

Pillar Axiom SnapDelta FS



Reference Guide

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About Pillar Axiom SnapDelta FS

The Pillar Axiom SnapDelta FS feature lists files that have been created, renamed, or deleted, or files with changed content, within a Pillar Axiom filesystem during the interval between two Snap FS snapshots.

External applications sometimes need to scan the contents of a Pillar Axiom filesystem to extract information. After an initial scan, these applications need to perform periodic rescans to process new, renamed, and deleted files, and files with changed content. Examples of these external applications include:

- File-based replication applications.
- Search and indexing applications.
- Information classification applications.
- Virus scanning applications.

The Pillar Axiom 600 storage system provides a filesystem change reporting command, `axiom_snapdelta_fs`, to enable external applications to rescan Pillar Axiom filesystems. SnapDelta FS provides efficient access to the set of file changes created during the interval between two Snap FS snapshots.

For example, here is how an external application might use SnapDelta FS to process filesystem changes:

- First, an application that tracks changes to a filesystem creates a snapshot and performs a full scan of the contents of the filesystem in that snapshot.
- Later, the application creates a second snapshot and uses the `axiom_snapdelta_fs` command to find the changes between the first snapshot and the second snapshot.
- Next, the application creates a third snapshot and performs further tracking of filesystem changes by finding the changes between the second and third snapshot, and so on.

Filesystem change reporting works on two snapshots at a time. These snapshots may be immediate snapshots created specifically for the use of `axiom_snapdelta_fs`, or they may be scheduled snapshots created automatically for the filesystem.

Download and Install SnapDelta FS

SnapDelta FS is available from the Pillar Axiom storage system Graphical User Interface (GUI).

Prerequisites:

- SnapDelta FS works only on a Red Hat Enterprise Linux (RHEL) 5 server.
- The client running on the RHEL5 server must have a root access export of the root directory of the filesystem.
- SnapDelta FS works only on NFS filesystems.

- 1 Log in to the GUI.
- 2 Click the **Support** icon in the top context pane.
- 3 Click the SnapDelta FS link in the left navigation pane.
- 4 Choose the Linux download option from the **Actions** drop-down list for your RHEL5 server platform.
- 5 Follow the prompts to download the software.
- 6 Copy the `axiom_snapdelta_fs` file to a location such as `/usr/local/bin` on your RHEL5 server.

Create a Filesystem Change Report

Filesystem change reports list any files that have changed during the interval between two snapshots. To create a filesystem change report, first create two snapshots at the points in time you want to compare, and then run the `axiom_snapdelta_fs` command to generate the list of created, renamed, or deleted files, or files with changed content.

- 1 Create at least two Snap FS snapshots to compare.

Choose one of:

- Use **Perform Snap FS Now** in the Pillar Axiom Storage Services Manager to create the snapshots. See the *Administrator's Guide* for instructions.
- Use **Create Snap FS Schedules** to schedule filesystem snapshots on a regular basis. See the *Administrator's Guide* for instructions.
- Write a script that uses the Pillar Axiom Command Line Interface (CLI) to create snapshots or a snapshot schedule. See the *Pillar Axiom CLI Reference Guide* for instructions.

- 2 Log in as root on the RHEL5 server where `axiom_snapdelta_fs` is installed.
- 3 Run the `axiom_snapdelta_fs` command.

See [axiom_snapdelta_fs](#).

Result:

The command returns a list of files that are have been created or changed during the interval between the two snapshots you created.

axiom_snapdelta_fs

Lists files that have changed during the interval between two snapshots of the same filesystem.

SYNTAX `axiom_snapdelta_fs -h host_vif -f filesystem_name -s source_snapshot -t target_snapshot {-n | -c | -n -c}`

OPTIONS `-h`

host_vif. The Pillar Axiom storage system from which to gather the change report. Specify the host name or IP address of a data path (network path to one of the ports on a Pillar Axiom Slammer) that has an NFS export for the filesystem. If expressed as an IP address, the *host_vif* should be a standard IP address with four octets. Example: 10.20.21.109.

`-f`

filesystem_name. The name of the filesystem from which to gather data for the report, such as `FileSystem1`.

`-s`

source_snapshot. The name of the first snapshot, the older of the two snapshots, to use as the basis of comparison. Scheduled snapshots have names like `home2.Hourly.04`, while immediate snapshots have names like `i_snap.snapshot-name`.

`-t`

target_snapshot. The name of the second snapshot, the more recent snapshot, to use as the basis of comparison. Follow the same naming conventions used for the `-s` option.

One or both of the following is required to specify the output. Choose one or both of:

- `-n`

Specifies that the report should show new files that exist in the second snapshot but not the first.

- `-c`

Specifies that the report should show all files with contents or metadata changed in the second snapshot when compared to the first snapshot.

Filesystem Change Report Output

The output of the `axiom_snapdelta_fs` command consists of a list of created, renamed, or deleted files, or files with changed content.

Sample 1:

```
# /usr/local/bin/axiom_snapdelta_fs
-h 10.34.32.14 -f svr32fsys3 -s i_snap.snap1 -t i_snap.snap2
-n -c
File1A
File1B
#
```

Description: Running the `axiom_snapdelta_fs` command on snapshots `i_snap.snap1` and `i_snap.snap2` with both options `-c` and `-n` specified returns a report of any new files added or existing files changed in the filesystem (`svr32fsys3`). The results indicate that files `File1A` and `File1B` are either new files added or existing files changed during the interval between the snapshots.

Sample 2:

```
# /usr/local/bin/axiom_snapdelta_fs
-h 10.34.32.14 -f svr32fsys3 -s i_snap.snap3 -t i_snap.snap4
-n -c
#
```

Description: Running the `axiom_snapdelta_fs` command on two different snapshots (`i_snap.snap3` and `i_snap.snap4`), using the same options as Sample 1 returns a blank line, indicating no new files added and no existing files changed during the interval between the snapshots.

Sample 3:

```
# /usr/local/bin/axiom_snapdelta_fs -h 10.34.32.14 -f
svr32fsys3 -s i_snap.snap1 -t i_snap.snap2 -n
File1A
#
```

Description: Running the `axiom_snapdelta_fs` command on the same snapshots as Sample 1, but with only the `-n` option, returns a list of new files added during the interval between the snapshots (`File1A`).

Sample 4:

```
# /usr/local/bin/axiom_snapdelta_fs -h 10.34.32.14 -f  
svr32fsys3 -s i_snap.snap1 -t i_snap.snap2 -c  
File1B  
#
```

Description: Running the `axiom_snapdelta_fs` command on the same snapshots as Sample 1 with only the `-c` option returns a list of existing files that changed during the interval between the snapshots (`File1B`).

Sample 5:

```
# /usr/local/bin/axiom_snapdelta_fs -h 10.34.32.14 -f  
svr32fsys3 -s i_snap.snap4 -t i_snap.snap3 -n  
File1C  
#
```

Description: Running the `axiom_snapdelta_fs` command on the same snapshots as Sample 2 in reverse order (`i_snap.snap4` before `i_snap.snap3`) with only the `-n` option returns a list of files deleted during the interval between the snapshots (`File1C`).