



ADSTAR Distributed Storage Manager

Using the UNIX** Backup-Archive Clients

Version 2

Note!

Before using this information and the product it supports, be sure to read the general information under "Notices" on page vii.

This book is also available in a softcopy form that can be viewed with the IBM BookManager READ licensed program.

First Edition (November 1996)

This edition applies to Version 2 Release 1 of the ADSTAR Distributed Storage Manager, 5648-020, 5622-112, 5697-078, 5763-SV1, 5733-197, 5686-073, 5655-119, 5765-564, 28H2250, 28H2180, 89G1342, and to any subsequent releases until otherwise indicated in new editions or technical newsletters. Make sure you are using the correct edition for the level of the product.

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Preface

ADSTAR Distributed Storage Manager (ADSM) is a client/server program product that provides storage management services to customers in a multivendor computer environment. It includes the following programs, which are available on a variety of platforms:

- A *server program* that allows various systems to act as backup and archive servers for distributed workstations and file servers. The server program also allows an MVS or AIX system to act as a migration server for distributed workstations and file servers.
- An *administrative client program* that allows an ADSM administrator to control and monitor server activities, define storage management policies for backup, archive, and space management services, and set up schedules to perform those services at regular intervals.
- A *backup-archive client program* that allows users to back up and archive files from their workstations or file servers to ADSM storage, and restore and retrieve backup versions of files and archived copies of files to their local file systems.
- A *hierarchical storage management (HSM) client program* that provides space management services. The HSM client program migrates eligible files to ADSM storage to maintain specific levels of free space on local file systems, and automatically recalls migrated files when they are accessed. It also allows users to migrate and recall specific files. The HSM client program runs only on the operating systems specified in *ADSTAR Distributed Storage Manager Using the UNIX Hierarchical Storage Management Clients*.
- An *application programming interface (API)* that allows you to enhance an existing application with storage management services. When an application is registered as a client node with an ADSM server, users can use the application to back up and archive objects, such as databases, to ADSM storage, and restore and retrieve objects from ADSM storage.

This publication provides information about the ADSM UNIX backup-archive client which runs on the following platforms:

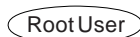
- AT&T UNIX SVR4 MP-RAS 2.02, 2.03, and 3.0
- Bull DPX/2 300 Bull Open Software Release 2.00
- Digital Equipment Corporation's ULTRIX 4.2A, 4.3, or 4.4
- Digital Equipment Corporation's Digital UNIX (DEC OSF/1 V3.2)
- Hewlett Packard's HP-UX level 8.07, 9.01, 9.03, 9.04, or 10.01
- IBM's AIX Version 3.2 or later
- IBM's OpenEdition MVS/ESA SP 5.1 or higher
- NEC EWS-UX/V Release 4.2 Revision 9.1, 9.2, 10.1, or 11.1
- Pyramid Nile DC/OSx level 79 or later or Reliant UNIX 1.0 or later
- Santa Cruz Operations' SCO Open Desktop 2.0 or 3.0 or UNIX 386 3.2.4
- Sequent PTX UNIX Release 2.1.6
- Siemens Nixdorf SINIX-N or SINIX-P Version 5.4.2 RISC
- Siemens Nixdorf SINIX-Z Version 5.4.1 386/486

- Silicon Graphics' IRIX Release 5.2 or 5.3 with efs- or xfs-File System
- Sun Microsystems' Solaris Version 2.3, 2.4, or 2.5 (in native mode)
- Sun Microsystems' SunOS Version 4.1.3

What You Should Know Before Reading This Publication

This publication is intended for root users and users who need to back up and archive their workstation files.

Information in this publication directed specifically to root users is identified by this icon:



We assume that you know how to use your workstation, and that you understand the general operation of the operating system.

We also assume that the ADSM backup-archive client is already installed on your system. See *ADSTAR Distributed Storage Manager Installing the Clients* for information on installing your client.

There are two versions of the backup-archive client: a graphical user interface (GUI) client and a command-line client. You might have both, or just one, of these clients installed. This book covers both clients, but the command-line client is treated as an advanced topic.

Style Conventions

Throughout this book, we use these style conventions:

Figure 1. Style Conventions

| Convention | Indicates |
|----------------|---|
| bold | A part of a window, or a file name. |
| UPPER CASE | An ADSM command or option. |
| <i>italics</i> | A new term. |
| monospace text | An example in the text. |
| semicolon (;) | Separates a sequence of actions. You should do these actions one after the other. For example, click on the ADSM menu; Backup item; Incremental item, means to select the ADSM menu from the action bar, then the Backup item from that menu, and finally the Incremental item from the resulting menu. |
| plus sign (+) | Used between two keys to indicate that the two keys it separates should be pressed simultaneously. |

Referenced Publications

The publications referenced in this book are listed in Figure 2.

All of the ADSM publications are available in online readable format on the *ADSM Online Product Library* CD-ROM, order number SK2T-1878. The ADSM library is also available on the following CD-ROMs:

MVS Base Collection Kit, SK2T-0710
VM Base Collection Kit, SK2T-2067
OS/2 Base Collection Kit, SK2T-2176
AIX Base Collection Kit, SK2T-2066
AS/400 Base Collection Kit, SK2T-2171
IBM SystemView for AIX, SK2T-1451

Figure 2. Referenced Publications

| Short Title | Publication Title | Order Number |
|----------------------------|--|--------------|
| Installing the Clients | <i>ADSTAR Distributed Storage Manager Installing the Clients</i> | SH26-4049 |
| ADSM Messages | <i>ADSTAR Distributed Storage Manager Mes- sages</i> | SH35-0133 |
| Using the UNIX HSM Clients | <i>ADSTAR Distributed Storage Manager Using the UNIX Hierarchical Storage Management Clients</i> | SH26-4030 |

Translations

Selected ADSM publications have been translated into languages other than American English. The *ADSTAR Distributed Storage Manager: General Information*, GH35-0114, has a complete list of the available translations and their order numbers. Contact your IBM representative for more information about the translated publications and whether these translations are available in your country.

Summary of Changes

Major technical changes in this book are indicated by a vertical bar (|) in the margin.

This book was previously released as *ADSM User's Guide and Reference for UNIX*, SH35-0120.

Version 2, Release 1, July 1995

Functional Enhancements

These are the changes made for ADSM Version 2 Release 1.

- On specific platforms, you can use an ADSM hierarchical storage management (HSM) client program that manages the storage space on your local file systems.

The ADSM HSM client program automatically migrates eligible files to ADSM storage to maintain specific levels of free space on your local file systems, and automatically recalls migrated files when you access them.

- ADSM backup-archive clients are now available for the following workstations:
 - Siemens Nixdorf Information Systems, Inc. SINIX
 - AT&T Global Information Solutions UNIX
 - Silicon Graphics IRIX
 - NEC Corporation EWS-UX/V
 - IBM OpenEdition MVS
 - Microsoft Windows NT 3.5 workstation and Advanced Server on x86 machines
- These options have been added although they are not available on all platforms:
 - AUTOMOUNT
 - BACKUPREG
 - BOOKS
 - DEFAULTSERVER
 - ERRORLOGRETENTION
 - FOLLOWSYMBOLIC
 - FSTYPES
 - POSTSCHEDULECMD
 - PRESCHEDULECMD
 - SCHEDLOGRETENTION
 - TCPNODELAY
 - TXNBYTELIMIT
 - Space management options
- These command-line only options have been added:
 - DELETEFILES (for ARCHIVE)
 - FROMDATE (for QUERY ARCHIVE, QUERY BACKUP, RESTORE, RETRIEVE)
 - IFNEWER (for RESTORE)
 - INCRBYDATE (for INCREMENTAL)
 - TODATE (for QUERY ARCHIVE, QUERY BACKUP, RESTORE, RETRIEVE)
- A new command, MACRO, that allows you to run a macro that contains ADSM commands.
- Because the Version 2 clients store files in a different format than the Version 1 clients, ADSM updates the attributes for each active file on the ADSM server during the first incremental backup after you install the Version 2 client.
- When using the graphical user interface, you can:
 - Include subdirectories when backing up, archiving, restoring and retrieving files by file specification, and when deleting archived files
 - Instruct ADSM to delete a file from your local file system after archiving it to ADSM storage

Changes to this Book

- We have moved installation information from this book to a common installation guide, *ADSTAR Distributed Storage Manager Installing the Clients*.
- We have moved the messages from this book to a common message guide, *ADSTAR Distributed Storage Manager Messages*.
- This book has been reorganized and rewritten to make it easier to use.
- To make it easier for you to use the publications in softcopy, we have added a **View Books** menu item to the graphical user interface (GUI) on many ADSM clients.

Version 2, Release 1, March 1996

Functional Enhancements

- These command-line only options have been added:
 - FROMTIME (for QUERY ARCHIVE, QUERY BACKUP, RESTORE, RETRIEVE)
 - NOPROMPT (for DELETE ARCHIVE)
 - TOTIME (for QUERY ARCHIVE, QUERY BACKUP, RESTORE, RETRIEVE)
- ADSM backup-archive clients are now available for the following:
 - Digital Equipment Corporation's Digital UNIX (DEC OSF/1 V3.2)
 - Bull DPX/2 300 Bull Open Software (B.O.S.) Release 2.00
- The ADSM for SINIX client runs on Pyramid Nile DC/OSx level 79 or later or Reliant UNIX 1.0 or later
- The following option has been added:
 - RESTOREMIGSTATE
- These options have new default values:
 - TCPBUFFSIZE
 - TCPWINDOWSIZE
 - CPICBUFFERSIZE
 - TXNBYTELIMIT
 - TAPEPROMPT

Version 2, Release 1, November 1996

These are additional changes made for ADSM Version 2 Release 1.

Functional Enhancements

- The COMPRESSALWAYS option has been added.

Reading Syntax Diagrams

This section describes how to read the syntax diagrams used in this book.

To read a syntax diagram, follow the path of the line. Read from left to right and top to bottom.

- The \blacktriangleright — symbol indicates the beginning of a syntax diagram.
- The — \blacktriangleright symbol at the end of a line indicates the syntax diagram continues on the next line.
- The \blacktriangleright — symbol at the beginning of a line indicates a syntax diagram continues from the previous line.
- The — \blacktriangleleft symbol indicates the end of a syntax diagram.

Syntax items, such as a keyword or variable, can be:

- On the line (required element)
- Above the line (default element)
- Below the line (optional element).

| Syntax Diagram Description | Example |
|---|--|
| <p>Abbreviations:</p> <p>Uppercase letters denote the shortest acceptable truncation. If an item appears entirely in uppercase letters, it cannot be truncated.</p> <p>You can type the item in any combination of uppercase or lowercase letters.</p> <p>In this example, you can enter KEYWO, KEYWORD, or KEYWOrd.</p> | \blacktriangleright —KEYWOrd— \blacktriangleleft |
| <p>Symbols:</p> <p>Enter these symbols exactly as they appear in the syntax diagram.</p> | <ul style="list-style-type: none"> * Asterisk { } Braces : , = Equal Sign - Hyphen () Parentheses . Space |
| <p>Variables:</p> <p>Italicized lowercase items (<i>var_name</i>) denote variables.</p> <p>In this example, you can specify a <i>var_name</i> when you enter the KEYWORD command.</p> | \blacktriangleright —KEYWOrd— <i>var_name</i> — \blacktriangleleft |

Syntax Diagram Description

Example

Repetition:

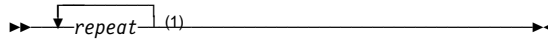
An arrow returning to the left means you can repeat the item.



A character within the arrow means you must separate repeated items with that character.



A footnote by the arrow references the number of times you can repeat the item.

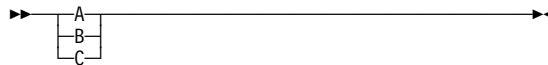


Note:

1 Specify *repeat* as many as 5 times.

Required Choices:

When two or more items are in a stack and one of them is on the line, you *must* specify one item.



In this example, you *must* choose A, B, or C.

Optional Choice:

When an item is below the line, that item is optional. In the first example, you can choose A or nothing at all.



When two or more items are in a stack below the line, all of them are optional. In the second example, you can choose A, B, C, or nothing at all.



Defaults:

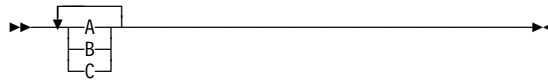
Defaults are above the line. The default is selected unless you override it. You can override the default by including an option from the stack below the line.



In this example, A is the default. You can override A by choosing B or C. You can also specify the default explicitly.

Repeatable Choices:

A stack of items followed by an arrow returning to the left means you can select more than one item or, in some cases, repeat a single item.



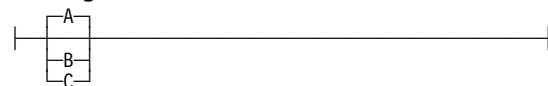
In this example, you can choose any combination of A, B, or C.

Syntax Fragments:

Some diagrams, because of their length, must fragment the syntax. The fragment name appears between vertical bars in the diagram. The expanded fragment appears between vertical bars in the diagram after a heading with the same fragment name.



The fragment name:



Chapter 1. Introducing the ADSM Backup-Archive Clients

The ADSTAR Distributed Storage Manager (ADSM) is a client/server program that helps you protect information on your workstation. Using ADSM, you can maintain backup versions of your workstation files that you can restore quickly and easily if the original files are damaged or lost. You can also archive files that you do not currently need on your workstation or that you want to preserve in their current state, and retrieve them when necessary.

The portion of ADSM that provides these services is the *backup-archive client*, a program that allows you to request backup and archive services from an ADSM server.

From the main window, you use the menus listed on the action bar to do your backup and archive tasks (Figure 3).

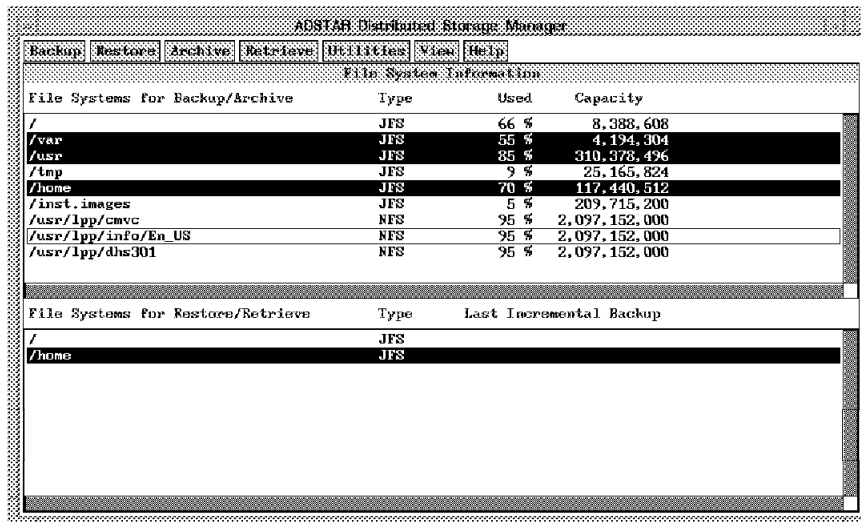


Figure 3. The ADSM Main Window

The File System Information window is divided into two parts: **File Systems for Backup/Archive** and **File Systems for Restore/Retrieve**. Before you can perform an action, you must select the file systems you want to use from one of these lists. Then, you can select an action from one of the menus on the action bar.

You can use the graphical user interface, or you can use ADSM commands. You can do most tasks with the graphical user interface. For tasks such as starting the client scheduler, you use commands. You can also use backup-archive commands in shell scripts.

Backing Up and Restoring Files

You request *backup* services when you want ADSM to save copies of files that you can restore if your original files are damaged or lost. These copies are called *backup versions* or *backups*.

To back up files, you can choose one of the following:

- *Incremental backup*—Backs up all files and directories in the file systems you specify that meet certain criteria.
- *Selective backup*—Backs up only those files you specify.

Running incremental backups on a regular basis can ensure that you have recent backup versions of your current files available at all times. Selective backup is useful when you want to back up only a specific subset of your files.

A root user on your workstation can use incremental backup to perform system-wide backups and can selectively back up any file on your system. If you are a user, you can back up any file you own using incremental or selective backup.

ADSM provides backup and archive services for the following file systems:

- All locally mounted file systems
- Network File System (NFS)
- Andrew File System (AFS) (on AIX workstations only)

ADSM backs up regular files and directories. It does not back up character special files, block special files, or FIFO special files (named pipe files).

If you are using an AIX workstation, and you want ADSM to back up AFS access control lists, you must use the AFS version of ADSM. For more information, see “Using the AFS Version of ADSM” on page 10.

If you accidentally erase a file that you need, or if a file on your workstation is damaged or lost, you can *restore* a backup version of the file from the server.

You can restore a single file, a group of files, or all the files in a directory. You can also choose to restore files to the same directory from which you backed them up or to a different directory.

A root user on your workstation can restore a backup version of any file on your workstation. If you are a user, you can restore a backup version of any file you own and any other files to which another user grants you access.

For more information about backing up and restoring files, see Chapter 3, “Backing Up and Restoring Files” on page 15.

Archiving and Retrieving Files

You request *archive* services when you want to save files at a specific point, or when you want to place copies of files on long-term ADSM storage and erase them from your workstation disk. These copies are called *archive copies* or *archives*.

Archives are never replaced with more current versions, but are preserved exactly as you store them.

A root user can archive any file on your system. If you are a user, you can archive any file to which you have read access. You can archive a single file, a group of files, or all the files in a directory. When you archive a file, you can enter a description of the file that you can use later to retrieve it. You can return archive copies to the same directory from which you archived them or to a different directory.

If you find you need a copy of an archived file back on your workstation, you can *retrieve* the file from the server.

A root user can retrieve any file archived to ADSM storage from your workstation. If you are a user, you can retrieve any file you archive and any other files to which another user grants you access.

For more information about archiving and retrieving files, see Chapter 4, “Archiving and Retrieving Files” on page 45.

Automating ADSM Tasks

ADSM provides *central scheduling* to automatically perform ADSM tasks. Your ADSM administrator defines schedules to perform tasks at regular intervals or on a one-time basis. For example, you might have files that you want backed up daily, weekly, or monthly. After defining appropriate schedules, your administrator associates your client node with those schedules.

A root user must start the *client scheduler*, which tells the server to include your node when it runs the schedule.

For more information about scheduling, see “Using Central Scheduling” on page 55.

Storage management policies are a set of rules that govern how and when your files are backed up and archived. Your ADSM administrator defines those policies, and a root user on your workstation associates your files with them.

Your administrator can coordinate scheduled services with the storage management policies you use for your files. For example, if the storage management policy you use for a group of files specifies that they can be backed up only once a week, your ADSM administrator can schedule automatic backup services to occur for those files on a particular day each week.

For more information about storage management policies, see “Using Storage Management Policies” on page 61.

Setting Processing Options

ADSM includes options that control processing for user sessions. You can set options in three files: the *client system options file*, an *include-exclude options file*, and a *client user options file*. Options in the client system options file and in an include-exclude options file affect ADSM processing for all users on your workstation. Users can choose to use a default client user options file created by a root user or create their own.

To view the options that are already set for your client, click on the **Utilities** menu; **Display options** item.

Setting Options in the Client System Options File

In the client system options file, a root user sets options that are required to establish communication with an ADSM server and options that authorize groups or users on your workstation to use ADSM services. A root user can also set options that affect backup and archive processing and options that affect scheduled services.

In addition, if you have the ADSM hierarchical storage management (HSM) client installed on your workstation, a root user can set options that affect space management processing.

Setting Options in an Include-Exclude Options File

One of the options in the client system options file can identify an include-exclude options file.

If you have the ADSM backup-archive client installed on your workstation, a root user can set options in an include-exclude options file to exclude specific files from backup services. If you have the ADSM backup-archive client and the ADSM HSM client installed on your workstation, a root user can set options in an include-exclude options file to exclude specific files from both backup and space management services, from backup services only, or from space management services only.

In addition, a root user can set options to associate specific files with different management classes.

Setting Options in a Client User Options File

In the default client user options file, a root user can set options that determine which ADSM server your client node contacts for backup and archive services and that specify the formats to use for date, time, and numbers. A root user can also set additional options that affect backup, archive, restore, and retrieve processing.

Users can also create their own personalized client user options file if they want to use different options. In addition, users can override an option contained in a client user

options file by entering a different value for the option with an appropriate ADSM command.

For more information about ADSM options, see Chapter 6, “Setting Processing Options” on page 75.

Root User Tasks

Root User

If you are a root user, you are responsible for the following tasks:

- Installing the ADSM backup-archive client program on your workstation
- Setting options in the client system options file
- Creating an include-exclude options file if you want to:
 - Exclude specific files from backup services
 - Assign different management classes to specific files
- Creating a default client user options file
- Setting and changing the ADSM password for your workstation if one is required
- Registering your workstation with an ADSM server
- Running a schedule command that allows ADSM to perform scheduled work for your client node

As a root user, you also have the authority to back up and archive all eligible files in all locally mounted file systems on your workstation, restore and retrieve all backup and archive files for your workstation from ADSM storage, and grant users access to specific files on ADSM storage. Your ADSM administrator can also give you authority to delete obsolete backup and archive files from ADSM storage.

Chapter 2. Getting Started

This chapter contains instructions for starting and ending an ADSM session.

Note: All of the window illustrations in this publication show windows from an AIX workstation. If you are running ADSM on another UNIX workstation, your windows may look slightly different.

Starting a Session

Before you can start a session with the ADSM graphical user interface, the X Window System must be running on your workstation. If you do not have the X Window System running on your workstation, you can use the ADSM command-line interface only.

The X Window System is started automatically when you log on to the following:

- An HP-UX workstation
- A DEC ULTRIX workstation
- A Digital UNIX workstation
- An NEC EWS-UX/V workstation
- An IRIX workstation
- A Bull DPX/2 workstation

If the X Window System is *not* running on an HP-UX, NEC EWS-UX/V, IRIX, or Bull DPX/2 workstation, you can start it as follows:

- On an HP-UX workstation, enter **x11start**
- On an NEC EWS-UX/V workstation, enter **xinit**
- On an IRIX workstation, enter **xinit**
- On a Bull DPX/2 workstation, enter **xinit**

On other workstations, you can start the X Window System as follows:

- On an AIX workstation, enter **xinit**
- On an SCO workstation, enter **startx**
- On a SunOS or Solaris workstation, enter **openwin**
- On a SINIX workstation, enter **startx**
- On a Pyramid Nile workstation, enter **startx**
- On an AT&T UNIX workstation, enter **xinit**

For OpenEdition MVS, the X Window System must be started on the workstation you intend to use to display the ADSM graphical user interface. Ensure that the DISPLAY environment variable is set on the OpenEdition MVS system as follows:

```
export DISPLAY=IP.address:0
```

From your workstation, you can use the **rlogin** command to log on to the OpenEdition MVS system instead of using the 3270 terminal emulation so its behavior and appearance is more like UNIX.

Starting ADSM the First Time

Root User

Before you can use ADSM, your client must be registered with the ADSM server.

Your ADSM administrator decides how you register your client with the server. If your site is using open registration, ADSM prompts you for your ADSM node name, password, and contact information. If your site is using closed registration, your administrator must register your client to use ADSM.

Starting ADSM Automatically

Root User

You can start the ADSM client scheduler automatically when you start your operating system. If the ADSM administrator has defined schedules for your node, starting the client scheduler allows ADSM to automatically back up your machine (or perform other scheduled actions). See Chapter 5, “Automating ADSM Tasks” on page 55 for more information about the client scheduler.

To start the client scheduler automatically, ensure that the `PASSWORDACCESS` option is set to `GENERATE` in your client system options file, and then add one of the following commands to the `/etc/inittab` file:

- For AIX:
`adsm::once:/usr/lpp/adsm/bin/dsmc sched > /dev/null 2>&1 # ADSM scheduler`
- For Digital UNIX:
`adsm::once:/usr/opt/adsm/dsmc sched > /dev/null 2>&1 # ADSM scheduler`
- For other UNIX clients:
`adsm::once:/usr/adsm/dsmc sched > /dev/null 2>&1 # ADSM scheduler`

Note: You **must** include the redirection to `/dev/null` in the command.

For OpenEdition MVS clients, add the following to the `/etc/rc` file:

```
_BPX_JOBNAME='ADSM' /usr/adsm/dsmc schedule &
```

Starting ADSM: Advanced Considerations

You can include ADSM options on the DSM commands. For example, you can modify the format used to display dates, times, and numbers, or you can include your password so that ADSM does not prompt for it. (However, if you include the `PASSWORD` option, your password can be seen by anyone who sees you enter the command.)

In addition, if you have more than one ADSM server available to you, and you want to contact a different server for backup-archive services than the one specified in your client user options file, you can specify the server with the `SERVERNAME` option. For example:

```
dsm -servername=server_b
```

Using the AFS Version of ADSM

RootUser

ADSM includes executable files for the graphical user interface and for the command-line interface in both non-AFS and AFS versions. You can choose to use the AFS versions on an AIX workstation only.

If you back up AFS files using the non-AFS versions, ADSM backs up the files and saves standard UNIX access permissions and extended permissions, but does not back up AFS access control lists for directories.

If you want ADSM to back up AFS access control lists, you must use the AFS versions of the executable files.

Users can issue `/usr/lpp/adsm/bin/dsm.afs` to start a GUI session and issue `/usr/lpp/adsm/bin/dsmc.afs` to start a command-line session.

Or, you can do the following:

- 1** Delete or rename the non-AFS versions of the executable files.
- 2** Rename the AFS versions to **dsm** and **dsmc**.

Then, users can issue **dsm** to start a GUI session and **dsmc** to start a command-line session.

When you back up AFS files, you want ADSM to begin checking files for eligibility at the directory that begins a user account. To identify where a user account begins, you can use the VIRTUALMOUNTPOINT option in your client system options file. For example, to define a virtual mount point in AFS for a user named Steiner, you could enter the following:

```
virtualmountpoint /afs/almaden.ibm.com/u/steiner
```

Attention: If you do not specify a virtual mount point for AFS, ADSM must check the entire AFS directory tree beginning with **/afs** to find the files a user can back up. That can take a long time. You probably do not want to allow ADSM to check the entire AFS directory.

For more detailed information about the VIRTUALMOUNTPOINT option, see “VIRTUALMOUNTPOINT” on page 174.

Using a Mouse

A mouse works with ADSM in the same way it works with other standard applications.

Throughout this publication, the term *click* means to press and release mouse button 1 (usually the left mouse button). For example, “click on **OK**” means to move the mouse pointer to the button labeled **OK**, and then press and release the left mouse button. Releasing the mouse button initiates the action associated with the **OK** button.

The term *select* means to choose an item from a list or group of items. Usually, the item is highlighted to show that you have selected it.

For example, you select a menu button from the action bar by moving the mouse pointer over the menu button and holding mouse button 1 down. While the mouse button is down, a pop-up menu appears.

Next, you select a menu item by moving the mouse pointer over the item in the menu. The item is highlighted. You initiate the action associated with the menu item by releasing the mouse button.

Displaying Online Help

You can display online help in one of two ways. First, you can click on the **Help** button that appears in many windows. The **Help** button displays online information about the current operation.

Second, you can select the **Help** menu (shown in Figure 5) from the action bar.

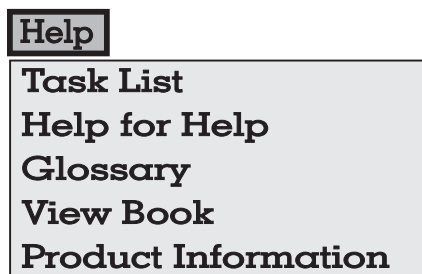


Figure 5. ADSM Help Menu

When you select **Task List**, ADSM displays the Help Text Info window (Figure 6 on page 12).

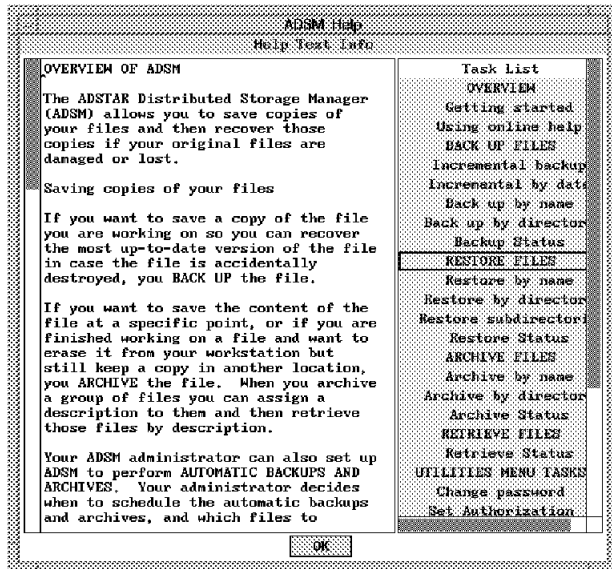


Figure 6. Help Text Info Window

On the right side of the window is the task list. When you select an entry from the list, the text for that entry appears on the left side of the window.

When you select **Help for Help**, ADSM displays information about how to use online help.

When you select **Glossary**, ADSM displays a glossary of ADSM terms.

When you select **View Book**, ADSM starts an online book reader program, which you can use to read books in the ADSM library (including this one). If this feature is available on your workstation, a root user or your administrator must install the reader and books on a disk accessible to your system. The BOOKS option must also be set in your client user options file for this help option to work. See "BOOKS" on page 95 for details on how to set up this option.

When you select **Product information**, ADSM displays a window that contains information about ADSM.

Performing Root User Tasks

Root User

A root user can perform several tasks that a regular user cannot. If you are a root user, you can back up and archive all files in all locally mounted file systems on your workstation, and you can restore and retrieve all of your workstation's files from ADSM storage.

In addition, only a root user can change the ADSM password for your workstation or delete file systems from ADSM storage. In the **Utilities** menu, the **Change password** and **Delete restore/retrieve file systems** menu options are available only to a root user. If you are logged in as a regular user, those menu options appear in a lighter color than the other options, and you cannot select them.

Changing Your Password

Root User

If you are using passwords, you should change them regularly to protect access to your data.

To change your password, click on the **Utilities** menu; **Change password** item. Fill in your old and new passwords and click on **OK**.

An ADSM password can be up to 64 characters. Valid characters are:

| Characters | Description |
|--------------|--|
| A–Z | any letter, A through Z, upper or lower case |
| 0–9 | any number, 0 through 9 |
| + | plus |
| . | period |
| _ | underscore |
| - | hyphen |
| & | ampersand |

A password is not case sensitive.

You can also use the SET PASSWORD command to change the ADSM password.

Ending a Session

To end an ADSM GUI session, click on the **Backup** menu; **Exit** item.

If you are running ADSM on an AIX workstation under the Motif window manager, you can also use the following method:

- 1** Select the button in the upper left corner of the ADSM window to bring up the system menu.
- 2** Select **Close** from that menu.

Note: If you select **Minimize** from the system menu, the window turns into the ADSM icon on the desktop. The session is *not* ended.

To end the session, click on the icon to bring up the system menu, then select **Close**.

Chapter 3. Backing Up and Restoring Files

One of ADSM's main uses is to maintain a set of backup versions of the files on your workstation. This allows you to recover older versions of your files if those files are lost or damaged.

This chapter covers the various ways you can back up your files using ADSM, and how you can restore them when necessary. It also covers the difference between backing up and archiving files.

Do You Want to Back Up or Archive Files?

When ADSM backs up or archives a file, it sends a copy of the file and its associated attributes to the ADSM server. Backups and archives, though, have different purposes.

Backups are used to protect against file damage. A sequence of backup versions are kept for each file on your workstation (the number of backup versions is set by your ADSM administrator), and older versions are deleted as newer versions are made.

Archive copies, however, are more permanent. They are used to maintain a file in a particular state indefinitely (although your administrator also sets a limit on how long archives are kept). They are useful if you think you might need to go back to a particular version of your files, or if you want to delete a file from your workstation and still be able to retrieve it if necessary. For example, you might need to save some spreadsheets for tax purposes, but because you are not using them, you do not want them left on your workstation. See Chapter 4, "Archiving and Retrieving Files" on page 45 for more information on archive.

Use backups to protect against unforeseen damage to your files, and archives for maintaining more permanent versions of your files.

When you back up files, ADSM also backs up all related directory information. When you archive a file, ADSM saves fully-qualified path information with the file. ADSM also stores access permissions with backup versions of files and archived copies of files.

Backing Up Files and Directories

There are two types of backup using ADSM: incremental and selective.

An *incremental backup* backs up all files that are new or that have changed since the last incremental backup.

A *selective backup* backs up the specific files you indicate.

Your administrator might have set up schedules to automatically back up files on your workstation. See Chapter 5, "Automating ADSM Tasks" on page 55 for information on checking and running the schedules available to you. The following sections cover how to back up files without using a schedule.

Backing Up New and Changed Files

The most effective way of maintaining a complete set of backup versions for your most important files is to regularly run incremental backups. An incremental backup backs up the new or changed files on your workstation.

There are two types of incremental backup: *full* and *partial*. A full incremental is also referred to simply as an *incremental* backup.

Do You Want a Full or Partial Incremental?

If you are a casual user of ADSM, and you do not want to worry about the details, skip this section and perform only full incremental backups of your file systems. See “Running a Full Incremental Backup” on page 17 for how to perform full incremental backups.

There are two main differences between full and partial incremental backup:

- A full incremental ensures that the backups kept on the ADSM server are managed according to your installation's storage management policies (see “Understanding Storage Management Policies” on page 62). It ensures that your backup storage accurately reflects the state of your workstation storage.

A partial incremental does not ensure this.

- A partial incremental should complete more quickly than a full incremental, and require less memory. Thus, if you are constrained for time or machine memory, you might want to perform a partial incremental.

In a full incremental, the client queries the ADSM server so that it knows the exact state of your storage as of your last incremental. During a full incremental, ADSM uses this information to:

- Back up new files
- Back up files whose contents have changed
- Expire backup versions on the server for files that have been deleted from the workstation.
- Rebind backup versions to management classes if you have changed management class assignments, even if the associated file is not backed up.

All of this processing is required to maintain your backups according to the policies defined in the management classes.

In a partial incremental, however, only certain information is considered when deciding whether to back up a file.

- In an *incremental by date*, the client only asks the server for the date and time of the last incremental backup. This is the only information used to determine which files get backed up, so any changes that do not change the date and time are not recognized. If a file's last changed date and time is after that of the last backup, the file is backed up. Otherwise, it is not, even if the file is new to the workstation. Because they do not change the last changed date and time, changes to access control lists (ACL) are not backed up during an incremental by date.

Also, in a partial incremental, files are not expired or rebound on the server, and the copy frequency attribute in the backup copy group of a management class is ignored.

Use partial incremental only if you must meet a limited backup time window, and a full incremental takes longer than the allotted time. Periodically perform full incremental backups to bring the ADSM server in line with your workstation's status. For example, if you have only a limited time during the week to perform backups, but extra time on the weekend, you can use partial backups on the weekdays, and then use full incremental backups on the weekends.

Running a Full Incremental Backup

To run a full incremental backup:

- 1 Choose the file systems you want to back up from the **File Systems for Backup/Archive** section of the File System Information window by clicking on them. Some file systems are already selected. You can deselect file systems by clicking on them.
- 2 Click on the **Backup** menu; **Incremental backup** item (Figure 7).

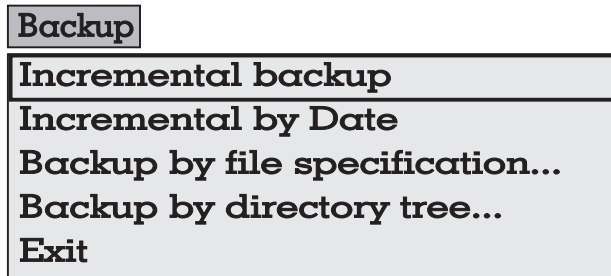


Figure 7. Selecting Incremental Backup from the Backup Menu

ADSM starts the incremental backup, and displays the status of the backup in the Backup Status window (see "Understanding the Backup Status Window" on page 18). ADSM tells you when the backup is complete. The first time you do an incremental backup, ADSM has to back up all your files, which can take a long time. Subsequent backups usually do not take as long.

Running an Incremental Backup by Date

To run an incremental backup by date:

- 1 Choose the file systems you want to back up from the **File Systems for Backup/Archive** section of the File System Information window. Some file systems are already selected. You can deselect file systems by clicking on them.

2 Select the **Backup** menu; **Incremental by Date** item (Figure 8 on page 18).

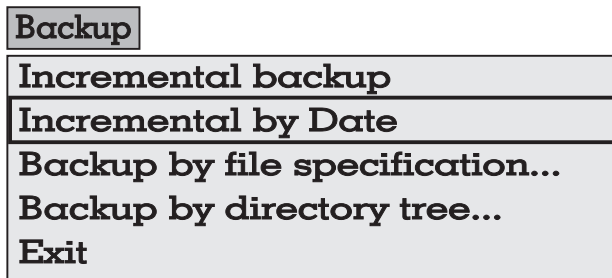


Figure 8. Selecting Incremental by Date from the Backup Menu

ADSM starts the incremental by date, and displays the status of the backup in the Backup Status window (see “Understanding the Backup Status Window”).

Understanding the Backup Status Window

During any type of backup, ADSM uses the Backup Status window (Figure 9) to show you what it is doing, and to provide you with statistics on various items.

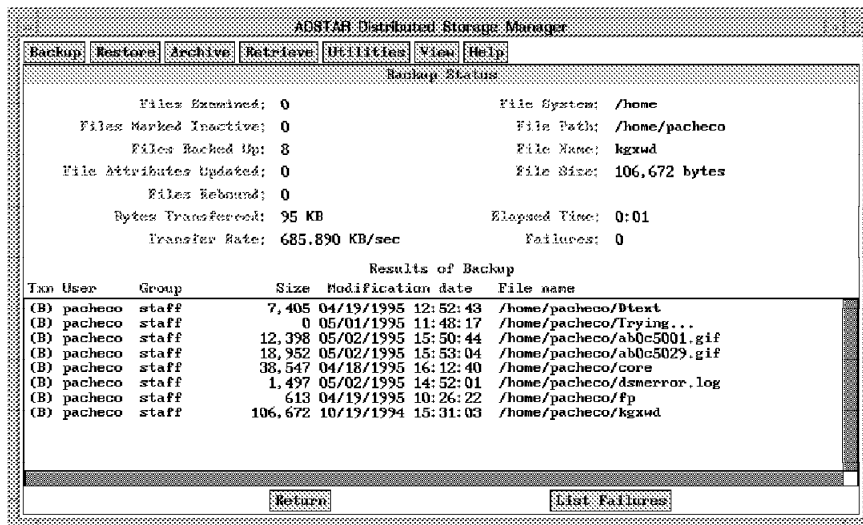


Figure 9. Backup Status Window

The fields in the window are:

Files Examined

The number of files and directories on your workstation that ADSM considered backing up.

Files Marked Inactive

The number of backup versions of files on ADSM storage that were marked inactive because the original files have been deleted from your workstation since your last backup.

Files Backed Up

The number of objects backed up. The objects that are counted include files, directories that contain files, and symbolic links.

File Attributes Updated

The number of files whose file attributes were updated on the server.

Files Rebound

The number of files bound to a different management class (see “Binding and Rebinding Management Classes to Files” on page 71).

Bytes Transferred

The number of kilobytes of data sent to the ADSM server.

Transfer Rate

The speed at which bytes were transferred to the ADSM server.

File System

The file system being backed up.

File Path

The directory being backed up.

File Name

The name of the file being backed up.

File Size

The size of the file being backed up.

Elapsed Time

The amount of time it took to back up all the files.

Failures

The number of files ADSM could not back up.

The lower half of the window, **Results of Backup**, contains a list of the files ADSM processed. The transaction (**Txn**) column indicates the results of ADSM processing:

(B) Backup

The file was successfully backed up.

(F) Failure

The file was not backed up. If ADSM failed to back up a file, the reason for the failure is shown to the right of the file name. Click on **List Failures** to see a list of the files that ADSM failed to back up.

(I) Inactive

The file was marked inactive on the server because it no longer exists on the workstation.

(R) Rebound

The file was successfully rebound to another management class.

(U) Update

The file's attributes were updated on the server.

Using an Include-Exclude Options File to Control Processing

Usually, there are files on some of your file systems that you do not want to back up. Those files might be core files, local caches of network file systems, operating system or application files that could be easily recovered by reinstalling the program, or any other files that you could easily rebuild.

A root user on your workstation can use the EXCLUDE and INCLUDE options in your include-exclude options file to tell ADSM which files to exclude from backup processing.

If you have the ADSM HSM client installed on your workstation, the EXCLUDE option excludes a file from both backup and space management services. You can use the EXCLUDE.BACKUP option to exclude a file from backup services only, and you can use the EXCLUDE.SPACEMGMT option to exclude a file from space management services only.

ADSM honors the include-exclude options file whether you are doing an incremental or selective backup. ADSM backs up any file that is not explicitly excluded from backup. You do not need to use an INCLUDE option to include specific files unless those files are in a directory you are trying to exclude.

For more information on creating an include-exclude options file, see "Creating an Include-Exclude Options File" on page 82.

Setting a Virtual Mount Point

If you want ADSM to consider files for backup beginning with a specific directory within a file system, a root user can define that directory as a virtual mount point (see "VIRTUALMOUNTPOINT" on page 174).

Defining a virtual mount point within a file system provides a direct path to the files you want to back up, thus saving processing time. It is more efficient than defining the file system with the DOMAIN option, and then using an EXCLUDE option in your include-exclude options file to exclude the files you do not want ADSM to consider for backup. It also allows you to store backups and archives for specific directories in separate file spaces in ADSM storage.

Understanding How ADSM Stores Files in File Spaces

When you back up and archive files, ADSM stores the backups and archives in a file space in ADSM storage that has the same name as the file system or virtual mount point from which the files originated.

For example, if you have a file system named **/home**, and you back up a file named **doc1** in the **/home/jones** directory, ADSM stores the file in a file space named **/home**. However, if a root user subsequently defines **/home/jones** as a virtual mount point, any

files you back up from the **/home/jones** directory, such as **doc2**, are stored in a file space named **/home/jones**.

If you enter this command:

```
dsmc query backup /home/jones/*
```

ADSM looks for files in the **/home/jones** file space. It always looks for a file in the file space with the longest name that matches the file specification you include in a command. It finds the file named **doc2** that was backed up *after* the virtual mount point was defined. However, it does not find the file named **doc1** because that file was backed up *before* the virtual mount point was defined, and the backup was stored in the **/home** file space.

To list or restore the **doc1** file using a command, you must specify the file space name explicitly by enclosing it in braces. For example:

```
dsmc query backup {/home}/jones/*  
dsmc restore {/home}/jones/doc1
```

If the root user subsequently removes the **/home/jones** virtual mount point, and you then back up additional files in the **/home/jones** directory, the backups are once again stored in the **/home** file space. For example, if you now back up a file named **doc3** in the **/home/jones** directory, it is stored in the **/home** file space. It is not stored in the existing **/home/jones** file space.

However, because the **/home/jones** file space already exists, when you try to list or restore the **doc3** file, ADSM looks in the **/home/jones** file space for the file unless you specify the correct file space name as follows:

```
dsmc query backup {/home}/jones/*  
dsmc restore {/home}/jones/doc2
```

Note: You must specify the file space name explicitly only when there can be more than one resolution to the file specification you enter.

Here is another example. If these file spaces exist in ADSM storage:

```
/home  
/home/jones  
/home/jones/project1  
/home/jones/project1/planning
```

and you enter this command:

```
dsmc query backup /home/jones/project1/planning/*
```

ADSM looks for files only in the **/home/jones/project1/planning** file space, even if one or more of the other file spaces contains a path with the same name. But, if you enter:

```
dsmc query backup {/home}/jones/project1/planning/*
```

ADSM looks for files only in the **/home** file space.

Or, if you enter one of the following:

```
dsmc query backup {/home/jones}/project1/planning/*  
dsmc query backup {/home/jones/project1}/planning/*
```

ADSM looks for files only in the **/home/jones** file space or the **/home/jones/project1** file space.

Saving Access Permissions

When you back up your files, ADSM also saves standard UNIX access permissions assigned to the files. Depending on your operating system, it also saves extended permissions. For example, for files on an AIX workstation, ADSM saves access control lists.

If you use the AFS versions of the DSM and DSMC commands (DSM.AFS and DSMC.AFS) to back up AFS files (on an AIX workstation only), ADSM also saves the access control lists that exist for each AFS directory. If you back up AFS files using the non-AFS versions, ADSM backs up the files and standard UNIX access permissions, but does not save the AFS access control lists for directories.

Note: If a root user backs up files for a user, the user owns the backup versions of the files on ADSM storage. The root user does not need to grant the user access to the backup versions.

Incremental Backup: Advanced Considerations

This section discusses some advanced considerations for using incremental backup. You do not need to understand this information in order to use ADSM for basic work.

Starting an Incremental Backup with a Command: You can perform an incremental backup from the command line using the INCREMENTAL command. For example, to back up the **/home** file system, issue:

```
dsmc incremental /home
```

If you do not indicate the file systems you want backed up, ADSM uses your default domain (see “Setting Your Default Domain” on page 24). You can add file systems to the default domain with the DOMAIN option. For example, if your default domain contains file systems **/u** and **/usr**, you can back up those file systems plus the **/mfg** file system using:

```
dsmc incremental -domain="/mfg"
```

To start an incremental by date, add the INCRBYDATE option:

```
dsmc incremental -incrbydate
```

When the INCREMENTAL command completes, ADSM provides you with statistics similar to those shown in the GUI's Backup Status window. (Similar statistics are produced by the SELECTIVE and ARCHIVE commands. These also show up in the schedule log for scheduled commands.)

| | |
|------------------------------------|---------------|
| Total number of objects inspected: | 4,048 |
| Total number of objects backed up: | 710 |
| Total number of objects updated: | 0 |
| Total number of objects rebound: | 0 |
| Total number of objects deleted: | 138 |
| Total number of objects failed: | 0 |
| Total number of bytes transferred: | 59.8 MB |
| Data transfer time: | 258.56 sec |
| Data transfer rate: | 237.05 KB/sec |
| Average file size: | 86.3 KB |
| Compression percent reduction: | 46.89% |
| Elapsed processing time: | 0:09:40 |

Where:

Total number of objects inspected

The number of files and directories ADSM considered processing.

Total number of objects backed up

The number of files and directories backed up.

Total number of objects updated

The number of files or directories whose attributes were updated on the server, but were not backed up.

Total number of objects rebound

The number of files or directories whose management class changed.

Total number of objects deleted

The number of files or directories that were expired on the server because they no longer exist on the workstation.

Total number of objects failed

The number of files or directories that could not be backed up.

Total number of bytes transferred

The number of bytes sent to the server (after any compression processing).

Data transfer time

The time it took to transfer data, from the first byte sent to the last.

Data transfer rate

The average number of kilobytes sent per second.

Average file size

The average uncompressed size of the files sent to the server.

Compression percent reduction

The percentage ADSM was able to reduce the size of your files using compression.

Elapsed processing time

The time between starting and ending the command.

See “DSMC INCREMENTAL—Backing Up New and Changed Files” on page 199 for more information about the INCREMENTAL command.

Setting Your Default Domain: When you start ADSM, or use the INCREMENTAL command without indicating file systems, ADSM automatically selects the file systems in your default domain as the file systems to process. Your default domain is set with the DOMAIN option in your client user options file (see “DOMAIN” on page 108). If you do not have the DOMAIN option set, the default domain is all local file systems.

Understanding What ADSM Considers a Changed File: For full incrementals, ADSM considers a file to be changed if any of these items are different from the last backup taken:

- File size
- Date or time of last modification
- File owner
- File permissions

Understanding Which Files Are Backed Up: When you request an incremental backup, ADSM backs up a file if all of the following requirements are met:

- The file is not excluded from backup in your include-exclude options file. If you do not have an include-exclude options file, all files are considered for backup.
- The selected management class contains a backup copy group. See Chapter 5, “Automating ADSM Tasks” on page 55 for more information on management classes and backup copy groups.
- The file meets the copy serialization requirements defined in the backup copy group. If serialization is *static* or *shared static*, and the file is in use each time ADSM attempts to back it up, the file is not backed up.
- The file meets the copy mode requirements defined in the backup copy group. If the copy mode is *modified*, the file must have changed since the last backup. If the copy mode is *absolute*, the file can be backed up even if it has not changed.
- The file meets the copy frequency requirements defined in the backup copy group. The minimum number of days since the last backup must elapse before a file is backed up. (Copy frequency is ignored for partial incrementals.)

When you run an incremental backup, ADSM also backs up all directory information, except for empty directories, which are not backed up. You can exclude the files within a directory, but you cannot exclude a directory from being backed up. Directories are counted in the number of files backed up.

Understanding How Your Files Are Managed: ADSM uses *management classes* to determine how to manage your backups on the ADSM server. Every time you back up a file, the file is assigned a management class. The management class used is either a default chosen for you, or one assigned to the file by a root user with an INCLUDE option in the include-exclude options file. The chosen management class must contain a backup copy group in order for the file to be backed up. See Chapter 5, “Automating ADSM Tasks” on page 55 for more information on management classes and how a root user assigns them to files.

Understanding How Symbolic Links Are Handled: A UNIX symbolic link is a file that contains a pointer to another file or directory. ADSM handles symbolic links differently than it does regular files and directories. In some operations, such as a backup, only the path information that the symbolic link contains is backed up. In other operations, such as archive, the file that the symbolic link points to is archived, but under the name of the symbolic link.

For directories, most operations are affected by the setting of the SUBDIR option. If the SUBDIR option is set to no, only the directory and the files it contains are affected. If the SUBDIR option is yes, ADSM recursively processes all files in subdirectories of the directory.

Incremental Backup: When you run an incremental backup, ADSM backs up only the path information to a file or directory to which a symbolic link points. The contents of the file or the contents of files in the directory are not backed up.

Selective Backup: When you run a selective backup on a symbolic link that points to a file, ADSM backs up only the path information to that file. The contents of the file are not backed up.

Restore: When you restore a symbolic link that originally pointed to a file, the symbolic link is restored, regardless of whether the file it points to still exists. If you restore a symbolic link that originally pointed to a directory (for example, /home/smith/symdir), and the symbolic link does not exist on your file system, nothing is returned to the directory to which the symbolic link points.

If you restore a symbolic link that originally pointed to a directory, along with the files in the directory (for example, /home/smith/symdir/*), and the symbolic link does not exist on your file system, ADSM builds the directory on your workstation and puts the files in that directory. If the SUBDIR option is set to yes, ADSM recursively restores all subdirectories of the directory.

If you restore a symbolic link that originally pointed to a directory, and the symbolic link already exists on your workstation, the result depends on how the FOLLOWSYMBOLIC option is set. If the FOLLOWSYMBOLIC option is set to yes, the symbolic link is restored and overwrites the symbolic link on your workstation. If the FOLLOWSYMBOLIC option is no (which is the default), ADSM displays an error message.

Note: If the FOLLOWSYMBOLIC option is set to yes, a symbolic link can be used as a virtual mount point.

Understanding How Hard Links Are Handled: A hard link is established when two files point to the same data file. When you back up a file that contains a hard link to another file, ADSM stores both the link information and the data file on the ADSM server. If you back up two files that contain a hard link to each other, ADSM stores the same data file under both names, along with the link information.

When you restore a file that contains hard link information, ADSM attempts to reestablish the links. If only one of the hard-linked files is still on your workstation, and you restore both files, ADSM hard-links them together.

The one exception to this procedure occurs if you back up two files that are hard-linked together, and then break the connection between them on your workstation. The two files then contain separate data files. If you restore the two files from the ADSM server, ADSM will respect the current file system and not restore the hard link.

Problems can occur if you back up only one file of a hard-linked pair. For example, files **texta** and **textb** contain a hard link to each other. You back up **texta**, then edit **textb** and make some changes. If you restore **texta**, the changes you made to **textb** will be lost.

To ensure that hard-linked files remain synchronized, always back up all files that have hard links to each other at the same time, and restore those same files together.

Understanding How NFS Hard and Soft Mounts are Handled: When you connect an ADSM backup-archive client to an NFS file system, you can use either a hard mount or a soft mount. You should be aware of the consequences of each if the mount becomes stale (for example, if the server for the file system is not available).

- Hard mount—If the NFS file system is hard mounted, NFS will try repeatedly to contact the server. It will not time out, and you cannot interrupt it. If a connection cannot be established, this will effectively hang your system.
- Soft mount—If the NFS file system is soft mounted, NFS will try repeatedly to contact the server until one of the following happens:
 - A connection is established
 - It times out
 - You interrupt it (for example, by pressing Cntl C)

When one of those events occurs, control returns to the calling program.

Backing Up Opened Files: Some files on your system may be in use when you try backing them up (these are called *open files*, because they are opened by an application for its use). Because an open file is likely to change, it is likely that any backup of an open file will not correctly reflect the contents of the file at a given time.

If you find that certain files are not getting backed up because they are open and get changed when you try backing them up (or when the backup schedule starts), you need to consider your options:

- If the file is unimportant, or can be easily rebuilt (for example, a temporary file), you might not care that the file is not backed up.
- If the file is important:
 - A root user on your workstation can ensure the file is closed before ADSM tries to back it up. If backups are run according to a schedule, a root user can use the PRESCHEDULECMD option to issue a command that closes the file. For example, if the open file is a database, use the database's quiesce

command to shut down the database. A root user can use the POSTSCHEDULECMD option to restart the application that uses the file after the backup completes.

If you are not using a schedule for the backup, ensure that you close the application that uses the file before you start the backup.

- You can have ADSM back up the file even if it is open and gets changed during the backup. This is only useful if the file will be usable even if it changes during backup. To have ADSM back up these files, assign the files a management class with the serialization **dynamic** or **shared dynamic**. See “Choosing a Management Class for Files” on page 69 for information on assigning management classes, and “Displaying Information About Management Classes” on page 64 for information on determining which management classes are available to you.

Backing Up Specific Files or Directories

You can use ADSM to back up specific files, a group of files with similar names, or entire directories. This is called a *selective backup*.

You can choose the files you want to back up either by using a file specification (the path, name, and extension of the file) or by choosing the files or directories from a directory list.

You cannot back up empty directories or empty subdirectories nested within another directory. If you attempt to back up an empty directory, ADSM returns this message:

```
ANS4095I No files matching search criteria were found.
```

Backing Up Specific Files Using File Specifications

To back up selected files using file specifications:

- 1** Choose the file systems that contain the files you want to back up from the **File Systems for Backup/Archive** section of the File System Information window by clicking on them.
- 2** Click on the **Backup** menu; **Backup by file specification** item (Figure 10 on page 28).

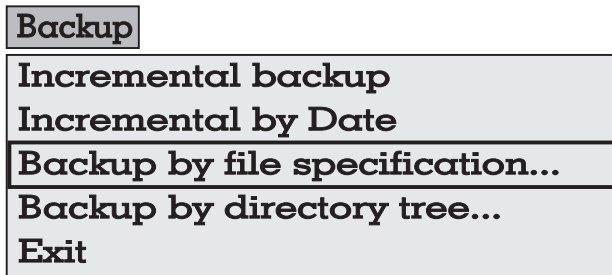


Figure 10. Selecting Backup by File Specification from the Backup Menu

- 3 Fill in the path, name, and extension of the file you want to back up. You can use the standard wildcard characters to back up a set of similarly named files (wildcard characters are explained in "Using Wildcard Characters" on page 32). For example, Figure 11 shows how to list all files that end with **doc**.

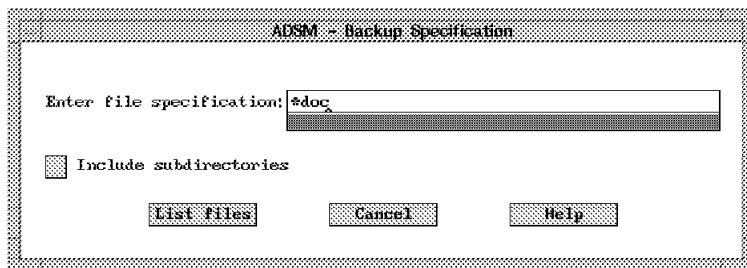


Figure 11. Entering a File Specification for Backup

- 4 Click on **Include subdirectories** if you want ADSM to search all subdirectories of the directory you specified in your path for files that match your file specification.

If the path you specified begins with a file system, ADSM searches that file system regardless of the file systems you selected in the **File Systems for Backup/Archive** section of the File System Information window.

If the path you specified includes a subdirectory that is a mounted file system, ADSM does not search that subdirectory.

If you did not specify a path, and you click on **Include subdirectories**, ADSM searches the subdirectories of the file systems you selected in the **File Systems for Backup/Archive** section of the File System Information window.

- 5 Click on **List files** to see the list of files that match your specification (Figure 12 on page 29). Select the files you want from this list. (Click on **Select All** to select all the files).

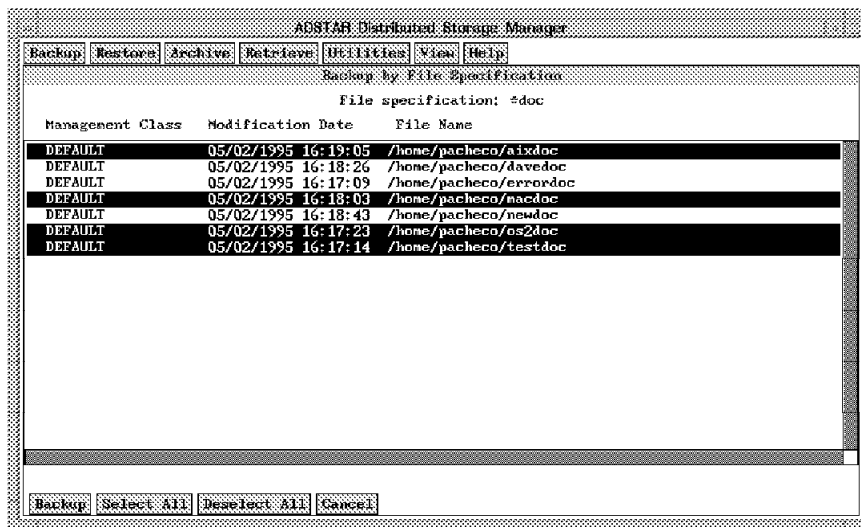


Figure 12. Choosing from the File Specification for Backup List

- 6 Click on **Backup** to back up the selected files. The Backup Status window (see "Understanding the Backup Status Window" on page 18 for details) displays ADSTM's processing.

Backing Up Specific Files Using Directory Trees

To back up specific files or entire directories using directory trees:

- 1 Choose the file systems that contain the files you want to back up from the **File Systems for Backup/Archive** section of the File System Information window by clicking on them.
- 2 Click on the **Backup** menu; **Backup by directory tree** item (Figure 13 on page 30).

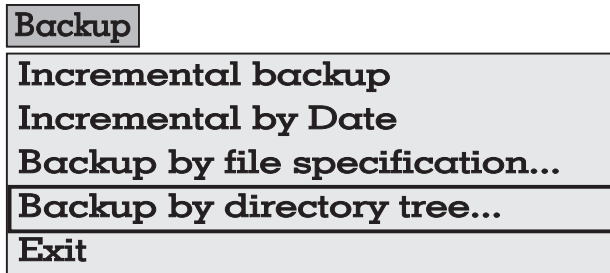


Figure 13. Selecting Backup by Directory Tree from the Backup Menu

3 Select the files and directories you want to back up:

- To select or deselect all the files in a directory, double-click the right mouse button on the directory name. When all the files in a directory are selected, the letter **F** is displayed to the left of the directory name. Selecting a directory does not select the directory's subdirectories.
- To select or deselect some of the files in a directory, double-click the left mouse button on the directory name. Then select or deselect files from the list that displays on the right side of the window by clicking the left mouse button on the file name. When some of the files in a directory are selected, the letter **P** is displayed to the left of the directory name.

If ADSM does not let you select a file or directory, it is because your include-exclude options file excludes them from backup.

To see a list of the files you selected, click on **List Selections**.

Figure 14 on page 31 shows an example of full and partial directory selections.

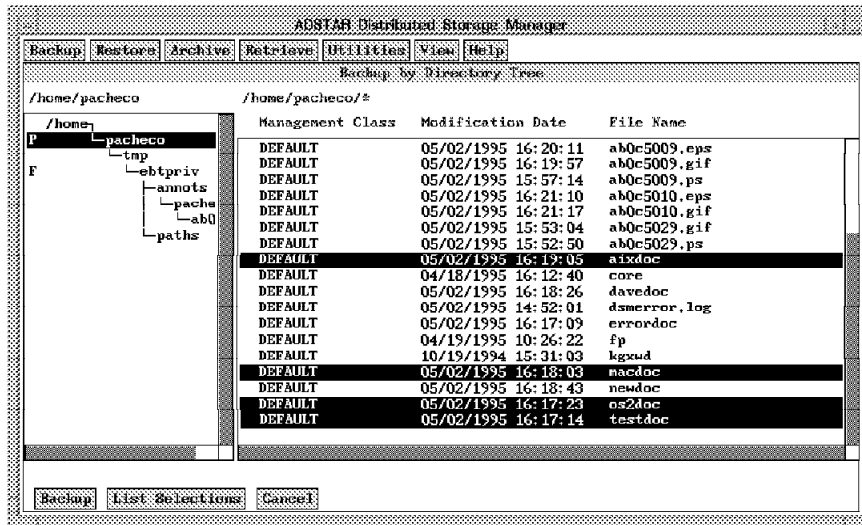


Figure 14. Selecting Files and Directories

- 4 Click on **Backup** to back up the selected files and directories. The Backup Status window (see “Understanding the Backup Status Window” on page 18 for details) displays ADSM's processing.

Selective Backup: Advanced Considerations

This section discusses some advanced considerations for using selective backup. You do not need to understand this information in order to use ADSM for basic work.

Backing Up Specific Files Using Commands: You can use the **SELECTIVE** command to back up specific files. Use wildcards to back up more than one file at a time. If you back up a directory, you can use the **SUBDIR=YES** option to include all the subdirectories under that directory in the backup.

For example, to back up the **/home/jones/proj** directory and its subdirectories, use:

```
dsmc selective /home/jones/proj -subdir=yes
```

If a subdirectory is a mounted file system, ADSM does not back up the files in that subdirectory when you use the **SUBDIR=YES** option.

Note: Be careful when using the **SUBDIR=YES** option as it can affect ADSM performance. ADSM must search through your subdirectories which can take extra time. For best performance, use the **SUBDIR=YES** option only when necessary.

You can use more than one file specification on the **SELECTIVE** command. For example, to back up the **/home/jones/h1.doc** and **/home/jones/test.doc** files, use:

```
dsmc selective /home/jones/h1.doc /home/jones/test.doc
```

See “Starting an Incremental Backup with a Command” on page 22 for an explanation of the statistics that ADSM provides after processing an INCREMENTAL, SELECTIVE, or ARCHIVE command.

For more information, see “DSMC SELECTIVE—Backing Up Selected Files” on page 246.

Using Wildcard Characters: You can use the operating system's wildcard characters in file specifications with ADSM, including on ADSM commands, for most ADSM tasks. These characters allow you to select groups of files that have similar names.

In a command, wildcard characters can only be used in the file name or extension. They cannot be used to specify destination files, file systems, or directories.

The wildcard characters are:

* Asterisk. This stands for zero or more characters. For example:

***.exe** matches all files that have an extension **exe**

hm*.* matches all files that start with **hm**, regardless of extension

h*. matches all files with an **h** somewhere in the file name, regardless of extension

? Question mark. This stands for one character. For example:

?exe matches all files with the extension **exe** that have one, and only one, character in their file name

hm?.exe matches all files that have three-character names beginning with **hm** and that have the **exe** extension

You can combine the asterisk and question mark in a file specification. For example, **??hm.*** matches all four-character file names ending in **hm**, no matter what extension they have.

Note: In a path name for a file specification, you cannot specify a directory whose name is an asterisk (*) or a question mark (?). ADSM will recognize those characters only as wildcard characters.

Sorting File Lists: You can sort lists of files in ADSM using the **Sort by** item in the **View** menu (Figure 15 on page 33). You can sort any list of files, whether you are backing up, restoring, archiving, or retrieving them.

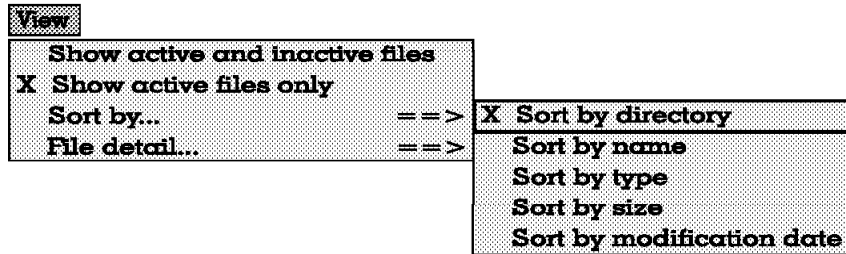


Figure 15. Sort Menu

You can sort files by directory name, file name, file type (extension), file size, and last modification date.

Sorting files by last modification date is especially useful if you are trying to restore files to their state as of a particular date.

To sort files in a different order, click on the **View** menu; hold the left mouse button down and move the pointer over the arrow to the right of the **Sort by** item until a list of items appears; move the pointer to the sort item you want to use and release the mouse button.

Understanding Which Files Are Backed Up: When you request a selective backup, ADSM backs up a file if all of the following requirements are met:

- The file is not excluded from backup in your include-exclude options file. If you do not have an include-exclude options file, all files are considered for backup.
- The selected management class contains a backup copy group.
- The file meets the serialization requirements defined in the backup copy group. If copy serialization is *static* or *shared static*, and the file is in use each time ADSM attempts to back it up, the file is not backed up.

When you run a selective backup, ADSM also backs up all directory information. You can exclude the files within a directory, but you cannot exclude a directory from being backed up. Directories are counted in the number of files backed up.

Restoring Files or Directories

You can use ADSM to restore backup versions of specific files, a group of files with similar names, or entire directories.

You can choose the files you want to restore either by using a file specification (the path, name, and extension of the file) or choosing the files or directories from a directory list, or by using a subdirectory path to restore a directory and its subdirectories.

If you have the ADSM HSM client installed on your workstation, you can set the `RESTOREMIGSTATE` option to restore migrated and premigrated files to a migrated or resident state. For more information about using the `RESTOREMIGSTATE` option, see

"RESTOREMIGSTATE" on page 145. Also see *ADSTAR Distributed Storage Manager Using the UNIX Hierarchical Storage Management Clients* for detailed information about restoring migrated files.

Do You Want To Restore an Active or Inactive Backup?

Your administrator determines how many backup versions ADSM maintains for each file on your workstation. Frequently, the administrator has ADSM maintain more than one version of each file. Having multiple versions of a file allows you to restore older versions in case the most recent backup is damaged.

ADSM considers the most recent backup version to be the *active* version. Any other backup version is considered an *inactive* version.

Every time ADSM backs up your files, it marks the new backup version the active backup, and it changes what used to be the active backup to an inactive backup. When the maximum number of inactive versions is reached, ADSM deletes the oldest inactive version.

If you want to restore a backup version that is inactive, you need to tell ADSM to show both active and inactive versions. Do this by clicking on the **View** menu; **Show active and inactive files** item. You can change back to showing only active versions using **Show active files only** from the same menu.

If you try to restore both an active and inactive version of a file at the same time, only the active version is restored.

Restoring Files Using a File Specification

If you know the name of the file you want to restore, or you know at least part of the name, you can use the name to restore the file. Restoring a file using a file specification is much like backing one up. The windows are similar, except you are choosing files to restore rather than to back up. To restore a file by its file specification:

- 1** Choose the file systems that contain the backups from the **File Systems for Restore/Retrieve** section of the File System Information window by clicking on them.
- 2** Click on the **Restore** menu; **Restore by file specification** item (Figure 16).

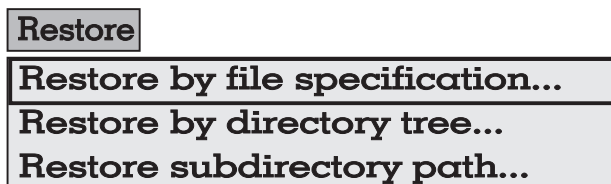


Figure 16. Selecting Restore by File Specification from the Restore Menu

- 3 Fill in the path, name, and extension of the file you are restoring. You can use the standard wildcard characters to restore a set of similarly named files (wildcard characters are explained in “Using Wildcard Characters” on page 32). The Restore by File Specification window is similar to the one for backup shown in Figure 11 on page 28.
- 4 Click on **Include subdirectories** if you want ADSM to search all subdirectories of the directory you specified in your path for files that match your file specification.

If the path you specified begins with a file system, ADSM searches that file system regardless of the file systems you selected in the **File Systems for Restore/Retrieve** section of the File System Information window.

If the path you specified includes a subdirectory that is a mounted file system, ADSM does not search that subdirectory.

If you did not specify a path, and you click on **Include subdirectories**, ADSM searches the subdirectories of the file systems you selected in the **File Systems for Restore/Retrieve** section of the File System Information window.
- 5 Click on **List files** to see the list of files that match your specification (this list is similar to the one for backup shown in Figure 12 on page 29). Select the files you want from this list. (Click on **Select All** to select all the files.)
- 6 Click on **Restore** and fill in the Restore Parameters window (Figure 17).

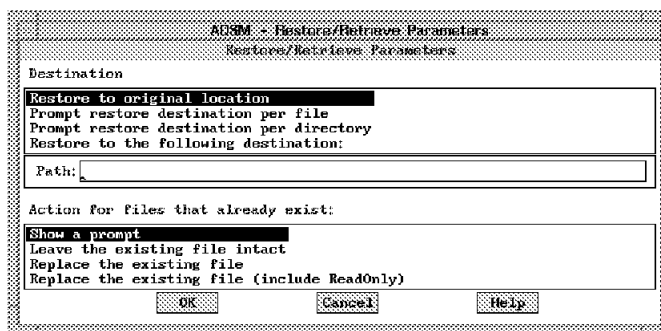


Figure 17. Choosing Restore Parameters

The restore parameters are:

- **Destination**

You can choose where you want to restore each file:

- **Restore to original location** restores each file to the file system and directory from which they were backed up.

- **Prompt restore destination per file** lets you choose a location for each file as it is restored.
- **Prompt restore destination per directory** lets you choose a location for each directory of files as the directories are restored.
- **Restore to the following destination** lets you indicate the path to which all files are to be restored. You must enter a fully-qualified directory path.

- **Action for files that already exist**

If you are restoring files that still reside on your file systems, you need to tell ADSM how to handle them. You can:

- **Show a prompt:** Have ADSM ask you if you want to overwrite the existing file as each file is restored.
- **Leave the existing file intact:** Have ADSM bypass any files that are already on your file system.
- **Replace the existing file:** Have ADSM overwrite existing files without first asking your permission, unless the existing file is read-only.
- **Replace the existing file (include ReadOnly):** Have ADSM overwrite existing files, including read-only files, without first asking your permission.

Note: ADSM overwrites a read-only file only if you are the owner of the original file, or you are a root user.

7 Click on **OK** to restore the files.

The Restore Status window (similar to the one for backup; see “Understanding the Backup Status Window” on page 18 for details) displays ADSM's processing. The transaction field (**Txn**) contains (**R**) if the file is restored, (**F**) if the restore fails.

Each object ADSM restores is counted in the **Objects restored** output field. The restored objects counted include: files, access control lists (only if associated to a directory), and symbolic links. Directories are not counted.

The **Results of Restore** shows a separate entry for each file restored. (ACLs associated to files are not counted separately from the file itself). When an ACL associated to a directory is restored, only the directory name is given.

If the directory structure does not exist at the target of the restore, it is created before any file is restored and is not counted in the statistics.

Restoring Files Using a Directory Tree

You can use a directory tree to choose the files you want to restore. Restoring a file using a directory tree is much like backing one up. The windows are the same, except you are choosing files to restore rather than to back up. To restore a file using a directory tree:

- 1** Choose the file systems that contain the backups from the **File Systems for Restore/Retrieve** section of the File Systems Information window by clicking on them.
- 2** Click on the **Restore** menu; **Restore by directory tree** item (Figure 18).



Figure 18. Selecting Restore by Directory Tree from the Restore Menu

- 3** Select the directories and files you want to restore from the Restore by Directory Tree window.
- 4** Click on **Restore** and fill in the Restore Parameters window (Figure 17 on page 35).
- 5** Click on **OK** to restore the files.

Restoring Files Using a Subdirectory Path

If you want to restore a directory and all of its subdirectories and files, and you know the name of the directory you want to restore, you can use restore by subdirectory path.

To restore a directory and its subdirectories:

- 1** Choose the file systems that contain the backups from the **File Systems for Restore/Retrieve** section of the File System Information window by clicking on them.
- 2** Click on the **Restore** menu; **Restore subdirectory path** item (Figure 19 on page 38).



Figure 19. Selecting Restore Subdirectory Path from the Restore Menu

3 Fill in the Restore Subdirectory Path window:

- a Source Path:** This is the directory you are trying to restore. Enter a fully-qualified path name.
- b Destination Path:** This is the directory to which you want the restored files written. You must fill in this field. Enter a fully-qualified path name. You can restore the directory to a directory of a different name.
- C Action for files that already exist:** If you are restoring files that still reside on your file systems, you need to tell ADSM how to handle them. See “Restoring Files Using a File Specification” on page 34 for detailed information about each action you can choose.

4 Click on **OK** to restore the files in the directory and its subdirectories.

Restoring Files: Advanced Considerations

This section discusses some advanced considerations for restoring data. You do not need to understand this information in order to use ADSM for basic work.

Restoring Files Using Commands

You can use the RESTORE command to restore files. Indicate the file you want restored and where you want to restore it. If you do not indicate a destination, the files are restored to their original location.

For example, to restore the **/home/jones/h1.doc** file to its original directory, use:

```
dsmc restore /home/jones/h1.doc
```

To restore it under a new name, use:

```
dsmc restore /home/jones/h1.doc /home/jones/h2.doc
```

If the file you are restoring no longer resides on your workstation, and you have run an incremental backup since deleting the file, there is no active backup of the file on the

server. In this case, you need to use the LATEST option to tell the server to restore the most recent backup version. If you do not want the most recent version, use the PICK and INACTIVE options to get a list of backups from which you can choose.

For example, if you want to restore the latest version of the deleted file **/home/jones/h1.doc**, use:

```
dsmc restore /home/jones/h1.doc -latest
```

Add the SUBDIR=YES option to the command if you need to restore the files in a directory and all of its subdirectories. For example, if you are recovering an entire file system (the **/home** file system in this case), you can restore all of the files using:

```
dsmc restore /home -subdir=yes
```

See “DSMC RESTORE—Restoring Files from Backup” on page 228 for more information.

Authorizing Another User to Restore or Retrieve Your Files

You can authorize another user on the same workstation or a different workstation to restore backup versions or retrieve archive copies of your files. This allows you to share files with other people or with other workstations that you use with a different ADSM node name. To authorize a user on another workstation to restore or retrieve your files, the other workstation must be running one of the ADSM UNIX clients.

If you are using OpenEdition MVS, you can only restore files on an OpenEdition MVS client that were backed up from an OpenEdition MVS client. You cannot restore files backed up from other ADSM UNIX clients.

To authorize another user to restore or retrieve your files:

- 1** Click on the **Utilities** menu; **Set authorization** item. ADSM shows you a list of nodes that you have authorized. The list might be empty. (see Figure 20 on page 40).

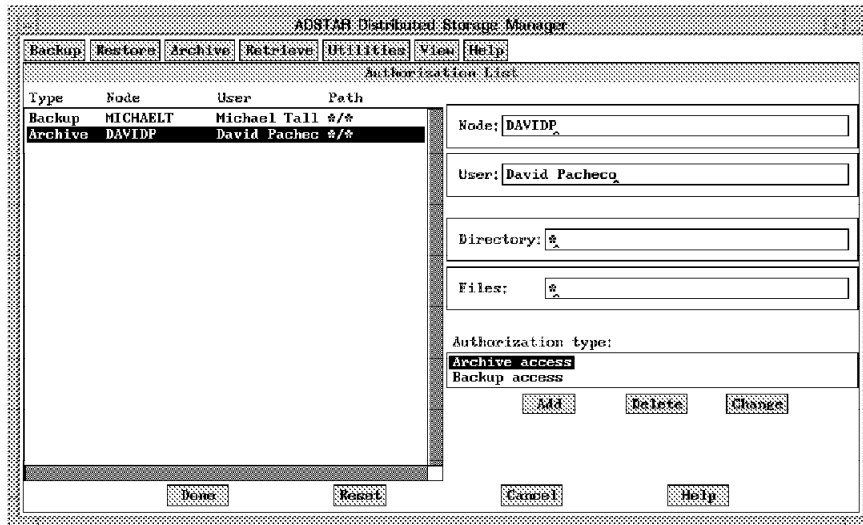


Figure 20. The Authorizations List Window

2 Fill in the Authorization List window with the name of the node and user you want to authorize, and the directory and file specification for the file to which you want the user to have access. You can give the user access to backups or archives. You must add separate authorizations for backup and archive access, even if you want to give the same user access to the same files for both.

You can authorize all users by using an asterisk (*) for the node name.

If the user is on an OpenEdition MVS client, the name must be in all uppercase letters.

3 Click on **Add** in the Authorization List window to add the user.

4 Click on **Done** to add the user to the authorization list. The user is not added until you do this. While you are in the Authorization List window, you can add several users at once, delete users, or change your existing authorizations. All additions, deletions, and changes are processed when you click on **Done**. If you make a mistake, click on **Cancel** to leave the authorization list and start again.

You can also work with your authorization list using the SET ACCESS command. Use the QUERY ACCESS command to see your current list, and DELETE ACCESS to delete users from the list.

For more information on the commands, see:

- “DSMC SET ACCESS—Granting Access to Files” on page 249
- “DSMC QUERY ACCESS—Displaying File Access Information” on page 206

- “DSMC DELETE ACCESS—Deleting Access to Files” on page 189

Restoring or Retrieving Another User's Files

After users grant you access to their files on the server, you can restore or retrieve those files by clicking on the **Utilities** menu; **Set user/node name for Restore/Retrieve** item. Enter the user name and node name you want to access and click on **OK**.

The other user's file spaces are then displayed in the **File Systems for Restore/Retrieve** section of the File System Information window, and you can restore or retrieve files from them the same way you would your own files.

If you are using commands, use the FROMNODE and FROMOWNER options to indicate the node name and the name of the user who owns the files.

For example, to restore files to one of your own file systems that were backed up from a workstation named Cougar and owned by a user named Jones, enter:

```
dsmc restore -fromnode=cougar -fromowner=jones “/home/proj/*” /home/smith
```

Use the QUERY FILESPACE command to get a list of file spaces (see “DSMC QUERY FILESPACE—Displaying a List of File Spaces” on page 219). For example, to get a list of file spaces owned by Jones on Cougar, use:

```
dsmc query filespace -fromnode=cougar -fromowner=jones
```

For more information about using the FROMNODE and FROMOWNER options with the RESTORE command, see “DSMC RESTORE—Restoring Files from Backup” on page 228. See “DSMC RETRIEVE—Retrieving Files from Archive” on page 237 for the RETRIEVE command.

Restoring or Retrieving Your Files to Another Workstation

ADSM lets you restore or retrieve files you back up from your own workstation when you are using a different workstation. You must know the ADSM password for your original workstation.

To restore or retrieve files to another workstation, use the NODENAME option to specify the node name of the workstation from which you backed up the files. You can either use the NODENAME option when starting ADSM, or update the client user options file. (Use the NODENAME option on the **dsm** command if you are borrowing someone else's machine so you do not change their configuration).

For example, if your node name is cougar, use:

```
dsm -nodename=cougar
```

ADSM prompts you for the password for your original workstation. After you enter the correct password, ADSM displays all file systems from your original workstation in the **File Systems for Restore/Retrieve** section of the File System Information window. You can then restore or retrieve files as if you were working on your original workstation.

Attention: When you use this method to access files, you have access to *all* files backed up and archived from your workstation. You are considered a virtual root user by ADSM.

You can use NODENAME on ADSM commands, too. For example, you can restore your **projx** files using:

```
dsmc restore -nodename=cougar "/home/jones/projx/*"
```

If you do not want to restore or retrieve the files to the same directory name on the alternate workstation, enter a different destination.

The considerations for retrieving files are the same as for restoring them.

Restoring a Disk In Case of Disk Loss

ADSM can recover your files only if you can run the ADSM client. If the file system that contains the client is lost (from theft or hardware failure, for example), you must reinstall the client before you can recover your files. If you also lose the file system that contains the operating system and communication software, you must recover them before you can connect to the ADSM server.

To protect yourself against these kinds of losses, you need to put together a set of installation media that you can use to restore your system to a state that permits you to contact the ADSM server and begin recovering data. The installation media should contain:

- 1** A bootable operating system that will allow you to perform basic functions.
- 2** A correctly configured communication program that will allow you to establish communications with the ADSM server.
- 3** An ADSM backup-archive client with appropriately customized options files. The ADSM command-line client is sufficient for this.

The exact files you need differ depending on the communication package you use. Consult your operating system and communication software manuals for help in setting up your installation media.

If you also have ADSM HSM installed on your workstation, your installation media should include the ADSM HSM command-line client. For information about restoring migrated files, see *Using the UNIX HSM Clients*.

Note: Your ADSM administrator can schedule restore operations. This can be especially useful when you need to restore a large number of files.

Performing Large Restore Operations

If you need to restore a large number of files, you can get faster performance by using the RESTORE command instead of the GUI. In addition, you can improve performance by issuing multiple RESTORE commands at one time.

For example, to restore all the files in your **/u** file space, you could enter:

```
dsmc restore /u -subdir=yes -replace=all -tapeprompt=no
```

However, if you issue multiple commands for the directories in the **/u** file space, ADSM can restore the files faster.

For example, you could issue these commands:

```
dsmc restore /u/jones -subdir=yes -replace=all -tapeprompt=no
dsmc restore /u/smith -subdir=yes -replace=all -tapeprompt=no
dsmc restore /u/brown -subdir=yes -replace=all -tapeprompt=no
```

You can also choose to use the QUIET option with the RESTORE commands to save processing time. However, you will not receive informational messages for individual files.

Note: If you already have the appropriate values set for the SUBDIR, REPLACE, TAPEPROMPT, and QUIET options in your client user options file, you do not need to include those options in the commands.

When you issue multiple commands to restore your files, you must specify a unique part of the file space in each RESTORE command. Be sure that you do not use any overlapping file specifications in the commands.

To display a list of the directories in a file space, use the QUERY BACKUP command. For example:

```
dsmc query backup -dirsonly -subdir=no
```

As a general rule, you can issue from two to four RESTORE commands at one time. The maximum number you can run at one time without degrading performance depends on factors such as how much memory you have and network utilization.

The speed at which ADSM can restore the files also depends on how many tape drives are available, and whether your administrator is using collocation to keep file spaces assigned to as few volumes as possible.

For example, if **/u/jones** and **/u/smith** are on the same tape, the restore for **/u/smith** must wait until the restore for **/u/jones** is complete. However, if **/u/brown** is on a different tape, and there are at least two tape drives available, the restore for **/u/brown** can begin at the same time as the restore for **/u/jones**.

If your administrator is using collocation, the number of sequential access media mounts required for restore operations is also reduced.

Deleting File Spaces

Root User

If your ADSM administrator gives you the authority, you can delete entire file spaces from the server. When you delete a file space, you delete all the files, both backup versions and archive copies, that are contained within the file space. For example, if you delete the file space for your **/home/jones** file system, you are deleting every backup for every file in that file system, and every file you archived from that file system.

Carefully consider what you are doing before you attempt to delete a file space.

You cannot delete individual backup versions kept on the ADSM server.

If you decide you do not need the file space, delete it by clicking on the **Utilities** menu; **Delete restore/retrieve file systems**.

Chapter 4. Archiving and Retrieving Files

Archiving and retrieving files is similar to backing up and restoring files. Many of the windows and concepts are similar. In this chapter, we cover the main archive and retrieve tasks, but where windows and concepts are the same as for backup and restore, we direct you to sections within Chapter 3, "Backing Up and Restoring Files" on page 15.

See "Do You Want to Back Up or Archive Files?" on page 15 for a discussion of the difference between backups and archives.

Archiving Files

To archive files, you need to specifically select the files to archive. You can select the files by using a file specification or by choosing them from a directory tree.

Your administrator might have set up schedules to archive certain files on your workstation automatically. See Chapter 5, "Automating ADSM Tasks" on page 55 for information on checking and running the schedules available to you. The following sections cover how to archive files without using a schedule.

Archiving Files Using a File Specification

To archive a file using a file specification:

- 1** Choose the file systems that contain the files to be archived from the **File Systems for Backup/Archive** section of the File System Information window by clicking on them.
- 2** Click on the **Archive** menu; **Archive by file specification** item (Figure 21).



Figure 21. Selecting Archive by File Specification from the Archive Menu

- 3** Fill in the path, name, and extension of the file you want to archive, just as you would do when backing up a file. You can use the standard wildcard characters to archive a set of similarly named files (wildcard characters are explained in "Using Wildcard Characters" on page 32).

4 Click on **Include subdirectories** if you want ADSM to search all subdirectories of the directory you specified in your path for files that match your file specification.

If the path you specified begins with a file system, ADSM searches that file system regardless of the file systems you selected in the **File Systems for Backup/Archive** section of the File System Information window.

If the path you specified includes a subdirectory that is a mounted file system, ADSM does not search that subdirectory.

If you did not specify a path, and you click on **Include subdirectories**, ADSM searches the subdirectories of the file systems you selected in the **File Systems for Backup/Archive** section of the File System Information window.

5 Click on **List files** to see the list of files that match your specification. Select the files you want from this list. (Click on **Select All** to select all the files).

6 Click on **Archive** to start archiving the selected files. The Archive Status window that is shown is similar to the Backup Status window (see “Understanding the Backup Status Window” on page 18 for details). The transaction field (**Txn**) contains **(A)** for successfully archived files, **(A/D)** for successfully archived files that were deleted from your workstation, and **(F)** for failures. If there are any failures, you can click on **List Failures** to see a list of them.

7 Fill in the Archive Options window (Figure 22).

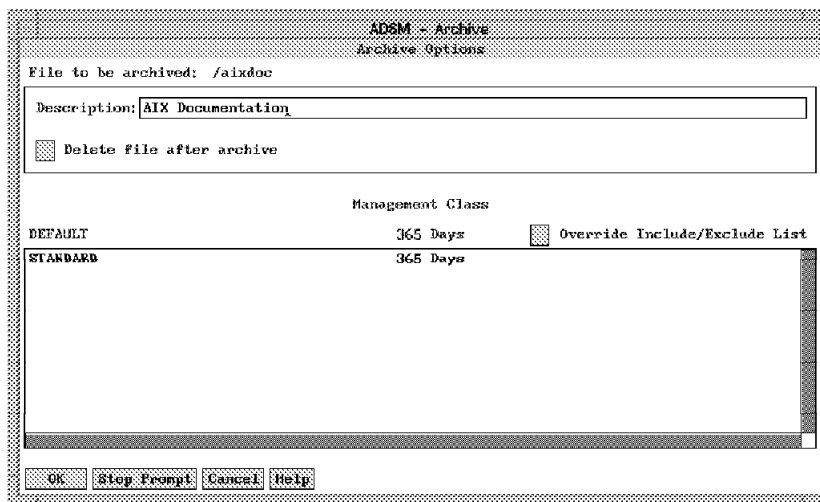


Figure 22. Archive Options Window

The archive options are:

File to be archived

This is the name of the file ADSM is archiving. The options you set apply to this file.

Description

This is the description you want to keep with the archive copy.

Delete file after archive

Instructs ADSM to delete the file from your local file system after it is archived and committed to ADSM server storage.

For symbolic links, ADSM deletes only the link, not the data.

Management Class

This section allows you to choose the management class you want assigned to the file (see “Using Storage Management Policies” on page 61 for more information about management classes). You must select **Override Include/Exclude List** in order for ADSM to use the management class you choose. Once you select override, you can choose a management class by clicking on it. For your convenience, ADSM shows how long archives are kept according to the policy defined for each management class.

- 8 Click on **OK** to archive the file and bring up the Archive Options window for the next file, or click on **Stop Prompt** to archive all remaining files without bringing up the Archive Options window for each one.

If you click on **Stop Prompt**, ADSM uses the description and management class you specified for all the remaining files. If you selected **Delete file after archive**, ADSM also deletes all the remaining files you selected for archive from your local file system after they are archived and committed to ADSM storage.

Archiving Files Using a Directory Tree

To archive files using a directory tree:

- 1 Choose the file systems that contain the files to be archived from the **File Systems for Backup/Archive** section of the File System Information window by clicking on them.
- 2 Click on the **Archive** menu; **Archive by directory tree** item (Figure 23).



Figure 23. Selecting Archive by Directory Tree from the Archive Menu

- 3** Select the files and directories you want to archive in the same way you would choose them for backup:
 - To select or deselect all the files in a directory, double-click the right mouse button on the directory name. When all the files in a directory are selected, the letter **F** is displayed to the left of the directory name. Selecting a directory does not select the directory's subdirectories.
 - To select or deselect some of the files in a directory, double-click the left mouse button on the directory name. Then select or deselect files from the list that displays on the right side of the window by clicking the left mouse button on the file name. When some of the files in a directory are selected, the letter **P** is displayed to the left of the directory name.

To see a list of the files you selected, click on **List Selections**.

- 4** Click on **Archive** to start archiving the selected files. The Archive Status window that is shown is similar to the Backup Status window (see “Understanding the Backup Status Window” on page 18 for details).

- 5** Fill in the Archive Options window (see Figure 22 on page 46).

- 6** Click on **OK** to archive the file and bring up the Archive Options window for the next file, or click on **Stop Prompt** to archive all remaining files without bringing up the Archive Options window for each one.

If you click on **Stop Prompt**, ADSM uses the description and management class you specified for all the remaining files. If you selected **Delete file after archive**, ADSM also deletes all the remaining files you selected for archive from your local file system after they are archived and committed to ADSM storage.

Archiving Files: Advanced Considerations

This section discusses some advanced considerations for archiving files. You do not need to understand this information in order to use ADSM for basic work.

Archiving Files Using Commands

You can use the ARCHIVE command to archive files. Use wildcards to archive more than one file at a time. You can archive all the files in a directory, and you can use the SUBDIR=YES option to include files in all subdirectories under that directory in the archive. You can also use the DELETEDFILES option if you want ADSM to delete the files from your local workstation after they are archived and committed to ADSM storage.

For example, to archive the files in the **/home/jones/proj** directory and the files in its subdirectories, use:

```
dsmc archive /home/jones/proj -subdir=yes -deletefiles
```


You can use more than one file specification on the ARCHIVE command. For example, to archive the `/home/jones/h1.doc` and `/home/jones/test.doc` files, use:

```
dsmc archive /home/jones/h1.doc /home/jones/test.doc
```

Use the description option to assign a description to the archive:

```
dsmc archive /home/jones/h1.doc -description="Chapter 1, first version"
```

See “Starting an Incremental Backup with a Command” on page 22 for an explanation of the statistics that ADSM provides after processing an INCREMENTAL, SELECTIVE, or ARCHIVE command.

See “DSMC ARCHIVE—Archiving Files” on page 185 for more information.

Saving Access Permissions

When you archive a file, ADSM saves standard UNIX access permissions assigned to the file. Depending on your operating system, it also saves extended permissions. For example, for files on an AIX workstation, ADSM saves access control lists.

RootUser Archived files always belong to the user who archives them. If you are a root user, and you archive a file for a user, the owner name for the archived copy of the file is ROOT. You can retrieve the file for the user, or, if the user wants to retrieve the file, you must first grant the user access to the archived file.

If you are a user, and you archive a file to which you have read access, you own the archived copy of the file. You are the only user who can retrieve the archived file unless you grant access to another user.

Understanding How Symbolic Links are Handled

When you archive a symbolic link, ADSM archives the file to which the symbolic link points. It does not archive path information for the directory. If SUBDIR has been set to yes, ADSM recursively processes all subdirectories of the directory.

If you archive a symbolic link that points to a directory, ADSM archives the files contained in the directory (and its subdirectories if the SUBDIR option is set to yes) under the name of the symbolic link.

When you retrieve a symbolic link, the symbolic link is returned, along with the contents of the original file or the contents of the files in the directory to which the symbolic link points. If the SUBDIR option is set to yes, ADSM recursively retrieves files in all subdirectories of the directory.

Note: If the symbolic link already exists on your workstation, whatever it is pointing to is overwritten by the file or directory that is retrieved.

Understanding How Hardlinks are Handled

When you archive a file that contains a hard link to another file, ADSM stores both the link information and the data file on the ADSM server.

When you retrieve a file that contains hard link information, ADSM attempts to reestablish the links. If only one of the hard-linked files is still on your workstation, and you retrieve both files, ADSM hard-links them together.

The one exception to this procedure occurs if you archive two files that are hard-linked together, and then break the connection between them on your workstation. The two files then contain separate data files. If you retrieve the two files from the ADSM server, ADSM respects the current file system and does not restore the hard link.

Problems can occur if you archive only one file of a hard-linked pair. For example, files **texta** and **textb** contain a hard link to each other. You archive **texta**, and then edit **textb** and make some changes. If you retrieve **texta**, the changes you made to **textb** are lost.

To ensure that hard-linked files remain synchronized, always archive all files that have hard links to each other at the same time, and retrieve those same files together.

Deleting Archived Files

You can delete archives if you decide you no longer need them. Unlike backup versions, you can delete individual archives without deleting the entire file space.

To delete an archive copy:

- 1** Choose the file systems that contain the files to be deleted from the **File Systems for Restore/Retrieve** section of the File System Information window by clicking on them.
- 2** Click on the **Retrieve** menu; **Delete archive files** item (Figure 24).



Figure 24. Selecting Delete Archive Files from the Retrieve Menu

- 3** Fill in the Archive Delete Scope window (Figure 25 on page 51).

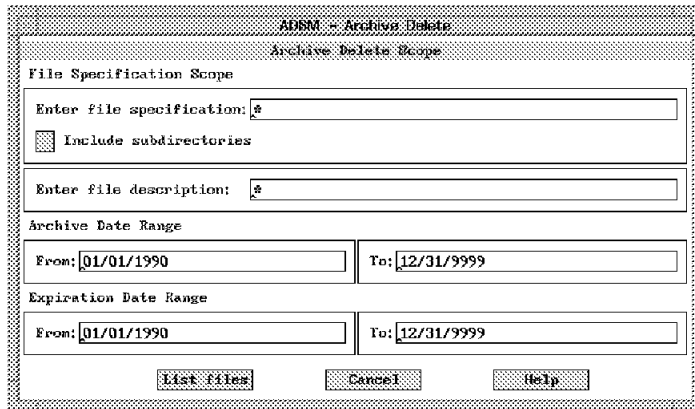


Figure 25. Archive Delete Scope Window

The Archive Delete Scope window allows you to build a list of archive copies. You can list all of your archives, or limit the list as much as you want, even to listing the exact file you want to delete, if you know the file's name.

The options are:

Enter file specification

This is the path, name, and extension of the file you want to delete. You can use wildcard characters to list similarly named files.

Include subdirectories

Click on **Include subdirectories** if you want ADSM to search all subdirectories of the directory you specified in your path for files that match your file specification.

If the path you specified begins with a file system, ADSM searches that file system regardless of the file systems you selected in the **File Systems for Restore/Retrieve** section of the File System Information window.

If the path you specified includes a subdirectory that is a mounted file system, ADSM does not search that subdirectory.

If you did not specify a path, and you click on **Include subdirectories**, ADSM searches the subdirectories of the file systems you selected in the **File Systems for Restore/Retrieve** section of the File System Information window.

Enter file description

This is the description you gave the file when you archived it. You can use wildcard characters to list files with similar descriptions. The description is case-sensitive.

Archive Date Range

This is the date range for when you archived the file.

You can limit the list of files by using short date ranges, or, if you cannot

remember when you archived the files, you can set a long range to ensure you find the archives you are looking for.

Expiration Date Range

This is the expiration date range for when the archive copy is set to expire (set to be deleted automatically on the server).

4 Click on **List files** to get a list of files.

5 Click on the files you want to delete in the Delete from Archive window (Figure 26).

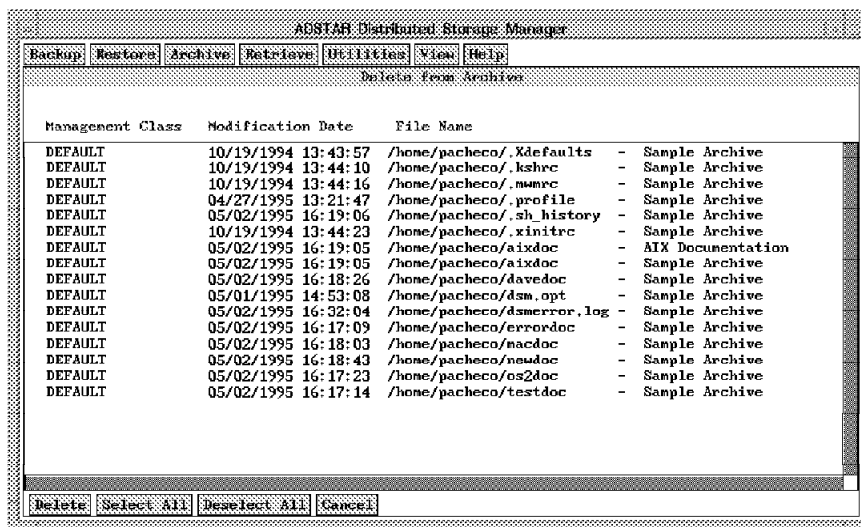


Figure 26. Delete from Archive Window

6 Click on **Delete** to delete the files. The Archive Delete Status window shows the results of your action. A **(D)** in the transaction field (**Txn**) indicates that the file is deleted; an **(F)** indicates failure.

If you are using commands, you can delete archive copies with the **DELETE ARCHIVE** command.

For example, to delete the file **/home/jones/t.exe**, use:

```
dsmc delete archive /home/jones/t.exe
```

Retrieving Archived Files

You *retrieve* a file when you want to return an archive copy from the AD SM server to your workstation.

Retrieving Files

To retrieve an archived file:

- 1** Choose the file systems that contain the archives from the **File Systems for Restore/Retrieve** section of the File System Information window by clicking on them.
- 2** Click on the **Retrieve** menu; **Retrieve by file specification** item (Figure 27).



Figure 27. Selecting Retrieve by File Specification from the Retrieve Menu

- 3** Fill in the Retrieve Scope window. This window is similar to the Archive Delete Scope window shown in “Deleting Archived Files” on page 50. You can get a list of archived files using the file name, description, archive date, and expiration date for the file.
- 4** Click on **List files** to get a list of files.
- 5** Click on the files you want to delete in the Retrieve by File Specification window (similar to Figure 26 on page 52).
- 6** Click on **Retrieve** to retrieve the files.
- 7** Fill in the Retrieve Parameters window. This is similar to the Restore Parameters window shown in Figure 17 on page 35. You select where to store the retrieved files and what to do if a file is already at that destination.
- 8** Click on **OK** to retrieve the files. The Retrieve Status window shows the results of your action. An **(R)** in the transaction field (**Txn**) indicates that the file is retrieved; and **(F)** indicates failure.

Retrieving Files: Advanced Considerations

This section discusses some advanced considerations for retrieving files. You do not need to understand this information in order to use ADSM for basic work.

Retrieving Files Using Commands

You can use the RETRIEVE command to retrieve files. Indicate the file you want retrieved and a destination. If you do not indicate a destination, the files are retrieved to their original location.

For example, to retrieve the **/home/jones/h1.doc** file to its original directory, use:

```
dsmc retrieve /home/jones/h1.doc
```

To retrieve it under a new name, use:

```
dsmc retrieve /home/jones/h1.doc /home/jones/h2.doc
```

You can use the PICK option to get a list of archives from which you can choose.

See “DSMC RETRIEVE—Retrieving Files from Archive” on page 237 for more information.

Understanding the Similarities between Retrieve and Restore

Many of the advanced considerations for retrieving files are the same as they are for restoring files. See these sections for more information:

- “Authorizing Another User to Restore or Retrieve Your Files” on page 39
- “Restoring or Retrieving Another User’s Files” on page 41
- “Restoring or Retrieving Your Files to Another Workstation” on page 41

Understanding How Your Archives Are Managed

As with backing up files, ADSM checks the INCLUDE options in your include-exclude options file to determine which management class to assign to your archived files. If you do not specifically assign a management class to a file with an INCLUDE option, ADSM assigns the file the default management class.

ADSM can only archive a file if the selected management class contains an archive copy group.

For information on the various management class attributes used to manage your archives, see “Displaying Information About Management Classes” on page 64. For information on assigning management classes, see “Assigning Management Classes with the INCLUDE Option” on page 86.

Chapter 5. Automating ADSM Tasks

Root User

This entire chapter applies to the root user only.

One of the best ways to use ADSM is to automate the tasks you want done on a regular basis. Your ADSM administrator has probably set up some ADSM processes that you can use to do this. For example, ADSM can back up files at the end of each day automatically. Or, it can archive some of your files every Friday.

Central scheduling is a procedure your administrator defines to automatically process ADSM tasks. You start the *client scheduler* on your workstation, which connects you to the server's schedule.

Whereas you can use central scheduling to actually perform your tasks automatically, you can use *storage management policies* to tell ADSM how to manage your backups and archives on the ADSM server. Your ADSM administrator defines those policies, and you associate your data with them. Then, when your data is backed up or archived, it is managed according to the criteria set by the policy.

Using Central Scheduling

An ADSM administrator can set up schedules to perform ADSM tasks automatically. Central scheduling is a cooperative effort between the server and your client node. An ADSM administrator sets up central scheduling on the server, and you are responsible for starting the client scheduler on your client node. After you start the client scheduler, no further intervention is necessary.

You must have the ADSM command-line client installed in order to start the client scheduler. You cannot start the client scheduler from the ADSM graphical user interface.

You can also:

- Display information about available schedules
- Display information about work that a schedule has completed
- Modify scheduling options in the client system options file, if necessary

Starting the Client Scheduler

To start the client scheduler, you issue the `dsmc SCHEDULE` command. You can choose to start the client scheduler when you start your operating system, or start it at any other appropriate time.

When you issue the `dsmc SCHEDULE` command, it starts the client scheduler, which runs continuously until you close the window in which you initiated the command, kill the process, or log out of your system.

To run the SCHEDULE command in the background and to keep the client scheduler running even if you log out of your system, you can enter the SCHEDULE command as follows:

```
nohup dsmc schedule 2> /dev/null &
```

If an ADSM password is required for your workstation and you want to run the SCHEDULE command in the background, you must supply the password with the command.

If you want to start the client scheduler when you start your operating system, ensure that the PASSWORDACCESS option is set to GENERATE in your client system options file, and include one of the following commands in the **/etc/inittab** file:

- For AIX:
adsm::once:/usr/lpp/adsm/bin/dsmc sched > /dev/null 2>&1 # ADSM scheduler
- For Digital UNIX:
adsm::once:/usr/opt/adsm/dsmc sched > /dev/null 2>&1 # ADSM scheduler
- For other UNIX clients:
adsm::once:/usr/adsm/dsmc sched > /dev/null 2>&1 # ADSM scheduler

For OpenEdition MVS clients, include the following command in the **/etc/rc** file:

```
_BPX_JOBNAME='ADSM' /usr/adsm/dsmc schedule &
```

Note: ADSM does not record changes to the **dsm.opt** or **dsm.sys** files while the client scheduler is running. If you make changes to those files while the client scheduler is running, and you want ADSM to begin using the new values immediately, you must stop the client scheduler and then restart it. For example, if you change the INCLEXCL option in your **dsm.sys** file to point to a different include-exclude options file, you must stop the client scheduler, and then restart it before ADSM can begin using the new file you specified.

To manually stop the client scheduler, use the KILL command if it is running in the background, or use Ctrl+C if it is running in the foreground. To restart the client scheduler, reissue the SCHEDULE command.

Note: Tape prompting does not occur during a scheduled operation regardless of the setting for the TAPEPROMPT option in your client user options file.

Displaying Information About Scheduled Work

To see what schedules are defined for your client node, use the QUERY SCHEDULE command:

```
dsmc query schedule
```

ADSM displays detailed information about all scheduled work for your client node.

Figure 28 on page 57 shows sample QUERY SCHEDULE output.

```

Schedule Name: DAILY_INC
  Description: Daily System-wide backup
    Action: Incremental
    Options: QUIET
    Objects:
    Priority: 1
Next Execution: 30 minutes
  Duration: 4 Hours
    Period: 1 Day
  Day of Week: Any
    Expire: Never

Schedule Name: WEEKLY_INC
  Description: Weekly backup for project files
    Action: Incremental
    Options: QUIET
    Objects: /proj
    Priority: 1
Next Execution: 60 minutes
  Duration: 8 Hours
    Period: 7 Days
  Day of Week: Friday
    Expire: Never

```

Figure 28. Sample QUERY SCHEDULE output

The schedule named DAILY_INC starts an incremental backup every day. The next incremental backup is due to start in 30 minutes. Because no objects are listed, ADSM runs the incremental backup on your default domain. The schedule has no expiration date.

The schedule named WEEKLY_INC starts an incremental backup in the **/proj** file system every Friday.

You see the following details about schedules:

Schedule Name

The name the administrator has given to the schedule.

Description

A description of the schedule.

Action

The type of task to perform:

- Incremental—The schedule incrementally backs up the file systems listed in the **Objects** field.
- Selective—The schedule backs up the files listed in the **Objects** field.
- Archive—The schedule archives the files listed in the **Objects** field.
- Restore—The schedule restores the files listed in the **Objects** field.
- Retrieve—The schedule retrieves the files listed in the **Objects** field.
- Command—The schedule runs the command shown in the **Objects** field.
- Macro—The schedule runs the macro listed in the **Objects** field.

Options

Override options that you have set in your client user options file.

Objects

The file systems to be processed, or the command to be executed. If file systems are not listed for an incremental backup, ADSM uses the default domain.

To perform space management tasks such as threshold migration or reconciliation, your administrator can specify an HSM client command.

Priority

The priority of the schedule if there is more than one schedule for the same client node starting at the same period of time. The server runs the schedule with the highest priority first. For example, a schedule with a priority of 1 is started before a priority 3 schedule.

Next Execution

When the schedule runs next.

Duration

The maximum amount of time that can elapse from the specified start time before the schedule can be started. For example, if the duration is 4 hours, the schedule must be started within 4 hours of the specified start time.

Period

How often the schedule runs. A period of 12 hours indicates that the schedule runs every 12 hours.

Day of Week

The day of the week on which the schedule begins. *Any* means that the schedule can start on any day.

Expire

The date on which the schedule is no longer used. *Never* means that the schedule never expires.

Displaying Information About Completed Work

When you run the SCHEDULE command in the foreground, output from scheduled commands appears on your screen. It is also directed to a file called **dsmsched.log** in the current directory unless you change the path and file name using the SCHEDLOGNAME option. When you run SCHEDULE in the background, output is directed to **dsmsched.log** in the current directory or to the path and file name you specified.

After scheduled work is performed, you can check the schedule log to find out whether all work completed successfully. Figure 29 on page 59 shows sample output directed to the schedule log. The output shows the successful completion of a scheduled, selective backup.

See “Starting an Incremental Backup with a Command” on page 22 for an explanation of the statistics that ADSM provides after processing an INCREMENTAL, SELECTIVE, or ARCHIVE command.

The schedule log continues to grow unless you prune it using the SCHEDLOGRETENTION option. See “Specifying Scheduling Options” on page 59 for more information.

```
02/18/1995 12:50:18 Session established with server GANDALF: AIX_V3_for_RS/6000
02/18/1995 12:50:18 Server Version 2, Release 1, Level 0.0
02/18/1995 12:50:18 Server date/time: 02/18/1995 12:50:33 Last access: 02/18/1995 12:35:56

02/18/1995 12:50:18 Querying server for next scheduled event.
02/18/1995 12:50:18 Next operation scheduled:
02/18/1995 12:50:18 -----
02/18/1995 12:50:18 Schedule Name:      BONZTEST
02/18/1995 12:50:18 Action:          Selective
02/18/1995 12:50:19 Objects:          /home/164/normb/*.tst
02/18/1995 12:50:19 Options:
02/18/1995 12:50:19 Server Window Start: 13:00:00 on 02/18/1995
02/18/1995 12:50:19 -----
02/18/1995 12:50:19 Command will be executed in 13 minutes.
02/18/1995 13:03:19 Executing scheduled command now.
02/18/1995 13:03:19 Session established with server GANDALF: AIX_V3_for_RS/6000
02/18/1995 13:03:19 Server Version 2, Release 1, Level 0.0
02/18/1995 13:03:19 Server date/time: 02/18/1995 13:03:34 Last access: 02/18/1995 12:50:33

02/18/1995 13:03:19 Selective Backup function invoked.

02/18/1995 13:03:33 Normal File-->      1,327 /home/164/normb/bonz1.tst Sent
02/18/1995 13:03:33 Normal File-->      1,379 /home/164/normb/bonz2.tst Sent
02/18/1995 13:03:33 Normal File-->      2,656 /home/164/normb/bonz3.tst Sent
02/18/1995 13:03:33 Normal File-->      2,705 /home/164/normb/bonz4.tst Sent
02/18/1995 13:03:34 Normal File-->      1,327 /home/164/normb/bonz5.tst Sent
02/18/1995 13:03:34 Normal File-->      1,327 /home/164/normb/bonz6.tst Sent
02/18/1995 13:03:34 Normal File-->      1,327 /home/164/normb/bonz7.tst Sent
02/18/1995 13:03:35 Normal File-->      1,327 /home/164/normb/bonz8.tst Sent
02/18/1995 13:03:35 Normal File-->      1,327 /home/164/normb/bonz9.tst Sent
02/18/1995 13:03:37 Selective Backup of '/HOME/L64/NORMB/*.TST' complete.

02/18/1995 13:03:37 Scheduled event 'BONZTEST' completed successfully.
02/18/1995 13:03:37 Sending results for scheduled event 'BONZTEST'.
02/18/1995 13:03:38 Results sent to server for scheduled event 'BONZTEST'.
```

Figure 29. Sample Schedule Log

Specifying Scheduling Options

You can modify scheduling options in the client system options file if you do not like the current values.

For more detailed information about each scheduling option, see Chapter 6, “Setting Processing Options” on page 75.

Changing How the Scheduler Runs

The following options determine how the scheduler runs on your workstation.

If your administrator specifies values for these options, those values override what you have in the client system options file.

QUERYSCHEDPERIOD: If you use the client-polling mode (see “SCHEDMODE” on page 60), you can set the maximum number of hours the client scheduler waits between attempts to contact the server for scheduled work.

In the following example, the client scheduler waits for 5 hours:

```
querschedperiod=5
```

MAXCMDRETRIES: Use this option to indicate the maximum number of times the client scheduler can retry a scheduled command that fails.

In the following example, the client scheduler tries 3 times:

```
maxcmdretries=3
```

RETRYPERIOD: Use this option to set the number of minutes the client scheduler must wait between retry attempts for a scheduled command that fails or unsuccessful attempts to contact the server.

In the following example, the client scheduler waits for 15 minutes:

```
retryperiod=15
```

SCHEDLOGNAME: Use this option to specify where you want ADSM to store the schedule log. The default is the current directory with a file name of **dsmsched.log**.

In the following example, ADSM puts the log in the **/etc** directory with a file name **log.info**:

```
schedlogname /etc/log.info
```

SCHEDLOGRETENTION: Use this option to set the number of days to keep log file entries from the schedule log before pruning it, and whether to save pruned entries.

In the following example, ADSM keeps entries for 7 days, and then prunes them and discards the pruned entries:

```
schedlogretention 7,D
```

Changing the Scheduling Mode and TCP/IP Addresses

The following options change the scheduling mode, TCP/IP address, or TCP/IP port number.

SCHEDMODE: Use this option to indicate whether you want to use the client-polling mode or the server-prompted mode.

In the *client-polling mode*, the client scheduler queries the server for scheduled work at prescribed time intervals. This is the default schedule mode.

In the *server-prompted mode*, the client scheduler waits for the server to contact your client node when scheduled work needs to be done. This mode provides an ADSM administrator with more control and flexibility in processing scheduled work. For example, if you normally run a scheduled, system-wide incremental backup in the

evening, but your host system is scheduled to be down for maintenance work, your ADSM administrator can choose to initiate a backup at an earlier time.

Your administrator can specify that either mode is supported by the server, or only one mode is supported. If your administrator specifies only one mode, you must specify that same mode in your client system options file. Otherwise, scheduled work is not processed.

In the following example, the mode is polling:

```
schedmode polling
```

TCPCLIENTADDRESS: Use this option to specify a TCP/IP address if your client node has more than one address, and you want the server to contact a different address than the one used to make initial contact with the server.

You can use this option only if you are using the server-prompted schedule mode.

In the following example, the address is **dscInt.sanjose.ibm.com**:

```
tcpclientaddress dscInt.sanjose.ibm.com
```

TCPCLIENTPORT: Use this option if you are using the server-prompted schedule mode. You can specify a TCP/IP port number if you want the server to use a different port than the one used to make initial contact with the server.

If the default or specified port is busy, ADSM attempts to use any other available port.

In the following example, the port number is **1503**:

```
tcpclientport 1503
```

Issuing Commands Before and After a Schedule Runs

The following options let you run commands before and after a schedule.

PRESCCHEDULECMD: Use this option to run a command before the schedule runs. For example, use PRESCCHEDULECMD to quiesce a database before starting a schedule that runs an incremental backup of the database. Then, use POSTSCHEDULECMD to restart the database.

POSTSCHEDULECMD: Use this option to run a command after running a schedule. For example, after the schedule runs, use a post-schedule command that runs an exec to scan the schedule log and send the results to your administrator.

Using Storage Management Policies

Storage management policies are rules that your ADSM policy administrator defines to tell ADSM how to manage backups and archives, based on the needs of users and the business. If you have the ADSM HSM client installed, your administrator also defines rules that determine whether files are eligible for migration from your local file systems to ADSM storage.

For backup and archive, policies determine:

- Whether a file is eligible for backup or archive services
- How many backup versions to keep
- How long to keep backup versions and archive copies
- Where to place the copies in storage

This section first explains more about storage management policies. Then, it shows you how to display what policies are available to you. Next, you can read about how to choose the best policies for your files and directories. And finally, this section explains some concepts about how ADSM associates your data with policies.

Understanding Storage Management Policies

Storage management policies have several components, as described by the following terms:

Copy group

The specific storage management attributes that describe how the server is to manage backed up or archived data. There are two kinds of copy groups: backup copy groups and archive copy groups

Management class

A collection of backup and archive copy groups that establishes similar storage management requirements for backing up and archiving data.

If you have the ADSM HSM client installed, a management class can also contain *space management attributes* that determine whether files are eligible for migration and where they are stored. For information about space management attributes, see *Using the UNIX HSM Clients*.

Most of the work you do with storage management policies is with management classes.

Policy set

A group of one or more management classes. The ADSM administrator uses a policy set to implement different management classes based on business and user needs.

Policy domain

A group of clients that have similar needs for backup and archive. Policy domains contain one or more policy sets.

Understanding Policy Domains and Sets

An ADSM administrator uses *policy domains* to manage a group of client nodes in a logical way. For example, a domain could consist of the following clients:

- An organization, such as payroll, technical writers, or the marketing team
- A physical location, such as a particular building or floor
- Local area networks, such as all clients associated with a particular file server

ADSM includes a policy domain named STANDARD. Initially, your client node is probably associated with that policy domain. However, your ADSM administrator can define

additional policy domains if there are groups of users that have unique backup and archive requirements.

Each policy domain can hold numerous *policy sets*. Only one of these policy sets can be active at a time, called the *active policy set*. Each policy set contains a *default management class* and any number of additional management classes.

Understanding Management Classes and Copy Groups

A *management class* contains the specific requirements for backing up and archiving data. If you have the ADSM HSM client installed, it can also contain specific requirements for migrating files to ADSM storage.

An ADSM administrator can establish separate management classes to meet the backup and archive requirements for different kinds of data, such as:

- System data critical for the business
- Application data that changes frequently
- Report data that management reviews monthly
- Legal information that needs to be retained for a long time and requires a lot of disk space

Each file and directory that you back up and each file that you archive must be associated with a management class. You are responsible for associating files and directories with appropriate management classes. If you do not associate a file with a management class, ADSM uses the default management class in the active policy set. If you do not specify a management class for directories, ADSM uses the management class in the active policy set that specifies the longest retention period.

You associate files with management classes by using INCLUDE options in your include-exclude options file. See “Choosing a Management Class for Files” on page 69 for more information. To associate directories with a management class, you use the DIRMC option in your client system options file. See “Choosing a Management Class for Directories” on page 71 for more information.

Within a management class, the specific backup and archive requirements are in *copy groups*. There are two kinds of copy groups: backup copy groups and archive copy groups. A management class can have one backup copy group, one archive copy group, both, or neither.

Backup Copy Groups: A *backup copy group* contains attributes that ADSM uses during the backup process to determine the following:

- Whether a file is backed up only if it has changed since the last time it was backed up
- How many days must elapse before a file can be backed up again
- How a file is processed during backup if it is in use

It also contains attributes that ADSM uses to manage the backup versions of your files on the server. Those attributes control the following:

- Where the server stores backup versions of your files and directories

- How many backup versions the server keeps of your files and directories
- How long the server keeps backup versions of your files and directories

Archive Copy Groups: An *archive copy group* contains attributes that control the following:

- Whether a file is archived if it is in use
- Where the server stores archived copies of your files
- How long the server keeps archived copies of your files

Displaying Information About Management Classes

Before you choose the management classes you want to use, you need to see which ones are available by clicking on the **Utilities** menu; **Display policy information** item. The information is displayed in the Display Policy Information window (Figure 30).

You can also use the QUERY MGMTCLASS command with the DETAIL option to see the available management classes.

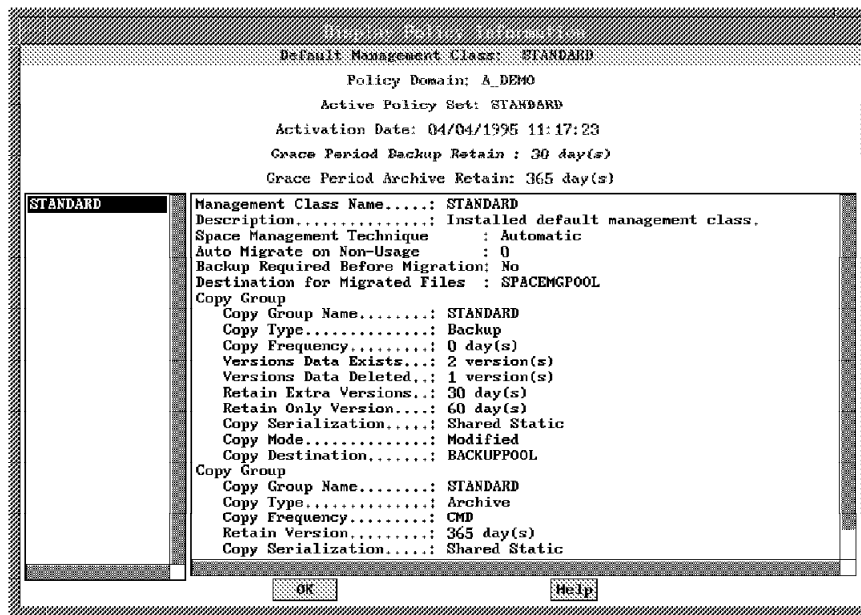


Figure 30. The Display Policy Information Window

Policy Information

ADSM displays the following information in this window:

For policy information, you see this information:

Default Management Class

The name of the default management class for this policy set.

Policy Domain

The name of the policy domain to which this management class belongs.

Active Policy Set

The policy set that is active at the time.

Activation Date

The date and time that this policy set became the active one.

Grace Period Backup Retain

The number of days to retain a backup version when the server is unable to rebind the file to an appropriate management class.

Grace Period Archive Retain

The number of days to retain an archived copy when the server is unable to rebind the file to an appropriate management class.

For more information on grace periods, see “Using a Retention Grace Period” on page 72.

Management Class Information

For management class information, you see this information:

Management Class Name

The name of the management class.

Description

A description of the management class.

If you have the ADSM HSM client installed, the management class information can also include:

Space Management Technique

Determines whether a file can be migrated automatically and selectively, selectively only, or neither.

Auto Migrate on Non-Usage

The number of days that must elapse since a file was last accessed before it is eligible for automatic migration.

Backup Required Before Migration

Determines whether a backup version of a file must exist before the file is eligible for migration.

Attention

If this attribute is set to Yes, ADSM checks for a backup version only on your migration server. If your backup-archive server and migration server are not the same, setting this option to Yes prohibits migration.

Destination for Migrated Files

The name of the destination where ADSM stores migrated files. The destination can be either a storage pool of disk devices or a storage pool of devices that support removable media such as tape.

Copy Groups

You will see information for both backup and archive copy groups:

Copy Group Name

For backup and archive copy groups, the copy group name is always STANDARD.

Copy Type

For backup copy groups, the type is always BACKUP. For archive copy groups, the type is always ARCHIVE.

Copy Frequency

For backup copy groups, the minimum number of days that must elapse between successive incremental backups.

Copy frequency works with the copy mode parameter that is described later. For example, if copy frequency is 0, and copy mode is modified, a file or directory is backed up only if it has been changed since the last incremental backup.

If copy frequency is 0, and copy mode is absolute, a file is backed up every time you run an incremental backup against it.

ADSM does not check this attribute for selective backups.

For archive copy groups, the copy frequency is always CMD (command), that is, there is no restriction on how often you can archive a file.

Versions Data Exists

For backup copy groups, the maximum number of different backup versions ADSM retains for files and directories currently in your file system.

If you select a management class that allows more than one backup version, the most current version is called the *active* version. All other versions are called *inactive* versions.

If the maximum number of versions allowed is **5**, and you run a backup that creates a sixth version, ADSM deletes the oldest version from server storage.

Versions Data Deleted

For backup copy groups, the maximum number of different backup versions ADSM retains for files and directories that you have erased from your file system. ADSM ignores this parameter as long as the file or directory remains in your file system.

If you erase the file or directory, the next time you run an incremental backup, ADSM changes the active backup version to inactive and erases the oldest versions that are in excess of the number specified by this parameter.

The expiration date for the remaining versions is based on the Retain Extra Versions and Retain Only Version parameters described later.

Retain Extra Versions

For backup copy groups, how many days ADSM retains all but the most recent backup version. The most recent version is the active version, and active versions are never erased.

If Nolimit is specified, extra backup versions are deleted based on the Versions Data Exists or Versions Data Deleted parameters.

Retain Only Version

For backup copy groups, how many days ADSM retains the last remaining inactive version of a file or directory.

If Nolimit is specified, the last version is retained forever.

Retain Version

For archive copy groups, the number of days an archived file remains in ADSM storage.

When the specified number of days elapse for an archived copy of a file, ADSM deletes it from ADSM storage.

Copy Serialization

For backup and archive copy groups, whether a file can be in use during a backup or archive, and what to do if it is. The value for this parameter can be one of the following:

Static

A file or directory must not be modified during backup or archive. If the object is changed during the backup or archive attempt, it is not backed up or archived.

Shared Static

A file or directory must not be modified during backup or archive. ADSM attempts to perform a backup or archive as many as four additional times, depending on the value specified for the CHANGINGRETRIES option in your client system options file. If the object is changed during every backup or archive attempt, it is not backed up or archived.

Dynamic

A file or directory is backed up or archived on the first attempt regardless of whether it changes during backup or archive.

Shared Dynamic

A file or directory is backed up or archived regardless of whether it changes during backup or archive. However, ADSM tries as many as four additional times, depending on the value specified for the CHANGINGRETRIES option in your client system options file, to back up or archive the file without the file changing during the attempt. The file is backed up or archived on the last try even if it has changed.

Attention

Be careful about choosing a management class that contains a copy group that specifies shared dynamic or dynamic for copy serialization.

If you choose a management class that allows a file to be backed up or archived while it is in use, the backup or archive stored on the server might be a fuzzy copy. A fuzzy copy is a backup or archive that does not accurately reflect what is currently in the file. It might contain some, but not all, of the changes. If that is not acceptable, be sure to choose a management class that allows ADSM to create a backup or archive only if the file does not change during backup or archive.

If you restore or retrieve a file that contains a fuzzy copy, the file might not be usable, depending on the file's application.

Copy Mode

For backup copy groups, this attribute determines whether a file or directory is considered for incremental backup only if it has changed since the last backup or regardless of whether it has changed. ADSM does not check the copy mode for selective backups. The value for this parameter can be one of the following:

Modified

Indicates the file is considered for incremental backup only if it has changed since the last backup. A file is considered changed if any of the following are different:

- The date or time of the last modification
- The file size
- The file owner
- The file permissions

Absolute

Indicates the file is considered for incremental backup regardless of whether it has changed since the last backup.

For archive copy groups, the copy mode is always absolute, which indicates that a file is archived regardless of whether it has changed since the last archive request.

Copy Destination

For backup and archive copy groups, the name of the destination where ADSM stores the backup or archive. The destination can be either a storage pool of disk devices or a storage pool of devices that support removable media such as tape.

Default Values for Management Class STANDARD

ADSM includes a default management class named STANDARD. Figure 31 shows the default values for the backup and archive copy groups in this management class.

Figure 31. Default Values in the STANDARD Management Class

| Attribute | Backup Default | Archive Default |
|-----------------------|----------------|-----------------|
| Copy Group Name | STANDARD | STANDARD |
| Copy Type | BACKUP | ARCHIVE |
| Copy Frequency | 0 days | CMD |
| Versions Data Exists | 2 versions | N/A |
| Versions Data Deleted | 1 version | N/A |
| Retain Extra Versions | 30 days | N/A |
| Retain Only Version | 60 days | N/A |
| Retain Version | N/A | 365 days |
| Copy Serialization | shared static | shared static |
| Copy Mode | modified | absolute |
| Copy Destination | BACKUPPOOL | ARCHIVEPOOL |

Figure 32 shows the default values for space management attributes in the STANDARD management class if you have the ADSM HSM client installed.

Figure 32. Default Values for Space Management Attributes

| Attribute | Default |
|----------------------------------|-------------|
| Space Management Technique | None |
| Auto Migrate on Non-Usage | 0 |
| Backup Required Before Migration | Yes |
| Destination for Migrated Files | SPACEMGPOOL |

Choosing a Management Class for Files

If the default management class meets the backup, archive, and space management requirements for all the files on your workstation, you do not need to take any action to associate your files with that management class. ADSM does that automatically when your files are backed up, archived, or migrated.

Using an Include-Exclude Options File to Assign a Management Class

To assign a management class other than the default to a file or group of files, use an INCLUDE statement in your include-exclude options file. For example, to associate all the files in the **/home/jones/costs** directory with a management class named BUDGET use the following include statement:

```
INCLUDE /home/jones/costs/* budget
```

Management class names are not case sensitive.

To specify a management class to be used for all files to which you do not explicitly assign a management class, use the following include statement as the first statement in your include-exclude options file:

```
INCLUDE * managa11
```

where `managa11` is the name of an available management class. For more information about using the include-exclude options file, see “Assigning Management Classes with the INCLUDE Option” on page 86.

Overriding the Management Class for Archived Files

When you archive a file, you can choose to override the assigned management class. When using the graphical user interface, ADSM presents a window that allows you to select a different management class.

When using the ARCHIVE command, you can use the ARCHMC option to specify a different management class. For example, to associate the file **/home/jones/budget.jan** with the management class RET2YRS, you specify the following:

```
dsmc archive -archmc=ret2yrs /home/jones/budget.jan
```

For more information about ARCHMC, see “DSMC ARCHIVE—Archiving Files” on page 185.

Questions to Consider When Choosing a Management Class

If you need to choose a different management class for some of your files, consider the following questions.

- Does the management class contain a backup copy group?
If you attempt to back up a file that is associated with a management class that does not contain a backup copy group, the file is not backed up.
- Does the management class contain an archive copy group?
If you attempt to archive a file that is associated with a management class that does not contain an archive copy group, the file is not archived.
- Does the backup copy group contain attributes that allow your files to be backed up often enough?
Copy mode and copy frequency work together to control how often a file is backed up when you use incremental backup. ADSM does not check those attributes for selective backup.
- Do the copy groups specify either static or shared static for copy serialization?
If copy serialization is shared dynamic or dynamic, you might get fuzzy backups or archive copies. Be sure you understand whether that is acceptable.
For example, you might want to use shared dynamic or dynamic for a file where log records are continuously added to it. If you used static or shared static, the file might not be backed up at all because it is constantly in use. With shared dynamic

or dynamic, the file would be backed up, but the backup version of the file might contain a truncated message.

However, you would not want to use shared dynamic or dynamic for a file if it is critical that the backup version or archive copy contain all changes. That is probably the case for most of your files.

- Does the backup copy group specify an adequate number of backup versions to keep and an adequate length of time to keep them?
- Does the archive copy group specify an adequate length of time to keep archived copies of files?

Note: If you have the ADSM HSM client installed, and you want a file to be eligible for migration, you must assign the file a management class that also contains the appropriate space management attributes.

Choosing a Management Class for Directories

If the management class in your active policy set that contains the longest retention period meets your backup requirements for directories, you do not need to take any action to associate directories with that management class. ADSM does it automatically when it backs up your directories.

If that default management class does not meet your requirements, be sure to choose a management class with an adequate retention period specified for Retain Only Version. You want to be sure that ADSM keeps directories at least as long as it keeps the files associated with those directories.

To assign a management class other than the default to directories, you use the DIRMC option in your client system options file. For example, to assign a management class named DIRECT1 to your directories, you would enter:

```
DIRMC DIRECT1
```

For more information about using DIRMC, see “DIRMC” on page 106.

Binding and Rebinding Management Classes to Files

When you back up a file for the first time, ADSM binds it to either the default management class or the management class specified for the file in your include-exclude options file. *Binding* is the term for associating a file with a management class.

If the backup copy group for the management class instructs ADSM to keep multiple backup versions of the file, and you request multiple backups, the server always has one active backup version (the most current version) and one or more inactive backup versions of the file. All the backup versions of a file are bound to the same management class and are managed based on the attributes in the backup copy group.

When you archive a file, ADSM binds it to the default management class, to the management class specified for the file in your include-exclude options file, or to a management class you specify.

There are several instances when backup versions of a file can be rebound to a different management class. Archived files are never rebound to a different management class. If you change the management class for a file, any previous copies of the file that you have archived remain bound to the management class specified when you archived them.

Rebinding Backup Versions of Files

Backups of files are rebound to a different management class in the following cases. In each case, the files (active and inactive) are not rebound until the next backup.

- You change the management class for the file by specifying a different management class in an INCLUDE statement.
ADSM continues to manage the backups based on the old management class until you run another backup.
- Your ADSM administrator deletes the management class from your active policy set.
ADSM uses the default management class to manage the backup versions when you back up the file again.
- Your ADSM administrator assigns your client node to a different policy domain and the active policy set in that domain does not have a management class with the same name.
ADSM uses the default management class for the new policy domain to manage the backup versions.

Using a Retention Grace Period

ADSM also provides a *backup retention grace period* and an *archive retention grace period* that it uses to help protect your backup and archive data when it is unable to rebound a file to an appropriate management class.

For example, ADSM uses the backup retention grace period in these cases:

- You change the management class for a file, but the new management class does not contain a backup copy group, nor does the default management class.
- The management class to which a file is bound no longer exists, and the default management class does not contain a backup copy group.

ADSM begins using the backup retention grace period when you run an incremental backup.

The backup retention grace period is defined in your policy domain. The default is 30 days. However, your ADSM administrator can choose to change that value to a longer or shorter period.

After ADSM begins managing a file using the backup retention grace period, it does not create any new backup versions of the file. All existing backup versions of the file expire 30 days (or the number of days specified in your policy domain) from the day they are marked inactive.

For archived files, if the management class to which a file is bound no longer exists, and the default management class does not contain an archive copy group, ADSM uses the archive retention grace period defined in your policy domain. The default retention period is 60 days. Your ADSM administrator can choose to change that value to a longer or shorter period.

Chapter 6. Setting Processing Options

You can use defaults for processing options, or you can tailor the processing options to meet specific needs. This chapter:

- Gives an overview of processing options
- Explains how to set options in a file
- Explains how to use options with commands

It also contains a client options reference section that provides detailed information about each option.

Understanding Processing Options

ADSM processing options reside in these files:

- Client system options file
- Include-exclude options file
- Client user options file

Setting Options in the Client System Options File

Root User

A root user on your workstation is responsible for setting options in the client system options file. That file contains the following:

- Server and node options
- Communication options
- Authorization options
- Backup and archive processing options
- Scheduling options
- Transaction processing option

If you have the ADSM HSM client installed on your workstation, the client system options file can also contain space management options.

During initial installation and setup of ADSM, you are provided with a sample client system options file named **dsm.sys.smp**. Copy **dsm.sys.smp** to **dsm.sys** in your ADSM installation directory and modify the required options in the new copy. Required options are those that provide information the ADSM client programs need to establish communication with an ADSM server.

The following sections provide an overview of all the options you can set in the client system options file. You can use this information to help you decide whether to modify any other options.

Server and Node Options

Each client node that communicates with an ADSM server must have a node name, and each server your client node communicates with must be identified with a server name.

Node Options: The default node name for your client node is the name returned by the **hostname** command. If necessary, you can assign a different node name to your client node. For example, if you have one workstation named SunOS and one named SUNOS, an ADSM server would recognize both as the same client node. You can change the node name for a client node by specifying a different name with the NODENAME option in your client system options file (**dsm.sys**).

For special situations, you can also use the NODENAME option in your client user options file (**dsm.opt**) or with a command to indicate that you want to request services for a different client node. See “Server and Node Options” on page 89 for detailed information about using the NODENAME option for that purpose.

Server Options: Your client node communicates with a particular ADSM server based on options you set in your client system options file. You enter options in the client system options file in stanzas. Each stanza begins with a SERVERNAME option and must contain all options required to establish communication with an ADSM server.

If your client system options file contains only one stanza, your client node contacts the server specified in that stanza for all services.

If your client system options file contains more than one stanza, you can:

- Specify a default server with the DEFAULTSERVER option.
If you do not specify a default server with the DEFAULTSERVER option, ADSM contacts the server specified in the first stanza of your client system options file by default.
- Specify a migration server with the MIGRATESERVER option if the ADSM HSM client is installed on your workstation
If you specify a migration server with the MIGRATESERVER option, it overrides what is specified with the DEFAULTSERVER option for migration only.

If you do not specify a default server or a migration server, ADSM contacts the first server specified in your client system options file by default.

The DEFAULTSERVER and MIGRATESERVER options must be placed at the beginning of your client system options file before any server stanzas.

Figure 33 on page 77 shows a sample client system options file.

```

DEFAULTServer          server2
MIGRATEServer         server1

Servername    server1
  COMMmethod  TCPip
  TCPport     1500
  TCPserveraddress almvmd.almaden.ibm.com
  Passwordaccess generate
  Mailprog    /usr/bin/xsend root
  Groups      system adsm
  Users       pacheco brown sullivan
  Incl excl   /adm/adsm/backup1.excl

Servername    server2
  COMMmethod  SNA1u6.2
  PARTner1name raptor
  TPname      appcde1
  CPICM0dename appc
  Passwordaccess prompt
  Groups      system adsm
  Users       jones tallan arbis
  Incl excl   /adm/adsm/backup2.excl

```

Figure 33. Sample Client System Options File

Note: You can also specify which server to contact for backup-archive services by including the SERVERNAME option in your default client user options file. If you specify which server to contact in the default client user options file, that overrides the default server specified in your client system options file. In addition, users can override the server you specify for backup-archive services by:

- Specifying a different server with the SERVERNAME option in their own client user options files
- Specifying a different server with the SERVERNAME option on a command

Users cannot override the migration server you specify in the client system options file.

Figure 34. Server and Node Options

| Option | Description | Reference |
|---------------|--|-----------|
| NODENAME | The name of your workstation used to establish communication with the ADSM server. | Page 131 |
| SERVERNAME | The name of an ADSM server to contact for services. | Page 154 |
| DEFAULTSERVER | The name of the ADSM server to contact for backup-archive services by default if more than one server is defined in the client system options file. Also specifies the ADSM server to contact for space management services if you do not specify a server with the MIGRATESERVER option. | Page 105 |
| MIGRATESERVER | The ADSM server to contact for space management services. | Page 128 |

Communication Options

Use communication options to specify how your client node communicates with an ADSM server. The options you must specify depends on which communication protocol you choose to use.

On an AIX workstation, you can use these communication methods: TCP/IP, SNA LU6.2, or Shared Memory. On other UNIX workstations, you can use only TCP/IP. You specify which protocol to use with the COMMMETHOD option. The default is TCP/IP. For more information, see “COMMMETHOD” on page 99.

Ask your ADSM administrator for assistance in setting your communication options.

TCP/IP Options: To use the TCP/IP protocol, you must include the TCPSEVERADDRESS option in your client system options file. The other TCP/IP options have default values. You need to modify those options only if you want to change their default values.

Figure 35. TCP/IP Options

| Option | Description | Reference |
|-----------------|--|-----------|
| TCPBUFFSIZE | The size, in kilobytes, of the ADSM internal TCP/IP communication buffer. | Page 161 |
| TCPNODELAY | Determines whether ADSM immediately sends small transactions to the server. Only available for the AIX client. | Page 164 |
| TCPPORT | The TCP/IP port address for an ADSM server. | Page 165 |
| TCPSEVERADDRESS | The TCP/IP address for an ADSM server. | Page 166 |
| TCPWINDOWSIZE | The size, in kilobytes, of the TCP/IP sliding window for your client node. | Page 167 |

SNA LU6.2 Options: To use the SNA LU6.2 protocol (available on an AIX workstation only), you must include either the SYMBOLICDESTINATION option or all three of the following options: CPICMODENAME, PARTNERLUNAME, and TPNAME.

Figure 36. SNA LU6.2 Options

| Option | Description | Reference |
|---------------------|---|-----------|
| CPICBUFFERSIZE | The buffer size for SNA LU6.2 communication. | Page 102 |
| CPICMODENAME | The mode name for SNA LU6.2 communication. | Page 103 |
| PARTNERLUNAME | A logical unit name used by the transaction program to identify the ADSM server in the SNA network. | Page 135 |
| SYMBOLICDESTINATION | A symbolic ADSM server name. | Page 159 |
| TPNAME | A symbolic name for a transaction program in an SNA network. The transaction program identifies the target logical unit (LU), which is the ADSM server. | Page 169 |

Shared Memory Option: To use the shared memory communication method, TCP/IP must be installed on your workstation.

The communication option for Shared Memory is:

Figure 37. Shared Memory Option

| Option | Description | Reference |
|---------|---|-----------|
| SHMPORT | The TCP/IP port address that the server is listening on to establish a shared memory connection. (AIX only) | Page 156 |

Authorization Options

Use the following authorization options to control access to an ADSM server.

Figure 38. Authorization Options

| Option | Description | Reference |
|----------------|--|-----------|
| GROUPS | The groups on your workstation that you want to be able to request services from the ADSM server. | Page 116 |
| MAILPROG | The program and user ID to which you want ADSM to send a newly-generated password when the old one expires. Used only when PASSWORDACCESS is GENERATE. | Page 122 |
| PASSWORDACCESS | How you want ADSM to handle a password if one is required for your workstation. | Page 136 |
| USERS | The users on your workstation who can request services from an ADSM server. | Page 172 |

Backup and Archive Processing Options

Use the following options to control some aspects of backup and archive processing:

Figure 39 (Page 1 of 2). Backup and Archive Processing Options

| Option | Description | Reference |
|-----------------|---|-----------|
| AUTOMOUNT | A symbolic link to an NFS mount point monitored by the automount daemon (SunOS) or the automounter (Solaris) that you want ADSM to consider as a valid domain for incremental backup. | Page 94 |
| CHANGINGRETRIES | The number of retries for attempting to back up or archive a file that is in use. | Page 97 |
| COMPRESSALWAYS | Whether to compress files or send them if compression causes them to grow. | Page 100 |
| COMPRESSION | Whether to compress files before sending them to the ADSM server. | Page 101 |
| DIRMC | The management class to use for directories. If not specified, ADSM uses the management class with the longest retention period. | Page 106 |
| DOTDIRCHECK | Whether ADSM checks for "." and "." entries in a directory. | Page 107 |

Figure 39 (Page 2 of 2). Backup and Archive Processing Options

| Option | Description | Reference |
|-------------------|--|-----------|
| INCLEXCL | The path and file name of your include-exclude options file. | Page 117 |
| VIRTUALMOUNTPOINT | A directory to serve as a virtual mount point for a file system. This provides a direct path to the files you want ADSM to consider for backup, thus saving processing time. | Page 174 |

Note: If you have the ADSM HSM client installed on your workstation, the COMPRESSION option also applies to migrated files.

Scheduling Options

Use scheduling options to provide information that ADSM needs when performing scheduled work. ADSM uses scheduling options only when the SCHEDULE command is running.

Most of the options discussed in this section can be overridden by ADSM server settings after the backup-archive client program on your workstation makes contact with the ADSM server.

Figure 40. Scheduling Options

| Option | Description | Reference |
|-------------------|---|-----------|
| MAXCMDRETRIES | The maximum number of times the client scheduler attempts to process a scheduled command that fails. | Page 123 |
| POSTSCHEDULECMD | A command to process after running a schedule. | Page 139 |
| PRESCHEDULECMD | A command to process before running a schedule. | Page 140 |
| QUERYSCHEDPERIOD | The number of hours the client scheduler waits between unsuccessful attempts to contact the ADSM server for scheduled work. | Page 141 |
| RETRYPERIOD | The number of minutes the client scheduler waits between attempts to process a scheduled command that fails or between unsuccessful attempts to report results to the server. | Page 147 |
| SCHEDLOGNAME | The name of the file where schedule log information is stored. | Page 148 |
| SCHEDLOGRETENTION | The number of days to keep log file entries in the schedule log, and whether to save pruned entries. | Page 149 |
| SCHEDMODE | The schedule mode to use, POLLING or PROMPTED. | Page 151 |
| TCPCIENTADDRESS | The TCP/IP address of your client node. Used only with the SCHEDULE command when SCHEDMODE is PROMPTED. | Page 162 |
| TCPCIENTPORT | The TCP/IP port number of your client node. Used only with the SCHEDULE command when SCHEDMODE is PROMPTED. | Page 163 |

Transaction Processing Option

Use the following option to control how ADSM processes transactions between the client and server.

Figure 41. Transaction Processing Option

| Option | Description | Reference |
|--------------|---|-----------|
| TXNBYTELIMIT | The number of kilobytes ADSM can buffer in a transaction before sending data to the server. | Page 170 |

Space Management Options

If you have the ADSM HSM client installed on your workstation, you can set the options listed in this section in your client system options file. These options affect automatic migration, recall, and reconciliation.

Because most space management options apply to your client node and not to a particular ADSM server, they must be placed before any server stanzas in your client system options file. The exception is the ERRORPROG option. You can place an ERRORPROG option in each server stanza.

For detailed information about the ADSM HSM client, see *Using the UNIX HSM Clients*.

Figure 42. Space Management Options

| Option | Description | Reference |
|-------------------|---|-----------|
| CHECKTHRESHOLDS | How often the space monitor daemon checks space usage on your file systems. | Page 98 |
| ERRORPROG | The path and file name of the program HSM notifies if a severe error occurs during space management processing. | Page 112 |
| KERNELMESSAGES | Determines whether HSM-related messages issued by the kernel are displayed. | Page 120 |
| MAXRECALLDAEMONS | The maximum number of recall daemons that can run at one time. | Page 124 |
| MAXRECONCILEPROC | The maximum number of file systems HSM can reconcile automatically at one time. | Page 125 |
| MAXTHRESHOLDPROC | The maximum number of threshold migration processes that HSM can perform automatically at one time. | Page 126 |
| MIGFILEEXPIRATION | The number of days a migrated or premigrated file remains in ADSM storage after it is modified on the local file system or erased from the local file system. | Page 127 |
| MINRECALLDAEMONS | The minimum number of recall daemons to retain. | Page 130 |
| RECONCILEINTERVAL | Determines how often HSM automatically reconciles the file systems on your workstation. | Page 143 |

Creating an Include-Exclude Options File

RootUser

You can create an include-exclude options file to:

- Exclude specific files from backup services
- Assign specific management classes to files

If you have the ADSM HSM client installed on your workstation, you can also use options in your include-exclude options file to exclude specific files from space management services.

Figure 43 provides brief descriptions of the include-exclude options that you can specify in your include-exclude options file and references to more detailed information about each option.

Figure 43. Include-Exclude Options

| Option | Description | Reference |
|-------------------|--|-----------|
| EXCLUDE | Defines a file or group of files you want to exclude from backup services. If you have the ADSM HSM client installed, this option excludes files from both backup and space management services. | Page 113 |
| EXCLUDE.BACKUP | Defines a file or group of files you want to exclude from backup services only. You can use this option when you have both the backup-archive client and the HSM client installed. | Page 113 |
| EXCLUDE.SPACEMGMT | Defines a file or group of files you want to exclude from space management services only. You can use this option when you have both the backup-archive client and the HSM client installed. | Page 113 |
| INCLUDE | Defines one of the following: <ul style="list-style-type: none">• A subset of a broad group of excluded files that you want to specifically include for backup services (and space management services if you have the HSM client installed). Can be a file or group of files.• A file or group of files to which you want to assign a specific management class and the management class name.• A management class to assign to all files to which you do not assign a specific management class. | Page 118 |

Excluding System Files

For UNIX, we recommend you include at least the following in your include-exclude options file:

```
exclude /unix
exclude /.../core
```

If you are using AFS, also specify:

```
exclude /usr/vice/cache/*
```

```
exclude /var/vice/cache/*
```

Those files are all system files that cannot be recovered without possibly corrupting the operating system.

Including and Excluding Groups of Files

To specify groups of files that you want to include or exclude, you can use the wildcard characters listed in Figure 44.

Note: This table applies only to include and exclude statements. For information on using wildcard characters in ADSM commands, see “Using Wildcard Characters” on page 182.

Figure 44. Wildcard and Other Special Characters

| Character | Function |
|-----------|--|
| ? | The match one character matches any single character except the directory separator; it does not match the end of the string. It can only be used in the file name, not in a directory name. |
| * | The match all character matches zero or more characters, but it does not cross a directory boundary. It can only be used in the file name, not in a directory name. |
| /... | The match <i>n</i> character matches zero or more directories. |
| / | The directory separator character limits the scope of the search for the matching <i>n</i> characters and directories. If a pattern does not begin with a directory separator (or one does not follow the file system specification), a match all directories is appended to the pattern. For example, these patterns are equivalent: core /.../core |
| [| The open character class character is used to begin the enumeration of a character class. For example: xxx[abc] matches xxxa, xxxb, or xxxc. |
| – | The character class range includes characters from the first character specified up to and including the last character specified. For example: xxx[a-z] matches xxxa, xxxb, xxxc, ... xxxz. |
|] | The close character class character ends the enumeration of a character class. |
| \ | The literal escape character, when used within a character class, causes the next character to be treated literally. When used outside a character class, it is not specially treated. |

Examples Using Wildcards in EXCLUDE and INCLUDE Patterns

This section contains examples that are appropriate when you are using only the ADSM backup-archive client. For more information about using the EXCLUDE.BACKUP and EXCLUDE.SPACEMGMT options, see *Installing the Clients*.

Note: INCLUDE and EXCLUDE do not work with symbolic links to directories; do not use /u in these commands. That is, instead of

```
include /u/tmp/save.fil
```

use

```
include /home/tmp/save.fil
```

The EXCLUDE command works with symbolic links to directories when you issue the backup command using the absolute path that contains the symbolic link.

Example 1

Exclude all files with a **bak** extension, except those found on the **/usr** file system in the **dev** directory.

```
exclude *.bak
include /usr/dev/*.bak
```

Example 2

Exclude all files and directories under any **tmp** directory that may exist, *except* for the one file **/home/tmp/save.fil**. Include this file.

```
exclude ../tmp/*/*/*
include /home/tmp/save.fil
```

Example 3

Evaluate the following EXCLUDE statements:

```
exclude /usr[1-3]/*/*/*
exclude /usr2/*/*/*
exclude ../tmp/*/*/*
```

This example is a bit more complex.

- 1** **/usr[1-3]/*/*/*** matches any **.obj** file in any directory on the **/usr1**, **/usr2**, and **/usr3** file systems.
- 2** **/usr2/*/*/*** only matches the **.obj** files found in the root directory in the **/usr2** file system.
- 3** **../tmp/*/*/*** matches any file found on any directory that resides under the **tmp** directory.

Processing INCLUDE and EXCLUDE Options

ADSM processes the EXCLUDE and INCLUDE options as follows:

- Directories are *not* checked, only files are. Therefore, if you have a file system (such as **usr**) defined in the DOMAIN option, all directories of that file system are

backed up regardless of what you defined for your EXCLUDE and INCLUDE options, even if the files in those directories are not backed up.

- **The order that these options are checked is from the bottom up until a match is found.** If a match is found, the processing stops and looks at whether the option is INCLUDE or EXCLUDE. If the option is INCLUDE, the file is backed up. If the option is EXCLUDE, the file is *not* backed up.
- If a match is *not* found, files listed are implicitly included and therefore backed up.
- If policy administration is in effect, files are backed up according to the default management class or the management class you specify.

Here are some other examples of *bottom up* processing.

Example 1

Assume that */u* is defined as the domain in the DOMAIN option and you have this defined for the EXCLUDE and INCLUDE options.

```
excl ude *.obj
incl ude /home/fo o/.../*.obj
excl ude /home/fo o/junk/*.obj
```

The current file being processed is **/home/fo o/dev/test.obj**.

The processing follows these steps:

- 1** Rule 3 (the last INCLUDE or EXCLUDE defined) is checked first because of *bottom up* processing.
- 2** **/home/fo o/junk/*.obj** does not match the current filename being processed.
- 3** Processing moves to Rule 2 and checks.
- 4** This time, **/home/fo o/.../*.obj** matches the current file name being processed.
- 5** Processing stops, the option is checked, and it is INCLUDE.
- 6** **/home/fo o/dev/test.obj** is backed up.

Example 2

Assume that */u* is defined as the domain in the DOMAIN option, and you have this defined for the EXCLUDE and INCLUDE options.

```
excl ude *.obj
incl ude /home/fo o/.../*.obj
excl ude /home/fo o/junk/*.obj
```

The current file being processed is **/home/widg/copyit.bat**.

The processing follows these steps:

- 1** Rule 3 is checked and finds no match.
- 2** Rule 2 is checked and finds no match.
- 3** Rule 1 is checked and finds no match.
- 4** Because no match is found, **/home/widg/copyit.bat** falls into the implicit INCLUDE option and is backed up.

Example 3

Assume that **/u** is defined as the domain in the DOMAIN option and you have this defined for the EXCLUDE and INCLUDE options.

```
exclude /.../*.obj
include /home/foo/.../*.obj
exclude /home/foo/junk/*.obj
```

The current file being processed is **/home/lib/objs/printf.obj**.

The processing follows these steps:

- 1** Rule 3 is checked and finds no match.
- 2** Rule 2 is checked and finds no match.
- 3** Rule 1 is checked and a match is found.
- 4** Processing stops, the option is checked, and it is EXCLUDE.
- 5** **/home/lib/objs/printf.obj** is not backed up.

Assigning Management Classes with the INCLUDE Option

A management class defines when your files are included in a backup or archive, how long backup versions and archive copies are kept on the ADSM server, and how many backup versions of the file the ADSM server should keep.

If you have the ADSM HSM client installed, the management class assigned to a file also defines whether a file can be migrated to ADSM storage automatically, when the file is eligible for automatic migration, and whether a current backup version of the file must exist before the file can be migrated.

The ADSM server administrator chooses a default management class. Optionally, you can override the default management class by specifying your own management class.

This is an example of using INCLUDE options to assign management classes to files:

```
exclude /.../*.sno
include /home/winter/.../*.ice      mcweekly
include /home/winter/december/*.ice mcdaily
include /home/winter/january/*.ice mcmonthly
include /home/winter/winter/white.sno
```

The processing follows these steps:

- 1** The file named **white.sno** is backed up because of *bottom up* processing. Because you did not specify a management class, the file is bound to the default management class.
- 2** Any file with an **ice** extension in the directory **/home/winter/january** is bound to the management class MCMONTHLY.
- 3** Any file with an **ice** extension in the directory **/home/winter/december** is bound to the management class MCDAILY.
- 4** Any other files with an **ice** extension in any directory under **/home/winter** are bound to MCWEEKLY.
- 5** Any file with a **sno** extension (except **/home/winter/winter/white.sno**) in any directory is excluded from backup.

To specify your own default management class for files that are not explicitly included, specify:

```
INCLUDE * mgmt_class_name
```

as the *first* option in your include-exclude options file.

When you archive a file using the graphical user interface, you can override the management class assigned to the file by selecting a different management class. When you use the ARCHIVE command, you can use the ARCHMC option to specify a different management class. For an example of its usage, see the ARCHIVE command on page 185.

To specifically define a management class for directories, use the DIRMC option. For details, see “DIRMC” on page 106.

Setting Options in a Client User Options File

A root user on your workstation is responsible for creating a default client user options file. As a user, you can also create your own personalized client user options file.

A client user options file can contain the following:

- Server and node options
- Backup and archive processing options

- Restore and retrieve processing options
- Format and language options
- Command processing options
- Error processing option
- Information availability option

If you have the ADSM HSM client installed, a client user options file can also contain an option that determines whether users must use the standard or short format when entering options with HSM client commands.

During initial installation and setup of ADSM, you are provided with a sample client user options file named **dsm.opt.smp**.

RootUser If you are a root user, copy **dsm.opt.smp** to **dsm.opt** in your installation directory. Then, modify any options for which you do not want to use the default values.

If you are a user, and you want to create your own personalized client user options file, copy **dsm.opt.smp** to **dsm.opt** or a new file name of your choice. You can store your personalized client user options file in any directory to which you have write access.

You must also set the DSM_CONFIG environment variable to point to your personalized client user options file.

For the Bourne or Korn shell, enter the DSM_CONFIG variable in the .profile file in your \$HOME directory. For example:

```
DSM_CONFIG=/home/jones/dsm.opt
export DSM_CONFIG
```

For the C shell, add the DSM_CONFIG variable to .cshrc in your \$HOME directory. For example:

```
setenv DSM_CONFIG /home/jones/dsm.opt
```

We recommend that you use full path names instead of relative path names when setting environment variables.

The following sections provide an overview of all the options you can set in your client user options file. You can use this information to help you decide whether to modify any options.

You can also enter these options with appropriate ADSM commands. If you enter an option with a command, it overrides what is specified for the option in your client user options file, with the exception of the DOMAIN option. When you use the DOMAIN option with a command, it adds to what is specified in the client user options file, rather than overriding what is specified.

Server and Node Options

Use the following options to specify:

- The client node for which you want to request backup-archive services
- Which server to contact for backup-archive services

Node Option: Use the NODENAME option in your client user options file or with a command *only* if you want to request services for a client node other than the one on which you are currently working.

For example, if you have a hardware failure on your own workstation, you can restore backup versions of files to a different workstation.

Attention: When you use the NODENAME option in your client user options file or with a command, you must supply the password for the client node you specify. Any user who can supply the correct password becomes a virtual root user and can access all backup versions and archived copies of files that originated from the specified client node.

Server Option: Use the SERVERNAME option in your client user options file or with a command *only* if you want to contact a server other than the one specified in your client system options file.

Figure 45. Server and Node Options

| Option | Description | Reference |
|------------|---|-----------|
| NODENAME | The name of another client node. Use this option if you want to restore or retrieve your files from an ADSM server to a different client node than the one from which you stored the files. | Page 131 |
| SERVERNAME | The ADSM server to contact for services. | Page 154 |

Backup and Archive Processing Options

You can use the following options to control some aspects of backup and archive processing:

Figure 46. Backup and Archive Processing Options

| Option | Description | Reference |
|-----------------|--|-----------|
| DOMAIN | The file systems included in your default client domain for incremental backup. | Page 108 |
| SLOWINCREMENTAL | Specifies a memory-saving backup algorithm for incremental backups for use with the INCREMENTAL command. | Page 157 |
| SUBDIR | Whether to include subdirectories of a specified directory. | Page 158 |

Restore and Retrieve Processing Options

The following options relate to restore and retrieve processing and apply most often when you issue a RESTORE or RETRIEVE command.

Figure 47. Restore and Retrieve Processing Options

| Option | Description | Reference |
|-----------------|--|-----------|
| FOLLOWSYMBOLIC | Determines whether you want ADSM to restore files to symbolic directory links, and allow a symbolic link to be used as a virtual mount point. | Page 115 |
| REPLACE | Determines whether to overwrite an existing file or prompt you for your choice when restoring or retrieving files. | Page 144 |
| RESTOREMIGSTATE | Determines whether ADSM restores stub files for migrated files or restores backup versions of migrated files. (This option is valid only when the HSM client is also installed on an AIX workstation.) | Page 145 |
| SUBDIR | Determines whether to include subdirectories of a specified directory. | Page 158 |
| TAPEPROMPT | Determines whether you want ADSM to wait for a tape required for a restore, retrieve, backup, or archive to be mounted, or to prompt you for your choice. | Page 160 |

Format and Language Options

You can use options to choose different formats for date, time, and numbers, and to choose a different language if you have the appropriate client installed for that language. These options are valid for all UNIX clients except AIX. For the AIX client, the language and formats used are determined when you install the client.

Figure 48. Format and Language Options

| Option | Description | Reference |
|--------------|--|-----------|
| DATEFORMAT | The format for displaying dates. | Page 104 |
| LANGUAGE | The language used to display messages. | Page 121 |
| NUMBERFORMAT | The format for displaying numbers. | Page 133 |
| TIMEFORMAT | The format for displaying times. | Page 168 |

Note: You cannot use the LANGUAGE option with a command.

Command Processing Options

Most of the following options apply only when you use certain ADSM commands.

The OPTIONFORMAT option applies only when you are using ADSM HSM client commands.

Figure 49 (Page 1 of 2). Command Processing Options

| Option | Description | Reference |
|--------------|---|-----------|
| OPTIONFORMAT | The format users must use when entering ADSM HSM client commands. | Page 134 |
| QUIET | ADSM does not show processing information on your screen. The alternative is VERBOSE. | Page 142 |

Figure 49 (Page 2 of 2). Command Processing Options

| Option | Description | Reference |
|--------------|--|-----------|
| SCROLLLINES | The number of lines to display at one time when displaying a list of items. Used only when SCROLLPROMPT is YES. | Page 152 |
| SCROLLPROMPT | Determines whether ADSM stops after displaying the number of lines specified by SCROLLLINES or scrolls to the end of the list. | Page 153 |
| VERBOSE | ADSM displays processing information on your screen. The alternative is QUIET. | Page 173 |

Error Processing Option

Use the following option to control how ADSM treats the entries in the error log file.

Figure 50. Error Processing Options

| Option | Description | Reference |
|-------------------|---|-----------|
| ERRORLOGRETENTION | The number of days to keep log file entries in the error log, and whether to save pruned entries. | Page 110 |

Information Availability Option

The BOOKS option allows you to make the ADSM online publications available through the graphical user interface if you are using one of the following:

- An AIX workstation
- A SunOS workstation
- An HP-UX workstation
- An IRIX workstation

Figure 51. Information Availability Option

| Option | Description | Reference |
|--------|---|-----------|
| BOOKS | A command that starts the online book reader. | Page 95 |

Setting Options in a File

This section provides instructions for setting options in your client system options file, a client user options file, or an include-exclude options file.

To set an option in an options file, type the option name, followed by one or more blank spaces, followed by the option parameters. For example:

```
compression on
servername client_a
```

Some options consist of only the option name. For example:

```
verbose
quiet
```

You can write the entire option name or an abbreviation for the option name. For example, for the INCLUDE option, you can write either of the following:

```
include
in
```

The following are additional general rules for entering options in a file:

- You can begin an option in any column of the line.
- You can leave blank lines between options.
- You can enter comments in an options file by entering an asterisk (*) as the first character in a line.
- Put each option on a separate line, and enter all parameters for an option on the same line.

For example, to specify a group of five different file systems as your default client domain, you could enter the following:

```
domain /home /mfg /planning /mrketing /mgmt
```

- Put one or more blank spaces between each parameter.

Using Options With Commands

Users can override most of the options set in a client user options file by entering them with appropriate ADSM backup-archive commands.

ADSM also includes a group of client command options that you can enter only on the command line with specific backup-archive commands. For information about that group of options, see “Options” on page 180.

To use an option with an ADSM command, enter a dash (-) followed by the option name, followed by an equal sign (=), followed by the option parameters. For example:

```
dsmc incremental -domain=/home
```

For options that do not include parameters, enter a dash (-), followed by the option name. For example:

```
dsmc incremental -quiet
```

You can enter the entire option name or an abbreviation for the option name. For example, for the QUIET option, enter either of the following:

```
-quiet
-q
```

The shortest acceptable abbreviations are shown in the syntax diagrams for each option. For information about how to read the syntax diagrams, see “Reading Syntax Diagrams” on page xv.

The following are additional general rules for entering options with a command:

- You can enter options in any order before or after command parameters.

For example, you can enter the SUBDIR option before or after a file specification:

```
dsmc selective -subdir=yes "/home/devel/proj1/*"  
dsmc selective "/home/devel/proj1/*" -subdir=yes
```

- When you enter more than one option in a command, separate each option with a blank space.

For example:

```
dsmc selective -subdir=yes -quiet "/home/devel/proj1/*"
```

- If the value you enter for an option contains a blank space, you must enclose the value in quotes (" ").

For example:

```
dsmc archive -description="Project A" /home/devel/proja.lst
```

Client Options Reference

The following sections contain detailed information about each of the ADSM processing options. These options are arranged in alphabetical order. Information for each option includes:

- A description of the option
- The options file in which you can set the option
- A diagram that shows the syntax of the option

The option name is shown in a combination of uppercase and lowercase characters. The uppercase characters indicate the minimum abbreviation you can use for the option name.

- Detailed descriptions of the option parameters. If the parameter is a constant, its minimum abbreviation is shown in uppercase letters.
- Example of using the option in an options file (if applicable)
- Example of using the option on the command line (if applicable)

AUTOMOUNT

AUTOMOUNT

RootUser

Use the AUTOMOUNT option to specify a symbolic link to an NFS mount point monitored by the automount daemon (SunOS) or a mount point monitored by the automounter (Solaris). The automount filesystem specified in this option is considered as a valid domain for ADSM incremental backup.

This option is required if you want ADSM to add the mount point to the **File Systems for Backup/Archive** part of the File System Information window in the ADSM GUI. It is also required if you want to include the mount point in an incremental backup using the command-line client or the client scheduler if the symbolic link points to a mount point monitored by automounter using indirect map.

Options File

This option goes in the client system options file and is valid for a SunOS or Solaris workstation only.

Syntax

▶—AUTOMOUNT *filesystem*—————▶

Parameters

filesystem

A symbolic link to an NFS mount point monitored by the automount daemon (SunOS) or a mount point monitored by the automounter (Solaris).

Examples

Options file example: automount /home/user1
 where /home/user1 -> /tmp_mnt/home/user1

Command line example: Not applicable

BOOKS

Use the BOOKS option to make the ADSM online publications available through the ADSM graphical user interface if you are using one of the following:

- An AIX workstation
- A SunOS workstation
- An HP-UX workstation
- An IRIX workstation

If you set the option in the options file, you can read the online publications by clicking on the **Help** menu; **View Books** item. If you do not set the option, you can still read the online books by starting the online book reader outside of ADSM.

Options File

This option goes in the client user options file.

Syntax

▶▶—BOOKS *command*—————▶▶

Parameters

command

A command that starts the online book reader. The exact command depends on which reader you are using, where the reader is installed, where the books are installed, and whether those items are available in your command path.

The readers available are IBM BookManager and Electronic Book Technologies Dynatext on AIX, and Dynatext on selected other platforms.

The *ADSM Online Product Library* contains the online books and readers for the supported platforms. You or your administrator must install the books and readers separately from the product, as described in the information booklet included with the CD-ROM.

Because of the large amount of disk space required to hold the reader programs and ADSM publications, we recommend that the ADSM administrator install the readers and publications on a LAN server or other machine easily accessible to client users.

BOOKS

Attention

If you use the BOOKS option, be aware that when users select **View Books** from the GUI, ADSM starts the online book reader as a separate program.

Online book readers might use a large amount of system resources, because they display graphics and process large files. The reader might require more resource than is available on your machine, and if run at the same time as ADSM (or any other program), might freeze the workstation.

If your workstation freezes in this manner, do not use **View Books**. Instead, to read the online books, first stop ADSM and other programs that use large amounts of system resource, and then start the readers.

You do not have to use the BOOKS option in order to use the ADSM online library.

Also, ADSM does not stop the reader when the user stops ADSM.

Examples

Options file example: books bookmgr

or

books dtext

Command line example: Not applicable

CHANGINGRETRIES

CHANGINGRETRIES

Root User

Use the CHANGINGRETRIES option to specify how many additional times you want ADSM to attempt to back up or archive a file that is in use during the first attempt.

This option relates to copy serialization, which is an attribute in a management class copy group. ADSM uses this option only when copy serialization is shared static or shared dynamic.

With shared static, if a file is in use during the first backup or archive attempt, ADSM retries the operation the number of times specified with this option. If the file is in use during each attempt, the operation is not completed.

With shared dynamic, if a file is in use during the first backup or archive attempt, ADSM retries the operation the number of times specified with this option. The backup or archive occurs during the last attempt regardless of whether the file is currently in use.

Options File

This option goes in the client system options file.

Syntax

▶▶—Changingretries *numberretries*—————▶▶

Parameters

numberretries

The number of times ADSM retries a backup or archive operation if the file is in use during the first attempt.

The range of values is 0 to 4.

The default is 4.

Examples

Options file example: changingretries 3

Command line example: Not applicable

CHECKTHRESHOLDS

CHECKTHRESHOLDS

RootUser

Use the CHECKTHRESHOLDS option to specify how often the space monitor daemon checks space usage on your file systems. The space monitor daemon checks each file system to which you have added space management.

Options File

This option goes in the client system options file and is used only when the ADSM HSM client is installed on your workstation. It must be placed at the beginning of the client system options file before any server stanzas.

Syntax

▶—CHECKthresholds *interval*—————▶

Parameters

interval

The number of minutes that must elapse between each successive time the space monitor daemon checks space usage on your file systems.

The range of values is 1 to 9999.

The default is 5.

Examples

Options file example: checkthresholds 10

Command line example: Not applicable

COMMMETHOD

COMMMETHOD

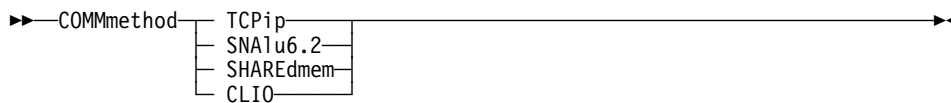
Root User

Use the COMMMETHOD option to specify the communication method you are using to provide connectivity for client-server communication.

Options File

This option goes in the client system options file.

Syntax



Parameters

TCPIP

The Transmission Control Protocol/Internet Protocol (TCP/IP) communication method.

SNA1u6.2

The Systems Network Architecture (SNA) logical unit 6.2 (LU6.2) communication method.

You can specify this communication method on AIX workstations only.

SHAREdmem

The Shared Memory communication method.

Note: On an AIX 4.1 server, you can establish a maximum of 10 concurrent shared memory communications sessions.

CLIO

Sets the communication method to Client Input-Output/Sockets (CLIO/S). Ensure the AIX TCPPort number matches the MVS server CLIOPort option number.

When specifying COMMMethod CLIO, the maximum limit for TCPBuffsize is 512. CLIO/S performance improves with a larger TCPBuffsize.

You can specify this communication method on AIX workstations only.

Examples

Options file example: COMM sna

Command line example: Not applicable

COMPRESSALWAYS

COMPRESSALWAYS

Use the COMPRESSALWAYS option to control what ADSM does when a file grows during compression. You can cause ADSM to either continue compressing or not to send the object if it grows during compression. This option has no effect unless the COMPRESSION option is set to Yes.

Options File

This option goes in the client user options file.

Syntax

►—COMPRESSAlways No Yes ◄

Parameters

No

Object is not sent if it grows during compression.

This is the default.

Yes

File compression continues even if the file grows as a result of compression.

Examples

Options file example: COMPRESSALWAYS Yes

Command line example: -COMPRESSA=No

COMPRESSION

COMPRESSION

Root User

Use the COMPRESSION option to specify whether ADSM should compress files before sending them to the ADSM server. Compressing your files decreases the amount of data storage required to store backup versions of files, archived copies of files, and migrated files (if you have the ADSM HSM client installed). However, it can affect ADSM throughput. Typically, a fast processor on a slow line benefits from compression, but a slow processor on a fast line does not.

This option controls compression only if your ADSM administrator specifies that the choice is determined by your client node.

ADSM does not compress a file if it determines that the compression process is increasing the size of the file. This might happen if a file has already been compressed by another program. These files are sent to the server without being compressed by ADSM.

Options File

This option goes in the client system options file.

Syntax

►►—COMPRESSION No Yes —►►

Parameters

No

Files are not compressed before being sent to the server. You can also specify No as OFF, False, or 0.

This is the default.

Yes

Files are compressed before being sent to the server. You can also specify Yes as ON, True, or 1.

Examples

Options file example: COMPRESSION Yes

Command line example: Not applicable

CPICBUFFERSIZE

CPICBUFFERSIZE

RootUser

Use the CPICBUFFERSIZE option to specify the size of the CPIC buffer for SNA LU6.2 communication. A larger buffer can improve communication performance, but uses more memory.

Options File

This option goes in the client system options file.

Syntax

▶—CPicbuffersize *size*—————▶

Parameters

size

The size of an SNA LU6.2 communication buffer, in kilobytes.

The range of values is 1 to 31.

The default is 31.

Examples

Options file example: CPICBUFFERSIZE 31

Command line example: Not applicable

CPICMODENAME

CPICMODENAME

Root User

Use the CPICMODENAME option to define the mode name for the SNA LU6.2 communication method. For CPIC, this option identifies the SNA connection to the gateway and target logical unit. The CPIC mode name is used if the symbolic destination is not provided and the partner LU is located on another system. The mode name must be known on both the local and remote systems.

If you use this option, you must also use the TPNAME and the PARTNERLUNAME options.

Options File

This option goes in the client system options file.

Syntax

▶▶—CPICMOdename *name*—————▶▶

Parameters

name

The mode name for SNA LU6.2 communication.

There is no default.

Examples

Options file example: cpicmodename vmmode

Command line example: Not applicable

DATEFORMAT

DATEFORMAT

Use the DATEFORMAT option to select the format you want ADSM to use for displaying dates.

For AIX and Solaris Users Only: The DATEFORMAT option is ignored. AIX and Solaris support a locale describing every user interface that varies with location or language. The default directories for system-supplied locales are /usr/lib/nls/loc in AIX and /usr/lib/localedef/src in Solaris. ADSM backup-archive and administrative clients obtain format information from the current locale definition in effect at the time the client is called. Consult the documentation on your local system for details on setting up your locale definition.

Options File

This option goes in the client user options file and is valid for all UNIX clients except AIX and Solaris.

Syntax

▶▶—DATEformat *number*—————▶▶

Parameters

number

One of the following date formats:

- 1 Displays the date in the default format: MM/DD/YYYY
- 2 Displays the date in this format: DD-MM-YYYY
- 3 Displays the date in this format: YYYY-MM-DD
- 4 Displays the date in this format: DD.MM.YYYY
- 5 Displays the date in this format: YYYY.MM.DD

For AIX and Solaris Users Only: To set a particular date format, edit your locale's source file and modify the `d_fmt` line to suit your needs. Whatever date format you choose applies both to output and to input. The lower-case `y` produces a 2-digit year, while an upper-case `Y` produces a 4-digit year. The character that separates the parts of the date can be anything.

“%m/%d/%y” Produces a date in the form mm/dd/yy.
“%m/%d/%Y” Produces a date in the form mm/dd/yyyy.
“%Y.%m.%d” Produces a date in the form yyyy.mm.dd.

Examples

Options file example: DATEFORM 3

Command line example: -DATE=4

DEFAULTSERVER

DEFAULTSERVER

Root User

Use the DEFAULTSERVER option to specify the server to which ADSM backs up and archives files from your local systems by default.

If you have the ADSM HSM client installed on your workstation, and you do not specify a migration server with the MIGRATESERVER option, this option also specifies the ADSM server to which ADSM migrates files from your local file systems.

Options File

This option goes in the client system options file. It must be placed at the beginning of the client system options file before any server stanzas.

Syntax

▶▶—DEFAULTServer *servername*—————▶▶

Parameters

servername

The name of the server to which ADSM backs up and archives files by default, and the server to which ADSM migrates files from your local file systems if a migration server is not specified with the MIGRATESERVER option.

Examples

Options file example: DEFAULT server_a

Command line example: Not applicable

DIRMC

DIRMC

RootUser

Use the DIRMC option to specify the management class you want ADSM to use for directories. If you do not use this option to associate a management class with directories, ADSM uses the management class in the active policy set of your policy domain that has the longest retention period.

When choosing a management class for directories, be sure to choose one that allows ADSM to retain directories at least as long as it retains the files associated with them.

Options File

This option goes in the client system options file.

Syntax

►—DIRMc *mgmtclassname*—————►

Parameters

mgmtclassname

The name of the management class you want to associate with directories. ADSM uses the management class you specify for all directories it backs up. If you do not use this option, the management class with the longest retention period is associated with directories.

Examples

Options file example: DIRM managdir

Command line example: Not applicable

DOTDIRCHECK

DOTDIRCHECK

Use the DOTDIRCHECK option to specify whether you want ADSM to check for “.” and “..” entries in a directory during an incremental backup.

Setting this option to Yes allows you to back up VM NFS-mounted minidisks that do not contain those entries.

Options File

This option goes in the client user options file.

Syntax

►► DOTDIRcheck Yes No

Parameters

Yes

ADSM checks for “.” and “..” entries in a directory during an incremental backup. If the entries do not exist, the backup fails.

This is the default.

No

ADSM does not check for “.” and “..” entries in a directory during an incremental backup.

Examples

Options file example: DOTDIRCHECK NO

Command line example: -DOTDIR=NO

DOMAIN

DOMAIN

Use the DOMAIN option to specify the file systems you want to include in your client domain for incremental backup. When you use this option in your client user options file, it defines your *default client domain*. ADSM uses your default client domain to determine which file systems to process during an incremental backup in these situations:

- You run an incremental backup using the INCREMENTAL command without specifying which file systems to process.
- Your ADSM administrator defines a schedule to run an incremental backup for you, but does not specify which file systems to process.

If you do not specify file systems with the DOMAIN option in your client user options file, the default is all locally mounted file systems except /tmp.

Note: You can include a virtual mount point in your client domain. For information about defining a virtual mount point, see “VIRTUALMOUNTPOINT” on page 174.

When you use this option with the INCREMENTAL command, it adds the file systems you specify to what is defined in your client user options file. For example, if you enter DOMAIN /u /usr /datasave in your client user options file and you enter dsmc incremental -domain="/fs1 /fs1" on the command line, ADSM performs an incremental backup for your /u, /usr, /datasave, /fs1, and /fs2 file systems.

If you use both the *filesystem* parameter and the DOMAIN option on the INCREMENTAL command, ADSM ignores the DOMAIN option and processes only those file systems in the *filesystem* parameter. For example, if you enter the following, ADSM performs an incremental backup only for the /usr and /data file systems.

```
dsmc incremental /usr /data -domain="/fs1 /fs2"
```

Options File

This option goes in the client user options file.

Syntax

►►-DOMain [ALL-LOCAL | domain]

Parameters

domain

In your client user options file, it is the file systems to include in your default client domain.

When used with the INCREMENTAL command, it is the file systems to process in addition to those specified in your default client domain.

The default value for this option is **ALL-LOCAL**, which specifies that all local file systems are to be backed up.

DOMAIN

Examples

Options file example: `domain /u /usr /tst /datasave /joe`

Command line example: `-domain="/fs1 /fs2"`

ERRORLOGRETENTION

ERRORLOGRETENTION

Use the ERRORLOGRETENTION option to specify:

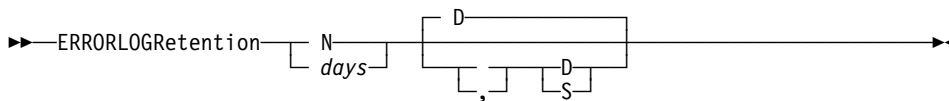
- The number of days to keep entries in the error log
- Whether to save the pruned entries

The error log is pruned when the first error is written to the log after an ADSM session is started. If the only ADSM session you run is the client scheduler, and you run it 24 hours a day, the error log might not be pruned according to your expectations. You must stop the client scheduler and restart it to allow ADSM to prune the error log when the next error is written.

Options File

This option goes in the client user options file.

Syntax



Parameters

N or *days*

How long to wait before pruning the error log.

N

Do not prune the error log. This allows the error log to grow indefinitely.

This is the default.

days

The number of days to keep log file entries before pruning the log.

The range of values is 0 to 9999.

D or S

Whether to save the pruned entries.

If you specify anything but D or S, ADSM uses the default D. You must use a space or comma to separate this parameter from the previous one.

D

Discard the log entries when pruning the log.

This is the default if you use ERRORLOGRETENTION.

S

Save the log entries when pruning the log.

ADSM copies the entries pruned from the error log to **dsmerlog.pru** which is stored in the same directory as the error log.

ERRORLOGRETENTION

Examples

Options file example: `ERRORLOGRETENTION 400 S`

Command line example: `-ERRORLOGRETENTION=400,S`

ERRORPROG

ERRORPROG

RootUser

Use the ERRORPROG option to specify a program to which you want ADSM to send a message if a severe error occurs during space management processing.

Options File

This option goes in the client system options file and is used only when the ADSM HSM client is installed on your workstation. It must be included in a server stanza.

Syntax

▶—ERRORPROG *program-name*—————▶

Parameters

program-name

The path and file name of the program to which you want ADSM to send a message if a severe error occurs during space management processing.

Examples

Options file example: errorprog /usr/bin/echo

Command line example: Not applicable

EXCLUDE

EXCLUDE

If you have the ADSM backup-archive client installed on your workstation, use the EXCLUDE option to exclude a file or group of files from ADSM backup services. When you back up files, any files you exclude with this option are not considered for backup.

For example, you might want to exclude all temporary files, any local caches of network files, all files that contain compiled object code that you can easily reproduce using other methods, and operating system files.

If you have the ADSM backup-archive client *and* the ADSM HSM client installed on your workstation, use the EXCLUDE option to exclude a file or group of files from *both* backup and space management services. Any files you exclude with this option are not considered for backup or for migration.

To exclude a file from backup only, use the EXCLUDE.BACKUP option. To exclude a file from space management only, use the EXCLUDE.SPACEMGMT option.

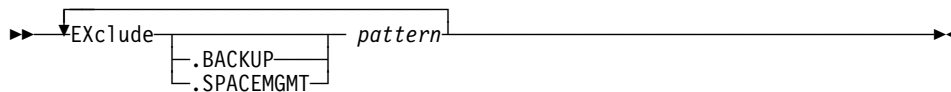
You can use wildcard characters to exclude a broad range of files. See “Including and Excluding Groups of Files” on page 83 for a list of wildcards you can use. Then, if necessary, you can use the INCLUDE option to make exceptions.

See “Creating an Include-Exclude Options File” on page 82 for more information. See also the list of files in “Excluding System Files” on page 82 that should always be excluded for each platform.

Options File

This option goes in the include-exclude options file.

Syntax



Parameters

.BACKUP

Excludes a file or group of files from backup services only. For example:

```
EXCLUDE.BACKUP /users/home1/file1
```

.SPACEMGMT

Excludes a file from space management services only. For example:

```
EXCLUDE.SPACEMGMT /users/home1/file1
```

pattern

The file or group of files that you want to exclude from backup services. The pattern must end with a file specification.

If the pattern contains a blank space, you must enclose it in quotation marks.

EXCLUDE

Examples

Options file example:

```
exclude      /unix
exclude      /.../core
exclude      /home/jones/proj1/*
include      /home/jones/proj1/devplan
exclude.backup /home/jones/proj1/devplan
include      /home/jones/proj1/status
exclude.spacegmt /home/jones/proj1/status
```

Command line example: Not applicable

FOLLOWSYMBOLIC

FOLLOWSYMBOLIC

Use the FOLLOWSYMBOLIC option to specify whether you want ADSM to:

- Restore files to symbolic directory links
- Allow a symbolic link to be used as a virtual mount point

Options File

This option goes in the client user options file.

Syntax

► FOLLOWSYMBOLIC No Yes

Parameters

NO

Specifies that you do not want ADSM to restore to symbolic directory links, or to allow symbolic links to be used as virtual mount points.

This is the default.

YES

Specifies that you want ADSM to be able to restore to symbolic directory links, and to allow a symbolic link to be used as a virtual mount point.

Examples

Options file example: followsymbolic YES

Command line example: -fo1=YES

GROUPS

GROUPS

RootUser

Use the GROUPS option to list the groups on your workstation that you want to authorize to request services from the ADSM server.

You can use the GROUPS option more than once to specify a large number of group names.

If you do not specify group names with the GROUPS option or user IDs with the USERS option, all users can request ADSM services. If you use the GROUPS option, the USERS option, or both, only users included in one of the specified groups or included in the list of users can request ADSM services.

A root user is always authorized to request services.

Options File

This option goes in the client system options file.

Syntax



Parameters

groupname

The name of a group you want to authorize to request ADSM services.

Examples

Options file example:

```
groups dsmcdev group1 test1 test2 design1
groups endicott almaden qadev qadev1 tools23
groups tools31 tools35 toolsdv toolsdv1
```

Command line example: Not applicable

INCLEXCL

Root User

Use the INCLEXCL option to specify the path and file name of your include-exclude options file if you choose to use one. You can use an include-exclude options file to exclude files from backup and to assign different management classes to specific files or groups of files.

If you have the ADSM HSM client installed on your workstation, you can use an include-exclude options file to exclude files from both backup and space management, exclude files from backup only, exclude files from space management only, and to assign different management classes to specific files or groups of files.

For detailed information about creating an include-exclude options file, see “Creating an Include-Exclude Options File” on page 82.

In a SunOS environment, if ADSM is accessed through a Heterogeneous File Server, be sure that your include-exclude options file is in a file system, such as **/usr/share**, that is accessible to all different types of clients.

In other UNIX environments, be sure that your include-exclude options file is in a directory, such as **/etc**, to which all users have read access.

Options File

This option goes in the client system options file.

Syntax

▶—Incl`excl` *filespec*—————▶

Parameters

filespec

The path and file name of your include-exclude options file.

Examples

Options file example:

```
inclexcl /usr/dsm/backup.excl
inclexcl /etc/inclexcl.def
```

Command line example: Not applicable

INCLUDE

INCLUDE

RootUser

Use the INCLUDE option to specify one of the following:

- A subset of a broad group of excluded files that you want to specifically include for backup services (and space management services if you have the ADSM HSM client installed). You can specify a file or a group of files.
- A file or group of files to which you want to assign a specific management class and the management class name.
- A management class to assign to all files to which you do not assign a specific management class.

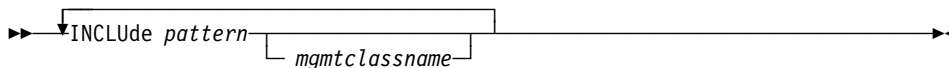
If you do not assign a specific management class to files, ADSM uses the default management class in the active policy set of your policy domain.

See “Creating an Include-Exclude Options File” on page 82 for more information.

Options File

This option goes in the include-exclude options file.

Syntax



Parameters

pattern

The specific files you want to include for services, or the file or group of files to which you want to assign a specific management class.

You must end this variable with a file specification.

If the pattern contains a blank, you must enclose it in quotation marks.

mgmtclassname

The name of the management class you want to assign to the files. If you do not specify a management class, ADSM uses the default management class.

Examples

Options file example:

Example 1

Explicitly include a subset of files that are excluded:

```
exclude /home/proj/text/*
include /home/proj/text/devel.*
```

INCLUDE

Example 2

Assign a management class to a group of files:

```
include /home/proj/text/* textfiles
```

Example 3

Specify a management class to assign to all files to which you have not assigned a specific management class:

```
include * managall
```

This must be the *first* statement in your include-exclude options file.

Use this method to assign a management class to all files to which you have not assigned a specific management class only when you do not want ADSM to use the default management class for those files.

Command line example: Not applicable

KERNELMESSAGES

KERNELMESSAGES

RootUser

Use the KERNELMESSAGES option to specify whether you want ADSM to display HSM-related messages issued by the kernel during processing.

Note: For transparent recall, if more than one process accesses the same migrated file at one time, the kernel issues a message for the first process that accesses the file only.

Options File

This option goes in the client system options file and is used only when the ADSM HSM client is installed on your workstation. It must be placed at the beginning of the client system options file before any server stanzas.

Syntax

►—KERNe1messages— Yes No —————►

Parameters

Yes

HSM-related messages issued by the kernel are displayed. You can also specify Yes as ON, True, or 1.

This is the default.

No

HSM-related messages issued by the kernel are *not* displayed. You can also specify No as OFF, False, or 0.

Examples

Options file example: KERNELMESSAGES NO

Command line example: Not applicable

LANGUAGE

LANGUAGE

Use the LANGUAGE option to specify the national language for presenting client messages.

Options File

This option goes in the client user options file and is valid for all UNIX clients except AIX.

Syntax

▶▶—LANGUAGE *language*—————▶▶

Parameters

language

The language you want to use. You can use American English (AMENG) with all clients. To use a different language, you must order the client in that language. Not all clients are available in all languages.

The languages available are:

| | |
|----------------|---|
| AMENG | American English. This is the default. |
| FRENCH | French. |
| GERMAN | German. |
| ITALIAN | Italian. |
| JAPAN | Japanese. |
| SPANISH | Spanish. |
| SWEDISH | Swedish. |

Examples

Option file example: LANGUAGE AMENG

Command line example: Not applicable

MAILPROG

MAILPROG

RootUser

Use the MAILPROG option to specify the program and user ID to which you want ADSM to send a newly-generated password when the old one expires.

Use this option only when you choose GENERATE for PASSWORDACCESS.

Options File

This option goes in the client system options file.

Syntax

▶—Mailprog *filespec userid*—————▶◀

Parameters

filespec

The path and file name of the program to which you want ADSM to send a newly-generated password. The program you specify must accept standard output.

userid

The user ID of the user to whom you want ADSM to send a newly-generated password. For OpenEdition MVS clients, the user ID must be in all uppercase letters (see example).

Examples

Option file example:

```
mailprog /usr/bin/xsend root (for AIX)
mailprog /bin/mailx USER1 (for OpenEdition MVS)
```

Note: You must run the ENROLL command before ADSM can use xsend.

Command line example: Not applicable

MAXCMDRETRIES

MAXCMDRETRIES

Root User

Use the MAXCMDRETRIES option to specify the maximum number of times you want the client scheduler on your workstation to attempt to process a scheduled command that fails.

ADSM uses this option only when the SCHEDULE command is running.

Your ADSM administrator can also set this option. If your ADSM administrator specifies a value for this option, that value overrides what you specify in your client system options file after your client node successfully contacts the ADSM server.

Options File

This option goes in the client system options file.

Syntax

▶▶—MAXCMDRetries *maxcmdretries*—————▶▶

Parameters

maxcmdretries

The number of times the client scheduler can attempt to process a scheduled command that fails.

The range of values is 0 to 9999.

The default value is 2.

Examples

Options file example: MAXCMDR 4

Command line example: Not applicable

MAXRECALLDAEMONS

MAXRECALLDAEMONS

RootUser

Use the MAXRECALLDAEMONS option to specify the maximum number of ADSM recall daemons you want to run at one time to perform recalls for your client node.

During your normal operations, if you notice that the number of recall daemons running at one time is often close to the maximum number allowed, increase the value specified for the MAXRECALLDAEMONS option. For example, if you use an application that opens multiple files at one time, and all of the files it opens are migrated, that application could use all available recall daemons. If ADSM is unable to start a recall daemon for another process that attempts to access a migrated file, that process will be unable to continue until a recall daemon is available.

Options File

This option goes in the client system options file and is used only when the ADSM HSM client is installed on your workstation. It must be placed at the beginning of the client system options file before any server stanzas.

Syntax

▶▶—MAXReconciledaemons *number*—————▶▶

Parameters

number

The maximum number of recall daemons you want to run at one time to perform recalls.

The range of values is 2 to 99.

The default is 20.

Examples

Options file example: maxrecalldaemons 5

Command line example: Not applicable

MAXRECONCILEPROC

MAXRECONCILEPROC

Root User

Use the MAXRECONCILEPROC option to specify the maximum number of reconciliation processes HSM can start automatically at one time.

Options File

This option goes in the client system options file and is used only when the ADSM HSM client is installed on your workstation. It must be placed at the beginning of the client system options file before any server stanzas.

Syntax

▶▶—MAXRECOncileproc *maxreconcileproc*—————▶▶

Parameters

maxreconcileproc

The maximum number of reconciliation processes that HSM can start at one time.

The range of values is 1 to 99.

The default is 3.

Examples

Options file example: maxreconcileproc 5

Command line example: Not applicable

MAXTHRESHOLDPROC

MAXTHRESHOLDPROC

RootUser

Use the MAXTHRESHOLDPROC option to specify the maximum number of threshold migration processes that HSM can start automatically at one time.

Note: When a file system runs out of space, HSM does not check to see whether the maximum number of threshold migration processes are already running. It starts threshold migration as part of the demand migration process regardless of the number of threshold migration processes that are currently in progress.

Options File

This option goes in the client system options file and is used only when the ADSM HSM client is installed on your workstation. It must be placed at the beginning of the client system options file before any server stanzas.

Syntax

▶—MAXThresholdproc *maxthresholdproc*—————▶

Parameters

maxthresholdproc

The maximum number of automatic threshold migration processes that HSM can start at one time.

The range of value is 1 to 99.

The default is 3.

Examples

Options file example: maxthresholdproc 5

Command line example: Not applicable

MIGFILEEXPIRATION

MIGFILEEXPIRATION

Root User

Use the MIGFILEEXPIRATION option to specify the number of days ADSM keeps copies of migrated or premigrated files on the ADSM server after they are modified on your local file system or deleted from your local file system.

Options File

This option goes in the client system options file and is used only when the ADSM HSM client is installed on your workstation. It must be placed at the beginning of the client system options file before any server stanzas.

Syntax

►►—MIGFILEEXPIRATION *days*—————►◄

Parameters

days

The number of days a copy of a migrated or premigrated file remains in ADSM storage after it is modified on your local file system or deleted from your local file system.

The range of values is 0 to 9999.

The default is 7.

Examples

Options file example: migfileexpiration 5

Command line example: Not applicable

MIGRATESERVER

MIGRATESERVER

RootUser

Use the MIGRATESERVER option to specify the name of the server to which you want ADSM to migrate files from your client node. You can specify only one migration server for each client node, and users *cannot* override the server you specify for migration in a client user options file or when issuing a command.

If you do not specify a server with the MIGRATESERVER option, ADSM migrates your files to the server specified with the DEFAULTSERVER option. If you do not specify a server with the MIGRATESERVER option or the DEFAULTSERVER option, ADSM migrates your files to the server identified in the first stanza of your client system options file by default.

After ADSM begins migrating files to the server you specify with this option or to the default server, do not make any changes to your client system options file that cause ADSM to contact a different server for migration unless your ADSM administrator exports your migrated files from the currently specified server and imports them to another. Otherwise, ADSM will be unable to locate your migrated files until you modify options to specify the server to which your files were originally migrated.

Options File

This option goes in the client system options file and is used only when the ADSM HSM client is installed on your workstation. It must be placed at the beginning of the client system options file before any server stanzas.

Syntax

▶▶—MIGRateserver *servername*—————▶▶

Parameters

servername

The name of the server to which you want to migrate files for your client node.

Your client system options file must contain a stanza, beginning with the SERVERNAME option, that contains at least the required communication options for the server you specify with the MIGRATESERVER option.

MIGRATESERVER

Examples

Options file example:

```
MIGRATEServer server_b

SErvername server_a
  COMMmethod TCPip
  TCPPort 1500
  TCPServeraddress almvmd.almaden.ibm.com
  Incl excl /adm/adsm/excl.list

SErvername server_b
  COMMmethod SNA1u6.2
  PARTnerluname raptor
  TPname appcdel
  CPICMODename appc
  Passwordaccess generate
  Incl excl /adm/adsm/migexl.list
```

Command line example: Not applicable

MINRECALLDAEMONS

MINRECALLDAEMONS

RootUser

Use the MINRECALLDAEMONS option to specify the minimum number of ADSM recall daemons you want to run at one time to perform recalls for your client node.

Options File

This option goes in the client system options file and is used only when the ADSM HSM client is installed on your workstation. It must be placed at the beginning of the client system options file before any server stanzas.

Syntax

▶—MINRecalldaemons *number*—————▶

Parameters

number

The minimum number of recall daemons you want to run at one time to perform recalls.

The range of values is 1 to 99.

The default is 3.

Examples

Options file example: minrecalldaemons 5

Command line example: Not applicable

NODENAME

NODENAME

The NODENAME option has two different purposes, depending on whether you set it as a client system option or as a client user option.

In your client system options file (**dsm.sys**), use the NODENAME option to assign a new name to your client node if you do not want to use the default. The default is the name returned by the **hostname** command.

In your client user options file (**dsm.opt**) or in a command, use the NODENAME option *only* when you want to request services for a different client node than the one on which you are working (the one specified in your client system options file). When you use the NODENAME option in your client user options file or with a command:

- The node name you specify must be different from the name returned by the **hostname** command on your workstation.
- ADSM prompts you for the ADSM password assigned to the node you specify if a password is required. If you enter the correct password, you become a virtual root user and have access to all backups and archives that originated from the specified node.

Options File

This option can be used in the client system options file to assign a name to your client node, or in the client user options file to specify the name of a different client node.

Syntax

►► NODename *nodename* ◄◄

Parameters

nodename

In your client system options file, a 1 to 64 character name that identifies your client node to an ADSM server.

In your client user options file or on the command line, a 1 to 64 character name to identify the node for which you want to request ADSM services.

Note: If the node name you specify in your client user options file or on the command line is different than the name returned by the **hostname** command on your workstation, ADSM assumes you are specifying a different client node (even if the node name you specify is the same as the node name specified in your client system options file). Do not specify the NODENAME option in your client user options file or with a command unless you want to request services for a client node other than the one on which you are currently working.

Examples

Option file example: NODENAME cougar

NODENAME

Command line example: -NOD=banshee

NUMBERFORMAT

NUMBERFORMAT

Use the NUMBERFORMAT option to specify the format you want ADSM to use for displaying numbers.

For AIX and Solaris Users Only: The NUMBERFORMAT option is ignored. AIX and Solaris support a locale describing every user interface that varies with location or language. The default directories for system-supplied locales are /usr/lib/nls/loc in AIX and /usr/lib/localedef/src in Solaris. ADSM backup-archive and administrative clients obtain format information from the current locale definition in effect at the time the client is called. Consult the documentation on your local system for details on setting up your locale definition.

Options File

This option goes in the client user options file and is valid for all UNIX clients except AIX and Solaris.

Syntax

▶▶—NUMBERformat *number*—————▶▶

Parameters

number

One of the following number formats:

- 1 Displays numbers in the default format: 1,000.00
- 2 Displays numbers in this format: 1,000,00
- 3 Displays numbers in this format: 1 000,00
- 4 Displays numbers in this format: 1 000.00
- 5 Displays numbers in this format: 1.000,00
- 6 Displays numbers in this format: 1'000,00

For AIX and Solaris Users Only: To define number formats, modify the following lines in your locale's source file to suit your needs. Whatever format you choose applies both to output and to input.

- | | |
|----------------------|--|
| decimal_point | Specifies the character that separated the whole number from its fractional part. |
| thousands_sep | The character that separates the hundreds from the thousands from the millions. |
| grouping | The number of digits in each group that is separated by the thousands_sep character. |

Examples

Options file example: num 4

Command line example: -numberformat=4

OPTIONFORMAT

OPTIONFORMAT

Use the OPTIONFORMAT option to specify the format users must use when issuing ADSM HSM client commands.

Options File

This option goes in the client user options file and is used only when the ADSM HSM client is installed on your workstation.

Syntax

►—OPTIONFormat — [SStandard]
 [SShort]

Parameters

*S*Standard

Allows you to enter ADSM HSM client commands in a format similar to ADSM backup-archive client commands, as shown in these examples:

```
dsmmigrate -Recursive -Detail /home/user1/file1  
dsmmigrate -r -d /home/user1/file1
```

*S*hort

Allows you to enter ADSM HSM client commands in a format similar to your operating system commands, as shown in these examples:

```
dsmmigrate -Rv /home/user1/file1  
dsmmigrate -v -R /home/user1/file1
```

Refer to *Using the UNIX HSM Clients* for details regarding these two command formats.

Examples

Options file example: optionformat short

Command line example: Not applicable

PARTNERLUNAME

PARTNERLUNAME

Root User

Use the PARTNERLUNAME option to specify a logical unit name used by the transaction program to identify the ADSM server in the SNA network.

The partner logical unit name is used if the symbolic destination name is not provided for SNA LU6.2 communications.

If you use this option, you must also define the CPICMODENAME and TPNAME options.

Options File

This option goes in the client system options file.

Syntax

▶▶—PARTnerluname *logical_unit_name*—————▶▶

Parameters

logical_unit_name

A 1 to 64 character LU name used to identify the remote target in a SNA network. Contact your system administrator for this name.

There is no default.

Examples

Options file example: partnerlu ALMVMA

Command line example: Not applicable

PASSWORDACCESS

PASSWORDACCESS

RootUser

Use the PASSWORDACCESS option to specify how you want to handle the ADSM password for your client node if one is required.

An ADSM password is required for your client node only when your ADSM administrator enables the authentication feature. Check with your administrator to verify whether you need a password.

If a password is required, you can choose to:

- Set the password for your client node yourself and have ADSM prompt users for it each time they request services.

In this case, each user must know the ADSM password for your client node. Any user who knows the ADSM password for your client node can gain access to *all* backups and archives that originate from your client node.

- Let ADSM automatically generate a new password for your client node each time it expires, encrypt and store the password in a file, and retrieve the password from that file when users request services. Users are not prompted for the password.

In this case, users do not need to know the ADSM password for your client node. Any user who does not know the ADSM password for your client node can access *only* the backups and archives the user owns and those to which the user has been granted access by other users.

Note: If you have the ADSM HSM client installed on your workstation, the PASSWORDACCESS option must be set to GENERATE.

Syntax

► PASSWORDAccess [Prompt | Generate] ◄

Parameters

Prompt

ADSM prompts users for the ADSM password you set for your client node each time they request services from the server. This is the default.

When users request ADSM services while working on your client node, they can access only the backups and archives they own and those to which other users have granted them access if a node name is not specified in the **dsm.opt** file, and the user does not specify a node name with a command.

Attention: If you set PASSWORDACCESS to PROMPT, be aware of the following:

- A user who knows the ADSM password for your client node can become a virtual root user and can access all backups and archives originating from your client node.

PASSWORDACCESS

For example, if the user enters the node name and password for your client node from a different client node, the user becomes a virtual root user.

Or, if you change the name of your client node (using the NODENAME option in the **dsm.sys** file), and the same node name is specified in the **dsm.opt** file, a user who enters the correct password becomes a virtual root user. The same is true if a user specifies the same node name by using the NODENAME option with a command and enters the correct password.

- To keep the password for your client node secure, users should enter ADSM commands without the password, and wait for ADSM to prompt them for it. That method provides better security in two ways. When a user types a password after being prompted for it:
 - ADSM does not display the characters on the screen for anyone else to see.
 - The user eliminates the possibility that the password will be displayed if another user subsequently issues a UNIX ps command to see a list of processes currently running in the system. On some UNIX clients, if a user enters a password with an ADSM command, a subsequent UNIX ps command may also display the password with the command.

For API applications, ADSM does not prompt for a password directly. If PASSWORDACCESS is set to PROMPT, the password must be supplied when a session is initiated. The application is responsible for obtaining the ADSM password.

Generate

ADSM automatically generates a new password for your client node each time the password expires, places the encrypted password in a locally stored file, and retrieves the password from that file when users request services.

ADSM does not prompt users for a password when they request services. However, as a root user, you are prompted for a password if:

- You register your client node with an ADSM server using open registration
- Your ADSM administrator manually changes your password

When you set the PASSWORDACCESS option to GENERATE, you can use the MAILPROG option to specify a program and user ID to which you want ADSM to send the new password each time the old one expires.

Attention: When PASSWORDACCESS is set to GENERATE, be aware of the following:

- If a user enters the ADSM password for your client node, the user becomes a virtual root user and can access all backups and archives that originated from your client node.

If you want users to be able to access *only* the backups and archives they own and those to which they have been granted access by other users, set PASSWORDACCESS to GENERATE and do *not* give the ADSM password for your client node to users.

PASSWORDACCESS

- If you change the name of your client node (using the NODENAME option in the **dsm.sys** file), and the same node name is specified in the **dsm.opt** file, ADSM prompts users for the ADSM password for your client node. If a user enters the correct password, the user becomes a virtual root user. The same is true if a user specifies the same node name by using the NODENAME option with a command.

Examples

Options file example: passwordaccess generate

Command line example: Not applicable

POSTSCHEDULECMD

POSTSCHEDULECMD

Root User

Use the POSTSCHEDULECMD option to specify a command that ADSM should process after running a schedule.

If you want ADSM to wait for the command to complete before continuing with other processing, specify POSTschedulecmd. If you do not want it to wait, specify POSTNschedulecmd.

Options File

This option goes in the client system options file.

Syntax

► POSTschedulecmd "cmdstring" ►
POSTNschedulecmd

Parameters

"cmdstring"

The command to process.

You can use only one POSTSCHEDULECMD option. You can also issue a command before a schedule using the PRESCHEDULECMD option.

Use a blank or null string for *cmdstring* if you want to prevent any commands that the ADSM administrator uses for POSTSCHEDULECMD and PRESCHEDULECMD from running. If you specify a blank or null string on *either* option, it prevents the administrator from using a command on *both* options.

However, if your administrator uses a blank or a null string on the POSTSCHEDULECMD option, that prevents you from running a post-schedule command.

If the command string contains blanks, you must enclose it in double quotes. If you have double quotes within the command string, use single quotes to enclose them.

Examples

Options file example: postschedulecmd "restart database"

where the command string is a valid command for restarting your database.

Command line example: Not applicable

PRESCHEDULECMD

PRESCHEDULECMD

Root User

Use the PRESCHEDULECMD option to specify a command that ADSM should process before running a schedule.

If you want ADSM to wait for the command to complete before continuing with other processing, specify PREschedulecmd. If you do not want it to wait, specify PRENSchedulecmd.

Options File

This option goes in the client system options file.

Syntax

► — PREschedulecmd — "cmdstring" —►
 └─ PRENSchedulecmd ─┘

Parameters

"cmdstring"

The command to process.

You can use only one PRESCHEDULECMD option. You can also issue a command after a schedule using the POSTSCHEDULECMD option.

Use a blank or null string for *cmdstring* if you want to prevent any commands that the ADSM administrator uses for POSTSCHEDULECMD and PRESCHEDULECMD from running. If you specify a blank or null string on *either* option, it prevents the administrator from using a command on *both* options.

However, if your administrator uses a blank or a null string on the PRESCHEDULECMD option, that prevents you from running a pre-schedule command.

If the command string contains blanks, you must enclose it in double quotes. If you have double quotes within the command string, use single quotes to enclose them.

Examples

Options file example: preschedulecmd "quiesce database"

where the command string is a valid command for quiescing your database.

Command line example: Not applicable

QUERYSCHEDPERIOD

QUERYSCHEDPERIOD

Root User

Use the QUERYSCHEDPERIOD option to specify the number of hours you want the client scheduler to wait between attempts to contact the ADSM server for scheduled work.

This option applies only when the SCHEDMODE option is set to POLLING. ADSM uses this option only when the SCHEDULE command is running.

Your ADSM administrator can also set this option. If your ADSM administrator specifies a value for this option, that value overrides what you specify in the client system options file after your client node successfully contacts the ADSM server.

Options File

This option goes in the client system options file.

Syntax

►►—QUERYSCHedperiod *hours*—————►►

Parameters

hours

The number of hours the client scheduler waits between attempts to contact the ADSM server for scheduled work.

The range of values is 1 to 9999.

The default is 12.

Examples

Options file example: QUERYSCH 6

Command line example: Not applicable

QUIET

QUIET

Use the QUIET option to keep messages from being displayed on your screen during ADSM processing.

For example, when you run the INCREMENTAL or SELECTIVE command, ADSM displays information about each file it backs up. You can use the QUIET option if you do not wish to view that information.

When you use the QUIET option, certain error information still appears on your screen, and messages are written to log files.

If you do not specify QUIET, ADSM uses the VERBOSE option by default.

Options File

This option goes in the client user options file.

Syntax

▶—Quiet—▶

Examples

Options file example: quiet

Command line example: -q

RECONCILEINTERVAL

RECONCILEINTERVAL

Root User

Use the RECONCILEINTERVAL option to specify how often ADSM automatically reconciles your file systems. ADSM reconciles each file system for which space management is active.

The reconciliation process synchronizes the client and server and builds a new migration candidates list for each file system.

Options File

This option goes in the client system options file and is used only when the ADSM HSM client is installed on your workstation. It must be placed at the beginning of the client system options file before any server stanzas.

Syntax

►►—RECOncileinterval *interval*—————▶▶

Parameters

interval

The number of hours that must elapse between each successive time ADSM automatically reconciles the file systems on your workstation.

If you specify a value of 0, ADSM does *not* automatically reconcile your file systems.

The range of values is 0 to 9999.

The default is 24.

Examples

Options file example: reconcileinterval 12

Command line example: Not applicable

REPLACE

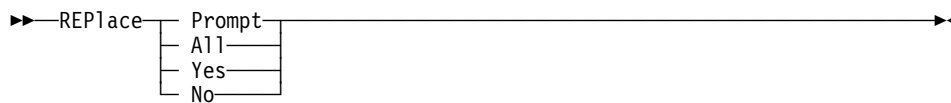
REPLACE

Use the REPLACE option to specify what you want ADSM to do when restoring files that already exist on your workstation. This applies only to the RESTORE and RETRIEVE commands.

Options File

This option goes in the client user options file.

Syntax



Parameters

Prompt

ADSM prompts you for your choice for overwriting a file when it encounters an existing file during a restore or retrieve process. If the existing file is a read-only file, you cannot overwrite it.

This is the default.

All

ADSM overwrites any existing files, including read-only files.

Yes

ADSM overwrites any existing files, except read-only files. You can also specify Yes as True, 1, or ON.

No

ADSM does not overwrite any existing files. You can also specify No as False, 0, or OFF.

Examples

Options file example: `replace all`

Command line example: `-replace=off`

RESTOREMIGSTATE

RESTOREMIGSTATE

Use the RESTOREMIGSTATE option to specify whether you want ADSM to restore stub files for migrated and premigrated files (placing them in a migrated state) or restore backup versions of migrated and premigrated files (placing them in a resident state) during a restore operation.

ADSM can restore a stub file for a migrated or premigrated file only when:

- The ADSM HSM client is installed and active
- The file exists in the migration storage pool
- The file is backed up and migrated to the same server

When a stub file for a migrated file or the original copy of a premigrated file is erased from a local file system, ADSM marks the migrated file for expiration the next time reconciliation is run. When the number of days specified with the MIGFILEEXPIRATION option elapse, ADSM removes the migrated file from ADSM storage.

If you set RESTOREMIGSTATE to Yes (the default), and if the migrated or premigrated file has not expired, ADSM restores the file to a stub file, regardless of whether it has been marked for expiration.

Attention

The RESTOREMIGSTATE option does not support hardlinked files. If you attempt to restore a stub file for a hardlinked file, a stub file is not restored unless all of the files that are hardlinked together have been deleted from the local file system.

When one file in a set of hardlinked files is migrated, all of the hardlinked files in the set become stub files. When you issue the RESTORE command with the RESTOREMIGSTATE option, and ADSM restores a stub file for a hardlinked file, the stub file has the same name as the file that was originally migrated. Stub files are not restored for any other files that were previously in the hardlinked set of files.

Options File

This option goes in the client user options file and is used only when the ADSM HSM client is installed on your workstation.

Syntax

►► RESToremigstate Yes No ◄◄

Parameters

Yes

ADSM restores migrated and premigrated files to stub files on the local file system during a restore operation. The files remain migrated.

RESTOREMIGSTATE

This is the default.

Note: A stub file created during a restore operation contains the information necessary to recall the migrated file from ADSM storage. It does not contain any leading bytes of data from the file. In addition, any recall mode previously set for the migrated file (for example, migrate-on-close or read-without-recall) is not stored in the stub file. The recall mode is set to normal for all files restored to stub files.

No

ADSM restores backup versions of migrated files to the local file system during a restore operation. The files become resident.

Examples

Options file example: RESTOREMIGSTATE YES

Command line example: -restoremigstate=no

RETRYPERIOD

RETRYPERIOD

Root User

Use the RETRYPERIOD option to specify the number of minutes you want the client scheduler to wait between attempts to process a scheduled command that fails or between unsuccessful attempts to report results to the server.

ADSM uses this option only when the SCHEDULE command is running.

Your ADSM administrator can also set this option. If your ADSM administrator specifies a value for this option, that value overrides what you specify in the client system options file after your client node successfully contacts the ADSM server.

Options File

This option goes in the client system options file.

Syntax

▶▶—RETRYPeriod *minutes*—————▶▶

Parameters

minutes

The number of minutes the client scheduler waits between attempts to contact the ADSM server or attempts to process a scheduled command that fails.

The range of values is 1 to 9999.

The default is 20.

Examples

Options file example: RETRYP 10

Command line example: Not applicable

SCHEDLOGNAME

SCHEDLOGNAME

RootUser

Use the SCHEDLOGNAME option to specify the name and location of a file where you want ADSM to store the schedule log.

When you run the SCHEDULE command, output from scheduled commands appears on your screen. It is also directed to the file you specify with this option.

ADSM uses this option only when the SCHEDULE command is running.

Options File

This option goes in the client system options file.

Syntax

►—SCHEDLOGname *filespec*—————►

Parameters

filespec

The path and file name where you want ADSM to store schedule log information when processing scheduled work. If you specify only a file name, ADSM stores the file in your current directory.

The default is the current directory with a file name of **dsmsched.log**.

Examples

Options file example: schedlogname /u/mydir/schedlog.jan

Command line example: Not applicable

SCHEDLOGRETENTION

SCHEDLOGRETENTION

Root User

Use the SCHEDLOGRETENTION option to specify:

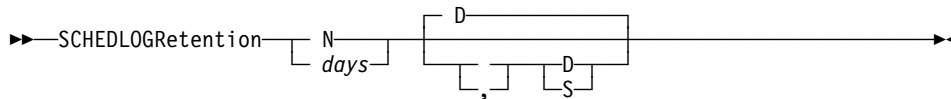
- The number of days to keep entries in the schedule log
- Whether to save the pruned entries

The schedule log is pruned after a scheduled event completes.

Options File

This option goes in the client system options file.

Syntax



Parameters

N or *days*

How long to wait before pruning the schedule log.

N

Do not prune the log. This allows the log to grow indefinitely.

This is the default.

days

The number of days to keep log file entries before pruning the log.

The range of values is 0 to 9999.

D or **S**

Whether to save the pruned entries.

If you specify anything but D or S, ADSM uses the default D. You must use a space or comma to separate this parameter from the previous one.

D

Discard the log entries when pruning the log.

This is the default if you use SCHEDLOGRETENTION.

S

Save the log entries when pruning the log.

ADSM copies the entries pruned from the log to **dsmsched.pru**, which is stored in the same directory as the schedule log.

SCHEDLOGRETENTION

Examples

Options file example: SCHEDLOGRETENTION 30 S
Command line example: -SCHEDLOGRETENTION=30,S

SCHEDMODE

SCHEDMODE

Root User

This option only applies if you are using the TCP/IP communication method and the SCHEDULE command is running.

Use the SCHEDMODE option to specify which ADSM schedule mode to use. The schedule mode determines whether your client node periodically asks the ADSM server for scheduled work (POLLING), or whether the ADSM server contacts your client node when it is time to start a scheduled operation (PROMPTED).

All communication methods can use POLLING, but only TCP/IP can use prompted.

Your ADSM administrator can specify that either mode is supported by the ADSM server, or only one mode is supported. If your ADSM administrator specifies either, you can choose the schedule mode. If your ADSM administrator specifies only one mode, you must specify that same mode in your client system options file. Otherwise, scheduled work is not processed.

If the scheduling mode is PROMPTED, you can supply values for the TCPCLIENTADDRESS and TCPCLIENTPORT on the SCHEDULE command. This allows you to be contacted at an address or port other than the one that made initial contact with the server.

Options File

This option goes in the client system options file.

Syntax

► SCHEDMODE { POLLING | PROMPTED } ►

Parameters

POLLING

The client scheduler should query the ADSM server for scheduled work at prescribed time intervals set with the QUERYSCHEDPERIOD option.

This is the default.

PROMPTED

The client scheduler should wait for the ADSM server to contact your client node when scheduled work needs to be done.

Examples

Options file example: SCHEDMODE PROMPTED

Command line example: Not applicable

SCROLLINES

SCROLLINES

Use the SCROLLINES option to specify the number of lines you want to appear at one time when ADSM displays lists of information on your screen.

ADSM uses this option only when you set the SCROLLPROMPT option to Yes, and you are using ADSM backup-archive client commands.

Options File

This option goes in the client user options file.

Syntax

►—SCROLLLines *number*—————►

Parameters

number

The number of lines you want ADSM to display at one time when displaying lists of information on your screen.

The range of values is 1 to 80.

The default is 20.

Examples

Options file example: SCROLLINES 25

Command line example: -SCROLL=25

SCROLLPROMPT

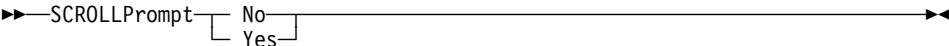
SCROLLPROMPT

Use the SCROLLPROMPT option to specify whether you want ADSM to stop and wait after displaying the number of lines you specify with the SCROLLLLINES option, or scroll through all lines and stop at the end of the list.

Options File

This option goes in the client user options file.

Syntax



Parameters

No

ADSM scrolls to the end of the list and stops. You can also specify No as OFF, False, or 0.

This is the default.

Yes

ADSM stops and waits after displaying the number of lines indicated with the SCROLLLLINES option. ADSM displays the following prompt at the bottom of the screen:

Press 'Q' to quit, 'C' to continuous scroll, or 'Enter' to continue.

You can also specify Yes as On, True, or 1.

Examples

Options file example: SCROLLPRO Yes

Command line example: -SCROLLP=Yes

SERVERNAME

SERVERNAME

In your client system options file, use the SERVERNAME option to specify the name you want to use to identify an ADSM server and to begin a stanza containing options for that server. You can name and specify options for more than one server.

The following is an example of specifying options for two different servers:

```
SErvername      server_a
  COMMmethod     TCPip
  TCPport        1500
  TCPserveraddress almvmd.almaden.ibm.com
  Passwordaccess prompt
  Groups         adsm
  Users          sullivan mushock tallan
  Incl excl      /adm/adsm/backup.excl

SErvername      server_b
  COMMmethod     SNA1u6.2
  PARTnerluname  raptor
  TPname         appcde1
  CPICMODename  appc
  Passwordaccess generate
  Mailprog       /usr/bin/xsend root
  Groups         system adsm
  Incl excl      /adm/adsm/archive.excl
```

In a client user options file or on the command line, use the SERVERNAME option to specify which server to contact for backup-archive services.

When specified in a client user options file or on the command line, the SERVERNAME option overrides the default server specified in your client system options file.

Note: You cannot use the SERVERNAME option to override the server specified for migration in your client system options file.

Options File

This option goes in both the client system options file and the client user options file.

Syntax

►—SErvername *servername*—————►

Parameters

servername

In your client system options file, the name you want to assign to a particular ADSM server.

In your client user options file or on the command line, the name of the server you want to contact for backup-archive services.

A server name can be up to 64 characters long and is not case sensitive.

SERVERNAME

Examples

Options file example: `servername server_a`

Command line example: `-se=server_b`

SHMPORT

SHMPORT

Use the SHMPORT option to specify the TCP/IP port address that the server is listening on to establish a shared memory connection. Shared memory communication is supported between AIX clients and servers on the same workstation. To use shared memory, TCP/IP must be installed on the workstation.

Note: The value specified for SHMPORT in the client system options file (**dsm.sys**) must match the value specified for SHMPORT in the server options file (**dsm serv.opt**).

Options File

This option goes in the client system options file and is valid for AIX only.

Syntax

▶▶—SHMPort *port_address*—————▶▶

Parameters

port_address

The TCP/IP address that the server is listening on to establish a shared memory connection.

The range of values is 1000 to 32767.

The default is 1510.

Examples

Options file example: shmpport 1520

Command line example: Not applicable

SLOWINCREMENTAL

SLOWINCREMENTAL

Use the SLOWINCREMENTAL option to specify a slower algorithm for processing incremental backups. With the SLOWINCREMENTAL option, ADSM backs up one directory at a time, and so uses less memory. However, the backup operation takes longer to complete.

Use this option with the INCREMENTAL command when your machine is running low on memory.

Options File

This option goes in the client user options file.

Syntax

►► Slowincremental No Yes ◄◄

Parameters

No

Your client node uses the fastest, memory-intensive method when processing incremental backups. You can also specify No as OFF, False, or 0.

This is the default.

Yes

Your client node uses the method that uses less memory when processing incremental backups. You can also specify Yes as ON, True, or 1.

Examples

Options file example: slowincremental yes

Command line example: -sl=no

SUBDIR

SUBDIR

Use the SUBDIR option to specify whether you want ADSM to include subdirectories of specified directories on the following commands:

ARCHIVE
DELETE ARCHIVE
QUERY ARCHIVE
QUERY BACKUP
RESTORE
RETRIEVE
SELECTIVE

Options File

This option goes in the client user options file.

Syntax

►► SUBdir No Yes ◄◄

Parameters

No

ADSM does not process subdirectories. You can also specify No as OFF, False, or 0.

This is the default.

Yes

ADSM processes subdirectories. You can also specify Yes as ON, True, or 1.

Because ADSM searches all the subdirectories of a directory being processed, it can take longer for ADSM to complete the requested task than if SUBDIR were **No**. Therefore, you should use **Yes** only when necessary.

If a subdirectory is a mounted file system, it is not processed even if SUBDIR is **Yes**.

Examples

Options file example: SUBDIR Yes

Command line example: -SU=Yes

SYMBOLICDESTINATION

SYMBOLICDESTINATION

Root User

Use the SYMBOLICDESTINATION option to specify a symbolic ADSM server name. Contact your ADSM administrator to get the correct name. The symbolic destination name indexes SNA routing and security parameters that are stored in communication directory files.

When a symbolic destination is used with the COMMMETHOD option for SNA LU6.2 communication, you do not have to specify the TPNAME, PARTNERLUNAME, or CPICMODENAME options.

This option is required if your communication protocol is SNA LU6.2 and a transaction program name or partner logical unit name is not provided.

Options File

This option goes in the client system options file.

Syntax

►►—SYMBOLICDESTINATION *sym_dest_name*—————►►

Parameters

sym_dest_name

A 1 to 8 character symbolic destination name for the ADSM server. Contact your ADSM administrator to get this name.

There is no default.

Examples

Options file example: symbolicdestination adsm

Command line example: Not applicable

TAPEPROMPT

TAPEPROMPT

Use the TAPEPROMPT option to specify whether you want ADSM to wait for a tape to be mounted if required for a backup, archive, restore, or retrieve process, or prompt you for your choice.

Note: Tape prompting does not occur during a scheduled operation regardless of the setting for the TAPEPROMPT option.

Options File

This option goes in the client user options file.

Syntax

▶—TAPEPrompt No Yes ▶

Parameters

No

ADSM does not prompt you for your choice. It waits for the appropriate tape to be mounted. You can also specify No as OFF, False, or 0.

This is the default.

Yes

ADSM prompts you when a tape is required when you issue a command that backs up, archives, restores, or retrieves data. At the prompt, you can choose whether to wait for the appropriate tape to be mounted. If you choose not to wait, the file is not processed. You can also specify Yes as ON, True, or 1.

Examples

Options file example: TAPEPROMPT NO

Command line example: -TAPEP=NO

TCPBUFFSIZE

TCPBUFFSIZE

Root User

Use the TCPBUFFSIZE option to specify the size you want to use for the ADSM internal TCP/IP communication buffer.

A larger buffer can improve communication performance, but uses more memory.

Options File

This option goes in the client system options file.

Syntax

▶—TCPBuffsize *size*—————▶

Parameters

size

The size you want to use, in kilobytes, for the ADSM internal TCP/IP communication buffer.

The range of values is 1 to 32.

The default is 31.

For AIX users only: When specifying COMMMethod CLIO, the maximum size is 512. CLIO/S performance improves with a larger TCPBuffsize.

Examples

Options file example: tcpb 2

Command line example: Not applicable

TCPCLIENTADDRESS

TCPCLIENTADDRESS

RootUser

Use the TCPCLIENTADDRESS option to specify a TCP/IP address if your client node has more than one address, and you want the server to contact a different address than the one used to make initial contact with the server.

You can use this option only if you are using PROMPTED for SCHEDMODE.

ADSM uses this option only when the SCHEDULE command is running.

Options File

This option goes in the client system options file.

Syntax

▶▶TCPCLIENTAddress *client_address*—————▶▶

Parameters

client_address

The TCP/IP address you want the ADSM server to use to contact your client node.

The value you specify for this parameter can be a TCP/IP Internet domain name or a dot address.

Examples

Options file example: tcpclienta dsmc1nt.sanjose.ibm.com

Command line example: Not applicable

TCPCLIENTPORT

TCPCLIENTPORT

Root User

Use the TCPCLIENTPORT option to specify a TCP/IP port number if you want the ADSM server to contact a different port than the one used to make initial contact with the server.

You can use this option only if you are using PROMPTED for SCHEDMODE.

ADSM uses this option only when the SCHEDULE command is running.

If the default or specified port is busy, ADSM attempts to use any other available port.

Options File

This option goes in the client system options file.

Syntax

▶—TCPCLIENTPort *client_port_address*—————▶

Parameters

client_port_address

The TCP/IP port address you want the ADSM server to use to contact your client node.

The range of values is 1000 to 32767.

The default is 1501.

Examples

Options file example: tcpclientp 1502

Command line example: Not applicable

TCPNODELAY

TCPNODELAY

RootUser

Use the TCPNODELAY option to have an ADSM transaction sent immediately to the server, rather than having small transactions buffered before sending. A *small* transaction is one that is smaller than the byte limit set with the TXNBYTELIMIT option. TCPNODELAY might improve performance in higher-speed networks, especially within an IBM SP2 computer.

You can only use this option with an AIX client. All other clients buffer small transactions before sending them to the server.

Options File

This option goes in the client system options file.

Syntax

► TCPNodeLay [NO | YES]

Parameters

NO

Do not send small transactions without buffering them first.

This is the default.

YES

Send small transactions without first buffering them.

Examples

Options file example: tcpnodeLay yes

Command line example: Not applicable

TCPPOINT

TCPPOINT

Root User

Use the TCPPOINT option to specify a server's TCP/IP port address.

Obtain this port address from your ADSM administrator.

Options File

This option goes in the client system options file.

Syntax

▶—TCPPOINT *port_address*—————▶

Parameters

port_address

The TCP/IP port address used to communicate with an ADSM server.

The range of values is 1000 to 32767.

The default is 1500.

Examples

Options file example: `tcp 1501`

Command line example: Not applicable

TCPSERVERADDRESS

TCPSERVERADDRESS

RootUser

Use the TCPSERVERADDRESS option to specify the TCP/IP address for an ADSM server.

Obtain this server address from your ADSM administrator.

Options File

This option goes in the client system options file.

Syntax

▶—TCPServeraddress *server_address*————▶

Parameters

server_address

A 1 to 64 character TCP/IP address for an ADSM server.

The value you specify for this parameter can be a TCP/IP Internet domain name or a dot address.

Examples

Options file example: tcps dsmchost.endicott.ibm.com

Command line example: Not applicable

TCPWINDOWSIZE

TCPWINDOWSIZE

Root User

Use the TCPWINDOWSIZE option to specify the size you want to use for the TCP/IP sliding window for your client node. This is the size of the buffer used when sending or receiving data.

A larger size can improve communication performance, but uses more memory.

Options File

This option goes in the client system options file.

Syntax

▶▶—TCPWindowsize *window_size*—————▶▶

Parameters

window_size

The size you want to use, in kilobytes, for the TCP/IP sliding window for your client node.

The range of values is 1 to 2048.

The default is 32.

Examples

Options file example: tcpwindowsize 1

Command line example: Not applicable

TIMEFORMAT

TIMEFORMAT

Use the TIMEFORMAT option to select the format you want ADSM to use for displaying the system time.

For AIX and Solaris Users Only: The TIMEFORMAT option is ignored. AIX and Solaris support a locale describing every user interface that varies with location or language. The default directories for system-supplied locales are /usr/lib/nls/loc in AIX and /usr/lib/localedef/src in Solaris. ADSM backup-archive and administrative clients obtain format information from the current locale definition in effect at the time the client is called. Consult the documentation on your local system for details on setting up your locale definition.

Options File

This option goes in the client user options file and is valid for all UNIX clients except AIX and Solaris.

Syntax

▶—TIMEformat *format_number*—————▶

Parameters

format_number

One of the following time formats:

- 1 Displays time in the default format: 23:00:00
- 2 Displays time in this format: 23,00,00
- 3 Displays time in this format: 23.00.00
- 4 Displays time in this format: 12:00:00A/P

For AIX and Solaris Users Only: To set a particular time format, edit your locale's source file and modify the t_fmt line to suit your needs. Whatever time format you choose applies both to output and to input.

| | |
|--------------|---|
| “%H:%M:%S” | Displays time in the form hh:mm:ss with hh ranging from 0-23. |
| “%H,%M,%S” | Displays time in the form hh,mm,ss with hh ranging from 0-23. |
| “%I,%M.%S%p” | Displays time in the form hh,mm.ss with hh ranging from 1-12. The “%p” represents the am/pm designator. |

Examples

Options file example: TIMEFORMAT 4

Command line example: -TIME=3

TPNAME

Root User

Use the TPNAME option to specify a symbolic name for the transaction program name. The transaction program name is required if the symbolic destination name is not provided for SNA LU6.2 communication.

If you use this option, you must also define the CPICMODENAME and PARTNERLUNAME options.

Options File

This option goes in the client system options file.

Syntax

▶▶—TPname *symbolic_name*—————▶▶

Parameters

symbolic_name

The 1 to 64 character transaction program name of the target logical unit (the ADSM server).

Contact your ADSM administrator for this name.

There is no default.

Note: To communicate with an AIX ADSM server, the *symbolic_name* must be **dsmserv** in all lower-case letters.

Examples

Options file example: tpname adsm

Command line example: Not applicable

TXNBYTELIMIT

TXNBYTELIMIT

RootUser

Use the TXNBYTELIMIT option to select the number of kilobytes ADSM should buffer before sending a transaction to the server. This limit applies when files are batched together during backup. It is also used when receiving files from the server during restore.

A *transaction* for ADSM can have two meanings:

- 1** The action taken for each file or directory processed due to client request. This result is displayed in the GUI clients on the Status window, and in the command-line clients in the output associated with a command. These kinds of transactions can include successful backing up, archiving, deleting, and so forth, of a file or directory.
- 2** The action taken between ADSM server data commitments. Because ADSM can transfer more than one file or directory between the client and server before committing the data to server storage, a transaction in this sense can contain more than one file or directory. This is sometimes referred to as a *transaction group*.

The transaction processing option relates to the second meaning of *transaction*. This option allows you to control the amount of data sent between the client and server before the server commits the data and changes to the server's database, thus altering the speed with which your client performs work.

The server can limit the number of files or directories contained within a group transaction, however, so the actual size of a transaction can be less than your limit.

The number of kilobytes buffered is limited by the TXNGROUPMAX option set on the ADSM server. TXNGROUPMAX determines the number of files or directories that can be sent in a single transaction. Once this number is reached, the client sends the files to the server even if the transaction byte limit is not reached.

Options File

This option goes in the client system options file.

Syntax

▶▶—TXNByteLimit *number*—————▶▶

Parameters

number

The number of kilobytes ADSM can buffer together in a transaction before sending data to the server.

TXNBYTELIMIT

The range of values is 1 to 25600 (25 MB).

The default is 2048.

Examples

Options file example: txnb 1024

Command line example: Not applicable

USERS

USERS

RootUser

Use the **USERS** option to authorize specific users on your workstation to request services from an ADSM server.

You can use this option more than once to specify a large number of user IDs.

If you do not specify group names with the **GROUPS** option or user IDs with the **USERS** option, all users can request ADSM services. If you use the **GROUPS** option, the **USERS** option, or both, only users included in one of the specified groups or included in the list of users can request ADSM services.

You can use the **USERS** option to exclude all other users from accessing the server by defining only your root user name.

Options File

This option goes in the client system options file.

Syntax



Parameters

username

A user you want to authorize to request ADSM services.

Examples

Options file example:

```
users carol larry davecd kathyba michelle  
users amyb msmith ksmith kjones srjames  
users davidp mtallan marylbt johnrd armand
```

Command line example: Not applicable

VERBOSE

VERBOSE

Use the VERBOSE option to specify that you want processing information to appear on your screen.

For example, when you run the INCREMENTAL command, ADSM generates information about each file it backs up. You can use the VERBOSE option if you want ADSM to display that information on your screen.

The alternative is the QUIET option. If you do not specify either option, VERBOSE is the default.

Options File

This option goes in the client user options file.

Syntax

▶▶—Verbose—————▶▶

Examples

Options file example: VERBOSE

Command line example: -V

VIRTUALMOUNTPOINT

VIRTUALMOUNTPOINT

RootUser

Use the VIRTUALMOUNTPOINT option to define a virtual mount point for a file system if you want ADSM to consider files for backup beginning with a specific directory within that file system.

Using the VIRTUALMOUNTPOINT option to identify a directory within a file system provides a direct path to the files you want to back up, thus saving processing time. It is more efficient to define a virtual mount point within a file system than to define the file system with the DOMAIN option, and then use the EXCLUDE option in your include-exclude options file to exclude the files you do not want ADSM to consider for backup.

You can use the VIRTUALMOUNTPOINT option to define virtual mount points for multiple file systems, and you can define more than one virtual mount point within the same file system. You can use the VIRTUALMOUNTPOINT option to define virtual mount points for both local and remote file systems.

Note: If the directory you want to specify as a virtual mount point is a symbolic link, be sure to set the FOLLOWSYMBOLIC option to Yes. If that option is set to No, which is the default, ADSM does not allow a symbolic link to be used as a virtual mount point.

After you define a virtual mount point, you can include it for incremental backup services by specifying the path and directory name in the DOMAIN option in either the default client user options file or in the INCREMENTAL command. Users can also specify the path and directory name of the virtual mount point with the DOMAIN option in their own client user options files and with the INCREMENTAL command.

Options File

This option goes in the client system options file.

Syntax

▶ `VIRTUALMountpoint directory` ▶

Parameters

directory

The path and directory name for the directory you want to use as the virtual mount point for a file system.

You cannot use wildcard characters in the path or directory names.

Define only one virtual mount point with each VIRTUALMOUNTPOINT option you include in your client system options file. Use the VIRTUALMOUNTPOINT option as many times as necessary to define all of the virtual mount points you want to use.

VIRTUALMOUNTPOINT

Examples

Options file example:

```
virtualmountpoint /afs/xyzcorp.com/u/bob  
virtualmountpoint /afs/xyzcorp.com/u/bob/test/data
```

Command line example: Not applicable

VIRTUALMOUNTPOINT

Chapter 7. Using Commands

ADSM provides a command line interface that you can use as an alternative to the graphical user interface to perform ADSM functions.

This chapter provides information about starting and ending a client command session and instructions for entering commands. It also contains a command reference section that provides detailed information about each ADSM command.

Starting and Ending a Client Command Session

You can start a client command session in either batch or interactive mode.

Using Batch Mode

Use batch mode when you want to issue a single client command. If an ADSM password is required, ADSM prompts you for your password each time you enter a command.

Note: An ADSM password is required only if your administrator enables the ADSM authentication feature. If a password is required, you are prompted for it only if the PASSWORDACCESS option in the client system options file is set to PROMPT. If that option is set to GENERATE, you are not prompted for a password.

When you enter an ADSM command in batch mode, you must precede it with **dsmc** in *lowercase* letters.

Note: If you are using ADSM on an AIX workstation, and you want to back up or archive AFS files, check with the root user on your workstation responsible for setting up ADSM to find out whether you can use **/usr/lpp/adsm/bin/dsmc.afs** with commands.

For example, to issue the dsmc INCREMENTAL command, you would enter the following:

```
dsmc incremental
```

If an ADSM password is required, ADSM responds with the following:

```
Please enter password for node "UNIX_2":
```

where *UNIX_2* is the node name for your workstation.

Type your password, and then press ENTER. When you type your password, it does not appear on the screen.

For OpenEdition MVS systems, if you are working in the OMVS shell, type HIDE and press PF2 (SUBCOMMAND) before typing in your password. That ensures that your password does not appear on the screen, and it is not saved on the input stack for command retrieval.

ADSM processes the command and returns to the command prompt.

You can also enter your ADSM password with a command. For example, to issue the `dsmc INCREMENTAL` command with your password in batch mode, you would enter the following:

```
dsmc incremental -password=secret
```

where *secret* is your password.

ADSM processes the command and returns to the command prompt.

Note: When possible, you should consider entering ADSM commands without your password, and then wait for ADSM to prompt you for it. This method provides better security in two ways. First, when you type your password after being prompted for it, ADSM does not display the characters on your screen for anyone else to see. Secondly, when you enter your password after being prompted for it, you eliminate the exposure that it will be displayed should another user subsequently issue a UNIX `ps` command to see a list of processes currently running in the system. On some UNIX clients, if you enter your password with a `dsmc` command, a subsequent UNIX `ps` command may also display your password along with your `dsmc` command.

Using Interactive Mode

Use interactive mode when you want to issue a series of commands.

To start a client command session in interactive mode, enter the `dsmc LOOP` command as follows:

```
dsmc loop
```

Note: You can also enter `dsmc` by itself on the command line to start a client command session in interactive mode. That has the same effect as entering `dsmc loop`.

When you press enter, this prompt appears on your screen:

```
dsmc>
```

When you enter the first command in interactive mode, ADSM prompts you for your password if it is required. For example, if a password is required, and you enter the following:

```
dsmc> incremental
```

ADSM responds as follows:

```
Please enter password for node "UNIX_2":
```

where *UNIX_2* is the node name for your workstation.

Type your password, and then press Enter. When you type your password, it does not appear on the screen.

For OpenEdition MVS systems, if you are working in the OMVS shell, type `HIDE` and press `PF2` (SUBCOMMAND) before typing in your password. That ensures that your

password does not appear on the screen and it is not saved on the input stack for command retrieval.

ADSM processes the command and returns to the `dsmc>` command prompt. You can continue to enter client commands, without including your password, each time ADSM displays the `dsmc>` prompt.

You can also enter your password with the `dsmc LOOP` command. For example, you can enter:

```
dsmc loop -password=secret
```

You can continue to enter client commands, without including your password, each time ADSM displays the `dsmc>` prompt.

Note: When possible, you should consider entering the `dsmc LOOP` command without your password, and then wait for ADSM to prompt you for it. This method provides better security in two ways. First, when you type your password after being prompted for it, ADSM does not display the characters on your screen for anyone else to see. Secondly, when you enter your password after being prompted for it, you eliminate the exposure that it will be displayed should another user subsequently issue a UNIX `ps` command to see a list of processes currently running in the system. On some UNIX clients, if you enter your password with a `dsmc` command, a subsequent UNIX `ps` command may also display your password along with your `dsmc` command.

To end an interactive session, enter **quit** at the `dsmc>` prompt.

Entering Client Commands

A client command can include one or more of these components:

- Command name
- Parameters
- Options

The components for each client command are identified in syntax diagrams for each command in the command reference section of this chapter.

Command Name

The first component of a command is the command name or keyword. The command name is the unique identifier for the command. It can consist of a single action word, such as `HELP` or `SCHEDULE`, or it can consist of an action word and an object for the action, such as `QUERY ARCHIVE`.

You can enter the entire command name or an abbreviation for the command name. In the syntax diagram for each command, uppercase letters indicate the shortest acceptable abbreviation. Here is an example of how a command name appears in a syntax diagram:

```
▶▶—dsmc Query Schedule————▶▶
```

You can enter any acceptable abbreviation for the command name. For example, to issue the dsmc QUERY SCHEDULE command, you can enter any of the following:

```
dsmc query schedule
dsmc q s
dsmc que sch
```

Parameters

Some client commands have required parameters, optional parameters, or both. You must enter parameters in the order indicated in the syntax diagram for a command.

Required Parameters

Required parameters supply ADSM with information it needs to perform a task. The most common required parameter is a file specification. For example, when you use the dsmc ARCHIVE command, you must specify the file or files you want to archive.

For example, to archive a file named **budget** from the **project** directory, you can enter the following:

```
dsmc archive /project/budget
```

Optional Parameters

Some client commands have optional parameters. If you do not enter a value for an optional parameter, ADSM uses a default value.

For example, the dsmc RESTORE command has a required parameter, *sourcefilespec*, that specifies the file or group of files you want to restore, and an optional parameter, *destinationfilespec*, that specifies where you want to place the restored file or files. If you do not specify a value for *destinationfilespec*, ADSM restores the file to the original source path by default.

However, if you want to restore the file to a different directory, you can enter a value for *destinationfilespec*.

For example, to restore **/home/jones/budget** to **/home/finance/budget**, you can enter the following:

```
dsmc restore /home/jones/budget /home/finance/budget
```

Options

You can use options with all commands. There are two groups of options from which you can choose:

- Client user options—The group of options set in your client user options file. You can override any option in that file by entering the option with an appropriate command.

Client user options specific to particular commands are discussed with those commands in the command reference. You can also find detailed information about each client user option in Chapter 6, “Setting Processing Options” on page 75.

- Client command options—The group of options you can use with specific commands on the command line only. Figure 52 provides an alphabetical listing of those options.

For detailed information about entering options with commands see “Using Options With Commands” on page 92.

Figure 52 (Page 1 of 2). Options Used on Command Line Only.

| Option | Command | Description |
|---------------|--|--|
| ARCHMC | ARCHIVE | Overrides the assigned management class for a file or group of files. |
| DELETEFILES | ARCHIVE | Deletes archived files from your workstation after the archives are committed to server storage. |
| DESCRIPTION | ARCHIVE DELETE ARCHIVE QUERY ARCHIVE RETRIEVE | Specifies a description for a file you are archiving, deleting, or retrieving. |
| DETAIL | QUERY MGMTCLASS | Displays management class attributes for available management classes. |
| DIRSONLY | QUERY BACKUP RESTORE | Displays directory names for files you have backed up. Also specifies that only directories should be restored (if you have the ADSM HSM client installed). |
| FROMDATE | QUERY ARCHIVE QUERY BACKUP RESTORE RETRIEVE | Sets a date limit for files. ADSM does not include files processed before this date when processing the command, although older directories might be included. |
| FROMNODE | QUERY ARCHIVE QUERY BACKUP QUERY FILESPACE QUERY MGMTCLASS RESTORE RETRIEVE | Displays file spaces on an alternate node. Also specifies an alternate node from which to restore or retrieve files. |
| FROMOWNER | QUERY ARCHIVE QUERY BACKUP QUERY FILESPACE RESTORE RETRIEVE | Displays file spaces for an alternate owner. Also specifies an alternate owner from which to restore or retrieve files. |
| FROMTIME | QUERY ARCHIVE QUERY BACKUP RESTORE RETRIEVE | Used with the FROMDATE option to specify a beginning time on the specified date. |
| IFNEWER | RESTORE | Replaces existing files with the latest backup version if the backup version is newer than the existing version. |
| INACTIVE | QUERY BACKUP RESTORE | Displays inactive backup versions of files. |
| INCRBYDATE | INCREMENTAL | Performs a partial incremental backup. |

Figure 52 (Page 2 of 2). Options Used on Command Line Only.

| Option | Command | Description |
|----------|--|---|
| LATEST | RESTORE | Restores the most recent backup version of a file whether it is active or inactive. |
| NOPROMPT | DELETE ARCHIVE | Suppresses the confirmation prompt when deleting an archived file. |
| PASSWORD | Any command | Entered with a DSMC command when required. |
| PICK | DELETE ARCHIVE RESTORE RETRIEVE | Displays a list of files from which you can choose the ones to delete, restore, or retrieve. |
| TODATE | QUERY ARCHIVE QUERY BACKUP RESTORE RETRIEVE | Sets a date limit for files. ADSM does not include files processed after this date when processing the command. |
| TOTIME | QUERY ARCHIVE QUERY BACKUP RESTORE RETRIEVE | Used with the TODATE option to specify an ending time on the specified date. |

Using Wildcard Characters

You can use wildcard characters when you want to specify multiple files with similar names in *one* command. Without wildcards, you would have to repeat the command for each file.

In a command, wildcard characters can only be used in the file name or extension. They cannot be used to specify destination files, file systems, or directories.

The wildcard characters you can use are:

- * Matches zero or more characters
- ? Matches any single character at the current position.

Note: You cannot specify a directory whose name is an asterisk (*) or a question mark (?) with an ADSM command. ADSM will recognize those characters only as wildcard characters.

The following are examples of using the * wildcard character:

| Pattern | Matches | Does Not Match |
|----------|-----------------------|-------------------|
| ab* | ab, abb, abxxx | a, b, aa, bb |
| ab*rs | abrs, abtrs, abtrs | ars, aabrs, abrss |
| ab*ef*rs | abefrs, abefghrs | abefr, abers |
| *.* | ab.efr, abgh.r, .befr | aabb, abrs |

Note: In the last example .befr does match the *.* pattern. If you have worked with wildcard characters in the UNIX shell, you may have noticed that files that start with a period are handled as exceptions to normal pattern-matching rules. In the UNIX shell, .befr does not match the *.* pattern. To obtain a match to a file name that begins with

a period, you must place the period in the first position of the pattern-matching expression (.*).

However, in ADSM, the use of the wildcard character * matches all files. ADSM accomplishes this by requiring that all pattern-matching expressions be enclosed with quotation marks. When the pattern-matching expression is enclosed with quotation marks, ADSM does the matching and expansion of the wildcard characters, rather than the UNIX shell, through the use of a different algorithm.

When issuing commands while in batch mode, you should enclose all pattern-matching expressions with quotation marks. Otherwise, the command might not produce the results you want. This applies when you use a wildcard character by itself ("*"), and when you use the wildcard character as part of an expression such as "/user/home/*.c". However, quotation marks are not required when issuing commands while in interactive mode. Examples of using pattern-matching expressions are clearly illustrated in command syntax diagrams and command examples.

Here are examples of using the ? wildcard character:

| Pattern | Matches | Does Not Match |
|----------|----------------|--------------------------|
| ab? | abc | ab, abab, abzzzz |
| ab?rs | abfrs | abrs, abllrs |
| ab?ef?rs | abdefjrs | abefrs, abdefrs, abefjrs |
| ab??rs | abcdrs, abzzrs | abrs, abjrs, abkkrs |

Command Entry Rules

The following are general rules for entering commands:

- Enter the *dsmc* part of the command in lowercase letters.
- For ADSM to recognize a pattern-matching expression or blank space in a file specification, you must enclose the file specification with quotation marks.
- You can use the wildcard character "*" as a stand-alone expression in some ADSM commands to specify all files in the current directory. When you use the wildcard character "*" as a stand-alone expression, you must enclose it with quotation marks.
- The command line allows up to 256 characters. You must enter the characters in a continuous string without using the return key.
- When you enter options with a command, always precede the option with a dash (-).
- You can enter more than one option in a command in any order before or after the file specification.

Command Reference

Figure 53 provides an alphabetical listing of the DSMC commands. For each command, the table provides a brief description.

Figure 53. Commands

| Command | Description | Reference |
|------------------|---|------------------|
| ARCHIVE | Archive files from workstation. | Page 185 |
| DELETE ACCESS | Revoke authorization for a user to restore or retrieve files. | Page 189 |
| DELETE ARCHIVE | Delete archived files from ADSM storage. | Page 192 |
| DELETE FILESPACE | Delete file spaces on ADSM storage. | Page 195 |
| HELP | Display online command help. | Page 198 |
| INCREMENTAL | Back up new and changed files. | Page 199 |
| LOOP | Start an interactive command session. | Page 203 |
| MACRO | Use DSMC commands within a macro file. | Page 205 |
| QUERY ACCESS | Display a list of current authorization rules. | Page 206 |
| QUERY ARCHIVE | Display a list of archived files. | Page 208 |
| QUERY BACKUP | Display a list of backup versions. | Page 214 |
| QUERY FILESPACE | Display a list of file spaces on ADSM storage. | Page 219 |
| QUERY MGMTCLASS | Display information about available management classes. | Page 222 |
| QUERY SCHEDULE | Display information about scheduled events. | Page 226 |
| RESTORE | Restore backup versions from ADSM storage. | Page 228 |
| RETRIEVE | Retrieve archived files from ADSM storage. | Page 237 |
| SCHEDULE | Start the client scheduler on the workstation. | Page 243 |
| SELECTIVE | Back up selected files. | Page 246 |
| SET ACCESS | Authorize another user to access your backup or archive copies. | Page 249 |
| SET PASSWORD | Change the ADSM password for the workstation. | Page 252 |

ARCHIVE

DSMC ARCHIVE—Archiving Files

Use the `dsmc ARCHIVE` command to archive copies of files on an ADSM server. You can archive a single file, selected files, or all files in a directory (and optionally, its subdirectories). Directories are not archived.

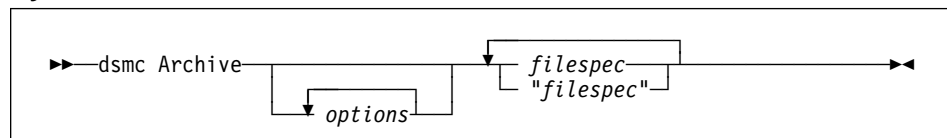
Archive files that you want to preserve in their current state, either for later use or for historical or legal purposes. Examples might be financial files from previous years that could be needed for tax audit purposes, down-level versions of programs, or personnel records of former employees.

When you archive a symbolic link, the file that is pointed to by the symbolic link is the one that is actually archived. If the symbolic link points to a file that does not exist, ADSM responds with a message that states the file was not found.

The owner of an archived copy of a file is the user who archives the file. For example, if you are a root user, and you archive a file that is owned by another user on your workstation, you are the owner of the archived copy of the file.

If you need to free storage space on your workstation, you can delete the original files from your workstation as you archive them. You can retrieve the archived files whenever you need them back on your workstation.

Syntax



Parameters

options

Specifies any of the following options:

-ARCHMc=managementclass

Specifies the name of an available management class in the active policy set of your policy domain. If specified, it overrides the assigned management class for the file or files you are archiving.

For example, to archive a file named **budget** and use a management class named `RET2YRS`, you would enter the following:

```
Archive -ARCHMc=RET2YRS /user/home/proj1/budget
```

-DELETEFILES

Deletes the archived files from your workstation after ADSM commits the files to server storage.

ARCHIVE

-Description=*description*

Assigns a description to the file you are archiving.

For example, to archive a file named **budget** and assign a description to it, you could enter the following:

```
Archive -DDescription="1992 Budget for Proj 1" /user/home/proj1/budget
```

If you do not remember the name of a file you archived, you can use the description to retrieve the file.

If you use the dsmc ARCHIVE command to archive more than one file, the description you enter is assigned to each of the files. For example, to archive a group of files and assign the same description, **Project X**, to each file, you can enter:

```
Archive -DDescription="Project X" "/u/allproj/*.x"
```

You can use the description to retrieve all of the files.

-Servername=*servername*

Specifies the name of the ADSM server on which you want to archive your files. If you have more than one server available to you, this option allows you to override the default server specified in the client user options file you use.

Note: You can use this option only when you issue the dsmc ARCHIVE command in batch mode.

For example, to archive a file named **budget** on a server identified as **server_b**, you can enter the following:

```
dsmc Archive -Server=server_b /user/home/proj1/budget
```

-Subdir=*value*

Recursively descends directories allowing you to either include or exclude files in subdirectories when archiving your files. For example, to archive only the files in the **/u/proj** directory, you can enter:

```
Archive -Subdir=no /u/proj
```

However, to archive the files in the **/u/proj** directory *and* all of its subdirectories, you can enter:

```
Archive -Subdir=yes /u/proj
```

If a subdirectory is a mounted file system, ADSM will not include the files with the SUBDIR option.

Note: Be careful when using the SUBDIR option as it can impact ADSM performance. ADSM must search through your subdirectories, which can take extra time. For the best performance, use the SUBDIR option only when necessary.

-TAPEPrompt=*value*

Specifies whether you want ADSM to prompt you for whether to wait for a tape to be mounted if one is required for an archive process (**Yes**), or automatically wait for a tape mount if one is required (**No**).

ARCHIVE

The default is No.

For example, to archive files in the **/user/home** directory, and cause ADSM to prompt you for a tape mount if required for the archive process, enter the following:

```
dsmc Archive /user/home -TAPEPrompt=Yes
```

You can also use these options:

DATEFORMAT
NODENAME
NUMBERFORMAT
PASSWORD
QUIET
TIMEFORMAT
VERBOSE

Note: The DATEFORMAT, NUMBERFORMAT, and TIMEFORMAT options are not valid for an AIX client.

filespec

Specifies the path and file name of the file you want to archive. You can use pattern-matching expressions to specify a group of files or all the files in a directory. If you use wildcard characters, enclose the file specification in double quotation marks (").

You can enter multiple file specifications in one command.

Examples

Task: Archive a single file named **budget**.

Command: Archive /user/home/proj1/budget

Task: Archive all files in the **/user/home/proj1** directory that end with the characters **.txt**.

Command: Archive "/user/home/proj1/*.txt"

Task: Archive a single file named **budget** and also files whose names end with the characters **.txt**.

Command: Archive /user/home/proj1/budget "/user/home/proj1/*.txt"

Task: Archive all files in the **/home** directory.

Command: Archive "/user/home/*"

Related Commands

Figure 54 (Page 1 of 2). Related Commands for DSMC ARCHIVE

| Command | Description | Reference |
|---------------------|--|-----------|
| DSMC QUERY ARCHIVE | Display a list of your archived files. | Page 208 |
| DSMC DELETE ARCHIVE | Delete archived files from ADSM storage. | Page 192 |

ARCHIVE

Figure 54 (Page 2 of 2). Related Commands for DSMC ARCHIVE

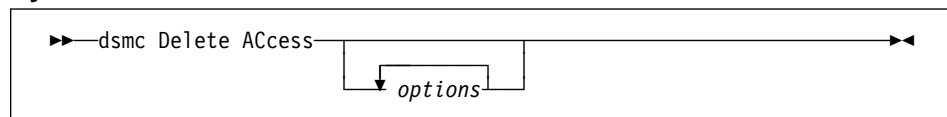
| Command | Description | Reference |
|----------------|--|------------------|
| DSMC RETRIEVE | Retrieve archived files from ADSM storage. | Page 237 |

DELETE ACCESS

DSMC DELETE ACCESS—Deleting Access to Files

Use the `dsmc DELETE ACCESS` command to delete current authorization rules for backup versions or archived copies of your files. When you delete an authorization rule, you revoke the access a user has to any files specified by that rule.

Syntax



Parameters

options

Specifies any of the following options:

–SCROLLPrompt=*value*

Specifies whether you want ADSM to stop after displaying the number of lines specified with the `SCROLLLINES` option and wait for you to scroll to the next group of lines, or whether you want ADSM to scroll through all lines and stop at the end of the list.

When you use the `dsmc DELETE ACCESS` command, ADSM displays a list of users to whom you have granted access and the files to which they have access. If the `SCROLLPROMPT` option is not set to `YES` in the client user options file you use, and you do not specify that setting in the command, ADSM scrolls to the end of the list. To display the authorization rules one screen at a time, you can enter:

```
Delete ACcess –SCROLLPrompt=Yes
```

When prompted for an action at each screen, you can either press `Enter` to continue to the next screen, or type your selections, and then press `Enter`.

–SCROLLLines=*number*

Specifies the number of lines you want to appear at one time when ADSM displays a list of items. For example, if you are using the `SCROLLPROMPT` option, and you want 10 lines displayed per screen, you can enter:

```
Delete ACcess –SCROLLPrompt=Yes –SCROLLLines=10
```

–Servername=*servername*

Specifies the name of the ADSM server on which you want to delete authorization rules. If you have more than one server available to you, this option allows you to override the default server specified in the client user options file you use.

Note: You can use this option only when you issue the `dsmc DELETE ACCESS` command in batch mode.

For example, to delete access to files on a server identified as **server_b**, you could enter the following:

```
dsmc Delete ACcess –Server=server_b
```

DELETE ACCESS

You can also use these options:

DATEFORMAT
NODENAME
NUMBERFORMAT
PASSWORD
QUIET
TIMEFORMAT
VERBOSE

Note: The DATEFORMAT, NUMBERFORMAT, and TIMEFORMAT options are not valid for an AIX client.

Examples

Task: Display a list of current authorization rules and select the rules you want to delete.

Command: Delete AAccess

Output:

| Index | Type | Node | Owner | Path |
|-------|---------|-------|-------|-------------------|
| 1 | Backup | NODE1 | usera | /u/dev/proja/list |
| 2 | Archive | NODE3 | userb | /u/fin/budg/depta |
| 3 | Backup | NODE4 | userd | /u/plan/exp/deptc |
| 4 | Archive | NODE5 | usere | /u/mfg/invn/parta |

Enter Index of rule(s) to delete, or quit to cancel:

To delete the authorization rules that allow *userb* and *usere* to have access to your files, type **2 4**, and then press Enter.

ADSM displays the following message:

```
'Delete Access' command successfully completed.
```

Note: The above selections are separated by a blank space. You can also separate selections with a comma (.). If you have one selection, enter that selection only.

If you wish, you can quit before making a selection.

Related Commands

Figure 55 (Page 1 of 2). Related Commands for DSMC DELETE ACCESS

| Command | Description | Reference |
|-----------------|--|-----------|
| DSMC SET ACCESS | Grant another user access to your files. | Page 249 |

DELETE ACCESS

Figure 55 (Page 2 of 2). Related Commands for DSMC DELETE ACCESS

| Command | Description | Reference |
|-------------------|--|-----------|
| DSMC QUERY ACCESS | Display a list of current authorization rules. | Page 206 |

DELETE ARCHIVE

-Subdir=value

Recursively descends directories allowing you to either include or exclude files in subdirectories when deleting your archived files. For example, to delete only the archived files in the **/u/proj** directory, you can enter:

```
dsmc Delete ARchive -Subdir=no /u/proj
```

However, to delete the archived files in the **/u/proj** directory *and* all of its subdirectories, you can enter:

```
dsmc Delete ARchive -Subdir=yes /u/proj
```

If a subdirectory is a mounted file system, ADSM will not include the files with the SUBDIR option.

Note: Be careful when using the SUBDIR option as it can impact ADSM performance. ADSM must search through your subdirectories, which can take extra time. For the best performance, use the SUBDIR option only when necessary.

You can also use these options:

DATEFORMAT
NODENAME
NUMBERFORMAT
PASSWORD
QUIET
TIMEFORMAT
VERBOSE

Note: The DATEFORMAT, NUMBERFORMAT, and TIMEFORMAT options are not valid for an AIX client.

filespec

Specifies the path and file name of the file you want to delete. You can use pattern-matching expressions to specify a group of files or all the files in a directory. If you use wildcard characters, enclose the file specification in double quotation marks (").

Examples

Task: Delete a single archived file named **budget**.

Command: Delete ARchive /user/home/proj1/budget

Task: Delete all archived files in the **/user/home/proj1** directory that end with the characters **.txt**.

Command: Delete ARchive "/user/home/proj1/*.txt"

Task: Delete archived files in the **/user/project** directory. Use the PICK option.

Command: Delete ARchive "/user/project/*" -pick

Output: See the RESTORE command for information on using the PICK window.

DELETE ARCHIVE

Related Commands

Figure 56. Related Commands for DSMC DELETE ARCHIVE

| Command | Description | Reference |
|--------------------|--|-----------|
| DSMC ARCHIVE | Archive files on ADSM storage. | Page 185 |
| DSMC QUERY ARCHIVE | Display a list of your archived files. | Page 208 |
| DSMC RETRIEVE | Retrieve archived files from ADSM storage. | Page 237 |

DELETE FILESPACE

DSMC DELETE FILESPACE—Deleting File Spaces

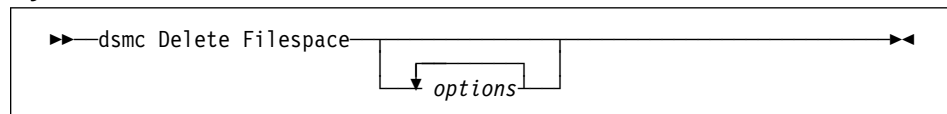
Root User

Use the `dsmc DELETE FILESPACE` command to delete file spaces on ADSM storage. A file space is a logical space that contains a group of files backed up or archived from the same file system (or part of a file system defined with the `VIRTUALMOUNTPOINT` option in the client system options file).

To delete a file space, you must have the appropriate authorizations. If the file space you want to delete contains backup versions of files, you must have `BACKDEL` authority from your ADSM administrator. If the file space contains archived files, you must have `ARCHDEL` authority. If the file space contains both backup versions of files and archived files, you must have both types of authority.

Attention: When you delete a file space, you delete *all* backup versions of files and archived files within the file space. After you delete a file space, you cannot recover the files. You should be certain that the files are no longer needed before you delete them.

Syntax



Parameters

options

Specifies any of the following options:

-SErvername=servername

Specifies the name of the ADSM server on which you want to delete file spaces. If you have more than one server available to you, this option allows you to override the default server specified in the client user options file you use.

Note: You can use this option only when you issue the `dsmc DELETE FILESPACE` command in batch mode.

For example, to delete a file space on a server identified as **server_b**, you could enter the following:

```
dsmc Delete Filespace -SErver=server_b
```

You can also use these options:

DATEFORMAT
NODENAME
NUMBERFORMAT
PASSWORD
QUIET

DELETE FILESPACE

TIMEFORMAT
VERBOSE

Note: The DATEFORMAT, NUMBERFORMAT, and TIMEFORMAT options are not valid for an AIX client.

Examples

Task: Delete a file space.

Command: Delete Filespace

Output:

| Num | Last Incr Date | Type | File Space Symbolic Name |
|-----|----------------------|------|--------------------------|
| 1 | 07/09/1994 09:16:38A | NFS | / |
| 2 | 07/09/1994 09:16:59A | NFS | /devel |
| 3 | 07/09/1994 09:17:01A | NFS | /devel/proga |
| 4 | 07/09/1994 09:17:01A | NFS | /devel/progc |
| 5 | 07/09/1994 09:10:02P | NFS | /devel/progh |
| 6 | 08/05/1994 03:01:55P | NFS | /planning |

Which file space number to remove? (1 - 6 or Quit):

Last Incr Date indicates the date of the last incremental backup for the file space.

To delete **/planning**, type **6**, then press Enter. ADSM displays the following:

```
***** WARNING *****  
Removing an ADSM server file space is irreversible!!  
Are you absolutely certain you want to remove:  
File Space: '/PLANNING' (Yes/No)
```

To continue with the deletion, type **Yes**. ADSM responds with the following messages:

```
ANS4130I Initiating the removal of '/PLANNING'  
file space...  
ANS4132I Removal of file space '/PLANNING'  
successfully completed.
```

Task: Delete a file space. Use the DATEFORMAT and TIMEFORMAT options to reformat the dates and times:

DELETE FILESPACE

Command: Delete Filespace -DATEformat=5 -TIMEformat=1

Output:

| Num | Last Incr Date | Type | File Space Symbolic Name |
|-----|---------------------|------|--------------------------|
| 1 | 1994.07.09 09:16:38 | NFS | / |
| 2 | 1994.07.09 09:16:59 | NFS | /devel |
| 3 | 1994.07.09 09:17:01 | NFS | /devel/proga |
| 4 | 1994.07.09 09:17:01 | NFS | /devel/progc |
| 5 | 1994.07.09 21:10:02 | NFS | /devel/progh |
| 6 | 1994.08.05 15:01:55 | NFS | /planning |

Which file space number to remove? (1 - 6 or Quit):

Note: The formats for dates and times are different from the previous example. By entering the DATEFORMAT and TIMEFORMAT options in the command, you can change those formats to the ones you prefer.

You can also set formats in the client user options file. If you do not specify formatting options in the command, ADSM uses the settings in the client user options file. There are five different format settings for the DATEFORMAT option and four for the TIMEFORMAT option.

With the screens reformatted, you can continue with the deletion as outlined in the previous example.

Related Commands

Figure 57. Related Commands for DSMC DELETE FILESPACE

| Command | Description | Reference |
|----------------------|--|-----------|
| DSMC QUERY FILESPACE | Displays a list of your file spaces on ADSM storage. | Page 219 |

HELP

DSMC HELP—Displaying Online Information

Use the `dsmc HELP` command to display online help information for DSMC commands. When you issue the `dsmc HELP` command, ADSM displays a list of help topics from which you can choose.

Syntax

```
▶▶—dsmc [ Help ]▶▶
```

INCREMENTAL

DSMC INCREMENTAL—Backing Up New and Changed Files

Use the `dsmc INCREMENTAL` command to back up all files in your default client domain or in the file systems you specify that are not excluded from backup services, and that meet management class requirements for frequency, mode, and serialization.

Normally, you use incremental backup to back up all files created or changed since the last time you ran a backup. However, a root user can exclude specific files or groups of files from backup services using the `EXCLUDE` option in an include-exclude options file.

In addition, the following attributes in the management class assigned to a file affect whether the file is actually backed up.

- **Frequency** — Specifies the number of days that must elapse between successive backups for the file.
- **Mode** — Specifies whether a file is backed up only if it has changed since the last backup.
- **Serialization** — Specifies whether a file is backed up if it changes during the backup process.

The management class assigned to a file can be the default management class or one specifically assigned to the file by a root user using an `INCLUDE` option in an include-exclude options file.

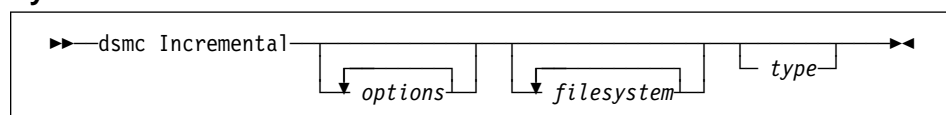
Note: ADSM backs up all regular files. It does *not* back up the following types of files:

- Character special files
- Block special files
- FIFO special files (named pipe files)

The owner of a backup version of a file is the same as the owner of the original file. If you are a root user, and you back up a file that is owned by another user, that user is the owner of the backup version.

Note: ADSM backs up hidden files associated with various disk compression products. If your system has such a disk compression product installed, you might want to search for these hidden files before starting a backup. In your include-exclude options file, exclude any hidden files you do not wish to have backed up.

Syntax



Parameters

options

Specifies any of the following options:

INCREMENTAL

-DOMain=domain

Specifies the file systems for which you want ADSM to perform an incremental backup in *addition* to the file systems specified with the DOMAIN option in the client user options file you use.

For example, to run an incremental backup for the **/u** and **/usr** file systems in addition to the file systems specified with the DOMAIN option in the client user options file, you can enter:

```
Incremental -DOMain="/u /usr"
```

If the DOMAIN option in your client user options file specifies the **/proj** and **/devel** file systems, ADSM also backs up files in those file systems.

If you want to run an incremental backup for *only* the file systems you specify, use the *filesystem* parameter to specify the file systems instead of the DOMAIN option.

Note: If you specify the DOMAIN option *and* specify a value for the *filesystem* parameter in the command, ADSM ignores the DOMAIN option. For example, if you add the **/mfg** file system to the previous command example in the following manner, *only* the files in the **/mfg** file system are backed up:

```
Incremental -DOMain="/u /usr" /mfg
```

You can also specify a virtual mount point (defined by a root user with the VIRTUALMOUNTPOINT option in your client system options file) as a file system to be included in an incremental backup.

-Quiet

Prevents messages from being displayed on your screen during processing.

Note: Certain error information is still displayed, and messages are posted to log files.

If you are running an incremental backup for the **/u** and **/usr** file systems, and you do not want ADSM to display information about each file it backs up, you can enter:

```
Incremental /u /usr -Quiet
```

-SErvername=servername

Specifies the name of the ADSM server on which you want to back up your files. If you have more than one server available to you, this option allows you to override the default server specified in the client user options file you use.

Note: You can use this option only when you issue the dsmc INCREMENTAL command in batch mode.

For example, to begin an incremental backup of all files in the **/u** file system to a server identified as **server_b**, you could enter the following:

```
dsmc Incremental /u -SErver=server_b
```

-TAPEPrompt=value

Specifies whether you want ADSM to wait for a tape to be mounted if required for an incremental backup, or prompt you for your choice.

INCREMENTAL

For example, to run an incremental backup of files in the `/user` directory and cause ADSM to prompt you for a tape mount if one is required, enter the following:

```
dsmc Incremental /user -TAPEPrompt=Yes
```

The default value for the TAPEPROMPT option is No.

You can also use these options:

DATEFORMAT
NODENAME
NUMBERFORMAT
PASSWORD
SLOWINCREMENTAL
TIMEFORMAT
VERBOSE

Note: The DATEFORMAT, NUMBERFORMAT, and TIMEFORMAT options are not valid for an AIX client.

filesystem

Specifies the file system for which to perform the incremental backup. You can enter one or more file systems. They must be separated by a blank space.

If you specify one or more file systems with this parameter, ADSM performs an incremental backup for *only* the file systems you specify. It does not back up any file systems specified with the DOMAIN option if that option is included with the command or is specified in your client user options file.

If you do not specify any file systems, ADSM performs an incremental backup for the file systems specified with the DOMAIN option. If you have not added that option to your client user options file or used it with the command, the default is all locally mounted file systems.

Note: The value you enter for this parameter must be a mount point, such as `/usr`, or a virtual mount point defined with the VIRTUALMOUNTPOINT option in your client system options file.

type

The type of incremental backup.

The default is a full incremental backup.

In a *full* incremental, the client queries the ADSM server so that it knows the exact state of your storage as of your last incremental. During a full incremental, ADSM uses this information to:

- Back up new files
- Back up files whose contents have changed
- Expire backup versions on the server for files that have been deleted from the workstation.
- Rebind backup versions to management classes if you have changed management class assignments, even if the associated file is not backed up.

INCREMENTAL

All of this processing is required to maintain your backups according to the policies defined in the management classes.

If you use any of the following *types*, you are requesting a partial incremental as described.

Only use partial incrementals if you must meet a limited backup time window, and a full incremental takes longer than the allotted time. Periodically perform full incremental backups to bring the ADSM server in line with your workstation's status. For example, if you have only a limited time during the week to perform backups, but extra time on the weekend, you can use partial incrementals on the weekdays and then full incremental backups on the weekends.

–INCRBYDate

Requests an incremental by date.

In an *incremental by date*, the client only asks the server for the date and time of the last incremental backup. This is the only information used to determine which files get backed up, so any changes that do not change the date and time are not recognized. If a file's last changed date and time is after that of the last backup, the file is backed up. Otherwise, it is not, even if the file is new to the workstation.

Also, in an incremental by date, files are not expired or rebound on the server, and the copy mode frequency attribute of the management classes is ignored. Because they do not change the last changed date and time, changes to access control lists (ACL) are not backed up during an incremental by date.

Examples

Task: Run an incremental backup for the default client domain specified with the DOMAIN option in your client user options file. The default for the DOMAIN option is ALL-LOCAL.

Command: Incremental

Task: Run an incremental backup for the **/u** file system, the **/usr** file system, and the **/proj** file system.

Command: Incremental /u /usr /proj

Related Commands

Figure 58. Related Commands for DSMC INCREMENTAL

| Command | Description | Reference |
|-------------------|---|-----------|
| DSMC QUERY BACKUP | Display a list of backup versions of your files. | Page 214 |
| DSMC RESTORE | Restore backup versions of files from ADSM storage. | Page 228 |
| DSMC SELECTIVE | Back up selected files. | Page 246 |

LOOP

DSMC LOOP—Starting an Interactive Command Line Session

Use the `dsmc LOOP` command to start an interactive command line session that is maintained until you enter **quit**. Using an interactive command line session eliminates the need for you to precede each command name with the letters **dsmc**. It also eliminates the need to enter your password with each command if you are required to enter a password.

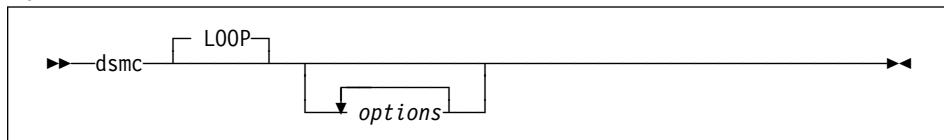
Note: You can enter **dsmc** by itself on the command line to start an interactive session. That has the same effect as entering **dsmc loop**.

After you start an interactive session, most options you enter with subsequent commands *remain in effect* throughout the session unless you reenter them with a different setting. The following options, however, are the exceptions. You must enter these options in each command for which you want them to take effect:

DESCRIPTION
DETAIL
DIRONLY
FROMNODE
FROMOWNER
INACTIVE
LATEST
PICK

You can enter all commands in interactive mode except the SCHEDULE and LOOP commands.

Syntax



Parameters

options

Specifies any of the following options:

-PASword=*password*

Entered with a DSMC command when required. If your password is **notell**, you can enter:

```
dsmc LOOP -PASword=note11
```

If you do not enter your password when it is required, ADSM prompts you for it after you enter your first command in interactive mode.

Note: When possible, you should consider entering ADSM commands without your password, and then wait for ADSM to prompt you for it. This method provides better security in two ways. First, when you type your password after being prompted for it, ADSM does not display the characters on your screen

LOOP

for anyone else to see. Secondly, when you enter your password after being prompted for it, you eliminate the exposure that it will be displayed should another user subsequently issue a UNIX ps command to see a list of processes currently running in the system. On some UNIX clients, if you enter your password with a dsmc command, a subsequent UNIX ps command may also display your password along with your dsmc command.

-SErvername=servername

Specifies the name of the ADSM server on which you want to begin your interactive session. If you have more than one server available to you, this option allows you to override the default server specified in the client user options file you use.

For example, to start an interactive session on a server identified as **server_b**, you can enter:

```
dsmc LOOP -SErver=server_b
```

This option remains in effect throughout the session. You cannot change servers while in interactive mode.

You can also use these options:

DATEFORMAT
NODENAME
NUMBERFORMAT
QUIET
TIMEFORMAT
VERBOSE

Note: The DATEFORMAT, NUMBERFORMAT, and TIMEFORMAT options are not valid for an AIX client.

Examples

Task: Start an ADSM interactive command line session.

Command: dsmc

Output: ADSM provides you with a command prompt:

```
dsmc>
```

Enter ADSM commands at this prompt. For example:

```
dsmc> query archive /home/proj1
```

When you are finished, enter **quit** to end the session.

MACRO

DSMC MACRO—Using DSMC Commands Within a Macro File

Use the `dsmc` MACRO command to issue a series of valid ADSM client commands as specified in a named macro file.

Commands may be nested to a maximum of 10 levels. You can include the MACRO command within a macro file.

This command can be executed in either batch mode or interactive mode.

Syntax

```
▶—DSMC MACro macroname—▶
```

Parameters

macroname

Specifies the name of a file containing valid ADSM client commands.

Examples

Task: Selectively back up files in the `/devel/project/proja`, `/devel/project/projb`, and `/devel/project/projc` directories.

Command: `MACRO backabc`

where **backabc** is a macro file containing the statements:

```
Selective /devel/project/proja  
Selective /devel/project/projb  
Selective /devel/project/projc
```

QUERY ACCESS

DSMC QUERY ACCESS—Displaying File Access Information

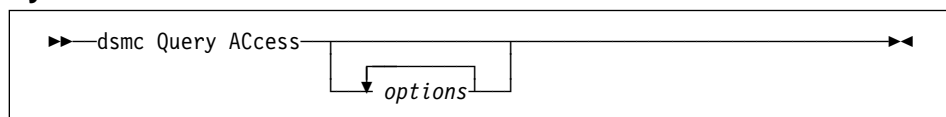
Use the `dsmc QUERY ACCESS` command to display a list of users to whom you have granted access to backup versions of specific files or archived copies of specific files.

When you issue the `dsmc QUERY ACCESS` command, ADSM displays a list of authorization rules you defined using the `dsmc SET ACCESS` command, or using the **Set Authorization** option on the **Utilities** menu of the ADSM graphical user interface.

The information ADSM displays includes the following:

- Whether you granted a user authority to restore backup versions of your files or to retrieve archived copies of your files.
- The node name and user ID of the user to whom you granted authorization.
- The file or group of files to which the user has access.

Syntax



Parameters

options

Specifies any of the following options:

–SCROLLPrompt=*value*

Specifies whether you want ADSM to stop after displaying the number of lines specified with the `SCROLLLLINES` option and wait for you to scroll to the next group of lines, or whether you want ADSM to scroll through all lines and stop at the end of the list.

When you use the `dsmc QUERY ACCESS` command, ADSM displays a list of users to whom you have granted access and the files to which they have access. If the `SCROLLPROMPT` option is not set to `YES` in the client user options file you use, and you do not specify that setting in the command, ADSM scrolls to the end of the list. To display the authorization rules one screen at a time, you can enter:

```
Query ACcess –SCROLLPrompt=Yes
```

–SCROLLLines=*number*

Controls the number of lines that are displayed on a screen. For example, if you are using the `SCROLLPROMPT` option and you want 10 lines displayed per screen, you can enter:

```
Query ACcess –SCROLLPrompt=Yes –SCROLLLines=10
```

–SErvername=*servername*

Specifies the name of the ADSM server on which you want to query your current authorization rules. If you have more than one server available to you,

QUERY ACCESS

this option allows you to override the default server specified in the client user options file you use.

Note: You can use this option only when you issue the `dsmc QUERY ACCESS` command in batch mode.

For example, to query accessed files on a server identified as **server_b**, you could enter the following:

```
dsmc Query Access -SErver=server_b
```

You can also use these options:

DATEFORMAT
NODENAME
NUMBERFORMAT
PASSWORD
TIMEFORMAT

Note: The DATEFORMAT, NUMBERFORMAT, and TIMEFORMAT options are not valid for an AIX client.

Examples

Task: Display a list of users who have access to files you own.

Command: `Query Access`

Output:

| Type | Node | Owner | Path |
|---------|-------|-------|-------------------|
| Backup | NODE1 | usera | /u/dev/proja/list |
| Archive | NODE3 | userb | /u/fin/budg/depta |
| Backup | NODE4 | userd | /u/plan/exp/deptc |
| Archive | NODE5 | usere | /u/mfg/invn/parta |

Related Commands

Figure 59. Related Commands for DSMC QUERY ACCESS

| Command | Description | Reference |
|--------------------|--|-----------|
| DSMC SET ACCESS | Authorize another user to access backup versions or archived copies of your files. | Page 249 |
| DSMC DELETE ACCESS | Revoke authorization for a user to restore or retrieve your files. | Page 189 |

QUERY ARCHIVE

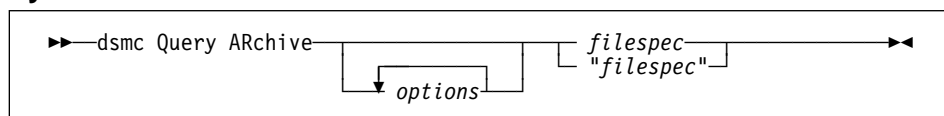
DSMC QUERY ARCHIVE—Displaying a List of Archived Files

Use the `dsmc QUERY ARCHIVE` command to display a list files that you have archived. For each archived file, ADSM displays the file size, archive date, file specification, expiration date, and file description.

The `QUERY ARCHIVE` command displays the archived files that you own. It does not display files that another user owns, even if that user has given you access to them, unless you use the `FROMNODE` and `FROMOWNER` options.

Note: In ADSM, the owner of an archive copy is the person who archived the file, whereas the owner of a backup version is the original owner of the file. For example, the root user archives some of your files. If you use the `QUERY ARCHIVE` command, you would not see the files you originally created because the root user archived them and is known to ADSM as the owner. This is true even if the root user specifically grants you access to those files in ADSM storage. If you want to view a list of your files that were archived by a root user, you must use the `-FROMNODE` option with the `QUERY ARCHIVE` command.

Syntax



Parameters

options

Specifies any of the following options:

-D*Description*=*description*

Specifies a description you assigned to the file when you archived it. For example, to search files that were archived with a description that starts with the word *valid* you enter:

```
Query ARchive "/home/case/*" -DDescription="valid"
```

-FROM*Date*=*date*

The date from which you want ADSM to look for archives. ADSM does not list files that were archived before this date.

You can use this option with the `TODATE` option to create a time window for archives. This can help you list files that were archived between two dates.

For example, to list all the files you archived from the **/home/case** directory from January 1, 1995 through April 30, 1995, enter:

```
Query ARchive "/home/case/*" -FROMDate=01/01/1995 -TODate=04/30/1995
```

The *date* must be in the format you select with the `DATEFORMAT` option. For example, the date for date format 1 is `mm/dd/yyyy`, which is the American English standard. If you include `DATEFORMAT` with the command, it must precede `FROMDATE` and `TODATE`.

QUERY ARCHIVE

-FROMTime=*time*

Used with the FROMDATE option to specify a beginning time on the specified date. For example, with FROMTIME and FROMDATE, you can request that ADSM list files beginning with those that were archived on or after 6:00 AM on June 1, 1995.

You can also use FROMTIME and FROMDATE with TOTIME and TODATE to request that ADSM list only files that were archived within a particular window of time. For example, you can request that ADSM list only files that were archived between 6:00 AM on June 1, 1995 and 11:59 PM on June 15, 1995.

The *time* must be in the format you select with the TIMEFORMAT option. For example, if TIMEFORMAT is set to the default of 1, the time must be in the format 23:00:00. If you include the TIMEFORMAT option with the command, it must precede the FROMTIME and TOTIME options.

The default for FROMTIME is 00:00:00.

Note: If you want ADSM to use a value you specify for FROMTIME, you must also include FROMDATE with the command. Otherwise, ADSM ignores FROMTIME.

-SCROLLPrompt=*value*

Specifies whether you want ADSM to stop after displaying the number of lines specified with the SCROLLLINES option and wait for you to scroll to the next group of lines, or whether you want ADSM to scroll through all lines and stop at the end of the list.

When you use the dsmc QUERY ARCHIVE command, ADSM displays a list of your archived files that match the file specification you enter. If the SCROLLPROMPT option is not set to YES in the client user options file you use, and you do not specify that setting in the command, ADSM scrolls to the end of the list. To display a list of archived files in the current directory one screen at a time, you can enter:

```
Query ARchive -SCROLLPrompt=Yes "*"
```

-SCROLLLines=*number*

Controls the number of lines that are displayed on a screen. For example, if you are using the SCROLLPROMPT option and you want 10 lines displayed per screen, you can enter:

```
Query ARchive -SCROLLPrompt=Yes -SCROLLLines=10 "*"
```

-SErvername=*servername*

Specifies the name of the ADSM server on which you want to query your archived files. If you have more than one server available to you, this option allows you to override the default server specified in the client user options file you use.

Note: You can use this option only when you issue the dsmc QUERY ARCHIVE command in batch mode.

For example, to query your archived files on a server identified as **server_b**, you could enter the following:

QUERY ARCHIVE

```
dsmc Query ARchive -SErver=server_b "*"
```

-SUBdir=value

Specifies that all subdirectories below the directory indicated in the dsmc QUERY ARCHIVE command will be included in the search. To display a list of all archived files including those in subdirectories enter:

```
Query ARchive "/*" -SUBdir=yes
```

If a subdirectory is a mounted file system, ADSM does not include the files in that subdirectory with the SUBDIR option.

Note: Be careful when using the SUBDIR option as it can impact ADSM performance. ADSM must search through your subdirectories, which can take extra time. For the best performance, use the SUBDIR option only when necessary.

-TODate=date

The date to which you want ADSM to look for archives. ADSM does not list files that were archived after this date.

You can use this option with the FROMDATE option to create a time window for archives. See the discussion of FROMDATE for more information on using TODATE.

-TOTime=time

Used with the TODATE option to specify an ending time on the specified date. For example, with TOTIME and TODATE, you can request that ADSM list only files that were archived on or before 11:59 PM on June 15, 1995.

You can also use TOTIME and TODATE with FROMTIME and FROMDATE to request that ADSM list only files that were archived within a particular window of time. For example, you could request that ADSM list only files that were archived between 6:00 AM on June 1, 1995 and 11:59 PM on June 15, 1995.

The *time* must be in the format you select with the TIMEFORMAT option. For example, if TIMEFORMAT is set to the default of 1, the time must be in the format 23:00:00. If you include the TIMEFORMAT option with the command, it must precede the FROMTIME and TOTIME options.

The default for TOTIME is 23:59:59.

Note: If you want ADSM to use a value you specify for TOTIME, you must also include TODATE with the command. Otherwise, ADSM ignores TOTIME.

You can also use these options:

- DATEFORMAT
- FROMNODE
- FROMOWNER
- NODENAME
- NUMBERFORMAT
- PASSWORD
- TIMEFORMAT

QUERY ARCHIVE

Note: The DATEFORMAT, NUMBERFORMAT, and TIMEFORMAT options are not valid for an AIX client.

filespec

Specifies the path and file name of the file you want to display. You can use pattern-matching expressions to specify a group of files or all the files in a directory. If you use wildcard characters, enclose the file specification in double quotation marks ("). Specify "*" to display information about all files archived from the current directory.

Examples

Task: Display a list of files archived from the current directory.

Command: Query ARchive "*"

Output:

| Size | Archive Date | File - Expires on - Description |
|------|----------------------|------------------------------------|
| 1184 | 03/08/1992 10:01:10A | /u/case/projb 09/24/1993 Project B |
| 311 | 03/08/1992 04:02:22P | /u/case/exp 03/08/1993 Expense |
| 1722 | 03/08/1992 10:04:36A | /u/case/sal 09/24/1994 Salaries |
| 1522 | 04/12/1992 02:44:06P | /u/case/projx 09/24/1994 Project X |
| 344 | 06/07/1992 06:02:11P | /u/case/rev 03/08/1995 Revenue |
| 2112 | 07/31/1992 10:11:40A | /u/case/projd 09/24/1994 Project D |

To display archived files from other directories, first use the dsmc QUERY FILESPACE command to display valid directories. Then, use the dsmc QUERY ARCHIVE command to display archived files from specific directories as listed under *File Space Name* in the QUERY FILESPACE output display. Refer to the following example.

Task: Display a list of archived files from the */devel* directory.

Command: Query ARchive "/devel/*" -SUBDIRectory=yes

Output:

| Size | Archive Date | File - Expires on - Description |
|------|----------------------|--|
| 1004 | 05/09/1994 10:01:10A | /devel/proj/projb 07/24/1995 Project B |
| 245 | 05/09/1994 04:02:22P | /devel/acct/exp 03/18/1995 Expense |
| 8872 | 05/09/1994 10:04:36A | /devel/plan/sal 08/24/1995 Salaries |
| 1328 | 06/12/1994 02:44:06P | /devel/proj/projx 07/04/1996 Project X |
| 2327 | 06/15/1994 06:02:11P | /devel/acct/rev 12/08/1995 Revenue |
| 142 | 08/21/1994 10:11:40A | /devel/proj/projd 09/22/1995 Project D |

QUERY ARCHIVE

Task: Display a list of files archived from the current directory. Use the DATEFORMAT and TIMEFORMAT options to reformat the dates and times.

Command: Query Archive -DATEformat=5 -TIMEformat=1 "*"

Output:

| Size | Archive Date | File - Expires on - Description |
|------|---------------------|------------------------------------|
| 1184 | 1992.03.08 10:01:10 | /u/case/projb 1993.09.24 Project B |
| 311 | 1992.03.08 16:02:22 | /u/case/exp 1993.03.08 Expense |
| 1722 | 1992.03.08 10:04:36 | /u/case/sal 1994.09.24 Salaries |
| 1522 | 1992.04.12 14:44:06 | /u/case/projx 1994.09.24 Project X |
| 344 | 1992.06.07 18:02:11 | /u/case/rev 1995.03.08 Revenue |
| 2112 | 1992.07.31 10:11:40 | /u/case/projd 1994.09.24 Project D |

Note: The formats for dates and times are different from the previous example. By entering the DATEFORMAT and TIMEFORMAT options in the command, you can change those formats to the ones you prefer.

You can also set formats in the client user options file that you use. If you do not specify formatting options in the command, ADSM uses the settings in the client user options file. There are five different format settings for the DATEFORMAT option and four for the TIMEFORMAT option.

Task: Display the list of files that were archived from the **/u/proj** directory whose file names begin with the letters **proj**. Use the DATEFORMAT and TIMEFORMAT options.

Command: Query Archive -DATEformat=1 -TIMEformat=4 "/u/proj/proj*"

Output:

| Size | Archive Date | File - Expires on - Description |
|------|----------------------|------------------------------------|
| 1184 | 03/08/1992 10:01:10A | /u/proj/projb 09/24/1993 Project B |
| 1522 | 04/12/1992 02:44:06P | /u/proj/projx 09/24/1994 Project X |
| 2112 | 07/31/1992 10:11:40A | /u/proj/projd 09/24/1994 Project D |

Related Commands

QUERY ARCHIVE

Figure 60. Related Commands for DSMC QUERY ARCHIVE

| Command | Description | Reference |
|---------------------|--|------------------|
| DSMC ARCHIVE | Archive files on ADSM storage. | Page 185 |
| DSMC DELETE ARCHIVE | Delete archived files from ADSM storage. | Page 192 |
| DSMC RETRIEVE | Retrieve archived files from ADSM storage. | Page 237 |

QUERY BACKUP

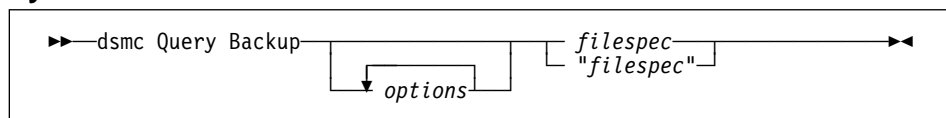
DSMC QUERY BACKUP—Displaying a List of Backup Versions

Use the `dsmc QUERY BACKUP` command to display a list of backup versions of your files.

For each backup version, ADSM displays the file size, backup date, the management class to which the file is bound, whether the file is active or inactive, and the file specification. If the management class name is longer than 10 characters, ADSM displays only the first 10 characters.

The `QUERY BACKUP` command displays the backup versions that you own. It does not display files that another user owns, even if that user has given you access to them, unless you use the `FROMNODE` and `FROMOWNER` options.

Syntax



Parameters

options

Specifies any of the following options:

-Dironly

Causes the query to display only directory names for backup versions of your files. For example, to display only directory information, you can enter:

```
Query Backup -Dironly "*"
```

-FROMDate=*date*

The date from which you want ADSM to look for backups. ADSM does not list files that were backed up before this date.

You can use this option with the `TODATE` option to create a time window for backups. This can help you list files that were backed up between two dates.

For example, to display a list of files in the current directory that were backed up in April 1995, enter:

```
Query Backup -FROMDate=04/01/1995 -TODate=04/30/1995 "*"
```

The *date* must be in the format you select with the `DATEFORMAT` option. For example, the date for date format 1 is `mm/dd/yyyy`, which is the American English standard. If you include `DATEFORMAT` on the command, it must precede `FROMDATE` and `TODATE`.

-FROMTime=*time*

Used with the `FROMDATE` option to specify a beginning time on the specified date. For example, with `FROMTIME` and `FROMDATE`, you can request that ADSM list files beginning with those that were backed up on or after 6:00 AM on June 1, 1995.

QUERY BACKUP

You can also use FROMTIME and FROMDATE with TOTIME and TODATE to request that ADSM list only files that were backed up within a particular window of time. For example, you can request that ADSM list only files that were backed up between 6:00 AM on June 1, 1995 and 11:59 PM on June 15, 1995.

The *time* must be in the format you select with the TIMEFORMAT option. For example, if TIMEFORMAT is set to the default of 1, the time must be in the format 23:00:00. If you include the TIMEFORMAT option with the command, it must precede the FROMTIME and TOTIME options.

The default for FROMTIME is 00:00:00.

Note: If you want ADSM to use a value you specify for FROMTIME, you must also include FROMDATE with the command. Otherwise, ADSM ignores FROMTIME.

-INActive

Causes the query to display information about both active *and* inactive backup versions of files. If you do not specify this option, ADSM displays information about active backup versions only.

To display information about both active and inactive backup versions, you can enter:

```
Query Backup -INActive "*"
```

-SCROLLPrompt=*value*

Specifies whether you want ADSM to stop after displaying the number of lines specified with the SCROLLLINES option and wait for you to scroll to the next group of lines, or whether you want ADSM to scroll through all lines and stop at the end of the list.

When you use the dsmc QUERY BACKUP command, ADSM displays a list of the backup versions of your files that match the file specification you enter. If the SCROLLPROMPT option is not set to YES in the client user options file you use, and you do not specify that setting in the command, ADSM scrolls to the end of the list. To display the list of files in the current directory one screen at a time, you can enter:

```
Query Backup -SCROLLPrompt=Yes "*"
```

-SCROLLLines=*number*

Controls the number of lines that are displayed on a screen. For example, if you are using the SCROLLPROMPT option, and you want 10 lines displayed per screen, you can enter:

```
Query Backup -SCROLLPrompt=Yes -SCROLLLines=10 "*"
```

-Servername=*servername*

Specifies the name of the ADSM server on which you want to query backup versions of your files. If you have more than one server available to you, this option allows you to override the default server specified in the client user options file you use.

QUERY BACKUP

Note: You can use this option only when you issue the `dsmc QUERY BACKUP` command in batch mode.

For example, to display a list of backup versions of your files on a server identified as **server_b**, you can enter the following:

```
dsmc Query Backup -Server=server_b "*" 
```

-Subdir=value

Recursively descends directories, allowing you to either include or exclude files in subdirectories when querying backup versions. For example, to display information about only the backup versions of files from the **/u/devel** directory, you can enter:

```
Query Backup -Subdir=no /u/devel
```

However, to display information about backup versions of files from the **/u/devel** directory *and* from all of its subdirectories, you can enter:

```
Query Backup -Subdir=yes /u/devel
```

If a subdirectory is a file system in its own right, then ADSM will not include the files with the SUBDIR option.

Note: Be careful when using the SUBDIR option as it can impact ADSM performance. ADSM must search through your subdirectories, which can take extra time. For the best performance, use the SUBDIR option only when necessary.

-TODate=date

The date to which you want ADSM to look for backups. ADSM does not list files that were backed up after this date.

You can use this option with the FROMDATE option to create a time window for backups. See the discussion of FROMDATE for more information on using TODATE.

-TOTime=time

Used with the TODATE option to specify an ending time on the specified date. For example, with TOTIME and TODATE, you can request that ADSM list only files that were backed up on or before 11:59 PM on June 15, 1995.

You can also use TOTIME and TODATE with FROMTIME and FROMDATE to request that ADSM list only files that were backed up within a particular window of time. For example, you could request that ADSM list only files that were backed up between 6:00 AM on June 1, 1995 and 11:59 PM on June 15, 1995.

The *time* must be in the format you select with the TIMEFORMAT option. For example, if TIMEFORMAT is set to the default of 1, the time must be in the format 23:00:00. If you include the TIMEFORMAT option with the command, it must precede the FROMTIME and TOTIME options.

The default for TOTIME is 23:59:59.

Note: If you want ADSM to use a value you specify for TOTIME, you must also include TODATE with the command. Otherwise, ADSM ignores TOTIME.

QUERY BACKUP

You can also use these options:

DATEFORMAT
FROMNODE
FROMOWNER
NODENAME
NUMBERFORMAT
PASSWORD
QUIET
TIMEFORMAT
VERBOSE

Note: The DATEFORMAT, NUMBERFORMAT, and TIMEFORMAT options are not valid for an AIX client.

filespec

Specifies the path and file name of the file for which you want to display information. You can use pattern-matching expressions to specify a group of files or all the files in a directory. If you use wildcard characters, enclose the file specification in double quotation marks ("). Specify "*" to display information about backup versions for all of your files in the current file system.

Examples

Task: Display a list of all active and inactive backup versions of files in the current directory.

Command: Query Backup -INActive "*"

Output:

| Size | Backup Date | Management Class | A/I | File |
|------|----------------------|------------------|-----|-----------------|
| 1184 | 03/08/1992 10:01:08A | Proj_Files | A | /u/case/proja |
| 311 | 03/08/1992 04:02:11P | Acct_Files | A | /u/case/expense |
| 1722 | 03/08/1992 10:04:53A | Acct_Files | I | /u/case/salary |
| 1522 | 04/12/1992 02:44:10P | Proj_Files | A | /u/case/projn |
| 344 | 06/07/1992 06:02:23P | Acct_Files | I | /u/case/revenue |
| 2112 | 07/31/1992 10:11:55A | Proj_Files | A | /u/case/projz |

Task: Display a list of all active and inactive backup versions of files in the current directory. Use the DATEFORMAT and TIMEFORMAT options to reformat the dates and times.

Command: Query Backup -DATEformat=5 -TIMEformat=1 -INActive "*"

Output:

QUERY BACKUP

| Size | Backup Date | Management Class | A/I File |
|------|---------------------|------------------|-------------------|
| 1184 | 1992.03.08 10:01:08 | Proj_Files | A /u/case/proja |
| 311 | 1992.03.08 16:02:11 | Acct_Files | A /u/case/expense |
| 1722 | 1992.03.08 10:04:53 | Acct_Files | I /u/case/salary |
| 1522 | 1992.04.12 14:44:10 | Proj_Files | A /u/case/projn |
| 344 | 1992.06.07 18:02:23 | Acct_Files | I /u/case/revenue |
| 2112 | 1992.07.31 10:11:55 | Proj_Files | A /u/case/projz |

Note: The formats for dates and times are different from the previous example. By entering the DATEFORMAT and TIMEFORMAT options in the command, you can change those formats to the ones you prefer.

You can also set formats in the client user options file that you use. If you do not specify formatting options in the command, ADSM uses the settings in the client user options file. There are five different format settings for the DATEFORMAT option and four for the TIMEFORMAT option.

Task: Display the list of files that were backed up from the **/u/proj** directory with file names that begin with **proj**. Use the DATEFORMAT and TIMEFORMAT options.

Command: Query Backup -DATEformat=1 -TIMEformat=4 "/u/proj/proj*"

Output:

| Size | Backup Date | Management Class | A/I File |
|------|----------------------|------------------|-----------------|
| 1184 | 03/08/1992 10:01:08A | Proj_Files | A /u/proj/proja |
| 1522 | 04/12/1992 02:44:10P | Proj_Files | A /u/proj/projn |
| 2112 | 07/31/1992 10:11:55A | Proj_Files | A /u/proj/projz |

Related Commands

Figure 61. Related Commands for dsmc QUERY BACKUP

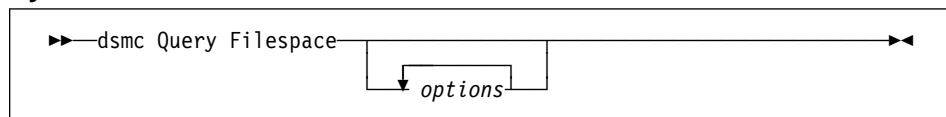
| Command | Description | Reference |
|------------------|---|-----------|
| DSMC ARCHIVE | Archive files on ADSM storage. | Page 185 |
| DSMC INCREMENTAL | Back up new and changed files to ADSM storage. | Page 199 |
| DSMC RESTORE | Restore backup versions of files from ADSM storage. | Page 228 |
| DSMC SELECTIVE | Back up selected files. | Page 246 |

QUERY FILESPACE

DSMC QUERY FILESPACE—Displaying a List of File Spaces

Use the `dsmc QUERY FILESPACE` command to display a list of your existing file spaces on ADSM storage.

Syntax



Parameters

options

Specifies any of the following options:

–SCROLLPrompt=*value*

Specifies whether you want ADSM to stop after displaying the number of lines specified with the `SCROLLLLINES` option and wait for you to scroll to the next group of lines, or whether you want ADSM to scroll through all lines and stop at the end of the list.

When you use the `dsmc QUERY FILESPACE` command, ADSM displays a list of your file spaces. If the `SCROLLPROMPT` option is not set to `YES` in the client user options file you use, and you do not specify that setting in the command, ADSM scrolls to the end of the list. To display the list of file spaces one screen at a time, you can enter:

```
Query Filespace –SCROLLPrompt=Yes
```

–SCROLLLines=*number*

Controls the number of lines that are displayed on a screen. For example, if you are using the `SCROLLPROMPT` option, and you want 10 lines displayed per screen, you can enter:

```
Query Filespace –SCRollprompt=Yes –SCROLLLines=10
```

–SErvername=*servername*

Specifies the name of the ADSM server for which you want to display file space information. If you have more than one server available to you, this option allows you to override the default server specified in the client user options file you use.

Note: You can use this option only when you issue the `dsmc QUERY FILESPACE` command in batch mode.

For example, to display file spaces on a server identified as `server_b`, you could enter the following:

```
dsmc Query Filespace –SErver=server_b
```

You can also use these options:

DATEFORMAT
FROMNODE

QUERY FILESPACE

NODENAME
NUMBERFORMAT
PASSWORD
TIMEFORMAT

Note: The DATEFORMAT, NUMBERFORMAT, and TIMEFORMAT options are not valid for an AIX client.

Examples

Task: Display your file spaces.

Command: Query Filespace

Output:

| Last Incr Date | Type | File Space Symbolic Name |
|----------------------|------|--------------------------|
| 07/09/1992 09:16:38A | NFS | / |
| 07/09/1992 09:16:59A | NFS | /devel |
| 07/09/1992 09:17:01A | NFS | /devel/proga |
| 07/09/1992 09:17:01A | NFS | /devel/progc |
| 07/09/1992 09:10:02P | NFS | /devel/progh |
| 08/05/1992 03:01:55P | NFS | /planning |

Task: Display your file spaces. Use the DATEFORMAT and TIMEFORMAT options to reformat the dates and times:

Command: Query Filespace -DATEformat=5 -TIMEformat=1

Output:

| Last Incr Date | Type | File Space Symbolic Name |
|---------------------|------|--------------------------|
| 1992.07.09 09:16:38 | NFS | / |
| 1992.07.09 09:16:59 | NFS | /devel |
| 1992.07.09 09:17:01 | NFS | /devel/proga |
| 1992.07.09 09:17:01 | NFS | /devel/progc |
| 1992.07.09 21:10:02 | NFS | /devel/progh |
| 1992.08.05 15:01:55 | NFS | /planning |

Note: The formats for dates and times are different from the previous example. By entering the DATEFORMAT and TIMEFORMAT options in the command, you can change those formats to the ones you prefer.

You can also set formats in the client user options file. If you do not specify formatting options in the command, ADSM uses the settings in the client user options file you use. There are five different format set-

QUERY FILESPACE

tings for the DATEFORMAT option and four for the TIMEFORMAT option.

Related Commands

Figure 62. Related Commands for DSMC QUERY FILESPACE

| Command | Description | Reference |
|-----------------------|---------------------------------------|-----------|
| DSMC DELETE FILESPACE | Delete file spaces from ADSM storage. | Page 195 |

QUERY MGMTCLASS

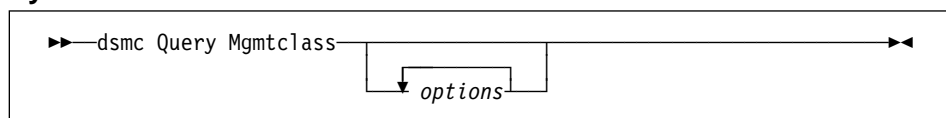
DSMC QUERY MGMTCLASS—Displaying Management Classes

Use the `dsmc QUERY MGMTCLASS` command to display information about the management classes available in your active policy set.

Management classes are defined by your ADSM administrator. They contain attributes that control whether a file is eligible for backup or archive services, and attributes that determine how ADSM manages the backup versions and archived copies of your files after they reach the server.

Your active policy set contains a default management class, and can contain any number of additional management classes. A root user can assign specific management classes to files using `INCLUDE` options in an include-exclude options file. If a root user does not assign a management class to a file, ADSM uses the default management class.

Syntax



Parameters

options

Specifies any of the following options:

-DEtail

Displays detailed information about each management class in your active policy set. If you do not specify the `DETAIL` option, ADSM displays only the management class name and a brief description.

When you specify the `DETAIL` option, ADSM also displays information about the attributes contained in each copy group contained in each management class. A management class can contain a backup copy group, an archive copy group, both, or neither.

A *backup copy group* contains these attributes:

Copy Group Name

A copy group name is always `STANDARD`.

Copy Type

The type is `Backup`.

Copy Frequency

The minimum number of days that must elapse between successive incremental backups.

Versions Data Exists

The maximum number of different backup versions ADSM retains for files currently on your workstation.

QUERY MGMTCLASS

Versions Data Deleted

The maximum number of different backup versions ADSM retains for files erased from your workstation.

Retain Extra Versions

How many days ADSM retains all but the most recent backup version.

Retain Only Version

How many days ADSM retains the last remaining inactive version of a file.

Copy Serialization

How ADSM processes a file if it is in use during the first attempt to back it up. The choices are:

Static

Not backed up if in use during first attempt.

Shared Static

Not backed up if in use during number of attempts specified with CHANGINGRETRIES option.

Shared Dynamic

Backed up on last attempt even if in use after number of attempts specified with CHANGINGRETRIES option.

Dynamic

Backed up on first attempt even if in use.

Copy Mode

If set to *Modified*, ADSM considers a file for incremental backup only if it has changed since the last backup.

If set to *Absolute*, ADSM considers a file for backup regardless of whether it has changed since the last backup.

Copy Destination

The name of the storage pool where ADSM stores the backup versions of your files.

An *archive copy group* contains these attributes:

Copy Group Name

A copy group name is always STANDARD.

Copy Type

The type is Archive.

Copy Frequency

The frequency is CMD. A file is archived only when specified in a dsmc ARCHIVE command or selected for archive using the GUI.

Retain Version

The number of days an archived file remains in ADSM storage.

QUERY MGMTCLASS

Serialization

How ADSM processes a file if it is in use during the first attempt to archive it. The choices are:

Static

Not archived if in use during first attempt.

Shared Static

Not archived if in use during number of attempts specified with CHANGINGRETRIES option.

Shared Dynamic

Archived on last attempt even if in use after number of attempts specified with CHANGINGRETRIES option.

Dynamic

Archived on first attempt even if in use.

Copy Mode

The mode is always *Absolute*. A file is always archived upon request regardless of whether it has changed since it was last archived.

Copy Destination

The name of the storage pool where ADSM stores the archived copies of your files.

To display detailed information about available management classes in your active policy set, you can enter:

```
Query Mgmtclass -DEtail
```

-SErvername=*servername*

Specifies the name of the ADSM server on which you want to display the available management classes. If you have more than one server available to you, this option allows you to override the default server specified in the client user options file you use. You could find this helpful in locating a management class on another server more suitable to your needs than those on the default server.

Note: You can use this option only when you issue the `dsmc QUERY MGMTCLASS` command batch mode.

For example, to display the available management classes in your active policy set on a server identified as **server_b**, you could enter the following:

```
dsmc Query Mgmtclass -SErver=server_b
```

You can also use these options:

DATEFORMAT
FROMNODE
NODENAME
NUMBERFORMAT

QUERY MGMTCLASS

PASSWORD
TIMEFORMAT

Note: The DATEFORMAT, NUMBERFORMAT, and TIMEFORMAT options are not valid for an AIX client.

Examples

Task: Display default and available management classes.

Command: Query Mgmtclass

Output:

```
Domain Name           :CALIFORNIA
Activated Policy Set Name :SAN_JOSE
Activation date/time    :08/19/1992 09:09:09
Default Mgmt Class Name :STANDARD
Grace Period Backup Retn. :30 day(s)
Grace Period Archive Retn. :30 day(s)

MgmtClass Name: Project_Files
Description   : Back up and archive project files

MgmtClass Name: Source_Code
Description   : Back up source code files

MgmtClass Name: Persnl_Files
Description   : Back up and archive personnel records
```

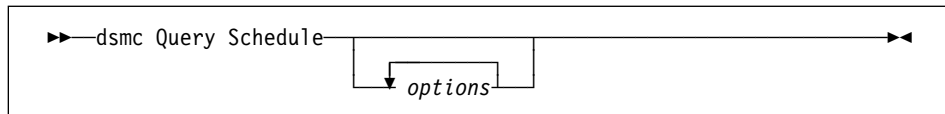
QUERY SCHEDULE

DSMC QUERY SCHEDULE—Displaying Scheduled Events

Use the `dsmc QUERY SCHEDULE` command to display the events scheduled for your client node.

Your ADSM administrator can set up schedules to perform automatic backups and archives for you. To better plan your work, you can use this command to determine when the next of those scheduled events is to occur.

Syntax



Parameters

options

Specifies any of the following options:

-SErvername=servername

Specifies the name of an ADSM server. If your automatic backups or archives are scheduled on a server other than the default server specified in the client user options file that you use, use this option to override the default server setting. Otherwise, your scheduled events are not displayed.

Note: You can use this option only when you issue the `dsmc QUERY SCHEDULE` command in batch mode.

For example, to display your scheduled events on a server identified as **server_b**, you can enter the following:

```
dsmc Query Schedule -SErver=server_b
```

You can also use these option:

DATEFORMAT
NODENAME
NUMBERFORMAT
PASSWORD
TIMEFORMAT

Note: The DATEFORMAT, NUMBERFORMAT, and TIMEFORMAT options are not valid for an AIX client.

Examples

Task: Display your scheduled events.

Command: Query Schedule

Output:

QUERY SCHEDULE

```
Schedule Name: DAILY_INCR
Description: Daily Backup of /u file system
Action: Incremental
Options: -Quiet
Objects: /u
Priority: 5
Next Execution: 10 Minutes
Duration: 4 Hours
Period: 1 Day
Day of Week: Any
Expire: Never
```

Related Commands

Figure 63. Related Commands for DSMC QUERY SCHEDULE

| Command | Description | Reference |
|---------------|---|-----------|
| DSMC SCHEDULE | Start the client scheduler on your workstation. | Page 243 |

RESTORE

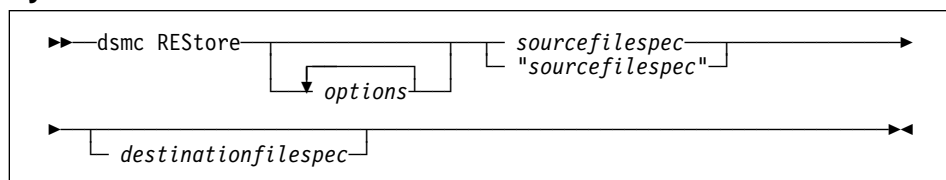
DSMC RESTORE—Restoring Files from Backup

Use the `dsmc RESTORE` command to obtain copies of backup versions of your files from an ADSM server.

You can restore files by specifying directories, by specifying selected files, or by choosing files from a list. You can also restore files to the directory from which you backed them up or to a different directory.

If you have the ADSM HSM client installed on your workstation, you can also use the `RESTOREMIGSTATE=Yes` option with the `RESTORE` command to restore stub files for migrated and premigrated files.

Syntax



Parameters

options

Specifies any of the following options:

-FROMDate=*date*

The date from which you want ADSM to look for backups. ADSM does not restore files that were backed up before this date, although ADSM might restore directories that are older than this date.

You can use this option with the `TODATE` option to create a time window for backups. This can help you restore a set of files to their state as of that window. For example, to restore backup versions of files that were created during the last week of March 1995 for the files in the `/home/jones` directory, enter:

```
Restore -FROMDate=03/26/1995 -TODate=03/31/1995 /home/jones
```

The *date* must be in the format you select with the `DATEFORMAT` option. For example, the date for date format 1 is `mm/dd/yyyy`, which is the American English standard. If you include `DATEFORMAT` on the command, it must precede `FROMDATE` and `TODATE`.

For AIX and Solaris Users Only: See the “`DATEFORMAT`” option for information about defining the date.

The file selected for restore depends on the other options you use:

INACTIVE or **LATEST**

Restores the latest backup version in the `fromdate-todate` window, even if it is an inactive version. If a file does not have a backup within the window, the file is not restored.

RESTORE

Using the INACTIVE or LATEST option with FROMDATE and TODATE is likely to get the results you want.

SUBDIR=YES

Restores the most recent backup of a directory up to the TODATE date. The FROMDATE option is ignored for directories.

If you also use the INACTIVE or LATEST option, then ADSM restores the most recent backup of the directory up to the TODATE date, even if the backup is inactive. If you do not use INACTIVE or LATEST, ADSM only restores active backup versions. If the directory you are restoring does not have an active backup before the TODATE date, ADSM recreates the directory instead of restoring it.

-FROMOwner=owner

Specifies an alternate owner from which you would like to restore files. To successfully use this option, the owner must have granted you access to the files. For example, to restore files from the **/u/devel/proja** directory that belongs to an owner identified as **user_c**, and place the restored files in a directory you own named **/u/id/proja**, you can enter the following:

```
REStore -FROMOwner=user_c /u/devel/proja /u/id/proja
```

-FROMNode=node

Specifies an alternate node from which you would like to restore files that are owned by another user. If the owner of the files you want to restore is on another node, in addition to specifying the owner, you must also specify the owner's node. To successfully use this option, the owner must have granted you access to the files. For example, to restore files from the **/u/devel/proja** directory that belongs to an owner identified as **user_c** on another node identified as **unix_2**, and place the restored files in a directory you own named **/u/id/proja**, you can enter:

```
REStore -FROMNode=unix_2 -FROMOwner=user_c /u/devel/proja /u/id/proja
```

-FROMTime=time

Used with the FROMDATE option to specify a beginning time on the specified date. For example, with FROMTIME and FROMDATE, you can request that ADSM restore only files that were backed up on or after 6:00 AM on June 1, 1995.

You can also use FROMTIME and FROMDATE with TOTIME and TODATE to request that ADSM restore only files that were backed up within a particular window of time. For example, you can request that ADSM restore only files that were backed up between 6:00 AM on June 1, 1995 and 11:59 PM on June 15, 1995.

The *time* must be in the format you select with the TIMEFORMAT option. For example, if TIMEFORMAT is set to the default of 1, the time must be in the format 23:00:00. If you include the TIMEFORMAT option with the command, it must precede the FROMTIME and TOTIME options.

The default for FROMTIME is 00:00:00.

RESTORE

Note: If you want ADSM to use a value you specify for FROMTIME, you must also include FROMDATE with the command. Otherwise, ADSM ignores FROMTIME.

The actual files selected for restore are also determined by other options you use with the command. See the discussion on FROMDATE for more information.

-IFNewer

ADSM should replace an existing file with the backup if the backup is newer than the existing file. This option is ignored if the REPLACE option is NO.

Only active backups are considered unless you also use the INACTIVE or LATEST options.

-INActive

Specifies that you want ADSM to display both active and inactive versions of files when you also use the PICK option. See the last example in this section.

-LAtest

Restores the most recent backup version of a file. If you delete files from your workstation, then run an incremental backup, ADSM changes the status of the *active* backup versions of the deleted files to *inactive*. You can restore inactive backup versions of deleted files using this option.

The LATEST option tells ADSM to search both active and inactive files for the latest backup versions. If you do not specify LATEST, ADSM searches only for active files and does not restore any backup versions for deleted files.

For example, to restore the latest backup versions of files from the **/u/devel/projecta** directory, you can enter the following:

```
REStore -LAtest /u/devel/projecta
```

-Pick

Causes ADSM to display a list of active backup versions of your files that match the file specification you enter. From that list, you can select the backup versions to restore.

Note: Do not use the -Pick option when you run a restore in background (nohup) mode.

If you also use the INACTIVE option, ADSM displays both active and inactive versions. See the last example in this section.

-Quiet

Prevents messages from being displayed on your screen during processing.

Note: Certain error information is still displayed, and messages are posted to log files.

If you are restoring a large number of files, and you do not want ADSM to display information about each file it restores, you can enter:

```
REStore -Quiet /u/devel
```

RESTORE

-REPlace=*value*

When restoring a file, determines what happens when a file of the same name as the backup already exists in the destination directory. The possible values are:

Prompt

ADSM prompts you for your choice for overwriting an existing file. If the file is read-only, you cannot overwrite it. This is the default unless REPLACE is set in the client user options file.

Note: Do not use **-REPlace=Prompt** when you run a restore in background (nohup) mode.

No

ADSM does not overwrite existing files.

Yes

ADSM overwrites existing files, except for read-only files, without prompting you.

All

ADSM overwrites existing files, even if they are read-only, without prompting you.

Note: ADSM overwrites a read-only file only if you are the owner of the original file, or you are a root user.

-RESToremigstate=*value*

When restoring migrated and premigrated files, determines whether ADSM restores the files to a migrated state or a resident state. The possible values are:

Yes

ADSM restores migrated files and premigrated files to stub files on the local file system. Migrated files remain migrated, and premigrated files become migrated.

This is the default.

No

ADSM restores backup versions of migrated and premigrated files to the local file system, and the files become resident.

-SErvername=*servername*

Specifies the name of the ADSM server from which you want to restore your files. If you have more than one server available to you, this option allows you to override the default server specified in the client user options file you use.

Note: You can use this option only when you issue the RESTORE command in batch mode.

For example, to restore a file named **budget** from a server identified as **server_b**, you can enter the following:

```
dsmc REStore -SErvername=server_b /u/devel/proja/budget
```

RESTORE

-Subdir=value

Recursively descends directories, allowing you to either include or exclude files in subdirectories when restoring files. For example, to restore only the files in the **/u/devel** directory, you can enter:

```
REStore -Subdir=no /u/devel
```

However, to restore the files in the **/u/devel** directory *and* all of its subdirectories, you can enter:

```
REStore -Subdir=yes /u/devel
```

If a subdirectory is a mounted file system, ADSM will not include the files with the SUBDIR option.

Note: Be careful when using the SUBDIR option as it can impact ADSM performance. ADSM must search through your subdirectories, which can take extra time. For the best performance, use the SUBDIR option only when necessary.

-TAPEPrompt=value

Specifies whether you want ADSM to wait for a tape to be mounted when required for a restore process, or prompt you for your choice. If you set TAPEPROMPT to Yes, ADSM allows you to choose whether to wait for the tape to be mounted. If TAPEPROMPT is set to No (the default), ADSM waits for the tape to be mounted. For example, you can enter:

```
REStore -TAPEPrompt=Yes /u/devel/proja/budget
```

-TODate=date

The date to which you want ADSM to look for backups. ADSM does not restore files that were backed up after this date.

You can use this option with the FROMDATE option to create a time window for backups. See the discussion of FROMDATE for more information on using TODATE.

-TOTime=time

Used with the TODATE option to specify an ending time on the specified date. For example, with TOTIME and TODATE, you can request that ADSM restore only files that were backed up on or before 11:59 PM on June 15, 1995.

You can also use TOTIME and TODATE with FROMTIME and FROMDATE to request that ADSM restore only files that were backed up within a particular window of time. For example, you could request that ADSM restore only files that were backed up between 6:00 AM on June 1, 1995 and 11:59 PM on June 15, 1995.

The *time* must be in the format you select with the TIMEFORMAT option. For example, if TIMEFORMAT is set to the default of 1, the time must be in the format 23:00:00. If you include the TIMEFORMAT option with the command, it must precede the FROMTIME and TOTIME options.

The default for TOTIME is 23:59:59.

RESTORE

Note: If you want ADSM to use a value you specify for TOTIME, you must also include TODATE with the command. Otherwise, ADSM ignores TOTIME.

The actual files selected for restore are also determined by other options you use with the command. See the discussion on FROMDATE for more information.

You can also use these options:

DATEFORMAT
NODENAME
NUMBERFORMAT
PASSWORD
TIMEFORMAT
VERBOSE

Note: The DATEFORMAT, NUMBERFORMAT, and TIMEFORMAT options are not valid for an AIX client.

sourcefilespec

The path and file name of the file you want to restore. You can use pattern-matching expressions to restore backup versions for multiple files. If you use wildcard characters, enclose the file specification in double quotation marks (").

destinationfilespec

The path and file name where you want to place the restored file or files. If you do not specify a destination, ADSM restores the files to the original source path.

Examples

Task: Restore a single file named **budget**.

Command: REStore /u/devel/projecta/budget

Task: Restore all files from the **/u/devel/projecta** directory that end with the characters **.c**.

Command: REStore "/u/devel/projecta/*.c"

Task: Restore all files from the **/u/devel/projecta** directory that end with the characters **.c** to the **/u/newdevel/projectn** directory.

Command: REStore "/u/devel/projecta/*.c" /u/newdevel/projectn

Attention: If the destination directory does not exist, you must specify the delimiter (/) as the last character of the destination directory. Otherwise, ADSM assumes the destination is a file and will repeatedly overwrite each file restored to this destination file if the REPLACE option is set to YES.

Task: Restore all files from the **/u/devel/projecta** directory that end with the characters **.c** to the **/u/newdevel/projectn** directory, where the **projectn** directory does not exist.

Command: REStore "/u/devel/projecta/*.c" /u/newdevel/projectn/

RESTORE

Task: Restore files in the `/user/project` directory. Use the PICK option and the INACTIVE option.

Command: Restore `"/user/project/*" -Pick -INActive`

Output:

```
ADSM Scrollable PICK Window - Restore

#      Backup Date/Time  File Size A/I  File
-----
1.     01/02/1993 21:17    7362  A  /user/project/projb
2.     02/10/1993 12:19   83442  A  /user/project/expense
3.     03/22/1993 04:07    8117  I  /user/project/projx
4.     04/06/1993 12:12    4392  A  /user/project/salaries
5.     04/07/1993 11:27   287009 A  /user/project/projd
6.     04/08/1993 07:21     362  I  /user/project/revenue

0-----10-----20-----30-----40-----50-----60--
<U>=Up  <D>=Down <T>=Top <B>=Bottom <R#>=Right <L#>=Left
<G#>=Goto Line # <#>=Toggle Entry <+>=Select All <->=Deselect All
<#:#+>=Select A Range <#:#->=Deselect A Range <O>=Ok <C>=Cancel
pick>
```

When you use the PICK option with the `dsmc RESTORE` command, ADSM displays a list of files that match the file specification you entered. When you use the INACTIVE option along with the PICK option in the same command, ADSM displays inactive files as well as active files. If you wish to display active files only, just enter the PICK option with the command.

The functions available to manipulate the display and make selections appears at the bottom of the screen. If it takes more than one screen to display the list, you can scroll forward and backward through the screens.

To make selections, at the `pick>` prompt, type the number or numbers that correspond to the files you want to restore. For example, to select the **projx** file and the **revenue** file for restore, enter the following:

```
pick> 3 6
```

ADSM marks your selections with an x as shown in the following illustration.

RESTORE

```

ADSM Scrollable PICK Window - Restore

#      Backup Date/Time  File Size A/I  File
-----
1.    01/02/1993 21:17      7362  A  /user/project/projb
2.    02/10/1993 12:19     83442  A  /user/project/expense
x 3.    03/22/1993 04:07      8117  I  /user/project/projx
4.    04/06/1993 12:12      4392  A  /user/project/salaries
5.    04/07/1993 11:27    287009  A  /user/project/projd
x 6.    04/08/1993 07:21       362  I  /user/project/revenue

0-----10-----20-----30-----40-----50-----60-
<U>=Up  <D>=Down <T>=Top <B>=Bottom <R#>=Right <L#>=Left
<G#>=Goto Line # <#>=Toggle Entry <+>=Select All <->=Deselect All
<#:#+>=Select A Range <#:#->=Deselect A Range <O>=Ok <C>=Cancel
pick>

```

To restore the files you selected, enter **o** at the pick> prompt. For example:

```
pick> o
```

ADSM restores the files and displays the following:

```
Restore processing finished.
```

Figure 64 provides an explanation of each Pick Window manipulation function.

Figure 64 (Page 1 of 2). Pick Window Manipulation Functions

| Legend | Description |
|------------------|--|
| <U>=Up | Scrolls the window up one page of files. |
| <D>=Down | Scrolls the window down one page of files. |
| <T>=Top | Positions the window to the top of the list. |
| =Bottom | Positions the window to the bottom of the list. |
| <R#>=Right | Positions the window # spaces to the right. Default is 20 if only R is entered. |
| <L#>=Left | Positions the window # spaces to the left. Default is 20 if only L is entered. |
| <G#>=Goto Line # | Positions the file # entered to top of screen. |
| <#>=Toggle Entry | Selects the file # entered or deselects it if already selected. More than one file # can be entered by separating each with a blank. |
| <+>=Select All | Selects all files. |
| <->=Deselect All | Deselects all files. |

RESTORE

Figure 64 (Page 2 of 2). Pick Window Manipulation Functions

| Legend | Description |
|--------------------------|--|
| <#:#+>=Select a range. | Selects a range of files. First file # entered is beginning of range. Second file # entered is end of range. |
| <#:#->=Deselect a range. | Deselects a range of files. First file # entered is beginning of range. Second file # entered is end of range. |
| <O>=Ok | Restores the files selected. |
| <C>=Cancel | Cancels the operation and returns to the command prompt. |

Related Commands

Figure 65. Related Commands for DSMC ARCHIVE

| Command | Description | Reference |
|-------------------|--|-----------|
| DSMC INCREMENTAL | Back up new and changed files. | Page 199 |
| DSMC QUERY BACKUP | Display a list of backup versions of your files. | Page 214 |
| DSMC SELECTIVE | Back up selected files. | Page 246 |

RETRIEVE

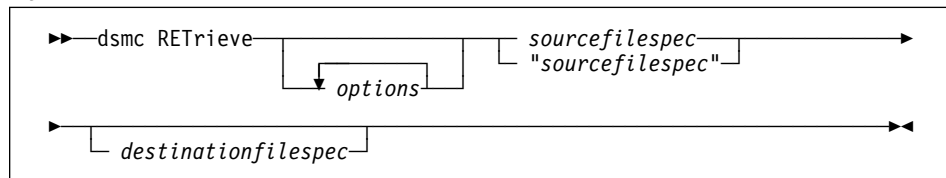
DSMC RETRIEVE—Retrieving Files from Archive

Use the dsmd RETRIEVE command to obtain copies of archived files from the server.

You can retrieve archived files by specifying directories, selected files, or the descriptions assigned to the files when they were archived.

You can also place the retrieved files in the same directory from which they were archived or in a different directory.

Syntax



Parameters

options

Specifies any of the following options:

-Description=description

Provides a description of the file you want to retrieve. If you do not remember the name of a file you want to retrieve, you can use the description you gave it when it was archived. For example, if you want to retrieve a file that you archived from the **/user/home/proj1** directory with a description of **1992 Budget for Proj 1**, you can enter:

```
RETRIEVE -Description="1992 Budget for Proj 1" /user/home/proj1
```

You can also use pattern-matching expressions to retrieve a group of files you previously archived with the same description. For example, if you want to retrieve all files that were archived from the current directory with the description of **Project X** from the **/u/allproj** directory, you can enter:

```
RETRIEVE -Description="Project X" "/u/allproj/*.x"
```

You can use **"*"** for *sourcefilespec* if you remember only the file description. For example, to retrieve all files with the description **Project X**, you can enter:

```
RETRIEVE -Description="Project X" "*"
```

You can also use wildcard characters to retrieve files with similar descriptions. For example, to retrieve files whose descriptions are **Project X**, **Project XZ**, and **Project YZ**, you can enter:

```
RETRIEVE -Description="Project*" "*"
```

-FROMDate=date

The date from which you want ADSM to look for archives. ADSM does not retrieve files that were archived before this date.

RETRIEVE

You can use this option with the TODATE option to create a time window for archives. This can help you retrieve a set of files to their state as of that window.

For example, to retrieve copies of files that were archived during the last week of March 1995 from the **/home/jones** directory, enter:

```
Retrieve -FROMDate=03/26/1995 -TODate=03/31/1995 /home/jones
```

The *date* must be in the format you select with the DATEFORMAT option. For example, the date for date format 1 is mm/dd/yyyy, which is the American English standard. If you include DATEFORMAT on the command, it must precede FROMDATE and TODATE.

If you use SUBDIR=YES, ADSM retrieves the most recent archive copies of files in a directory up to the TODATE date. The FROMDATE option is ignored for directories.

-FROMOwner=owner

Specifies an alternate owner from which you would like to retrieve files. To successfully use this option, the owner must have granted you access to the files. For example, to retrieve files from the **/u/devel/projecta** directory that belongs to an owner identified as **user_c**, and place the retrieved files in a directory you own named **/u/id/projecta**, you can enter:

```
RETRieve -FROMOwner=user_c /u/devel/projecta /u/id/projecta
```

-FROMNode=node

Specifies an alternate node from which you would like to retrieve files that are owned by another user. If the owner of the files you want to retrieve is on another node, in addition to specifying the owner, you must also specify the owner's node. To successfully use this option, the owner must have granted you access to the files. For example, to retrieve files from the **/u/devel/proja** directory that belongs to an owner identified as **user_c** on another node identified as **unix_2**, and place the retrieved files in a directory you own named **/u/id/proja** you can enter:

```
RETRieve -FROMNode=unix_2 -FROMOwner=user_c /u/devel/proja /u/id/proja
```

-FROMTime=time

Used with the FROMDATE option to specify a beginning time on the specified date. For example, with FROMTIME and FROMDATE, you can request that ADSM retrieve only files that were archived on or after 6:00 AM on June 1, 1995.

You can also use FROMTIME and FROMDATE with TOTIME and TODATE to request that ADSM retrieve only files that were archived within a particular window of time. For example, you can request that ADSM retrieve only files that were archived between 6:00 AM on June 1, 1995 and 11:59 PM on June 15, 1995.

The *time* must be in the format you select with the TIMEFORMAT option. For example, if TIMEFORMAT is set to the default of 1, the time must be in the

RETRIEVE

format 23:00:00. If you include the TIMEFORMAT option with the command, it must precede the FROMTIME and TOTIME options.

The default for FROMTIME is 00:00:00.

Note: If you want ADSM to use a value you specify for FROMTIME, you must also include FROMDATE with the command. Otherwise, ADSM ignores FROMTIME.

If you use SUBDIR=YES, ADSM retrieves the most recent archive of a directory up to the time specified with TOTIME on the date specified with TODATE. ADSM ignores FROMTIME for directories.

-Pick

Causes ADSM to display a list of archived files that match the file specification you enter. From that list, you can select the files to retrieve. See the RESTORE command for information on using the PICK window.

-Quiet

Prevents messages from being displayed during processing.

Note: Certain error information is still displayed, and messages are posted to log files.

If you are retrieving a large number of files from a server, and you do not want ADSM to display information about each file it retrieves, you can enter:

```
RETRieve -Quiet /u/devel
```

-REPlace=*value*

When retrieving a file, determines what happens when a file of the same name as the archive already exists in the destination directory. The possible values are:

Prompt

ADSM prompts you for your choice for overwriting an existing file. If the file is read-only, you cannot overwrite it. This is the default unless REPLACE is set in the client user options file.

No

ADSM does not overwrite existing files.

Yes

ADSM overwrites existing files, except for read-only files, without prompting you.

All

ADSM overwrites existing files, even if they are read-only, without prompting you.

-SErvername=*servername*

Specifies the name of the ADSM server from which you want to retrieve files. If you have more than one server available to you, this option allows you to override the default server specified in the client user options file you use.

RETRIEVE

Note: You can use this option only when you issue the RETRIEVE command in batch mode.

For example, to retrieve a file named **budget** from a server identified as **server_b**, you can enter the following:

```
dsmc RETrieve -SErvername=server_b /u/devel/proja/budget
```

-SUBdir=value

Recursively descends directories allowing you to either include or exclude files in subdirectories when retrieving your files. When retrieving files from subdirectories, ADSM does not retrieve the directory attributes and owner information.

For example, to retrieve only the files in the **/u/proj** directory, you can enter:

```
RETrieve -SUBdir=no /u/proj
```

However, to retrieve the files in the **/u/proj** directory *and* all of its subdirectories, you can enter:

```
RETrieve -SUBdir=yes /u/proj
```

If a subdirectory is a mounted file system, ADSM will not include the files with the SUBDIR option.

Note: Be careful when using the SUBDIR option as it can impact ADSM performance. ADSM must search through your subdirectories, which can take extra time. For the best performance, use the SUBDIR option only when necessary.

-TAPEPrompt=value

Specifies whether you want ADSM to wait for a tape to be mounted when required for a retrieve process, or prompt you for your choice.

If you set TAPEPROMPT to YES, ADSM allows you to choose whether to wait for the tape to be mounted. If TAPEPROMPT is set to NO (the default), ADSM waits for the tape to be mounted. For example, you can enter:

```
RETrieve -TAPEPrompt=Yes /u/devel/proja/budget
```

-TODate=date

The date to which you want ADSM to look for archives. ADSM does not retrieve files that were archived after this date.

You can use this option with the FROMDATE option to create a time window for archives. See the discussion of FROMDATE for more information on using TODATE.

-TOTime=time

Used with the TODATE option to specify an ending time on the specified date. For example, with TOTIME and TODATE, you can request that ADSM retrieve only files that were archived on or before 11:59 PM on June 15, 1995.

You can also use TOTIME and TODATE with FROMTIME and FROMDATE to request that ADSM retrieve only files that were archived within a particular window of time. For example, you could request that ADSM retrieve only files

RETRIEVE

that were archived between 6:00 AM on June 1, 1995 and 11:59 PM on June 15, 1995.

The *time* must be in the format you select with the TIMEFORMAT option. For example, if TIMEFORMAT is set to the default of 1, the time must be in the format 23:00:00. If you include the TIMEFORMAT option with the command, it must precede the FROMTIME and TOTIME options.

The default for TOTIME is 23:59:59.

Note: If you want ADSM to use a value you specify for TOTIME, you must also include TODATE with the command. Otherwise, ADSM ignores TOTIME.

If you use SUBDIR=YES, ADSM retrieves the most recent archive of a directory up to the time specified with TOTIME on the date specified with TODATE. ADSM ignores FROMTIME for directories.

You can also use these options:

DATEFORMAT
NODENAME
NUMBERFORMAT
PASSWORD
TIMEFORMAT
VERBOSE

Note: The DATEFORMAT, NUMBERFORMAT, and TIMEFORMAT options are not valid for an AIX client.

sourcefilespec

The path and file name of the file you want to retrieve. You can use pattern-matching expressions to retrieve multiple archived files. If you use wildcard characters, enclose the file specification in double quotation marks ("). Specify "*" to retrieve all archived files that were backed up from the current directory.

destinationfilespec

The path and file name where you want to place the retrieved files. If you do not specify a destination, ADSM returns the files to the original source path.

Examples

Task: Retrieve a single file named **budget**.

Command: RETrieve /u/devel/projecta/budget

Task: Retrieve all files from the **/u/devel/projecta** directory that end with the characters **.c**.

Command: RETrieve "/u/devel/projecta/*.c"

Task: Retrieve all files in the **/home** directory.

Command: RETrieve "/user/home/*"

Note: The SUBDIR option has no effect when retrieving files. To retrieve files contained in any subdirectories of **/home**, you must specify the subdirectory in another RETRIEVE command.

RETRIEVE

Task: Retrieve all files from the **/u/devel/projecta** directory that end with the characters **.c** to the **/u/newdevel/projectn** directory.

Command: RETrieve "/u/devel/projecta/*.c" /u/newdevel/projectn

Attention: If the destination directory does not exist, you must specify the delimiter (/) as the last character of the destination directory. Otherwise, ADSM assumes the destination is a file and will repeatedly overwrite each file retrieved to this destination file if the REPLACE option is set to YES.

Task: Retrieve all files from the **/u/devel/projecta** directory that end with the characters **.c** to the **/u/newdevel/projectn** directory, where the **projectn** directory does not exist.

Command: RETrieve "/u/devel/projecta/*.c" /u/newdevel/projectn/

Task: Retrieve files in the **/user/project** directory. Use the PICK option.

Command: RETrieve "/user/project/*" -PIck

Output: See the RESTORE command for information on using the PICK window.

Related Commands

Figure 66. Related Commands for DSMC RETRIEVE

| Command | Description | Reference |
|---------------------|--|-----------|
| DSMC ARCHIVE | Archive files on ADSM storage. | Page 185 |
| DSMC DELETE ARCHIVE | Delete archived files from ADSM storage. | Page 192 |
| DSMC QUERY ARCHIVE | Display a list of your archived files. | Page 208 |

DSMC SCHEDULE—Running Scheduled Events

Root User

Use the `dsmc SCHEDULE` command to start the client scheduler on your workstation. The client scheduler must be running before work scheduled by your ADSM administrator can be initiated. Your ADSM administrator can define schedules to run incremental or selective backups, or to archive specific files.

When the `dsmc SCHEDULE` command is running, ADSM uses the options listed below. You can allow ADSM to use defaults for these options, or you can set them in your client system options file.

- **SCHEDMODE** — Specifies the schedule mode to use, `POLLING` or `PROMPTED`. If `SCHEDMODE` is `POLLING`, your client node periodically asks the server for scheduled work. If `SCHEDMODE` is `PROMPTED`, the server contacts your client node when it is time to start a scheduled service.
Your ADSM administrator determines whether one or both modes are supported by the server.
- **TCPCLIENTADDRESS** — Specifies the TCP/IP address you want the server to use to contact your client node. ADSM uses this option only when `SCHEDMODE` is `PROMPTED`.
- **TCPCLIENTPORT** — Specifies the TCP/IP port number you want the server to use to contact your client node. ADSM uses this option only when `SCHEDMODE` is `PROMPTED`. If the default or specified port is busy, ADSM attempts to use any other available port.
- **QUERYSCHEDPERIOD** — Specifies the maximum number of hours the client scheduler on your workstation must wait between attempts to contact the server for scheduled work. ADSM uses this option only when `SCHEDMODE` is `POLLING`.
If your administrator specifies a value for this option, that value overrides what you specify in the client system options file.
- **MAXCMDRETRIES** — Specifies the maximum number of times the client scheduler on your workstation can retry a scheduled command that fails.
If your administrator specifies a value for this option, that value overrides what you specify in the client system options file.
- **RETRYPERIOD** — Specifies the number of minutes the client scheduler on your workstation must wait between retry attempts for a scheduled command that fails or unsuccessful attempts to contact the server.
If your administrator specifies a value for this option, that value overrides what you specify in the client system options file.
- **SCHEDLOGNAME** — Specifies where ADSM stores the schedule log that contains detailed information about schedule processing. The default is the current directory with a file name of **`dsm Sched.log`**.

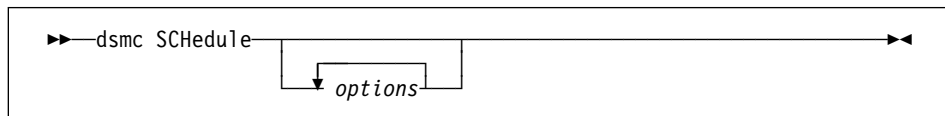
SCHEDULE

- SCHEDLOGRETENTION — Specifies the number of days ADSM keeps entries in the schedule log and whether entries that are pruned from the schedule log are saved.
- PRESCHEDULECMD — Specifies that you want ADSM to run a command before running the client scheduler.
- POSTSCHEDULECMD — Specifies that you want ADSM to run a command after running the client scheduler.

After you start the client scheduler, it continues to run and to initiate scheduled events until you shut down the machine, close the window in which you initiated the command, or terminate the process.

You *cannot* issue the `dsmc SCHEDULE` command in interactive mode.

Note: Tape prompting will not occur during a scheduled operation regardless of the setting for the TAPEPROMPT option.



Parameters

options

Specifies any of the following options:

-PASsword=*password*

Specifies the ADSM password for your workstation. If an ADSM password is required for your workstation and you want to run the `dsmc SCHEDULE` command in the background, you must supply the password with the command.

-SErvername=*servername*

Specifies the name of the ADSM server to contact for scheduled work. If you have more than one server available to you, this option allows you to override the default server specified in the client user options file you use. For example, to initiate scheduled events from a server identified as **server_b**, you can enter the following:

```
dsmc SCHEDULE -SErvername=server_b
```

You can also use these options:

DATEFORMAT
NODENAME
NUMBERFORMAT
QUIET
TIMEFORMAT
VERBOSE

SCHEDULE

Note: The DATEFORMAT, NUMBERFORMAT, and TIMEFORMAT options are not valid for an AIX client.

Examples

Task: Automatically start the scheduler at system bootup time.

Command: Make sure that the PASSWORDACCESS option is set to GENERATE, and then add one of the following entries to the **/etc/inittab** file.

For AIX:

```
adsm::once:/usr/lpp/adsm/bin/dsmc sched > /dev/null 2>&1 # ADSM scheduler
```

For Digital UNIX:

```
adsm::once:/usr/opt/adsm/dsmc sched > /dev/null 2>&1 # ADSM scheduler
```

For other UNIX clients:

```
adsm::once:/usr/adsm/dsmc sched > /dev/null 2>&1 # ADSM scheduler
```

Note: You **must** include the redirection to **/dev/null** in the command.

For OpenEdition MVS clients, add the following entry to the **/etc/rc** file:

```
_BPX_JOBNAME='ADSM' /usr/adsm/dsmc schedule &
```

Task: Interactively start the scheduler and keep it running in the background.

Command: `nohup dsmc sched 2> /dev/null &`

Related Commands

Figure 67. Related Commands for DSMC SCHEDULE

| Command | Description | Reference |
|---------------------|---|-----------|
| DSMC QUERY SCHEDULE | Display information about scheduled events. | Page 226 |

SELECTIVE

DSMC SELECTIVE—Backing Up Selected Files

Use the `dsmc SELECTIVE` command to selectively back up files that you work with on a day-to-day basis. If any of those files become damaged or lost, you can obtain backup versions from the server to replace them.

When you run a selective backup, ADSM backs up all the files you specify as long as they are not excluded from backup services in your include-exclude file, and they meet management class requirements for serialization.

During a selective backup, ADSM sends copies of the files to the server regardless of whether they have changed since the last backup. As a result, you could have more than one copy of the same file on the server. If that occurs, you may not have as many different down-level versions of the file on the server as you intended. Your version limit could be made up of identical files. You can use the `dsmc INCREMENTAL` command to back up only changed and new files if you want to avoid that possibility.

You can selectively back up single files or directories. You can also use pattern-matching expressions to back up groups of related files.

Note: ADSM backs up all regular files. It does *not* back up the following types of files:

- Character special files
- Block special files
- FIFO special files (named pipe files)

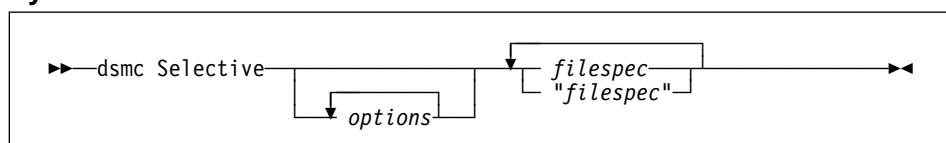
The owner of a backup version of a file is the same as the owner of the original file. If you are a root user, and you back up a file that is owned by another user, that user is the owner of the backup version.

In ADSM you cannot back up empty directories, or empty subdirectories nested within another directory. If you attempt to back up an empty directory, ADSM returns the following message:

```
ANS4095I No files matching search criteria were found.
```

Note: ADSM backs up hidden files associated with various disk compression products. If your system has such a disk compression product installed, you might want to search for these hidden files before starting a backup. In your include-exclude options file, exclude any hidden files you do not wish to have backed up.

Syntax



Parameters

SELECTIVE

options

Specifies any of the following options:

-Quiet

Prevents messages from being displayed on your screen during processing.

Note: Certain error information is still displayed, and messages are posted to log files. For example, if you are selectively backing up files in the **/u/proj** directory, and you do not want ADSM to display information about each file it backs up, you can enter:

```
Selective -Quiet /u/proj
```

-SErvername=servername

Specifies the name of the ADSM server on which you want to back up your files. If you have more than one server available to you, this option allows you to override the default server specified in the client user options file you use.

Note: You can use this option only when you issue the `dsmc SELECTIVE` command in batch mode.

For example, to begin a selective backup up of the **/u/proj** directory to a server identified as **server_b**, you could enter the following:

```
dsmc Selective -SErver=server_b /u/proj
```

-SUBdir=value

Recursively descends directories allowing you to either include or exclude files in subdirectories when backing up your files. For example, to back up only the files in the **/u/proj** directory, you can enter:

```
Selective -SUBdir=no /u/proj
```

However, to backup the files in the **/u/proj** directory *and* all of its subdirectories, you can enter:

```
Selective -SUBdir=yes /u/proj
```

If a subdirectory is a mounted file system, ADSM will not include the files with the SUBDIR option.

Note: Be careful when using the SUBDIR option as it can impact ADSM performance. ADSM must search through your subdirectories, which can take extra time. For the best performance, use the SUBDIR option only when necessary.

-TAPEPrompt=value

Specifies whether you want ADSM to wait for a tape to be mounted if required for a selective backup, or prompt you for your choice.

For example, to run a selective backup of files in the **/user** directory, and cause ADSM to prompt you for whether to wait for an appropriate tape to be mounted if required for the backup process, enter the following:

```
dsmc Selective /user -TAPEPrompt=Yes
```

The default value for the TAPEPROMPT option is No.

SELECTIVE

You can also use these options:

DATEFORMAT
NODENAME
NUMBERFORMAT
PASSWORD
VERBOSE

Note: The DATEFORMAT and NUMBERFORMAT options are not valid for an AIX client.

filespec

Specifies the path and file name of the file you want to back up. You can use pattern-matching expressions to specify a group of files or all the files in a directory. If you use wildcard characters, enclose the file specification in double quotation marks (").

You can enter multiple file specifications in one command.

Examples

Task: Back up the **proja** file in the **/u/devel** directory.

Command: `Selective /u/devel/proja`

Task: Back up all files in the **/u/devel** directory whose file names begin with *proj*.

Command: `Selective "/u/devel/proj*"`

Task: Back up all files in the **/u/devel** directory whose file names begin with *proj*. Also, back up the single file **budget** in the **/user/home** directory.

Command: `Selective "/u/devel/proj*" /user/home/budget`

Related Commands

Figure 68. Related Commands for DSMC SELECTIVE

| Command | Description | Reference |
|-------------------|--|-----------|
| DSMC INCREMENTAL | Back up new and changed files. | Page 199 |
| DSMC QUERY BACKUP | Display a list of backup versions of your files. | Page 214 |
| DSMC RESTORE | Restore files from ADSM storage. | Page 228 |

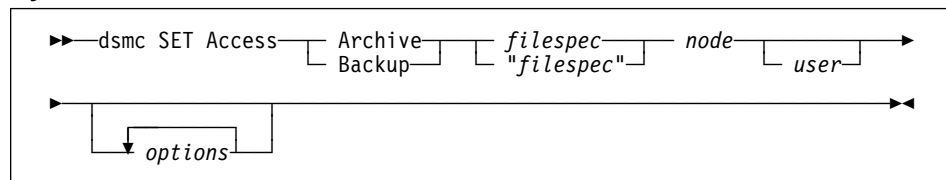
SET ACCESS

DSMC SET ACCESS—Granting Access to Files

Use the `dsmc SET ACCESS` command to grant other users access to backup versions of your files or archived copies of your files. When you grant access to another user, that user can restore or retrieve your files.

Using the `dsmc SET ACCESS` command, you can grant another user access to all your files or a specific file or files. You can grant access to all users on a particular node, or you can grant access to just one user. However, you must specifically state in the command whether you are granting access to archived copies of files or backup versions of files. You cannot grant access to both types of files with a single command.

Syntax



Parameters

Archive

Specifies that you want to grant access to archived files.

Backup

Specifies that you want to grant access to backup versions of files.

filespec

The path and file name of the file to which you want to grant another user access. Use pattern-matching expressions to grant access to multiple files within a directory. If you use wildcard characters, enclose the file specification in double quotation marks (`"`). Specify `"*"` to grant access to all of your archived files or to all of the backup versions of your files.

node

Specifies the ADSM client node to which you are granting access. You can use pattern-matching expressions to grant access to multiple nodes with similar node names.

user

Specifies the user at the node you specify to whom you are granting access. You can use pattern-matching expressions to grant access to multiple users with similar user names. By default, if you do not specify a value for *user*, any user at the node you specify is granted access.

options

Specifies any of the following options:

`-SErvername=servername`

Specifies the name of the ADSM server on which your backup versions and archived files reside. If you have more than one server available to you, this

SET ACCESS

option allows you to override the default server specified in the client user options file you use.

Note: You can use this option only when you issue the `dsmc SET ACCESS` command in batch mode.

For example, to grant all users at the specified node access to all backup versions of your files at a server identified as **server_b**, you can enter the following:

```
dsmc SET Access Backup "*" node_2 -Servername=server_b
```

You can also use these options:

DATEFORMAT
NODENAME
NUMBERFORMAT
PASSWORD
TIMEFORMAT

Note: The DATEFORMAT, NUMBERFORMAT, and TIMEFORMAT options are not valid for an AIX client.

Examples

Task: Give **user_c** at **node_3** the authority to restore the **budget** file from the directory of `/u/user`.

Command: `SET Access Backup /u/user/budget node_3 user_c`

Task: Give **user_c** at **node_3** the authority to retrieve all files from the **/u/devel/proja** directory whose file names end with `.c`.

Command: `SET Access Archive "/u/devel/proja/*.c" node_3 user_c`

Task: Give any user at **node_3** the authority to retrieve all files from the **/u/devel/proja** directory.

Command: `SET Access Archive /u/devel/proja node_3`

Task: Give **user_c** at **node_3** the authority to restore all of the backup versions of your files.

Command: `SET Access Backup "*" node_3 user_c`

Task: Give all users at **node_3** whose user names start with **depta** the authority to restore all the backup versions of your files.

Command: `SET Access Backup "*" node_3 "depta*"`

Task: Give all users at nodes whose node names end with **bdg** the authority to restore all the backup versions of your files.

Command: `SET Access Backup "*" "*bdg"`

Related Commands

SET ACCESS

Figure 69. Related Commands for DSMC SET ACCESS

| Command | Description | Reference |
|--------------------|--|------------------|
| DSMC DELETE ACCESS | Revoke authorization for another user to restore or retrieve your files. | Page 189 |
| DSMC QUERY ACCESS | Display a list of current authorization rules for backup versions and archived copies of your files. | Page 206 |

SET PASSWORD

DSMC SET PASSWORD—Changing Your Password

RootUser

Use the `dsmc SET PASSWORD` command to change the ADSM password for your workstation. If you do not enter your old and new passwords, you are prompted for them.

When ADSM prompts you for a password, the password you enter does not appear on your screen.

ADSM prompts you for the new password twice to protect you from error.

An ADSM password can be up to 64 characters. Valid characters are:

| Characters | Description |
|------------|--|
| A–Z | any letter, A through Z, upper or lower case |
| 0–9 | any number, 0 through 9 |
| + | plus |
| . | period |
| _ | underscore |
| - | hyphen |
| & | ampersand |

A password is not case sensitive.

Note: When possible, you should consider entering the `dsmc SET PASSWORD` command without your passwords, and then wait for ADSM to prompt you for them. This method provides better security in two ways. First, when you type your passwords after being prompted for them, ADSM does not display the characters on your screen for anyone else to see. Secondly, when you enter your passwords after being prompted for them, you eliminate the exposure that they will be displayed should another user subsequently issue a UNIX `ps` command to see a list of processes currently running in the system. On some UNIX clients, if you enter your password with a `dsmc` command, a subsequent UNIX `ps` command may also display your password along with your `dsmc` command.

Syntax

```
▶▶ dsmc SET Password [ oldpw newpw ] [ options ] ▶▶
```

Parameters

oldpw

Specifies the current ADSM password for your workstation.

newpw

Specifies a new ADSM password for your workstation.

SET PASSWORD

options

Specifies the following option:

-SErvername=servername

Specifies the name of the ADSM server on which you want to change your password. If you have more than one server available to you, this option allows you to override the default server specified in the client user options file you use.

Note: You can use this option only when you issue the `dsmc SET PASSWORD` command in batch mode.

For example, if you want to change your password on a server identified as **server_b**, you can enter the following:

```
dsmc SET Password osecret nsecret -SErvername=server_b
```

Examples

Task: Change your current ADSM password from **osecret** to **nsecret**.

Command: `SET Password osecret nsecret`

SET PASSWORD

The terms in this glossary are defined as they pertain to the ADSM library. If you do not find a term you are looking for, you can refer to the *IBM Dictionary of Computing*, McGraw-Hill, 1994. In the United States and Canada you can order this publication by calling McGraw Hill at 1-800-2MC-GRAW.

This glossary may include terms and definitions from:

- The *American National Standard Dictionary for Information Systems*, ANSI X3.172-1990, copyright (ANSI). Copies may be purchased from the American National Standards Institute, 11 West 42nd Street, New York, New York 10036.
- The *Information Technology Vocabulary*, developed by Subcommittee 1, Joint Technical Committee 1, of the International Organization for Standardization and the International Electrotechnical Commission (ISO/IEC JTC2/SC1).

A

absolute. A copy group mode value that indicates that a file is considered for incremental backup even if it has not changed since the last time it was backed up. See *mode*. Contrast with *modified*.

active policy set. The policy set within a policy domain that contains the most recently activated policy. This policy set is used by all client nodes assigned to the current policy domain. See *policy set*.

active version. The most recent backup copy of a file stored in ADSM storage for a file that currently exists on a file server or workstation. An active version remains active and exempt from deletion until it is replaced by a new backup version, or ADSM detects during an incremental backup that the user has deleted the original file from a file server or workstation.

administrative client. A program that runs on a file server, workstation, or mainframe. This program allows administrators to control and monitor ADSM servers through ADSM administrator commands. Contrast with *backup-archive client*.

administrator. A user who has been registered to the server as an administrator. Administrators can be assigned one or more privilege classes. Administrators can use the administrative client to enter ADSM server commands and queries according to their privileges.

ADSM. ADSTAR Distributed Storage Manager

ADSTAR Distributed Storage Manager (ADSM). A client/server program that provides storage management and data access services to customers in a multivendor computer environment.

Advanced Program-to-Program Communications (APPC). An implementation of the SNA LU6.2 protocol that allows interconnected systems to communicate and share the processing of programs. See *Systems Network Architecture Logical Unit 6.2* and *Common Programming Interface Communications*.

APPC. Advanced program-to-program communications.

archive. A function that allows users to copy one or more files to a long-term storage device. Archive copies may be accompanied by descriptive information, may imply data compression software usage, and may be retrieved by archive date, file name, or description. Contrast with *retrieve*.

archive copy. A file or group of files residing in an archive storage pool in ADSM storage.

archive copy group. A policy object that contains attributes which control the generation, destination, and expiration of archive files. The archive copy group belongs to a management class.

archive retention grace period. The number of days ADSM retains an archive copy when the server is unable to rebind the file to an appropriate management class.

authentication. The process of checking and authorizing a user's password before allowing that user access to the ADSM server. Authentication can be turned on or off by an administrator with system privilege.

authorization rule. A specification that allows another user to either restore or retrieve a user's files from ADSM storage.

B

backup. A function that allows users to copy one or more files to a storage pool to protect against data loss. Contrast with *restore*.

backup-archive client. A program that runs on a file server, PC, or workstation and provides a means for ADSM users to back up, archive, restore, and retrieve files. Contrast with *administrative client*.

backup copy group. A policy object that contains attributes which control the generation, destination, and expiration of backup files. The backup copy group belongs to a management class.

backup retention grace period. The number of days ADSM retains a backup version when the server is unable to rebind the file to an appropriate management class.

backup version. A file, directory, or file space that a user has backed up that resides in a backup storage pool in ADSM storage. Though there may be more than one backup version of a file in ADSM storage, only one is considered the active version. See *active version* and *inactive version*.

bindery. A database that consists of three system files for a NetWare 3.11 or 3.12 server. The files contain user IDs and user restrictions.

binding. The process of associating a file with a management class name.

C

central scheduling. A function that allows an administrator to schedule backup and archive operations from a central location. The operations can be scheduled on a periodic basis or on an explicit date.

client. A program running on a file server, PC, workstation or terminal that requests services of another program called the server. There are two types of ADSM clients: administrative client and backup-archive client. See *administrative client* and *backup-archive client*.

Client Access/400. A software product that supports advanced program-to-program communications (APPC) in the DOS, OS/2, and Microsoft Windows environments and provides a set of end user services.

client domain. The set of drives, file systems, or volumes selected by a user for processing during a backup or archive operation.

client node. A file server or workstation on which the backup-archive client program has been installed that has been registered with the server.

client options file. A user-editable file that contains processing options to identify ADSM servers, select communication methods, specify backup, archive,

restore, and retrieve options, define scheduling options, and to choose formats for date, time, and numbers. Also called the **dsm.opt** file.

client polling. A client/server communication technique where the client node queries the server for scheduled work.

client/server. A communications network architecture in which one or more programs (clients) request computing or data services from another program (the server).

client system options file. A file, used on UNIX clients, that contains a number of processing options which identify the ADSM servers to be contacted for services. This file also specifies communications options, backup and archive processing options, and scheduling options. Also called the **dsm.sys** file. See *client user options file*.

client user options file. A user-editable file, used on UNIX clients, that contains processing options to identify the ADSM server to contact, to specify backup, archive, restore, and retrieve options, and to select formats for date, time, and numbers. Also called the **dsm.opt** file. See the *client systems options* file.

closed registration. A registration process in which an ADSM administrator must register workstations as client nodes with the server. Contrast with *open registration*.

command line interface. A type of user interface where commands are specified on the command line. Contrast with *graphical user interface*.

Common Programming Interface Communications (CPIC). A programming interface that allows program-to-program communication using SNA LU6.2. See *Systems Network Architecture Logical Unit 6.2*.

communication method. The method by which a client and server exchange information. For ADSM backup-archive clients, the method can be 3270, PWSCS, SNA LU6.2, or TCP/IP. See *Programmable Workstation Communication Service*, *Systems Network Architecture Logical Unit 6.2*, and *Transmission Control Protocol/Internet Protocol*.

communication protocol. A set of defined interfaces that allows computers to communicate with each other.

copy group. A policy object that contains attributes which control the generation, destination, and expiration of backup and archive files. There are two kinds of copy

groups: backup copy group and archive copy group. Copy groups belong to management classes. See *frequency*, *destination*, *mode*, *retention*, *serialization*, and *version*.

CPIC. Common Programming Interface Communications.

D

default management class. A management class assigned to a policy set that is used to govern backed up or archived files when a user does not explicitly associate a file with a specific management class through the include-exclude list.

destination. A copy group attribute that specifies the storage pool to which a file will be backed up or archived. At installation, ADSM provides two storage destinations named BACKUPPOOL and ARCHIVEPOOL.

domain. See *policy domain* or *client domain*.

dsm.opt file. See *client options file* and *client user options file*.

dsm.sys file. See *client system options file*.

dynamic. A copy group serialization value that specifies that ADSM accepts the first attempt to back up or archive an object, regardless of any changes made during backup or archive processing. See *serialization*. Contrast with *shared dynamic*, *shared static*, and *static*.

E

error log. A text file written on disk that contains ADSM processing error messages. These errors are detected and saved by the ADSM server.

exclude. The process of identifying files in an include-exclude list to prevent them from being backed up whenever a user or schedule issues an incremental or selective backup operation.

expiration. The process by which files are identified for deletion because their expiration date or retention period has passed. Backed up or archived files are marked for

deletion based on the criteria defined in the backup or archive copy group.

F

file server. A dedicated computer and its peripheral storage devices that are connected to a local area network that stores both programs and files that are shared by users on the network.

file space. A logical space on the ADSM server that contains a group of files. In ADSM, users can restore, retrieve, or delete file spaces from ADSM storage. On systems such as DOS or OS/2, a file space is a logical partition and is identified by a volume label. On UNIX systems, a file space is a logical space that contains a group of files backed up or archived from the same file system (or part of a file system defined with the VIRTUALMOUNTPOINT option in the client system options file).

frequency. A copy group attribute that specifies the minimum interval, in days, between incremental backups.

fuzzy backup. A backup version of a file that might not accurately reflect what is currently in the file because ADSM backed up the file while the file was being modified.

fuzzy copy. An archive copy of a file that might not accurately reflect what is currently in the file because ADSM archived the file while the file was being modified.

G

gigabyte (GB). (1) One billion (10⁹) bytes. (2) When referring to memory capacity, 1 073 741 824 in decimal notation.

graphical user interface (GUI). A type of user interface that takes advantage of a high-resolution monitor, includes a combination of graphics, the object-action paradigm, and the use of pointing devices, menu bars, overlapping windows, and icons. Contrast with *command line interface*. See *windowed interface*.

GUI. Graphical user interface.

H

hierarchical storage management client. A program that runs on a workstation or file server to provide space management services. It automatically migrates eligible files to ADSM storage to maintain specific levels of free space on local file systems, and automatically recalls migrated files when they are accessed. It also allows users to migrate and recall specific files.

hive. On Windows NT, a registry subkey that corresponds to a set of files in the `\system32\config` directory.

HSM. Hierarchical Storage Management.

I

inactive version. A copy of a backup file in ADSM storage that either is not the most recent version or the corresponding original file has been deleted from the client file system. Inactive backup versions are eligible for expiration according to the management class assigned to the file.

include-exclude file. On UNIX clients, a file that contains statements which ADSM uses to determine whether to back up certain files and to determine the associated management classes to use for backup or archive. See *include-exclude list*.

include-exclude list. A list of INCLUDE and EXCLUDE options that include or exclude selected files for backup. An EXCLUDE option identifies files that should not be backed up. An INCLUDE option identifies files that are exempt from the exclusion rules or assigns a management class to a file or a group of files for backup or archive services. The include-exclude list is defined either in the include-exclude file (for UNIX clients) or in the client options file.

incremental backup. A function that allows users to back up files or directories from a client domain that are not excluded in the include-exclude list and that meet the requirements for frequency, mode, and serialization as defined by a backup copy group of the management class assigned to each file. Contrast with *selective backup*.

IPX/SPX. Internetwork Packet Exchange/Sequenced Packet Exchange.

L

Local Area Network (LAN). A variable-sized communications network placed in one location. It connects servers, PCs, workstations, a network operating system, access methods, and communications software and links.

M

management class. A policy object that is a named collection of copy groups. A management class is associated with a file to specify how the server should manage backup versions or archive copies of workstation files. See *binding* and *copy group*.

migration. The process of copying a file from a local file system to ADSM storage and replacing the file with a stub file on the local file system.

mode. A copy group attribute that specifies whether a backup file should be created for a file that was not modified since the last time the file was backed up. See *absolute* and *modified*.

modified. A backup copy group attribute that indicates that a file is considered for backup only if it has been changed since the last backup. A file is considered changed if the date, size, owner, or permissions have changed. See *absolute* and *mode*.

N

Named Pipe. A type of interprocess communication which allows message data streams to be passed between peer processes, such as between a client and a server.

NDS. NetWare Directory Services.

NETBIOS. Network Basic Input/Output System. An operating system interface for application programs used on IBM personal computers that are attached to the IBM Token-Ring Network.

NetWare Directory Services (NDS). A database used by Novell NetWare to organize resources for an entire network of NetWare servers. The database itself can be distributed across the network and accessed by all servers. The NDS is available in NetWare Version 4.0 and higher.

NetWare Loadable Module (NLM). Novell NetWare software that provides extended server capability. Support for various ADSM and NetWare platforms are examples of NLMs.

Networking Services/DOS (NS/DOS). A software product that supports advanced program-to-program communications (APPC) in the DOS and Microsoft Windows 3.1 environments. With NS/DOS, communications applications on your workstation can 'talk to' partner applications on other systems that support APPC.

NLM. NetWare Loadable Module.

node. See *client node*.

node name. A unique name used to identify a workstation, file server, or PC to the server.

NS/DOS. Networking Services/DOS.

NTFS. The NT file system on Windows NT.

O

open registration. A registration process in which users can register their own workstations or PCs as client nodes with the server. Contrast with *closed registration*.

owner. The owner of backup-archive files sent from a multi-user client node, such as AIX.

P

pattern-matching character. See *wildcard character*.

PC Support/400. A software product that supports advanced program-to-program communications (APPC) in the DOS, OS/2, and Microsoft Windows environments and provides a set of end user services.

policy domain. A policy object that contains one or more policy sets. Client nodes are associated with a policy domain. See *policy set*, *management class*, and *copy group*.

policy set. A policy object that contains a group of management class definitions that exist for a policy domain. At any one time, there can be many policy sets within a policy domain, but only one policy set can be active. See *active policy set* and *management class*.

Programmable Workstation Communication Services (PWSCS). A product that provides transparent high performance communications between programs running on workstations or on host systems.

PWSCS. Programmable Workstation Communication Services.

R

registration. The process of identifying a client node or administrator to the server by specifying a user ID, password, and contact information. For client nodes, a policy domain, compression status, and deletion privileges are also specified.

registry. On Windows NT, a central database that contains information about hardware, applications, and operating system settings for each machine on the network. Provides security and control over system, security, and account settings.

restore. A function that allows users to copy a version of a backup file from the storage pool to a workstation or file server. The backup copy in the storage pool is not affected. Contrast with *backup*.

retention. The amount of time, in days, that inactive backed up or archived files are retained in the storage pool before they are deleted. The following copy group attributes define retention: retain extra versions, retain only version, retain version.

retrieve. A function that allows users to copy an archive file from the storage pool to the workstation or file server. The archive copy in the storage pool is not affected. Contrast with *archive*.

S

scheduling mode. The type of scheduling operation for the server and client node. ADSM supports two scheduling modes: client-polling and server-prompted.

selective backup. A function that allows users to back up files from a client domain that are not excluded in the include-exclude list and that meet the requirement for serialization in the backup copy group of the management class assigned to each file. Contrast with *incremental backup*.

serialization. A copy group attribute that specifies whether a file can be modified during a backup or

archive operation and what to do if it is. See *static*, *dynamic*, *shared static*, and *shared dynamic*.

server. A program running on a mainframe, workstation, or file server that provides shared services such as back up and archive to other various (often remote) programs called clients.

server-prompted scheduling. A client/server communication technique where the server contacts the client node when work needs to be done.

session. A period of time in which a user can communicate with a server to perform backup, archive, restore, or retrieve requests.

shared dynamic. An ADSM copy group serialization mode. This mode specifies that if a file changes during backup or archive and continues to be changed after a number of retries, the last retry commits the file to the ADSM server whether or not it changed during backup or archive.

shared static. A copy group serialization value that specifies that a file must not be modified during a backup or archive operation. ADSM attempts to retry the operation a number of times. If the file is in use during each attempt, the file is not backed up or archived. See *serialization*. Contrast with *dynamic*, *shared static*, and *static*.

SNA LU6.2. Systems Network Architecture Logical Unit 6.2.

space management attributes. Attributes contained in a management class that specify whether automatic migration is allowed for a file, whether selective migration is allowed for a file, how many days must elapse since a file was last accessed before it is eligible for automatic migration, whether a backup version of a file must exist before the file can be migrated, and the ADSM storage pool to which files are migrated.

static. A copy group serialization value that specifies that a file must not be modified during a backup or archive operation. If the file is in use during the first attempt, ADSM will not back up or archive the file. See *serialization*. Contrast with *dynamic*, *shared static*, and *static*.

storage pool. A named set of storage volumes that is used as the destination of backup or archive copies.

system drive or partition. On Windows NT, the drive or partition on which Windows NT is installed. The

Windows NT directory is usually called WINNT or WINNT35.

Systems Network Architecture Logical Unit 6.2 (SNA LU6.2). A set of rules for data to be transmitted in a network. Application programs communicate with each other using a layer of SNA called Advanced Program-to-Program Communication (APPC).

T

TCP/IP. Transmission Control Protocol/Internet Protocol.

timeout. (1) An event that occurs at the end of a predetermined period of time that began at the occurrence of another specified event. (2) A time interval allotted for certain operations to occur; for example, response to polling or addressing before system operation is interrupted and must be restarted. (3) A terminal feature that logs off a user if an entry is not made within a specified period of time.

Transmission Control Protocol/Internet Protocol (TCP/IP). A standard set of communication protocols that supports peer-to-peer connectivity of functions for both local and wide-area networks.

V

version. The maximum number of different backup copies of files retained for files. The following backup copy group attributes define version criteria: versions data exists and versions data deleted.

W

wildcard character. An asterisk (*) or question mark (?) character that is used to search for various or certain combinations of alphanumeric and symbolic names. These names can reflect file names or character strings within a file, for example.

windowed interface. A type of user interface that is either a graphical user interface or a text-based interface. The text-based interface maintains a close affinity to the graphical user interface, including action bars and their associated pull-down menus and windows. See *graphical user interface*.

workstation. A programmable high level workstation (usually on a network) with its own processing hardware

such as a high-performance personal computer. In a local area network, a personal computer that acts as a

single user or client. A workstation can also be used as a server.

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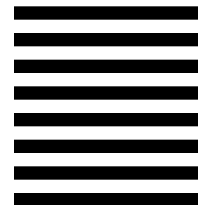
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