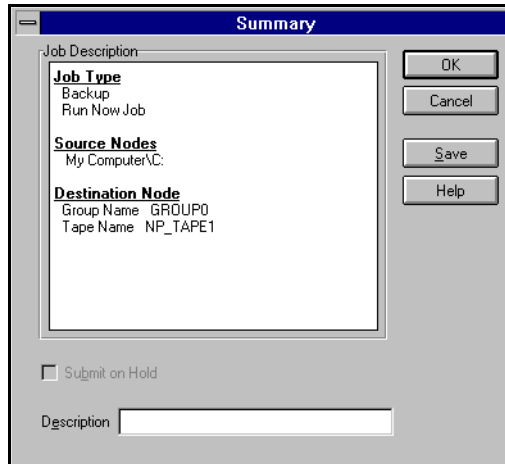
The Security and Agent Information dialog box opens:



This dialog box displays the security and agent information for each machine that is selected as a source. Select the machine “My Computer” and click the Security button to enter the username and password for your machine.

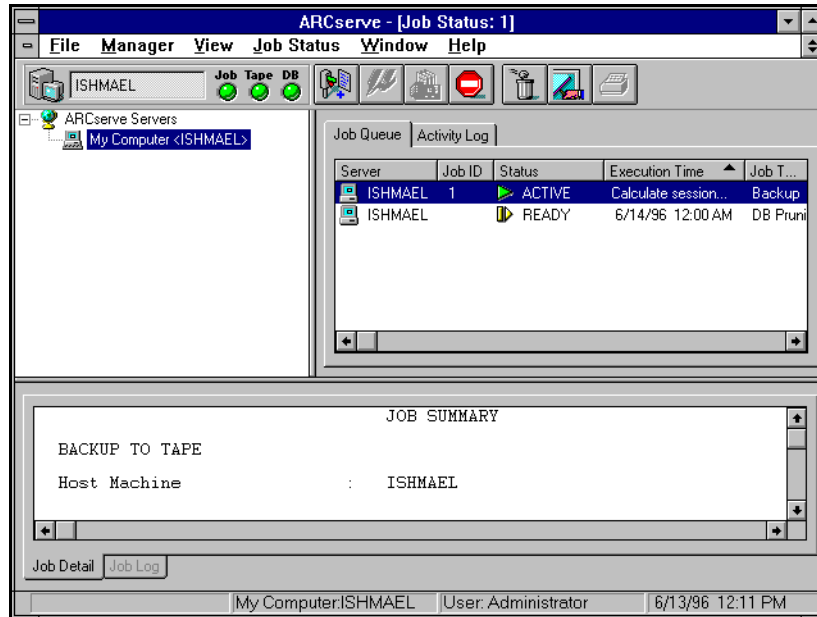
13. Click OK to continue.

The Summary dialog box opens:



15. Click OK to run this backup job.

The Job Status Manager appears:



17. When the job is complete, select the Job Log tab in the lower to view the activity log entry for your job.
To view details of the job, select the Job Detail tab.

2

Chapter

BASIC PROCEDURES

This chapter explains the basic procedures that you must know in order to operate ARCserve for Windows NT.

In this chapter, you will learn:

<i>Page</i>	
2-3 >	Quick Access Menu
2-3 >	Selecting an ARCserve Server
2-8 >	Selecting machines, files, and directories for ARCserve operations using the machine tree in the Browser
2-19 >	Selecting tape groups and tapes for ARCserve operations using the tape tree in the Browser
2-22 >	How to use online Help

Customizing the Quick Access Toolbar

ARCserve's menu bar appears at the top of every window. This menu bar contains drop-down menus by which you can select a function to be performed.

Whenever the step-by-step instructions in this manual tell you to select a function from a menu, use your mouse to highlight the menu option.

You are able to customize the toolbar with the ARCserve Manager by selecting one of the two Quick Access methods:

- A detailed window
- A toolbar

To set your preference for the way Quick Access is displayed:

1. Start the ARCserve Manager screen (refer to Chapter 1).
2. From the View menu, select *Quick Access Detail*.
This is the default view. The Quick Access window is shown above.
3. From the View menu, select *Quick Access Toolbar*.
The Quick Access toolbar appears at the top of the ARCserve Manager window, as shown below:



To configure so no Quick Access is displayed:

1. From the View menu, select *Quick Access Detail*.
This action displays the Quick Access window.
2. Close the Quick Access window.
3. From the View menu, select *Save Quick Access Settings Now*.

From now on (until you select another setting), Quick Access will not appear on your desktop, either as a window or toolbar.

Using keystrokes instead of mouse

You can also use keystrokes to choose menu options. From the Main menu, or the Quick Access screen, you can press the ALT key together with the underlined letter to select a menu.


Once the menu is displayed, you can select an option from it by pressing the underlined letter in the option name.

2

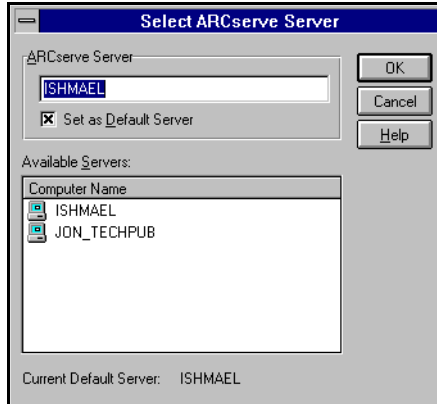
Selecting an ARCserve Server

You can select an ARCserve Server from any Manager window that submits job requests to a server, such as the Backup window or the Restore window. You can select a different server from each open Manager window.

To select an ARCserve Server from a Manager window:

1. Click the Select Server button  on the mini Server Admin.

The Select ARCserve Server dialog box opens.

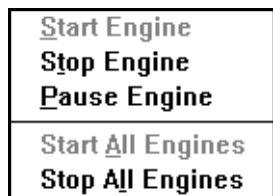


2. Select a server from the Available Servers list.
3. Select the option *Set as Default Server* to make this your default server.
4. Click OK.

A new server is selected for this Manager window.

Controlling the ARCserve Server engines

You can use the mini Server Admin pop-up menu, shown below, to view and change the state of the ARCserve Server engines:



For more information about using this menu with the ARCserve Server engines, refer to Chapter 10, “Administering the ARCserve Server”.

Determining engine status

The color of the lights in the mini ARCserve Server Admin indicates the current state of each ARCserve engine.

- Green light - the engine is running
- Red light - the engine is stopped
- Yellow light - the engine is paused

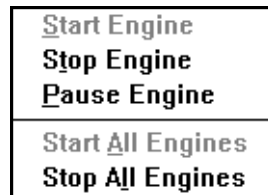
2

Changing the state of an engine

To change the current state of an engine:

1. Place the cursor over the engine's status color and click the right mouse button.

The Mini ARCserve Server Admin menu appears



You can also start and stop the ARCserve engines by selecting the appropriate option from the File menu.

2. Choose to start, stop, or pause the engine or all the engines.
The engine's status color will change to reflect the engine's new state.

Starting the engines as needed

ARCserve Manager can automatically start the ARCserve engines *as needed* during your operations. To start the ARCserve engines as they are needed, select the option *Auto Start Engines* from the File menu.

For example, if the Auto Start Engines option is selected, then the Tape engine is automatically started when you open the Backup window. Similarly, the Tape and Database engines are started when you open the Restore Window.

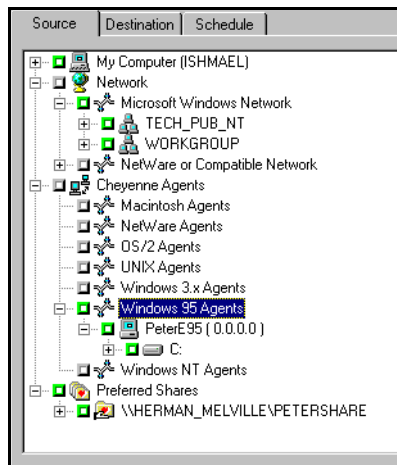
Starting the engines on Windows NT startup

The Setup program provides an option to automatically start your engines on Windows NT startup. You can also specify this option by configuring the ARCserve engine services in the Windows NT Services program. (Click the Services icon in the Windows NT Control Panel program group to access this program.) Refer to your Windows NT manuals for more information.

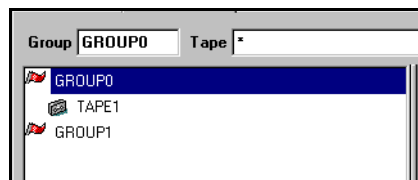
Using the Browser

The Browser facility is used in many Manager windows to enable you to choose the source and destination for your backup, copy, and restore operations. The Browser operates in two modes:

- **Machine tree:** view and select files, directories, drives, shares, machines, volumes, and servers.



- **Tape tree:** view and select tape groups and tapes.















The Browser mode is determined by the type of operation (e.g. backup or restore) and whether the *Source* or *Destination* tabs are selected. In the figure above, a machine tree is shown in the Browser:




Using the machine tree in the Browser

The machine tree in the Browser enables you to view and select files, directories, drives, shares, machines, volumes, and servers for your backup, copy, restore, and related operations as shown in the previous screen.

Basic elements of the machine tree

The basic elements of the machine tree are described in the following table:




Symbol	Represents
	Available network on your LAN
	My Computer
	Registry
	Cheyenne Agents
	Network Provider (e.g. Microsoft Windows network or NetWare network)
	Windows NT Domain or Workgroup
	Windows NT machine
	Novell NetWare file server
	Preferred Shares
	Disk drive
	Directory
	File

Symbol	Represents
	Indicates that the file, directory, or volume is compressed
	Indicates that the view for the icon can be expanded. Clicking the plus box expands the view.
	Indicates that the view is fully expanded. Clicking the minus box collapses the view.

2

Selecting an item in the machine tree

To select an item in the machine tree, click the green selection box to the left of the item. A solid box indicates that the item has been selected. A partially filled box indicates that some files or directories below this level have been selected.

Symbol	Represents
	This machine, drive, directory, or file is not selected.
	Some, but not all, of the machine, drive, or directory are selected.
	The entire machine, drive, directory, or file is selected.

Selecting your local machine

The Browser uses the following label to indicate the local machine on which the ARCserve Manager is running:

My Computer (machine name)

To select your local machine:

1. In the Browser, select *My Computer*.
2. Click the green box next to *My Computer*.

All volumes, drives, directories, and files on your machine are selected.

Selecting a Windows NT domain or workgroup

Selecting a Windows NT domain or workgroup automatically selects each Windows NT machine that belongs to it.



1. In the Browser, expand the tree under Network.

Double-click Network to expand the tree. The types of available networks are listed.



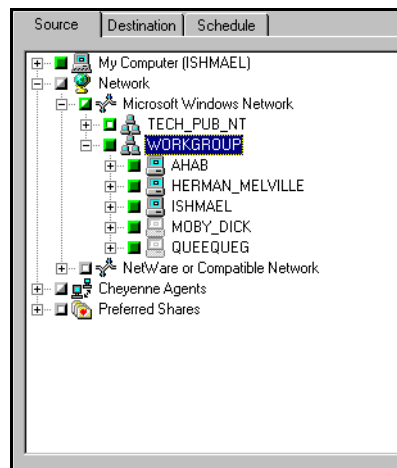
2. Expand the tree under Microsoft Windows Network.

A list of Windows NT domains and workgroups on your network appears.



3. Select the domain or workgroup.

When you select a domain or workgroup, all the machines that belong to it are selected.



4. (Optional) Provide security information for the domain.

Refer to the 'Providing security information for remote machines' section on page 2-17 for details.

Selecting individual Windows NT machines

To select an individual Windows NT machine:



1. In the Browser, expand the tree under Network.

Double-click Network to expand the tree. The types of available networks are listed.



2. Expand the tree under Microsoft Windows Network.


A list of Windows NT domains and workgroups on your network appears.

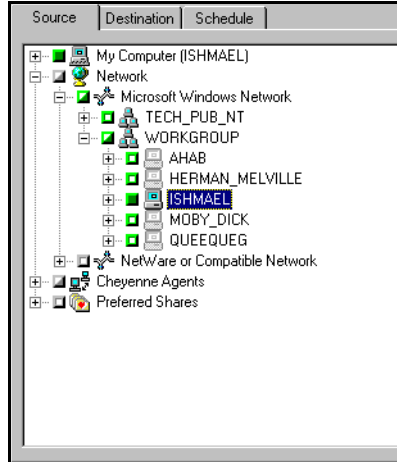


3. Expand the tree under the domain or workgroup that the machine belongs to.

A list of Windows NT machines appears.

4. Select the machine.

To select a specific Windows NT machine () , expand the tree under the domain or workgroup that it belongs to, and then select the machine.



5. (Optional) Provide security information for the machine.

Refer to the 'Providing security information for remote machines' section on page 2-17 for details.

Selecting a NetWare server

Note: For the most complete backup of NetWare servers, use the optional Client Agent for NetWare. See chapter 11, “Using Agents”, for more information.

To select a NetWare server:



1. In the Browser, expand the tree under Network.

Double-click Network to expand the tree. The types of available networks are listed.

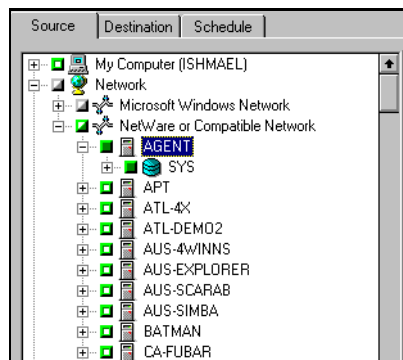


2. Expand the tree under NetWare Network.

A list of NetWare file servers on your network appears.



3. Select the file server.



4. Provide security information for the NetWare machine.

Refer to the ‘Providing security information for remote machines’ section on page 2-17 for details.


Selecting an entire drive or directory

To select an entire drive or directory:

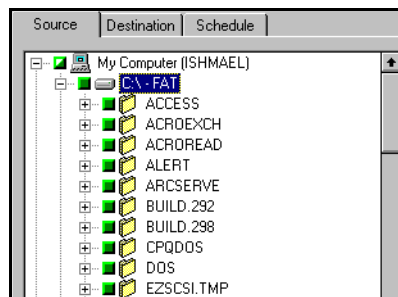
1. In the Browser, double-click on the name of the machine that has the drive you want.


The Browser now shows you a graphical tree of the drives available on the machine.

Note: For a remote machine, you may need to provide security information before you see the graphical tree. Refer to the 'Providing security information for remote machines' section on page 2-17 for details.

2. Select the drive. 

If a green box appears next to the drive, click it so that it is completely filled. This automatically selects the entire drive for the operation. All directories and files on the drive are selected.

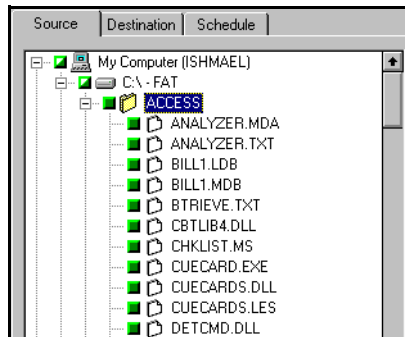


To select a directory, double-click on the drive instead of simply selecting it. Double-clicking on the drive will display a list of directories on that drive. 

3. Select the directory.

If a green box appears next to the directory, click the box so that it is completely filled.

If the directory you want is a subdirectory, continually expand the directory tree from its parent directories until you see the directory you want.



Adding Preferred Shares to the machine tree

The Preferred Shares are a collection of your favorite backup shares. (A share is a shared drive or directory.) You can manually add individual share points to the Preferred Shares tree; the share point is remembered and displayed regardless of the status of the network connection. This provides a quick access to commonly used shares on your machines.

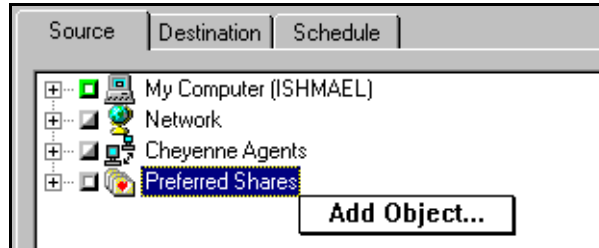
This feature can be used to back up share points provided by other operating systems that are capable of creating “shares” in a Windows NT network, such as UNIX NFS shares or OS/2 LAN Server shares.

This feature is also useful for users that frequently back up “shares” within a network, instead of “machines”. Shares are considered “named” short-cuts or aliases to machine drives and directories on the network. Shares perform the same function as drive mappings, with the advantage of allowing the user to provide a descriptive name to the share.

To add a Preferred Share to the machine tree:

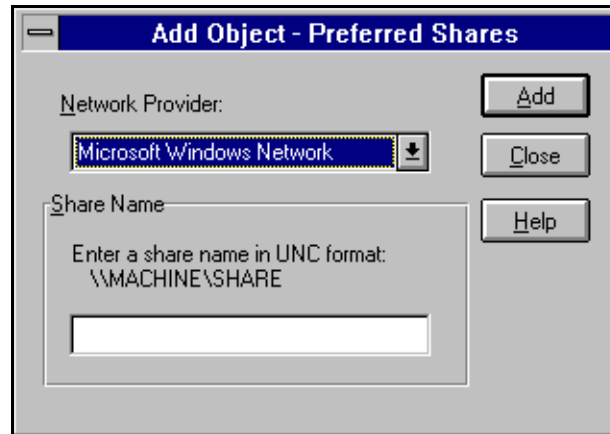
1. In the Browser, click Preferred Shares with your *right* mouse button.

A pop-up menu is displayed:



2

2. Choose *Add Object...* from the popup menu.
The Add Preferred Shares dialog box opens:



3. Select a Network Provider.
4. Enter a share name in Uniform Naming Convention (UNC) format (e.g. \\MACHINE\SHARE).
5. Click Add.
The machine is added to the Preferred Shares tree.
6. Repeat steps 3-5 for each machine that you wish to add.
7. Choose *Close* from the Control Menu when done.

Adding objects to the machine tree

You can add objects to the machine tree that are unavailable when you set up a job. For example, you can add a machine that is temporarily unavailable and schedule a backup/restore for the machine.

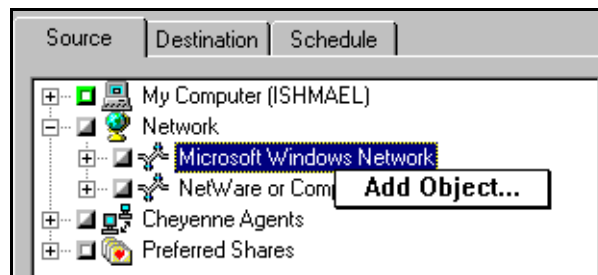
You can add the following types of objects to the machine tree:

- Windows NT domains (or workgroups), machines, or shares
- NetWare servers and volumes

To add a Windows NT domain follow these steps:

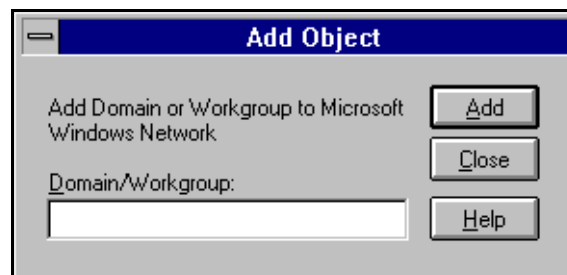
1. In the Browser, click Microsoft Windows Network with your *right* mouse button.

A pop-up menu is displayed:



2. Choose *Add Object* from the pop-up menu.

The Add Object dialog box opens:



3. Enter the Domain name and click Add.

A new Windows NT domain is added to this node of the machine tree.

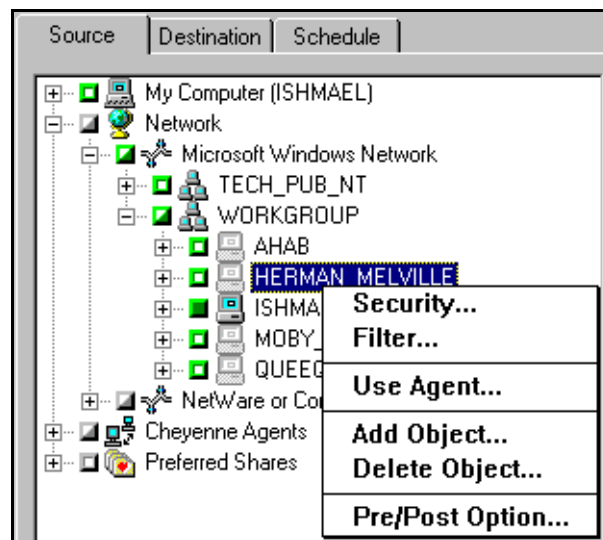
Providing security information for remote machines

You must provide a valid username and password in order to browse a remote machine. By default, ARCserve will use the username and password provided for the local machine to access the remote machine. If this information is not valid, you will be prompted to enter valid information when you try to expand the node for the local machine.

To enter a username and password for a remote machine:

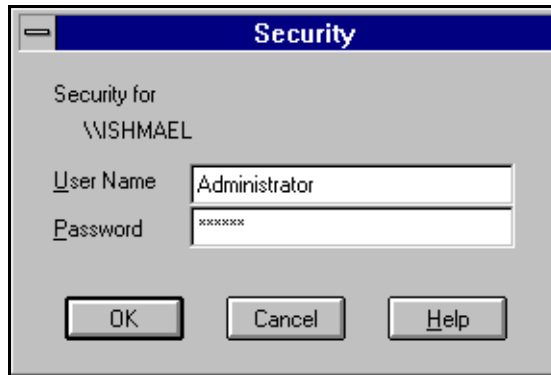
1. In the Browser, click the remote machine with your *right* mouse button.

A pop-up menu is displayed:



2. From the pop-up menu that appears, select *Security...* and enter the information.

The Security dialog box opens.



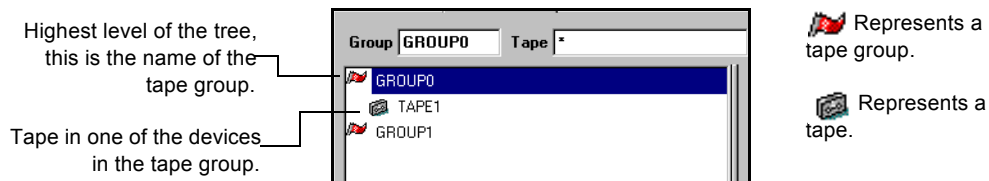
Using the tape tree in the Browser

The Browser is also used to select the tape groups and tapes that you want to use for your jobs. Depending on the job you want to perform, you may need to select a tape or tape group as your source or destination. Whether the tape is the job's source or destination, the method for selecting a tape or tape group is the same.

2

Basic elements of the tape tree in the Browser

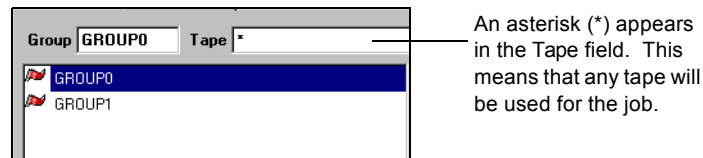
The following screen shows the basic elements of the Browser when selecting tapes or tape groups:



Selecting a tape group only

Follow the directions below to select a specific tape group.

1. Highlight the name of the tape group you want to use.
Click once on the name of the tape group so that it is highlighted. The name of the tape group appears in the *Group* field.



If you select a tape group only, the first tape found in the first device in the tape group will be used for the operation. The job will be appended to this tape.

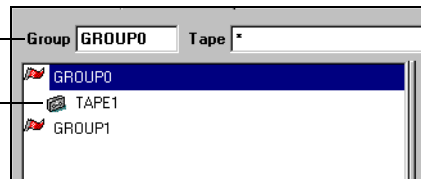
Selecting a tape

1. Expand the tree for the tape group you want to use.

The Browser shows you all the tapes found in devices assigned to the tape group. The name of this tape group appears in the *Group* field.

The name of the tape group you double-clicked in the Browser area appears here.

The Browser lists all the tapes found in this tape group's devices.



2. Highlight or specify the name of the tape you want to use.

Appending a job to tape

By default, an asterisk (*) appears in the *Tape* field. If you leave the asterisk in this field, make sure the tape option, *Append to Tape* is selected.

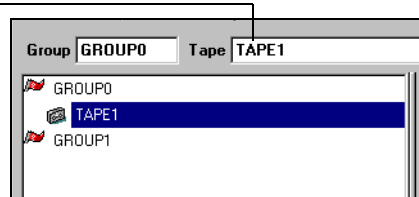
If you want to append the job to a specific tape, enter the name of the tape in the *Tape* field and make sure the *Append to Tape* tape option is selected.

Reformatting a tape

If you enter a name in the *Tape* field (instead of selecting an existing tape) and select an “Overwrite...” tape option, ARCserve will reformat the tape in the drive with the name that you specified.

If you leave the asterisk (*) in the *Tape* field (instead of entering a name) and select an “Overwrite...” tape option, ARCserve will reformat the tape in the drive, using the current date and time for the tape name.

After you highlight the tape in the Browser, it appears in this field.



Getting help

Online help system provides help information and error messages

The online help system provides help information and explanations of the ARCserve error messages.

To access online help, either:

- Select *Help* from the menu bar.
- Place the cursor on the field or dialog box for which you need help and press F1.

On-screen descriptions of buttons

To display a description of a Quick Access bar button or a toolbar button, hold the cursor over the button. The name of the button is displayed underneath the button. A brief description is displayed in the status bar.

Other sources for help

As you use ARCserve, you may find that you need additional information that may not be provided in this manual. Other sources for help in using ARCserve are:

- Microsoft Windows NT documentation - for any questions you might have about using the Windows NT interface.

3

Chapter

BACKING UP DATA

This chapter describes how to use ARCserve to back up data from your network.

In this chapter, you will learn:

<i>Page</i>	
3-2 >	About available options for backing up data from your network
3-3 >	How to submit a backup job
3-7 >	How to select a backup method
3-16 >	About considerations for backing up Windows NT machines

Backing up data on your network

ARCserve allows you to back up most machines attached to your Windows NT network.

For complete system backups of non-Windows NT systems, such as NetWare or OS/2, use ARCserve in conjunction with the appropriate Cheyenne *Client Agent*. The Client Agent for Windows NT is also available for more efficient backups of Windows NT machines. Refer to Chapter 11, "Using Agents" for more information on Cheyenne's Client Agents.

Cheyenne's *Database Agents* allow you to back up and restore complete databases, such as Oracle and Microsoft SQL. Refer to Chapter 11, "Using Agents" for more information on Database Agents.

The following additional software options are also available to enhance ARCserve's backup capabilities:

- RAID Option: to utilize Tape RAIDs for high-speed backups.
- Image Option: to perform high-speed image backups.
- Changer Option: to use an autochanger with your backup rotation.

Contact your Cheyenne representative for information on any of these options.

Submitting a backup job

To back up data from your network, you must configure and submit a backup job using the Backup Manager.

ARCserve allows you great flexibility in specifying options, filters, and scheduling information for your jobs. This chapter explains the basic procedures for a backup job, and some of the basic backup options. For a description of additional backup job options, filtering, and job scheduling features, refer to Chapter 6, “Customizing Your Jobs”.

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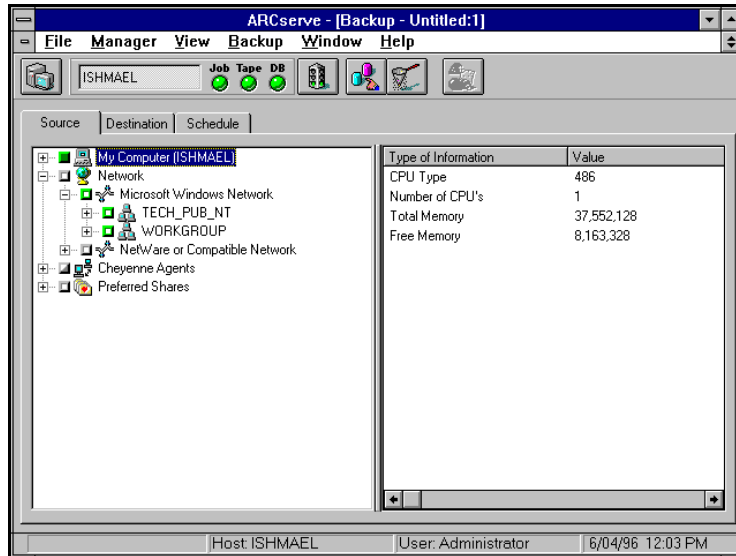
To submit a backup job:

1. Click the Backup button from the Quick Access dialog/toolbar.

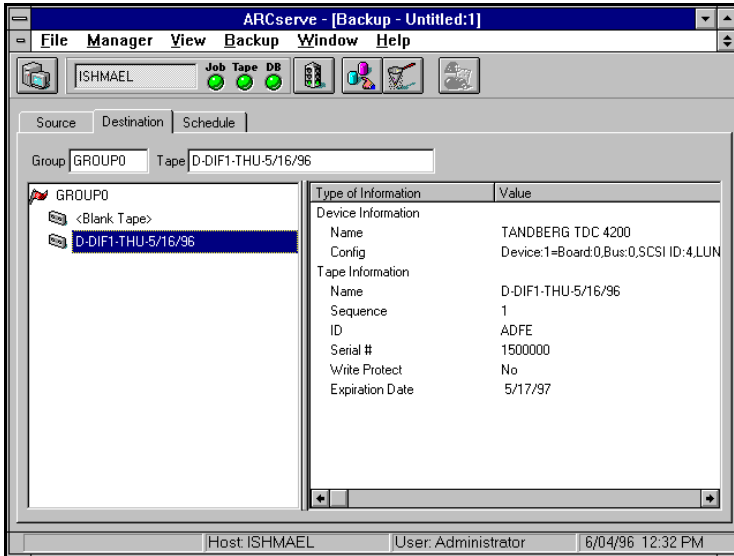
The Backup Manager opens.

2. Select the machines, directories, and/or files that you wish to back up.

Select the Source tab and then select the machines, directories, or files from the machine tree. Refer to Chapter 2, ‘Basic Procedures’, to learn how to select objects from the Browser.

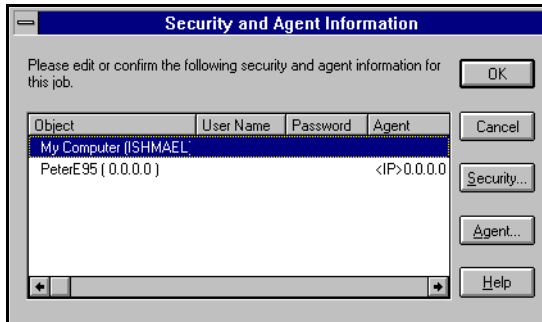


3. Select the tape group (and tape, if you have a specific one in mind) you want the files backed up to.
Select the Destination tab and then select the tape group and tape from the tape tree in the Browser. Refer to Chapter 2, "Basic Procedures", for details on using the tape tree in the Browser.



4. Select a backup method for this job.
Click the Options button and select the Method tab from the Options dialog box, then select a backup method. Refer to the section 'Selecting a backup method' for more information.
5. (Optional) Select additional options for your backup job.
Refer to the following sections in this chapter for some of the basic backup job options. Refer also to Chapter 6, "Customizing Your Jobs" for information on applying additional backup job options.
6. (Optional) Specify filters for your backup job.
Refer to Chapter 6, "Customizing Your Jobs" for information on applying filters.
7. Schedule your job.
Click the Schedule tab and enter scheduling information. Refer to Chapter 6, "Customizing Your Jobs" for information on scheduling a job.
8. Click the Run button.
The Security and Agent Information dialog box opens.

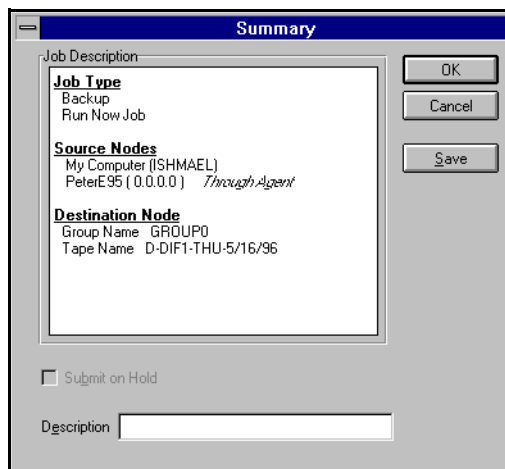




This dialog box displays the security and agent information for each machine and/or share that is selected as a source. To change this information, select the machine, then select either the Security button or the Agent button.

9. Click OK.

The Job Summary dialog box opens:



The Job Summary dialog box describes the following elements of the job you are submitting:

- Job Type
- Source Nodes
- Destination Node

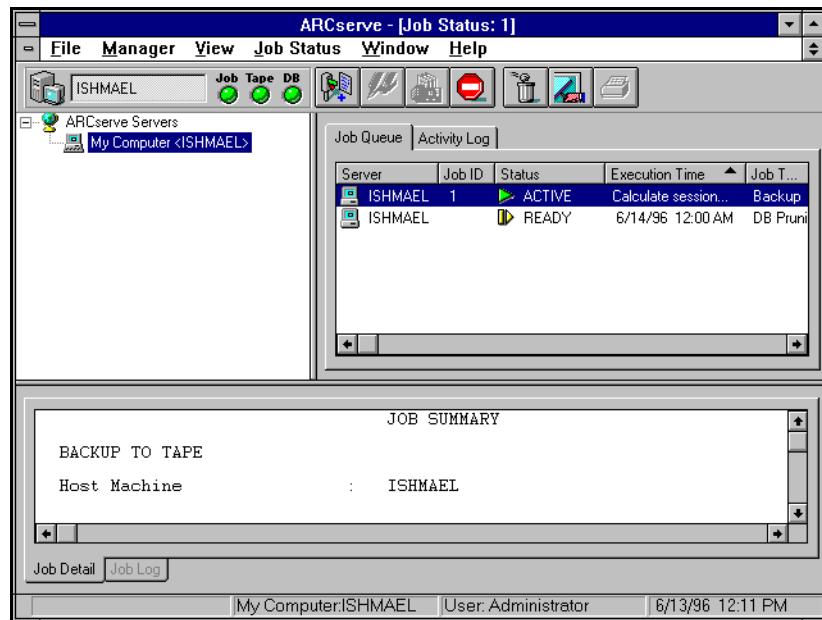
You can add an additional description of the job in the space provided at the bottom of the dialog box.

Backing Up Data

To save this job as a script, click the Save button.

10. To submit the job, click OK.

The job runs and the Job Status Manager appears, allowing you to view information about the job as it runs.



By selecting the appropriate tab in the lower panel, you can:

- View more *detailed* job information (Job Detail tab).
- View the activity *log* entry for the job when the job has completed (Job Log tab).

Selecting a backup method

To select a backup method for your job:

1. Click the Options button (while you are setting up the job).
2. Select the Method tab in the Options dialog box.
3. Choose the appropriate Method option for this backup job.

4. Click OK.

The backup method determines which files in a selected drive or directory are backed up. The available backup methods are:

Method	Which files are included?	Check archive bit?	Reset archive bit?
Full (Keep Archive Bit)	All source files.	No.	No.
Full (Clear Archive Bit)	All source files.	No.	Yes.
Incremental (Archive Bit)	Source files whose archive bit is turned on.	Yes.	Yes.
Differential (Archive Bit)	Source files whose archive bit is turned on.	Yes.	No.

In general, if you have large amounts of data to be backed up every day, running regular differential or incremental backup jobs and an occasional full backup job may be your best solution.

The following table describes the advantages of each method:

Method	Description
Full (Keep Archive Bit)	Includes all the source files. This method does not change the archive bit. You might use this option if you wish to perform an unscheduled full backup that will not affect your incremental or differential backups.
Full (Clear Archive Bit)	Includes all the source files. This method ignores the file's archive bit until after the file is backed up. At that time, ARCserve turns off the file's archive bit. At the end of the job, all files that have been backed up have their archive bits turned off.
Incremental	Includes only files that have changed since the last <i>Full (Clear Archive Bit)</i> or <i>Incremental</i> backup. ARCserve checks the file's archive bit. If the archive bit is on, ARCserve backs up the file, then turns archive bit off. The next time an incremental backup is done, this file is skipped (unless it is modified again).

Method	Description
Differential	Includes files that have been changed since the last <i>Full (Clear Archive Bit)</i> or <i>Incremental</i> backup. ARCserve checks the file's archive bit. If the archive bit is on, ARCserve backs up the file, but in this case, ARCserve <i>does not</i> turn off the archive bit afterwards.

About Archive Bits

What is an archive bit?

A file's archive bit is a marker that indicates whether the file has been modified. An archive bit that is set (turned on) indicates that the file has changed since it was last backed up or copied.

Why turn off a file's archive bit?

Turning off (resetting) the file's archive bit is a procedure that affects what ARCserve will back up or copy the next time. An archive bit that is off indicates to ARCserve that this file has not changed since it was last backed up.

The method you select determines whether ARCserve will back up or copy all files, or only files whose archive bit is on. It also determines whether ARCserve will turn off the archive bit after the file has been backed up or copied.

Note that a file's archive bit can also be turned on and off by other applications.

Warning: ARCserve's Copy feature can set or clear file archive bits that may affect your Incremental or Differential backups. Plan your copy operations carefully to ensure that they do not interfere with your backup jobs.

Specifying tape overwrite/append rules

You can specify the overwrite/append rules for the tapes used in your backup job while you are configuring the job.

To specify the tape overwrite/append rules for your back-up job:

1. Click the Options button.
2. Select the Tape tab in the Options dialog box.
3. Choose the appropriate overwrite/append option for this backup job.
4. Click OK.

The following types of options are available:

- **First Tape Options:** determine the overwrite rules for the first tape that is used for the backup job.
- **Additional Tape Options:** determine the overwrite rules for the additional tapes.

First Tape Options

The *first tape* is the tape you use when the backup job begins. The options for the first tape are:

Option	Description
Append to Tape	Append job sessions to the selected tape.
Overwrite Same Tape Name, or Blank Tape	Overwrite the tape in the drive <i>only</i> if it is the one you specified for the job or if the tape is blank. If neither of these conditions is met, ARCserve prompts you to supply the specific tape name.
Overwrite Same Tape Name or Blank Tape First, then Any Tape	Overwrite <i>any</i> tape found in the drive. If you select this tape option, ARCserve checks to see if the tape in the drive is the one specified for the job. If it isn't, ARCserve checks to see if the tape is blank. If the tape isn't blank either, ARCserve reformats whatever tape it finds in the device and starts backing up files at the beginning of the tape.
Timeout for First Tape	Number of minutes ARCserve will attempt to write to tape before cancelling job.

Additional Tape Options

The *additional tape* options apply to jobs that require more than one tape. You need to specify which tapes ARCserve can use when the job spans tapes. The additional tape options are:

Option	Description
Overwrite Same Tape Name, or Blank Tape	Write to the tape in the device only if it has the same tape name (but a different tape ID) or if it is blank. ARCserve remembers the name and ID of the job's first tape. When the job requires an additional tape, ARCserve checks if the new tape has the same name (but different tape ID) or if it is a blank tape. As long as the ID is different, ARCserve reformats the tape, giving it the same name and ID as the first tape. The sequence number will be different.
Overwrite Same Tape Name or Blank Tape First, then Any Tape	Overwrite <i>any</i> tape found in the device (as long as it has a different ID from the first tape's ID). All subsequent tapes are reformatted with the same name and ID as the first tape. Only the sequence number will be different.
Timeout for Additional Tapes	Number of minutes ARCserve will attempt to write to tape before cancelling job.

3

Specifying a password for your backup job

You can specify a *Session* password for an entire backup job or for data from a selected drive. The password will be required in order to restore the data from tape. *You MUST remember the Session password in order to restore this session!*

To specify a Session password for a selected drive:

1. Select the Source tab.

-
2. Highlight the drive and click the *right* mouse button.
The Source Context (pop-up) menu opens.
 3. Choose *Option...* from the Source Context menu.
The Local Option dialog box opens.
 4. Enter the password for this drive in the Session Password field.
 5. Click OK.
The specified password will be required to restore data from this drive.

To specify a Session password for the entire backup job:

1. Click the Options button.
2. Select the Tape tab in the Options dialog box.
3. Enter a password in the Session password field.
4. Click OK.
Your backup job will be stored with the specified Session password.

Verifying your data on tape

ARCserve allows you to verify that your data was correctly backed up to tape. You can verify the data for the entire backup job, or for a selected drive that is included in your backup job. The global verification options (applied to the entire job) will be overridden by the options selected for a drive.

To verify the data for selected drive:

1. Select the Source tab.
2. Highlight the machine or drive and click the *right* mouse button.
The Source Context (pop-up) menu opens.
3. Choose *Option...* from the Source Context menu.

The Local Option dialog box opens.

4. Choose a verification option.

The verification options are described following.

5. Click OK.

The specified options are applied **ONLY** to the selected drive.

To verify data for the entire backup job:

1. Click the Options button.
2. Select the Verification tab in the Options dialog box.
3. Choose a verification option.

The verification options are described following.

4. Click OK.

Your backup job will be stored with the specified Session password.



Available verification options are:

Option	Description
None	The backup is not verified.
Scan Tape Contents	Check the header of each file on the backup tape. If the header is readable, ARCserve assumes the data is reliable. If the header is not readable, the Activity Log is updated with this information. Of the two verification methods, this one is faster.
Compare Tape to Disk	Read blocks of data from the tape and compares the data, byte for byte, against the source files on the source machine. This option is more time consuming, but it ensures that all data on the tape is <i>exactly</i> as it is on disk. If ARCserve finds a mismatch, the Activity Log is updated with this information.

Specifying pre/post commands

ARCserve allows you to specify pre/post commands that are run immediately before and/or after your data is backed up to tape. You can specify pre/post commands:

- For the entire backup job: these commands are executed at the beginning or end of the job.
- For a selected machine: these commands are executed before and/or after the data from the selected machine is backed up.

If you specify pre/post commands for the entire job, as well as for machines in the job, the global pre/post commands are executed before/after the job starts/ends and local commands are executed when the selected machine is backed up.

To specify a pre/post command for a selected machine:

1. Select the Source tab.
2. Highlight the machine and click the *right* mouse button.
The Source Context (pop-up) menu opens.
3. Choose *Pre/Post option...* from the Source Context menu.
The Pre/Post dialog box opens.
4. Specify the pre/post commands for this machine.
Refer to Chapter 6, “Customizing Your Jobs” for a description of the Pre/Post options.
5. Click OK.
The specified options are applied *only* to the selected drive.

To specify pre/post commands for the entire backup job:

1. Click the Options button.
2. Select the Pre/Post tab in the Options dialog box.
3. Specify the pre/post commands for this job.

Refer to Chapter 6, “Customizing Your Jobs” for a description of the Pre/Post options.

4. Click OK.

The specified pre/post commands are applied to this job.

Specifying additional options for your backup job

Refer to Chapter 6, “Customizing Your Jobs”, for information on applying additional backup job options.

3

Backing up Windows NT machines

ARCserve for Windows NT allows you to back up any Windows NT machine on your Microsoft network using one of the following methods:

- Back up the administrative shared drives.
- Back up user-shared files, directories, and drives.
- Use Cheyenne’s Client Agent for Windows NT for efficient backups of the complete Windows NT machine, including system information. Refer to Chapter 11, “Using Agents”, for more information on Cheyenne’s Client Agents.

By default, Windows NT creates an *administrative share* for the root directory of each drive on the machine. Unless the administrative share is deleted, you can select it for backup and ARCserve is able to back up all the files and directories on the drive.

In addition to creating default administrative shares, Windows NT also allows you to designate specific files and directories as shareable (*user-shared drives and directories*). The owner of these files and directories has specified that they are accessible to all. These files and

directories are displayed in ARCserve's Browser, and with a click of the mouse button, you can quickly select these specially shared files and directories for backup.

Performing domain or workgroup level backups

Do you want to quickly back up all the machines belonging to a specific domain or workgroup? Since ARCserve separates and lists Windows NT machines by the domain or workgroup to which they belong, this is easily done by selecting the name of the domain or workgroup. Doing this automatically selects all the machines that are members of the domain or workgroup for backup.

4

Chapter

RESTORING YOUR DATA

This chapter contains information about restoring data to local Windows NT machines and shared network drives.

In this chapter, you will learn:

Page	
4-2 >	Restoring data
4-3 >	How to perform a quick, basic restore
4-7 >	How to change and use the different restore source views

Restore basics

Each restore job requires a source and destination. The files you select as your source will always come from a tape, and the place you select as your destination will always be a hard drive.

ARCserve provides you with four methods for selecting the data you want to restore (the source), Restore by Tree, Tape, Query, and Tape Media. Three of these methods use information logged in ARCserve's database, while the fourth method doesn't. In addition, if you have separately purchased the Image Backup Option, you will also have Restore by Image available.

You also have several methods for selecting a Destination to restore the data to the machine, as described in this chapter.

Restoring files - the basic steps

The following steps outline a basic restore job - that is, using the default restore options to get back data that has been backed up to tape.

Note: The following basic steps assume that your ARCserve database is up-to-date and available. Although the following example uses the “Restore by Tree” source view, the basic steps can be applied using any of the source views. Refer to the section ‘Changing the source view’ in this chapter for more information on using a different source view.

The basic steps for restoring data are:

1. Click the Restore button from Quick Access.

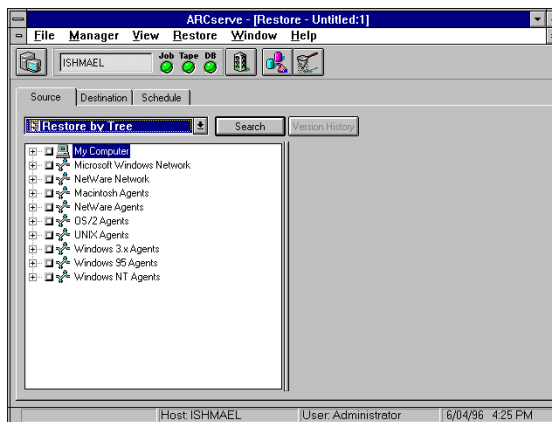
The Restore Manager appears, with the default source view, Restore by Tree, selected.

2. Select what you want to restore.

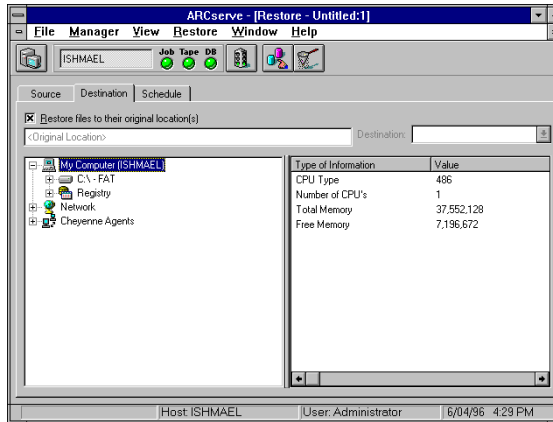
Select the Source tab and choose the view you want to use to select the source for your job. Then specify what you want to restore.



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- Specify where you want the files restored to (Destination).
Select the Destination tab.

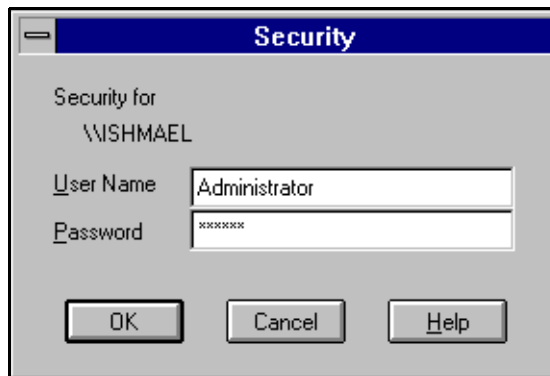


The option *Restore files to their original location(s)* is selected by default. When this option is selected, your files are restored to their original machine and path. If the original location is on a remote machine, you will be prompted to enter a valid username and password for the remote machine.

You can also clear this option and select another location using the Browser.

- Click the Run button.

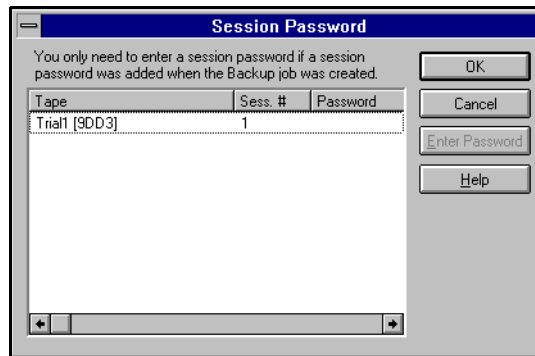
The Security dialog box opens:



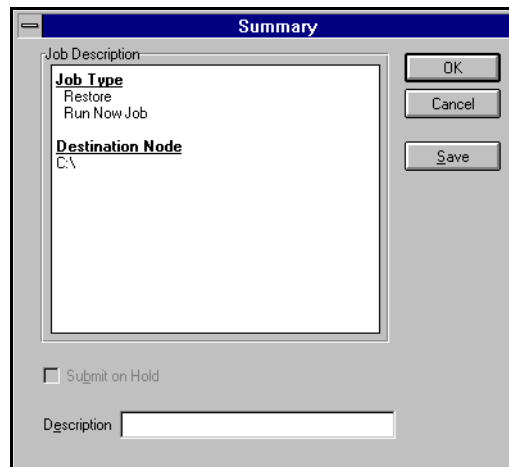
Enter, change, or verify the username and password for the destination machine. To enter or change the security information for a session, select the session and click the Edit button.

5. Click OK to continue.

The Session Password dialog box opens:



6. If a session password has been assigned, enter the session password and click OK.



The Summary dialog box contains the following information about the job:

- Job Type
- Destination Node



You can also add a description of the job in the space provided at the bottom of the dialog box.

To save this job to a script file, click the Save button in this dialog box.

7. Click OK to submit this job.

Selecting data from tape

Although the files that you restore will always come from a tape, the way you select these source files can vary. ARCserve provides you with the most convenient and thorough methods for finding the files you want to restore. There are four methods by which you can choose your source files:

- The Restore by Tree view - Using its database, ARCserve reconstructs a directory tree in the Browser of all machines, directories, and files that were backed up.
- The Restore by Tape view - Using its database, ARCserve displays all tapes used for backups and the source for each session on the tape.
- The Restore by Query view - You specify a search pattern and ARCserve searches its database for the specified files and directories.
- The Restore by Tape Media restore - Place a tape in the tape device and select a particular tape session to restore.

Note: An additional Restore method appears on the list in the drop-down box, Restore by Image. This method refers to the ARCserve Image Option, which is sold separately. If you have not purchased the Image Option, this Restore method is not available.

The method you choose to select your source depends on what you know about the files you want to restore and the tape(s) you need to use.

The “Restore by Query” source view uses the ARCserve database and a search pattern that you specify to display files you want to restore. The Restore by Query can be as

general or specific as you want it. You can specify a search pattern directed towards a specific machine, directories, or files. Subdirectories can also be included in the search.

Use the “Database Restore by Query” source view when you know the names of the files and/or directories you want to restore, but do not know the machine it was backed up from or the tape it was backed up to.

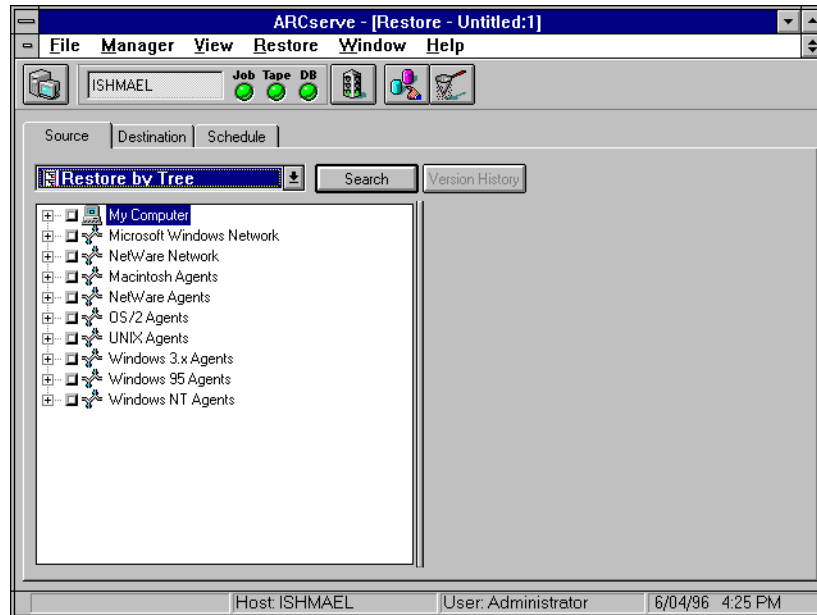
Restoring by Tree

The *Restore by Tree* view lets you restore a specific directory or drive. This view displays a machine tree of files and directories that were backed up with ARCserve.

To select data using the *Restore by Tree* view:

1. Select *Restore by Tree* from the source view drop-down list.

The Browser displays a machine tree of the networks and machines that have been backed up by ARCserve.



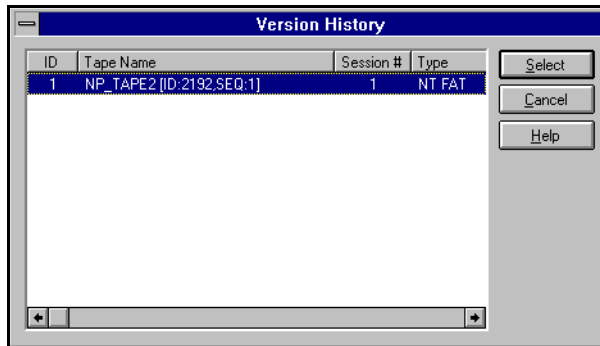
2. Select the files you want to restore.

Choosing a version from tape

To select the version of the file, directory, or drive you want to restore:

1. Select the drive, directory, or file you want to restore.
2. Click the Version History button. **Version History**


ARCserve searches its database and returns a list of all the backed up versions of this file, directory, or drive. From this list, you can select the version you want to restore:



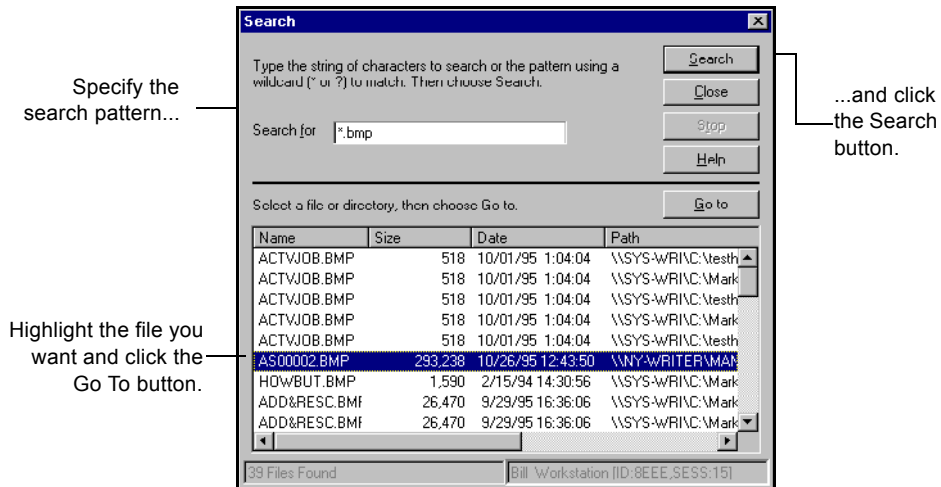
If you try to expand a backup session that has been pruned from the database, you will be asked whether you want to merge the pruned session. Refer to Chapter 7, "Managing Devices and Media", for more information on merging.

Searching for files on tape

To locate files and directories whose name or location you are unsure or unaware of:

1. Click the Search button. 
The Search dialog box appears.
2. Enter the search criteria and click Search.

Use an asterisk (*) or question mark (?) as a wildcard symbol, as necessary.



After you click the Search button, ARCserve searches its database, and displays the files and directories that match the search pattern you specified.

3. Highlight the file you want and click the Go To button. The selected file is displayed in the Browser. The Browser directory tree expands until the file is shown.

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Restoring by Tape

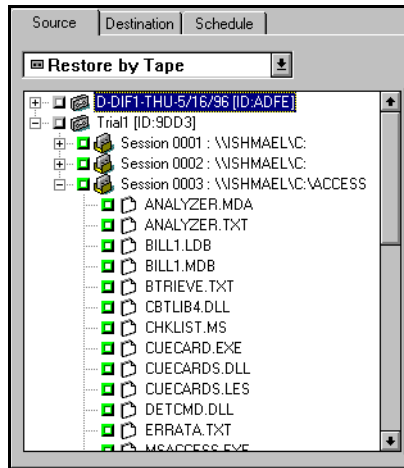
The *Restore by Tape* view allows you to select the tape, then the session, and finally, the files and directories you want to restore. This source view is useful if you know the tape that holds the data you want to restore, but you may not be sure which session it is in.

To select data using the *Restore by Tape* view:

1. In the Restore Manager, select *Restore by Tape* from the source view drop-down list.

A list of tapes that you have used for backups displays in the Browser.

2. Expand the tree for the tape you want to restore from.
Double-click on the name of the tape that holds your data to display a list of sessions logged in the database for that tape.



If you try to expand a backup session that has been pruned from the database, you will be asked whether you want to merge the pruned session.

3. Select or expand the tree for the session that contains the files you need to restore.
If you only want to restore specific files or directories from a session, expand the tree for the session, and then select the files and directories.
4. Repeat step 2 and 3 for each session on the tape you want to restore from.

Restoring by Query

Use the Restore by Query source view to restore files when you know the name of the file or directory you want to restore, but do not know the machine it was backed up from or the tape(s) it was backed up to.

This view also uses ARCserve's database. As long as the file and directory information is logged in the database, you can effectively use this view to select files to restore.

Note: This source view is useful if:

You know the entire path, a partial path, or only the name of the file or directory to restore.

OR

You don't know which machine it was backed up from or which tape it was backed up to.

1. In the Restore Manager, select *Restore by Query* from the source view drop-down list.
2. Specify your search criteria and click the Query button.

Name	Size	Date	Path
------	------	------	------

3. Select the file(s) and directory(ies) you want to restore. Double-click the name of the file or directory. A green light appears when a file or directory is selected.

Restoring by Tape Media

The *Restore by Tape Media* view allows you to restore complete sessions on a tape in a tape device. All files in the session are restored to the destination, unless filters are added to the job.

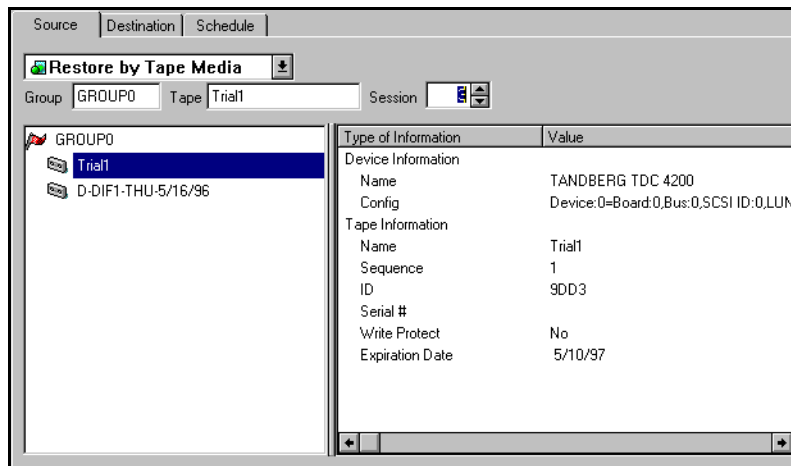
This source view is useful if information from your ARCserve database is unavailable, or you are trying to recover your network after a disaster.

To select data using the *Restore by Tape Media* view:

1. Select *Restore by Tape Media* from the source view drop-down list.

ARCserve will read directly from the tape devices and display your tape groups and tapes in the Browser.

2. Select or enter a tape name.



3. Specify the session number.

Selecting a destination for your restored data

With the default option *Restore files to their original location(s)* selected, your files are restored to their original machine and path. You can also clear this option and select another destination using the Browser. In addition, with either type of destination, you can use the Options button to specify destination options.

To select a destination:

1. In the Restore Manager, click the Destination tab.
The Destination dialog box appears.
2. Specify the location where you want your data restored.
 - If you want to restore files to their original location, select *Restore files to their original location(s)*, and then go to Step 4.
 - If you want to restore files to another location, clear the check box for the default option *Restore files to their original location(s)*, and then go to Step 3.
3. If you're restoring to a different location:
In the Browser, select the drive or directory where you want the files restored.
For information on how to use the Browser, see the section 'Using the Browser', in Chapter 2, "Basic Procedures".
4. Specify destination options.
For more information about destination options, see the following section, 'Specifying destination options'.
5. Schedule the job.
For more information about scheduling a job, see the section, 'Scheduling a job', in Chapter 6, "Customizing Your Jobs".

Specifying destination options

The Destination options determine how the directory structure is created on the destination when files are restored. They also determine which files (if any) can be overwritten.

To specify Destination options:

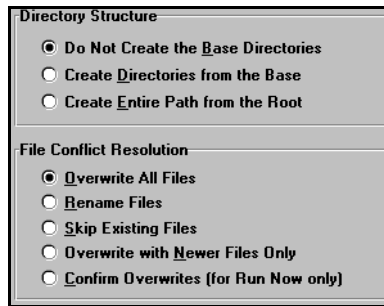
1. In the Restore Manager, click the Options button.



The Options dialog box appears.

2. Click the Destination tab.

The Destination dialog appears:



3. Specify the Directory Structure and File Conflict Resolution options you want.

For a description of these options, see the following sections.

4. Click OK.

These destination options you will take effect when the Restore job is run.

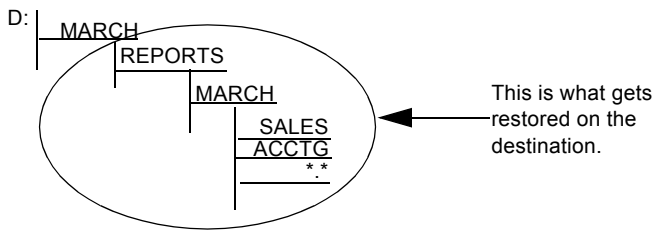
Directory Structure options

Select the method ARCserve should use to create directories on your destination.

Create Entire Path from the Root

Create the entire source path (except the root drive or volume name) on the destination. No files from any parent directories are restored. Only the directory path to the base directory is created on the destination. Restoring the sample path results in:

C: is the root. As a result, the path to the MARCH directory is built beginning from the REPORTS directory.



File Conflict Resolution options

Select the method ARCserve should use when there are files on the destination disk that have the same name as files being copied from the source. The default is *Overwrite All Files*.

The File Conflict Resolution options are described in the following table:

Option	Description
Overwrite All Files	Restore all source files to the destination regardless of conflicting file names. Existing files on the destination will be overwritten by the files from the source.

Option	Description
Rename Files	Copy the source file to the destination with the same filename but a different extension. The extension will maintain the first two characters of the original, but the last character will be 1, 2, 3..., depending on how many files ARCserve has encountered with the same name. Filenames without extensions will be renamed with extensions “._0”, “._1”, “._2”, etc.
Skip Existing Files	Do not restore a source file if a file with the same name already exists on the destination.
Overwrite with Newer Files Only	Only restore source files whose modification date is later than the modification date of the file with the same name on the destination. Source files whose modification date is earlier will not be copied to the destination.
Confirm Overwrites	Applies when submitting an immediate job (if <i>Run Now</i> is selected). Before ARCserve tries to restore the source file, you will be prompted to confirm that you want the file on the destination to be overwritten.

Recovering from a disaster

This section describes how to use ARCserve to best protect and recover your data in the event of a system failure.

Make sure you back up ARCserve's database often

Whenever you select your ARCserve home directory for backup, ARCserve's database is backed up as well. Always maintain a current backup of your ARCserve database files so that recovering from a disaster is easier.

Always maintain current backups

The most important thing you can do to ensure against data loss is to maintain current backups of all your Windows NT machines. If you do not have these backups, then ARCserve is limited in its ability to recover against data loss or disaster. Be sure to create a tape rotation scheme using different backup methods and scheduling as a means of maintaining current backups.

If something happens to any machine between full backups, you can recover with the last full backup (a backup job with the *Full (Clear Archive Bit)* method selected), and your most recent differential or incremental backup (which contains all the modifications to the data since the last full backup).

You should have the appropriate installation disks and the backup tapes to restore from.

To recover a Windows NT machine:

1. Re-install the Windows NT operating system.
Refer to your Windows NT documentation to re-install the operating system.
2. (Optional) Re-install ARCserve.
If the machine that crashed was an ARCserve machine, you will need to re-install ARCserve before you can proceed to recover *any* machine on your Microsoft network.

An ARCserve machine is a Windows NT machine that has ARCserve for Windows NT installed on it. In addition to the ARCserve software, it contains a copy of the ARCserve database, which will need to be recovered in order to recover the machine.

3. (Optional) Restore the most current ARCserve database to the ARCserve machine.

Again, if the machine that crashed was your ARCserve machine, you will need to recover the latest version of your database back to the ARCserve machine. Use the Recover Database utility to perform this step.

The ARCserve database contains information about what has been previously backed up. You will need to recover the ARCserve database so that you can restore the rest of the information on the host.

4. Use the “Restore by Tree” source view in the Restore Manager to select what data you want to recover.

Now that you have restored the database, use the “Restore by Tree” source view to display the data that was backed up from each machine. You can pick and choose what you want to recover (or select the entire machine).

5. Select the machine you want to recover.

Click the Destination tab in the Restore Manager and select the machine you want to recover the data to.

6. Click the Options button to specify destination options.

If you are trying to restore the machine to the state it was in before it crashed, then you should:

- Select a Destination option that overwrites any conflicting files. If you are unsure, you can choose to rename any files that exist on the machine.
- Select the *Restore Registry* option.

7. Click the Run button to run the job.

ARCserve will then tell you the tapes that you will need to recover the machine.



5

Chapter

MANAGING DATA

This chapter explains how to copy, count, and delete files, and how to manage data on tapes.

In this chapter, you will learn:

Page

- | | | |
|-----|---|--|
| 5-2 | ➤ | About Copying files |
| 5-3 | ➤ | How to perform a quick, basic copy job |
| 5-9 | ➤ | How to use the ARCserve utilities |

Copy basics

The Copy feature allows you to copy (or move) files from one hard disk to another. For example, you can run a copy job on your local machine to store files and directories on another machine that is going to be backed up to tape. Or, you might want to copy files when your hard disk space is running low.

ARCserve's powerful copy capabilities are easy to use. With them, you can copy a drive, volume, directories, or files between:

- Your local Windows NT machine
- Remote Windows NT machines on your Microsoft network
- NetWare file servers

Copying files from remote Windows NT machines

ARCserve for Windows NT allows you to copy files from any Windows NT machine on your Microsoft network. Copying files from a Windows NT machine can be done in one of two ways:

- Copy an administrative shared drive
- Copy user shared files, directories, or a drive

Administrative shared drives

By default, Windows NT creates an administrative share for the root directory of each drive on the machine. Unless the administrative share is deleted, you can select it to be copied and ARCserve is able to copy all of the files and directories on the drive.

User shared drives and directories

In addition to creating default administrative shares, Windows NT allows you to designate specific files and directories as shareable. The owner of these files and directories has specified that they are accessible to all.

These files and directories are displayed in ARCserve's Browser, and with a click of the mouse button, you can select them to be copied.

Copying files - the basic steps

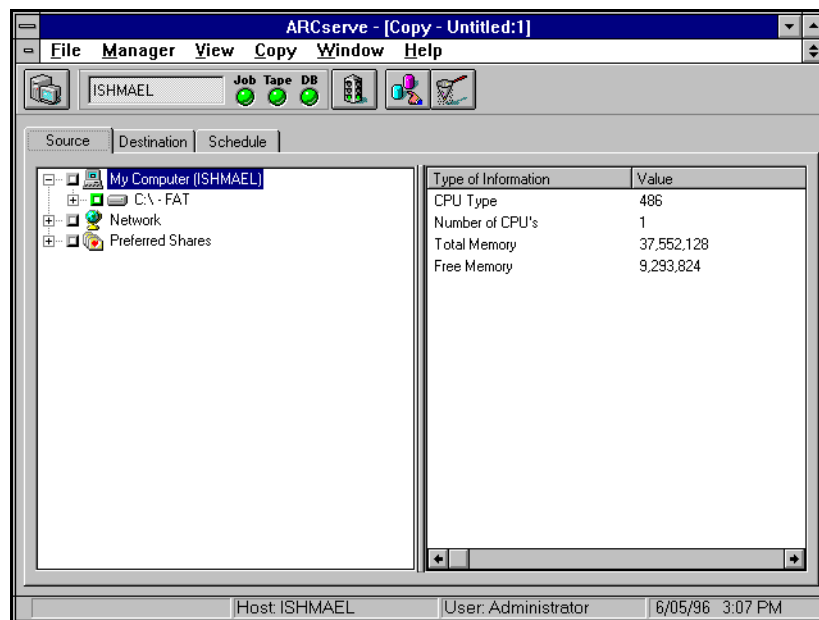
Following are the basic steps for performing a copy job - that is, using the default options to copy files and directories from one hard disk to another. Advanced copy options are discussed in Chapter 6, "Customizing Your Job".

Basic steps for copying files

To copy files:

1. Click the Copy button from Quick Access.
2. In the Source pane, select the files you want to copy.

You can only select one drive or volume, but you can select multiple directories or files on that drive or volume.



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3. In the Destination pane, specify where you want to copy the files.

4. To run the job:



- now, click the Run button.
- later, click the Schedule tab, schedule the job, and then click the Run button.

For more information about scheduling, see the section, ‘Scheduling a job’ in Chapter 6, “Customizing Your Jobs”.

The Security Information dialog box opens:

This dialog box displays the security information for the source machine or share. Enter or verify the information that is shown. To enter or change the username or password, select the machine, then click the Security button.

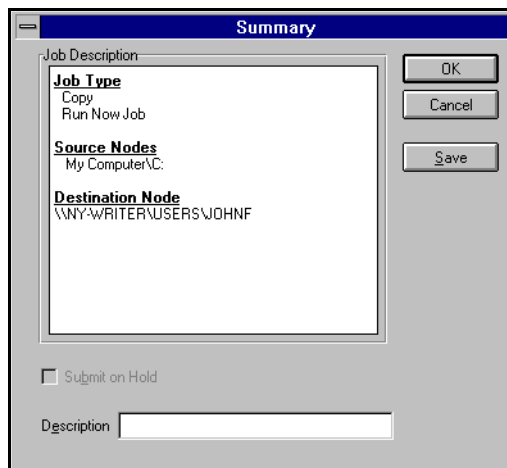
5. Click OK.

The Security dialog box opens:

Enter or verify the username and password for the destination machine.

6. Click OK to continue.

The Summary dialog box opens.



The Summary dialog box contains summary information about the job.

7. To save this job to a script file, click the Save button in this dialog box.
The Save Job Script dialog box appears.
8. Click OK to submit this job.

Considerations for WORM drives

A WORM (Write Once Read Many) drive is a storage device that uses an optical medium that can be recorded only once. You can map a WORM device like you would map any network drive. But, because it is a “write once” device, if you schedule a full copy of your C drive to your WORM device each day, files will not overwrite older copies of themselves on the drive (the way they would if you copied a file from a diskette to your hard drive). Instead, you will have separate full copies of your C drive (similar to backing up files and appending the data to a tape).

Therefore, your copy strategy when using WORM devices might be to perform a full copy job once and then use either incremental or differential jobs on subsequent days.

If you are having trouble deciding whether to use incremental or differential methods, refer to the following copy examples for WORM drives:

Scenario #1: Using incremental copy jobs

You perform a full copy on Monday and then incremental copy jobs on Tuesday through Friday. Saturday, you need to recover your entire C drive. You have to copy Monday's full copy job and Tuesday through Thursday's incremental copy jobs to recover all the files for your C drive.

The advantage in this example is the speed of the incremental copy jobs performed Tuesday through Friday. The disadvantage is the increased amount of time it takes to recover files in the event of an emergency.

Scenario #2: Using differential copy jobs

You perform a full copy on Monday and then differential copy jobs on Tuesday through Friday. Saturday, you need to recover your entire C drive. You have to copy Monday's full copy job and Friday's differential copy job to recover all the files for your C drive.

The advantage in this example is the short amount of time it takes to recover files in the event of an emergency. The disadvantage can be the increased amount of time it takes to perform differential copy jobs (vs. performing an incremental copy job).

Utilities basics

ARCserve offers several utilities that you can use to manage files. The utilities are:

- Recover Database - overwrites your ARCserve database files with a backed up copy of the database files.
- Merge Tape - adds information from tape into your ARCserve database.
- Scan Tape - reports information about one or more tape backup sessions.
- Compare - compares the contents of a tape to files on a machine.
- Count - counts files on a machine.
- Purge - deletes files from a machine.

This section describes these utilities and explains how and when to use them.

Recovering a database

The Recover Database utility allows you to restore database files from a tape to your ARCserve database.

Each time you run a backup job, ARCserve records information in its database about the machines, directories, and files that have been backed up, and the tapes that were used. This allows ARCserve to locate files whenever you need to restore them. This database information is backed up whenever you back up your ARCserve home directory.

Unlike the Merge Tape utility, which *appends* database information from tape to your existing database files, the Recover Database utility *overwrites* existing database files.

Why would you need to use the Recover Database utility?

You could use the Recover Database utility anytime you lose your ARCserve database files, such as after a disaster like a fire, flood, or a machine crash, and you want to restore your files on a machine where you can create new ARCserve database files.

To recover a database:

If you have some experience using ARCserve, you will be able to recover a database using these steps. If you need more information about using an ARCserve Manager window, refer to Chapter 2, “Basic Procedures”.

To recover a database:



1. Click the Recover Database button from the Quick Access window.

2. Specify which tape you want to use.

If the tape you want to use is not currently in a tape drive, you must type the information into the *Group* and *Tape* fields.

3. Click the Options button to indicate which database session you want to recover.



4. Select the Log tab to determine how detailed you would like the Job Queue Log/Job View Database Log to be for this job.

5. Run the job.

Click the Run button to run the job.



6. Close and re-open the ARCserve manager.

Merging a tape into the ARCserve database

The Merge Tape utility allows you to take a tape that contains one or more backup sessions and add the information from the tape into your ARCserve database. The database information from the tape will be *appended* to your existing database files.

Each time you run a backup job, ARCserve records information in its database about the machines, directories, and files that have been backed up, and the tapes that were used. This allows ARCserve to locate files whenever you need to restore them. This database information is backed up whenever you back up your ARCserve home directory.

If you have a tape that has a backup session that is not included in the ARCserve database (the backup was created using ARCserve on a different machine, for example), you can use the Merge Tape utility to get the tape's information into the database in ARCserve's home directory.

Unlike the Recover Database utility, which *overwrites* existing database files with database information from tape, the Merge Tape utility *appends* database information to your existing database files.

Why would you need to use the Merge Tape utility?

You could use the Merge Tape utility if you need to restore files to an ARCserve machine that you did not use to create the backup.

You could also use the Merge Tape utility if you pruned (deleted) information from your ARCserve database that you now need. Refer to Chapter 10, "Administering the ARCserve Server", for more information about pruning database records.

To merge a tape:

If you have some experience using ARCserve, you will be able to merge a tape using these steps. If you need more information about using an ARCserve Manager window, refer to Chapter 2, “Basic Procedures”.

To merge a tape into the ARCserve database:



1. Click the Merge Tape button from the Quick Access window.

The Merge tape screen appears.

2. Specify which tape you want to merge.

If the tape you want to use is not currently in a tape drive, you must type the information into the *Group* and *Tape* fields.

3. Indicate which session(s) you want to merge.

If you do not know the session number, you can check the Activity Log or the Job View or Tape View windows in the database. If they are not available, you can use the Scan Tape utility to list the contents of the tape, including all session numbers.

4. Run the job.

Click the Run button to run the job.



Note: Don't forget to click the Refresh button after the job completes.

Scanning Tapes

The Scan Tape utility gives you information about your tape backup sessions. (Each source that you select to back up is saved on tape as an individual session.) You can scan a single session or an entire tape. Results of the Scan Tape job can be seen in the Job Queue or Job View Database Manager (by clicking the Log tab).

The Option button on the Scan Tape Manager allows you to select the level of detail you will see in the log. You can select to see just summary information and any errors that occurred during the scan or you can select to see each file that was backed up as well as the summary information and any errors. A sample report appears below:

```

ARCserve for Windows NT -- Scan
Tape Name..... ELLENS FULL BACKUP, ID 172F
Sequence..... 1
Session..... 1
Workstation..... TP_AS
Path..... C:
Owner Name..... Administrator
Date & Time..... 12/09/94 12:44
Data Compression..... None
Session Type..... Windows NT FAT Drive
Session Method..... Backup
                   No Registry
                   Disk/Volume Backed Up
                   No Filters

C:
                   <DIR>    0/00/80  0:00
IO.SYS                40,566   9/30/93 11:20
MSDOS.SYS             38,138   9/30/93 11:20
    
```

Why would you use the Scan Tape utility?

Use the Scan Tape option to find out what is on a tape.

You would need to do this if you are trying to recover an ARCserve machine and you need to find the most recent backup of the ARCserve database so that you can restore it.

You could also use the Scan Tape utility if you want a list of the files that were backed up.



To scan a tape:

If you already have some experience using ARCserve, you will be able to scan a tape using these steps. If you need more information about using an ARCserve Manager window, refer to Chapter 2, “Basic Procedures”.



To scan a tape:

1. Click the Scan Tape button from the Quick Access window.

The Scan Tape screen appears.

2. Specify which tape you want to scan.

If the tape you want to use is not currently in a tape drive, you must type the information into the *Group* and *Tape* fields.

3. Indicate which session(s) you want to scan.
4. Determine how detailed you would like the Job Queue Log/Job View Database Log to be for this job.

Click the Options button and select the Log tab.



5. Run the job.

Click the Run button to run the job.



Comparing Tapes

The Compare utility allows you to compare the contents of a tape session to files on a machine.

Results of the Compare Tape job can be seen in the Job Status or Job View Database Manager (by clicking the Log tab).

The Option button on the Compare Tape Manager allows you to select the level of detail you will see in the log. You can select to see just summary information and any errors that occurred during the scan or you can create a report that lists each file that was compared and indicates if there is any difference in the file name, size, date, time, or attributes.

Why would you use the Compare Tape utility?

You could use this utility after a backup to verify that the backup copied all of the files to tape without error.

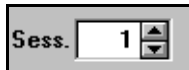
To compare the contents of a tape:

If you already have some experience using ARCserve, you will be able to compare a tape using these steps. If you need more information about using an ARCserve Manager window, refer to Chapter 2, “Basic Procedures”.

To compare the contents of a tape:



1. Click the Compare Tape button from Quick Access.
The Compare Tape screen appears.
2. Specify which tape you want to compare.
If the tape you want to use is not currently in a tape drive, you must type the information into the *Group* and *Tape* fields.
3. Specify the session number you want to compare.
Enter the session number in the *Session* field.



If you do not know the session number, you can check the Activity Log or the Job View or Tape View windows in the database. If they are not available, you can use the Scan Tape utility to list the contents of the tape, including all session numbers.

4. Select the Destination tab to specify what you want to compare against.
5. Determine how detailed you would like the Job Queue Log/Job View Database Log to be for this job.
Click the Options button and select the Log tab.



6. Run the job.
Click the Run button to run the job.



Counting files and directories

The Count utility allows you to count the number of files and directories on a machine.

Results of the Count job can be seen in the Job Queue or Job View Database Manager (by clicking the Log tab).

To count files:

If you already have some experience using ARCserve, you will be able to count files using these steps. If you need more information about using an ARCserve Manager window, refer to Chapter 2, “Basic Procedures”.

To count files:



1. Click the Count button from the Quick Access window.

The Count screen appears.

2. Specify what you want to count.

You can select one or more domains, machines, drives or directories.

3. Add any filters you may need.

You can add filters to include or exclude files or directories from being counted.



To add filters, click the Filters button.

For more information about filtering, refer to Chapter 6, “Customizing Your Jobs”.

4. Determine how detailed you would like the Job Queue Log/Job View Database Log to be for this job.

Click the Options button and select the Log tab.



5. Run the job.

Click the Run button to run the job.



Purging files and directories

The Purge utility allows you to delete files and directories from a machine. (Using filters, you can include or exclude files to be deleted.)

Results of the Purge job can be seen in the Job Queue or Job View Database Manager (by clicking the Log tab).

The Option button on the Purge Manager allows you to select the level of detail you will see in the log. You can select to see just totals and any errors that occurred or you can create a report that lists each file and directory that was deleted.

Why would you use the Purge utility?

You could use this utility to delete files that have not been used for a specific period of time.

To purge files:

If you already have some experience using ARCserve, you will be able to purge files using these steps. If you need more information about using an ARCserve Manager window, refer to Chapter 2, “Basic Procedures”.

To purge files:



1. Click the Purge button from the Quick Access window.
The Purge screen opens.

2. Specify what you want to purge.

You can select a drive, directory, or specific files on a machine.

3. Add any filters you may need.

You can add filters to include or exclude files or directories from being purged. To add filters, click the Filter button.







C h a p t e r

CUSTOMIZING YOUR JOBS

This chapter explains how to add filters and options to your jobs, how to schedule jobs, and how to create scripts.

In this chapter, you will learn:

<i>Page</i>	
6-2	➤ How to apply a filter
6-10	➤ How to schedule a job
6-15	➤ How to use tape rotation schemes, including Grandfather-Father-Son (GFS) rotation
6-22	➤ How to create scripts for your job
6-31	➤ How to apply job options

Applying filters

About filtering

Filters allow you to include or exclude files and directories from your backup, copy, or restore jobs, as well as from the utilities, such as count and purge.

For backup and count jobs, filtering can be performed on a per machine basis. This means you can include a directory from one machine and exclude the same directory from another machine.

Exclude over include

Exclusions always take precedence over inclusions. For example, if you add a File Pattern filter to include only files that have an *.exe* extension, and you add a Directory filter to exclude your *\system* directory, all *.exe* files in the *\system* directory will be excluded.

Include only

Specifying to “Include” files will result in a backup or restore containing only those files which satisfy the filter specifications. For example, suppose in the source area you selected to back up your entire local hard drive, and you then set up a Directory filter to include files in the *\system* directory. The result would be that ARCserve would only back up files from your *\system* directory. No other files would be backed up.

Available filters

You have the option of including and excluding files based on the following criteria:

- Specific file names or patterns
- Specific directory names or patterns
- File attributes (hidden, system, etc.)
- Files created, modified, or last accessed before, on, or after a specific date or within a date range

Machine-level filters

Machine-level filters can be created for backup and count jobs. These filters apply to one specific machine, not the entire job. (A backup or count job can have machine-level and job-level filters for the same job.) If you want to add a filter that applies to the whole job, refer to the 'Job-level filters' section below.

To apply a machine-level filter:

1. Highlight the machine you want to filter.
2. Click your right mouse button.
A pop-up menu opens.
3. Select *Filter*.

The Filter dialog box appears. In it, you will create your machine-level filters. Refer to the 'Job-level filters' section below for information about the Filter dialog.

Job-level filters

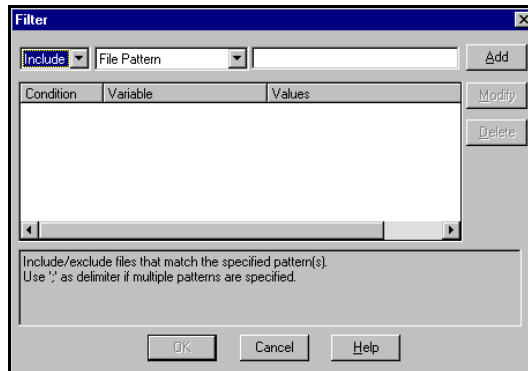
Job-level filters can be created for backup, copy, and restore jobs, as well as for the utilities, such as count. Job-level filters are applied to the whole job, not to a specific machine.

To apply a job-level filter:

1. Click the Filter button.



The Filter dialog box opens:



2. Decide whether to include or exclude the files or directories.

If you select *Include*, only files or directories that match the criteria you specify will be backed up, copied, restored, counted, or deleted.

If you select *Exclude*, all files will be backed up, copied, restored, counted, or deleted EXCEPT for those that match the criteria you specify.

3. Specify the filtering information.

Select the type of filter you want to add and enter the criteria (file pattern, directory, date(s), or file attributes) for that filter.

Refer to the sections that follow in this chapter for information about the various filters.

4. Click the Add button.

File Pattern filter

Use a File Pattern filter to include or exclude certain files from a job. You can specify a particular file name or you can use wildcards to specify a file pattern.

For example, to exclude files with a *.bak* extension:

1. In the left drop-down box, select *Exclude*.
2. In the middle drop-down box, select *File Pattern*.
3. In the space provided, type **.bak*.
4. Click *Add*.

The filter is applied to your job.

The following table describes the recognized file patterns.

Pattern	What it means	Example
DRIVE:\PATH\FILE	An absolute path on your local hard drive.	C:\SYSTEM*.FOT C:\BAT\AUTOEXEC.BAT
\\MACHINE\PATH\FILE	An absolute path on any network drive.	\\ENG\DOS\SYSTEM.BAT
\PATH\FILE	An absolute path on any network drive.	\WINNT\SYSTEM*.FOT \BAT\AUTOEXEC.BAT
DRIVE:FILE	The file may be in any directory on the specified network drive.	C:*.FOT C:AUTOEXEC.BAT
FILE	The file may be in any directory on any drive.	*.FOT AUTOEXEC.BAT

Directory filter

Use a Directory filter to include or exclude specific directories from a job. You can enter an entire directory name or provide a pattern that the directory name follows.

For example, to exclude the directory *\reports\backup* from a job:

1. From the left drop-down box, select *Exclude*.
2. From the middle drop-down box, select *Directories*.
3. In the space provided, enter *\reports\backup*.
4. Click *Add*.



The directory filter is added to your job.

The table on the following page shows you how to specify paths for Microsoft Network machines and NetWare servers.

Pattern	What it means	Example
DRIVE:\PATH	An absolute path on your local hard drive.	C:\WINNT\MSAPPS C:\WIN*
\\MACHINE\PATH	An absolute path on any network drive.	\\ENG\DOS
\PATH	An absolute path on any network drive.	\\WINNT\MSAPPS \WIN*
DRIVE:DIR_NAME	The directory may be in any other directory on the specified drive.	C:MSAPPS C:MS*
DIR_NAME	The directory may be in any other directory on any network drive.	MSAPPS *APPS

File Attributes filter

Use the File Attributes filter to include or exclude specific types of files from a job.

For example, to exclude hidden files:

1. From the left drop-down box, select *exclude*.
2. From the middle drop-down box, select *File Attribute*.
3. In the right drop-down box, check *Hidden*.
4. Click *Add*.

The filter is added to your job.

Types of file attributes

There are four types of file attributes you can choose from. Select as many file types as you want.

- *Hidden* - Files not shown in a directory listing. For example, IO.SYS is a hidden file.
- *System* - Files that are unique to the machine you are using.
- *Read Only* - Files that cannot be modified.
- *Archive* - Files whose archive bit is set.

File Modified/Created/Accessed filters

Use the File Modified/Created/Accessed filters to include or exclude files based on a specific date and time or a date range.

For example, to include files that have been modified today:

1. From the left drop-down box, select *include*.
2. From the middle drop-down box, select *File Modified After*.
3. In the date box, select today's date.
4. Click *Add*.

The filter is applied to your job.

Filter types

There are three types of filters from which to choose:

- *Modified* - will include or exclude files last modified (changed) on this date.
- *Created* - will include or exclude files created on this date.
- *Accessed* - will include or exclude files last accessed (used but not changed) on this date.

Filter criteria

There are four options from which to choose:

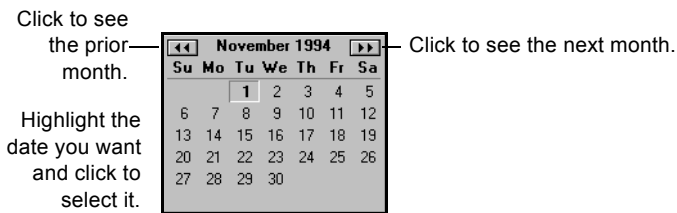
- *Before* - Files whose date matches, or whose date is earlier than, this date will be included or excluded.

-
- *After* - Files whose date matches, or whose date is later than, this date will be included or excluded.
 - *Between* - You must specify two dates for this selection. Files whose date falls between the two dates will be included or excluded from the job.
 - *Within* - Selecting this option requires you to enter a number of days, months, or years to be used for the comparison (for example, *within* the past 12 months). Enter a number between 1 and 250, inclusive. ARCserve will use the current date as the basis from which to count back.

Specifying dates

You can specify a date in two ways:

- Enter a specific date.
- Double-click in the date field to display a calendar to select a specific date.



Viewing, modifying, or deleting existing filters

You can view the filters you've created by displaying the Filter dialog box. You can also change or delete a filter from within this dialog.

To modify a filter that has already been added to a job:

1. Highlight the filter to modify.
The filter is displayed in the entry field.
2. Make your changes to the filter.

You can change the values in any field.

3. Click the Modify button.
4. Click OK when done.

To delete a filter:

1. Highlight the filter to delete.
2. Click the Delete button.

The filter will be deleted from the list of applied filters for the job.

Scheduling a job

This section describes how to schedule a job to run immediately or at a later date and time. You specify the source and, if required, the destination for your job before you can specify scheduling information.

Backup, Restore and Copy jobs can all be scheduled in essentially the same way, using the Schedule options available in the ARCserve Manager. Backup jobs can also be configured to use Tape Rotation schemes, as described in the section “Using a Rotation Scheme”, in Chapter 3, “Backing up to Media”.

Running a job immediately vs. scheduling it for a later time

Run your job immediately when:

- The job you are submitting is a “one-shot” job that you want executed immediately.
- You want to monitor the job as it runs.

When shouldn't you run a job immediately

If your tape drive is currently busy and you want to run a backup job as soon as the drive is free, you should not select *Run Now*. Instead, you should schedule your backup job, keeping the current date and time. This way, when ARCserve discovers that the tape drive is busy, it will automatically retry the backup job until the drive becomes free.

If you select *Run Now*, ARCserve will report that the tape drive is busy and the backup job will not be submitted to the job queue. Instead, you will be asked to wait until the drive is available before you can resubmit the job.

To run your job immediately:

1. In the Schedule dialog box, select *Run Now* and click OK. You will be taken to the Job Queue Manager so that you can watch the progress of your job.

Scheduling your job

You can schedule your job to run at a specified date and time, and/or to repeat regularly (automatically resubmitted to the job queue).

When should you schedule your job?

Schedule your job when:

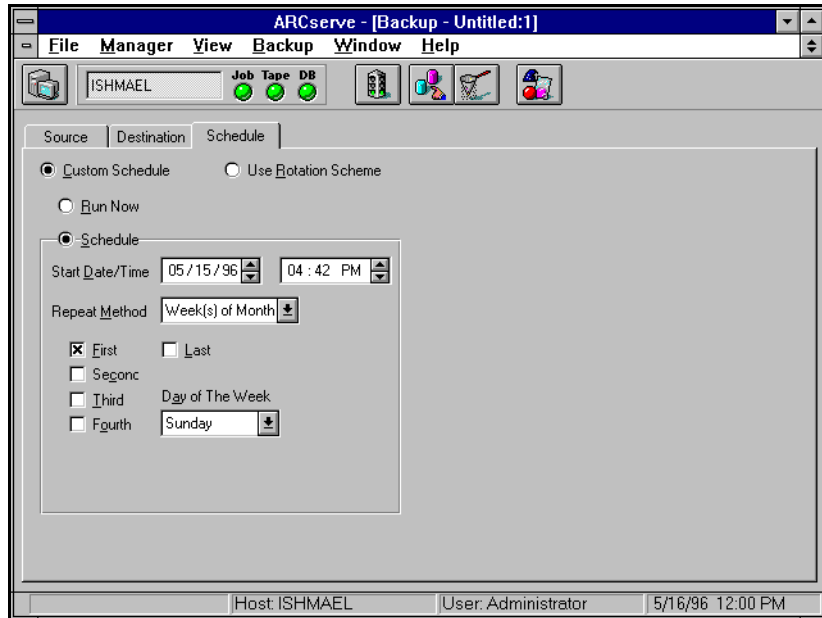
- You are submitting a “one-shot” job, but you don’t want it to run now. You want it to run at a specific time, such as 12 am.
- You are submitting a job that should run regularly. This is especially useful for setting up a tape rotation scheme for your network.
- Your tape drive is currently busy and you want to run a backup job as soon as the drive is free. To do this, schedule your backup job with the current date and time. ARCserve will retry the job until the drive is free.

To specify a scheduling option:

1. Open the appropriate window (Backup, Restore, Copy, or other job-configuring window).
2. When you’ve selected the Source (and, if appropriate, Destination) for your job, click the Schedule tab.

The Schedule dialog box appears.

3. If it is not already activated, select Custom Schedule.
The Custom Schedule dialog box appears.



4. Select the schedule mode you want.
 - To run the job immediately, select Run Now.
 - To schedule the job, select Schedule and then enter the scheduling information in the appropriate fields. (See the following procedure, "Selecting a Custom Schedule Repeat Method", for more information on how to perform this operation.)
5. Click the Run button.

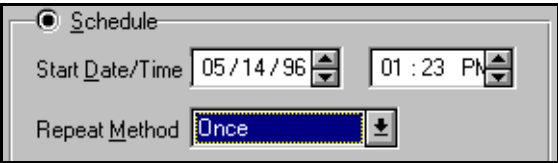
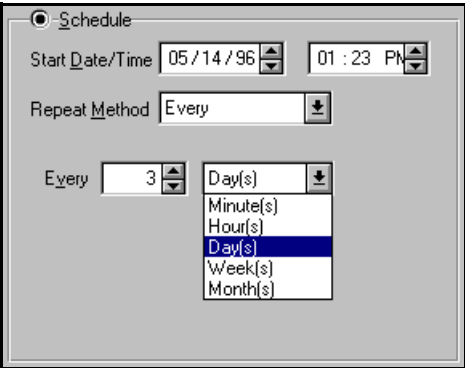


ARCserve places the job in the job queue according to the mode you specified.

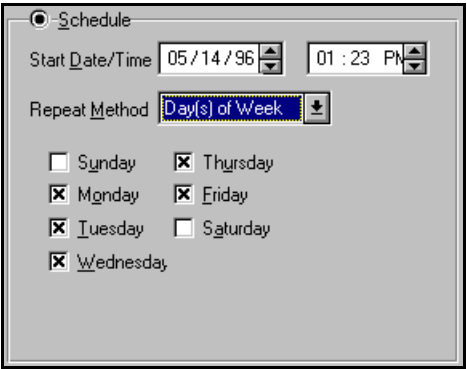
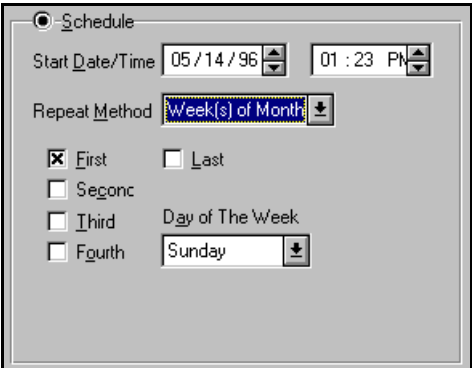
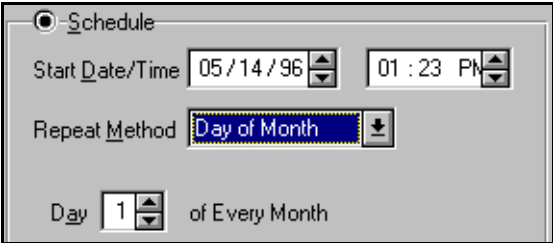
Specifying a repeat method with custom scheduling

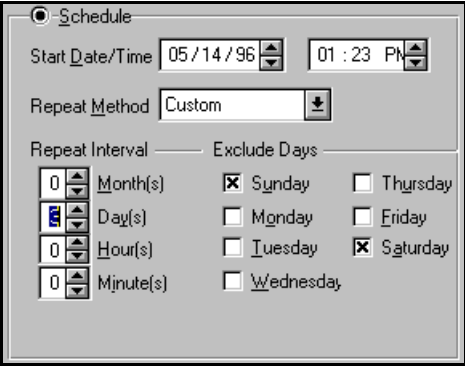
To specify a repeat method:

- 1. With the Custom Schedule dialog box open, select from one of the following repeat methods:

Repeat Method	Description
<i>Once</i>	Run the job once at the specified time. 
<i>Every</i>	Run the job repeatedly at the specified interval. 



Repeat Method	Description
<i>Day(s) of Week</i>	<p>Run the job on the selected days of the week at the specified time.</p> 
<i>Week(s) of Month</i>	<p>Run the job during the specified week or weeks on the specified day of the week.</p> 
<i>Day of Month</i>	<p>Run the job once a month on a given (numerical) day of the month.</p> 

Repeat Method	Description
<p><i>Custom</i></p>	<p>Run job at specified interval excluding selected days of the week.</p> 

2. In the Schedule dialog, specify the appropriate parameters.

Grandfather-Father-Son (GFS) rotation

ARCserve's Grandfather-Father-Son (GFS) rotation scheme is based on what is standard in the mainframe and minicomputer environments.

The most important things to remember about ARCserve's GFS feature are the following advantages it offers.

Based on a weekly schedule

The GFS strategy is a method of maintaining backups on a daily, weekly, and monthly basis. GFS backup schemes are based on a seven-day weekly schedule, beginning any day. A full backup is performed at least once a week. All other days, full, partial, or no backups are performed. The daily backups are the Son. The last full backup in the

week (the weekly backup) is the Father. The last full backup of the month (the monthly backup) is the Grandfather.

By default, you can re-use daily media after six days. Weekly media can be overwritten after five weeks have passed since it was last written to. Monthly media are saved throughout the year. These can and should be taken off-site for storage. You can change any of these media rotation defaults to suit your particular environment.

The primary purpose of the GFS scheme is to suggest a minimum standard and consistent interval at which to rotate and retire the media.

GFS media pools

The GFS rotation scheme automatically creates three media pools - daily, weekly, and monthly when you schedule a backup using this scheme. These pools are named according to the Media Pool Prefix you enter in the Schedule dialog box. Each media pool has its own Scratch Set and Save Set with a default retention period and minimum number of media to save.

The following are the GFS media pools and the formulas used to calculate their retention periods and number of media to save, when the default values are used:

- *Daily pool:* This pool holds the daily media. The default retention period is six days and the number of Save Set media is based on the number of daily media in the GFS rotation minus one [# of daily media -1].

For example, if you are using the default GFS setup, where you preserve six daily media, the number of Save Set media in the GFS Daily Media Pool would be five: six daily media minus one. After six days have passed since the media was used [on the seventh day], it can be moved from the Save set to the Scratch set.

- **Weekly pool:** This pool holds the weekly media. The retention period equals the number of weekly media times seven, minus one $[(\# \text{ of weeklies} * 7) - 1]$. The number of save media is based on the number of weekly media in the GFS setup minus one $[\# \text{ of weekly media} - 1]$.

For example, if you are using the default GFS scheme, where you preserve five weekly media, 34 days would be the length of the retention period (5 times 7 minus 1). In the same example, four would be the number of save media in the GFS Media Pool (5 weekly media minus 1). After 34 days since the media was used (on the 35th day), it can be moved to the Scratch set, provided there are four (4) other media in the save set of the Weekly pool.

- **Monthly pool:** This pool holds the monthly media. The retention period equals the number of monthly media times 29 minus five $[(\# \text{ of monthlies} * 29) - 5]$. The number of save media is based on the number of monthly media in the GFS setup minus one $[\# \text{ of monthly media} - 1]$.

For example, if you are using the default GFS scheme, where you preserve 12 monthly media, 343 days would be the length of the retention period (12 times 29 minus 5). In the same example, 11 would be the number of save media in the GFS Media Pool (12 monthly media minus 1). After 343 days since a media has been used, it can be moved to the Scratch set, provided there are 11 media in the Save Set of the Monthly pool.

If you preserve one media each month (12 monthly media), the retention period is 343 days, using the $(12 * 29) - 5$ formula, which takes into account months with differing number of days.

Incremental vs. Differential backups

There are basically three backup modes for use with rotation schemes, either custom or GFS:

- Full
- Incremental
- Differential

The first weekly backup will be a full backup. Subsequent backups (until the next full backup) can either be incremental or differential (but all one mode).

In incremental backup mode, on the first day after the last full backup, only those files which have changed since the last full backup are backed up. With subsequent incremental backups, only those files which have changed since the previous incremental backup are backed up.

In differential backup mode, every file that has changed since the last full backup is backed up during every differential backup.

Thus incremental backups are, on average, much faster than differential backups because fewer files need to be backed up. However, restoring data backed up with a rotation scheme using incremental backups is much slower, since data from the last full backup plus data from all the incremental backups must be restored. Restoring data backed up in differential mode only requires the last full backup plus the last differential backup.

Using the Use Rotation Scheme option

This section describes how to configure a rotation scheme for a backup job by using ARCserve's default GFS scheme or by specifying your own rotation parameters.

The basic configuration of a rotation scheme consists in specifying one of the following parameters for a backup on a given calendar day:

- Full backup
- Incremental backup
- Differential backup
- No backup

Full backup is self-explanatory. A full backup is performed each time the job is repeated.

An incremental backup backs up only those files that have changed (their archive bit has been set) since the last backup was done will be backed up. After each backup, archive bits are reset so that they are not backed up during the next incremental backup job.

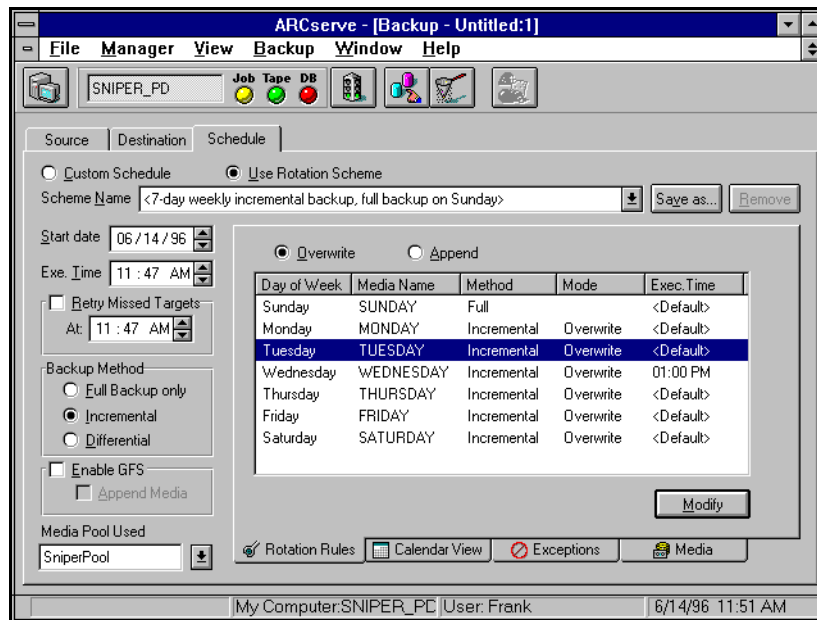
With differential backup, the backup is performed daily after one weekly full backup and the following occurs:

- A full backup will be made of the job and all archive bits will be cleared.
- The next day, the differential Backup will back up files that have their archive bit set. (The archive bit will not be reset after the backup.)
- The following day, the differential backup will contain all files that have their archive bit set from the previous two days.

To configure a rotation scheme:

1. If it is not already activated, activate the *Use Rotation Scheme* check box.

The Use Rotation Scheme dialog box (shown in high resolution) appears.



2. From the drop-down box at the top of the panel, select the type of rotation scheme you want.

For more information on these standard schemes, see the following section, “Using the Calendar View to modify your rotation scheme”.

3. Specify if you want GFS rotation or not.
 - To create three media pools (daily, weekly, monthly) for a GFS scheme, select *Enable GFS*.
 - If you select *Enable GFS*: in the space labeled Media Pool Name Prefix, type in the prefix for the names of the Monthly, Weekly, and Daily media pools. ARCserve will automatically create and name these media pools using this prefix when the first backup job is run.

- To specify a simple rotation scheme (single media pool), leave the GFS option unselected.
If you leave *Enable GFS* unselected, select a media pool from the list of available media pools in the drop-down box or enter the name of the new media pool you want ARCserve to create.
- 4. Customize your selected rotation scheme.
For more information on rotation schemes see the sections of this chapter, 'Grandfather-Father-Son (GFS) rotation' and 'GFS media pools', and the following section, 'Using the Calendar View to customize Your Rotation Scheme'.
- 5. Name and save your rotation scheme.
Click the *Save as* button to name and save your scheme.
- 6. Click the Run button.
The backup job will run according the rotation scheme you have set up.

Using the Calendar View to customize Your Rotation Scheme

With GFS rotation either enabled or disabled, you can the Calendar View feature to customize your rotation scheme according to the types of backups you want for particular days of the week or month. This feature enables you to specify exceptions to the standard rotation scheme you're using.

To customize a rotation scheme:

1. From the drop-down box at the top of the Schedule dialog, select a standard rotation scheme.

The standard rotation schemes available are as follows:

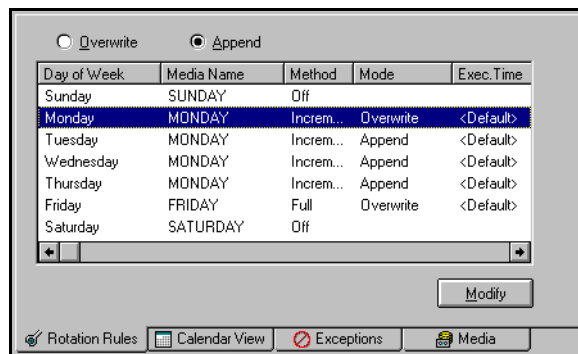
- *Five-day weekly incremental backup, full backup on Friday*
- *Seven-day weekly incremental backup, full backup on Sunday*

- *Five-day weekly differential backup, full backup on Friday*
- *Seven-day weekly differential backup, full backup on Sunday*
- *Five-day weekly full backup*
- *Seven-day weekly full backup*

You can specify each of these standard rotation schemes with GFS either enabled or disabled.

2. To view the rotation rules for the scheme you've selected, click the *Rotation Rules* tab at the bottom of the panel.

The Rotation Rules box appears:



In the example above, the list box displays the rotation rules for the *5-day weekly incremental backup, full backup on Friday* with *Append* selected.

In this box, you can select either *Overwrite* or *Append* as the method of writing to tape.

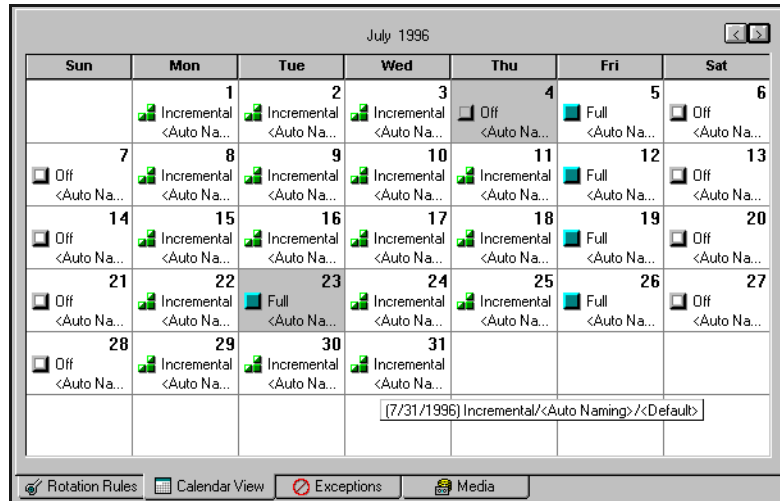
3. Specify a start date and execution time.
4. If you selected a rotation scheme with GFS, select *Enable GFS*.

If you select this option, enter a *Media Pool Name Prefix* in the space provided.

Otherwise, from the drop-down box, select a *Media Pool Used* from the available media pools.

5. Click the *Calendar View* tab at the bottom of the panel.





The Calendar View appears, with a graphic view of the rotation scheme you specified.



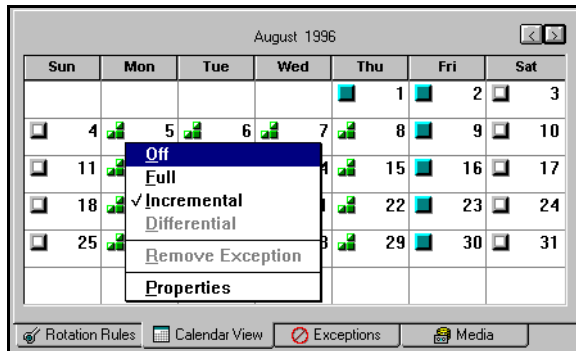
The Calendar View begins on the Start Date you specified and displays information about the backup method for each date in symbolic form. If you are viewing a high-resolution display, this information also appears in word form, as shown in the figure above.

With either a low or high resolution display, you can also view information about the backup method by placing the cursor on the date box and waiting a few seconds.

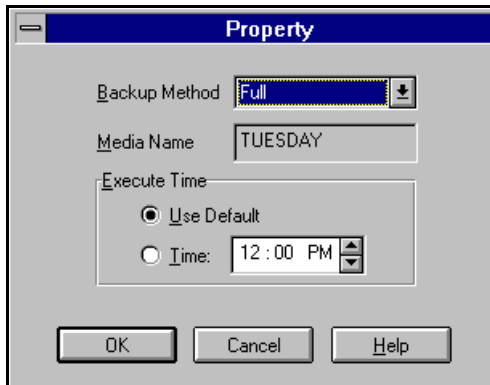
The Calendar View displays the following symbols for backup types on specific dates:

Symbol	Description
	Full backup on this date.
	Incremental backup on this date.
	Differential backup on this date.
	No backup on this date.

-
6. To change the backup method for a specific date:
With the pointer on the date you want to be an exception, click the right mouse button. A pop-up menu appears:



7. From the pop-up menu, select the backup method you want to substitute as an exception.
The date with the exception now appears gray with the icon for the exception backup method.
You can also use this pop-up menu to remove a previously inserted exception (select *Remove Exception*), and to change the properties of the backup for that date, for example, execution time and backup type. To do so, select *Properties*.
The Property dialog box appears:

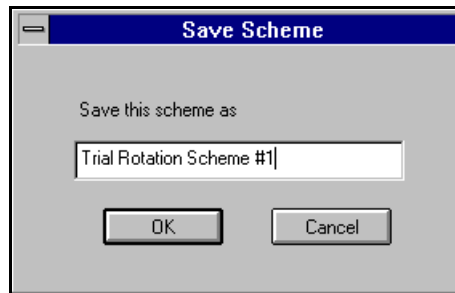


If desired, specify an execution time for this date different from the default execution time.

You can also change the backup method using this dialog box. To do so, select the method from the drop-down box. Click OK.

8. To save your customized rotation scheme, click *Save as*.

The Save Scheme dialog box opens:



9. In the space provided, enter the name you want your rotation scheme to have and then click OK.

Your rotation scheme is saved, and your backup jobs will be run according to this scheme.

Note: With a high resolution display, you can resize the Manager window by simple clicking and dragging. Expanding the Backup Manager window also increases the amount of information on backup method which you can see on in the date boxes of the Calendar View.

Options with Use Rotation Scheme

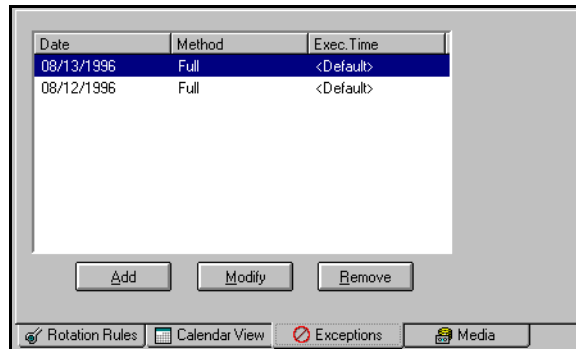
At the bottom of the Use Rotation Scheme dialog are the following four tabs:

- Rotation Rules
- Calendar View
- Exceptions
- Media

The previous section describes the use of the Rotation Rules and Calendar View tabs. The following two sections describe the Exceptions and Media tabs.

Exceptions

When you click the Exceptions tab, the following dialog appears:



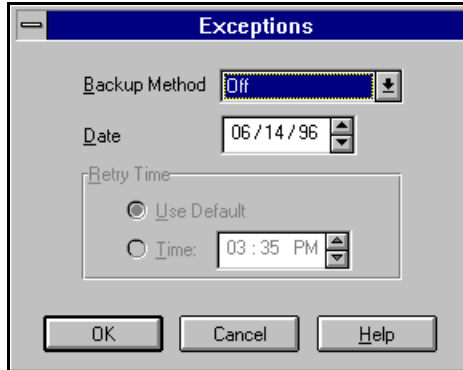
The box in this dialog displays a list of the dates which have exceptions in backup method. Using the buttons, you can perform the following operations on your exceptions.

Adding and modifying exceptions

To add an exception:

1. Click Add or Modify.

The Exceptions dialog box appears:



This is an alternative method to using the pop-up menu with the Calendar View. You can also change the Retry time with this dialog box.

2. Add or change whatever exceptions you want, and then click OK.

The exceptions you specified are added to your rotation scheme.

Removing exceptions

As an alternative to selecting *Remove Exceptions* from the Calendar View, you can remove exceptions using the Exceptions dialog.

To remove exceptions:

1. In the Exceptions dialog, select the exception you want to remove.
2. Click the Remove button.

The exception is removed from the rotation scheme.



Using the Media tab to view media pool information

To view media pool information:

- > Click the Media tab at the bottom of the *Use Rotation Scheme* dialog.

The Media Pool Information box appears.

Media Pool Information		Preserve Media	
Pool Name	New_Pool1	Daily	4
Base Serial Number	1000000	Weekly	5
Next Serial Number	1000000	Monthly	12
Serial Number Range	100000	Total Media needed	21
Min. # of Media	5		
Retention Time (days)	6		

Rotation Rules | Calendar View | Exceptions | Media

Creating scripts for your jobs


You can save any type of job as a script. The script will contain the source, destination, and options that you selected, as well as the schedule information. It will also contain any filters you created to include and exclude files and directories.

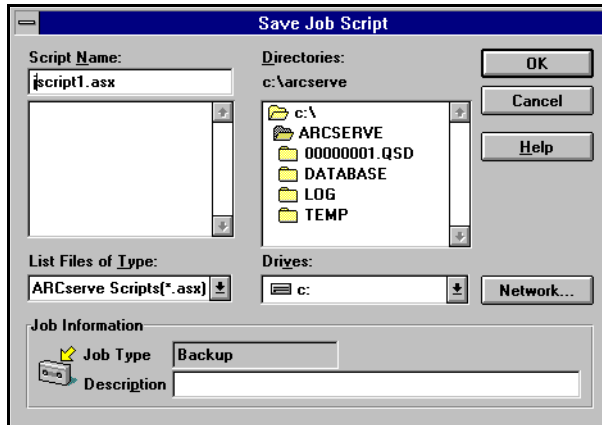
Creating a script has the following advantages:

- You can re-use the same settings at a later time.
- You can copy your settings to a different Windows 95 machine running ARCserve.
- You can quickly re-submit regularly executed jobs after a job has been accidentally deleted.

To use a script, go to the Job Queue Manager and use the Add Job button. When you specify the job script name, all of the information that you set when you saved the job script will be used, including the files and directories and the scheduling information.

To create a script:

1. Set up the job.
Select the source, destination (if required), scheduling method, and any options or filters. Refer to the appropriate chapter in this manual for more information about setting up a job.
Refer to the previous section in this chapter for details about specifying scheduling information.
2. Click the Run button. The Run button icon is a small square button with a green play symbol and a small window icon.
3. Fill in the requested security (and for backups, Agent) information.
4. When the Job Summary dialog box appears, click Save.
The Save Job Script dialog box appears.



5. Give the script a name.

ARCserve scripts are stored in the ARCserve home directory by default, extension “.asx”. You can specify a different directory in which to save your script.

6. Click OK.

Note: You can also save job scripts using the Save or Save As... options from the File menu.

To use a script:

1. Open the Job Status Manager.
2. Click the Add Job button.
3. Specify the script file name.

Refer to Chapter 8, “Job Status”, for more details about using the Job Queue Manager and the Add Job button.

Applying job options



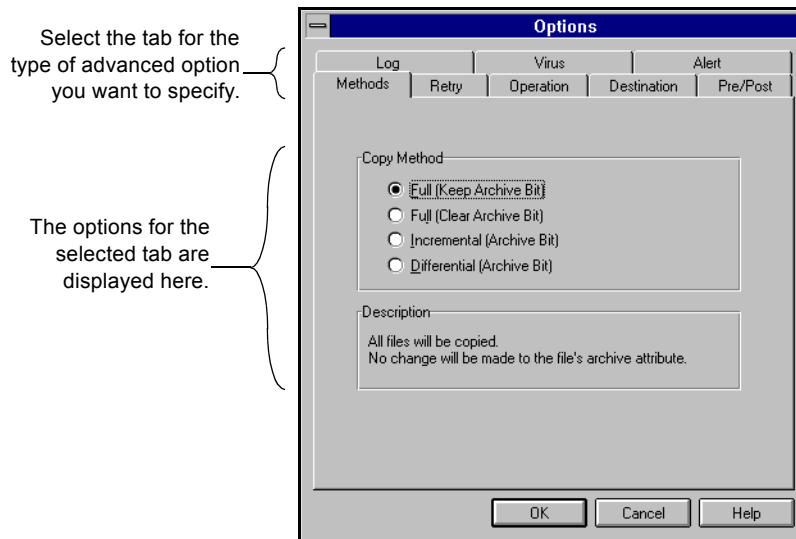
Job options apply to the current job that you are configuring. They can be used to configure any type of job that is submitted to the ARCserve engine, including backup, copy, and restore jobs.

Some of the most common job options for backup jobs are described in Chapter 3, “Backing Up Data”.

To apply job options to a job:

1. Set up the job in the appropriate Manager window.
2. Click the Options button on the toolbar.

The Options dialog box opens:



3. Select the tab for the type of option that you wish to change.
4. Select your options.

The rest of this section describes each type of global job option.

Destination options (Restore and Copy)

The Destination options determine how the directory structure is created on the destination when files are copied or restored. They also determine which files (if any) can be overwritten.

Destination options apply to both Restore and Copy jobs. For more information on how to specify destination options for Restore jobs, refer to the section, ‘Selecting a destination for your restored data’, in Chapter 4, ‘Restoring Your Data’.

To specify destination options for a copy job:

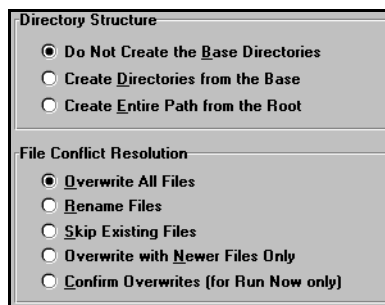
1. In Copy Manager, click the Options button.

The Options dialog box appears.



2. Select the Destination tab.

The Destination dialog appears:



3. Specify the destination options you want.

For a description of these options, refer to the section, ‘Selecting a destination for your restored data’, in Chapter 4, ‘Restoring Your Data’.

4. Click OK.

These options will be applied to the job when it runs.

Log options (general)

The Log options determine the level of detail that is included in the log report for the operation. You can view the log report in the Job Queue window or Database Manager window (Job View).

The log options can be set in the following windows:

- Backup
- Restore
- Compare
- Scan
- Copy
- Count
- Delete

The log options are described in the following table:

Option	Description
Log All Activity	Record all of the activity that occurs while the job is running in the Job Log.
<i>Log Summary Only</i> (the default selection)	Record summary information of the job (including source, destination, session number, and totals) and errors.
Log Disabled	Do not record any information about this job in the Job Log.



Methods options (Backup and Copy)

The Backup Method options determine which files are backed up or copied and if the file's archive bit is reset.

The available backup methods are:

Method	Which files are included?	Check archive bit?	Reset archive bit?
Full (Keep Archive Bit)	All source files.	No.	No.
Full (Clear Archive Bit)	All source files.	No.	Yes.
Incremental (Archive Bit)	Source files whose archive bit is turned on.	Yes.	Yes.
Differential (Archive Bit)	Source files whose archive bit is turned on.	Yes.	No.

In general, if you have large amounts of data to be backed up or copied every day, running regular differential or incremental backup or copy jobs and an occasional full backup or copy job may be your best solution.

Refer to Chapter 3, “Backing Up Data” for more information on the available backup methods.

Operation options (Backup)

The Operation options for Backup determine related actions that occur during or after the backup, and the level of information that is recorded in the database.

Basic Operation options

The following table describes the (basic) Operation options:

Option	Description
Eject Tape	Eject the tape from the drive after the job finishes. This helps prevent any other job from overwriting information on this tape.

Option	Description
Delete Files After Backup	Delete source files from the source machine after they have been backed up to tape. Use this option to perform disk grooming. Set a filter to back up files that haven't been accessed for a certain period of time (say, 3 months or so), and then select this option to delete these old, unaccessed files from the source disk.
Disable File Estimate	Before any file is backed up to tape, ARCserve, by default, performs an estimate of how long the job will take. Set this option on if you want ARCserve to skip this function.
Compress Files	Compress files on backing up.

Database Operation options

The following table describes the database operation options:

Option	Description
Record Detail Information	Log all the information pertaining to the source and destination in the database.
Record Job and Session Information Only	Log only job and session information in the ARCserve database.
Disable Database Recording	Don't log any information about this job in the database. Select this option if you are backing up the ARCserve database or if you have limited disk space. You will have to submit a Merge Tape operation before you can use any of the database views to restore this data. Or, you can restore data from this job using the <i>Restore by Tape Media</i> source view.



Operation options (Copy)

The Operation options (for Copy) determine related actions that occur during or after the copy operation, and the level of information that is recorded in the database.

Basic Operations options

The basic Operation options for Copy are described in the following table:

Option	Description
Mirror	Create a mirror image of the source machine on the destination. Copy files and directories from source and delete all files and directories that do not appear on source.
Delete Files	Delete files from source machine after copying to destination.
Create Empty Directories	Copy empty directories from source machine to destination machine.

Database options

The Database Operation options for Copy are described in the table below:

Option	Description
Record Job Information Only	Record job information.
Disable Database Recording	Do not record job information.

Operation options (Restore, Compare, Scan, Count)

The Operation options (for Restore, etc.) determine related actions that occur during or after the job, and the level of information that is recorded in the database.

Basic Operation options

The basic Operation options for Restore etc., are described in the following table:

Option	Description
Restore Registry Files	Restore registry files to the machine.
Create Empty Directories	Restore directories that have no files in them.

Database Operation options

Database Operation options for Restore, etc., are described in the following table:

Option	Description
Record Job Information Only	Record job information.
Disable Database Recording	Do not record job information.



Retry options (Backup and Copy)

There are two types of Retry options:

-
- Open File Retry: determines how frequently (if at all) ARCserve will attempt to back up or copy open files.
 - File Sharing: determines how ARCserve shares the files with other applications when backing up or copying a file.

Open File Retry options

Select the option ARCserve should take if it attempts to back up or copy an open file:

Option	Description
Retry Immediately	Back up or copy the file again immediately after the first attempt failed. If the file is still unavailable, this information is written to ARCserve's Activity Log, and the job is labeled "Incomplete".
Retry After Job	Back up or copy the file again after all the other source files have been backed up copy. If the file is <i>still</i> unavailable after these attempts, this information is written to ARCserve's Activity Log, and the job is labeled "Incomplete".
Number of Retries	Number of times you want ARCserve to try to back up or copy the file.
Retry Interval (sec)	Period of time you want ARCserve to wait between attempts.

File Sharing options

The file sharing options are described in the following table:

Option	Description
Use Deny None if Deny Write Fails [default]	Attempt to place the file in "Deny Write" mode. If this is not possible (because the file is already open), then place the file into "Deny None" mode.

Option	Description
Use Lock Mode if Deny Write Fails	Attempt to place the file in “Deny Write” mode. If this is not possible (because the file is already open), then lock the file completely (prohibiting any user from opening or writing to the file). This option ensures the most recent version of the file is backed up or copied.
Deny Write	Prevent another process from writing to the file while ARCserve has it open. If another process has the file open before ARCserve can open it, ARCserve will not back up the file (unless you specified an <i>Open File Retry</i> option).
Deny None	Allow another process to read or write to the file, regardless of whether ARCserve opens it first or opens it after another process already has it open. This option ensures that your files are up-to-date, although the file that was backed up or copied may not be the most recent version.

Considerations

If you use applications (such as e-mail) that are in operation 24 hours a day, you may want to choose one of the *Deny None* methods. As long as no other process is writing to these files during the job, the backup or copy will be consistent.

If you want to ensure that only the most current version of every file is backed up or copied, you should select a *Deny Write* or *Lock Mode* option.

Tape options (Backup)

There following types of Tape options are available for backup jobs:

- **Session Password:** specify a Session password that will be required in order to restore this data from tape. *You MUST remember the Session password in order to restore this session!*

-
- **First Tape Options:** determine the overwrite rules for the first tape that is used for the backup job.
 - **Additional Tape Options:** determine the overwrite rules for the additional tapes.

Refer to Chapter 3, “Backing Up Data” for a description of the available Tape options for backup jobs.

Tape Options (Restore, Compare, Scan)

The Tape options for Restore, Compare, and Scan allow you to specify a timeout period ARCserve should wait for you to provide the tape you need to restore your data. Available Tape options are:

Option	Description
Timeout for First Tape	Period of time that ARCserve waits for the first tape required for your restore job. If the time expires and the first tape has not been provided, the job will fail. By default, ARCserve will wait five minutes.
Timeout for Additional Tape(s)	Period of time that ARCserve waits for any additional tapes to become available. By default, there is not timeout.

Verification options (Backup)

The Backup Verification options allow you to verify that your data was backed up correctly. (These options may be overridden by specifying local options for individual machines.)

Refer to Chapter 3, “Backing Up Data” for a description of the available Verification options for backup jobs.

Virus options (Backup, Copy, Count)

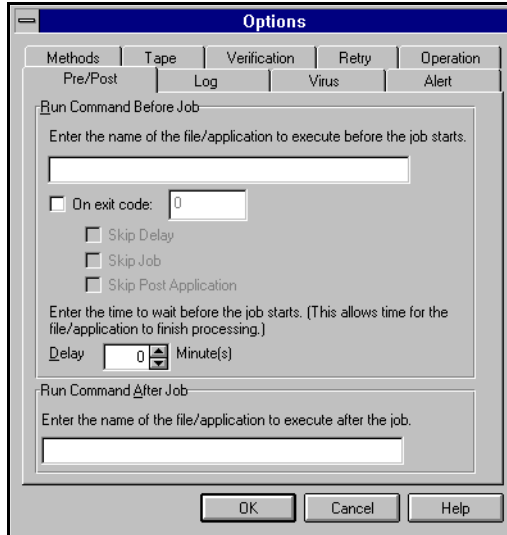
You can automatically scan for viruses during a backup, copy, or count operation using the virus scanning options. Available virus scanning options are:

Option	Description
Enable Virus Scanning	Select this option to enable virus scanning.
Skip	Do not back up the infected file.
Rename	Rename the infected files with the extension AVB. (If a file with the same name and the extension AVB exists, then extension AV1 is used, and so on.)
Delete	Delete the infected file.

Pre/Post options (Backup, Restore, Copy, Utilities)

These options allow you to run a command on your machine before and/or after the job is executed. For example, you may want to use this option to load a virus scanning application before files are backed up and then run a batch file you created that sends a detailed report to the printer.





The available pre/post options are:

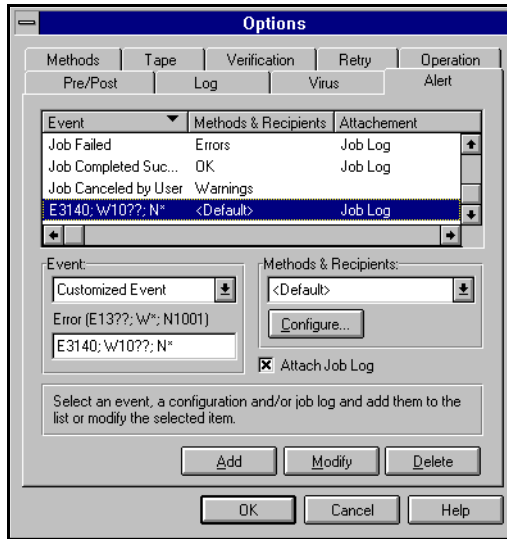
Option	Description
Run Command Before Job	Enter the path to and name of the file to be executed on the machine before the job takes off.
Delay n Minutes	Enter the time to wait (in minutes), before the backup job will start. This period of time gives the application or file specified in the <i>Run Command Before Job</i> field time to process.
Run Command After Job	Enter the path to and name of the file to be executed on the machine after the job has completed.

Alert options (Backup, Restore, Copy, Utilities)

You can use the Alert notification system to send messages about events in your backup operation. For more information on the Alert system, refer to Chapter 12, “Using the Alert Manager”.

To access Alert options:

- > In the Options dialog, click the Alert tab.
The Alert Options dialog appears:

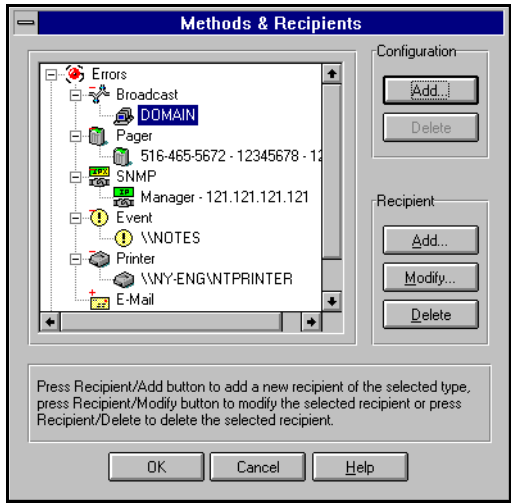


Configuring Methods and Recipients

To configure methods and recipients:

1. In the Alert Options dialog box, shown above, click the Configure button.
The Methods & Recipients dialog box appears:

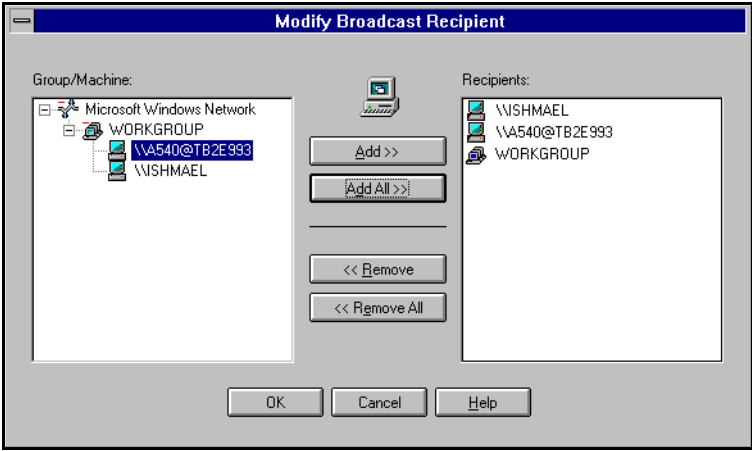




2. Select whether you want to Add or Delete a Configuration or Add, Modify, or a Recipient.

If you choose to Add a configuration, click Add in the Configuration panel. A dialog box appears, prompting you for the name of the configuration. Enter the name of the configuration and click OK. The new configuration now appears as a tree in the Methods & Recipients.

If you choose to Add or Modify a Recipient, click Add or Modify in the Recipient panel. The Modify Broadcast Recipient dialog box appears.



3. To Add or Remove a recipient, select the recipient and then click the appropriate button.

Adding Alert events

To add an event to the Alert list:

1. In the Alert Options dialog box, select an Event type from the Even drop-down box.
2. In the Methods & Recipients drop-down box, select a configuration.
3. Click Add.

The selected event and recipients are added to the Alert list. The following table describes the types of Alert Event.

Event Choose one or more of the following events for which you want to be notified:

Event	Description
Job completed successfully	All of the nodes and drives/shares were processed.
Job incomplete	Some nodes and/or drives/shares were missed.
Job cancelled by user	The user cancelled the job.
Job failed	The job was started but could not be completed.
Virus detected	A virus was detected in one of the files to be backed up. Refer to the 'Virus options (Backup, Copy, Count)' section on page 6-41 for more information.
Customized Event	A customized event occurred. To specify this type of event, enter an error, warning or notification code in the space below the Event drop-box. You can enter multiple codes and use wild cards, for example, E1???; W*; N1?31.



<hr/> Method	Choose one or more of the defined Alert configurations. The <default> configuration means that you will use whatever is configured in Alert Manager. Before you choose, click the Configure button to define further configurations.
<hr/> Attach job log	Select this option to include the job log information in the Alert message. (This option applies for Trouble Tickets and Email only.) For more information about the new options that facilitate configuring Alert, see Chapter 12, “Using the Alert Manager”, and the ARCserve for Windows NT v6.0 online Help. <hr/> Note: The list you create using Alert Options is saved with the Job Script together with the configuration defined using the Configuration button. <hr/>

7

Chapter

MANAGING DEVICES AND MEDIA

This chapter contains information about tapes and tape devices.

In this chapter, you will learn how to:

Page	
7-5	➤ Get information about tape devices and the tapes that are in them
7-11	➤ Configure tape groups
7-15	➤ Perform various maintenance functions on tapes, such as formatting, erasing, and retensioning
7-23	➤ Use ARCserve's Media Pool Manager

Device Manager basics

The Device Manager is informational as well as functional

Whenever you want information about tape devices that are connected to your system, the tapes in these devices, or the status of these devices, turn to the Device Manager.

Whenever you need to format, erase, or retension tapes, use the Device Manager. Also use the Device Manager to change the compression mode for your tape drives, if they support compression.

Several tape devices = one tape group

If you have more than one tape device connected to your Windows NT machine, ARCserve lets you separate them into two or more “groups”. Establishing tape groups is a key component to ARCserve’s flexibility and efficiency.

Tape groups allow for:

- Parallel streaming - you can have several operations occurring simultaneously, one at each tape group configured for your system.
- Automated tape spanning - if, during a backup session, the end of a tape is reached, ARCserve automatically spans to another tape in another device within the same tape group. Note that this requires two or more devices in the tape group for this to happen.

By default, ARCserve is installed with each tape device assigned to its own group. If ARCserve finds identical tape drives (same make, model, and firmware), it automatically places them in the same group. Later, you can use the Device Manager to regroup your devices.

Multiple tape groups = parallel streaming

If you have more than one tape group configured on your machine, you can take advantage of “parallel streaming”. Parallel streaming means that you can have more than one

job requiring a tape device running at a time. For example, suppose you have two tape groups, "GROUP1" and "GROUP2", respectively. You could then have a backup job running with GROUP1, while a restore job runs with GROUP2.

Multiple devices in a group = "automated" tape spanning

Tape spanning means that, when one tape becomes full, the session will automatically span to another tape. If you have a tape group that consists of two or more devices, tape spanning will occur across devices. That means, when one tape in a group drive becomes full, the job spans to another tape in another device within the same tape group.

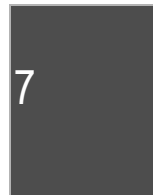
For example, suppose you have two tape groups, "GROUP1" and "GROUP2". GROUP1 is made up of one tape drive and GROUP2 is made up of two tape drives. If you submitted a backup job that will take up two tapes, you can insert blank tapes in each GROUP2 drive and let ARCserve automate the tape spanning for you. If you used GROUP1 for the same backup job, you will need to manually eject the first tape and then insert a second tape. As you can see, automated tape spanning lets you let ARCserve do most of the work for you.

How do I decide which devices can be grouped together?

There is only one rule when assigning tape devices to the same group: the devices in the group *must* be of the same make and model.

Refer to the section 'Configuring tape groups', for more information about setting up and configuring tape groups.

The rest of this chapter describes how to get information about tape devices, how to interpret this information, and how to maintain your tapes.



Using the Device Manager

The starting point for all tape and tape device operations

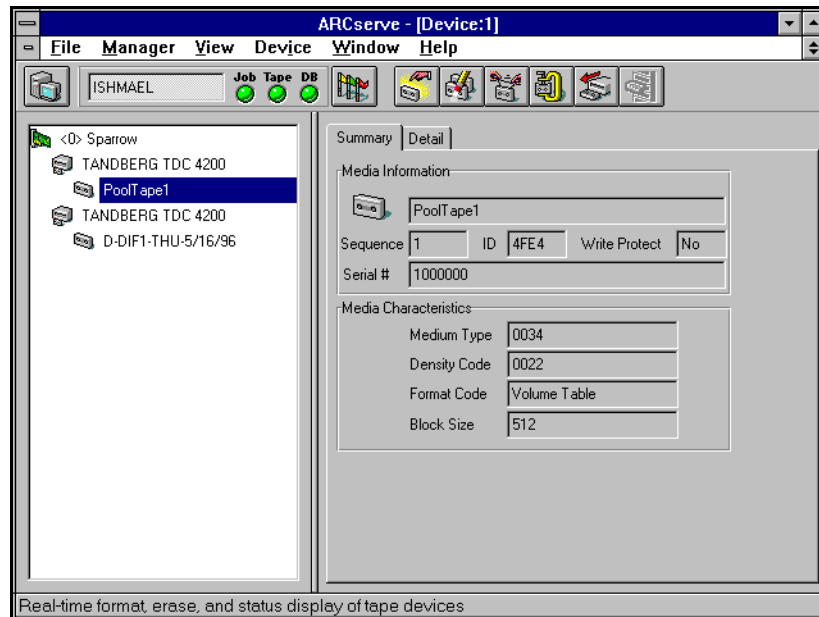
The Device Manager is the starting point for all tape and device monitoring and maintenance operations. The Device Manager is shown below. Each device option is discussed in more detail throughout the rest of this chapter.

To access the Device Manager:

1. Click the Device Manager button from the Quick Access window.



The Device Manager appears:



Getting information

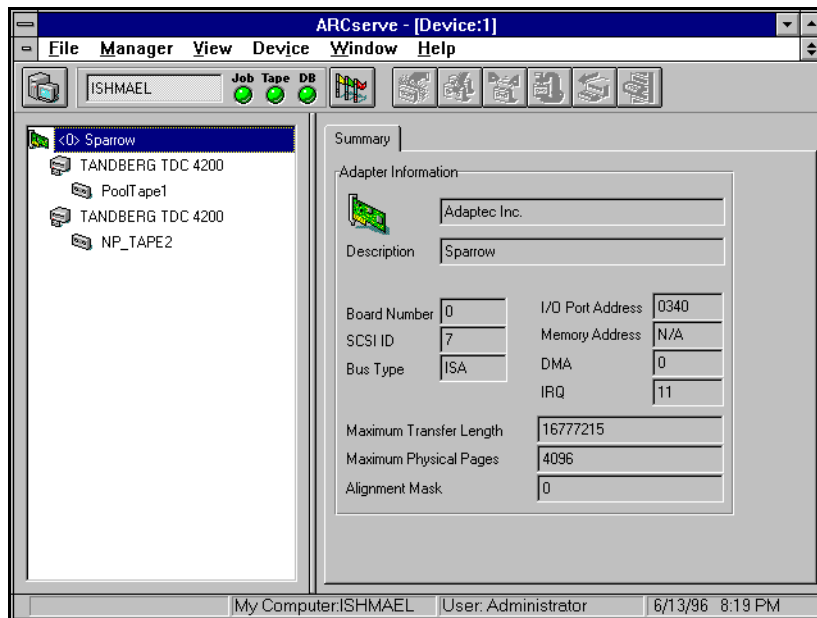
You can view a variety of information about the tapes you use and the tape drives connected to your system using the Device Manager. The rest of this section describes:

- Getting general or detailed information about an adapter card.
- Getting general or detailed information about a tape device.
- Getting general or usage information about a tape in a tape device.

Getting information about an adapter card

To get information about an adapter card:

- > Highlight the adapter card.



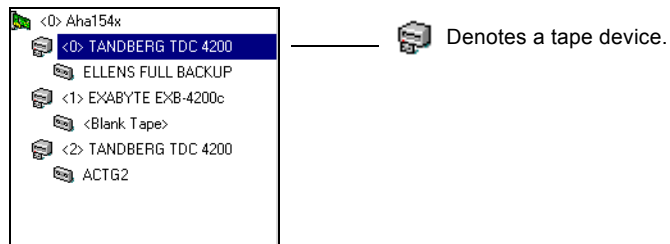
Information about the adapter card appears in the right panel.

Getting information about a tape device

When you highlight a tape device, you can see two types of information: summary and detail.

To view either type of information for a tape device:

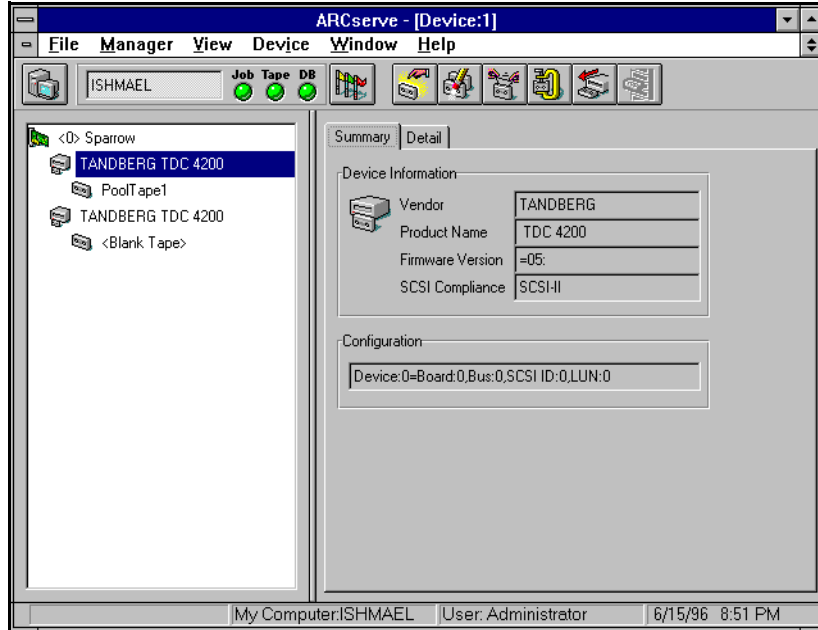
1. Highlight the tape device you want information about.



2. Select the Summary or Detail tab.

Summary information

Selecting the Summary tab displays general information about the tape device, such as its vendor, product name, firmware version, and SCSI compliance.



Detailed information Selecting the Detail tab displays detailed information about the tape device.

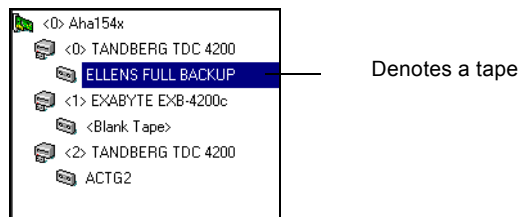


Getting information about a tape in a tape device

When you highlight a tape, you can see two types of information: summary and details.

To view either type of information for a tape:

1. Highlight the tape you want information about.

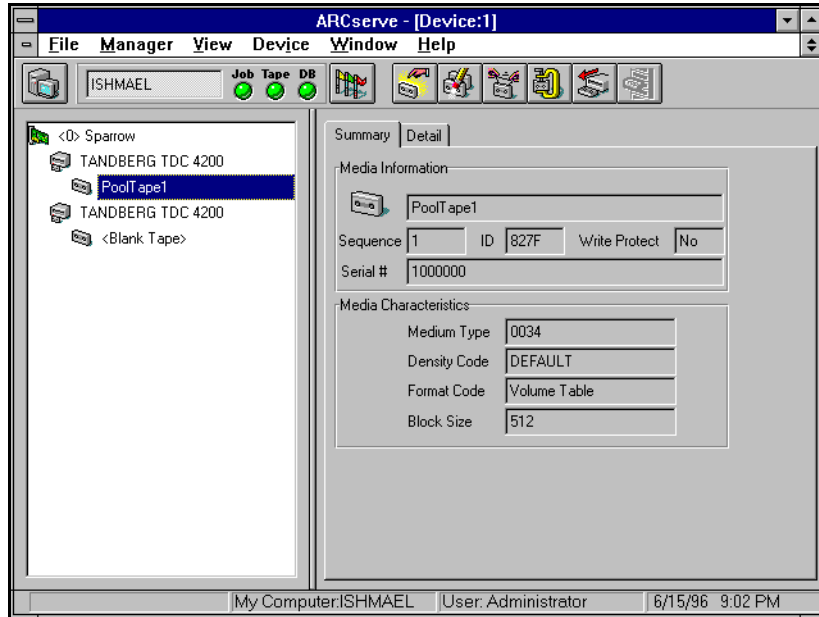


2. Select the Summary or Detail tab.

To display summary information about a tape:

- > With the tape highlighted, select the Summary tab.

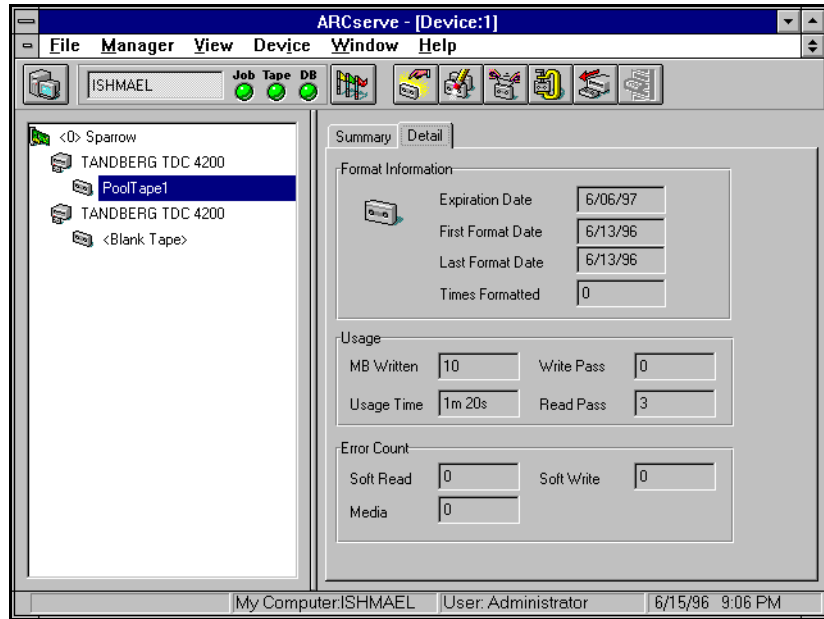
ARCserve displays general information about the tape, such as the tape name, sequence number, ID, and whether it is write-protected. Media characteristics are also displayed.



To view detailed tape information:

- > Select the Detail tab.

ARCserve displays detailed information about the tape's usage:



Configuring tape groups

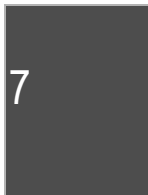
ARCserve uses “tape groups”

As discussed at the beginning of this chapter, ARCserve provides the concept of “tape groups”. ARCserve allows you to separate your tape devices into groups. Grouping devices allows you to take advantage of parallel streaming. And, if you have several devices in a group, you can also take advantage of “automated” tape spanning.

One rule for grouping multiple devices in a group

If you want to have several devices in a group, there is only one rule. Each device in the group must be the same make and model.

When ARCserve’s Tape Engine is started, each tape device that you have is automatically placed in a tape group. Identical drives are grouped together and differing drives are separated into different groups. For example, if you have five drives attached to your machine, three of which are identical, you will have three groups: GROUP0, GROUP1, and GROUP2. The three identical drives will be in one group and the remaining two, since they are different from all others, are each placed in their own individual group.



Since ARCserve automatically groups your tape devices, you can keep these tape group names, or, you can regroup and rename them. After you start ARCserve, you can use the Device Manager and the instructions in the following sections to:

- Create a new tape group
- Assign a device to a tape group
- Remove a tape device from a tape group
- Rename a tape group

Creating a new tape group

To create new tape groups and assign tape devices to them:

1. Click the Device Group Configuration button.

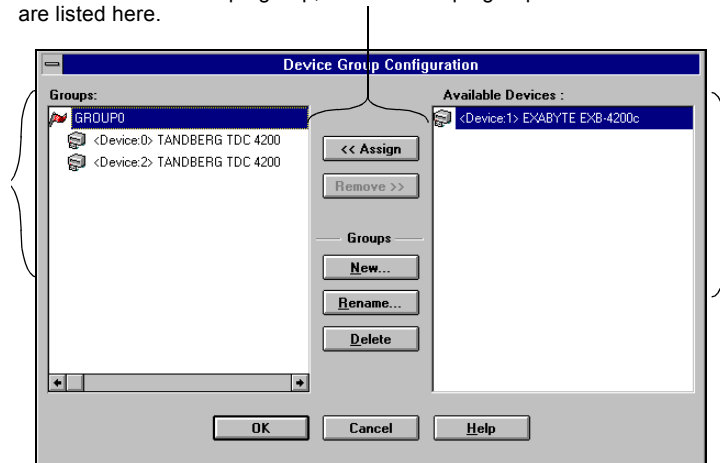


The Group Configuration dialog box appears:

Existing tape groups and the devices in each group are listed here.

Use these buttons to assign and remove devices from groups, create a new tape group, rename an existing tape group, or delete a tape group.

Devices not assigned to a tape group yet.



2. Click the New... button.

The New Group dialog box appears.

3. Enter a name for the tape group and click OK.

The new tape group appears in the Groups box. Now you can begin assigning tape devices to this tape group.

Assigning a tape device to a group

To add tape devices to a tape group:

1. In the Device Group Configuration dialog box, select the device from the Available Devices box.

The Available Devices box lists all the tape devices that are not assigned to a tape group. From this list, select the one you are assigning to the group.

2. From the Groups box, select the group you want the device assigned to.

Highlight the name of the tape group.

3. Click the <<Assign button.

The device is removed from the Available Devices box and is placed beneath the tape group in the Groups box.

4. Repeat steps 2 and 3 to assign more devices to groups.
5. When finished, click OK.

Removing a tape device from a tape group

To remove a tape drive from a tape group:

1. In the Device Configuration dialog box, highlight the device to remove.

Devices are listed below their assigned tape groups in the Groups box. Select the one you want to remove by highlighting it.

2. Click the Remove>> button.



The tape device is removed from under the tape group in the Groups box and appears in the Available Devices box.

3. Repeat steps 1 and 2 to remove more devices from tape groups.
4. When finished removing tape devices, click OK.

Other tape group configuration features

Deleting a tape group

To delete a tape group:

1. Remove the tape devices assigned to the tape group.
Refer to 'Removing a tape device from a tape group' section on page 7-13 for details on performing this step.
2. Select the tape group you want to delete.
Highlight the name of the tape group in the Groups box.
3. Click the Delete button.
The tape group is removed from the Groups box.

Renaming a tape group

If you want only to change the name of a tape group:

1. Select the tape group you want to rename.
Highlight the name of the tape group in the Groups box.
2. Click the Rename button.
The Rename Group dialog box appears.
3. Enter a new name for the tape group and click OK.
The new tape group name is reflected in the Groups box.

Maintaining your tapes

Tape maintenance tasks you can perform

You can perform the following maintenance tasks on your tapes:

- Formatting
- Erasing data
- Retensioning
- Compressing data - this task can only be used if the tape drive supports tape compression
- Ejecting from the tape drive - this task can only be used if the tape drive supports this feature

Warning: Before you use these options, especially the destructive ones (formatting and erasing), make sure you have the right tape selected.

The rest of this section shows you how to use the options listed above.

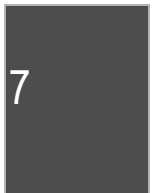
Formatting a tape

Format your tapes before you use them

Although ARCserve automatically formats blank tapes, you can use this option to manually format your tapes. Formatting writes a new label at the beginning of the tape, effectively destroying all existing data on the tape.

Low level formatting, as is required on most hard drives and some mini cartridge tape drives, is not required for drives that ARCserve for Windows NT supports.


You also use the Format option to assign tapes to media pools. For more information on this topic, see the section, “Assigning media to a media pool”, later in this chapter.

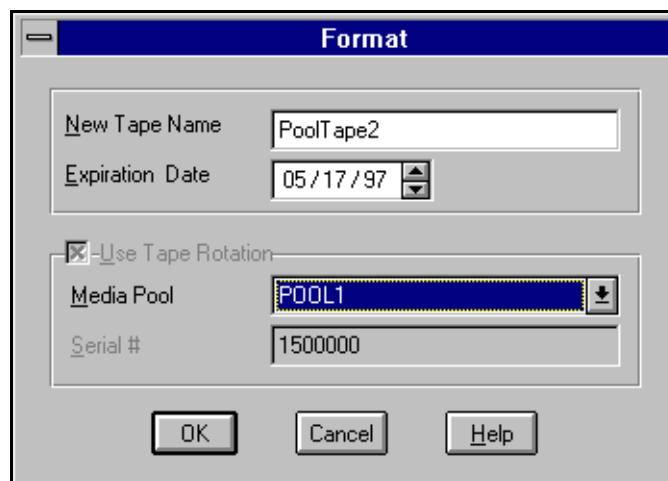




Warning: Use this feature with care! Once you format a tape, the data it contained (if any), and any job sessions associated with this tape, are gone permanently.

To format a tape:

1. Insert the tape into a tape drive.
2. In the Browser, highlight the tape.
3. Click the Format button. 
The Format dialog box appears.
4. Enter a name for this tape and select a date for this tape to be put out of service.



A tape's life is generally based on "passes". A pass is defined as the tape drive head "passing" over a given point on the tape. For example, a backup without verification constitutes one pass, whereas a backup with verification constitutes two passes.

Tape manufacturers rate their tapes' useful lives from about 500 to 1500 passes. This doesn't mean that the tape is unusable after it reaches the maximum number, just that it is more susceptible to errors at this point.

You should choose an expiration date based on how you will use the tape. If you plan to use the tape often, say, a few times a week, you should set the expiration date to a year from now, maybe even sooner than that. On the other hand, if you plan to use the tape only once or twice a month, you can set the expiration date to two or three years from the current date.

When a tape reaches its expiration date, you will still be able to use it, but when you make a backup, for example, a note is made in the Activity Log that this tape is expired.

The expiration date is a way of tracking how long a tape has been in service so you can stop using it before it reaches the end of its useful life.

Notes:

If you are formatting a new, blank tape, the default expiration date will be one year from the current date. If you are reformatting a tape, the expiration date that appears will be the date you specified the first time the tape was formatted.

You also use Format to add tapes to a media pool. In the above example, Use Tape Rotation is selected and the media pool to which the formatted tape is to be added is selected in the drop-down box. For more information about how this works, see the section 'Media Pooling' later in this chapter.

5. Click OK to start formatting the tape.

A message appears asking you to confirm formatting the tape.

Erasing a tape

Use this option to erase all data from a tape. ARCserve also erases all references to the contents of this tape (if any) from the database. When and if you re-format this tape, its physical history (read and write passes, etc.) will be carried over.



Warning: Use this feature with care! Once you erase data on a tape, the data is gone.

There are three erase options from which you can choose: Quick Erase, Quick Erase Plus, and Long Erase.

Quick Erase

A Quick Erase takes much less time than a Long Erase because it only overwrites the current tape label. Although, technically, there is still data on the tape, the data is effectively gone without the tape label. Quick Erase is useful if you want to re-use ARCserve tapes, but you don't have time to wait for a Long Erase.

Quick Erase Plus


Like Quick Erase, Quick Erase Plus erases the current tape label. In addition, Quick Erase Plus also erases the serial number, so that you can assign a new serial number to the tape.

Long Erase

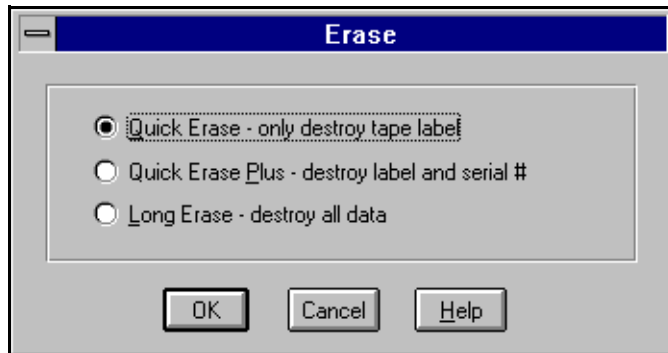
A Long Erase completely removes all data from a tape. It takes much longer than a Quick erase, but the tape is considered blank, as if it were just formatted. For security reasons, if you want to make sure that the data on a tape is gone completely, use Long Erase.

To erase a tape:

1. Insert the tape that you want to erase into a tape device.
2. Select the tape.

3. Click the Erase button. 

The Erase dialog box appears.



4. Select *Quick Erase* or *Long Erase*.
5. Click OK to start erasing data from the tape.

Retensioning a tape

Computer tapes are similar to audio tapes in that the more you use them, rewinding and fast forwarding, the more the tape becomes uneven and loose on the spools. When a tape becomes unevenly wound, it is prone to errors, may jam, or worse yet, break.

Use ARCserve's Retension feature to make sure a tape is evenly wound and properly tensioned. Retension a tape especially if you are having trouble writing to it or reading from it.

Note: This feature applies only to Quarter Inch Cartridge tapes. It does not apply to 8mm or 4mm Digital Audio Tapes (DATs).

To retension a tape:

1. Insert the tape into a tape device.

-
2. Select that tape.

In the left pane of the Device Manager, expand the tree under the device that the tape is in, and highlight the tape.

3. Click the Retension button.



4. Click OK to start retensioning the tape.

Compressing data on tapes

If your tape drive supports compression, you can tell ARCserve to use it by turning it on.

Normally, you will want to leave compression on. The only time you should turn it off is if you plan to use the tape in another drive that doesn't support compression. The drive that doesn't support compression will not be able to read the compressed data on the tape.

Note: You can only change compression when a blank tape is in the drive. This prevents the "mixing" of uncompressed and compressed data between sessions on a tape.

To turn compression on or off:

1. Select the tape device that supports data compression.

In the left pane of the Device Manager, highlight the tape device.

Select the Detail tab in the right pane to check that compression is supported by this device.

2. Click the Change Compression Mode button.



3. Click OK to set the compression mode to Off (if it is On) or On (if it is Off).

Ejecting tapes

You can eject tapes from a drive using ARCserve's Device Manager, if your device supports this feature.

To eject a tape with ARCserve:

1. Select the tape device you want to eject the tape from.

In the left pane, highlight the tape device.

2. Click the Eject button. 

The tape drive ejects the tape.

Media Pooling

A media pool is a collection of media managed as a unit.

Tape rotation or grandfather-father-son (GFS) methods of backup are based on media pools.

Each media pool is assigned a name and the media are organized according to serial numbers. The serial numbers assigned are permanent and if you are using a device with a bar code reader, the bar code labels will be used for the serial number of the media. The media pools are organized by the range of serial numbers of the media they contain and are divided into two sets, the Save Set and the Scratch Set.

The set of media containing important data that can not be overwritten is called the Save Set. Once the media has passed several criteria (minimum number of media to save and a retention period) they will be recycled and re-used.

Those media from the Save Set that can be re-used and overwritten because they have met several criteria (minimum number of media to save and retention period) are placed in the Scratch Set.

Each time a media is written to, it moves from the Scratch Set to the Save Set. That media will move back to the Scratch Set once the specified criteria have been met.

Media pools apply to every media, regardless of which backup type and method were selected. All Rotation backup jobs will create their own media pool based on the name entered in the Media Pool Name field of the Schedule dialog box for simple rotation, or the prefix entered in the Media Pool Name Prefix field with GFS enabled. The GFS backup uses three media pools: Daily, Weekly, and Monthly. These three pools are also based on

the information entered in the Media Pool Name Prefix field. For example, if you enter *ACTG* as the Media Pool Name Prefix for an GFS backup job, the Daily media pool name would be *ACTG_DLY*.

For a simple (single media pool) rotation, you specify the complete name for the media pool.

Save Set

The media pool Save Set is a set of media which can not be overwritten. You can modify Save Set information for all Custom backup jobs. You can move media from the Save Set to the Scratch Set and you can move media from one media pool Save Set to another media pool Save Set. You cannot modify Save Set information for GFS and Rotation backup jobs which have a pre-determined number of media pools and rules.

You define the minimum number of media contained within the Save Set and the retention period.

Scratch Set

The media pool Scratch Set is a set of media which has been recycled from the Save Set after its retention period has passed. All media in the Scratch Set will be overwritten the next time they are used. Those media which have not been formatted in the longest period of time, will be used first.

Retention period

The retention period is the number of days in which a media has not been used before it is moved into the Scratch Set. For example, if you specify a retention period of 14 days, a media will remain in the Save Set as long as it has been used within that specified time. If the media has not been used for 14 days, it will be moved to the Scratch Set.

Minimum number of saved media

You can specify the minimum number of save media to be retained in the media pool. This is the number of media that need to be retained in the Save Set before the older media are recycled to the Scratch Set. This is a safeguard for preventing data loss in case backups are not done for extended periods of time.

Rotation and GFS media pools

Rotation and GFS media pools are based on basic media pooling architecture. The Rotation backup names its media pool based on what you enter in the Media Pool Name field of the Schedule dialog box in the Backup Manager.

The GFS backup uses three media pools: *Daily*, *Weekly*, and *Monthly*. Each media pool has a default retention period and number of media to save.

Serial number information

The serial number of a media is one of the factors used in categorizing media pools. One of the following three ways may be used to create a serial number for media:

- **Bar Code:** A number is read from a bar code label, assigning the serial number. A changer with a bar code reader is required for this method. This will override any previously-defined media pool settings.
- **User defined:** You enter a serial number when the media is formatted. This will override any previously-defined media pool settings.
- **Automatic:** ARCserve will automatically assign a serial number for the media based on the *Base* and *Range* of serial numbers set when the pool was created.

You can not change the serial number of media, however, you can add and modify the following serial number information on the Pool Information screen.

Field	Description
Base	This is the base number which ARCserve will use when automatically assigning serial numbers. The first media formatted will have the same serial number as the <i>Base</i> number. Each media's serial number thereafter will be incremented by one.
Range	You can specify the range (up to 31 digits) from which the media pool serial numbers will be categorized. For example, if you specify 200000 as the range for all media in the MKTG media pool, all numbers which fall into the 200000 range will be categorized in the MKTG media pool.
Next Available	This number begins the same as the base number, but is increased by one (1) for each media that is formatted. You do not need to enter any number here ARCserve will automatically increase this number according to the other media pool settings.



Once the serial number is assigned to a media, it will remain constant for the life of the media, even if the media is erased or formatted, unless you explicitly want to destroy the serial number manually.

Creating a media pool

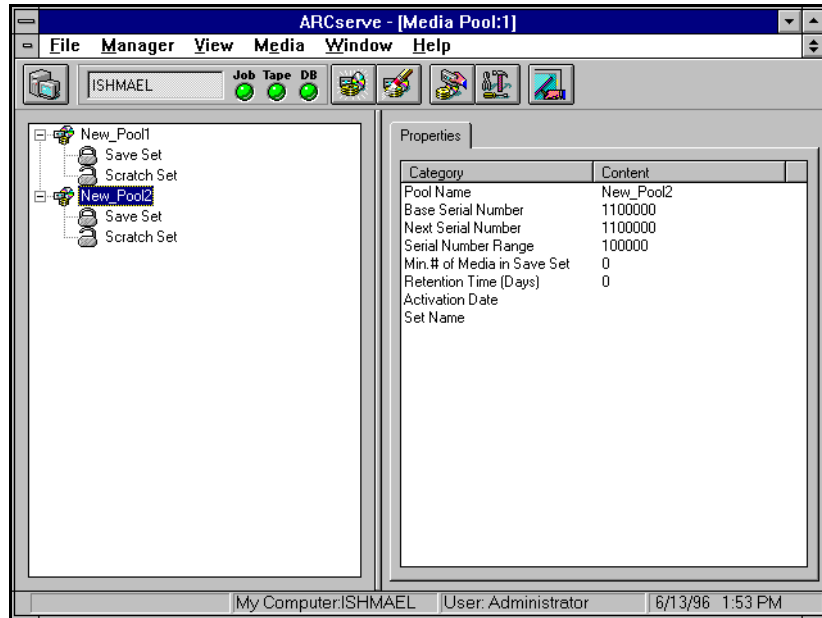
To assign media to a media pool, you first need to create the media pool. You can create media pools using the ARCserve Media Manager.

Notes: The Media menu in the Media Pool Manager window can be invoked as a pop-up menu by selecting a media pool in the left panel and then clicking the right mouse button.

To create a media pool:

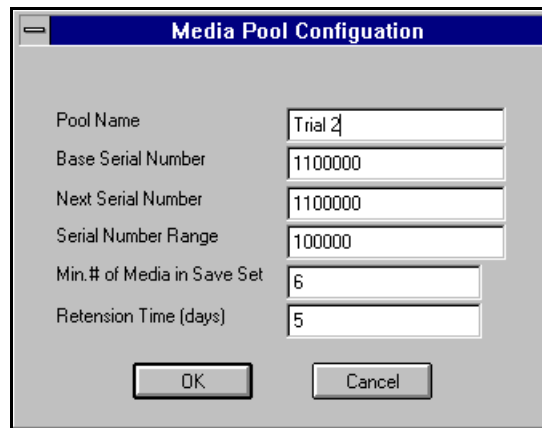
1. Click the Media Pool Management button in the Quick Access window or select Media Pool from the Manager Menu.

The Media Pool Manager screen appears.



2. From the Media menu, select New Pool.

The Media Pool Configuration dialog box appears.



This dialog box contains the following fields:

- Pool Name
- Base Serial Number
- New Serial Number

-
- Serial Number range
 - Minimum # of media in Save Set
 - Retention Time (days)

Pool Name, Minimum # of media in Save Set, and Retention Time are empty fields that need to be filled in. The three Serial Number fields contain default values that you can change if desired.

3. Entered the desired values in the appropriate fields and click OK.

The new media pool icon appears in the left pane, together with the name of the media pool. You can now assign media to this media pool.

Note: ARCserve itself also creates a media pool or pools (if they don't already exist) when you submit a backup job either with simple or GFS rotation.

Assigning media to a media pool

You can assign media to a media pool during the process of formatting the media.

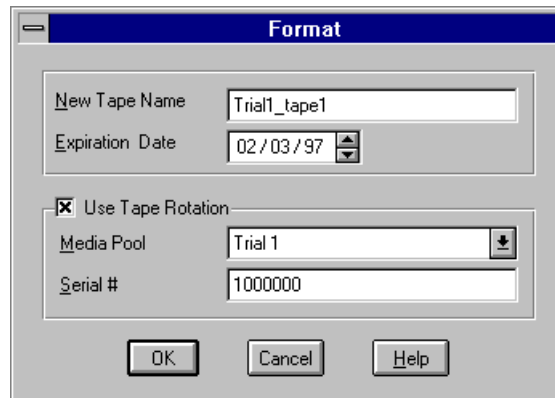
When you format media, using the Device Management function, you define certain media pooling information that will be associated with the tape. You can define the following media pool information when formatting media:

Field	Description
New Media Name	If the media inserted in the tape drive is named, that name will be displayed. If the media is blank, you can assign a media name. If the media is blank, but has an assigned serial number, it can be assigned to any existing media pool.

Field	Description
Expiration Date	You can set an expiration date for the media to be formatted. When this date arrives, ARCserve will remind you that the media has reached expiration.
Media Pool	You can select any existing media pool previously created using the Media Manager.
Serial Number	The serial number shown here is the current serial number, bar code label, or the next available serial number (based on pre-defined rules). You can manually enter a different serial number only that number is not already in use. ARCserve scans the database, and if the serial number already exists (in any of the media pools), an error message is displayed prompting you to enter a new, unique serial number.

To assign media to a media pool:

1. Click the Device Manager button in the Quick Access window or select Device Manager from the Manager menu.
The Device Manager screen appears.
2. Click the Format button or select Format from the Device menu.
The Format dialog box appears.



3. Enter the desired values in the appropriate fields. (See the preceding table for a description of these fields).



To assign the media you are formatting to a specific media pool:

- Activate the Use Tape Rotation check box.
 - In the Media Pool drop-down box, select the media pool to which you want to assign the media.
 - If the media does not have a serial number assigned (displayed in the Serial # field), enter a serial number not in use.
4. Click OK.
ARCserve formats the media and assigns it to the media pool.

Viewing media pools

You can view information about existing media pools with the Media Pool Manager screen.

To view media pool information:

1. Click the Media Pool Management button in Quick Access or select Media Pool from the Manager menu.
The Media Pool Manager screen appears, displaying the icons for the existing media pools in the left pane.
2. Expand the view of the media pool you want to examine by double-clicking on its icon.
The Save Set and Scratch Set icons for selected media pool appear.
3. To view information about a set, select the set.
Information about the set appears in the right pane under the category tab.
Save Set information includes:
 - Pool name
 - Minimum # of Media
 - Retention Time (Days)

- Current Number of Media
 - Scratch Set information includes:
 - Pool Name
 - Current Number of Media
4. To view the media in the:
- Save Set - double click the Save Set icon.
 - Scratch Set - double click the Scratch Set icon.
- The media icons for all the media in the selected set appear.
5. To view information about selected media, click the Component tab.
- Information about the media appears in the right pane, including:
- Pool name
 - Tape Name
 - Random ID
 - Sequence No.
 - Serial Number
 - Expiration Date
 - Backup Method
 - Set Status
 - Media Status
 - Offsite Location
 - Date Sent

Modifying media pools

You can also modify media pool information from the Media Pool Manager window. Using the Media Pool Manager, you can perform the following tasks:

- Delete an existing media pool.
- Move media in a pool from Scratch Set to Save Set and vice versa.

-
- Perform location maintenance.
 - Reconfigure media pool properties.

Deleting a media pool

To delete a media pool:

1. In the left pane, select the media pool you want to delete.
2. From the Media menu, select Delete Pool.

A dialog box appears asking you if you're sure you want to delete the selected pool.

3. Click Yes.

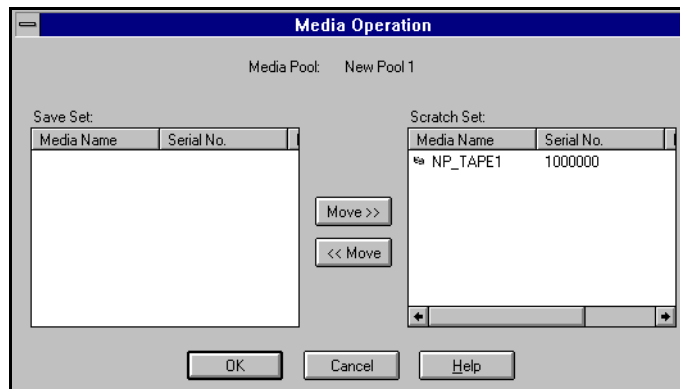
The selected pool is deleted.

Moving Media

To move media from one set to another:

1. In the left pane, highlight the media pool containing the media you want to move.
2. From the Media menu, select Move Media.

A dialog box appears allowing you to shift media from one set to the other.



3. Select the media you want to move and click the appropriate Move button.
The media are moved in the direction you select.
4. When you're finished, click OK.

Note: You can also move media from Scratch Set to Save Set and vice versa by dragging and dropping the media icon in the left panel.

The media you've moved appear in their new locations in the left pane.

Viewing media properties

You can view the following properties for any tape in a media pool:

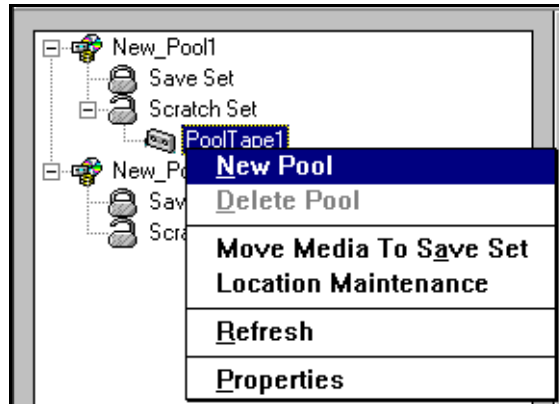
- Tape name, serial number and Random ID number
- Name of media pool to which tape belongs
- Expiration date of tape
- Date first formatted
- Date last formatted
- Date tape was sent
- Date tape was last read

To view Media Properties for a tape in a media pool:

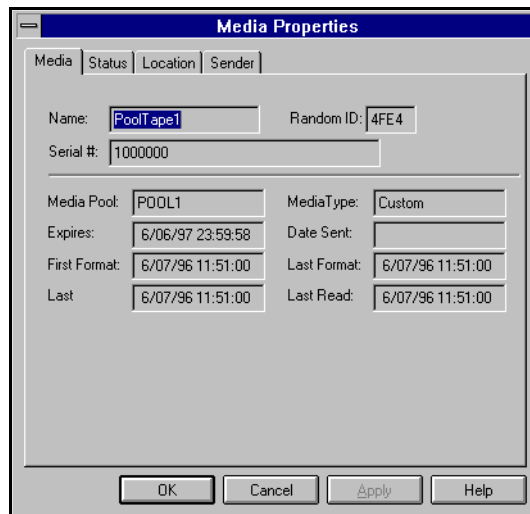
1. Open the Media Pool Manager.
2. Select the tape whose properties you want to view.
3. Click the right mouse button.

A pop-up menu appears.





4. From the pop-up menu, select Properties.
The Media Properties dialog box appears.



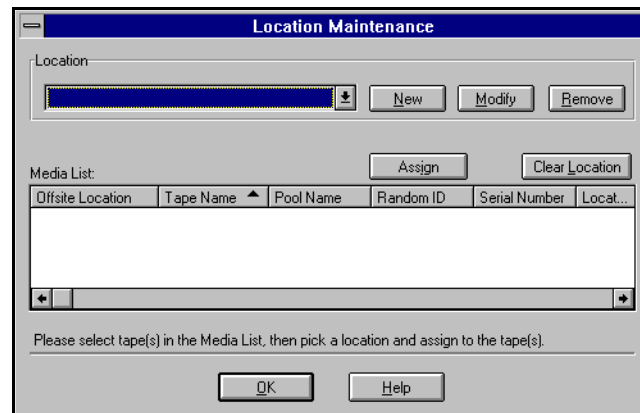
Performing location maintenance

You can assign or reassign offsite locations to media using the Media Manager. You can also enter new locations or modify the information about existing locations.

To perform location maintenance:

1. From the Media menu, select Location Maintenance.

The Location Maintenance dialog box appears. The upper scroll box displays the list of existing locations. The lower scroll box displays a list of media.



- To enter information about a new location, click New. A dialog box appears, enabling you to enter information about the location.
 - To modify information about an existing location, click Modify. A dialog box appears, enabling you to modify information about the location.
 - To assign a media to a location, highlight the media, highlight the location, and then click Assign.
2. When you've finished, click OK.
Revised information about media location is stored.

Reconfiguring media pool properties

To Reconfigure media pool properties:

1. In the left pane, highlight the media pool whose properties you want to change
2. From the Media menu, select Properties.
The Media Pool Configuration dialog box appears.
3. Enter the new values for the properties you want to change.

Note: See the section of this chapter, “Creating a new media pool”, for more information about these properties. The dialog box that appears when you select Properties is the same as the dialog box that appears when you select New Pool. The only difference is that, in this case, the dialog box already contains information about an existing media pool.

4. Click OK.

Viewing the Media Pool and GFS Rotation Profile Reports

The Media Pool and GFS Rotation Profile Reports can be viewed like any other reports. For more information on viewing these reports, see the section ‘Viewing reports in the Report Manager’, in Chapter 9, “Managing the Database and Reporting”.

8

Chapter

MANAGING JOBS

This chapter describes what the Job Status Manager is and how to use it.

In this chapter, you will learn:

Page

- | | | |
|-----|---|--|
| 8-2 | ➤ | About the ARCserve Job Status Manager. |
| 8-2 | ➤ | Using the Job Status Manager. |

About the Job Status Manager

Job Status Manager is a graphical tool, included as part of ARCserve Manager, that provides an intuitive way to centralized manage ARCserve Servers enterprise-wide. It combines all the functionality of Job Queue and Quick Status Manager into one integrated Manager.

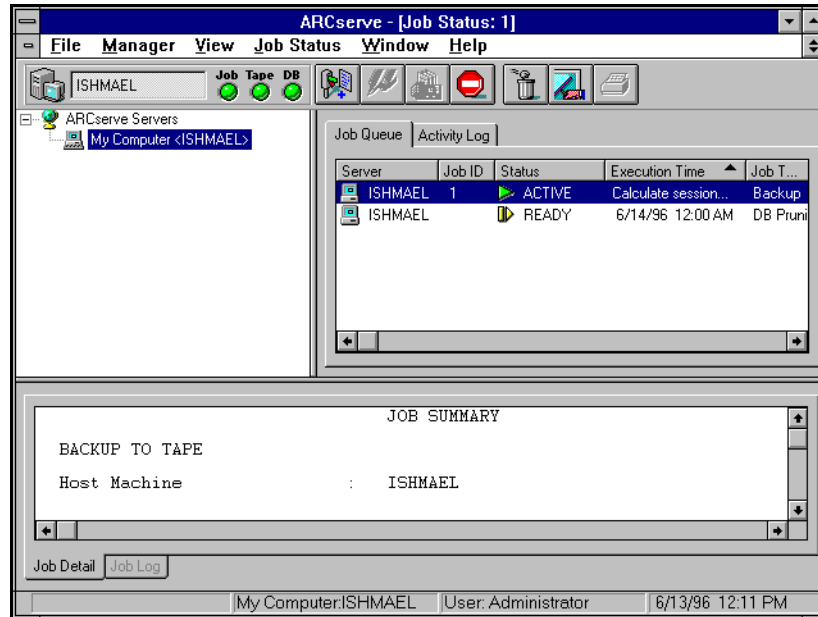
With Job Status Manager you can:

- View all available ARCserve servers, job queues and activity logs within one manager.
- Manage jobs-- add/delete/modify/reschedule job.
- Monitor progress of active jobs.
- View job detail and log.
- View activity and tape logs.

Using the Job Status Manager

To open the Status Manager:

- > In Quick Access, click the Job Status Manager button. .



Job Status Manager has the Explorer-like paradigm that is consistent with all the other managers. The left-panel Server Browser makes it easy to navigate through ARCserve servers and objects on those servers. At the top level, all servers are arranged into groups which are user-configurable.

Displaying Job Detail and Job Log

You can use the bottom panel of the Job Status Manager to displays details about any job in the job queue. If the job has completed, you can also use this panel view the Job Log.

To display Job Detail or Job Log:

- > Click the appropriate tab above the bottom panel.

Displaying a list of servers

To show a list of servers:

- > Double-click on the group.

A list of servers belonging to the group appears.

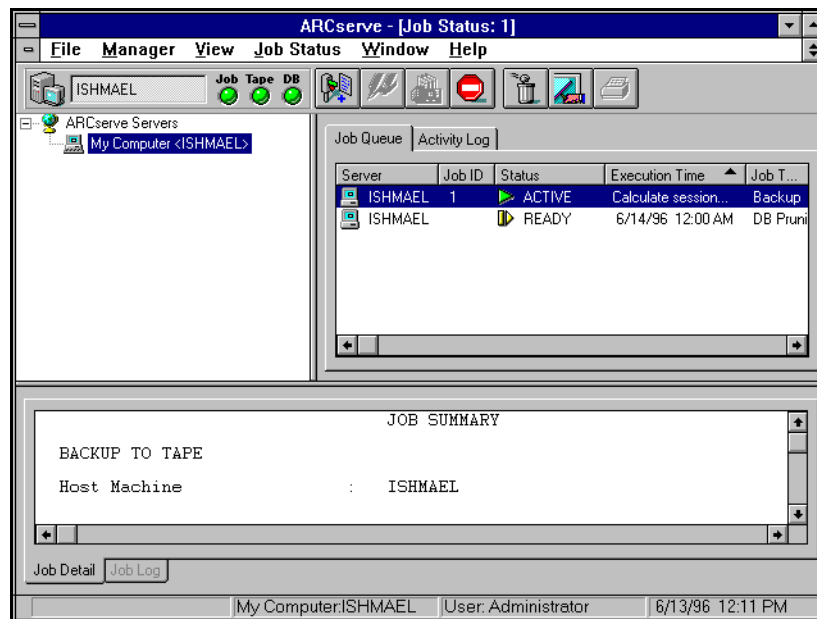
The right panel shows object information for the current selected object. In the Job Status screen shown on the previous page, where a group object is selected, all jobs that reside in those servers appear in the right panel.

Displaying a job queue for a server

To display the job queue for a particular server:

1. Click the server icon.
2. If it isn't selected, click the Job Queue tab.

The job queue for that server appears in the right panel.



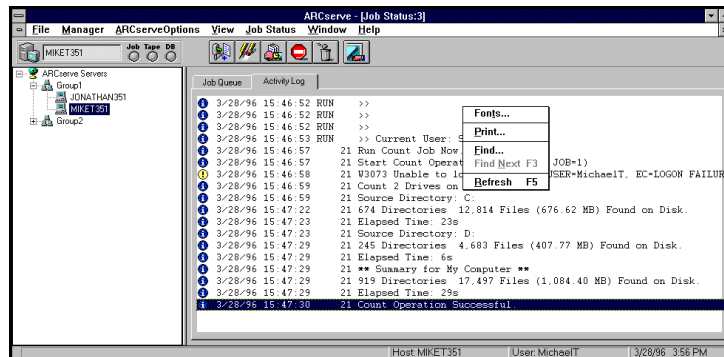
Displaying an activity log

To display the activity log for a server:

- > With the server selected click the Activity Log tab.

The activity log for the server appears.

The tape log will appear if there's one on the server.



Accessing and using pop-up menus

Pop-up menus can be used to perform various operations with the Job Status Manager. These pop-up menus appear in both the left (Server Browser) and right (Job Queue) panes.

To access a pop-up menu:

- > With the pointer on a selection in the left or right panel, click the right mouse button.

Note: When accessing a pop-up menu in the Browser, the pointer must be on either a selected group, server, or object. When accessing a pop-up menu in the Job Queue, a job must be selected.

When a Group is selected, a pop-up menu with the following options appears:

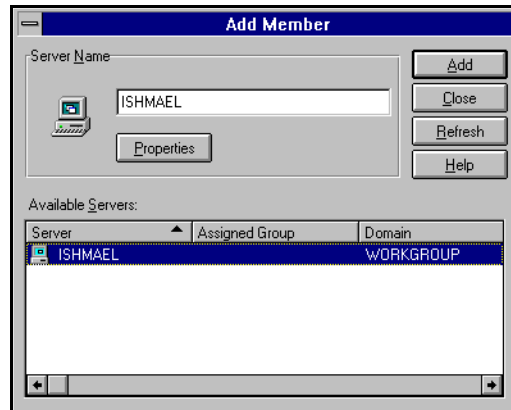
-
- New Server Group - Appends a new server group at the end of the list and then allows you to edit the name of the group.
 - Delete - All servers in the selected group are deleted.
 - Rename - Allows you to edit the group name.
 - Add Member - Adds a server to the selected group.
 - Security - Allows you to set security for the group

Adding a member to a server group

To add a member to a selected server group:

1. Select Add Member from the pop-up menu.

The Add Member dialog box appears.



2. Type the name of the server you want to add to the group in the space provided, click Add, and then click close.

The specified server appears in the list of servers under the selected group.

Server pop-up menu

When a server is selected, a pop-up menu with the following options appears:

- Delete - Deletes the server from its group.
- Start all engines - Starts the ARCserve engines if they have been stopped.
- Stop all engines - Stops the ARCserve engines.
- Properties - a box appears listing the status of the ARCserve engines for this server, build number, version, CD licensing key, options installed, etc.

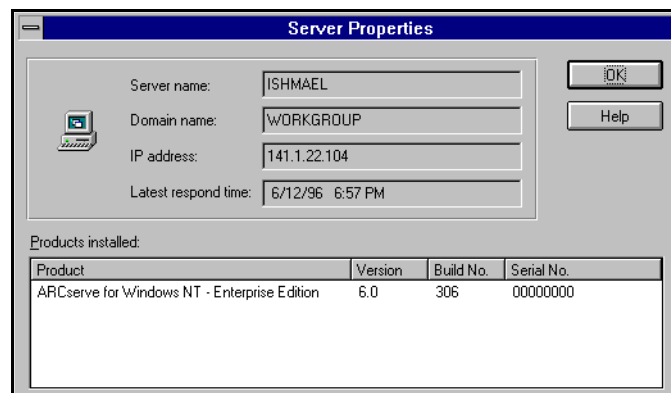
8

Viewing Server Properties

To view server properties:

1. With a server selected, click the right mouse button.
The server pop-up menu appears.
2. Select Server Properties.

The server properties dialog box appears:

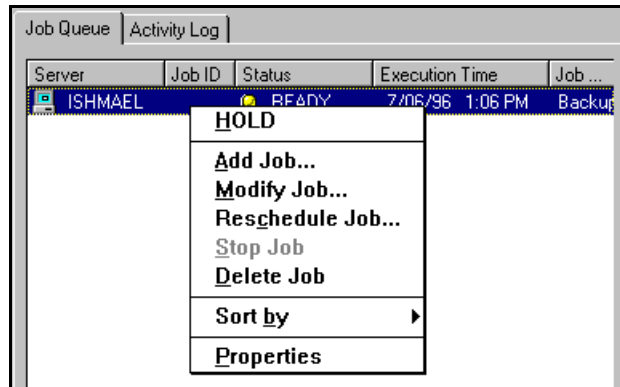


Job Status pop-up menu

To access the Job Queue pop-up menu:

- > With the Job Queue tab selected, click the right mouse button on a highlighted job.

The Job Queue pop-up menu to appear:

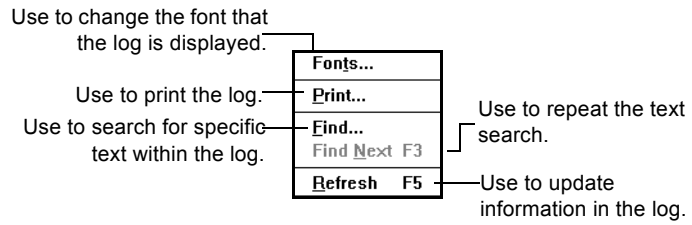


This menu offers the following options:

- HOLD - changes the job's status to Hold or to READY (if it is currently on hold).
- Add Job - use to select a job script and add it to the queue.
- Modify Job - use to modify a job.
- Reschedule Job - use to change the job's execution time.
- Stop Job - use to stop an active job.
- Delete Job - use to delete a job from the queue.
- Sort by - use to change the way jobs are listed in the queue.
- Properties - calls up the Job Properties dialog box.

Detail/Log tab pop-up menu

If you are viewing information in the Detail or Log tab and you click your right mouse button, the following menu will appear:



Note: All of the above pop-up menus options are described in added detail in the following sections of this chapter.

Job queue basics

How does
ARCserve's job
queue work?

Every time you run or schedule a job with the ARCserve Manager, you submit it to the ARCserve job queue. Information about all jobs (such as execution time, status, last result, and owner) is stored here. ARCserve continuously scans the job queue for jobs that are ready to be executed. (The scanning frequency can be changed through the ARCserve Server Admin. Refer to Chapter 12 for more information.) At the appropriate date and time, the job is executed.

Job Status
Manager

You can do the following from the Job Status Manager:

- Add a job
- Change job execution date, time, or status
- View contents of a job
- Modify a job
- Delete a job
- Monitor an active job
- Stop an active job

The remainder of this chapter explains how to use the Job Status Manager.

Managing jobs in the queue

You can manage jobs that are in the queue with the Job Status Manager. Job management includes the following tasks:

- Reviewing information about the last time jobs that have been executed
- Adding a previously saved script to the queue
- Changing a job's execution date, time, or status (this includes resubmitting a job)
- Displaying information about a job
- Modifying information about a pending job
- Deleting a job
- Monitoring an active job
- Stopping an active job

Each function listed above is explained on the following pages.

Reviewing information about executed jobs

A job listed in the Job Queue with a *Done* status is a job with no repeat interval that has already been executed.

Done jobs remain listed in the Job Queue for a specified number of hours. This is set up through ARCserve's Server Admin feature. Refer to Chapter 12 for more information.

A repeating job (a backup job that runs every Friday, for example) will not have a *Done* status after it has been executed. Instead, it will have a *Ready* status (it is ready to be executed again next Friday).

The Last Result field

The *Last Result* field tells you whether or not your executed job was successful. And, if it wasn't successful, the *Last Result* field helps you figure out why the job may have failed.

Last Result	Explanation	Possible Causes
Finished	All of the nodes and drives/shares were processed.	n/a
Incomplete	Some nodes and/or drives/shares were missed.	A machine was turned off, a share was not available, or some files were missed.
Cancelled	The user cancelled the job.	Someone cancelled the job from the Job Queue, answered NO or CANCEL to a prompt, or the job required the user to answer OK or to insert a tape but the timeout was reached and the job was cancelled. (Timeout is set in the Tape options in the Backup Manager window.)
Failed	The job was started but could not be completed.	There was an error reading from or writing to the tape, the tape group was already open, there was no tape in the drive, or a memory allocation error occurred.
Run Failed	The job was started, but the program that runs the job (the Job Runner) failed.	There was not enough memory to run the job or a DLL file was not found.

Last Result	Explanation	Possible Causes
Crashed	The job was started, but before it was completed, something happened to the Job Runner and Job Runner could not update the job queue.	A system error occurred in the job, such as a memory violation.

Backup job failure

If you determine that your job was not successful, you can use the information provided in the *Last Status* field to remedy the problem. You can then resubmit the job to run. (Refer to on page 8-15 for information about resubmitting a job.)

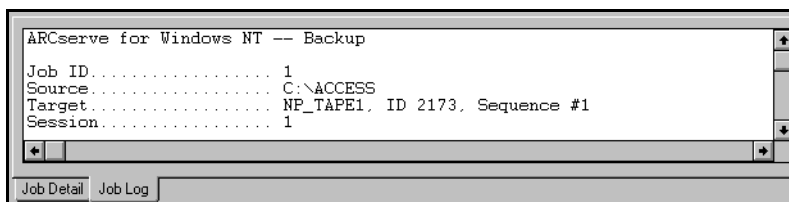
The Queue Log

The Queue Log displays information about jobs that have been executed. The level of detail in this log is determined when you set up a job. You can select to see all of the activity that occurred while the job was running or just the summary information (which includes source, destination, session number, and totals along with any errors that may have occurred). You also have the ability to disable reporting.

To display the Queue Log:

1. Highlight the job you want.
2. Select the Job Log tab in the lower panel.

The Job Log appears:



Adding a job to the job queue

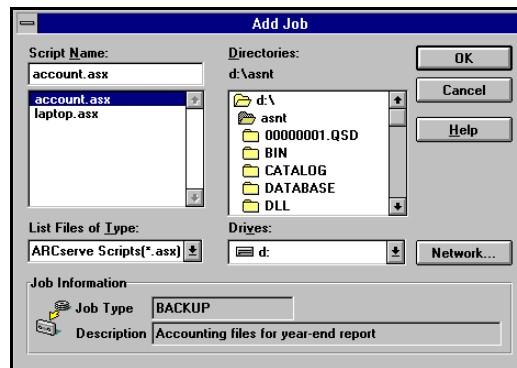
You can quickly submit a job to the queue by using a previously saved script. A script is a job that you saved to a file. It contains the original source, destination, option, and schedule information for the job. Refer to the section, ‘Creating scripts for your jobs, in Chapter 6, “Customizing Your Jobs”, for more information about scripts.

To add a job to the job queue using the Job Status Manager:

1. From the Job Status Manager, click the Add Job button.



The Add Job dialog appears.



2. Select the file name for the script you want to submit to the queue.

The script that you select is added to the job queue.

Changing a job's execution date, time, or status


8

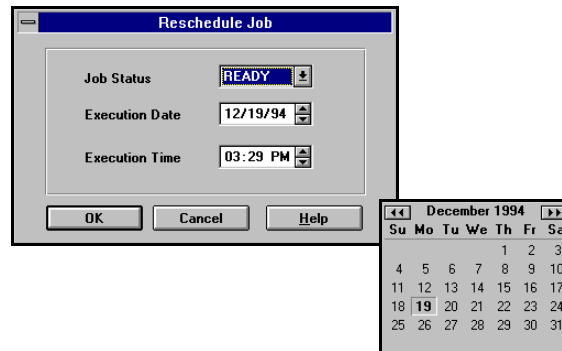
The Job Status Manager makes it easy for you to quickly change a job's execution date, time, or status. It also allows you to resubmit a *Done* job that is still in the Job Queue. You may want to do this if your job was not successful when it first ran.

To change execution information about a job:

1. Highlight the job you want to change.

You can only change a job's execution date, time, or status if the job is not active.

2. Click the Reschedule Job button. 
3. Change the job status, execution date, and/or execution time.



Job status can be changed to "Hold" or "Ready". "Ready" job status indicates the job will execute at the specified date and time. A job with "Hold" status will not execute until you change the status to "Ready".

After clicking OK, the job is changed to the status, execution date, and execution time you specified.

Displaying information about a job

Job Detail

The Job Detail tab displays the details about a job, including the source and destination target(s) and tape statistics, such as sequence and session number.



To display the Job Detail for a job:

1. Highlight the job you want to view.
2. Select the Job Detail tab.


The details of the job appear.

Stopping an active job

You can use the Stop Job button or the Delete Job button to cancel an active job. However, if the job you are stopping is a job that repeats at regular intervals (this is determined when you create the job), you should read the following information to determine which button to use:

- Stop Job button  - cancels the active job and reschedules it for its next regular interval.
- Delete Job button  - cancels the active job and deletes it completely. The job will not be rescheduled for its next regular interval.

To stop an active job:

1. Highlight the active job you want to cancel.
2. Click the Stop Job button. 
3. Click OK to confirm.

Modifying a job

Use the Job Status Manager to modify a job already in the queue. This way you can add options or additional sources to an existing job, without having to create a new job.

To modify a job:

1. Highlight the job you want to change.

You cannot modify an active job. Only jobs with a Ready, Hold, or Done status can be modified.

2. Click the Modify button.



The job that you originally created appears in its appropriate window, with the original source(s), option(s), and destination(s) selected. For example, if the job is a backup job, the Backup Manager appears. If the job is a restore job, the Restore Manager appears.

3. Make the desired changes.
4. Click the Run button.
Change or re-confirm the original execution information.
5. Click OK.

Deleting a Job

You can delete jobs from the queue, whether they are active, done, or pending. Deleting jobs from the Job Status Manager window will completely remove them from the job queue. This means that repeating jobs will not be rescheduled.

Warning: You may not want to use the Delete Job button if you are deleting an active job that repeats at automatic intervals (determined when you create the job). The Delete Job button interrupts and removes the job completely from the queue. As a result, the job is not rescheduled for its next automatic interval. You will have to recreate the job if you did not save it to a script file.

To delete a job:

1. Highlight the job you want to delete.
2. Click the Delete Job button.



After confirming, the job is removed from the Job Queue list.

Changing the way jobs are listed in the job queue

8

When you first open the Job Status Manager window, the jobs in the queue are listed in order of execution time. At any time, you can change the way in which jobs are listed in the queue. Jobs can be sorted by clicking any of the following fields:

- Status
- Execution Time
- Job Type
- Server
- Last Result
- Owner
- Total Files
- Description

Note: You can resize these columns by using the “drag and drop” method with the mouse. Place the cursor on the divider between columns, click and hold down the left mouse button, and then move the divider in either direction until the column is the size you want.

Sorting the job queue is for informational purposes only. It does not affect the order in which jobs are processed.

To sort the job queue:

1. Click on the title of the field you want to sort.

Jobs are sorted alphabetically or chronologically within the field you selected.

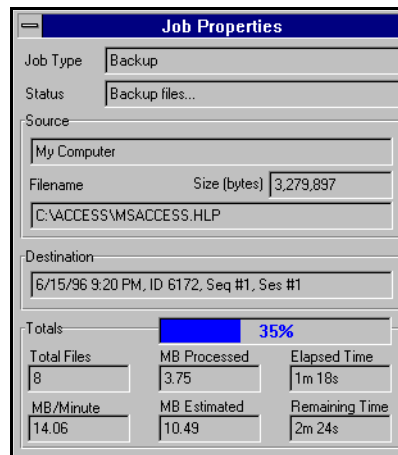
Monitoring an active job

You can monitor the real-time status of a job while it is running.

To monitor an active job:

- > In the Job Queue tab panel, double-click the active job you want to monitor.

The Job Properties box appears:



Note: Depending upon the type of job that is running, some of the fields may not be used.

9

Chapter

MANAGING THE DATABASE AND REPORTING

This chapter explains how to manage the ARCserve database and view reports.

In this chapter, you will learn:

Page	
9-2 >	Managing the ARCserve database
9-12 >	ARCserve's reporting features
9-12 >	ARCserve Activity Log
9-14 >	Job Log
9-16 >	ARCserve Tape Log
9-17 >	Generating reports using the Reports Manager

Managing the ARCserve Database

The ARCserve Database records job information for each job run, including tape and tape device information.

The database information allows you to perform intelligent restores by keeping track of each file and directory that was backed up to tape. When you wish to restore a specific file, the database determines which tape a file is stored on.

The database information is also used to generate ARCserve's many types of reports. See "Viewing and printing reports" on page 12.

Opening the Database Manager

The Database Manager allows you to:

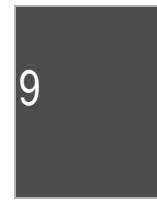
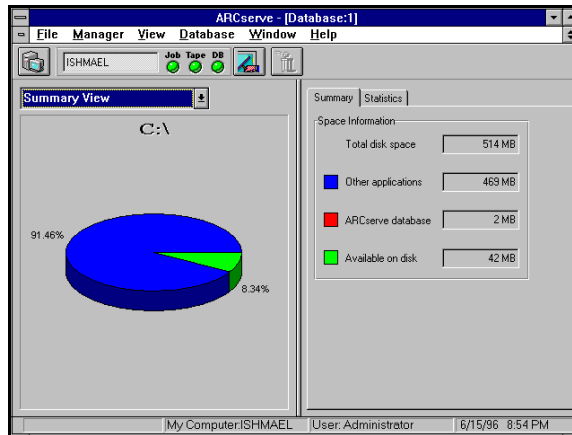
- Keep track of the location of your tapes.
- Determine the session number of your most recent backup.
- Determine if a tape should be retired.
- View log information about jobs you have run.
- Delete old records from the database.
- Graphically compare the size of your database to the total available disk space



To open the Database Manager:

1. Click the Database button from the Quick Access window.

The Database Manager Window opens.



The Summary View is shown by default. This view provides summary information the hard disk on which ARCserve is installed.

Selecting a database view

The following database views are available:

- Summary View
- Job View
- Tape View
- Device View

To change the database view:

- > Select a new view from the drop-down menu.

Changing the sort order


You can change the sort order of records displayed in the Job View, Tape View, and Device View windows.

To change the sort order in these windows:

- > Click on the field name on which you want to sort by.

Deleting a record from the database

To delete a record:

1. Highlight the record(s) you want to delete.
You cannot delete the last Job View record.
2. Click the Delete button. 
3. Confirm the deletion.

Make sure this is the record you want to delete.

Pruning your database

You may want to set ARCserve to prune old records from the database. Refer to Chapter 12, “Administering the ARCserve Server”, for more information.

Summary View

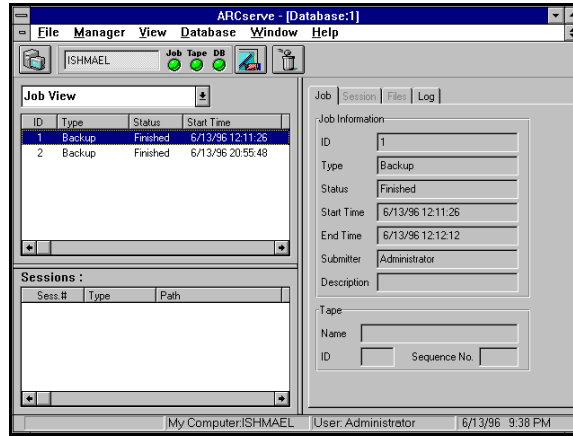
The Summary View shows how much space on your hard disk is being used by the ARCserve database. This view is displayed by default when you open the Database window.

Job View

To view information about jobs processed by ARCserve:

- > Choose Job View from the view drop-down menu.

The Job View window displays information about all jobs that have been processed by ARCserve.

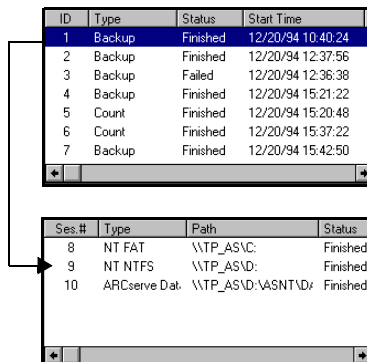


To view log information for a specific job:

1. Highlight the job.
2. Click the Log tab.

To view session information for a backup job:

1. Highlight the backup job.
Session information is displayed in the *Sessions* section.



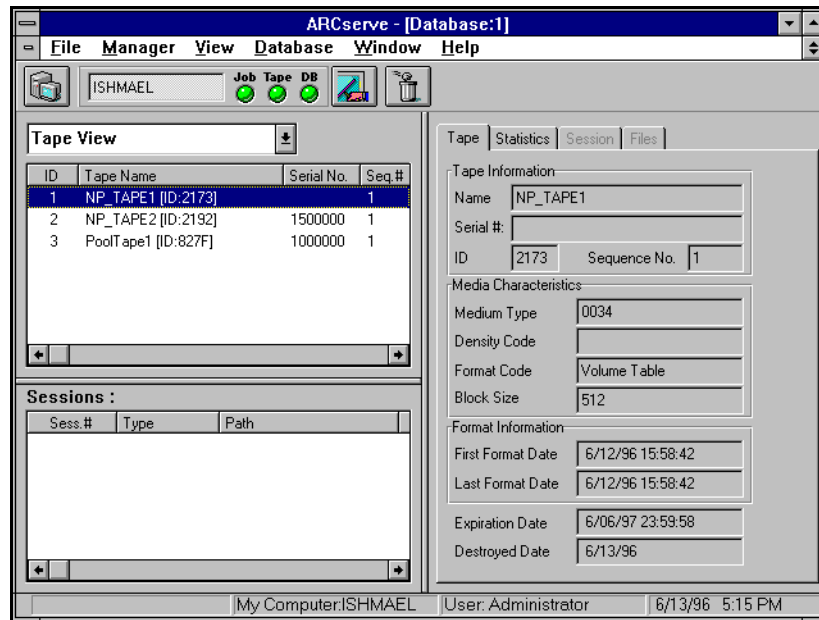
2. Highlight the session you want to know more about.
3. Select the Session tab or the Files tab to see additional information about the session.

Tape View

The Tape View window displays information about the tapes used with ARCserve. This includes information about formatting, how much the tape has been used since it was put into service, and number of errors (if any) that have occurred while ARCserve was using the tape.

To view tape information about the tapes used with ARCserve:

- > Choose Tape View from the view drop-down menu.



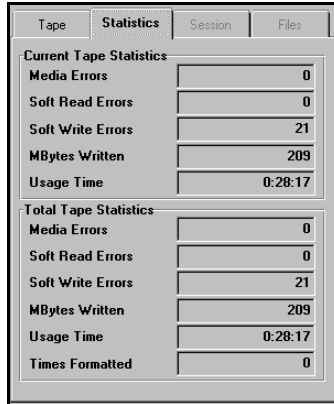
Viewing details about a tape

You can view additional details about a tape. This includes how many errors ARCserve has encountered while reading from or writing to the tape, how much data (total) has been written to the tape, and number of read and write passes ARCserve has made over the tape. In addition, you can see a list of the sessions that were created on the tape and a list of files backed up for each session.

Viewing statistical information about a tape

To view statistical information about a tape:

1. Click the Statistics tab.



Database Statistical Information

Statistics	Explanation
Media Errors	Indicates that some sort of data corruption has occurred on the tape and the read or write operation could not be successfully completed.
Soft Read Errors	An error has occurred while reading the tape. ARCserve is attempted to correct the problem in real time. A higher number of soft read errors indicates possible defective media. Tape should be replaced for any future backups.
Soft Write Errors	A write has occurred during the backup. ARCserve is correcting the media problem in real time. A high number indicates the media should be replaced for future backups. Make sure the tape drive heads are cleaned after the current backup session has been completed.

Viewing information on a tape

To view session and file information:

1. Highlight a tape.

Session information is displayed in the *Sessions* section.

ID	Tape Name	Seq #	Last Format Date
1	ELLENS FULL BACKUP [E	1	11/15/94 15:16
2	ACCTG3 [D:F5A0]	1	11/03/94 9:37

Ses. #	Type	Path	Status
8	NT FAT	\\WTP_AS\C:	Finish
9	NT NTFS	\\WTP_AS\D:	Finish
10	ARCserve Dat.	\\WTP_AS\D:\ASNT\D:	Finish
11	NT FAT	\\WTP_AS\C:\PSP	Finish
12	NT FAT	\\WTP_AS\C:	Finish
13	NT FAT	\\WTP_AS\C:	Finish

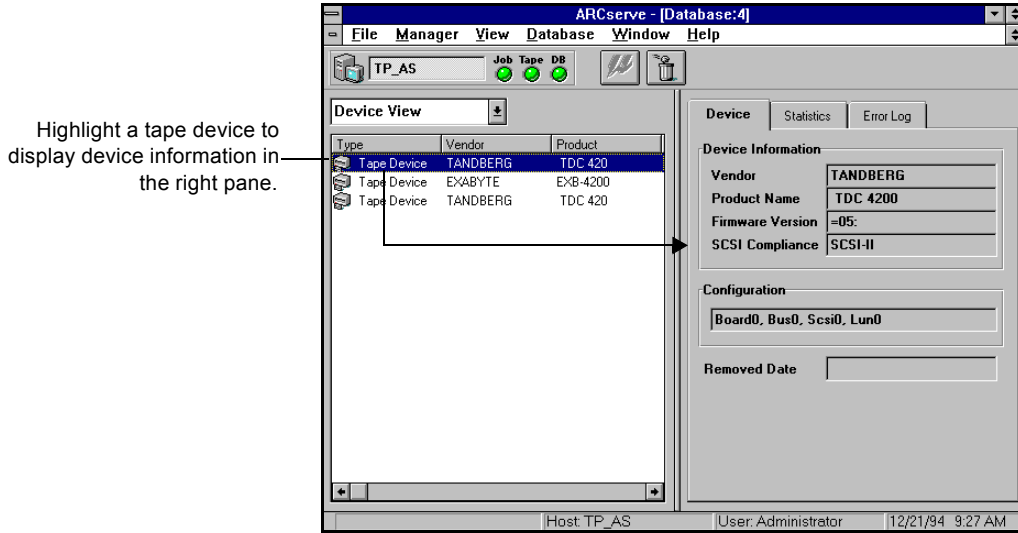
2. Highlight the session you want to know more about.
3. Select the Session tab or the Files tab to see additional information about that session.

Device View

The Device View window displays information about the tape devices used with ARCserve.

To view information about the tape devices used to back-up your data:

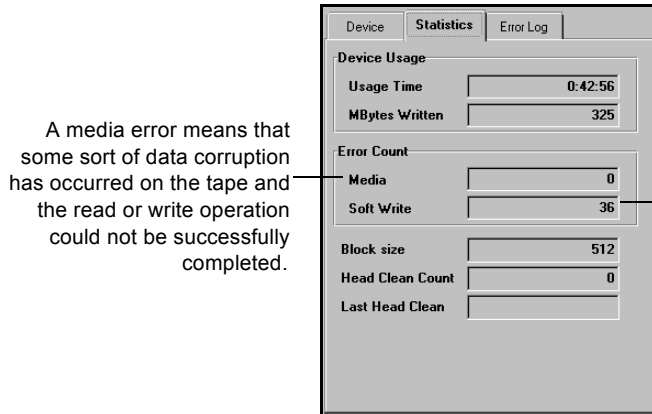
1. Choose Device View from the view drop-down menu.
The device information is displayed:



Viewing information on a device

To view information about a specific tape device:

1. Highlight a tape device.
2. Select the Statistics tab or the Error Log tab.



A soft error means that the tape drive detected a problem when it was trying to write to the tape but was able to correct the problem by retrying the operation. Use this field to determine the "quality" of your tape. Remember, it is normal for a tape drive to always generate a certain number of soft write errors. The problem occurs when the number of errors is very high in relation to the amount of data being written.

Error Log tab

You will only see information in the Error Log if the tape drive has a critical error. An explanation of the fields in the Error Log appears below:

Field	Description
Code	Type of error - hardware or media (see explanation alongside the Statistics tab above).
Time	Time the error occurred.
Sense Info	SCSI error code.
Media	Number of media errors (see explanation above) that occurred during the job.
Soft Write	Number of soft write errors (see explanation above) that occurred during the job.
Soft Read	Number of soft read errors (see explanation above) that occurred during the job.
Tape Usage	Amount of time the tape was used during the job.
KB written	Amount of data written to the tape during the job.
Times Formatted	Number of times tape has been formatted.

Viewing and printing reports

ARCserve provides the following options for displaying logs and reports:

- **Activity Log:** Logs all ARCserve activity.
- **Tape Log:** Logs all tape activity (for debugging purposes only)
- **Job Logs:** Logs activity related to a specific job.
- **Reports Manager:** Generates reports from the ARCserve database for viewing or printing.



Viewing the Activity Log

The Activity Log contains comprehensive information about the operations performed by ARCserve. It provides an audit trail of all ARCserve activity, including every job that is run.

For each job, the log includes the following:

- Time the job started and ended
- Type of job
- Average throughput of the data
- Number of directories and files processed (backed up, copied, etc.)
- Job session number and Job ID
- Result of the job
- Errors and warnings that occurred

You can scan this log every day to see if any errors have occurred. You can also use it to find out a session number in case you need to restore a specific session.



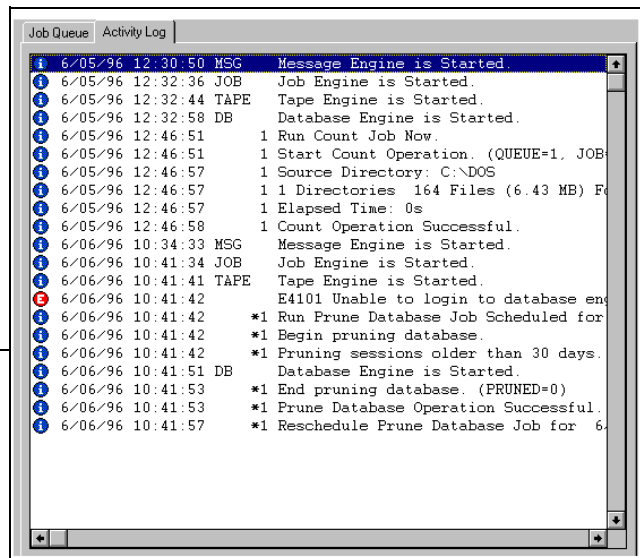
To view the Activity Log:

1. Click the Job Status button on the Quick Access bar.
The Job Status Manager opens.
2. Select the Activity Log tab:
The Activity Log is displayed:

The icon indicates the severity of the message:

- = Informational
- = Warning
- = Error

This is the Job ID. (Each job has a unique Job ID.)



To print the Activity Log:


1. (Optional) Select the records you want to print.
If you only want to print selected records, highlight the first record that you want, press and hold down your Shift key while you select the remaining records.
2. Click the Print button.
3. Select your print options and click OK.
You can also click your right mouse button.

To refresh the Activity Log:

- > Click the Refresh button if you have been looking at the Activity Log for awhile and you want to update the information in the log without having to close the Manager

window and then re-open it. You can then press the END key to move to the end of the log to see the latest information.

To delete the Activity Log:

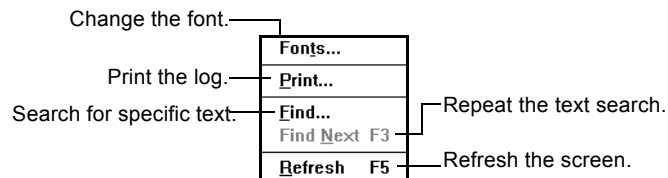
- > Click the Delete button  to delete all of the information from the Activity Log.

To search for a text string:

- > Click the Activity Log with your right mouse button and choose Find from the pop-up menu.

To use the hidden menu:


- > If you click your right mouse button in the Activity Log, the following pop-up menu opens:



Viewing Job Log

A Job Log is generated for each job that is run by ARCserve. You can specify the level of detail in the log by choosing the Log options before you submit the job.

To configure the log report for a job:

1. Click the Options button  in the open window.
The Options dialog box opens.
2. Click the Log tab.



Indicate how detailed you want the log to be.

Log Option

- Log All Activity**
Records all of the activity that occurs while the job is running.
- Log Summary Only.**
Records only summary information (which includes source, destination, session number, and totals) and errors.
- Log Disabled**
No information is recorded.

3. Select an option.

The log options are described in the following table:

Option	Description
Log All Activity	Record all of the activity that occurs while the job is running.
<i>Log Summary Only</i> (the default selection)	Record summary information of the job (including source, destination, session number, and totals) and errors.
Log Disabled	Do not record any information about this job

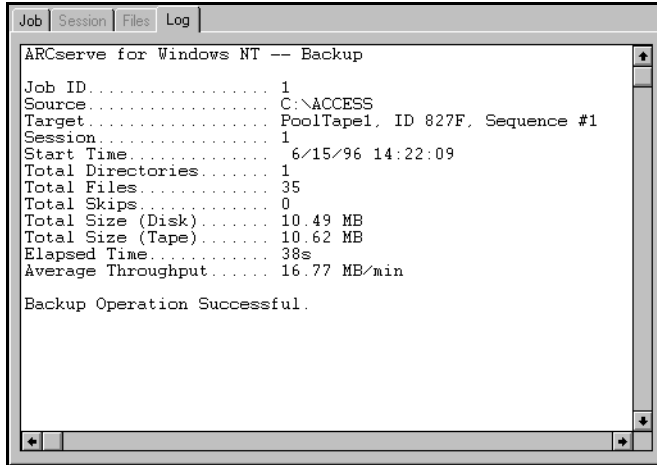
Viewing the Log Report

You can view the Job Log for a job from the Job Status Manager (see Chapter 5, “Managing Data”) or the Database Manager (Job View):

To view the report from the Database Manager:

1. In the drop-down box for views, select the Job View.
2. Select the job in the job list box.
3. In the right panel, select the Log tab.

The Job Log for the selected job appears:



Viewing the Tape Log

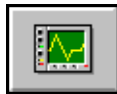
The Tape Log contains messages sent by the tape drives to ARCserve. This log is not generated for normal operation. It is designed for debugging purposes only.

To generate a Tape Log:

- > Configure the Tape options for the ARCserve Server Admin to log tape information.
Refer to Chapter 10, “Administering the ARCserve Server”, for more information.

To view the Tape Log:

1. Click the Job Status button on the Quick Access bar.
The Job Status Manager opens.
2. Select the Tape Log tab:
The Tape Log is displayed:

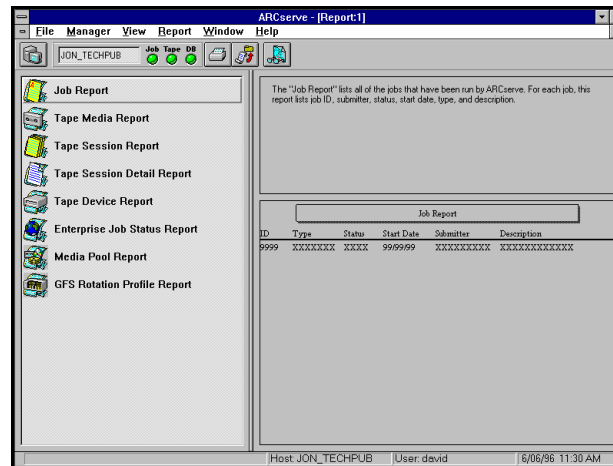


Viewing reports in the Report Manager

The Report Manager allows you to view a variety of reports based on information in the ARCserve database.


To open the Report Manager:

1. Click the Reports button from the Quick Access bar.
The Reports Manager opens:




Printing a report

To print a report:

1. Select the type of report you want to print.
2. Click the Print to Printer button. 
3. Select the print options you want.
4. Click OK.

Printing a report to a file


To print a report to an ASCII print file:


1. Highlight the report you want to print.
2. Click the Print to File button. 
3. Enter a name for the report file.

4. Click OK.

Viewing a report

To view a report:

1. Highlight the report you want to view.
2. Click the Print Preview button. 

You can also double-click on the report name.
3. If applicable, select the tape, session, or device you want to view information about.
4. Click your cursor, which now looks like , to enlarge the text on the report.



Types of reports available

	Report Manager output descriptions
Job Report	This report provides a brief listing of all jobs that have been run by ARCserve. It contains the information that is found in the Database Manager on the Job View window. For each job, this report lists the following information: Job ID, Job type, Job status, Start time, Submitter, and Description.
Tape Media Report	This report provides information about the tapes you use with ARCserve. It contains the information that is found in the Database Manager on the Tape View window. You must select a tape before you can generate this report. This report includes the following: tape name, ID, and sequence number; media type; usage time; creation, format, and expiration date; amount of data written to the tape; number of errors; tape usage statistics.

Tape Session Report	This report provides information about all of the backup sessions that are on tape. (Each source you select to back up is saved on tape as an individual session.) The report contains the session information that is found in the Database Manager on the Job View or Tape View window when you highlight a record and click the Session tab. When you go to view this report you will be asked if you want the report to include all tapes or just one that you select. For each tape session, this report includes the following: Session number, Status, Source selected, Start time, End time, Session method, Flags, Total files/KB in the session.
Tape Session Detail Report	This report includes all of the information found in the Tape Session Report and also lists every file that was backed up in each session. The report contains the session information that is found in the Database Manager on the Job View or Tape View windows when you highlight a record and click the <i>Files</i> tab. When you go to view this report you will be asked to select a tape and a session from that tape.
Tape Device Report	This report provides information about all of the tape devices you are using with ARCserve. It contains the information that is found in the Database Manager on the Device View window. This report gives you a convenient way of getting a hard copy printout of your Device View information. When you go to view this report you will be asked to select a tape device. For each tape device, this report includes the following: vendor, firmware revision, SCSI ID, device type, last head cleaning date, head cleaning count, amount of usage, and errors.
Enterprise Job Status	Provides Enterprise job statistics. The Enterprise Job Status Report contains information about the jobs that have been run by all the servers within a specific period of time. The information includes server name, job ID, start time, time elapsed, job status, and submitter, along with session numbers and file statistics for each job.

Media Pool Report	Provides information about the defined media pools. This information includes Pool Name, date activated, serial number ranges, as well as the media properties of the tapes contained in the pool.
GFS Rotation Profile Report	Displays GFS rotation information. The information in this report includes data on the tapes in the Scratch and Save Sets, media pool name, number of media in each set, tape names, backup method for each tape (Full, Incremental, or Differential), Status, and location. This report also contains the Source, Session Number and file statistics for each tape.





10

Chapter

ADMINISTERING THE ARCSERVE SERVER

The ARCserve Server consists of the Job Engine, Tape Engine, and Database Engine. The ARCserve Server Admin allows you to manage these three engines.

In this chapter, you will learn:

<i>Page</i>	
10-6	➤ Viewing information about an individual engine
10-8	➤ Controlling the ARCserve engines
10-10	➤ Configuring the ARCserve engines

The ARCserve Server and the ARCserve Server Admin

What is the ARCserve Server?

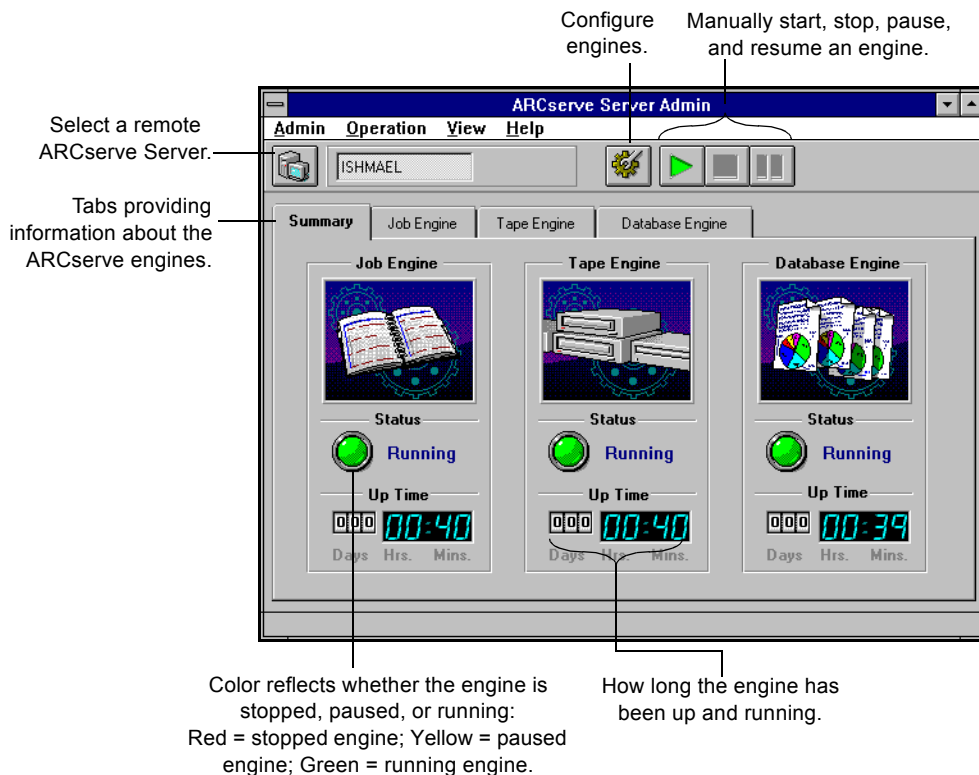
The ARCserve Server consists of three functional engines. They are the Job Engine, Tape Engine, and Database Engine. For a description of these engines and how they work together to make up the ARCserve Server, refer to Chapter 2, "About ARCserve for Windows NT".

Using the ARCserve Server Admin

To access the engine manager:

1. Double-click the ARCserve Server Admin icon.

The ARCserve Server Admin appears, as shown below:



Remote Administration

You can manage an ARCserve Server from a remote machine. Refer to Chapter 1, “Getting Started” to learn how install the ARCserve Server Administrator on a remote machine.

If you are running the ARCserve Server Administrator remotely, you can select a server by clicking the Select Server button. Refer to Chapter 3, “Basic Procedures” for information on the Select Server button.

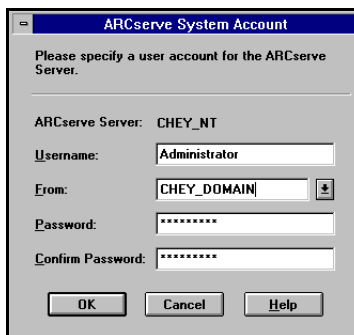
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Changing the ARCserve System Account

The ARCserve Server requires a valid user account on the host Windows NT machine. You must enter a system account during the installation program. You can change the system account at any time in the ARCserve Server Administrator.

To change the ARCserve system account:

1. Choose ARCserve System Account from the File menu.
The ARCserve System Account dialog box opens:



Enter a valid username and password for the Windows NT machine on which the ARCserve Server is installed.

2. Click OK.

The ARCserve System Account is updated.

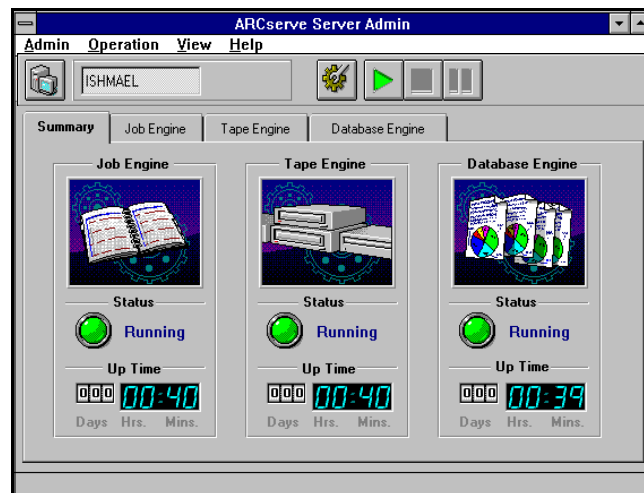
Getting information about the ARCserve engines

The ARCserve Server Admin has four tabs, each showing you various information.

- **Summary** - shows you the current state of all the ARCserve engines.
- **Job Engine** - displays information about jobs, such as the number of active and pending jobs.
- **Tape Engine** - displays information about jobs using the tape engine, such as the type of job it is and who submitted it.
- **Database Engine** - displays information about database pruning.

The ARCserve Server Admin shows you the current state of the various ARCserve engines (whether each is running, paused, or stopped). It also shows you how long each has been running.

10



Viewing information about an individual engine

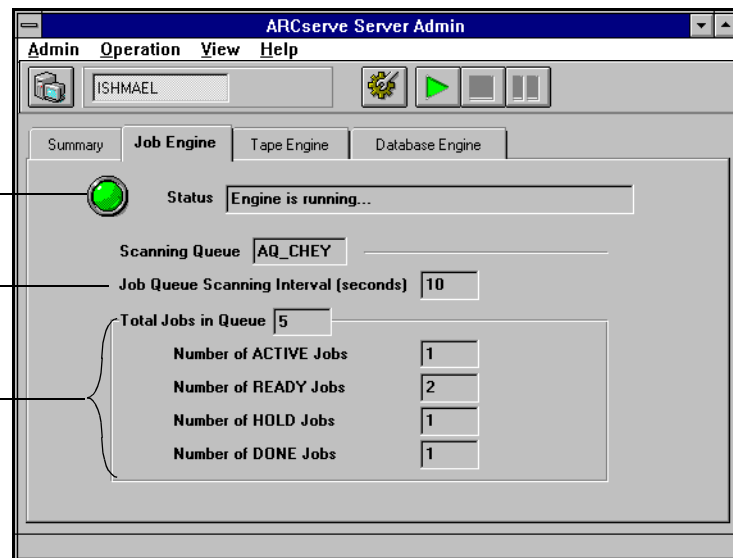
To get specific information about the ARCserve Job Engine:

1. From the ARCserve Server Admin, select the Job Engine.

Describes the state of the engine, such as if it is running, paused, stopped, etc.

Tells you how often the job queue is scanned for jobs ready to be executed. This information is set in the Job Engine configuration.

This information is taken from the job queue. It shows the number of jobs currently in the queue, and then separates them by job status.



To view information specific to the ARCserve Tape Engine:

- > From the ARCserve Server Admin, select the Tape Engine.

The screenshot shows the 'ARCserve Server Admin' window with the 'Tape Engine' tab selected. A green light indicator shows the engine is running. Below this, a table lists two active tape engine jobs. A second table below it is empty, representing zero active data transfer groups.

Indicates whether the Tape Engine is running or stopped.

The number of active jobs currently using the Tape Engine...

...and some information about these active tape groups, such as the group name, tape name, etc.

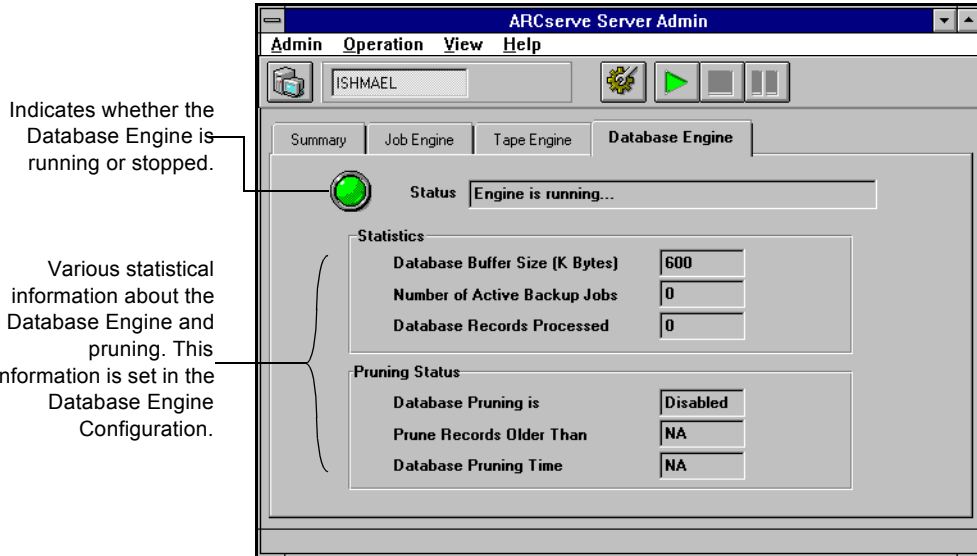
Client Name	Job Type	Process State
ARCserve Manager	Device Management	None
audrey	Read/Write	None

Group Name	Device	Tape Name	Tape ID	Seq	WProt	KB Used



To view information about the Database Engine:

- > From the ARCserve Server Admin, select the Database Engine.



Viewing and changing the running status of the engines

What happens when an engine is stopped


A stopped engine is an engine that is completely off-line. This may be because you have not yet started it, you brought it down manually for some other purpose, or, in the course of running, it has encountered an error and shut itself down. Whatever the reason, it means that the services that the engine provides are not available.

ARCserve's engines are designed to run independently of each other. That means that if, say, you stop the Tape Engine, the Database Engine and the Job Engine are not affected. They continue to run, providing and performing their services as configured. The Database Engine continues to log pertinent ARCserve information in the database. And the Job Engine continues to scan the job queue and launch jobs as required. If a job requiring a tape drive is encountered, the job is launched by the Job

Engine as usual, but the job will fail because the Tape Engine is not there to communicate with the tape drives. The Database Engine then logs this information.


NOTE: Although ARCserve still runs if one or two engines are not running, ARCserve needs all three engines running simultaneously to achieve complete functionality.

To start an engine from the ARCserve Server Admin:

1. In the ARCserve Server Admin, select the tab for the engine you want to start.
2. Click the Start Engine button. 


You can verify that the engine is started by checking the *Status* field (seen in the engine's tab) or by checking for a green status light under the engine's name (seen in the Summary tab).

To completely halt services from an engine:

1. In the ARCserve Server Admin, select the tab for the engine you want to stop.
2. Click the Stop Engine button. 

You can verify that the engine is stopped by checking the engine's *Status* field (in the engine's tab) or by checking for a red status light under the engine's name (in the Summary tab).

To temporarily pause the Job Engine.

1. In the ARCserve Server Admin, select the Job Engine tab.
2. Click the Pause Engine button. 

You can verify that the Job Engine is paused by checking the *Status* field in the Job Engine tab, or by checking for a yellow status light under Job Engine in the Summary tab.

The Job Engine is the only engine which may be paused.

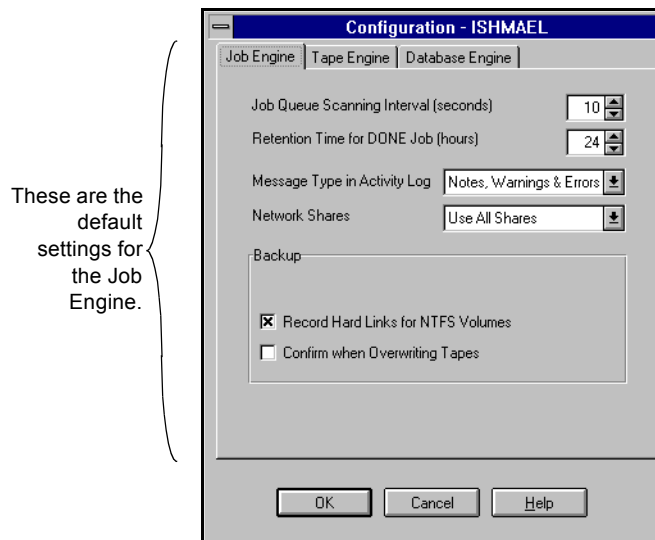
Configuring the ARCserve engines

The ARCserve Server Admin allows you to configure each engine to suit your particular needs.

To configure the ARCserve engines:

From the ARCserve Server Admin, click the Configure Engine button.

The Configuration dialog box appears. By default, the Job Engine tab is selected:



Configuring the ARCserve Job Engine

The ARCserve Job Engine controls when jobs in the job queue should be executed. It scans the job queue regularly, launching jobs as their execution date and time are reached. Follow the directions below to configure the ARCserve Job Engine.

1. In the Configuration dialog box, select the Job Engine tab.

The figure above shows the default configuration for the Job Engine.

2. Provide the information to configure the Job Engine and click OK.

Job Engine configuration fields

Job Queue Scanning Interval (seconds)- default is 10 seconds

The Job Engine constantly scans the job queue for jobs that should be executed. By default, the job queue is scanned every 10 seconds. To change the time interval that the job queue is scanned, specify a number between one and 9,999.

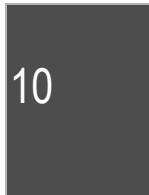
Retention Time for DONE Job (hours)- default is 24 hours

Jobs with a final status of “DONE” remain in the job queue for the time that you specify in this field. By default, ARCserve will keep DONE jobs for 24 hours before they are deleted from the queue. To change the time that DONE jobs remain in the queue, specify a number between 0 and 999.

Message Type in Activity Log- default is “Notes, Warnings & Errors”

The Activity Log contains information about all of ARCserve’s activities. By default, notes, warnings, and errors that occur when running ARCserve appear in its Activity Log. To change the types of messages that are included in the Activity Log, specify one of the following values:

- None - No messages will appear.
- Errors - Only errors that occur will appear.
- Warnings & Errors - Warnings and errors that occur while running ARCserve will appear.
- Notes, Warnings & Errors - The default selection, includes all notes, warnings, and errors.



-
- Debug - Only debugging information will appear. This should only be used for troubleshooting purposes.

Network Shares-
default is "Use All
Shares"

This option applies only for machines on a Windows NT network. The selected option determines how the network is displayed in the Browser. The available options are:

- Use All Shares - Display administrative and user shares.
- Use Default Shares Only - Display only administrative shares.
- Use Users Shares Only - Display only shares that have been specifically set by users.

For example, if you select Use Default Shares Only, then only default shares are displayed in the Browser. If you back up a machine, you are only able to back up the default share drives for the selected machine.

For more information on shares, refer to your Windows NT documentation.

Backup -> Record
Hard Links for NTFS
Volumes - default is
on

If you back up files that have hard links, this information is included and preserved by default.

Backup -> Confirm
when Overwriting
Tapes - default is off

Any time a tape will be overwritten, you can have ARCserve prompt you to confirm that you really want this to happen. By default, this option is not set. If you set this option on, ARCserve will pop up a confirmation dialog box and wait five minutes for you to respond. If you still have not confirmed after five minutes, the job will be cancelled.

Configuring the ARCserve Tape Engine

The ARCserve Tape Engine identifies the tape drives that are connected to your system and activates them when a job requiring them is started.

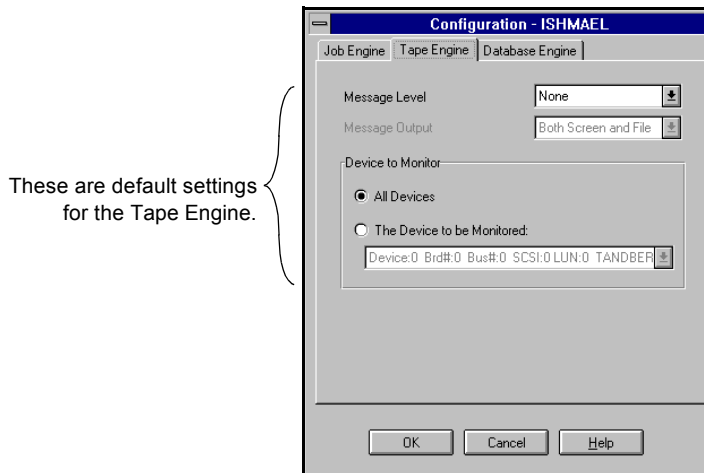
NOTE: Changing the configuration of the Tape Engine is not recommended unless you are having problems with your tape devices. Keep the default configuration for the Tape Engine, except for troubleshooting purposes.

10

To configure the Tape Engine:

1. In the Configuration dialog box, select the Tape Engine tab.

The default configuration for the Tape Engine appears as shown below:



2. Provide the information to configure the Tape Engine and click OK.

Tape Engine configuration fields

Message Level- default is "None"

The value you specify for this field determines whether you need to specify values for the other fields in this dialog box. If you keep the default ("None"), you do not need to specify anything else.

If you specify a *Message Level* value other than "None", ARCserve will monitor the Tape Engine and log all information in a Tape Engine Log. To change the level of Tape Engine messages, specify one of the following:

- None - The default value, nothing is logged.
- Detail - Every message sent by the drives is logged.

Message Output

If you specified "Detail" in the *Message Level* field, you can specify where you want the messages sent. Specify one of the following:

- Both Screen and File - The messages are recorded in the Tape Engine Log as well as to A DOS box (the Tape Engine Message window).
- Screen Only - The messages are sent to the Tape Engine Message window only.
- File Only - The messages are recorded in the Tape Engine Log only. You can view the Tape Engine Log in the Job Status Manager.

Device to Monitor

If you specified "Detail" in the *Message Level* field, you can specify which device(s) you want to monitor. To specify the drive to monitor, select one of the following:

- All Devices - All the SCSI devices connected to your machine will be monitored.
- The Device to be Monitored: - Select this option to monitor only one device. Drop down the device list and select the one to monitor.

Configuring the ARCserve Database Engine

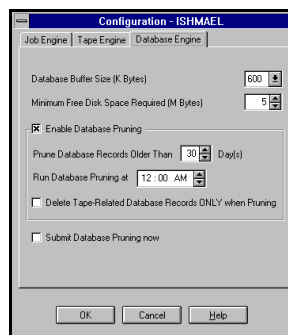
The ARCserve Database Engine stores all the important information that ARCserve needs. Some of the information saved to the database are:

- what files and directories have been backed up, copied, and restored
- jobs that ARCserve has processed
- tape devices and tapes used for ARCserve operations

To configure the Database Engine:

1. In the Configuration dialog box, select the Database Engine tab.

The default configuration for the Database Engine is shown below:



2. Provide the information to configure the Database Engine and click OK.

Database Engine configuration fields

**Database Buffer Size
(K Bytes) - default is
600 KB**

By default, ARCserve uses a buffer that is 600 KB for recording information in the database. To change the size of the buffer used by ARCserve when writing to the database, drop down the list and select one of the available sizes.

Minimum Free Disk Space Required (M Bytes) - default is 5 MB	Specify the minimum amount of disk space (in megabytes) you want to reserve for the ARCserve database. By default, 5 MB of disk space is specified for the database. To change the amount of disk space required for the database, specify a number between 1 and 10.
Enable Database Pruning - default is on	Information regarding the files and directories that were backed up in a session is deleted when database pruning is done. By default, this option is selected. It is useful to maintain the detailed information for restoring purposes. However, not pruning your database can mean that it fills up quickly. If you want to free up space in the database file, you might want to set this option on.
Prune Database Records Older Than _ Day(s)	This field is active only if the <i>Enable Database Pruning</i> option is on. Specify how long the record should be in the database before ARCserve prunes it. By default, the record will be pruned (if enabled) after it has been in the database for 30 days. To change the length of time a record has to remain in the database before pruning, specify a number between one and 365.
Run Database Pruning at _	This field is active only if the <i>Enable Database Pruning</i> option is on. Specify when you want the pruning operation to run. By default, pruning (if enabled) will occur at 12:00 AM.
Delete Tape-Related Database Records ONLY when Pruning	When you reformat or erase a tape, ARCserve will also delete the records in the database that pertain to the tape. Performing this extra step, however, can be a time-consuming process. When running an overwrite tape job, select this option to postpone deleting these records until pruning is performed. This happens during the job.

11

Chapter

USING AGENTS

In this chapter, you will learn how the Client Agents can work with ARCserve running on different platforms.

In this chapter, you will learn:

Page:

- | | | |
|------|---|------------------------------|
| 11-2 | ➤ | What are Client Agents |
| 11-5 | ➤ | How to enable a Client Agent |
| 11-8 | ➤ | About Database Agents |

What is a Client Agent?

The Client Agent software is an optional product that can be used with your ARCserve for Windows NT software. The benefits of using the Client Agent in conjunction with ARCserve are:

- The Client Agent for NetWare enables ARCserve to back up all NetWare specific information (such as bindery and trustee information).
- Compatibility and support for SPX/IPX and TCP/IP protocols.
- Support for file system "browsing" of the remote clients.
- Maximize your ARCserve server's capabilities and speed by off-loading the processing of the backup, restore, and compare functionality directly to the machine on which the Client Agent resides.

Client Agents are available for the following operating systems:

- Windows NT
- Windows 95 and Windows 3.1
- NetWare
- UNIX
- OS/2
- Macintosh

How do the Client Agents work?

ARCserve for Windows NT allows you the option of performing complete and safe backup, compare, and restore jobs with or without the Client Agents running. Client Agents provide added functionality when you perform these jobs. These features include:

- **Multi-stream processing** - One client agent can handle different requests and perform multiple jobs at the same time.
- **Integrated Authentication** - Use existing NT security for remote authentication.

Push Agent technology and efficient backups

All seven Client Agents utilize the Push Agent technology to accomplish backup, restore, and compare jobs. The advantage of Push Agent technology is that it requires a NetWare server or a Windows for NT machine to perform the necessary filtering of files and directories prior to "pushing" them to the host server (the server running ARCserve) for processing. By utilizing this technology, the transfer of data to the ARCserve host is now minimized thereby reducing load on your communications network. The host server is more efficient because it no longer has to process the files or directories that were flagged for a job. For example:

System Files

An important advantage of the Push Agent technology is that it retains the attributes of system files. This is useful, particularly as it relates to NetWare servers. Because the attributes of the system files are maintained, they are restored as system files rather than as DOS files. This enables you to perform complete disaster recovery.

While a backup done without using the Push Agent technology is as effective and safe, the Push Agent technology allows the restore operation to be completed

much more efficiently. Since the system files are backed up intact (native attributes are maintained), they can be restored as is in the event of a disaster, thereby reducing your down time. A restore operation on a server that was backed up without utilizing the Push Agent technology, would require that the system files and bindery be rebuilt. In effect, your NetWare server would be restored but it would be generic.

Installing and Loading the Client Agents

The client agent must be properly installed and loaded in order for ARCserve for Windows NT to use the agent. See the installation guide for your client agent for more information.

Enabling a Client Agent for ARCserve

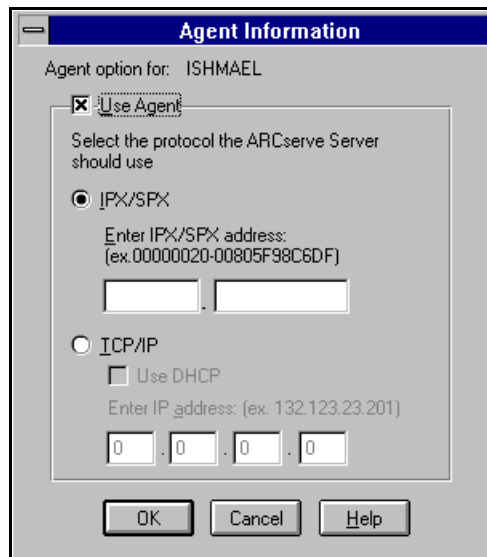
Before enabling the Client Agent, you must load it on each machine you will be accessing. Be sure to note the address of the source machine (the machine the Agent is loaded on) when loading the Client Agent. You must enable the client agent before performing a backup, restore, or copy operation.

There are two methods to enabling the agent. Both will give you the same results but require different information to be supplied.

To use method 1:

1. Highlight the machine in the Browser of the Backup, Restore, or Copy window.
2. Click the server name with your right mouse button (or choose *Source Context Menu* from the Backup menu).
3. Choose *Use Agent* from the popup menu.

The Agent dialog box opens.

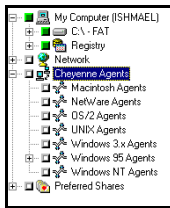


4. Click the Use Agent checkbox.

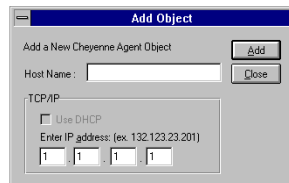
-
5. Select a protocol and enter the protocol address on the remote machine.
 6. Click OK.
The client agent is enabled for this machine.

To use Method 2:

1. Highlight the machine in the Browser of the Backup, Restore, or Copy window.
2. Make sure the *Cheyenne Agents* context is expanded (double click on it). Select the specific agent you wish to enable.



3. Click on right mouse button and select *Add Object*.



4. Enter the Host Name
5. Enter the IP address and click on Add.
6. Click on Close once all the information has been entered.

Database Agents

ARCserve for Windows NT v6.0 also supports the following Database Agents:

- DBagent for SQL 6.0
- DBagent for Oracle
- DBagent for SAP R/3
- DBagent for Exchange Server
- DBagent for Lotus Notes (beta)

Database Agents are sold separately. For more information about any Database Agent, refer to the User Guide for that agent.



12

Chapter

USING THE ALERT MANAGER

ARCserve for Windows NT can alert you (or anybody you choose) whenever a virus is detected on your network and when jobs are completed or terminated.

In this chapter, you will learn:

Page	
12-2 >	Alert Overview
12-4 >	Running Alert
12-6 >	Configuring your system to send alerts

Alert basics

Alert is a notification system that sends messages to people in your organization using different communication mechanisms. Alerts can be sent to the system administrator, a hardware technician, or anyone else, in or out of the office.

How does Alert work with ARCserve for Windows NT?

Alert does not generate its own messages. Alert routes any messages, errors, or warnings it receives from different sources including ARCserve and distributes these “alerts” to specific destinations. For example, ARCserve generates warning messages whenever a virus is detected. These warning messages are passed to Alert, which sends the notification.

Alerts can be sent via:

- Broadcasts - Alert broadcasts can be sent to specific network users or groups.
- Pager - alphanumeric.
- Electronic Mail - Microsoft Mail or Microsoft Exchange Server must be installed on a server on your network.
- Trouble tickets - An alert can be printed through any print queue on your network. (Trouble tickets can only be sent to non-Postscript printers.)
- Simple Network Management Protocol (SNMP) managers - Such as NetWare Management System (NMS) and HP OpenView.
- NT Event Log of remote machine.

Components of Alert?

Alert has four basic components:

- ALERT SERVICE - This is the Service that is responsible for the reception, processing, and distribution of Alert messages.
- ALBUILD.DLL - This is the .DLL that acts as the channel between Alert and other applications. This should be located in the ARCserve home directory.
- *.ALT - This is the application profile file. This file is provided by an application (such as ARCserve, which creates an ARCSERVE.ALT file). This .ALT file must be present in the Windows NT directory in order for Alert to handle messages generated by an application.
- Alert Manager - This is where you can configure how Alert broadcasts its messages.

What do you have to do to generate alerts?

In order for ARCserve to generate alerts you must tell Alert what information is necessary to communicate. For example, if you will be using the pager system, you will have to tell Alert what pager number to dial, and you will have to supply information about your modem.

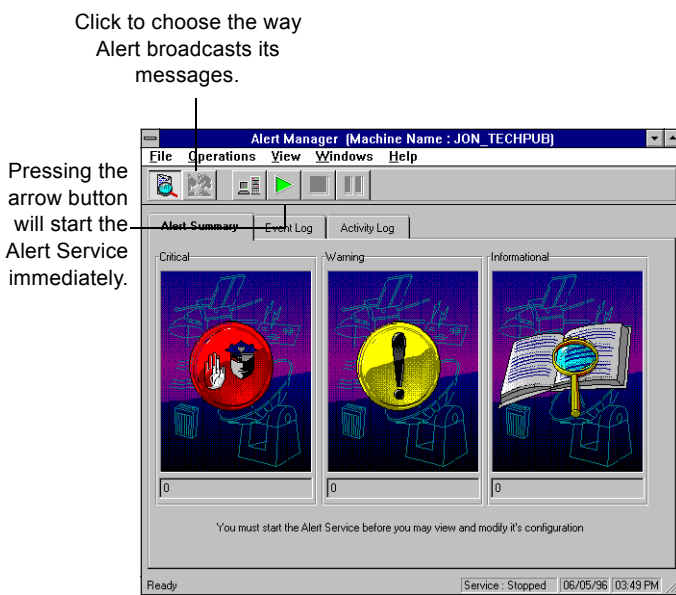
All of this information must be configured in the Alert program on your ARCserve for Windows NT server.

Running the Alert Manager

To run Alert:

1. Click the Alert Manager icon in the Program Manager.

The Alert manager screen appears:



Selecting a remote Alert machine to manage

You can use the Alert Manager to select a remote machine to manage Alert messages for.

To select a remote machine:

1. In the Alert Manager window, click the Select Server button.



The Connect Alert Server dialog box appears:

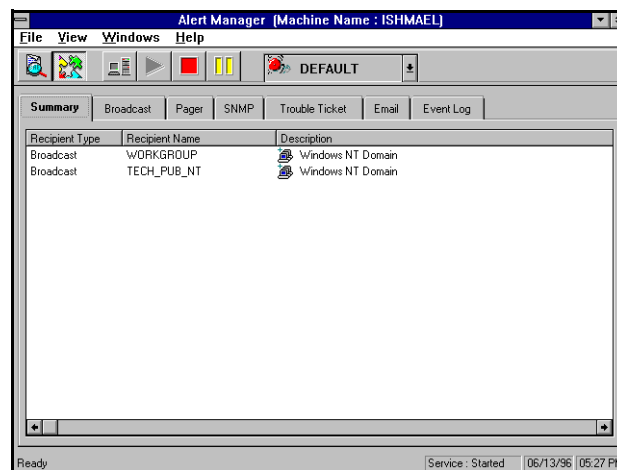


2. Enter the name of the remote server, your username on that server, and your password, and click Ok.

You will be logged on, and can now configure Alert messages for the remote server you specified.

Configuring Alert

When you enter configuration information in Alert Manager (displayed below), this same information is used for all applications using Alert. You can also enter configuration information specifically for ARCserve.



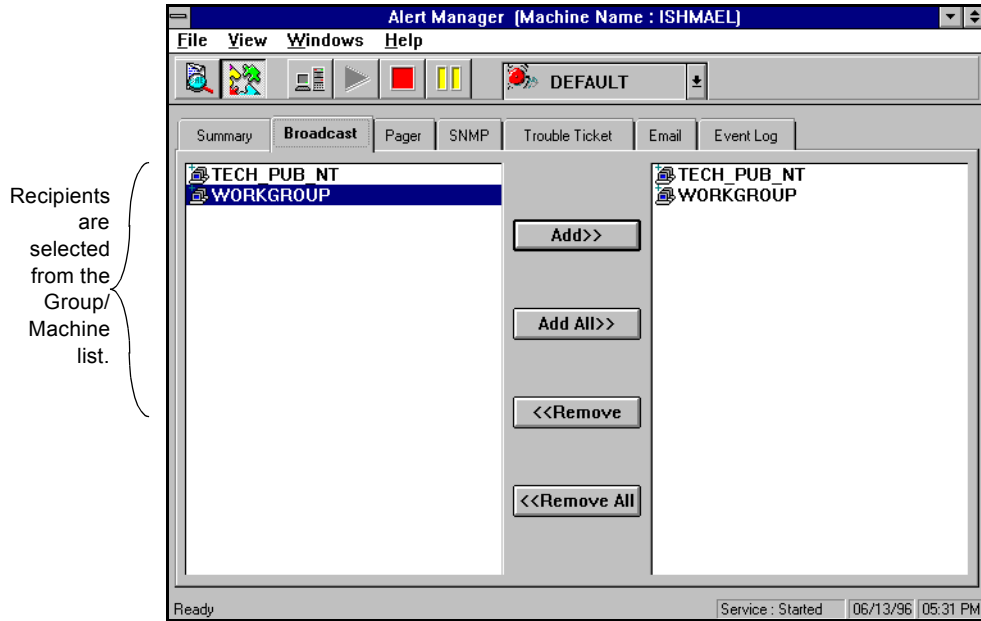
Using the Broadcast option

Alert broadcasts can be sent to specific network users or groups.

To add broadcast recipients:

1. In the Alert Manager, click the Broadcast tab.

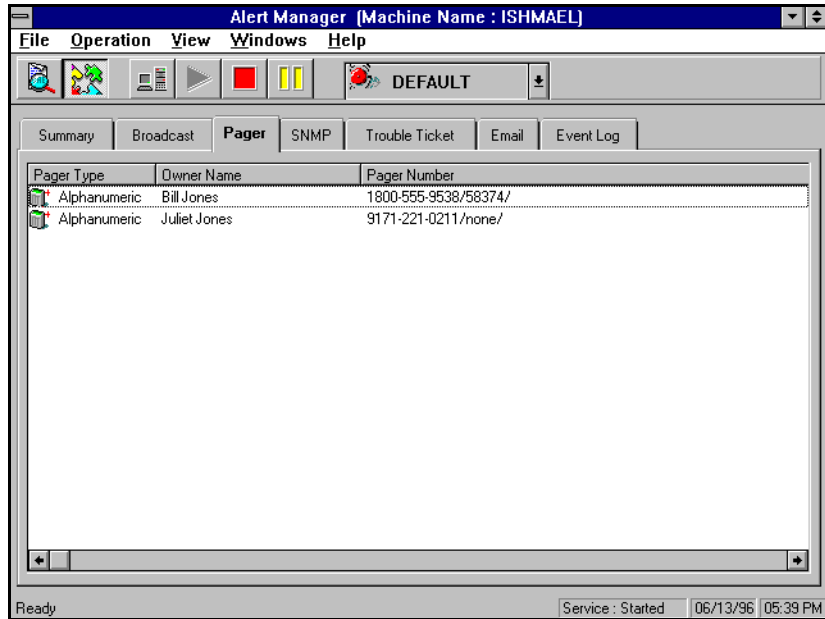
A list of all groups and recipients appears:



2. Highlight the group/machine you want.
3. Press the Add button.

Using the Pager option

The pager option is used to send an alphanumeric pager message. When you click the Pager tab, the current list of recipients appears:

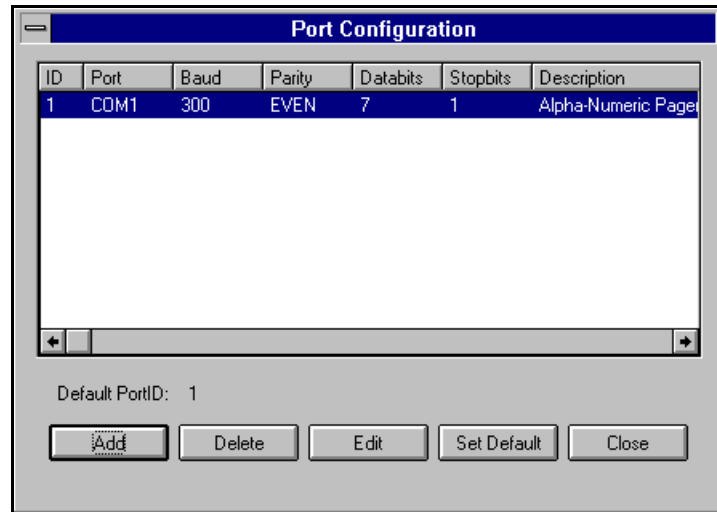


To add pager recipients, you first need to configure your communications ports for Alert if you have not already done so.

To configure your communications ports:

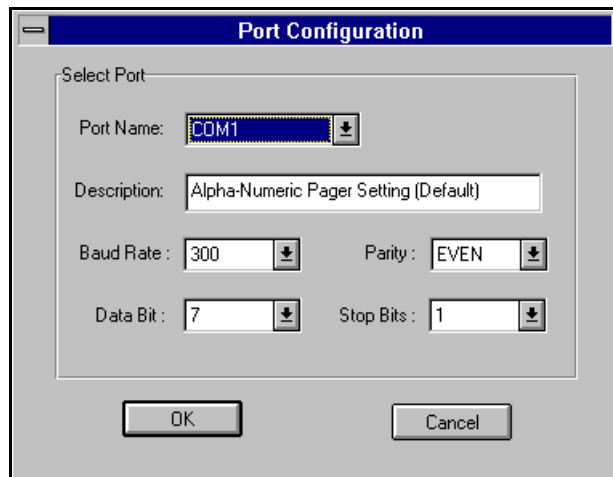
1. From the File menu, select *Port Setup*.

The Port Configuration dialog box opens:



- To edit the Port Configuration parameters, click Edit.

The edit Port Configuration dialog box appears:



- Specify the Port parameters you want and then click OK.

The parameters you can specify with this dialog are as follows:

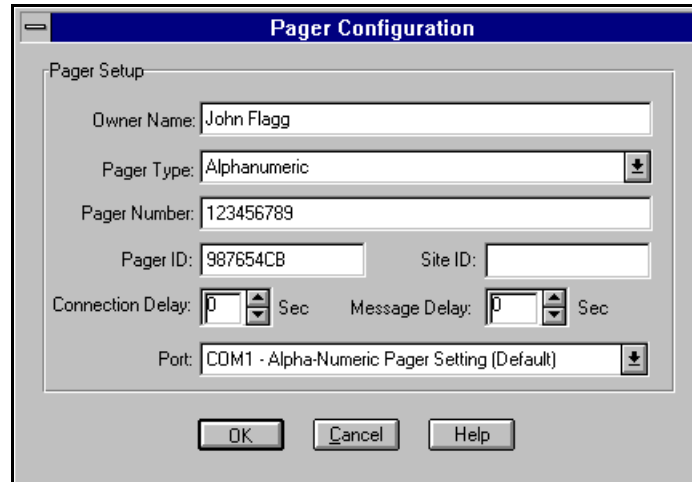
Port Name	Enter the name of the communications port you want the pager message to be broadcast from.
Baud Rate	Indicate the baud rate being used by your modem.
Parity	Indicate the parity setting, none, odd, or even, of your modem.
Data Bits	Enter the number of data bits, 7 or 8, that your modem uses.
Stop Bits	Enter the number of stop bits, 1 or 2, that your modem uses. For alphanumeric pagers, the recommended usage is 7 data bits, even parity, 1 stop bit; or 8 data bits, No parity, 1 stop bit.

Note: When sending an alphanumeric page, consult your pager manual for proper modem settings

4. Click OK , and then click Close to close the Port Configuration dialog box to save your information.

To add pager recipients:

1. Select the Pager tab.
2. From the Operation menu, select New.
The Pager Configuration screen appears:



2. Enter information on the Pager Configuration screen.
Enter information in the fields in the Pager Configuration dialog box as follows:

Owner name

Enter the name of the pager recipient.

Pager Type

Indicate that you are using an alphanumeric pager.

Pager Number

Enter a maximum of 24 characters. If a digit, such as 9, must be dialed to get a dial tone, it must be included in this field.

A comma can be entered to indicate a one second pause. If a longer pause is desired, a string of commas can be entered. A dash (-) can be used to separate digits, but it has no function. (Since this can vary by modem, you should verify this with your modem manual.)

Pager ID

Enter up to eight digits to identify the pager that will receive the alerts.

Site ID

Enter up to four digits to identify where the alert occurred. This number is included in the message to the pager.

Therefore, if the number is less than four digits, you should use leading zeros.

Connection Delay

Enter the number of seconds for each delay you want to wait before a connection is made with the pager company. When a phone number is dialed, a connection is made. The connection may be established immediately or it may be delayed. This will vary with your pager company, location, time of day, telephone equipment, and telephone traffic. If the connection is not established immediately, adding a delay can prevent the alert from being sent before the connection is established.

Message Delay

Enter the number of seconds for each delay you want to wait between the time the connection is made and the alert message is sent.

3. When you've finished entering the information, click OK. To complete the process of configuring pager recipients, you need to enter the parameters for the communications port you want the pager message to be broadcast from.

Interpreting the pager message

There are several messages that can be sent to an alphanumeric pager. Each message is listed below. Words that appear in italics are variables that will be filled in with an actual user name, workstation address, path and file name, virus name, or server name.

Boot Virus Detected - *username* at *workstation address*

Manager Detected a Virus [*virusname*] in [*path*] - *username* at *workstation address*

Infected File [*servername/path*] Detected

Infected File [*path**] Accessed by *username* at *workstation address*

* This can be the path on a server or workstation.

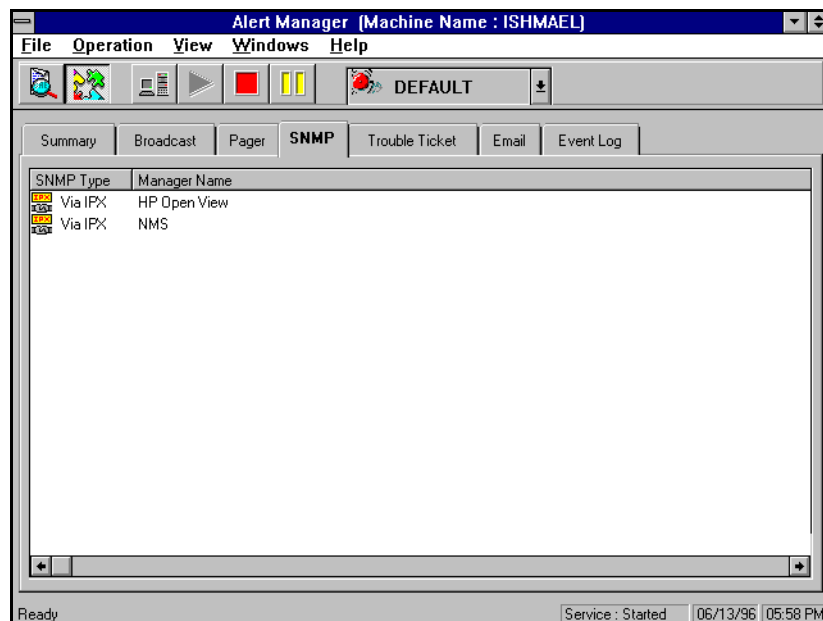
Using the SNMP option

The SNMP option is used to send an SNMP 'trap' (message) to an SNMP manager.

Examples of SNMP managers include NetWare Management System (NMS), HP OpenView, and IBM Netview.

This section explains the SNMP fields on the SNMP Configuration screen.

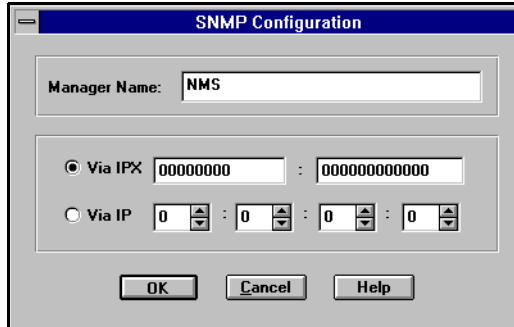
When you click the SNMP tab, the current list of managers appears:



To add SNMP recipients:

1. Click the New button.

The SNMP Configuration screen appears:

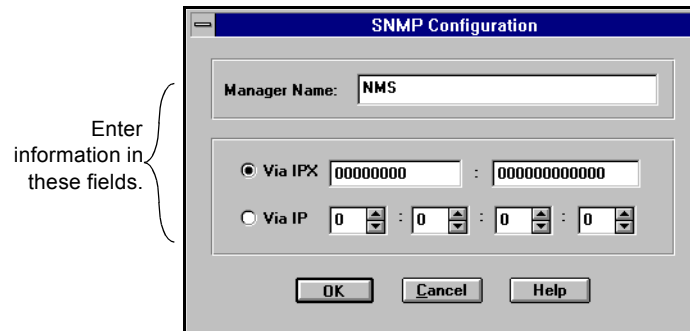


The image shows a dialog box titled "SNMP Configuration". It has a "Manager Name" field containing "NMS". Below this, there are two radio button options: "Via IPX" (selected) and "Via IP". The "Via IPX" option has two text input fields: the first contains "00000000" and the second contains "000000000000". The "Via IP" option has four spin buttons, each containing the number "0". At the bottom of the dialog are three buttons: "OK", "Cancel", and "Help".

2. Enter information on the SNMP Configuration screen.

Manager Name

Enter the name of the SNMP Manager.



The image shows the same "SNMP Configuration" dialog box as above. A bracket on the left side of the dialog points to the "Manager Name" field and the two input fields under the "Via IPX" option. Next to the bracket is the text "Enter information in these fields."

Via IPX

Enter the 8 byte network address of the machine where the SNMP manager is located. Next, enter the 12 byte node address of the machine where the SNMP manager is located. Use this field for Novell networks.

Via IP

Enter the IP address of the machine where the SNMP manager is located. Use this field if you are running the TCP/IP stack.

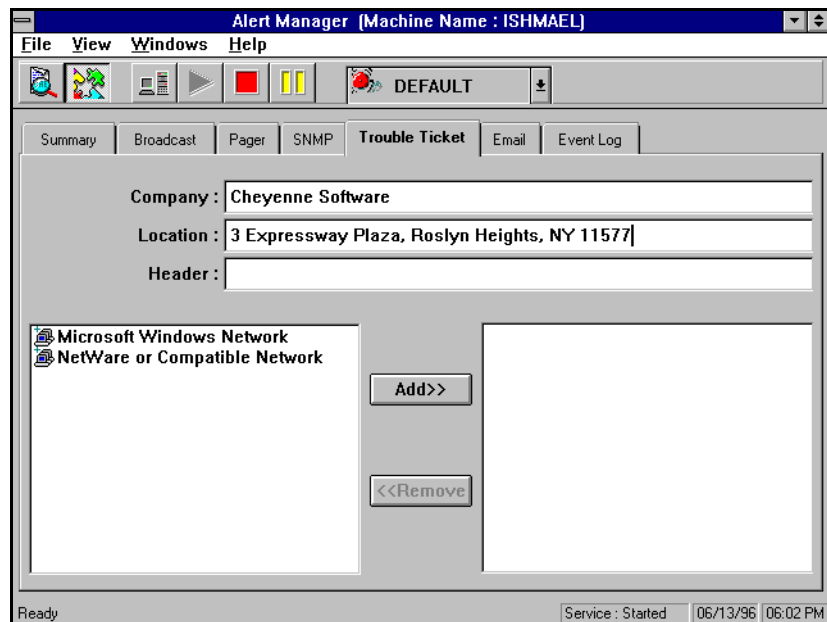
3. Press OK to save your information.

Using the Trouble Ticket option

Trouble tickets are used to alert users through a printed document.

To use the Trouble Ticket option:

1. Click the Trouble Ticket tab.



- **Company Name** Enter your company name.
- **Location** Enter the location of your company.
- **Trouble Ticket Header** Enter the information that should appear at the top of each Trouble Ticket.

Choosing the Printer

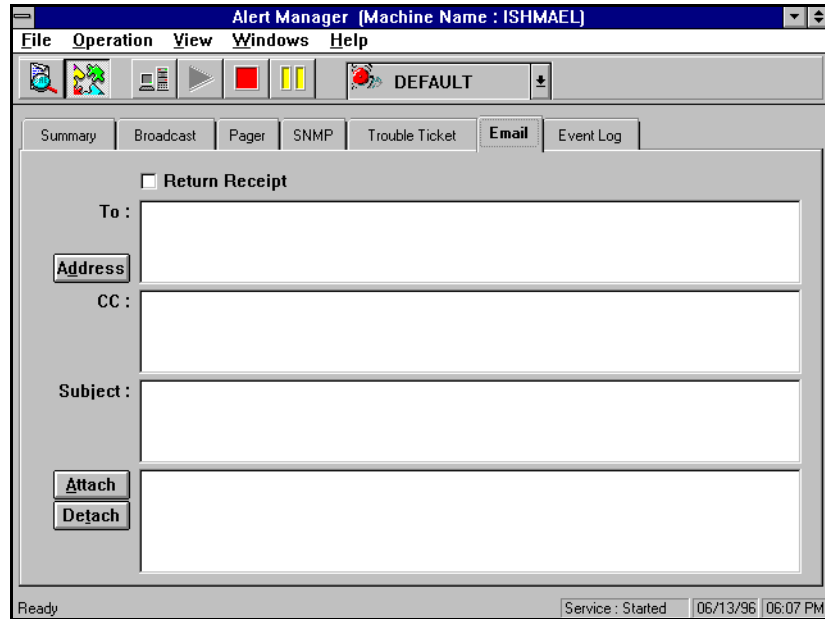
To choose a printer:

1. Choose a printer from the *Print Queue List* by highlighting it.
2. Click the Add button to move the printer to the *Recipients* column.

Using the E-mail option

The E-mail option is used to send E-mail messages to specific users.

NOTE: Microsoft Mail or Microsoft Exchange Client must be installed on your computer in order to be able to send messages or to enter configuration data on this screen. Consult your Windows NT manual for instructions about how to set up your E-mail account.



To add E-mail recipients:

1. Log into E-mail.
2. Select E-mail recipients.

To log into E-mail:

1. Click the Address button.

You will be prompted for your Microsoft Mail or MS Exchange information.

For Microsoft Mail, this information will consist of:

- Mailbox name
- Password

For MS Exchange, this information will consist of:

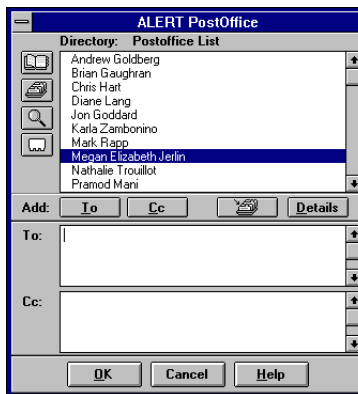
- Profile Name
- Password

Note: The rest of this procedure assumes you're using Microsoft Mail. For information about how to set up MS Exchange for Alert messaging, refer to your MS Exchange documentation.

2. Enter the user name and password Alert should use when logging into Microsoft Mail.

Using your Alert PostOffice to select E-mail recipients

Once you have logged into E-Mail, the Alert PostOffice screen of Microsoft Mail, for example, will appear. This screen contains the names of users in your post office.



3. Locate usernames in the Alert PostOffice.

To locate usernames in the Alert PostOffice you can:

- Enter the first few characters of a name. The list scrolls to the first name in the list with those characters.
- Use the scroll bar or press the arrow keys to scroll through the list.

4. Select a username.

Highlight the name you have selected and click the To button. The selected name will appear in the To box.

To add names to the Cc list, repeat the steps for locating and selecting names, and then click the Cc button.

5. Click OK.

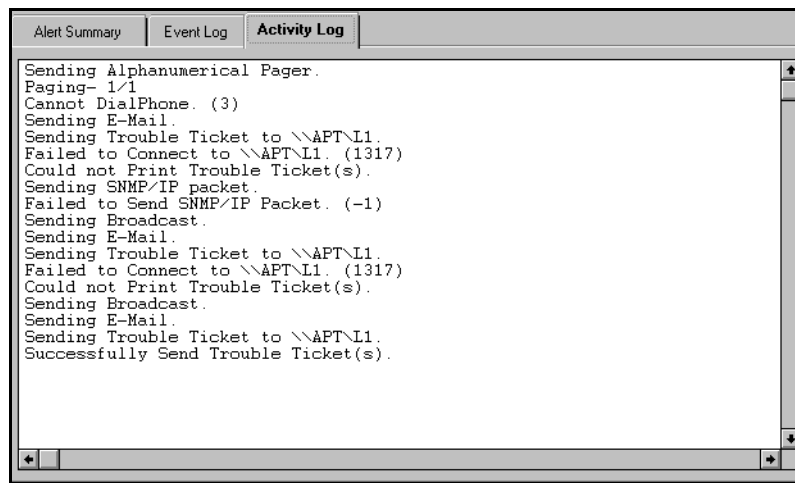
Alert's Activity Log

While the current status of Alert is displayed on Alert's main menu, a historical listing is stored in the Activity Log. You can view, print, or clear this log.

To display the Activity Log:

1. Select the Activity Log Tab from the Alert manager.

Your Activity Log, similar to the one shown below, appears:



You can delete the Activity Log. You might want to do this if Alert has been running for a long time and the log has grown large.

To clear the log:

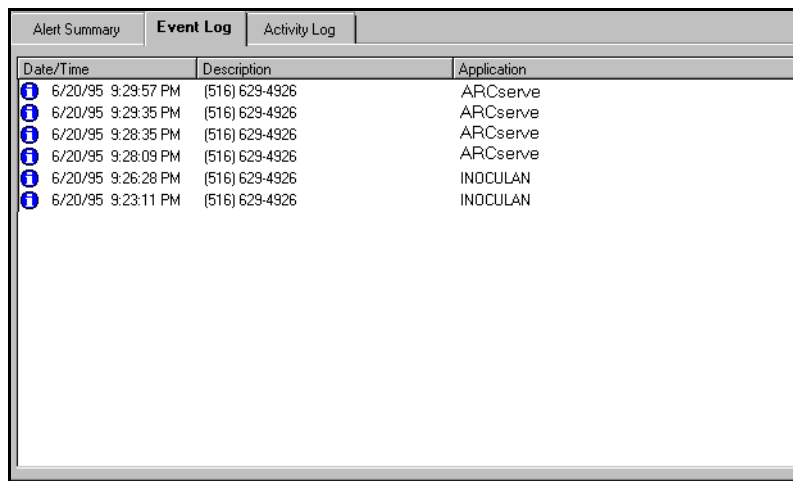
1. Select *Clear Activity Log* from the Operations menu.

Alert's Event Log

Every message that is generated by Alert is stored in the Event Log. You can view, print, or clear this log.

To display the Event Log:

1. Select the Event Log Tab from the Alert Manager.



The screenshot shows the Alert Manager interface with the 'Event Log' tab selected. The table below displays the event log records.

Date/Time	Description	Application
6/20/95 9:29:57 PM	(516) 629-4926	ARCserve
6/20/95 9:29:35 PM	(516) 629-4926	ARCserve
6/20/95 9:28:35 PM	(516) 629-4926	ARCserve
6/20/95 9:28:09 PM	(516) 629-4926	ARCserve
6/20/95 9:26:28 PM	(516) 629-4926	INOCULAN
6/20/95 9:23:11 PM	(516) 629-4926	INOCULAN

You can delete the Event Log. You might want to do this if Alert has been running for a long time and the log has grown large.

To clear the log:

- > From the Operations menu, select *Clear All Event Records*.
If you want to clear one item, highlight it and select *Clear Selected Event Records*.

To view an event record:

- > From the Operations menu, select *View Event Record*.

Fields on the Event Log screen

<u>Date/Time</u>	Displays the date and time the event occurred.
<u>Description</u>	The description is determined by the applications that set the alert.
<u>Application</u>	Tells you the application that generated the event.

Other Alert options described in Online Help

For information about how to use the following options, see Online Help for Alert.

<u>Event Log Destination</u>	You can configure the Event Log destination so that Alert will put an event for a selected server in that machine's Windows NT Event Log.
<u>MS Exchange Mail Setup</u>	You can use either the Alert Setup program or the Exchange Mail Setup option in the Alert Manager File menu to configure MS Exchange Mail for use with Alert.



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