Dell Acceleration Appliance for Databases 2.0

CLI Reference

2015 - 07

Rev. A04

Contents

About this guide

This guide contains information about the command line interface (CLI) in software in Dell Acceleration Appliance for Databases (DAAD) software. This guide is intended for administrators responsible for server and storage systems. It is assumed that the reader is familiar with basic server administration.

Typographical conventions

This document follows these conventions:

Convention	Usage	Examples
NOTE:	Important additional information or further explanation of a topic.	**NOTE:** A weekly backup is recommended.
CAUTION!	The task or operation might have serious consequences if conducted incorrectly or without appropriate safeguards. If you are not an expert in the use of this product, consult support for assistance.	**CAUTION!** Do not change configuration parameters.
Bold	A command or system input that you type, or text or a button you click on a graphical user interface (GUI).	Click **Help** for details about disaster recovery.
Italic	Italic font indicates any of the following: • A term with a specific meaning in the context of this document. • Emphasis on specific information. • Reference to another document. • Variables in a syntax statement for which values are substituted.	Detailed information about disaster recovery methods is available in the Administrator Guide. `network:ping` *`hostname`*
`Courier`	System output, file names or path names. Bold Courier for commands typed by user.	`> Recovery in progress` **`network:ping 10.1.100.14`**
< > Angle Brackets	A required entry or variable parameter	`installer-<version#>.run`
Square `[ ]` Brackets	An optional entry or variable parameter.	**`tar [zxvf] file.tgz`**
Curly `{ }` Brackets	A list of options separated by a the pipe symbol "|" from which any one must be selected.	Click { **OK** | **Cancel** }.

1

Overview

The *Dell Acceleration Appliance for Databases CLI Reference* helps you use the DAAD software in a command-line environment to accomplish tasks like setting up storage profiles and pools, creating volumes, adding initiators, and managing Fusion ioMemory.

DAAD documentation matrix

The following documentation is available for the Dell Acceleration Appliance for Databases:

- *Dell Acceleration Appliance for Databases Release Notes* — a summary of new features and bugs fixes in this release of the product. The Release Notes also identifies known issues with the current product.
- *Dell Acceleration Appliance for Databases Configuration Guide* — an introduction to the Dell Acceleration Appliance for Databases software. The guide also outlines information on features such as first boot setup, host multipathing, and application tuning.
- *Dell Acceleration Appliance for Databases GUI Guide* — a description of the web interface provided for the Dell Acceleration Appliance for Databases. This guide provides procedures for setting up storage profiles and pools, creating volumes, adding initiators, and managing Fusion ioMemory in the GUI environment.
- *Dell Acceleration Appliance for Databases Monitoring Guide* — a description of how to monitor the status and performance of DAAD systems using the built-in web-based interface, Oracle Enterprise Manager (OEM), or Ganglia.

2

About the CLI

With the Command-Line Interface (CLI) you can perform basic configuration tasks, as well as fine-tune and manage your Dell Acceleration Appliance for Databases system.

> **NOTE:** For an introduction to Dell Acceleration Appliance for Databases, as well as First Boot instructions and a variety of best practices and configuration information, refer to the *Dell Acceleration Appliance for Databases Configuration Guide*.
>
> **CAUTION!** Many of the CLI commands can affect data or configurations on a wide variety of devices. Be sure to use the commands with caution, or try them on a test system if you are unsure of their potential effects. Use the **`--help`** option with any command to see its command syntax and usage.

Command groups

The commands are arranged in the following groups:

- Help
- CNA
- Fan
- Initiator
- Manage
- Port
- Rules
- SNMP
- Target
- Bus
- Config
- FIO
- Kdump
- Network
- Profile
- SAFT
- Software
- Temp
- Chassis
- CPU
- Format
- Log
- Node
- PSU
- Service
- SSH
- View
- Cluster
- Drive
- Inigroup
- LUN
- Pool
- RAID
- Shell
- System
- Volume

These command groups include several basic types of commands. Some of the commands are listed as follows:

- Create — creates a specific object
- Delete — deletes a specific object
- Get — gets information about a specific object
- List — provides a list of objects of a certain type
- Update — changes or sets the information for an object

CLI login

To begin using the Command-Line Interface, log in to Dell Acceleration Appliance for Databases at the command line, using the IP address of the management host. Use the password you chose for the admin username during installation. (If you have modified the password, you must log in using the modified password.) For example:

```
# ssh admin@10.10.10.99
```

> **NOTE:** At login, the chassis serial number is displayed in the console text.

To view a complete list of CLI command from the console, press **Tab.**

Basic CLI syntax

The basic syntax for the CLI commands is:

```
commandgroup:command --option1 <item> --option2 <item> ... arg1 arg2 ...
```

Some options require specific syntaxes; for more information, see Common options on page 14.

The `help` and `history` commands use the syntaxes `*:help` and `*:history`, respectively. For more information, see Help, history, version on page 27.

> **NOTE:** For Fibre Channel, the UUIDs in commands represent World Wide Port Names (WWPNs).

CLI command example

```
pool:create --pesize 512 mainpool fioa fiob fioc fiod fioe fiof fiog fioh
```

This creates a new storage pool called `mainpool`, from the device IDs specified, with a physical extent size (`pesize`) of 512 KB.

Shortening commands

Using the format `commandgroup:command` you can omit `commandgroup` if `command` is unique within the name space of CLI commands. For example, `system:setup` can shortened to `setup` and `config:verify` to `verify` cause `setup` and `verify` are not used with any other commands. However, `port:get` cannot shortened to `get` cause there are other `get` commands (for example, `pool:get`) that are used by the CLI.

Shortening list commands

When shortening list commands, use the plural form. For example, `pool:list` comes `pools`.

Commands that cannot be shortened

All CLI commands can be shortened to omit their `commandgroup` name, except the following:

- create
- delete
- get
- update

Commands unique to the CLI

Although most CLI commands have GUI counterparts, there are some functions that are available only through the CLI. These unique commands include:

- `help`
- `history`
- `config -db` – lists all the current settings for storage information
- `node:update`
- `pool:create` — when used to create more than one storage pool
- `pool:delete`
- `pool:update`

- `raid:create` — when used to create more than one RAID
- `raid:delete`, `raid:get`, `raids or raid:list`, `raid:update`
- `soft:dropbox`, `soft:history`, `soft:revert`, `soft:version`
- `volume:create` – when the storage profile is Direct Access/JBOD

Commands unique to the CLI

Although most CLI commands have GUI counterparts, there are some functions that are available only through the CLI. These unique commands include:

- `help`
- `history`
- `config –db` (lists all the current settings for storage information)
- `node:update` (available in the Setup process)
- `pool:create` (when creating more than one storage pool)
- `pool:delete` (pools can be deleted only in the CLI, not the GUI)
- `pool:update`
- `raid:create` (creating multiple RAIDs)
- `raid:delete, raid:get, raids, raid:update`
- `soft:dropbox, soft:history, soft:revert, soft:version`
- `volume:create` (if the storage profile is Direct Access/JBOD)

Common options

Common options are shared by each command in the CLI. They are mentioned throughout the Command-line reference section, but the descriptions are not repeated.

`--display`	Type of display formatting:
	`brief`
	`wide`
	`list`
	`table`
	`xml`
	`json`
	`any`
	`-dt`
	`-dl`
	`-dx`
	`-dw`
	`-db`
	`-dj`

`--display-table` Displays output as a table. For example:

```
admin@url> nodes -dt

ID           Status Cluster      IP            Number
-----------------------------------------------------
fiona        MEMBER              192.168.1.1   1
                                 192.168.2.1
fionb        MEMBER              192.168.1.2   2
                                 192.168.2.2
```

`--display-list` Displays output as a list. For members that are also lists, contents are displayed as arrays. For example:

```
admin@url> nodes -dl
       id     fiona
statusEnum MEMBER
       cluster null
ipaddr [192.168.1.1, 192.168.2.1]
       number 1
              id     fionb
statusEnum MEMBER
       cluster null
       ipaddr [192.168.1.2, 192.168.2.2]
       number 2
```

`--display-xml` Displays output as XML. (Performance statistics are printed as bytes, not in GB.) For example:

```
admin@url> nodes -dx

<node id="fiona">
    <uuid>16885952</uuid>
    <ipaddrs>
        <ipaddr>192.168.1.1</ipaddr>
        <ipaddr>192.168.2.1</ipaddr>
    </ipaddrs>
    <local>true</local>
    <num slots>6</num slots>
    <number>1</number>
    <status>MEMBER</status>
</node>
<node id="fionb">
    <uuid>33663168</uuid>
    <ipaddrs>
        <ipaddr>192.168.1.2</ipaddr>
        <ipaddr>192.168.2.2</ipaddr>
    </ipaddrs>
    <local>false</local>
    <num slots>0</num slots>
    <number>2</number>
    <status>MEMBER</status>
</node>
```

`--display-json` Displays output as JSON. (Performance statistics are printed as bytes, not GB.)

`--display-wide` Displays output in wide format

`--display-brief` Displays output in brief format

`--display-csv` Displays output as comma-separated values

`--display-flavor <string>` `display-flavor` values are `vmware` or `detailed` (for RAID tables).

`--output-file <filename>` Save the command output to a file.

`--output-scp <user@host>` Save the command output through SCP to a user's home directory on a host.

`--output-share<domain/user@host/share>`	Save the command output to a CIFS share.
`--output-usb`	Save the command output to an attached USB drive.
`--wiki`	Table form that allows you to cut and paste to a wiki.
`--window`	Displays the output results in a window, if the GUI is available.

Troubleshooting

The CLI has a number of commands to help you track and diagnose errors.

Error checking

When errors during interactive sessions, the CLI displays a short message describing the error. For example:

```
admin@url> drive:get no_disk
Error executing command:
com.fusionio.fikon.rest.saft.SAFTNotFound: Object not found
```

You can also use the `shell:explain` command to get more information about an error condition:

```
admin@url> explain
The object you've requested doesn't exist.
Try using a listing command (like drives, or volumes) to find the identifiers of
available objects.
```

Command validation

When command validation is enabled, a variety of preconditions are tested on the commands you execute. Any failure of a precondition prints a descriptive message to the console, and the command is not executed.

To check whether validation is on, run `shell:validate --get`

To toggle validation, run `shell:set validate on` (or `off`)

Here is what a validation error might look like:

```
pool:create newpool bogus_drive   Error executing command:
Can't create pool over bogus_drive, which doesn't exist
```

Other functionality

Combining commands

You can combine multiple commands into a single one by using a semicolon to separate each command. For example, `drives;volumes` lists all the drives and then lists all the volumes.

Creating aliases

You can create a short alias that runs a longer command. The `{ }` syntax is used to form a closure (a first-class function that can be invoked). When a variable is assigned a closure as its value, typing the name of the variable at the command line executes the closure.

The following example creates an alias named `vol` that runs the `volumes -dt` command:

```
vol={volumes -dt}
```

> **NOTE:** To use aliases in later CLI sessions, you must save the CLI environment tree (`shell:save`).

Customizing the CLI environment

The `shell:set` command has a variety of options that can be used to customize the way the CLI operates. For example, `CONFIRMATION` prompts the user before command execution; `SUPPRESS_EXECUTION` parses and validates commands but suppresses their execution; `TIME_SAFT` displays the execution times for CLI commands.

For more information on the `shell:set` command, see Shell commands for scripting on page 137. For more examples that help you customize your CLI environment, see Working with the CLI environment (tree) on page 162.

Piping output

You can also pipe the text output of one command into another, using the piping symbol ("|"). For example, `config:config | more` displays one page of the configuration at a time.

A convenient pipe command is `grep`, which allows searching for values. For example:

```
luns -dt | grep some_volume
```

Filtering output

The CLI enables a number of useful forms of filtering. Here are some sample expressions:

- Get port objects and store them:

  ```
  > p=(ports -o) // grab port objects and store
  ```

- Return a list of the modes of the ports:

  ```
  > each $p {$1 mode} // get mode property
  ```

- Return a list of booleans indicating which ports are *not* management ports:

  ```
  > each $p {$1 . mode . neq Management}
  ```

- Filter the ports, returning the ones that are management ports:

  ```
  > each $p -w { $1 . mode . eq Management}
  ```

- Filter the ports, returning a list of the IDs of the ones that are management ports:

  ```
  > each $p -w { $1 . mode . eq Management} {$1 id}
  ```

Using closures and subcommands

A *closure* is created by surrounding statement(s) with braces. This forms a function, which can be used directly or assigned to a variable. Within a closure you can refer to any positional argument by $n, where n is the number of the argument, starting with 1. $args refers to all the arguments passed to the function.

```
admin@url> each (volumes) {volume:get $1}
vol1
vol2
...
```

You can use closures to create functions, by assigning the closure to a variable name. After it has been created, you can refer to the closure value by using the $ symbol, or can invoke the closure by referring to the variable without the $ sign.

```
admin@url> getall = {each (volumes) {volume:get $1}}
admin@url> getall
vol1
vol2
...
```

Subcommands are surrounded by parentheses. They are particularly useful with each command:

```
each (volumes) {volume:get $1}
```

Logging off, shutting down, or restarting the server

To log off the console, use the `exit` or `quit` command. Using `exit` allows a script to specify a numeric exit code, while `quit` always returns 0.

To restart the server, use the `system:restart` command.

To shut down the server from the command line, use the `system:shutdown` command.

3

Quick-start tasks

This section outlines a variety of basic but important tasks you can perform with the CLI. For details on command usage, refer to Command-line reference on page 27.

Other common but less-critical tasks are outlined in Appendix B: Common CLI Tasks.

Management tasks

By running several CLI commands, you can create a basic storage configuration for your Dell Acceleration Appliance for Databases. For more information on each of these commands and others, refer to the Command-line reference on page 27, including the Help commands.

Here are some basic tasks you can complete:

- Create a Profile, based on the type of performance and reliability you need. For example:

  `profile:create maximum_performance`

  This creates a storage pool with a RAID 0 array. (For more information, see Profile commands on page 90)

- Create volumes in the storage pool that can be exported later as LUNs. For example:

  `volume:create newvolume 8 pool_md`

  This creates a volume called `newvolume`. It has a capacity of 8 GB (the second parameter) and uses the `pool_md` storage pool.

- Create initiator groups, so that you can manage access to LUNs. For example:

  `inigroup:create mygroup <ini1 WWN> <ini2 WWN> <etc.>`

  This creates an initiator group named `mygroup`, with initiators optionally assigned to the group by WWN.

- Populate each initiator group with the desired initiators. For more information, see Sample command set on page 22.

- Create LUNs (export volumes) to share logical storage with initiators. For example:

  `lun:create myVolume newgroup 21:00:00:24:ff:67:5f:60 21:00:00:24:ff:67:5f:61`

  This creates a LUN by exporting `myVolume` to the initiator group `newgroup` using the specified target port WWPNs.

- Enter the Setup screen after the First Boot process has completed, so that you can change values as needed:

  `system:maintenance on` (do this for both nodes if in HA mode)

  `system:setup <screen>` (where <screen> is one of the following Setup screens to display: `lan`, `cluster`, `timezone`, `password`, or `resetios`). For details, see system:setup on page 119.

  `system:maintenance off` (do this for both nodes if in HA mode)

- Use the plural of various commands (for example, `raids`, `initiators`, `volumes`) to display information about the objects in the Dell Acceleration Appliance for Databases system.

Creating and deleting multiple volumes or LUNs

The following commands illustrate how to use the `shell:each` and `shell:seq` commands to create loops that automate common, repetitive tasks. For complete syntax on these commands, refer to shell:each on page 140 and shell:seq on page 150.

- Create 16 unique volumes of 100 GB each, in RAID10_POOL_1, where each volume name begins with “vol” followed by a number:

  ```
  each (seq 16) {volume:create vol$1 100  RAID10_POOL_1
  ```

- Delete volumes vol9 through vol16:

  ```
  each (seq --first 9 16) {volume:delete vol$1}
  ```

- Create 16 unique LUNs in the `win` initiator group that uses all available targets, where each volume name begins with “vol” followed by a number:

  ```
  each (seq 16) {lun:create vol$1 win -a}
  ```

Sample command set

The following tasks can be accomplished with the CLI:

- Create a Maximum Performance storage pool profile.
- Create a `Test2` volume, with a size of 595 GB, for `pool_md3`.
- Create an initiator group `BLUE2` for the volume.
- Assign initiators to the `BLUE2` group.
- Create a LUN for the `BLUE2` initiators to access the Test2 volume.

Here is the script that does the tasks:

```
profile:create maximum_performance
volume:create Test2 595 pool_md3
inigroup:create BLUE2
initiator:create --assign BLUE2 21:00:00:24:ff:69:d4:ca IONb2_1
initiator:create --assign BLUE2 21:00:00:24:ff:69:d4:cb IONb2_2
initiator:create --assign BLUE2 21:00:00:24:ff:69:d4:c8 IONb2_3
initiator:create --assign BLUE2 21:00:00:24:ff:69:d4:c9 IONb2_4
initiator:update --assign BLUE2 21:00:00:24:ff:69:d4:ca --id IONb2_1
initiator:update --assign BLUE2 21:00:00:24:ff:69:d4:cb --id IONb2_2
initiator:update --assign BLUE2 21:00:00:24:ff:69:d4:c8 --id IONb2_3
initiator:update --assign BLUE2 21:00:00:24:ff:69:d4:c9 --id IONb2_4
lun:create --all-targets --blocksize 4096 Test2 BLUE2
```

Software update

> **NOTE:** For more information on the software update process, see Software commands on page 107.

The following steps allow you to perform a *non-disruptive* software update:

1. Obtain the Dell Acceleration Appliance for Databases updated build file (`.iop`) from customer support dell.com/support/home.
2. Log in to each node that is to be updated, using the physical IP address of the node.
3. Copy the `.iop` file onto the local DAAD node by running the `soft:upload` command. For example, to copy an `.iop` file using scp enter a command similar to this:

   ```
   admin@ionr9i51/> soft:update --input-scp
   root:password@10.1.100.10:/tmp/ION_Accelerator-update.x86_64-2.5.1-425.iop
   12:02:35 Read 91.9% of 652,313 KiB. 00:00:01 remaining.
   Uploading /tmp/ION_Accelerator-update.x86_64-2.5.1-425.iop.part1
   Uploading /tmp/ION_Accelerator-update.x86_64-2.5.1-425.iop.part2
   Uploading /tmp/ION_Accelerator-update.x86_64-2.5.1-425.iop.part3
   Uploading /tmp/ION_Accelerator-update.x86_64-2.5.1-425.iop.part4
   …..
   ```

   This places the `.iop` file under `/home/admin`
4. To perform the update for the first node, run these commands:

   ```
   soft:apply
   ```
5. Wait until the update is complete.
6. Run `soft:history –dt` or `soft:history –dt --cluster` to verify that the node is updated with the latest Dell Acceleration Appliance for Databases software.
7. If you are using HA mode, repeat this procedure on the second node.

8 When you are finished with the update(s), log out of the CLI. The system automatically restarts.

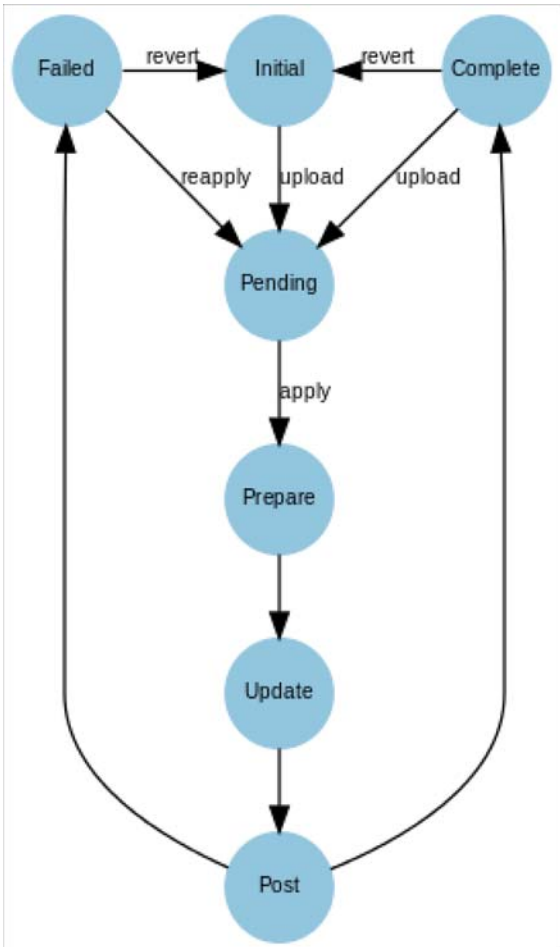
9 Log back in to the CLI to use the updated software,

To revert to a previous version of the software, run `soft:version`, then `soft:revert`, then `soft:version`.

Software update flow

The basic flow of the software update process is illustrated in Figure 3-1.

Figure 3-1. Basic flow of software update process



The Dell Acceleration Appliance for Databases software starts out in the initial state shown in Figure 3-1. After the `software:upload` command is executed, an update is present in the DAAD dropbox (if verification passes). The patch can be applied with the `software:apply` command, which either completes or fails. If it fails (failed state in the

diagram), the user can issue the `software:revert` command to discard the patch, or issue the `software:apply` command again, if the issue preventing the patch from succeeding has been fixed.

> **CAUTION!** If you are using HA mode and want to wipe the existing configuration on one or more nodes, you must upgrade both nodes simultaneously. If you upgrade one node at a time, then one node propagates the data to the other, and data is not wiped.

4

Command-line reference

This section contains information about the Dell Acceleration Appliance for Databases CLI.

Help, history, version

help

Displays help for a command.

> **NOTE:** To view a list of all commands in the CLI, press **Tab** at the command prompt, or type `help #` and press **Enter**.

Syntax

```
help <command>
```

To display help and include examples of the command usage, if available

```
<command> --help
<command> -h
```

To display help and include common options

```
<command> --help-all
```

Options

`--bare` or `-b`	Output the help content as simplified, plain text.
`--markdown` or `-m`	Output in markdown format.
`--toc` or `-t`	Generates markdown for table of contents entries.
`--lyx` or `-l`	Generates the Lyx format.
`--all` or `-a`	Displays information on the following common options (see Common options on page 14 for more details) `--wiki, --output-file, --output-scp, --output-share, --output-usb, --display, display-brief, --display-csv, --display-flavor, --display-list, --display-json, --display-table, --display-wide, --display-xml`

Arguments

command	Name of the command to get help for

Using auto-completion

Pressing **Tab** after beginning to type a CLI command displays the possibilities for completing the command, listed alphabetically. Commands (partial or complete) and options can be auto-completed. Table 4-1 provides a few examples.

Table 4-1. Auto-Completion Examples

	Type this . . .	See This . . .
Partial command	`u<tab>`	`unset upload url`
Full command	`raid<tab>`	`raid:create raid:delete raid:get raid:list raid:raids raid:update raids`
Partial option	`raid:create --<tab>`	`--chunksize --help --raidtype`

	`lun:create target<tab>`	`21:00:00:24:ff:60:03:10`
		`21:00:00:24:ff:60:03:11`
		`21:00:00:24:ff:60:03:12`
		`21:00:00:24:ff:60:03:13`

history

Displays recent commands that have been run. To scroll through recent commands, use the up and down arrow keys.

Syntax

```
history [options]
<command> --history [options]
```

Options

`--window` or `-w`	Shows the history in a window, if possible.

Notes

The `history` command also enables you to select and repeat a previous command by its prefix, by using "!" and the prefix as the command. For example:

```
> drives
fioa
> !dr
fioa
```

You can also substitute into a previous command by using "^" and the parts you want to substitute. This can be useful for correcting errors in long command strings. For example:

```
> drive:get fioa
... info A
> ^fioa^fiob^
... info B
```

After viewing history, you can recall a command to run by typing ! followed by the number of the command you want to run. For example:

```
> history
0 pool:create pool1 md0
1 lun:create -a rjvol pool1
> !1
```

version

Shows the current CLI version, and adds Dell Acceleration Appliance for Databases system version information if the `--all` option is used.

Syntax

```
version [options]
```

Options

`--all` or `-a`	Shows all available version information, including the Dell Acceleration Appliance for Databases version.
`--node` or `-n`	Issues this command to one or more nodes in the cluster.
`--cluster`	Issues this command to all instances in the cluster.
`--parallel`	Execute the command in parallel against the targets.

Examples

Running the `version --all` command displays the following information:

```
Version  1.1.0-SNAPSHOT 5bea0cb2c1c6+
         Build Number
            Hotfix Id
       Update Applied
         Release Date  "2015-04-16 12:16 -0700"
          Description  Fikon
         Update State
Estimated Update Time
      Reboot Required
               Reason

              Version  2.5.1
```

```
         Build Number  413
            Hotfix Id
       Update Applied
         Release Date  Thu Apr 16 20:29:53 MDT 2015
          Description  DAAD 2.0
         Update State  INITIAL
Estimated Update Time  0
      Reboot Required  false
               Reason
```

Bus commands

The Bus commands get information about available buses.

buses or bus:list

Lists the IDs of the available buses.

Syntax

```
buses [options]
```

Options

`--uuid` or `-u`	Shows UUIDs instead of readable IDs.
`--node` or `-n <address(es)>`	Issues this command to one or more nodes in the cluster.
`--property` or `-p <list>`	Properties to display: • `id` — ID of the cluster • `uuid` — Machine-readable ID • `ipaddr` — Cluster IP address
`--objects` or `-o`	Returns objects.
`--separator` or `-s <type>`	Separator between property values when printing multiple properties; defaults to `tab`. Valid values are `space`, `comma`, and `tab`.
`--cluster`	Issues this command to all instances in the cluster.
`--sort <property>`	Sorts the output, using the specified Property name to sort on.
`--no-sort` or `-ns`	Do not sort the output.
`--order-with <function>`	Sorts the output, extracting key with this function. Example: `{$1 method}`
`--where` or `-w <function>`	Filters by a function, if the function is true.
`--where-not` or `-wn <function>`	Filters by a function, if the function is false.
`--used`	Shows only objects that are in use.
`--not-used` or `-nu`	Shows only objects that are not in use.

Examples

This lists available buses:

```
> buses
pci0000:00
pci0000:01
pci0000:02
...
```

bus:get

Gets details about a bus, including UUID, bus type, and NUMA node.

Syntax

`bus:get [options] id`

Options

`--node` or `-n <address(es)>`	Issues this command to one or more nodes in the cluster.
`--cluster`	Issues this command to all instances in the cluster.

Arguments

id	The ID, UUID, or WWPN of the bus to get information for

Examples

This gets details about the bus with the ID `pci0000:35` (from `bus:list`):

```
>  bus:get  pci0000:35
        Id  pci0000:35
      UUID  pci0000:35
  Bus Type  pci
NUMA Nodes  [1]
```

Chassis commands

The Chassis commands get information about available chassis.

chassis or chassis:list

Lists the available chassis.

Syntax

```
chassis [options]
```

Options

`--uuid` or `-u`	Shows UUIDs instead of readable IDs.
`--node` or `-n <address(es)>`	Issues this command to one or more nodes in the cluster.
`--property` or `-p <list>`	Properties to display: • `id` — ID of the cluster • `uuid` — Machine-readable ID • `ipaddr` — Cluster IP address
`--objects` or `-o`	Returns objects.
`--separator` or `-s <type>`	Separator between property values when printing multiple properties; defaults to `tab`. Valid values are `space`, `comma`, and `tab`.
`--cluster`	Issues this command to all instances in the cluster.
`--sort <property>`	Sorts the output, using the specified Property name to sort on.
`--no-sort` or `-ns`	Do not sort the output.
`--order-with <function>`	Sorts the output, extracting key with this function. Example: `{$1 method}`
`--where` or `-w <function>`	Filters by a function, if the function is true.
`--where-not` or `-wn <function>`	Filters by a function, if the function is false.
`--used`	Shows only objects that are in use.
`--not-used` or `-nu`	Shows only objects that are not in use.

Examples

This lists the available chassis:

```
> chassis
bda5e8f9-a3f6-5daf-bf25-ceeeeef562a6
```

chassis:get

Gets details about a chassis, including serial number, UUID, BIOS version, BIOS release date, chassis type, SKU, manufacturer, and error and warning messages (if any).

Syntax

`chassis:get [options] id`

Options

`--node` or `-n <address(es)>`	Issues this command to one or more nodes in the cluster.
`--cluster`	Issues this command to all instances in the cluster.

Arguments

id	The ID, UUID, or WWPN of the chassis to get information for

Examples

This gets details about the specified chassis (from `chassis:list`):

```
> chassis:list
d13b5478-aac1-51dc-b786-84c8c5b4f30b
> chassis:get d13b5478-aac1-51dc-b786-84c8c5b4f30b
    System Serial  97MCR22
      System UUID  44454C4C-3700-104D-8043-B9C04F523232
               ID  d13b5478-aac1-51dc-b786-84c8c5b4f30b
             UUID  d13b5478-aac1-51dc-b786-84c8c5b4f30b
     BIOS Version  1.1.4
BIOS Release Date  11/03/2014
    BIOS Revision  1.1
     Chassis Type  Rack Mount Chassis
              SKU  DELL-HA-FC-D32
     Manufacturer  Dell Inc.
           Errors
         Warnings
```

Cluster commands

The Cluster commands return information about clusters used in HA mode.

clusters or cluster:list

Lists the cluster IDs.

Syntax

```
clusters [options]
```

Options

`--uuid` or `-u`	Shows UUIDs instead of readable IDs.
`--node` or `-n <address(es)>`	Issues this command to one or more nodes in the cluster.
`--property` or `-p <list>`	Properties to display: • `id` — ID of the cluster • `uuid` — Machine-readable ID • `ipaddr` — Cluster IP address
`--objects` or `-o`	Returns objects.
`--separator` or `-s <type>`	Separator between property values when printing multiple properties; defaults to `tab`. Valid values are `space`, `comma`, and `tab`.
`--cluster`	Issues this command to all instances in the cluster.
`--sort <property>`	Sorts the output, using the specified Property name to sort on.
`--no-sort` or `-ns`	Do not sort the output.
`--order-with <function>`	Sorts the output, extracting key with this function. Example: `{$1 method}`
`--where` or `-w <function>`	Filters by a function, if the function is true.
`--where-not` or `-wn <function>`	Filters by a function, if the function is false.
`--used`	Shows only objects that are in use.
`--not-used` or `-nu`	Shows only objects that are not in use.

Examples

This returns a list of the cluster IDs, also showing the UUIDS and IP addresses. (To display the UUIDs instead of the regular IDs, use the `--uuid` option.)

```
> clusters –-property uuid –-property ipaddr
10.60.34.47    ionr8i47
```

cluster:get

Gets details about a cluster, including error and warning messages (if any) and IP address.

Syntax

cluster:get [options] *id*

Options

`--node` or `-n <address(es)>`	Issues this command to one or more nodes in the cluster.
`--cluster`	Issues this command to all instances in the cluster.

Arguments

id	The ID, UUID, or WWPN of the cluster to get information for

Examples

This gets details about the cluster with the ID `ionr8i47` (from `cluster:list`):

```
> cluster:get mycluster
      Id  ionr8i47
      IP  10.60.34.47
  Errors
Warnings
    UUID  ionr8i47
```

CNA commands

The CNA commands return information about Converged Networking Adapters.

cnas or cna:list

Lists available CNAs (Converged Networking Adapters).

Syntax

cnas [options]

Options

`--uuid` or `-u`	Shows UUIDs instead of readable IDs.
`--property` or `-p <list>`	One or more properties to display: • id — ID of each CNA • uuid — Machine-readable IDs • vendor — CNA vendor name(s) • product — Product name for each CNA • fabric — One of the following values: – 0 = `FABRIC_FC` — Fibre Channel – 1 = `FABRIC_ETHERNET` — Ethernet (not currently implemented) – 2 = `FABRIC_IB` — SRP/InfiniBand (not currently implemented • pci_slot — PCIe slot where the CNA is installed • is_interconnect — TRUE if this CNA is used as the cluster interconnect; FALSE otherwise
`--objects` or `-o`	Returns objects.
`--separator or –s <type>`	Separator between property values when printing multiple properties; defaults to `tab`. Valid values are `space`, `comma`, and `tab`.
`--node` or `-n <address(es)>`	Issues this command to one or more nodes in the cluster.
`--cluster`	Issues this command to all instances in the cluster.
`--sort <property>`	Sorts the output, using the specified Property name to sort on.
`--no-sort` or `-ns`	Do not sort the output.
`--order-with <function>`	Sorts the output, extracting key with this function. Example: `{$1 method}`
`--where` or `-w <function>`	Filters by a function, if the function is true.

`--where-not` or `-wn <function>`	Filters by a function, if the function is false.
`--used`	Shows only objects that are in use.
`--not-used` or `-nu`	Shows only objects that are not in use.

Examples

This lists available CNAs, showing the ID and vendor for each CNA:

```
> cnas --property id --property vendor
NetXtreme BCM5720 Gigabit Ethernet PCIe Broadcom
QLogic Corporation-QLE2662-BFE1439K31681        QLogic Corporation
QLogic Corporation-QLE2662-RFE1349J62495        QLogic Corporation
mlx4_0  Mellanox Technologies
```

This lists available CNAs by UUID:

```
> cnas –-uuid
00:02:c9:fc:31:a0
00:1b:21:3a:a5:f0
00:9c:02:3c:a2:a8
```

cna:get

Gets information about a CNA, including fabric type, interconnect, slot #, product name, and vendor.

Syntax

`cna:get [options] id`

Options

`–-node` or `-n <address(es)>`	Issues this command to one or more nodes in the cluster.
`--cluster`	See `–-urlList`.

Arguments

id	The ID, UUID, or WWPN of the CNA to get information for

Examples

This gets details about the CNA for the UUID `00:02:c9:fc:31:a0` (from `cna:list`):

```
> cna:get 00:02:c9:fc:31:a0
 Id  MT27500  Family [ConnectX-3]
        UUID  00:02:c9:fc:31:a0
      Fabric  (fabricType) not found
Interconnect  (interconnect) not found
```

Config commands

The Config commands provide the ability to backup and restore the configuration of the Dell Acceleration Appliance for Databases, and to apply that configuration when provisioning other appliances.

> **NOTE:** Configuration backups should be taken *only* when the Dell Acceleration Appliance for Databases system is in a healthy state.

config:alter

Alters an existing configuration.

Syntax

`config:alter [options] configuration`

Options

`--no-auto` or `-na`	Do not automatically repair the configuration problems.
`--from-node` or `–fn <names>`	List of node identifiers to be changed
`--to-node or –tn <names>`	List of targets to change to
`--from-target` or `–ft <names>`	List of target identifiers to be changed
`--to-target` or `-tt <names>`	List of targets to change to
`--input-last`	Load the last known configuration from the CLI.
`--input-file` or `-if <filename>`	Load a file with a configuration.
`--input-pipe` or `-ip`	Use `stdin` as input to the command line (non-interactive only).
`--input-scp` or `-is <string>`	`Use SCP input. For example, user[:password]@host:filename`
`--input-share` or `-ic <string>`	Use CIFS/Windows input. For example, `domain/user[:password]@host/share/filename`
`--input-ssh` or `-ih <string>`	`Use Unix shell file input, such as user[:password]@host:filename`
`--input-url` or `-ir <URL>`	Load a configuration from a URL. For example: `http://somehost/filename` `ftp://[username[:password]@]host/path/file`
`--input-usb` or `-iu <file>`	Load a configuration from the USB drive.
`--current-file <filename>`	Read the current configuration from a file, instead of from Dell Acceleration Appliance for Databases.

`--current-url <URL>`	Read the current configuration from a URL, instead of from Dell Acceleration Appliance for Databases.

Arguments

`configuration` Configuration object to modify, or variable containing the configuration

config:backup

Backs up the current configuration to a provided destination. For configuration backup files, the CLI forms a generated filename by combining the name of the node with a timestamp that uses `.xml` as an extension.

Syntax

`config:backup [options]` *`outputFilename`*

Options

`--message` or `-m <string>`	Message describing the configuration scenario
`--id or –i <string>`	Identifier for this system, which is embedded into a filename
`--input-file` or `-f <filename>`	Upload the configuration from a file.
`--host <name>`	Host to load configuration from
`--share <string>`	Windows (CIFS) share to load configuration from
`--domain <string>`	Domain for Windows (CIFS) share user
`--user` or `-u <string>`	User name
`--password or –p <string>`	Password for the user
`--output-file` or `-of <file>`	Save command output to a file or directory
`--output-scp` or `-os <string>`	Save command output to an SCP destination (`user[:pass]@host[:dest]`)
`--output-share` or `-oc <string>`	Save command output to a CIFS share (`domain/user[:pass]@host/share[/dest]`)
`--output-usb` or `-ou`	Saves command output to the USB drive mounted on the DAAD

Arguments

`outputFilename` Optional filename for output. This is useful with options like `–-host and --share`.

Examples

- `backup --host <server IP> --share <share name> --user <username> --domain <domain name> filename.xml`

  This backs up configuration to a Windows server (CIFS) share, prompting for a password.

- `backup user@host:destdir/filename.xml`

  This backs up the configuration using the `scp` protocol.

- `backup localfile.xml`

  This backs up the configuration to a local file.

- `backup user@192.168.1.1`

  This backs up the configuration to the specified `scp` target.

config:config

Retrieves all or part of a configuration, depending on the options. If you provide the `--include` option, the set of elements to include starts empty. If you provide the `--exclude` option, the set starts with everything.

Syntax

```
config:config [options]
```

Options

`--flatten`	Flattens the resulting configuration into a simple list of objects.
`--include` or `-i <DomainType>`	Includes only this type of result, starting with the empty set.
	DomainType is one of the following: `boot_drives, boot_raids, bus, chassis, cluster, cna, cpu, drive, fan, inigroup, initiator, lun, node, numa, pool, port, profile, psu, raid, snmp, software, target, temp, volume`
`--exclude or –x <DomainType>`	Exclude this type of result. See the list of domain types.
`--objects`	Do not format returned objects.
`–-uuid`	Shows UUIDs instead of readable IDs.
`--input-last`	Retrieves last known configuration.
`–-node` or `-n <address(es)>`	Issues this command to one or more nodes in the cluster.
`--cluster`	Issues this command to all nodes in the cluster.

Sample Output

```
CLUSTER: []
NODE: [ionr1sm1]
DRIVE: [fioa, fiob]
RAID: [md0]
POOL: [pool_md0]
VOLUME: [volume0, volume1, volume2, volume3, volume4]
LUN: [327a41ce-489e-11e2-9500-0025900fefc2-LUN0, 327a41ce-489e-11e2-9500-
0025900fefc2-LUN1, 33587368-489e-11e2-9500-0025900fefc2-LUN0, 33587368-489e-
11e2-9500-0025900fefc2-LUN1]
TARGET: [tgt, tgt]
CNA: [QLogic Corporation-QLE2562-LFD1014B42206]
PORT: [21:00:00:24:ff:21:23:4c, 21:00:00:24:ff:21:23:4d]
INITIATOR_GROUP: [ini]
INITIATOR: [21:00:00:1b:32:8b:49:77, 21:01:00:1b:32:ab:49:77,
50:01:43:80:04:25:ce:6c]
SOFTWARE: SoftwareVersion [version=2.0.1, patchLevel="", hotfixId="",
releaseDate="Mon Dec 17 09:51:55 MST 2012", buildNumber=253, description="ION
Accelerator", updating=false, updateState=INITIAL, estimatedUpdateTimeMins=0,
rebootRequired=false]
SNMP: SNMPDetail [trapAddress=null, trapCommunity=null, serviceEnabled=true]
```

config:restore

Applies (restores) a configuration to the current node.

Syntax

`config:restore [options] configuration`

Options

`--local`	Make changes only on the local node.
`--dry-run`	Shows what will be done, but don't do it.
`--no-auto` or `-na`	Do not automatically repair configuration problems.
`--from-node or –fn <names>`	List of node identifiers to be changed
`--to-node or –tn <names>`	List of targets to change to
`--from-target or –ft <names>`	List of target identifiers to be changed
`--to-target` or `-tt <names>`	List of targets to change to
`--input-last`	Load the last known configuration.
`--input-file` or `-if <filename>`	Use file input.
`--input-pipe` or `-ip`	Use `stdin` as input to the command line (non-interactive only).
`--input-scp` or `-is <string>`	Use SCP input. For example: `user[:password]@host:filename`
`--input-share` or `-iu <string>`	Use CIFS/Windows input. For example: `domain/user[:password]@host/share/filename`
`--input-ssh` or `-ih <string>`	Use Unix shell file input, such as `user[:password]@host:filename`

`--input-url` or `-ir <URL>`	Use URL input. For example:
	`http://somehost/filename`
	`ftp://[username[:password]@]host/path/file`

`--input-usb` or `-iu <file>`	Use content retrieved from the USB drive.
`--current-file <filename>`	Read the current configuration from a file, instead of from Dell Acceleration Appliance for Databases.
`--current-url <URL>`	Read the current configuration from a URL, instead of from Dell Acceleration Appliance for Databases.

Arguments

configuration	Configuration object to modify, or variable containing the configuration

Examples

- `restore --input-file cfg.xml`
  This restores the configuration in cfg.xml.
- `restore --input-last`
  This attempts to restore the last known configuration.
- `restore --from-target TGA --to-target TGB --input-file cfg.xml`
  This restores from `cfg.xml`, changing references to target TGA into references to TGB.
- `restore --input-url http://backup.server/config.xml`
  This restores the configuration from an http URL.
- `restore --input-share adomain/auser@myhost/ashare/cfg.xml`
  This restores a configuration from a Windows (CIFS) share.

config:verify

Returns `TRUE` if the configuration can be applied to the current node.

Syntax

`config:verify [options] *configuration*`

Options

`--input-last`	Load the last known configuration.
`--input-file` or `-if <filename>`	Use file input.

`--input-url` or `-ir <URL>`	Use URL input. For example:
	`http://somehost/filename`
	`ftp://[username[:password]@]host/path/file`

`--input-usb` or `-iu <file>`	Use content retrieved from the USB drive.
`--input-share` or `-ic <string>`	Use CIFS/Windows input. For example: `domain/user[:password]@host/share/filename`
`--input-scp` or `-is <string>`	Use SCP input. For example, `user[:password]@host:filename`
`--input-pipe` or `-ip`	Use `stdin` as input to the command line (non-interactive only).
`--current-file <filename>`	Read the current configuration from a file, instead of from Dell Acceleration Appliance for Databases.

`--current-url <URL>`	Read the current configuration from a URL, instead of from Dell Acceleration Appliance for Databases.

Arguments

`configuration`	Configuration object to modify, or variable containing the configuration

config:wipe

Wipes (deletes) the specified resources.

Syntax

```
config:wipe [options]
```

Option (required)

`--wipe` or `-w <type>`	Types of resources to wipe (delete all of). Types include: `lun`, `volume`, `pool`, `raid`, `target`, `initiator`, `inigroup`, `all`

CPU commands

The CPU commands get information about CPUs in the Dell Acceleration Appliance for Databases host.

cpus or cpu:list

Lists the available CPUs in the host by ID.

Syntax

```
cpu:list [options]
```

Options

`--uuid` or `-u`	Shows UUIDs instead of readable IDs.
`--property` or `-p <list>`	One or more properties to display
`--objects`	Returns objects.
`--separator or –s <type>`	Separator between property values when printing multiple properties; defaults to `tab`. Valid values are `space`, `comma`, and `tab`.
`--node` or `-n <address(es)>`	Issues this command to one or more nodes in the cluster.
`--cluster`	Issues this command to all instances in the cluster.
`--sort <property>`	Sorts the output, using the specified Property name to sort on.
`--no-sort` or `-ns`	Do not sort the output.
`--order-with <function>`	Sorts the output, extracting key with this function. Example: `{$1 method}`
`--where` or `-w <function>`	Filters by a function, if the function is true.
`--where-not` or `-wn <function>`	Filters by a function, if the function is false.
`--used`	Shows only objects that are in use.
`--not-used` or `-nu`	Shows only objects that are not in use.

Examples

This lists all available CPUs in the host:

```
> cpus
0
1
10
11
12
13
14
15
16
17
18
19
2
20
21
22
23
24
25
26
27
28
29
3
30
31
4
5
6
7
8
9
```

cpu:get

Gets information about a CPU, including core ID, vendor, family, model, Uarch, Mhz, thread siblings, and NUMA node.

Syntax

`cpu:get [options] id`

Options

`--node` or `-n <address(es)>`	Issues this command to one or more nodes in the cluster.
`--cluster`	Issues this command to all instances in the cluster.

Arguments

id	The ID or UUID of the CPU to get information for

Examples

This gets information about CPU 11 (from `cpu:list`):

```
> cpu:get 11
             Id  11
           UUID  11
        Core Id  5
         Vendor  GenuineIntel
         Family  6
          Model  63
          Uarch  unknown
            Mhz  3199.991
Thread Siblings  11,27
      NUMA Node  1
```

Drive commands

The Drive commands manipulate physical disk structures in the Dell Acceleration Appliance for Databases host.

drives or drive:list

Lists available drives.

Syntax

```
drives [options]
```

Options

`--boot` or `-b`	Includes only boot devices in the list of drives.
`--rescan` or `-r`	Forces rescan of boot devices.
`--uuid` or `-u`	Shows UUIDs instead of readable IDs.
`--property` or `-p <list>`	One or more properties to display
`--objects`	Returns objects.
`--separator or –s <type>`	Separator between property values when printing multiple properties; defaults to `tab`. Valid values are `space`, `comma`, and `tab`.
`--node` or `-n <address(es)>`	Issues this command to one or more nodes in the cluster.
`--cluster`	Issues this command to all instances in the cluster.
`--sort <property>`	Sorts the output, using the specified Property name to sort on.
`--no-sort` or `-ns`	Do not sort the output.
`--order-with <function>`	Sorts the output, extracting key with this function. Example: `{$1 method}`
`--where` or `-w <function>`	Filters by a function, if the function is true.
`--where-not` or `-wn <function>`	Filters by a function, if the function is false.
`--used`	Shows only objects that are in use.
`--not-used` or `-nu`	Shows only objects that are not in use.

Examples

This lists all available drives in the system:

```
> drives
fioa
fiob
fioc
fiod
```

drive:get

Gets information about a drive, including capacity, device path, slot #, adapter ID, board name, UUID, and total errors and warnings.

Syntax

`drive:get [options] id`

Options

`--boot` or `-b`	Specify that the drive is a boot device.
`--rescan` or `-r`	Forces rescan of boot devices.
`--node` or `-n <address(es)>`	Issues this command to one or more nodes in the cluster.
`--cluster`	Issues this command to all instances in the cluster.

Arguments

id The ID, UUID, or WWPN of the drive to get information for

Examples

This gets information about the drive named `fioa` (from `drive:list`):

```
> drive:list
fioa
fiob
fioc
fiod
> drive:get fioa
        Id  fioa
  Capacity  3,200.00 GB
    Device  /dev/fioa
      Slot  6
   Adapter  1445G1087
Board Name  ioMemory Adapter Controller
      UUID  1445G1087
  Err/Warn  []
```

Fan commands

The Fan commands get information about available fans.

> **NOTE:** Fan speed may be reported either as a percentage or in RPM. Check the units that apply to your particular platform.

fans or fan:list

Lists the available fans.

Syntax

```
fan:list [options]
```

Options

`--uuid` or `-u`	Shows UUIDs instead of readable IDs.
`--node` or `-n <address(es)>`	Issues this command to one or more nodes in the cluster.
`--property` or `-p <list>`	Properties to display: • `id` — ID of the cluster • `uuid` — Machine-readable ID • `ipaddr` — Cluster IP address
`--objects` or `-o`	Returns objects.
`--separator` or `-s <type>`	Separator between property values when printing multiple properties; defaults to `tab`. Valid values are `space`, `comma`, and `tab`.
`--cluster`	Issues this command to all instances in the cluster.
`--sort <property>`	Sorts the output, using the specified Property name to sort on.
`--no-sort` or `-ns`	Do not sort the output.
`--order-with <function>`	Sorts the output, extracting key with this function. Example: `{$1 method}`
`--where` or `-w <function>`	Filters by a function, if the function is true.
`--where-not` or `-wn <function>`	Filters by a function, if the function is false.
`--used`	Shows only objects that are in use.
`--not-used` or `-nu`	Shows only objects that are not in use.

Examples

This lists all available fans in the host:

```
fans
```

fan:get

Gets details about a fan.

Syntax

`fan:get [options] id`

Options

`–-node` or `-n <address(es)>`	Issues this command to one or more nodes in the cluster.
`--cluster`	Issues this command to all instances in the cluster.

Arguments

id	The ID, UUID, or WWPN of the fan to get information for

Examples

This gets details about the fan with the ID `fan1`.

```
> fan:get fan1
```

FIO commands

The `fio` commands provide information about the Fusion ioMemory devices used in the Dell Acceleration Appliance for Databases. These commands are similar to the Command-Line Utilities available with the Fusion ioMemory VSL software.

fio:beacon

Enable or disable the beacon for Fusion ioMemory devices attached to a device control node (using the `--on` or `--off` options), or return its status (using neither `--on` nor `--off`).

Syntax

`fio:beacon [options] *device-node*`

Options

`--on`	Enable the beacon.
`--off`	Disable the beacon.
`--ppci`	Prints the PCI bus ID of the device node.

Arguments

`device-node` Fusion ioMemory device control node, such as `/dev/fct1`

Examples

This turns on the beacon for the `fct1` device and prints its PCI bus ID:

```
> fio:beacon –-on --ppci /dev/fct1
PCI address: f:0.0
/dev/fct1 beacon ON
```

fio:status

Determines the status of Fusion ioMemory devices devices by displaying a variety of information fields.

Syntax

`fio:status [options] *device*`

Options

`--all` or `-a`	Report all available information.
`--err-warn` or `-e`	Report only errors and warnings, with minimal device info.
`--data-volume or –d`	Report the volume of data read and written.
`--unavailable-detail` or `-U`	Shows unavailable fields and details for why they are unavailable.

`--unavailable`	Shows unavailable fields.
`--list-fields` or `-l`	List fields that can be individually accessed with `--field`.
`--count` or `-c`	Report the number of Fusion ioMemory devices installed.
`-fs`	Use the standard output format.
`-fx`	Use XML output format.
`-fj`	Use JSON output format.
`--field <string>`	Request a particular field. This option is repeatable.

Arguments

device Pathname to the control device

Examples

This displays the status for the `/dev/fct1` device:

```
> fio:status /dev/fct1

Found 1 VSL driver package:
   4.2.0 build 988 Driver: loaded

Found 1 ioMemory device in this system as device '/dev/fct1'

Adapter: ioMono  (driver 4.2.0)
        ioMemory SX300-3200, Product Number:FJYYT, SN:1445G1072
        PCIe Power limit threshold: 54.75W
        Connected ioMemory modules:
          fct1:   05:00.0:      Product Number:FJYYT, SN:1445G1072

fct1    Attached
        ioMemory Adapter Controller, Product Number:FJYYT, SN:1445G1072
        PCI:05:00.0, Slot Number:7
        Firmware v8.7.17, rev 20150212 Public
        3200.00 GBytes device size
        Internal temperature: 31.50 degC, max 37.40 degC
        Reserve space status: Healthy; Reserves: 100.00%, warn at 10.00%
        Contained Virtual Partitions:
          fiob: ID:0, UUID:d24af062-89c7-4977-bcf1-c15939902805

fiob    State: Online, Type: block device, Device: /dev/fiob
        ID:0, UUID:d24af062-89c7-4977-bcf1-c15939902805
        3200.00 GBytes device size
```

Format command

The `format` command formats objects.

format:format

Formats objects.

Syntax

`format [options] item(s)`

Options

`--flatten` or `-f`	Flattens a collection of arguments into a single one
`--maxdepth or –m <depth>`	Maximum depth for flattening arguments; default is 4

Arguments

item	Objects to flatten. This argument can be used multiple times.

Inigroup commands

The Inigroup commands enable you to manipulate named groups of initiators. Initiator groups can be organized into a tree, where the leaves of the tree are the initiators. Each initiator or initiator group can have one parent initiator group. Setting the parent of an initiator group to a non-existent group implicitly creates that group.

inigroup:create

Creates an initiator group. If HA is enabled, the group is created across a cluster.

Syntax

`inigroup:create [options] id initiator(s)`

Options

`--uuid` or `-u <string>`	UUID for the group (generated if not provided)
`--parent_uuid` or `-p <string>`	Optional parent group UUID
`--type` or `-t <InitiatorGroupType>`	Optional type of the initiator group: `default` or `aix`. The blocksize for creating AIX groups must be 512B.
`--if_not_exists` or `-ne`	If an object with the given identifier already exists, skip creation.

Arguments

id	Human-readable id for the initiator group
initiator	Optional identifier of initiator to add to this group. This option can be included multiple times.

Examples

This creates an initiator group named `mygroup` that belongs to the parent `0c8e4659-855c-4f86-9712-ed7ba476b1eb`:

```
> inigroup:create --parent_uuid 0c8e4659-855c-4f86-9712-ed7ba476b1eb mygroup
```

inigroup:delete

Deletes one or more initiator groups (across a cluster if in HA mode).

Syntax

`inigroup:delete [options] id(s)`

Options

`See help --all for common options.`

Arguments

id	The ID or UUID of the initiator group to delete. This option may be used multiple times.

Examples

This deletes the initiator group named `tempgroup`:

```
> inigroup:delete tempgroup
```

inigroup:get

Gets details about an initiator group, including type and parent (if any), the IDs for the initiators in the group, and the group UUID.

Syntax

`inigroup:get [options] id`

Options

`--node` or `-n <address(es)>`	Issues this command to one or more nodes in the cluster.
`--cluster`	Issues this command to all nodes in the cluster.

Arguments

id	The ID, UUID, or WWPN of the initiator group to get information for

Examples

This gets information for the `W2K12` initiator group (from `inigroup:list`):

```
> inigroup:get W2K12
           Id  W2K12
         Type
       Parent
   Initiators  iqn.1991-05.com.microsoft:win-pq45oau7hi9#192.168.30.48
               iqn.1991-05.com.microsoft:win-pq45oau7hi9#192.168.20.49
               iqn.1991-05.com.microsoft:win-pq45oau7hi9#192.168.20.48
               iqn.1991-05.com.microsoft:win-pq45oau7hi9#192.168.30.49
         UUID  9482affc-fd81-11e3-892b-0015178fbc10
```

inigroups or inigroup:list

Lists initiator groups.

Syntax

`inigroups [options]`

Options

`--uuid` or `-u`	Shows UUIDs instead of readable IDs.
`--property` or `-p <list>`	One or more initiator group properties to display.
`--objects` or `-o`	Returns objects.

`--separator or –s <type>`	Separator between property values when printing multiple properties; defaults to `tab`. Valid values are `space`, `comma`, and `tab`.
`--node or --n <address(es)>`	Issues this command to one or more nodes in the cluster.
`--cluster`	Issues this command to all nodes in the cluster.
`--sort <property>`	Sorts the output, using the specified Property name to sort on.
`--no-sort` or `-ns`	Do not sort the output.
`--order-with <function>`	Sorts the output, extracting key with this function. Example: {$1 method}
`--where` or `-w <function>`	Filters by a function, if the function is true
`--where-not` or `-wn <function>`	Filters by a function, if the function is false.
`--used`	Shows only objects that are in use.
`--not-used` or `-nu`	Shows only objects that are not in use.

Examples

This lists all the initiator groups in the system:

```
> inigroups
W2K12
```

inigroup:update

Updates (re-keys) an initiator group, by assigning it to a different parent group or giving it a new ID.

Syntax

`inigroup:update [options] id`

Options

`–-parent_uuid or –p <string>`	New parent group UUID
`--rename or –-id` or `-i <string>`	Renames this initiator group to the specified string.

Arguments

id	The ID or UUID of the initiator group to update

Examples

This updates (renames) the `oldgroup` initiator group to `newgroup`:

```
> inigroup:update --id newgroup
```

Initiator commands

The Initiator commands enable you to create, delete, list, get information for, and update remote SCSI initiators.

initiator:create

Manually creates an initiator, directly specifying a unique identifier for port, as well as an optional name. If performed in an HA cluster, the initiator definition is created across each machine in the cluster. This command accepts WWPNs (such as `f8:e9:d2:c3:b4:a5:f6:e7`), IQNs (such as iqn.1992-01.com.example:storage.disk2.sys1.xyz) or GUID identifiers (such as 0002:c903:004c:7535) for the initiator.

Syntax

`initiator:create [options] *UUID id*`

Options

`--assign or –a <string>`	Assign the newly created initiator to a group.
`–-if_not_exists` or `-ne`	If an object with the given identifier already exists, skip creation.

Arguments

UUID	WWPN, IQN, or GID for the initiator. For example:
	`WWPN:f8:e9:d2:c3:b4:a5:f6:e7`
	`IQN: iqn.1992-01.com.exampl:dsk.sys1.xy[3]`
	`GID: 0002:c903:004c:7535`

id	Human-readable identifier for the initiator

Examples

This creates the initiator `init22` at WWPN `21:00:00:24:ff:67:5f:60` …

```
> initiator:create --assign init22 21:00:00:24:ff:67:5f:60
```

initiator:delete

Deletes an initiator.

Syntax

`initiator:delete [options] *id(s)*`

Options

`–-node or --n <address(es)>`	Issues this command to one or more nodes in the cluster.
`--cluster`	Issues this command to all nodes in the cluster.

Arguments

id	The ID, UUID, or WWPN of the initiator to delete. This argument may be used multiple times.

Deleting an Initiator

To delete an initiator from an existing group, run the following commands:

```
inigroup:create trashcan
initiator:update --assign trashcan initiator
inigroup:delete trashcan
```

This process a) creates a temporary group (`trashcan` in this case) to hold the unwanted initiator; b) assigns that initiator to the temporary group; and c) deletes the temporary group.

initiator:get

Gets information about an initiator, including UUID, protocol, discovery status, and initiator group ID.

Syntax

`initiator:get [options] id`

Options

`--node` or `-n <address(es)>`	Issues this command to one or more nodes in the cluster.
`--cluster`	Issues this command to all nodes in the cluster.

Arguments

id	The ID, UUID, or WWPN to get information for

Examples

This gets information about the `win_1` initiator (from `initiator:list`):

```
> initiator:get win_1
             id  win_1
           UUID  iqn.1991-05.com.microsoft:win-pq45oau7hi9#192.168.20.48
       Protocol  iSCSI
      Discovered false
Initiator Group  9482affc-fd81-11e3-892b-0015178fbc10
```

initiators or initiator:list

Lists available initiators.

Syntax

`initiators [options]`

Options

`--uuid` or `-u`	Shows UUIDs instead of readable IDs.
`--property` or `-p <list>`	One or more initiator group properties to display.
`--objects` or `-o`	Returns objects.
`--separator or –s <type>`	Separator between property values when printing multiple properties; defaults to `tab`. Valid values are `space`, `comma`, and `tab`.
`--node` or `-n <address(es)>`	Issues this command to one or more nodes in the cluster.
`--cluster`	Issues this command to all nodes in the cluster.
`--sort <property>`	Sorts the output, using the specified Property name to sort on.
`--no-sort` or `-ns`	Do not sort the output.
`--order-with <function>`	Sorts the output, extracting key with this function. Example: `{$1 method}`
`--where` or `-w <function>`	Filters by a function, if the function is true.
`--where-not` or `-wn <function> .`	Filters by a function, if the function is false
`--used`	Shows only objects that are in use.
`--not-used` or `-nu`	Shows only objects that are not in use.

Examples

This lists the initiators:

```
> initiators
21:00:00:0e:1e:12:83:60
21:00:00:0e:1e:12:83:61
```

initiator:update

Updates an existing initiator, by renaming it or assigning it to a group. See also initiator:delete on page 62.

Syntax

`initiator:update [options] *initiator*`

Options

`--rename` or `-id or -i <string>`	Renames the initiator to the specified string.
`--assign or –a <string>`	Assign the initiator to a group.

Arguments

`initiator`	ID or UUID of the initiator to update

Examples

This assigns the initiator to a group named `init22`.

```
> initiator:update --assign init22
```

KDUMP commands

The `kdump` commands get information about kernel dumps.

> **NOTE:** To clear kdump messages, use the `system:messages –clear` command.

kdumps or kdump:list

Lists the available kdumps.

Syntax

`kdump:list [options]`

Options

See `help --all` for details on common options.

kdump:get

Retrieves and stores a kdump (kernel dump) at a designated location, which is specified with the various output options. Use the `kdump:list` command to see the available kernel dumps.

Syntax

`kdump:get [options] dumpName`

Options

`--verbose` or `–v`	Shows additional information while processing.

Arguments

dumpName	Name of the kdump to get information for

Examples

This gets details about the kdump named `kdump1`:

> kdump:get kdump1

kdump:delete

Deletes a kdump.

Syntax

`kdump:delete [options] dumpName`

Options

See `help --all` for details on common options.

Arguments

dumpName	Name of the kdump to delete.

Examples

This deletes `kdump1`:

```
> kdump:delete kdump1
```

Log command

The Log command enables you to gather log files and service report information across the Dell Acceleration Appliance for Databases configuration.

log:servicereport

Gathers files and other information into a report package for the `fio-bugreport` utility. The report package can then be sent to customer support. (The email address for customer support can be obtained from dell.com/support/home.) You can use the `--output` options to specify the destination for the report.

Syntax

`log:servicereport [options]` *`show`*

Options

`--include` or `-I <part(s)>`	Part(s) of the service report to include: `clusters, cnas, config, crm_resource_list, fio_agent_log, fio_msrv_log, fio_saft_log, fio_scst_conf, fio_status, inigroups, initiators, ion_default, ion_out, ionservice, lib_fio, luns, lvdisplay, lvs, messages, nodes, pools, ports, processes, pvdisplay, pvs, raids, scst_groups, scst_sessions, scst_tmp, suse_studio_custom, targets, updatectrl_log, vgdisplay, vgs, volumes`
`--exclude` or `-X <part(s)>`	Report part to exclude (same items as listed for the `--include` option)
`--all` or `-a`	Includes all report parts.
`--detailed`	Collect additional detailed information, if available.
`--limit` or `-l <size>`	Limit the gathered log file size to the specified amount, in KiB.
`--browse`	Open a view of the `bugreport` directory, if in a GUI environment.

Arguments

`show <part>`	Part to include in the report. This option can be included multiple times. See the `--include` option for details.

Examples

`servicereport`

Creates a standard service report in the user's home directory

`servicereport –detailed`

Creates a detailed service report in the user's home directory

`servicereport lvdisplay pvdisplay vgdisplay`

Reports LVM information only in the user's home directory

`servicereport --output-usb`

Creates a standard service report and place it on the USB drive (if available)

`servicereport --output-share domain/user@host/share`

Sends the report to a CIFS share

`servicereport --output-scp user@host`

Sends the report through scp to user's home directory on the host

LUN commands

The LUN commands enable you to create, delete, list, get information for, and update LUNs.

A LUN represents the presentation of a block device (Fusion ioMemory, RAID, or volume) by a target, which can be queried by remote initiators. Each LUN has a unique serial number that initiators use for multipath I/O discovery. An initiator group should be given if access control is required; only those initiators in the given group are allowed access to the block device presented by the target.

NOTE: A host connecting to DAAD may not auto-discover the LUNs that you created. To rediscover LUNs perform the following OS specific tasks:

Windows	Click **Rescan volumes**
RHEL or Oracle Linux Red Hat Compatible Kernel (OL-RHCK)	Run **`rescan-scsi-bus.sh`**
Oracle Linux Unbreakable Enterprise Kernel (OL-UEK)	Reboot the OL-UEK host
SLES	Run **`echo - - - > /sys/class/scsi_host/host#/scan <#>`** where "#" indicates the host number based on the current configuration

NOTE: In some corner cases where the configuration for the DAAD has been lost and volumes have been recreated, the initiator may not automatically discover the volumes. In this situation, reboot the initiator.

lun:create

Creates a LUN.

Syntax

`lun:create [options] volume initiatorGroup target(s)`

Options

`--repair`	Indicates repair, after servicing
`--blocksize or -b <integer>`	Block size for the LUN. The default is 512B.

NOTE: Using a random write access pattern with 512B blocks may significantly impact available system RAM.

Arguments

volume	Volume to export as a LUN
initiatorGroup	Name of the initiator group to assign the LUN to
target	Target for the created LUNs. This argument may be used multiple times.

Examples

This creates LUNs exported to `initiator_group` from all known targets, for `vol1`:

```
> lun:create -a vol1 initiator_group
```

This creates a LUN by exporting `myVolume` to the target port WWPNs (`21:00:00:24:ff:67:5f:60` and `21:00:00:24:ff:67:5f:61`):

```
> lun:create myVolume newgroup 21:00:00:24:ff:67:5f:60 21:00:00:24:ff:67:5f:61
```

This creates LUNs exported to `initiator_group` from targets that are NUMA-optimized for `vol1`:

```
> lun:create -o vol1 initiator_group
```

lun:delete

Deletes a LUN.

Syntax

`lun:delete [options]` *id(s)*

Options

`--volume or –v <names>`	Delete all LUNs associated with a volume.
`--dry-run`	List deletions to be performed, but do not execute them.
`--group or –g <name(s)>`	Delete all LUNs that are members of the specified group(s).
`–-node or --n <address(es)>`	Issues this command to one or more nodes in the cluster.
`--cluster`	Issues this command to all nodes in the cluster.

Arguments

id	ID, UUID, or WWPN of the LUN to delete. This argument may be used multiple times.

Examples

This deletes `testLUN`:

```
> lun:delete testLUN
```

lun:get

Gets details about a LUN.

Syntax

`lun:get [options] id`

Options

`--node or -n <address(es)>`	Issues this command to one or more nodes in the cluster.
`--cluster`	Issues this command to all nodes in the cluster.

Arguments

id	The ID, UUID, or WWPN of the LUN to get information for

Examples

This gets information about a LUN (from `lun:list`):

```
> lun:get
0827a41e-dac6-11e3-9679-001b213aa590-LUN0
0827a41e-dac6-11e3-9679-001b213aa590-LUN1
0827a41e-dac6-11e3-9679-001b213aa590-LUN2
...
```

luns or lun:list

Lists the LUN IDs. To view LUNs arranged by volumes, see Viewing LUNs by volume on page 74.

Syntax

`luns [options]`

Options

`--volume or -v <string>`	List LUNS on the current volume.
`--target or -t <string>`	List LUNS on a specified target.
`--uuid or -u`	Shows UUIDs instead of readable IDs.

`--property or –p <list>`	One or more properties to display: • `id` — Generated Logical Unit number, in string format • `number` — Generated Logical Unit number, integer • `uuid` — Machine-readable ID of the LUN • `device_uuid` — Machine-readable ID of the device (such as `t0LoO3-Vkle-WKpe-KLwd-hDv5-yQhr-fmxypA`) • `target_uuid` — Machine-readable ID of the target (such as `iqn.2007-02.com.fusionio:sn.2m232406fw:eth5`)
`--objects or –o`	Returns objects.
`--separator or –s <type>`	Separator between property values when printing multiple properties; defaults to `tab`. Valid values are `space`, `comma`, and `tab`.
`--sort <property>`	Sorts the output, using the specified Property name to sort on.
`--no-sort` or `-ns`	Do not sort the output.
`--order-with <function>`	Sorts the output, extracting key with this function. Example: `{$1 method}`
`--where` or `-w <function>`	Filters by a function, if the function is true.
`--where-not` or `-wn <function>`	Filters by a function, if the function is false.
`--used`	Shows only objects that are in use.
`--not-used` or `-nu`	Shows only objects that are not in use.
`–-node` or `-n <address(es)>`	Issues this command to one or more nodes in the cluster.
`--cluster`	Issues this command to all nodes in the cluster.

Examples

This lists all the available LUNs:

```
> luns
cfff0cee-fd89-11e3-8e78-009c023ca2a8-LUN0
cfff0cee-fd89-11e3-8e78-009c023ca2a8-LUN1
cfff0cee-fd89-11e3-8e78-009c023ca2a8-LUN10
cfff0cee-fd89-11e3-8e78-009c023ca2a8-LUN11
cfff0cee-fd89-11e3-8e78-009c023ca2a8-LUN12
...
```

Viewing LUNs by volume

To extract a subset of LUNs for one or more volumes:

1. List the LUNs:

   ```
   luns -dt --volume vol1 --volume vol2
   ```

2. Get the connected initiators:

   ```
   each (luns -o --volume vol1) { $1 connected }
   ```

3. Extract the desired details and print out a message:

   ```
   admin1> each (luns -o --volume vol1) { echo Lun ($1 id) connections ($1
   connected) } Lun 20eb1d58-ad3d-11e2-a54c-90b11c06e8d0-LUN0 connections
   [21:00:00:24:ff:66:a1:e8]
   Lun 23887b50-ad3d-11e2-a54c-90b11c06e8d0-LUN0 connections
   [21:00:00:24:ff:66:a1:e8]
   ```

4. Find these connected initiators, then collect details on them. Note the nested each commands:

   ```
   Admin1> each (luns -o --volume vol1) { each -dt ($1 connected) {
   initiator:get $1 } }
   Id |UUID |Protocol|Discovered? |Group UUID
   ------------------------------------------------------------------
   21:00:00:24:ff:66:a1:e8 |21:00:00:24:ff:66:a1:e8 |FC |false |ea65a7f2-aa4a-
   11e2-bb4f-90b11c06e928
   Id |UUID |Protocol|Discovered? |Group UUID
   ------------------------------------------------------------------
   21:00:00:24:ff:66:a1:e8 |21:00:00:24:ff:66:a1:e8 |FC |false |ea65a7f2-aa4a-
   11e2-bb4f-90b11c06e928
   ```

Manage command

The Manage command enables third party application integration.

manage:ganglia

Manage the Ganglia monitoring daemon on the Dell Acceleration Appliance for Databases.

Syntax

```
manage:ganglia [options] <verb>
```

Options

`--host`	Ganglia Server IP Address (required for enable)
`--port`	Ganglia Port Number (required for enable)

Arguments

`disable`	Disables the Ganglia integration
`enable`	Enables the Ganglia integration
`start`	Starts the Ganglia agent
`status`	Shows the status of the Ganglia agent
`stop`	Stops the Ganglia agent

Examples

To enable the Ganglia integration with a server located at 192.168.1.42 which is using port 8660:

```
manage:ganglia --host 192.168.1.42 --port 8660 enable
```

To view the status of the Ganglia agent:

```
manage:ganglia status
```

manage:oem

Controls integration with the Oracle Enterprise Manager product through a custom plug-in.

Syntax

```
manage:oem [options] verb
```

Options

`--oms-host <string>`	OMS Host (required for ENABLE)
`--oms-port <integer>`	OMS Port (required for ENABLE)
`--agent-password <string>`	Agent registration password (required for ENABLE and SECURE).

Arguments

verb One of the following actions to take:

```
DISABLE: Disable the OEM integration.
ENABLE: Enable the OEM integration.
SECURE: Secure the OEM agent with a password.
START: Start the OEM agent.
STATUS: Show the status of the OEM agent.
STOP: Stop the OEM agent.
UPLOAD: Manually trigger a metric upload.
```

Network commands

The Network commands enable you to see details for network addresses, including Ethernet ports, IP addresses, and subnets.

network:addrs

Shows network address details for components of the Dell Acceleration Appliance for Databases system.

Syntax

```
network:addrs [options]
```

Options

See `help --all` for details on common options.

Examples

This shows network address details for Ethernet ports:

```
> network:addrs
eth3 inet 192.168.20.49/24
eth0 inet 10.60.34.49/24
eth5 inet 192.168.30.49/24
eth6 inet 192.168.1.2/24
eth7 inet 192.168.2.2/24
```

network:ping

Specifies a target host on the network to ping.

Syntax

`network:ping [options] *target*`

Options

`--count` or `-c`	Number of pings to execute (defaults to 3)

Arguments

target	IP address of the host to ping

Examples

This shows network address details:

```
> network:ping 192.168.20.49
PING 192.168.20.49 (192.168.20.49) 56(84) bytes of data.
64 bytes from 192.168.20.49: icmp_seq=1 ttl=64 time=0.031 ms
64 bytes from 192.168.20.49: icmp_seq=2 ttl=64 time=0.010 ms
64 bytes from 192.168.20.49: icmp_seq=3 ttl=64 time=0.017 ms

--- 192.168.20.49 ping statistics ---
3 packets transmitted, 3 received, 0% packet loss, time 1998ms
rtt min/avg/max/mdev = 0.010/0.019/0.031/0.009 ms
```

Node commands

The Node commands enable you to list or get information for network nodes.

node:get

Retrieves detailed information on a node. If no node is specified, information about the current local node is returned.

Syntax

`node:get [options] id`

Options

`--node` or `-n <address(es)>`	Issues this command to one or more nodes in the cluster.
`--cluster`	See `--urlList`.

Arguments

id	The ID or UUID of the node to get information for

Examples

This gets information on `ionr8i48`:

```
> node:get ionr8i48
                 Id  ionr8i48
               UUID  16885952
             Status  Member
             Errors
           Warnings
              Local  false
              Slots
                 IP  192.168.1.1
                     192.168.2.1
              Node#  1
Chassis Monitor URL
            Gateway
                DNS
                NTP
                 TZ
              State  Normal
         USB Status  UsbNotlocal(5)
             Uptime
```

nodes or node:list

Lists available nodes.

Syntax

```
nodes [options]
```

Options

`--uuid or -u`	Shows UUIDs instead of readable IDs.

`--property or -p <list>`	• `id` — Node ID
	• `uuid` — Node UUID
	• `number` — Number of the node; a small integer, starting from 0
	• `islocal` — TRUE if this node is the local appliance; FALSE otherwise
	• `num_slots` — Number of PCIe slots in the local node
	• `chassis_monitor_url` — URL to access the chassis monitor
	• status — One of the following values
	`0 = STATUS_MEMBER` — Node is a member of this cluster.
	`1 = STATUS_NOT_A_MEMBER` — Node is a not a member of this cluster.
	`2 = STATUS_STANDALONE` — Node is a standalone server.
	• `ipaddr` — Cluster IP addresses. For example:
	`[192.168.1.1 192.168.2.1]`
	`[192.168.1.2 192.168.2.2]`
	• `gateway` — IP address of the gateway
	• dns_server — IP address of the DNS server
	• `timezone` — Time zone (three characters) of the node
	• `ntp_server` — DNS name or IP address of the NTP server
	• `maintenance_state` — One of the following values:
	0 = `STATE_NORMAL` — Node is in a normal state.
	1 = `STATE_MAINTENANCE` — Node is in a maintenance mode.
	2 = `STATE_HALTING` — Node has halted.
	3 = `STATE_RESTARTING`

`--objects or –o`	Returns objects.
`–-separator or –s <type>`	Separator between property values when printing multiple properties; defaults to `tab`. Valid values are `space`, `comma`, and `tab`.
`–-node or --n <address(es)>`	Issues this command to one or more nodes in the cluster.
`--cluster`	Issues this command to all nodes in the cluster.
`--sort <property>`	Sorts the output, using the specified Property name to sort on.
`--no-sort` or `-ns`	Do not sort the output.
`--order-with <function>`	Sorts the output, extracting key with this function. Example: `{$1 method}`
`--where` or `-w <function>`	Filters by a function, if the function is true.
`--where-not` or `-wn <function>`	Filters by a function, if the function is false.
`--used`	Shows only objects that are in use.
`--not-used` or `-nu`	Shows only objects that are not in use.

Examples

This lists the available nodes on the cluster. It also determines whether the node is the local appliance, and it returns the cluster interconnect IP address.

```
> nodes –-property islocal --property ipaddr
```

node:local

Returns the ID or UUID of the local node in a cluster. In a cluster management scenario, it may not be obvious which node you are connected to, so this command returns the information for you.

Syntax

```
node:local [options]
```

Options

`–-uuid or –u`	Shows the UUID instead of the readable ID.

Examples

This shows the UUID of the local node in the cluster.

```
> node:local –uuid
33663168
```

node:update

Updates any of the following node properties: gateway, DNS server, time zone or code, NTP server, and chassis monitor URL.

Syntax

```
node:update [options]
```

Options

`--gateway` or `-g <addr>`	Sets the gateway address.
`--dns-server` or `-dns <string>`	Sets the domain name server.
`--tz <code>`	Short 2- or 3- letter time zone code, such as EST
`--timezone <zone>`	Sets the time zone.
`--ntp-server` or `-ntp <string>`	Sets the NTP server.
`--chassis-monitor-url <string>`	Sets the chassis monitor URL.
`--control` or `-c <addr>`	Sends one of the following control commands: `<enter | exit | halt | restart>`
`--wait` or `-w`	Wait for the system to respond to the update request (instead of doing it in the background).
`--node or --n <address(es)>`	Issues this command to one or more nodes in the cluster.
`--cluster`	Issues this command to all nodes in the cluster.

Examples

For *myNode* this sets the gateway to 10.10.10.20, sets the time zone to MDT (Mountain Daylight Time), and instructs the server to restart after the node update is complete:

```
node:update --gateway 10.10.10.20 --timezone mdt --control restart myNode
```

Pool commands

The Pool commands enable you to create, delete, list, and get information for storage pools.

> **NOTE:** The capacity reported for storage pools and volumes is closely approximated. So if the CLI reports 1500.00 GB available, the actual amount may be slightly less than that, and therefore a file of that exact capacity might not fit.

pool:create

Creates a storage pool.

Syntax

`pool:create [options] id device(s)`

Options

`--repair`	Repair, after servicing.
`--pesize or –p <integer>`	PE (Physical Extent) size, in KiB
`--if-not-exists or –ne`	If an object with the given identifier already exists, skip creation.
`--cluster`	Issues this command to all nodes in the cluster.

Arguments

id	Identifier for the new pool
device	Device to include in the pool. This argument may be used multiple times.

Examples

This creates a new storage pool called `mainpool`, from the device IDs specified, with a physical extent size (`pesize`) of 512KB:

```
> pool:create --pesize 512 mainpool fioa fiob fioc fiod fioe fiof fiog fioh
```

pool:delete

Deletes a pool.

> **CAUTION!** This destroys any volumes and user data that are currently in the storage pool.

Syntax

`pool:delete id(s)`

Options

`--node` or `-n <address(es)>`	Issues this command to one or more nodes in the cluster.
`--cluster`	Issues this command to all nodes in the cluster.

Arguments

id	ID, UUID, or WWPN of the pool to delete. This argument may be used multiple times.

Examples

This deletes the `test1` storage pool:

```
> pool:delete test1
```

pool:get

Gets information about a pool, including pool capacity, errors and warnings (if any), devices, free/extents, free/usable space, extent size, maximum usable capacity, free usable capacity, profile ID and name, and volume names.

Syntax

`pool:get [options]` *id*

Options

`--node` or `-n <address(es)>`	Issues this command to one or more nodes in the cluster.
`--cluster`	Issues this command to all nodes in the cluster.

Arguments

id	The ID, UUID, or WWPN of the pool to get information for

Examples

This gets storage pool information for the `max` pool (from `pool:list`):

```
> pool:get --display-table max
                  Id  max
            Capacity  2,410.00 GB
              Errors
            Warnings
             Devices  [/dev/md3]
             Extents  73,547,326
                Free  51,573,966
         Extent Size  32 KiB
          Profile Id  RAID0
        Profile Name  Maximum Performance
 Max Usable Capacity  2,409.93 GB
```

```
Free Usable Capacity  1,689.92 GB
                UUID  Jinp8p-4lFS-qOMI-QcBc-tHpt-9c4N-yHGi2N
             Volumes  ion48_max_1
                      ion48_max_2
                      ion48_max_3
                      ...
```

pools or pool:list

Lists available pools.

Syntax

`pools [options]`

Options

`--uuid` or `-u`	Shows UUIDs instead of readable IDs.
`--property` or `-p <list>`	One or more initiator group properties to display.
`--objects` or `-o`	Returns objects.
`--separator or –s <type>`	Separator between property values when printing multiple properties; defaults to `tab`. Valid values are `space`, `comma`, and `tab`.
`--node` or `-n <address(es)>`	Issues this command to one or more nodes in the cluster.
`--cluster`	Issues this command to all nodes in the cluster.
`--sort <property>`	Sorts the output, using the specified Property name to sort on.
`--no-sort` or `-ns`	Do not sort the output.
`--order-with <function>`	Sorts the output, extracting key with this function. Example: `{$1 method}`
`--where` or `-w <function>`	Filters by a function, if the function is true.
`--where-not` or `-wn <function>`	Filters by a function, if the function is false.
`--used`	Shows only objects that are in use.
`--not-used` or `-nu`	Shows only objects that are not in use.

Examples

This lists all available storage pools in the system:

```
> pools
max
pool_md0
```

pool:update

Updates a pool.

Syntax

`pool:update` *`id(s)`*

Options

`--rename` or `-id or –i <newID>`	Renames the pool with the specified UUID or WWPN.
`–-node` or `-n <address(es)>`	Issues this command to one or more nodes in the cluster.
`--cluster`	Issues this command to all nodes in the cluster.

Arguments

`id`	Existing ID, UUID, or WWPN of the pool to be updated. This argument may be used multiple times.

Examples

This updates the storage pool ID from `oldtest6` to `newtest7`.

```
> pool:update newtest7 oldtest6
```

Port commands

The Port commands enable you to get and set information for the ports on a CNA.

port:get

Gets information on a port.

Syntax

`port:get [options] id`

Options

`--node` or `-n <address(es)>`	Issues this command to one or more nodes in the cluster.
`--cluster`	Issues this command to all nodes in the cluster.

Arguments

id	The ID, UUID, or WWPN of the port to get information for

Examples

This gets information for the port (from `port:list`):

```
> port:get eth0
```

ports or port:list

Lists available ports.

Syntax

`ports [options]`

Options

`--uuid` or `-u`	Shows UUIDs instead of readable IDs.
`--property` or `-p <list>`	One or more properties to display: • id — Port ID • uuid — Node UUID • number — Number of the port; a small integer, starting from 0 • status — One of the following values: 0 = STATUS_DISCONNECTED — Port is disconnected. 1 = STATUS_CONNECTED — Port is connected. • address — MAC address • MTU — Maximum Transmission Unit for the port • ip_address — IP address • subnet_mask — IP subnet mask for the port • bytes_transmitted — Number of bytes transmitted on this port • bytes_received — Number of bytes received on this port • target_uuid — UUID of the target host • cna_uuid — UUID of the CNA
`--objects` or `-o`	Returns objects.
`--separator or –s <type>`	Separator between property values when printing multiple properties; defaults to `tab`. Valid values are `space`, `comma`, and `tab`.
`--node` or `-n <address(es)>`	Issues this command to one or more nodes in the cluster.
`--cluster`	Issues this command to all nodes in the cluster.
`--sort <property>`	Sorts the output, using the specified Property name to sort on.
`--no-sort` or `-ns`	Do not sort the output.
`--order-with <function>`	Sorts the output, extracting key with this function. Example: `{$1 method}`
`--where` or `-w <function>`	Filters by a function, if the function is true.
`--where-not` or `-wn <function>`	Filters by a function, if the function is false
`--used`	Shows only objects that are in use.
`--not-used` or `-nu`	Shows only objects that are not in use.

Examples

This displays the names of the available ports:

```
> ports
20:01:00:0e:1e:c2:09:50
20:01:00:0e:1e:c2:09:51
20:01:00:0e:1e:c2:09:c0
20:01:00:0e:1e:c2:09:c1
eth0
eth1
eth2
eth3
eth4
eth5
```

port:update

Updates a port.

Syntax

`port:update [options] id`

Options

`--mode <portMode>`	Mode for the port: `management` or `iscsi` or `cluster`. this can transition only between `ISCSI` and `MANAGEMENT`. **NOTE:** Ports cannot be changed to or from cluster mode.
`--ip-address` or `-ip <address>`	IP address to set for the port
`--subnet-mask` or `-s <value>`	Subnet mask to set for the port
`–-node` or `-n <address(es)>`	Issues this command to one or more nodes in the cluster.
`--cluster`	Issues this command to all nodes in the cluster.

Arguments

id	The ID or UUID of the port to update

Examples

This sets the port to management mode, with an IP address of 10.11.12.13:

```
> port:update –-mode management –-ip-address 10.11.12.13
```

Profile commands

The `profile` commands enable you to create and examine profile configurations for storage pools.

profile:create

Creates a storage pool with desired characteristics. You can run `profiles –dt` to see the available profile types.

> **NOTE:** A storage profile created in the CLI is not reflected or available in the GUI.

Syntax

`profile:create [options]` *`profile (name)`*

Options

`--slot` or `-s <number(s)>`	Allow the use of the specified slot; by default all are allowed. Use slot or node/slot.
`--slot-list <number(s)>`	Use the specified list of slots `[slot# slot#]` syntax. Use slot or node/slot.
`--slot-count or --drive-count` or `-d <number>`	Number of drives to use with the profile; the default is all
`--dry-run`	List the actions to perform, but do not perform them.
`–-node` or `-n <address(es)>`	Issues this command to one or more nodes in the cluster.
`--cluster`	Issues this command to all nodes in the cluster.

Arguments

`profile`	Profile type to use: `maximum_performance`, `reliable_performance`, `reliable_capacity`, or `direct`

Examples

- `profile:create maximum_performance`

  This creates a storage pool that emphasizes maximum performance, across all available devices.

- `profile:create reliable_performance`

  This creates a storage pool that ensures reliability, across all available devices.

- `profile:create reliable_capacity`

  This creates a storage pool that ensures reliability but emphasizes capacity over performance.

- `profile:create -d 2 direct`

  This creates a direct (JBOD) using two of the available devices.

- `profile:create -s 1 -s 3 maximum_performance`
  This creates a performance pool using the devices in slots 1 and 3.
- `profile:create maximum_performance my_pool`
  This creates a performance pool and names it `my_pool`.

profile:delete

Deletes a storage profile, also removing its owned resources.

Syntax

`profile:delete [options] *profile*`

Options

`--force` or `-f`	Forces deletion of the profile, even if volumes exist.

Arguments

`profile <name>`	Name of an existing storage profile (or pool) to delete

Examples

This deletes the `maximum_performance` pool:

```
> profile:delete maximum_performance
```

profiles or profile:list

Lists available profiles for storage pools.

Syntax

`profiles [options]`

Options

`–-uuid` or `-u`	Shows UUIDs instead of readable IDs.
`–-property` or `-p <list>`	One or more properties to display
`--objects` or `-o`	Returns objects.
`–-separator or –s <type>`	Separator between property values when printing multiple properties; defaults to `tab`. Valid values are `space`, `comma`, and `tab`.
`–-node` or `-n <address(es)>`	Issues this command to one or more nodes in the cluster.
`--cluster`	Issues this command to all nodes in the cluster.
`--sort <property>`	Sorts the output, using the specified Property name to sort on.
`--no-sort` or `-ns`	Do not sort the output.

`--order-with <function>`	Sorts the output, extracting key with this function. Example: `{$1 method}`
`--where` or `-w <function>`	Filters by a function, if the function is true.
`--where-not` or `-wn <function>`	Filters by a function, if the function is false.
`--used`	Shows only objects that are in use.
`--not-used` or `-nu`	Shows only objects that are not in use.

Examples

This lists the profiles:

```
> profiles
JBOD
RAID0
RAID10
RAID5
```

PSU commands

The PSU commands get information about available power supply units.

psu or psu:list

Lists the available power supply units.

Syntax

```
psu:list [options]
```

Options

`--uuid` or `-u`	Shows UUIDs instead of readable IDs.
`--node` or `-n <address(es)>`	Issues this command to one or more nodes in the cluster.
`--property` or `-p <list>`	Properties to display (can be used multiple times)
`--objects` or `-o`	Returns objects.
`--separator` or `-s <type>`	Separator between property values when printing multiple properties; defaults to `tab`. Valid values are `space`, `comma`, and `tab`.
`--cluster`	Issues this command to all instances in the cluster.
`--sort <property>`	Sorts the output, using the specified Property name to sort on.
`--no-sort` or `-ns`	Do not sort the output.
`--order-with <function>`	Sorts the output, extracting key with this function. Example: `{$1 method}`
`--where` or `-w <function>`	Filters by a function, if the function is true.
`--where-not` or `-wn <function>`	Filters by a function, if the function is false
`--used`	Shows only objects that are in use.
`--not-used` or `-nu`	Shows only objects that are not in use.

psu:get

Gets details about a power supply unit.

Syntax

```
psu:get [options] id
```

Options

`--node` or `-n <address(es)>`	Issues this command to one or more nodes in the cluster.
`--cluster`	Issues this command to all instances in the cluster.

Arguments

id	The ID, UUID, or WWPN of the power supply unit to get information for

Examples

This gets details about the power supply unit with the ID `psu1`:

```
> psu:get psu1
```

RAID commands

The RAID commands enable you to create, delete, list, get information about, and update RAID arrays. Multiple block devices are input to create a RAID 0 or a RAID 1.

> **NOTE:** If you need to create a RAID 10 configuration, use the *reliable_performance* argument with the `profile:create` command.

> **NOTE:** You can use `--display-flavor detailed` to show more information about the RAID table.

raid:create

Creates a RAID array with a unique ID.

Syntax

`raid:create [options] raidtype drives`

Options

`--repair`	Indicates repair, after servicing.
`--chunksize or -c <integer>`	Chunk size in KB; the default is 8KB.
`--spare or -s <list>`	Adds one or more spare drives, listed by ioMemory module.
`--cluster`	Issues this command to all nodes in the cluster.

Arguments

raidtype	RAID type: `raid0`, `raid1`, or `raid5`
drive(s)	Drives to create the RAID from

Examples

This creates a RAID 0 array, with a chunk size of 16, from the two drives specified.

```
> raid:create --chunksize 16 xtra raid0 fioa fiob
```

raid:delete

Deletes a RAID array.

Syntax

`raid:delete [options] id(s)`

Options

`--node or -n <address(es)>`	Issues this command to one or more nodes in the cluster.
`--cluster`	Issues this command to all nodes in the cluster.

Arguments

id	The ID, UUID, or WWPN of the RAID to delete. This argument may be used multiple times.

Examples

This deletes the RAID array named `myRAID`:

```
> raid:delete myRAID
```

raid:get

Gets details about a RAID, including capacity, chunk size, RAID device path, errors and warnings, other device paths, spares and faults (if available), rebuild percent, RAID state and status, sync status, and UUID.

Syntax

`raid:get [options]` *id*

Options

`--boot or –b`	Includes only boot devices.
`--rescan or –r`	Forces rescan of boot devices.
`–-node or -n <address(es)>`	Issues this command to one or more nodes in the cluster.
`--cluster`	Issues this command to all nodes in the cluster.

Arguments

id	The ID, UUID, or WWPN to get information for

Examples

This gets information for the RAID array named `md0` (from `raid:list`):

```
> raid:list
md0
md1
> raid:get md0
         Id  md0
       Type  raid0
   Capacity  122,904.02 GB
 Chunk Size  32 KiB
RAID Device  /dev/md0
     Errors
   Warnings
    Devices  /dev/dm-15
```

```
          /dev/dm-10
          . . .
          /dev/dm-1
    Spares  []
    Faults  []
  Rebuild  100%
     State  clean
    Status
      Sync
      UUID  51098333-863f-5ff1-4427-b229a94e9577
```

raids or raid:list

Lists the RAID IDs.

Syntax

`raids [options]`

Options

`--boot or –b`	Includes only boot devices.
`--rescan or –r`	Forces rescan of boot devices.
`–-uuid` or `-u`	Shows UUIDs instead of readable IDs.
`–-property` or `-p <list>`	One or more properties to display: id — RAID ID uuid — RAID UUID capacity_gb — Capacity of the RAID in GB chunksize_kb — RAID chunk size in KB devices — IDs of the ioDrives to RAID together raidtype — One of the following values: 0 = RAID 0 1 = RAID 1 2 = RAID 10 3 = RAID 5 status — Current status of the RAID rebuild_pct — Current progress percentage toward completing the RAID rebuild
`--objects` or `-o`	Returns objects.
`–-separator or –s <type>`	Separator between property values when printing multiple properties; defaults to `tab`. Valid values are `space`, `comma`, and `tab`.

`--node or --n <address(es)>`	Issues this command to one or more nodes in the cluster.
`--cluster`	Issues this command to all nodes in the cluster.
`--sort <property>`	Sorts the output, using the specified Property name to sort on.

Examples

This lists the RAID IDs:

```
> raids
md0
md1
md2
md3
```

raid:update

Updates a RAID device.

Syntax

`raid:update [options] id`

Options

`--boot or –b`	Includes only boot devices.
`--rescan or –r`	Forces rescan of boot devices.
`--fault or –fail or -f <deviceName(s)>`	Marks a device as failed/faulted.
`--add or -a <device name(s)>`	Adds one or more devices to the RAID array.
`--remove <device name(s)>`	Removes one or more devices from the RAID array.
`–-node or -n <address(es)>`	Issues this command to one or more nodes in the cluster.
`--cluster`	Issues this command to all nodes in the cluster.

Arguments

id	ID or UUID of the LUN to update

Examples

This marks the drive `fioa` as faulted, in `testRAID`:

```
> raid:update --fault fioa testRAID
```

Rules commands

The `rules` commands manipulate and get information for rule contexts in the CLI.

rules:compile

Compiles rule contexts.

Syntax

`rules:compile [options]`

Options

`--context` or `-c <string>`	Name of the rule context

rules:delete

Deletes rule contexts.

Syntax

`rules:delete [options] contextName(s)`

Options

See `help --all` for details on all common options.

Arguments

`contextName`	Name of the rule context to delete. This argument can be used multiple times.

rules:facts

Lists or counts the known facts.

Syntax

`rules:facts [options]`

Options

`--count`	Returns the number of facts.
`--context` or `-c <string>`	Name of the rule context

rules:insert

Inserts objects into working memory.

Syntax

`rules:insert [options] object(s)`

Options

`--run` or `-r`	Run rules after inserting objects.
`--context` or `-c`	Name of the rule context

Arguments

`object`	Object to insert into working memory. This argument can be used multiple times.

rules:reset

Resets rules.

Syntax

```
rules:reset [options]
```

Options

`--context` or `-c`	Name of the rule context

rules or rules:rules

Shows information about rule contexts.

Syntax

```
rules:rules [options]
```

Options

`--all` or `-a`	Shows information about all known rule contexts.
`--verbose` or `-v`	Shows more details.
`--context` or `-c <string>`	Name of the rule context

Examples

This lists the rules:

```
> rules
Loaded com.fusionio.fikon.drl
1 rules, 0 queries, 0 types, 0 functions, 2 globals
```

rules:run

Runs rules and returns the number of rules that were fired.

Syntax

```
rules:run [options]
```

Options

`--max or –m <number>`	Maximum number of rules to fire (defaults to all of them)
`--timeout or –s <seconds>`	Timeout for rule execution, in seconds
`--context` or `-c <string>`	Name of the rule context

SAFT commands

The `saft` commands list objects in the system and manage SAFT service access.

saft:list

Lists a selected type of objects.

Syntax

`saft:list [options] type`

Options

`--uuid` or `-u`	Shows UUIDs instead of readable IDs.
`--objects` or `-o`	Returns objects.
`--node` or `-n <address(es)>`	Issues this command to one or more nodes in the cluster.
`--cluster`	Issues this command to all nodes in the cluster.

Arguments

type	Type of object to list: `bus`, `chassis`, `cluster`, `cna`, `cpu`, `drive`, `fan`, `inigroup`, `initiator`, `lun`, `node`, `pool`, `port`, `psu`, `raid`, `target`, `temp`, `volume`

saft:url

Gets or sets the URL used to connect to the SAFT service.

Syntax

`saft:url [options] url`

Options

`--host`	*URL* specifies the only host to connect to.
`--port`	*URL* specifies the only port to connect to.
`--test`	Test the URL before using it.

Arguments

URL	URL (or host or port, depending on the option set) used to connect to SAFT.

Service command

The `service` command gets the state of CLI services. The CLI may start certain services while operating, such as a zeroconf daemon. This command lists the services that are running, or have run at any point, and their current states.

service:services

Lists CLI service states.

Syntax

```
service:services [options]
```

Options

See `help --all` for details on all common options.

Shell commands

See Shell commands for scripting on page 137.

SNMP commands

The SNMP commands get and change SNMP configuration, as well as download available MIB files. For information types, see snmp:update on page 105.

snmp:get

Gets SNMP information.

Syntax

```
snmp:get [options]
```

Options

`--node` or `-n <address(es)>`	Issues this command to one or more nodes in the cluster.
`--cluster`	Issues this command to all instances in the cluster.

Examples

This gets SNMP information:

```
> snmp:get
       Enabled  true
      Location  Server Room
Client Address  127.0.0.1
     Community  public
       Contact  Sysadmin (root@localhost)
Trap Addresses  []
Trap Community
```

snmp:mibs

Downloads a .zip file containing the MIBs defined on the target Dell Acceleration Appliance for Databases server.

Syntax

```
snmp:mibs [options]
```

Options

`--host <servername>`	Dell Acceleration Appliance for Databases server to download from

snmp:update

Changes the SNMP information.

Syntax

```
snmp:update [options]
```

Options

`-client-address <string>`	Address of the client
`--community <string>`	SNMP Community
`--contact <string>`	Contact information
`--location <string>`	Location information
`--trap-address <string>`	Sets the trap destination address.
`--trap-community <string>`	Community for traps
`--enable`	Enable SNMP.
`--disable`	Disable SNMP.

Examples

This updates the current SNMP information to include a contact name of sysadmin(root@localhost) and a location of “server room”:

```
> snmp:update --contact sysadmin(root@localhost) –-location server room
```

Software commands

The Software commands enable you to update, validate and check history for the Dell Acceleration Appliance for Databases software.

For step-by-step instructions on updating and reverting software versions through the CLI, refer to Software update on page 23.

soft:apply

Applies the software update in the drop-box to the Dell Acceleration Appliance for Databases. The drop-box is a temporary location on the DAAD for the pending software update file.

> **NOTE:** After the upgrade finishes, you must log out of the CLI. Although a console message states that no restart is necessary, the system automatically restarts.

Syntax

```
soft:apply [options]
```

Options

`--no-wait`	Do not wait for the result of the apply/restart; return immediately after requesting.
`--node` or `-n <address(es)>`	Issues this command to one or more nodes in the cluster.
`--cluster`	Issues this command to all nodes in the cluster.

Examples

This applies the software update from the drop-box to the Dell Acceleration Appliance for Databases.

```
> soft:apply
```

soft:dropbox

Validates the software update in the drop-box and returns information about it.

Syntax

```
soft:dropbox [options]
```

Options

`--node` or `-n <address(es)>`	Issues this command to one or more nodes in the cluster.
`--cluster`	Issues this command to all nodes in the cluster.

Return Values

The following values are returned:

- `retval` — Integer, with one of the following:

  `0 = SUCCESS` — The update software in the drop-box is valid.

  `801 = UPDATE_BAD_SIGNATURE` — The update software is invalid; it has a bad signature.

  `802 = UPDATE_BAD_METADATA` — The update software is invalid; it has bad metadata.

  `805 = UPDATE_EMPTY_DROPBOX` — No update software was found in the drop-box.
- `release_date` — Release date of the software update
- `version` — Version number of the software update
- `build_number` — Build number of the software update
- `patch_level` — Patch level number of the software update, if any
- `description` — Comments about the software update file
- `hotfix_id` — Identifies the hot fix used with this update, if any
- `reboot_required` — True if a restart is required after installing the update; False otherwise
- `estimated_update_time_mins` — Estimated number of minutes needed for the software update to complete

Examples

This gets information about the software update file currently in the drop-box.

```
> soft:dropbox
```

soft:history

Displays the software update history, compared to the current version. A `history` list is returned for each software update that occurred.

Syntax

```
soft:history [options]
```

Options

`--node` or `-n <address(es)>`	Issues this command to one or more nodes in the cluster.
`--cluster`	Issues this command to all nodes in the cluster.

Return Values

The following values are returned in each history list:

- `update_date` — Date this software update was applied
- `release_date` — Release date of the software update

- `version` — Version number of the software update
- `build_number` — Build number of the software update
- `patch_level` — Patch level number of the software update, if any
- `description` — Comments about the software update file
- `hotfix_id` — Identifies the hot fix used with this update, if any

Examples

This gets the software update history, in list format:

```
> soft:history –display-list
```

soft:revert

Reverts the software update in the drop-box.

Syntax

```
soft:revert [options]
```

Options

`–-no-wait`	Do not wait for the result of the apply/restart; return immediately after requesting it.
`–-node` or `-n <address(es)>`	Issues this command to one or more nodes in the cluster.
`--cluster`	Issues this command to all nodes in the cluster.

(See `help –-all` for details on these options: `--display`, `--nodelist`, `--url`, `--urlList`, `--output-file`, `--parallel`)

Examples

This reverts the software update in the drop-box to whatever the previous software version is:

```
> soft:revert
```

soft:update

Uploads an update package and then applies it to the DAAD system.

Syntax

```
soft:update [options]
```

Options

`–-no-wait`	Do not wait for the result of the apply/restart; return immediately after requesting.
`--quiet` or `-q`	Do not print status messages.
`--file` or `-f <filename>`	File containing the update package

`--web` or `-w <URL>`	Web address (URL) to download the update package from
`--noparts`	Forces upload of update as one file (for older DAAD systems).
`–-node` or `-n <address(es)>`	Issues this command to one or more nodes in the cluster.
`--cluster`	Issues this command to all nodes in the cluster.

Examples

This updates the Dell Acceleration Appliance for Databases software while suppressing status messages:

```
> soft:update –q
```

soft:upload

Uploads a saved DAAD software update file (.IOP, from Dell) to the drop-box location on the DAAD. The drop-box location is `/home/admin`.

Syntax

```
soft:upload [options]
```

Options

`--quiet` or `-q`	Do not print status messages.
`--file` or `-f <file>`	File containing the update package
`--web` or `-w <URL>`	URL to download the update package from
`--noparts`	Forces upload of update as one file (for older DAAD systems).
`–-node` or `-n <address(es)>`	Issues this command to one or more nodes in the cluster.
`--cluster`	Issues this command to all nodes in the cluster.
`--input-scp` or `-is <string>`	Use SCP input. For example, `user[:password]@host:filename`
`--input-share` or `-ic <string>`	Use CIFS (Windows) share. For example, `domain/user[:password]@host/share/filename`

Examples

The following examples use an update file name `ION_Accelerator-update.x86_64-2.5.1-425.iop`.

An example of uploading the update file to the drop-box location using the specified web address:

```
> soft:upload --file ION_Accelerator-update.x86_64-2.5.1-425.iop --web
https:exampledownload.company.com
```

An example of uploading the update file using a specified CIFS (Windows) share:

```
admin@ionr9i52/> soft:update  --input-share
r8.ion.com/administrator:password@10.1.100.10/tmp/ ION_Accelerator-
update.x86_64-2.5.1-425.iop
…..
11:53:24 Read 97.3% of 652,313 KiB. 00:00:00 remaining.
Uploading ION_Accelerator-update.x86_64-2.5.1-425.iop.part1
Uploading ION_Accelerator-update.x86_64-2.5.1-425.iop.part2
…. . .
An example of uploading the update file using a specified scp source:
admin@ionr9i51/> soft:update --input-scp
root:password@10.1.100.10:/tmp/ION_Accelerator-update.x86_64-2.5.1-425.iop
12:02:35 Read 91.9% of 652,313 KiB. 00:00:01 remaining.
Uploading /tmp/ION_Accelerator-update.x86_64-2.5.1-425.iop.part1
Uploading /tmp/ION_Accelerator-update.x86_64-2.5.1-425.iop.part2
Uploading /tmp/ION_Accelerator-update.x86_64-2.5.1-425.iop.part3
Uploading /tmp/ION_Accelerator-update.x86_64-2.5.1-425.iop.part4
…. . .
```

soft:version

Returns the current software version information.

Syntax

```
soft:version [options]
```

Options

--node or -n <address(es)>	Issues this command to one or more nodes in the cluster.
--cluster	Issues this command to all nodes in the cluster.

Examples

This returns the software version:

```
> soft:version
              Version  2.5.1
         Build Number  413
            Hotfix Id
       Update Applied
         Release Date  Thu Apr 16 20:29:53 MDT 2015
          Description  DAAD 2.0
         Update State  INITIAL
Estimated Update Time  0
      Reboot Required  false
               Reason
```

soft:versions

Displays the DAAD software update history.

Syntax

```
soft:versions [options]
```

Options

`--node` or `-n <address(es)>`	Issues this command to one or more nodes in the cluster.
`--cluster`	Issues this command to all nodes in the cluster.

Examples

This returns the software update history in a table format:

```
> soft:versions --display-table

Version|Build|Hotfix|Update Applied           |Released
|Description|State|Reboot|Reason
-------------------------------------------------------------------------------------------------
2.4.0  |59   |      |Mon Apr 28 15:08:31 2014 |Sat Apr 26 22:16:47 MDT 2014|ION Accelerator|     |      |
2.4.0  |92   |      |Thu May 15 08:08:09 2014 |Wed May 14 17:21:00 MDT 2014|ION Accelerator|     |true  |
2.4.0  |112  |      |Thu May 29 16:27:10 2014 |Thu May 29 18:45:34 MDT 2014|ION Accelerator|     |true  |
2.4.0  |114  |      |Fri May 30 13:49:48 2014 |Fri May 30 05:57:33 MDT 2014|ION Accelerator|     |true  |
2.4.0  |119  |      |Tue Jun  3 13:20:24 2014 |Tue Jun 3 20:06:07 MDT 2014 |ION Accelerator|     |true  |
```

SSH commands

The SSH commands enable you to execute commands, copy files, and so on, through SSH.

ssh:close

Closes SSH tunnels.

Syntax

`ssh:close [options] host(s)`

Options

`--all`	Close all tunnels.

Arguments

`host`	Host to close tunnels to. This argument can be used multiple times.

Examples

This closes all active SSH tunnels.

ssh:close --all

ssh:exec

Executes a command over SSH.

Syntax

`ssh:exec [options] command(s)`

Options

`--user` or `-u <string>`	User name
`--password` or `-p <string>`	Password
`--port <integer>`	Port ID (defaults to 22)
`--host <string>`	Host to connect to

Arguments

`command`	Command to execute. This argument can be used multiple times.

ssh:scpput

Copies a file to a remote system.

Syntax

`ssh:scpput [options] localFile destination`

Options

`--user` or `-u <string>`	User name for the remote system login
`--password` or `-p <string>`	Password for the remote system login
`--port <string>`	Port to use for the file copy (defaults to 22)
`--host <string>`	Remote host to connect to

Arguments

`localFile` Local file to copy

`destination` Remote filename or directory. Most (but not all) systems accept a path and file name here. If this argument is left blank, the local filename is used.

Examples

```
> scpput config.xml someone@srv
```

This copies `config.xml` from local directory to the home directory of someone on host *srv*.

```
> scpput /tmp/config.xml someone@srv:/tmp
```

This copies `/tmp/config.xml` to the `/tmp` directory on host *srv*.

```
> scpput config.xml someone@srv:/tmp/my_config.xml
```

This copies `config.xml` to `/tmp/my_config.xml` on host *srv*.

```
> scpput config.xml someone@srv --password pass
```

or

```
> scpput config.xml someone:pass@srv
```

This copies `config.xml` to the home directory of someone on host *srv*, using password pass.

ssh:sftp

Executes SFTP (SSH File Transfer Protocol) commands over SSH. The initial call to this command starts an SFTP session against the host. Successive commands reuse the same session information, until SFTP disconnect is invoked. This allows the user to perform a series of commands, such as changing local and remote directories, followed by `put` and `get`.

Syntax

`ssh:sftp [options] command(s)`

Options

`--quiet` or `-q`	Hide the displayed progress.
`--from <long>`	Byte position to begin transfer (for the `get` command)
`--disconnect`	Disconnect after executing the command.
`--user` or `-u <string>`	User name for the remote system
`--password` or `-p <string>`	Password for the remote system
`--port <string>`	Port to use for the file copy (defaults to 22)
`--host <string>`	Host to connect to

See `help --all` for details on these options: `--display`, `--output-file`.

Arguments

`command` Command to execute. This argument can be used multiple times. Any of the following values can be used:

`CD`: Change the remote directory.

`CHGRP`: Change the file group `<groupid:int> <file> [file]*`

`CHOWN`: Change the file owner `<ownerid:int> <file> [file]*`

`DIR`: List the remote directory contents `<directory>`.

`DISCONNECT`: Disconnect the currently cached session.

`GET`: Get a remote file `<file> [local]`.

`GET_APPEND`: Append to a local `<file> [local]`.

`GET_RESUME`: Resume get `<remote file> [local]`.

`LCD`: Change the local directory `<directory>`.

`LDIR`: List the local directory contents `<directory>`.

`LLS`: List the local directory contents `<directory>`.

`LN`: Links a remote file `<current> <new>`.

`LPWD`: Prints the local directory.

`LS`: List the remote directory contents `<directory>`.

`LSTAT`: Retrieves information about a local file `<file>`.

`MKDIR`: Make a remote directory `<directory> [directory]*`.

`PUT`: Copy to remote `<local> [remote]`.

`PUT_APPEND`: Append to remote `<local> [remote]`.

`PUT_RESUME`: Resume copy to remote `<local> [remote]`.

`PWD`: Prints the remote directory.

`READLINK`: Prints the target of a link `<link>`.

`REALPATH`: Prints the full path of a file `<file>`.

`RENAME`: Renames a remote file `<current> <new>`.

`RM`: Removes a remote file `<file> [file]*`.

`RMDIR`: Removes a remote directory `<directory>+`.

`STAT`: Retrieves information about a remote file `<file>`.

`SYMLINK`: Links a remote file `<current> <new>`.

`VERSION`: Prints the remote SSH version.

`args` Command arguments to use

Examples

This starts an SFTP session against the NodeX host and then issues the `pwd` command (print the remote directory) and the `stat Testfile` command (get information about `Testfile`):

```
ssh:sftp –-NodeX pwd stat Testfile
```

ssh:tunnels

Lists the active SSH tunnels.

Syntax

```
ssh:tunnels [options]
```

Options

See `help –-all` for details on common options.

Examples

This lists the active tunnels in table format:

```
> ssh:tunnels –display-table
```

System commands

system:keys

Sets up interconnect key pairs.

Syntax

`system:keys [options] verb(s) key`

Options

`--force` or `-f`	Forces the creation or removal of specified keys
`--user` or `-u <username>`	Username to use for another node
`--password` or `-p <string>`	Password to use for the remote user
`--map-password` or `-mp <string>`	Password map of format (node=password, node=password)
`--type <KeyPairType>`	Key pair type: `dsa` (Digital Signature Algorithm) or `rsa` (public-key encryption)

Arguments

verb	One of the following values (this argument may be used multiple times): `AUTHORIZE:` Authorizes a new key pair `CHECK:` Verifies the key configuration `CREATE:` Creates a new key pair `PUSH:` Pushes keys to other nodes in the cluster `MOVE:` Removes the current key pair
key	Public key to authorize

system:maintenance

Sets maintenance mode on or off. Maintenance mode disables all storage access, but management tasks are available. Entering maintenance mode is useful when hardware must be replaced in a server, for example.

Syntax

`system:maintenance [options] mode`

Options

`--wait or –w <integer>`	Maximum seconds to wait for the system to respond to the update request. Use `--wait 0` to return immediately.
`––node` or `-n <address(es)>`	Issues this command to one or more nodes in the cluster.
`--cluster`	Issues this command to all nodes in the cluster.

Arguments

mode	on to enter maintenance mode; `off` to exit maintenance mode

Examples

This turns on maintenance mode so hardware changes can be made safely in the Dell Acceleration Appliance for Databases system:

> system:maintenance on

system:messages

Displays Dell Acceleration Appliance for Databases system messages, if any, such as system alerts.

Syntax

```
system:messages [options]
```

Options

`––clear` or `-c`	Clear the system messages after displaying them.

Examples

This captures Dell Acceleration Appliance for Databases system messages and saves them in the `messages1.txt` file:

```
system:messages –output-file messages1.txt
```

system:numa

Shows or sets the NUMA tuning mode. Currently this is not supported on DAAD systems.

system:restart

Restarts a designated node.

Syntax

```
system:restart [options]
```

Options

`--wait or –w <integer>`	Maximum seconds to wait for the system to respond to the update request. Use `--wait 0` to return immediately.
`–-node` or `-n <address(es)>`	Issues this command to one or more nodes in the cluster.
`--cluster`	Issues this command to all nodes in the cluster.

Examples

This restarts node2 in the system:

```
> system:restart –-node node2
```

system:setup

Configures a selected aspect of the DAAD system by invoking the corresponding Setup dialog box. This temporarily exits the CLI and returns when the dialog box is closed. For details on the dialog boxes and their respective fields, refer to the *Dell Acceleration Appliance for Databases GUI Guide*.

> **NOTE:** Before using this command, be sure you have put the affected nodes into maintenance mode (see system:maintenance on page 117).

Syntax

`system:setup` *`setup`*

Arguments

`setup`	One of the following types of setup to perform: `lan` — Invokes the LAN configuration screen `cluster` – Invokes the Cluster Configuration screen `timezone` — Invokes the Timezone screen `password` – Invokes the Password Screen `resetios` — Shuts down `fio-agent` and `fio-msrv`, resets the database, and restarts the services `resetvols` — Removes constraints on a failed node so failover can occur

Examples

This enables you to configure the time zone for the server at the console:

```
system:setup timezone
```

See also Quick-start tasks on page 21.

system:shutdown

Shuts down a designated node.

Syntax

```
system:shutdown
```

Options

`--wait or –w <integer>`	Maximum seconds to wait for the system to respond to the update request. Use `--wait 0` to return immediately.
`––node` or `-n <address(es)>`	Issues this command to one or more nodes in the cluster.
`--cluster`	Issues this command to all nodes in the cluster.

Examples

This shuts down `nodeB` in the system:

```
> system:shutdown ––node nodeB
```

system:status

Shows the configuration and maintenance state.

Syntax

```
system:status
```

Options

See `help ––all` for details on all common options.

Examples

This shows the current configuration and maintenance state for the Dell Acceleration Appliance for Databases system:

```
> system:status
```

Target commands

The Target commands represent a protocol-specific endpoint for SCSI communication. Initiators connect to targets through a discovered network address. See also Port commands on page 87.

target:create

Manually creates a target, specifying a name and optionally specifying a UUID for the target. The UUID field accepts WWPNs (such as `f8:e9:d2:c3:b4:a5:f6:e7`), IQNs (such as `iqn.1992-01.com.example:storage.disk2.sys1.xyz[3]`), and GIDs (such as `0ab0:0ab0:0ab0:0ab0:0ab0:0ab0:0ab0:0ab0`).

Syntax

`target:create [options] id`

Options

`--uuid <string>`	Specify the exact UUID to use for the created target, instead of generating one.
`--node` or `-n <string>`	Route target creation to another node in the cluster.
`--if-not-exists` or `-ne`	If an object with the given identifier already exists, skip creation.

Arguments

id	Human-readable target identifier

Examples

The following examples creates `target2` using either the Fibre Channel or iSCSI protocol:

```
> target:create –protocol FC target2
> target:create –protocol ISCSI target2
```

target:delete

Deletes a target.

Syntax

`target:delete [options] id(s)`

Options

`–-node` or `-n <address(es)>`	Issues this command to one or more nodes in the cluster.
`--cluster`	Issues this command to all nodes in the cluster.

Arguments

id	ID, UUID, or WWPN of target to delete. This argument may be used multiple times.

Examples

This deletes the target named `testTarget`:

```
> target:delete testTarget
```

target:get

Gets details about a target.

Syntax

`target:get [options] id`

Options

`--node` or `-n <address(es)>`	Issues this command to one or more nodes in the cluster.
`--cluster`	Issues this command to all nodes in the cluster.

Arguments

id	The ID, UUID, or WWPN of the target to get information for

Examples

This gets details about the `eth3` target (from `target:list`):

```
> target:get target
 Id  eth3
      UUID  iqn.2007-02.com.fusionio:sn.2m232406fw:eth3
  Protocol  iSCSI
   Enabled  true
     State  Online
  Err/Warn  []
Statistics
```

targets or target:list

Lists the target IDs.

Syntax

`targets [options]`

Options

`--uuid` or `-u`	Shows UUIDs instead of readable IDs.
`--property or -p <list>`	One or more properties to display: • `id` — Target ID • `uuid` — Target UUID • `ipaddr` — Cluster IP address
`--objects` or `-o`	Returns objects.
`--separator or -s <type>`	Separator between property values when printing multiple properties; defaults to `tab`. Valid values are `space`, `comma`, and `tab`.
`--node` or `-n <address(es)>`	Issues this command to one or more nodes in the cluster.
`--cluster`	Issues this command to all nodes in the cluster.
`--sort <property>`	Sorts the output, using the specified Property name to sort on.
`--no-sort` or `-ns`	Do not sort the output.
`--order-with <function>`	Sorts the output, extracting key with this function. Example: `{$1 method}`
`--where` or `-w <function>`	Filters by a function, if the function is true.
`--where-not` or `-wn <function>`	Filters by a function, if the function is false
`--used`	Shows only objects that are in use.
`--not-used` or `-nu`	Shows only objects that are not in use.

Statistics

Using `--property FC`, the following Fibre Channel statistics are displayed:

- tx_frames
- tx_words
- rx_frames
- rx_words
- lip_count
- nos_count
- error_frames
- dumped_frames
- link_failure_count
- loss_of_sync_count
- loss_of_signal_count

- invalid_tx_word_count
- invalid_crc_count

Examples

This lists the available targets:

```
> targets
20:01:00:0e:1e:c2:09:50
20:01:00:0e:1e:c2:09:51
20:01:00:0e:1e:c2:09:c0
20:01:00:0e:1e:c2:09:c1
```

target:update

Updates a target.

Syntax

`target:update [options] id`

Options

`--issue-lip` or `-l`	Issues a LIP to the target.
`--rename or --id or –i <string>`	Sets a new ID.
`--remove-id` or `-r`	Removes the ID assigned to a target, reverting to its natural identifier.
`--all` or `-a`	Issues the command against all targets.
`–-node` or `-n <address(es)>`	Issues this command to one or more nodes in the cluster.
`--cluster`	Issues this command to all nodes in the cluster.

Arguments

id	ID or UUID of the LUN to update

Examples

```
> target:update --all --issue-lip
```

This issues LIP to all targets on the node.

```
> target:update --all --remove-id
```

This removes any aliases applied to the targets on this node.

```
> target:update --cluster --all --issue-lip
```

This issues LIP to all targets on all nodes in the cluster.

```
> target:update 13:32:45:32 mytarget
```

This changes the ID of target 13:32:45:32 to mytarget.

Temp commands

The Temp commands get information about temperature sensors.

temp:get

Gets information on a temperature sensor.

Syntax

`temp:get [options] id`

Options

`--node` or `-n <address(es)>`	Issues this command to one or more nodes in the cluster.
`--cluster`	Issues this command to all nodes in the cluster.

Arguments

id	Human-readable target identifier

temps or temps:list

Lists available temperature sensors.

Syntax

`temps [options]`

Options

`--uuid` or `-u`	Shows UUIDs instead of readable IDs.
`--property or -p <list>`	One or more properties to display • `id` — Target ID • `uuid` — Target UUID • `ipaddr` — Cluster IP address
`--objects` or `-o`	Returns objects.
`--separator or -s <type>`	Separator between property values when printing multiple properties; defaults to `tab`. Valid values are `space`, `comma`, and `tab`.
`--node` or `-n <address(es)>`	Issues this command to one or more nodes in the cluster.
`--cluster`	Issues this command to all nodes in the cluster.
`--sort <property>`	Sorts the output, using the specified Property name to sort on.
`--no-sort` or `-ns`	Do not sort the output.
`--order-with <function>`	Sorts the output, extracting key with this function. Example: `{$1 method}`

`--where` or `-w <function>`	Filters by a function, if the function is true.
`--where-not` or `-wn <function>`	Filters by a function, if the function is false.
`--used`	Shows only objects that are in use.
`--not-used` or `-nu`	Shows only objects that are not in use.

View command

view:graph

Creates a configuration graph of the Dell Acceleration Appliance for Databases system. The possible elements to exclude in the graph are listed in the `--exclude` option.

> **NOTE:** To create configuration graphs, you must have the open-source Graphviz Dot tool available in your command path.

Syntax

`view:graph [options] *configuration*`

Options

`--format or –f <format>`	Output format; defaults to SVG. Other output formats include these: `bmp`, `canon`, `cmap`, `cmapx`, `cmapx_np`, `dot`, `emf`, `emfplus`, `eps`, `fig`, `gd`, `gd2`, `gif`, `gv`, `imap`, `imap_np`, `ismap`, `jpe`, `jpeg`, `jpg`, `metafile`, `pdf`, `plain`, `png`, `ps`, `ps2`, `svg`, `svgz`, `tif`, `tiff`, `tk`, `vml`, `vmlz`, `vrml`, `wbmp`, `xdot`
`--exclude or –e <format>`	Exclude one or more of the following element types from the graph: `boot_drives`, `boot_raids`, `bus`, `chassis`, `cluster`, `cna`, `cpu`, `drive`, `fan`, `inigroup`, `initiator`, `lun`, `node`, `numa`, `pool`, `port`, `profile`, `psu`, `raid`, `snmp`, `software`, `target`, `temp`, `volume`
`--from <DomainType>`	Specify the start of a range of elements. See the list for the `--exclude` option.
`--to <DomainType>`	Specify the end of a range of elements. See the list for the `--exclude` option.
`--browse or –b`	Displays the graph in a browser, if available on your platform.
`--input-file <file>`	Load configuration from a file.
`–-node` or `-n <address(es)>`	Issues this command to one or more nodes in the cluster.
`--cluster`	Issues this command to all nodes in the cluster.

Arguments

`configuration`	Configuration value to be used, either as a String (XML), a Domain, a DomainSet, or a ResultMap

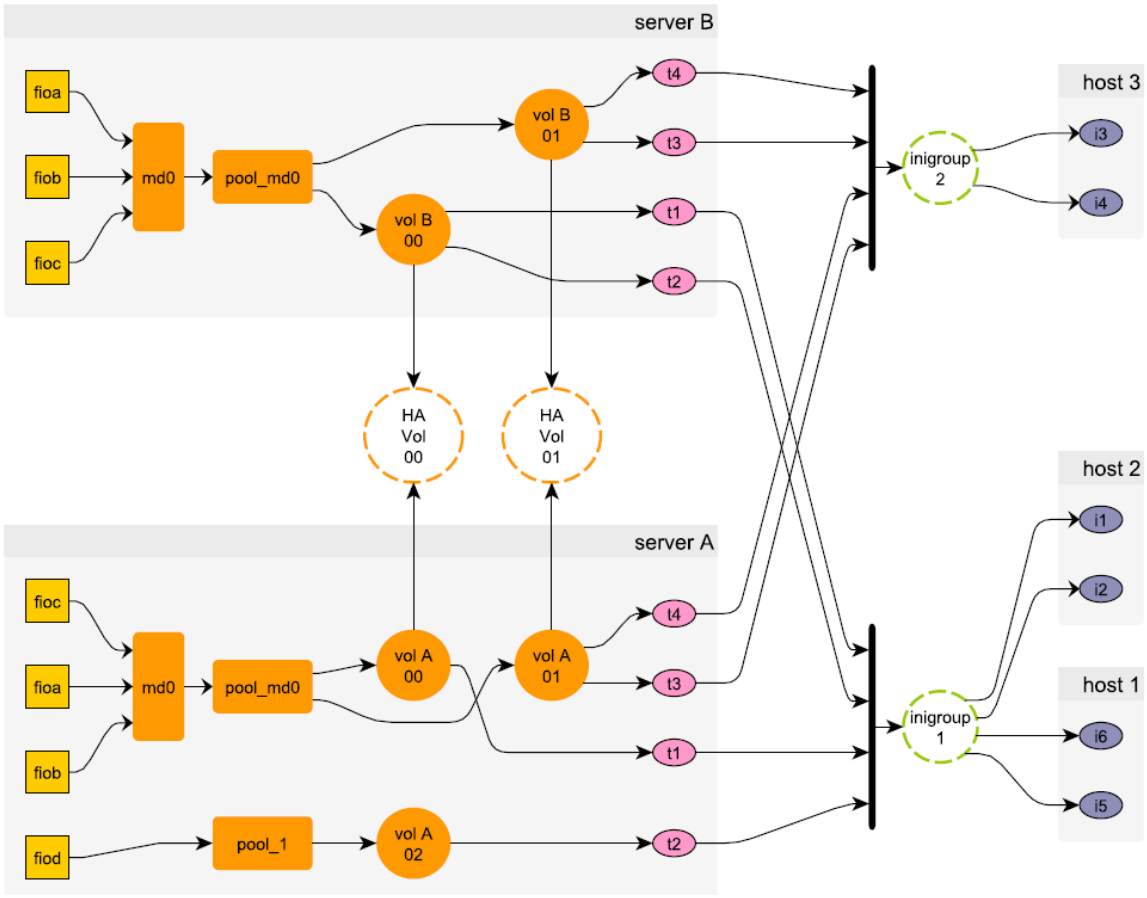
Examples

This traverses all nodes in the cluster to gather configuration elements (in parallel) and outputs them to the `mychart.jpg` file.

```
> view:graph --cluster --parallel --format jpg --output mychart.jpg
```

Figure 4-1 shows a sample graph from a clustered configuration (HA).

Figure 4-1. sample graph from an HA configuration



You can also capture the current configuration into a variable, and reuse it:

```
admin@url> cfg = (config --cluster --parallel)
admin@url> graph --format dot $cfg
admin@url> graph --output configuration.svg $cfg
admin@url> graph --format pdf --output configuration.pdf $cfg
```

Volume commands

The Volume commands model storage to be presented as a LUN of a target. A volume of specified capacity is allocated from a pool. Volumes can be expanded after creation and are replicated across cluster nodes for high availability, if in Dell Acceleration Appliance for Databases HA mode.

> **NOTE:** The capacity reported for storage pools and volumes is closely approximated. So if the CLI reports 1500.00 GB available, the actual amount may be slightly less than that, and therefore a file of that exact capacity might not fit.

volume:create

Creates a volume.

Syntax

`volume:create [options] id capacity_gb pool`

Options

`--repair`	Repair, after servicing.
`--minor <integer>`	Supply a code for the minor version, to be used with the `--repair` option.
`--if-not-exists` or `-ne`	If an object with the given identifier already exists, skip creation.
`--local` or `-l`	Create a volume on this node only, if in a cluster.
`--node` or `-n <address(es)>`	Issues this command to one or more nodes in the cluster.
`--cluster`	Issues this command to all nodes in the cluster.

Arguments

`id`	Identifier for the new volume
`capacity_gb`	Size of the volume to be created, in GB or percentage of available space
`pool`	Pool to create the volume in

Examples

This creates a volume on the `mynode` host, called `newvolume`. It has a capacity of 8 GB, using the `xperfpool` storage pool:

```
> volume:create --url mynode newvolume 8 xperfpool
```

This creates a series of 10 volumes, each with 50 GB, belonging to the *MYPOOL* storage pool:

```
> each (seq 10) { volume:create vol${1} 50 MYPOOL }
```

volume:delete

Deletes a volume by ID or UUID. In HA mode, this command also deletes associated volumes on other cluster nodes.

> **CAUTION!** This destroys any user data currently on the volume, as well as initiator access to it. Before deleting a volume, ensure that there is no initiator traffic on the volume.

Syntax

`volume:delete [options]` *`volume(s)`*

Options

See `help --all` for details on all common options.

Arguments

`volume`	ID or UUID of the volume to delete. This option can be used multiple times.

Examples

This deletes the volume named `testVol`:

```
> volume:delete testVol
```

volume:get

Gets a variety of information on a volume.

Syntax

`volume:get [options]` *`id`*

Options

`--node` or `-n <address(es)>`	Issues this command to one or more nodes in the cluster.
`--cluster`	Issues this command to all nodes in the cluster.

Arguments

id	The ID, UUID, or WWPN of the volume to get information for

Examples

This gets information for the `ion48_max1` volume (from `volume:list`):

```
> volume:get ion48_max1
           Id  ion48_max_1
       Device  /dev/drbd33
       Errors
     Warnings
       T10 Id  2f05ca9e-ion48_max_1
          USN  2f05ca9e
     Capacity  50.00 GB
         Pool  max
       Status  Connected
   Bytes Read  48,971,776
Bytes Written  0
         UUID  mcl0vs-aBLF-xRf0-eNxW-yC1b-Q6UN-kcuYrd
        Nodes  ionr8i48
               ionr8i49
```

volumes or volume:list

Lists available volumes.

Syntax

```
volumes [options]
```

Options

`--uuid` or `-u`	Shows UUIDs instead of readable IDs.
`--property` or `-p <list>`	One or more properties to display: • id — Volume ID • uuid — Volume UUID • capacity_kb — Capacity of the volume in KB • device — Device where the volume resides • pool — Storage pool where the volume resides • nodes — HA nodes where the volume resides; "*" for all • node_uuids — Node UUIDs where the volume is available • status — Status of the volume (Connected or Disconnected)
`--objects` or `-o`	Returns objects.
`--separator or –s <type>`	Separator between property values when printing multiple properties; defaults to `tab`. Valid values are `space`, `comma`, and `tab`.
`--node` or `-n <address(es)>`	Issues this command to one or more nodes in the cluster.
`--cluster`	Issues this command to all nodes in the cluster.
`--sort <property>`	Sorts the output, using the specified Property name to sort on.
`--no-sort` or `-ns`	Do not sort the output.
`--order-with <function>`	Sorts the output, extracting key with this function. Example: `{$1 method}`
`--where` or `-w <function>`	Filters by a function, if the function is true.
`--where-not` or `-wn <function>`	Filters by a function, if the function is false
`--used`	Shows only objects that are in use.
`--not-used` or `-nu`	Shows only objects that are not in use.

Examples

This displays the volumes available on the current host:

```
> volumes
Vol1_447
Vol2_469
Vol3_491
```

```
Vol4_513
Vol5_535
Vol6_557
Vol7_579
Vol8_601
```

volume:update

Updates a volume.

Syntax

`volume:update [options] id`

Options

`ename or --id or -i <string>`	Renames the volume to the specified string (not allowed in HA mode).
`--capacity_gb or -c <float>`	Sets the capacity in GB (capacity can only be increased).
`--node or -n <address(es)>`	Issues this command to one or more nodes in the cluster.
`--cluster`	Issues this command to all nodes in the cluster.

Arguments

id	ID or UUID of the volume to update

Examples

This increases the capacity of `myVolume` to 100 GB:

```
> volume:update –capacity_gb 100 myVolume
```

5

Contacting technical support

Dell Acceleration Appliance for Databases drivers, utilities, and related documentation are available at:

dell.com/support/home

Dell provides several online and telephone-based support and service options. Availability varies by country and product, and some services may not be available in your area. To get help with your Fusion ioMemory devices, contact your Dell Technical Service representative or access the Dell Support website.

Choose the method of contacting Dell that is convenient for you.

> **NOTE:** The safety information that shipped with your system provides important safety and regulatory information. Warranty information may be included within this document or as a separate document.

Appendix A: Shell commands for scripting

The Shell command group contains core commands similar to the functions commonly found in Unix shells. Commands in this group include piping and routing output, formatting output, control structures (looping and closures), and miscellaneous functions.

> **NOTE:** These shell commands can be useful for running scripts to manage or configure Dell Acceleration Appliance for Databases systems.

These commands do *not* manipulate the conventional Linux file system. While they have syntax and names like certain Linux commands, they manipulate the CLI's environment tree, which is an in-memory structure. You must use the Save command to keep whatever changes you make. When you set options or passwords into the environment (or declare sub-environments to reach other systems), those changes are held in memory only until you save them. The entire environment is kept in the user's home directory in a file. Passwords stored there are scrambled but should not be considered to be secure.

shell:auth

Displays or changes authorization information in the current environment.

Syntax

```
shell:auth [options]
```

Options

`--host <string>`	Store the host.
`--user` or `-u <string>`	Store the username, or `user.[host]` if the host option is supplied.
`--password` or `-p <string>`	Store the password, or `password.[host]` if the host option is supplied.

shell:cat

Displays the content of a file or URL.

Syntax

`shell:cat [options]` ***paths*** or ***URLs***

Options

`--n`	Number the output lines, starting at 1.

Arguments

paths or *URLs*	List of file paths or URLs to display, separated by whitespace (use for STDIN)

Examples

This displays the contents of both `file1` and `file2`, with numbered lines for each:

```
shell:cat file1 file2
```

shell:cd

Changes the current environment path.

Syntax

```
shell:cd [options] path
```

Options

See `help --all` for details on all common options.

Arguments

path	Desired environment path (root if not provided)

shell:clear

Clears the console buffer.

Syntax

```
shell:clear
```

shell:compare

Uses an operator to compare two arguments.

Syntax

```
shell:compare [options] left operator right
```

Options

`--not`	Negate the logic of the operator.

Arguments

left	Left argument for the operator
operator	Any of the following: `CONTAINS`, `con`, `CONTAINS_MATCH`, `cm`, `ENDS_WITH`, `ew`, `EQUALS`, `==`, `eq`, `is`, `GREATER`, `>`, `gt`, `GREATER_EQUAL`, `>=`, `ge`, `IN`, `in`, `LESS`, `<`, `lt`, `LESS_EQUAL`, `<=`, `le`, `MATCHES`, `m`, `NOT_EQUALS`, `<>`, `neq`, `NOT_IN`, `nin`, `STARTS_WITH`, `sw`
right	Right argument for the operator

shell:cp

Copies a variable or subtree.

Syntax

`shell:update [options] *from to*`

Options

See `help --all` for details on all common options.

Arguments

from	Name of item to move
to	New name or location

shell:display

Sets the default display/formatting.

Syntax

`shell:display [options] *displayType (flavor)*`

Options

See `help --all` for details on all common options.

Arguments

displayType	Formatting or display type (see Common options on page 14 for details)
flavor	Flavor of the display type, if available

shell:each

Executes a closure on a list of arguments. See also Other functionality on page 18.

Syntax

`shell:each [options] values function`

Options

`--arg <list>`	Additional arguments to pass to the function (numbered $2 and up).
`--flatten` or `-f`	Flattens nested lists of results into a single output list.
`--threads` or `-t <integer>`	Number of threads (parallel threads implied)
`--parallel` or `-p <string>`	Use one thread for each item (unless `--threads` is provided as well).
`--timeout` or `-t <integer>`	Timeout for parallel activity, in seconds.
`--nulls` or `-n`	Includes nulls in results (by default nulls are discarded).
`--rule` or `-r <integer>`	Sends results from each completed iteration to the rule system.
`--sort <property>`	Sorts the output, using the specified Property name to sort on.
`--order-with <function>`	Sorts the output, extracting the key with this function. Example: `{$1 method}`
`--unique`	Removes duplicates from the results.
`--where` or `-w <function>`	Filters by a function.
`--where-not` or `-wn <function>`	Keep where this function is false.

Arguments

values	Collection of arguments to iterate on
function	Function to execute

Examples

```
> each (seq 5) { echo $1 }
```

This loops over the numbers 1 through 5, printing each of them.

```
> each (drives) --where { $1 starts_with fi } { (drive:get $1) uuid }
```

This lists the IDs of drives whose ID starts with `fi` and prints their UUIDs.

```
> each (volumes -o) --where {($1 id) sw vol}
```

This lists volumes whose IDs start with vol.

shell:echo

Echoes or prints arguments, or sends them to the log.

Syntax

`shell:echo [options] *argument(s)*`

Options

`--stderr`	Sends the output to the error stream.
`--n`	Do not print the trailing newline character.
`--log`	Sends to the log.
`--logLevel <level>`	Log level to use (implies `--log`). Valid values include:`trace`, `debug`, `info`, `warning`, `error`
`--logCategory <string>`	Log category to use (implies `--log`).

Arguments

argument	One or more arguments to display, separated by spaces

shell:eval

Evaluates a binary operation, or executes a command provided as a string. This command can also be used to do mathematics, or to construct a string as a command and then evaluate it.

Syntax

`shell:eval [options] *left operator right*`

Options

See `help --all` for details on all common options.

Arguments

left	Left argument for the operator, or string to execute as a command
operator	Any of the following: `AND`, `DIVIDE`, `/`, `MINUS`, `-`, `MOD`, `%`, `OR`, `PLUS`, `+`, `TIMES`, `*`, `XOR`
right	Right argument for the operator

shell:exit

Exits the CLI, optionally returning an exit code.

Syntax

`shell:exit [options] *exitCode*`

Options

See `help --all` for details on all common options.

Arguments

exitCode	Integer code to return to the OS when exiting

shell:explain

Analyzes the last error and attempts to provide additional information.

Syntax

`shell:explain [options]`

Options

`--max or –m <level>`	Maximum number of rules to fire (defaults to all)
`--timeout or –s <num>`	Timeout for rule execution, in seconds (defaults to 30)
`--context or –c <string>`	Name of rule context (defaults to “explain”)

shell:filter

Keeps or discards objects that match a pattern, optionally extracting a field.

Syntax

`shell:filter [options] *input(s)*`

Options

`--not`	Discard objects that match, keeping the ones that do not match.
`--no-flatten`	Keep the nested list structure, if any, of the input objects

`--extract <string>`	Collect the return values from the matched pattern expressions, which allows returning the properties of objects.
`--xpath <string>`	Provide an XPath-based pattern.

Arguments

`input`	Input object(s) to match against. If not provided, standard input is parsed.

shell:find

Recursively search the CLI environment tree, returning items that match conditions.

Syntax

`shell:find [options] *locationOrFunction*`

Options

`--name` or `-name <string>`	Name to search for (such as file.txt or *.txt). This option is repeatable.
`--regex` or `-regex <string>`	Regex pattern to match against names. This option can be specified multiple times.
`--maxdepth` or `-maxdepth <num>`	Maximum depth to search
`--mindepth` or `-mindepth <num>`	Minimum depth to search (matches must be at least at this depth)
`--not` or `-not`	Find items that do not match.
`--dir` or `-dir`	Match only directories (environments).
`--exec` or `-exec <function>`	Execute a function, where `$1` is the path, `$2` is the directory, and `$3` is the name.
`--execdir` or `-execdir`	Execute a function in the directory of the item.

Arguments

`locationOrFunction`	Location to search or function to run (`$1` is the path, `$2` is the directory, and `$3` is the name). You can supply multiple locations and functions, in any order.

shell:fold

Calls a closure with an input value (`$1`) and a list element (`$2`), passing the result of each call as the input to the next (unless suppressed with `--curry`).

Syntax

`shell:fold [options] *values input function*`

Options

`--curry` or `-c`	Additional arguments to pass to the function (numbered $3 and higher)
`--arg` <list>	Curry instead of fold, passing input for each invocation and returning a list of results.

Arguments

`values`	Collection of arguments to iterate on
`input`	First input value
`function`	Closure, where $1 is the value and $2 is the input

shell:grep

Prints lines matching the given pattern.

Syntax

`shell:grep [options]` *`pattern`*

Options

`--line-number` or `-n`	Prefix each line of output with the line number within its input file.
`--invert-match` or `-v`	Invert the sense of matching, to select non-matching lines.
`--word-regexp` or `-w`	Select only those lines containing matches that form whole words. The test is that the matching substring must either be at the beginning of the line, or preceded by a non-word constituent character. Similarly, it must be either at the end of the line or followed by a non-word constituent character. Word-constituent characters are letters, digits, and the underscore.
`--line-regxp` or `-x`	Select only those matches that exactly match the whole line.
`--ignore-case` or `-i`	Ignore case distinctions in both the PATTERN and the input files.
`--count` or `-c`	Prints only a count of matching lines per FILE.
`--color <colorOption>`	Use markers to distinguish the matching string. WHEN may be ‘always’, ‘never’ or ‘auto’. The default is ‘auto’.
`--before-context` or `-B`	Prints NUM lines of leading context before matching lines. This places a line containing ’--’ between contiguous groups of matches. The default is -1.

`--after-context` or `-A`	Prints NUM lines of trailing context after matching lines. This places a line containing '--' between contiguous groups of matches. The default is -1.
`-context` or `-C`	Prints NUM lines of output context. This places a line containing '--' between contiguous groups of matches.
`--only-matching or –o`	Prints only the part of the line that matches the expression.
`--group or –g <string>`	Prints the contents of the regex group. Group 0 is the entire pattern.
`--group-separator or –sep <string>`	When printing multiple groups, use this item to separate them.

Arguments

`pattern`	Regular expression, following the syntax given at http://docs.oracle.com/javase/6/docs/api/java/util/regex/Pattern.html

shell:head

Displays the first lines of a file.

Syntax

`shell:head [options]` *`paths`* `or` *`URLs`*

Options

`-n <integer>`	Number of lines to display, starting at 1

Arguments

`paths` or *`URLs`*	List of file paths or URLs to display, separated by spaces

shell:if

Conditionally executes commands.

Syntax

`shell:if [options]` *`condition ifTrue`* **or** *`ifFalse`*

Options

`--not`	Negate the logic of the condition.

Arguments

condition	Condition; a function or value
ifTrue	Function to execute if the condition is true
ifFalse	Function to execute if the condition is false

Details

This CLI command checks a condition: if true, it executes the *ifTrue* function; if false, it executes the optional *ifFalse* function. The condition can be a value or a function itself. If it is a function, it is called to get the condition value. Boolean values are used directly. Numeric values are true if not equal to 0. String values are true if non-empty; null is false.

Use `shell:if` in conjunction with the `shell:test` command:

```
> if (test exists volume vol1){ echo "Vol1 exists" }{ echo "Vol1 doesn't exist"}
```

You can call a function as the condition. The example below is equivalent to the previous one:

```
> if {test exists volume vol1}{ echo "Vol1 exists" } { echo "Vol1 doesn't exist"}
```

You can call a defined function:

```
> my_test={test exists volume $1}
> if (my_test vol1) { echo "Found" }
```

You can use functions to organize your code:

```
> yes={echo "Yes"}
> no={echo "No"}
> if (test exists volume vol1) { yes } { no }
```

shell:join

Joins the arguments together into a single string, and optionally into a string (with delimiters between them).

Syntax

```
shell:join [options] arguments
```

Options

`--flatten` or `-f`	Un-nest the list arguments.
`--string` or `-s`	Join the arguments together into a string.
`--delimiter` or `-d <string>`	Place a delimiter between the arguments. This implies the `--string` option.

Arguments

arguments	Items to join into a string

shell:load

Loads the CLI environment tree from a file.

Syntax

`shell:load [options] treeFile`

Options

`--input-file` or `-if <filename>`	Use file input.
`--input-url` or `-ir <URL>`	Use URL input. For example, `http://somehost/filename` or `ftp://[username[:password]@]host/path/file`
`--input-usb` or `-iu <file>`	Use content retrieved from the USB drive.
`--input-share` or `-ic <string>`	Use CIFS/Windows input. For example, `domain/user[:password]@host/share/filename`
`--input-scp` or `-is <string>`	Use SCP input. For example, `user[:password]@host:filename`
`--input-ssh` or `-ih <string>`	Use Unix shell file input: `user[:password]@host:filename`
`--input-pipe` or `-ip`	Use `stdin` as input to the command line (non-interactive only).

Arguments

`treeFile`	Tree file to load. This defaults to the standard CLI tree location in your profile.

shell:ls

Lists the contents of the current directory, or a provided path.

Syntax

`shell:ls [options] path`

Options

`--long` or `-l`	Use the long form.
`--all` or `-a`	List hidden entries as well.

Arguments

`path`	Tree path to list

shell:man

Shows detailed information for one or more CLI commands at the console.

Syntax

`shell:man [options] command`

Options

`--all` or `-a`	Create a full manual for all commands.
`--html`	Format as HTML.
`--lyx` or `-l`	Format as Lyx.
`--keys` or `-k`	Displays a table of keyboard shortcuts.

Arguments

command	Command to show details for

shell:markdown

Transforms text with the markdown processor.

Syntax

`shell:markdown [options]`

Options

See `help --all` for details on all common options.

shell:mkdir

Creates a new environment path in the CLI tree.

Syntax

`shell:mkdir [options] path`

Options

`--if-not-exists` or `-i`	Create the path if it doesn't already exist.
`--parents` or `-p`	Create parent directories as needed.

Arguments

path	Path to create

shell:more

View the contents of a text file one screen at a time.

Syntax

`shell:more [options]`

Options

`--lines <number>`	Displays the specified number of lines, per screen.

shell:mv

Renames or moves a variable or sub-tree.

Syntax

`shell:mv [options] *from to*`

Options

See `help --all` for details on all common options.

Arguments

from	Name of item to move
to	New name or location

shell:printf

Returns a formatted string, based on arguments.

Syntax

`shell:printf [options] *format*` **Arguments**

Options

`--echo` or `-e`	Echo the formatted string to the output stream, appending a newline if it doesn't end with one.

Arguments

format	Format pattern to use (quotes recommended)
arguments	Arguments for the given format pattern

Examples

```
shell:printf "%017d\n" 77
```

For detailed instructions about the allowable format strings, see http://docs.oracle.com/javase/7/docs/api/java/util/Formatter.html#syntax

shell:pwd

Shows the current working directory.

Syntax

`shell:pwd [options] *id*`

Options

See `help --all` for details on all common options.

shell:quit

Quits the CLI.

Syntax

shell:quit [options]

Options

See `help --all` for details on all common options.

shell:rm

Removes a variable from the CLI environment.

Syntax

`shell:rm [options] path`

Options

See `help --all` for details on all common options.

Arguments

path	Path to the variable to remove

shell:rmdir

Removes a CLI environment path.

Syntax

`shell:rmdir [options] path`

Options

See `help --all` for details on all common options.

Arguments

path	Desired environment path (root, if not provided)

shell:save

Saves the environment tree. This includes the aliases, options, passwords, and so on, that you have created, so they can be used in later sessions.

Syntax

`shell:save [options]`

Options

`--console` or `-c`	Displays the environment's XML to the console.

shell:seq

Generates a sequence of numbers, or pattern-formatted strings. For a detailed discussion of format strings usable with the `--format` option, see http://docs.oracle.com/javase/7/docs/api/java/util/Formatter

Syntax

`shell:seq [options] *last*`

Options

`--first or –f <integer>`	First number to generate (default is 1)
`--first-letter or –fl <char>`	First letter to generate (implies `--letter`)
`--increment or –i <integer>`	Amount to add to the sequence (default is 1)
`--hex or –x`	Format numbers as hex (return strings).
`--octal`	Format numbers as octal.
`--binary or –b`	Format numbers as binary.
`--letter or –l`	Change generated numbers to letters, where 1 is 'a', 2 is 'b', and so on.
`--uppercase or –u`	Generated uppercase letters (implies `--letter`).
`--format <string>`	Formatting string following Java's `String.format` rules
`--down or –d`	Count down, instead of up.

Arguments

`last`	Last number or string to generate; or number of letters when the `--letter` option is used

shell:set

Sets a flag in the current environment.

Syntax

`shell:set [options] *setting value*`

Options

(**See** `help --all` for details on these options: `--display`, `--output-file`)

Arguments

`setting`	Any of the following values: `ACTOR_SYSTEM_NAME`: Name of the actor system, when used `ANSI`: Shows color text. `AUTOCOMPLETE_LIMIT`: Time, in seconds, to wait for the auto-completer to retrieve information

`CACHE_SAFT`: Cache CLI instances.

`COMPATIBILITY`: Handle backwards compatibility.

`CONFIRMATION`: For some commands, prompt the user before execution takes place.

`CONNECTION_TIMEOUT_SECONDS`: Time, in seconds, to wait for a connection to a CLI host

`DISABLED`: Disable SAFT connection.

`DISPLAY_FLAVOR`: Default flavor of display to use

`DISPLAY_TYPE`: Default display type

`EXTENDED_COMPLETION`: Displays source information when completing certain types.

`LOG_MODE`: Enable automatic logging.

`MEMOIZE_SAFT`: Put the CLI results into memo format.

`MSRV_URL`: URL to the MSRV

`PARALLEL_EXECUTION`: Use parallel execution as a default.

`PASSWORD`: Password to use

`PREFERRED_PEER_PORT`: Port expected to be used for the actor system

`PROFILEDIR`: Default directory to save and load environments

`PROMPT_MILLIS`: Milliseconds to wait for prompt status construction.

`PROMPT_SHOW_BUSY`: Shows the busy indicator in the prompt.

`PROMPT_SHOW_NODE_NAME:` Shows the node name in the prompt.

`PROMPT_SHOW_USER`: Shows the current user name in the prompt.

`READ_TIMEOUT_SECONDS`: Time, in seconds, to wait for a response from a CLI host

`REST_LOG_PROMPT`: When logging REST, log transactions related to the prompt.

`REST_LOG`: REST call logging

`REST_LOG_URLS_ONLY`: When logging REST, record only the URLs, not the responses.

`ROOT_SAFT_URL_OVERRIDE`: Provide a CLI URL to be used instead of the one contained in the root of the environment tree.

`RULE_CONTEXT`: Name of the default rule context

`SAFT_EXCERPT_LIMIT:` Maximum size of SAFT log excerpts, in KiB.

`SAFT_LOG_EXCERPTS:` Includes excerpts from `fio-saft` log in the CLI log.

`SAFT_REDIRECTOR`: Use the CLI's general redirection for distributed operations.

`SAFT_THREADS`: Suggested number of threads to use to communicate with the CLI

`SAFT_URL`: URL of the CLI

`STACKTRACE`: Shows full stack traces when exceptions are encountered

`STRICT:` Emit errors if SAFT responses do not conform to the known schema.

`SUPPRESS_EXECUTION`: Parse and validate commands, but suppress execution.

`TERMINAL_HEIGHT`: Height of terminal

`TERMINAL_WIDTH`: Width of terminal

`TIME_COMMAND`: Shows execution times for commands.

`TIME_SAFT`: Shows execution times for CLI calls.

`TRACE`: Prints additional information regarding command execution.

`TREEFILE`: Location of the CLI's environment file

`UNICODE_TABLE`: Use Unicode table drawing characters.

`USERNAME`: A user name

`VALIDATE`: If false, prevent checking of command parameters prior to execution.

`WATCH_AUTO`: Build out necessary watches automatically during execution.

`value` Value to set

shell:sleep

Causes the CLI to sleep for a short time and then wake up.

Syntax

`shell:sleep [options] duration`

Options

`--second` or `–s`	Use a duration time of seconds instead of milliseconds.

Arguments

duration	Amount of time to sleep. The default time unit is milliseconds; use the `-s` option to specify seconds instead.

shell:sort

Writes a sorted concatenation of all specified files to standard output.

Syntax

`shell:sort [options] files`

Options

`--ignore-case` or `-f`	Fold lowercase to uppercase characters.
`--reverse` or `-r`	Reverse the result of comparisons.
`--unique` or `-u`	Output only the first of an equal run.
`--field-separator` or `-t <string>`	Use SEP instead of non-blank to blank a transition.
`--ignore-leading-blanks` or `–b`	Ignore leading blanks.
`--key or –k <list>`	Fields to use for sorting, separated by spaces
`--numeric-sort or –n`	Compare according to string numerical value

Arguments

files	List of files separated by spaces

shell:source

Runs a script.

Syntax

`shell:source script arg(s)`

Options

`--input-file` or `-if <filename>`	Use file input.
`--input-url` or `-ir <URL>`	Use URL input. For example, `http://somehost/filename` or `ftp://[username[:password]@]host/path/file`
`--input-usb` or `-iu <file>`	Use content retrieved from the USB drive.
`--input-share` or `-ic <string>`	Use CIFS/Windows input. For example, `domain/user[:password]@host/share/filename`
`--input-scp` or `-is <string>`	Use SCP input. For example, `user[:password]@host:filename`
`--input-ssh` or `-ih <string>`	Use Unix shell file input, such as `user[:password]@host:filename`
`--input-pipe` or `-ip`	Use `stdin` as input to the command line (non-interactive only).

Arguments

arg	Argument to use for the script. This can be specified multiple times.

Examples

```
shell:source --input-file hello.fik
```

Load the `hello.fik` file, executing the script it contains.

```
shell:source --input-scp user:pass@host:setup.fik
```

Run `setup.fik` from an scp source, then execute it.

```
shell:source --input-share domain/user@host/share_name/setup.fik
```

Run `setup.fik` from CIFS/Windows share named share_name.

```
shell:source --input-url http://somehost/setup.fik
```

Run `setup.fik` from the given URL.

shell:tac

Concatenates input to a string and returns the result. This command can also send output to a file.

Syntax

```
shell:tac [options]
```

Options

`--no-return or –n`	do not return the input string.
`--file or –f <file>`	Store input to a file.
`--binary`	Store the stream contents directly to a file; do not perform any text translation. This option must be

shell:tail

Displays the last lines of a file.

Syntax

`shell:tail [options] path or URL`

Options

`--n <integer>`	The number of lines to display, starting at 1.
`--f`	Follow file changes
`--s <long integer>`	Sleep interval (used for the `--follow` option)

Arguments

path or *URL*	File path or URL to display

shell:tee

Sends `stdin` to `stdout` and other specified locations.

Syntax

`shell:tee [options]`

Options

`--file` or `-f`	Sends content to a file.
`--binary` or `-b`	Use no text decoding/encoding; just do a binary copy.
`--encoding <string>`	Encoding to use for output
`--input-encoding <string>`	Encoding to use for the input
`--log`	Sends lines to the log
`--log-level <level>`	Log level to use (implies the `–log` option):`trace`, `debug`, `info`, `warning`, `error`
`--log-category <string>`	Log category to use (implies the `–log` option)

See `help --all` for details on all common options.

shell:test

Evaluate a specified condition, returning true or false.

Syntax

`shell:test [options] *test type term(s)*`

Options

`--not`	Negate the result.
`--any`	If multiple terms are used, the condition is true if any terms pass.
`--all`	If multiple terms are used, the condition is true if all terms pass.

Arguments

`test`	Type of test: `exists`, `used`, `in_cluster`, or `connection`
`type`	Object type: `bus`, `chassis`, `cluster`, `cna`, `cpu`, `drive`, `fan`, `inigroup`, `initiator`, `lun`, `node`, `pool`, `port`, `psu`, `raid`, `target`, `temp`, `volume`
`terms`	Terms to use

shell:throw

Throws a Java exception. This is useful for simulating error conditions.

Syntax

`shell:throw [options] *className message*`

Options

See `help --all` for details on all common options.

Arguments

`className`	Qualified name of the exception class to throw
`message`	Optional message to pass to the exception constructor

shell:types

Returns a list of the type names for the CLI.

Syntax

`shell:types [options]`

Options

See `help --all` for details on all common options.

shell:unset

Removes the specified setting(s) from the environment.

Syntax

`shell:unset [options] *setting*`

Options

See `help --all` for details on all common options.

Arguments

`--setting`	For a list of settings, see the `shell:set` command.

Appendix B: Common CLI tasks

This appendix describes some common tasks that may be useful in working with the Dell Acceleration Appliance for Databases CLI. Other common tasks are outlined in About the CLI on page 11. For complete details on command syntax, as well as usage examples for most commands, see Command-line reference on page 27.

Copying to or from DAAD

> **NOTE:** The `config:backup` command is used for the following examples, but any other command that supports output routing could also be used.

Routing output

Table B-1. Routing output tasks

Task	Example	Description
Back up to scp (Unix Secure Copy) destination with a generated filename.	`backup --output-scp user@host`	You are prompted for a password to connect to the remote host; a filename is generated based on the name of the DAAD system you are backing up, together with a timestamp.
Back up to scp, using a specific filename.	`backup --output-scp user@host:filename.xml`	You are prompted for the password; the configuration is stored with your specified filename.
Back up to scp, specifying a password, generated filename.	`backup --output-scp user:password@host`	A generated filename is used.
Back up to a Windows/CIFS share with a generated filename.	`backup --output-share domain/user@host/shareName`	Saves to a Windows share; the domain is almost always required. You are prompted for a password.
Back up to a Windows/CIFS share, using a specific filename.	`backup --output-share domain/user@host/shareName/filename.xml`	You are prompted for a password.
Back up to a Windows/CIFS share, providing a password.	`backup --output-share domain/user:password@host/shareName`	A generated filename is used.
Back up to a specific file.	`backup --output-file my_config.xml`	Backs up to `my_config.xml` in the user's home directory. When logged in as admin, this is `/home/admin`.
Back up to the USB drive.	`backup --output-usb`	If a USB drive is plugged in to the DAAD, this writes the configuration to the USB drive with a generated filename.
Store a tabular list of luns into a text file in the home directory.	`luns --output-file luns.txt -dt`	
Store the list of LUNs in JSON format to a file in the home directory.	`luns --output-file luns.json -dj`	
Store a list of LUNs in XML format to a file in the home directory.	`luns --output-file luns.xml -dx`	
Store the list of luns in tabular text format to an scp destination, using a generated filename.	`luns --output-scp user@host -dt`	You are prompted for a password.

Table B-1. Routing output tasks (continued)

Task	Example	Description
Store the list of luns in JSON format to a Windows share destination, using a generated filename.	`luns --output-share domain/user@host/shareName -dj`	You are prompted for a password.

Routing input

Some commands require files as input. Here are some examples:

Table B-2. Routing input tasks

Task	Example	Description
Restore from a config file in the user's home directory	`restore my_config.xml`	Reads and applies the configuration in the file. Tab completion is available for choosing the file.
Restore from a USB drive	`restore --input-usb my_config.xml`	Reads a configuration from the USB drive. Tab completion is available for the files on the USB drive; you are limited to choosing from files available there.
Restore from an scp source	`restore --input-scp user@host:my_config.xml`	Reads the configuration using Unix security copy; you are prompted for a password.
Restore from a Windows share	`restore --input-share domain/user@host/shareName/my_config.xml`	Reads the configuration from a Windows share; you are prompted for a password.
Restore from an http URL	`restore --input-url http://host:port/my_config.xml`	Uses the http protocol to read the configuration from the given host/port and filename.
Restore from an ftp URL	`restore --input-url ftp://user:password@host/path/my_config.xml`	Uses the ftp protocol to read a configuration file. You must specify the password in the URL.

Working with the CLI environment (tree)

The CLI can store settings, aliases, and other configuration into its preferences file. By default this file is stored in `~/.fikon/tree.xml`.

You interact with the tree in a way that is similar to working with a file system. Fikon's tree is a nested set of environments (directories). Each environment has variables in it, and each environment can contain child environments.

Table B-3. CLI environment tree tasks

Task	Example	Description
List the contents of the current environment.	`ls`	Shows the variables that are bound in the current environment.
Make a child environment.	`mkdir child`	Creates a new child environment nested inside the current one.
Change into a child environment.	`cd child`	Changes to the child environment, setting the current working environment
Change to a parent environment.	`cd ..`	Changes the working environment to the parent
Change to the root environment.	`cd /`	Goes to the top of the tree
Remove a child environment.	`rmdir child`	
Create a variable.	`varname=value`	Sets a value into the environment
Remove a variable.	`rm varname`	Removes a variable from the environment
Save the entire tree.	`save`	Saves the entire Fikon tree into your preferences file, which is at `~/fikon/tree.xml` by default.
Save the tree, showing its contents on the console.	`save -c`	Saves the tree, and shows you what is being saved.
Save your CLI environment tree to an scp destination.	`save --output-scp user@host:my_env.xml`	Stores your Fikon environment (setup) to an scp destination, prompting you for a password.
Reload the tree file.	`load`	Reloads the tree file from the default location
Reload the tree from a file.	`load treeFile.xml`	Reloads the tree from the specified file.
Load your Fikon envionment from an scp source	`load --input-scp user@host:my_env.xml`	Loads the Fikon environment from an scp source, prompting you for the password to use.

Working with tree settings

Settings show up in your current tree location and are visible as uppercase entries. When you create a setting, it is inherited by all child environments below your current environment.

Table B-4. Tree setting tasks

Task	Example	Description
Remove a setting.	`unset read_timeout_seconds`	Unset removes an entry from the environment (as does rm). Unset tab-completes the available settings.
Remember settings.	`save`	Writes your environment tree to `~/.fikon/tree.xml`, which is read each time Fikon starts (unless --norc is specified on Fikon's command line).
Change the fio-saft timeout.	`set read_timeout_seconds 60`	If fio-saft is taking a long time to respond (but *is* eventually responding) you can change the default timeout, which is 30 seconds.
Show interactions with fio-saft.	`set rest_log console`	This displays every interaction with fio-saft on the console.
Show only key fio-saft interactions.	`set rest_log_urls_only on`	Reduces the output of set rest_log_console to show only the URLs and response codes, without response bodies.
Set time commands.	`set time_command on`	For each command entered, shows how long it takes to execute it.

Change the prompt.	`set prompt_show_busy <val>`
	`set prompt_show_node_name <val>`
	`set prompt_show_user <val>`
		These control the contents of the prompt that's displayed. Note that in non-interactive mode a simplified prompt is used and no display options are allowed.

Attaching to a remote DAAD

You can run the CLI on a workstation or laptop and then attach it to a remote Dell Acceleration Appliance for Databases system. This is done with an SSH tunnel.

Table B-5. Attaching to a remote DAAD with an SSH tunnel

Task	Example	Description
1 Make an environment.	`mkdir remote` `cd remote`	Creates an environment in the Fikon tree, and changes into that environment. The environment is now ready to accept settings.
2 Set up a tunnel.	`url=ssh://<ip address>`	Tells the CLI that it should use the ssh protocol to connect to a remote DAAD system at the given IP address.
3 Set up authentication	`user=<user>` `password=<password>`	The user name is often admin in a standard DAAD setup. When done in this way, the settings are saved into the user's environment tree. You can also use a different form of the url property. ssh://user:password@<ip address> That format does not require an additional user/pass property.
4 Test the connection	`drives`	This checks to see if an SSH tunnel can be formed to the target node. If so, the drives commands is executed and the results are displayed.
5 Save the connection	`save`	This tells Fikon to save its environment tree into `~/.fikon/tree.xml`, so it is available the next time you start up.