Command Line Guide

Active Circle Storage System

Version 4.0.2

Active Circle

Command Line Guide: Active Circle Storage System

Version 4.0.2

Published February 2015

Revision 2.0b

Contents

Introduction

In order to facilitate administrative tasks, Active Circle includes a customized command-line environment that allows administrators to accelerate, systematize, and automate certain operations.

Many of the tasks that can be performed in the graphical user interfaces, the Active Circle Administration Tool and the Active Circle File Explorer, can also be run from the command line. In combination with the various switches and arguments, the Active Circle Command Line is a powerful tool for:

- Selecting files, objects, or entities managed by the system while applying filtering conditions according to various criteria (properties, date, location, etc.)
- Running the commands against the items selected.

Chapter 1, *Overview* contains an overview of terminology and conventions used in this book, a general description of command usage, syntax and options and an alphabetical list of all the commands in the system.

For the purposes of this manual, the commands have been organized by functional groups as follows:

- Chapter 2, *Environment*
- Chapter 3, *File Management*
- Chapter 4, *Information*
- Chapter 5, *Administration*

Each command is presented with syntax, option descriptions and usage/output examples.

Chapter 6, *Usage scenarios* contains descriptions of several scenarios where the command line could be useful for solving problems or accomplishing specific tasks.

The index at the end of the book lists tasks, scenarios, themes and commands alphabetically, to make topics and usage examples easier to find.

Audience

This manual has been designed for administrators of the Active Circle storage system and assumes a working knowledge of the software and the environment in which it has been installed. It is assumed that the reader is familiar with basic Unix/Linux shell commands.

Chapter 1. Overview

This chapter provides an overview of the command presentation of this guide and general usage information.

Terminology

The terms listed below have a particular meaning in the context of this document.

Term	Meaning
Command	A program designed to execute a particular piece of functionality in the Active Circle application. To distinguish them from standard shell commands, Active Circle commands begin with the letters 'ac'.
Option	Added to a command in order to modify its default behavior. Command-specific options are also called "switches" if they don't take arguments or values. Some options have both a short form and a long form which are equivalent, for example: -v and --verbose.
Argument	The object the command is run against, for example a file or a directory.
File	Can refer to a file, a directory, or a symbolic link. Can exist in one or more versions.
Version	Corresponds to a specific state of a shared element (associated data, owner, mode, etc.). For more information, see File versions.
File Data	The "physical" contents of a file with a size that is not zero. File data can be linked with one or more versions of the same shared element.
Share	A virtual space accessed over the network by users to deposit, remove and modify files.
Account	Resource on which a share is built. A share is an account made available through the VFS (Virtual File System) layer.

File versions

In the Active Circle system, the creation or modification of a file, a directory, or a symbolic link on a share creates a new version of the shared element. A data file is associated with it only if it has a file size greater than zero (not null). If that is the case, a new version will be generated only if the content of the file has changed. For example, the modification of the owner or the mode for a file generates a new version, but the data file remains the same.

> **Note**
>
> Unless otherwise mentioned, the values displayed by certain commands in the statistics correspond to the number of data files and not the number of versions.

Command Syntax

The command syntax uses GNU/Linux-style conventions and is presented the following way in this guide:

command {*CONNECTION OPTIONS*} [*COMMAND OPTIONS*] [*STANDARD OPTIONS*]

The formatting of the options in the syntax has the following meanings:

Curly brackets: { }	**Required options**. Some general required options, such as connection options, can be predefined with configuration commands to avoid having to type them for each command.
Square brackets: [ ]	**Optional options**.
Italics	**A value, or an argument**. Text in *italics* indicate an element that should be replaced by an argument value, for example a number, a character, or a name (the help messages on the command line indicate these with <angle-brackets>).
Vertical bar: |	This indicates a choice between several arguments or between a short form and a long form of an option, where both forms are equivalent. For example:

```
-S | --shareName
-v | --verbose
```

The help messages on the command line separate these with a comma, for example `-v, --verbose`.

> **Note**
>
> In this guide, the command-specific options are listed explicitly for each command. The standard and connection options will be referred to with a link to the common option tables, unless there are exceptions.

Using Quotes

When specifying arguments that consist of several words or characters separated by spaces (for example pool or policy names), use quotes around the whole string or just the name containing spaces. You can use either single or double quotes. For example, all three versions of the following command line are equivalent:

- **acfind --poolPath 'Disk Pool 1.node-01.Domain-A1.Domain-A'**
- **acfind --poolPath 'Disk Pool 1'.node-01.Domain-A1.Domain-A**
- **acfind --poolPath "Disk Pool 1".node-01.Domain-A1.Domain-A**

Command Line Options

The options available on the Active Circle command line can be divided into two main categories, one of which has two sub-categories:

Command-specific	These options indicate a specific functionality for a given command.

Common	These options represent the same functionality for all the commands, and consist of:

	Standard options	Modify the display modes for command output and provide command help.
	Connection options	Provide resource, location and logon information.

The command-specific options are listed for each command in this guide. The common options are only listed explicitly (or exceptions noted) if the valid set for a command deviates from the full set. For the commands that take the full set of either standard or connection options, there is a link to the option tables presented in this section.

Standard Options

The options below are used with virtually all of the Active Circle commands:

Table 1.1. Standard Options

Option	Description
-v | --verbose	Sets the *level* of verbosity for the operation. Possible values from 0 (low verbosity, the default) to 5.
-z | --debug	Sets the debug *level* for the operation. Possible values from 1 (exception className) to 5 (complete exception stack trace).
--quiet	Quiet mode (warning messages are not shown).
--nocolor	Disable text color options.
--help	Display the help message specific to the current command.

Connection Options

Connection options are used to provide information necessary for connecting to resources the command needs to retrieve data from, such as a share or node name and logon credentials.

Table 1.2. Connection Options

Option	Description
-P | --fullPath	Specifies the connection path to the Active Circle location. The syntax of the argument is as follows: [*login@*]*nodeName*:/*shareName*/[*directory*]. Alternatively, you can provide this information using the corresponding options listed below in this table.
-C | --nodeName	Specifies the name of the node to query.
-S | --shareName	Specifies the name of the share to analyze. Alternatively, you can enter the argument *all* to analyze all the shares of the Circle. Note that this may be very time consuming.

Option	Description
`-d	--directoryPath`	Specifies the directory path from which to begin the analysis. The path provided must be relative to the share root.
`-A	--login`	Specifies the user name to use to perform the command.
`--password`	Specifies the password associated with the user account given with the argument `-A` (`--login`).

Use these options to establish a connection to Active Circle and indicate the working context within the system. This can be done either by using the `--fullPath` option or by entering each element separately using the options `-A` (user login), `--nodeName` or `--shareName`.

Most of the commands need one or more of the connection options to be specified in order to function. Usually the command will prompt the user for connection information if these options are omitted on the command line.

The path options can be omitted if you are querying the current working directory as defined with the command **accd** (see "**accd**" for more information). The user login options can be omitted if you have created a configuration file using the **acconfig** command (see "**acconfig**" for more information).

New and Updated Commands

Some new commands and sub-commands have been added in this version. The list below summarizes these additions (new or changed command switches are not listed here, please refer to the sections describing each command).

Table 1.3. New and Updated Active Circle Commands

Command	Description
acadmin --circle	Manage the circle. Stop and start nodes, update license.
acadmin --cluster	Create and modify HA clusters.
acadmin --drive	Manage tape drives (maintenance mode, cleaning).
acadmin --library	Manage tape libraries and their contents (move tapes, synchronize, maintenance mode, etc.).
acinfo --drive	Obtains information about the tape drives connected to the system.
acinfo --library	Obtains information about the tape libraries connected to the system.

Alphabetical list of Commands

> ## Tip
>
> You can click on any of the commands in the table below to view the section corresponding to that command in this document.

Table 1.4. Active Circle Commands

Command	Description
acacl	Update or reset Access Control Lists
acadmin --account	Create or update Accounts, Shares (such as access rights)
acadmin --cache	Manage node cache
acadmin --fileServer	Manage file server
acadmin --node	Add or manage nodes
acadmin --partition	Add or manage shared partitions
acadmin --pool	Manage pools
acadmin --tape	Create/update tape pools or manage tapes.
acarchive	Manage Share archives
accd	Change the current/working directory for Active Circle command mode
accheck --integrity	Start integrity checks on Shares
accheck --job	Perform controls and operations on jobs
accheck --partition	Monitor shared partition access status
accheck --pool	Start configuration validation on shared disk pool
accircleproperty	View or modify circle property
accluster	Set up a new Cluster or add a node to an existing Cluster (also for starting and stopping OpenVPN)
acconfig	Manage configuration files for Active Circle command mode
accopy	Copy files to a local directory
acdestage	Move file copies from tape to the cache
acdirectory	Show information or start synchronization of the Active Circle Directory
acdu	List file information and used space per UID or GID for Shares
acexec	Execute a list of commands
acfileop	Process specific files or show current file processes.
acfind	Find files according to conditions and optionally perform operations on them
achelp	Display this help message
acinfo --account	Display information about Accounts and Shares
acinfo --acl	Display information about Access Control Lists
acinfo --archive	Display information about Archives
acinfo --cluster	Display information about Cluster Accounts

Command	Description
acinfo --fileServer	Display information about File servers and Protocols
acinfo --node	Display information about Nodes
acinfo --policy	Display information about Policies
acinfo --pool	Display information about Pools
acinfo --quota	Display information about Share space usage and Quotas
acinfo --session	Display information about Sessions
acinfo --space	Display space used by Shares in pack pools
acinfo --tape	Display information about Tapes
acinfo --version	Display client and [available] node versions
aclog	View archived, current, and incoming Admin log entries
aclogger	View or modify logger levels
acls	List files (with optional conditions) and format the output
acmail	Send e-mail using SMTP configuration
acmd5sum	Compute, show or validate check sum
acpwd	Display the current/working directory of Active Circle command mode
acquota	Set Quotas on a folder, recursively or not, on Shares
acrestore	Restore a previous version of selected files
acrm	Remove ALL versions of a file for which at least one version matches specified names or patterns
actop	Perform monitoring
acwait	Wait until a node or a share is ready

Automation

Using the Active Circle Command Line, it is sometimes easier to achieve results — whether querying, counting, listing, copying, deleting, or extracting — faster and with better focus than in the Administration Tool.

By creating script files, you can run specific sequences of commands in order to automate certain operating modes. Additionally, in Unix or Linux environments it is possible to use the **cron** command to run your scripts at set times.

A *configuration file* greatly simplifies the use of the command line mode by allowing you to set certain system options and default values for most of the command arguments, thereby allowing you to adapt the your storage environment to a particular execution environment. This can be configured using the **acconfig** command.

Chapter 2. Environment

This chapter describes the commands for configuring the Active Circle command-line environment and getting help. They are:

accd   **achelp**

acconfig   **acpwd**

accd

The Active Circle *change directory* command.

accd [-r | --reset] {*full_path*} [--help]

This command allows you to set the working directory for the Active Circle command line environment by specifying the *full_path* to the desired directory. This information is used by all Active Circle commands that take the full path option -P (or --fullPath) unless another path is specified in the command.

Table 2.1. Options for accd

Option	Description
-r	--reset	Removes a previously defined working directory.
full_path	The path to set as the working directory for the Active Circle command-line environment.
--help	Display this help message.

The **accd** command differs from many of the other Active Circle commands in that it takes as an argument the path to the desired location on an Active Circle share without the need for an option to introduce it. The format for the path is as follows:

[*login@*]*nodeName:/shareName*[*/directoryPath*]

The values for *login* and *directoryPath* are optional. If you do not provide the user name (login) here, you will have to provide it whenever running a command that requires it.

> **ℹ Note**
>
> The value entered with the command **accd** remains set, even between terminal sessions and/or machine restarts.
>
> The command does not validate the path entered, it just stores it for use when commands are executed. In case specify an incorrect path with **accd**, you will not receive an error until you try to use the path with another command.

acconfig

The Active Circle command-line environment *configuration* command.

acconfig [-ifrlbptg] [*STANDARD OPTIONS*]

The command **acconfig** allows you to create and modify the command line configuration file, setting values for options that can be either global or user specific. Once set, these values can then be used by several other Active Circle commands.

Table 2.2. Options for `acconfig`

Option	Description
`-i` | `--interactive`	Interactive mode will prompt you for a new default value for each of the options that can be modified in interactive mode (see below).
`-f` | `--force`	Force the over-writing of the current values. This option is *REQUIRED* when using the option `-i` if the configuration file already exists.
`-r` | `--reset`	Reset the options to their original default values.
`-l` | `--list`	List the current configuration.
`-b` | `--backup`	When used in association with the option `-l` (`--list`), displays the contents of the backup file. When used in association with the option `-i`, prompts you to replace the current configuration by the backup.
`-p` | `--password`	Used in association with the option `-i` to modify password options.
`-t` | `--textEnhancement`	Used in association with the option `-i` to modify text color options.
`-g` | `--global`	When used in combination with the other edit options, makes the same changes but applies them to the global configuration file. This option can only be used by the OS root/administrator of the machine.

When you initiate the interactive mode, you will be prompted to enter new values one at a time for the options listed in the table below. You can press **Enter** to maintain the current value or you may enter a new value and then press **Enter** to change the value.

Table 2.3. Editable Options in Interactive Mode

Option	Default Values
`defaultNodeName`	**none**
`defaultShareName`	**none**
`defaultLogin`	**admin**
`defaultElementSeparator`	**\t**
`defaultLineSeparator`	**\n**
`defaultElementTrueValue`	**X**
`defaultElementFalseValue`	**-**

Table 2.4. Macros in Interactive Mode

Macro	Description
`!r`	Remove the current value from the option.
`!i`	Ignore the option (do not edit). Same as **Enter**.
`!q`	Quit interactive mode without saving.

Macro	Description
`!s`	Save and exit from interactive mode.

Passwords

It is possible to store passwords for the various user accounts in the configuration file by using the `-p` (or `--password`) option. When used in conjunction with the option `-i`, it will prompt you for the password after each user account.

> ⊗ **Warning**
>
> The password option should not be used in conjunction with the global option (`-g | --global`). Doing so would allow any user to connect to the system using the command line environment without the need to enter a password.

Text Enhancement

The text enhancement option (`-t | --textEnhancement`) allows you to control the colors used to display the various messages displayed by the system. When used in conjunction with the option `-i`, it will prompt you to enter a color to be used when displaying each type of system message on the screen.

The table below lists the different message types and their default color values.

Table 2.5. Text Color Options

Message Type	Default Color
Warning	`blue`
Error	`red`
Directory	`blue`
Link	`cyan`
Executable	`green`
Archive	`red`
Image	`purple`

The possible color values are:

Table 2.6. Possible Color Values

`black`	`red`
`green`	`yellow`
`blue`	`purple`
`cyan`	`white`

Usage

The first time you run the **acconfig** command, you can run it without any options and it will create the configuration file with the default options. If subsequently you wish to modify the

configuration file, you need to use **acconfig -if**. The -i turns on editing in interactive mode and the -f forces the existing configuration file to be overwritten.

Example of overwriting existing configuration file in interactive mode, specifying new values for node and share while leaving all other values as default:

```
# acconfig -f -i
defaultNodeName[<none>]: node-01
defaultShareName[<none>]: share-01
defaultLogin[admin]:
defaultElementSeparator[\t]:
defaultLineSeparator[\n]:
defaultElementTrueValue[X]:
defaultElementFalseValue[-]:
Your configuration successfully backed up.
Your configuration successfully saved.
```

achelp

The Active Circle *help* command.

achelp [*STANDARD OPTIONS*]

Displays a list of all the Active Circle commands with a short description. The **achelp** command only takes the standard options (which are optional).

acpwd

The Active Circle *print working directory* command.

acpwd

The command **acpwd** prints to screen the current working directory for the Active Circle command line environment as set with the command **accd**. The information is presented in the following format:

acpwd=*login@nodeName:/shareName/folderName*

If the working directory is not set, the following message will be displayed:

```
There is no current/working full path for Active Circle Command mode.
Use the accd command to define one.
```

> ℹ️ **Note**
>
> The command **acpwd** has no options or help message.

Chapter 3. File Management

This chapter describes the Active Circle commands for manipulating files. They are:

accopy   **acls**

acdestage   **acmd5sum**

acfileop   **acrestore**

acfind   **acrm**

accopy

The Active Circle *copy* command.

accopy {-o *target_directory*} [-l] [-f *filepath*]
[--disableRelativePath] [--disableEmptyCheck] [--showOffLineTape]
[--stopIf] [--overwriteFile] [--noExecute] [--limit *n*]
[*STANDARD OPTIONS*] {*CONNECTION OPTIONS*}

The **accopy** command allows you to designate a folder (using the connection options) in an Active Circle share to extract and recursively copy to a location on an external file system. You can use this command to make a local copy of selected directories.

This command is particularly useful when extracting files from tape pools as it copies the files in a manner that is optimal with regard to their position on tape.

Table 3.1. Options for accopy

Option	Description
-o | --outputDir	Specifies the directory to which the data will be written. If it does not exist, the command will create the directory; if it does exist, it must be empty. The command verifies whether it is possible to write to the destination directory.
-l | --list	Specifies that the command should interpret the file specified by the -f option as containing a list of files.
-f | --filePath	Specifies the path of the file. If used together with the -l option, this should be a file containing a list of files. Each line in the list file should be formatted like this (starting from the root of the share): Dir/Subdir/.../Filename.
--stopIf	Stop if there is an offline or unreachable file
--disableRelativePath	Create full path from the share root
--disableEmptyCheck	Disable output (local) directory empty check
--overwriteFile	Overwrite file at destination if it already exists
--showOffLineTape	Show offline tape where offline files can be found
--noExecute	Copy process will not be executed
--limit	Specifies the maximum number of files to display in the list of offline, unreachable or not copied files. The default is 1000 files. Specifying --limit 0 will result in no file list being displayed.

If you want the command to list the files on the screen as they are copied, set the standard option -v (--verbose) to level 1 or higher (the default level is 0). This will also enable the display of any errors related to the files being copied.

Usage

Example 3.1. Copy operation with offline or unreachable files

The below is an example of the output relating to offline and unreachable files. To access the files on the offline tapes, an administrator or operator will have to insert the tapes in the library.

```
# accopy -S testshare -o /data/test/ --disableEmptyCheck --showOffLineTape -C node-01
WARNING: List of OffLine files:
\\node-01\testshare\video1\video1_5.wmv
\\node-01\testshare\video2\video2_6.wmv
\\node-01\testshare\video2\video2_3.wmv
\\node-01\testshare\video1\video1_3.wmv
\\node-01\testshare\video1\video1_4.wmv
\\node-01\testshare\video2\video2_5.wmv
\\node-01\testshare\video2\video2_2.wmv
WARNING: List of unreachable files:
\\node-01\testshare\video1\video99.avi
WARNING: Some files are located on the following offline tapes:
tartest-5(NFC280L2)
tartest-2(NKG658L2)
```

acdestage

The Active Circle *destaging* command. It is used to copy files from tapes to the cache and disk pools.

acdestage [-Hlh] [--show] [--remove] [--cancel] [--stop] [--noStream] [-p *process_id*] [-f *file_path*] [-d *description*] [-m *monitoring_minutes*] [--fileState *state*] [--showResult] [--showFile] [-U *size_unit*] {*CONNECTION OPTIONS*} [*STANDARD OPTIONS*]

The purpose of the command is to load a group of files that have been identified by a user into the cache and/or disk pools from slow media, for example files stored on tape. The copying will be performed in an optimized way according the location of the files on the tape(s). When you anticipate a need for using files located on a tape, launching this operation beforehand can save a considerable amount of time. Once the files are in the cache, access to them will be the at the quickest level possible.

One practical use of this command could be in a broadcast environment where you want to load programs to be broadcast the following day into the cache during the night preceding the broadcast.

> **Note**
>
> By default, if the share the files belong to is associated with a storage policy, the selected files will be copied to the disk pool(s) defined by the policy, in addition to the cache. If you do not want disk pool copies of the files to be created, use the --noStream command option. If there is no storage policy associated with the share, the files are only copied to the cache.

The command takes all the common connection options except `-d | --directoryPath` (use instead the command-specific option `-f | --filePath`).

Table 3.2. Command Switches

Switch	Description
`-H	--showHeader`	Show headers for data columns
`-l	--list`	Each file is interpreted as a list of files, one per line
`-h`	Print sizes in human readable format

Table 3.3. Options for `acdestage`

Option	Description
`-f	--filePath`	Specifies the path of the file or directory relative to the root of the share. Specifies a file containing a list of files if used with the `--list` option.
`-d	--description`	Specifies a description for a new file process
`-p	--process`	Specifies the process id to manage or show
`--show`	Show file process status
`--remove`	Remove file process
`--cancel`	Cancel file process if not scheduled
`--stop`	Stop file process
`-m	--monitor`	Wait until file process stops. Specify time out in minutes before stopping file process monitoring
`--noStream`	No streams will be created. Use this option to prevent disk pool copies of the files to be created, when there is a storage policy associated with the share.
`--fileState`	Specifies the state of displayed files. Possible values are one or more of: `ALL`, `UNDEFINED`, `FOUND`, `ONLINE`, `RETRIEVING`, `ERROR`, `DESTAGED`. By default only files with the status `ERROR` are listed.
`--showResult`	Show detailed results for the process
`--showFile`	Show status information for files in the process (only files with errors are displayed unless states are specified by the `--fileState` option).
`-U	--unit`	Specifies unit to use; ignored if human readable format is activated. Possible values are: `K` (kilo), `M` (mega), `G` (giga), `T` (tera).

Table 3.4. Data Formatting Options

Option	Description
`--elementSeparator`	Characters separating elements on the same line.
`--lineSeparator`	Characters separating lines.

Option	Description
`--elementTrueValue`	Characters representing a "true" value.
`--elementFalseValue`	Characters representing a "false" value.

Usage

In the following examples, *node-01* is the node name and *testshare* is the share name.

To request destaging of all files in the directory *Videos* on the root of the share using the process description *processname*:

```
# acdestage -C node-01 -S testshare -f /Videos -d processname
```

To request destaging of the files specified in the list file *filelist-Videos* using the process description *processname*:

```
# acdestage -C node-01 -S testshare -f ./filelist-Videos --list -d processname
```

To list all the destaging processes on the node:

```
acdestage -C node-01 --show
```

To list all the destaging processes on the node with detailed results information:

```
acdestage -C node-01 --showResult
```

To display status information for the destaging process with id 5:

```
acdestage -C node-01 --show -p 5
```

Cancel a destaging process that has not been started, where N is the process identification number:

```
acdestage -C node-01 -p N --cancel
```

Stopping a destaging process, where N is the process identification number:

```
acdestage -C node-01 -p N --stop
```

Deleting a destaging process that has been terminated, where N is the process identification number:

```
acdestage -C node-01 -p N --remove
```

Output

In the following examples, *node-01* is the node name and *testshare* is the share name. Also, "..." indicates output has been compressed to fit inside the sample output boxes.

When initiating a destaging process, the output is the process id and description:

```
# acdestage -C node-01 -S testshare -f ./filelist-Videos --list -d "Friday Broadcast"
5       Friday Broadcast
```

Use the `--show` option to display the status of the destaging process. Include the `-H` option to display the data column headings:

```
# acdestage -C node-01 -S testshare -H -p 5 --show
Id       Description       Share       State       TerminationCause
5        Friday Broadcast  testshare   TERMINATED  NORMALLY
```

To display more detailed information about the destaging process, use the `--showResult` option. The output will be the same as for `--show`, with the addition of the data columns shown in the following output extract:

```
# acdestage -C node-01 -S testshare -H -p 5 --showResult
... Step        Partial PostDate    StartDate   Duration Requested Destaged Failed
... TERMINATED true     2012-03... 2012-03... 00:00:33 8         8        0
```

To display status information for each file in the destaging process, use the `--showFile` option. By default, this option only displays files which have the status ERROR, so you can add the option `--fileState ALL` to display information for all the selected files. The data columns for each file in the output are the following:

FilePath	StartDate	ExpectedSize	ErrorReason
State	Duration	CurrentSize	
Rank	Accomplished	ErrorStep	

Sample output for a running process:

```
# acdestage -C node-01 -S testshare -Hh -p 5 --showFile --fileState ALL
Id       Description       Share       State       TerminationCause
5        Friday Broadcast  testshare   RUNNING     <none>
FilePath State       Rank StartDate  Duration Acc... Expect... Curren... Err... Err...
file1    DESTAGED    0    2012-02... 00:00:02 100%   17.46MB   17.46MB   <none> <none>
file2    DESTAGED    1    2012-02... 00:00:01 100%   26.47MB   26.47MB   <none> <none>
file3    DESTAGED    2    2012-02... 00:00:07 100%   95.143MB  95.143MB  <none> <none>
file4    RETRIEVING  3    2012-02... 00:00:00 0%     23.964MB  -1Bytes   <none> <none>
file5    ONLINE      4    <none>     00:00:00 0%     -1Bytes   -1Bytes   <none> <none>
file6    ONLINE      5    <none>     00:00:00 0%     -1Bytes   -1Bytes   <none> <none>
file7    ONLINE      6    <none>     00:00:00 0%     -1Bytes   -1Bytes   <none> <none>
file8    ONLINE      7    <none>     00:00:00 0%     -1Bytes   -1Bytes   <none> <none>
```

Sample output for a process which has been successfully completed:

```
# acdestage -C node-01 -S testshare -Hh -p 5 --showFile --fileState ALL
Id       Description       Share       State       TerminationCause
5        Friday Broadcast  testshare   TERMINATED  NORMALLY
FilePath State     Rank StartDate  Duration Acc... Expect... Curren... Err... Err...
file1    DESTAGED 0    2012-02... 00:00:01 100%   17.46MB   17.46MB   <none> <none>
file2    DESTAGED 1    2012-02... 00:00:01 100%   26.47MB   26.47MB   <none> <none>
file3    DESTAGED 2    2012-02... 00:00:09 100%   95.143MB  95.143MB  <none> <none>
file4    DESTAGED 3    2012-02... 00:00:02 100%   23.964MB  23.964MB  <none> <none>
file5    DESTAGED 4    2012-02... 00:00:06 100%   98.488MB  98.488MB  <none> <none>
file6    DESTAGED 5    2012-02... 00:00:06 100%   98.488MB  98.488MB  <none> <none>
file7    DESTAGED 6    2012-02... 00:00:01 100%   15.483MB  15.483MB  <none> <none>
file8    DESTAGED 7    2012-02... 00:00:01 100%   25.03MB   25.03MB   <none> <none>
```

acfileop

The Active Circle *file process* command.

acfileop [-Hlh] {[--type *process_type*]|[--deletePack]}
[--show] [--remove] [--cancel] [--stop] [--noStream]
[-p *process_id*] [-f *file_path*] [-d *description*] [-m *monitoring_minutes*]
[--fileState *state*] [--showResult] [--showFile] [-U *size_unit*]
{*CONNECTION OPTIONS*} [*STANDARD OPTIONS*]

The **acfileop** command allows you to process specific files or show current file processes in the Active Circle system. It is similar to the "**acdestage**" command, but in addition it lets you specify a file process type and perform deletion of packs with archived files.

The command takes all the common connection options *except* -d | --directoryPath.

> 💡 **Tip**
>
> For this command, it is possible to specify the leader of an HA cluster instead of a specific node for the -C (--nodeName) connection option. The format is as follows: -C leader:*ClusterName*. Using this feature, the command will work even if a specific node is down, as the current leader node of the cluster will be used for the query. This can be especially useful in scripts containing this command.

Table 3.5. Options for `acfileop`

Option	Description
-H | --showHeader	Show the header
-l | --list	Each file is interpreted as a list of files, one per line
-h	Print sizes in human readable format
--type	Specify the file process type. Possible values are: UNSTREAMING and DESTAGING.
--deletePack	Delete pack of archived files
-p | --process	Specifies the process id to manage or show
-f | --filePath	Specifies the path of the file
-d | --description	Specifies a description for a new file process
--show	Show file processes
--remove	Remove file process
--cancel	Cancel file process if not scheduled
--stop	Stop file process
-m | --monitor	Wait until file process stops. Specify time out in minutes before stopping file process monitoring
--noStream	No stream will be created
--fileState	Specifies the state of displayed files. Possible values are one or more of: UNDEFINED, FOUND, ONLINE, RETRIEVING, ERROR, DESTAGED
--showResult	Show file processes and results
--showFile	Show files in file processes

Option	Description
-U | --unit	Specifies size unit to use; ignored if human readable format is activated. Possible values are: K (kilo), M (mega), G (giga), T (tera).

Table 3.6. Data Formatting Options

Option	Description
--elementSeparator	String of characters to use to separate elements on the same line.
--lineSeparator	String of characters to use to separate lines.
--elementTrueValue	String of characters to use to represent a "true" value.
--elementFalseValue	String of characters to use to represent a "false" value.

acfind

The Active Circle *find* command.

acfind [-HhlicutXYZagrs] [-T *policy_status*] [-U *uid*] [-G *gid*] [-D *pool_path*]
[-K *node_name*] [-I *archive_tapepool_name*] [--tape *tape_name*]
[--onlyInArchive] [--archiveStatus *status*] [--maxdepth *levels*]
[--accessibility *type*] [--order *sort_order*] [--locale *locale*]
[-b *date_time*] [-e *date_time*] [-L *date_time*] [-M *number_of_days*]
[--noVersion] [--refDate *data*] [--timeSlice *timeslice*]
[--timeSliceUnit *unit*] [--deletedMarker *marker*] [--movedMarker *marker*]
[--includeDeletedFiles] [--sumStatus invalid|none] [--chkTime *days*]
[--force] [--empty] [-exec *command*] [-o *path*] [-m *mount_point*]
[--elementSeparator *characters*] [--lineSeparator *characters*]
[--showBooking] {*CONNECTION OPTIONS*} [*STANDARD OPTIONS*]

The command **acfind** allows you to find files and list detailed information on the file versions in a share or folder that correspond to the search conditions. It gives a summary of all the analyzed data according to their policy status. You can also execute either a copy (-exec cp) or a remove (-exec rm) command on the files found.

> **Tip**
>
> For this command, it is possible to specify the leader of an HA cluster instead of a specific node for the -C (--nodeName) connection option. The format is as follows: -C leader:*ClusterName*. Using this feature, the command will work even if a specific node is down, as the current leader node of the cluster will be used for the query. This can be especially useful in scripts containing this command.

Table 3.7. acfind Switches

Switch	Description
-H	Display column headings.

Switch	Description
	Alternate form: `--showHeader`
`-h`	Print data sizes in human-readable format.
`-l`	Show additional information (policy status, UID, size). Alternate form: `--fullInformation`
`-i`	Show location information (pool, partition/tape, tar/pack, byte offset begin/end and archive name).
`-c`	Use the time of last modification of file status information (ctime). Effective with `-b` and `-e` options.
`-u`	Use the time of last access (utime). Effective with `-b` and `-e` options.
`-t`	Use the version creation time (ttime). Effective with `-b` and `-e` options.
`-X`	Show only data having incorrect global location status. Alternate form: `--showOnlyWithBadGlobalLocationStatus`
`-Y`	Show files which are only in a cache. Alternate form: `--onlyInCache`
`-Z`	Ignore temporary files (automatically activated with `-X` option). Alternate form: `--ignoreTemporaryFile`
`-a`	Show/manage all versions.
`-g`	Show GID (group) instead of UID (user).
`-r`	Show user or group name instead of ID.
`-s`	Show policy status statistics. When used together with the `-X`, statistics for invalid file locations will be shown instead of policy status. The statistics are shown as a summary at the end of the output.

Table 3.8. `acfind` Filtering Options

Option	Description
`--force`	Force analysis even on error (shows a warning if not quiet)

`-T	--policyStatus`	Specifies the policy status. Comma-separated if more than one. Possible values are:
		• For storage policies:
		  • `fulfilled`
		  • `processing`
		  • `notFulfilled`
		  • `na`
		  • `completed`
		• For archiving policies:
		  • `archived` or `notArchived`

`-U	--uid`	Specifies the UID that owns the data (Linux-like format).
`-G	--gid`	Specifies the GID that owns the data (Linux-like format).

Option	Description
`-D` | `--poolPath`	Specifies the path to the pool where the data is located (format: *pool.node.domain.parentdomain*).
`-K` | `--cacheNodeName`	Specifies the name of the node whose cache contains the data.
`-I` | `--archiveName`	Specifies the name of the tape pool archive where the data is located.
`--tape`	Specifies the tape where the data must be located (user must be an administrator to get such information)
`--onlyInArchive`	Show files that only exist in an archive (cached files will be ignored).
`--archiveStatus`	Specifies the status of the archive. Use with `--onlyInArchive`. Possible values are `empty`, `expired`, `complete`, `incomplete`, `partial` or `valid`.
`-maxdepth` | `--maxdepth`	Specify maximum levels of directories to traverse.
`--accessibility`	Specifies the accessibility of the files. One or more of the following (separated by commas): `online`, `nearline`, `offline`, `unreachable` or `all`.
`--empty`	Show only empty files. Not to be used with `-s`, `-i`, `-X`, `-D`, `-K`, `-I` or `-T` (with a storage policy status).
`--order`	Display order of file versions (default is from the most recent to oldest). Possible values are `normal` or `reverse`
`-b` | `--oldestTime`	Specifies the oldest date/time the data can have. Format: date matching the specified locale or a number of days.
`-e` | `--newestTime`	Specifies the newest date/time the data can have. Format: date matching the specified locale or a number of days.
`--locale`	Specifies the locale to use instead of the default, for example `fr` or `de` (currently `en_US`)
`-L` | `--expirationTime`	Specifies the expiration date. Data with expiration time prior to this are shown.
`-M` | `--expirationDays`	Specifies number of days from today (not including) before expiration. Data with expiration time less than this value are shown.
`--noVersion`	Hides version columns from the output.
`--refDate`	Specifies a date for reference in the past and browse files as if you are at this reference date. Default value: now.

Option	Description
--timeSlice	Specifies a time slice to look for files. Allows for seeing deleted files.
--timeSliceUnit	Specifies a time slice unit to use with --timeSlice option. Default value: day.
--deletedMarker	Specifies the marker to prefix path for deleted files.
--movedMarker	Specifies the marker to prefix path for moved files.
--includeDeletedFiles	Include deleted files. Same as '--timeSlice infinite'
--sumStatus	Filter the search by the status of the check sum. Possible arguments: `invalid` or `none`.
--chkTime	Filter the search by the check sum validation date. Value is number of days from the last validation date. With a positive number ("g" or "+" prefix, or none), the option will return only those files for which the validation date is older than the number of days provided. With a negative number ("l" prefix), the option will return only those files for which the validation date is more recent than the number of days provided.

Table 3.9. `acfind` Data Formatting Options

Option	Description
--elementSeparator	Specifies the string of characters to use to separate elements on the same line.
--lineSeparator	Specifies the string of characters to use to separate lines when there are multiple lines of output for a single file (for example when displaying all file versions using the `-a` option).
--showBooking	Change the format to show booking information.

Table 3.10. `acfind` Command Post-processing Options

Option	Description
-exec	Execute a copy or remove command on the current version of each file matching the conditions.
-o	Specifies the output directory (needed by the option `-exec cp`). Alternative: `--outputDirectory`
-m	Specifies the share mount point (needed by the option `-exec cp`). Alternative: `--mountPoint`

-exec

The `-exec` option allows you to run a copy or remove operation on the files found as a result of the search. The `-exec` option is used with two subcommands:

`-exec cp`   Copies (or backs up) all the data matching the specified conditions from the mount point to a backup directory.

`-exec rm`   Deletes all versions of the data that matches the specified conditions.

To perform a copy, run the command:

acfind [*SEARCH OPTIONS*] `-exec cp -m` *mount_point* `-o` *output_directory*

To perform a remove, run the command:

acfind [*SEARCH OPTIONS*] `-exec rm`

> **ⓘ Note**
>
> The option `-exec` differs slightly from most of the other options in the Active Circle command line environment in that it is prefixed with a single dash.

Invalid Location Status (`-X` option)

The `-X` option will search for all files with incorrect location status. These indicate situations where the files might be at risk, either because they only exist in a cache or because of missing or corrupt metadata.

When used together with the statistics option `-s`, the command will produce summary information for each incorrect location status:

IN_CACHE	Data only available in the cache (has not yet been transferred to a pool).
PACK_MISSING	At least one pack is missing: it will never be possible to restore the stream.
METADATA_MISSING	Either some metadata is missing (location information) or one of the pools is inaccessible.
NO_STREAM	There is no stream location information.
BAD_STREAM	The stream segments are not continuous.
BAD_STREAM_SIZE	The sum of the size of the stream segments is not equal to that of the original file.

Usage

The selection conditions that can be specified are the following:

- One or more policy states.
- One or more data locations (in a pool and/or in the cache of a node and/or in an archive tape pool).
- The UID or the GID of the data owner.
- By date (for example the expiration for its policy or time after or before which data will be ignored).
- Files with incorrect location status.
- Check sum status and validation time.

Conditions can be combined.

> **ℹ Note**
>
> There is no point in combining a condition based on the state of a policy with a condition based on incorrect location status due to the fact that any data with a significant critical level will have a policy status of "unavailable".

Output

The command output is a list with one file version per line. For each line, the following data are displayed:

Default data columns:

Path	The full path to the file version, including node and share name.
Version	The file version.
VersionReference	A version reference corresponding to the last version of a shared element linked to the same data (to be found higher up in the output listing). If a reference does not exist, the value will be <none>.
StorageStatus	This column will be displayed only if the query is entered using the -T with one or more storage policy status values. It shows the storage policy status for each file.

> **💡 Tip**
>
> Use the -H switch to display the titles of the data columns.

Data columns added by the -l option:

StorageStatus	The status of the storage policy that applies to the file.
UID	The id of the user who owns the file.
size	The file size.

Data columns added by the -i option:

Location	The name of the pool or node containing a copy of the file. If more than one, a new line will be printed for each location. If the location is a cache, the name of the node will be displayed instead.
Location2	The name of the data partition (local or shared) the file is stored on. If the location is a tape, this column will display the name of the tape. If the location is a cache, this will be indicated by the word 'cache'.
BoxFileNumber	The number of the pack or tar file containing the file.
Start	The offset in bytes for the start of the file.
End	The offset in bytes for the end of the file.
ArchiveLocation	The name of the archive the file is located in.

> ℹ️ **Note**
>
> When using the location (-i) option, a new line will be added for each location a file is stored in. For example, if a file is replicated to local and shared disk pools and archived through an archive pool, one line would be produced for each one of these pool locations (see an example below).

If more than one share is queried, the files will be listed by share with the share name as heading.

At the end of the output listing, the total size of the files matching the specified conditions will be displayed (if not null). If more than one share was queried, the total size will be calculated and displayed for each share.

If you specify the *statistics* (-s) option, a summary of policy states similar to the output below will be appended to the end of the listing:

```
Statistics for user 'admin' on share 'projects:
217 Fulfilled
0 Processing
0 NotFulfilled
3 NotAvailable
0 Completed

220 Matching condition(s)
1 Empty
220 Analyzed
```

If you specify the *incorrect location status* (-X) option along with the statistics (-s) option, the summary changes to show statistics for any files with such status. The command will list each file having an invalid status, followed by the status, then the summary for each share:

```
# acfind -sX -C node-01 -S projects
//node-01/projects/John/ac-400.cmd v1 <none> NO_STREAM
//node-01/projects/John/Old projects/Outdoors.wmv      v1   <none>  IN_CACHE
//node-01/projects/John/Old projects/Commercial.mp4    v1   <none>  IN_CACHE
//node-01/projects/John/Old projects/FutureOpen.avi    v1   <none>  METADATA_MISSING
//node-01/projects/John/Old projects/Film-project1.avi v1   <none>  METADATA_MISSING
//node-01/projects/John/Old projects/Automation.wmv    v1   <none>  IN_CACHE
//node-01/projects/test/testfile.txt v1 <none> METADATA_MISSING

Total size = 437,887,072B
Statistics for user 'admin' on share 'projects:
3 IN_CACHE
0 PACK_MISSING
3 METADATA_MISSING
1 NO_STREAM
0 BAD_STREAM
0 BAD_STREAM_SIZE

7 Matching condition(s)
389 Analyzed
```

Examples

Example 3.2. Finding files according to storage policy status

The following command lists files for which the storage policy has not been fulfilled:

```
# acfind -T notFulfilled
```

The following command lists files for which the storage policy has been fulfilled, but where the files have not been archived:

```
# acfind -T fulfilled,notArchived
```

The following command lists files for which both the storage and archive policies have been completed, and that have not been accessed (-u) for 90 days (-e). This can be useful if you want to identify files for subsequent processing, for example removing them from disk.

```
acfind -T fulfilled,archived -u -e 90
```

Example 3.3. Listing file versions in a pool

The file version will be displayed next to the file name in the format vn, where n is the version number. The following command gets a list of file versions in the pool "Disk Pool 1" in the sub-domain "SubDomain-A1":

```
# acfind --poolPath 'Disk Pool 1.node-01.SubDomain-A1.Domain-A'
//node-01/share-01/Test-docs/04/test14.txt          v1    <none>
//node-01/share-01/Test-docs/04/test10.txt          v2    <none>
//node-01/share-01/Test-docs/04/test19.txt          v1    <none>
//node-01/share-01/Test-docs/04/test09.txt          v3    <none>
//node-01/share-01/Test-docs/04/01/test-write08.odt v4    <none>
//node-01/share-01/Test-docs/04/01/01/test19.txt    v6    <none>
...
```

Example 3.4. Listing files in the cache

Use the -K option to list files in a cache of a specified node. The following command finds files located in the cache of the node *myNode* in the domain *myDomain.myParentDomain*:

```
# acfind -K myNode.myDomain.myParentDomain
```

Example 3.5. Listing files by user

Files owned by the user with UID 10000:

```
# acfind -U 10000
```

Example 3.6. Finding files by date

It is possible to search for files older than a certain date or younger than a certain date using different date formats. Use the -b and -e options to specify the time limits, and use --locale if you want to specify the date format in another format than the default.

Data modified before 10 December 2008 at ten past eleven in the evening in the default US English format:

```
# acfind -e "12/10/08 11:10 pm"
```

The same specified with French (fr) date and time format:

```
# acfind -e "10/12/08 23:10" --locale fr
```

Data modified after 15 January 2008 at 3:20 pm, in French format:

```
# acfind -b "01/15/08 15:20" --locale fr
```

Data modified between 1 January 2008 at 00:00 and 31 December 2008 at 23:59 in the default US English format:

```
# acfind -b "01/01/08 00:00 am" -e "12/31/08 11:59 pm"
```

By default, the date taken into account when using the -b and -e options is the most recent modification. It is also possible to search by:

mtime (default) – time of last file modification
utime (-u option) – time of last access (also known as 'atime')
ctime (-c option) – time of last file attribute modification (owner, mode, etc.)
ttime (-t option) – time of version creation

Files accessed (-u option) between 1 January 2008 at 00:00 and 31 December 2008 at 23:59:

```
# acfind -b "01/01/08 00:00" -e "12/31/08 23:59" -u --locale fr
```

Example 3.7. Finding files which only exist on tape and which have been accessed during the last year

To create a list of archived files (-T archived) which only exist on tape (--onlyInArchive), with the additional constraints that the last access time (-u) is within the last year (-b "365"), issue the following command:

```
# acfind -C nodename -S sharename -T archived --onlyInArchive -u -b "365" --noVersion
```

The command lists the files in the following format, including node name, share name and total size for all the files:

```
//node/share/dir/file1
//node/share/dir/file2
//node/share/dir/file3
//node/share/dir/file4
Total size = xxx,xxxB
```

It can be useful to create a cleaned file list containing only the directory paths and the file names, and redirect the output to a file. The following is an example of parameters to add to accomplish this (it filters using the commands **sed** and **grep**, which are by default part of the Linux operating system on each Active Circle node). Append this to the above command line:

```
| sed -e 's/\/\/[^\/]*\/[^\/]*\///' | grep -v "Total size" > file.lst
```

This produces a cleaned file list with this format:

```
dir/file1
dir/file2
dir/file3
dir/file4
```

Example 3.8. Displaying more detailed information

You can use the `-l` and `-i` options to display more details about each file found by the **acfind** command.

The standard listing shows the file *path*, *version* and *reference version*. The following command shows this for the files with policy status 'archived' in the 'Giovanni' directory on the 'projects' share:

```
# acfind -T archived -C node-01 -S projects -h -d Giovanni
//node-01/projects/Giovanni/Video/Wildlife.wmv      v1   <none>
//node-01/projects/Giovanni/Video/media.mp4         v1   <none>
//node-01/projects/Giovanni/Video/AirSTAR.mp4       v1   <none>
//node-01/projects/Giovanni/Images/image001.png     v1   <none>
//node-01/projects/Giovanni/Images/image003.png     v1   <none>
//node-01/projects/Giovanni/Images/image002.png     v1   <none>
Total size = 82.233MB
```

Adding the **-l option** for the same command will add the *storage policy status*, *UID* and *file size* to the output for each file (file paths shortened to fit the output into the box):

```
# acfind -T archived -C node-01 -S projects -h -d Giovanni -l
//node-01/.../Wildlife.wmv    v1   <none>   Fulfilled  0   25.03MB
//node-01/.../media.mp4       v1   <none>   Fulfilled  0   17.46MB
//node-01/.../AirSTAR.mp4     v1   <none>   Fulfilled  0   23.964MB
//node-01/.../image001.png    v1   <none>   Fulfilled  0   101.56KB
//node-01/.../image003.png    v1   <none>   Fulfilled  0   96.67KB
//node-01/.../image002.png    v1   <none>   Fulfilled  0   104.292KB
Total size = 82.233MB
```

Adding the **-i option** for the same command will add the *pool location*, *partition/tape name*, *pack/tar file number* and beginning and end *byte offsets* to the output for each file, as shown in the output example below (file paths shortened and columns compressed to fit the output into the box). For each file, a new output line is added for each location it exists in.

```
# acfind -T archived -C node-01 -S projects -h -d Giovanni -i
//node-01/.../Wildlife.wmv v1  <>  Archive Pool Archive Pool-2   6   169257472 195...
//node-01/.../Wildlife.wmv v1  <>  Disk Pool 1  Partition Data1 89  80797     2627...
//node-01/.../Wildlife.wmv v1  <>  Disk Pool 2  Partition Data1 89  80797     2627...
//node-01/.../Wildlife.wmv v1  <>  Shared Pool  Partition /SANv1 87 80797     2627...
//node-01/.../media.mp4    v1  <>  Archive Pool Archive Pool-2   6   195504128 213...
//node-01/.../media.mp4    v1  <>  Disk Pool 1  Partition Data1 93  0         1822...
//node-01/.../media.mp4    v1  <>  Disk Pool 2  Partition Data1 87  0         1822...
//node-01/.../media.mp4    v1  <>  Shared Pool  Partition /SANv1 93 0         1822...
//node-01/.../AirSTAR.mp4  v1  <>  Archive Pool Archive Pool-2   6   127892480 153...
//node-01/.../AirSTAR.mp4  v1  <>  Disk Pool 1  Partition Data1 94  0         2504...
//node-01/.../AirSTAR.mp4  v1  <>  Disk Pool 2  Partition Data1 91  0         2504...
//node-01/.../AirSTAR.mp4  v1  <>  Shared Pool  Partition /SANv1 90 0         2504...
//node-01/.../image001.png v1  <>  Archive Pool Archive Pool-2   9   1024      105020
//node-01/.../image001.png v1  <>  Disk Pool 1  Partition Data1 115 103958    205159
//node-01/.../image001.png v1  <>  node-01      cache            <none> <none> <none>
//node-01/.../image001.png v1  <>  Disk Pool 2  Partition Data1 99  103958    205159
//node-01/.../image001.png v1  <>  Shared Pool  Partition /SANv1 100 103958   205159
//node-01/.../image003.png v1  <>  Archive Pool Archive Pool-2   9   213504    312493
//node-01/.../image003.png v1  <>  Disk Pool 1  Partition Data1 115 205160    301111
//node-01/.../image003.png v1  <>  node-01      cache            <none> <none> <none>
//node-01/.../image003.png v1  <>  Disk Pool 2  Partition Data1 99  205160    301111
//node-01/.../image003.png v1  <>  Shared Pool  Partition /SANv1 100 205160   301111
//node-01/.../image002.png v1  <>  Archive Pool Archive Pool-2   9   105984    212778
```

```
//node-01/.../image002.png v1  <>  Disk Pool 1  Partition Data1  115 0        103957
//node-01/.../image002.png v1  <>  node-01       cache           <none> <none> <none>
//node-01/.../image002.png v1  <>  Disk Pool 2  Partition Data1  99  0        103957
//node-01/.../image002.png v1  <>  Shared Pool  Partition /SANv1 100 0        103957
Total size = 82.233MB
```

In the above output, we can see that all the files exist in 4 different locations, resulting in 4 lines being printed for each file. Each file is replicated in two local disk pools and one shared disk pool. In addition, all the files have been archived on the tape called 'Archive Pool-2', with some being stored in tar file number 6 and the others in tar file 9. The three files called `image00*.png` also have a fifth copy in the cache of 'node-01'. We also see that these three files all have a copy stored in pack file number 115 on the partition 'Data1'. `image002.png` is stored at the start of the pack, with byte offset 0. Its end offset is 103957. The start of the next file in the pack, `image001.png`, is at the following byte offset 103958. The last column (off the screen in the example) shows the name of the archive (if any) the file is located in.

To display the maximum amount of information for each file, you can specify `-l` and `-i` at the same time.

Additional Examples

For additional examples of using the **acfind** command, see "Saving and extracting data", "Share cleanup" and "Finding and removing expired archives" in Chapter 6, *Usage scenarios*.

`acls`

The Active Circle *list directory contents* command.

acls [-h1alcutrRsm][-f *list_file_path*][-D *pool_path*][--force][--list] [--elementSeparator *characters*][--lineSeparator *characters*] {*CONNECTION OPTIONS*}[*STANDARD OPTIONS*]

The **acls** command lists the contents of the designated path. Using the options, you can list the information according to certain conditions. You can display a summary of the all the analyzed data according to their policy status.

Table 3.11. Switches for `acls`

Switch	Description
-h	Print sizes in human-readable format
-1	List one file per line
-a	Show all versions
-l	Show file type, mode, UID, GID, size in bytes and time. Alternate form: `--fullInformation`.
-c	Use the `ctime`, or the time of last modification of file status information (mode, owner, etc.). Used with `-l` and `-t` options.
-u	Use the `utime`, or the time of last user access. Used with `-l` and `-t` options.
-t	Sort by time
-r	Reverse order while sorting
-R	List subdirectories recursively

Switch	Description
`-s`	Show statistics
`-m | --showPolicy`	Show policy status
`-i`	Show location information

Table 3.12. Options for `acls`

Option	Description
`-D | --poolPath`	Specifies the path to the pool where the data is located (format: *pool.node.domain.parentdomain*).
`-f | --filePath`	Specifies the path of the file that will be interpreted as a list of files.
`--force`	Force analysis even on error (shows a warning if not quiet).
`--list`	Each file is interpreted as a list of files, one per line.

List File Format

The list file for the **acls** `-f` option is formatted as follows:

```
file_path/file_name "version"
```

Example:

```
myDir1/myDir2
myDir1/myDir2/file1 6
myDir1/myDir2/file2 3
myDir1/myDir2/file3 1
```

Usage

The output of the **acls** command can be a simple file or directory list or very detailed, providing all available information on files and versions recursively within a tree structure.

> **i** **Note**
>
> In the examples below, it is assumed that the current working directory is set to `/Misc` on `share-01`. The "**acpwd**" command can be used verify the current path, which in these examples would be:
> `acpwd=admin@node-01:/share-01/Misc/`.
> To set a working directory, use the "**accd**" command. If no share or directory is preset, you can specify the same information by adding the `-S` and `-d` options to the command lines below.

Example 3.9. Statistics

When the option `-s` is used, the command displays the statistics broken down into policy states, depending on the other options used. A section similar to this will be added to the end of the output:

```
Statistics for user 'admin' on share 'share-01':
32 Fulfilled
0 Processing
0 NotFulfilled
1 NotAvailable
0 Completed

33 Analyzed
```

Example 3.10. `acls`

Print a simple list of the contents of the current working directory:

```
# acls
Images                  Spreadsheets        ac-322-out-txt.tar      ac-322.cmd
ac-400-out-txt.tar      ac-400.cmd          ac-400p6-out-txt.tar    ch-directory.xml
lastcell.txt            nas-audit.csv       nas-stats.csv           ps-lst
```

In the output, elements of different types are shown with different colors as defined by the environment configuration (see "Text Enhancement" for more information). In the above example, the default settings are used. This means for example that the directories are shown in blue, `.tar` archives in red and the executable `.cmd` files in green.

Example 3.11. `acls -l`

List files with extra information: modes, UID, GID, size, date of last modification and file name.

```
# acls -l
drwxrwxrwx       0        0            0 16 Nov 2011 09:38 AM   Images
drwxrwxrwx       0        0            0 16 Nov 2011 09:13 AM   Spreadsheets
-rw-rw-rw-       0        0       153600 27 Sep 2011 06:21 PM   ac-322-out-txt.tar
-rwxrwxrwx       0        0         5365 15 Nov 2011 05:22 PM   ac-322.cmd
-rw-rw-rw-       0        0       174080 27 Sep 2011 06:20 PM   ac-400-out-txt.tar
-rwxrwxrwx       0        0         4824 15 Nov 2011 05:22 PM   ac-400.cmd
-rw-rw-rw-       0        0       174080 08 Nov 2011 09:44 AM   ac-400p6-out-txt.tar
-rw-rw-rw-       0        0       117638 15 Nov 2011 05:23 PM   ch-directory.xml
-rw-rw-rw-       0        0       479996 06 Sep 2011 10:04 AM   lastcell.txt
-rw-rw-rw-       0        0          786 24 Oct 2011 10:15 AM   nas-audit.csv
-rw-rw-rw-       0        0         1077 25 Oct 2011 10:56 AM   nas-stats.csv
-rw-rw-rw-       0        0        43577 19 Sep 2011 04:10 PM   ps-lst
```

Example 3.12. `acls -lhtr`

List files with extra information sorted by date and size in human-friendly format.

```
# acls -lhtr
-rw-rw-rw-       0        0        469KB 06 Sep 2011 10:04 AM   lastcell.txt
-rw-rw-rw-       0        0         43KB 19 Sep 2011 04:10 PM   ps-lst
-rw-rw-rw-       0        0        170KB 27 Sep 2011 06:20 PM   ac-400-out-txt.tar
-rw-rw-rw-       0        0        150KB 27 Sep 2011 06:21 PM   ac-322-out-txt.tar
-rw-rw-rw-       0        0      786Bytes 24 Oct 2011 10:15 AM  nas-audit.csv
-rw-rw-rw-       0        0          1KB 25 Oct 2011 10:56 AM   nas-stats.csv
-rw-rw-rw-       0        0        170KB 08 Nov 2011 09:44 AM   ac-400p6-out-txt.tar
-rwxrwxrwx       0        0          5KB 15 Nov 2011 05:22 PM   ac-400.cmd
-rwxrwxrwx       0        0          5KB 15 Nov 2011 05:22 PM   ac-322.cmd
-rw-rw-rw-       0        0        115KB 15 Nov 2011 05:23 PM   ch-directory.xml
drwxrwxrwx       0        0       0Bytes 16 Nov 2011 09:13 AM   Spreadsheets
drwxrwxrwx       0        0       0Bytes 16 Nov 2011 09:38 AM   Images
```

Example 3.13. `acls -Ralhs`

List files with extra information including subdirectories recursively with size in human-readable format, in all their versions, with statistics.

```
# acls -Rlhas
//node-01/share-01/Misc:
drwxrwxrwx  0   0     0Bytes 16 Nov 2011 00:20 PM  Images    v3
drwxrwxrwx  0   0     0Bytes 16 Nov 2011 00:20 PM  Images    v2
drwxrwxrwx  0   0     0Bytes 16 Nov 2011 00:20 PM  Images    v1
drwxrwxrwx  0   0     0Bytes 16 Nov 2011 09:13 AM  Spreadsheets    v3
drwxrwxrwx  0   0     0Bytes 16 Nov 2011 09:13 AM  Spreadsheets    v2
drwxrwxrwx  0   0     0Bytes 16 Nov 2011 09:13 AM  Spreadsheets    v1
-rw-rw-rw-  0   0     150KB 27 Sep 2011 06:21 PM  ac-322-out-txt.tar    v4    Fulfilled
-rw-rw-rw-  0   0     150KB 27 Sep 2011 06:21 PM  ac-322-out-txt.tar    v3    Fulfilled
-rw-rw-rw-  0   0     150KB 27 Sep 2011 06:21 PM  ac-322-out-txt.tar    v2    Fulfilled
-rw-rw-rw-  0   0     150KB 27 Sep 2011 06:21 PM  ac-322-out-txt.tar    v1    Fulfilled
-rwxrwxrwx  0   0       5KB 15 Nov 2011 05:22 PM  ac-322.cmd        v4    Fulfilled
-rwxrwxrwx  0   0       5KB 15 Nov 2011 05:22 PM  ac-322.cmd        v3    Fulfilled
-rwxrwxrwx  0   0       5KB 15 Nov 2011 05:22 PM  ac-322.cmd        v1    Fulfilled
-rw-rw-rw-  0   0     170KB 27 Sep 2011 06:20 PM  ac-400-out-txt.tar    v4    Fulfilled
-rw-rw-rw-  0   0     170KB 27 Sep 2011 06:20 PM  ac-400-out-txt.tar    v3    Fulfilled
-rw-rw-rw-  0   0     170KB 27 Sep 2011 06:20 PM  ac-400-out-txt.tar    v2    Fulfilled
-rw-rw-rw-  0   0     170KB 27 Sep 2011 06:20 PM  ac-400-out-txt.tar    v1    Fulfilled
-rwxrwxrwx  0   0       5KB 15 Nov 2011 05:22 PM  ac-400.cmd        v3    Fulfilled
-rwxrwxrwx  0   0       5KB 15 Nov 2011 05:22 PM  ac-400.cmd        v2    Fulfilled
-rwxrwxrwx  0   0       5KB 15 Nov 2011 05:22 PM  ac-400.cmd        v1    Fulfilled
-rw-rw-rw-  0   0     170KB 08 Nov 2011 09:44 AM  ac-400p6-out-txt.tar  v4    Fulfilled
-r          0   0     17    8 Nov 2011 09:44       -400p6-out-txt        3    Fulfilled
-w-rw-rw    0   0     ytes 2  2011 00    AM  na  400p6-out-t     1    Fu  Fulfille
-rw-rw-rw-                1KB 25 Oc      56 AM  nas-s              v2    Fulfi
-rw-rw-rw-  0   0       1KB 25 Oct 2011 10:56 AM  nas-stats.csv        v1    Fulfilled
-rw-rw-rw-  0   0      43KB 19 Sep 2011 04:10 PM  ps-lst  v2     Fulfilled
-rw-rw-rw-  0   0      43KB 19 Sep 2011 04:10 PM  ps-lst  v1     Fulfilled

//node-01/share-01/Misc/Images:
-rw-rw-rw-  0   0      99KB 16 Nov 2011 09:39 AM  Thumbs.db        v3    NotAvailable
-rw-rw-rw-  0   0      99KB 16 Nov 2011 09:39 AM  Thumbs.db        v2    NotAvailable
-rw-rw-           0   0       KB    Nov 2011 09         bs.db                 Available
-rw-rw-rw-        0   0     193KB 15 N   2011    25 PM  image       v1    Ful    ed
-rw-rw-rw-  0   0     121KB 15 Nov 2011 05:25 PM  image003.png        v4    Fulfilled
-rw-rw-rw-  0   0     121KB 15 Nov 2011 05:25 PM  image003.png        v3    Fulfilled
-rw-rw-rw-  0   0     121KB 15 Nov 2011 05:25 PM  image003.png        v2    Fulfilled
-rw-rw-rw-  0   0     121KB 15 Nov 2011 05:25 PM  image003.png        v1    Fulfilled

//node-01/share-01/Misc/Spreadsheets:
-rw-rw-rw-  0   0      34KB 16 Nov 2011 09:13 AM  Thumbs.db        v2    NotAvailable
-rw-rw-rw-  0   0      34KB 16 Nov 2011 09:13 AM  Thumbs.db        v1    NotAvailable
-r          0   0     1   5 Nov 2011 05:25         as-audit.ods    v       ulfilled
-w-rw-      0   0     KB 2   v 2011 05      M  n   udit.ods         lled
-rw-rw-             11KB 25 Oc         01 AM  nas-s              v2    Ful
-rw-rw-rw-  0   0      11KB 25 Oct 2011 11:01 AM  nas-stats.ods        v1    Fulfilled
Statistics for user 'admin' on share 'share-01':
20      Fulfilled
0       Processing
0       NotFulfilled
2       NotAvailable
0       Completed

22      Analyzed
```

acmd5sum

The Active Circle *check sum* command specific to the MD5 method. It can be used both to generate and to validate check sums for files.

`acmd5sum` [-c] [-l] [-status] [-show] [--force] [-f *file_path*] [-p *file_pattern*]
[-V *version_number*] [-sum *checksum*] [-location *type*]
[-noSort *type*] [-fastSort *type*] [-timeout *seconds*]

{*CONNECTION OPTIONS*} [*STANDARD OPTIONS*]

Table 3.13. Switches for `acmd5sum`

Switch	Description
`-c` | `--check`	Read sums from the files and check them.
`-l` | `--list`	Each file is interpreted as a list of files, one per line.
`-status` | `--status`	Display output for `--check`. Return code `0` (zero) means all sums matched, other values indicate at least one failed match.
`-show` | `--show`	Show already calculated check sum.

Table 3.14. Options for `acmd5sum`

Option	Description
`--force`	Force analyze even on error (warn if not quiet)
`-f` | `--filePath`	Specifies the file_path of the file
`-p` | `--pattern`	Specifies the name pattern to use for selecting file. file name pattern (Java regular expression)
`-V` | `--version`	Specifies a version number.
`-sum` | `--sum`	Specifies the sum to check if not specified in list of files
`--location`	Specifies the data location type to apply check sum. Possible values: `pack` or `archive`.
`--noSort`	Do not sort files according to data locations type to apply check sum.
`--fastSort`	Sort files according to data header locations.
`--timeout`	Specifies the timeout for each check sum

> **Note**
>
> If the `--check` or `--show` options are not specified, the check sum will be calculated for the selected files.

Usage

The command **`acmd5sum`** allows you to:

- Generate an MD5 check sum
- Display previously generated check sums
- Compare check sums with reference check sums

To generate a check sum for an individual file:

```
# acmd5sum -C node-01 -S share-01 --filePath test-files/00.odt
//node-01/share-01/test-files/00.odt 1 6f8da1b784d26b0c2a22e0e59bf83892
```

To generate a check sum for a list of files:

```
# acmd5sum -C node-01 -S share-01 --list --filePath /home/user/md5-list.txt
//node-01/share-01/test-files/00.odt 1 6f8da1b784d26b0c2a22e0e59bf83892
//node-01/share-01/test-files/01.odt 3 262118e33722a8a279a6395421265855
//node-01/share-01/test-files/02.odt 2 782ebad77a8bc12ccd4a86fe3ca07e86
//node-01/share-01/test-files/03.odt 3 69e37e29a93f36640c1b7b80902bdc41
```

The list file consists of the path to the file relative to the root of the share:

```
test-files/00.odt
test-files/01.odt
test-files/02.odt
test-files/03.odt
```

To view the check sum for an individual file:

```
# acmd5sum -C node-01 -S share-01 --show --filePath test-files/00.odt
//node-01/share-01/test-files/00.odt 1 6f8da1b784d26b0c2a22e0e59bf83892
```

To view the check sum for a list of files:

```
# acmd5sum -C node-01 -S share-01 --show --list --filePath /home/user/md5-list.txt
//node-01/share-01/test-files/00.odt 1 6f8da1b784d26b0c2a22e0e59bf83892
//node-01/share-01/test-files/01.odt 3 262118e33722a8a279a6395421265855
//node-01/share-01/test-files/02.odt 2 782ebad77a8bc12ccd4a86fe3ca07e86
//node-01/share-01/test-files/03.odt 3 69e37e29a93f36640c1b7b80902bdc41
```

To verify the check sum for a file:

```
# acmd5sum --check --filePath test-files/00.odt --sum 6f8da1b784d26b0c2a22e0e59
bf83892
//node-01/share-01/test-files/00.odt: OK
```

To verify the check sum for a list of files:

```
# acmd5sum -C node-01 -S share-01 --check --list --filePath ./md5-list-sums.txt
//node-01/share-01/test-files/00.odt: OK
//node-01/share-01/test-files/01.odt: OK
//node-01/share-01/test-files/02.odt: OK
//node-01/share-01/test-files/03.odt: OK
```

The list file consists three tab separated columns with the path to the file relative to the root of the share, the version number, and the check sum:

```
test-files/00.odt 1 6f8da1b784d26b0c2a22e0e59bf83892
test-files/01.odt 3 262118e33722a8a279a6395421265855
test-files/02.odt 2 782ebad77a8bc12ccd4a86fe3ca07e86
test-files/03.odt 3 69e37e29a93f36640c1b7b80902bdc41
```

To verify the check sum for a list of files and return a status — `0` (zero) if OK — that can be exploited by a shell script:

```
# acmd5sum -C node-01 -S share-01 --check --list --filePath /home/user/md5-list
-sums.txt --status && echo "You win" || echo "You lose"
You win
```

`acrestore`

The Active Circle *restore* command.

`acrestore` `[ -f list_file_path ] [ -p filename_pattern ]`
`[ -V version_number ] [ --force ] {CONNECTION OPTIONS} [STANDARD OPTIONS]`

The command **`acrestore`** allows you to restore previous versions of files. For each file, you can specify both the file name and the version to restore.

Table 3.15. Options for `acrestore`

Option	Description
`--force`	Force operation even in the event of an error (warn if not quiet)
`-f	--filePath`	Specifies the path to the list file
`-p	--pattern`	Specifies the name pattern to use for selecting files (Java regular expression)
`-V	--version`	Specifies a default version number

For more information on specifying name patterns in Java format, see this summary of regular-expression constructs on the Oracle Java web site. Pattern examples:

- 'Thumbs.db' for all files named 'Thumbs.db'
- '.*.txt' for all files with 'txt' extension
- 'a.b.*c' for all files like 'aZbc', 'a1b2c', 'aZb34c', 'a3b456c', etc.

Usage

The **`acrestore`** command allows you to restore a previous version of a file (or files). The versions to be restored may be specified in one of two ways: either through referencing a list file containing the information on the versions to be restored (using the option **-f**) or by specifying a file name/folder name pattern (using the option **-p**).

List File Format

The list file for the **`acrestore`** `-f` option is formatted as follows:

```
file_path/file_name "version"
```

Example:

```
myDir1/myDir2
myDir1/myDir2/file1 6
myDir1/myDir2/file2 3
myDir1/myDir2/file3 1
```

`acrm`

The Active Circle *remove* command.

`acrm` `[ -i ] [ -f list_file_path ] [ -p filename_pattern ]`
`[ -V version_number ] [ --force ] {CONNECTION OPTIONS} [STANDARD OPTIONS]`

Table 3.16. Options for `acrm`

Option	Description
`-i	--include`	Include the parent directory if it matches the search and is not the root of the share
`--force`	Force the operation even in the event of an error (warn if not quiet).
`-f	--filePath`	Specifies the path to a list file.
`-p	--pattern`	Specifies the pattern to use for matching the file name (Java regular expression).
`-V	--version`	Specifies a default version number.

Usage

Like the Unix command **rm**, the Active Circle command `acrm` is used for deleting files and/or directories. However, because Active Circle has a mechanism for saving previous versions of files, the command `acrm` removes *all* versions of a file indicated in the command for which at least *one* version matches the specified name(s) or pattern(s).

There are two ways you can indicate the files and/or directories to be deleted:

- Using the file path option (`-f | --filePath`), you can list the files to be deleted in a separate file and then call the file during the execution of the command.
- Using pattern-matching syntax to identify the files/directories to be deleted (`-p | --pattern`).

Patterns

For more information on specifying name patterns in Java format, see this summary of regular-expression constructs on the Oracle Java web site. Pattern examples:

- 'Thumbs.db' for all files named 'Thumbs.db'
- '.*.txt' for all files with 'txt' extension
- 'a.b.*c' for all files like 'aZbc', 'a1b2c', 'aZb34c', 'a3b456c', etc.

List File Format

The list file for the **acrm** `-f` option is formatted as follows:

```
file_path/file_name "version"
```

Example:

```
myDir1/myDir2
myDir1/myDir2/file1 6
myDir1/myDir2/file2 3
myDir1/myDir2/file3 1
```

Chapter 4. Information

This chapter describes the commands for extracting information from the Active Circle system. They are:

acdu	**aclog**	**aclogger**
acinfo	**aclogger**	**actop**

acdu

Obtains information on Active Circle *disk usage*.

acdu [-Hhgrs] [-U*size_unit*] [--force]
{*CONNECTION OPTIONS*} [*STANDARD OPTIONS*]

The command **acdu** allows you to view disk usage for each user or group. It displays a list sorted by user id (UID) or group id (GID) of the numbers of data files, files, file versions, directory versions, versions of symbolic links, and the corresponding used space for a specific share or for all the shares in a Circle.

Table 4.1. acdu Switches

Switch	Description
-H	Show the header. Alternate form: --showHeader
-h	Print sizes in human-readable format
-g	Sort by GID instead of UID
-r	Show user or group name instead of ID (resolve)
-s	Show statistics

Table 4.2. Options for acdu

Option	Description
-U | --unit	Indicate the unit to use when displaying storage sizes. Possible valuesare K, M, G, T.
--force	Force the operation, even in the event of an error (warn if not quiet)
--elementSeparator	Specifies the string of characters to use to separate elements on the same line.
--lineSeparator	Specifies the string of characters to use to separate lines.

Output

The command **acdu** -Hhs -d Documentation will produce a list of disk usage sorted by UID in human readable format for the "Documentation" directory of the default share (in this case testshare), including statistics.

```
# acdu -Hhs -d Documentation
<uid>   <data count> <file count> <file versions count>
<directory versions count> <symbolic link versions count> <used space>
```

```
testshare
1        1       2       2       0       0       278.902KB
35       1       1       2       0       0       22.5KB
37       0       1       1       0       0       0Bytes
38       1       2       2       0       0       32Bytes
40       648     648     693     58      0       390.036MB
83       12      13      18      6       0       21.124MB
125      1       1       1       0       0       6.004KB
567      33      34      35      5       0       4.856MB
578      563     559     570     33      0       57.862MB
667      1       1       16      0       0       1.291MB
10100    1       1       2       0       0       4.5KB
         1262    1263    1342    102     0       475.474MB
```

The first column is the user name (resolved from the UID). The next two columns refer to the number of data files and the number of files. The three following columns record the number of versions of files, directories, and symbolic links. The last column is the total size of all the data associated with the UID.

The command **acdu** `-Hhrs -S all` will produce an output as shown below, where user names are resolved and all the shares of the circle are listed.

```
# acdu -Hhrs -S all
<uid>    <data count> <file count> <file versions count>
<directory versions count> <symbolic link versions count> <used space>
projects
admin    180     180     180     22      0    17.075MB
Anna     2341    2341    3476    56      0    345.054MB
John     545     545     753     45      0    64.540MB


share-01
admin    23422   23416   23455   1570    0    2.169GB


multimedia
admin    110     110     110     6       0    408.688MB
```

acinfo

The Active Circle *information* command.

acinfo {*OBJECT_TO_QUERY*} [*OPTIONS*]

The **acinfo** command allows you to extract information on the different objects in the Active Circle system.

There are two levels of help information for this command:

- **acinfo** `--help`
  This provides you with a list of the objects that can be queried (see the table below).

- **acinfo** *OBJECT_TO_QUERY* `--help`
  This provides information on the options available for querying each Active Circle object.

Table 4.3. System objects to query (sub-commands)

Option	Description
--account	Accounts and shares
--acl	Access Control Lists for shares, folders, and files

Option	Description
--archive	Archives for shares
--cluster	HA Clusters
--drive	Tape drives
--fileServer	File server and protocols
--library	Tape libraries
--node	Nodes
--policy	Policies
--pool	Disk and tape pools
--quota	Quotas
--session	User sessions
--space	Used space on pools
--tape	Tapes
--version	Version of the client and of all active nodes in the Circle

acinfo --account

For obtaining information on accounts and shares.

acinfo --account [-Hlh][--description][--statusInfo][--quotaInfo]
[--policyManagerInfo][--policyManagementInfo][--policySchedulingInfo]
[--activationInfo][--storageInfo][--storageExtendedInfo]
[--storageDetailedInfo][--archiveInfo][--archiveDetailedInfo]
[--accessRightsInfo][--accessRightsFull][-s *statistics_type*]
[-n *share_names*]
[--logins *login1,login2,...*][--groups *group1,group2,...*]
{*CONNECTION OPTIONS*}[*FORMATTING OPTIONS*][*STANDARD OPTIONS*]

Table 4.4. Connection Options

Option	Description
-A | --login	Name of a user with administrative privileges
--password	Password for the user
-C | --nodeName	Specifies the name of the *node* to query.

Table 4.5. Command Switches

Switch	Description
-H | --showHeader	Show headers for data columns
-l | --list	Only display a list of objects
-h	Print sizes in human readable format.

Table 4.6. Command Options for acinfo --account

Option	Description
--description	Shows share description information.

Option	Description
--statusInfo	Shows shares and nodes for which status is OK.
--quotaInfo	Shows quota information for the shares. Columns displayed: *FileCount*, *UsedSpace*.
--policyManagerInfo	Shows the policy manager (name of the node currently managing the policies for the shares)
--policyManagementInfo	Shows policy management information. Columns displayed: *policyManager* (node name), *Mode* ('normal' or 'restricted'), *PreferredNode* (node name or <none>).
--policySchedulingInfo	Displays policy start time and policy frequency for the shares.
--activationInfo	Shows which nodes the shares are activated on.
--storageInfo	Shows storage policy information (policy name and number of fulfilled and not fulfilled files).
--storageExtendedInfo	Shows extended storage policy information (policy name and number of files being processed and complete).
--storageDetailedInfo	Shows detailed storage policy information.
--archiveInfo	Shows archive policy information (policy name and number of archived and not archived files).
--archiveDetailedInfo	Shows detailed archive policy information.
--accessRightsInfo	Shows the access rights with mode-like syntax
--accessRightsFull	Shows the inherited access rights of subjects (may be time consuming). Only has effect when used together with --accessRightsInfo.
-s | --stats	Shows statistics information. Specify one or several types of statistics separated by comma. Possible values are versioning, storage, storageDetailed and all
-n | --name	Specifies the name(s) of the *shares* (comma separated) to analyze or 'all' for all the shares (may be very time consuming).
--logins	Specifies the *logins* of the subjects to analyze (comma separated)
--groups	Specifies the *groups* to analyze (comma separated)
-U | --unit	Specifies unit to use for size display. Ignored if human readable format is activated. Possible level values: K, M, G or T.

Table 4.7. `acinfo` Data Formatting Options

Option	Description
`--elementSeparator`	String of characters to use to separate elements on the same line.
`--lineSeparator`	String of characters to use to separate lines.
`--elementTrueValue`	String of characters to use to represent a "true" value.
`--elementFalseValue`	String of characters to use to represent a "false" value.
`--secondElementSeparator`	Define a second element separator character used to separate elements on the same line.

Output

If you run the command with only the header option (`-H`), it will output a line with data column headers for for every share or account:

Figure 4.1. `acinfo --account -H`


```
# acinfo --account -H
Share   FileCount     UsedSpace      PolicyData     Fulfilled     NotFulfilled    PolicyArchive    Archived      NotArchived
projects      180      17903958      1x each domain + 1x shared    180    0     Archiving Policy      180      0
multimedia    108      428233114     1x each domain + 1x shared    108    0     Archiving Policy      108      0
share-01      23414    2329016187    1x each domain + 1x shared    23431  0     Archiving Policy      23414    0
share-02      180      17903958      1x for testing  180     0     ArchTestPool   180      0
```

Table 4.8. Column Header Output from `acinfo --account -H`

Columns	Meaning
`Share`	Name of the share or account
`FileCount`	Number of files currently being managed by the share
`UsedSpace`	Amount of space in bytes used by the share files
`policyData`	Name of the storage policy
`Fulfilled`	Number of files for which the requirements of the storage policy are met
`NotFulfilled`	Number of files for which the requirements of the storage policy are *not* met
`policyArchive`	Name of the archiving policy
`Archived`	Number of files for which the requirements of the archiving policy are met
`NotArchived`	Number of files for which the requirements of the archiving policy have not been met

You can change the information that is output by the command by using the various options.

`acinfo --acl`

Lists the *access control lists* for a share, sub-folders, and files.

`acinfo` `--acl`[`-Ra`][`--force`][`--elementSeparator`][`--lineSeparator`]

{*CONNECTION OPTIONS*} [*STANDARD OPTIONS*]

Table 4.9. Command Switches

Switch	Description
-R	List sub-directories recursively.
-a	List all files, even those with no ACL.

Table 4.10. Options for `acinfo --acl`

Option	Description
--force	Force the operation to continue, even in the event of an error.
--elementSeparator	String of characters to use to separate elements on the same line.
--lineSeparator	String of characters to use to separate lines.

Output

The command displays the full path of the object queried (using the connection options) and then for each ACL the ID of the owner and a textual representation of its rights.

By default, the command only displays files with ACLs, but with the option -a, you can display all files.

Example 4.1. acinfo --acl -S projects -d John -R

This command lists ACLs for all files and subdirectories of the directory "John" on the share "projects".

```
# acinfo --acl -S projects -d John -R
//node-01/projects/John
        S-1-1-0 Allowed (inherited/OI/CI//) Full access
        S-1-1-0 Allowed (inherited/OI/CI//) history, view
//node-01/projects/John/Stats
        S-1-1-0 Allowed (inherited/OI/CI//) Full access
        S-1-1-0 Allowed (inherited/OI/CI//) history, view
//node-01/projects/John/Stats/nas-stats.csv
        S-1-1-0 Allowed (inherited////) Full access
        S-1-1-0 Allowed (inherited////) history, view
//node-01/projects/John/ch-directory.xml
        S-1-1-0 Allowed (inherited////) Full access
        S-1-1-0 Allowed (inherited////) history, view
//node-01/projects/John/ac-400.cmd
        S-1-1-0 Allowed (inherited////) Full access
        S-1-1-0 Allowed (inherited////) history, view
```

`acinfo --archive`

Obtains information on the *archives* for one or more shares.

acinfo --archive [-HanfdlsXh] [-P *file_path_pattern*]
[-N *archive_name*] [--operationTypes *types*] [--showDir] [--force]
[--elementSeparator] [--lineSeparator]
{*CONNECTION OPTIONS*} [*STANDARD OPTIONS*]

Table 4.11. Connection Options

Option	Description
`-A	--login`	Specifies the user name with administrative privileges to perform theoperation.
`--password`	Specifies the password associated with the user account given with the argument `-A` (`--login`).
`-S	--shareName`	Specifies the name of the shares to analyze - one or several names of shares (separated by comma) or 'all' for all the shares (may be very time consuming)
`-C	--nodeName`	Specifies the name of the node to query (used with `-l` and `-a` or `-f`)

Table 4.12. Command Switches

Switch	Description
`-H	--showHeader`	Show the header
`-a	--archived`	Show full path list of archived data with version
`-n	--notArchived`	Show full path list of not archived data with version
`-f	--full`	Show full path list of all data with version (archived or not) (equivalent to `-an`)
`-d	--pool`	Show the name of the pool where the archives are located
`-l	--location`	Show tape location information in the format: *tape name(tar file number)*
`-s	--sort`	Sort files
`-X	--extract`	Extracts the version info from the file path and displays the version number in a separate data column
`-h`	Print sizes in human readable format

> **(i) Note**
>
> You must specify the name(s) of the archive(s) to be queried if you are using one of the options that displays its contents. They are `-a`, `-n`, and/or `-f`. You must also specify a node on which the share the archive belongs to is activated.

Table 4.13. Options for `acinfo --archive`

Option	Description
`--force`	Force the operation to continue, even in the event of an error.
`-P	--pattern`	Specifies the pattern for file selection.
`--showDir`	Show archived directory (ignored if not using one of the following options: `-f`, `-a`, `-n`).

Option	Description
`--operationTypes`	Specify the type(s) of operation. One or several types (separated by comma) of operation among `automatic`, `import`, `export` and `ondemand`
`-U` | `--unit`	Indicate the unit to use when displaying storage sizes. Possible values are `K`, `M`, `G`, `T`.
`-N` | `--name`	Specifies the name(s) of one or more archives separated by comma or `all` for all archives (may be very time consuming)
`--elementSeparator`	Specifies the string of characters to use to separate elements on the same line.
`--lineSeparator`	Specifies the string of characters to use to separate lines.

Output

If not specified, all shares are managed by default. Archives are listed by share. The archives are sorted by creation date. Supplemental archives are listed with the corresponding main archive. For example, to list archives for all shares with data column headers, type **acinfo --archive -H**:

Figure 4.2. `acinfo --archive -H`

For each archive, the following information is displayed:

name	date	number of files not archived
type	duration	operation type
status	size	pool (only with `-d`)
archiving status	number of files archived	location (only with `-l`)

Use the `-N` option to list information about a specific archive. In the figure below, information about the archive named "Archive:projects#4" is requested, with output options `-f` (all files regardless of archive status) and `-l` (shows tape information and tar file number). The file paths are listed including version number (if you want the version numbers to be listed in a separate data column instead, specify the `-X` option).

Figure 4.3. `acinfo --archive -fl -N Archive:projects#4 -C node-01`

```
# acinfo --archive -fl -N Archive:projects#4 -C node-01
projects
Archive:projects#4     Incremental    Complete     Successful     2011-11-24-0
2(6)
projects/Ana-Maria/.image000.png-v1      E08003L4        6
projects/Ana-Maria/Outdoors.wmv-v1       E08003L4        6
projects/Ana-Maria/SkyistheLimit.wmv-v1 E08003L4         6
projects/Ana-Maria/ac-cmd-help-all-322.cmd-v1    E08003L4        6
projects/Ana-Maria/ac-cmd-help-all-400.cmd-v1    E08003L4        6
projects/Ana-Maria/cmd-322-txt-incompl.tar-v1    E08003L4        6
projects/Ana-Maria/cmd-322-txt.tar-v1    E08003L4        6
projects/Ana-Maria/cmd-400-txt-incompl.tar-v1    E08003L4        6
projects/Ana-Maria/cmd-400-txt.tar-v1    E08003L4        6
projects/Ana-Maria/cmd-400p6-42484-txt.tar-v1    E08003L4        6
projects/Ana-Maria/export-ac-params.xml-v1       E08003L4        6
projects/Ana-Maria/image002.png-v1       E08003L4        6
```

If you are using color options, the output is coded as follows:

- Green if the state is "Successful"
- Red if the state is one of:
  - "Not scheduled"
  - "Interrupted on error"
  - "Interrupted on service stop"
- Yellow if the state is "Interrupted on demand"
- Cyan if some other state

`acinfo --cluster`

Lists information on the nodes that make up *clusters*. This includes HA clusters, Lock Manager clusters and Policy Management clusters.

`acinfo` `--cluster` [`-HlL`] [`-n` *cluster_name*]
{*CONNECTION OPTIONS*} [*FORMATTING OPTIONS*] [*STANDARD OPTIONS*]

Table 4.14. `acinfo --cluster` Connection Options

Option	Description
`-A | --login`	Specifies the user name with administrative privileges to perform the operation.
`--password`	Specifies the password associated with the user account given with the argument `-A` (`--login`).
`-C | --nodeName`	Specifies the name of the node to query.

Table 4.15. Command Switches

Switch	Description
`-H | --showHeader`	Show the column headers
`-l | --list`	Only show a list of cluster names
`-L | --showLeader`	Show the leader node (on by default while not listing)

Table 4.16. Options for `acinfo --cluster`

Option	Description
`n ｜ --name`	Specifies the name(s) of one or more clusters (comma separated)

Table 4.17. Formatting Options

Option	Description
`--elementSeparator`	Specifies the string of characters to use to separate elements on the same line.
`--lineSeparator`	Specifies the string of characters to use to separate lines.
`--elementTrueValue`	String of characters to use to represent a "true" value.
`--elementFalseValue`	String of characters to use to represent a "false" value.

Output

To show a simple list of clusters and the leader node for each:

`acinfo --cluster -l -L`

```
# acinfo --cluster -l -L
Doc Cluster         node2.Domain-B
Lock Manager        node1.Domain-A
Policy Management   node1.Domain-A
TestCluster         node3.Domain-B
```

To show detailed information on the "Doc Cluster":

`acinfo --cluster -n 'Doc Cluster'`

```
# acinfo --cluster -n 'Doc Cluster'
Doc Cluster - (no description)
Leader: node-02.SubDomain-A2.Domain-A
Members:
 node-02.SubDomain-A2.Domain-A
 node-01.SubDomain-A1.Domain-A
Network interfaces:
 node-02.SubDomain-A2.Domain-A <autodetection>
 node-01.SubDomain-A1.Domain-A <autodetection>
Clusterables:
 multimedia
 projects
 share-01
Parameters:
 heartBeatDelay: 3
 maxSilenceCount: 15
 port: 40000
 multicastGroup: 239.255.1.1
Cluster resource:
 Resource IP :
  Address: '192.168.1.55 Unicast (192.168.1.55)', Netmask: '255.255.255.0 Unicast (25
5.255.255.0)', Broadcast: '192.168.1.255 Unicast (192.168.1.255)'
```

```
 Resource DNS :
  <none>
 Resource Scripts :
  <none> Netbios name :
DOC-HACLUSTER
```

If the node being queried cannot be reached, the system will display "Unavailable" in the place of the lead node name.

acinfo --drive

Obtains information about the tape drives connected to the system.

acinfo --drive [-Hhl] [--status] [--error] [-U *size_unit*]
[*FORMATTING OPTIONS*] {*CONNECTION OPTIONS*} [*STANDARD OPTIONS*]

Table 4.18. Connection Options

Option	Description
-A │ --login	Specifies the user name with administrative privileges to perform the operation.
--password	Specifies the password associated with the user account given with the argument -A (--login).
-C │ --nodeName	Specifies the name of the node to query.

Table 4.19. Switches for `acinfo  --drive`

Switch	Description
-H │ --showHeader	Show the data column headers.
-h	Print sizes in human-readable format.
-l │ --list	Only show the list of drives.

Table 4.20. Options for `acinfo  --drive`

Option	Description
--status	Shows the status of the drives. If the drive is in service, one or more node names are displayed. If the drive is in maintenance, no information is shown.
--error	Shows information on the last drive errors (if any).
-U │ --unit	Specifies data unit to use. Ignored if human readable format is activated. Possible values: K, M, G or T.

Table 4.21. Data Formatting Options

Option	Description
--elementSeparator	String of characters to use to separate elements on the same line.
--lineSeparator	String of characters to use to separate lines.
--elementTrueValue	String of characters to use to represent a "true" value.
--elementFalseValue	String of characters to use to represent a "false" value.

Option	Description
`--secondElementSeparator`	Define a second element separator character used to separate elements on the same line.
`--addressSeparator`	Define a separator character for the display of the SCSI address of each tape drive. The default separator is a comma.

Output

By default, the command lists all the tape drives that are connected to the system (queries all the nodes and displays drive information if at least one node is connected to a library containing tape drives).

The data produced by the **`acinfo --drive`** command include:

Name
The name given to the tape drive in the Active Circle system. Usually this is the phrase "Tape drive" followed by a number.

Type
The generic tape drive type, for example `HP LTO-4` or `IBM LTO-5`.

Vendor
The manufacturer of the drive.

Product ID
The product ID of the tape drive, for example `ULT3580-TD4`.

Serial number
The serial number of the tape drive.

Nodes
Shows the name of the node(s) that have access to the tape drive. If more than one, the nodes are separated by a semicolon. If no nodes have access, `<none>` will be displayed

Addresses
Shows the SCSI addresses of each tape drive on each node. If there are addresses for more than one node, they are separated by semicolons.

Status
Shows the node(s) where the tape drive is in service. If the tape drive is in maintenance mode, no node name is displayed. This information is only displayed when using the `--status` option.

Error counts
Four columns which show the number of errors of different types which have occured on each drive. The error counts are divided into *Corrected* and *Uncorrected* errors for both *Read* and *Write* operations.

Last mounted tape
Shows the bar code of the tape that was last mounted in the drive.

Volume read
Shows the total volume of data that has been read by the drive since it was registered in the Active Circle system.

Volume written
Shows the total volume of data that has been written by the drive since it was registered in the Active Circle system.

Detailed error information

If you specify the `--error` option, additional information is displayed for each tape drive that has errors. The last 5 errors for each drive are listed. Each line represents one error and contains information about the date, the operation performed (read/write/positioning, etc.), the SCSI sense data in the form of the Sense Key, Additional Sense Code/Additional Sense Code Qualifier ("SenseKey", "ASC/ASCQ") and the command executed. For more information about SCSI sense data codes, please see the Wikipedia article at: http://en.wikipedia.org/wiki/ASC/ASCQ.

Example 4.2. acinfo --drive -error -H

The below is an example of a list of errors for a drive. This is displayed under the line for the drive in the list of drives:

```
Date                          Operation      SenseKey   ASC/ASCQ   Command
Mon Aug 20 11:35:40 CEST 2012  WRITE          7          27/00      WRITE (6)
Thu Apr 12 14:24:53 CEST 2012  READ           3          FF/FF      READ (6)
Thu Apr 12 12:35:25 CEST 2012  READ           3          FF/FF      READ (6)
Thu Apr 12 10:58:01 CEST 2012  WRITE_FILEMARK 6          28/00      WRITE FILEMARK
Wed Apr 11 10:30:19 CEST 2012  WRITE          7          27/00      WRITE (6)
```

`acinfo --fileServer`

Lists *fileserver* and protocol information for the node or the domain.

acinfo `--fileServer` [-D *domain_name*] [--showProtocol]
{*CONNECTION OPTIONS*} [*STANDARD OPTIONS*]

Table 4.22. `acinfo` --fileServer Connection Options

Option	Description
-A | --login	Specifies the user name with administrative privileges to perform the operation.
--password	Specifies the password associated with the user account given with the argument -A (--login).
-C | --nodeName	The name of the node to query.

Table 4.23. Options for `acinfo --fileServer`

Option	Description
-D | --domainName	Specifies the name of the domain
--showProtocol	Show file server protocol information

If no command options are specified, the command will return the general file server information for the node where the command is executed.

Output

Example 4.3. acinfo --fileServer -D Domain-A

```
# acinfo --fileServer -D Domain-A
File server activated: false
Access timeout (in seconds): 600 (inherited)
Statistics activated: true (inherited)
Statistics log period (in minutes): 5 (inherited)
```

Example 4.4. acinfo --fileServer --showProtocol

```
# acinfo --fileServer --showProtocol
File server activated: false
Access timeout (in seconds): 600
Statistics activated: true
Statistics log period (in minutes): 5
```

```
CIFS:
Protocol CIFS activated: true

FTP:
Protocol FTP activated: true

NFS:
Protocol NFS activated: true
```

acinfo --library

Obtains information about the tape libraries connected to the system.

acinfo --library[-Hl][--status]
[*FORMATTING OPTIONS*]{*CONNECTION OPTIONS*}[*STANDARD OPTIONS*]

Table 4.24. Connection Options

Option	Description
-A | --login	Specifies the user name with administrative privileges to perform the operation.
--password	Specifies the password associated with the user account given with the argument-A (--login).
-C | --nodeName	Specifies the name of the node to query.

Table 4.25. Switches for acinfo --drive

Switch	Description
-H | --showHeader	Show the data column headers.
-l | --list	Only show the list of libraries.

Table 4.26. Options for acinfo --drive

Option	Description
--status	Shows the status of the libraries. If the library is in service, one or more node names are displayed. If the library is in maintenance, no information is shown.

Table 4.27. Data Formatting Options

Option	Description
--elementSeparator	String of characters to use to separate elements on the same line.
--lineSeparator	String of characters to use to separate lines.
--elementTrueValue	String of characters to use to represent a "true" value.
--elementFalseValue	String of characters to use to represent a "false" value.
--secondElementSeparator	Define a second element separator character used to separate elements on the same line.
--addressSeparator	Define a separator character for the display of the SCSI address of each library. The default separator is a comma.

Output

By default, the command lists all the tape libraries that are connected to the system (queries all the nodes and displays library information if at least one node is connected to a library).

The data produced by the **acinfo --library** command include:

Name	The name given to the tape library in the Active Circle system. Usually this is the word "Library" followed by a number.
Type	The tape library type or model.
Vendor	The manufacturer of the library.
Product ID	The product ID of the tape library.
Serial number	The serial number of the tape library.
Nodes	Shows the name of the node(s) that have access to the tape library. If more than one, the nodes are separated by a semicolon. If no nodes have access, `<none>` will be displayed.
Addresses	Shows the SCSI addresses of each tape library on each node. If there are addresses for more than one node, they are separated by semicolons.
Status	Shows the node(s) where the tape library is in service. If the library is in maintenance mode, no node name is displayed. This information is only displayed when using the `--status` option.

Example 4.5. Examples of output from acinfo --library -H for three different tape libraries (one line per library):

```
# acinfo --library -H
Name       Type               Vendor    ProductID   SerialNumber Nodes       Addresses
Library 0 Spectra Logic...  SPECTRA   PYTHON      XYZPY_B      node1        5,8,0
Library 1 Overland NEO       OVERLAND  NEO Series 2B84600111   node2        1,1,1
Library 2 Stk L700           STK       L700        SHARE_LIB1   node1;node3 4,0,1;10,0,1
```

acinfo --node

Lists information about *nodes*.

acinfo --node[-Hlh]{-n *node_name*}[-U *unit*][--cache][--key][--version]
[--storageKey][--monitor][--clearScreen]
[--category *indicator*][--type *time_period*]
{*CONNECTION OPTIONS*}[*FORMATTING OPTIONS*][*STANDARD OPTIONS*]

Table 4.28. `acinfo` --node Connection Options

Option	Description
-A | --login	Specifies the user name with administrative privileges to perform the operation.
--password	Specifies the password associated with the user account given with the argument -A (--login).

Table 4.29. Command Switches

Switch	Description
-H | --showHeader	Show the header

Switch	Description
-l | --list	Only show the list of nodes
-h	Print sizes in human readable format

Table 4.30. Options for `acinfo --node`

Option	Description
-n | --name	Specifies the name(s) of one or more nodes (comma separated), or `all` for all the nodes.
--cache	Shows cache information.
--key	Shows the identification key necessary for node installation.
--version	Shows version information for an installed and running node.
--storageKey	Shows the shared storage key.
-U | --unit	Specifies unit to use for size display. Ignored if human readable format is activated. Possible level values: K, M, G or T.

Table 4.31. Monitoring Options for `acinfo --node`

Option	Description
--monitor	Monitor nodes.
--clearScreen	Clears screen when new monitor event received (only if one node monitored). This option produces the same output format as the **actop** command.
--category	Specifies the category to monitor. Possible values: `Cpu`, `Mem`, `Swap`, `Load`, `Net`, `Cache`, `Catalog`. If omitted, the command monitors all the categories.
--type	Specifies the type of period to monitor for displaying cumulative or average values. Possible values:
	`t1` Short time period, currently defined to 5 minutes (10 times the basic polling interval of 30 seconds)
	`t2` Longer time period, currently defined to 10 minutes (20 times the basic polling interval of 30 seconds)
	`tl` The total time since the start of the node.

Table 4.32. Interactive Options for `acinfo --node --monitor`

Key	Action
q	Quit monitoring.
n	Add or change node to monitor.

Table 4.33. Formatting Options

Option	Description
--elementSeparator	String of characters to use to separate elements on the same line.
--lineSeparator	String of characters to use to separate lines.

Option	Description
`--elementTrueValue`	String of characters to use to represent a "true" value.
`--elementFalseValue`	String of characters to use to represent a "false" value.
`--secondElementSeparator`	Defines a second element separator character used to separate elements on the same line.

Output

Example 4.6. Obtaining the installation key for a node: acinfo --node --key

This command displays the identification key needed to install the node called "node-03".
The output will look something like the following (key shortened to fit the box):

```
# acinfo --node -Hh -n node-03 --key
Name      Description        Path                      Key
node-03   Third node in circle   node-03.SubDomain-A2.Domain-A  3854456_2HKEHKP_2Q1...
```

Example 4.7. Obtaining version information for a node: acinfo --node --version

This command displays the version of the Active Circle software running on *all* the nodes
of a circle:

```
# acinfo --node -Hh -n all --version
Name      Description        Path                             Version   InternalVersion
node-01 First node in circle   node-01.SubDomain-A1.Domain-A   4.0.0_11 4.0.0_11
node-02 Second node in circle node-02.SubDomain-A2.Domain-A   4.0.0_11 4.0.0_11
node-03 Third node in circle  node-03.SubDomain-A2.Domain-A   4.0.0_11 4.0.0_11
```

Example 4.8. Obtaining cache information: acinfo --node --cache

The below command displays cache information for *all* the nodes of a circle. The output has
been shortened to fit the box. The data columns with cache information are the following:

CacheDirectory	*CacheUsedSpace*	*CacheLowWatermark*
CacheFreeSpace	*CacheTotalSpace*	*CacheHighWatermark*

```
# acinfo --node -Hh -n all --cache
Name     Desc...   Path        CacheDir...  CacheFr...  CacheUse...  CacheTot...  Low High
node-01 First...  node-01...  /cache/Cache 71.728GB    203.347GB    275.075GB    75   85
node-02 Second... node-02...  /cache/Cache 115.282GB   159.793GB    275.075GB    75   85
node-03 Third...  node-03...  /cache/Cache 405.547GB   52.902GB     458.449GB    75   85
```

Example 4.9. Monitoring: acinfo --node --monitor

Use the `--monitor` option and its associated options to display load indicators for one or
more nodes. If you do not specify a node, all nodes will be queried. All the indicator values for
each node will be displayed on one line unless the `--clearScreen` option is used. A new
line will be added for each node at regular intervals (the default polling interval is 30 seconds).

```
# acinfo --node --monitor -Hh
CPU:      User  Sys  Nice  Wait   Idle  MEM:Total    Used      Free      SWAP: Tot...
active10:1.7%  6.6%  4.6%  8.5%   5.3%      3.213GB  3.091GB  124.992MB        5.8...
active7: 2.3%  1.8%  3.2%  1.3%   2.1%      2.963GB  1.631GB  1.332GB          7.8...
active10:1.7%  6.6%  4.6%  8.5%   5.3%      3.213GB  3.091GB  124.992MB        5.8...
```

```
q
```

To stop monitoring, hit the **q** key and press Enter.

Like for the **actop** command, you can specify specific categories to be monitored (`--category` option) as well as the time periods to monitor for obtaining average and aggregate readings (`--type` option).

> 💡 **Tip**
>
> You can obtain similar load indicator information in a different format using the command **actop**.

`acinfo --policy`

Lists information about the *policies*.

acinfo `--policy` [`-Hlcf`] [`-n` *policy_name*] [`--types` *policy_type*] {*CONNECTION OPTIONS*} [*FORMATTING OPTIONS*] [*STANDARD OPTIONS*]

Table 4.34. `acinfo` --policy Connection Options

Option	Description
`-A` | `--login`	Specifies the user name with administrative privileges to perform the operation.
`--password`	Specifies the password associated with the user account given with the argument `-A` (`--login`).

Table 4.35. Command Switches

Switch	Description
`-H` | `--showHeader`	Show the header
`-l` | `--list`	Only show the list of policy names
`-c` | `--constraint`	Show only constraints (policy rules)
`-f` | `--feature`	Show only policy parameters (for archive policies)

Table 4.36. Options for `acinfo  --policy`

Option	Description
`-n` | `--name`	Specifies the name(s) of one or more policies (comma separated)
`--types`	Specifies the types of policies: `storage`, `archive` or `versioning`. If listing multiple types, separate by commas.

If no policy is specified, the command will list information for all the policies.

Table 4.37. Formatting Options

Option	Description
`--elementSeparator`	Specifies the string of characters to use to separate elements on the same line.

Option	Description
--lineSeparator	Specifies the string of characters to use to separate lines.
--elementTrueValue	String of characters to use to represent a "true" value.
--elementFalseValue	String of characters to use to represent a "false" value.

Output

Example 4.10. acinfo --policy --types archive

Information on archiving policies:

```
# acinfo --policy --types archive
Archiving Policy
Beginning: 0 Millisecond; End: 0 Infinite; Medium type: tape; Copy count: 1
Default configuration:
  Maximum archiving duration=8 hours
  Maximum TAR file size=10737418240
  Maximum count of files in one archive=1000000
  Minimum size to continue archiving=0
  Archiving external filter=false
  Path of the executable to use for external filter=
  Extensions list (comma separated) of files NOT to give to external filter=
  Regards partial archive status as an error=false
  Extensions list (comma separated) of files NOT to archive=
  Files selection optimization (using the treemarks system)=true
  Archiving TAR close system according to change at a folder depth (0=disabled)=0
  Keep empty archive=false
Specific configuration:
  Validated archiving=No validation on archiving
```

acinfo --pool

Obtains information on storage *pools*.

acinfo --pool [-Hlhdmas] [-n *pool_name*] [--detailed] [-U *size_unit*] {*CONNECTION OPTIONS*} [*FORMATTING OPTIONS*] [*STANDARD OPTIONS*]

The command **acinfo** --pool allows you to display information concerning storage (disk) and archive (tape) pools.

Table 4.38. Connection Options

Option	Description
-A | --login	Specifies the user name with administrative privileges to perform the operation.
--password	Specifies the password associated with the user account given with the argument -A (--login).

Table 4.39. Command Switches

Switch	Description
-H | --showHeader	Show the column headers

Switch	Description
`-l │ --list`	Only show the list of pools
`-h`	Print sizes in human-readable format
`-d`	Shows disk pool summary
`-m`	Shows tape pack pool summary
`-a`	Shows archive tape pool summary
`-s │ --showPath`	Shows path of disk pool partitions

Table 4.40. Options for `acinfo --pool`

Option	Description
`-U │ --unit`	Indicate the unit to use when displaying storage sizes. Possible values are `K`, `M`, `G`, `T`.
`-n │ --name`	Specifies the name(s) of one or more pools (comma separated)
`--detailed`	Show detailed information about the disk partitions and tapes that belong to each pool.

Table 4.41. Formatting Options

Option	Description
`--elementSeparator`	Specifies the string of characters to use to separate elements on the same line.
`--lineSeparator`	Specifies the string of characters to use to separate lines.

Output

When you run the command **`acinfo --pool`**, by default all information is displayed. Adding an option has the effect of deactivating the display of other information. You can, however, use multiple options.

The information relating to the different options is displayed in separate groups.

Example 4.11. acinfo --pool -Hhs --detailed

This command shows detailed information about all the pools, listing disk pools first and tape pools next. Under each disk pool, data on the partitions are shown (including the path, due to the `-s` option). Under each archive pool, data for the tapes that are assigned to the pool are shown.

```
# acinfo --pool -Hhs --detailed
Name            Capacity    Used space     Max. safes count    Used safes    Path
Disk Pool 1     13GB        2.788GB - 21%  480      97 Disk Pool 1
 Partition Data1  6GB       2.788GB - 46%  100      97   /data1/data-01
 Partition Data2  9GB       0Bytes - 0%    0        0    /data2/data-02
Cache Pool      5GB         0Bytes - 0%    192      0  Cache Pool
 Partition vtlcache 6GB     0Bytes - 0%    84       0    /vtlstore/vtlcache
Disk Pool 2     5GB         2.771GB - 55%  192      96 Disk Pool 2
 Partition Data1  6GB       2.771GB - 46%  96       96   /data1/data-01
Shared Pool     18GB        2.771GB - 15%  608      96 Shared Pool
```

```
 Partition /SANv1 19GB        2.771GB - 14%   96     96    /SANv1/activecircle/cell/d...
Name              Capacity  Used space        Used safes
Pack Pool         0Bytes    0Bytes - 0%       0
Archive Pool      804.889GB 2.808GB - 0%      7
 Archive Pool-2   4.951GB   2.808GB - 51%     7
 Archive Pool-3   800GB     0Bytes - 100%     0
Export Pool       0Bytes    0Bytes - 0%       0
```

acinfo --quota

Obtains information on *quotas*.

acinfo --quota [-HhRufVWla] [--maxdepth *n*] [-U *size_unit*] [--force]
[*FORMATTING OPTIONS*] {*CONNECTION OPTIONS*} [*STANDARD OPTIONS*]

The command **acinfo** --quota allows you to display information on space usage by share or the values set (if any) for the maximum volume and/or the maximum number of files allowed for a share and/or its subfolders.

Table 4.42. Switches for acinfo --quota

Switch	Description
-H | --showHeader	Show column headers
-h	Print sizes in human-readable format
-R	List subdirectories recursively
-u	Show used space (default)
-f	Show file count
-V	Show values (default)
-W	Show versioning values
-l	Show limits (if any)
-a	Align information

Table 4.43. Options for acinfo --quota

Option	Description
-U | --unit	Indicates the unit to use when displaying storage sizes. Possible values are K, M, G, T. Ignored if human readable format is activated.
--maxdepth	Can be used with the option -R to specify the maximum depth level (with a non-negative integer) below the current path to display.
--force	Force the operation, even in the event of an error (warn if not quiet)

Table 4.44. Formatting Options

Option	Description
--elementSeparator	Specifies the string of characters to use to separate elements on the same line.

Option	Description
`--lineSeparator`	Specifies the string of characters to use to separate lines.

Output

Example 4.12. acinfo --quota -Hh -C node-01

This command will show the used space on all the shares activated on the node named "node-01":

```
# acinfo --quota -Hh -C node-01
Share name path Used Space:Value
share-01    /    2.169GB
projects    /    221.081MB
multimedia  /    408.395MB
share-02    /    17.075MB
```

Example 4.13. acinfo --quota -HhRufVl -C node-01 -S projects,multimedia

This command will display used space and limits (quotas) for the two shares "projects" and "multimedia" and all their subdirectories (<none> means no limits have been imposed on this object/category):

```
# acinfo --quota -HhRufVl -C node-01 -S projects,multimedia
Share name      path     Used Space: value        soft limit      hard limit      File cou
projects        /        221.081MB        <none>  <none>  209     <none>  <none>
projects        /Marie   0Bytes  1.8GB    2GB     0       900     1000
projects        /Juan    0Bytes  1.8GB    2GB     0       900     1000
projects        /Giovanni        81.938MB         1.8GB   2GB     4       900     1000
projects        /Giovanni/Video 81.938MB          <none>  <none>  4       <none>  <none>
projects        /Ana-Maria       121.951MB        1.8GB   2GB     22      900     1000
projects        /John   120.644KB        1.8GB    2GB     3       900     1000
projects        /John/Stats      1.052KB <none>   <none>  1       <none>  <none>
projects        /Anna   17.075MB         1.8GB    2GB     180     900     1000
projects        /Anna/01         2.846MB <none>   <none>  30      <none>  <none>
projects        /Anna/04         2.846MB <none>   <none>  30      <none>  <none>
projects        /Anna/05         2.846MB <none>   <none>  30      <none>  <none>
projects        /Anna/02         2.846MB <none>   <none>  30      <none>  <none>
projects        /Anna/03         2.846MB <none>   <none>  30      <none>  <none>
multimedia      /        408.395MB        <none>  <none>  108     <none>  <none>
multimedia      /Old projects    0Bytes  4.5GB    5GB     0       90      100
multimedia      /Images 7.868MB 9GB       10GB    100     900     1000
multimedia      /Videos 400.527MB         90GB    100GB   8       900     1000
```

Example 4.14. acinfo --quota -HhRu -S projects --maxdepth 1 -C node-01

This command will display the used space for each folder stored at the root of the share "projects". In this example, each user has a folder at the root, so the output will show the space used by each user. The size information will include all subdirectories for each user folder, but only the first level will be displayed (`--maxdepth` option set to "1"):

```
# acinfo --quota -HhRu -S projects --maxdepth 1 -C node-01
ShareName       Path            UsedSpace:Value
projects        /               1.213GB
projects        /Anna           17.861MB
projects        /John           400.527MB
projects        /Giacomo        878.506KB
projects        /Ana-Maria      72.565MB
projects        /Marie          136.403MB
```

```
projects        /Juan           613.56MB
```

A variation of this command can be used to obtain the same information if the user folders are located one level down, under the "Users" folder, by adding the `-d` option:

```
# acinfo --quota -HhRu -S projects -d /Users --maxdepth 1 -C node-01
ShareName       Path            UsedSpace:Value
projects        /Users          5.345GB
projects        /Users/Anna     1.075GB
projects        /Users/John     835.435MB
projects        /Users/Marie    25.67MB
...
```

acinfo --session

Lists information on user *sessions*.

acinfo --session [-Hhlm] [--userLogin *logins*] [--types *session_type*] [--all] [-U *size_unit*] [*FORMATTING OPTIONS*] {*CONNECTION OPTIONS*} [*STANDARD OPTIONS*]

Table 4.45. `acinfo` --session Connection Options

Option	Description
-A | --login	Specifies the user name with administrative privileges to perform the operation.
--password	Specifies the password associated with the user account given with the argument -A (--login).
-C | --nodeName	Specifies the name of the node to query. Note that only active sessions on this node will be shown.

Table 4.46. Switches for `acinfo --session`

Switch	Description
-H | --showHeader	Show the header
-l | --list	Only show the user name and login time
-m | --monitor	Display all monitoring columns.
-h	Print sizes in human-readable format

Table 4.47. Options for `acinfo --session`

Option	Description
--all	Shows all default columns.
--userLogin	Specifies the user login (comma separated if more than one)
--types	Specifies the type of session (separated by comma). Possible values: operation, administration, and exploration.
-U | --unit	Indicate the unit to use when displaying data sizes. Possible values are K, M, G, T.

> **Note**
>
> You must specify either the name of a node (using the `-C` option) or a user name (using the `--userLogin` option), but you cannot specify both at the same time. The node mode shows current active sessions on the node, while the user mode shows a list of sessions for the user(s) specified.

Table 4.48. Formatting Options

Option	Description
`--elementSeparator`	Specifies the string of characters to use to separate elements on the same line.
`--lineSeparator`	Specifies the string of characters to use to separate lines.
`--elementTrueValue`	String of characters to use to represent a "true" value.
`--elementFalseValue`	String of characters to use to represent a "false" value.

Output

The default data columns displayed by the command, with each line representing one session, are:

Name	The login name of the user.
Login	Date and time of login (session start).
LastActivity	Date and time of the last activity
Logout	Date and time of logout (session end), <none> if session is still active.
Type	The session type, which is one of: ADMINISTRATION, OPERATION or EXPLORATION.
Node	The name of the node hosting the session.
Host	IP address of the system the login came from.
Active	Session status, either "true" (active) or "false" (closed).
ClosingCause	Reason for the closing of the session, for example: "User request", "Timeout expired", "Session Manager stopped".

`acinfo --space`

Obtains information on *space*.

`acinfo` `--space` `[-hars]` `[--includeDeletedFiles]` `[-U` *size_unit*`]` `[--force]` `[`*FORMATTING OPTIONS*`]` `{`*CONNECTION OPTIONS*`}` `[`*STANDARD OPTIONS*`]`

The command **`acinfo`** `--space` allows you to display information on the space used by the storage pools on the shares of Circle.

Table 4.49. Switches for `acinfo --space`

Switch	Description
`-h`	Print sizes in human-readable format
`-a`	Manage all versions

Switch	Description
`-r | --realSize`	Real file size. Used space in pool will be displayed without this toggle.
`-s | --sum`	Display total size.

Table 4.50. Options for `acinfo --space`

Option	Description
`--force`	Force the operation, even in the event of an error (warn if not quiet)
`-U | --unit`	Indicate the unit to use when displaying storage sizes. Possible values are `K`, `M`, `G`, `T`.
`--includeDeletedFiles`	Include deleted files.

Table 4.51. Formatting Options

Option	Description
`--elementSeparator`	Specifies the string of characters to use to separate elements on the same line.
`--lineSeparator`	Specifies the string of characters to use to separate lines.

Output

The command will list the specified shares (or all shares if not specified) that are activated on a given node. For each share, the space used in each pool will be displayed. You can also choose to show the total size of all the pools, with total size for disk pools and archive pool shown separately.

> ### Note
>
> If you query all the shares (either by not specifying any or using 'all' as argument for the connection option `-S | --shareName`), it may take a long time for the command to retrieve, calculate and display the data.

Disk pools will be displayed with information on which node its partitions are mounted on, in this format:

```
Pool name.Node name
```

Example 4.15. acinfo --space -hs

This command displays pool sizes across all shares in human-readable format, with totals.

```
# acinfo --space -hs
Shares      Disk Pool 2.node-02     Shared Pool.node-02    Archive Pool    Disk Pool...
share-01    2.158GB    2.158GB      2.17GB      0Bytes     2.158GB    0Bytes
projects    219.481MB  219.481MB    221.081MB   0Bytes     219.481MB  0Bytes
multimedia  407.909MB  407.909MB    408.395MB   0Bytes     407.909MB  0Bytes
share-02    0Bytes     0Bytes       0Bytes      17.075MB   16.992MB   51.224MB
Total       11.18GB (Disk 8.328GB, Tape 2.852GB)
```

`acinfo --tape`

Obtains information on *tapes* (also called media).

`acinfo` `--tape` `[-Hhlm]` `[-n` *pool_name*`]` `[--tape` *name_or_barcode*`]`
`[--types` *pool_type*`]` `[--archives]` `[--location]` `[--ext]` `[--date]` `[--integrity]`
`[--error]` `[--onlyFull]` `[--sort` *mode*`]` `[--locale` *locale*`]` `[-U` *size_unit*`]`
`[--minWriteAge` *days*`]` `[--minUseAge` *years*`]`
`[`*FORMATTING OPTIONS*`]` `{`*CONNECTION OPTIONS*`}` `[`*STANDARD OPTIONS*`]`

The command `acinfo` `--tape` allows you to display information about each tape in a tape pool.

Table 4.52. Connection Options

Option	Description
`-A | --login`	Specifies the user name with administrative privileges to perform the operation.
`--password`	Specifies the password associated with the user account given with the argument `-A` (`--login`).

Table 4.53. Switches for `acinfo --tape`

Switch	Description
`-H | --showHeader`	Show the data column headers
`-h`	Print sizes in human-readable format
`-l | --list`	Only show the list of tape pools
`-m | --more`	Displays more information, such as external identifier, location code, error information, mounting information and data volume read/written.

Table 4.54. Options for `acinfo --tape`

Option	Description
`-n | --name`	Specifies the name of one or more tape pools (separate with commas if more than one).
`--archives`	Show archive information for each tape pool.
`--location`	Show node and library location of tapes.
`--ext`	Show the external identifier information (data columns *Ext.identifier* and *Ext.LocationCode*).
`--date`	Show date and time for first assignment, last mount, last closing and last integrity check (data columns *FirstAssigment*, *LastMount*, *Last(Un)Closing* and *LastIntegrityCheck*).
`--integrity`	Show last integrity check date and status ((data columns *LastIntegrityCheck* and *IntegrityStatus*).

Option	Description
`--types`	Specifies one or more tape types among: `blank`, `typeUnknown`, `cleaner`, `pack` and `archive` (separate with commas if more than one).
`--tape`	Specifies the name or barcode of one or more tapes (separate with commas if more than one). **NOTE: Only works if you also identify the pool the tape is assigned to, using the option** `--name`.
`--error`	Show information on the last errors
`--onlyFull`	Show only full tapes.
`--sort`	Specify a sorting mode for displaying a list of tape barcodes by last write date or first assignment date. Possible values: `lastWrite`, `firstUse`. The list will be sorted from oldest to most recent.
`--minWriteAge`	Specify the minimum period (in days) since writing on a tape. Will return all tapes which have not been written to during the last X days specified when used with the sort mode `lastWrite`.
`--minUseAge`	Specify the minimum age (in years) since a tape was first assigned. Will return all tapes which have been assigned to a pool (including "Blank Tapes") for at least the amount of years specified when used with the sort mode `firstUse`). A value of 0 will return the barcodes of all the assigned tapes.
`--locale`	Specifies the locale to use instead of the default (en_US), for example `fr` or `de`.
`-U | --unit`	Specifies data unit to use. Ignored if human readable format is activated.

> **Tip**
>
> Remember that when specifying tape or pool names (or any other object name) containing spaces, you must use quotation marks. For example, the pool with the name **Disk Pool 1** should be specified like this:
>
> `--name 'Disk Pool 1'` (or you can use double quotes instead of single).

Table 4.55. Data Formatting Options

Option	Description
`--elementSeparator`	String of characters to use to separate elements on the same line.

Option	Description
`--lineSeparator`	String of characters to use to separate lines.
`--elementTrueValue`	String of characters to use to represent a "true" value.
`--elementFalseValue`	String of characters to use to represent a "false" value.
`--secondElementSeparator`	Define a second element separator character used to separate elements on the same line.

Output

By default, the command lists all (or the specified) tapes by the pools they belong to. If a pool contains no tapes, "<emtpty>" will be indicated next to the pool name.

The default data columns displayed for each assigned tape are listed below. For 'generic' (unassigned) tapes, only the three first columns are shown.

TapeName
The name given to the tape when it was assigned to a pool. Usually this is the name of the pool followed by a number.

BarCode
The bar code of the physical tape.

Type
The generic tape type, for example `LTO-4` or `LTO-5`.

Capacity
The capacity of the tape as defined by its generic type or the library configuration.

UsedSpace
The space occupied by the data on the tape, including compression.

DataSize
The size of the data stored on the tape, if restored (uncompressed).

Closed?
Indicates if the tape has been closed (`X`) or not (`-`).

Full?
Indicates if the tape is full (`X`) or not (`-`).

Fragmentation(%)
Displays the tape fragmentation as a percentage.

Fragmented?
Indicates if the tape is considered fragmented (`X`) or not (`-`), as defined by the fragmentation threshold.

Showing more details. You can obtain more detailed information on each tape by adding the **-m** (or `--more`) option, which will add the following columns:

Ext.identifier	*CorrectedWriteErrors*	*LastMountRelatedDevice*
Ext.LocationCode	*UncorrectedReadErrors*	*VolumeReadSinceDeviceKnown*
CorrectedReadErrors	*UncorrectedWriteErrors*	*VolumeWrittenSinceDeviceKnown*

In the output of the examples below, three dots means characters or lines have been removed for presentation purposes.

Example 4.16. acinfo --tape -hH --sort lastWrite

This command displays a list of the tapes in the system that have been written to, with the tape with the most recent write date at the bottom of the list:

```
# acinfo --tape -H --sort lastWrite
BarCode
E08005L4
E08004L4
E08003L4
```

Example 4.17. acinfo --tape -H --sort lastWrite --minWriteAge 10

This command displays the list of the tapes in the system that have *not been written to in the last 10 days*:

```
# acinfo --tape -H --sort lastWrite --minWriteAge 10
BarCode
E08005L4
E08004L4
```

Example 4.18. acinfo --tape -H --sort firstUse

This command displays the list of the tapes in the system that have been *assigned* to a tape pool (including the pool of blank tapes), with the tape with the most recent assignment date at the bottom of the list:

```
# acinfo --tape -H --sort firstUse
BarCode
E08002L4
E08003L4
E08001L4
E08004L4
E08005L4
E08006L4
E08008L4
E08007L4
```

(Adding the option `--minUseAge 0` would have given the same output.)

Example 4.19. acinfo --tape -H --sort firstUse --minUseAge 1

This command displays the list of the tapes in the system that have been *assigned* to a tape pool for at least 1 year (meaning it has "been in use" for minimum that amount of time):

```
# acinfo --tape -H --sort firstUse --minUseAge 1
BarCode
```

In this case, no tapes have reached the age of 1 year in the system, so the list is empty.

> **Note**
>
> If you delete a tape from a pool (so that the tape is recycled and returned to the list of unknown tapes), the 'firstUse' age is reset.

Example 4.20. acinfo --tape -Hh --location

This command lists all the tapes in the system, sorted by the pool they belong to. In addition, the location information for each tape is displayed (managing node name, library name and slot/element number in the library, for example `node-02;Library 0;Element 2`):

```
# acinfo --tape -Hh --location
TapeName  BarCode  Type  Capacity  UsedSpace  DataSize  Closed?  Full?  Fragmentat...
Disk Pool 1 <empty>

Archive Pool:
Archive Pool-2  E08003L4    LTO-4  4.951GB  2.747GB  2.808GB  -  -  0  -node-02;Lib...
Archive Pool-3  E08001L4    LTO-4  800GB    0Bytes   0Bytes   -  -  0  -node-02;Lib...
```

```
Pack Pool:
Pack Pool-3     E08008L4    LTO-4   800GB     0Bytes    0Bytes    - - 0  -node-02;Lib...


Cache Pool      <empty>


Disk Pool 2     <empty>


Blank Tapes:
Blank Tapes-15  E08006L4    LTO-4   800GB     -1Bytes   -1Bytes   - - 0  -node-02;Lib...
Blank Tapes-12  E08002L4    LTO-4   800GB     -1Bytes   -1Bytes   - - 0  -node-02;Lib...


Shared Pool     <empty>


Cleaning Tapes  <empty>


Unregistered Tapes:
Unregistered Tapes-44   E08013L4    Generic LTO    node-02;Library 0;Slot 1036
Unregistered Tapes-48   E08017L4    Generic LTO    node-02;Library 0;Slot 1040
Unregistered Tapes-53   CLN802L5    Generic LTO    node-02;Library 0;Slot 1046
...


Excluded Tapes  <empty>


Export Pool     <empty>


Blank Tapes-12  E08002L4    LTO-4   800GB     -1Bytes   -1Bytes   - - 0  -node-02;Lib...
ArchTest2:
ArchTest2-1     E08005L4    LTO-4   4.951GB   17MB      17.245MB X - 0  -node-02;Lib...


ArchTest1:
ArchTest1-1     E08004L4    LTO-4   4.951GB   45MB      51.734MB - - 0  -node-02;Lib...
```

Example 4.21. acinfo --tape -hH --archives --name 'Archive Pool' --tape E08003L4

This command lists the archives on a specific tape in the tape pool named 'Archive Pool'.
For each archive, the archive name, share, tar file number and size is output:

```
# acinfo --tape -hH --archives --name 'Archive Pool' --tape E08003L4
TapeName BarCode Type Capacity UsedSpace DataSize Closed? Full? Fragmentation(%) F...
Archive Pool:
Archive Pool-2    E08003L4    LTO-4   4.951GB  2.747GB  2.808GB  -   -   0    -
    Archive:projects#5        projects        7        124.5KB
    Archive:projects#4        projects        6        203.909MB
    Archive:projects#3        projects        1        17.248MB
    Archive:multimedia#4      multimedia      0        408.495MB
    Archive:share-01#2        share-01        3        1.846MB
    Archive:share-01#3        share-01        4        727.5KB
    Archive:share-01#4        share-01        5        1.444MB
    Archive:share-01#1        share-01        2        2.189GB
```

Example 4.22. acinfo --tape -Hh --integrity --types archive

This command lists the date and time of the last integrity check and the integrity status for all
tapes which have been assigned to archive pools. If no integrity check has been performed
on the tape, the output will be "<none>".

```
# acinfo --tape -Hh --integrity --types archive
TapeName        BarCode   ... LastIntegrityCheck   IntegrityStatus
On-demand:
```

```
On-demand-0     E08007L4  ...  5/11/12 4:36 PM        VALID


Archive Pool:
Archive Pool-1  E08004L4  ...  <none>                 <none>
Archive Pool-3  E08001L4  ...  <none>                 <none>
Archive Pool-0  E08003L4  ...  5/11/12 4:37 PM        VALID
```

acinfo --version

Obtains information on which *versions* of the Active Circle software are installed.

acinfo --version [-a] {*CONNECTION OPTIONS*} [*STANDARD OPTIONS*]

The command **acinfo** --version allows you to display information on the Active Circle software *versions*.

Table 4.56. Connection Options

Option	Description
-A | --login	Name of a user with administrative privileges
--password	Password for the user

Table 4.57. Switches for acinfo --version

Switch	Description
-a	Show the internal versions

Running **acinfo** --version -a will produce an output similar to the following:

```
acinfo --version -a
Client version is 4.0.0_6 (internal version: 4.0.0_6)
Node 'node-02' version is 4.0.0_6 (internal version: 4.0.0_6)
Node 'node-01' version is 4.0.0_6 (internal version: 4.0.0_6)
```

aclog

Extracts information from the Active Circle *logs*.

aclog [-Hcih] [--locale *locale*] [-o *date_time*] [-f *pattern*] [-d *date_format*] [--elementSeparator] [--lineSeparator] {*CONNECTION OPTIONS*} [*STANDARD OPTIONS*]

The command **aclog** allows you to view the administrative log messages. Depending on the options used, you can display past messages or view the messages as they appear in real-time, and you can change the data included in the log entries and their formatting.

Table 4.58. Connection Options

Option	Description
-A | --login	Specifies the user name with administrative privileges to perform the operation.
--password	Specifies the password associated with the user account given with the argument -A (--login).

Option	Description
`-C	--nodeName`	Specifies the name of the node to query for log history.

Table 4.59. Switches for `aclog`

Switch	Description
`-H	--showHeader`	Show the header
`-c`	Show current admin log entries (default)
`-i`	Show incoming administrative log entries (to stop properly, see the Table 4.61, "Options for Interrupting Incoming Messages when using **aclog** `-i`" below)
`-h`	Show administrative log history entries (dependent on the `-C` connection option)

Table 4.60. Command-specific Options

Option	Description
`--locale`	Specifies the locale to use instead of the current one, e.g. `fr`, `de`, etc.
`-o	--oldestTime`	Specifies the oldest date/time for administrative log entries to display.
`-f	--format`	Specifies the display format of the log entries. For a list of the labels to use, see Table 4.62, "Format Options for **aclog** `--format`".
`-d	--dateFormat`	Specifies the format of the dates in the log using a string pattern specified with variables, for example "dd.mm.yyyy". For a list of the variables, see Table 4.63, "Date Format Options for **aclog** `--dateFormat`".
`--elementSeparator`	Specifies the string of characters to use to separate elements on the same line.
`--lineSeparator`	Specifies the string of characters to use to separate lines.

When using the `-i` switch to display incoming log messages, you can use the following commands to interrupt the monitoring:

Table 4.61. Options for Interrupting Incoming Messages when using `aclog -i`

Option	Description
`stop`	Display the last incoming log entries and stop
`exit`	Wait for the finalization of command (max 30 seconds) and stop
`kill`	Stop immediately

The format of the output is determined by two options: `--format` and `--dateFormat`.

Using the `-f` option (or `--format`) you can specify the presence and order of output fields in the log. This option can take the following labels as arguments:

Table 4.62. Format Options for `aclog --format`

Option	Description
%date	Date
%message	Message
%level	Level
%node	node
%dmessage	Detailed message
%user	User (optional)

The `-d` option (or `--dateFormat`) can take the following arguments:

Table 4.63. Date Format Options for `aclog  --dateFormat`

Option	Description
G	Displays the era, e.g. "AD".
y	Year. "yy" for "09" or "yyyy" for "2009"
M	Month of the year (1-12) in two digits
w	Week of the year (1-53)
W	Week of the month (1-5)
D	Day of the year (1-366)
d	Day of the month (1-31)
F	The occurence of the day of the week in the month (1-5). For example, "2" for the second Thursday of the month.
E	Day of the week in three letters, e.g. Mon, Tue, etc.
a	Display AM or PM
H	Hour of the day (0-23), "HH" for two digits
k	Hour of the day (1-24), "kk" for two digits
K	Hour of the day (0-11), "KK" for two digits
h	Hour of the day (1-12), "hh" for two digits
m	Minute of the hour (0-59), "mm" for two digits
s	Second in the minute (0-59), "ss" for two digits
S	Millisecond up to the number of specified digits.
z	Time zone in letters, e.g. "CET" for Central European Time.
Z	Time zone in RFC 822 (relative to GMT), e.g. "+0100" for Central European Time.

Output

The default log output looks similar to this (examples of log entries):

```
# aclog
September 26, 2011 2:02:07 PM   node-01   Nodes 'node-03' removed from Disk Pool 'S...
September 26, 2011 2:02:07 PM   node-01   Node 'node-03' deleted
September 26, 2011 2:02:52 PM   node-01   Cluster 'Policy Management' elected on 'n...
```

Using the `-o` (or `--oldestTime`) option, you can define the oldest entries to display in the log. The following command will display log entries written since October 1, 2011 (using the default US English date format):

```
# aclog -o "10/01/11 00:00 am"
```

Using the `-f` (or `--format`) option, you can change which fields to be displayed in the log, and how they are formatted.

Example 4.23. aclog -f "%node - %date - %level - %message"

This command will list the node first, includes the level information in the output, and uses dashes (-) to separate the columns:

```
# aclog -f "%node - %date - %level - %message"
node-01 - September 26, 2011 2:02:07 PM - Normal - Nodes 'node-03' removed from Di...
node-01 - September 26, 2011 2:02:07 PM - Normal - Node 'node-03' deleted
node-01 - September 26, 2011 2:02:52 PM - Normal - Cluster 'Policy Management' ele...
```

You can use the `-d` (or `--dateFormat`) option to change the way the date is displayed in the log.

Example 4.24. aclog -d "E dd/MM/yy 'at' HH:mm:ss z"

```
# aclog -d "E dd/MM/yy 'at' HH:mm:ss z"
Mon 26/09/11 at 14:02:07 CET node-01 Nodes 'node-03' removed from Disk Pool 'Shar...
Mon 26/09/11 at 14:02:07 CET node-01 Node 'node-03' deleted
Mon 26/09/11 at 14:02:52 CET node-01 Cluster 'Policy Management' elected on 'node...
```

`aclogger`

Sets the level for internal node *loggers*.

`aclogger` [-pf] [-L *logger_name*] [-l *level*] [--list]
{*CONNECTION OPTIONS*} [*STANDARD OPTIONS*]

The command **`aclogger`** allows you to list and to modify the message level for internal node logging services.

Table 4.64. Connection Options

Option	Description
-A | --login	Specifies the user name with administrative privileges to perform the operation.
--password	Specifies the password associated with the user account given with the argument -A (--login).

Option	Description
`-C` | `--nodeName`	Specifies the name of the node to query for log history.

Table 4.65. Switches for `aclogger`

Switch	Description
`-p` | `--persist`	Persist setting on node (otherwise it will be reset after next restart)
`-f` | `--filter`	Manage filter levels instead of standard level

Table 4.66. Options for `aclogger`

Option	Description
`-L` | `--logger`	Specifies the logger name to manage
`-l` | `--level`	Specifies the level(s) to set
`--list`	List internal logger information (comma-separated if more than one).

Usage

Example 4.25. aclogger --list

In order to effectively use the command **`aclogger`** to manipulate the logging services, you must know the name of the service you wish to modify. The option **`--list`** allows you to list all of the logging services used in Active Circle. The command:

`aclogger -C node-01 --list`

Returns a list of services similar to this (excerpt):

```
# aclogger -C node-01 --list
sun.awt.AppContext.level=INFO
java.awt.Component.level=INFO
net.jini.loader.pref.PreferredClassProvider.level=INFO
DataSrc.level=INFO
com.sun.jini.thread.ThreadPool.level=INFO
net.jini.jeri.BasicInvocationDispatcher.level=INFO
Lease.level=INFO
...
```

Example 4.26. aclogger --filter

When used with the option **`--filter`**, the command lists the filter settings for the logging services:

```
# aclogger -C node-01 --list --filter
sun.awt.AppContext.filter=empty
java.awt.Component.filter=empty
net.jini.loader.pref.PreferredClassProvider.filter=empty
DataSrc.filter=DEBUG3,DEBUG2,DEBUG1,CONFIG,INFO,WARNING,ERROR,FATAL
com.sun.jini.thread.ThreadPool.filter=empty
net.jini.jeri.BasicInvocationDispatcher.filter=empty
Lease.filter=DEBUG3,DEBUG2,DEBUG1,CONFIG,INFO,WARNING,ERROR,FATAL
```

```
...
```

Example 4.27. aclogger --logger

Use the option **--logger *logging.service.name*** to check the level for an individual logging service. To find the level for the service "DataSrc":

```
# aclogger -C node-01 --list --logger DataSrc
DataSrc.level=INFO
```

Example 4.28. aclogger --level --persist

The default level for many of the logging services is INFO. In order to modify the level, you must use the option **--level** to indicate the new level for the logging service. If you also want the new level setting to remain after a restart of the node, use the **--persist** option:

aclogger --logger DataSrc --level DEBUG2 --persist

Once you have modified the level, you can run the command with the **--list** option to view the modified level:

```
# aclogger -C node-01 --list --logger DataSrc
DataSrc.level=DEBUG2
```

Example 4.29. aclogger --level --persist --filter

In order to modify the filter for a given logging service, you need to include the **--filter** option:

aclogger -C node-01 --logger DataSrc --level DEBUG2,INFO --persist --filter

Once you have modified the filter settings, you can run the command with the options **--list** and **--filter** to view the modified level:

```
aclogger -C node-01 --list --logger DataSrc --filter
DataSrc.filter=DEBUG2,INFO
```

`acmail`

This command allows you to send an *e-mail* using the system's SMTP configuration.

acmail [-H] [-s *subject*] {-t *recipient_address*} {-f *sender_address*} {-M *message*} [-a *attachments*] [--aPrefix *prefix*] [-m *mime_type*] {*CONNECTION OPTIONS*} [*STANDARD OPTIONS*]

Table 4.67. Connection Options

Option	Description
-A | --login	Specifies the user name with administrative privileges to perform the operation.
--password	Specifies the password associated with the user account given with the argument -A (--login).
-C | --nodeName	Specifies the name of the node to query.

Table 4.68. Command Switches

Switch	Description
`-H	--showHeader`	Show the header

Table 4.69. Options for `acmail`

Option	Description
`-s`	Specifies the subject of the e-mail.
`-t`	Specifies the recipient address.
`-f`	Specifies the sender address.
`-M	--message`	Specifies the message to be sent.
`-a`	Specifies one or more files to attach to the e-mail. Separate the file names with commas.
`--aPrefix`	Specifies a prefix to add to the file names of attachments.
`-m`	Specifies the MIME content type for attached files. Possible values are `text/plain`, `text/html` or `application/octet-stream`.

Table 4.70. Data Formatting Options

Option	Description
`--elementSeparator`	Characters separating elements on the same line.
`--lineSeparator`	Characters separating lines.

Usage

For the command to work, an e-mail address must have been configured at the top (circle) level of the system using the **Outgoing SMTP Server** feature of the Active Circle Administration Tool. To be used in a scheduled script (cron), the login and password must be configured using the `acconfig` command.

Example 4.30. Sending log files as attachements to an e-mail

You may have received an error in your system, and you would like to send the log files and the error message text to a colleague or a support person by e-mail. You also want to add a prefix to the files to identify them, for example with your company name (and/or the date). Run the acmail command with options similar to the following (line breaks inserted for readability):

```
# acmail -H -s "This is the subject" -t email@address -f email@address
-M "This is the message."
-a systemlog.txt,sessionlog.txt,errormessage.txt
--aPrefix customername-
```

The recipient would see the following three files attached to the e-mail:

```
customername-systemlog.txt
customername-sessionlog.txt
customername-errormessage.txt
```

actop

The Active Circle *top* command.

actop [-n *node_names*] [--category *indicator*] [--type *period*] [-U *unit*] {*CONNECTION OPTIONS*} [*FORMATTING OPTIONS*] [*STANDARD OPTIONS*]

Use this command to monitor CPU use, memory use and other load indicators for nodes.

Table 4.71. Connection Options

Option	Description
-A	--login	Name of a user with administrative privileges
--password	Password for the user

Table 4.72. Command Options for actop

Option	Description
-n	--name	Specifies the name(s) of the nodes (comma separated) to analyze. If omitted, the command queries all the nodes.
--category	Specifies the category to monitor. Possible values: Cpu, Mem, Swap, Load, Net, Cache, Catalog. If omitted, the command monitors all the categories.
--type	Specifies the type of period to monitor for displaying cumulative or average values. Possible values:
	t1 Short time period, currently defined to 5 minutes (10 times the basic polling interval of 30 seconds)
	t2 Longer time period, currently defined to 10 minutes (20 times the basic polling interval of 30 seconds)
	tl The total time since the start of the node.
-U	--unit	Specifies unit to use for size display. Ignored if human readable format is activated. Possible values: K, M, G or T.

Table 4.73. Interactive Options for actop

Key	Action
q	Quit monitoring.
n	Add or change node to monitor.

Table 4.74. Formatting Options

Option	Description
--elementSeparator	String of characters to use to separate elements on the same line.
--lineSeparator	String of characters to use to separate lines.
--elementTrueValue	String of characters to use to represent a "true" value.
--elementFalseValue	String of characters to use to represent a "false" value.

Option	Description
`--secondElementSeparator`	Defines a second element separator character used to separate elements on the same line.

Output

Example 4.31. Monitoring all indicator categories for a node

To monitor all indicator categories for the node "active10", run the following command: **`actop -n active10`**

The output will look similar to the below. The data displayed will be updated on the screen at regular intervals. The first line of the output shows the node name, the time since the node was started and the [polling interval, 30 seconds by default].

```
active10 - 10d05:17:00 [00:30]
   CPU: User     Sys     Nice        Wait    Idle
        1.7%     6.6%    495000.0%   8.5%    5.3%
   MEM:  Total        Used       Free
         3.213GB      3.091GB    124.496MB
   SWAP: Total        Used       Free
         5.852GB      128KB      5.852GB
   LOAD: Average      Thread
         0.14         193
   NET:

   CACHE:  Reads    Writes   ReadBytes   WriteBytes   avgqu-sz     svctm      %util
           0        86       0Bytes      620KB        0.00986...   0.3495...  734%
   CATALOG:Reads    Writes   ReadBytes   WriteBytes   avgqu-sz     svctm      %util
           1        16       4KB         112KB        0.00986...   0.3495...  105%
```

For the cache and catalog categories, the `avgqu-sz` column indicates the number of requests waiting in the device queue.

To stop monitoring, hit the **q** key and press Enter.

Example 4.32. Monitoring specific categories

To monitor only the CPU and memory indicators of node "active10", run the following command: **`actop -n active10 --category Cpu,Mem`**

Example 4.33. Adding average or aggregated values to the output

Using the `--type` option, you can add average or aggregated values based on different time periods to the display of some of the indicators.

These values are separated from the base value by a semicolon (;). If no value, <none> is displayed after the semicolon. The following is an output example for the command **`actop -n active10 --type t1`**. The first line of the output indicates the node name (active10), the node running time (10 days, 6 hours, 16 minutes and 30 seconds), the polling interval (30 seconds) and the time period defined by `t1` (5 minutes).

```
active10 - 10d06:16:30 [00:30;05:00]
CPU: User        Sys      Nice       Wait     Idle
     1.7%;1.7%   6.6%;6.6%   495000.0%;495000.0%   8.5%;8.5%   5.3%;5.3%
MEM: Total        Used       Free
     3.213GB;<none>  2.912GB;2.913GB 308.203MB;307.001MB
```

```
SWAP: Total       Used      Free
      5.852GB;<none>  128KB;128KB    5.852GB;5.852GB
LOAD: Average     Thread
      0.31;0.1   197;<none>
NET:

CACHE:   Reads   Writes  ReadBytes       WriteBytes      avgqu-sz        svctm  %util
         0;0     60;269  0Bytes;0Bytes   668KB;2.469MB   0.005...;<none> 0.265...;...
CATALOG: Reads   Writes  ReadBytes       WriteBytes      avgqu-sz        svctm  %util
         0;0     19;89   0Bytes;0Bytes   152KB;592KB     0.005...;<none> 0.265...;...
```

> **Tip**
>
> You can obtain similar load indicator information in a different format using the
> command **`acinfo --node --monitor`**.

Chapter 5. Administration

This chapter describes the commands for administering the Active Circle system. They are:

acacl   **accluster**
acadmin   **acdirectory**
acarchive   **acexec**
accheck   **acquota**
accircleproperty   **acwait**

acacl

The Active Circle command for managing *Access Control Lists*.

acacl [-R] [--reset] [--set *acl*] [--protect] [--unprotect] [--force] [*FORMATTING OPTIONS*] {*CONNECTION OPTIONS*} [*STANDARD OPTIONS*]

The command **acacl** allows you to modify the access rights associated with a share, its sub-folders and files. There are four distinct functionalities, each managed by a separate command option: *set*, *reset*, *protect* and *unprotect*. Each must be used separately from the others.

Table 5.1. Options for acacl

Option	Description
-s | --set	Set specific ACLs on a file (without inheritance). Must be followed by the formatted representation of the ACL (see below).
-r | --reset	Reset ACL with the default values
-R	Execute the command recursively (only allowed with the --reset option)
--protect	Prevent authorizations from being propagated to the specified file or folder and its children.
--unprotect	Allow authorizations to be propagated to the specified file or folder and its children.
--force	Force operation even on error (warn if not quiet)

Table 5.2. Data Formatting Options

Option	Description
--elementSeparator	String of characters to use to separate elements on the same line.
--lineSeparator	String of characters to use to separate lines.

The **acacl** command does not fail or display a message if the ACL state listed in the command already exists, for example if you add a right that already exists. It will not, however, execute in the event of a syntax error, an unknown "trustee", unknown right, etc. Any errors encountered are displayed at the end of the command.

> ⬤ **Warning**
>
> The `--force` option will allow you to implement any valid changes. This is not
> necessarily advisable as it could lead to incoherent ACLs.

`reset, protect, unprotect`

To *reset* the ACLs recursively on a folder:

```
acacl --reset -R -d "myDir/mySubDir"
```

To *stop the inheritance* of ACLs for a file or folder:

```
acacl --protect -d "myFile"
acacl --protect -d "myDir/mySubDir"
```

To *re-establish inheritance* of ACLs from parent folders and propagate them to children:

```
acacl --unprotect -d "myFile"
acacl --unprotect -d "myDir/mySubDir"
```

Setting ACLs

This section describes how to set authorizations using the `-s` (or `--set`) option.

You can add or remove authorizations (or rights) and restrictions for several "trustees" (users)
on a file or directory in one operation.

The command works by sending a formatted representation of the entries of the ACL to be
processed, with each element separated by a colon. The syntax for each entry of the ACL
is as follows:

`'[*]M:id:[flags{]:[+|-]right}[, [*]M:id:[flags{]:[+|-]right},...]'`

`*`	(Asterisk) Indicates a restriction ('deny') instead of an authorization ('grant').
`M`	User metatype: `g` for group name, `u` for user login or `s` for SID.
`id`	Identifier of the "trustee" (for example a user login) to be given authorization, must conform to the user metatype option.
`flags`	Inheritance flags. If more than one, separate by a dash (-). Possible values are: `OI` and `CI` for inheritance, `IO` and `NP` for propagation. Note that the propagation flags (`IO` and `NP`) should not be used unless at least one of the inheritance flags (`OI` or `CI`) is specified. If no flags are specified, the entry only applies to the specified object or container. See Table 5.3, "ACL Inheritance and Propagation Flags" below for more information on these flags.
`[+|-]`	Add or remove rights: Plus "+" to add, minus "-" to remove.
`right`	One or more of the keywords representing the rights to assign or remove (see tables below).

The whole ACL expression (which could contain several entries) should be enclosed in single
or double quotes. An example of the **acacl** command with a single entry might look like
the following:

```
acacl -s "u:admin:OI-CI:+view+history+full" -d dir1
```

An ACL is normally specified as a set of Access Control Entries (ACEs). The syntax described above represents such an entry. You can enter several of these entries (or rule expressions) in one command by separating each entry with a comma:

```
acacl -s "u:admin:OI-CI:+view+history+full","u:Bill:OI-CI:+view+history+read" -d dir1
```

The first command example above grants the user with login `admin` the 'view', 'history' and 'full' rights on the directory called *dir1*. In addition, the rights will be inherited by all directories (CI) and files (OI) in the entire subtree under the *dir1* directory (no restrictive propagation flags specified). The second command is the same for `admin`, while at the same time granting the 'view', 'history' and 'read' rights to the user `Bill` by adding a second entry after the comma. The tables below describe the elements and arguments to use in more detail.

Table 5.3. ACL Inheritance and Propagation Flags

Flag	Meaning	Explanation
OI	Object Inherit	Inheritance flag. The rule will apply to child file objects. Container objects also inherit this rule but only for the purpose of inheritance.
CI	Container Inherit	Inheritance flag. The rule will apply to child objects that are containers (directories).
IO	Inherit Only	Propagation flag. This means that the rule applies to child objects only and not to the object itself.
NP	No Propagation	Propagation flag. The rule is propagated to immediate children (sub-folders and/or the files contained therein), but not beyond to subsequent levels of objects (it will affect children, but not grandchildren).

If no propagation flag (`IO` or `NP`) is specified, the rule will by default be propagated down the entire subtree below the current container (assuming one or both inheritance flags have been specified). Use the propagation flags if you need to restrict propagation.

Rights

Both the proprietary Active Circle rights and the Windows rights can be set with the **acacl** command.

Table 5.4. Active Circle Rights

view	The right to view a file or sub-directory in a directory listing. Denying this right means that the object will be invisible to the specified user(s).
history	The right to restore previous versions of a file.

Table 5.5. Windows Rights

full	writeEA

read	executeFile
write	traverseFile
execute	deleteChild
modify	readAttr
readData	writeAttr
listDir	sync
writeData	writeOwner
addFile	writeDac
appendData	readControl
addSubDir	delete
readEA	

The full complement of Windows rights is available. For more information, please consult the Microsoft documentation.

Usage

The usage examples below assume that the additional required connection options (login, password, node, share) have already been defined by the **accd** or **acconfig** command. If not, they can be added to the command line or the command will prompt you to enter their values.

To add the `view` right to the folder `dir1` for the user `Anna` with no inheritance:

```
acacl -s "u:Anna::+view" -d dir1
```

To add the `view` and `history` rights to the folder `dir1` for the user `John` with inheritance for both files and folders:

```
acacl -s "u:John:OI-CI:+view+history" -d dir1
```

To remove the `history` right from the folder `dir1` for the user `Giovanni` with inheritance for both files and folders:

```
acacl -s "u:Giovanni:OI-CI:-history" -d dir1
```

To deny the `view` right to the folder `dir1` and all of its children for the user group `Employees`:

```
acacl -s "*g:Employees:OI-CI:+view" -d dir1
```

To remove the deny setting for `view` from the folder `dir1` and all of its children for the user group `Employees`:

```
acacl -s "*g:Employees:OI-CI:-view" -d dir1
```

To deny the `view` right to the folder `dir1` for all users (the user "EVERYONE", having SID S-1-1-0):

```
acacl -s "*s:S-1-1-0::+view" -d dir1
```

To perform several operations with a single command (each rule/entry separated by a comma):

```
acacl -s "u:admin::+view,*g:group1::+view,u:user1::+view-history" -d dir1
```

To grant all employees the `delete` right to all contents within the folder *dir1* and all of its children, but *not* to the folder itself:

```
acacl -s "g:Employees:OI-CI-IO:+delete" -d dir1
```

To grant all employees the `full` rights to all contents within the folder *dir1* and its immediate children, but *not* to any subfolders or files a level below (the right will not apply to grandchildren):

```
acacl -s "g:Employees:OI-CI-NP:+full" -d dir1
```

acadmin

The Active Circle *administration* command.

The command **acadmin** allows you to perform certain tasks associated with the administration of a Circle. It is divided into these sub-commands:

acadmin `--account`	Create and update shares (for example access rights) and process share policies.
acadmin `--cache`	Manage caches.
acadmin `--circle`	Manage the circle.
acadmin `--cluster`	Manage clusters.
acadmin `--drive`	Manage tape drives.
acadmin `--fileServer`	Manage file servers.
acadmin `--library`	Manage tape libraries.
acadmin `--node`	Create and manage nodes.
acadmin `--partition`	Create and manage shared partitions.
acadmin `--pool`	Manage and create pools.
acadmin `--tape`	Manage tapes.

acadmin --account

The sub-command for administering accounts and shares with the **acadmin** command.

acadmin `--account` [`-cgiSTU`] [`-a` *access_rights*] [`-n` *share_name*]
[`-d` *share_description*] [`-t` *storage_policy*] [`-h` *archiving_policy*]
[`--activate`] [`--deactivate`] [`-G` *sharegroup_name*]
{*CONNECTION OPTIONS*} [*STANDARD OPTIONS*]

The command **acadmin** `--account` allows you to create Accounts or shares, add or remove access rights for shares for users, activate or deactivate shares on nodes and process share policies.

Table 5.6. Connection Options

Option	Description
-A | --login	Specifies the user name with administrative privileges to perform the operation.
--password	Specifies the password associated with the user account given with the argument -A (--login).

Table 5.7. Command Switches for `acadmin --account`

Switch	Description
-c	Create the share if it does not exist. Must be followed by -n, -t and/or -h and -d.
-g	Manage group instead of subject
-i	Manage UID/GID instead of login/name
-S	Start Storage Policy processing. Alternative: --startStoragePolicyProcessing.
-T	Start Archiving Policy processing. Alternative: --startArchivingPolicyProcessing.
-U	Start Version Management Policy processing. Alternative: --startHistoryPolicyProcessing.

Table 5.8. Options for `acadmin --account`

Option	Description
-a | --accessRights	Specifies the access rights with mode-like syntax.
-n | --name	Specifies the name of the share.
-d | --description	Specifies the description of the share.
-t | --storagePolicy	Specifies the name of the storage policy to associate with the new share.
-h | --archivePolicy	Specifies the name of the archiving policy to associate with the new share.
--activate	Activate the share on the specified nodes
--deactivate	Deactivate the share on the specified nodes
-G | --group	Specifies the name of the [new] share group.

If the share does not already exist, it will be created when using the -c option. If a share group name is specified with the -G option, it will be created if it does not already exist. In both cases the share specified by the -n option becomes a member of the group.

When assigning access rights, the system is similar to that used with the Unix command **chmod**. Each bit of the control byte (expressed in the table below in hexadecimal notation)

corrresponds to a different permission. The access right expression to use with the `-a` (or `--accessRights`) option has this syntax:

`'id[+|-]mode[,id[+|-]mode,...]'`

> **id**   User login name or group name, or UID/GID. By default, the command expects a user login belonging to the main user directory. To specify a group name, you must add the `-g` switch. To specify a UID, add the `-i` switch. To specify a GID, add both the `-g` and the `-i` switch.

> **[+|-]**   Add or remove access rights: Plus "+" to add, minus "-" to remove.

> **mode**   The access right to add or remove. The mode is specified as a hexadecimal code (excluding the '0x' prefix) or a key word, as listed in the table below.

Table 5.9. Access Rights

Access Right	Code/Keyword
CREATE	0x01
DELETE	0x02
MOVE	0x04
READ	0x08
WRITE	0x10
HISTORY	0x20
SECURITY	0x40
ALL	0x7F
Remove all user rights	removeSubject
Remove all group rights	removeGroup

Several access right additions or removals can be done in the same command execution, by specifying several access right expressions separated by commas. The whole set of expressions should be enclosed in quotes. For example:

`acadmin --account -n sharename -a 'user1+7F,user3-7F,user4+03'`

The command will not fail or give an error if you add a right that already exists or you remove a right that does not exist.

Usage

Example 5.1. Creating a share

The following command creates the share "share-01", gives it the description "Test share", associates it with the storage policy called "Two copies" and places it in the share group named "ShareGroup-01":

```
acadmin --account -c -G ShareGroup-01 -n share-01 -d "Test share" -t "Two copies"
```

Example 5.2. Activating a share

The following command activates share-01 on node-01:

```
acadmin --account -n share-01 --activate node-01
```

Example 5.3. Adding and Removing Rights

Grant user John read access to share-01:

```
acadmin --account -n share-01 -a 'John+08'
```

Grant user John create, delete, move, read and write access to share-01:

```
acadmin --account -n share-01 -a 'John+1F'
```

Grant user John read and write access to share-01:

```
acadmin --account -n share-01 -a 'John+08,John+10'
```

Grant the user group Employees read and write access to share-01:

```
acadmin --account -n share-01 -g -a 'Employees+08,Employees+10'
```

Remove all explicit access rights for users on share-01 (since the previous command gave all employees read and write access through the group):

```
acadmin --account -n share-01 -a 'removeSubject'
```

acadmin --cache

The sub-command for administering *caches*.

acadmin --cache [-c] [--low] {*CONNECTION OPTIONS*} [*STANDARD OPTIONS*]

Table 5.10. Connection Options

Option	Description
-A | --login	Specifies the user name with administrative privileges to perform the operation.
--password	Specifies the password associated with the user account given with the argument -A (--login).
-C | --nodeName	Specifies the name of the node(s) whose cache(s) must be cleared. One or several names of nodes (separated by comma) or 'all' for all the nodes

Table 5.11. Options for `acadmin --cache`

Option	Description
-c | --clear	Clear the cache
--low	Purge the cache until low threshold is reached

acadmin --circle

The sub-command for administering the *circle*. You can use this command to stop the Active Circle service on all the nodes and to update the product license.

```
acadmin --circle [--stop] [--license key]
{CONNECTION OPTIONS} [STANDARD OPTIONS]
```

Table 5.12. Connection Options

Option	Description
`-A	--login`	Specifies the user name with administrative privileges to perform the operation.
`--password`	Specifies the password associated with the user account given with the argument `-A` (`--login`).

Table 5.13. Options for `acadmin --circle`

Option	Description
`--stop`	Stops all the nodes of the circle.
`--license`	Use this to specify a license key for updating the Active Circle license.

acadmin --cluster

The sub-command for managing Active Circle *HA clusters*. You can create different types of clusters and add or remove nodes in existing HA clusters.

Command syntax for modifying an **existing cluster**:

```
acadmin --cluster {-n name } [--mode set|add|remove]
{CONNECTION OPTIONS} [STANDARD OPTIONS]
```

Command syntax for creating an **IP cluster**:

```
acadmin --cluster {-c} {-n name } {--ip ip_address}
{CONNECTION OPTIONS} [STANDARD OPTIONS]
```

Command syntax for creating a **DNS cluster**:

```
acadmin --cluster {-c} {-n name } {--dnsHost hostname}
{--dnsAddress address} {--tsigKeyName name} {--tsigKey key}
{CONNECTION OPTIONS} [STANDARD OPTIONS]
```

Command syntax for creating a **scripted cluster**:

```
acadmin --cluster {-c} {-n name } {-ts script_name} {-ss script_name}
{-rs script_name} [-tp script_params] [-sp script_params]
[-rp script_params] {CONNECTION OPTIONS} [STANDARD OPTIONS]
```

Table 5.14. Connection Options

Option	Description
`-A	--login`	Specifies the user name with administrative privileges to perform the operation.
`--password`	Specifies the password associated with the user account given with the argument `-A` (`--login`).

Option	Description
-C | --nodeName	Specifies the name of the node(s) which should be added to, removed from or set for the cluster. Enter one or more names of nodes (separated by comma).

Table 5.15. Switches for `acadmin --cluster`

Switch	Description
-c	Create the cluster if it does not exist.

Table 5.16. General options for `acadmin --cluster`

Option	Description
-n | --name	Specifies the cluster name. If the cluster name includes spaces, enclose it within quotes.
--mode	Specifies the modification mode for an existing cluster. Possible values are: add, remove or set (default).

If the --mode option is not specified, the default action is to set the specified nodes as members of the cluster. Any nodes *not* specified will be removed from the cluster (only the nodes you specify will remain in the cluster). Note that you cannot remove all the nodes from a cluster; at least one node must be defined as a member of the cluster.

Table 5.17. Options for IP clusters:

Option	Description
--ip	Specifies the IP address for an IP cluster.

Table 5.18. Options for DNS clusters:

Option	Description
--dnsHost	Specifies the DNS host name.
--dnsAddress	Specifies the DNS address.
--tsigKeyName	Specifies the Transaction SIGnature (TSIG) key name.
--tsigKey	Specifies the TSIG key (HMAC-MD5 base64).

Table 5.19. Options for scripted clusters:

Option	Description
-ts	Specifies the name of the takeover script. Alternative: --takeOverScript.
-tp	Specifies the parameters of the takeover script. Alternative: --takeOverParameters.
-ss	Specifies the name of the split-brain recovery script. Alternative: --splitBrainRecoveryScript.
-sp	Specifies the parameters of the split-brain recovery script. Alternative: --splitBrainRecoveryParameters.
-rs	Specifies the name of the release script. Alternative: --releaseScript.

Option	Description
`-rp`	Specifies the parameters of the release script. Alternative: `--releaseParameters`.

When creating any type of cluster, you must always specify the cluster name (`-n` option) and at least one member node (`-C` option). In addition, you must specify at least the following options for each cluster type:

- **IP cluster:** `--ip`
- **DNS cluster:** `--dnsHost`, `--dnsAddress`, `--tsigKeyName`, `--tsigKey`
- **Scripted cluster:** `-ts`, `-ss`, `-rs`

Usage Examples

Create the IP cluster with name "My Cluster", IP address "192.168.1.99" and member nodes "node1", "node2" and "node3":

```
acadmin --cluster -c -n "My Cluster" -C node3,node2,node1 --ip 192.168.1.99
```

Remove the node "node3" from the cluster with name "My Cluster":

```
acadmin --cluster -n "My Cluster" -C node3 --mode remove
```

Add the nodes "node4", "node5" and "node6" to the cluster with name "supercluster":

```
acadmin --cluster -n supercluster -C node4,node5,node6 --mode add
```

acadmin --drive

The sub-command for administering *tape drives*. Use this command to set drives in maintenance mode or return them to service, and to clean drives.

acadmin `--drive` {`-n` *number*} [`--status` *mode*] [`--clean`]
{*CONNECTION OPTIONS*} [*STANDARD OPTIONS*]

Table 5.20. Connection Options

Option	Description
`-A	--login`	Specifies the user name with administrative privileges to perform the operation.
`--password`	Specifies the password associated with the user account given with the argument `-A` (`--login`).

Table 5.21. Options for `acadmin --drive`

Option	Description
`-n	--name`	Specifies the number or serial number of the drive.
`--status`	Specifies the mode of operation for the drive. Valid values are: *maintenance* and *service*. Use to put the drive in maintenance mode or return it to service.
`--clean`	Loads a cleaning tape in the drive and performs tape drive cleaning.

`acadmin --fileServer`

The sub-command for administering *file servers*.

acadmin --fileServer [--activate] [--deactivate] [--unset]
[-p *protocol*] [--stat] {*CONNECTION OPTIONS*} [*STANDARD OPTIONS*]

Table 5.22. Connection Options

Option	Description
`-A` | `--login`	Specifies the user name with administrative privileges to perform the operation.
`--password`	Specifies the password associated with the user account given with the argument `-A` (`--login`).
`-C` | `--nodeName`	The name of the node to query.
`-D` | `--domainName`	The name of the domain to query.

Table 5.23. Options for `acadmin --fileServer`

Option	Description
`--activate`	Activate file server (node only), protocol or statistic
`--deactivate`	Deactivate file server (node only), protocol or statistic
`--unset`	Unset domain or node defined activation value
`-p` | `--protocol`	Specifies the protocol to modify: *ftp*, *smb* or *nfs*
`--stat`	To modify statistic parameters

Usage Examples

Deactivate a node on a file server:

```
acadmin --fileServer --nodeName node_name --deactivate
```

Activate a node on a file server:

```
acadmin --fileServer --nodeName node_name --activate
```

Deactivate FTP on all nodes (except those for which FTP must be activated):

```
acadmin --fileServer --protocol ftp --deactivate
```

Activate FTP on a node (regardless of the current state of activation):

```
acadmin --fileServer --nodeName node_name --protocol ftp --activate
```

Reset the FTP to its inherited value:

```
acadmin --fileServer --nodeName node_name --protocol ftp --activate --unset
```

`acadmin --library`

The sub-command for administering *tape libraries* and their contents. Use this command to perform operations susch as moving tapes to and from slots and drives, synchronizing the inventory, setting the library in maintenance mode and more.

`acadmin` `--library{-n number}[--status mode][--synchronize]`
`[--reinitializeMailboxes][--reinitializeLibrary]`
`[--moveIn][--move][--src slot][--dst slot][--load element]`
`{CONNECTION OPTIONS}[`*`STANDARD OPTIONS`*`]`

Table 5.24. Connection Options

Option	Description
`-A	--login`	Specifies the user name with administrative privileges to perform the operation.
`--password`	Specifies the password associated with the user account given with the argument `-A` (`--login`).

Table 5.25. Options for `acadmin --library`

Option	Description
`-n	--name`	Specifies the number, name or serial number of the library. This option is required.
`--status`	Specifies the mode of operation for the library. Valid values are: *`maintenance`* and *`service`*. Use to put the library in maintenance mode or return it to service.
`--synchronize`	Performs synchronization of the library inventory.
`--reinitializeMailboxes`	Reinitialize the mailboxes.
`--reinitializeLibrary`	Reinitialize the library. This option instructs the library device to perform a complete re-scan of all its slots and to update the inventory accordingly. This operation can take some time, and the data in the library will not be available during the operation.
`--moveIn`	Move all tapes from the mailboxes into available slots.
`--move`	Move tape from one slot to another. Use with `--src` and `--dst`.
`--src`	Specifies the source slot for move or load operations.
`--dst`	Specifies the destination slot for move operations.
`--load`	Specifies the type of library element to load a tape into. Valid element values are `slot`, `drive`, `mailbox` or `picker`. Source slot (`--src`) must also be specified.

Usage Examples

In the below examples, the library is identified by its number in the Active Circle system, in this case "0".

Move the tape in slot 10 to slot 5:

```
acadmin --library -n 0 --move --src 10 --dst 5
```

Load the tape in slot 4 into a mailbox:

```
acadmin --library -n 0 --load mailbox --src 4
```

Move all tapes located in mailboxes to available slots:

```
acadmin --library -n 0 --moveIn
```

Load the tape in slot 5 in an available drive:

```
acadmin --library -n 0 --load drive --src 5
```

Set library 0 in maintenance mode:

```
acadmin --library -n 0 --status maintenance
```

`acadmin --node`

The sub-command for adding and administering *nodes*.

acadmin --node [-c] {-n *node_name*} [--description *node_description*]
{--domainName *domain*} [--delete] [--stop] [--move]
{*CONNECTION OPTIONS*} [*STANDARD OPTIONS*]

Table 5.26. Connection Options

Option	Description
-A | --login	Specifies the user name with administrative privileges to perform the operation.
--password	Specifies the password associated with the user account given with the argument -A (--login).

Table 5.27. Options for `acadmin --node`

Option	Description
-c	Creates the node if it does not exist.
-n | --name	Specifies the name of the node.
--description	Specifies the description of the node.
--domainName	Specifies the domain and/or sub-domain the node will be created in. To specify a sub-domain, use a period as separator: *subDomain_name.domain_name*. The domain must exist.
--delete	Deletes the node specified by the -n option.
--stop	Stops the node specified by the -n option.
--move	Moves the node to the domain specified by the --domainName option. **NOTE: This operation is only**

Option	Description
	possible on a node where the Active Circle software has not yet been installed.

Usage Example

The following command will create the node called "node-02" with the description "Node" in the sub-domain "Paris" of domain "France":

```
acadmin --node -c -n node-02 --description "Node" --domainName Paris.France
```

Note that the domain specified must already exist in the configuration.

acadmin --partition

The sub-command for defining and administering *shared partitions*.

acadmin `--partition` [-c] {-n *partition_name*} [`--label` *label*]
[`--wwn` *world_wide_name*] [`--size` *gigabytes*] [-G group_name] [`--delete`]
{*CONNECTION OPTIONS*} [*STANDARD OPTIONS*]

Table 5.28. Connection Options

Option	Description
-A | --login	Specifies the user name with administrative privileges to perform the operation.
--password	Specifies the password associated with the user account given with the argument -A (--login).

Table 5.29. Options for `acadmin --partition`

Option	Description
-c	Creates the partition if it does not exist.
-n | --name	Specifies the name of the disk partition.
--label	Specifies the label (LUN) of the partition.
--wwn	Specifies the world wide name of the partition to create.
--size	Specifies the size of the partition to create in gigabytes. Specify a size equal to zero to use all the space available on the disk volume.
-G | --group	Specifies the name of the partition group (will be created if it does not exist).
--delete	Deletes the shared partition specified by the -n option.

Usage Example

The following command will create the partition called "SANv1" with the label "/SANv1" with size 4 terabytes in the group "Shared Partitions":

```
acadmin --partition -c -n SANv1 --label /SANv1 --size 4096 -G "Shared Partitions"
```

Note that the server you are performing the command on must have access to the shared storage where the partition has been defined, and that the label specified must exactly match the LUN of the disk volume you want to use as a shared partition in Active Circle.

`acadmin --pool`

The sub-command for administering tape *pools*.

acadmin --pool [-c][-n *pool_name*][-d *pool_description*][--type *pool_type*] [--format *TAR/LTFS*][--autoExpand][--secondary][--export] [--activate *node_name*][--deactivate *node_name*] {*CONNECTION OPTIONS*}[*STANDARD OPTIONS*]

Table 5.30. Connection Options

Option	Description
-A | --login	Specifies the user name with administrative privileges to perform the operation.
--password	Specifies the password associated with the user account given with the argument -A (--login).

Table 5.31. Options for `acadmin --pool`

Option	Description
-c	Creates the pool if it does not exist.
-n | --name	Specifies the pool name.
-d | --description	Specifies the description of the tape pool being created.
--type	Specifies the type of pool. Possible values: `pack` or `archive`.
--format	Specifies the format of archive pools. Possible values are `TAR` or `LTFS`.
--autoExpand	Activates the auto-expand functionality on the pool.
--secondary	Specifies that the archive pool should be a backup pool. The pool will be treated as a secondary source location for file selection when copying files from tapes.
--export	Defines the pool being created as an export pool.
--activate	Activate the pool on the specified nodes. The name(s) of the node(s) separated by commas or 'all' for all the nodes (not recommended).
--deactivate	Deactivate the pool on the specified nodes. The name(s) of the node(s) separated by commas or 'all' for all the nodes (not recommended).

Usage Example

The following command will create the tape pack pool called "Test" with the description "Created with acadmin" and activate it on node-01:

```
acadmin --pool -c -n "Test" -d "Created with acadmin" --type pack --activate node-01
```

acadmin --tape

The sub-command for administering *tapes* (or media).

acadmin --tape {[-n *pool_name*]|[--type *pool_type*]|[--dstName *pool_name*]
|[--dstType *pool_type*]|[--tape *name_or_barcode*]|[--tapeType *tape_type*]
|[--shareName *share_name*]|[--userName *user_name*]}
[--assign][--move][--force][--import][--defrag][--duplicate]
[--close][--unclose][--load *library_element*]
{*CONNECTION OPTIONS*} [*STANDARD OPTIONS*]

You can use this command to assign, move, load and import tapes.

> **ℹ Note**
>
> This command cannot be used to create or activate tape pools. That functionality
> has been transferred to the command **acadmin** --pool.

Table 5.32. Connection Options

Option	Description
-A | --login	Specifies the user name with administrative privileges to perform the operation.
--password	Specifies the password associated with the user account given with the argument -A (--login).

Table 5.33. Options for acadmin --tape

Option	Description
-n | --name	Specifies the name of the tape pool the tape currently belongs to.
--type	Specifies the type of tape pool. Possible values: blank, exclude, cleaner, pack or archive.
--dstName	Specifies the name of the destination tape pool.
--dstType	Specifies the type of the destination tape pool. Possible values: blank, exclude, cleaner, pack or archive.
--tape	Specifies the name(s) or barcode(s) of tapes (separated by comma if more than one).
--tapeType	Specifies the type of tape. Possible values: lto1, lto2, lto3, lto4, sait1 (not generic or cleaner).
--shareName	Specifies the name of the share to import the contents of tape TAR files to.
--userName	Specifies the name of a user (optional). If not specified UID/GID will be kept during TAR import.

Option	Description
`--force`	Force the move of tapes.
`--import`	Import tapes.
`--move`	Move tapes.
`--assign`	Assign tapes.
`--defrag`	Defragment a tape (only for tapes in pack tape pools).
`--duplicate`	Duplicate a tape (only for tapes in archive pools). The duplication will optimize tape usage and recover wasted space.
`--close`	Close a tape.
`--unclose`	Unclose a tape.
`--load`	Specify the type of library element to load a tape into. Possible values: `picker`, `slot`, `drive` or `mailbox`.

Usage

Example 5.4. Assigning a tape to a pool

The following command will assign the tape currently in the default pool "Unregistered Tapes" to the pack pool "Pack Pool". The tape type is LTO-4:

```
acadmin --tape --assign --tape E08007L4 -n "Unregistered Tapes" --tapeType lto4
--dstName "Pack Pool" --dstType pack
```

The `--load` option can be used to physically move tapes within the tape library, between slots, drives, pickers and mailboxes.

Example 5.5. Loading a tape into a mailbox

The following command physically moves the tape with barcode E08007L4, that belongs to the "Pack Pool", to an available mailbox in the library:

```
acadmin --tape --load mailbox --tape E08007L4 -n "Pack Pool" --type pack
```

Example 5.6. Loading a tape into a slot (from a mailbox)

The following command takes the tape which was moved to the mailbox in the previous example, and moves it back into an available slot in the library. The pool name and type must be specified along with the tape name:

```
acadmin --tape --load slot --tape E08007L4 -n "Pack Pool" --type pack
```

acarchive

The Active Circle command for managing *archives*.

acarchive {[-a]|[-c]|[-d]|[-s]} [-olh] [--full] [--status *empty_or_expired*]
[--locale *locale*] [-e *expiration_date*] [-E *expiration_days*]
[-m *timeout_in_minutes*] [-U *size_unit*] [--mail *address*]
[--level *log_level*] [-f *file_path*] [--excludedFiles *extensions*]

`[--tarSized][--single][--export][--closeTape]`
`[--pool` *pool_name*`]{`*CONNECTION OPTIONS*`}[`*STANDARD OPTIONS*`]`

The command allows you to start all types of archiving, show or delete empty or expired archives, and clean archives.

Table 5.34. Connection Options

Option	Description
`-A │ --login`	Specifies the user name with administrative privileges to perform the operation.
`--password`	Specifies the password associated with the user account given with the argument `-A` (or `--login`).
`-C │ --nodeName`	Specifies the name of the node to query (preferred node for on-demand archiving). Note: Only to be used with the `-o` (or `--onDemand`) option. This lets you run several archiving operations (commands) in parallel on different nodes, provided that none of the files selected are the same in two different archiving commands.
`-S │ --shareName`	You can specify the *name* of the share to analyze or *all* for all the shares of the Circle (may be very time consuming).

Table 5.35. Switches for `acarchive`

Switch	Description
`-a │ --archive`	Start archiving (incremental by default).
`-c │ --clean`	Clean archives. You may need to do this to release resources linked to corrupted archives.
`-d │ --delete`	Delete empty or expired archives according to specified expiration information.
`-s │ --show`	Show empty or expired archives according to specified expiration information (for subsequent deletion).
`-o │ --onDemand`	On-demand archiving.
`--full`	Full archiving (use with `-a │ --archive`).
`-l │ --list`	Each file is interpreted as a list of files, one file per line. To be used with the `--filePath` and `--onDemand` options.
`-h`	Print sizes in human readable format.

Table 5.36. Options for `acarchive`

Option	Description
`--status`	Specifies the status for show or delete operations. Possible values are `empty` or `expired` (default: empty).
`--locale`	Specifies the locale to use instead of the default (en_US), for example `fr` or `de`. Use with `--show` or `--delete`.
`-e │ --expirationDate`	Specifies the date before which empty archives should be processed. Use with `--show` or `--delete`.

Option	Description
`-E	--expirationDays`	Specifies the number of days in the past before which empty archives should be processed. Use with `--show` or `--delete`.
`--level`	Specifies the internal log level on the archiving node. Possible level values: 1, 2 or 3.
`-m	--monitor`	Time to wait in minutes before stopping archiving monitoring. You can use this to force the command to wait (and keep monitoring) until archiving is finished. Verbose level (standard option `-v`) must be set to minimum 1 for progress message to be displayed.
`-U	--unit`	Specifies unit to use for size display. Ignored if human readable format is activated. Possible values: K, M, G or T.
`--mail`	Specifies the email address to notify at the end of archiving.
`-f	--filePath`	Specifies the path of the file. Valid only when using the `--onDemand` or `--export`) option. If used together with the `-l` option, it will be interpreted as a list of files. Each line in the list file should be formatted like this (starting from the root of the share): `Dir/Subdir/.../Filename`
`--excludedFiles`	Specifies the list of extensions to exclude as a comma-separated list of extensions (without the dot). Files with the specified extension will not be archived.
`--tarSized`	Tar files are sized according to the defined size limit, even if the limitation has been turned off by the system.
`--single`	Create only a single archive even if the policy defines multiple data locations. The archive will only be written to the first destination that has been defined in the archiving policy.
`--export`	Export archiving.
`--closeTape`	Close tape after archiving (export archiving).
`--pool`	Specifies the name of the destination archive pool (only for on-demand and export archiving).

The return code is "0" if no errors and a positive number if there are problems. The code "202" means that one share is not ready (relaunch the command later).

Usage

The `-a`, `-d`, `-s` and `-c` options must be used exclusively and at least one must be specified.

Expiration information can be specified when showing or deleting archives.

Example 5.7. On-demand, full archiving

The following command creates a full on-demand archive in the pool named 'ArchTest1' of 8 files on share-02 listed in the 'filelist' file residing in the current directory (`./`). The command will monitor the progress for 3 minutes, and the output detail is defined to verbose level 3

(the below is an excerpt containing only the archiving messages). An e-mail will be sent to the specified address.

Figure 5.1. # acarchive -a -l -h -o --full -S share-02 -m 3 -v 3 --mail "email@address" -f ./filelist --pool ArchTest1

The contents of the list file 'filelist' is shown below. The directory '8-videos-400Mb' is located at the root of share-02.

```
8-videos-400Mb/AirSTAR.mp4
8-videos-400Mb/film1.avi
8-videos-400Mb/film2.avi
8-videos-400Mb/HD_future_1280_XVid.avi
8-videos-400Mb/media.mp4
8-videos-400Mb/Robotica_720.wmv
8-videos-400Mb/The_Magic_of_Flight_720.wmv
8-videos-400Mb/Thumbs.db
8-videos-400Mb/Wildlife.wmv
```

Example 5.8. Notification e-mail

If an e-mail address is specified on the **acarchive** command line using the `--mail` option, an e-mail containing the result of the archiving will be sent. The contents will be similar to this:

Figure 5.2. E-mail Contents

On demand archive completed on Share 'share-02', on pool 'ArchTest1', with state 'Complete' and status 'Successful':
  name: Archive:share-02#12
  creation date: December 1, 2011 3:27:55 PM
  duration: 00:01:02
  archived Files count: 8
  data length: 400.53MB (419,983,114Bytes)
  user selection (first 10 items):
   8-videos-400Mb/AirSTAR.mp4
   8-videos-400Mb/film1.avi
   8-videos-400Mb/film2.avi
   8-videos-400Mb/HD_future_1280_XVid.avi
   8-videos-400Mb/media.mp4
   8-videos-400Mb/Robotica_720.wmv
   8-videos-400Mb/The_Magic_of_Flight_720.wmv
   8-videos-400Mb/Thumbs.db
   8-videos-400Mb/Wildlife.wmv

Additional Examples

For additional examples of using the **acarchive** command, see "Finding and removing expired archives" and "Deleting empty and expired archives" in Chapter 6, *Usage scenarios.*

`accheck`

The Active Circle *check* command is divided into four sub-commands:

accheck `--integrity`	Check the integrity of shares
accheck `--job`	Verify the status of jobs
accheck `--partition`	Check and monitor shared partition status
accheck `--pool`	Start configuration validation of a shared disk pool
accheck `--tape`	Launch integrity test on tapes

`accheck --integrity`

accheck `--integrity` {*CONNECTION OPTIONS*} [*STANDARD OPTIONS*]

Table 5.37. Connection Options for `accheck --integrity`

Option	Description
`-S | --shareName`	Used to specify the name of the share to analyze. Alternatively, you can enter the argument `all` to analyze all the shares of the Circle. Note that this may be very time consuming.
`-A | --login`	Used to specify the user name to use to perform command.
`--password`	Used to specify the password associated with the user account given with the argument `-A` (`--login`).

The `--integrity` sub-command has no specific options. The checking activity will be output to the logs.

`accheck --job`

accheck `--job` [`-r`] {*CONNECTION OPTIONS*} [*STANDARD OPTIONS*]

The command **accheck** `--job` allows you to check whether there are any files that have been stored in the Circle but which have not yet been replicated and which can therefore only be found in the *cache*. If this is found to be the case, the command starts an analysis of the jobs waiting in the queue.

Table 5.38. Connection Options for `accheck --job`

Option	Description
`-S | --shareName`	Used to specify the name of the share to analyze. Alternatively, you can enter the argument `all` to analyze all the shares of the Circle. Note that this may be very time consuming.
`-A | --login`	Used to specify the user name to use to perform command.
`--password`	Used to specify the password associated with the user account given with the argument `-A` (`--login`).

Table 5.39. Options for `accheck --job`

Option	Description
`-r	--restart`	Restart the jobs

Output

If the command finds files in an undesirable state, a message will appear recommending corrective action.

`accheck --partition`

`accheck` --partition {*CONNECTION OPTIONS*} [*STANDARD OPTIONS*]

You can use this command to monitor the status of shared storage partitions.

Table 5.40. Connection Options for `accheck --partition`

Option	Description
`-A	--login`	Used to specify the user name to use to perform command.
`--password`	Used to specify the password associated with the user account given with the argument `-A` (`--login`).

The `--partition` sub-command has no specific options.

Usage

Once the monitoring session has started, the status messages will appear as events occur. Press **Ctrl+C** to end the session.

Example 5.9. Monitoring the output from the `accheck --pool` command

A typical scenario that will output several status messages to the monitor for one or more shared partitions, is a configuration validation of a shared disk pool. Such a validation can be started with the **accheck** `--pool` sub-command. It will give the following output in the **accheck** `--partition` monitoring session, assuming a pool with only one partition (SANv1) and two nodes:

```
# accheck --partition
Starting monitoring (CTRL+C to stop the command) ...
Partition /SANv1, on node node-02: status changed from 'MOUNTED' to 'UNMOUNTING'.
Partition /SANv1, on node node-02: status changed from 'UNMOUNTING' to 'RELEASING'.
Partition /SANv1, on node node-02: status changed from 'RELEASING' to 'CHECKED'.
Partition /SANv1, on node node-02: status changed from 'CHECKED' to 'RESERVING'.
Partition /SANv1, on node node-02: status changed from 'RESERVING' to 'CHECKING'.
Partition /SANv1, on node node-02: status changed from 'CHECKING' to 'MOUNTING'.
Partition /SANv1, on node node-02: status changed from 'MOUNTING' to 'MOUNTED'.
Partition /SANv1, on node node-02: status changed from 'MOUNTED' to 'UNMOUNTING'.
Partition /SANv1, on node node-02: status changed from 'UNMOUNTING' to 'RELEASING'.
Partition /SANv1, on node node-02: status changed from 'RELEASING' to 'CHECKED'.
Partition /SANv1, on node node-01: status changed from 'CHECKED' to 'RESERVING'.
Partition /SANv1, on node node-01: status changed from 'RESERVING' to 'CHECKING'.
Partition /SANv1, on node node-01: status changed from 'CHECKING' to 'MOUNTING'.
Partition /SANv1, on node node-01: status changed from 'MOUNTING' to 'MOUNTED'.
Partition /SANv1, on node node-01: status changed from 'MOUNTED' to 'UNMOUNTING'.
```

```
Partition /SANv1, on node node-01: status changed from 'UNMOUNTING' to 'RELEASING'.
Partition /SANv1, on node node-01: status changed from 'RELEASING' to 'CHECKED'.
Partition /SANv1, on node node-02: status changed from 'CHECKED' to 'RESERVING'.
Partition /SANv1, on node node-02: status changed from 'RESERVING' to 'CHECKING'.
Partition /SANv1, on node node-02: status changed from 'CHECKING' to 'MOUNTING'.
Partition /SANv1, on node node-02: status changed from 'MOUNTING' to 'MOUNTED'.
```

accheck --pool

accheck --pool [-n *pool_name*] [-u *unit_name*]
[-partitionName *partition_name*] [-reinit]
{*CONNECTION OPTIONS*} [*STANDARD OPTIONS*]

This command allows you to launch a validation of the configuration of a shared disk pool. The validation process consists of going through the following cycle of operations for each partition and node that belong to the shared pool:

Reserving > Checking > Mounting > Mounted > Unmounting > Releasing > Checked

Table 5.41. Connection Options for `accheck --pool`

Option	Description
-C | --nodeName	The name of the node to query.
-A | --login	Used to specify the user name to use to perform command.
--password	Used to specify the password associated with the user account given with the argument -A (--login).

Table 5.42. Options for `accheck --pool`

Option	Description
-n | --name	Specifies a pool name
-u | --unitName	Specifies the name of the pool units (partitions for disk pools)
--partitionName	Specifies the name of the partitions (same as --unitName for disk pools)
--reinit	Resets the pool (to mount the pool partitions on a new leader)

Usage

To validate the configuration for a the shared disk pool with the name 'Shared Pool':

```
accheck --pool -n "Shared Pool"
```

> **Tip**
>
> You can monitor the progress of the validation using the **accheck --partition** command.

accheck --tape

accheck --tape {[-n *tape_name*] | [--barcode *barcode*]} [--poolName *pool*]

```
[--interrupt][--compute][--percent value]
{CONNECTION OPTIONS}[STANDARD OPTIONS]
```

This command allows you to launch an integrity check of specified tapes.

Table 5.43. Connection Options for `accheck --tape`

Option	Description
-A | --login	Used to specify the user name to use to perform the command.
--password	Used to specify the password associated with the user account given with the argument -A (--login).

Table 5.44. Options for `accheck --tape`

Option	Description
-n | --name	Specifies the name of one or more tapes separated by comma.
--barcode	Specifies the bar code of one or more tapes separated by comma.
--poolName	Specifies the name of the pool the tape belongs to. Use this option together with --name or --barcode, to improve checking time by only searching for tapes in the specified pool.
--interrupt	Interrupts the integrity check of the specified tapes.
--compute	Computes a check sum for specified tapes that have no check sum.
--percent	Defines the percent of the tape to be checked. The default is 10% (can be changed by the administrator). A value of 100 means 100%.

> ℹ **Note**
>
> The command will only check tapes that belong to an archive pool. Tapes in pack pools will be ignored.

Usage

Example 5.10. Checking a tape and verifying the log

The following command will perform an integrity check of 100% of the files on the tape with the specified bar code:

```
accheck --tape --barcode E08003L4 --percent 100
```

There will be no output on the command line. The results will be written to the node log (`/activecircle/cell/data/Log/lastcell.txt`) by the logger called "Medium". Below is an excerpt of log entries for a successful execution of the above command (information messages):

```
Requesting integrity check on ... of following tapes: Archive Pool-0(E08003L4)
```

```
Integrity check started on Tape 'Archive Pool-0(E08003L4)': checking 100% of the tape
Tape 'E08003L4', boxFile '7': updated last validation date of tape to 'Fri ... 2012',
new validation status=VALID
Integrity check ended on Tape 'Archive Pool-0(E08003L4)': 0.851 GB checked ,
2 TAR files checked successfully, 0 TAR files failed
```

Example 5.11. Checking more than one tape

To check more than one tape in the same operation, separate the names or bar codes by commas:

accheck --tape -n "Archive Pool-0","On-demand-0" --percent 100

> **Tip**
>
> You can use the command **acinfo --tape --integrity** to get information about the last integrity check and the integrity status for one or more tapes.

accircleproperty

This command allows you to view or modify Circle *properties*.

accircleproperty [-U] [-P *property*] [-V *value*]
{*CONNECTION OPTIONS*} [*STANDARD OPTIONS*]

Circle properties can be defined at the circle, domain or node level. Make sure you specify the proper level using the connection options when defining values for properties.

> **Note**
>
> If you set a property value without specifying any connection options for node or domain, the setting will apply to the whole circle. This means the value will be set for all the domains, subdomains and nodes in the Active Circle configuration that inherit their circle properties. If you set a property value specifically for a domain, subdomain or a node, inheritance for that level will be automatically turned off and any subsequent changes to properties at levels above will not apply.

Table 5.45. Connection Options

Option	Description
-A | --login	Specifies the user name with administrative privileges to perform the operation.
--password	Specifies the password associated with the user account given with the argument -A (--login).
-C | --nodeName	Specifies the name of the node to query.
-D | --domainName	Specifies the name of the domain to query.

Table 5.46. Command-specific Options for accircleproperty

Option	Description
-U | --unset	Unset value at the node or domain level (implies turning on inheritance).

Option	Description
`-P` | `--properties`	Specifies circle property or the category of properties.
`-V` | `--value`	Specifies the value for selected property. The value can be alphanumeric or a character string, depending on the property.

Circle properties have the following format:

`<category>.<property_name>: <value>`

Example: `archive.enableOnDemand: true`

The categories which can be specified as arguments for the `-P` (or `--properties`) option are:

adminlog	directory	nas
archive	diskpool	pack
authentication	drlm	session
catalog	httpd	supervision
cos	integrityChecker	vfs
depository	lease	
device	media	

Usage

To view a full list of all the circle properties and their values, run the command without any options. The output will be presented by category.

Example 5.12. Viewing the property values for a category

To view a list of all the property settings for the 'archive' category at the circle (default) level:

```
# accircleproperty -P archive
archive.disable: false
archive.enableOnDemand: true
archive.onDemandTarSized: true
archive.enableExport: true
archive.excludedFiles:
archive.minSize: 0
archive.maxDuration: 28800000
archive.keepEmptyArchive: false
archive.maxFilesCount: 1000000
archive.maxEmptySubArchivesCount: 5
archive.maxErrorRate: 100
archive.maxTarFileSize: 10737418240
archive.notificationDelay: 60
archive.fastTreeWalk: true
archive.sequential: false
archive.sequentialPlanning: false
archive.resourcesAllocationRetry: 0
archive.writeRetry: 0
archive.externalFilterExecutable:
archive.externalFilterExcludedFiles:
archive.externalFilterPartialIsNok: false
archive.dateFilter:
archive.dateFilterBasedOnMtime: false
archive.closeTAROnFolderChangeDepth: 0
```

```
archive.dataChangeOnly: false
```

If you run the same command while specifying a specific node which inherits its property values, there will be no output:

```
# accircleproperty -P archive -C node-02
#
```

> **i Note**
>
> Values will only be displayed if the domain or node specified has explicitly set values. Inherited values will not be shown.

Example 5.13. Viewing a specific property value

Display the value for the property `adminlog.currentSize`:

```
# accircleproperty -P adminlog.currentSize
adminlog.currentSize: 1024
```

Example 5.14. Setting and unsetting property values at different levels

Using the circle property `adminlog.currentSize`, the following examples will demonstrate how setting property values at different levels and inheritance work.

First we set a new default value **2048** for the whole circle by not specifying a node or domain:

```
# accircleproperty -P adminlog.currentSize -V 2048
```

Then we set the value **3096** specifically for the subdomain called 'SubDomain-A2':

```
# accircleproperty -P adminlog.currentSize -V 3096 -D SubDomain-A2
```

Lastly we set the value **2500** specifically for the node called 'node-02':

```
# accircleproperty -P adminlog.currentSize -V 2500 -C node-02
```

Viewing the property, we see that the new default (circle level) value has been set to **2048**:

```
# accircleproperty -P adminlog.currentSize
adminlog.currentSize: 2048
```

Now we decide to *unset* (`-U`) this property back to the default value for the whole circle:

```
# accircleproperty -U -P adminlog.currentSize
```

Checking the values we have defined gives the following results:

```
# accircleproperty -P adminlog.currentSize
adminlog.currentSize: 1024

# accircleproperty -P adminlog.currentSize -D SubDomain-A2
adminlog.currentSize: 3096

# accircleproperty -P adminlog.currentSize -C node-02
```

```
adminlog.currentSize: 2500

# accircleproperty -P adminlog.currentSize -D SubDomain-A1
#
```

The output above shows the following information:

- The default value for the circle has been reset to 1024.
- The change in default value has not affected SubDomain-A2, as we explicitly set the value for that domain to 3096, resulting in inheritance being turned off.
- The change in default value has not affected node-02, as we explicitly set the value for that node to 2500, resulting in inheritance being turned off.
- The value for SubDomain-A1 is blank, which means it is inherited from the level above.

To turn inheritance back on for a specific property for a node or domain, use the `--unset` (or `-U`) option. This will turn inheritance on and consequently change the property value to that of the parent object.

accluster

This command includes the same functionality as the **`acadmin --cluster`** command. Please refer to the "**`acadmin --cluster`**" section of this guide for a description of the general options. In addition, **`accluster`** includes specific options to use when creating or updating a scripted cluster based on **OpenVPN**. The setup options for OpenVPN clusters are described here.

`accluster` {--setup} {--name *cluster_name*} {--type openvpn}
{--vpnIP *ip_address*} {--vpnPort *port_number*}
{*CONNECTION OPTIONS*} [*STANDARD OPTIONS*]

The command option **`accluster`** `--setup` allows you to create an OpenVPN HA Cluster.

> **Note**
>
> The appropriate version of the OpenVPN software must be installed prior to cluster creation. General information on the installation of OpenVPN can be found in the *Active Circle Administration Guide*.

If you want to create or update other types of HA Clusters, the recommended command is **`acadmin --cluster`**.

Table 5.47. Connection Options

Option	Description
-A │ --login	Specifies the user name with administrative privileges to perform the operation.
--password	Specifies the password associated with the user account given with the argument -A (or --login).

Table 5.48. Options for `accluster`

Option	Description
--setup	Create or update a cluster.

Option	Description
--name	Specifies the name of the cluster to create or update.
--type	Specifies the type of cluster to create or update. Currently only openvpn is supported.
--vpnIP	IP address used by TUN (eg. 10.8.0.0)
--vpnPort	Port used by TUN. The default is 1194 and each cluster must have a different one.

Usage

When --setup is used, the cluster is created with the parameters provided, if it does not already exist. If it does exist, then the current node is added to the cluster as a new member.

To create a cluster called *myCluster*:

```
accluster --setup --name myCluster --type openvpn --vpnIP
 192.168.1.55 --vpnPort 1195
```

acdirectory

The Active Circle *directory services management* command.

acdirectory [-Hgsniop] [--deepProfile] [--sync]
[*FORMATTING OPTIONS*] {*CONNECTION OPTIONS*} [*STANDARD OPTIONS*]

The command **acdirectory** allows you to list and/or to synchronize the Active Circle Directory.

Table 5.49. Connection Options

Option	Description
-A | --login	Specifies the user name with administrative privileges to perform the operation.
--password	Specifies the password associated with the user account given with the argument -A (--login).

Table 5.50. Switches for acdirectory

Switch	Description
-H | --showHeader	Show the column headers
-g | --listGroups	List the groups in the directory
-s | --listSubjects	List the subjects (users) in the directory
-n | --showName	Show the name in addition to the login ID and the other information, depending on the options used.
-i | --showID	Show additional ID of subjects (UID and GID) and groups (GID)
-o | --showOrigin	Show the originating directory
-p | --showProfile	Show the profiles of users or groups:

Switch	Description
	SA = system administrator
	AA = application administrator
	PU = principal user
	RO = restore operator
	O = operator
`--deepProfile`	Show inherited profiles of users. Only works if `-p` (or `--showProfile`) is specified at the same time.
`--sync`	Synchronize Active Circle meta directory

acdirectory only takes switches. The command has no options that need arguments to be specified.

Table 5.51. Data Formatting Options

Option	Description
`--elementSeparator`	String of characters to use to separate elements on the same line.
`--lineSeparator`	String of characters to use to separate lines.

Output

If the command is run without any command-specific switches, it will return a simple list of the directories in the system. When listing users or groups (using `-s` or `-g`), the SID is always displayed. Use additional switches to display more information.

The `--sync` option should be specified without any other switches. It will launch a synchronization of local and external (imported) directories. The only screen output is a message informing you that directory synchonization has started. Any other messages will be output to the logs. In addition, a supervision note will be created both in case of a successful synchronization or a failure.

In the output of the examples below, three dots (...) means characters or lines have been removed for presentation purposes (typically, the SID has been shortened).

Example 5.15. Listing user groups with name, GID and origin directory:

acdirectory -Hgnio

```
# acdirectory -Hgnio
Active Circle Directory - Active Circle directory
<name>                <SID>                                    <GID>  <origin>
Administrators        S-1-5-21-214099845-1123432360-127-3007    999   Local
Data Administrators   S-1-5-21-214099845-1123432360-127-3005    996   Local
Employees             S-1-5-21-214099845-1123432360-127-3006    995   Local
Operators             S-1-5-21-214099845-1123432360-127-3002    998   Local
System AdministratorsS-1-5-21-214099845-1123432360-127-3003    997   Local
Users                 S-1-5-21-214099845-1123432360-127-3004    994   Local
```

Example 5.16. Listing users with name, UID, GID, origin and profile:

acdirectory -Hsniop

```
# acdirectory -Hsniop
```

```
Active Circle Directory - Active Circle directory
<login>         <name>        <SID>              <UID> <GID> <origin>  <profile>
Anyone                        S-1-1-0             -2    -2    Local    <none>
Ana-Maria       Ana-Maria     S-1-5-21-...-3008   898   995   Local    PU
Anna            Anna          S-1-5-21-...-3009   899   995   Local    PU
Data-admin      Data-admin    S-1-5-21-...-3010   888   996   Local    <none>
Giovanni        Giovanni      S-1-5-21-...-3011   894   995   Local    PU
Jean            Jean          S-1-5-21-...-3012   896   995   Local    PU
John            John          S-1-5-21-...-3013   897   995   Local    PU
Juan            Juan          S-1-5-21-...-3014   893   995   Local    PU
Marie           Marie         S-1-5-21-...-3015   892   995   Local    PU
Operator1       Operator1     S-1-5-21-...-3018   891   998   Local    <none>
Superuser       Superuser     S-1-5-21-...-3020   885   999   Local    AA,PU,O,SA,RO
System-admin    System-admin  S-1-5-21-...-3017   889   997   Local    <none>
admin           admin         S-1-5-21-...-3001   0     0     Local    O,AA,RO,PU,SA
okl-linux       okl-linux     S-1-5-21-...-3016   500   500   Local    PU,SA,AA,O,RO
```

Example 5.17. Listing users with name, UID, GID, origin and inherited profile:

acdirectory -Hsniop --deepProfile

In this example, the profiles the users have inherited through their group memberships are shown in addition to the explicit user profiles. For example, the users Data-admin, Operator1 and System-admin only have inherited profiles, which did not show up above (value <none>) where -p was specified without --deepProfile.

```
# acdirectory -Hsniop --deepProfile
Active Circle Directory - Active Circle directory
<login>         <name>        <SID>              <UID> <GID> <origin>  <profile>
Anyone                        S-1-1-0             -2    -2    Local    <none>
Ana-Maria       Ana-Maria     S-1-5-21-...-3008   898   995   Local    PU
Anna            Anna          S-1-5-21-...-3009   899   995   Local    PU
Data-admin      Data-admin    S-1-5-21-...-3010   888   996   Local    PU,AA
Giovanni        Giovanni      S-1-5-21-...-3011   894   995   Local    PU
Jean            Jean          S-1-5-21-...-3012   896   995   Local    PU
John            John          S-1-5-21-...-3013   897   995   Local    PU
Juan            Juan          S-1-5-21-...-3014   893   995   Local    PU
Marie           Marie         S-1-5-21-...-3015   892   995   Local    PU
Operator1       Operator1     S-1-5-21-...-3018   891   998   Local    PU,O,RO
Superuser       Superuser     S-1-5-21-...-3020   885   999   Local    PU,RO,SA,O,AA
System-admin    System-admin  S-1-5-21-...-3017   889   997   Local    PU,SA,O
admin           admin         S-1-5-21-...-3001   0     0     Local    PU,SA,RO,AA,O
okl-linux       okl-linux     S-1-5-21-...-3016   500   500   Local    PU,RO,O,AA,SA
```

acexec

The **acexec** command for *executing* the contents of a script file containing Active Circle commands.

acexec {-s *script_filename*} [--force] [*STANDARD OPTIONS*]

Table 5.52. Options for acexec

Option	Description
-f | --force	Execute all commands even if one fails.
-s | --srcFilePath	Specifies the path and file name of the script file that contains the commands to execute.

Usage

Each line of the source script file must contain a command including arguments in the following format:

exec <command_name> <command_suffix> [<command_argument>]

<command_name>	The name of command (for example `acacl`).
<command_suffix>	The suffix for the command (for example `acadmin --account`). If the command does not require a suffix, then use **""**.
[<command_argument>]	The list of arguments for the command.

acquota

The Active Circle *quota* command.

acquota [-hR] {[-e *file_soft_limit*]|[-f *file_hard_limit*] |[-t *space_soft_limit*]|[-u *space_hard_limit*]} [--unsetUsedSpace] [--unsetFileCount] [--force] {*CONNECTION OPTIONS*} [*STANDARD OPTIONS*]

The **acquota** command allows you to set limits on the amount of space or the number of files (or both) allowed on a particular share and/or its sub-directories. You can set two types of limit: an absolute limit and a warning limit to alert you when you are approaching the absolute limit.

Table 5.53. Options for acquota

Option	Description
-h	Print sizes in human-readable format
-R	List subdirectories recursively
-e	Specifies the file count soft limit (warning).
-f	Specifies the file count hard limit (absolute)
-t	Specifies the used space soft limit in bytes (warning)
-u	Specifies the used space hard limit in bytes (absolute)
--unsetUsedSpace	Unset used space limit
--unsetFileCount	Unset file count limit
--force	Force the operation to continue, even in the event of an error

Usage

If you are going to use quotas, at least one limit must be specified (either file count or used space).

If only a soft or hard limit is specified, the other will be automatically computed in such a way that the soft limit will be 90% of the hard limit.

File count limits can be defined between 0 and 2147483646.

Used space limits can be defined between 0 and 9223372036854775806 bytes.

`acwait`

The Active Circle *wait* command.

`acwait` [`-H`] [`--poolName` *name*] [`--timeOut` *seconds*] [`--activated`]
[*FORMATTING OPTIONS*] {*CONNECTION OPTIONS*} [*STANDARD OPTIONS*]

This command allows you to wait until a node, share or pool is ready before performing a particular operation, for example mounting shares, starting secondary nodes, launching an API client or performing an upgrade. Using this command, you can in effect monitor the start-up status of the specified objects.

Table 5.54. Connection Options

Option	Description
`-C | --nodeName`	Specifies the name of the node to wait for.
`-S | --shareName`	Specifies the name of the share to wait for. Alternatively, you can enter the argument `all` to analyze all the shares of the Circle. Note that this may be very time consuming.
`-A | --login`	Specifies the user name with administrative privileges to perform the operation.
`--password`	Specifies the password associated with the user account given with the argument `-A` (`--login`).

Table 5.55. Options for `acwait`

Option	Description
`-H | --showHeader`	Show the header.
`--poolName`	Specifies the name of the pool to analyze (or 'all' for all the pools).
`--timeOut`	Specifies the time to wait (or monitor) in seconds.
`--activated`	Wait only on activated shares or pools.

Table 5.56. Data Formatting Options

Option	Description
`--elementSeparator`	String of characters to use to separate elements on the same line.
`--lineSeparator`	String of characters to use to separate lines.

Output

If any of the nodes, shares or pools specified by the command have not been verified as "ready" within the timeout given, the command will stop monitoring and return a warning for each item.

If you use the defaul verbose level (0), the only output will be warnings or errors. If you want to see more output and status messages for nodes, shares or pools that are ready, you must specify verbose level 1 (or higher) using the standard option `-v`. If `acwait` is started before

the node you want to wait for is started, you may get error messages informing you that for example the node service and/or the session manager has not been found. In this case, that would be as expected.

Example 5.18. Sample output

This command waits 1 minute for ready status of node-01, all its shares, and its local pool called 'Disk Pool 1':

```
# acwait -C node-01 -S all --poolName 'Disk Pool 1' --timeOut 60 -v 1
Wait until all shares ready on node 'node-01'
Wait until pool 'Disk Pool 1' ready on node 'node-01'
'node-01' ready
'projects' ready
'multimedia' ready
'share-03' ready
'share-01' ready
'share-02' ready
'Disk Pool 1' ready
#
```

Chapter 6. Usage scenarios

This chapter describes some common user scenarios where the Active Circle command line can be useful.

To avoid repeating login and location options for every command line, several of the examples below assume that the following tasks have already been completed on the system:

- The **acconfig** command has been used to create a configuration file.
- The **accd** command has been used to establish the full current/working path for the command line.

If you have not, or do not want to set defaults using **acconfig** or **accd**, you will have to add connection options to the command line if such options are not explicitly specified in the example.

> ### Tip
>
> In addition to these usage scenarios, most of the command-specific sections in this guide also contain examples of command usage and output. Please consult the appropriate command section if you want examples of how to use a specific command.

Customizing output formats

The output format of the commands which support the element and line separators can be adapted to your needs.

The separation of output data for a command can be modified with the help of the following two options:

```
--elementSeparator
--lineSeparator
```

Comma-separated values (.csv)

It is possible to produce output in CSV format to use the result as tabular data in other applications, notably spreadsheets, where they can be sorted, formatted, analyzed and transformed into reports. Use the `--elementSeparator` option to specify a commma as separator in this case (the default is normally a tab stop).

Example 6.1. Tape use overview in an archive pool

Command: `acinfo --tape -n Archives -H --elementSeparator ,`

Output:

```
TapeName,BarCode,Type,Capacity,UsedSpace,DataSize,Closed?,Full?,Fragmentation(%),F...
Archives:
Archives-13,E01011L4,LTO-4,20919091200,20631781376,25347937792,-,X,0,-
Archives-9,E01002L4,LTO-4,15602810880,15317598208,15617787904,-,X,0,-
Archives-17,E01009L4,LTO-4,20919091200,20191379456,46640834048,-,X,0,-
```

```
Archives-7,E01014L4,LTO-4,15602810880,15016656896,24433105920,-,X,0,-
...
```

To use the output in a spreadsheet, save it to a file (it will be convenient to use .csv as extension). Then open the file in a spreadsheet application and specify the separator value (in this case a comma, as specified by the `--elementSeparator` option).

The output could look like the following after being imported to a spreadsheet:

Figure 6.1. CSV file imported into spreadsheet

	A	B	C	D	E	F	G	H	I	J
1	TapeName	BarCode	Type	Capacity	UsedSpace	DataSize	Closed?	Full?	Fragr	Fragm
2	Archives:									
3	Archives-13	E01011L4	LTO-4	20919091200	20631781376	25347937792	-	X	0	-
4	Archives-9	E01002L4	LTO-4	15602810880	15317598208	15617787904	-	X	0	-
5	Archives-17	E01009L4	LTO-4	20919091200	20191379456	46640834048	-	X	0	-
6	Archives-7	E01014L4	LTO-4	15602810880	15016656896	24433105920	-	X	0	-
7	Archives-3	E01012L4	LTO-4	20919091200	20229128192	19144336896	-	X	0	-
8	Archives-23	F01030L5	LTO-4	20919091200	20159922176	31250154496	-	X	0	-
9	Archives-25	F01035L5	LTO-4	858993459200	0	0	-	-	0	-
10	Archives-8	E01015L4	LTO-4	20919091200	20898119680	25477995008	-	X	0	-
11	Archives-16	E01010L4	LTO-4	20919091200	20859322368	53396636160	-	X	0	-
12	Archives-11	E01003L4	LTO-4	15602810880	14679015424	48888924352	-	X	0	-
13	Archives-22	E01018L4	LTO-4	20919091200	20539506688	25897742336	-	X	27	-
14	Archives-4	E01005L4	LTO-4	20919091200	20082327552	38816983008	-	X	0	-
15	Archives-12	E01004L4	LTO-4	20919091200	20600216832	62011220280		X	0	

Format the output on the screen

You can also create more sophisticated output presentations on screen using the separator options.

Example 6.2. Adding tabs between columns and lines between rows

Command: `acdirectory -Hsniop --elementSeparator " \t|\t " -- lineSeparator "\\n--...--\\n"`

In this this command, the element separator adds a vertical bar (|) between each column and a tab stop (`\t`) directly before and after, to create more space between the data. In addition we defined a row of dashes (-) and line feeds (`\\n`) as separators between lines:

```
# acdirectory -Hsniop --elementSeparator " \t|\t " --lineSeparator "\\n--------------
--------------------------------------------------------------------------\\n"
Active Circle Directory - Active Circle directory
<login>  |   <name>  |   <SID>           |   <UID>  |   <GID>  |   <origin>  |   <profile>
---------------------------------------------------------------------------...
Anna     |    Anna   |   S-1-...3009      |    899   |    995   |    Local    |    PU
---------------------------------------------------------------------------...
Jean     |    Jean   |   S-1-...3012      |    896   |    995   |    Local    |    PU
---------------------------------------------------------------------------...
John     |    John   |   S-1-...3013      |    897   |    995   |    Local    |    PU
---------------------------------------------------------------------------...
Juan     |    Juan   |   S-1-...3014      |    893   |    995   |    Local    |    PU
---------------------------------------------------------------------------...
Marie    |    Marie  |   S-1-...3015      |    892   |    995   |    Local    |    PU
---------------------------------------------------------------------------...
admin    |    admin  |   S-1-...3001      |     0    |     0    |    Local    |    O,A...
```

Saving and extracting data

Precautionary backup

If, for example, you have planned a cleanup of a share, you may want to back up your data first. Using **acfind**, you can use various criteria to select files and then perform a copy action on them.

Example 6.3. Copying all files modified during a period of time

Say you want to copy all files that have been deposited or changed on the share 'projects' from the beginning of this year until November 30th. Using US English date format, the following command wil copy (`-exec cp`) the files to the specified 'Backup' directory (`-o`) from the mount point of the share (`-m`):

```
# acfind -b "01/01/11 00:00 am" -e "11/30/11 11:59 pm" -S projects -C node-01
    -exec cp -o /Backup/ -m /mnt/projects/
//node-01/projects/Giovanni/Video/Film1.avi v1   <none>     cp
//node-01/projects/Ana-Maria/cmd-400p6.tar  v1   <none>     cp
//node-01/projects/Ana-Maria/nas-stats.ods  v1   <none>     cp
//node-01/projects/Ana-Maria/ac-help.cmd    v1   <none>     cp
//node-01/projects/John/ch-directory.xml    v1   <none>     cp
//node-01/projects/John/ac-400.cmd       v1   <none>     cp
...
Total size = 2,327,514,540B
```

For each file found and copied, the command will display the file path, version and the status 'cp'. At the end, the total data volume copied will be displayed in bytes.

Saving data at risk after a disruption

Scenario A: Files have been deposited to Active Circle shares while the configuration was in maintenance mode. This has rendered disk pools unavailable and caused data access problems.

Scenario B: An error during startup/shutdown or configuration has prevented replication of certain data, and the risk of data loss or corruption is considered to be elevated.

Example 6.4. Finding and copying data from unstable locations

The following command finds and copies out all files found to have an "invalid" location status (`-X`) where the data may be at risk:

```
# acfind -X -exec cp -o /Backup/ -m /mnt/projects/
```

Extracting files from the system

Scenario A: You are a user who wants to retrieve your data and copy them to a personal location or machine to work on the files outside of the Active Circle configuration. The challenge is that your files are dispersed in a complex folder structure where many of the folders are shared with your co-workers.

Scenario B: You wish to analyze the activity of a certain user during a given period.

Both of the above scenarios can be solved using the following example, in a more efficient way than a manual selection and copying operation.

Example 6.5. Copying a specific user's data deposited during a given time period

The following command finds and copies all files deposited or modified on the share 'projects' by the user (`-U`) whose UID is 995, during the period from July 1st to November 30th, 2011:

```
# acfind -b "07/01/11 00:00 am" -e "11/30/11 11:59 pm" -S projects -C node-01 -U 995
    -exec cp -o /Local/directory/ -m /mnt/projects/
```

Optimized extraction

Scenario: You want to extract data from the circle and copy them to a backup directory. Most of the files you need are located on tapes. You wish to perform the file retrieval automatically in the most efficient way, without having to mount an Active Circle share.

For optimized extraction, the command **accopy** will be used.

Example 6.6. Copy all files from a share

To copy all files residing on the share 'projects' on node-01 and copy them to the 'Backup' directory under the current directory (`./`), run this command:

```
# accopy -o ./Backup -C node-01 -S projects
```

The last version of each file will be copied, regardless if the physical location is in a cache or on disk or tape (or both). The original directory structure will be kept intact.

Example 6.7. Copy files from a specific directory

Say you are the user 'John', and your files are on the share 'projects' in a directory called 'John' just off of the share root. To copy all your files to the 'Backup' directory under the current directory (`./`), run this command:

```
# accopy -o ./Backup -C node-01 -S projects -d John
```

> **ℹ Note**
>
> The above **accopy** examples assume that the files are automatically accessible (online or nearline). If some of the files you need are on offline tapes, use the **accopy** option `--showOffLineTape` to identify the tape(s) and notify a tape library operator to load the tape(s). For more information, see "**accopy**" or the *Active Circle File Explorer Guide*.

Defining a New Node

You can add a node to the circle without using the graphical user interface. There are two steps to perform before the Active Circle software can be installed on a new node:

1. Adding the node to the configuration using the **acadmin** command.
2. Obtaining the node installation key using the **acinfo** command.

These steps must be performed on a node that is already running the Active Circle software.

Example 6.8. Adding the node

Use the following command to create the node, replacing the words shown in *italics* with the values that are proper for your configuration. The node description is optional.

```
acadmin --node -c -n nodename --description "node description" --
domainName subdomain.domain
```

Note that the domain and sub-domain specified must already exist in the configuration.

Example 6.9. Obtaining the installation key

Use the following command to display the identification key needed to install the node you just created.

```
acinfo --node -n nodename --key
```

The output will display a line containing the name of the node, its description (if any), the domain path and the node installation key. The key will look something like this:

```
3SKH995_2KPOHM4_2FU94CN_3HFC1KP_WB6ALG2_3H5QJRB_2HR9QK0_1I1GAL5
```

Save the whole key, you will need it as input for the **-k** option of the Active Circle setup program.

Using the key obtained with the **acinfo** command, you can install the Active Circle software on a new node server. Please refer to the installation documentation for information on how to install an addtional node in an Active Circle configuration.

> ⊗ **Warning**
>
> Before attempting to run the Active Circle setup program, you *must* make sure that you have prepared the new node server according to the specific prerequisites described in the *Active Circle Installation Guide* or the *Step by Step Installation of CentOS 6 and Active Circle*.

Finding files according to their storage policy status

You can use the **acfind** command to find files which correspond to a specific storage policy status.

Example 6.10. Identifying files for which the storage policy is not fulfilled

To find the files which have not been processed by the storage policy defined for the share the files belong to, run this command:

```
# acfind -T notFulfilled
```

Example 6.11. Identifying files that have exceeded the retention period defined by the share's storage policy

To find the files which have exceeded their defined lifetime on a share, run this command:

```
# acfind -T completed
```

Share cleanup

You can use the **acfind** command to perform certain cleaning tasks on data shares.

Invalid data location

Scenario A: Following a problem, a backup of data with invalid (or "risky") locations have been performed. Before the files are deposited again in a proper way, a cleanup of the previously deposited files should be done.

Scenario B: Data from storage external to the circle were deposited inappropriately during a maintenance cycle, resulting in invalid data locations. A cleanup should be performed before re-depositing the data.

Example 6.12. Deleting all data with invalid locations

The following command will find and remove all files with invalid/risky location status:

```
# acfind -X -exec rm
```

Obsolete data

Scenario: A share contains data that are no longer needed, but no automatic purging of data is activated for the share.

Example 6.13. Delete all data versions older than a certain date

The following will remove all files on the 'projects' share that have not been accessed (`-u`) during the last 6 months (180 days):

```
# acfind -u -e 180 -C node-01 -S projects -exec rm
```

Instead of a number of days, you may specify a date for the `-e` option.

Delete user data

Scenario: A user will no longer be using the system. It is decided that all the data of the user should be deleted.

Example 6.14. Deleting all data for a specific user

This command will find and remove all data belonging to the user with the UID 995:

```
# acfind -U 995 -exec rm
```

Viewing Archive information

Scenario: You want to list the archives of a share and the files contained in them.

Use the **acinfo** command with the `--archive` option to obtain information about archives.

Example 6.15. Listing archives

To see a list of all the archives of the share 'projects', run this command:

```
# acinfo --archive -S projects
```

Example 6.16. Listing archives and their files

To print a list of all the archives of the share 'projects', and for each archive the file contents of the archive, run this command:

```
# acinfo --archive -ha -N all -S projects
```

For more output examples from the **acinfo --archive** command, see the acinfo --archive Output section.

Example 6.17. Listing all archived files for a share

To print a list of all the archived files for the share 'projects', including information on versions, locations and deleted files, run this command:

```
# acfind -S projects -T archived -a -i --includeDeletedFiles
```

> 💡 **Tip**
>
> For an example of how to create an on-demand archive using the command line, please see the **acarchive** section.

Finding and removing expired archives

Scenario: You want to identify files in archives which have expired and then delete those files and archives.

Use the **acinfo** command to identify and delete the files and the **acarchive** command to delete the corresponding archives.

The first task is to find and delete the files which exist only in archives that have exceeded their *retention duration*, as defined by the archiving policy associated with the share. Issue the following command:

acfind --onlyInArchive --archiveStatus expired -exec rm

The files on the share for which the sole copy exists only in expired archives will now be removed.

The second task is to delete the archives that contained the files you just deleted. To see a list of the expired archives before you delete them, issue the following command:

acarchive --show --status expired

Run this command to delete all the expired archives:

acarchive --status expired --delete

Deleting empty and expired archives

Scenario: You want to delete all the archives which have expired or are empty.

To see a list of the expired and empty archives before you delete them, issue the following command:

```
acarchive --show
```

Run this command to delete all the empty and expired archives:

```
acarchive --delete
```

Checking and resetting ACLs

You can view and set ACLs (Windows and Active Circle file permissions) using the **acinfo** and **acacl** commands, respectively.

Checking ACLs

Scenario: You want to see the ACLs defined on all the files and folders of a share or a folder structure.

Example 6.18. List all the ACLs of the entire 'projects' share:

```
# acinfo --acl -R -S projects
```

Example 6.19. List all the ACLs of the folder 'John' on the 'projects' share:

```
# acinfo --acl -R -S projects -d John
```

To see an example of the output of this command, see the **acinfo** `--acl` output section.

Resetting ACLs

Scenario: There is a need for resetting the ACLs for a share or a folder structure. Reasons for this could be that certain users mismanage their file permissions or that a file deposit operation involving copying of external data to the circle has resulted in invalid ACLs.

Example 6.20. Reinitializing the ACLS on the folder structure 'John':

```
# acacl --reset -R -S projects -d John
```

You need to have the profile 'Data Administrator' to be authorized to execute the reset command.

Space usage analysis

Monitor space usage per user

In addition to the quota functionality, you may want to assess the data volume used by each user over time for the purpose of sending an e-mail notification if the space occupied approaches or exceeds a certain threshold.

This can be achieved by running the **acdu** command on a regular basis and processing the output to produce the desired result.

Example 6.21. Monitoring used space using a `crontab` script

Configure a script to execute the following tasks, using a `crontab` file:

1. Check space usage per UID og GID (**acdu** command).
2. Process the results by comparing each value with the limit.
3. Send an e-mail notification to the users or groups that are close to or have exceeded the allowed limit.

Monitor space usage by storage pool

Scenario: You need to assess the data volume in each pool in order to get a better idea of the wear on the storage equipment or to balance the space allocation between pools (some being used more than others).

This can be achieved using the **acinfo** command with the `--space` option.

Example 6.22. Monitoring pool used space using a `crontab` script

Configure a script to execute the following tasks, using a `crontab` file:

1. Check space usage per share in each pool (**acinfo** command).
2. Process the results.
3. Compare the output with reference values.
4. Send an e-mail if necessary.

Administration Log

Scenario: You want to obtain a global view of the current system use during a certain time.

You can monitor the administration log in real-time using the **aclog** command with the `-i` option.

Example 6.23. Viewing the system log in interactive mode

The basic command for viewing current log entries as they are written, is **aclog** `-i`. If you want the log entries to also be written to a file, you can use the **tee** command in Linux. The log entries will still be written to the screen at the same time. If you want errors to be written to the screen as well (and not just to the file specified by **tee**), you can add the Linux statement `2>&1` which will redirect error messages to the standard output:

```
# aclog -i 2>&1 |tee aclog.out
```

For more information on defining the logging time period, formatting options and interactive mode for **aclog**, see the **aclog** section.

Index

A

ACLs

C

D