Pillar Axiom

CLI Reference Guide

ORACLE

PILLAR AXIOM

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Preface

Audience

This document is intended for individuals who configure and monitor a Pillar Axiom system.

Expected experience includes the understanding and the administration of the following:

- Command-line interfaces

- Computer hardware

- Configuration of storage area network (SAN) environments

- Various network protocols such as Fibre Channel, Internet SCSI (Small Computer System Interface), Network Time Protocol (NTP), and Simple Network Management Protocol (SNMP)

- Network services such as Internet Storage Name Service (iSNS)

- Back-up and restore operations

You should also have a basic understanding and working knowledge of Pillar Axiom systems.

Before You Read This Guide

Being familiar with certain other Pillar Axiom technical documentation helps you succeed in the use of this guide.

In addition to this Guide, we recommend that you review the information in the *Pillar Axiom Customer Release Notes*, which contains additional information that was not available at the time when this Guide was published, including the following information:

- System enhancements

- Errata for technical documents, including this Guide

- Network requirements

- Known issues

- Various notations on the operation of the Pillar Axiom storage system

We also recommend that you become familiar with the *Pillar Axiom Administrator's Guide*, which provides detailed conceptual information on creating and managing storage resources.

How This Guide Is Organized

This *Guide* provides procedural and reference information for using the Pillar Axiom CLI to configure and manage a Pillar Axiom storage system.

The *Guide* is divided into four chapters and two appendixes:

- Chapter 1 introduces you to the Pillar Axiom CLI and includes information about software prerequisites and procedures for installing and upgrading Pillar Axiom CLI.

- Chapter 2 provides information about managing accounts in a Pillar Axiom storage system.

- Chapter 3 contains examples of the frequently performed Pillar Axiom CLI tasks.

- Chapter 4 describes the Pillar Axiom CLI scripts.

- Appendix A lists the ranges and value limits of various Pillar Axiom storage system objects.

- Appendix B lists all of the Pillar Axiom CLI commands, including their descriptions, syntax, and examples.

Related Documentation

Table 1 Additional information resources

Description	Title
The definitions of terms found in Pillar Axiom documentation.	*Pillar Glossary*

Table 1 Additional information resources (continued)

Description	Title
The extensive conceptual information, including the operation of the Pillar Axiom system and the storage objects you can manage. It also documents the usage of the Pillar Axiom Storage Services Manager.	*Pillar Axiom Administrator's Guide*
An introduction to the hardware and software architecture of a Pillar Axiom storage system.	*Pillar Axiom System Architecture Overview*
Instructions for integrating a SAN Pillar Axiom system into an iSCSI environment (Windows).	*Pillar Axiom iSCSI Integration Guide for Windows Platforms*
Instructions for integrating a Pillar Axiom system into a Windows environment.	*Pillar Axiom Windows Integration Guide*

Access Documentation

Technical documentation (including installation, service, cabling, integration, and administration guides) for Oracle's Pillar Axiom 600 storage system is available from several sources.

Pillar Axiom Storage Services Manager	Log in to your Pillar Axiom system. Navigate to the **Support** area in the Pillar Axiom Storage Services Manager and select the **Documentation** link.
Pillar Axiom HTTP access	For Pillar Axiom systems running release 5.0 (and higher) software, point your browser to `http://`*system-name-IP*`/` `documentation.php`, where *system-name-IP* is the name or the public IP address of your system.
Internet	Customer support portal (http://support-portal.pillardata.com/csportal/login.seam).
	Log in and click **Documents** in the left navigation pane.
Product CD-ROM	Insert the Technical Documentation CD-ROM (came with your Pillar Axiom system) into the CD player and open the `DocMenu` PDF.

Tip: To search all technical documents on the CD-ROM, click **Search all PDFs** in the top right corner.

Typographical Conventions

Table 2 Typography to mark certain content

Convention	Meaning
italics	Within normal text, words in italics indicate: • A reference to a book title. • New terms and emphasized words. • Command variables.
`monospace`	Indicates one of the following, depending on the context: • The name of a file or the path to the file. • *Output* displayed by the system on the command line.
`monospace` (bold)	*Input* provided by an administrator on the command line.
`camelCase`	Used in Pillar Axiom CLI commands for ease of reading. When issuing a command, you can use either camel case or lowercase.

Command Syntax Conventions

Table 3 Typography to mark command syntax

Typographic symbol	Meaning
`[ ]`	Square brackets. Delimits an optional command parameter or a set of optional command parameters.
`{ }`	Curly braces. Delimits a set of command parameters, one of which must be selected.

Table 3 Typography to mark command syntax (continued)

Typographic symbol	Meaning
|	Vertical bar. Separates mutually exclusive parameters.
`...`	Ellipsis. Indicates that the immediately preceding parameter or group of parameters can be repeated.
`monospace`	Indicates the name of a command or the name of a command option (sometimes called a *flag* or *switch*).
italic	Indicates a variable for which you need to supply a value.

Command parameters that are *not* enclosed within square brackets (`[  ]`) are required.

Important! The above symbols (and font styling) are based on the IEEE Std 1003.1-2004 standard. These symbols are used in the command syntax only to clarify how to use the command parameters. Do not enter these symbols on the command line.

Pillar Contacts

Table 4 Contacts at Pillar Data Systems

For help with...	Contact...
Error messages, usage questions, and other support issues	US and Canada: 877-4PILLAR (1-877-474-5527) Europe: +800 PILLAR FS (+800 74 55 27 37) Asia Pacific: +1-408-518-4515 South Africa: +0 800 980 400 Have your system serial number ready. support@pillardata.com Pillar Customer Support (http://support-portal.pillardata.com/csportal/login.seam)
Training (custom or packaged)	Training and Education (http://www.pillardata.com/support-education/training/)

Table 4 Contacts at Pillar Data Systems (continued)

For help with...	Contact...
Professional services and inquiries	globalsolutions@pillardata.com Global Solutions (http://www.pillardata.com/support/professional-services/)
Sales and general contact information	Company contacts (http://www.pillardata.com/company/contact)
Documentation improvements and resources	docs@pillardata.com Technical documents (http://www.pillardata.com/techdocs) (Log in with your username and password, and select Documents.)

CHAPTER 1

Introduction to the Pillar Axiom CLI

About the Pillar Axiom CLI

The Pillar Axiom CLI is the command-line interface for configuring and monitoring a Pillar Axiom system. The Pillar Axiom CLI provides the same capabilities as the Pillar Axiom GUI, allowing configuration and management of the Pillar Axiom system performed from command line or through custom scripts.

The Pillar Axiom CLI

- Runs as a command-line interface

- Communicates from the host system to the Pillar Axiom Pilot

- Uses familiar conventions for parameters and options, and provides reasonable default values where possible

- Checks for required sets of parameters and displays error messages if the required values are missing

- Supports automation through custom scripts that use Perl, Python, and standard shell commands

- Provides help for each of its commands

Supported Platforms

The Pillar Axiom CLI supported platforms are:

- Citrix 5.6 XenServer x86_64

- HP-UX 11i on ia64

- Mac OS X 10.6 x86_64

- Open SuSE 11.3

- Red Hat/CentOS/Oracle Linux, versions 4 and 5

- SLES 11

- Solaris 9 on Sparc

- Solaris 10 on Sparc

- Solaris 10 on x86

- Windows 2003

- Windows 2008

- Windows 7

- Windows Vista

- Windows XP

Install the Pillar Axiom CLI

Before using the Pillar Axiom CLI, you need to install it on your local workstation.

If the client host on which the Pillar Axiom CLI application will be installed is outside a firewall that surrounds the Pillar Axiom system, be sure that the TCP port 26008 in the firewall is open to allow TCP/IP traffic between the client host and the Pilot.

The installation of the Pillar Axiom CLI client application involves downloading and extracting the platform-specific Pillar Axiom CLI archive file (`tar` or `ZIP`).

Important! Install Pillar Axiom CLI only on a local disk. Installing Pillar Axiom CLI on a remote network-mounted filesystem can cause significant performance issues and is not recommended.

1   On your client workstation, browse to the location where you want to install the Pillar Axiom CLI (for example, `C:\` or `C:\Program Files`).

2   Create the subfolder for the Pillar Axiom CLI.

Example:
In **Windows**, to create the `AxiomCLI` subfolder, you can run the following command:

`C:\ mkdir AxiomCLI`

3   Download the Pillar Axiom CLI archive file (`tar` or `ZIP`) from **Utilities** on your Pillar Axiom website (for example, `http://`*pillar-axiom*, where *pillar-axiom* is the name of your Pillar Axiom system).

4   Using a platform-specific extraction tool, extract the downloaded Pillar Axiom CLI archive file into the created `AxiomCLI` folder.

5   Optionally, add the Pillar Axiom CLI installation folder to the `Path` system environment variable.

About the Pillar Axiom CLI Environment Variables

Before running the Pillar Axiom CLI, you can optionally define environment variables. The Pillar Axiom CLI looks for environment variables and applies them as credentials during login. Alternatively, these credentials can be supplied using command line arguments.

If you set the environment variables to run the `axiomcli login` command without any options, you *must* set the following environment variables together:

PDS_USER	The user account ID.
PDS_PASSWORD	The user account password.
PDS_HOST	The name of the Pillar Axiom system.

The optional environment variables are:

PDS_TMPDIR	The temporary directory that contains files downloaded by commands that retrieve files from the Pillar Axiom system.
PDS_TIMEOUT	The maximum time that each command can run. If the time is exceeded, the command fails.
PDS_SESSIONKEY	The Pillar Axiom CLI session key value. This value is returned when you log in to the Pillar Axiom system using the `-returnKey` command option. For details, see Manage Pillar Axiom CLI Session Keys. You can set the `PDS_SESSIONKEY` environment variable alone or in combination with the environment variables mentioned above.

When you log in to the Pillar Axiom system, the Pillar Axiom CLI creates a temporary file in the home directory to store the session key and the environment variables. This temporary file is used by the Pillar Axiom CLI to retrieve the session information needed to interact with the Pillar Axiom system. When you log out from the Pillar Axiom system, the Pillar Axiom CLI deletes this temporary file.

If the Pillar Axiom CLI does not find usable credentials in the environment or the temporary file, Pillar Axiom CLI commands return an error instructing you to run the `login` command.

Pillar Axiom CLI Home Folder Location

The Pillar Axiom CLI home folder location is specified in the `HOME` environment variable.

When you log in to the Pillar Axiom system, the Pillar Axiom CLI uses the folder specified in the `HOME` environment variable to store the login session file.

On the **Windows** operating system, you do not need to specify the `HOME` environment variable (if you do not have the `HOME` environment variable defined, the Pillar Axiom CLI queries the operating system for the home folder).

However, on a **UNIX** or **Linux** platform, you *must* set the `HOME` variable. Otherwise, the Pillar Axiom CLI will not work properly.

Change the Pillar Axiom CLI Logging Location

By default, the Pillar Axiom CLI saves the logging information in the `axiomcli.log` file that resides in the Pillar Axiom CLI home directory (`C:\Users\`*username*`\AppData\Local\Temp\par-`*username* on **Windows** and `/tmp/par-`*username* on **Linux** and **UNIX**). If you want, you can change the location of the `axiomcli.log` file.

Note: To change the location of the `axiomcli.log` file, you must have the `write` permission for the `axiomcli.log` file and the directory where it resides. If the `axiomcli.log` file does not exist at the specified location, the system creates the `axiomcli.log` file at runtime.

1 Browse to the Pillar Axiom CLI installation directory.

2 Open the `axiomCliLogger.conf` file.

3 Locate the `log4perl.appender.AXCLIAppender.filename` line.

4 Modify the `/axiomcli.log` path, specifying the new location of the `axiomcli.log` file.

   Example:
   To save the `axiomcli.log` file in the

UNIX `temp` directory	Change the path to `log4perl.appender.AXCLIAppender.filename=/tmp/axiomcli.log`.
Windows `temp` directory	Change the path to `log4perl.appender.AXCLIAppender.filename=C:\temp\axiomcli.log`.
Linux logging directory	Change the path to `log4perl.appender.AXCLIAppender.filename=/var/log/axiomcli.log`.

5 To verify that the Pillar Axiom CLI sends the logging information to the `axiomcli.log` file at the modified location, run several Pillar Axiom CLI commands.

Log In to the Pillar Axiom System

Before using the Pillar Axiom CLI, you need to log in to the Pillar Axiom system.

If the Pillar Axiom CLI client is outside a firewall that surrounds the Pillar Axiom system, be sure that the TCP port 26008 in the firewall is open so that the Pillar Axiom CLI client and the Pillar Axiom CLI server that resides on the Pilot can communicate with each other.

To log in to the Pillar Axiom system, the Pillar Axiom CLI uses an SSL session. For continuity from one command to the next, the Pillar Axiom CLI maintains the session information in a temporary file. Alternatively, you can set the user name, the password, and the host Pillar Axiom environment variables manually (see About the Pillar Axiom CLI Environment Variables).

Important! Do not run the Pillar Axiom CLI on a remote network-mounted filesystem because it can cause significant performance issues.

1 Open the command-line interface.

2 Change to the Pillar Axiom CLI installation directory.

3 If you have not set the Pillar Axiom CLI environment variables, to log in to the Pillar Axiom system, issue the following command, replacing *admin-user* with the user ID, *admin-password* with the administrator password, and *axiom-system* with the name of your Pillar Axiom system:

   `C:\AxiomCLI>axiomcli login -u` *admin-user* `-p` *admin-password* *axiom-system*

   If you have specified your log-in credentials in the environment variables, you can issue the following command instead:

   ```
   axiomcli login
   ```

   Result:
   The `Login Successful` message displays. After successfully logging in to the Pillar Axiom system, the Pillar Axiom CLI creates a session file in the user home directory. This session file contains the credentials and session information needed by all subsequent Pillar Axiom CLI commands. You can start issuing Pillar Axiom CLI commands.

Log Out of the Pillar Axiom System

When you log out of the Pillar Axiom system, the Pillar Axiom CLI ends the Pillar Axiom CLI session and deletes the session file.

If you do not log out of the Pillar Axiom system

- An unauthorized user may gain access to the Pillar Axiom system from your workstation.

- One log-in session is tied up unnecessarily until your session is automatically logged out when the inactivity time limit is reached.

To log out of the Pillar Axiom system, issue the following command:

```
C:\AxiomCLI>axiomcli logout
```

The `Logout Successful` message displays.

Access the Pillar Axiom CLI Help

When you are unsure what a certain Pillar Axiom CLI command does or how to run a Pillar Axiom CLI command, you can use the Pillar Axiom CLI help.

The Pillar Axiom CLI provides help for each of its commands.

The Pillar Axiom CLI offers two levels of help:

General Displays the description of the help command-line syntax and the list of all of the Pillar Axiom CLI commands for which help is available.

To view general help, run the following command:

```
C:\AxiomCLI>axiomcli help
```

To view the command-line syntax for all of the Pillar Axiom CLI commands, run the following command:

```
C:\AxiomCLI>axiomcli help -list -details
```

Specific Displays the following information for a specific Pillar Axiom CLI command:

- A description of how to use the command.

- The syntax of the command.

- A description of any parameters that can be used with the command.

- Examples of how to use the command.

To view detailed help for a specific Pillar Axiom CLI command, run the following command, replacing *command-name* with the name of the Pillar Axiom CLI command:

```
C:\AxiomCLI>axiomcli command-name -help
```

For example, if you run the `axiomcli version -help` command, the Pillar Axiom CLI returns the following detailed help information for the `version` command:

```
version
```

```
DESCRIPTION
     Displays the current version number for
     the Pillar Axiom CLI executable.

     Use the version command to display version
     information about the Pillar Axiom CLI.

     You can use the -verify command option to
     verify the command-line argument and its
     options prior to running it. If there are
     no errors, the command returns without
     executing. For example, the -verify command
     is helpful when writing scripts in which a
     particular command usage can be verified prior
     to adding it to a script.

     You can use the -help command option to
     display detailed help information for the
     command.

SYNOPSIS
     axiomcli version -list [-details] [-verify]
     axiomcli version -help

PARAMETERS
     Note: All roles can issue the -list command
     option

     -list
               Displays version information for the
               Pillar Axiom CLI.
               Valid options:
               -details
                       The -details option does
                       not return any additional
                       information and is there
                       for consistency.

EXAMPLE
     Run the axiomcli version -list display the
     version information.

     axiomcli version -list

     Results:
     Pillar Axiom CLI version : 050000-031700
```

About the Pillar Axiom CLI Command Output Options

Pillar Axiom CLI supports two output modes: text and XML. The text output mode displays output as formatted text, while the XML output mode displays XML.

The default output mode for all of the Pillar Axiom CLI commands is the text mode.

The text and the XML output modes for the same Pillar Axiom CLI command differ slightly. In particular, the XML mode displays the task and object information, while the text output contains only the object information.

Text Output

When you run any Pillar Axiom CLI command, the Pillar Axiom CLI by default displays the output in the plain-text mode.

For example, if you run the `axiomcli task -list` command, the text output may look similar to the following:

```
/GetOperation/159678/administrator
        Status          : IN_PROCESS
```

You may find the text output easier to use when writing Bash scripts.

XML Output

You can use the XML command output option for the ease of scripting and parsing.

Using the XML output option displays the Pillar Axiom CLI command output in the tagged XML format. To view the XML output, you need to add the `-o xml` or the `-outputFormat xml` option to a Pillar Axiom CLI command. For example, if you run the `axiomcli task -list -o xml` command, the XML output looks similar to the following snippet:

```
<?xml version="1.0"?>
<CLIResponse>
  <ResponseHeader>
    <ClientData>PillarAxiomCli</ClientData>
  </ResponseHeader>
<TaskInformation>
  <TaskGuid>4130303132373542A13F728A1D60E6C7</TaskGuid>
  <TaskFqn>/GetOperation/152226/administrator</TaskFqn>
</TaskInformation>
```

```
<Task>
  <Fqn>/GetOperation/152226/administrator</Fqn>
  <Status>IN_PROCESS</Status>
</Task>
</CLIResponse>
```

Because the XML output is easier to parse than the text output, administrators who write programs to process the Pillar Axiom CLI output can use the XML output.

Return Codes

When you run any of the Pillar Axiom CLI commands, the Pillar Axiom CLI sets a return code that determines the success of the command.

The Pillar Axiom CLI has four return codes described in the table below.

Table 5 Return codes

Return code	Description
0	A command executed successfully.
1	An unexpected error has occurred. For example, a Pillar Axiom CLI session file has been corrupted, or the Pillar Axiom CLI installation has been modified or corrupted and the Pillar Axiom CLI needs to be reinstalled.
2	A general error has occurred. For example, an unrecognized Pillar Axiom CLI command has been issued, a wrong Pillar Axiom CLI command syntax has been specified, or an unrecognized Pillar Axiom CLI command option has been used.
3	An error has occurred in the Pillar Axiom system. For example, an invalid FQN or ID has been specified, the Pillar Axiom system is not in a state that allows the execution of a request, or the communication with the Pillar Axiom system has been lost.

Error Handling

When you run a Pillar Axiom CLI command using the XML output format (the `-o xml` or the `-outputFormat xml` option), and the command fails, the Pillar Axiom CLI displays the error in the XML format.

For example, if you run the `axiomcli version -list -o xml` command and misspell the `-list` option (for instance, you type `-listt` instead of `-list`), the Pillar Axiom CLI returns the following XML output:

```
<?xml version="1.0"?>
<CLIResponse>
  <ResponseHeader>
    <ClientData>PillarAxiomCli</ClientData>
  </ResponseHeader>
<ErrorList>
  <ErrorInformation>
    <ErrorCode>AXIOMCLI_ERROR</ErrorCode>
    <ErrorMessage>Invalid options were specified.</
ErrorMessage>
  </ErrorInformation>
</ErrorList>
<Status>failed/Status>
</CLIResponse>
```

If there are multiple errors in the command syntax, the XML error output contains multiple `<ErrorList>` sections.

If you misspell the actual Pillar Axiom CLI command, the system does not generate the XML error output. Instead, the Pillar Axiom CLI returns the following plain-text message, where *misspelled-command-name* is the name of the misspelled Pillar Axiom CLI command:

```
Error: Unrecognizable Command: "misspelled-command-name"!
Issue "axiomcli help" for command list.
Command Failed
```

For example, if you run the `axiomcli lun -list -lun /badlunFQN -o xml` command, specifying a wrong FQN, the Pillar Axiom CLI returns the message similar to the following snippet:

```
<?xml version="1.0"?>
<CLIResponse>
  <ResponseHeader>
    <ClientData>PillarAxiomCli</ClientData>
  </ResponseHeader>
<ErrorList>
  <ErrorInformation>
    <ErrorCode>IDENTIFIER_NOT_FOUND</ErrorCode>
```

```
     <ErrorMessage>Error in parameter -lun. The object does not
exist. Make sure that you specify an object that is configured
on the Pillar Axiom system.</ErrorMessage>
  </ErrorInformation>
</ErrorList>
<Status>failed</Status>
</CLIResponse>
```

Upgrade the Pillar Axiom CLI

The version of the Pillar Axiom CLI you use must be compatible with the Pillar Axiom system. If you are managing multiple versions of the Pillar Axiom system, you can use different versions of the Pillar Axiom CLI on the same host. In that case, you must keep the older version of the Pillar Axiom CLI to communicate with the older Pillar Axiom system and upgrade the Pillar Axiom CLI to the latest version to communicate with the newer version of the Pillar Axiom system.

To maintain and use different versions of Pillar Axiom CLI on the same host, install each version of the Pillar Axiom CLI in a separate directory and update the `HOME` environment variable.

If you do not want to keep the previous version of the Pillar Axiom CLI, delete all of the existing Pillar Axiom CLI files from the Pillar Axiom CLI installation folder. Otherwise, keep the previous version of the Pillar Axiom CLI.

1 Install the Pillar Axiom CLI.

2 Optionally, after completing the upgrade, manually delete the temporary Pillar Axiom CLI installation files from the following directory:

- Windows

  ```
  C:\Documents and Settings\user_name\Local Settings\Temp
  \par-user_name
  ```

- Linux

  ```
  /tmp/par -user_name
  ```

Uninstall the Pillar Axiom CLI

If you want to remove the Pillar Axiom CLI from your client workstation, you need to uninstall the Pillar Axiom CLI.

The Pillar Axiom CLI does not have an uninstaller. To uninstall the Pillar Axiom CLI, delete the Pillar Axiom CLI installation folder, including all of the Pillar Axiom CLI files, as well as the `par-`*user_name* folder and the `~/.AXCLI_Session` file.

CHAPTER 2

Administrator Accounts

About Administrator Account Management

Administrators have specific privileges on the Pillar Axiom system based on their account type or assigned role.

You can create multiple administrator accounts in a Pillar Axiom system. Additional accounts are not necessary, but they are useful if you want to delegate administrator responsibilities. For example, you might choose to create:

- One administrator account. In this way, a designated person can assume responsibility while the Primary system administrator is on vacation. Assign this account to the Administrator 1 role.

  Tip: Pillar strongly recommends that you set up a Type 1 Administrator account when you install the system. Besides the Primary system administrator, only a Type 1 Administrator can modify an account password (including that of the Primary system administrator) without knowing the previous password.

- One or more administrator accounts with read-only privileges. In this way, managers can monitor the system but they cannot change configuration details. Assign these accounts to the Monitor role.

You can create any number of administrator accounts. However, only 25 account sessions can be active at any given time.

If you delegate administrative tasks to other administrators, you might need to:

- Modify account attributes (for example, change an administrator's password or disable an account other than the Primary system administrator account).

- Change administrator account security settings.

- Delete obsolete accounts.

At times, you might need to modify the attributes of an administrator account. A Primary system administrator and people who are assigned to the Administrator 1 role can modify their own or another administrator's account.

Some changes take effect immediately. For example, an administrator's session is terminated when you disable or delete the administrator account.

Other changes affect the administrators the next time that they log in, for example, when you modify their password or modify the session timeout value.

You can change the security settings for system administrator accounts, including:

- Set the number of consecutive failed login attempts that the Pillar Axiom system allows. When the threshold is exceeded, the system disables the account and writes an entry in the event log. Only a Primary Administrator or Administrator 1 account can re-enable the account, and the system resets the counter upon a successful login. If you do not set this value, there is no limit to the number of consecutive, unsuccessful login attempts.

- Set the session timeout so that the Pillar Axiom system terminates an administrator's session after a given period of inactivity. If you do not set this value, inactive sessions are terminated after 20 minutes.

Administrator Roles and Privileges

An administrator can use Pillar Axiom CLI commands to review and modify accounts that are configured on the Pillar Axiom system.

To administer a Pillar Axiom storage system, you must log in from an administrator account. Every account performs a specific role that defines system privileges.

Table 6 Administrator privileges by role

Administrator role	Privileges
Primary Administrator	Performs all configuration, management, and monitoring tasks. This account cannot be deleted or disabled.
Administrator 1	Performs all configuration, management, and monitoring tasks.
Administrator 2	Performs all tasks except: • Create and manage File Servers and administrator accounts. • Modify global, Small Network Management (SNMP), and Network Data Management Protocol (NDMP) settings. • Modify software or hardware configurations. • Shut down the system.
Monitor	Displays system information only; cannot modify the configuration. Can modify own account attributes.
Pillar Support	Performs limited customer service-only functions; cannot modify the configuration. **Note:** Only the Pillar World Wide Customer Support Center customer service personnel can use this account. For the complete list of command options that this role is authorized to perform, see the **PARAMETERS** section in a specific Pillar Axiom CLI command.
Support	Performs limited customer service-only functions; cannot modify the configuration. **Note:** Only the Pillar World Wide Customer Support Center customer service personnel can use this account.

Table 6 Administrator privileges by role (continued)

Administrator role	Privileges
	For the complete list of command options that this role is authorized to perform, see the **PARAMETERS** section in a specific Pillar Axiom CLI command.

<small>CHAPTER **3**</small>

Pillar Axiom CLI Command Examples

View LUN Details

You can use the Pillar Axiom CLI to view information about all of the available LUNs configured on the Pillar Axiom system.

A LUN is a logical volume within a storage area network (SAN). Administrators assign storage resources and Quality of Service (QoS) attributes to each logical unit (LUN). To view information about LUNs configured on the Pillar Axiom system, use the `lun` command with the `-list -details` command option.

1   Log in to the Pillar Axiom system.

2   Issue the following command:

```
C:\AxiomCLI>axiomcli lun -list -details
```

Result:
The list of available LUNs and their details display, similar to the following example:

```
/SLUN33
        Name                            : SLUN33
        Id                              :
4130303132373542A104064C540FAB3A
        SerialNumber                    :
000B080003001275
        VolumeGroup                     : /
        VolumeGroupId                   :
4130303132373542A20A000000000000
        StorageClass                    : satahd
        MaximumCapacity                 : 200
        AllocatedCapacity               : 200
        UsedCapacity                    : 200
        PhysicalAllocatedCapacity       : 241
        PhysicalUsedCapacity            : 241
        PhysicalMaximumCapacity         : 241
        LogicalMaximumCloneCapacity     : 0
        PhysicalMaximumCloneCapacity    : 0
        PhysicalAllocatedCloneCapacity  : 0
        UsedCloneCapacity               : 0
        AllocatedCloneCapacity          : 0
        PhysicalUsedCloneCapacity       : 0
```

```
        ManagementState                      : AVAILABLE
        AssignedSlammer
            SlammerId                            :
2009000B0803052A
            SlammerFqn                           : /
SLAMMER-01/1
        CurrentSlammer
            SlammerId                            :
2009000B0803052A
            SlammerFqn                           : /
SLAMMER-01/1
        TouchedBrickNode
            BrickNodeId                          :
200C000B083A5371
            BrickNodeFqn                         : /
BRICK-002/0
        TouchedBrickNode
            BrickNodeId                          :
200C000B08001D03
            BrickNodeFqn                         : /
BRICK-001/0
        StorageDomainIdentityId          :
4130303132373542A214000000000000
        StorageDomainIdentityFqn         : /default
        Mapped                           : false
        GlobalLunNumber                     : 33
        Redundancy                       : STANDARD
        Priority                         : HIGH
        MigrateData                      : false
        AccessBias                       : sequential
        IoBias                           : mixed
        FibreChannelAccess               : true
        IScsiAccess                      : true
        Status                           : ONLINE
        Active                           : true
        Clone                            : false
        CreationTime                     :
2011-03-15T22:27:21.000
        CopyPriority                     : auto
        ConservativeMode                 : allowed
```

View System Configuration

You can use the system configuration information for a variety of purposes, including working on the Pillar Axiom system, deciding when to allow such work, doing performance tuning, and managing storage.

To view the configuration information for the Pillar Axiom system, you can use the `storage_allocation` Pillar Axiom CLI command. The `storage_allocation` command scans the Pillar Axiom system for the storage allocations for LUNs, Storage Domains, and Bricks, and creates report files.

For example, to generate the XML configuration file for all of the Bricks available on a Pillar Axiom system, run the following command, replacing *xml_configuration_file* with the location and the name of the XML configuration file that you want to generate:

```
C:\AxiomCLI>axiomcli storage_allocation -list -brick -xml
xml_configuration_file
```

The output XML configuration file looks similar to the following example:

```
<?xml version="1.0" encoding="ISO-8859-1"?>
 <viewCod>
 <Brick>
 <FriendlyName>BRICK-001</FriendlyName>
 <WWN>0x200c000b08001d03</WWN>
 <BrickLUN>
 <MetadataIndex>0</MetadataIndex>
 <Number>2</Number>
 <RUI>2000000b-08001d03-00202020-30303030-30303032</RUI>
 <Status>Online</Status>
 <StorageClass>SATA 7k HDD</StorageClass>
 <StorageDomain>default</StorageDomain>
 <Volume>
 <Name>PERSISTENCE</Name>
 <SUID>0x0</SUID>
 <VlunHandle>0x0</VlunHandle>
 <VlunGUID>00dccfb0-d21d-b211-b318-220503080b00</VlunGUID>
 </Volume>
 </BrickLUN>
 <BrickLUN>
 <MetadataIndex>1</MetadataIndex>
 <Number>3</Number>
 <RUI>2000000b-08001d03-00202020-30303030-30303033</RUI>
 <Status>Online</Status>
 <StorageClass>SATA 7k HDD</StorageClass>
 <StorageDomain>default</StorageDomain>
 <Volume>
 <Name>PERSISTENCE</Name>
 <SUID>0x0</SUID>
```

```
<VlunHandle>0x0</VlunHandle>
<VlunGUID>00dccfb0-d21d-b211-b318-220503080b00</VlunGUID>
</Volume>
</BrickLUN>
</Brick>
<Brick>
<FriendlyName>BRICK-002</FriendlyName>
<WWN>0x200c000b083a5371</WWN>
<BrickLUN>
<MetadataIndex>2</MetadataIndex>
<Number>2</Number>
<RUI>2000000b-083a5371-00202020-30303030-30303036</RUI>
<Status>Online</Status>
<StorageClass>SATA 7k HDD</StorageClass>
<StorageDomain>default</StorageDomain>
<Volume>
<Name>PERSISTENCE</Name>
<SUID>0x0</SUID>
<VlunHandle>0x0</VlunHandle>
<VlunGUID>00dccfb0-d21d-b211-b318-220503080b00</VlunGUID>
</Volume>
</BrickLUN>
<BrickLUN>
<MetadataIndex>3</MetadataIndex>
<Number>3</Number>
<RUI>2000000b-083a5371-00202020-30303030-30303037</RUI>
<Status>Online</Status>
<StorageClass>SATA 7k HDD</StorageClass>
<StorageDomain>default</StorageDomain>
<Volume>
<Name>PERSISTENCE</Name>
<SUID>0x0</SUID>
<VlunHandle>0x0</VlunHandle>
<VlunGUID>00dccfb0-d21d-b211-b318-220503080b00</VlunGUID>
</Volume>
</BrickLUN>
</Brick>
</viewCod>
```

Create a Clone LUN

You can use the Pillar Axiom CLI to create a Clone LUN, which is a partial copy block-level snapshot of a SAN LUN.

To create the Clone LUN, run the following command, replacing *clone-lun-name* with the name you want to assign to Clone LUN and *source-lun-id-or-fqn* with the name of the LUN:

```
C:\AxiomCLI>axiomcli clone_lun -add -name clone-lun-name -source
source-lun-id-or-fqn
```

The system displays the message similar to the following:

```
NewObject
    Id                      : 4130303132373542A104D3392B7866A2
    Fqn                     : /clonelun
Command Succeeded
```

Delete a Clone LUN

You can use the Pillar Axiom CLI to delete a Clone LUN.

To delete the Clone LUN, run the following command, replacing *clone-lun-id-or-fqn* with the name of the Clone LUN:

```
C:\AxiomCLI>axiomcli clone_lun –delete –cloneLun clone-lun-id-or-fqn
```

The system displays the following message:

```
Command Succeeded
```

Modify a LUN

You can use the Pillar Axiom CLI to modify a LUN to new priority settings. To modify the LUN, use the `lun -modify` command option.

When you run the `axiomcli lun -modify` command, Pillar Axiom CLI modifies the properties of an existing SAN LUN.

To modify a LUN, issue the following command, replacing *lun-id-or-fqn* with the name of an existing LUN and *new-lun-name* with the name of the new LUN:

```
C:\AxiomCLI>axiomcli lun -modify -lun lun-id-or-fqn -newName
new-lun-name -priority high -migrateData
```

The Pillar Axiom CLI modifies the specified LUN and displays the message similar to the following:

```
NewObject
    Id                          : 4130303132373542A104064C540FAB3A
    Fqn                         : /SLUN34
Command Succeeded
```

The data migration can take several minutes, during which the performance of the system might drop. The system displays the message as soon as the task starts, but the task itself continues to run in the background. Active data migration tasks may temporarily degrade system performance.

If you want to monitor the progress of the task, run the `axiomcli lun -modify` command with the `-o xml` output option:

```
C:\AxiomCLI>axiomcli lun -modify -lun lun-id-or-fqn -newName
new-lun-name -priority high -migrateData -o xml
```

If you use the `-o xml` output option, the command line updates as the task progresses, and the final output looks similar to the following XML snippet:

```
<?xml version="1.0"?>
<CLIResponse>
  <ResponseHeader>
    <ClientData>PillarAxiomCli</ClientData>
  </ResponseHeader>
<TaskInformation>
  <TaskGuid>4130303132373542A13FCCE41018E940</TaskGuid>
  <TaskFqn>/CreateLun/174071/administrator</TaskFqn>
</TaskInformation>
<NewObject>
  <Id>4130303132373542A104064C540FAB3A</Id>
  <Fqn>/SLUN34</Fqn>
</NewObject>
```

```
<Status>succeeded</Status>
</CLIResponse>
```

Copy a LUN

You can use the Pillar Axiom CLI to make a copy of an existing LUN.

To copy a LUN, issue the following command, replacing *source-lun-id-or-fqn* with the name of the existing LUN and *lun-name* with the name you want to assign to the copied LUN:

```
C:\AxiomCLI>axiomcli lun –copy –source source-lun-id-or-fqn –name
lun-name
```

The system displays a message similar to the following:

```
NewObject
    Id                          : 4130303132373542A104D8BA5E6642C8
    Fqn                         : /lun_copy
Command Succeeded
```

View System Events

The Pillar Axiom CLI allows you to view events in the Pillar Axiom system event log. You can use the events to troubleshoot the system.

To view the detailed list of items contained in the Pillar Axiom system event log, issue the following command:

```
C:\AxiomCLI>axiomcli event_log -list -details
```

The Pillar Axiom CLI retrieves the event log that looks similar to the following example:

```
LOGIN_SUCCEEDED
    Name                                : Login Succeeded
    Description                         : Login succeeded.
    Severity                            : INFORMATIONAL
    Category                            : AUDIT
    Timestamp                           :
2011-03-15T20:38:14.306+00:00
    ComponentGuid                       :
413030313132373542A140000000000000
    ComponentName                       : administrator
    AuthenticatedAccountId              :
413030313132373542A140000000000000
    AuthenticatedAccountFqn             : /administrator
    AuthenticatedAccountName            : administrator
    EventParameters.IpAddress           : /10.32.5.73
PSG_PITMAN_EVENT_STATE_CHANGE
    Name                                : Private Interconnect
Topology Manager State Change
    Description                         : Private Interconnect
Topology Manager state machine has changed state
    PmiType                             :
PSG_PITMAN_EVENT_STATE_CHANGE
    Severity                            : INFORMATIONAL
    Category                            : SYSTEM
    Timestamp                           :
2011-03-15T20:38:00.215+00:00
    ComponentWwn                        : 2008000B08030522
    ComponentName                       : SLAMMER-01
    SourceNodeId                        : 2008000B08030522
    SourceNodeFqn                       : /SLAMMER-01/0
    SourceNodeName                      : SLAMMER-01
    PsgPitmStateChgEvent.state          :
PSG_PITM_EVENT_STATE_CHG_MONITOR
```

View System Performance Statistics

You can use the Pillar Axiom CLI to view the statistics of the Pillar Axiom system, including the performance of networking, all filesystems, all Slammer Control Units, and all protocols.

To view the performance statistics of the Pillar Axiom system, issue the following command:

```
C:\AxiomCLI>axiomcli statistics -list
```

The Pillar Axiom CLI retrieves the performance statistics that look similar to the following example:

```
FCPort                :/SLAMMER-01
        Id                    : 2008000B08042312
        ControlUnitNumber   : 0
        NodePortName        : PORT0
CollectionTime
        StartTime           : 2011-05-17T20:29:57.884+00:00
        EndTime             : 2011-05-17T20:31:57.455+00:00
SanControllerInformation
        ReadMBPerSecond     : 0.000
        WriteMBPerSecond    : 0.000
        TotalMBPerSecond    : 0.000
        CommandsPerSecond   : 0.000
        TotalChannelErrors  : 0
ScsiTaskManagementOperations
        AbortTask           : 0
        AbortTaskSet        : 0
        ClearAca            : 0
        ClearTaskSet        : 0
        LogicalUnitReset    : 0
        TargetReset         : 0
LoopActivity
        Lips        : 1
        LoopUps     : 2
        LoopDowns : 0
ChannelErrors
        LoopInitErrors              : 0
        RndErrors                   : 0
        XferErrors                  : 0
        UnderRunErrors              : 0
        OverRunErrors               : 0
        DmaErrors                   : 0
        SystemErrors                : 0
        PciErrors                   : 0
        ReselectionTimeoutErrors    : 0
        InvalidRxIdErrors           : 0
        PortUnavailableErrors       : 0
        CommandTimeoutErrors        : 0
```

```
                          UnacknowledgedHostEventErrors : 0
FCPort               :/SLAMMER-01
        Id                      : 2008000B08042312
        ControlUnitNumber   : 0
        NodePortName        : PORT1
CollectionTime
            StartTime            : 2011-05-17T20:29:57.884+00:00
            EndTime              : 2011-05-17T20:31:57.455+00:00
SanControllerInformation
            ReadMBPerSecond     : 0.000
            WriteMBPerSecond    : 0.000
            TotalMBPerSecond    : 0.000
            CommandsPerSecond   : 0.000
            TotalChannelErrors : 0
ScsiTaskManagementOperations
            AbortTask          : 0
            AbortTaskSet       : 0
            ClearAca           : 0
            ClearTaskSet       : 0
            LogicalUnitReset  : 0
            TargetReset        : 0
LoopActivity
            Lips       : 0
            LoopUps    : 1
            LoopDowns : 0
ChannelErrors
            LoopInitErrors                  : 0
            RndErrors                       : 0
            XferErrors                      : 0
            UnderRunErrors                  : 0
            OverRunErrors                   : 0
            DmaErrors                       : 0
            SystemErrors                    : 0
            PciErrors                       : 0
            ReselectionTimeoutErrors       : 0
            InvalidRxIdErrors              : 0
            PortUnavailableErrors          : 0
            CommandTimeoutErrors           : 0
            UnacknowledgedHostEventErrors : 0
FCPort               :/SLAMMER-01
        Id                      : 2008000B08042312
        ControlUnitNumber   : 1
        NodePortName        : PORT0
CollectionTime
            StartTime            : 2011-05-17T20:30:06.474+00:00
            EndTime              : 2011-05-17T20:32:06.008+00:00
SanControllerInformation
            ReadMBPerSecond    : 0.000
            WriteMBPerSecond   : 0.000
            TotalMBPerSecond   : 0.000
            CommandsPerSecond  : 6.927
            TotalChannelErrors : 0
ScsiTaskManagementOperations
```

```
                AbortTask        : 0
                AbortTaskSet     : 0
                ClearAca         : 0
                ClearTaskSet     : 0
                LogicalUnitReset : 0
                TargetReset      : 0
LoopActivity
                Lips      : 1
                LoopUps   : 2
                LoopDowns : 0
ChannelErrors
                LoopInitErrors                 : 0
                RndErrors                      : 0
                XferErrors                     : 0
                UnderRunErrors                 : 0
                OverRunErrors                  : 0
                DmaErrors                      : 0
                SystemErrors                   : 0
                PciErrors                      : 0
                ReselectionTimeoutErrors       : 0
                InvalidRxIdErrors              : 0
                PortUnavailableErrors          : 0
                CommandTimeoutErrors           : 0
                UnacknowledgedHostEventErrors : 0
FCPort           :/SLAMMER-01
        Id                   : 2008000B08042312
        ControlUnitNumber    : 1
        NodePortName         : PORT1
CollectionTime
                StartTime        : 2011-05-17T20:30:06.474+00:00
                EndTime          : 2011-05-17T20:32:06.008+00:00
SanControllerInformation
                ReadMBPerSecond   : 0.000
                WriteMBPerSecond  : 0.000
                TotalMBPerSecond  : 0.000
                CommandsPerSecond : 6.927
                TotalChannelErrors : 0
ScsiTaskManagementOperations
                AbortTask        : 0
                AbortTaskSet     : 0
                ClearAca         : 0
                ClearTaskSet     : 0
                LogicalUnitReset : 0
                TargetReset      : 0
LoopActivity
                Lips      : 1
                LoopUps   : 1
                LoopDowns : 0
ChannelErrors
                LoopInitErrors                 : 0
                RndErrors                      : 0
                XferErrors                     : 0
                UnderRunErrors                 : 0
```

```
                OverRunErrors                     : 0
                DmaErrors                         : 0
                SystemErrors                      : 0
                PciErrors                         : 0
                ReselectionTimeoutErrors          : 0
                InvalidRxIdErrors                 : 0
                PortUnavailableErrors             : 0
                CommandTimeoutErrors              : 0
                UnacknowledgedHostEventErrors : 0
IScsiPort              :/SLAMMER-01
        Id                     : 2008000B08042312
        ControlUnitNumber    : 0
        NodePortName         : PORT0
CollectionTime
                StartTime          : 2011-05-17T20:29:57.884+00:00
                EndTime            : 2011-05-17T20:31:57.455+00:00
SanControllerInformation
                ReadMBPerSecond    : 0.000
                WriteMBPerSecond   : 0.000
                TotalMBPerSecond   : NaN
                CommandsPerSecond  : NaN
                TotalChannelErrors :
ScsiTaskManagementOperations
                AbortTask        : 0
                AbortTaskSet     : 0
                ClearAca         : 0
                ClearTaskSet     : 0
                LogicalUnitReset : 0
                TargetReset      : 0
IscsiPortRequests
                ReinitializeRequests   : 0
                TargetColdResetRequests : 0
                TaskReassignRequests   : 0
                ISnsMessages           : 0
IscsiPortErrors
                UnderRunErrors         : 0
                OverRunErrors          : 0
                CommandTimeoutErrors   : 0
                DmaErrors              : 0
                TransportErrors        : 0
                DeviceUnavailableErrors : 0
                DataDigestErrors       : 0
                HeaderDigestErrors     : 0
                InvalidSnackErrors     : 0
                UnsolicitedDataErrors  : 0
                UnexpectedDataSnErrors : 0
                InitiatorTaskTagErrors : 0
                SystemErrors           : 0
                MacCrcErrors           : 0
                MacEncodingErrors      : 0
                ISnsErrors             : 0
                CommandPdusRejected    : 0
                ConnectionFailures     : 0
```

```
             SessionLoginFailures     : 0
             FwDumpErrors             : 0
IscsiPortEvents
             LinkUpEvents               : 1
             LinkDownEvents           : 0
             IpAddressChangeEvents    : 0
             DuplicateIpAddressEvents : 0
IScsiPort              :/SLAMMER-01
        Id                     : 2008000B08042312
        ControlUnitNumber   : 0
        NodePortName        : PORT1
CollectionTime
             StartTime         : 2011-05-17T20:29:57.884+00:00
             EndTime           : 2011-05-17T20:31:57.455+00:00
SanControllerInformation
             ReadMBPerSecond    : 0.000
             WriteMBPerSecond   : 0.000
             TotalMBPerSecond   : NaN
             CommandsPerSecond  : NaN
             TotalChannelErrors :
ScsiTaskManagementOperations
             AbortTask         : 0
             AbortTaskSet      : 0
             ClearAca          : 0
             ClearTaskSet      : 0
             LogicalUnitReset  : 0
             TargetReset       : 0
IscsiPortRequests
             ReinitializeRequests     : 0
             TargetColdResetRequests  : 0
             TaskReassignRequests     : 0
             ISnsMessages             : 0
IscsiPortErrors
             UnderRunErrors           : 0
             OverRunErrors            : 0
             CommandTimeoutErrors     : 0
             DmaErrors                : 0
             TransportErrors          : 0
             DeviceUnavailableErrors  : 0
             DataDigestErrors         : 0
             HeaderDigestErrors       : 0
             InvalidSnackErrors       : 0
             UnsolicitedDataErrors    : 0
             UnexpectedDataSnErrors   : 0
             InitiatorTaskTagErrors   : 0
             SystemErrors             : 0
             MacCrcErrors             : 0
             MacEncodingErrors        : 0
             ISnsErrors               : 0
             CommandPdusRejected      : 0
             ConnectionFailures       : 0
             SessionLoginFailures     : 0
             FwDumpErrors             : 0
```

```
IscsiPortEvents
        LinkUpEvents              : 1
        LinkDownEvents           : 0
        IpAddressChangeEvents    : 0
        DuplicateIpAddressEvents : 0
IScsiPort            :/SLAMMER-01
      Id                 : 2008000B08042312
      ControlUnitNumber  : 1
      NodePortName       : PORT0
CollectionTime
        StartTime          : 2011-05-17T20:30:06.474+00:00
        EndTime            : 2011-05-17T20:32:06.008+00:00
SanControllerInformation
        ReadMBPerSecond    : 0.000
        WriteMBPerSecond   : 0.000
        TotalMBPerSecond   : NaN
        CommandsPerSecond  : NaN
        TotalChannelErrors :
ScsiTaskManagementOperations
        AbortTask        : 0
        AbortTaskSet     : 0
        ClearAca         : 0
        ClearTaskSet     : 0
        LogicalUnitReset : 0
        TargetReset      : 0
IscsiPortRequests
        ReinitializeRequests    : 0
        TargetColdResetRequests : 0
        TaskReassignRequests    : 0
        ISnsMessages            : 0
IscsiPortErrors
        UnderRunErrors           : 0
        OverRunErrors            : 0
        CommandTimeoutErrors     : 0
        DmaErrors                : 0
        TransportErrors          : 0
        DeviceUnavailableErrors  : 0
        DataDigestErrors         : 0
        HeaderDigestErrors       : 0
        InvalidSnackErrors       : 0
        UnsolicitedDataErrors    : 0
        UnexpectedDataSnErrors   : 0
        InitiatorTaskTagErrors   : 0
        SystemErrors             : 0
        MacCrcErrors             : 0
        MacEncodingErrors        : 0
        ISnsErrors               : 0
        CommandPdusRejected      : 0
        ConnectionFailures       : 0
        SessionLoginFailures     : 0
        FwDumpErrors             : 0
IscsiPortEvents
        LinkUpEvents              : 1
```

```
            LinkDownEvents          : 0
            IpAddressChangeEvents    : 0
            DuplicateIpAddressEvents : 0
IScsiPort            :/SLAMMER-01
        Id                    : 2008000B08042312
        ControlUnitNumber     : 1
        NodePortName          : PORT1
CollectionTime
            StartTime            : 2011-05-17T20:30:06.474+00:00
            EndTime              : 2011-05-17T20:32:06.008+00:00
SanControllerInformation
            ReadMBPerSecond      : 0.000
            WriteMBPerSecond     : 0.000
            TotalMBPerSecond     : NaN
            CommandsPerSecond    : NaN
            TotalChannelErrors   :
ScsiTaskManagementOperations
            AbortTask        : 0
            AbortTaskSet     : 0
            ClearAca         : 0
            ClearTaskSet     : 0
            LogicalUnitReset : 0
            TargetReset      : 0
IscsiPortRequests
            ReinitializeRequests     : 0
            TargetColdResetRequests  : 0
            TaskReassignRequests     : 0
            ISnsMessages             : 0
IscsiPortErrors
            UnderRunErrors           : 0
            OverRunErrors            : 0
            CommandTimeoutErrors     : 0
            DmaErrors                : 0
            TransportErrors          : 0
            DeviceUnavailableErrors  : 0
            DataDigestErrors         : 0
            HeaderDigestErrors       : 0
            InvalidSnackErrors       : 0
            UnsolicitedDataErrors    : 0
            UnexpectedDataSnErrors   : 0
            InitiatorTaskTagErrors   : 0
            SystemErrors             : 0
            MacCrcErrors             : 0
            MacEncodingErrors        : 0
            ISnsErrors               : 0
            CommandPdusRejected      : 0
            ConnectionFailures       : 0
            SessionLoginFailures     : 0
            FwDumpErrors             : 0
IscsiPortEvents
            LinkUpEvents             : 1
            LinkDownEvents           : 0
```

```
                    IpAddressChangeEvents    : 0
                    DuplicateIpAddressEvents : 0
```

CHAPTER 4

Pillar Axiom CLI Scripts

About Pillar Axiom CLI Scripts

You can use scripts in the Pillar Axiom CLI to simplify and speed up everyday tasks, improve efficiency, and increase productivity.

Manage Pillar Axiom CLI Session Keys

Managing Pillar Axiom CLI session keys can be very useful when you write custom scripts.

When you log in to a Pillar Axiom system, Pillar Axiom CLI manages the session key for you. To manage the single session key, Pillar Axiom CLI stores the name of the Pillar Axiom system, your user name, and the session key in the hidden `.AXCLI_Session` file located in the user's home folder (for example, on **Windows 7**, the `.AXCLI_Session` file is located in the `C:\Users` folder). However, to use multiple session keys concurrently (for example, if you want to have one Pillar Axiom CLI session with the Administrator privileges and another Pillar Axiom CLI session with the Monitor privileges), you need to manage the session keys manually.

To manage multiple session keys, you can use the Pillar Axiom CLI `login` command with the `-returnKey` command option. When you use this command option, Pillar Axiom CLI returns the session key. The returned session key has the following structure:

pillar_axiom_name:*user_id*:*session_key*

For example, if you log in to the Pillar Axiom system using the `axiomcli login -u administrator -p` *pwd* `coaxm037 -returnKey` command, the returned session key might look similar to the following:

```
coaxm037:administrator:BB50C9B9E9C90FEE3502768E3D155B4E
```

When you use the `-returnKey` command option, you can store the returned session key. If you are working with a single Pillar Axiom system using only the Pillar Axiom CLI environment, you can specify the session key when issuing a Pillar Axiom CLI command, or you can store the session key in the `PDS_SESSIONKEY` environment variable. The `PDS_SESSIONKEY` environment variable then may look like this:

```
coaxm037:administrator:BB50C9B9E9C90FEE3502768E3D155B4E
```

If you do not specify the `PDS_SESSIONKEY` environment variable, Pillar Axiom CLI retrieves the session key from the hidden `.AXCLI_Session` file.

If you are working with multiple Pillar Axiom systems, setting the `PDS_SESSIONKEY` environment variable does not work because you cannot store multiple session keys in a single environment variable. In such a case, you can use the `-sessionKey` command option to specify which Pillar Axiom system you want to access. For example, to access two Pillar Axiom systems, run the following two commands:

1 The command to the first Pillar Axiom system:

```
C:\AxiomCLI>axiomcli system -list -sessionKey
coaxm037:administrator:BB50C9B9E9C90FEE3502768E3D155B4E
```

2 The command to the second Pillar Axiom system:

```
C:\AxiomCLI>axiomcli system -list -sessionKey
coaxm039:administrator:B4375CD75821A930E3036A9FADA14E6C
```

If you use the `-sessionKey` command option, Pillar Axiom CLI uses the specified value and skips the value specified in the `PDS_SESSIONKEY` environment variable, if any.

Important! The session key value that you provide on the command line takes precedence over both the value specified in the `PDS_SESSIONKEY` environment variable and the value in the hidden `.AXCLI_Session` session file.

Create SAN LUNs

This Windows Perl script creates four SAN LUNs in their own volume group and shows capacity information.

Important! This script assumes that

- The Pillar Axiom CLI has been added to the `Path` environment variable

- Perl has been installed on your system, including the **Getopt::Long** module

```perl
use Getopt::Long;

# Retrieve the options from the command line.
# n - lun name seed
# c - addressable capacity
# g - volume group name
# a - axiom name
# u - user id for the axiom
# p - password
# s - storage class (optional)
my @argMap = ( 'n:s', 'g:s', 'a:s', 'u:s', 'p:s', 'c:i',
's:s' );
my %options = ();
GetOptions( \%options, @argMap );
die "usage: CreateSanLuns -n <lun name seed> -g <volume group
name> -a <Axiom> -u <user id> -p <password> -c <addressable
capacity> [-s <storage class>]"
    unless ( $options{u} && $options{p} && $options{a} &&
$options{n} && $options{g} && $options{c});

# Login
my $command  = "axiomcli.exe login -u " . $options{u} . " -p
" . $options{p} . " " . $options{a};
my $response = execute_command($command);
# List the starting capacity information
$command = "axiomcli.exe san -list -details";
$response = execute_command($command);
print "\n$response\n";
# Create the volume group
$command  = "axiomcli.exe volume_group -add -name " .
$options{g};
$response = execute_command($command);
my $group_fqn = get_fqn($response);
print "Created volume group $group_fqn\n";
# Create and display its SAN luns
for ( my $i = 1; $i < 5; $i++ ) {
    my $lun_name = $options{n} . $i;
    $command
        = "axiomcli.exe lun -add -name $lun_name
-addressablecapacity " . $options{c} . " -clonecapacity " .
```

```perl
$options{c} . " -priority high -volumegroup $group_fqn";
    if ($options{s}){
        $command .= " -storageClass " . $options{s};
    }
    $response = execute_command($command);
    my $lun_fqn = get_fqn($response);
    print "Created SAN lun $lun_fqn\n";
    $command  = "axiomcli.exe lun -list -details -lun
$lun_fqn";
    $response = execute_command($command);
    print $response, "\n";
}
# List the ending capacity information
$command = "axiomcli.exe san -list -details";
$response = execute_command($command);
print "\n$response\n";

#************************************************************
*******
# get_fqn
#   extracts and returns the fully qualified name of a newly
created object
#   from the specified response
#************************************************************
*******
sub get_fqn {
    my ($string) = @_;
    my ($fqn) = $string =~ m{
        Fqn\s*:\s*
        (\S*)
    }xms;
    if ( !defined $fqn ) {
        print "Failed to extract fqn from command output.
Output: $string\n";
        exit();
    }
    return $fqn;
}

#************************************************************
*******
# execute_command
#   executes the specified command and returns the response
#************************************************************
*******
sub execute_command {
    my ($command) = @_;
    print "\nExecuting: ", $command, "\n";
    my $out       = `$command`;
    my $sys_exit   = $?;
    my $axcli_exit = ( $sys_exit >> 8 );
    if ( $axcli_exit != 0 ) {
        print "Error: $out\nError code: $axcli_exit\n";
```

```
        exit($axcli_exit);
    }
    return $out;
}
```

APPENDIX A

Pillar Axiom System Limits

Pillar Axiom System Limits

Note: A Pillar Axiom system uses binary units to calculate and display the capacity of physical storage and the size of logical volumes:

> 1 MB = 1024^2 (1,048,576) bytes
>
> 1 GB = 1024^3 (1,073,741,824) bytes
>
> 1 TB = 1024^4 (1,099,511,627,776) bytes

Table 7 System operating limits

Parameter	Limits
Volume groups	Minimum: 1 Maximum: 5000 **Note:** A volume group can contain up to 100 nested groups. Nesting is limited to five levels. Also, the root volume (`/Volumes`) is always available.
SAN LUNs	Maximum: • 8191 visible for any given SAN Slammer • 8191 visible across all SAN Slammers in a given system (2730 if all LUNs have non-zero clone repositories) • 255 visible for each host **Note:** A visible (active) LUN requires one virtual LUN (VLUN). Clones for that LUN require a VLUN for the data repository. Each active clone of the source LUN also requires a separate VLUN. For example, a LUN that has two clones requires four VLUNs.
SAN LUN size	Minimum: 1 to 2 GB. The exact value depends on these factors

Table 7 System operating limits (continued)

Parameter	Limits
	• Brick type (Fibre Channel or SATA) • RAID geometry (RAID 5 or Distributed RAID) • Strip size (1 MB or normal) Maximum: System capacity **Note:** All capacity values must be in increments of 1 GB.
Pillar Axiom Path Manager (APM)	Maximum Pillar Axiom systems: 8 for each SAN host
APM data paths	Maximum: 32 to each LUN
APM FC HBA ports	Maximum: 32 for each SAN host
Clone LUNs	Maximum: • Number of available LUNs • 13 active at a time (for a single source)
iSCSI protocol	Maximums for each iSCSI port: • 1 VLAN ID • 256 TCP connections • 256 iSCSI initiators • 512 simultaneous commands Maximum for each LUN: 32 persistent reservation registration keys
Administrator accounts	Minimum: 2 Maximum: Unlimited **Note:** Minimum provides for the Primary system administrator and Pillar support administrator.
Administrator sessions	Maximum: 25 simultaneous
Administrator login attempts	Minimum: 1 Maximum: Unlimited, unless set by the administrator
Session time-out period (minutes)	Minimum: 0 Maximum: 999

Table 7 System operating limits (continued)

Parameter	Limits
	Note: Default time-out period is 20 minutes.
Storage Domains	Maximum: 64 for each system
Number of Bricks in a Storage Domain	Minimum: • Serial ATA (SATA) or solid state drives (SSD) Bricks: 1 • Fibre Channel (FC) Bricks: 2 Maximum: • SATA Bricks: 64 • FC or SSD Bricks: 32

Table 8 Field input limits

Field	Length or Type	Notes
Names for: • Alerts • Brick storage enclosures • Pillar Axiom system • Schedules • Slammer storage controllers • Volume groups	1 through 16 8-bit Unicode Transformation Format (UTF-8) printable characters. UTF-8 is described in RFC 2279, which you can find online with any Internet search engine.	Embedded spaces are permitted. Invalid characters: • Non-printable characters, including ASCII 0 through 31 • / (slash) and \ (backslash) • . and .. (dot and dot-dot alone) • Embedded tabs Pillar Axiom processing: • Leading and trailing white space is stripped • Comparison is case sensitive
Names for: • LUNs • Storage Domains	1 through 82 UTF-8 printable characters	Invalid characters: • Nonprintable characters, including ASCII 0 through 31 • / (slash) and \ (backslash) • . and .. (dot and dot-dot alone) • Embedded tabs
Names for SAN hosts	1 through 63 UTF-8 printable characters	

Table 8 Field input limits (continued)

Field	Length or Type	Notes
DNS domains	0 through 255, in all four parts	IP version 4 (IPv4) dotted-decimal notation (nnn.nnn.nnn.nnn)
Administrator user name	1 through 16 UTF-8 printable characters	Case-sensitive value Invalid characters: • Embedded spaces • / (slash)
Administrator password	6 through 16 UTF-8 printable characters	• Case-sensitive value • Embedded spaces are permitted.
Optional entries for administrator full names	0 through 40 UTF-8 printable characters	Embedded spaces are permitted.
Optional entries for telephone numbers	0 through 80 UTF-8 printable characters	Embedded spaces are permitted.
Alert descriptions	0 through 80 UTF-8 printable characters	Embedded spaces are permitted.
Email address (emailuser@host)	1 through 64 characters for email user	a-z A-Z 0-9 ! # $ % & ' * + - / = ? ^ _ ` { | } ~ . are permitted, except that . (dot) cannot be the first or last character.
	1 through 255 characters for host	a-z A-Z 0-9 - . are permitted, except that: • 0-9 - . cannot be the first character. • . - cannot be the last character. An IP address cannot be the host part of the email address.
IP addresses	0 through 255, in all four parts	IP version 4 (IPv4) dotted-decimal notation (nnn.nnn.nnn.nnn)
Virtual LAN (VLAN) ID or tag	0 through 4094 (integer)	• 1 through 4094 denote that VLAN tagging is enabled. • 0 denotes that VLAN tagging is disabled.

Table 8 Field input limits (continued)

Field	Length or Type	Notes
SNMP community string	6 through 255 ASCII printable characters 33 through 126	Invalid characters: • Embedded spaces • Control characters
Chap Secrets	100 UTF-8 characters	Non-character (for example, integer) CHAP secret values are not supported. CHAP secrets should be more than 12 bytes if IPsec is not used on insecure network segments.

Pillar Axiom CLI Commands

About Pillar Axiom CLI Commands

In addition to the unique properties of a command, most of the Pillar Axiom CLI commands use the following common options:

- `-add`

- `-delete`

- `-modify`

- `-list`

- `-verify`

- `-o`

- `-timeout`

You can also use the `-help` option to display a short description of the syntax of a specific command.

The Pillar Axiom CLI uses fully qualified names (FQNs) that are exposed in the results when requesting a list of Pillar Axiom system objects.

Note: Use double quotes when entering file names that contain spaces, comments, and descriptions. The double quotes ensure that the spaces are not removed by the Pillar Axiom CLI when processing the command.

account

DESCRIPTION   Manages administrative accounts on a Pillar Axiom system. Administrators have specific privileges on the Pillar Axiom system based on their account type or assigned role.

Use this feature to perform any of the following actions:
- Create administrative accounts
- Delete administrative accounts
- Log an administrator off the system
- List existing administrative accounts
- Change administrative passwords
- Assign roles to specific administrative accounts

You can use the `-verify` option to test the command-line argument and its options before running it in Pillar Axiom CLI. If no errors exist, the Pillar Axiom CLI command returns without executing. For example, the `-verify` option is helpful when writing scripts in which a particular Pillar Axiom CLI command usage can be verified prior to adding it to a script.

You can use the `-outputformat` or the `-o` command option to specify how to display the results of running a command. If you do not specify either the `-outputformat` or the `-o` command option, the results display in the default `text` format. Valid options:

text   The system displays the results in the plain-text format.

xml   The system displays the results in the tagged XML format.

You can use the `-sessionKey` option to specify which Pillar Axiom system to access and which session key value to use for validation. The Pillar Axiom CLI displays the session key value when you log in to the Pillar Axiom system using the `-returnKey` option.

You can use the `-timeout` option to set a time limit for the execution of a command. If the command takes longer than the number of seconds specified in the `-timeout` option, the system stops executing the command. If you do not specify the `-timeout` option, the system does not set any time limit for executing the command.

Note: The `account` command replaces the deprecated `admin_acct` command.

The `account -list -userSessions` command option replaces the deprecated `admin_acct -sessions` command option.

SYNTAX

```
axiomcli account -add -name account-name
    -role {admin1 | admin2 | monitor | support}
    -password password
    -retypePassword password [-email email-address]
    [-phone phone-number] [{-enable | -disable}]
    [-fullName full-name]
    [-verify]
    [{-outputformat | -o} {text | xml}]
    [-sessionKey session-key]
    [-timeout timeout-in-seconds]
```

```
axiomcli account -modify [-account account-id-or-fqn]
    [-fullName full-name]
    [-password password -retypePassword password]
    [-email email-address] [-phone phone-number]
    [-newName new-account-name]
    [-role {admin1 | admin2 | monitor | support}]
    [{-enable | -disable}]
    [-verify]
    [{-outputformat | -o} {text | xml}]
    [-sessionKey session-key]
    [-timeout timeout-in-seconds]
```

```
axiomcli account -delete
    -account account-id-or-fqn [,account-id-or-fqn]...
    [-verify]
    [{-outputformat | -o} {text | xml}]
    [-timeout timeout-in-seconds]
```

```
axiomcli account -list [-details]
    [-account [account-name-id-or-fqn
[,account-name-id-or-fqn]...] ]
    [-userSessions [session-id-or-fqn [,session-id-or-fqn]...] ]
    [-verify]
    [{-outputformat | -o} {text | xml}]
    [-sessionKey session-key]
    [-timeout timeout-in-seconds]
```

```
axiomcli account -help
```

PARAMETERS

Note: Role permissions:

- Only the Primary Administrator and Administrator 1 roles can issue all of the commands.

- The Administrator 2, Pillar Support, and Support roles can issue only the `-modify` and `-list` commands.

- The Monitor role can issue only the `-list` command option.

-add

Creates new administrative accounts on a Pillar Axiom system. You can create multiple administrator accounts in a Pillar Axiom system. Additional accounts are not necessary, but they are useful if you want to delegate administrator responsibilities. For example, you might choose to create:

○ One administrator account so that a designated person assumes responsibility while the Primary System Administrator is on vacation. Assign this account to the Administrator 1 role.

○ One or more administrator accounts with read-only privileges so that managers can monitor the system but they cannot change configuration details. Assign these accounts to the Monitor role.

Valid options:
-name

Identifies the login name assigned to the administrator account. This field is limited to 20 characters.

-role

Identifies the authorized privileges for an administrator account. Different roles are authorized to perform different functions:

admin1   A login account that has the authority to perform all administration, configuration, and recovery tasks.

admin2   A login account that has the authority to perform all administrative and configuration tasks, except:

□ Create, modify, or delete administrator accounts and File Servers.

□ Modify system-wide settings such as Simple Network Management Protocol (SNMP).

□ Modify software or hardware configurations.

□ Shut down the system.

monitor   A login account that has the
                  authority to perform read-only
                  management tasks in a Pillar Axiom
                  system and the ability to modify
                  their own account attributes.

support   A unique login account solely for
                  support representatives. This login
                  account is not authorized to modify
                  or delete data resources, system
                  alerts, or administrator accounts.

                  Important! Use this account only if
                  you are familiar with it or instructed
                  by Pillar World Wide Customer
                  Support Center.

-password

Identifies the password of the administrator account.
Passwords can be between 6 and 20 characters in length.
Passwords are case sensitive and embedded spaces are
permitted. Blank passwords are not permitted.

-retypePassword

Confirms that the password was entered correctly.

-email

Identifies the email address associated with the
administrator account. The email username can have up
to 64 characters and the email domain can have up to 255
characters. The email server to which the Pillar Axiom
system sends alerts must be able to receive messages at
this address. The system does not validate this address.

Note: An IP address cannot be entered as the email
domain.

-phone

Identifies the phone number associated with the
administrator account. The Pillar Axiom system does not
verify the validity of this entry.

Note: Enclose telephone numbers with spaces in quotes.

-enable

Indicates whether the administrative account is enabled. By default, the account being created is enabled.

-disable

Indicates whether the administrative account is disabled. The Pillar Axiom system maintains disabled accounts but does not allow them to log in. A disabled account can be enabled at a later time by modifying it. This setting takes effect immediately. If the administrator is logged in when you disable the account, the system logs out the administrator immediately.

Note: You cannot disable the `primaryadmin` account.

-fullName

Identifies the first and last name associated with the administrator account.

-modify

Modifies an existing administrator account. At times, you may need to modify the attributes of an administrator account. A Primary system administrator and people who are assigned to the Administrator 1 role can modify their own or another administrator's account. Some changes take effect immediately.

For example, a logged-in administrator's session is terminated when you disable or delete the administrator account. Other changes, such as modifying the administrator's password or the session time-out value take affect the next time the administrator logs in.

Note: Only the Administrator 1, Pillar Support, and Support roles can modify an existing administrator account.

Valid options:
-account

Identifies the ID or fully qualified name (FQN) of the account to modify. If you do not specify an account, the system modifies the account currently logged into the Pillar Axiom system. If you modify the account currently logged in, the system will accept values for only the following parameters:

- `-fullName`
- `-password`

- `-retypePassword`
- `-email`
- `-phone`

Important! If other parameters are specified, the system generates an error.

-newName

Changes the name of the administrator account.

-delete

Deletes one or more administrative accounts.

Valid options:
-account

Specifies the ID or FQN of the account to delete.

-list

Displays a list of administrator accounts or any active administrator sessions.

Valid options:
-details

For accounts, displays the account name, role, email address, phone number, and whether an account is enabled.

For each logged-in administrator, displays all of the session information, including the user name, login time, and remote IP address. The log-in time displays in the `YYYY-MM-DDTHH:mm:SS.xxx+-HH:mm` format.

-account

Displays the information for a specified administrator account. If you specify a user session, and the specified account is logged in, their session is displayed. If the specified account is not logged in, the session information is not displayed.

If you do not provide either the `-account` or the `-userSessions` option, the system displays all of the currently logged-in administrative user sessions, followed by all of the administrative account information.

-userSessions

Displays information for all of the logged-in administrative user sessions. If you provide one or more

session-id-or-fqn operands, the system displays information for just the specified sessions.

If you do not provide either the `-account` or the `-userSessions` option, the system displays all of the currently logged-in administrative user sessions, followed by all of the administrative account information.

-help

Displays the detailed command help information.

EXAMPLE　　Run `axiomcli account -list -details` to display a detailed list of administrative accounts:

```
axiomcli account -list -details
```

Results:

```
Accounts
    /administrator
        Id                  :
4130303132373542A140000000000000
        Username            : administrator
        Fullname            :
        EmailAddress        :
        PhoneNumber         :
        Status              : Enabled
        Role                : PRIMARY_ADMINISTRATOR
        ManagementState     : AVAILABLE
    /pillar
        Id                  :
4130303132373542A140000000000001
        Username            : pillar
        Fullname            :
        EmailAddress        :
        PhoneNumber         :
        Status              : Enabled
        Role                : PILLAR_SUPPORT
        ManagementState     : AVAILABLE
UserSessions
    /administrator-759
        Id                  :
4130303132373542A143440CE1FB3F40
        LoginTime         : 2011-04-05T21:45:47.535
        RemoteIpAddress   : 172.18.24.134
        AccountFqn        : /administrator
        AccountId         :
4130303132373542A140000000000000
        Username            : administrator
        Fullname            :
        Role                : PRIMARY_ADMINISTRATOR
```

brick

DESCRIPTION   Manages the Brick storage enclosures on a Pillar Axiom system. Bricks connect to one or more Slammers through the Storage System Fabric (SSF).

Use the `brick` command to verify data consistency, clear the RAID controller history, restart a RAID controller, and add or move Bricks to a Storage Domain, or remove Bricks from a system configuration.

You can use the `-verify` option to test the command-line argument and its options before running it in Pillar Axiom CLI. If no errors exist, the Pillar Axiom CLI command returns without executing. For example, the `-verify` option is helpful when writing scripts in which a particular Pillar Axiom CLI command usage can be verified prior to adding it to a script.

You can use the `-outputformat` or the `-o` command option to specify how to display the results of running a command. If you do not specify either the `-outputformat` or the `-o` command option, the results display in the default `text` format. Valid options:

text   The system displays the results in the plain-text format.

xml   The system displays the results in the tagged XML format.

You can use the `-sessionKey` option to specify which Pillar Axiom system to access and which session key value to use for validation. The Pillar Axiom CLI displays the session key value when you log in to the Pillar Axiom system using the `-returnKey` option.

You can use the `-timeout` option to set a time limit for the execution of a command. If the command takes longer than the number of seconds specified in the `-timeout` option, the system stops executing the command. If you do not specify the `-timeout` option, the system does not set any time limit for executing the command.

SYNTAX
```
axiomcli brick -modify
     {-brick brick-id-or-fqn -newName new-brick-name
     | -brickNode bricknode-id-or-fqn
         {-acceptForeignDrive drive-slot-number | -remove |
-recreateRaidArray}
     }
     [-verify]
     [{-outputformat | -o} {text | xml}]
```

```
     [-sessionKey session-key]
     [-timeout timeout-in-seconds]
```

```
axiomcli brick -list
     [ {-brick brick-id-or-fqn [,brick-id-or-fqn]...
      | -brickNode bricknode-id-or-fqn
[,bricknode-ide-or-fqn]...
     }
     [-driveSmartData -driveSlot slot-number]
     ]
     [-dataConsistency] [-details]
     [-verify]
     [{-outputformat | -o} {text | xml}]
     [-sessionKey session-key]
     [-timeout timeout-in-seconds]
```

```
axiomcli brick -verifyDataConsistency [-brickNode
bricknode-id-or-fqn]
     -priority {high | low}
     [-verify]
     [{-outputformat | -o} {text | xml}]
     [-sessionKey session-key]
     [-timeout timeout-in-seconds]
```

```
axiomcli brick -clearRaidHistory -brick brick-id-or-fqn
     -portGroup {group0 | group1}
     [-verify]
     [{-outputformat | -o} {text | xml}]
     [-sessionKey session-key]
     [-timeout timeout-in-seconds]
```

```
axiomcli brick -restartRaidController -brick brick-id-or-fqn
     -portGroup {group0 | group1} [-disableCompanion]
     [-verify]
     [{-outputformat | -o} {text | xml}]
     [-sessionKey session-key]
     [-timeout timeout-in-seconds]
```

```
axiomcli brick -acceptNode -brickNode bricknode-id-or-fqn
     -storageDomain storage-domain-id-or-fqn
     [-verify]
     [{-outputformat | -o} {text | xml}]
     [-sessionKey session-key]
     [-timeout timeout-in-seconds]
```

```
axiomcli brick -move -brickNode bricknode-id-or-fqn
[,bricknode-id-or-fqn]...
     -storageDomain new-storage-domain-id-or-fqn
     [-verify]
     [{-outputformat | -o} {text | xml}]
```

```
     [-sessionKey session-key]
     [-timeout timeout-in-seconds]
```

```
axiomcli brick -help
```

PARAMETERS

Note: The Primary Administrator and Administrator 1 roles can issue all command options except for the following:

```
axiomcli brick -clearRaidHistory
```

```
axiomcli brick -restartRaidController
```

The Pillar Support and Support roles can issue all command options except for the following:

```
axiomcli brick -modify
```

```
axiomcli brick -acceptNode
```

```
axiomcli brick -move
```

All roles can issue the -list command option.
-modify

Modifies a Brick or a Brick node.

Valid options:
-brick

Identifies a specific Pillar Axiom object. Enter the ID or fully qualified name (FQN) of the Brick.

Valid options:

ID	A 16-character string with hexadecimal characters (a through f and 0 through 9). Example ID:
	`200C000B08000006`
Fully qualified name (FQN)	Starts with a leading slash (/) with the object's name. Example FQN:
	`/PillarBrick1`

-newName

Specifies a new name of a Brick.

-brickNode

Identifies the Brick node to be modified.

-acceptForeignDrive

Instructs the Brick to accept a foreign drive (a drive that has not been yet certified to work with the Brick). The operand specifies the drive slot number for the new drive.

-remove

Removes the specified Brick node from the list of hardware components (hardware manifest). When you remove a Brick, the capacity of the Brick is also removed leaving less space available in the system.

-recreateRaidArray

Recreates the RAID array for the specified Brick node.

⚠ Caution	The `-recreateRaidArray` option deletes all of the data on the specified array, and this action is *not* reversible.
	Before using the `-recreateRaidArray` option, contact Pillar World Wide Customer Support Center.

-list

Displays the hardware status and data consistency state of a Brick or Brick control unit (CU). The hardware status includes drives, fans, power supplies, enclosure services (ES) modules, RAID controllers, and serial numbers.

Valid options:
-brick

Displays information for the specified Brick. Enter the ID or FQN of the Brick. If you do not specify a Brick, the hardware status and data consistency for all Bricks is displayed.

-brickNode

Displays the hardware status and data consistency of the specified Brick CU.

-driveSmartData

Displays the S.M.A.R.T. data for the drive in the specified slot of the Brick identified by either the `-brick` or the `-brickNode` option.

-driveSlot

Identifies locations (slot numbers where individual drives reside in the Brick) of the Brick. The values range from 0 to the maximum number of drives minus one.

-dataConsistency

Displays only the data consistency state of the Brick components.

-details

Does not display any additional details but is included for symmetry.

-verifyDataConsistency

Verifies the integrity of the parity data, which is maintained by the RAID controller, not to the integrity of user-created data.

Note: Running this command option can take a long time to complete, but its progress can be tracked using the following command-line argument:

```
axiomcli task -list
```

Valid options:
-brickNode

Indicates that the verification will be performed against the specified Brick CU. If you do not specify a CU, the system verifies all Brick CUs.

-priority

Indicates the priority that should be given to the verification process:

high	Permits the verification check to affect I/O performance by up to 30%.
low	Permits the verification check to affect I/O performance by up to 10%.

-clearRaidHistory

Clears the RAID history information for the RAID controller of a Brick, a Brick CU, or a Brick controller unit (through a port group).

Valid options:
-brick

Identifies a specific Pillar Axiom object. Enter the ID or fully qualified name (FQN) of the Brick.

-portGroup

Identifies the port group of the RAID controller that you want to clear the history.

-restartRaidController

Restarts the RAID controller of one or all Bricks.

Valid options:
-brick

Identifies a specific Pillar Axiom object. Enter the ID or fully qualified name (FQN) of the Brick.

-portGroup

Specifies the RAID controller port group to be restarted.

-disableCompanion

Disables the secondary RAID controller while the system restarts the specified RAID controller.

-acceptNode

Adds the specified Brick to a Storage Domain.

Valid options:
-brickNode

Identifies the ID or FQN of the Brick to accept.

-storageDomain

Specifies the Storage Domain with which to associate the Brick.

-move

Moves the specified Brick CUs to the new Storage Domain.

Valid options:
-brickNode

Moves the specified Brick nodes to a new Storage Domain.

-storageDomain

Identifies the new Storage Domain for the Brick CUs.

-help

Displays the detailed command help information.

EXAMPLE   Run `brick` to display the hardware status and data consistency state of a Brick:

```
axiomcli brick -list -details
```

Results:

```
 Brick                            :  /BRICK-002
    Name                          :  BRICK-002
    Id                            :  200C000B083A5371
    Fqn                           :  /BRICK-002
    BrickWwn                      :  200C000B083A5371
    Type                          :  SATA
    Model                         :  1000-00008-00
    HardwareComponentStatus   :  NORMAL
    TemperatureStatus         :  NORMAL
    SerialNumber              :  SGAMS00038CLN008
    ManagementState           :  AVAILABLE
    OverallBrickStatus        :  NORMAL
    BrickNode
        Id                        :  200C000B083A5371
        Fqn                       :  /BRICK-002/0
        StorageClass          :  satahd
        StorageDomain
            Id                    :
4130303132373542A214000000000000
            Fqn                   :  /default
        MediaType             :  SATA_ROTATING_MEDIA
        OverallBrickNodeStatus :  NORMAL
        DiskDriveNumber: 0
            Status                :  NORMAL
            Model                 :  1450-00117-00
            ManufacturingModel :  3500-00004-00
            SerialNumber          :  3JS0DMVW
            Spare                 :  false
            Capacity              :  149
            FirmwareVersion       :  2052-00003-00
        DiskDriveNumber: 1
            Status                :  NORMAL
            Model                 :  1450-00028-00
            ManufacturingModel :  3500-00004-00
            SerialNumber          :  3JS10MP3
            Spare                 :  false
            Capacity              :  149
            FirmwareVersion       :  2052-00003-00
        DiskDriveNumber: 2
            Status                :  NORMAL
            Model                 :  1450-00028-00
            ManufacturingModel :  3500-00004-00
            SerialNumber          :  3JS10J6K
            Spare                 :  false
            Capacity              :  149
            FirmwareVersion       :  2052-00003-00
```

```
DiskDriveNumber: 3
    Status              : NORMAL
    Model               : 1450-00028-00
    ManufacturingModel  : 3500-00004-00
    SerialNumber        : 3JS10VQC
    Spare               : false
    Capacity            : 149
    FirmwareVersion     : 2052-00003-00
DiskDriveNumber: 4
    Status              : NORMAL
    Model               : 1450-00028-00
    ManufacturingModel  : 3500-00004-00
    SerialNumber        : 3JS10VPR
    Spare               : false
    Capacity            : 149
    FirmwareVersion     : 2052-00003-00
DiskDriveNumber: 5
    Status              : NORMAL
    Model               : 1450-00028-00
    ManufacturingModel  : 3500-00004-00
    SerialNumber        : 3JS10XMR
    Spare               : false
    Capacity            : 149
    FirmwareVersion     : 2052-00003-00
DiskDriveNumber: 6
    Status              : NORMAL
    Model               : 1450-00028-00
    ManufacturingModel  : 3500-00004-00
    SerialNumber        : 3JS10Y43
    Spare               : false
    Capacity            : 149
    FirmwareVersion     : 2052-00003-00
DiskDriveNumber: 7
    Status              : NORMAL
    Model               : 1450-00028-00
    ManufacturingModel  : 3500-00004-00
    SerialNumber        : 3JS10KQS
    Spare               : false
    Capacity            : 149
    FirmwareVersion     : 2052-00003-00
DiskDriveNumber: 8
    Status              : NORMAL
    Model               : 1450-00028-00
    ManufacturingModel  : 3500-00004-00
    SerialNumber        : 3JS103TY
    Spare               : false
    Capacity            : 149
    FirmwareVersion     : 2052-00003-00
DiskDriveNumber: 9
    Status              : NORMAL
    Model               : 1450-00028-00
    ManufacturingModel  : 3500-00004-00
    SerialNumber        : 3JS10F62
```

```
              Spare               : false
              Capacity            : 149
              FirmwareVersion     : 2052-00003-00
        DiskDriveNumber: 10
              Status              : NORMAL
              Model               : 1450-00028-00
              ManufacturingModel  : 3500-00004-00
              SerialNumber        : 3JS10KJA
              Spare               : false
              Capacity            : 149
              FirmwareVersion     : 2052-00003-00
        DiskDriveNumber: 11
              Status              : NORMAL
              Model               : 1450-00028-00
              ManufacturingModel  : 3500-00004-00
              SerialNumber        : 3JS10W59
              Spare               : false
              Capacity            : 149
              FirmwareVersion     : 2052-00003-00
        DiskDriveNumber: 12
              Status              : NORMAL
              Model               : 1450-00031-00
              ManufacturingModel  : 3500-00004-00
              SerialNumber        : 3JS10KDB
              Spare               : true
              Capacity            : 149
              FirmwareVersion     : 2052-00003-00
        PhysicalTotalCapacity       : 1780
        PhysicalFreeCapacity        : 1538
        PhysicalAllocatedCapacity   : 242
        PhysicalUnavailableCapacity : 0
  EsModule
        SerialNumber            : SGAMS0003BBLM167
        Status                  : NORMAL
        Model                   : PCA-00023-02-D
  Chassis
        SerialNumber            : SGAMS00038CLN008
        Status                  : NORMAL
        Model                   : 1000-00008-00
  FanModuleNumber                   : 0
        Model                       : PWR-00002-01-A
        SerialNumber                : CNART0003A3LA15C
        HardwareComponentStatus     : NORMAL
        TemperatureStatus           : NORMAL
        NumberOfTemperatureSensors  : 1
        NumberOfFans                : 0
        NumberOfFailedFans          : 0
  FanModuleNumber                   : 1
        Model                       : PWR-00002-01-A
        SerialNumber                : CNART0003A3LA161
        HardwareComponentStatus     : NORMAL
        TemperatureStatus           : NORMAL
        NumberOfTemperatureSensors  : 1
```

```
             NumberOfFans                  : 0
             NumberOfFailedFans            : 0
       RaidControllerNumber      : 0
             HardwareComponentStatus : NORMAL
             TemperatureStatus        : NORMAL
             Model                    : 1450-00014-03
             FirmwareVersion          :
2050-00036-072006-072006
             SerialNumber             : SGAMS000448GE011
             FibreChannelPort
                  PortStatus          : CONNECTED
                  ConnectionType      : COPPER
                  ConnectorId         : FC0
                  Speed               : 2000002000
                  Topology            : POINT_TO_POINT
                  PortSfpStatus       : INVALID
                  SfpVendorName       :
                  SfpPartNumber       :
                  SfpRevision         :
             FibreChannelPort
                  PortStatus          : CONNECTED
                  ConnectionType      : COPPER
                  ConnectorId         : FC1
                  Speed               : 2000000000
                  Topology            : POINT_TO_POINT
                  PortSfpStatus       : INVALID
                  SfpVendorName       :
                  SfpPartNumber       :
                  SfpRevision         :
             FibreChannelPort
                  PortStatus          : CONNECTED
                  ConnectionType      : COPPER
                  ConnectorId         : FC2
                  Speed               : 2000000000
                  Topology            : POINT_TO_POINT
                  PortSfpStatus       : INVALID
                  SfpVendorName       :
                  SfpPartNumber       :
                  SfpRevision         :
             FibreChannelPort
                  PortStatus          : CONNECTED
                  ConnectionType      : COPPER
                  ConnectorId         : FC3
                  Speed               : 2000000000
                  Topology            : POINT_TO_POINT
                  PortSfpStatus       : INVALID
                  SfpVendorName       :
                  SfpPartNumber       :
                  SfpRevision         :
       RaidControllerNumber      : 1
             HardwareComponentStatus : NORMAL
             TemperatureStatus        : NORMAL
             Model                    : 1450-00014-21
```

```
        FirmwareVersion          :
2050-00036-072006-072006
        SerialNumber             : GE0300211071002091
        FibreChannelPort
            PortStatus           : CONNECTED
            ConnectionType       : COPPER
            ConnectorId          : FC0
            Speed                : 2000000000
            Topology             : POINT_TO_POINT
            PortSfpStatus        : INVALID
            SfpVendorName        :
            SfpPartNumber        :
            SfpRevision          :
        FibreChannelPort
            PortStatus           : CONNECTED
            ConnectionType       : COPPER
            ConnectorId          : FC1
            Speed                : 2000000000
            Topology             : POINT_TO_POINT
            PortSfpStatus        : INVALID
            SfpVendorName        :
            SfpPartNumber        :
            SfpRevision          :
        FibreChannelPort
            PortStatus           : CONNECTED
            ConnectionType       : COPPER
            ConnectorId          : FC2
            Speed                : 2000000000
            Topology             : POINT_TO_POINT
            PortSfpStatus        : INVALID
            SfpVendorName        :
            SfpPartNumber        :
            SfpRevision          :
        FibreChannelPort
            PortStatus           : CONNECTED
            ConnectionType       : COPPER
            ConnectorId          : FC3
            Speed                : 2000000000
            Topology             : POINT_TO_POINT
            PortSfpStatus        : INVALID
            SfpVendorName        :
            SfpPartNumber        :
            SfpRevision          :
```

`call_home`

DESCRIPTION

Manages the Call-Home settings on a Pillar Axiom system and notifies Pillar World Wide Customer Support Center of status and configuration information or any issues. For example, when a component operates in degraded mode or fails, the system automatically performs failover actions. Although a component failure does not cause downtime, manual intervention is sometimes required to repair or replace the failed component. The Pillar Axiom system will then send a Call-Home message to Pillar World Wide Customer Support Center to initiate the repair or replacement process.

Use the `call_home` command to enable and configure the Call-Home settings for the types of Call-Home bundles such as a large file, as well as primary and secondary periodic log collections.

You can use the `-verify` option to test the command-line argument and its options before running it in Pillar Axiom CLI. If no errors exist, the Pillar Axiom CLI command returns without executing. For example, the `-verify` option is helpful when writing scripts in which a particular Pillar Axiom CLI command usage can be verified prior to adding it to a script.

You can use the `-outputformat` or the `-o` command option to specify how to display the results of running a command. If you do not specify either the `-outputformat` or the `-o` command option, the results display in the default `text` format. Valid options:

text The system displays the results in the plain-text format.

xml The system displays the results in the tagged XML format.

You can use the `-sessionKey` option to specify which Pillar Axiom system to access and which session key value to use for validation. The Pillar Axiom CLI displays the session key value when you log in to the Pillar Axiom system using the `-returnKey` option.

You can use the `-timeout` option to set a time limit for the execution of a command. If the command takes longer than the number of seconds specified in the `-timeout` option, the system stops executing the command. If you do not specify the `-timeout` option, the system does not set any time limit for executing the command.

SYNTAX

```
axiomcli call_home -modify
    [{-enableEventTrigger | -disableEventTrigger}]
    [{-enableLargeFile | -disableLargeFile}]
    [{-enableStandardPeriodic |
-disableStandardPeriodic}]
```

```
        [{-enableLargerPeriodic | -disableLargerPeriodic}]
        [-numberOfEvents number-of-events-to-include]
        [{-pillarDestination [-server server-ip-or-dns]
            {-scp
            | -https [{-enableProxy | -disableProxy}]
                        [-proxyIp proxy-ip]
                        [-proxyPort proxy-port]
                        [-proxyConnection {http |socks4 |
                         socks5}]
          }
        |-localDestination local-server-ip-or-dns
           -directory local-directory
             {-userName user-name -password password
             | -certificate}
         }
        ]
        [-schedulePeriodic {standard | large}
            -interval {daily | weekly | monthly}
            -frequency interval-frequency
            -startTime date-time
        ]
        [-verify]
        [{-outputformat | -o} {text | xml}]
        [-sessionKey session-key]
        [-timeout timeout-in-seconds]

axiomcli call_home -list [-settings] [-matrix]
[-details] [-verify]
        [{-outputformat | -o} {text | xml}]
        [-sessionKey session-key]
        [-timeout timeout-in-seconds]

axiomcli call_home -test [-verify]
        [{-outputformat | -o} {text | xml}]
        [-sessionKey session-key]
        [-timeout timeout-in-seconds]

axiomcli call_home -reset [-verify]
        [{-outputformat | -o} {text | xml}]
        [-sessionKey session-key]
        [-timeout timeout-in-seconds]

axiomcli call_home -uploadMatrix -file matrix-file-name
[-verify]
        [{-outputformat | -o} {text | xml}]
        [-sessionKey session-key]
        [-timeout timeout-in-seconds]

axiomcli call_home -help
```

PARAMETERS   **Note:** Only the Primary Administrator and Administrator 1 roles can issue all command options.

-modify

Modifies the Call-Home settings for the Pillar Axiom system.

Valid options:

-enableEventTrigger

Enables triggering Call-Home actions based on system events. The Call-Home matrix resident on the Pillar Axiom system contains the list of system events that trigger a Call-Home action.

-disableEventTrigger

Disables triggering Call-Home actions.

-enableLargeFile

Enables large files to be sent to the Call-Home server so that trace logs and performance statistics are automatically included in the Call-Home logs.

-disableLargerPeriodic

Excludes trace logs and performance statistics from the Call-Home status messages that are sent to Pillar Data Systems.

-enableStandardPeriodic

Enables the periodic sending of Call-Home header data to the Call-Home destination server.

-disableStandardPeriodic

Disables the periodic sending of Call-Home header data to the Call-Home destination server.

-enableLargerPeriodic

Enables the periodic sending of larger Call-Home data to the Call-Home destination server. If you do not enable large Call-Home file transfers using the -disableLargeFile option, enabling larger periodic transfers has the same effect as enabling standard periodic transfers using the -enableStandardPeriodic option.

-disableLargerPeriodic

Disables the periodic sending of larger Call-Home data to the Call-Home destination server.

-numberOfEvents

Specifies the maximum number of system events to be included in the Call-Home status messages. The number of system events should be greater than or equal to zero.

-pillarDestination

Specifies that Call-Home logs and messages should be sent to Pillar Data Systems.

-server	Identifies the IP address or the domain name of the Call-Home server, callhome.support.pillardata.com. Valid options: □ IP: The IP address for the SNMP server □ DNS: The Domain Name Service (DNS) for the SNMP server
-scp	Specifies the use of secure copy (SCP) with 1024-bit encryption and secure keys to transfer files directly over the Internet to the Pillar World Wide Customer Support Center.
-https	Sends files either directly to the Pillar server through a secure Internet connection or to a proxy server.
-enableProxy	Sends Call-Home logs through a proxy server for security purposes or when the Pillar Axiom system does not have direct access to the Internet.
-disableProxy	Sends Call-Home logs without using a proxy server.
-proxyIp	Identifies the DNS server name or IP address of the proxy server.
-proxyPort	Identifies the port that is used by the proxy server to send the Call-Home log files.

| `-proxyConnection` | Identifies the type of protocol that is used to access the proxy server. Valid options: |

> HTTP
> SOCKS4
> SOCKS5

If you specify the `-server` option, the Domain Name Server (DNS) is used to resolve IP addresses. This includes an email server that sends Call-Home log collection bundles from the system to Pillar Data Systems.

The Call-Home status messages can be sent either with the `-scp` or `-https` protocol options, but not both. The `-scp` option enables the secure copy (SCP) protocol with 1024-bit encryption and secure keys. The `https` option enables the Hypertext Transfer Protocol Secure (HTTPS) to send files either directly to Pillar Data Systems or through a proxy server for security purposes.

If you specify the `-https` option, the proxy settings must be specified with the following options:

> `-enableProxy`: The proxy setting. If you use the `-enableProxy` option, you must specify the `-proxyIp`, `-proxyPort`, and `-proxyConnection` options.
> `-disableProxy`: No proxy used.
> `-proxyIp`: The IP address of the proxy server.
> `-proxyPort`: The port that is used by the proxy server to send the Call-Home log files
> `-proxyConnection`: The type of protocol (HTTP, SOCKS4, or SOCKS5) that is used to access the proxy server.

Note: The `-pillarDestination` and `-localDestination` options are mutually exclusive.

-localDestination

Specifies that Call-Home status messages should be sent to a local server by providing the IP address or domain name of the local server.

The `-directory` option identifies the full directory path on the target server in which to store the Call-Home log files.

If you specify the `-certificate` option, the customer certificate is used for authentication. If you do not specify the `-certificate` option, you must specify the `-userName` and `-password` options to provide the proper credentials for authentication.

Note: The `-pillarDestination` and `-localDestination` options are mutually exclusive.

-schedulePeriodic

Specifies the schedule for sending the Call-Home status messages to the destination server. Valid options:

- `standard`: Standard status message
- `large`: Large status message

You can set the Call-Home data transfers in `-intervals` and `-frequency`.

Valid options:
monthly

1 through 3

weekly

1 through 14

daily

1 through 100

For example, to transfer data every other week, enter **-interval weekly frequency 2**. You can also provide the `-startTime` to indicate the time and date when to begin the periodic transfers.

The format of date-time is `YYYY-MM-DD[THH[:mm[:SS[.xxx]]]][+-HH:mm]` where:

- `YYYY-MM-DD` designates a four-digit year, two-digit month, and two-digit day for the date.
- `T` is a separator that designates the start of the time portion of the string.
- `HH:mm:SS.xxx` designates hours, minutes, and seconds (to three decimals places) in values for a 24-hour clock.

- ■ + -HH:mm designates the time zone as an offset from Coordinated Universal Time (UTC) in hours and minutes. The plus (+) or minus (-) prefix must be provided.

Note: Only one periodic schedule can be modified at a time. To modify both the standard and large schedules, a separate axiomcli call_home -modify command must be issued for each periodic schedule.

-list

Displays the Call-Home settings, matrix information, or both. The matrix information stores the format and version of the Call-Home matrix.

Valid options:
-settings

Displays the user-defined values such as number of recent events, Call-Home destination server, and if event trigger has been enabled. The user credentials are not displayed.

If you specify the -matrix option, both the Call-Home matrix information and user defined values are displayed. To display the matrix settings, you have to specify the -settings option.

Note: Only the Primary Administrator, Administrator 1, Administrator 2, and Monitor roles can issue the axiomcli call_home -list -settings command option.

-matrix

Displays the version and format of the Call-Home matrix.

If you specify the -settings option, both the Call-Home matrix information and user defined values are displayed.

Note: All authorized roles can issue the axiomcli call_home -list -matrix command option.

-details

Does not display any additional information and is present only for consistency.

-test

Tests the Call-Home feature to verify that it is correctly configured. The Call-Home information is collected and stored on the Pillar Axiom system and can be downloaded

using the `system_log -download` command. You can also send the Call-Home information to a server using the `call_home -send` command.

Note: Only the Primary Administrator, Administrator 1, Administrator 2, and Monitor roles can issue the `-test` command option.

-reset

Restores the Call-Home feature functionality to the default settings.

Note: Only the Primary Administrator, Administrator 1, Pillar Support, and Support roles can issue the `-reset` command option.

-uploadMatrix

Uploads the Call-Home matrix file, replacing the existing matrix file in the Pillar Axiom system.

Note: Only the Pillar Support and Support roles can issue this command option.

Valid options:
-file

Specifies the matrix file name.

-help

Displays the detailed command help information.

EXAMPLE   Run `axiomcli call_home` to display the Call-Home settings:

axiomcli call_home -list -matrix -settings

Results:

```
MatrixInformation
    Version                                  : 1
    Format                                   : 3.0
    UploadTime                               :
2011-04-01T18:41:23.000
CallHomeSettings
    EventTriggerEnabled                      : true
    StandardPeriodicTriggerEnabled    : true
    LargerPeriodicTriggerEnabled      : true
    LargeFileTransferEnabled          : true
    NumberOfRecentEvents              : 100
    CallHomeDestination
        PillarDestination
            Server                    :
```

```
callhome.support.pillardata.com
          TransportOptions
               Https
                    ProxyEnabled            : false
                    ProxyServer             : 192.168.1.1
                    ProxyPort               : 8080
                    ProxyConnection         : SOCKS5
     StandardPeriodicCallHomeSchedule
          Interval                          : WEEKLY
          UnitsBetween                      : 1
          InitialExecution                  :
2011-04-02T14:29:33.978
     LargerPeriodicCallHomeSchedule
          Interval                          : MONTHLY
          UnitsBetween                      : 3
          InitialExecution                  :
2011-04-02T14:29:33.978
```

`clone_lun`

DESCRIPTION   Manages snapshots of a LUN on a Pillar Axiom system. A Clone LUN is a point-in-time, read-write copy of a LUN that you can immediately use. A Clone LUN retains the same Quality of Service (QoS) parameters as the source LUN and consumes storage capacity from the Clone LUN storage space created for the source LUN. A Clone LUN is available immediately after creation. Clone LUNs provide a convenient method to branch from the source data without the need to do a full block-level copy.

Use the `clone_lun` command to manage Clone LUNs.

You can use the `-verify` option to test the command-line argument and its options before running it in Pillar Axiom CLI. If no errors exist, the Pillar Axiom CLI command returns without executing. For example, the `-verify` option is helpful when writing scripts in which a particular Pillar Axiom CLI command usage can be verified prior to adding it to a script.

You can use the `-outputformat` or the `-o` command option to specify how to display the results of running a command. If you do not specify either the `-outputformat` or the `-o` command option, the results display in the default `text` format. Valid options:

text   The system displays the results in the plain-text format.

xml   The system displays the results in the tagged XML format.

You can use the `-sessionKey` option to specify which Pillar Axiom system to access and which session key value to use for validation. The Pillar Axiom CLI displays the session key value when you log in to the Pillar Axiom system using the `-returnKey` option.

You can use the `-timeout` option to set a time limit for the execution of a command. If the command takes longer than the number of seconds specified in the `-timeout` option, the system stops executing the command. If you do not specify the `-timeout` option, the system does not set any time limit for executing the command.

Note: The `clone_lun` command replaces the deprecated `diskbackup` command and the retired `snaplun` command.

SYNTAX   ```
axiomcli clone_lun -add -name clone-lun-name
     -source source-lun-id-or-fqn
     [-addressableCapacity addressable-logical-capacity]
     [-priority {premium | high | medium | low |
```

```
archive}]
    [-volumeGroup volume-group-id-or-fqn]
    [{-mapped | -unmapped [-lunNumber lun-number]}]
    [{-fibreChannelAccess | -noFibreChannelAccess}]
    [{-iscsiAccess | -noIscsiAccess}]
    [-maskedSlammerPorts port-name [,port-name]...]
    [-inactive]
    [-verify]
    [{-outputformat | -o} {text | xml}]
    [-sessionKey session-key]
    [-timeout timeout-in-seconds]
```

```
axiomcli clone_lun -modify -cloneLun clone-lun-id-or-fqn
    [-newName new-name]
    [-addressableCapacity addressable-logical-capacity]
    [-priority {premium | high | medium | low |
archive}]
    [-volumeGroup volume-group-id-or-fqn]
    [{-mapped | -unmapped [-lunNumber lun-number]}]
    [{-fibreChannelAccess | -noFibreChannelAccess}]
    [{-iscsiAccess | -noIscsiAccess}]
    [-maskedSlammerPorts port-name [,port-name]...]
    [{-active | -inactive}]
    [-clearLossOfSync]
    [-clearLostData]
    [-clearPinnedData]
    [-verify]
    [{-outputformat | -o} {text | xml}]
    [-sessionKey session-key]
    [-timeout timeout-in-seconds]
```

```
axiomcli clone_lun -copy -source source-clonelun-id-or-fqn
    -name clone-lun-name
    [-addressableCapacity addressable-logical-capacity]
    [{-profile performance-profile-id-or-fqn
    | -priority {premium | high | medium | low |
     archive}
        [-redundancy {1 | 2}]
        [-accessBias {sequential | random | mixed}]
        [-ioBias {read | write | mixed}]}
    ]
    [-allocatedCapacity allocated-logical-capacity]
    [-cloneCapacity clone-capacity]
    [-volumeGroup volume-group-id-or-fqn]
    [{-mapped | -unmapped [-lunNumber lun-number]}]
    [{-fibreChannelAccess | -noFibreChannelAccess}]
    [{-iscsiAccess | -noIscsiAccess}]
    [-maskedSlammerPorts port-name [,port-name]...]
    [-storageDomain storage-domain-id-or-fqn]
    [-storageClass {sataHd | fcHd | slcSsd | mlcSsd}]
```

```
        [{-active | -inactive}]
        [-copyPriority {auto | low | high}]
        [-suppressConservativeMode]
        [-verify]
        [{-outputformat | -o} {text | xml}]
        [-sessionKey session-key]
        [-timeout timeout-in-seconds]
```

```
axiomcli clone_lun -list [-details [-bs]]
        [-cloneLun clone-lun-id-or-fqn [,clone-lun-id-or-fqn]...]
        [-source source-lun-id-or-fqn [,source-lun-id-or-fqn]...
[-hierarchy]]
        [-volumeGroup volume-group-id-or-fqn
[,volume-group-id-or-fqn]...]
        [-verify]
        [{-outputformat | -o} {text | xml}]
        [-sessionKey session-key]
        [-timeout timeout-in-seconds]
```

```
axiomcli clone_lun -delete -cloneLun clone-lun-id-or-fqn
[,clone-lun-id-or-fqn]...
        [-verify]
        [{-outputformat | -o} {text | xml}]
        [-sessionKey session-key]
        [-timeout timeout-in-seconds]
```

```
axiomcli clone_lun -restore -cloneLun clone-lun-id-or-fqn
        [-verify]
        [{-outputformat | -o} {text | xml}]
        [-sessionKey session-key]
        [-timeout timeout-in-seconds]
```

```
axiomcli clone_lun -help
```

PARAMETERS

Note: Only the Primary Administrator, Administrator 1, and Administrator 2 roles can issue all command options.

All roles can issue the `-list` command option.

-add

Creates a partial copy block-level snapshot of a LUN.

Valid options:
-name

Identifies the name that is assigned to a LUN for administrative purposes. LUN names must be unique across the Pillar Axiom system and must be 82 or fewer UTF characters, or 255 or fewer ASCII characters.

You cannot use invalid characters such as ASCII 0 through 31 control codes or embedded tabs. You also cannot use special characters such as the slash (/) or backslash (\), and dot (.) and dot-dot (..) by themselves.

-source

Specifies the ID or FQN of a LUN to clone.

-addressableCapacity

Identifies the addressable logical capacity of the Clone LUN. This value cannot be smaller than the current addressable capacity of the source LUN.

-priority

Specifies the QoS priority of the LUN. This option is mutually exclusive with the -profile option.

Valid options:

premium	Highest processing queue priority. Striping occurs across eight serial ATA (SATA) RAID groups or four Fibre Channel (FC) RAID groups on the outermost 20% of the drive platters.
high	Next highest processing queue priority. Striping occurs across eight SATA RAID groups or four FC RAID groups on the outermost 20-40% of the drive platters.
medium	Intermediate processing queue priority. Striping occurs across six SATA RAID groups or three FC RAID groups on the outermost 40-60% of the drive platters.
low	Next to lowest processing queue priority. Striping occurs across four SATA RAID groups or two FC RAID groups on the outermost 60-80% of the drive platters.

archive　　　　　　　Lowest processing queue priority. Striping occurs across four SATA RAID groups or two FC RAID groups on the outermost 80-100% of the drive platters.

-volumeGroup

Identifies the volume group, in which the Clone LUN should be added.

Valid options:

ID　　　　　　　　　A 38-character string that starts with ID and ends with 36 lower-case hex characters (a through f and 0 through 9) and hyphens. Example ID:

```
ID12345678-9abc-def0-
1234-56789abcdef0
```

Fully qualified name (FQN)　　Starts with a leading slash (/), contains a parent object's name if needed to establish uniqueness of the object, and ends with the object's name. Example FQN:

```
/Fully/Qualified/
ObjectName
```

If you do not specify the volume group, the system by default puts the new Clone LUN into the volume group at the top level.

-mapped

Identifies that the LUN is mapped to specific hosts.

-unmapped

Enables all hosts to have visibility to the LUN. If you do not specify either -mapped or -unmapped option, -mapped is the default value.

If you specify the -unmapped option, you can specify an additional -lunNumber option that assigns *lun-number* as the new LUN number.

-lunNumber

Identifies the optional LUN number to assign to the Clone LUN when you specify the `-unmapped` option.

-fibreChannelAccess

Allows access to the new LUN through the FC ports. The `-noFibreChannelAccess` option disables FC access to the LUN. If neither option is specified, then the system uses the `-fibreChannelAccess` option by default.

-iscsiAccess

Allows access to the new Clone LUN through the iSCSI ports.

If you do not specify this option, `-noIscsiAccess` disables the iSCSI access to the Clone LUN.

-maskedSlammerPorts

Masks access to the LUN through the Slammer ports specified in the list of *port-name* arguments. You can specify this option if the `-slammerNode` option is also specified. If you do not specify this option, the LUN is accessible on all of the Slammer ports.

The format for the *port-path* argument is:

```
/slammer name/CUx/Porty/(fc | iscsi)
```

For example, `/Slammer1/CU0/Port1/fc` specifies control unit 0 and fibre channel port 1. The `CU` and `Port` values are case insensitive and may be omitted entirely (for example `/0/0/iscsi` specifies control unit 0 and iSCSI port 0). You may specify up to 16 ports.

-inactive

Makes the newly created Clone LUN inaccessible to all hosts.

If you do not specify this option, the Clone LUN will be accessible to all hosts.

-modify

Modifies the name, the addressable logical capacity, and other parameters of a Clone LUN.

Valid options:
-cloneLun

Identifies the ID or FQN of the Clone LUN you want to modify.

-newName

Identifies the new name for the Clone LUN.

-addressableCapacity

Identifies the addressable logical capacity of the Clone LUN. This value cannot be smaller than the current addressable capacity of the source LUN.

-priority

Specifies the QoS priority of the LUN. This option is mutually exclusive with the -profile option.

Valid options:

premium	Highest processing queue priority. Striping occurs across eight serial ATA (SATA) RAID groups or four Fibre Channel (FC) RAID groups on the outermost 20% of the drive platters.
high	Next highest processing queue priority. Striping occurs across eight SATA RAID groups or four FC RAID groups on the outermost 20-40% of the drive platters.
medium	Intermediate processing queue priority. Striping occurs across six SATA RAID groups or three FC RAID groups on the outermost 40-60% of the drive platters.
low	Next to lowest processing queue priority. Striping occurs across four SATA RAID groups or two FC RAID groups on the outermost 60-80% of the drive platters.
archive	Lowest processing queue priority. Striping occurs across four SATA RAID groups or two FC RAID groups on the outermost 80-100% of the drive platters.

-volumeGroup

Identifies the volume group, in which the Clone LUN should be added.

Valid options:

ID	A 38-character string that starts with ID and ends with 36 lower-case hex characters (a through f and 0 through 9) and hyphens. Example ID:
	
	 `ID12345678-9abc-def0-`
	`1234-56789abcdef0`

Fully qualified name (FQN)	Starts with a leading slash (/), contains a parent object's name if needed to establish uniqueness of the object, and ends with the object's name. Example FQN:
	
	 `/Fully/Qualified/`
	`ObjectName`

If you do not specify the volume group, the system by default puts the new Clone LUN into the volume group at the top level.

-mapped

Identifies that the LUN is mapped to specific hosts.

-unmapped

Enables all hosts to have visibility to the LUN. If you do not specify either `-mapped` or `-unmapped` option, `-mapped` is the default value.

If you specify the `-unmapped` option, you can specify an additional `-lunNumber` option that assigns *lun-number* as the new LUN number.

-lunNumber

Identifies the optional LUN number to assign to the Clone LUN when you specify the `-unmapped` option.

-fibreChannelAccess

Allows access to the new LUN through the FC ports. The `-noFibreChannelAccess` option disables FC access to

the LUN. If neither option is specified, then the system uses the `-fibreChannelAccess` option by default.

-iscsiAccess

Allows access to the new Clone LUN through the iSCSI ports.

If you do not specify this option, `-noIscsiAccess` disables the iSCSI access to the Clone LUN.

-maskedSlammerPorts

Masks access to the LUN through the Slammer ports specified in the list of *port-name* arguments. You can specify this option if the `-slammerNode` option is also specified. If you do not specify this option, the LUN is accessible on all of the Slammer ports.

The format of *port-path* argument is:

```
/slammer name/CUx/Porty/(fc | iscsi)
```

For example, `/Slammer1/CU0/Port1/fc` specifies control unit 0 and fibre channel port 1. The `CU` and `Port` values are case insensitive and may be omitted entirely (for example `/0/0/iscsi` specifies control unit 0 and iSCSI port 0). You may specify up to 16 ports.

-active

Activates the Clone LUN to be visible to the host so that data can be accessed.

If an active Clone LUN is globally mapped or mapped to a host it is visible on the data path. The mapping configuration of the Clone LUN determines what hosts are visible to it. If a Clone LUN is mapped to one or more hosts, but is not active, the Clone LUN cannot be seen by any of the hosts that should have access to it. You can activate and deactivate Clone LUNs as many times as needed.

-inactive

Disables the Clone LUN from being accessible by all hosts.

-clearLossOfSync

Clears the loss of synchronization of the specified LUN.

-clearLostData

Clears any lost data from the specified LUN.

-clearPinnedData

Clears any pinned data on the specified LUN.

-copy

Creates a full copy of an existing Clone LUN. The parameters have the same meanings as `axiomcli lun -add` command. If you do not specify any of the options, the system uses the value of the source Clone LUN options.

Note: The Administrator 2 role can also issue this command option.

Valid options:
-source

Identifies the source Clone LUN.

-name

Identifies the name for the Clone LUN copy.

-addressableCapacity

Identifies the addressable logical capacity of the Clone LUN. This value cannot be smaller than the current addressable capacity of the source LUN.

-profile

Identifies the ID or FQN of the Quality of Service (QoS) performance profile that should be applied when creating the Clone LUN. When creating a new LUN, either the `-profile` option or the `-priority` option, but not both, must be provided.

Note: The `-profile` option is mutually exclusive with `-priority`.

-priority

Identifies the QoS priority of the Clone LUN. For a full copy, priority does affect striping of the new LUN.

Valid options:

premium	Highest processing queue priority. Striping occurs across eight serial ATA (SATA) RAID groups or four Fibre Channel (FC) RAID groups on the outermost 20% of the drive platters.
high	Next highest processing queue priority. Striping occurs

<table>
<tr><td></td><td>across eight SATA RAID groups or four FC RAID groups on the outermost 20-40% of the drive platters.</td></tr>
<tr><td>**medium**</td><td>Intermediate processing queue priority. Striping occurs across six SATA RAID groups or three FC RAID groups on the outermost 40-60% of the drive platters.</td></tr>
<tr><td>**low**</td><td>Next to lowest processing queue priority. Striping occurs across four SATA RAID groups or two FC RAID groups on the outermost 60-80% of the drive platters.</td></tr>
<tr><td>**archive**</td><td>Lowest processing queue priority. Striping occurs across four SATA RAID groups or two FC RAID groups on the outermost 80-100% of the drive platters.</td></tr>
</table>

Note: The `-priority` option is mutually exclusive with `-profile`.

`-redundancy`

Identifies how many mirror copies (`1` or `2`) of the original data are maintained. The default is `1`.

Valid options:

1 The standard option.

Stores original data only. Data striping over multiple RAID groups maintains full redundancy, even without mirror copies.

Note: Standard does not maintain redundancy at the LUN level; however, it does provide sufficient data protection for most purposes.

2 The double option.

Stores original data and one mirror copy, with data striping over multiple RAID groups.

Note: Double Redundancy can only provide true redundancy if your system has enough Bricks to allocate for the LUN such that no two mirror copies share a RAID group.

-accessBias

Identifies the expected access pattern to the LUN.

Valid options:

sequential	Read and write requests from client applications tend to request operations on the data one record after the other.
random	Read and write requests from client applications tend to request operations on the data records in an arbitrary order.
mixed	Read and write requests from client applications tend to mix the request operations on the data sometimes in sequential and sometimes in random order.

-ioBias

Identifies the expected read/write bias on the LUN.

read	Most requests from client applications are for read operations.
write	Most requests from client applications are for write operations.
mixed	Requests from client applications are likely equal for read and write operations.

-allocatedCapacity

Defines the actual amount of storage that is assigned to a logical volume. An allocated capacity can grow to and possibly exceed by a small amount the addressable logical capacity.

-cloneCapacity

Specifies the size of an extra space (in gigabytes) to set aside for the creation of filesystem clones using the clone_filesystem command.

-storageDomain

Specifies the Storage Domain in which to create the filesystem. If you do not provide this option, the system determines which Bricks contain the data.

-storageClass

Specifies the Storage Class to use for the default tier of the newly created filesystem. You can skip this option if the Pillar Axiom system supports only one type of the Storage Class. If this option is omitted and the Pillar Axiom system supports two or more storage classes, the command fails, and the system prompts to provide the -storageClass option.

Valid options:

- sataHd (Serial ATA hard drives)
- fcHd (Fibre Channel hard drives)
- slcSsd (single-layer cell, solid state drives)
- mlcssd (SATA multi-layer cell solid state disk drives)

-active

Enables the LUN to be accessible and available for use.

-inactive

Disables the LUN from being accessible and available for use.

-copyPriority

Identifies the setting to use that controls the impact on performance when you need to copy or migrate data from one location to another.

Valid options:

auto   The system finds a compromise between completion rate and system performance.

low   The system takes its time to complete the copy and data migration without degrading overall system performance.

high   The system completes the copy or data migration as quickly as possible even if there is degradation of system performance.

If you do not specify any option, `auto` is the default value.

-suppressConservativeMode

Prevents the Pillar Axiom system from entering conservative mode for the specified LUN.

⚠ Caution	If a CU fails, the system does not enable *write through*. If the remaining CU fails, any data that has not been written to the Bricks is lost.

-list

Displays information for Clone LUNs that exist on the Pillar Axiom system.

Note: The system will not display the following capacity values because they are not applicable to Clone LUNs:

- AllocatedCapacity
- UsedCapacity
- PhysicalAllocatedCapacity
- PhysicalUsedCapacity
- PhysicalMaximumCapacity

Valid options:
-details

Displays additional information for each Clone LUN, such as the name of the source LUN or Clone LUN.

-bs

Displays information about the underlying VLUNs associated with the SAN LUNs.

-cloneLun

Displays the specified Clone LUN. If you do not specify this option, the system displays all Clone LUNs.

-source

Displays Clone LUNs of a specified source LUN.

-hierarchy

Displays a hierarchal view of all of the Clone LUNs associated with each source LUN.

-volumeGroup

Limits the list of Clone LUNs to those in the specified volume groups.

-delete

Deletes one or more Clone LUNs.

Valid options:
-cloneLun

Specifies the ID or FQN of a Clone LUN to delete.

-restore

Restores the source of a Clone LUN to its state as captured by the specified Clone LUN.

Valid options:
-cloneLun

Specifies the ID or FQN of a Clone LUN from which to restore the source.

-help

Displays the detailed command help information.

EXAMPLE

Run the `clone_lun -list -details` command to view information for Clone LUNs that exist on the Pillar Axiom system:

```
axiomcli clone_lun -list -details
```

Results:

```
/Clone1
        Name                               : Clone1
        Id                                 :
4130303030303142A1040505B29AAB87
        SerialNumber                       :
000B080006000001
        VolumeGroup                        : /
        VolumeGroupId                      :
4130303030303142A10A000000000000
        SourceLunId                        :
4130303030303142A10404FBD4A7A540
        SourceLunFqn                       : /Lun1
        StorageClass                       : satahd
        AddressableCapacity                : 100
        ManagementState                    : AVAILABLE
        AssignedSlammer
            SlammerId                          :
```

```
2008000B08000052
        SlammerFqn                              : /
PillarSlammer1/0
    CurrentSlammer
        SlammerId                               :
2008000B08000052
        SlammerFqn                              : /
PillarSlammer1/0
    TouchedBrickNode
        BrickNodeId                             :
200C000B08000007
        BrickNodeFqn                            : /
PillarBrick2/0
    TouchedBrickNode
        BrickNodeId                             :
200C000B08000006
        BrickNodeFqn                            : /
PillarBrick1/0
    StorageDomainIdentityId          :
413030303030303142A114000000001FFA
    StorageDomainIdentityFqn         : /default
    Mapped                           : true
    Redundancy                       : STANDARD
    Priority                         : LOW
    AccessBias                       : mixed
    IoBias                           : mixed
    FibreChannelAccess               : true
    IScsiAccess                      : false
    Status                           : ONLINE
    Active                           : true
    Clone                            : true
    CreationTime                     :
2011-09-01T23:28:51.000
    CopyPriority                     : auto
    ConservativeMode                 : allowed
```

errors

DESCRIPTION   Use `errors` to view the list of all of the possible errors that the Pillar Axiom system may generate.

You can use the `-verify` option to test the command-line argument and its options before running it in Pillar Axiom CLI. If no errors exist, the Pillar Axiom CLI command returns without executing. For example, the `-verify` option is helpful when writing scripts in which a particular Pillar Axiom CLI command usage can be verified prior to adding it to a script.

You can use the `-outputformat` or the `-o` command option to specify how to display the results of running a command. If you do not specify either the `-outputformat` or the `-o` command option, the results display in the default `text` format. Valid options:

text   The system displays the results in the plain-text format.

xml   The system displays the results in the tagged XML format.

You can use the `-sessionKey` option to specify which Pillar Axiom system to access and which session key value to use for validation. The Pillar Axiom CLI displays the session key value when you log in to the Pillar Axiom system using the `-returnKey` option.

You can use the `-timeout` option to set a time limit for the execution of a command. If the command takes longer than the number of seconds specified in the `-timeout` option, the system stops executing the command. If you do not specify the `-timeout` option, the system does not set any time limit for executing the command.

SYNTAX
```
axiomcli errors -list [-details]
    [-verify]
    [{-outputformat | -o} {text | xml}]
    [-sessionKey session-key]
    [-timeout timeout-in-seconds]
```

```
axiomcli errors -help
```

PARAMETERS   Note: All roles can issue the `-list` command option.
-list

> Lists all of the errors that the Pillar Axiom system may generate.
>
> Valid options:
> **-details**

Displays complete information for each error, including the error name, the short description of the error, the long description of the error, and the comment. If the `-details` option is omitted, then the system displays only the name of the error.

-help

Displays the detailed command help information.

EXAMPLE   Run the `errors -list` command to view the list Pillar Axiom system errors:

```
axiomcli errors -list
```

Results:

```
INVALID_VLAN_TAG
INVALID_VOLUME_GROUP_SUID
INVALID_VOLUME_PUID
INVALID_VOLUME_SUID
INVALID_VOLUME_TYPE
INVALID_WRITE_CACHE_MODE
IO_EXCEPTION_WHILE_READING_MESSAGE
IP_ADDRESS_INVALID_FORMAT
IP_ADDRESS_NOT_PINGABLE
ISNS_SERVER_REGISTRATION_MUST_BE_ENABLED_FOR_ISNS_ACCES
S_CONTROL
JOB_CHOICE_NOT_SUPPORTED
LOCALE_COUNTRY_REQUIRES_LOCALE_LANGUAGE
LOCALE_VARIANT_REQUIRES_LOCALE_COUNTRY
LOCALE_VARIANT_REQUIRES_LOCALE_LANGUAGE
LOCK_INVALID
LOG_BUNDLE_TOO_LARGE_FOR_HTTPS_CALLHOME
LUN_DOES_NOT_EXIST
LUN_NOT_MAPPED
LUN_NUMBER_NOT_APPLICABLE_TO_MAPPED_LUN
LUN_NUMBER_NOT_AVAILABLE
LUN_NUMBER_NOT_SPECIFIED
LUN_NUMBER_REQUIRED_FOR_UNMAPPED_LUN
LUN_OFFLINE
LUN_PROTOCOL_REQUIRED
LUN_SLAMMER_NODE_PROTOCOL_MISMATCH
LUN_MAPPING_DOES_NOT_EXIST
MASKED_PORTS_MUST_BE_CONSISTENT_WITH_FAILOVER_SEQUENCE
...
```

`event_log`

DESCRIPTION

Event logs display the system events of a Pillar Axiom system. Events include management actions such as the creation or deletion of LUNs and any problems encountered by the Pillar Axiom system, such as hardware issues or other problems detected in the Slammer or the Pillar Axiom management software. You can set filters for severity and category types.

Use the `event_log -list` command to display events from the Pillar Axiom event log.

You can use the `-verify` option to test the command-line argument and its options before running it in Pillar Axiom CLI. If no errors exist, the Pillar Axiom CLI command returns without executing. For example, the `-verify` option is helpful when writing scripts in which a particular Pillar Axiom CLI command usage can be verified prior to adding it to a script.

You can use the `-outputformat` or the `-o` command option to specify how to display the results of running a command. If you do not specify either the `-outputformat` or the `-o` command option, the results display in the default `text` format. Valid options:

text The system displays the results in the plain-text format.

xml The system displays the results in the tagged XML format.

You can use the `-sessionKey` option to specify which Pillar Axiom system to access and which session key value to use for validation. The Pillar Axiom CLI displays the session key value when you log in to the Pillar Axiom system using the `-returnKey` option.

You can use the `-timeout` option to set a time limit for the execution of a command. If the command takes longer than the number of seconds specified in the `-timeout` option, the system stops executing the command. If you do not specify the `-timeout` option, the system does not set any time limit for executing the command.

SYNTAX

```
axiomcli event_log -list [-details]
     [-severity severity-value [,severity-value]...]
     [-before date-time] [-after date-time]
     [-eventType event-type]
     [-category category-value [,category-value]...]
     [-eventCount number-of-events] [-startingIndex
     starting-event-index]
     [-internal]
     [-verify]
```

```
        [{-outputformat | -o} {text | xml}]
        [-sessionKey session-key]
        [-timeout timeout-in-seconds]
```

```
axiomcli event_log -reset
        [-verify]
        [{-outputformat | -o} {text | xml}]
        [-sessionKey session-key]
        [-timeout timeout-in-seconds]
```

```
axiomcli event_log -help
```

PARAMETERS   **Note:** Only the Support role can issue the `-internal` option.

All roles can issue the `-list` command option.

-list

> Displays event types from the Pillar Axiom system event log.
>
> Valid options:
> **-details**
>
> Displays details for each event in the Pillar Axiom event log.
>
> **-severity**
>
> Requests events with the specified severity level. If you do not provide this option, the system displays events for all of the severity levels.
>
> Valid options:
> **informational**
>
> **warning**
>
> **pass**
>
> **fail**
>
> **critical**
>
> **-before**
>
> Specifies the date so that events that occurred on or before this date, and that match the selected filters, are displayed.
>
> The format of date-time is `YYYY-MM-DD[THH[:mm[:SS[.xxx]]]][+-HH:mm]` where:
>
> - `YYYY-MM-DD` designates a four-digit year, two-digit month, and two-digit day for the date.

- `T` is a separator that designates the start of the time portion of the string.
- `HH:mm:SS.xxx` designates hours, minutes, and seconds (to three decimals places) in values for a 24-hour clock.
- `+ -HH:mm` designates the time zone as an offset from Coordinated Universal Time (UTC) in hours and minutes. The plus (+) or minus (-) prefix must be provided.

For example, `axiomcli event_log -list -before 2006-07-25T14:30:00-08:00` would retrieve events of all severities that have occurred before 2:30 PM, July 25th, 2006 Pacific Time.

-after

Specifies the date so that events that occurred on or after this date, and that match the selected filters, are displayed.

The format of date-time is `YYYY-MM-DD[THH[:mm[:SS[.xxx]]]][+-HH:mm]` where:

- `YYYY-MM-DD` designates a four-digit year, two-digit month, and two-digit day for the date.
- `T` is a separator that designates the start of the time portion of the string.
- `HH:mm:SS.xxx` designates hours, minutes, and seconds (to three decimals places) in values for a 24-hour clock.
- `+ -HH:mm` designates the time zone as an offset from Coordinated Universal Time (UTC) in hours and minutes. The plus (+) or minus (-) prefix must be provided.

For example, `axiomcli event_log -list -after 2006-08-25T16:30:00-08:00` would retrieve events of all severities that have occurred after 4:30 PM, August 25th, 2006 Pacific Time.

-eventType

Displays events filtered by the specified event type.

-category

Displays events filtered by the specified set of categories. If you do not specify this option, the system displays events for all of the categories.

Valid options:
security

audit

system

-eventCount

Specifies the number of the most recent events to display.

-startingIndex

Requests events from a specified index position.

-internal

Displays internal support-specific events.

Note: Only the Pillar Support and Support roles can use this feature.

-reset

Clears the Pillar Axiom system event logs.

Note: Only the Pillar Support and Support roles can issue this command option.

-help

Displays the detailed command help information.

EXAMPLE   Run `event_log -list` to display the details of the event log:

```
axiomcli event_log -list
```

Results:

```
INFORMATIONAL      2011-04-01T18:30:39.655+00:00      Login
Succeeded
   LOGIN_SUCCEEDED
INFORMATIONAL      2011-04-01T18:30:23.396+00:00
Private Interconnect Topology
Manager State ChangePSG_PITMAN_EVENT_STATE_CHANGE
INFORMATIONAL      2011-04-01T18:30:20.256+00:00
Private Interconnect Topology
Manager Traffic Generator
StatusPSG_PITMAN_EVENT_TRAFFIC_GENERATOR_STATUS
WARNING            2011-04-01T18:30:10.934+00:00
Slammer Control Unit Boot Data
   PSG_DMS_EVENT_BOOTDATA
WARNING            2011-04-01T18:30:10.849+00:00
Slammer Control Unit Bezel Not
 DetectedPSG_DMS_EVENT_BEZEL_NOT_DETECTED
INFORMATIONAL      2011-04-01T18:27:12.196+00:00      One
```

```
or both pilots restarted.
   PCP_EVT_RESTARTED
INFORMATIONAL    2011-04-01T18:27:12.052+00:00    One
or both pilots restarted.
   PCP_EVT_RESTARTED
```

event_notification

DESCRIPTION

Creates and manages event notifications on a Pillar Axiom system. For example, using this command, you can define which types of events generate notifications, whom should be notified, and test the delivery of those notifications.

Use the `event_notification` command to manage all event notifications and the list of recipients who receive the event notifications.

You can use the `-verify` option to test the command-line argument and its options before running it in Pillar Axiom CLI. If no errors exist, the Pillar Axiom CLI command returns without executing. For example, the `-verify` option is helpful when writing scripts in which a particular Pillar Axiom CLI command usage can be verified prior to adding it to a script.

You can use the `-outputformat` or the `-o` command option to specify how to display the results of running a command. If you do not specify either the `-outputformat` or the `-o` command option, the results display in the default `text` format. Valid options:

text   The system displays the results in the plain-text format.

xml   The system displays the results in the tagged XML format.

You can use the `-sessionKey` option to specify which Pillar Axiom system to access and which session key value to use for validation. The Pillar Axiom CLI displays the session key value when you log in to the Pillar Axiom system using the `-returnKey` option.

You can use the `-timeout` option to set a time limit for the execution of a command. If the command takes longer than the number of seconds specified in the `-timeout` option, the system stops executing the command. If you do not specify the `-timeout` option, the system does not set any time limit for executing the command.

Note: The `event_notification` command replaces the deprecated `alert` command.

SYNTAX

```
axiomcli event_notification -add -name notification-name
    [-description descriptive-string]
    -recipients email-address [,email-address]...
    [-severity severity:category [,severity:category]...]
    [-eventType type [,type]...]
    [{-enable | -disable}]
    [-verify]
    [{-outputformat | -o} {text | xml}]
```

```
        [-sessionKey session-key]
        [-timeout timeout-in-seconds]

axiomcli event_notification -modify -eventNotification
event-notification-id-or-fqn
        [-description descriptive-string]
        [-recipients email-address [,email-address]...]
        [-severity severity:category [,severity:category]...]
        [-newname notification-name]
        [{-enable | -disable}]
        [-eventType type [,type]...]
        [-verify]
        [{-outputformat | -o} {text | xml}]
        [-sessionKey session-key]
        [-timeout timeout-in-seconds]

axiomcli event_notification -delete
        -eventNotification event-notification-id-or-fqn
            [,event-notification-id-or-fqn]...
        [-verify]
        [{-outputformat | -o} {text | xml}]
        [-sessionKey session-key]
        [-timeout timeout-in-seconds]

axiomcli event_notification -list [-details]
        [-eventNotification event-notification-id-or-fqn
            [,event-notification-id-or-fqn]...]
        [-verify]
        [{-outputformat | -o} {text | xml}]
        [-sessionKey session-key]
        [-timeout timeout-in-seconds]

axiomcli event_notification -test -recipients
email-address [,email-address]...
        [-verify]
        [{-outputformat | -o} {text | xml}]
        [-sessionKey session-key]
        [-timeout timeout-in-seconds]

axiomcli event_notification -help
```

PARAMETERS **Note:** Only the Primary Administrator and Administrator 1 roles can issue all command options; all roles can issue the `-list` command option.
-add

> Creates notifications for email recipients when specific Pillar Axiom system events occur.
>
> Valid options:
> **-name**

Specifies the name for the created event notification.

-description

Specifies a description for the event notification. The description cannot exceed 80 characters. If you do not specify a description, the value identified by the notification name is provided as the default description.

-recipients

Specifies a comma delimited list of up to four email addresses of the recipients who are to receive event notifications. The email server to which the Pillar Axiom system sends event notifications must be able to send messages to these email addresses.

-severity

Specifies a comma-delimited list of event severity/category pairs identified by *severity*：*category*. When an event occurs with a *severity*：*category* value that matches any of the specified severities, an email notification will be sent to the recipient list.

If you do not specify this option, an email will be sent when an event of any severity occurs.

Each *severity*：*category* consists of a severity and a category separated by a colon. Any combination of *severity*.*category* is allowed.

The severity values are:
- informational
- warning
- critical

Valid category values are:
- security
- audit
- system

-enable

Indicates whether the event notification is enabled.

-disable

Indicates whether the event notification is disabled.

-eventType

Specifies one or more event types for a notification. Only events of the specified type generate event notifications to the list of recipients. If you do not provide this option, the occurrence of any event type generates an event notification.

-modify

Modifies existing event notifications and the way an administrator is notified.

Valid options:
-eventNotification

Specifies the ID or FQN of an event notification.

-description

Specifies a description for the event notification. The description cannot exceed 80 characters. If you do not specify a description, the value identified by the notification name is provided as the default description.

-recipients

Specifies a comma delimited list of up to four email addresses of the recipients who are to receive event notifications. The email server to which the Pillar Axiom system sends event notifications must be able to send messages to these email addresses.

-severity

Specifies a comma-delimited list of event severity/category pairs identified by *severity*:*category*. When an event occurs with a *severity*:*category* value that matches any of the specified severities, an email notification will be sent to the recipient list.

If you do not specify this option, an email will be sent when an event of any severity occurs.

Each *severity*:*category* consists of a severity and a category separated by a colon. Any combination of *severity*:*category* is allowed.

The severity values are:

- informational
- warning
- critical

Valid category values are:

- security
- audit
- system

-newName

Specifies a new name for the event notification.

-enable

Indicates whether the event notification is enabled.

-disable

Indicates whether the event notification is disabled.

-eventType

Replaces the current set of event types associated with the specified event notification.

-delete

Deletes one or more event notifications defined on a Pillar Axiom system.

Valid options:
-eventNotification

Specifies the ID or FQN of an event notification.

-list

Displays a list of event notifications defined on a Pillar Axiom system.

Valid options:
-details

Displays the fully qualified name (FQN), ID, description, list of email recipients, and severity levels for each event notification. If you do not specify the -details option, running the event_notification -list command option displays only the event notification names.

-eventNotification

Specifies the ID or FQN of an event notification.

-test

Sends a test message to a list of email addresses. Recipients should look for a message that is titled "Axiom Event Alert: Test Email Notification" in their email in-boxes.

Valid options:

-recipients

Specifies up to four email addresses to which the system sends the test email.

-help

Displays the detailed command help information.

EXAMPLE

Run `event_notification` to display a list of details of warning events:

`axiomcli event_notification -list -details`

Results:

```
/Warning_Events
        Name             : Warning_Events
        ID               :
4130303133343942A1330000000009B2
        Description   : All_Events_of_Type_Warning
        IsEnabled     : true
        LastSent      : never
        Severity      : WARNING
        Category      : AUDIT
        Severity      : WARNING
        Category      : SECURITY
        Severity      : WARNING
        Category      : SYSTEM
        Severity      : WARNING
        Category      : OPERATIONS
        Recipients    : email-address
tech1@pillardata.com
        Recipients    : tech2@pillardata.com
```

`haltpoint`

DESCRIPTION

Manages the system halt points that are available on the Pillar Axiom system. A halt point on a particular software component causes the system to pause the startup sequence at some step associated with that component so that troubleshooting and diagnostic actions can be performed.

⚠ Caution	System halt points are to be used for recovery purposes only. They are used to gather information or to clear conditions that cannot otherwise be accomplished. Halt points should never be set or cleared without assistance from the Pillar World Wide Customer Support Center. Management of system halt points can only be performed by the Primary administrator and the Support administrator.

Use the `haltpoint` command to set up one or more active haltpoints for the specified components, remove haltpoints, display active or all of the haltpoints, and resume the system startup from the current haltpoint.

You can use the `-verify` option to test the command-line argument and its options before running it in Pillar Axiom CLI. If no errors exist, the Pillar Axiom CLI command returns without executing. For example, the `-verify` option is helpful when writing scripts in which a particular Pillar Axiom CLI command usage can be verified prior to adding it to a script.

You can use the `-outputformat` or the `-o` command option to specify how to display the results of running a command. If you do not specify either the `-outputformat` or the `-o` command option, the results display in the default `text` format. Valid options:

text   The system displays the results in the plain-text format.

xml   The system displays the results in the tagged XML format.

You can use the `-sessionKey` option to specify which Pillar Axiom system to access and which session key value to use for validation. The Pillar Axiom CLI displays the session key value when you log in to the Pillar Axiom system using the `-returnKey` option.

You can use the `-timeout` option to set a time limit for the execution of a command. If the command takes longer than the number of seconds specified in the `-timeout` option, the system stops executing the command. If you do not specify the `-timeout` option, the system does not set any time limit for executing the command.

Administrator 1 and Administrator 2 roles can only list the halt points.

SYNTAX

```
axiomcli haltpoint -add -haltpoint
componentName:haltPointStep [,componentName:haltPointStep]...
    [-suppressWarnings]
    [-verify]
    [{-outputformat | -o} {text | xml}]
    [-sessionKey session-key]
    [-timeout timeout-in-seconds]
```

```
axiomcli haltpoint -delete
    {-all
    | -haltpoint componentName:haltPointStep [,
componentName:haltPointStep]...
    }
    [-verify]
    [{-outputformat | -o} {text | xml}]
    [-sessionKey session-key]
    [-timeout timeout-in-seconds]
```

```
axiomcli haltpoint -list {-active | -all} [-details]
    [-verify]
    [{-outputformat | -o} {text | xml}]
    [-sessionKey session-key]
    [-timeout timeout-in-seconds]
```

```
axiomcli haltpoint -resume
    [-verify]
    [{-outputformat | -o} {text | xml}]
    [-sessionKey session-key]
    [-timeout timeout-in-seconds]
```

```
axiomcli haltpoint -help
```

PARAMETERS

-add

Sets up one or more active halt points for the specified components. Existing active halt points remain active.

Valid options:

-suppressWarnings

Suppresses the warning message and adds new haltpoints even if the haltpoints already exist. If the haltpoints already exist, they may be lost.

-haltpoint

Establishes a system halt point. A halt point on a particular software component causes the system to pause the startup sequence at some step associated with that

component so that troubleshooting and diagnostic actions can be performed.

The component name and its start-up phase (the halt point step) must be separated by a colon. Multiple halt point entries must be separated by commas.

componentName	Identifies the name of the software component that is associated with the system halt point.
haltPointStep	Identifies the name of the software component step where the halt point is to occur.

Note: For information on setting halt points, contact the Pillar World Wide Customer Support Center. Management of system halt points can only be performed by the Primary administrator and the Support administrator.

–delete

Removes halt points.

Valid options:
–all

All of the halt points are disabled.

–haltpoint

Specifies specific halt points to disable.

–list

Displays the active halt points or all of them.

Valid options:
–active

Displays only the active halt points.

–all

Displays all of the halt points.

–details

Currently displays no additional information.

–resume

Resumes the system startup from the current halt point.

-help

Displays the detailed command help information.

Contact the Pillar World Wide Customer Support Center for details.

EXAMPLE   Run the `axiomcli haltpoint -list -all` command to display the list of all of the halt points:

```
axiomcli haltpoint -list -all
```

Results:

```
PDS_COMP_NFS
        HaltPointStep               :
STOP_BEFORE_CONFIGURE_STARTED
        BootSequenceNumber          : 85
PDS_COMP_NFS
        HaltPointStep               :
STOP_BEFORE_COMMON_CONFIGURED
        BootSequenceNumber          : 86
PDS_COMP_NFS
        HaltPointStep               :
CM_STOP_BEFORE_COMMON_RECOVER
        BootSequenceNumber          : 87
PDS_COMP_NFS
        HaltPointStep               :
CM_STOP_BEFORE_COMMON_RUN
        BootSequenceNumber          : 88
PDS_COMP_NFS
        HaltPointStep               :
CM_STOP_BEFORE_CONFIGURE_RUNNING
        BootSequenceNumber          : 89
PDS_COMP_CIFS
        HaltPointStep               :
STOP_BEFORE_COMMON_NODE_LIST
        BootSequenceNumber          : 90
PDS_COMP_CIFS
        HaltPointStep               :
STOP_BEFORE_CONFIGURE_STARTED
        BootSequenceNumber          : 91
PDS_COMP_CIFS
        HaltPointStep               :
STOP_BEFORE_COMMON_CONFIGURED
        BootSequenceNumber          : 92
PDS_COMP_CIFS
        HaltPointStep               :
CM_STOP_BEFORE_COMMON_RECOVER
        BootSequenceNumber          : 93
PDS_COMP_CIFS
        HaltPointStep               :
CM_STOP_BEFORE_COMMON_RUN
        BootSequenceNumber          : 94
PDS_COMP_CIFS
        HaltPointStep               :
```

```
CM_STOP_BEFORE_CONFIGURE_RUNNING
        BootSequenceNumber         : 95
PDS_COMP_SIM
        HaltPointStep              :
STOP_BEFORE_COMMON_NODE_LIST
        BootSequenceNumber         : 96
PDS_COMP_SIM
        HaltPointStep              :
STOP_BEFORE_CONFIGURE_STARTED
        BootSequenceNumber         : 97
PDS_COMP_SIM
        HaltPointStep              :
STOP_BEFORE_COMMON_CONFIGURED
        BootSequenceNumber         : 98
PDS_COMP_SIM
        HaltPointStep              :
CM_STOP_BEFORE_COMMON_RECOVER
        BootSequenceNumber         : 99
PDS_COMP_SIM
        HaltPointStep              :
CM_STOP_BEFORE_COMMON_RUN
        BootSequenceNumber         : 100
PDS_COMP_SIM
        HaltPointStep              :
CM_STOP_BEFORE_CONFIGURE_RUNNING
        BootSequenceNumber         : 101
PDS_COMP_FPI
        HaltPointStep              :
STOP_BEFORE_COMMON_NODE_LIST
        BootSequenceNumber         : 102
PDS_COMP_FPI
        HaltPointStep              :
STOP_BEFORE_CONFIGURE_STARTED
        BootSequenceNumber         : 103
PDS_COMP_FPI
        HaltPointStep              :
STOP_BEFORE_COMMON_CONFIGURED
        BootSequenceNumber         : 104
PDS_COMP_FPI
        HaltPointStep              :
CM_STOP_BEFORE_COMMON_RECOVER
        BootSequenceNumber         : 105
PDS_COMP_FPI
        HaltPointStep              :
CM_STOP_BEFORE_COMMON_RUN
        BootSequenceNumber         : 106
PDS_COMP_FPI
        HaltPointStep              :
CM_STOP_BEFORE_CONFIGURE_RUNNING
        BootSequenceNumber         : 107
```

`help`

DESCRIPTION	Displays a list of all supported commands as well as help for a specific command.

Use the `axiomcli help` command to display a list of all available supported commands.

The syntax conventions used for `axiomcli` command arguments are:

Curly brackets ({ })	Indicate a set of command parameters, one of which must be selected.
Square brackets ([ ])	Indicate an optional command parameter or a set of optional command parameters. Command parameters that are not enclosed in square brackets are required.
**Vertical bar (	)**	Indicates a set of mutually exclusive parameters.
Ellipsis (...)	Indicate that the immediately preceding parameters or group of parameters can be repeated.
Camel case	Used in Pillar Axiom CLI commands for ease of reading. When issuing a command, you can use either camel case or lowercase.

When you execute a Pillar Axiom CLI command, the command sets a return code that you can query to determine the success of the command. The Pillar Axiom CLI has four return codes:

0	A command executed successfully.
1	An unexpected error has occurred. For example, a Pillar Axiom CLI session file has been corrupted, or the Pillar Axiom CLI installation has been modified or corrupted and the Pillar Axiom CLI needs to be reinstalled.

2 A general error has occurred. For example, an unrecognized Pillar Axiom CLI command has been issued, a wrong Pillar Axiom CLI command syntax has been specified, or an unrecognized Pillar Axiom CLI command option has been used.

3 An error has occurred in the Pillar Axiom system. For example, an invalid FQN or ID has been specified, the Pillar Axiom system is not in a state that allows the execution of a request, or the communication with the Pillar Axiom system has been lost.

You can use the `-outputformat` or the `-o` command option to specify how to display the results of running a command. If you do not specify either the `-outputformat` or the `-o` command option, the results display in the default `text` format. Valid options:

text The system displays the results in the plain-text format.

xml The system displays the results in the tagged XML format.

You can use the `-verify` option to test the command-line argument and its options before running it in Pillar Axiom CLI. If no errors exist, the Pillar Axiom CLI command returns without executing. For example, the `-verify` option is helpful when writing scripts in which a particular Pillar Axiom CLI command usage can be verified prior to adding it to a script.

You can use the `-sessionKey` option to specify which Pillar Axiom system to access and which session key value to use for validation. The Pillar Axiom CLI displays the session key value when you log in to the Pillar Axiom system using the `-returnKey` option.

You can use the `-timeout` option to set a time limit for the execution of a command. If the command takes longer than the number of seconds specified in the `-timeout` option, the system stops executing the command. If you do not specify the `-timeout` option, the system does not set any time limit for executing the command.

You can use the `-help` subcommand to display the detailed help information for a specific Pillar Axiom CLI command.

SYNTAX   `axiomcli` *command-name* `-help`

PARAMETERS   Help is available for the following commands:
- `account`
- `brick`

- call_home
- clone_lun
- errors
- event_log
- event_notification
- haltpoint
- host_group
- hostmap
- iscsi
- job
- login
- logout
- lun
- pilot
- profile
- report
- san
- san_host
- slammer
- smprovider
- snmp_host
- software_update
- statistics
- storage_allocation
- storage_domain
- system
- system_alert
- system_log
- task
- time
- ups
- version
- volume_group

EXAMPLE   Run `axiomcli version -help` to display detailed help for the `version` command:

```
axiomcli version -help
```

Results:

```
version


DESCRIPTION
     Displays the current version number for the Pillar
Axiom CLI
     executable.

     Use the version command to display version
information about the
     Pillar Axiom CLI.

     You can use the -verify option to test the command-
line argument
     and its options before running it in Pillar Axiom
CLI. If there are
     no errors, the Pillar Axiom CLI command returns
without executing.
     For example, the -verify option is helpful when
writing scripts
     in which a particular Pillar Axiom CLI command
usage can be
     verified prior to adding it to a script.

     You can use the -outputformat or the -o command
option to specify
     how to display the results of running a command.
If you do not
     specify either the -outputformat or the -o command
option, the
     results display in the default text format. Valid
options:

     *  text: The system displays the results in the
plain-text
         format.

     *  xml:  The system displays the results in the
tagged XML
         format.

     You can use the -sessionKey option to specify
which Pillar Axiom
     system to access and which session key value to
use for
     validation. The Pillar Axiom CLI displays the
session key value when
     you log in to the Pillar Axiom system using the -
returnKey
     option.
```

```
SYNOPSIS
     axiomcli version -list [-details]
            [-verify]
            [{-outputformat | -o} {text | xml}]
            [-sessionKey session-key]

     axiomcli version -help

PARAMETERS
     Note: All roles can issue the -list command option

     -list
            Displays the Pillar Axiom CLI software
version.

            Valid options:

            -details
                    The -details option does not
return any
                    additional information and is
there for
                    consistency.

     -help
            Displays the detailed command help
information.

EXAMPLE
     Run the axiomcli version -list display the
software version
     information:

     axiomcli version -list

     Results:

     Pillar Axiom CLI version : 050000-031700
```

`host_group`

DESCRIPTION

A *host group* is a named collection of SAN hosts that the system manages as a group, which simplifies the task of associating hosts to LUNs.

Use the `host_group` command to add, modify, list, or delete SAN host groups.

You can use the `-verify` option to test the command-line argument and its options before running it in Pillar Axiom CLI. If no errors exist, the Pillar Axiom CLI command returns without executing. For example, the `-verify` option is helpful when writing scripts in which a particular Pillar Axiom CLI command usage can be verified prior to adding it to a script.

You can use the `-outputformat` or the `-o` command option to specify how to display the results of running a command. If you do not specify either the `-outputformat` or the `-o` command option, the results display in the default `text` format. Valid options:

text   The system displays the results in the plain-text format.

xml   The system displays the results in the tagged XML format.

You can use the `-sessionKey` option to specify which Pillar Axiom system to access and which session key value to use for validation. The Pillar Axiom CLI displays the session key value when you log in to the Pillar Axiom system using the `-returnKey` option.

You can use the `-timeout` option to set a time limit for the execution of a command. If the command takes longer than the number of seconds specified in the `-timeout` option, the system stops executing the command. If you do not specify the `-timeout` option, the system does not set any time limit for executing the command.

SYNTAX

```
axiomcli host_group -add -name host-group-name
     [-verify]
     [{-outputformat | -o} {text | xml}]
     [-sessionKey session-key]
     [-timeout timeout-in-seconds]
```

```
axiomcli host_group -modify -hostGroup host-group-id-or-fqn
     -newName host-group-name
     [-verify]
     [{-outputformat | -o} {text | xml}]
```

```
        [-sessionKey session-key]
        [-timeout timeout-in-seconds]
```

```
axiomcli host_group -delete -hostGroup host-group-id-or-fqn
[, host-group-id-or-fqn]...
        [-verify]
        [{-outputformat | -o} {text | xml}]
        [-sessionKey session-key]
        [-timeout timeout-in-seconds]
```

```
axiomcli host_group -list [-details] [-hostGroup
host-group-id-or-fqn [, host-group-id-or-fqn]...]
        [-verify]
        [{-outputformat | -o} {text | xml}]
        [-sessionKey session-key]
        [-timeout timeout-in-seconds]
```

```
axiomcli host_group -help
```

PARAMETERS   **Note:** Only the Primary Administrator, Administrator 1, and Administrator 2
roles can issue all of the command options.

The Monitor, Pillar Support, and Support roles can issue only the `-list`
command option.

-add

> Creates a host group. The `-name` option specifies the
> name of the new host group.
>
> Valid options:
> **-name**
>
> Specifies the name on the new host group.

-modify

> Modifies the name of an existing host group.
>
> Valid options:
> **-hostGroup**
>
> Specifies the ID or FQN of the host group that has its
> name changed.
>
> **-newName**
>
> Specifies the new name for the host group.

-delete

> Deletes a host group.
>
> Valid options:
> **-hostGroup**

Specifies the ID or FQN of the host group to be deleted.

-list

Lists host groups, displaying the name and SAN hosts that are included in a given host group.

Valid options:
–hostGroup

Specifies the ID or FQN of a host group to display.

–details

Displays the SAN hosts that are included in each displayed host group. If the –details option is omitted, the system displays only the host groups.

-help

Displays the detailed command help information.

EXAMPLE   Run the host_group -add command to create a host group:

axiomcli host_group -add -name HostGroupName

Results:

```
NewObject
    Id                               :
4130303132373542A14B46372C9C4C3
    Fqn                              : /HostGroupName
Command Succeeded
```

`hostmap`

DESCRIPTION   Creates and manages host mappings between Pillar Axiom LUNs and storage area network (SAN) hosts. You can also display the configuration information for LUNs and SAN hosts.

Use the `hostmap` command to manage host mappings between Pillar Axiom LUNs and SAN hosts.

You can use the `-verify` option to test the command-line argument and its options before running it in Pillar Axiom CLI. If no errors exist, the Pillar Axiom CLI command returns without executing. For example, the `-verify` option is helpful when writing scripts in which a particular Pillar Axiom CLI command usage can be verified prior to adding it to a script.

You can use the `-outputformat` or the `-o` command option to specify how to display the results of running a command. If you do not specify either the `-outputformat` or the `-o` command option, the results display in the default `text` format. Valid options:

text   The system displays the results in the plain-text format.

xml   The system displays the results in the tagged XML format.

You can use the `-sessionKey` option to specify which Pillar Axiom system to access and which session key value to use for validation. The Pillar Axiom CLI displays the session key value when you log in to the Pillar Axiom system using the `-returnKey` option.

You can use the `-timeout` option to set a time limit for the execution of a command. If the command takes longer than the number of seconds specified in the `-timeout` option, the system stops executing the command. If you do not specify the `-timeout` option, the system does not set any time limit for executing the command.

SYNTAX

```
axiomcli hostmap -add -lun lun-or-clone-id-or-fqn -lunNumber
logical-unit-number
     {-host host-id-or-fqn
     |-hostGroup host-group-id-or-fqn
     }
     [-verify]
     [{-outputformat | -o} {text | xml}]
```

```
            [-sessionKey session-key]
            [-timeout timeout-in-seconds]
```

```
axiomcli hostmap -modify -lun lun-or-clone-id-or-fqn
-lunNumber logical-unit-number
            {-host host-id-or-fqn
            |-hostmap hostmap-id-or-fqn
            |-hostGroup host-group-id-or-fqn
            |-hostGroupMap host-group-map-id-or-fqn
            }
            [-verify]
            [{-outputformat | -o} {text | xml}]
            [-sessionKey session-key]
            [-timeout timeout-in-seconds]
```

```
axiomcli hostmap -delete
            {-host host-id-or-fqn [-lun lun-or-clone-id-or-fqn]
            |-hostmap hostmap-id-or-fqn [,hostmap-id-or-fqn]...
            |-hostGroup host-group-id-or-fqn [, host-group-id-or-fqn]...
            |-hostGroupMap host-group-map-id-or-fqn [,
host-group-map-id-or-fqn]...
            }
            [-verify]
            [{-outputformat | -o} {text | xml}]
            [-sessionKey session-key]
            [-timeout timeout-in-seconds]
```

```
axiomcli hostmap -list [-details]
            [{-lun lun-or-clone-id-or-fqn [,lun-or-clone-id-or-fqn]... |
-availableLunNumbers}]
            [{-host host-id-or-fqn [,host-id-or-fqn]...
            |-hostmap hostmap-id-or-fqn [,hostmap-id-or-fqn]...
            |-hostGroup host-group-id-or-fqn [, host-group-id-or-fqn]...
            |-hostGroupMap host-group-map-id-or-fqn [,
host-group-map-id-or-fqn]...
            }]
            [-verify]
            [{-outputformat | -o} {text | xml}]
            [-sessionKey session-key]
            [-timeout timeout-in-seconds]
```

```
axiomcli hostmap -help
```

PARAMETERS   **Note:** Only the Primary Administrator, Administrator, and Administrator 2 roles
can issue all command options.

All roles can issue the `-list` command option.

-add

Enables the Pillar Axiom system to recognize Fibre Channel (FC) or iSCSI SAN hosts that do not have Pillar Axiom Path Manager (APM) installed.

Valid options:
-lun

Identifies the name of the LUN or Clone LUN on the Pillar Axiom system.

Note: The World Wide Name (WWN) cannot be used. For hosts that are not running APM, enter the following command-line argument:

```
axiomcli san_host -add
```

This will create named SAN hosts using the host's WWN. After creating the new SAN host, use the new SAN host name in the -hostmap option.

-lunNumber

You can map a LUN or Clone LUN to either a single host or a host group. The -host option specifies the ID or FQN of the customer host machine to be mapped to the LUN or Clone LUN. The -hostGroup option specifies the ID or FQN of the host group to be mapped to the LUN or Clone LUN.

-host

Identifies the SAN host that accesses LUNs or Clone LUNs configured on the Pillar Axiom system.

-hostGroup

Specifies the ID or FQN of the host group to be mapped to the LUN or the Clone LUN.

-modify

Modifies the LUN or Clone LUN number assigned to a specific LUN or Clone LUN for a host.

Valid options:
-lun

Identifies the name of the LUN or Clone LUN on the Pillar Axiom system.

-lunNumber

Specifies the new logical unit number for the LUN or Clone LUN.

-host

Identifies the SAN host that accesses LUNs or Clone LUNs configured on the Pillar Axiom system.

-hostmap

Identifies the instance of the host LUN map.

-hostGroup

Identifies the host group.

-hostGroupMap

Identifies the host group of the LUN map instance.

-delete

Deletes host LUN mappings.

Valid options:
-host

Identifies the SAN host that accesses LUNs or Clone LUNs configured on the Pillar Axiom system.

You must specify either the `-host`, the `-hostmap`, the `-hostGroup`, or the `-hostGroupMap` option.

-lun

Identifies the LUN or Clone LUN of the specified hostmap.

You must specify either the `-host`, the `-hostmap`, the `-hostGroup`, or the `-hostGroupMap` option.

-hostmap

Identifies one or more hostmaps to be deleted.

You must specify either the `-host`, the `-hostmap`, the `-hostGroup`, or the `-hostGroupMap` option.

–hostGroup

Identifies one or more host groups from which to delete all of the LUN mappings.

You must specify either the `-host`, the `-hostmap`, the `-hostGroup`, or the `-hostGroupMap` option.

–hostGroupMap

Identifies one or more host group LUN map instances from which to delete all of the LUN mappings.

You must specify either the `-host`, the `-hostmap`, the `-hostGroup`, or the `-hostGroupMap` option.

-list

> Lists host mappings. The Pillar Axiom system detects HBA ports and assigns hosts to those that you do not assign. You can specify any combination of LUNs or Clone LUNs.
>
> Valid options:
> **-details**
>
> Displays the following for each host mapping:
> - SAN LUN or Clone LUN name
> - Host name or WWN
> - Logical unit number
> - Set of masked ports
>
> **-lun**
>
> Identifies the details for the specified LUN or Clone LUN.
>
> **-availableLunNumbers**
>
> Identifies the available LUNs either system wide or for a given host.
>
> **-host**
>
> Identifies the SAN hosts. If you do not specify the -details option, either the LUNs and SAN hosts with host mappings or the available LUN numbers are displayed.
>
> If you do not specify either option, the system-wide numbers are displayed.
>
> **-hostmap**
>
> Identifies the LUN map instances. If you do not specify the -details option, either the LUNs and SAN hosts with host mappings or the available LUN numbers are displayed.
>
> If you do not specify either option, the system-wide numbers are displayed.
>
> **-hostGroup**
>
> Identifies the LUN host groups. If you do not specify the -details option, either the LUNs and SAN hosts with host mappings or the available LUN numbers are displayed.
>
> If you do not specify either option, the system-wide numbers are displayed.
>
> **-hostGroupMap**
>
> Identifies the LUN host group instances. If you do not specify the -details option, either the LUNs and SAN

hosts with host mappings or the available LUN numbers are displayed.

If you do not specify either option, the system-wide numbers are displayed.

-help

Displays the detailed command help information.

EXAMPLE   Run the `hostmap -list -details` command to list the details of host mappings:

```
axiomcli hostmap -list -details
```

Results:

```
HostMap
    SanHostFqn  : /21:01:00:E0:8B:29:60:D3
    SanHostId   : 4130303132373542A12D00DFA646187E
    LunFqn      : /SLUN33
    LunId       : 4130303132373542A10401F81E4BBCEE
    InitiatorLunPair
        MapFqn          : /SLUN33/210100E08B2960D3
        MapId           :
4130303132373542A12F01F97D074A94
        InitiatorFqn  : /210100E08B2960D3
        InitiatorId   :
4130303132373542A2320BD6B7A64E1A
        LunNumber     : 33
        MappingType   : GLOBAL
HostMap
    SanHostFqn  : /iqn.
2002-03.com.sanland:host.linux.co-sanbs4
    SanHostId   : 4130303132373542A12D026184CF9271
    LunFqn      : /SLUN33
    LunId       : 4130303132373542A10401F81E4BBCEE
    InitiatorLunPair
        MapFqn          : /SLUN33/iqn.
2002-03.com.sanland:host.linux.co-sanbs4

        MapId           :
4130303132373542A12F0261B2DAF76A
        InitiatorFqn  : /iqn.
2002-03.com.sanland:host.linux.co-sanbs4
        InitiatorId   :
4130303132373542A2320BD6B978498F
        LunNumber     : 33
        MappingType   : GLOBAL
HostMap
    SanHostFqn  : /21:01:00:E0:8B:29:60:D3
    SanHostId   : 4130303132373542A12D00DFA646187E
    LunFqn      : /SLUN1
    LunId       : 4130303132373542A10401F4C3140230
```

```
     InitiatorLunPair
        MapFqn          : /SLUN1/210100E08B2960D3
        MapId           :
4130303132373542A12F01F680C7840A
        InitiatorFqn  : /210100E08B2960D3
        InitiatorId   :
413030313232373542A2320BD6B7A64E1A
        LunNumber     : 1
        MappingType   : GLOBAL
HostMap
    SanHostFqn  : /21:01:00:E0:8B:29:60:D3
    SanHostId   : 4130303132373542A12D00DFA646187E
    LunFqn      : /SLUN0
    LunId       : 4130303132373542A10401F2A56F884D
    InitiatorLunPair
        MapFqn          : /SLUN0/210100E08B2960D3
        MapId           :
4130303132373542A12F01F4A29DA0A6
        InitiatorFqn  : /210100E08B2960D3
        InitiatorId   :
413030313232373542A2320BD6B7A64E1A
        LunNumber     : 0
        MappingType   : GLOBAL
HostMap
    SanHostFqn  : /21:00:00:E0:8B:09:60:D3
    SanHostId   : 4130303132373542A12D00DFA6DC91A8
    LunFqn      : /SLUN0
    LunId       : 4130303132373542A10401F2A56F884D
    InitiatorLunPair
        MapFqn          : /SLUN0/210000E08B0960D3
        MapId           :
4130303132373542A12F01F4A52724E8
        InitiatorFqn  : /210000E08B0960D3
        InitiatorId   :
413030313232373542A2320BD6B7A64E18
        LunNumber     : 0
        MappingType   : GLOBAL
HostMap
    SanHostFqn  : /iqn.
2002-03.com.sanland:host.linux.co-sanbs4
    SanHostId   : 4130303132373542A12D026184CF9271
    LunFqn      : /SLUN1
    LunId       : 4130303132373542A10401F4C3140230
    InitiatorLunPair
        MapFqn          : /SLUN1/iqn.
2002-03.com.sanland:host.linux.co-sanbs4
        MapId           :
4130303132373542A12F0261B2FF5410
        InitiatorFqn  : /iqn.
2002-03.com.sanland:host.linux.co-sanbs4
        InitiatorId   :
413030313232373542A2320BD6B978498F
        LunNumber     : 1
```

```
            MappingType    : GLOBAL
HostMap
     SanHostFqn  : /21:00:00:E0:8B:09:60:D3
     SanHostId   : 4130303132373542A12D00DFA6DC91A8
     LunFqn      : /SLUN33
     LunId       : 4130303132373542A10401F81E4BBCEE
     InitiatorLunPair
         MapFqn          : /SLUN33/210000E08B0960D3
         MapId           :
4130303132373542A12F01F97D9F6719
         InitiatorFqn  : /210000E08B0960D3
         InitiatorId     :
4130303132373542A2320BD6B7A64E18
         LunNumber      : 33
         MappingType    : GLOBAL
HostMap
     SanHostFqn  : /21:00:00:E0:8B:09:60:D3
     SanHostId   : 4130303132373542A12D00DFA6DC91A8
     LunFqn      : /SLUN1
     LunId       : 4130303132373542A10401F4C3140230
     InitiatorLunPair
         MapFqn          : /SLUN1/210000E08B0960D3
         MapId           :
4130303132373542A12F01F68186993A
         InitiatorFqn  : /210000E08B0960D3
         InitiatorId     :
4130303132373542A2320BD6B7A64E18
         LunNumber      : 1
         MappingType    : GLOBAL
HostMap
     SanHostFqn  : /iqn.
2002-03.com.sanland:host.linux.co-sanbs4
     SanHostId   : 4130303132373542A12D026184CF9271
     LunFqn      : /SLUN0
     LunId       : 4130303132373542A10401F2A56F884D
     InitiatorLunPair
         MapFqn          : /SLUN0/iqn.
2002-03.com.sanland:host.linux.co-sanbs4
         MapId           :
4130303132373542A12F0261B3486970
         InitiatorFqn  : /iqn.
2002-03.com.sanland:host.linux.co-sanbs4
         InitiatorId     :
4130303132373542A2320BD6B978498F
         LunNumber      : 0
         MappingType    : GLOBAL
HostMap
     SanHostFqn  : /21:01:00:E0:8B:29:60:D3
     SanHostId   : 4130303132373542A12D00DFA646187E
     LunFqn      : /SLUN32
     LunId       : 4130303132373542A10401F68D685677
     InitiatorLunPair
         MapFqn          : /SLUN32/210100E08B2960D3
```

```
        MapId           :
4130303132373542A12F01F8130F1DA6
        InitiatorFqn   : /210100E08B2960D3
        InitiatorId    :
4130303132373542A2320BD6B7A64E1A
        LunNumber      : 32
        MappingType    : GLOBAL
HostMap
    SanHostFqn  : /iqn.
2002-03.com.sanland:host.linux.co-sanbs4
    SanHostId   : 4130303132373542A12D026184CF9271
    LunFqn      : /SLUN32
    LunId       : 4130303132373542A10401F68D685677
    InitiatorLunPair
        MapFqn          : /SLUN32/iqn.
2002-03.com.sanland:host.linux.co-sanbs4

        MapId           :
4130303132373542A12F0261B323DA83
        InitiatorFqn   : /iqn.
2002-03.com.sanland:host.linux.co-sanbs4
        InitiatorId    :
4130303132373542A2320BD6B978498F
        LunNumber      : 32
        MappingType    : GLOBAL
HostMap
    SanHostFqn  : /21:00:00:E0:8B:09:60:D3
    SanHostId   : 4130303132373542A12D00DFA6DC91A8
    LunFqn      : /SLUN32
    LunId       : 4130303132373542A10401F68D685677
    InitiatorLunPair
        MapFqn          : /SLUN32/210000E08B0960D3
        MapId           :
4130303132373542A12F01F813AE9AFA
        InitiatorFqn   : /210000E08B0960D3
        InitiatorId    :
4130303132373542A2320BD6B7A64E18
        LunNumber      : 32
        MappingType    : GLOBAL
```

iscsi

DESCRIPTION   Manages the iSCSI configuration settings on a Pillar Axiom system. If you have iSCSI hosts configured to use Challenge-Handshake Authentication Protocol (CHAP), Access Control, or Internet Storage Name Service (iSNS), you must also set up system-wide iSCSI settings. Doing so configures the authentication and access controls on the Pillar Axiom system in which the host must match to gain access. If you have CHAP and Access Control configured for each initiator, you do not need to configure iSCSI globally.

Use the `iscsi` command to ping, modify, or list iSCSI settings.

You can use the `-verify` option to test the command-line argument and its options before running it in Pillar Axiom CLI. If no errors exist, the Pillar Axiom CLI command returns without executing. For example, the `-verify` option is helpful when writing scripts in which a particular Pillar Axiom CLI command usage can be verified prior to adding it to a script.

You can use the `-outputformat` or the `-o` command option to specify how to display the results of running a command. If you do not specify either the `-outputformat` or the `-o` command option, the results display in the default `text` format. Valid options:

text   The system displays the results in the plain-text format.

xml   The system displays the results in the tagged XML format.

You can use the `-sessionKey` option to specify which Pillar Axiom system to access and which session key value to use for validation. The Pillar Axiom CLI displays the session key value when you log in to the Pillar Axiom system using the `-returnKey` option.

You can use the `-timeout` option to set a time limit for the execution of a command. If the command takes longer than the number of seconds specified in the `-timeout` option, the system stops executing the command. If you do not specify the `-timeout` option, the system does not set any time limit for executing the command.

SYNTAX
```
axiomcli iscsi -ping -slammerNode slammer-node-id-or-fqn
    -port {port0 | port1 | port2 | port3 | port4 |
port5 | port6 | port7}
    -ip ip-address
    [-verify]
    [{-outputformat | -o} {text | xml}]
```

```
     [-sessionKey session-key]
     [-timeout timeout-in-seconds]


axiomcli iscsi -modify
     {-slammerNode slammer-node-id-fqn
      -port {port0 | port1 | port2 | port3 | port4 |
port5 | port6 | port7}
          [-tcpPort port-number] [-mtu mtu]
          [{-dhcp | -noDhcp}] [-ip ip-address]
          [-netmask netmask] [-gateway gateway-ip]
          [{-enableVlan | -disableVlan}] [-vlanId
vlan-id-number]
          |
          [-accessControl {isns | axiom | none}]
          [-alias alias-name]
          [-authentication {allInitiators |
perInitiator}]
          [-authenticationServer {axiom | radius}]
          [{-headerDigest | -noHeaderDigest}]
          [{-dataDigest | -noDataDigest}]
          [{-biDirectionalChap | -noBiDirectionalChap}]
          [-chapSecret chap-secret -retypeChapSecret
chap-secret]
          [{-isnsRegistration | -noIsnsRegistration}]
          [-isnsDiscovery {dhcp | static}]
          [-isnsServerIp ip-address]
          [-isnsTcpPort port-number]
          [-radiusIp ip-address]
          [-radiusUdpPort udp-port]
          [-radiusSecret radius-secret -retypeRadiusSecret
radius-secret]
          [-secondaryRadiusIp ip-address]
          [-secondaryRadiusUdpPort udp-port]
          [-secondaryRadiusSecret radius-secret
               -retypeSecondaryRadiusSecret radius-secret]
     }
     [-verify]
     [{-outputformat | -o} {text | xml}]
     [-sessionKey session-key]
     [-timeout timeout-in-seconds]

axiomcli iscsi -list [-details]
     [-slammerNode slammer-node-id-or-fqn
         [-port {port0 | port1 | port2 | port3 | port4 |
port5 | port6 | port7}]]
     [-global]
     [-verify]
     [{-outputformat | -o} {text | xml}]
```

```
        [-sessionKey session-key]
        [-timeout timeout-in-seconds]
```

```
axiomcli iscsi -help
```

PARAMETERS **Note:** Only the Primary Administrator, Administrator 1, Pillar Support, and Support roles can issue the `-ping` command.

Only the Primary Administrator and Administrator 1 can issue the `-modify` command.

All roles can issue the `-list` command option.

-ping

> Sends an echo request to iSCSI data storage devices through the TCP/IP network. This includes iSCSI initiators such as Pillar Axiom File Servers, and iSCSI targets such as disk arrays and tape subsystems.
>
> Valid options:
> **-slammerNode**
>
> Identifies the Slammer control unit (CU). Enter the ID or fully qualified name (FQN) hosting the iSCSI port.
>
> **-port**
>
> Identifies the iSCSI port on the Slammer CU.
>
> Valid options:
>
> > port0
> > port1
> > port2
> > port3
> > port4
> > port5
> > port6
> > port7
>
> **-ip**
>
> Identifies the permanent (static) IP addresses assigned to the iSCSI port. If the ports have been configured using Dynamic Host Configuration Protocol (DHCP), an error message displays.

-modify

> Modifies the specified iSCSI port settings or global iSCSI settings.

Valid options:
-slammerNode

Identifies the Slammer CU. Enter the ID or fully qualified name (FQN) hosting the iSCSI port.

If you do not specify this option, the system will modify the global iSCSI port settings.

-port

Identifies the iSCSI port on the Slammer CU.

Valid options:

```
port0
port1
port2
port3
port4
port5
port6
port7
```

-tcpPort

Identifies the iSCSI TCP port number that is configured on the iSCSI port.

-mtu

Identifies the number of bytes of the maximum transmission unit (MTU). The MTU is the largest physical packet size that a network can transmit. Any messages larger than the MTU (default is 1500) are divided into smaller packets before being sent. Specifies the number of bytes of the maximum transmission unit.

The frame size (MTU) does not include the Ethernet header portion of the packet. If your network switch has trouble with this, you can set the switch to a larger value or lower the MTU size to correct the problem. If your network supports extended Ethernet (jumbo) frames, enter an integer greater than 1500 and less than 9001.

Note: Make sure that this Pillar Axiom MTU size matches the network MTU size. If the MTU sizes are mismatched, performance may be severely degraded.

-dhcp

Identifies that dynamic IP addresses are assigned to the iSCSI port using Dynamic Host Configuration Protocol (DHCP).

Note: This requires a DHCP server that automatically assigns IP addresses to network clients. This setting makes the Pillar Axiom system known to the DHCP software.

If you do not specify this option, `-noDhcp` is assumed.

-ip

Identifies that static IP addresses are assigned to the iSCSI port. If the ports have been configured using DHCP, an error message displays.

-netmask

Identifies the subnet mask for the range of IP addresses at the destination of the iSCSI port. If the ports have been configured using DHCP, an error message displays.

-gateway

Identifies the IP address assigned to the gateway host. The gateway IP address is used to route messages from this network to other networks. If the ports have been configured using DHCP, an error message displays.

-enableVlan

Indicates whether the virtual LAN (VLAN) tagging on the iSCSI port is enabled.

If you do not specify this option, `-disableVlan` is assumed.

-vlanId

Sets the VLAN ID for the iSCSI port.

-accessControl

Identifies the access control method for iSCSI initiators.

Valid options:

isns	The system rejects any iSCSI login attempts from initiators that have not been granted access by the iSNS server
axiom	The system rejects any iSCSI login attempts from the initiators that have not been

given the appropriate CHAP
credentials.

none   The system allows all iSCSI
                            initiators to login.

If you specify iSNS, the system will reject any iSCSI login
attempts from initiators that have not been granted access
by the iSNS server. If you specify axiom, the system will
reject any iSCSI login attempts from the initiators that have
not been given the appropriate CHAP credentials. If you
specify none, the system allows all iSCSI initiators to login.

-alias

Identifies the global iSCSI alias, which is a user-defined
name or description for the iSCSI device that is an alias for
the iSCSI target name.

-authentication

Identifies how iSCSI authentication should be performed.

Valid options:

- `perIntiator`
- `allInitiator`

If you specify the `perIntiator` option, the system does
not always negotiate for CHAP authentication during login,
but the initiator may require authentication. If you specify
the `allInitiator` option, the system requires CHAP
authentication of initiators for all logins.

-authenticationServer

Identifies the server to perform authentication.

Valid options:

- `axiom`
- `radius`

-headerDigest / -noHeaderDigest

Directs the system to negotiate for iSCSI header digests
during session login for all initiators.

If you specify the `-noHeaderDigest` option, the system
will not negotiate for iSCSI header digests.

-dataDigest / -noDataDigest

Directs the system to negotiate for iSCSI data digests
during session login for all initiators.

If you specify the `-noDataDigest` option, the system will not negotiate for iSCSI data digests.

`-biDirectionalChap`

Directs the Pillar Axiom system to require the iSCSI initiator to provide the CHAP secret when performing an iSCSI login. The `-noBiDirectionalChap` option directs the Pillar Axiom system not to require the CHAP secret. The iSCSI initiator will still be required to provide its CHAP secret.

`-chapSecret`

Identifies the encrypted CHAP authentication password (secret) to be used in the exchange of user names and secrets between two devices. Both devices must support Point-to-Point (PPP) authentication.

Note: The Pillar Axiom system supports up to 100 UTF-8 non-integer characters. However, when connecting to Windows servers, you must limit the secret to a value between 12 and 16 characters in length.

`-isnsRegistration`

Directs the system to register with the iSNS server. The system will query the iSNS server for the list of iSCSI initiators that are permitted to log into the Pillar Axiom system.

`-isnsDiscovery`

Directs the system to discover the iSNS server.

Valid options:
- `dhcp`
- `static`

If you specify `dhcp`, DHCP will be used for iSNS discovery. If you specify `static`, the previously set iSNS server IP address will be used.

`-isnsServerIp`

Identifies the IP address of the iSNS server that the system will use for authenticating iSCSI logins.

`-isnsTcpPort`

Identifies the TCP port number that the system will use when accessing the iSNS server.

`-radiusIP`

Identifies the IP address of the primary Remote Authentication Dial In User Service (RADIUS) server that the system will use for making authentication requests when validating iSCSI logins. RADIUS is a network protocol that authenticates users or devices before granting access to a network, authorizes users or devices to use network services, and accounts for the usage of those services. You must set `-authenticationServer` to `radius`.

-radiusUdpPort

Identifies the UDP port number that the system will use when sending authentication requests to the primary RADIUS server. You must set `-authenticationServer` to `radius`.

-radiusSecret

Identifies the encrypted authentication password (secret) to use when accessing the primary RADIUS server.

-secondaryRadiusIP

Identifies the IP address of the secondary RADIUS server that the system will use for making authentication requests when validating iSCSI logins. You must set `-authenticationServer` to `radius`.

-secondaryRadiusUdpPort

Identifies the UDP port number that the system will use when the system sends authentication requests to the secondary RADIUS server. You must set `-authenticationServer` to `radius`.

-secondaryRadiusSecret

Identifies the encrypted authentication password (secret) to use when accessing the secondary RADIUS server.

-list

Displays the settings for iSCSI ports and global iSCSI settings.

Valid options:
-slammerNode

Displays the specified Slammer CU. Enter the ID or FQN hosting the iSCSI port.

If you do not specify this option, the system will display iSCSI port information for all Slammers.

If you do not specify either `-slammerNode` or `-global`, the system will display global iSCSI settings first followed by the iSCSI settings for each SAN Slammer that provides an iSCSI port.

-port

Displays the iSCSI port on the Slammer CU.

If you do not specify this option, the system displays settings for all of the iSCSI ports on the Slammer CU.

-global

Displays the global iSCSI settings.

If you do not specify either `-slammerNode` or `-global`, the system will display global iSCSI settings first followed by the iSCSI settings for each SAN Slammer that provides an iSCSI port.

-help

Displays the detailed command help information.

EXAMPLE   Run `axiomcli iscsi -list` to display the settings for iSCSI ports and global iSCSI settings:

axiomcli iscsi -list

Results:

```
Global IScsi Settings
   IScsiSettings
      AccessControl           : NONE
      DeviceName              : iqn.
2002-03.com.pillardata:axiom.ssn.a001275bcx
      Alias                   : Pillar Axiom 500
SSN:A001275BCX
      Authentication          : PER_INITIATOR
      AuthenticationServer    : AXIOM
      HeaderDigest            : false
      DataDigest              : false
      BiDirectionalChap       : false
   ISnsSettings
      EnableISnsServerRegistration : false
      ISnsServerDiscovery          : STATIC
      IpAddress                    : 0.0.0.0
      TcpPort                      : 3260
   RadiusSettings
      PrimaryServerIpAddress    : 0.0.0.0
```

```
        PrimaryUdpPort          : 1812
        SecondaryServerIpAddress : 0.0.0.0
        SecondaryUdpPort         : 1812
/SLAMMER-01
    SlammerId          : 2008000B08030522
    ControlUnitFqn     : /SLAMMER-01/0
    ControlUnitId      : 2008000B08030522
    ControlUnitNumber : 0
        IScsiPort               : port0
            MacAddress          : 00:C0:DD:07:65:D2
            PortalGroupTag      : 20
            MaximumSpeed        : 1000000000
            Speed               : 1000000000
            Status              : CONNECTED
            ConnectionType      : COPPER
            TcpPort             : 3260
            MaximumMtuBytes     : 9000
            MinimumMtuBytes     : 582
            MtuBytes            : 1500
            IpAssignment        : STATIC
            IpAddress           : 192.168.100.208
            Netmask             : 255.255.255.0
            Gateway             : 192.168.100.1
            ISnsClientStatus    : NOT_CONNECTED
            VlanEnabled         : false
            VlanId              : 0

        IScsiPort               : port1
            MacAddress          : 00:C0:DD:07:65:D4
            PortalGroupTag      : 21
            MaximumSpeed        : 1000000000
            Speed               : 1000000000
            Status              : CONNECTED
            ConnectionType      : COPPER
            TcpPort             : 3260
            MaximumMtuBytes     : 9000
            MinimumMtuBytes     : 582
            MtuBytes            : 1500
            IpAssignment        : STATIC
            IpAddress           : 192.168.100.209
            Netmask             : 255.255.255.0
            Gateway             : 192.168.100.1
            ISnsClientStatus    : NOT_CONNECTED
            VlanEnabled         : false
            VlanId              : 0

    ControlUnitFqn     : /SLAMMER-01/1
    ControlUnitId      : 2009000B0803052A
    ControlUnitNumber : 1
        IScsiPort               : port0
            MacAddress          : 00:C0:DD:07:66:3A
            PortalGroupTag      : 36
            MaximumSpeed        : 1000000000
```

```
                Speed                 : 1000000000
                Status                : CONNECTED
                ConnectionType        : COPPER
                TcpPort               : 3260
                MaximumMtuBytes       : 9000
                MinimumMtuBytes       : 582
                MtuBytes              : 1500
                IpAssignment          : STATIC
                IpAddress             : 192.168.100.210
                Netmask               : 255.255.255.0
                Gateway               : 192.168.100.1
                ISnsClientStatus      : NOT_CONNECTED
                VlanEnabled           : false
                VlanId                : 0

            IScsiPort                 : port1
                MacAddress            : 00:C0:DD:07:66:3C
                PortalGroupTag        : 37
                MaximumSpeed          : 1000000000
                Speed                 : 1000000000
                Status                : CONNECTED
                ConnectionType        : COPPER
                TcpPort               : 3260
                MaximumMtuBytes       : 9000
                MinimumMtuBytes       : 582
                MtuBytes              : 1500
                IpAssignment          : STATIC
                IpAddress             : 192.168.100.211
                Netmask               : 255.255.255.0
                Gateway               : 192.168.100.1
                ISnsClientStatus      : NOT_CONNECTED
                VlanEnabled           : false
                VlanId                : 0
```

job

DESCRIPTION

Manages jobs on a Pillar Axiom system to be performed in the future once or repeatedly. A job is a management task, such as generating reports, updating software, or creating Clone LUNs, that can be scheduled on a Pillar Axiom system. Not all management tasks can be scheduled; jobs are a subset of all possible management tasks.

Use the `job` command to schedule and manage jobs configured on a Pillar Axiom system.

You can use the `-verify` option to test the command-line argument and its options before running it in Pillar Axiom CLI. If no errors exist, the Pillar Axiom CLI command returns without executing. For example, the `-verify` option is helpful when writing scripts in which a particular Pillar Axiom CLI command usage can be verified prior to adding it to a script.

You can use the `-outputformat` or the `-o` command option to specify how to display the results of running a command. If you do not specify either the `-outputformat` or the `-o` command option, the results display in the default `text` format. Valid options:

text   The system displays the results in the plain-text format.

xml   The system displays the results in the tagged XML format.

You can use the `-sessionKey` option to specify which Pillar Axiom system to access and which session key value to use for validation. The Pillar Axiom CLI displays the session key value when you log in to the Pillar Axiom system using the `-returnKey` option.

You can use the `-timeout` option to set a time limit for the execution of a command. If the command takes longer than the number of seconds specified in the `-timeout` option, the system stops executing the command. If you do not specify the `-timeout` option, the system does not set any time limit for executing the command.

SYNTAX

```
axiomcli job -add -name job-name
     [{-enable | -disable}]
     {-oneTime date-time
     | -recurring
         -interval {hourly | daily | weekly | monthly}
         -frequency interval-frequency
         -startTime date-time
     }
     {-softwareUpdate {-component
```

```
component-version: instruction
            [, component-version: instruction]...
            | -all {newerversiononly | alwaysinstall}
         }
         {-disruptive | -noDisruptive}
     | -addCloneLun -cloneName clone-lun-name
         -source source-lun-id-or-fqn
         [-addressableCapacity addressable-logical-capacity]
         [-priority {premium | high | medium | low |
archive}]
         [-volumeGroup volume-group-id-or-fqn]
         [{-fibreChannelAccess | -noFibreChannelAccess}]
         [{-iscsiAccess | -noIscsiAccess}]
         [-maskedSlammerPorts port-name [, port-name]...]
         [-inActive]
     | -generateReport
         -type {system | storageUse | volumeUse |
performance | sanHosts | systemSummary}
         [-language locale-language]
         [-country locale-country]
         [-variant locale-variant]
     }
     [-verify]
     [{-outputformat | -o} {text | xml}]
     [-sessionKey session-key]
     [-timeout timeout-in-seconds]
```

```
axiomcli job -modify -job job-id-or-fqn
     [-newName job-name]
     [{-enable | -disable}]
     [{-oneTime date-time
       | -recurring
         -interval {hourly | daily | weekly | monthly}
         -frequency interval-frequency
         -startTime date-time
     }]
     [{-softwareUpdate {-component
component-version: instruction
            [, component-version: instruction]...
            | -all {newerversiononly | alwaysinstall}
            }
         {-disruptive | -noDisruptive}
     | -addCloneLun -cloneName clone-lun-name
         -source source-lun-id-or-fqn
         [-addressableCapacity addressable-logical-capacity]
         [-priority {premium | high | medium | low |
archive}]
         [-volumeGroup volume-group-id-or-fqn]
         [{-fibreChannelAccess | -noFibreChannelAccess}]
         [{-iscsiAccess | -noIscsiAccess}]
```

```
            [-maskedSlammerPorts port-name [,port-name]...]
            [{-active | -inActive}]
      | -generateReport
            -type {system | storageUse | VolumeUse |
performance | sanHosts | systemSummary}
            [-language locale-language]
            [-country locale-country]
            [-variant locale-variant]
      }]
      [-verify]
      [{-outputformat | -o} {text | xml}]
      [-sessionKey session-key]
      [-timeout timeout-in-seconds]
```

```
axiomcli job -delete -job job-id-or-fqn [,job-id-or-fqn]...
      [-verify]
      [{-outputformat | -o} {text | xml}]
      [-sessionKey session-key]
      [-timeout timeout-in-seconds]
```

```
axiomcli job -list [-details] [-job job-id-or-fqn
[,job-id-or-fqn]...]
      [-verify]
      [{-outputformat | -o} {text | xml}]
      [-sessionKey session-key]
      [-timeout timeout-in-seconds]
```

```
axiomcli job -help
```

PARAMETERS

Note: Only the Primary Administrator, Administrator 1, and Administrator 2 roles can issue all command options.

All roles can issue the -list command option.

-add

> Creates a Pillar Axiom job. A job is a request that you schedule to run at a later time. Based on the type of scheduled operation that the job is associated with, you must complete different sets of name and value pairs.
>
> Valid options:
> **-name**
>
> Identifies the unique name of a scheduled operation, which is an action to be performed at the specified time or at regular intervals.
>
> **-enable**
>
> Indicates whether the job is enabled.
>
> **-disable**

Indicates whether the job is disabled, allowing you, for example, to define a schedule before the source volume (LUN) has been made available to users.

-oneTime

Identifies the date and time at which the Pillar Axiom system starts a job to be performed once.

-recurring

Identifies the date and time at which the Pillar Axiom system starts a scheduled operation.

Valid options for job schedule recurrence intervals are:

hourly	1 through 24
daily	1 through 7
weekly	1 though 4

You can schedule jobs in `-intervals` and `-frequency`. For example, to schedule a job to run every other week, enter **-intervals weekly -frequency 2**. You can also provide the `-startTime` to indicate the time and date when to begin the periodic transfers.

The format of date-time is `YYYY-MM-DD[THH[:mm[:SS[.xxx]]]][+-HH:mm]` where:

- `YYYY-MM-DD` designates a four-digit year, two-digit month, and two-digit day for the date.
- `T` is a separator that designates the start of the time portion of the string.
- `HH:mm:SS.xxx` designates hours, minutes, and seconds (to three decimals places) in values for a 24-hour clock.
- `+ -HH:mm` designates the time zone as an offset from Coordinated Universal Time (UTC) in hours and minutes. The plus (+) or minus (-) prefix must be provided.

At a minimum, just the date is required, in which case the time defaults to `12:00:00.000+00:00`. You can specify the hours with the rest of the values defaulting to `0`. You can also specify the minutes, seconds, fractional seconds, and the UTC offset. The UTC offset is independent of the time values, so it can be specified with just the date or any combination of date and time. For example:

- `2006-08-25T16:30:00-08:00` specifies a time of 4:30 PM on August 25, 2006, Pacific Time
- `2006-8-25` specifies a time of 12:00 AM on August 25, 2006, UTC
- `2010-10-10T04:50-07:00` specifies a time of 4:50 AM on October 10, 2010, Mountain Standard Time
- `2010-10-10T12:15:01.123-08:00` specifies a time of 12:15:01.123 PM on October 10, 2010, Pacific Time

Valid options:
-interval

Specifies the time unit to use for the interval between job executions.

-frequency

Specifies the positive number of time units between job executions. For example, to create a Clone LUN every other week, specify "weekly" for the `-interval` and "2" for `-frequency.`

-startTime

Specifies the time and date when to begin the job execution.

-softwareUpdate

Schedules a package of software or firmware updates from the Pillar support portal on the Pillar Axiom system.

Valid options:
-component

Specifies a comma delimited list of the *component-version* to install and its installation *instruction*. The *component-version* is a string that conforms to the following expression:

    [0-9]{4}-[0-9]{5}-[0-9]{6}-[0-9]{6}

The *instruction* variable can be one of the following:

    exclude
    newerversiononly
    alwaysinstall

For a list of component versions available for installation, enter the following command-line argument:

    axiomcli software_update -list -staged

-all

Stages a package of software updates to Pillar Axiom system.

Valid options:
newerversiononly

Installs only those components that are newer than the components that are already installed on the Pillar Axiom system.

alwaysinstall

Installs all of the components, even if they are older than the versions of the components installed on the Pillar Axiom system.

-disruptive

Allows for a disruptive update. Updates are typically performed non-disruptively.

Note: Select this option only when advised by Pillar World Wide Customer Support Center, unless it is necessary to set it for an update that defines itself as disruptive.

If you do not specify the -disruptive option, then -noDisruptive is the default value.

-addCloneLun

Schedules a partial copy block-level snapshot of a LUN.

-cloneName

Identifies the name of the Clone LUN.

-source

Identifies the ID or fully qualified name (FQN) of the source LUN to be cloned.

-addressableCapacity

Identifies the addressable logical capacity of the LUN. This value cannot be smaller than the current addressable capacity of the LUN.

-priority

Identifies the Quality of Service (QoS) performance of the LUN.

Valid options:

premium	Highest processing queue priority. Striping occurs across

	eight serial ATA (SATA) RAID groups or four Fibre Channel (FC) RAID groups on the outermost 20% of the drive platters.
`high`	Next highest processing queue priority. Striping occurs across eight SATA RAID groups or four FC RAID groups on the outermost 20-40% of the drive platters.
`medium`	Intermediate processing queue priority. Striping occurs across six SATA RAID groups or three FC RAID groups on the outermost 40-60% of the drive platters.
`low`	Next to lowest processing queue priority. Striping occurs across four SATA RAID groups or two FC RAID groups on the outermost 60-80% of the drive platters.
`archive`	Lowest processing queue priority. Striping occurs across four SATA RAID groups or two FC RAID groups on the outermost 80-100% of the drive platters.

`-volumeGroup`

Identifies the volume group, in which the Clone LUN should be added.

`-fibreChannelAccess`

Allows access to the new Clone LUN through the Fibre Channel (FC) ports.

`-noFibreChannelAccess`

Disables access to the Clone LUN.

`-iscsiAccess`

Allows access to the new Clone LUN through the iSCSI ports.

-noIscsiAccess

Disables the iSCSI access to the Clone LUN.

-maskedSlammerPorts

Restricts access to the Clone LUN through the Slammer ports identified by port name.

If you do not specify this option, the Clone LUN becomes accessible on all Slammer ports by default.

-inActive

Makes the newly created Clone LUN inaccessible to all hosts.

If you do not specify this option, the Clone LUN will be accessible to all hosts.

-generateReport

Indicates whether a report stored on the Pillar Axiom system is to be generated.

Valid options:
-type

Identifies the type of report to generate.

Valid options:

system	Provides detailed information on the configuration and status of the current Pillar Axiom system and all of its components, such as serial numbers, firmware versions, ports, and status, for the Pilot, Slammers, and Bricks.
storageUse	Provides storage capacity information on the storage currently available on the Pillar Axiom system. Includes total capacity, allocated, free, and unavailable capacity,

		and storage use by Storage Class.
	`volumeUse`	Provides capacity information for each logical volume on the Pillar Axiom system.
	`performance`	Provides performance information about the LUNs on the Pillar Axiom system. Includes operations/ second, read MB/s, and write MB/s.
	`sanHosts`	Provides statistical information on the host servers and configured components currently included in your storage area network (SAN).
	`systemSummary`	Provides a summary of the Pilot, Slammer, and Brick information included in the detailed System Configuration report.

`-language`

Specifies the language (two lowercase letters that conform to ISO-639) to use in the report. You can find the full list of the ISO-639 language codes at http://ftp.ics.uci.edu/pub/ietf/ http/related/iso639.txt.

`-country`

Specifies the country locale (two uppercase letters that conform to ISO-3166) to use for generating the report. You can find a copy of ISO-3166 at http:// www.chemie.fu-berlin.de/diverse/doc/ISO_3166.html.

`-variant`

Specifies the locale variant, if any, to use for generating the report.

`-modify`

Modifies the specified Pillar Axiom job. You can also enable or disable the job.

Valid options:
-newName

Identifies the new name of the job .

-enable

Indicates whether the job is enabled.

-disable

Indicates whether the job is disabled, allowing you, for example, to define a schedule before the source volume (LUN) has been made available to users.

-oneTime

Identifies the date and time at which the Pillar Axiom system starts a job to be performed once.

-recurring

Identifies the date and time at which the Pillar Axiom system starts a scheduled operation.

Valid options:
-interval

Specifies the time unit to use for the interval between job executions.

-frequency

Specifies the positive number of time units between job executions. For example, to create a Clone LUN every other week, specify "weekly" for the `-interval` and "2" for `-frequency.`

-startTime

Specifies the time and date when to begin the job execution.

-softwareUpdate

Schedules a package of software or firmware updates from the Pillar support portal on the Pillar Axiom system.

Valid options:
-component

Specifies a comma delimited list of the *component-version* to install and its installation *instruction*. The *component-version* is a string that conforms to the following expression:

[0-9]{4}-[0-9]{5}-[0-9]{6}-[0-9]{6}

The *instruction* variable can be one of the following:

```
exclude
newerversiononly
alwaysinstall
```

For a list of component versions available for installation, enter the following command-line argument:

```
axiomcli software_update -list -staged
```

-all

Stages a package of software updates to Pillar Axiom system.

Valid options:
newerversiononly

Installs only those components that are newer than the components that are already installed on the Pillar Axiom system.

alwaysinstall

Installs all of the components, even if they are older than the versions of the components installed on the Pillar Axiom system.

-disruptive

Allows for a disruptive update. Updates are typically performed non-disruptively.

Note: Select this option only when advised by Pillar World Wide Customer Support Center, unless it is necessary to set it for an update that defines itself as disruptive.

If you do not specify the -disruptive option, then -noDisruptive is the default value.

-addCloneLun

Identifies a partial copy block-level snapshot of a LUN.
Valid options:
-cloneName

Identifies the name of the Clone LUN.

-source

Identifies the ID or fully qualified name (FQN) of the source LUN to be cloned.

-addressableCapacity

Identifies the addressable logical capacity of the LUN. This value cannot be smaller than the current addressable capacity of the LUN.

-priority

Identifies the Quality of Service (QoS) priority of the LUN.

-volumeGroup

Identifies the volume group, in which the Clone LUN should be added.

-fibreChannelAccess

Allows access to the new Clone LUN through the Fibre Channel (FC) ports.

-noFibreChannelAccess

Disables access to the Clone LUN.

-iscsiAccess

Allows access to the new Clone LUN through the iSCSI ports.

-noIscsiAccess

Disables the iSCSI access to the Clone LUN.

-maskedSlammerPorts

Restricts access to the Clone LUN through the Slammer ports identified by port name.

If you do not specify this option, the Clone LUN becomes accessible on all Slammer ports by default.

-active

Activates the Clone LUN so that it can be discovered and accessed by a host.

-inActive

Makes the newly created Clone LUN inaccessible to all hosts.

If you do not specify this option, the Clone LUN will be accessible to all hosts.

-generateReport

Generates a specific type of report to be stored on the Pillar Axiom system for download to your client in the format of your choice.

Valid options:

-type

Specifies the type of report to generate.

Valid options:

- □ sanHosts
- □ performance
- □ storageUse
- □ volumeUse
- □ system
- □ systemSummary
- □ filesystemQuotas

-language

Specifies the language (two lowercase letters that conform to ISO-639) to use in the report. You can find the full list of the ISO-639 language codes at http://ftp.ics.uci.edu/pub/ietf/http/related/iso639.txt.

-country

Specifies the country locale (two uppercase letters that conform to ISO-3166) to use for generating the report. You can find a copy of ISO-3166 at http://www.chemie.fu-berlin.de/diverse/doc/ISO_3166.html.

-variant

Specifies the locale variant, if any, to use for generating the report.

-delete

Deletes one or more scheduled jobs on a Pillar Axiom system.

Valid options:
-job

Specifies the IDs or FQNs of one or more jobs to be deleted.

-list

Displays a list of jobs that are associated with the specified schedule that will be performed in the future.

Valid options:
-details

Displays the job name, job to perform, and its schedule information.

-job

Displays the ID or FQN of one or more jobs.

-help

Displays the detailed command help information.

EXAMPLE

Run `job -add` to create a Pillar Axiom job:

```
axiomcli job -add -name report -oneTime
2011-04-15T17:05:03.913+00:00 -generateReport -type
system
```

Results:

```
NewObject
    Id                            :
4130303132373542A13B46D2B28CDA37
    Fqn                           : /report
Command Succeeded
```

`login`

DESCRIPTION   Creates a secure connection and logs the user in to the Pillar Axiom system.

If the system does not find valid login credentials with the `login` command, in the environment variables, or in the temporary file, all other Pillar Axiom CLI commands return a message instructing that the `login` command must be provided first.

You can use the `-verify` option to test the command-line argument and its options before running it in Pillar Axiom CLI. If no errors exist, the Pillar Axiom CLI command returns without executing. For example, the `-verify` option is helpful when writing scripts in which a particular Pillar Axiom CLI command usage can be verified prior to adding it to a script.

You can use the `-outputformat` or the `-o` command option to specify how to display the results of running a command. If you do not specify either the `-outputformat` or the `-o` command option, the results display in the default `text` format. Valid options:

`text`   The system displays the results in the plain-text format.

`xml`   The system displays the results in the tagged XML format.

Note: The `login` command replaces the deprecated `axiom_login` command.

SYNTAX
```
axiomcli login [-returnKey] [-force]
    [-u admin-user -p admin-password axiom-system]
    [-verify]
    [{-outputformat | -o} {text | xml}]
```
```
axiomcli login -help
```

PARAMETERS   **`-returnKey`**

Requests that the command return the session key for use in subsequent commands.

After the key is returned, it can be used in one of the following ways:
- ○ Provides the `-sessionKey` option for all subsequent commands. Any command that uses the session key will have the command directed to the Pillar Axiom system associated with that session key.
- ○ Stores the session key in the environment variable

PDS_SESSIONKEY. Subsequent commands that don't include the `-sessionkey` option will use the value stored in PDS_SESSIONKEY.

-force

Disconnects all current user sessions prior to performing the login.

If there are five simultaneous sessions in use for any given account that are preventing normal login from succeeding, the `-force` command disconnects all current user sessions of the given account to allow the login to succeed.

Because the session key can be accessed from different sources, Pillar Axiom CLI uses the following rules to determine where to get the session key for a given command:

- If you specify the `-sessionKey` option with the command, that value will be used, and the values of PDS_SESSIONKEY environment variable will be ignored.
- If you do not specify the `-sessionKey` option, the value from the PDS_SESSIONKEY environment variable will be used.
- If the PDS_SESSIONKEY environment variable is undefined, the session key from the temporary hidden `.AXCLI_Session` file is used.

If a session key is not found, then a message displays instructing that the `login` command, along with valid login credentials, be specified.

-u

Specifies the administrative user account used to log into the system. If the credentials for an administrator account are not specified, a message displays instructing that a valid administrator account be specified.

-p

Specifies the password and host machine for the administrative account. If a password is not specified, then a message displays instructing that a password and host machine be specified.

Valid parameters:
admin-password

Identifies the password of the administrator account. Passwords can be between 6 and 20 characters in length. Passwords are case sensitive and embedded spaces are permitted. Blank passwords are not permitted.

axiom-system

Specifies the Pillar Axiom system to log into. Provide the DNS host name or IP address of the Pilot.

Note: If `-u`, `-p`, and *axiom-system* are not provided, then the PDS_USER, PDS_PASSWORD, and PDS_HOST environment variables will be used. If `-u`, `-p`, and *axiom-system* are not specified, and one or more of the environment variables are not initiated, the command will fail.

-verify

Verifies that the login credentials entered are valid. If you specify this option, you will not be logged in to the Pillar Axiom system.

-help

Displays the detailed command help information.

EXAMPLE   Run `axiomcli login` to connect to a Pillar Axiom system.

```
axiomcli login -u admin001 -p password axiomhost.domain
```

Results:

```
Login Successful

****************************************************
**                                                **
**   This is a company computer system with access  **
**   restricted to those with proper authorization. **
**   Authorized parties are restricted to those     **
**   functions which have been assigned to perform  **
**   work related duties.  Any unauthorized access  **
**   will be investigated and prosecuted to the     **
**   full extent of the law.  If you are not an     **
**   authorized user, disconnect now.               **
**                                                **
****************************************************
```

`logout`

DESCRIPTION

Logs off an active Pillar Axiom CLI session.

Use the `logout` command to log off an active Pillar Axiom CLI session on a Pillar Axiom system.

You can use the `-verify` option to test the command-line argument and its options before running it in Pillar Axiom CLI. If no errors exist, the Pillar Axiom CLI command returns without executing. For example, the `-verify` option is helpful when writing scripts in which a particular Pillar Axiom CLI command usage can be verified prior to adding it to a script.

You can use the `-outputformat` or the `-o` command option to specify how to display the results of running a command. If you do not specify either the `-outputformat` or the `-o` command option, the results display in the default `text` format. Valid options:

text   The system displays the results in the plain-text format.

xml   The system displays the results in the tagged XML format.

You can use the `-timeout` option to set a time limit for the execution of a command. If the command takes longer than the number of seconds specified in the `-timeout` option, the system stops executing the command. If you do not specify the `-timeout` option, the system does not set any time limit for executing the command.

Note: The `logout` command replaces the deprecated `exit` and `quit` commands.

SYNTAX

`axiomcli logout`

`axiomcli logout -help`

PARAMETERS

Note: All roles can issue this command.
-help

Displays the detailed command help information.

EXAMPLE

Run `axiomcli logout` to log out from the Pillar Axiom CLI session:

axiomcli logout

Results:

`Logout Successful`

`lun`

DESCRIPTION   Creates and manages the LUNs on a Pillar Axiom system. You can modify the parameters, mappings, and Quality of Service (QoS) settings of an existing LUN. You can also copy existing LUNs and give the new LUNs different QoS attributes, which allows system resources to be maximized.

A LUN is defined as:

A logical volume within a storage area network (SAN). Administrators assign storage resources and Quality of Service (QoS) attributes to each logical unit (LUN).

Use the `lun` command to manage the LUNs on a Pillar Axiom system.

You can use the `-verify` option to test the command-line argument and its options before running it in Pillar Axiom CLI. If no errors exist, the Pillar Axiom CLI command returns without executing. For example, the `-verify` option is helpful when writing scripts in which a particular Pillar Axiom CLI command usage can be verified prior to adding it to a script.

You can use the `-outputformat` or the `-o` command option to specify how to display the results of running a command. If you do not specify either the `-outputformat` or the `-o` command option, the results display in the default `text` format. Valid options:

`text`   The system displays the results in the plain-text format.

`xml`   The system displays the results in the tagged XML format.

You can use the `-sessionKey` option to specify which Pillar Axiom system to access and which session key value to use for validation. The Pillar Axiom CLI displays the session key value when you log in to the Pillar Axiom system using the `-returnKey` option.

You can use the `-timeout` option to set a time limit for the execution of a command. If the command takes longer than the number of seconds specified in the `-timeout` option, the system stops executing the command. If you do not specify the `-timeout` option, the system does not set any time limit for executing the command.

Note: The `lun` command replaces the deprecated `sanlun` command.

The `lun -copy` command option replaces the deprecated `luncopy` command.

SYNTAX   ```
axiomcli lun -add -name lun-name
     -addressableCapacity addressable-logical-capacity
```

```
                    [-allocatedCapacity allocated-logical-capacity]
                    {-profile performance-profile-id-or-fqn
                    | -priority {premium | high | medium | low |
                       archive}
                         [-redundancy {1 | 2}]
                         [-accessBias {sequential | random | mixed}]
                         [-ioBias {read | write | mixed}]
                    }
                    [-cloneCapacity clone-capacity]
                    [-volumeGroup volume-group-id-or-fqn]
                    [-slammerNode slammer-node-id-or-fqn]
                         [-maskedSlammerPorts port-name [,port-name]...]
                    [{-mapped | -unmapped [-lunNumber lun-number]}]
                    [{-fibreChannelAccess | -noFibreChannelAccess}]
                    [{-iscsiAccess | -noiIscsiAccess}]
                    [-storageDomain storage-domain-id-or-fqn]
                    [-storageClass {sataHd | fcHd | slcSsd | mlcSsd}
]
                    [{-active | -inactive}]
                    [-copyPriority {auto | low | high}]
                    [-suppressConservativeMode]
                    [-verify]
                    [{-outputformat | -o} {text | xml}]
                    [-sessionKey session-key]
                    [-timeout timeout-in-seconds]
```

```
axiomcli lun -modify -lun lun-id-or-fqn
                    [-newName new-lun-name]
                    [-addressableCapacity addressable-logical-capacity]
                    [-allocatedCapacity allocated-logical-capacity]
                    [{-profile performance-profile-id-or-fqn
                    | [-priority {premium | high | medium | low |
                          archive} [-migrateData]]
                         [-redundancy {1 | 2}]
                         [-accessBias {sequential | random | mixed}]
                         [-ioBias {read | write | mixed}]
                     }]
                    [-cloneCapacity clone-capacity]
                    [-volumeGroup volume-group-id-or-fqn]
                    [-slammerNode slammer-node-id-or-fqn]
                    [{-mapped | -unmapped [-lunNumber lun-number]}]
                    [{-fibreChannelAccess | -noFibreChannelAccess}]
                    [{-iscsiAccess | -noIscsiAccess}]
                    [-maskedSlammerPorts port-name [,port-name]...]
                    [-storageDomain storage-domain-id-or-fqn]
                    [-storageClass {sataHd | fcHd | slcSsd | mlcSsd}]
                    [{-active | -inactive}]
                    [-copyPriority {auto | low | high}]
                    [{-allowConservativeMode |
-suppressConservativeMode}]
```

```
    [-clearLossOfSync]
    [-clearLostData]
    [-clearPinnedData]
    [-rebuildRedundancy]
    [-verify]
    [{-outputformat | -o} {text | xml}]
    [-sessionKey session-key]
    [-timeout timeout-in-seconds]
```

```
axiomcli lun -copy -source source-lun-id-or-fqn
    -name lun-name
    [-addressableCapacity addressable-logical-capacity]
    [{-profile performance-profile-id-or-fqn
    | -priority {premium | high | medium | low |
     archive}
        [-redundancy {1 | 2}]
        [-accessBias {sequential | random | mixed}]
        [-ioBias {read | write | mixed}]
    }]
    [-allocatedCapacity allocated-logical-capacity]
    [-cloneCapacity clone-capacity]
    [-volumeGroup volume-group-id-or-fqn]
    [{-mapped | -unmapped [-lunNumber lun-number]}]
    [{-fibreChannelAccess | -noFibreChannelAccess}]
    [{-iscsiAccess | -noIscsiAccess}]
    [-maskedSlammerPorts port-name [,port-name]...]
    [-storageDomain storage-domain-id-or-fqn]
    [-storageClass {sataHd | fcHd | slcSsd | mlcSsd}]
    [{-active | -inactive}]
    [-copyPriority {auto | low | high}]
    [-suppressConservativeMode]
    [-verify]
    [{-outputformat | -o} {text | xml}]
    [-sessionKey session-key]
    [-timeout timeout-in-seconds]
```

```
axiomcli lun -delete -lun lun-id-or-fqn [,lun-id-or-fqn]...
[-suppressWarnings]
    [-verify]
    [{-outputformat | -o} {text | xml}]
    [-sessionKey session-key]
    [-timeout timeout-in-seconds]
```

```
axiomcli lun -cloneDelete -lun lun-id-or-fqn
[-suppressWarnings]
    [-verify]
    [{-outputformat | -o} {text | xml}]
```

```
      [-sessionKey session-key]
      [-timeout timeout-in-seconds]

axiomcli lun -maximumCapacity
      -storageDomain storage-domain-id-or-fqn
      -priority {premium | high | medium | low | archive}
      -redundancy {1 | 2}
      [-raidLevel {raid5 | raid10 | default}]
      [-stripSize {default | oneMeg | normal}]
      [-stripeWidth stripe-width]
      [-enableBrickWideStriping]
      -storageClass storage-class
      [-verify]
      [{-outputformat | -o} {text | xml}]
      [-sessionKey session-key]
      [-timeout timeout-in-seconds]

axiomcli lun -list [-details [-bs]] [-lun lun-id-or-fqn
[,lun-id-or-fqn]...]
      [-volumeGroup volume-group-id-or-fqn
[,volume-group-id-or-fqn]...]
      [-verify]
      [{-outputformat | -o} {text | xml}]
      [-sessionKey session-key]
      [-timeout timeout-in-seconds]

axiomcli lun -help
```

PARAMETERS

Note: Only the Primary Administrator and Administrator 1 roles can issue all command options and all roles can issue the `-list` option.

-add

> Creates a LUN in a Pillar Axiom system to efficiently partition (stripe) storage across multiple Bricks based on storage or performance priorities.
>
> Valid options:
> **-name**
>
> Identifies the name that is assigned to a LUN for administrative purposes. LUN names must be unique across the Pillar Axiom system and must be 82 or fewer UTF characters, or 255 or fewer ASCII characters.
>
> You cannot use invalid characters such as ASCII 0 through 31 control codes or embedded tabs. You also cannot use special characters such as the slash (/) or backslash (\), and dot (.) and dot-dot (..) by themselves.
>
> **-addressableCapacity**
>
> Identifies the addressable logical capacity of the LUN.

-allocatedCapacity

Defines the actual amount of storage that is assigned to a logical volume. An allocated capacity can grow to and possibly exceed by a small amount the addressable logical capacity.

-profile

Identifies the ID or fully qualified name (FQN) of the QoS performance profile that should be applied when creating the LUN. When creating a new LUN, either the `-profile` option or the `-priority` option (not both), must be provided.

-priority

Identifies the QoS performance of the LUN.

Valid options:

`premium`	Highest processing queue priority. Striping occurs across eight serial ATA (SATA) RAID groups or four Fibre Channel (FC) RAID groups on the outermost 20% of the drive platters.
`high`	Next highest processing queue priority. Striping occurs across eight SATA RAID groups or four FC RAID groups on the outermost 20-40% of the drive platters.
`medium`	Intermediate processing queue priority. Striping occurs across six SATA RAID groups or three FC RAID groups on the outermost 40-60% of the drive platters.
`low`	Next to lowest processing queue priority. Striping occurs across four SATA RAID groups or two FC RAID groups on the outermost 60-80% of the drive platters.

archive	Lowest processing queue priority. Striping occurs across four SATA RAID groups or two FC RAID groups on the outermost 80-100% of the drive platters.

Note: The `-priority` option is mutually exclusive with `-profile.`

-redundancy

Identifies how many mirror copies of the original data are stored online. The default is `1` (standard).

Valid options:

1	Stores original data only. Data striping over multiple RAID groups maintains full redundancy, even without mirror copies. **Note:** Standard does not maintain redundancy at the LUN level; however, it does provide sufficient data protection for most purposes.
2	Stores original data and one mirror copy, with data striping over multiple RAID groups. **Note:** Double Redundancy can only provide true redundancy if your system has enough Bricks to allocate the LUN such that no two mirror copies share a RAID group.

-accessBias

Identifies the expected access pattern to the LUN.

Valid options:

sequential	Read and write requests from client applications tend to request operations on the data one record after the other.

random	Read and write requests from client applications tend to request operations on the data records in an arbitrary order.
mixed	Read and write requests from client applications tend to mix the request operations on the data sometimes in sequential and sometimes in random order.

-ioBias

Identifies the typical read-write ratio.

Valid options:

read	Most requests from client applications are for read operations.
write	Most requests from client applications are for write operations.
mixed	Requests from client applications are likely equal for read and write operations.

-cloneCapacity

Identifies the capacity that is allocated for Clone LUNs.

-volumeGroup

Identifies the volume group, where the LUN will reside. If you do not specify a volume group, the LUN is located in the root volume group.

-slammerNode

Identifies the Slammer CU to which the LUN is assigned. By default, the Pillar Axiom system selects the Slammer automatically.

If you do not specify this option, the Slammer name and control unit (CU) values are entered as /slammer name/control unit. For example, **/Slammer1/CU0** specifies Slammer1 and control unit 0. The CU value is not

case sensitive and may be omitted entirely (for example, **/Slammer1/0**).

Note: If you specify the `-slammerNode` option, you must also specify the `-slammerPorts` option.

-maskedSlammerPorts

Restricts access to the LUN through the Slammer ports identified by port-name. If you do not specify this option, the LUN becomes accessible on all Slammer ports on the assigned CU by default.

The `-maskedSlammerPorts` option can only be specified along with the `-slammerNode` option.

If you do not specify this option, the Slammer name, CU, port number, and protocol values are entered as follows:

```
/slammer name/control unit/port number/
(fc | iscsi)
```

For example, **/Slammer1/CU0/Port1/fc** specifies Slammer1, CU 0, and Fibre Channel (FC) port 1.

The CU and port values are not case sensitive and can be omitted. For example, **/0/0/iscsi** specifies CU 0 and iSCSI port 0. You can specify up to 16 ports.

-mapped

Identifies that the LUN is mapped to specific hosts.

-unmapped

Enables all hosts to have visibility to the LUN. If you do not specify either `-mapped` or `-unmapped` option, `-mapped` is the default value.

If you specify the `-unmapped` option, you can specify an additional `-lunNumber` option that assigns *lun-number* as the new LUN number.

-lunNumber

Identifies the optional LUN number to assign to the LUN when you specify the `-unmapped` option.

If you specify the `-unmapped` option, you can specify an additional `-lunNumber` option that assigns *lun-number* as the new LUN's number.

-fibreChannelAccess

Allows access to the new LUN through the FC ports. The
`-noFibreChannelAccess` option disables FC access to
the LUN. If neither option is specified, then the system
uses the `-fibreChannelAccess` option by default.

-noFibreChannelAccess

Disables the FC access to the LUN.

-iscsiAccess

Allows access to the new LUN through the iSCSI ports. If
you do not specify this option, the iSCSI access to the LUN
is disabled.

-noIscsiAccess

Disables the iSCSI access to the LUN.

-storageDomain

Identifies the Storage Domain in which the LUN should be
created. If this option is not provided, the system
determines which Bricks contains the data.

-storageClass

Identifies the type of physical storage in which to assign to
the LUN. If the Pillar Axiom system has two or more
different Storage Classes, you must specify the Storage
Class for the Pillar Axiom system to use.

Valid options:
- `sataHd` (Serial ATA hard drives)
- `fcHd` (Fibre Channel hard drives)
- `slcSsd` (single-layer cell, solid state drives)
- `mlcSsd` (multi-layer cell, solid state drives

-active

Enables the LUN to be accessible and available for use.

-inactive

Disables the LUN from being accessible and available for
use.

-copyPriority

Identifies the setting to use that controls the impact on
performance when you need to copy or migrate data from
one location to another.

Valid options:

auto The system finds a compromise between completion rate and system performance.

low The system takes its time to complete the copy and data migration without degrading overall system performance.

high The system completes the copy or data migration as quickly as possible even if there is degradation of system performance.

If you do not specify any option, `auto` is the default value.

-suppressConservativeMode

Prevents the Pillar Axiom system from entering conservative mode for the specified LUN.

⚠ Caution	If a CU fails, the system does not enable *write through*. If the remaining CU fails, any data that has not been written to the Bricks is lost.

-modify

Modifies the addressable capacity, volume group, priority, or redundancy of an existing LUN. The parameters have the same meanings as `axiomcli lun -add` with the exception of the following options:

-lun

Identifies the name of the LUN to be modified.

-newName

Identifies the new name of the LUN.

-addressableCapacity

Identifies the addressable logical capacity of the LUN. This value cannot be smaller than the current addressable capacity of the LUN.

-allocatedCapacity

Defines the actual amount of storage that is assigned to a logical volume. An allocated capacity can grow to and possibly exceed by a small amount the addressable logical capacity.

-profile

Identifies the ID or fully qualified name (FQN) of the QoS performance profile that should be applied when creating the LUN. When creating a new LUN, either the `-profile` option or the `-priority` option (not both), must be provided.

`-priority`

Identifies the QoS priority of the LUN.

Valid options:

`premium`	Highest processing queue priority. Striping occurs across eight serial ATA (SATA) RAID groups or four Fibre Channel (FC) RAID groups on the outermost 20% of the drive platters.
`high`	Next highest processing queue priority. Striping occurs across eight SATA RAID groups or four FC RAID groups on the outermost 20-40% of the drive platters.
`medium`	Intermediate processing queue priority. Striping occurs across six SATA RAID groups or three FC RAID groups on the outermost 40-60% of the drive platters.
`low`	Next to lowest processing queue priority. Striping occurs across four SATA RAID groups or two FC RAID groups on the outermost 60-80% of the drive platters.

archive	Lowest processing queue priority. Striping occurs across four SATA RAID groups or two FC RAID groups on the outermost 80-100% of the drive platters.
-migrateData	Migrates the LUN data to the new priority setting.
	If you do not specify the `-migrateData` option, the data migration will not occur.

The `-priority` setting will be considered as a temporary change until such a time it is reverted back to the original value, or a modify command is issued specifying `-migrateData`.

-redundancy

Identifies how many mirror copies of the original data are stored online. The default is `1` (standard).

Valid options:

1	Stores original data only. Data striping over multiple RAID groups maintains full redundancy, even without mirror copies.
	Note: Standard does not maintain redundancy at the LUN level; however, it does provide sufficient data protection for most purposes.
2	Stores original data and one mirror copy, with data striping over multiple RAID groups.

Note: Double Redundancy can only provide true redundancy if your system has enough Bricks to allocate the LUN such that no two mirror copies share a RAID group.

-accessBias

Identifies the expected access pattern to the LUN.

Valid options:

sequential	Read and write requests from client applications tend to request operations on the data one record after the other.
random	Read and write requests from client applications tend to request operations on the data records in an arbitrary order.
mixed	Read and write requests from client applications tend to mix the request operations on the data sometimes in sequential and sometimes in random order.

-ioBias

Identifies the typical read-write ratio.

Valid options:

read	Most requests from client applications are for read operations.
write	Most requests from client applications are for write operations.
mixed	Requests from client applications are likely equal for read and write operations.

-cloneCapacity

Identifies the capacity that is allocated for Clone LUNs.

-volumeGroup

Identifies the volume group, where the LUN will reside. If you do not specify a volume group, the LUN is located in the root volume group.

-slammerNode

Identifies the Slammer CU to which the LUN is assigned. By default, the Pillar Axiom system selects the Slammer automatically.

If you do not specify this option, the Slammer name and control unit (CU) values are entered as follows:

```
/slammer-name/control-unit
```

For example, **/Slammer1/CU0** specifies Slammer1 and control unit 0. The CU value is not case sensitive and may be omitted entirely (for example, **/Slammer1/0**).

Note: If you specify the -slammerNode option, you must also specify the -slammerPorts option.

-mapped

Identifies that the LUN is mapped to specific hosts.

-unmapped

Enables all hosts to have visibility to the LUN. If you do not specify either –mapped or –unmapped option, –mapped is the default value.

If you specify the -unmapped option, you can specify an additional -lunNumber option that assigns *lun-number* as the new LUN's number.

-lunNumber

Identifies the optional LUN number to assign to the LUN when you specify the -unmapped option.

If you specify the -unmapped option, you can specify an additional -lunNumber option that assigns *lun-number* as the new LUN's number.

-fibreChannelAccess

Allows access to the new LUN through the FC ports. The -noFibreChannelAccess option disables FC access to the LUN. If neither option is specified, then the system uses the -fibreChannelAccess option by default.

-noFibreChannelAccess

Disables the FC access to the LUN.

-iscsiAccess

Allows access to the new LUN through the iSCSI ports. If you do not specify this option, the system by default disables the iSCSI access to the LUN.

-noIscsiAccess

Disables the iSCSI access to the LUN.

-maskedSlammerPorts

Restricts access to the LUN through the Slammer ports identified by port-name. If you do not specify this option, the LUN becomes accessible on all Slammer ports on the assigned CU by default.

The `-maskedSlammerPorts` option can only be specified along with the `-slammerNode` option.

If you do not specify this option, the Slammer name, CU, port number, and protocol values are entered as follows:

`./slammer name/control unit/port number/`

For example, **/Slammer1/CU0/Port1/fc** specifies Slammer1, CU 0, and Fibre Channel (FC) Port 1.

The CU and port values are not case sensitive and can be omitted. For example, **/0/0/iscsi** specifies CU 0 and iSCSI port 0. You can specify up to 16 ports.

-storageDomain

Identifies the Storage Domain in which the LUN should be created. If this option is not provided, the system determines which Bricks will contain the data.

-storageClass

Identifies the type of physical storage in which to assign to the LUN. If the Pillar Axiom system has two or more different Storage Classes, you must specify the Storage Class for the Pillar Axiom system to use.

Valid options:
- `sataHd` (Serial ATA hard drives)
- `fcHd` (Fibre Channel hard drives)
- `slcSsd` (single-layer cell, solid state drives)
- `mlcSsd` (multi-layer cell, solid state drives

-active

Enables the LUN to be accessible and available for use.

-inactive

Disables the LUN from being accessible and available for use.

-copyPriority

Identifies the setting to use that controls the impact on performance when you need to copy or migrate data from one location to another.

Valid options:

auto	The system finds a compromise between completion rate and system performance.
low	The system takes its time to complete the copy and data migration without degrading overall system performance.
high	The system completes the copy or data migration as quickly as possible even if there is degradation of system performance.

If you do not specify any option, auto is the default value.

-allowConservativeMode

Allows the Pillar Axiom system to enter conservative mode for the specified LUN if a CU fails.

⚠ Caution	In conservative mode, data is written to disk before the write option completes (write through).

-suppressConservativeMode

Prevents the Pillar Axiom system from entering conservative mode for the specified LUN.

⚠ Caution	If a CU fails, the system does not enable *write through*. If the remaining CU fails, any data that has not been written to the Bricks is lost.

-clearLossOfSync

Clears the loss of synchronization on the specified LUN.

-clearLostData

Clears any lost data from the specified LUN.

-clearPinnedData

Clears any pinned data on the specified LUN.

-rebuildRedundancy

Rebuilds redundancy on the specified LUN.

-migrateData

Migrates the LUN data to the new priority setting.

If you do not specify the -migrateData option, the data migration will not occur.

-copy

Creates a copy of a LUN. The parameters have the same meanings as axiomcli lun -add. If you do not specify any of the valid options, the value of the source LUN's option will be used.

Note: The Administrator 2 role can also issue this command option.

Valid options:
-source

Identifies the source LUN.

-name

Identifies the name for the LUN copy.

-addressableCapacity

Identifies the addressable logical capacity of the LUN. This value cannot be smaller than the current addressable capacity of the LUN.

-profile

Identifies the ID or fully qualified name (FQN) of the QoS performance profile that should be applied when creating the LUN. When creating a new LUN, either the -profile option or the -priority option (not both), must be provided.

-priority

Identifies the QoS priority of the LUN.

Valid options:

premium	Highest processing queue priority. Striping occurs across eight serial ATA (SATA) RAID groups or four Fibre Channel (FC) RAID groups on the outermost 20% of the drive platters.
high	Next highest processing queue priority. Striping occurs across eight SATA RAID groups or four FC RAID groups on the outermost 20-40% of the drive platters.
medium	Intermediate processing queue priority. Striping occurs across six SATA RAID groups or three FC RAID groups on the outermost 40-60% of the drive platters.
low	Next to lowest processing queue priority. Striping occurs across four SATA RAID groups or two FC RAID groups on the outermost 60-80% of the drive platters.
archive	Lowest processing queue priority. Striping occurs across four SATA RAID groups or two FC RAID groups on the outermost 80-100% of the drive platters.

The `-priority` setting will be considered as a temporary change until such a time it is reverted back to the original value, or a modify command is issued specifying `-migrateData`.

-redundancy

Identifies how many mirror copies of the original data are stored online. The default is `1` (standard).

Valid options:

1	Stores original data only. Data striping over multiple RAID groups maintains full redundancy, even without mirror copies.
	Note: Standard does not maintain redundancy at the LUN level; however, it does provide sufficient data protection for most purposes.
2	Stores original data and one mirror copy, with data striping over multiple RAID groups.
	Note: Double Redundancy can only provide true redundancy if your system has enough Bricks to allocate the LUN such that no two mirror copies share a RAID group.

`-accessBias`

Identifies the expected access pattern to the LUN.

Valid options:

`sequential`	Read and write requests from client applications tend to request operations on the data one record after the other.
`random`	Read and write requests from client applications tend to request operations on the data records in an arbitrary order.
`mixed`	Read and write requests from client applications tend to mix the request operations on the data sometimes in sequential and sometimes in random order.

`-ioBias`

Identifies the typical read-write ratio.

Valid options:

read	Most requests from client applications are for `read` operations.
write	Most requests from client applications are for `write` operations.
mixed	Requests from client applications are likely equal for `read` and `write` operations.

-allocatedCapacity

Defines the actual amount of storage that is assigned to a logical volume. An allocated capacity can grow to and possibly exceed by a small amount the addressable logical capacity.

-cloneCapacity

Identifies the capacity that is allocated for Clone LUNs.

-volumeGroup

Identifies the volume group, where the LUN will reside. If you do not specify a volume group, the LUN is located in the root volume group.

-mapped

Identifies that the LUN is mapped to specific hosts.

-unmapped

Enables all hosts to have visibility to the LUN. If you do not specify either `-mapped` or `-unmapped` option, `-mapped` is the default value.

If you specify the `-unmapped` option, you can specify an additional `-lunNumber` option that assigns *lun-number* as the new LUN's number.

-fibreChannelAccess

Allows access to the new LUN through the FC ports. The `-noFibreChannelAccess` option disables FC access to the LUN. If neither option is specified, then the system uses the `-fibreChannelAccess` option by default.

-noFibreChannelAccess

Disables the FC access to the LUN.

-iscsiAccess

Allows access to the new LUN through the iSCSI ports. If you do not specify this option, the system by default disables the iSCSI access to the LUN.

-noIscsiAccess

Disables the iSCSI access to the LUN.

-maskedSlammerPorts

Restricts access to the LUN through the Slammer ports identified by port-name. If you do not specify this option, the LUN becomes accessible on all Slammer ports on the assigned CU by default.

The -maskedSlammerPorts option can only be specified along with the -slammerNode option.

If you do not specify this option, the Slammer name, CU, port number, and protocol values are entered as */slammer name/control unit/port number/*(fc | iscsi).

For example, **/Slammer1/CU0/Port1/fc** specifies Slammer1, CU 0, and Fibre Channel (FC) Port 1.

The CU and port values are not case sensitive and can be omitted. For example, **/0/0/iscsi** specifies CU 0 and iSCSI port 0. You can specify up to 16 ports.

-storageDomain

Identifies the Storage Domain in which the LUN should be created. If this option is not provided, then the Pillar Axiom system determines which Bricks will contain the data.

-storageClass

Identifies the type of physical storage in which to assign to the LUN. If the Pillar Axiom system has two or more different Storage Classes, you must specify the Storage Class for the Pillar Axiom system to use.

Valid options:
- sataHd (Serial ATA hard drives)
- fcHd (Fibre Channel hard drives)
- slcSsd (single-layer cell, solid state drives)
- mlcSsd (multi-layer cell, solid state drives

-active

Enables the LUN to be accessible and available for use.

-inactive

Disables the LUN from being accessible and available for use.

-copyPriority

Identifies the setting to use that controls the impact on performance when you need to copy or migrate data from one location to another.

Valid options:

auto	The system finds a compromise between completion rate and system performance.
low	The system takes its time to complete the copy and data migration without degrading overall system performance.
high	The system completes the copy or data migration as quickly as possible even if there is degradation of system performance.

If you do not specify any option, auto is the default value.

-suppressConservativeMode

Prevents the Pillar Axiom system from entering conservative mode for the specified LUN.

⚠ Caution	If a CU fails, the system does not enable *write through*. If the remaining CU fails, any data that has not been written to the Bricks is lost.

-delete

Deletes one or more SAN LUNs.

If you specify the -suppressWarnings option, the system does not display a warning message stating that all clones of the LUN will also be deleted. If you do not specify the -suppressWarnings option, the system displays a warning message to confirm the deletion of the LUN and all of its clones.

Valid options:
-lun

Identifies the source LUN of the clones to be deleted.

-suppressWarnings

Suppresses the warning that all clones of the LUN will be deleted. If you do not specify the `-suppressWarnings` option, the system displays a message displays to confirm the deletion of the LUN and all of its clones.

-cloneDelete

Deletes all of the Clone LUNs of the specified LUN. Only the complete Clone LUN hierarchy of the LUN will be deleted; the specified source LUN will not be deleted.

Valid options:
-lun

Identifies the source LUN of the clones to be deleted.

-suppressWarnings

Suppresses the warning that all clones of the LUN will be deleted. If you do not specify the `-suppressWarnings` option, the system displays a message displays to confirm the deletion of the LUN and all of its clones.

-maximumCapacity

Identifies the maximum capacity allocated to a logical volume. The parameters for this option use the same definitions as the `-add` option. The options that are not required will be set to default settings, where the `-stripeWidth` option will have a default value of `999`.

Valid options:
-storageDomain

Identifies the Storage Domain in which the LUN should be created. If this option is not provided, then the Pillar Axiom system determines which Bricks will contain the data.

-priority

Identifies the QoS performance of the LUN.

Valid options:

premium	Highest processing queue priority. Striping occurs across eight serial ATA (SATA) RAID groups or four Fibre Channel (FC) RAID groups on the outermost 20% of the drive platters.

high	Next highest processing queue priority. Striping occurs across eight SATA RAID groups or four FC RAID groups on the outermost 20-40% of the drive platters.
medium	Intermediate processing queue priority. Striping occurs across six SATA RAID groups or three FC RAID groups on the outermost 40-60% of the drive platters.
low	Next to lowest processing queue priority. Striping occurs across four SATA RAID groups or two FC RAID groups on the outermost 60-80% of the drive platters.
archive	Lowest processing queue priority. Striping occurs across four SATA RAID groups or two FC RAID groups on the outermost 80-100% of the drive platters.

-redundancy

Identifies how many mirror copies of the original data are stored online. The default is 1 (standard).

Valid options:

1	Stores original data only. Data striping over multiple RAID groups maintains full redundancy, even without mirror copies. **Note:** Standard does not maintain redundancy at the LUN level; however, it does provide sufficient data protection for most purposes.

| 2 | Stores original data and one mirror copy, with data striping over multiple RAID groups. |

Note: Double Redundancy can only provide true redundancy if your system has enough Bricks to allocate the LUN such that no two mirror copies share a RAID group.

-raidLevel

Specifies the RAID level to use for the profile. If unspecified, then the `default` option is assumed.

-stripSize

Specifes the strip size. `OneMeg` specifies 1024 KB for Oracle Automatic Storage Management (ASM) applications. `Normal` corresponds to 64 KB for FC Bricks, or 128 KB for SATA or SSD Bricks.

-stripeWidth

Specifies the RAID stripe width size. Valid values are `1` through `64`. A value of `999` is a default value. If you do not specify the `-stripeWidth` option, the system uses the default value.

-enableBrickWideStriping

Enables data striping across a Brick LUNs. If not provided, the system uses the `-disableBrickWideStriping` option.

-storageClass

Identifies the type of physical storage in which to assign to the LUN. If the Pillar Axiom system has two or more different Storage Classes, you must specify the Storage Class for the Pillar Axiom system to use.

Valid options:
- `sataHd` (Serial ATA hard drives)
- `fcHd` (Fibre Channel hard drives)
- `slcSsd` (single-layer cell, solid state drives)
- `mlcSsd` (multi-layer cell, solid state drives

-list

Displays the information of all LUNs configured on a Pillar Axiom system.

Valid options:
-details

Displays the configuration details of each LUN. If you do not specify this option, the system displays the FQN of each LUN.

-bs

Displays information about the underlying VLUNs associated with the SAN LUNs.

If you specify the `-bs` option, you must also specify the `-details` option.

Note: Only the Primary Administrator, Administrator 1, Pillar Support, and Support roles can issue the `-bs` command option.

-lun

Displays information for the specified SAN LUN.

If you do not specify `-lun` or `-volumeGroup` options, the system displays information for all LUNs configured on the system.

-volumeGroup

Displays all the LUNs associated with the specified volume group.

If you do not specify `-lun` or `-volumeGroup` options, the system displays information for all LUNs configured on the system.

-help

Displays the detailed command help information.

EXAMPLE   Run `lun` to add a LUN:

```
axiomcli lun -add -name newLun -addressableCapacity 100
-priority medium -storageClass fcHd
```

Results:

```
NewObject
    Id                          :
4130303132343042A10498594DBDDF3B
    Fqn                            : /demLUN
```

`pilot`

DESCRIPTION   Displays information about the Pilots on a Pillar Axiom system.

Use the `pilot` command either to display information about the Pilot hardware or force a failover of the Pilot.

If the standby Pilot CU is available, then this command causes a Pilot CU failover to the standby Pilot CU, whether or not the customer external network connected to the standby Pilot CU is available.

Before running this command, ping the passive Pilot CU IP address to verify that the Pilot CU is available. If the standby Pilot CU is not available, the active Pilot CU reboots rather than force a failure. In either case, whether the standby Pilot CU is available or not, the system displays a status of booting but data access is not affected. The system restarts the Pilot CU and returns the normal status without affecting the operational state of the Slammers. Before running this command, check for running tasks. Do not use this command to terminate running tasks unless advised to do so by the Pillar World Wide Customer Support Center.

The Support role can trigger a failover of the active Pilot.

You can use the `-verify` option to test the command-line argument and its options before running it in Pillar Axiom CLI. If no errors exist, the Pillar Axiom CLI command returns without executing. For example, the `-verify` option is helpful when writing scripts in which a particular Pillar Axiom CLI command usage can be verified prior to adding it to a script.

You can use the `-outputformat` or the `-o` command option to specify how to display the results of running a command. If you do not specify either the `-outputformat` or the `-o` command option, the results display in the default `text` format. Valid options:

text   The system displays the results in the plain-text format.

xml   The system displays the results in the tagged XML format.

You can use the `-sessionKey` option to specify which Pillar Axiom system to access and which session key value to use for validation. The Pillar Axiom CLI displays the session key value when you log in to the Pillar Axiom system using the `-returnKey` option.

You can use the `-timeout` option to set a time limit for the execution of a command. If the command takes longer than the number of seconds specified in the `-timeout` option, the system stops executing the command. If you do

not specify the `-timeout` option, the system does not set any time limit for executing the command.

SYNTAX

```
axiomcli pilot -list [-details]
     [-verify]
     [{-outputformat | -o} {text | xml}]
     [-sessionKey session-key]
     [-timeout timeout-in-seconds]
```

```
axiomcli pilot -forceFailover
     [-verify]
     [{-outputformat | -o} {text | xml}]
     [-sessionKey session-key]
     [-timeout timeout-in-seconds]
```

```
axiomcli pilot -serverHealthCheck
     [-verify]
     [{-outputformat | -o} {text | xml}]
     [-sessionKey session-key]
     [-timeout timeout-in-seconds]
```

```
axiomcli pilot -sendInfoToSan
     [-verify]
     [{-outputformat | -o} {text | xml}]
     [-sessionKey session-key]
     [-timeout timeout-in-seconds]
```

```
axiomcli pilot -help
```

PARAMETERS

Note: All roles can issue the `-list` command option.

-list

> Displays information about the Pillar Axiom Pilot.

-forceFailover

> Forces the currently active Pilot control unit (CU) to fail over to the passive CU. The passive CU then becomes the active CU.
>
> **Note:** Only the Pillar Support and Support roles can issue this command option.

-serverHealthCheck

> Checks the health of the Pilot configuration server.
>
> **Note:** Only the Pillar Support and Support roles can issue this command option.

-sendInfoToSan

> Sends Pilot information to the SAN system. The IP address is included in the information sent.

> **Note:** Only the Primary Administrator and Administrator 1 roles can issue this command option.

`-help`

> Displays the detailed command help information.

EXAMPLE

Run the `axiomcli pilot -list` comment to display information about the Pilot hardware component in your system:

```
axiomcli pilot -list
```

Results:

```
Pilot
        HardwareComponentStatus         : NORMAL
        PilotControlUnitName            : PILOT_1
            OperationMode           : STANDBY
            HardwareComponentStatus : NORMAL
            EnclosureAssemblyNumber : 1030-00002-20
            EnclosureDescription    : Axiom 1U-Pilot
            EnclosureSerialNumber   : No Enclosure
            FruAssemblyNumber       : 1450-00164-20
            FruDescription          : Pilot
            SerialNumber            : NC016461060078
            PilotOs                 :
2070-00001-050000-031500
            PilotSoftware           :
2073-00001-050000-031800
        PilotControlUnitName            : PILOT_2
            OperationMode           : ACTIVE
            HardwareComponentStatus : NORMAL
            EnclosureAssemblyNumber : 1030-00002-20
            EnclosureDescription    : Axiom 1U-Pilot
            EnclosureSerialNumber   : No Enclosure
            FruAssemblyNumber       : 1450-00164-20
            FruDescription          : Pilot
            SerialNumber            : NC016461060079
            PilotOs                 :
2070-00001-050000-031500
            PilotSoftware           :
2073-00001-050000-031800
```

`profile`

DESCRIPTION   Creates and manages new storage profiles that determine the Quality of Service (QoS) for logical volumes.

A storage profile can be utilized to adjust any of the available settings in the system. An application profile is a set of storage profiles utilized to create multiple logical volumes to support a given application. Each logical volume to be created for the application has an associated storage profile.

Use the `profile` command to manage storage profiles on a Pillar Axiom system.

You can use the `-verify` option to test the command-line argument and its options before running it in Pillar Axiom CLI. If no errors exist, the Pillar Axiom CLI command returns without executing. For example, the `-verify` option is helpful when writing scripts in which a particular Pillar Axiom CLI command usage can be verified prior to adding it to a script.

You can use the `-outputformat` or the `-o` command option to specify how to display the results of running a command. If you do not specify either the `-outputformat` or the `-o` command option, the results display in the default `text` format. Valid options:

text   The system displays the results in the plain-text format.

xml   The system displays the results in the tagged XML format.

You can use the `-sessionKey` option to specify which Pillar Axiom system to access and which session key value to use for validation. The Pillar Axiom CLI displays the session key value when you log in to the Pillar Axiom system using the `-returnKey` option.

You can use the `-timeout` option to set a time limit for the execution of a command. If the command takes longer than the number of seconds specified in the `-timeout` option, the system stops executing the command. If you do not specify the `-timeout` option, the system does not set any time limit for executing the command.

SYNTAX
```
axiomcli profile -add -name profile-name
    -priority {premium | high | medium | low | archive}
    [-redundancy {1 | 2}]
    [-accessBias {sequential | random | mixed}]
    [-ioBias {read | write | mixed}]
    [-raidLevel {raid5 | raid10 | default}]
    [-stripSize {oneMeg | normal}]
    [-stripeWidth stripe-width]
```

```
        [{-enableBrickWideStriping |
        -disableBrickWideStriping}]
        [-readAhead {default | normal | aggressive |
        conservative}]
        [-writeCache {writeThrough | writeBack | default}]
        [-storageClass storage-class [,storage-class]...]
        [-verify]
        [{-outputformat | -o} {text | xml}]
        [-sessionKey session-key]
        [-timeout timeout-in-seconds]
```

```
axiomcli profile -delete -profile profile-id-or-fqn
[,profile-id-or-fqn]...
        [-verify]
        [{-outputformat | -o} {text | xml}]
        [-sessionKey session-key]
        [-timeout timeout-in-seconds]
```

```
axiomcli profile -list [-profile profile-id-or-fqn
[,profile-id-or-fqn]...] [-details]
        [-verify]
        [{-outputformat | -o} {text | xml}]
        [-sessionKey session-key]
        [-timeout timeout-in-seconds]
```

```
axiomcli profile -help
```

PARAMETERS

Note: Only the Primary Administrator, Administrator 1, Pillar Support, and Support roles can issue all command options.

All roles can issue the `-list` command option.

-add

> Creates a new performance profile, which can be used later when creating logical volumes.
>
> Valid options:
> **-name**
>
> Identifies the name for the performance profile.
>
> **-priority**
>
> Determines how much of the system resources are devoted to the volume. Valid options:

Premium	Highest processing queue priority. Striping occurs across eight serial ATA (SATA) RAID groups or four Fibre Channel (FC) RAID groups on the outermost 20% of the drive platters.

High

Next highest processing queue priority. Striping occurs across eight SATA RAID groups or four FC RAID groups on the outermost 20-40% of the drive platters.

Medium

Intermediate processing queue priority. Striping occurs across six SATA RAID groups or three FC RAID groups on the outermost 40-60% of the drive platters.

Low

Next to lowest processing queue priority. Striping occurs across four SATA RAID groups or two FC RAID groups on the outermost 60-80% of the drive platters.

Archive

Lowest processing queue priority. Striping occurs across four SATA RAID groups or two FC RAID groups on the outermost 80-100% of the drive platters.

-redundancy

Identifies how many mirror copies (`1` or `2`) of the original data are stored online. The default is `1`.

Valid options:

Standard

Stores original data only. Data striping over multiple RAID groups maintains full redundancy, even without mirror copies.

Note: Standard does not maintain redundancy at the LUN level; however, it does provide sufficient data protection for most purposes.

Double

Stores original data and one mirror copy, with data striping over multiple RAID groups.

> **Note:** Double Redundancy can only provide true redundancy if your system has enough Bricks to allocate the filesystem or LUN such that no two mirror copies share a RAID group.

-accessBias

Identifies the expected access pattern for the profile.

Valid options:

sequential	Read and write requests from client applications tend to request operations on the data one record after the other.
random	Read and write requests from client applications tend to request operations on the data records in an arbitrary order.
mixed	Read and write requests from client applications tend to mix the request operations on the data sometimes in sequential and sometimes in random order.

-ioBias

Identifies the typical read-write ratio.

Valid options:

read	Most requests from client applications are for `read` operations.
write	Most requests from client applications are for `write` operations.
mixed	Requests from client applications are likely equal

for `read` and `write` operations.

`-raidLevel`

Identifies the RAID levels to use for the profile.

Valid options:

`raid5`	Uses standard redundancy allocation.
`raid10`	Uses standard redundancy allocation for random write bias QoS.
`default`	Uses RAID 5 or RAID 10 depending on the QoS settings.

If you do not specify this option, the system assigns the `default` value.

`-stripSize`

Identifies the number of contiguous bytes in each block of data written to the drives. Valid options:

`oneMeg`	Used for the Oracle Automatic Storage Management (ASM) Storage Profile. These strips are 1024 KB (1 MB) in size.
`normal`	The number of bytes in the strip depends on the type of media contained within a Brick:

- 64 KB for Fibre Channel (FC) media

- 128 KB for serial ATA (SATA) media

- 128 KB for solid-state drive (SSD) media

`-stripeWidth`

Identifies the number of drives over which the data will be written. Valid values are `1` through `64`. A value of `999` is the default value. If you do not specify any value, the system uses the default value (`999`).

-enableBrickWideStriping

Indicates whether data striping across Brick LUNs is enabled. By default, striping is disabled.

-disableBrickWideStriping

Indicates whether data striping across Brick LUNs is disabled.

-readAhead

Indicates the read-ahead settings to use for the profile. The settings adjust the amount of additional data that is read into cache. Valid options:

Valid options:

default	Reads beyond the requested data and puts the additional data into cache.
normal	Reads only the requested data. No additional data is put into cache.
aggressive	Reads large extents of the cached data.
conservative	Writes data to physical storage in full stripe extents. Data is retained in cache for a shorter period of time.

If you do not specify this option, the system assigns the `default` value, which is based on the `-accessBias` and `-ioBias` options.

-writeCache

Identifies the write caching rules to use for the profile. Valid options:

writeThrough	Writes data to the Slammer cache and on the Bricks before the write request returns. This rule ensures that

<table>
<tr><td></td><td>the data is safely written to the Bricks before the write request returns to the application. This option performs more slowly than write-back because the data is also being written to the Bricks as well as to the faster cache.</td></tr>
<tr><td>writeBack</td><td>Writes data to the Slammer cache, and the write request returns immediately. During idle cycles, the system writes the data from the cache to the Bricks. Write-back caching performs faster because the data only needs to be written to the cache prior to returning from the write call.

Important! If the system crashes, the data in the cache that has not been written to the Bricks might be lost.</td></tr>
</table>

If you do not specify this option, the system assigns a `default` value.

-storageClass

Identifies an ordered list of one or more Storage Class values for the profile.

Valid options:

- `sataHd` (Serial ATA hard drives)
- `fcHd` (Fibre Channel hard drives)
- `slcSsd` (single-layer cell, solid state drives)

-delete

Deletes an existing performance profile. The `-profile` option specifies the ID or fully qualified name (FQN) of the profile to be deleted.

-list

Displays one or all performance profiles.

Valid options:
-profile

Identifies the ID or FQN of one or more profiles to display. If option is not provided, then all profiles will be displayed.

-details

Displays all of the settings for a given profile. If option is not provided, then just the profile name is displayed.

-help

Displays the detailed command help information.

EXAMPLE   Run `profile -list` to display a list of performance profiles:

```
axiomcli profile -list
```

Results:

```
/Web Files
/OracleDB: DB Tables
/MSSQL: TPCC Data
/Xen: Application
/Xen: Swap Space
/OracleDB: DB Temp Files
/Xen: Operating System
/OracleDB: Online Redo Logs
/Backup: VTL Data
/MSSQL: Temp DB
/MSSQL: System DB
/OracleUCM: Backup and Recovery
/OracleDB: Archive Logs
/Backup: Disk to Disk
/Oracle ASM
/OracleUCM: Redo Log Group
/Backup: SIR Data
/OracleUCM: Web Viewable Repository
/OracleUCM: Search Index Table Space
/Backup: SIR Scratch
/MSSQL: Backup Files
/OracleUCM: Native File Repository
/MSXchg: Database
/OracleDB: Control Files
/Performance Benchmark
/General Purpose
/MSSQL: TPCC Logs
```

```
/MSXchg: Transaction Logs
/OracleDB: DB Index
/Generic Logs
/MSSQL: Quorum Disk
/Streaming Media
/MSXchg: SMTP-MTA Queue
```

`report`

DESCRIPTION   Generated reports provide listings of configuration details and statistical information about your system that you can download to your client from the Pillar Axiom system in various formats.

Use the `report` command to generate predefined statistical reports, download reports to your client, delete reports, or provide a listing of generated reports.

You can use the `-verify` option to test the command-line argument and its options before running it in Pillar Axiom CLI. If no errors exist, the Pillar Axiom CLI command returns without executing. For example, the `-verify` option is helpful when writing scripts in which a particular Pillar Axiom CLI command usage can be verified prior to adding it to a script.

You can use the `-outputformat` or the `-o` command option to specify how to display the results of running a command. If you do not specify either the `-outputformat` or the `-o` command option, the results display in the default `text` format. Valid options:

text   The system displays the results in the plain-text format.

xml   The system displays the results in the tagged XML format.

You can use the `-sessionKey` option to specify which Pillar Axiom system to access and which session key value to use for validation. The Pillar Axiom CLI displays the session key value when you log in to the Pillar Axiom system using the `-returnKey` option.

You can use the `-timeout` option to set a time limit for the execution of a command. If the command takes longer than the number of seconds specified in the `-timeout` option, the system stops executing the command. If you do not specify the `-timeout` option, the system does not set any time limit for executing the command.

SYNTAX
```
axiomcli report -generate
    -type {system | storageUse | volumeUse |
performance
            | sanHosts | systemSummary
            }
    [-verify]
    [{-outputformat | -o} {text | xml}]
```

```
        [-sessionKey session-key]
        [-timeout timeout-in-seconds]
```

```
axiomcli report -delete [-report report-id-or-fqn
[,report-id-or-fqn]...]
        [-verify]
        [{-outputformat | -o} {text | xml}]
        [-sessionKey session-key]
        [-timeout timeout-in-seconds]
```

```
axiomcli report -list [-report report-id-or-fqn
[,report-id-or-fqn]...] [-details]
        [-verify]
        [{-outputformat | -o} {text | xml}]
        [-sessionKey session-key]
        [-timeout timeout-in-seconds]
```

```
axiomcli report -download [-report report-id-or-fqn]
        [-file download-file]
        [-format {pdf | xml | csv | excel | html}]
        [-verify]
        [{-outputformat | -o} {text | xml}]
        [-sessionKey session-key]
        [-timeout timeout-in-seconds]
```

```
axiomcli report -help
```

PARAMETERS   **Note:** Only the Primary Administrator and Administrator 1 roles can issue all command options.

All roles can issue the -list command option.

-generate

> Generates a specific type of report to be stored on the Pillar Axiom system for download to your client in the format of your choice.

> Valid options:
> **-type**

> Specifies the type of report to generate.

> Valid options:
> - sanHosts
> - performance
> - storageUse
> - volumeUse
> - system
> - systemSummary

- ■ `filesystemQuotas`

-delete

Deletes the specified report.

Valid options:
-report

Specifies the ID or FQN of the report to delete. If you do not provide this option, the system deletes the most recently created report.

-list

Displays a listing of reports that have been generated and are available for download.

Valid options:
-report

Specifies the ID or FQN of the report to display. If you do not provide this option, the system displays all of the generated reports.

-download

Downloads a report from the Pillar Axiom system to your client in the format of your choice.

Note: The Pillar Support and Support roles can also issue this command option.

Valid options:
-report

Specifies the ID or FQN of the report to download. If you do not provide this option, the system downloads the most recently generated report.

-file

Identifies the path and filename for the downloaded report. If no filename is provided, the report is stored as `axiomreport.`*ext*, where *ext* is the default extension for the format of the file specified in the `-format` option (`pdf`, `xml`, `csv`, `xls`, or `html`).

-format

Identifies the format for the downloaded report.

Valid options:
- ■ `csv`
- ■ `excel`

- html
- pdf
- xml

If you do not specify the `-format` option, the default report format is `pdf`.

-help

Displays the detailed command help information.

EXAMPLE   Run the `axiomcli report -generate` command option to generate a system report:

```
axiomcli report -generate -type system
```

Results:

```
NewObject
    Id                          :
4130303132363742A13D012B1B55226A
    Fqn                         : /
SystemConfiguration_1284653778934
Command Succeeded
```

san

DESCRIPTION   Displays SAN protocol statistics for both iSCSI and Fibre Channel protocols.

Use the `san` command to display information about the SAN objects that are configured on your system.

You can use the `-verify` option to test the command-line argument and its options before running it in Pillar Axiom CLI. If no errors exist, the Pillar Axiom CLI command returns without executing. For example, the `-verify` option is helpful when writing scripts in which a particular Pillar Axiom CLI command usage can be verified prior to adding it to a script.

You can use the `-outputformat` or the `-o` command option to specify how to display the results of running a command. If you do not specify either the `-outputformat` or the `-o` command option, the results display in the default `text` format. Valid options:

text   The system displays the results in the plain-text format.

xml   The system displays the results in the tagged XML format.

You can use the `-sessionKey` option to specify which Pillar Axiom system to access and which session key value to use for validation. The Pillar Axiom CLI displays the session key value when you log in to the Pillar Axiom system using the `-returnKey` option.

You can use the `-timeout` option to set a time limit for the execution of a command. If the command takes longer than the number of seconds specified in the `-timeout` option, the system stops executing the command. If you do not specify the `-timeout` option, the system does not set any time limit for executing the command.

SYNTAX

```
axiomcli san -list [-details]
    [-verify]
    [{-outputformat | -o} {text | xml}]
    [-sessionKey session-key]
    [-timeout timeout-in-seconds]
```

```
axiomcli san -panic {-enable | -disable}
    [-verify]
    [{-outputformat | -o} {text | xml}]
    [-sessionKey session-key]
    [-timeout timeout-in-seconds]
```

```
axiomcli san -help
```

PARAMETERS

Note: All roles can issue the `-list` command option.

Only the Pillar Support role can issue the `-panic` command option.

-list

> Displays the SAN storage configuration of the Pillar Axiom system.

-panic

> Enables or disables the SAN Panic feature. Enabling the panic feature allows SAN to panic when a vendor-unique SCSI command (Panic CDB) is received. The vendor-unique SCSI command is sent when data do not compare or when other errors are detected. If the panic feature is disabled, SAN ignores the vendor-unique SCSI command and returns good status or rejects the vendor-unique SCSI command as an illegal code.
>
> **Note:** Only the Pillar Support and Support roles can issue the `-panic` command option.

-help

> Displays the detailed command help information.

EXAMPLE

Run the `axiomcli san -list` command to display information about the SAN objects that are configured on your system:

```
axiomcli san -list
```

Results:

```
TotalSanStorageUsage
    PhysicalUsedCapacity                    : 484
    PhysicalAllocatedCapacity               : 484
    PhysicalMaximumCapacity                 : 484
LunUsage
    NumberOfLuns                        : 4
    UsedCapacity                        : 402
    AllocatedCapacity                   : 402
    AddressableCapacity                 : 402
    MaximumCapacity                     : 402
    PhysicalUsedCapacity                : 484
    PhysicalAllocatedCapacity           : 484
    PhysicalMaximumCapacity             : 484
CloneLunUsage
    NumberOfCloneLuns                   : 0
    PhysicalUsedCloneCapacity           : 0
    PhysicalAllocatedCloneCapacity      : 0
    PhysicalMaximumCloneCapacity        : 0
```

san_host

DESCRIPTION

Manages the storage area network (SAN) hosts defined on a Pillar Axiom system. You can modify and view host settings, and delete host names. If you have SAN hosts that access the LUNs using HP-UX initiator ports and HP Host Bus Adapters (HBAs), you can enable the HP-UX option.

You can use the `-verify` option to test the command-line argument and its options before running it in Pillar Axiom CLI. If no errors exist, the Pillar Axiom CLI command returns without executing. For example, the `-verify` option is helpful when writing scripts in which a particular Pillar Axiom CLI command usage can be verified prior to adding it to a script.

You can use the `-outputformat` or the `-o` command option to specify how to display the results of running a command. If you do not specify either the `-outputformat` or the `-o` command option, the results display in the default `text` format. Valid options:

text The system displays the results in the plain-text format.

xml The system displays the results in the tagged XML format.

You can use the `-sessionKey` option to specify which Pillar Axiom system to access and which session key value to use for validation. The Pillar Axiom CLI displays the session key value when you log in to the Pillar Axiom system using the `-returnKey` option.

You can use the `-timeout` option to set a time limit for the execution of a command. If the command takes longer than the number of seconds specified in the `-timeout` option, the system stops executing the command. If you do not specify the `-timeout` option, the system does not set any time limit for executing the command.

Note: The `san_host` command replaces the deprecated `sanhost` command.

SYNTAX

```
axiomcli san_host -add -name sanhost-name
    [{-hpuxCompatibility | -noHpuxCompatibility}]
    [{-iscsiAccessControl | -noIscsiAccessControl}
     {-iscsiAuthentication
            -chapName chap-name
            -chapPassword chap-password
            -retypeChapPassword chap-password
     | -noIscsiAuthentication
     }
    ]
    { -fcInitiatorPort fcinitiatorport-wwn[:fcinitiatorport-alias]
```

```
                [, fcinitiatorport-wwn[:fcinitiatorport-alias] ]...
            [-iscsiInitiatorPort
iscsi-initiator-name[:iscsi-initiatorport-alias]
                [, iscsi-initiator-name[:iscsi-initiatorport-alias] ]...   ]
     | -iscsiInitiatorPort
iscsi-initiator-name[:iscsi-initiatorport-alias]
                [, iscsi-initiator-name[:iscsi-initiatorport-alias] ]...
            [-fcInitiatorPort  fcinitiatorport-wwn[:fcinitiatorport-alias]
                [, fcinitiatorport-wwn[:fcinitiatorport-alias] ]...   ]
     }
     [-lunSettings lun-id-or-fqn:load-balance-type
          [, lun-id-or-fqn:load-balance-type]...]
     [-reconcileMappings]
     [-associateGroup host-group-id-or-fqn]
     [-verify]
     [{-outputformat | -o} {text | xml}]
     [-sessionKey session-key]
     [-timeout timeout-in-seconds]
```

```
axiomcli san_host -modify -sanhost sanhost-id-or-fqn
     [-newName new-sanhost-name]
     [{-hpuxCompatibility | -noHpuxCompatibility}]
     [ {-iscsiAccessControl | -noIscsiAccessControl}
      {-iscsiAuthentication
               -chapName chap-name
               -chapPassword chap-password |
               -retypeChapPassword chap-password
     | -noIscsiAuthentication
      }
     ]
     [-fcInitiatorPort [fcinitiator-wwn[:fcinitiatorport-alias]
          [, fcinitiatorport-wwn[:fcinitiatorport-alias]]... ] ]
     [-iscsiInitiatorPort
[iscsi-initiator-name[:iscsi-initiatorport-alias]
          [, iscsi-initiator-name[:iscsi-initiatorport-alias]]... ] ]
     [-lunSettings lun-id-or-fqn:load-balance-type
          [, lun-id-or-fqn:load-balance-type]...]
     [{-reconcileMappings | -noReconcileMappings}]
     [{-associateGroup host-group-id-or-fqn
       |-unAssociateGroup {-removeMappings |
-preserveMappings}
      }]
     [-verify]
     [{-outputformat | -o} {text | xml}]
     [-sessionKey session-key]
     [-timeout timeout-in-seconds]
```

```
axiomcli san_host -delete -sanhost sanhost-id-or-fqn
     [,sanhost-id-or-fqn]...
```

```
        [-lunSettings lun-id-or-fqn [,lun-id-or-fqn]...]
        [-removeInitiatorsAndMappings]
        [-verify]
        [{-outputformat | -o} {text | xml}]
        [-sessionKey session-key]
        [-timeout timeout-in-seconds]
```

```
axiomcli san_host -list [-details]
        {-sanhost sanhost-id-or-fqn [,sanhost-id-or-fqn]...
        | -slammerNode slammer-node-id-or-fqn
            [,slammer-node-id-or-fqn]...
        }
        [-forceDiscovery]
        [-verify]
        [{-outputformat | -o} {text | xml}]
        [-sessionKey session-key]
        [-timeout timeout-in-seconds]
```

```
axiomcli san_host -help
```

PARAMETERS

Note: Only the Primary Administrator, Administrator 1, and Administrator 2 roles can issue all command options.

All roles can issue the `-list` command option.

-add

> Creates a SAN host entry on a Pillar Axiom system. This command is used for SAN hosts that are not running Pillar Axiom Path Manager (APM) and are just known to the Pillar Axiom system through the World Wide Names (WWNs) of the HBA ports.
>
> Valid options:
> **-name**
>
> Identifies the name assigned to a specific SAN host.
>
> **-hpuxCompatibility**
>
> Indicates whether HP-UX compatibility is enabled. When this option is enabled, the system determines LUN numbers using the HP-UX addressing scheme, allowing up to 255 LUNs. Also when enabled, the host cannot have a visible LUN using ID 0.
>
> If you do not specify this option, the `-noHpuxCompatibility` is the default value.
>
> **-iscsiAccessControl**
>
> Indicates whether access control for an iSCSI session is enabled.

If you do not specify this option, the `-noIscsiAccessControl` is the default value.

The `-noIscsiAccessControl` and `-iscsiAuthentication` are mutually exclusive.

-iscsiAuthentication

Indicates whether Challenge Handshake Authentication Protocol (CHAP) for iSCSI sessions between the SAN host and the Pillar Axiom system is enabled.

Note: Depending on the global settings, CHAP name and CHAP secret may not be required. Those parameters are not required, for example, if authentication is performed through a RADIUS server.

Valid options:
-chapName

Specifies the CHAP name that the Pillar Axiom system will use for authentication to the SAN host iSCSI initiator during login.

Note: This must be the same CHAP name with which the initiator was configured on the SAN host.

-chapPassword / -retypeChapPassword

Specifies the CHAP password to use for authentication of iSCSI sessions between the SAN host and the Pillar Axiom system.

-noIscsiAuthentication

Indicates whether CHAP for iSCSI sessions between the SAN host and the Pillar Axiom system are disabled.

-fcInitiatorPort

Identifies one or more SAN host FC initiator ports. The value is the WWN of the port, optionally followed by a colon and the alias name of the port.

Note: You are required to include all of the port settings on the SAN host.

You must provide one or both of `-fcInitiatorPort` or `-iscsiInitiatorPort`

-iscsiInitiatorPort

Identifies one or more iSCSI initiator ports that are on the SAN host, optionally followed by a colon and an alias name.

Note: You are required to include all of the port settings on the SAN host.

You must provide one or both the `-fcInitiatorPort` and `-iscsiInitiatorPort` options.

-lunSettings

Identifies the type of load balancing that the SAN hosts should perform to access LUNs that are configured on the Pillar Axiom system.

Valid options:

static	Distributes load balancing across multiple paths equally from the host to the Pillar Axiom system.
roundrobin	Distributes load balancing across multiple paths sequentially in a series from the host to the Pillar Axiom system.

–reconcileMappings

Specifies that any subsequent conflicting host LUN mappings will be automatically fixed. If not present, mappings will not be automatically fixed. Note that automatically fixing the LUN mappings might interrupt data to the host.

-associateGroup

Specifies the ID or FQN of the host group with which to associate the new SAN host.

-modify

Modifies the attributes of a SAN host.

Valid options:
-sanhost

Identifies the SAN hosts to be modified by entering the ID or FQN of the LUN.

-newName

Identifies the new name of the SAN host.

-fcInitiatorPort

Identifies one or more SAN host FC initiator ports. The value is the WWN of the port, optionally followed by a colon and the alias name of the port.

Note: You are required to include all of the port settings on the SAN host.

-iscsiInitiatorPort

Identifies one or more iSCSI initiator ports that are on the SAN host, optionally followed by a colon and an alias name.

Note: You are required to include all of the port settings on the SAN host.

-lunSettings

Identifies a set of LUN settings to add to the SAN host or modify the value of the load balance type for the LUNs.

If you specify LUNs that have a LUN setting on the SAN host, you must update its load balance type with the value provided. Otherwise, you must add the LUN setting to the SAN host's collection of LUN settings.

Enter the ID or fully qualified name (FQN) of the LUN to modify it.

ID	A 32-character string that contains hex characters (a through f and 0 through 9). Example ID:
	
	`4130303132363742A12D`
	`012AD8B86A8A`

Fully Qualified Name (FQN)	An object name starting with a leading slash (/), contains a parent object's name if needed to establish uniqueness of the object, and ends with the object's name. Example FQN: `/cofunintel02`

–noReconcileMappings

Disables the automatic fixing of any host LUN mappings that cause mapping conflicts.

-associateGroup

Specifies the ID or FQN of the host group with which to associate the new SAN host. All of the SAN host LUN mappings will be associated with the specified group.

–unAssociateGroup

Removes a SAN host from a host group.

You can associate a SAN host only with a single host group. You must either remove or preserve LUN mappings that the SAN host had as part of the host group.

Valid options:

–removeMappings

Removes all of the host group LUN mappings from a SAN host

–preserveMappings

Preserves host group LUN mappings after a SAN host is removed from a host group.

-delete

Removes the configuration of specific SAN hosts from the Pillar Axiom system. It also deletes a set of LUN settings associated with a SAN host. If you need to delete a SAN host, you can do so only if that host is not connected to the network. The HBA port reappears after the Pillar Axiom system rediscovers it.

Valid options:

–sanhost

Identifies the SAN hosts to be modified by entering the ID or FQN of the LUN.

–lunSettings

Deletes only the LUN settings from the SAN hosts, not the SAN hosts.

If you do not specify the `–lunSettings` option, the SAN hosts specified by the `–sanhost` option will be deleted.

–removeInitiatorsAndMappings

Deletes the initiators and mappings associated with the SAN host being deleted.

-list

Displays all SAN hosts. The Pillar Axiom system detects HBA ports and assigns hosts to ports that you do not

assign. Use this request to identify all SAN hosts, both user and system defined.

Valid options:
-details

Provides additional information for each SAN host. The details displayed depends on if the host is an HBA port host or a Pillar Axiom host. For both hosts, the number of LUNs and HBA port details are provided. For Pillar Axiom hosts, the details include the operating system, operating system version, IP address, LUN settings, and additional HBA port details. If you do not specify this option, the system only displays the SAN host names.

-sanhost

Identifies the SAN hosts to be displayed by entering the ID or FQN of the LUN.

Note: The `-sanhost` and `-slammerNode` options are mutually exclusive.

-slammerNode

Displays the SAN hosts that have visibility to the specified list of Slammer CUs. Enter the ID or FQN of the Slammer CUs for which you want to identify all SAN hosts.

Note: The `-sanhost` and `-slammerNode` options are mutually exclusive.

-forceDiscovery

Forces the Pillar Axiom system to discover all of the SAN host initiators that communicate with it.

-help

Displays the detailed command help information.

EXAMPLE

Run `san_host -list -details` to list details of all SAN hosts on a Pillar Axiom system:

```
axiomcli san_host -list -details
```

Results:

```
/iqn.2002-03.com.sanland:host.linux.co-sanbs4
    Id                          :
4130303132373542A12D026184CF9271
    Name                              : iqn.
2002-03.com.sanland:host.linux.co-sanbs4
    Creator                         : AXIOM
```

```
    ManagementState            : AVAILABLE
    IScsiInitiatorPort
        IScsiInitiatorPortFqn     : /iqn.
2002-03.com.sanland:host.linux.co-sanb
s4
        IScsiInitiatorPortId      :
4130303132373542A2320BD6B978498F
        Name                       : iqn.
2002-03.com.sanland:host.linux.co-sanbs
4
        Alias                      :
        HpuxCompatibility         : false
        RemoteReplicationAppliance : false
        IScsiSetting
            EnableAccessControl       : false
            EnableAuthentication      : false
            ChapName                  :
        PortConnection
            SlammerNodeFqn            : /SLAMMER-01/0
            SlammerNodeId             :
2008000B08030522
            PortName                  : PORT1
            IpAddress                 :
192.168.100.24
        PortConnection
            SlammerNodeFqn            : /SLAMMER-01/0
            SlammerNodeId             :
2008000B08030522
            PortName                  : PORT0
            IpAddress                 :
192.168.100.24
        PortConnection
            SlammerNodeFqn            : /SLAMMER-01/1
            SlammerNodeId             :
2009000B0803052A
            PortName                  : PORT0
            IpAddress                 :
192.168.100.24
        PortConnection
            SlammerNodeFqn            : /SLAMMER-01/1
            SlammerNodeId             :
2009000B0803052A
            PortName                  : PORT1
            IpAddress                 :
192.168.100.24
/21:01:00:E0:8B:29:60:D3
    Id                         :
4130303132373542A12D00DFA646187E
    Name                       : 21:01:00:E0:8B:
29:60:D3
    Creator                    : AXIOM
    ManagementState            : AVAILABLE
    FcInitiatorPort
```

```
        FcInitiatorPortFqn          : /210100E08B2960D3
        FcInitiatorPortId           :
4130303132373542A2320BD6B7A64E1A
        Wwn                         : 210100E08B2960D3
        Alias                       :
        HpuxCompatibility           : false
        PortSpeed                   : UNKNOWN
        RemoteReplicationAppliance  : false
        PortConnection
            SlammerNodeFqn              : /SLAMMER-01/0
            SlammerNodeId               :
2008000B08030522
            PortName                    : PORT1
        PortConnection
            SlammerNodeFqn              : /SLAMMER-01/1
            SlammerNodeId               :
2009000B0803052A
            PortName                    : PORT1
/21:00:00:E0:8B:09:60:D3
    Id                          :
4130303132373542A12D00DFA6DC91A8
    Name                        : 21:00:00:E0:8B:
09:60:D3
    Creator                     : AXIOM
    ManagementState             : AVAILABLE
    FcInitiatorPort
        FcInitiatorPortFqn          : /210000E08B0960D3
        FcInitiatorPortId           :
4130303132373542A2320BD6B7A64E18
        Wwn                         : 210000E08B0960D3
        Alias                       :
        HpuxCompatibility           : false
        PortSpeed                   : UNKNOWN
        RemoteReplicationAppliance  : false
        PortConnection
            SlammerNodeFqn              : /SLAMMER-01/0
            SlammerNodeId               :
2008000B08030522
            PortName                    : PORT0
        PortConnection
            SlammerNodeFqn              : /SLAMMER-01/1
            SlammerNodeId               :
2009000B0803052A
            PortName                    : PORT0
```

slammer

DESCRIPTION   Manages the Slammer settings on a Pillar Axiom system such as renaming Slammers, running diagnostics, locating Slammers, and viewing Slammer details.

Use the `slammer` command to manage the Slammer settings on a Pillar Axiom system.

You can use the `-verify` option to test the command-line argument and its options before running it in Pillar Axiom CLI. If no errors exist, the Pillar Axiom CLI command returns without executing. For example, the `-verify` option is helpful when writing scripts in which a particular Pillar Axiom CLI command usage can be verified prior to adding it to a script.

You can use the `-outputformat` or the `-o` command option to specify how to display the results of running a command. If you do not specify either the `-outputformat` or the `-o` command option, the results display in the default `text` format. Valid options:

text   The system displays the results in the plain-text format.

xml   The system displays the results in the tagged XML format.

You can use the `-sessionKey` option to specify which Pillar Axiom system to access and which session key value to use for validation. The Pillar Axiom CLI displays the session key value when you log in to the Pillar Axiom system using the `-returnKey` option.

You can use the `-timeout` option to set a time limit for the execution of a command. If the command takes longer than the number of seconds specified in the `-timeout` option, the system stops executing the command. If you do not specify the `-timeout` option, the system does not set any time limit for executing the command.

SYNTAX
```
axiomcli slammer -modify -slammer slammer-id-or-fqn
    [-newname new-slammer-name]
    [-verify]
    [{-outputformat | -o} {text | xml}]
    [-sessionKey session-key]
    [-timeout timeout-in-seconds]

axiomcli slammer -list [-details]
    [-slammer slammer-id-or-fqn [,slammer-id-or-fqn]...]
    [-port [port-name [, port-name]...] ]
    [-diagnostics]
```

```
        [-masterNode]
        [-verify]
        [{-outputformat | -o} {text | xml}]
        [-sessionKey session-key]
        [-timeout timeout-in-seconds]

axiomcli slammer -command -slammerNode
slammer-node-id-or-fqn
        -commandString command-string
        [-parameters name1:value1 [,name2:value2]...]
        [-environment envname1:value1 [,envname2:value2]...]
        [-timeout timeout-in-seconds]
        [-verify]
        [{-outputformat | -o} {text | xml}]
        [-sessionKey session-key]

axiomcli slammer -runDiagnostics
        -slammerNode slammer-node-id-or-fqn
        [-verify]
        [{-outputformat | -o} {text | xml}]
        [-sessionKey session-key]
        [-timeout timeout-in-seconds]

axiomcli slammer -rejoin -slammerNode
slammer-node-id-or-fqn [,slammer-node-id-or-fqn]...
        [-verify]
        [{-outputformat | -o} {text | xml}]
        [-sessionKey session-key]
        [-timeout timeout-in-seconds]

axiomcli slammer -failback -slammerNode
slammer-node-id-or-fqn [,slammer-node-id-or-fqn]...
        [-verify]
        [{-outputformat | -o} {text | xml}]
        [-sessionKey session-key]
        [-timeout timeout-in-seconds]

axiomcli slammer -modifyAgentHaFlags [-slammerNode
slammer-node-id-or-fqn]
        {[-noWarmstart]
         [-noFailover]
         [-clearWsCounter]
         [-debugMode]
        | -clearFlags
        }
        [-verify]
        [{-outputformat | -o} {text | xml}]
```

```
    [-sessionKey session-key]
    [-timeout timeout-in-seconds]
```

```
axiomcli slammer -forceCuFailure -slammerNode
slammer-node-id-or-fqn
    [-verify]
    [{-outputformat | -o} {text | xml}]
    [-sessionKey session-key]
    [-timeout timeout-in-seconds]
```

```
axiomcli slammer -resetControlUnit -slammerNode
slammer-node-id-or-fqn
    [-verify]
    [{-outputformat | -o} {text | xml}]
    [-sessionKey session-key]
    [-timeout timeout-in-seconds]
```

```
axiomcli slammer -reenable [-slammerNode
slammer-node-id-or-fqn]
    [-verify]
    [{-outputformat | -o} {text | xml}]
    [-sessionKey session-key]
    [-timeout timeout-in-seconds]
```

```
axiomcli slammer -remove -slammer slammer-id-or-fqn
    [-verify]
    [{-outputformat | -o} {text | xml}]
    [-sessionKey session-key]
    [-timeout timeout-in-seconds]
```

```
axiomcli slammer -help
```

PARAMETERS   **Note:**

- The Primary Administrator and Administrator 1 roles can issue the following commands:

  ```
  -modify
  -list
  -command
  -runDiagnostics
  -rejoin
  -failback
  ```

- The Administrator 2 and Monitor roles can issue only the `-list` command.
- The Pillar Support and Support roles can issue all of the commands, except the `-modify` command.

-modify

Modifies the settings for a specified Slammer.

Valid options:
-slammer

Specifies the ID or FQN of the Slammer to be modified.

-newName

Specifies the new name for the Slammer.

-list

Displays detailed information that describes the Slammers and all of its hardware components.

Valid options:
-details

Displays the Slammer type, control units, fans, power supplies, network interface module, and private interface module, temperature, serial number, and revision number.

-slammer

Displays one or more Slammers configured on the Pillar Axiom system. Enter the ID or fully qualified name (FQN) of all Slammers for which you want to display information.

-port

Displays detailed information about the Slammer port.

The `-port` option is specified as follows:

`/slammer-name/control-unit/port-number[/port-type]`

The values specify the Slammer, control unit (CU) `0` or `1`, and ports `0` through `7`. The values for port type can be `fc`, `iscsi`, or `eth` (Ethernet). For example, `/Slammer1/CU1/Port0/fc` specifies Slammer 1, control unit 1, port 0, and Fibre Channel (FC).

-diagnostics

Displays the last set of diagnostics results for the specified Slammers.

-masterNode

Displays the identity of the master Slammer CU.

-command

Sends a Slammer specific command to a Slammer.

Valid options:
-slammerNode

Identifies the Slammer CU to which to send the command.

-commandString

Identifies the command to send to the Slammer.

-parameters

Identifies one or more parameters for the Slammer command.

-environment

Specifies one or more environment variable name/value pairs to use when executing the slammer command.

-timeout

Identifies the timeout value in seconds. If the Slammer command does not complete within the timeout value specified, the command aborts.

If you do not specify the -timeout option, the system does not apply a timeout value to the command execution.

-runDiagnostics

Runs diagnostics on a Slammer CU. During the diagnostics, the CU is taken off line for several minutes. Enter the ID or FQN of the Slammer CU on which you want to run diagnostics.

If you run diagnostics on a SAN Slammer, you need to disconnect the CU from the public network and attach a loop back connector between the ports on the Slammer CU. (A loop-back connector takes whatever is transmitted, turns it around, and sends it back into the receive input on the same port or another port.)

Valid options:
-slammerNode

Specifies the ID or FQN of the Slammer CU on which you want to run diagnostics.

-rejoin

Enables one or more Slammer CUs to rejoin the Pillar Axiom system.

Valid options:
-slammerNode

Specifies the ID or FQN of the Slammer CU to rejoin the Pillar Axiom system.

-failback

Specifies one or more Slammer CUs that are in a failover state.

Valid options:
-slammerNode

Specifies the ID or FQN of a Slammer CU to fail back.

-modifyAgentHaFlags

Modifies the agent high availability (HA) flag settings for a Slammer CU.

Valid options:
-slammerNode

Identifies the Slammer CU for which you want to modify the agent HA flag.

If you do not specify this option, all Slammer CUs will have their flags modified.

Valid options:

- -noWarmstart
- -noFailover
- -clearWsCounter
- -debugMode
- -clearFlags

Note: The -clearFlags option is mutually exclusive with the other options. If you do not specify the -clearFlags option, at least one of the other options must be specified.

-forceCuFailure

Forces a Slammer CU to the failed state.

Valid options:
-slammerNode

Specifies the ID or FQN of a Slammer CU to force to a failed state.

-resetControlUnit

Resets a Slammer CU.

Valid options:
-slammerNode

Specifies the ID or FQN of a Slammer CU to reset.

-reenable

Re-enables a specified Slammer CU or all of the Slammer CUs that have been excluded due to failures. If you do not specify the `-slammerNode` option, the system re-enables all of the Slammer CUs.

Valid options:
-slammerNode

Identifies the Slammer CU to re-enable. If you do not specify the `-slammerNode` option, the system re-enables all of the Slammer nodes.

-remove

Removes a specified Slammer from the system configuration.

-help

Displays the detailed command help information.

EXAMPLE

Run `axiomcli slammer -list -details` to display a list of Slammers that are configured on the Pillar Axiom system:

```
axiomcli slammer -list -details
```

Results:

```
Slammer                      : /SLAMMER-01
    Name                     : SLAMMER-01
    ID                       : 2008000B08041CE2
    HardwareComponentStatus : NORMAL
    ServiceType              : SAN
    SerialNumber             : A001267BHN
    Model                    : AX300
    ManagementState          : AVAILABLE
    Chassis
        SerialNumber             : A001267BHN
        Status                   : NORMAL
        PartNumber               :
2062-00001-030000-015001
    ControlUnit              : 0
        ControlUnitWWN           : 2008000B08041CE2
        ControlUnitFQN           : /SLAMMER-01/0
        ControlUnitStatus        : NORMAL
        HardwareComponentStatus : NORMAL
        TemperatureStatus        : NORMAL
        Memory                   : 3
        Motherboard
            SerialNumber             : FC000260120024
            HardwareComponentStatus : NORMAL
...
```

smprovider

DESCRIPTION

Manages devices of a storage area network (SAN). SMProvider is a Storage Management Initiative (SMI) compliant, messaging-based interface designed to support the specific requirements of managing devices of a SAN. The SMProvider interface is also used by Volume Shadow Copy Service (VSS) and Virtual Disk Service (VDS) clients.

Use the `smprovider` command to enable or disable the SMProvider interface and to display the status of the SMProvider interface.

You can use the `-verify` option to test the command-line argument and its options before running it in Pillar Axiom CLI. If no errors exist, the Pillar Axiom CLI command returns without executing. For example, the `-verify` option is helpful when writing scripts in which a particular Pillar Axiom CLI command usage can be verified prior to adding it to a script.

You can use the `-outputformat` or the `-o` command option to specify how to display the results of running a command. If you do not specify either the `-outputformat` or the `-o` command option, the results display in the default `text` format. Valid options:

text The system displays the results in the plain-text format.

xml The system displays the results in the tagged XML format.

You can use the `-sessionKey` option to specify which Pillar Axiom system to access and which session key value to use for validation. The Pillar Axiom CLI displays the session key value when you log in to the Pillar Axiom system using the `-returnKey` option.

You can use the `-timeout` option to set a time limit for the execution of a command. If the command takes longer than the number of seconds specified in the `-timeout` option, the system stops executing the command. If you do not specify the `-timeout` option, the system does not set any time limit for executing the command.

SYNTAX

```
axiomcli smprovider -enable
    [-verify]
    [{-outputformat | -o} {text | xml}]
    [-sessionKey session-key]
    [-timeout timeout-in-seconds]
```

```
axiomcli smprovider -disable
    [-verify]
    [{-outputformat | -o} {text | xml}]
```

```
        [-sessionKey session-key]
        [-timeout timeout-in-seconds]
```

```
axiomcli smprovider -list [-details]
        [-verify]
        [{-outputformat | -o} {text | xml}]
        [-sessionKey session-key]
        [-timeout timeout-in-seconds]
```

```
axiomcli smprovider -help
```

PARAMETERS

Note: Only the Primary Administrator, Administrator 1, Pillar Support, and Support roles can issue all command options.

All roles can issue the `-list` command option.

-enable

> Indicates whether the SMProvider interface on the Pilot is enabled.
>
> If you specify this option, support for SMI, VSS, and VDS, is also enabled.

-disable

> Indicates whether the SMProvider interface on the Pilot is disabled.
>
> If you specify this option, support for SMI, VSS, and VDS, is also disabled.

-list

> Displays the status of the SMProvider interface on the Pilot.

-help

> Displays the detailed command help information.

EXAMPLE

Run the `smprovider -list` command to display the status of the SMProvider interface on the Pilot:

axiomcli smprovider -list

Results:

```
SmiEnabled : true
```

snmp_host

DESCRIPTION   Creates and manages Simple Network Management Protocol (SNMP) hosts to receive event traps on a Pillar Axiom system. If you use an SNMP management application to monitor network devices, you can define SNMP trap hosts to receive Pillar Axiom traps. Any workstation that has an SNMP-based management application installed on it can be a trap host.

Pillar Axiom systems support SNMP version 2c. SET operations from SNMP management applications are not supported.

Use the `snmp_host` command to manage SNMP hosts that will have specified event traps sent to it.

You can use the `-verify` option to test the command-line argument and its options before running it in Pillar Axiom CLI. If no errors exist, the Pillar Axiom CLI command returns without executing. For example, the `-verify` option is helpful when writing scripts in which a particular Pillar Axiom CLI command usage can be verified prior to adding it to a script.

You can use the `-outputformat` or the `-o` command option to specify how to display the results of running a command. If you do not specify either the `-outputformat` or the `-o` command option, the results display in the default `text` format. Valid options:

text   The system displays the results in the plain-text format.

xml   The system displays the results in the tagged XML format.

You can use the `-sessionKey` option to specify which Pillar Axiom system to access and which session key value to use for validation. The Pillar Axiom CLI displays the session key value when you log in to the Pillar Axiom system using the `-returnKey` option.

You can use the `-timeout` option to set a time limit for the execution of a command. If the command takes longer than the number of seconds specified in the `-timeout` option, the system stops executing the command. If you do not specify the `-timeout` option, the system does not set any time limit for executing the command.

SYNTAX
```
axiomcli snmp_host -add
    -name snmp-host-name
    -ip snmp-host-ip-or-dns
    -community snmp-community
    [-trapPort port-number
        [-trapEvent {informational | warning |
```

```
critical}]
    ]
    [-verify]
    [{-outputformat | -o} {text | xml}]
    [-sessionKey session-key]
    [-timeout timeout-in-seconds]
```

```
axiomcli snmp_host -modify
    -id snmp-host-id-or-fqn
    [-newName new-snmp-host-name]
    [-ip snmp-host-ip-or-dns]
    [-community snmp-community]
    [{-newTrap -trapPort port-number
        [-trapEvent {informational | warning |
critical}]
    |      -removeTrap}
    ]
    [-verify]
    [{-outputformat | -o} {text | xml}]
    [-sessionKey session-key]
    [-timeout timeout-in-seconds]
```

```
axiomcli snmp_host -delete -id snmp-host-id-or-fqn
[,snmp-host-id-or-fqn]...
    [-verify]
    [{-outputformat | -o} {text | xml}]
    [-sessionKey session-key]
    [-timeout timeout-in-seconds]
```

```
axiomcli snmp_host -list [-id snmp-host-id-or-fqn
[,snmp-host-id-or-fqn]...]
    [-details]
    [-verify]
    [{-outputformat | -o} {text | xml}]
    [-sessionKey session-key]
    [-timeout timeout-in-seconds]
```

```
axiomcli snmp_host -help
```

PARAMETERS   **Note:** Only the Primary Administrator, Administrator 1, and Administrator 2 roles can issue all of the command options.

All roles can issue the -list command option.

-add

Creates a Simple Network Management Protocol (SNMP) host that specifies event traps that are sent to it.

Valid options:
-name

Identifies the name for the SNMP host.

-ip

Identifies the IP address or domain name of a client that receives the Pillar Axiom SNMP information.

-community

Identifies the community string for use when the Pillar Axiom system sends an event trap to the SNMP host.

Note: When an SNMP administrator does not specify a community string for read-only access, the typical value used by SNMP servers and clients is `public`.

-trapPort

Identifies the SNMP host port number to use for sending an event trap. If you do not provide this option, no traps are sent to the SNMP host.

Note: The `-trapPort` option is mutually exclusive with `-trapEvent`.

-trapEvent

Identifies the severity threshold for events that are to be sent to the SNMP host by event traps.

Severity levels:
- informational
- warning
- critical

For example, if a trap is specified for `warning`, any events that occur with severities ranging from `warning` to `critical` will have event traps sent to the SNMP host. Specifying `critical` will only send critical event traps to the SNMP host.

Note: The `-trapEvent` option is mutually exclusive with `-trapPort`.

-modify

Modifies existing event trap settings on an SNMP host.

Valid options:
-id

Identifies the ID or fully qualified name (FQN) of an existing SNMP host. The FQN for a SNMP host is a

combination of the IP or DNS address, community, port, and event severity beginning with a forward slash (`/`) character and separated by a colon (`:`) character:

```
/172.20.32.75:public
/ca-gp-01:public:162
/172.20.32.75:public:165:WARNING
```

-newName

Specifies the new name of the SNMP host.

-ip

Identifies the IP address or domain name of a client that receives the Pillar Axiom SNMP information.

-community

Identifies the community string for use when the Pillar Axiom system sends an event trap to the SNMP host.

Note: When an SNMP administrator does not specify a community string for read-only access, the typical value used by SNMP servers and clients is `public`.

-newTrap

Identifies a new trap setting for the SNMP host. The `-newtrap` option is followed by the `-trapPort` and optional `-trapEvent` options that have the same semantics as defined in the `-add` command.

Valid options:
-trapPort

Identifies the SNMP host port number to use for sending an event trap. If you do not provide this option, no traps are sent to the SNMP host.

Note: The `-trapPort` option is mutually exclusive with `-trapEvent`.

-trapEvent

Identifies the severity threshold for events that are to be sent to the SNMP host by event traps.

Severity levels:
- □ informational
- □ warning
- □ critical

For example, if a trap is specified for `warning`, any events that occur with severities ranging from `warning` to `critical` will have event traps sent to the SNMP host. Specifying `critical` will only send critical event traps to the SNMP host.

Note: The `-trapEvent` option is mutually exclusive with `-trapPort`.

-removeTrap

Identifies that no traps are to be sent to the SNMP host.

Note: The `-removeTrap` option cannot be provided if `-newTrap` is also provided.

-delete

Deletes one or more SNMP hosts.

-list

Displays all SNMP hosts. If you specify the `-id` option, the ID or FQN of one or more existing SNMP hosts is displayed.

If you specify the `-details` option, all available information about each SNMP host is displayed. If you do not specify the `-details` option, only the FQN of each SNMP host is displayed.

-help

Displays the detailed command help information.

EXAMPLE   Run `snmp_host -add` to create a Simple Network Management Protocol (SNMP) host:

```
axiomcli snmp_host -add -name SNMPhost -ip 172.20.32.75
-community Community
```

Results:

```
NewObject
    Id                          :
4130303132373542A148D788AAE0750A
    Fqn                         : /SNMPhost
Command Succeeded
```

software_update

DESCRIPTION Installs the requested components of the staged software update package on a Pillar Axiom system. An update affects one or more of the following components:

- Brick storage enclosures:
  - Drive firmware
  - Enclosure Services (ES) firmware

  Note: Updating a Brick requires a system restart.

- Pilot management controller:
  - Software
  - Operating system

- Slammer storage controllers:
  - Software for storage area network (SAN) configurations
  - Programmable ROM (PROM)

    Note: Updating the PROM requires a system restart.

Use the `software_update` command to install and update software or firmware onto a Pillar Axiom system.

You can use the `-verify` option to test the command-line argument and its options before running it in Pillar Axiom CLI. If no errors exist, the Pillar Axiom CLI command returns without executing. For example, the `-verify` option is helpful when writing scripts in which a particular Pillar Axiom CLI command usage can be verified prior to adding it to a script.

You can use the `-outputformat` or the `-o` command option to specify how to display the results of running a command. If you do not specify either the `-outputformat` or the `-o` command option, the results display in the default `text` format. Valid options:

text The system displays the results in the plain-text format.

xml The system displays the results in the tagged XML format.

You can use the `-sessionKey` option to specify which Pillar Axiom system to access and which session key value to use for validation. The Pillar Axiom CLI displays the session key value when you log in to the Pillar Axiom system using the `-returnKey` option.

You can use the `-timeout` option to set a time limit for the execution of a command. If the command takes longer than the number of seconds specified in the `-timeout` option, the system stops executing the command. If you do

not specify the `-timeout` option, the system does not set any time limit for executing the command.

SYNTAX

```
axiomcli software_update -add -package package-file-name
     [-verify]
     [{-outputformat | -o} {text | xml}]
     [-sessionKey session-key]
     [-timeout timeout-in-seconds]
```

```
axiomcli software_update -list [{-staged | -installed}]
[-upgradePath] [-details]
     [-verify]
     [{-outputformat | -o} {text | xml}]
     [-sessionKey session-key]
     [-timeout timeout-in-seconds]
```

```
axiomcli software_update -install
     { -component component-version:instruction [,
component-version:instruction]...
     | -all {newerversiononly | alwaysinstall}
     }
     [ { -disruptive | -noDisruptive } ]
     [-ignoreCompatibilityChecking]
     [-forceSlammerShutdown]
     [-ignoreBadSystemState]
     [-ignoreOperationPoolDraining]
     [-overridePreviousFailedUpdate]
     [-ignoreExistingAlerts]
     [-suppressWarnings]
     [-verify]
     [{-outputformat | -o} {text | xml}]
     [-sessionKey session-key]
     [-timeout timeout-in-seconds]
```

```
axiomcli software_update -validate
     {-component component-version:instruction
[,component-version:instruction]...
     | -all {newerversiononly | alwaysinstall}
     }
     [ { -disruptive | -noDisruptive}]
     [-ignoreCompatibilityChecking]
     [-forceSlammerShutdown]
     [-ignoreBadSystemState]
     [-ignoreOperationPoolDraining]
     [-overridePreviousFailedUpdate]
     [-ignoreExistingAlerts]
     [-verify]
     [{-outputformat | -o} {text | xml}]
```

```
        [-sessionKey session-key]
        [-timeout timeout-in-seconds]
```

```
axiomcli software_update -help
```

PARAMETERS

Note: Only the Primary Administrator, Administrator 1, Pillar Support, and Support roles can issue all command options.

All roles can issue the `-list` command option.

-add

Stages a package of software updates to Pillar Axiom system.

The `-package` options specifies the file that contains the new release of the software or firmware. The package is sent to the Pillar Axiom system. The package includes specific software versions for the Brick, Slammer, and Pilot. After the package has been uploaded to the system, it becomes available to be installed (staged). See the `-install` option for more details.

-list

Displays the version information for the software packages that are staged or installed on a Pillar Axiom system.

The version information includes:
- ○ Drive and Enclosure Services (ES) firmware in the Brick storage enclosures.
- ○ Application software and operating system in the Pilot management controller.
- ○ Software (SAN) and programmable ROM (PROM) in Slammer storage controllers.

Valid options:
-staged

Displays the package information that has been added but not yet installed. This will also display the upgrade path information.

If you do not specify the `-staged` or `-installed` options, the package information for both are displayed.

-installed

Displays the package information that is already installed, including the upgrade path information.

If you do not specify the `-staged` or `-installed` options, the package information for both are displayed.

-upgradePath

Displays the upgrade paths for either the staged or installed packages, depending whether the `-staged` or `-installed` options were provided.

If you do not specify the `-staged` or `-installed` options, the upgrade path for both are displayed.

-install

Installs the requested components of the staged software update package on a Pillar Axiom system. After uploading the package, if you do not specify the `-install` option, the uploaded package remains staged until either it is installed or another package is uploaded, overwriting the staged package.

Valid options:
-component

Identifies a list of software or firmware modules that can be installed.

The *component-version* variable is a string that conforms to the `[0-9]{4}-[0-9]{5}-[0-9]{6}-[0-9]{6}` regular expression or one of the following strings:

    pilotSoftware
    pilotOS
    slammerSoftwareAX300
    slammerSoftwareAX500
    slammerSoftwareAX600
    slammerProm (this string works with both AX300 and AX500 systems)
    slammerPromAX600
    brickSataFW
    brickSataNextGenFW
    brickSataThirdGenFW
    brickFCNextGenFW
    brickFCFW
    hddFW

The *instruction* variable can be one of the following:

```
exclude
newerversiononly
alwaysinstall
```

For a list of component versions available for installation, enter the following command-line argument:

```
axiomcli software_update -list -staged
```

You must specify either the `-component` or the `-all` option, but not both.

`-all`

Indicates that all staged components are to be installed at one time. The `-all` command option is limited to the following values:

```
newerversiononly
alwaysinstall
```

The installation *instruction* will be applied to each staged component as it is installed.

You must specify either the `-component` or the `-all` option, but not both.

`-disruptive`

Allows for a disruptive update. Updates are typically performed non-disruptively. If you do not provide this option, the system uses the default `-noDisruptive` option.

Note: Select the `-disruptive` option only when advised by Pillar World Wide Customer Support Center.

Any of the five options specified below forces the software update to occur, regardless of the state of the Pillar Axiom system or current software installations. When you use any of the options below, the following message displays:

```
"Contact the Support Center before
proceeding! Proceeding without their
assistance could risk data loss. Type
"yes" if you wish to proceed with the
update".
```

The update proceeds only if you enter `yes`.

The message does not display if you include the `-suppressWarnings` option.

Valid options:
`-ignoreCompatibilityChecking`

Allows an update to occur while ignoring any conflicts with the compatibility matrix.

-forceSlammerShutdown

Forcibly shuts down the Slammers as part of a disruptive update.

-ignoreBadSystemState

Updates software, even if hardware issues exist.

-ignoreOperationPoolDraining

Updates software, even if the operation pool cannot be drained.

-overridePreviousFailedUpdate

Updates software, ignoring failures from a previous update attempt.

-ignoreExistingAlerts

Updates software, ignoring system alerts.

-suppressWarnings

Updates software without showing warning messages.

-validate

Validates the staged software package on the Pillar Axiom system. The validation process confirms that the staged software can be installed successfully. Once the validation is complete, the results of the validation are displayed.

Valid options:
-component

Specifies a comma delimited list of the *component-version* to install and its installation *instruction*. The *component-version* is a string that conforms to the following expression:

    [0-9]{4}-[0-9]{5}-[0-9]{6}-[0-9]{6}

The *instruction* variable can be one of the following:

```
exclude
newerversiononly
alwaysinstall
```

For a list of component versions available for installation, enter the following command-line argument:

```
axiomcli software_update -list -staged
```

-all

Indicates that all staged components are to be installed at one time. The `-all` command option is limited to the following values:

```
newerversiononly
alwaysinstall
```

The installation *instruction* will be applied to each staged component as it is installed.

You must specify either the `-component` option or `-all` option, not both.

-disruptive

Allows for a disruptive update, when the data path is interrupted. Updates are typically performed non-disruptively. If you do not provide this option, the system uses the default `-noDisruptive` option.

Note: Select the `-disruptive` option only when advised by Pillar World Wide Customer Support Center.

-ignoreCompatibilityChecking

Allows an update to occur while ignoring any conflicts with the compatibility matrix.

-forceSlammerShutdown

Forcibly shuts down the Slammers as part of a disruptive update.

-ignoreBadSystemState

Updates software, even if hardware issues exist.

-ignoreOperationPoolDraining

Updates software, even if the operation pool cannot be drained.

-overridePreviousFailedUpdate

Updates software, ignoring failures from a previous update attempt.

-ignoreExistingAlerts

Updates software, ignoring system alerts.

-help

Displays the detailed command help information.

EXAMPLE   Run `software_update -list` to display a list of software that is staged and installed:

```
axiomcli software_update -list
```

Results:

```
Staged Software: /STAGED
        Id                 :
4130303132373542A13A000000000001
        ManagementState : AVAILABLE
        ComponentInformation
              SoftwareComponent        :
BRICK_SATA_THIRDGEN_FIRMWARE
              Version                  :
2050-00046-032006-032006
              AppliesToCurrentHardware : false
              SoftwareComponent        :
BRICK_FIBRE_CHANNEL_NEXTGEN_FIRMWARE
              Version                  :
2050-00045-022006-022006
              AppliesToCurrentHardware : false
              SoftwareComponent        :
BRICK_SATA_FIRMWARE
              Version                  :
2050-00036-072006-072006
              AppliesToCurrentHardware : true
              SoftwareComponent        :
SLAMMER_SOFTWARE_AX500
              Version                  :
2060-00001-050100-014400
              AppliesToCurrentHardware : true
              SoftwareComponent        :
BRICK_SATA_NEXTGEN_FIRMWARE
              Version                  :
2050-00040-002006-002006
              AppliesToCurrentHardware : false
              SoftwareComponent        :
SLAMMER_PROM_AX300_AX500
              Version                  :
2062-00002-030000-015001
              AppliesToCurrentHardware : true
              SoftwareComponent        : PILOT_OS
              Version                  :
2070-00001-050100-014100
              AppliesToCurrentHardware : true
              SoftwareComponent        :
BRICK_FC_FIRMWARE
              Version                  :
2050-00038-012006-012006
              AppliesToCurrentHardware : false
              SoftwareComponent        : PILOT_SOFTWARE
              Version                  :
```

```
2073-00001-050100-014400
          AppliesToCurrentHardware : true
          SoftwareComponent        :
SLAMMER_PROM_AX600
          Version                   :
2062-00003-050000-040000
          AppliesToCurrentHardware : false
          SoftwareComponent        :
SLAMMER_SOFTWARE_AX600
          Version                   :
2060-00003-050100-014400
          AppliesToCurrentHardware : false
          SoftwareComponent        :
SLAMMER_SOFTWARE_AX300
          Version                   :
2060-00301-050100-014400
          AppliesToCurrentHardware : false
      UpgradePathInformation
Installed Software: /INSTALLED
      Id                 :
413030313232373542A13A000000000000
      ManagementState : AVAILABLE
      ComponentInformation
          SoftwareComponent        :
BRICK_SATA_THIRDGEN_FIRMWARE
          Version                   :
2050-00046-032006-032006
          AppliesToCurrentHardware : false
          SoftwareComponent        :
BRICK_FIBRE_CHANNEL_NEXTGEN_FIRMWARE
          Version                   :
2050-00045-022006-022006
          AppliesToCurrentHardware : false
          SoftwareComponent        :
BRICK_SATA_FIRMWARE
          Version                   :
2050-00036-072006-072006
          AppliesToCurrentHardware : true
          SoftwareComponent        :
SLAMMER_SOFTWARE_AX500
          Version                   :
2060-00001-050100-014400
          AppliesToCurrentHardware : true
          SoftwareComponent        :
BRICK_SATA_NEXTGEN_FIRMWARE
          Version                   :
2050-00040-002006-002006
          AppliesToCurrentHardware : false
          SoftwareComponent        :
SLAMMER_PROM_AX300_AX500
          Version                   :
2062-00002-030000-015001
          AppliesToCurrentHardware : true
```

```
                SoftwareComponent         : PILOT_OS
                Version                   :
2070-00001-050100-014100
                AppliesToCurrentHardware : true
                SoftwareComponent         :
BRICK_FC_FIRMWARE
                Version                   :
2050-00038-012006-012006
                AppliesToCurrentHardware : false
                SoftwareComponent         : PILOT_SOFTWARE
                Version                   :
2073-00001-050100-014400
                AppliesToCurrentHardware : true
                SoftwareComponent         :
SLAMMER_PROM_AX600
                Version                   :
2062-00003-050000-040000
                AppliesToCurrentHardware : false
                SoftwareComponent         :
SLAMMER_SOFTWARE_AX600
                Version                   :
2060-00003-050100-014400
                AppliesToCurrentHardware : false
                SoftwareComponent         :
SLAMMER_SOFTWARE_AX300
                Version                   :
2060-00301-050100-014400
                AppliesToCurrentHardware : false
         CompatibilityMatrixVersion :
2090-00001-050100-014400
         UpgradePathInformation
```

statistics

DESCRIPTION   Displays performance statistics for logical volumes and storage area network (SAN) protocols.

Performance statistics are affected by usage patterns and Quality of Service (QoS) settings. For example, if the QoS settings for a LUN are configured for a large number of operations a second and only a few people are accessing the storage device, the performance statistics show fewer operations a second.

You can use the `-verify` option to test the command-line argument and its options before running it in Pillar Axiom CLI. If no errors exist, the Pillar Axiom CLI command returns without executing. For example, the `-verify` option is helpful when writing scripts in which a particular Pillar Axiom CLI command usage can be verified prior to adding it to a script.

You can use the `-outputformat` or the `-o` command option to specify how to display the results of running a command. If you do not specify either the `-outputformat` or the `-o` command option, the results display in the default `text` format. Valid options:

text   The system displays the results in the plain-text format.

xml   The system displays the results in the tagged XML format.

You can use the `-sessionKey` option to specify which Pillar Axiom system to access and which session key value to use for validation. The Pillar Axiom CLI displays the session key value when you log in to the Pillar Axiom system using the `-returnKey` option.

You can use the `-timeout` option to set a time limit for the execution of a command. If the command takes longer than the number of seconds specified in the `-timeout` option, the system stops executing the command. If you do not specify the `-timeout` option, the system does not set any time limit for executing the command.

Note: The `statistics` command replaces the deprecated `axiom_perf` command.

SYNTAX
```
axiomcli statistics -list
    [-lun lun-or-clone-id-or-fqn [, lun-or-clone-id-or-fqn]... ]
    [{ -protocol { san | fc | iscsi}]
     | -port port-name [, port-name]...]
     }]
    [-verify]
    [{-outputformat | -o} {text | xml}]
```

```
        [-sessionKey session-key]
        [-timeout timeout-in-seconds]
```

```
axiomcli statistics -help
```

PARAMETERS   **Note:** All roles can issue the `-list` command option.
              -list

Displays the performance statistics of a Pillar Axiom system.

If you do not specify any other options, the system displays the performance statistics for networking, all Slammer control units, and all protocols.

Valid options:
-lun

Displays performance statistics for the specified LUN or Clone LUN.

-protocol

Displays protocol statistics.

Valid options:
san

Displays performance statistics for both iSCSI and Fibre Channel protocols.

fc

Displays performance statistics for the Fibre Channel protocol.

iscsi

Displays performance statistics for the iSCSI protocol.

-port

Displays statistics for a specified port identified as follows:

```
/slammer name/control unit/port number[/
port type]
```

The value for the `slammer name` option must be the name of the Slammer. The value for the `control unit` option can be either `CU0` or `CU1` (you can also simply specify `0` or `1`). The value for the `port number` option can be `Port` followed by a number in the range from `0` through `7`, or it can be only a number in the `0` through `7` range. The value for the optional `port type` option identifies the port type, which can be either `fc` (for a Fibre

Channel port), `iscsi` (for an iSCSI port), or `eth` (for an Ethernet port).

-help

Displays the detailed command help information.

EXAMPLE   Run `axiomcli statistics -list -protocol` to display performance statistics for the SAN protocol:

```
axiomcli statistics -list -protocol san
```

Results:

```
SanProtocol                :/SLAMMER-01
        Id                    : 2008000B08041CE2
        ControlUnitNumber  : 0
        NodePortName       : PORT0
CollectionTime
        StartTime          :
2010-10-08T17:05:40.768+00:00
        EndTime            :
2010-10-08T17:07:40.055+00:00
SanControllerInformation
        ReadMBPerSecond    : 0
        WriteMBPerSecond   : 0
        TotalMBPerSecond   : 0
        CommandsPerSecond  : 0
        TotalChannelErrors : 0
ScsiTaskManagementOperations
        AbortTask          : 0
        AbortTaskSet       : 0
        ClearACA           : 0
        ClearTaskSet       : 0
        LogicalUnitReset   : 0
        TargetReset        : 0
LoopActivity
        LIPs      : 0
        LoopUps   : 1
        LoopDowns : 0
ChannelErrors
        LoopInitErrors                  : 0
        RNDErrors                       : 0
        XferErrors                      : 0
        UnderRunErrors                  : 0
        OverRunErrors                   : 0
        DMAErrors                       : 0
        SystemErrors                    : 0
        PCIErrors                       : 0
        ReselectionTimeoutErrors        : 0
        InvalidRXIDErrors               : 0
        PortUnavailableErrors           : 0
        CommandTimeoutErrors            : 0
```

```
                              UnacknowledgedHostEventErrors : 0
...
```

storage_allocation

DESCRIPTION   Displays the logical volume information for designated Bricks.

The `storage_allocation` command scans the Pillar Axiom system and downloads the system configuration information. That information determines the allocations displayed by this command. The system configuration information is downloaded to your home directory, and the report files are created. Once the command completes generating the report files, the system configuration information in your home directory is deleted.

Use `storage_allocation` to display logical volume information for designated Bricks.

You can use the `-verify` option to test the command-line argument and its options before running it in Pillar Axiom CLI. If no errors exist, the Pillar Axiom CLI command returns without executing. For example, the `-verify` option is helpful when writing scripts in which a particular Pillar Axiom CLI command usage can be verified prior to adding it to a script.

You can use the `-outputformat` or the `-o` command option to specify how to display the results of running a command. If you do not specify either the `-outputformat` or the `-o` command option, the results display in the default `text` format. Valid options:

text   The system displays the results in the plain-text format.

xml   The system displays the results in the tagged XML format.

You can use the `-sessionKey` option to specify which Pillar Axiom system to access and which session key value to use for validation. The Pillar Axiom CLI displays the session key value when you log in to the Pillar Axiom system using the `-returnKey` option.

SYNTAX
```
axiomcli storage_allocation -list [-details]
    [{ -saveConfigFile saved-file-name | -configFile
config-file-name}]
    {  -lun [{-name lun-or-clone-name | -id lun-or-clone-id}]
     | -storageDomain [{-name storage-domain-name | -id
storage-domain-id}]
     | -brick [{-name brick-name | -wwn brick-wwn}]
    }
    {-csv csv-file-name | -html html-directory-name | -xml
xml-file-name}
    [-verify]
```

```
     [{-outputformat | -o} {text | xml}]
     [-sessionKey session-key]
```

```
axiomcli storage_allocation -help
```

PARAMETERS

Note: All roles can issue the `-list` command option.

-list

> Displays the storage allocations of LUNs, Storage Domains, or Bricks.

> **Note:** You must use the `id_type` parameter. For the `-lun` and `-storageDomain` options, the only valid `id_type` values are `name` and `suid`, which correspond to the `-name` and `-id` options.

> Valid options:
> **-details**

> Displays no additional detail and is included for symmetry with the `-list` options of other commands.

> **-saveConfigFile**

> Saves the `Axiom_COD.tar` configuration file that was downloaded from the Pillar Axiom system to your client machine at the path and file name specified in the `saved-file-name` variable. You can also use this option to download the `.cod` file for analysis. If you do not provide this option, the system deletes the configuration file from your local workstation when the command completes.

> **Note:** The `-saveConfigFile` and `-configFile` options are mutually exclusive.

> **-configFile**

> Bypasses the process of collecting and downloading the system configuration information from the Pillar Axiom system.

> **Note:** The `-configFile` and `-saveConfigFile` options are mutually exclusive.

> **-lun**

> Displays a summary of the Quality of Service (QoS) for all LUNs or Clone LUNs. If this option is provided, the QoS for the specified LUN or Clone LUN is displayed. Valid options:
> **-name**

> Specifies the name of the LUN or Clone LUN.

`-id`

Specifies the ID of the LUN or Clone LUN.

`-storageDomain`

Displays a summary of the specified Storage Domain.
Valid options:
`-name`

Specifies the Storage Domain name.

`-id`

Specifies the ID of a Storage Domain.

`-brick`

Displays the volumes that touch the LUNs of all Bricks. If this option is provided, the LUN volumes for the specified Brick are displayed. Valid options:
`-name`

Specifies the name of a Brick.

`-wwn`

Specifies the World Wide Name (WWN) of a Brick.

`-csv`

Specifies the comma-separated output format of the configuration file. You can specify the `-csv` option only if the `-lun` option is used.

`-html`

Specifies the name of the directory that contains all of the generated HTML files.

`-xml`

Specifies the XML output format of the configuration file.

Note: You *must* specify the `-csv`, the `-html`, or the `-xml` option.

`-help`

Displays the detailed command help information.

EXAMPLE   Run `storage_allocation -list -brick -xml` to write the Brick configuration file in the XML output format, replacing *xml_configuration_file* with the location and the name of the XML configuration file:

```
axiomcli storage_allocation -list -brick -xml
xml_configuration_file
```

The output XML configuration file looks similar to the following example:

```
<?xml version="1.0" encoding="ISO-8859-1"?>
<viewCod>
<Brick>
<FriendlyName>BRICK-001</FriendlyName>
<WWN>0x200c000b08001d03</WWN>
<BrickLUN>
<MetadataIndex>0</MetadataIndex>
<Number>2</Number>
<RUI>2000000b-08001d03-00202020-30303030-30303032</RUI>
<Status>Online</Status>
<StorageClass>SATA 7k HDD</StorageClass>
<StorageDomain>default</StorageDomain>
<Volume>
<Name>PERSISTENCE</Name>
<SUID>0x0</SUID>
<VlunHandle>0x0</VlunHandle>
<VlunGUID>00dccfb0-d21d-b211-b318-220503080b00</
VlunGUID>
</Volume>
</BrickLUN>
<BrickLUN>
<MetadataIndex>1</MetadataIndex>
<Number>3</Number>
<RUI>2000000b-08001d03-00202020-30303030-30303033</RUI>
<Status>Online</Status>
<StorageClass>SATA 7k HDD</StorageClass>
<StorageDomain>default</StorageDomain>
<Volume>
<Name>PERSISTENCE</Name>
<SUID>0x0</SUID>
<VlunHandle>0x0</VlunHandle>
<VlunGUID>00dccfb0-d21d-b211-b318-220503080b00</
VlunGUID>
</Volume>
</BrickLUN>
</Brick>
<Brick>
<FriendlyName>BRICK-002</FriendlyName>
<WWN>0x200c000b083a5371</WWN>
<BrickLUN>
<MetadataIndex>2</MetadataIndex>
<Number>2</Number>
<RUI>2000000b-083a5371-00202020-30303030-30303036</RUI>
<Status>Online</Status>
<StorageClass>SATA 7k HDD</StorageClass>
<StorageDomain>default</StorageDomain>
<Volume>
<Name>PERSISTENCE</Name>
<SUID>0x0</SUID>
<VlunHandle>0x0</VlunHandle>
<VlunGUID>00dccfb0-d21d-b211-b318-220503080b00</
VlunGUID>
</Volume>
```

```
</BrickLUN>
<BrickLUN>
<MetadataIndex>3</MetadataIndex>
<Number>3</Number>
<RUI>2000000b-083a5371-00202020-30303030-30303037</RUI>
<Status>Online</Status>
<StorageClass>SATA 7k HDD</StorageClass>
<StorageDomain>default</StorageDomain>
<Volume>
<Name>PERSISTENCE</Name>
<SUID>0x0</SUID>
<VlunHandle>0x0</VlunHandle>
<VlunGUID>00dccfb0-d21d-b211-b318-220503080b00</
VlunGUID>
</Volume>
</BrickLUN>
</Brick>
</viewCod>
```

`storage_domain`

DESCRIPTION   Provides functionality that allows you to create, delete, list, or modify Pillar Axiom Storage Domains. A Pillar Axiom Storage Domain is a subset of a virtual storage pool that is comprised of a grouping of physical Bricks.

Use the `storage_domain` command to manage Pillar Axiom Storage Domains on a Pillar Axiom system.

You can use the `-verify` option to test the command-line argument and its options before running it in Pillar Axiom CLI. If no errors exist, the Pillar Axiom CLI command returns without executing. For example, the `-verify` option is helpful when writing scripts in which a particular Pillar Axiom CLI command usage can be verified prior to adding it to a script.

You can use the `-outputformat` or the `-o` command option to specify how to display the results of running a command. If you do not specify either the `-outputformat` or the `-o` command option, the results display in the default `text` format. Valid options:

text   The system displays the results in the plain-text format.

xml   The system displays the results in the tagged XML format.

You can use the `-sessionKey` option to specify which Pillar Axiom system to access and which session key value to use for validation. The Pillar Axiom CLI displays the session key value when you log in to the Pillar Axiom system using the `-returnKey` option.

You can use the `-timeout` option to set a time limit for the execution of a command. If the command takes longer than the number of seconds specified in the `-timeout` option, the system stops executing the command. If you do not specify the `-timeout` option, the system does not set any time limit for executing the command.

SYNTAX

```
axiomcli storage_domain -add -name storage-domain-name
    [-verify]
    [{-outputformat | -o} {text | xml}]
    [-sessionKey session-key]
    [-timeout timeout-in-seconds]
```

```
axiomcli storage_domain -modify -domain
storage-domain-id-or-fqn
    [-newName new-storage-domain-name]
    [-isPrimary]
    [-verify]
```

```
        [{-outputformat | -o} {text | xml}]
        [-sessionKey session-key]
        [-timeout timeout-in-seconds]
```

```
axiomcli storage_domain -delete
        -domain storage-domain-id-or-fqn
[,storage-domain-id-or-fqn]...
        [-verify]
        [{-outputformat | -o} {text | xml}]
        [-sessionKey session-key]
        [-timeout timeout-in-seconds]
```

```
axiomcli storage_domain -list [-details]
        [-domain storage-domain-id-or-fqn
[,storage-domain-id-or-fqn]...]
        [-verify]
        [{-outputformat | -o} {text | xml}]
        [-sessionKey session-key]
        [-timeout timeout-in-seconds]
```

```
axiomcli storage_domain -help
```

PARAMETERS
Note: Only Primary Administrator and Administrator 1 roles can issue all command options.

All roles can issue the `-list` command option.

-add

Creates a Storage Domain.

Note: The Pillar Axiom system must contain at least three Bricks before a Storage Domain can be created.

Valid options:
-name

Specifies the name of this Storage Domain. This name must be unique within the Pillar Axiom system.

-modify

Changes certain properties of a Storage Domain.

Valid options:
-domain

Specifies the ID or fully qualified name (FQN) of the Storage Domain to modify.

-newName

Specifies the new name of this Storage Domain. This new name must be unique within the Pillar Axiom system.

-isPrimary

Specifies that this domain is to be the primary domain. Be sure that this primary domain contains at least two Bricks.

Important! Use of this option causes the system to migrate the system configuration and persistence data from the existing primary domain to this new primary domain. This migration is automatic, cannot be interrupted, and affects system performance until the migration completes.

-delete

Removes one or more Storage Domains from the Pillar Axiom system.

Note: You cannot delete the primary Storage Domain. Also, you cannot delete a Storage Domain that has any logical volumes or Bricks assigned to it.

Valid options:
-domain

Specifies the ID or FQN of a Storage Domain to delete.

-list

Displays existing Storage Domain names.

Valid options:
-details

Displays all properties of the specified Storage Domains that are listed. Otherwise, only the names of the domains are shown.

Some Storage Domain properties include the following:
Name

Specifies the name of the Storage Domain.

PhyscialTotalCapacity

Displays the total amount of raw capacity (in GB) provided by the Bricks defined within the indicated Storage Domain.

PhysicalFreeCapacity

Displays the amount of raw capacity (in GB) that is available for allocation in the indicated Storage Domain.

PhysicalAllocatedCapacity

Displays the amount of raw capacity, in gigabytes (GB), that has been assigned and designated to all logical volumes residing on the indicated Brick.

PhysicalUnavailableCapacity

Displays the amount of raw capacity (in GB) that is currently being initialized. This value typically results from a volume having been deleted. This value decreases over a period of time while the value for free capacity correspondingly increases for the indicated Storage Domain.

-domain

Displays all of the properties of the specified Storage Domain.

-help

Displays the detailed command help information.

EXAMPLE   Run `axiomcli storage_domain -list -details` to display all the properties of each Storage Domain:

```
axiomcli storage_domain -list -details
```

Results:

```
/default
    Id                       :
4130303132373542A214000000000000
    Name                     : default
    ManagementState          : AVAILABLE
    Primary                  : true
    BrickNodeFqn             : /BRICK-001/0
    BrickNodeId              : 200C000B08001D03
    BrickNodeFqn             : /BRICK-002/0
    BrickNodeId              : 200C000B083A5371
    PhysicalTotalCapacity        : 3560
    PhysicalFreeCapacity         : 3076
    PhysicalAllocatedCapacity    : 484
    PhysicalUnavailableCapacity : 0
    StorageClass                 : satahd
        TotalCapacity      : 3560
        AvailableCapacity  : 3076
        AllocatedCapacity  : 484
        UnavailableCapacity : 0
```

`system`

DESCRIPTION   Manages the status and shutdown functions of a Pillar Axiom system.

The components listed by `system` include:
- Slammers: Includes the control units (CUs), fans, power supplies, batteries, network interface modules, private interconnect modules, and temperature.
- Bricks: Includes the drives, power supplies and fans, Enclosure Services (ES) module, and RAID controllers.
- Pilots: Includes just the control units.

Use the `system` command to manage the system-wide settings of a Pillar Axiom system.

You can use the `-verify` option to test the command-line argument and its options before running it in Pillar Axiom CLI. If no errors exist, the Pillar Axiom CLI command returns without executing. For example, the `-verify` option is helpful when writing scripts in which a particular Pillar Axiom CLI command usage can be verified prior to adding it to a script.

You can use the `-outputformat` or the `-o` command option to specify how to display the results of running a command. If you do not specify either the `-outputformat` or the `-o` command option, the results display in the default `text` format. Valid options:

text   The system displays the results in the plain-text format.

xml   The system displays the results in the tagged XML format.

You can use the `-sessionKey` option to specify which Pillar Axiom system to access and which session key value to use for validation. The Pillar Axiom CLI displays the session key value when you log in to the Pillar Axiom system using the `-returnKey` option.

You can use the `-timeout` option to set a time limit for the execution of a command. If the command takes longer than the number of seconds specified in the `-timeout` option, the system stops executing the command. If you do not specify the `-timeout` option, the system does not set any time limit for executing the command.

Note: The `system` command replaces the deprecated `axiom_status` command.

The `system –modify` and `system –network` command options replace the deprecated `pilotconfig` command.

SYNTAX

```
axiomcli system -modify
     [-newName system-name]
     [-description axiom-description]
     [-location system-location]
     [-contactName contact-name]
     [-contactPhone contact-phone]
     [-assetNumber asset-number]
     [-sessionTimeout timeout-in-minutes]
     [-maximumFailedLogins maximum-failed-login-attempts]
     [-messageOfTheDay message-of-the-day]
     [{-enableEmail | -disableEmail}]
     [-smtpServerIp smtp-server-ip_or_dns]
     [-smtpServerPort smtp-server-port-number]
     [-emailDomain email-domain]
     [-emailFloodInterval flood-prevention-interval-seconds]
     [{-enableSsh {-ssh ssh-ticket | -file ssh-ticket-file}
     | -disableSsh}]
     [{-conservativeMode | -performanceMode}]
     [-verify]
     [{-outputformat | -o} {text | xml}]
     [-sessionKey session-key]
     [-timeout timeout-in-seconds]
```

```
axiomcli system -network
     [-ip ip-address]
     [-netmask netmask]
     [-nameServer dns-ip1 [,dns-ip2]...]
     [{-enableDhcp | -disableDhcp}]
     [-duplex {auto | 10h | 10f | 100h | 100f | 1000h |
1000f}]
     [-pilot1Ip pilot1-ip-address]
     [-pilot1Netmask pilot1-netmask]
     [-pilot1Gateway pilot1-gateway]
     [-pilot2Ip pilot2-ip-address]
     [-pilot2Netmask pilot2-netmask]
     [-pilot2Gateway pilot2-gateway]
     [-verify]
     [{-outputformat | -o} {text | xml}]
     [-sessionKey session-key]
     [-timeout timeout-in-seconds]
```

```
axiomcli system -list [-details]
     [-storage]
```

```
    [-productDetails]
    [-ssh]
    [-storageIoStatistics]
    [-status]
    [-verify]
    [{-outputformat | -o} {text | xml}]
    [-sessionKey session-key]
    [-timeout timeout-in-seconds]

axiomcli system -shutdown [-overridePinnedData]
[-overrideDisabledNodes]
    [-verify]
    [{-outputformat | -o} {text | xml}]
    [-sessionKey session-key]
    [-timeout timeout-in-seconds]

axiomcli system -restart
    {[-overridePinnedData] [-overrideDisabledNodes]
    | [-emergencyClearBbm]
    | [-emergencyPreserveBbm]
    }
    [-verify]
    [{-outputformat | -o} {text | xml}]
    [-sessionKey session-key]
    [-timeout timeout-in-seconds]

axiomclisystem -restoreSlammer -slammer slammer-name
-unit unit-name
    [-verify]
    [{-outputformat | -o} {text | xml}]
    [-sessionKey session-key]
    [-timeout timeout-in-seconds]

axiomcli system -replace -unit unit-name
    [-verify]
    [{-outputformat | -o} {text | xml}]
    [-sessionKey session-key]
    [-timeout timeout-in-seconds]

axiomcli system -resume {-brickFru brick-fru | -slammerFru
slammer-fru}
    [-verify]
    [{-outputformat | -o} {text | xml}]
    [-sessionKey session-key]
    [-timeout timeout-in-seconds]

axiomcli system -beacon -unit unit-name [-stop]
[-reversebeacon]
    [-verify]
    [{-outputformat | -o} {text | xml}]
```

```
    [-sessionKey session-key]
    [-timeout timeout-in-seconds]
```

```
axiomcli system -reset {-ssn encrypted-ssn | -file
encrypted-ssn-file}
    [-verify]
    [{-outputformat | -o} {text | xml}]
    [-sessionKey session-key]
    [-timeout timeout-in-seconds]
```

```
axiomcli system -pi –command private-interconnect-command
[-timeout timeout-value]
    [-verify]
    [{-outputformat | -o} {text | xml}]
    [-sessionKey session-key]
```

```
axiomcli system -verifyPersistenceRedundancy
    [-verify]
    [{-outputformat | -o} {text | xml}]
    [-sessionKey session-key]
    [-timeout timeout-in-seconds]
```

```
axiomcli system –help
```

PARAMETERS

Note: The Primary Administrator and Administrator 1 roles can issue all command options except for the following options:

```
axiomcli system –list –storageIoStatistics
```

```
axiomcli system –restart –emergencyClearBbm
```

```
axiomcli system –restart –emergencyPreserveBbm
```

The Pillar Support and Support roles can issue all commands except for the following options:

```
axiomcli system –modify
```

```
axiomcli system –network
```

All roles can issue the `-list`, and `-beacon` command options.
–modify

> Modifies the system-wide settings of a Pillar Axiom system.

> Valid options:
> **–newName**

> Identifies the system name of a Pillar Axiom system.

> **–description**

> Identifies the description of the Pillar Axiom system.

-location

Identifies the physical location of the Pillar Axiom system.

-contactName

Identifies the administrator's login (user) name who is responsible for the Pillar Axiom system.

-contactPhone

Identifies the telephone number for the Primary Administrator.

-assetNumber

Identifies a fixed inventory asset number for the Pillar Axiom system.

Note: This asset number is not the serial number for the Pillar Axiom system.

-sessionTimeout

Identifies an inactivity time limit, after which an administrator's session is terminated. In-progress sessions are not affected by changes that you make to the value; current sessions use the old value. Sessions that start after you change the value use the modified session timeout.

The default for the session timeout is 20 minutes. Values for the session timeout parameter must be between 1 and 999 minutes. If you specify a value larger than 999, Pillar Axiom CLI will adjust the value down to 999 before sending it to the Pillar Axiom system.

-maximumFailedLogins

Identifies the number of times that an administrator can attempt, but fail, to log in to the Pillar Axiom system.

When this threshold is exceeded, the system disables the account.

The Primary Administrator or Administrator 1 can re-enable an account by entering the following command-line argument:

```
axiomcli account -modify -account
account-id-or-fqn -enable
```

-messageOfTheDay

Provides the default message to display when a user logs in to the Pillar Axiom CLI.

-enableEmail

Indicates whether email notifications to be sent by the Pillar Axiom system are enabled.

-disableEmail

Indicates whether email notifications to be sent by the Pillar Axiom system are disabled.

-smtpServerIp

Identifies the Simple Mail Transfer Protocol (SMTP) server to use for sending any emails. Valid options:

- IP: The IP address for the SNMP server

- DNS: The Domain Name Service (DNS) for the SNMP server

-emailDomain

Specifies the sending domain identifier other than the Pillar Axiom system.

-emailFloodInterval

Identifies the time in which two subsequent emails are permitted to be sent when some type of event occurs on a Pillar Axiom system. The smaller the number, the more frequent you will receive emails for events being generated by the system. The default time is set to 10 minutes.

-enableSsh

Indicates whether Secure Shell (SSH) access to the Pillar Axiom system is enabled.

If you specify the `-ssh` command, its returned value is the encrypted SSH ticket. If you specify the `-file` option, the returned value is the path to the file containing the encrypted SSH ticket.

-disableSsh

Indicates whether SSH access to the Pillar Axiom system is disabled.

–conservativeMode

Puts the Pillar Axiom system into the conservative performance mode. To restore the Pillar Axiom system back to a normal performance mode, use the

-performanceMode option. The -conservativeMode and -performanceMode options are support-only commands.

> ⚠ **Caution**   In the conservative mode, if a CU fails, the system does not enable write through. If the remaining CU fails, any data that has not been written to the Bricks is lost.

-network

Modifies the network settings on a Pillar Axiom system.

Valid options:
-ip

Identifies the IP address that is permanently assigned to the Pillar Axiom system if Dynamic Host Configuration Protocol (DHCP) is disabled.

-netmask

Identifies the subnet mask for the Pillar Axiom IP address if DHCP is disabled.

-nameServer

Identifies the primary, secondary, and tertiary Domain Name Sever (DNS) that is used by the Pillar Axiom system to resolve IP addresses.

-enableDhcp

Indicates whether DHCP is enabled on your network and makes the Pillar Axiom system known to the DHCP software.

-disableDhcp

Indicates whether DHCP is disabled and is not used on your network.

-duplex

Sets the duplex settings for the Pillar Axiom system.

Valid options:
- auto – System determines
- 10h – Half 10 Mbps
- 10f – Full 10 Mbps

- **100h** – Half 100 Mbps
- **100f** – Full 100 Mbps
- **1000h** – Half 1000 Mbps
- **1000f** – Full 1000 Mbps

-pilot1Ip

Sets the public IP address for Pilot1.

-pilot1Nnetmask

Sets the netmask to be used by Pilot1.

-pilot1Gateway

Sets the route IP address for Pilot1.

-pilot2Ip

Sets the public IP address for Pilot2.

-pilot2Netmask

Sets the netmask to be used by Pilot2.

-pilot2Gateway

Sets the route IP address for Pilot2.

-list

Displays the status of a Pillar Axiom system.

Valid options:
-details

Displays the status of a Pillar Axiom system including the properties set by `-modify` or `-network` options.

-storage

Displays a summary of all used and available storage on a Pillar Axiom system.

-productDetails

Displays the product details of a Pillar Axiom system. This includes, but is not limited to, software build number, operating system version, and product name.

If you do not specify this option, but specify other options, product details are not displayed.

-ssh

Displays the SSH status of enabled, start time, or duration of the Pillar Axiom system.

-storageIoStatistics

Displays the storage I/O statistics of the total number of SAN blocks. The rest of the system information is not displayed.

Note: Only the Pillar Support and Support roles can issue this command option.

-status

Displays the system status information only.

Note: If the Pillar Axiom system is powered off or there is a network connectivity problem, this function will fail.

-shutdown

Places the Pillar Axiom system into a shutdown state. This option does not power off the system. Use this option in preparation for a power-off or power cycle, or for maintenance or recovery. Before the system is placed in a shutdown state, an attempt to flush the write-back cache will be made. If successful, the shutdown occurs; otherwise, the shutdown does not occur.

While the system is in a shutdown state, the only actions you can perform are to display system status and to restart the system.

Important! If you need to power off the system for more than 48 hours, remove the Slammer batteries.

Note: If there is data in the battery backup memory (BBM), the data is retained until the system is restarted. If the batteries discharge before the system restarts, the data is lost.

Valid options:
-overridePinnedData

Forces the shutdown to occur even if pinned data exists. The pinned data can occur when issues arise regarding the Brick storage array. In such a case, data to be written to that array remains in the BBM of the Slammer CU. Data is pinned if it cannot be flushed from cache to the storage array.

An administrator-initiated shutdown request will fail if any user data is still cached and has not yet been written to

physical storage. If the Slammers cannot communicate with the Bricks to flush the cached data, the Pillar Axiom system retains, or pins, the data in cache.

-overrideDisabledNodes

Forces the shutdown to occur even if Slammer CUs are disabled.

-restart

Restarts a Pillar Axiom system. Before restarting, the system attempts to flush the buffers. If successful, the restart will proceed as normal; otherwise, the restart will not occur.

Tip: When restarting a system after an extended period of time, remember to reinstall the batteries before you restart the system.

Valid options:
-overridePinnedData

Forces the system to restart even if pinned data exists. The pinned data can occur when issues arise regarding the Brick storage array. In such a case, data to be written to that array remains in the BBM of the Slammer CU. Data is pinned if it cannot be flushed from cache to permanent storage on disk.

-overrideDisabledNodes

Forces the restart to occur even if there are disabled Slammer CU.

-emergencyClearBbm

Performs an emergency restart and clears the contents of the BBM.

You cannot use this option with any other system -restart option.

Note: Only the Pillar Support and Support roles can issue this command option.

-emergencyPreserveBbm

Performs an emergency restart and will preserve the contents of the BBM.

You cannot use this option with any other system -restart option.

Note: Only the Pillar Support and Support roles can issue this command option.

-restoreSlammer

Fails back a recovered Slammer CU.

Valid options:

-slammer

Specifies the Slammer to fail back.

-unit

Specifies the control unit to fail back (`0` or `1`).

-replace

Notifies the Pillar Axiom system that a specific hardware component is going to be replaced.

The `-unit` option identifies the unit being replaced by using a path name shown in the `axiomcli system -list` output. The supported units are:

Control unit 0 power supply

`/Slammer1/CU0/PS0`

Control unit 0 FanModule

`/Slammer1/CU0/FM0`

Control unit 0 Battery

`/Slammer1/CU0/BA0`

Control unit 0 Memory

`/Slammer1/CU0/MEM0`

Control unit 0 Motherboard

`/Slammer1/CU0/MB0`

Control unit 0 SANNetworkInterfacemodule

`/Slammer1/CU0/SANNIM1`

Control unit 0 PrivateInterconnectModule

`/Slammer1/CU0/PIM0`

Control unit 0 SCSIController

`/Slammer1/CU0/SCSI1`

Control unit 0 Chassis

`/Slammer1/CU0/CH`

Brick

`/Brick005`

Brick Drive

/Brick005/Disk04

Brick PowerSupplyFanModule

/Brick1/PSFM01

Brick ESModule

/Brick1/ESM0

Brick SpareDrive

/Brick1/Spare01

Brick RAIDController

/Brick1/CU0

Brick Chassis

/Brick1/CH

-resume

Resumes operations in the Pillar Axiom system after the following actions:

- ○ Removal of a field replaceable unit (FRU) in a Brick or Slammer hardware component.
- ○ Addition of a new FRU to replace the old one.

Valid options:
-brickfru

Identifies a FRU in a Brick.

Valid options:

PowerSupplyFanModule	Specifies either of the two power supply/fan modules that are installed.
ESModule	Specifies the ES that is installed.
DiskDrive	Specifies any of the six drives that are installed on each Brick CU.
SpareDiskDrive	Specifies the spare drive that is shared by the two Brick CUs.

| RAIDController | Specifies either of the two RAID controllers that are installed. |
| Chassis | Specifies an entire Brick. |

You can find the FRU by entering the following command-line argument:

```
axiomcli system –replace
```

–slammerfru

Identifies a FRU on a Slammer.

Valid options:

PowerSupply	Specifies either of the two power supplies that are installed. Each Slammer contains four power supplies.
FanModule	Specifies either of the two fan assemblies that are installed on Slammer CU. Each fan assembly contains two fans, which are not individual FRUs.
Battery	Specifies either of the two batteries that are installed on Slammer CU.
Memory	Specifies memory modules that reside on the motherboard of each Slammer CU.
Motherboard	Specifies the motherboard that is installed on each Slammer CU.
SANNetworkInterfaceModule	Specifies either of the two network interface modules that are installed on a SAN Slammer.
PrivateInterconnectModule	Specifies either of the two private interconnect modules that are installed on a Slammer.

	SCSIController	Specifies the PCI card that resides in the network interface module.
	Chassis	Specifies the entire Slammer.

You can find the Slammer FRU by entering the following command-line argument:

```
axiomcli system -replace
```

-beacon

Identifies the specific Slammers or Bricks in the Pillar Axiom system. The beacon command option blinks the LEDs on the front and back of the target hardware component. You can also perform a reverse beacon, which blinks the LEDs on all of the Pillar Axiom system hardware components except the target FRU.

Note: A Pillar Axiom system can beacon only one component at a time because blinking disables all other LEDs.

Valid options:
-unit

Identifies the name of the unit specified by the -replace option.

-stop

Stops the LED blinking and returns all Pillar Axiom system LEDs to their normal function.

-reverseBeacon

Blinks all LEDs except those associated with the specified unit.

-reset

Deletes all user data and configuration details on the Pillar Axiom system.

⚠ **Caution**	All user data and configured logical volumes will be lost.

Valid options:
-ssn

Identifies the encrypted system serial number (SSN) that is assigned to the Pillar Axiom system being reset. You

need to reset your system serial number only in extremely rare circumstances.

-file

Identifies the name and path of the file that contains the encrypted SSN. You must specify the SSN file. If you do not know the name of the SSN file, contact Pillar World Wide Customer Support Center.

-pi

Sends a private interconnect command and parameters to the Pillar Axiom system. The command is passed as-is and requires you to know the commands and parameters that can be sent. For the list of available parameters, contact Pillar World Wide Customer Support Center.

Valid options:
-command

Identifies a free form text string for the private interconnect command.

-timeout

Identifies an optional timeout value for the command.

-verifyPersistenceRedundancy

Checks two copies of the doubly redundant persistence data. If there are any errors, the system returns the number of detected errors.

-help

Displays the detailed command help information.

EXAMPLE   Run `system -list` to display the status of a Pillar Axiom system:

```
axiomcli system -list
```

Results:

```
System
    Name          : coaxm012
    SystemStatus  : NORMAL
    Slammer                        : /SLAMMER-01
        Name                       : SLAMMER-01
        Id                         : 2008000B08030522
        HardwareComponentStatus  : NORMAL
        ServiceType                : SAN
    Brick                          : /BRICK-001
        Name                       : BRICK-001
        Id                         : 200C000B08001D03
```

```
                BrickWwn                      : 200C000B08001D03
                Type                          : SATA
                HardwareComponentStatus   : NORMAL
                TemperatureStatus         : NORMAL
        Brick                           : /BRICK-002
                Name                          : BRICK-002
                Id                            : 200C000B083A5371
                BrickWwn                      : 200C000B083A5371
                Type                          : SATA
                HardwareComponentStatus   : NORMAL
                TemperatureStatus         : NORMAL
        Pilot
                HardwareComponentStatus       : NORMAL
                ManagementState               : AVAILABLE
                PilotControlUnitName          : PILOT_1
                    OperationMode             : ACTIVE
                    HardwareComponentStatus   : NORMAL
                    ConfigurationServerStatus : NORMAL
                    EnclosureAssemblyNumber   : 1030-00001-00
                    EnclosureDescription      : Axiom 1U-Pilot
                    EnclosureSerialNumber     : No Enclosure
                    FruAssemblyNumber         : 1450-00106-00
                    FruDescription            : MSI-9249
                    SerialNumber              :
BC0071031142300038
                    OsVersion                 :
2070-00001-050100-014100
                    PacmanVersion             :
2073-00001-050100-014400
                PilotControlUnitName          : PILOT_2
                    OperationMode             : STANDBY
                    HardwareComponentStatus   : NORMAL
                    EnclosureAssemblyNumber   : 1030-00001-00
                    EnclosureDescription      : Axiom 1U-Pilot
                    EnclosureSerialNumber     : No Enclosure
                    FruAssemblyNumber         : 1450-00106-00
                    FruDescription            : MSI-9249
                    SerialNumber              :
BC0096001042670011
                    OsVersion                 :
2070-00001-050100-014100
                    PacmanVersion             :
2073-00001-050100-014400
        Storage
                AvailableCapacity      : 3076
                UsedCapacity           : 484
        ProductDetails
                Model          : AX500
                SerialNumber : A001275BCX
                PilotControlUnitName          : PILOT_1
                    SerialNumber              :
BC0071031142300038
                    OsVersion                 :
```

```
2070-00001-050100-014100
            PacmanVersion             :
2073-00001-050100-014400
        PilotControlUnitName          : PILOT_2
            SerialNumber              :
BC0096001042670011
            OsVersion                 :
2070-00001-050100-014100
            PacmanVersion             :
2073-00001-050100-014400
        BuildInformation
            BuildVersion     :
            CsiChecksum      :
ae98d810cc302cf46afe6f4234592c9e
        SoftwareComponent :
BRICK_SATA_THIRDGEN_FIRMWARE
            Version          : 2050-00046-032006-032006
        SoftwareComponent :
BRICK_FIBRE_CHANNEL_NEXTGEN_FIRMWARE
            Version          : 2050-00045-022006-022006
        SoftwareComponent : BRICK_SATA_FIRMWARE
            Version          : 2050-00036-072006-072006
        SoftwareComponent : SLAMMER_SOFTWARE_AX500
            Version          : 2060-00001-050100-014400
        SoftwareComponent : BRICK_SATA_NEXTGEN_FIRMWARE
            Version          : 2050-00040-002006-002006
        SoftwareComponent : SLAMMER_PROM_AX300_AX500
            Version          : 2062-00002-030000-015001
        SoftwareComponent : PILOT_OS
            Version          : 2070-00001-050100-014100
        SoftwareComponent : BRICK_FC_FIRMWARE
            Version          : 2050-00038-012006-012006
        SoftwareComponent : PILOT_SOFTWARE
            Version          : 2073-00001-050100-014400
        SoftwareComponent : SLAMMER_PROM_AX600
            Version          : 2062-00003-050000-040000
        SoftwareComponent : SLAMMER_SOFTWARE_AX600
            Version          : 2060-00003-050100-014400
        SoftwareComponent : SLAMMER_SOFTWARE_AX300
            Version          : 2060-00301-050100-014400
    SSH
        Enabled : false
```

system_alert

DESCRIPTION   Displays and deletes system alerts, which are system events that require administrator intervention. System alerts are recommended system maintenance activities that have not yet been completed.

You can use the `-verify` option to test the command-line argument and its options before running it in Pillar Axiom CLI. If no errors exist, the Pillar Axiom CLI command returns without executing. For example, the `-verify` option is helpful when writing scripts in which a particular Pillar Axiom CLI command usage can be verified prior to adding it to a script.

You can use the `-outputformat` or the `-o` command option to specify how to display the results of running a command. If you do not specify either the `-outputformat` or the `-o` command option, the results display in the default `text` format. Valid options:

text   The system displays the results in the plain-text format.

xml   The system displays the results in the tagged XML format.

You can use the `-sessionKey` option to specify which Pillar Axiom system to access and which session key value to use for validation. The Pillar Axiom CLI displays the session key value when you log in to the Pillar Axiom system using the `-returnKey` option.

You can use the `-timeout` option to set a time limit for the execution of a command. If the command takes longer than the number of seconds specified in the `-timeout` option, the system stops executing the command. If you do not specify the `-timeout` option, the system does not set any time limit for executing the command.

SYNTAX
```
axiomcli system_alert -delete
    {-all | -alert system-alert-id-or-fqn
[,system-alert-id-or-fqn]...}
    [-verify]
    [{-outputformat | -o} {text | xml}]
    [-sessionKey session-key]
    [-timeout timeout-in-seconds]
```

```
axiomcli system_alert -list [-details]
    [{ -alert system-alert-id-or-fqn [, system-alert-id-or-fqn]...
     | -thresholds
    }]
    [-verify]
    [{-outputformat | -o} {text | xml}]
```

```
     [-sessionKey session-key]
     [-timeout timeout-in-seconds]
```

```
axiomcli system_alert -threshold {-lunRepository |
-storagePool}
     -upperBoundUsed upper-bound-used-percentage
     -lowerBoundNearingLimit
lower-bound-nearing-limit-percentage
     -reachedLimit reached-limit-percentage
     [-verify]
     [{-outputformat | -o} {text | xml}]
     [-sessionKey session-key]
     [-timeout timeout-in-seconds]
```

```
axiomcli system_alert -help
```

PARAMETERS

Note: Different roles can issue the following commands:

- The Primary Administrator and Administrator 1 roles can issue all of the command options.
- The Administrator 2 role can issue only the `-list` command option.
- The Pillar Support and Support roles can issue only the `-delete` and `-list` command options.
- The Monitor role is not allowed to issue any of the command options.

-delete

Deletes existing system alerts that have not been completed.

Required values must be entered on the command line. If you do not specify a required value, the system returns a syntax error and provides information on correct usage of the command.

Required options are:

-all

Specifies that all system alerts are to be deleted.

-alert

Identifies one or more alerts to be deleted. Enter the ID or FQN of the alert to delete. To display the current set of alerts, run the `-list` option.

Valid options:

ID	A 32-character string with hexadecimal characters (a through f and 0 through 9). Example ID:

	4130303133334 3942A13E0 12AAA1A0D35

Fully qualified name (FQN)	An object name starting with a leading slash (/) with the object's name. Example FQN:
	
	`/`
	`TopologyValidationFai`
	`led...`

-list

Displays information about the specified system alert that has not yet been resolved. A list of unresolved system alerts with their ID, FQN, type, and creation date are displayed. The `-list` option also identifies whether you can delete the system alert.

If you do not specify the `-alert` option, the system displays the `system_alert -list` information only for the specified action, rather than all of the actions. If you do not provide the `-thresholds` option, the system does not display threshold values.

Note: The Primary Administrator, Administrator 1, Administrator 2, Pillar Support, and Support roles can issue the `-list` command options.

Valid options:
-details

Displays the set of parameter names and values associated with each system alert, including the date of the alert.

The format of date-time is
`YYYY-MM-DD[THH[:mm[:SS[.xxx]]]][+-HH:mm]`
where:

- `YYYY-MM-DD` designates a four-digit year, two-digit month, and two-digit day for the date.
- `T` is a separator that designates the start of the time portion of the string.
- `HH:mm:SS.xxx` designates hours, minutes, and seconds (to three decimals places) in values for a 24-hour clock.

■ + -HH:mm designates the time zone as an offset from Coordinated Universal Time (UTC) in hours and minutes. The plus (+) or minus (-) prefix must be provided.

-alert

Specifies one or more alerts that are to be addressed.

Note: You can specify either the -alert or the -thresholds option, but not both.

-thresholds

Specifies alert threshold values to be displayed. If you provide the -details option, the system does not display any additional information for the alert thresholds.

Note: You can specify either the -thresholds or the -alert option, but not both.

-threshold

Sets alert threshold values for a LUN repository or a storage pool.

Valid options:
-lunRepository

Specifies a LUN repository alert threshold percentage value to set.

Note: You can specify either the -lunRepository or the -storagePool option, but not both.

-storagePool

Specifies a storage pool alert threshold percentage value to set.

Note: You can specify either the -storagePool or the -lunRepository option, but not both.

-upperBoundUsed

Specifies the 0 through 100 percentage value that represents the acceptable usage of the selected storage item. This value clears any nearing or reached system alerts that pertain to the selected storage item when the storage item is at the specified limit or below.

-lowerBoundNearingLimit

Specifies the `0` through `100` percentage value of the lower bound limit to display the alert that the selected storage item is nearing its allocation limit.

-reachedLimit

Specifies the `0` through `100` percentage value that determines if the selected storage item has reached its allocation limit.

-help

Displays the detailed command help information.

EXAMPLE   Run `system_alert -list -details` to display a list of system alerts:

```
axiomcli system_alert -list -details
```

Results:

```
/SlammerBezelNotDetectedSystemAlert/2009000B0803052A
    Id            : 4130303132373542A13E0045B262838C
    CreationDate  : 2011-04-01T18:52:29.784
    Problem: The bezel is not being detected by a
Slammer Control Unit.
        SlammerBezelNotDetected
            ControlUnitIdentity
                Id                    : 2009000B0803052A
                Fqn                   : /SLAMMER-01/1
```

system_log

DESCRIPTION   Collects information about the Pillar Axiom system and creates a tar file of trace logs. Pillar World Wide Customer Support Center may request that you perform this command to diagnose issues in your Pillar Axiom system.

Use the `system_log` command to collect and review system information.

Note: The `system_log` command replaces the deprecated `sysinfo` command.

You can use the `-verify` option to test the command-line argument and its options before running it in Pillar Axiom CLI. If no errors exist, the Pillar Axiom CLI command returns without executing. For example, the `-verify` option is helpful when writing scripts in which a particular Pillar Axiom CLI command usage can be verified prior to adding it to a script.

You can use the `-outputformat` or the `-o` command option to specify how to display the results of running a command. If you do not specify either the `-outputformat` or the `-o` command option, the results display in the default `text` format. Valid options:

text   The system displays the results in the plain-text format.

xml   The system displays the results in the tagged XML format.

You can use the `-sessionKey` option to specify which Pillar Axiom system to access and which session key value to use for validation. The Pillar Axiom CLI displays the session key value when you log in to the Pillar Axiom system using the `-returnKey` option.

You can use the `-timeout` option to set a time limit for the execution of a command. If the command takes longer than the number of seconds specified in the `-timeout` option, the system stops executing the command. If you do not specify the `-timeout` option, the system does not set any time limit for executing the command.

SYNTAX
```
axiomcli system_log -collect
    [ { -all
      | [-eventLog] [-statistics] [-systemConfig]
[-pilot] [-sanhostLogs]
        [-slammerBackup] [-slammerInMemory]
[-slammerLogs] [-brickLogs]
        [-replicationAppliance] [-client]
      } ]
    [-slammerNode slammer-node-id-or-fqn
[,slammer-node-id-or-fqn]...]
```

```
        [-brick brick-id-or-fqn [,brick-id-or-fqn]...]
        [-sanhost sanhost-id-or-fqn [, sanhost-id-or-fqn]... ]
        [-sendToCallHome]
        [-withinLastHours number-of-hours]
        [-collectionReason reason-description]
        [-uploadClientLogsFirst]
        [-verify]
        [{-outputformat | -o} {text | xml}]
        [-sessionKey session-key]
        [-timeout timeout-in-seconds]

axiomcli system_log -list [-logBundle log-bundle_id_or_fqn
[, log-bundle-id-or-fqn]... ]
        [-details]
        [-verify]
        [{-outputformat | -o} {text | xml}]
        [-sessionKey session-key]
        [-timeout timeout-in-seconds]

axiomcli system_log -download [-logBundle
log-bundle-id-or-fqn] -file download-file
        [-verify]
        [{-outputformat | -o} {text | xml}]
        [-sessionKey session-key]
        [-timeout timeout-in-seconds]

axiomcli system_log -delete -logBundle log-bundle-id-or-fqn
[,log-bundle-id-or-fqn]...
        [-verify]
        [{-outputformat | -o} {text | xml}]
        [-sessionKey session-key]
        [-timeout timeout-in-seconds]

axiomcli system_log -clearLogs {-all | [-slammerLogs]
[-brickLogs] [-logBundles]}
        [-verify]
        [{-outputformat | -o} {text | xml}]
        [-sessionKey session-key]
        [-timeout timeout-in-seconds]

axiomcli system_log -send [-logBundle log-bundle-id-or-fqn]
        [-verify]
        [{-outputformat | -o} {text | xml}]
        [-sessionKey session-key]
        [-timeout timeout-in-seconds]


axiomcli system_log –uploadClientLogs
        [-verify]
        [{-outputformat | -o} {text | xml}]
```

```
        [-sessionKey session-key]
        [-timeout timeout-in-seconds]
```

```
axiomcli system_log –help
```

PARAMETERS **Note:** The Primary Administrator, Administrator 1, Administrator 2, and Monitor roles can issue all command options, except the `-clearLogs` and `-delete` command options.

The Pillar Support and Support roles can issue all of the command options.

-collect

> Collects system information and downloads a tar file with statistics from the Pillar Axiom system to your administrative workstation.

> Valid options:
> **-all**

> Requests the collection of all system information.

> **-eventLog**

> Requests a record of high-level events that have occurred on the system. By default, this option returns either the last 30,000 events or events from the last two weeks, whichever is greater. If a filter is set on event log entries, we recommend that you collect all logged events from the event log as well as logs for the management interfaces (GUI and CLI). On occasion, the Pillar World Wide Customer Support Center may request that all event information be collected and sent to Pillar Data Systems for analysis.

> **-statistics**

> Requests system statistics. The Pillar Axiom system generates performance statistics for logical volumes and storage area network (SAN) protocols. The statistics also include capacity usage and system health information. The Pillar World Wide Customer Support Center may request that you collect performance statistics and transmit the data to Pillar Data Systems for analysis.

> **-systemConfig**

> Requests the global settings that are defined for the system. Information about the Pillar Axiom system configuration can be collected at any time.

> **-pilot**

Requests Pilot-specific information.

-sanhostLogs

Requests logs from all known SAN hosts.

-slammerBackup

Requests information about the Slammer backups. The Pillar Axiom system periodically creates the backup copy, which may contain useful details to compare to other logs.

-slammerInMemory

Requests in-memory Slammer logs. Identifies whether to write details from the utility's active memory to another log and include this log with the component-specific logs that you specify.

-slammerLogs

Requests Slammer-related log information.

-brickLogs

Requests Brick-related log information.

-replicationAppliance

Requests logs from all replication appliances.

-client

Requests only client-related log information.

-slammerNode

Identifies one or more Slammer control units (CUs) from which any other specified logs will be retrieved. Enter the ID or fully qualified name (FQN) of the specified Slammer CUs.

-brick

Identifies one or more Bricks from which any other specified logs will be retrieved. Enter the ID or FQN of the specified Bricks.

–sanhost

Identifies one or more SAN hosts from which logs will be collected. You may specify a maximum of 10 SAN hosts.

-sendToCallHome

Directs the system information and logs to be sent to the Call-Home server as soon as the collection operation completes.

Note: You can send a log to the Call-Home server at a later time by issuing the following command-line argument:

```
axiomcli system_log -send
```

-withinLastHours

Collects logs of activities that have occurred within the last number of hours.

-collectionReason

Specifies the reason for performing the log collection. The entry cannot exceed 256 characters.

-uploadClientLogsFirst

Specifies that the log files on the client system be collected first and sent to the Pillar Axiom system for inclusion in the set of logs being collected.

-download

Downloads a tar file with statistics from the Pillar Axiom system to your administrative workstation. Transmit the file as requested by Pillar World Wide Customer Support Center.

Valid options:
-logBundle

Identifies the log bundle by either the ID or FQN. If you do not specify a log bundle, the most recent log bundle will be downloaded.

Example of specifying the most recent log bundle:

```
axiomcli system_log -download -file C:/
AxiomCLI/
```

Example of specifying the log bundle by ID:

```
C:/AxiomCLI> axiomcli system_log
-download -file C:/AxiomCLI/
413939303033365AA1360000000007AE
```

Example of specifying the log bundle by FQN:

```
C:/AxiomCLI> axiomcli system_log
-download -file C:/AxiomCLI/
A990036ZGN-1272319504-e-02-02.tar
```

-file

Specifies the path used for downloading the log bundle.

-list

Displays the collected system information on a Pillar Axiom system.

Valid options:
-logBundle

Identifies the log bundle to display by either the ID or FQN. If you do not specify a log bundle, the most recent log bundle will be displayed.

-details

Displays the details for each log bundle stored on the Pillar Axiom system. If you do not specify a log bundle, just the FQN of each bundle (if any) will be displayed.

-delete

Deletes specific bundles by ID or FQN.

-clearLogs

Clears the current set of logs on the Pillar Axiom system.

Note: Only the Pillar Support and Support roles can issue this command option.

Valid options:
-all

Clears all system log information on the Pillar Axiom system.

Note: If you specify the -all option, no other option can be specified.

-slammerLogs

Clears all Slammer log information on the Pillar Axiom system.

-brickLogs

Clears all Brick log information on the Pillar Axiom system.

-logBundles

Clears all log bundle information on the Pillar Axiom system.

-send

Sends a specific log bundle to the Call-Home server.

Enter the ID or FQN of a specific Call-Home bundle to send. If you do not specify the `-bundle` option, the most recent Call-Home bundle is sent.

-uploadClientLogs

Specifies that logs on the client system be collected and sent to the Pillar Axiom system.

-help

Displays the detailed command help information.

EXAMPLE   Run `system_log -list` to collect information about the system:

axiomcli system_log -list

Results:

```
/
A001275BCX-110401204538-110402142910-SECONDARY_PERIODIC
_COLLECTION-p-02-02.tar
/
A001275BCX-110402143404-110402143404-PRIMARY_PERIODIC_C
OLLECTION-p-02-02.tar
/
A001275BCX-110402143611-110406140106-MANUAL_COLLECTION-
m-01-01.tar
/
A001275BCX-110401185341-110401204308-MANUAL_COLLECTION-
m-01-01.tar
/
A001275BCX-110401183421-110401185325-PCP_EVT_SYSTEM_STA
TE_CHANGED-e-02-02.tar
```

task

DESCRIPTION   Displays information about one or more tasks. A task is a fundamental unit of work within a Pillar Axiom system. The system converts every configuration request into one or more tasks, queues the tasks so that dependencies are satisfied, and performs the tasks.

Use the `task` command to display a list of tasks.

You can use the `-verify` option to test the command-line argument and its options before running it in Pillar Axiom CLI. If no errors exist, the Pillar Axiom CLI command returns without executing. For example, the `-verify` option is helpful when writing scripts in which a particular Pillar Axiom CLI command usage can be verified prior to adding it to a script.

You can use the `-outputformat` or the `-o` command option to specify how to display the results of running a command. If you do not specify either the `-outputformat` or the `-o` command option, the results display in the default `text` format. Valid options:

text   The system displays the results in the plain-text format.

xml   The system displays the results in the tagged XML format.

You can use the `-sessionKey` option to specify which Pillar Axiom system to access and which session key value to use for validation. The Pillar Axiom CLI displays the session key value when you log in to the Pillar Axiom system using the `-returnKey` option.

You can use the `-timeout` option to set a time limit for the execution of a command. If the command takes longer than the number of seconds specified in the `-timeout` option, the system stops executing the command. If you do not specify the `-timeout` option, the system does not set any time limit for executing the command.

SYNTAX
```
axiomcli task -list [-details] [-task task-id-or-fqn
[,task-id-or-fqn]...]
     [-verify]
     [{-outputformat | -o} {text | xml}]
     [-sessionKey session-key]
     [-timeout timeout-in-seconds]
```

```
axiomcli task -help
```

PARAMETERS   **Note:** All roles can issue the `-list` command option.
-list

Displays a list of tasks and the status of each task.

Valid options:
-details

Displays the status, operation name, and percent complete for one or more tasks. The administrator who initiated the task is also displayed.

-task

Displays information for all specified tasks.

-help

Displays the detailed command help information.

EXAMPLE   Run `axiomcli task -list` to display a list of tasks:

```
axiomcli task -list
```

Results:

```
/GetOperation/100396/administrator
        Status          : IN_PROCESS
```

`time`

DESCRIPTION

Manages the system date and time settings that are configured on the Pillar Axiom system.

Use the `time` command to synchronize the Pillar Axiom clock time with a Network Time Protocol (NTP) server or to set the date and time manually.

You can use the `-verify` option to test the command-line argument and its options before running it in Pillar Axiom CLI. If no errors exist, the Pillar Axiom CLI command returns without executing. For example, the `-verify` option is helpful when writing scripts in which a particular Pillar Axiom CLI command usage can be verified prior to adding it to a script.

You can use the `-outputformat` or the `-o` command option to specify how to display the results of running a command. If you do not specify either the `-outputformat` or the `-o` command option, the results display in the default `text` format. Valid options:

text   The system displays the results in the plain-text format.

xml   The system displays the results in the tagged XML format.

You can use the `-sessionKey` option to specify which Pillar Axiom system to access and which session key value to use for validation. The Pillar Axiom CLI displays the session key value when you log in to the Pillar Axiom system using the `-returnKey` option.

You can use the `-timeout` option to set a time limit for the execution of a command. If the command takes longer than the number of seconds specified in the `-timeout` option, the system stops executing the command. If you do not specify the `-timeout` option, the system does not set any time limit for executing the command.

SYNTAX

```
axiomcli time -modify [-dateTime date-and-time]
    [{-ntpService | -noNtpService}]
    [-ntpServiceIp ntp-service-ip [,ntp-service-ip]...]
    [-verify]
    [{-outputformat | -o} {text | xml}]
    [-sessionKey session-key]
    [-timeout timeout-in-seconds]

axiomcli time -list [-details] [-ntpQuery]
    [-verify]
    [{-outputformat | -o} {text | xml}]
```

```
      [-sessionKey session-key]
      [-timeout timeout-in-seconds]
```

```
axiomcli time -help
```

PARAMETERS

Note: Only the Primary Administrator, Administrator, Pillar Support, and Support roles can issue all command options.

All roles can issue the `-list` command option.

-modify

Modifies the date and time settings on a Pillar Axiom system.

Valid options:
-dateTime

Modifies the system date and time.

The format of date-time is
`YYYY-MM-DD[THH[:mm[:SS[.xxx]]]][+-HH:mm]`
where:

- `YYYY-MM-DD` designates a four-digit year, two-digit month, and two-digit day for the date.
- `T` is a separator that designates the start of the time portion of the string.
- `HH:mm:SS.xxx` designates hours, minutes, and seconds (to three decimals places) in values for a 24-hour clock.
- `+ -HH:mm` designates the time zone as an offset from Coordinated Universal Time (UTC) in hours and minutes. The plus (+) or minus (-) prefix must be provided.

At a minimum, just the date is required, in which case the time defaults to `12:00:00.000+00:00`. You can specify the hours with the rest of the values defaulting to `0`. You can also specify the minutes, seconds, fractional seconds, and the UTC offset. The UTC offset is independent of the time values, so it can be specified with just the date or any combination of date and time. For example:

- `2006-08-25T16:30:00-08:00` specifies a time of 4:30 PM on August 25, 2006, Pacific Time
- `2006-8-25` specifies a time of 12:00 AM on August 25, 2006, UTC
- `2010-10-10T04:50-07:00` specifies a time of 4:50 AM on October 10, 2010, Mountain Standard Time

■ `2010-10-10T12:15:01.123-08:00` specifies a time of 12:15:01.123 PM on October 10, 2010, Pacific Time

-ntpService

Specifies that the Pillar Axiom system uses an NTP service to set the date and time. If you use an NTP service, enter the preferred NTP server IP address.

-noNtpService

Specifies that the Pillar Axiom system must have the date and time set manually.

-ntpServiceIp

Specifies one or more NTP server IP addresses. You can specify up to three IP addresses.

-list

Displays the system date, time, and NTP server settings.

If you specify the `-ntpQuery` option, the system displays NTP Query information only.

Note: The NTP Query information returned is the same information returned by the UNIX **ntpq -pn** command.

-help

Displays the detailed command help information.

EXAMPLE   Run `axiomcli time -list` to display the system date, time, and NTP server settings:

```
axiomcli time -list
```

Results:

```
Time
    DateTime         : 2011-04-06T14:26:07.496+00:00
    NtpService       : Enabled
    NtpServiceIp     : 10.63.0.5
    NtpService1Ip    : 10.63.0.6
    NtpService2Ip    :
    ManagementState  : AVAILABLE
    NtpQuery         :
remote           refid       st t when poll reach
delay   offset   jitter
==========================================================
======================
 172.30.80.3     10.63.0.5           4 u  668 1024  377
0.001    0.139   0.125
```

```
*10.63.0.5       172.20.20.3      3 u   312 1024   377
0.545    -5.145   2.949
+10.63.0.6       172.18.20.2      3 u   428 1024   377
0.548    -3.748   0.811
```

ups

DESCRIPTION   Manages the universal power supply (UPS) device on a Pillar Axiom system.

Use the `ups` command to review the current status of the UPS device.

You can use the `-verify` option to test the command-line argument and its options before running it in Pillar Axiom CLI. If no errors exist, the Pillar Axiom CLI command returns without executing. For example, the `-verify` option is helpful when writing scripts in which a particular Pillar Axiom CLI command usage can be verified prior to adding it to a script.

You can use the `-outputformat` or the `-o` command option to specify how to display the results of running a command. If you do not specify either the `-outputformat` or the `-o` command option, the results display in the default `text` format. Valid options:

text   The system displays the results in the plain-text format.

xml   The system displays the results in the tagged XML format.

You can use the `-sessionKey` option to specify which Pillar Axiom system to access and which session key value to use for validation. The Pillar Axiom CLI displays the session key value when you log in to the Pillar Axiom system using the `-returnKey` option.

You can use the `-timeout` option to set a time limit for the execution of a command. If the command takes longer than the number of seconds specified in the `-timeout` option, the system stops executing the command. If you do not specify the `-timeout` option, the system does not set any time limit for executing the command.

SYNTAX
```
axiomcli ups -add –name ups-name -ip ip-address -community
community
    [-verify]
    [{-outputformat | -o} {text | xml}]
    [-sessionKey session-key]
    [-timeout timeout-in-seconds]

axiomcli ups –modify –ups ups-id-or-fqn
    [-newName new-ups-name]
    [-ip ip-address]
    [-community community]
    [-verify]
    [{-outputformat | -o} {text | xml}]
```

```
        [-sessionKey session-key]
        [-timeout timeout-in-seconds]
```

```
axiomcli ups -delete -ups ups-id-or-fqn [,ups-id-or-fqn]...
        [-verify]
        [{-outputformat | -o} {text | xml}]
        [-sessionKey session-key]
        [-timeout timeout-in-seconds]
```

```
axiomcli ups -list [-details] [-ups ups-id-or-fqn
[,ups-id-or-fqn]...]
        [-verify]
        [{-outputformat | -o} {text | xml}]
        [-sessionKey session-key]
        [-timeout timeout-in-seconds]
```

```
axiomcli ups -help
```

PARAMETERS   **Note:** Only the Primary Administrator and Administrator 1 roles can issue all command options.

All roles can issue the -list command option.

-add

> Identifies a new UPS device for the system to monitor. You may connect several UPS devices to the system. The Pillar Axiom system retrieves information from each device using Simple Network Management Protocol (SNMP) over the Pilot Ethernet connection to monitor and report status.
>
> Valid options:
> **-name**
>
> Identifies the name of the UPS device. UPS names must be unique across the Pillar Axiom system and must be 256 or fewer UTF-8 characters.
>
> **-ip**
>
> Identifies the IP address that is assigned to the external UPS device.
>
> **-community**
>
> Identifies a community for which a specific trap host should receive traps that the Pillar Axiom system generates. You can specify different community strings for each trap host so that multiple administrators can receive specific types of SNMP traps. The default community string is public (lower case).

-modify

Modifies the specified external UPS device.

Valid options:
-ups

Identifies the specific UPS device to modify. Enter the globally unique ID (GUID) or fully qualified name (FQN) of the UPS to modify. To display all of the ID and FQN values, run the `-list` option.

Valid options:

Globally unique ID (GUID)	A 38-character string that starts with ID and ends with 36 lower-case hexadecimal characters (a through f and 0 through 9) and hyphens. Example GUID:
	
	`ID123456789abcdef0123`
	`456789abcde`

Fully qualified name (FQN)	Starts with a leading slash (/) with the object's name. Example FQN: `/UPSName`

-newName

Specifies a new name for the UPS device.

-ip

Identifies the IP address that is assigned to the external UPS device.

-community

Identifies a community for which a specific trap host should receive traps that the Pillar Axiom system generates. You can specify different community strings for each trap host so that multiple administrators can receive specific types of SNMP traps. The default community string is `public` (lower case).

-delete

Removes one or more UPS devices from the list of devices on a Pillar Axiom system. Enter the globally unique ID (GUID) or fully qualified name (FQN) of the UPS to delete.

-list

> Displays one or more UPS devices being monitored on the Pillar Axiom system.

> Valid options:
> **-details**

> Displays the IP address, SNMP community string, model, firmware version, serial number, power source, and battery status of the UPS devices.

> **-ups**

> Displays one or more UPS devices. Enter the GUID or FQN of the UPS to display.

-help

> Displays the detailed command help information.

EXAMPLE   Run the `axiomcli ups -list -details` command to display UPS devices that are monitored on the Pillar Axiom system:

```
axiomcli ups -list -details
```

Results:

```
/PowerUp
        Id                    :
4130303030303142A14936C779E37722
        ManagementState       : AVAILABLE
        Name                  : PowerUp
        IpAddress             : 10.10.10.1
        Community             : public
        Model                 :
        FirmwareVersion       :
        SerialNumber          :
        PowerSource           : AC
        BatteryStatus         : NORMAL
        CommunicationStatus   : OK
```

`version`

DESCRIPTION Displays the current version number for the Pillar Axiom CLI executable.

Use the `version` command to display version information about the Pillar Axiom CLI.

You can use the `-verify` option to test the command-line argument and its options before running it in Pillar Axiom CLI. If no errors exist, the Pillar Axiom CLI command returns without executing. For example, the `-verify` option is helpful when writing scripts in which a particular Pillar Axiom CLI command usage can be verified prior to adding it to a script.

You can use the `-outputformat` or the `-o` command option to specify how to display the results of running a command. If you do not specify either the `-outputformat` or the `-o` command option, the results display in the default `text` format. Valid options:

text The system displays the results in the plain-text format.

xml The system displays the results in the tagged XML format.

You can use the `-sessionKey` option to specify which Pillar Axiom system to access and which session key value to use for validation. The Pillar Axiom CLI displays the session key value when you log in to the Pillar Axiom system using the `-returnKey` option.

You can use the `-timeout` option to set a time limit for the execution of a command. If the command takes longer than the number of seconds specified in the `-timeout` option, the system stops executing the command. If you do not specify the `-timeout` option, the system does not set any time limit for executing the command.

SYNTAX
```
axiomcli version -list [-details]
    [-verify]
    [{-outputformat | -o} {text | xml}]
    [-sessionKey session-key]
    [-timeout timeout-in-seconds]
```
```
axiomcli version -help
```

PARAMETERS **Note:** All roles can issue the `-list` command option
-list

Displays the Pillar Axiom CLI software version.

Valid options:

-details

The -details option does not return any additional information and is there for consistency.

-help

Displays the detailed command help information.

EXAMPLE Run the axiomcli version -list display the software version information:

axiomcli version -list

Results:

Pillar Axiom CLI version : 050000-031700

volume_group

DESCRIPTION   Creates and manages volume groups on a Pillar Axiom system.

Volume groups provide a means to group filesystems and LUNs. Every system has a default group, which is the root volume group. The default group is represented by a single forward slash (`/`). Volume groups can be hierarchical in that a given volume group can contain one or more other volume groups.

Volume group names express this hierarchy through fully qualified name (FQN) notations: a leading forward slash representing the root volume group, optionally followed by the name of a volume group contained in the root. Each of these volume groups can have nested volume groups that are identified by following the parent name with a forward slash and the name of the nested group. Examples include the following:

`/`	Identifies the default root volume group.
`/group1`	Identifies a group (group1) contained in the default volume group.
`/group1/nestedgroup2`	Identifies a volume group (nestedgroup2) that is contained within group1.

Use the `volume_group` command to manage volume groups on a Pillar Axiom system.

You can use the `-verify` option to test the command-line argument and its options before running it in Pillar Axiom CLI. If no errors exist, the Pillar Axiom CLI command returns without executing. For example, the `-verify` option is helpful when writing scripts in which a particular Pillar Axiom CLI command usage can be verified prior to adding it to a script.

You can use the `-outputformat` or the `-o` command option to specify how to display the results of running a command. If you do not specify either the `-outputformat` or the `-o` command option, the results display in the default `text` format. Valid options:

text   The system displays the results in the plain-text format.

xml   The system displays the results in the tagged XML format.

You can use the `-sessionKey` option to specify which Pillar Axiom system to access and which session key value to use for validation. The Pillar Axiom CLI displays the session key value when you log in to the Pillar Axiom system using the `-returnKey` option.

You can use the `-timeout` option to set a time limit for the execution of a command. If the command takes longer than the number of seconds specified in the `-timeout` option, the system stops executing the command. If you do not specify the `-timeout` option, the system does not set any time limit for executing the command.

Note: The `volume_group` command replaces the deprecated `volgrp` command.

SYNTAX

```
axiomcli volume_group -add -name name
    [-in parent-id-or-fqn]
    [{-limit capacity | -nolimit}]
    [-verify]
    [{-outputformat | -o} {text | xml}]
    [-sessionKey session-key]
    [-timeout timeout-in-seconds]
```

```
axiomcli volume_group -modify -volumeGroup
volume-group-id-or-fqn
    [-newName new-volumeGroup-name]
    [{-limit capacity | -nolimit}]
    [-in parent-id-or-fqn]
    [-verify]
    [{-outputformat | -o} {text | xml}]
    [-sessionKey session-key]
    [-timeout timeout-in-seconds]
```

```
axiomcli volume_group -delete -volumeGroup
volume-group-id-or-fqn [,volume-group-id-or-fqn]...
    [-verify]
    [{-outputformat | -o} {text | xml}]
    [-sessionKey session-key]
    [-timeout timeout-in-seconds]
```

```
axiomcli volume_group -list [-details]
    [-volumeGroup volume-group-id-or-fqn
[,volume-group-id-or-fqn]...]
    [-verify]
    [{-outputformat | -o} {text | xml}]
    [-sessionKey session-key]
    [-timeout timeout-in-seconds]
```

```
axiomcli volume_group -help
```

PARAMETERS **Note:** Only the Primary Administrator, Administrator 1, and Administrator 2 roles can issue all command options.

All roles can issue the `-list` command option.

-add

>   Creates a new volume group and adds it the Pillar Axiom system.
>
>   Valid options:
>   **-name**
>
>   Identifies the name of the new volume group being added to the system.
>
>   **-in**
>
>   Identifies the ID or FQN of the containing parent volume group for the new volume group. If you do not specify this option, the command creates a top-level volume group under the root volume group (`/`).
>
>   **-limit**
>
>   Identifies the total maximum capacity for all of the objects in the volume group.
>
>   A volume group can contain up to 100 nested groups. However, nesting is limited to four levels. Also, the root volume (`/Volumes`) is always available.

-modify

>   Modifies the existing volume group on a Pillar Axiom system.
>
>   Valid options:
>   **-volumeGroup**
>
>   Identifies the ID or FQN of the volume group. Valid volume group names consist of letters and digits up to 14 characters long. Each volume group name must be unique within its parent volume group.
>
>   **Note:** If a volume group already exists on the Pillar Axiom system and contains the same name as the specified ID or FQN, the function will fail.
>
>   **-newName**
>
>   Identifies the new name of the specified volume group.
>
>   **-limit**

Identifies the total maximum capacity for all of the objects in the volume group.

A volume group can contain up to 100 nested groups. However, nesting is limited to four levels. Also, the root volume (/Volumes) is always available.

-nolimit

Indicates that no maximum capacity limit exists for the volume group.

-in

Identifies the ID or FQN of the containing parent volume group for the new volume group. If you do not specify this option, the command creates a top-level volume group under the root volume group (/).

-delete

Deletes the specified volume group. This function fails if the volume group contains any logical volumes, or if the specified volume group does not exist.

-list

–details

Displays volume groups. The list can be limited to specific volume groups by specifying the ID or FQN of a specific volume group or an ID or FQN that identifies the containing parent volume group. If you specify the ID or FQN that identifies the containing parent volume group, all volume groups found are displayed. If you do not specify an ID or FQN, the system displays the IDs or FQNs of all volume groups.

Valid options:
-details

Displays the ID or FQN, capacity limit, and parent volume group for each volume group.

-volumeGroup

Identifies the ID or FQN of the volume group. Valid volume group names consist of letters and digits up to 14 characters long. Each volume group name must be unique within its parent volume group.

-help

Displays the detailed command help information.

EXAMPLE   Run `volume_group-list -details` to show the volume group, capacity
                 limit, parent volume group for each volume group:

```
axiomcli volume_group -list -details
```

Results:

```
/
        Name                              : root
        Id                                :
4130303132373542A20A000000000000
        ParentVolumeGroupFqn       :
        ParentVolumeGroupId        :
        MaximumCapacity            : 0
        AllocatedCapacity          : 0
        UsedCapacity               : 0
        PhysicalAllocatedCapacity : 0
        PhysicalUsedCapacity       : 0
```

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