

# Pillar Axiom



# CLI Reference Guide



PILLAR AXIOM

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Part Number: E27589-01  
Pillar Axiom release 5.3  
2012 February

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# Preface

## Related Documentation

- *Pillar Axiom Customer Release Notes*
- *Pillar Axiom Glossary*
- *Pillar Axiom Administrator's Guide*
- *Pillar Axiom System Architecture Overview*
- *Pillar Axiom iSCSI Integration Guide for Windows Platforms*
- *Pillar Axiom Windows Integration Guide*

## Typographical Conventions

Table 1 Typography to mark certain content

Convention	Meaning
<i>italics</i>	Within normal text, words in italics indicate: <ul style="list-style-type: none"><li>• A reference to a book title.</li><li>• New terms and emphasized words.</li><li>• Command variables.</li></ul>
monospace	Indicates one of the following, depending on the context: <ul style="list-style-type: none"><li>• The name of a file or the path to the file.</li><li>• <i>Output</i> displayed by the system on the command line.</li></ul>
<b>monospace</b> (bold)	<i>Input</i> 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 2 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.
	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 <i>flag</i> or <i>switch</i> ).
<i>italic</i>	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.

## Oracle Contacts

Table 3 Oracle resources

For help with...	Contact...
Support	<a href="https://support.oracle.com">https://support.oracle.com</a>
Training	<a href="https://education.oracle.com">https://education.oracle.com</a>

**Table 3 Oracle resources (continued)**

For help with...	Contact...
Documentation	<ul style="list-style-type: none"> <li>• <a href="#">Oracle Technical Network</a>:  <a href="http://www.oracle.com/technetwork/indexes/documentation/index.html#storage">http://www.oracle.com/technetwork/indexes/documentation/index.html#storage</a></li> <li>• From the Pillar Axiom Storage Services Manager (GUI):  <b>Support &gt; Documentation</b></li> <li>• From Pillar Axiom HTTP access:  <a href="http://system-name-ip/documentation.php">http://system-name-ip/documentation.php</a>                      where <i>system-name-ip</i> is the name or the public IP address of your system.</li> </ul>
Documentation feedback	<a href="http://www.oracle.com/goto/docfeedback">http://www.oracle.com/goto/docfeedback</a>
Contact Oracle	<a href="http://www.oracle.com/us/corporate/contact/index.html">http://www.oracle.com/us/corporate/contact/index.html</a>

## 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:

<b>PDS_USER</b>	The user account ID.
<b>PDS_PASSWORD</b>	The user account password.
<b>PDS_HOST</b>	The name of the Pillar Axiom system.

The optional environment variables are:

<b>PDS_TMPDIR</b>	The temporary directory that contains files downloaded by commands that retrieve files from the Pillar Axiom system.
<b>PDS_TIMEOUT</b>	The maximum time that each command can run. If the time is exceeded, the command fails.
<b>PDS_SESSIONKEY</b>	The Pillar Axiom CLI session key value. This value is returned when you log in to the Pillar Axiom system using the <code>-returnKey</code> command option. For details, see <a href="#">Manage Pillar Axiom CLI Session Keys</a> .  You can set the <code>PDS_SESSIONKEY</code> 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 4 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 time-out 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 time-out 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 5 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: <ul style="list-style-type: none"> <li>• Create and manage File Servers and administrator accounts.</li> <li>• Modify global and Small Network Management (SNMP) settings.</li> <li>• Modify software or hardware configurations.</li> <li>• Shut down the system.</li> </ul>
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.  <b>Note:</b> Only the Oracle Pillar Customer Support customer service personnel can use this account.  For the complete list of command options that this role is authorized to perform, see the <b>PARAMETERS</b> section in a specific Pillar Axiom CLI command.
Support	Performs limited customer service-only functions; cannot modify the configuration.  <b>Note:</b> Only the Oracle Pillar Customer Support customer service personnel can use this account.

**Table 5 Administrator privileges by role (continued)**

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

## CHAPTER 3

# 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>00dccb0-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          : /clone1un
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 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  :
4130303132373542A140000000000000
  ComponentName  : administrator
  AuthenticatedAccountId :
4130303132373542A140000000000000
  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
PerformanceMetrics
  TotalBytesPerSecond      : 74496017.659
  ReadBytesPerSecond       : 37910032.746
  WriteBytesPerSecond      : 36585984.913
  ReadThroughputInIOPerSecond : 0.000
  WriteThroughputInIOPerSecond : 253.504
  TotalThroughputInIOPerSecond : 253.504
  ReadBandwidthInBytesPerSecond : 0.000
  WriteBandwidthInBytesPerSecond : 32825633.950
  TotalBandwidthInBytesPerSecond : 66839228.524
  AverageReadOperationSizeInBytes : 0.000
  AverageWriteOperationSizeInBytes : 129487.609
  AverageReadResponseTimeInMilliseconds : 0.000
  AverageWriteResponseTimeInMilliseconds : 0.000
  AverageCombinedResponseTimeInMilliseconds : 0.000
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

```
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 " .
```

```

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 6 System operating limits**

Parameter	Limits
Volume groups	Minimum: 1 Maximum: 5000  <b>Note:</b> 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: <ul style="list-style-type: none"> <li>• 8191 visible for any given SAN Slammer</li> <li>• 8191 visible across all SAN Slammers in a given system (2730 if all LUNs have non-zero clone repositories)</li> <li>• 255 visible for each host</li> </ul> <b>Note:</b> 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 6 System operating limits (continued)

Parameter	Limits
	<ul style="list-style-type: none"> <li>• Brick type (Fibre Channel or SATA)</li> <li>• RAID geometry (RAID 5 or Distributed RAID)</li> <li>• Strip size (1 MB or normal)</li> </ul> <p>Maximum: System capacity</p> <p><b>Note:</b> All capacity values must be in increments of 1 GB.</p>
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	<p>Maximum:</p> <ul style="list-style-type: none"> <li>• Number of available LUNs</li> <li>• 13 active at a time (for a single source)</li> </ul>
iSCSI protocol	<p>Maximums for each iSCSI port:</p> <ul style="list-style-type: none"> <li>• 1 VLAN ID</li> <li>• 256 TCP connections</li> <li>• 256 iSCSI initiators</li> <li>• 512 simultaneous commands</li> </ul> <p>Maximum for each LUN: 32 persistent reservation registration keys</p>
Administrator accounts	<p>Minimum: 2</p> <p>Maximum: Unlimited</p> <p><b>Note:</b> Minimum provides for the Primary system administrator and Pillar support administrator.</p>
Administrator sessions	Maximum: 25 simultaneous
Administrator login attempts	<p>Minimum: 1</p> <p>Maximum: Unlimited, unless set by the administrator</p>
Session time-out period (minutes)	<p>Minimum: 0</p> <p>Maximum: 999</p>

**Table 6 System operating limits (continued)**

Parameter	Limits
	<b>Note:</b> Default time-out period is 20 minutes.
Storage Domains	Maximum: 64 for each system
Number of Bricks in a Storage Domain	Minimum: <ul style="list-style-type: none"> <li>• Serial ATA (SATA) or solid state drives (SSD) Bricks: 1</li> <li>• Fibre Channel (FC) Bricks: 2</li> </ul> Maximum: <ul style="list-style-type: none"> <li>• SATA Bricks: 64</li> <li>• FC or SSD Bricks: 32</li> </ul>

**Table 7 Field input limits**

Field	Length or Type	Notes
Names for: <ul style="list-style-type: none"> <li>• Alerts</li> <li>• Brick storage enclosures</li> <li>• Pillar Axiom system</li> <li>• Schedules</li> <li>• Slammer storage controllers</li> <li>• Volume groups</li> </ul>	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: <ul style="list-style-type: none"> <li>• Non-printable characters, including ASCII 0 through 31</li> <li>• / (slash) and \ (backslash)</li> <li>• . and .. (dot and dot-dot alone)</li> <li>• Embedded tabs</li> </ul> Pillar Axiom processing: <ul style="list-style-type: none"> <li>• Leading and trailing white space is stripped</li> <li>• Comparison is case sensitive</li> </ul>
Names for: <ul style="list-style-type: none"> <li>• LUNs</li> <li>• Storage Domains</li> </ul>	1 through 82 UTF-8 printable characters	Invalid characters: <ul style="list-style-type: none"> <li>• Nonprintable characters, including ASCII 0 through 31</li> <li>• / (slash) and \ (backslash)</li> <li>• . and .. (dot and dot-dot alone)</li> <li>• Embedded tabs</li> </ul>
Names for SAN hosts	1 through 63 UTF-8 printable characters	

Table 7 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: <ul style="list-style-type: none"> <li>• Embedded spaces</li> <li>• / (slash)</li> </ul>
Administrator password	6 through 16 UTF-8 printable characters	<ul style="list-style-type: none"> <li>• Case-sensitive value</li> <li>• Embedded spaces are permitted.</li> </ul>
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: <ul style="list-style-type: none"> <li>• 0-9 - . cannot be the first character.</li> <li>• . - cannot be the last character.</li> </ul> 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)	<ul style="list-style-type: none"> <li>• 1 through 4094 denote that VLAN tagging is enabled.</li> <li>• 0 denotes that VLAN tagging is disabled.</li> </ul>

**Table 7 Field input limits (continued)**

Field	Length or Type	Notes
SNMP community string	6 through 255 ASCII printable characters 33 through 126	Invalid characters: <ul style="list-style-type: none"> <li>• Embedded spaces</li> <li>• Control characters</li> </ul>
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.

## APPENDIX B

# 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`
- `-sessionkey`
- `-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.

## 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]
[-name 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:

<b>admin1</b>	A login account that has the authority to perform all administration, configuration, and recovery tasks.
<b>admin2</b>	A login account that has the authority to perform all administrative and configuration tasks, except: <ul style="list-style-type: none"><li>□ Create, modify, or delete administrator accounts and File Servers.</li><li>□ Modify system-wide settings such as Simple Network Management Protocol (SNMP).</li><li>□ Modify software or hardware configurations.</li><li>□ Shut down the system.</li></ul>
<b>monitor</b>	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 Oracle Pillar Customer Support.

**-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.

**-name**

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 -name 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-id-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
    -controller {cu0 | cu1 | both} [-restartCompanion]
    [-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.

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
```

**-name**

Specifies a new name of a Brick.

**-brickNode**

Identifies the Brick 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 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.



**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 Oracle Pillar Customer Support.

**-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.

**-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. If you do not specify a Brick, the system verifies all Bricks.

**-priority**

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

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

**-controller**

Specifies the RAID controller to be restarted.

**-restartCompanion**

Restarts the secondary RAID controller as well as 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 Bricks 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 Oracle Pillar Customer Support 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 Oracle Pillar Customer Support 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.pillarata.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 Oracle Pillar Customer Support.

**-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.

## 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]
    [{-unmapped | -globalMapping lun-number}]
    [{-fibreChannelAccess | -noFibreChannelAccess}]
    [{-iscsiAccess | -noIscsiAccess}]
```

```

[-maskedSlammerPorts port-name [, port-name]...]
[{-active | -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]
  [{-unmapped | -globalMapping 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]
  [{-unmapped | -globalMapping 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]...
[-suppressWarnings]
[-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 -prepare -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]
[{-unmapped | -globalMapping lun-number}]
[{-fibreChannelAccess | -noFibreChannelAccess}]
[{-iscsiAccess | -noIscsiAccess}]
[-maskedSlammerPorts port-name [, port-name]...]
[{-active | -inactive}]
```

```
axiomcli clone_lun -commit -cloneLun clone-lun-id-or-fqn
[, clone-lun-id-or-fqn]...
```

```
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:

<b>premium</b>	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.
<b>high</b>	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.
<b>medium</b>	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-def0-1
234-56789abcdef0
```

**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.

**-unmapped**

Causes the LUN to become unmapped at the global level.

**-globalMapping**

Maps the LUN globally to all hosts using the specified *lun-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.

**-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/CUN/Portn/(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**

Makes the newly created Clone LUN accessible to all hosts.

**-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:

<b>premium</b>	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.
<b>high</b>	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.
<b>medium</b>	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.
<b>low</b>	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.
<b>archive</b>	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-def0-1  
234-56789abcdef0
```

**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.

**-unmapped**

Causes the LUN to become unmapped at the global level.

**-globalMapping**

Maps the LUN globally to all hosts using the specified *lun-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.

**-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:

<b>premium</b>	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.
<b>high</b>	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.
<b>medium</b>	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.
<b>low</b>	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.
<b>archive</b>	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 (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)

**-volumeGroup**

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

Valid options:

<b>ID</b>	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-def0-1  
234-56789abcdef0
```

<b>Fully qualified name (FQN)</b>	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 Clone LUN into the volume group at the top level.

**-unmapped**

Causes the LUN to become unmapped at the global level.

**-globalMapping**

Maps the LUN globally to all hosts using the specified *lun-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.

**-iscsiAccess**

Allows access to the 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.

**-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. If any host or hostGroup mappings exist for this Clone LUN, you are prompted to confirm that you want to delete the Clone LUN. Specify `-suppressWarnings` if you do not want to be prompted to confirm deletion.

Valid options:

**-cloneLun**

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

**-suppressWarnings**

Suppresses the warning that all LUN host and host group mappings will be deleted. If you do not specify the `-suppressWarnings` option, the system displays a message to confirm the deletion of the mappings.

**-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.

**-prepare**

Prepares the creation of a Clone LUN. Performs the steps for setting up the clone, but the clone will not become a point-in-time copy of the source until it is committed with the `-commit` option.

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:

<b>premium</b>	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.
<b>high</b>	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.
<b>medium</b>	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.
<b>low</b>	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-def0-1
234-56789abcdef0
```

**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.

**-unmapped**

Causes the LUN to become unmapped at the global level.

**-globalMapping**

Maps the LUN globally to all hosts using the specified *lun-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.

**-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/CUn/Portn/(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**

Makes the newly created Clone LUN accessible to all hosts.

**-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.

**-commit**

Finishes the creation of one or more Clone LUNs prepared using the `clone_lun -prepare` option.

Up to 64 clones can be committed with this option, and it should take no more than ten seconds to complete.

Valid options:

**-cloneLun**

Specify the ID or FQN of up to 64 Clone LUNs prepared using the `clone_lun-prepare` option.

**-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 :
4130303030303142A114000000001FFA
      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_ACCESS_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.

### 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]...]
  [-name 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

**-name**

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 Oracle Pillar Customer Support. 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 Oracle Pillar Customer Support. 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 Oracle Pillar Customer Support 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_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:

<b>Curly brackets ( {} )</b>	Indicate a set of command parameters, one of which must be selected.
<b>Square brackets ( [] )</b>	Indicate an optional command parameter or a set of optional command parameters. Command parameters that are not enclosed in square brackets are required.
<b>Vertical bar (   )</b>	Indicates a set of mutually exclusive parameters.
<b>Ellipsis ( ... )</b>	Indicate that the immediately preceding parameters or group of parameters can be repeated.
<b>Camel case</b>	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
  -name 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.

**`-name`**

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  :
4130303132373542A2320BD6B7A64E1A
```

```

        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        :
4130303132373542A2320BD6B7A64E1A
  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        :
4130303132373542A2320BD6B7A64E18
  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        :
4130303132373542A2320BD6B978498F
  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-or-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:

<b>isns</b>	The system rejects any iSCSI login attempts from initiators that have not been granted access by the iSNS server
-------------	--

<b>axiom</b>	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:

- `perInitiator`
- `allInitiator`

If you specify the `perInitiator` 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]...]
  [{-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 -modify -job job-id-or-fqn
  [-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]...]
  [{-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:

<b>hourly</b>	1 through 24
<b>daily</b>	1 through 7
<b>weekly</b>	1 through 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 decimal 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  
neweronly  
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 Oracle Pillar Customer Support, 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.
<b>high</b>	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.
<b>medium</b>	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.
<b>low</b>	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.
<b>archive</b>	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.
<b>-volumeGroup</b>	Identifies the volume group, in which the Clone LUN should be added.
<b>-fibreChannelAccess</b>	Allows access to the new Clone LUN through the Fibre Channel (FC) ports.
<b>-noFibreChannelAccess</b>	Disables access to the Clone LUN.
<b>-iscsiAccess</b>	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**

Makes the newly created Clone LUN accessible to all hosts.

**-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.
<b>volumeUse</b>	Provides capacity information for each logical volume on the Pillar Axiom system.
<b>performance</b>	Provides performance information about the LUNs on the Pillar Axiom system. Includes operations/second, read MB/s, and write MB/s.
<b>sanHosts</b>	Provides statistical information on the host servers and configured components currently included in your storage area network (SAN).
<b>systemSummary</b>	Provides a summary of the Pilot, Slammer, and Brick information included in the detailed System Configuration report.
<b>-language</b>	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 <a href="http://ftp.ics.uci.edu/pub/ietf/http/related/iso639.txt">http://ftp.ics.uci.edu/pub/ietf/http/related/iso639.txt</a> .
<b>-country</b>	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 <a href="http://www.chemie.fu-berlin.de/diverse/doc/ISO_3166.html">http://www.chemie.fu-berlin.de/diverse/doc/ISO_3166.html</a> .
<b>-variant</b>	

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:

**-name**

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 how often the system should perform the scheduled operation. Valid values vary based on the schedule's recurrence interval and frequency.

Valid options for job schedule recurrence intervals are:

**hourly**                    1 through 24, inclusive

**daily**                     1 through 7, inclusive

**weekly**                   1 though 52, inclusive

**-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 Oracle Pillar Customer Support, 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.

**-active**

Makes the newly created Clone LUN accessible to all hosts.

**-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`

**-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](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.

## SYNTAX

```
axiomcli login [-returnKey] [-force]
               [-u admin-user -p admin-password -axiom 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.

**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` are not specified, and one or more of the environment variables are not initiated, the command will fail.

**-axiom**

Specifies the Pillar Axiom system to log into.

Valid options:

***axiom-system***

Specifies the Pillar Axiom system to log into. Provide the DNS host name or IP address of the Pilot.

**-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

<b>DESCRIPTION</b>	<p>Logs off an active Pillar Axiom CLI session.</p> <p>Use the <code>logout</code> command to log off an active Pillar Axiom CLI session on a Pillar Axiom system.</p> <p>You can use the <code>-verify</code> 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 <code>-verify</code> 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.</p> <p>You can use the <code>-outputformat</code> or the <code>-o</code> command option to specify how to display the results of running a command. If you do not specify either the <code>-outputformat</code> or the <code>-o</code> command option, the results display in the default <code>text</code> format. Valid options:</p> <ul style="list-style-type: none"><li><b>text</b> The system displays the results in the plain-text format.</li><li><b>xml</b> The system displays the results in the tagged XML format.</li></ul> <p>You can use the <code>-timeout</code> 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 <code>-timeout</code> option, the system stops executing the command. If you do not specify the <code>-timeout</code> option, the system does not set any time limit for executing the command.</p>
<b>SYNTAX</b>	<pre>axiomcli logout</pre> <pre>axiomcli logout -help</pre>
<b>PARAMETERS</b>	<p><b>Note:</b> All roles can issue this command.</p> <p><b>-help</b></p> <p>Displays the detailed command help information.</p>
<b>EXAMPLE</b>	<p>Run <code>axiomcli logout</code> to log out from the Pillar Axiom CLI session:</p> <pre>axiomcli logout</pre> <p>Results:</p> <pre>Logout Successful</pre>

# 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.

## 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]...]
    [{-unmapped | -globalMapping lun-number}]
    [{-fibreChannelAccess | -noFibreChannelAccess}]
    [{-iscsiAccess | -noIscsiAccess}]
    [-storageDomain storage-domain-id-or-fqn]
    [-storageClass {sataHd | fcHd | slcSsd | mlcSsd}]
]

[{-active | -inactive}]
[-copyPriority {auto | low | high}]
[{-allowConservativeMode | -
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]
    [{-unmapped | -globalMapping 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]
[{-unmapped | -globalMapping 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}]
[-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:

<b><code>premium</code></b>	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.
<b><code>high</code></b>	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.
<b><code>medium</code></b>	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.
<b><code>low</code></b>	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.
<b><code>archive</code></b>	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:

- |          |  |
|----------|--|
| <b>1</b> | Stores original data only. Data striping over multiple RAID groups maintains full redundancy, even without mirror copies.<br><br><b>Note:</b> Standard does not maintain redundancy at the LUN level; however, it does provide sufficient data protection for most purposes. |
| <b>2</b> | Stores original data and one mirror copy, with data striping over multiple RAID groups.<br><br><b>Note:</b> 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:

- |                   |  |
|-------------------|--|
| <b>sequential</b> | Read and write requests from client applications tend to request operations on the data one record after the other.                                    |
| <b>random</b>     | Read and write requests from client applications tend to request operations on the data records in an arbitrary order.                                 |
| <b>mixed</b>      | 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:

<b>read</b>	Most requests from client applications are for <code>read</code> operations.
<b>write</b>	Most requests from client applications are for <code>write</code> operations.
<b>mixed</b>	Requests from client applications are likely equal for <code>read</code> and <code>write</code> 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 `.` 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 can 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.

**-unmapped**

Causes the LUN to become unmapped at the global level.

**-globalMapping**

Maps the LUN globally to all hosts using the specified *lun-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:

- |             |  |
|-------------|--|
| <b>auto</b> | The system finds a compromise between completion rate and system performance.  |
| <b>low</b>  | The system takes its time to complete the copy and data migration without degrading overall system performance.            |
| <b>high</b> | 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.

**-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.
<b>high</b>	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.
<b>medium</b>	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.
<b>low</b>	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.
<b>archive</b>	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.
<b>-migrateData</b>	Migrates the LUN data to the new priority setting.  If you do not specify the <code>-migrateData</code> 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.

**-unmapped**

Causes the LUN to become unmapped at the global level.

**-globalMapping**

Maps the LUN globally to all hosts using the specified *lun-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:

<b>auto</b>	The system finds a compromise between completion rate and system performance.
<b>low</b>	The system takes its time to complete the copy and data migration without degrading overall system performance.
<b>high</b>	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.

**-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:

<b>premium</b>	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.
<b>high</b>	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.
<b>medium</b>	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.
<b>low</b>	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.
<b>archive</b>	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.

**-unmapped**

Causes the LUN to become unmapped at the global level.

**-globalMapping**

Maps the LUN globally to all hosts using the specified *lun-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 `(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:

<b>auto</b>	The system finds a compromise between completion rate and system performance.
<b>low</b>	The system takes its time to complete the copy and data migration without degrading overall system performance.
<b>high</b>	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.



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.



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 the LUN has clones or is mapped to a host or hostGroup, the system displays a warning that deleting the LUN also deletes any associated clones and host or group mappings of the LUN.

If you specify the `-suppressWarnings` option, the warning message does not display. If you do not specify the `-suppressWarnings` option, the warning message displays, and you are prompted to confirm the deletion of the LUN and all of its clones and mappings.

Valid options:

**-lun**

Identifies the source LUN of the clones to be deleted.

**-suppressWarnings**

Suppresses the warning that all LUN clones and host or hostGroup mappings will be deleted. If you do not specify the `-suppressWarnings` option, the system displays a message to confirm the deletion of the clones and mappings.

#### **-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:

<b>premium</b>	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.
<b>high</b>	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.
<b>medium</b>	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.
<b>low</b>	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.
<b>archive</b>	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**

Specifies 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 Oracle Pillar Customer Support.

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` command 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:

<b>Premium</b>	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.
<b>High</b>	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.
<b>Medium</b>	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.
<b>Low</b>	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.
<b>Archive</b>	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:

<b>Standard</b>	Stores original data only. Data striping over multiple RAID groups maintains full redundancy, even without mirror copies.  <b>Note:</b> Standard does not maintain redundancy at the LUN level; however, it does provide sufficient data protection for most purposes.
<b>Double</b>	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:

- |                   |  |
|-------------------|--|
| <b>sequential</b> | Read and write requests from client applications tend to request operations on the data one record after the other.                                    |
| <b>random</b>     | Read and write requests from client applications tend to request operations on the data records in an arbitrary order.                                 |
| <b>mixed</b>      | 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:

- |              |   |
|--------------|---|
| <b>read</b>  | Most requests from client applications are for <code>read</code> operations.  |
| <b>write</b> | Most requests from client applications are for <code>write</code> operations. |
| <b>mixed</b> | Requests from client applications are likely equal                            |

for `read` and `write` operations.

**-raidLevel**

Identifies the RAID levels to use for the profile.

Valid options:

<b>raid5</b>	Uses standard redundancy allocation.
<b>raid10</b>	Uses standard redundancy allocation for random write bias QoS.
<b>default</b>	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:

<b>oneMeg</b>	Used for the Oracle Automatic Storage Management (ASM) Storage Profile. These strips are 1024 KB (1 MB) in size.
<b>normal</b>	The number of bytes in the strip depends on the type of media contained within a Brick: <ul style="list-style-type: none"><li>□ 64 KB for Fibre Channel (FC) media</li><li>□ 128 KB for serial ATA (SATA) media</li><li>□ 128 KB for solid-state drive (SSD) media</li></ul>

**-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:

<b>default</b>	Reads beyond the requested data and puts the additional data into cache.
<b>normal</b>	Reads only the requested data. No additional data is put into cache.
<b>aggressive</b>	Reads large extents of the cached data.
<b>conservative</b>	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:

<b>writeThrough</b>	Writes data to the Slammer cache and on the Bricks before the
---------------------	---

write request returns. This rule ensures that 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.

**writeBack**

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.

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`

### **-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.`, where `.` 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.

## 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 | -noReconcileMappings}]
[-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
[-name new-sanhost-name]
[{-hpuxCompatibility | -noHpxCompatibility}]
[ {-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 slash (/) 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 slash (/) 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:

<b>static</b>	Distributes load balancing across multiple paths equally from the host to the Pillar Axiom system.
<b>roundrobin</b>	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.

**-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.

**-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.

**-name**

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 slash (/) 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 slash (/) 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.

<b>ID</b>	A 32-character string that contains hex characters (a through f and 0 through 9). Example ID:  4130303132363742A12D 012AD8B86A8A
<b>Fully Qualified Name (FQN)</b>	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]
  [-linkAggregation]
```

```
[-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
  - 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.

**-linkAggregation**

Includes link aggregation settings.

**-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:

```
SmProvider  
Enabled : 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
  [-name 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 administrator does not specify a community string for read-only access, SNMP servers and clients will typically use `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
```

**-name**

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 administrator does not specify a community string for read-only access, SNMP servers and clients will typically use `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 | -hdd}
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
{-hdd
| { -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 -remove -hdd
```

```
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` option specifies that the package file contains a new release of non-hard disk drive (HDD) software or firmware to send 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.

The `-hdd` option specifies that the package file contains hard disk drive (HDD) firmware to be staged.

### **-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:

**-hdd**

Specifies the installation of staged hard disk drive (HDD) firmware.

You can specify only one of `-hdd`, `-component`, or `-all`.

**-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 can specify only one of `-hdd`, `-component`, or `-all`.

**-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 can specify only one of `-hdd`, `-component`, or `-all`.

**-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 Oracle Pillar Customer Support.

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  
neweronly  
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 Oracle Pillar Customer Support.

**-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.

**-remove -hdd**

Removes a previously staged hard disk drive (HDD) firmware package.

**-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_THIRDDGEN_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 :
4130303132373542A13A000000000000
    ManagementState : AVAILABLE
    ComponentInformation
    SoftwareComponent :
BRICK_SATA_THIRDDGEN_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.

### 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
PerformanceMetrics
  TotalBytesPerSecond:    74496017.659
  ReadBytesPerSecond:    37910032.746
  WriteBytesPerSecond:   36585984.913
  ReadThroughputInIOPerSecond: 0.000
  WriteThroughputInIOPerSecond: 253.504
  TotalThroughputInIOPerSecond: 253.504
  ReadBandwidthInBytesPerSecond: 0.000
  WriteBandwidthInBytesPerSecond: 32825633.950
  TotalBandwidthInBytesPerSecond: 66839228.524
  AverageReadOperationSizeInBytes: 0.000
  AverageWriteOperationSizeInBytes: 129487.609
  AverageReadResponseTimeInMilliseconds: 0.000
  AverageWriteResponseTimeInMilliseconds: 0.000
  AverageCombinedResponseTimeInMilliseconds: 0.000
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 with the location and the name of the XML configuration file:

```
axiomcli storage_allocation -list -brick -xml
```

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.

**PhysicalTotalCapacity**

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.

## SYNTAX

```
axiomcli system -modify
  [-name 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]
[-overrideDisabledCUs]
[-verify]
[{-outputformat | -o} {text | xml}]

```

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

```
axiomcli system -restart
  {[-overridePinnedData] [-overrideDisabledCUs]
  | [-emergencyClearBbm]
  | [-emergencyPreserveBbm]
  }
  [-verify]
  [{-outputformat | -o} {text | xml}]
  [-sessionKey session-key]
  [-timeout timeout-in-seconds]
```

```
axiomcli system -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:

**-name**

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 Server (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.

**-pilot1Netmask**

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.

**-overrideDisabledCUs**

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.

**-overrideDisabledCUs**

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 EModule**

/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:

<b>PowerSupplyFanModule</b>	Specifies either of the two power supply/fan modules that are installed.
<b>ESModule</b>	Specifies the ES that is installed.
<b>DiskDrive</b>	Specifies any of the six drives that are installed on each Brick CU.
<b>SpareDiskDrive</b>	Specifies the spare drive that is shared by the two Brick CUs.
<b>RAIDController</b>	Specifies either of the two RAID controllers that are installed.
<b>Chassis</b>	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:

<b>PowerSupply</b>	Specifies either of the two power supplies that are
--------------------	---

	installed. Each Slammer contains four power supplies.
<b>FanModule</b>	Specifies either of the two fan assemblies that are installed on Slammer CU. Each fan assembly contains two fans, which are not individual FRUs.
<b>Battery</b>	Specifies either of the two batteries that are installed on Slammer CU.
<b>Memory</b>	Specifies memory modules that reside on the motherboard of each Slammer CU.
<b>Motherboard</b>	Specifies the motherboard that is installed on each Slammer CU.
<b>SANNetworkInterfaceModule</b>	Specifies either of the two network interface modules that are installed on a SAN Slammer.
<b>PrivateInterconnectModule</b>	Specifies either of the two private interconnect modules that are installed on a Slammer.
<b>SCSIController</b>	Specifies the PCI card that resides in the network interface module.
<b>Chassis</b>	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 Oracle Pillar Customer Support.

**-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 Oracle Pillar Customer Support.

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
    Name         : /SLAMMER-01
    Name         : SLAMMER-01
    Id           : 2008000B08030522
    HardwareComponentStatus : NORMAL
    ServiceType  : SAN
  Brick
    Name         : /BRICK-001
    Name         : BRICK-001
    Id           : 200C000B08001D03
    BrickWwn     : 200C000B08001D03
    Type         : SATA
    HardwareComponentStatus : NORMAL
    TemperatureStatus : NORMAL
  Brick
    Name         : /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_THIRDDGEN_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:

```
4130303133343942A13E0
12AAA1A0D35
```

**Fully qualified name (FQN)**

An object name starting with a leading slash (/) with the object's name. Example FQN:

```
/
TopologyValidationFailed...
```

**-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. Oracle Pillar Customer Support 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 Oracle Pillar Customer Support 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 Oracle Pillar Customer Support 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 Oracle Pillar Customer Support.

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/  
413939303033365AA136000000007AE
```

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_CO
LLECTION-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_STAT
E_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
  [-name 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
```

**-name**

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  
Pillar Axiom 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.

## 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.

**-name**

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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