



## **storage shelf commands**

### **ONTAP 9.3 commands**

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# Table of Contents

- storage shelf commands ..... 1
  - storage shelf show ..... 1
  - storage shelf acp configure ..... 27
  - storage shelf acp show ..... 28
  - storage shelf acp module show ..... 30
  - storage shelf drawer show-phy ..... 34
  - storage shelf drawer show-slot ..... 38
  - storage shelf drawer show ..... 40
  - storage shelf firmware show-update-status ..... 43
  - storage shelf firmware update ..... 44
  - storage shelf location-led modify ..... 45
  - storage shelf location-led show ..... 46

# storage shelf commands

## storage shelf show

Display a list of storage shelves

**Availability:** This command is available to *cluster* administrators at the *admin* privilege level.

### Description

The `storage shelf show` command displays information about all the storage shelves in the storage system. If no parameters are specified, the default command displays the following information about the storage shelves:

- Shelf Name
- Shelf ID
- Serial Number
- Model
- Module Type
- Status

To display detailed profile information about a single storage shelf, use the `-shelf` parameter.

### Parameters

**{ [-fields <fieldname>,...]**

Displays the specified fields for all the storage shelves, in column style output.

**| [-bay ]**

Displays the following details about the disk bays in the storage shelf:

- The unique positional identifier of the disk bay
- Whether a disk drive is installed in the bay
- Bay type
- Operational status of the disk bay

**| [-connectivity ]**

Displays the following details about the connectivity from the node to the storage shelf:

- Node name
- Initiator side switch port
- Target side switch port
- World wide port name
- Target Port Group Number (TPGN)

### | [-cooling ]

Displays the following details about the cooling elements and temperature sensors of the storage shelf:

- Element ID of the cooling fan
- The current speed of the cooling fan in revolutions per minute (rpm)
- Operational status of the cooling fan
- Sensor ID of the temperature sensor element
- Temperature at the sensor in degrees Celsius
- Whether the current temperature at the sensor is the ambient temperature
- Low critical threshold value for the temperature sensor
- Low warning threshold value for the temperature sensor
- High critical threshold value for the temperature sensor
- High warning threshold value for the temperature sensor
- Operational status for the temperature sensor

### | [-errors ]

Displays the following error status information about the storage shelves which have errors:

- Error type
- Error description

### | [-module ]

Displays the following details about the I/O modules attached to the storage shelf:

- Module ID
- Module Part number
- Serial number of the Enclosure Services Controller Electronics element
- Whether monitoring is enabled on this module
- Whether this module is the SAS expander master module
- Whether this module is the element reporting
- Version of the firmware installed on the module
- Latest firmware revision
- Number of times, since last boot, that this module has been swapped
- Operational status of the module

### | [-port ]

Displays the following details about the storage shelf ports:

- Expander phy element identifier
- SAS shelf port type
- World Wide Port Name of the SAS port
- Operational physical link rate of the SAS port in Gb/s

- Negotiated physical link rate of the SAS port in Gb/s
- Power status of the SAS port
- Status of the SAS port
- Fibre Channel shelf port ID
- Fibre Channel shelf port type
- Fibre Channel shelf port status

#### | [-power ]

Displays the following details about the power supplies, voltage sensors and current sensors of the storage shelf:

- Power Supply Unit (PSU) number
- PSU type
- PSU part number
- PSU serial number
- PSU power rating in watts
- PSU crest factor
- Power drawn from the PSU in watts
- Whether the PSU can be reset via software control
- Whether the auto power reset of the PSU is enabled
- PSU firmware revision
- Operational status of the PSU
- Voltage sensor number
- Voltage detected by the voltage sensor, in volts (V)
- Operational status of the voltage sensor
- Current sensor number
- Current detected by the current sensor, in milliamps (mA)
- Operational status of the current sensor

#### | [-instance ] }

Displays expanded information about all the storage shelves in the system.

#### [-node {<nodename>|local}] - Node

Displays information only about the storage shelves that are attached to the node you specify.

#### [-shelf <text>] - Shelf Name

Displays information only about the storage shelves that match the names you specify.

#### [-shelf-uid <text>] - Shelf UID

Displays information only about the storage shelf that matches the shelf UID you specify. Example:  
 `50:05:0c:c0:02:10:64:26`

**[-stack-id {<integer>|-}] - Stack ID**

Displays information only about the storage shelves that are attached to the stack that matches the stack ID you specify

**[-shelf-id <text>] - Shelf ID**

Displays information only about the storage shelves that match the shelf ID you specify.

**[-module-type {unknown|atfcx|esh4|iom3|iom6|iom6e|iom12|iom12e|iom12f|iom12b}] - Shelf Module Type**

Displays information only about the storage shelves that match the module-type you specify.

**[-connection-type {unknown|fc|sas}] - Shelf Connection Type**

Displays information only about the storage shelves that match the connection type you specify. Example: FC or SAS.

**[-is-local-attach {true|false}] - Is the Shelf Local to This Cluster?**

Displays information only about the storage shelves that are local (TRUE) or remote (FALSE) to this cluster.

**[-vendor <text>] - Shelf Vendor**

Displays information only about the storage shelves that match the vendor you specify.

**[-product-id <text>] - Shelf Product Identification**

Displays information only about the storage shelves that match the product ID you specify.

**[-serial-number <text>] - Shelf Serial Number**

Displays information only about the storage shelf that matches the serial number you specify.

**[-disk-count {<integer>|-}] - Disk Count**

Displays information only about the storage shelves that have the disk count you specify.

**[-state {unknown|no-status|init-required|online|offline|missing}] - Shelf State**

Displays information only about the storage shelves that are in the state you specify.

**[-op-status {unknown|normal|warning|error|critical|standby-power}] - Shelf Operational Status**

Displays information only about the storage shelves that are currently operating under the status condition you specify.

**[-bay-id {<integer>|-}] - Bay ID**

Displays information only about the storage shelves that have bays that match the bay ID you specify.

**[-bay-type {unknown|single-disk|multi-lun}] - Bay Type**

Displays information only about the storage shelves that have bays that match the type of bay you specify.

**[-bay-has-disk {true|false}] - Bay Has Disk**

Displays information only about the storage shelves that have bays with disk drives inserted in them (true) or empty bays (false).

**[-bay-op-status {unknown|normal|error}] - Bay Operational Status**

Displays information only about the storage shelves that have bays that match the operational state you specify.

**[-controller {<nodename>|local}] - Controller Name**

Displays information only about the storage shelves that are connected to the node you specify.

**[-controller-uuid <text>,...] - Controller UUID**

Displays information only about the storage shelves that are connected to the node UUID you specify.

**[-initiator <text>,...] - Initiator**

Displays information only about the storage shelves that are visible to the initiator you specify.

**[-initiator-wwpn <text>,...] - Initiator WWPN**

Displays information only about the storage shelves that are visible to the initiator WWPN you specify.

**[-initiator-side-switch-port <text>,...] - Initiator Side Switch Port**

Displays information only about the storage shelves that are visible to an initiator connected to the switch port you specify.

**[-target-side-switch-port <text>,...] - Target Side Switch Port**

Displays information only about the storage shelves visible on target ports identified by the switch port to which they are connected.

**[-target-port <text>,...] - Target Port**

Displays information only about the storage shelves visible on the specified target ports identified by their World Wide Port Name (WWPN).

**[-tpgn {<integer>|-}] - Target Port Group Number**

Displays information only about the storage shelves that belong to the Target Port Group Name (TPGN) you specify.

**[-port-speed {<integer>|-}] - Port Speed**

Displays information only about the storage shelves with ports that match the port speed you specify.

**[-io-kbps {<integer>|-}] - Kbytes/sec on Storage Shelf**

Displays information only about the storage shelves visible to an initiator that has executed I/O at the throughput you specify.

**[-iops {<integer>|-}] - Number IOPS per Second on Storage Shelf**

Displays information only about the storage shelves visible to an initiator that has executed the number of IOPs you specify.

**[-current-sensor-id {<integer>|-}] - Current Sensor ID**

Displays information only about the storage shelves with current sensor that matches the current sensor ID you specify.

**[-current-sensor-location <text>,...] - Current Sensor Location**

Displays information only about the storage shelves with current sensors installed at the location you specify.

**[-current-sensor-reading {<integer>|-}] - Current Sensor Reading**

Displays information only about the storage shelves with current sensors that match the current reading you specify.

**[-current-op-status {unknown|normal|over-current-critical|under-current-critical|not-supported|not-installed}] - Operational Status**

Displays information only about the storage shelves with current sensors that match the operational status you specify.

**[-fan-id {<integer>|-}] - Fan ID**

Displays information only about the storage shelves with a cooling fans that match the fan IDs you specify.

**[-fan-location <text>,...] - Fan Location**

Displays information only about the storage shelves with cooling fans installed.

**[-fan-rpm {<integer>|-}] - Fan Rotation Per Minute**

Displays information only about the storage shelves with cooling fans that match the rpm you specify.

**[-fan-op-status {unknown|normal|off|error|not-supported|not-installed}] - Fan Operational Status**

Displays information only about the storage shelves with cooling fans that match the operational status you specify.

**[-module-id <text>,...] - Module ID**

Displays information only about the storage shelves with an I/O module that matches the module ID you specify.

**[-module-location <text>,...] - Module Location**

Displays information only about the storage shelves with I/O modules in the specified shelf module slots.

**[-module-part-number <text>,...] - Module Part Number**

Displays information only about the storage shelves with I/O modules that match the module part numbers you specify.

**[-is-sas-master-module {true|false}] - Is SAS Expander Master Module?**

Displays information only about the storage shelves with a SAS master I/O module (true) or an I/O module that is not a SAS master (false). This parameter applies only to SAS shelves.

**[-is-monitor-active {true|false}] - Is Monitor Active?**

Displays information only about the storage shelves whose monitoring is enabled (true) or disabled (false).

**[-enclosure-type <text>,...] - Module Enclosure Type**

Displays information only about the storage shelves that match the enclosure types you specify.

**[-es-serial-number <text>,...] - ES Electronics Element Serial Number**

Displays information only about the storage shelves with I/O modules that match the electronics serial numbers you specify.



**[`-module-fru-id <text>,...`] - Field Replaceable Unit ID**

Displays information only about the storage shelves with I/O modules that match the field replaceable unit (FRU) IDs you specify.

**[`-module-is-reporting-element {true|false}`] - Is Reporting Element?**

Displays information only about the storage shelves with element reporting I/O modules (true) or not (false).

**[`-module-fw-revision <text>,...`] - Firmware Revision**

Displays information only about the storage shelves with I/O modules that match the firmware revision you specify.

**[`-module-latest-fw-revision <text>,...`] - Latest Firmware Revision**

Displays information only about the storage shelves with I/O modules that match the latest firmware revision you specify.

**[`-module-fw-progress {not-available|ready|in-progress|failed}`] - Module Firmware Progress**

Displays information only about the storage shelves with I/O modules that match the specified firmware update progress.

**[`-module-swap-count {<integer>|-}`] - Module Swap Count**

Displays information only about the storage shelves whose I/O modules have been swapped the specified number of times.

**[`-module-op-status {unknown|normal|warning|error}`] - Module Operational Status**

Displays information only about the storage shelves with I/O modules that match the operational status you specify.

**[`-sas-port-id <text>,...`] - Port ID**

Displays information only about the storage shelves with SAS Ports that match the port IDs you specify.

**[`-sas-port-type {unknown|circle|square|sil|disk|in|out|unused|host|dcm|aux1|aux2|hi_ho|a_to_b|b_to_a}`] - Port Type**

Displays information only about the storage shelves with SAS Ports that match the SAS port type you specify.

**[`-sas-port-wwpn <text>,...`] - Port World Wide Port Name**

Displays information only about the storage shelves with SAS Ports that match the World Wide Port Names you specify.

**[`-sas-port-speed <text>,...`] - Port Speed**

Displays information only about the storage shelves with SAS Ports that match the port speed you specify.

**[`-sas-negotiated-port-speed <text>,...`] - Negotiated Port Speed**

Displays information only about the storage shelves with SAS Ports that match the negotiated port speed you specify.

**[`-sas-port-power-status <text>,...`] - Port Power Status**

Displays information only about the storage shelves with SAS Ports that match the power status you

specify.

**[-sas-port-op-status {error|normal|off|unknown|byp-bad-term|bad-zone-recovery|byp\_clk\_thr|byp\_comma\_los|byp\_crc\_brst\_thr|byp\_data\_timeout|byp\_drv\_fault|byp\_drv\_pcycle|byp\_drv\_pwr|byp\_drv\_self|byp\_gen|byp\_init|byp\_lip\_brst\_thr|byp\_lip\_f8|byp\_lip\_rate\_thr|byp\_lipf7|byp\_ltbi|byp\_man|byp\_no\_drive|byp\_osc|byp\_other\_thr|byp\_rec\_los|byp\_rport|byp\_stall\_thr|byp\_wrd\_brst\_thr|byp\_wrd\_rate\_thr|byp\_xmit\_fault|diag\_transmit|inserted|loopback|status\_unknown|warn\_high\_clk\_delta|warn\_high\_crc\_rate|warn\_high\_lip|warn\_high\_wrd\_rate|term|phy\_dis\_clk\_fault|phy\_dis\_crc\_err|phy\_dis\_crc\_err\_burst|phy\_dis\_disparity|phy\_dis\_disparity\_burst|phy\_dis\_emulate\_reserve|phy\_dis\_inval\_dword|phy\_dis\_inval\_dword\_burst|phy\_dis\_loss\_dword|phy\_dis\_loss\_dword\_burst|phy\_dis\_man\_smp|phy\_dis\_manual|phy\_dis\_mirrored|empty|phy\_dis\_phy\_change|phy\_dis\_phy\_change\_burst|phy\_dis\_phy\_reset|phy\_dis\_phy\_reset\_burst|phy\_dis\_phy\_unused|phy\_ena|phy\_ena\_not\_attach|phy\_ena\_unknown|phy\_unknown}] - Port Operational Status**

Displays information only about the storage shelves with SAS Ports that match the operational status you specify.

**[-sas-port-module-id {A|B}] - Port Module ID**

Displays information only about the storage shelves with SAS Ports that match the module ID you specify.

**[-fc-port-id <text>,...] - Fibre Channel Port ID**

Displays information only about the storage shelves with FC Ports that match the port IDs you specify.

**[-fc-port-mode**

**{unknown|circle|square|sil|disk|in|out|unused|host|dcm|aux1|aux2|hi\_ho|a\_to\_b|b\_to\_a}] - Fibre Channel Port Mode**

Displays information only about the storage shelves with FC Ports that match the port modes you specify.

**[-fc-port-op-status {error|normal|off|unknown|byp-bad-term|bad-zone-recovery|byp\_clk\_thr|byp\_comma\_los|byp\_crc\_brst\_thr|byp\_data\_timeout|byp\_drv\_fault|byp\_drv\_pcycle|byp\_drv\_pwr|byp\_drv\_self|byp\_gen|byp\_init|byp\_lip\_brst\_thr|byp\_lip\_f8|byp\_lip\_rate\_thr|byp\_lipf7|byp\_ltbi|byp\_man|byp\_no\_drive|byp\_osc|byp\_other\_thr|byp\_rec\_los|byp\_rport|byp\_stall\_thr|byp\_wrd\_brst\_thr|byp\_wrd\_rate\_thr|byp\_xmit\_fault|diag\_transmit|inserted|loopback|status\_unknown|warn\_high\_clk\_delta|warn\_high\_crc\_rate|warn\_high\_lip|warn\_high\_wrd\_rate|term|phy\_dis\_clk\_fault|phy\_dis\_crc\_err|phy\_dis\_crc\_err\_burst|phy\_dis\_disparity|phy\_dis\_disparity\_burst|phy\_dis\_emulate\_reserve|phy\_dis\_inval\_dword|phy\_dis\_inval\_dword\_burst|phy\_dis\_loss\_dword|phy\_dis\_loss\_dword\_burst|phy\_dis\_man\_smp|phy\_dis\_manual|phy\_dis\_mirrored|empty|phy\_dis\_phy\_change|phy\_dis\_phy\_change\_burst|phy\_dis\_phy\_reset|phy\_dis\_phy\_reset\_burst|phy\_dis\_phy\_unused|phy\_ena|phy\_ena\_not\_attach|phy\_ena\_unknown|phy\_unknown}] - Fibre Channel Port Operational Status**

Displays information only about the storage shelves with FC Ports that match the operational status you specify.

**[-psu-id {<integer>|-}] - Power Supply Unit ID**

Displays information only about the storage shelves with power supply units (PSU) that match the unit IDs you specify.

**[-psu-location <text>,...] - Power Supply Unit Location**

Displays information only about the storage shelves with PSUs that are located at the specified location inside the shelf.

**[-psu-type <text>,...] - Power Supply Unit Type**

Displays information only about the storage shelves with PSUs that match the PSU types you specify.

**[-psu-part-number <text>,...] - Power Supply Unit Part Number**

Displays information only about the storage shelves with PSUs that match the PSU part number you specify.

**[-psu-serial-number <text>,...] - Power Supply Unit Serial Number**

Displays information only about the storage shelves with PSUs that match the PSU serial numbers you specify.

**[-psu-reset-capable {true|false}] - Power Supply Unit Reset Capability**

Displays information only about the storage shelves with reset capable PSUs (true) or reset incapable PSUs (false).

**[-psu-is-enabled {true|false}] - Power Supply Unit Enable/Disable Status**

Displays information only about the storage shelves with PSUs that are enabled (true) or disabled (false).

**[-psu-fw-version <text>,...] - Power Supply Unit Firmware Version**

Displays information only about the storage shelves with PSUs that have the firmware version you specify.

**[-psu-op-status {unknown|normal|error|dc-over-voltage|dc-under-voltage|dc-over-current|over-temperature-error|failed|off|not-supported|not-installed}] - Operational Status**

Displays information only about the storage shelves with PSUs that match the operational status you specify.

**[-psu-power-rating {<integer>|-}] - Power Supply Power Ratings In Watts**

Displays information only about the storage shelves with PSUs that match the power rating you specify.

**[-psu-crest-factor {<integer>|-}] - Power Supply Crest Factor**

Displays information only about the storage shelves with PSUs that match the crest factor value you specify.

**[-psu-power-drawn {<integer>|-}] - Power Drawn From PSU In Watts**

Displays information only about the storage shelves with PSUs that match the drawn power you specify.

**[-temp-sensor-id {<integer>|-}] - Sensor Name**

Displays information only about the storage shelves with temperature sensors that match the sensor IDs you specify.

**[-temp-sensor-location <text>,...] - Sensor Location**

Displays information only about the storage shelves with temperature sensors that match the specified sensor locations inside the shelf.

**[-temp-sensor-reading {<integer>|-}] - Temperature Reading**

Displays information only about the storage shelves with temperature sensors that match the temperature reading you specify.

**`[-temp-is-ambient {true|false}] - Temperature Reading at Ambient Value`**

Displays information only about the storage shelves with temperature sensors whose current temperature reading is ambient (true) or not (false).

**`[-temp-high-critical-threshold {<integer>|-}] - High Critical Threshold`**

Displays information only about the storage shelves with temperature sensors that match the high critical threshold you specify.

**`[-temp-high-warning-threshold {<integer>|-}] - High Warning Threshold`**

Displays information only about the storage shelves with temperature sensors that match the high warning threshold you specify.

**`[-temp-low-warning-threshold {<integer>|-}] - Low Warning Threshold`**

Displays information only about the storage shelves with temperature sensors that match the low warning threshold you specify.

**`[-temp-low-critical-threshold {<integer>|-}] - Low Critical Threshold`**

Displays information only about the storage shelves with temperature sensors that match the low critical threshold you specify.

**`[-temp-op-status {unknown|normal|under-temperature|over-temperature|error|not-supported|not-installed}] - Operational Status`**

Displays information only about the storage shelves with temperature sensors that match the operational status you specify.

**`[-voltage-sensor-id {<integer>|-}] - Voltage Sensor ID`**

Displays information only about the storage shelves with voltage sensors that match the sensor IDs you specify.

**`[-voltage-sensor-location <text>,...] - Voltage Sensor Location`**

Displays information only about the storage shelves with voltage sensors that match the specified sensor locations inside the shelf.

**`[-voltage-sensor-reading <text>,...] - Voltage Current Reading`**

Displays information only about the storage shelves with voltage sensors that match the voltage reading you specify.

**`[-voltage-op-status {unknown|normal|over-voltage-critical|under-voltage-critical|not-supported|not-installed|not-recoverable}] - Operational Status`**

Displays information only about the storage shelves with voltage sensors that match the operational status you specify.

**`[-error-type {unknown|acpp|bay|configuration|current|disk|internal|fan|module|port|power|temperature|voltage}] - Error Type`**

Displays information only about the storage shelves with errors that match the error type you specify.

**`[-error-severity {unknown|notice|warning|error|critical}] - Error Severity`**

Displays information only about the storage shelves with errors that match the error severity you specify.

Examples

The following example displays information about all storage shelves:

```
cluster1::> storage shelf show
Module Operational
      Shelf Name  Shelf ID  Serial Number  Model  Type
Status
-----
Critical          1.1         1  6000832415    DS2246  IOM6
Normal            1.2         2  6000647652    DS2246  IOM6
Normal            1.3         3  6000003844    DS2246  IOM6
Normal            1.4         4  SHJ000000013A9E DS4246  IOM6
Normal            1.5         5  SHJ000000013A84 DS4246  IOM6
Normal            1.6         6  6000005555    DS2246  IOM6
6 entries were displayed.
cluster1::>
```

The following example displays expanded information about a storage shelf named 1.2:

```
cluster1::> storage shelf show -shelf 1.2 -instance
Shelf Name: 1.2
      Stack ID: 1
      Shelf ID: 2
      Shelf UID: 50:0a:09:80:01:b9:75:41
      Serial Number: 6000647652
      Module Type: IOM6
      Model: DS2246
      Shelf Vendor: NETAPP
      Disk Count: 12
      Connection Type: SAS
      Shelf State: Online
      Status: Normal
Modules:
      Latest Swap Operational Module
      ID Part No.      ES Serial No.      is Active Master Element      Progress
      FW Rev. FW Rev. Count Status      Location
      Module is
      Monitor Is      Reporting FW Update
```

```

-----
a 111-00190+A0 8006437891      true      false  false  not-
available 0191      -          0 normal      rear of the shelf at the top
left

```

```

b 111-00190+A0 8006435180      true      true   true   not-
available 0191      -          0 normal      rear of the shelf at the top
right

```

Paths:

Speed

Controller	Initiator	Initiator	Side	Switch	Port	Target	Side
Switch Port	Target Port	TPGN	Gb/s	I/O	KB/s	IOPS	

stsw-8020-01	0a	-	-	-	-	-	-
stsw-8020-01	2b	-	-	-	-	-	-
stsw-8020-02	0a	-	-	-	-	-	-
stsw-8020-02	2b	-	-	-	-	-	-

Power Supply Units:

Reset	PSU	Operational	Crest	Power
ID	Type	Part#	Serial#	Power Rating
Capable	Enabled	Firmware	Status	PSU Location
1	9C	114-00065+A1	XXT131052637	-
false	true	020F	normal	rear of the shelf at the bottom left

2	9C	114-00065+A1	XXT131052551	-
false	true	020F	normal	rear of the shelf at the bottom right

Voltage Sensors:

Voltage	Operational	Sensor Location
ID	(V)	Status
1	5.70	normal
2	12.300	normal
3	5.70	normal

```

right power supply
  4 12.180 normal rear of the shelf on the lower
right power supply
Current Sensors:
  Current Operational
  ID      (mA) Status      Sensor Location
  ---
  1        0 normal rear of the shelf on the lower left
power supply
  2        0 normal rear of the shelf on the lower left
power supply
  3        0 normal rear of the shelf on the lower
right power supply
  4        0 normal rear of the shelf on the lower
right power supply
Fans:
  Speed Operational
  ID  (RPM) Status      Fan Location
  ---
  1  3000 normal rear of the shelf on the lower left
power supply
  2  2970 normal rear of the shelf on the lower left
power supply
  3  3000 normal rear of the shelf on the lower
right power supply
  4  2970 normal rear of the shelf on the lower
right power supply
Temperature:
  -- Thresholds °C --
  Temp Is      Low Low High High Operational
  ID   °C Ambient Crit Warn Crit Warn Status      Sensor
Location
  ---
  1  23 true      0   5  42  40 normal front of the
shelf on the left, on the OPS panel
  2  26 false     5  10  55  50 normal inside of the
shelf on the midplane
  3  24 false     5  10  55  50 normal rear of the
shelf on the lower left power supply
  4  39 false     5  10  70  65 normal rear of the
shelf on the lower left power supply
  5  25 false     5  10  55  50 normal rear of the
shelf on the lower right power supply
  6  36 false     5  10  70  65 normal rear of the
shelf on the lower right power supply

```

```

7 25 false 5 10 60 55 normal rear of the
shelf at the top left, on shelf module A
8 26 false 5 10 60 55 normal rear of the
shelf at the top right, on shelf module B
SAS Ports:

```

					-- Port Speeds Gb/s -- Power	
Port	Phy #	IOM	Port Type	WWPN	Operational	Negotiated Status
Status						
-----	-----	-----	-----	-----	-----	-----
Enabled	0	A	Square	500a098004b063b0	6.0	- -
Enabled	1	A	Square	500a098004b063b0	6.0	- -
Enabled	2	A	Square	500a098004b063b0	6.0	- -
Enabled	3	A	Square	500a098004b063b0	6.0	- -
Enabled	4	A	Circle	500a09800569f03f	6.0	- -
Enabled	5	A	Circle	500a09800569f03f	6.0	- -
Enabled	6	A	Circle	500a09800569f03f	6.0	- -
Enabled	7	A	Circle	500a09800569f03f	6.0	- -
Enabled	8	A	Disk	500605ba00c1cb8d	6.0	6.0 on
Enabled	9	A	Disk	500605ba00c1ea8d	6.0	6.0 on
Enabled	10	A	Disk	500605ba00c1d111	6.0	6.0 on
Enabled	11	A	Disk	500605ba00c1bc49	6.0	6.0 on
Enabled	12	A	Disk	500605ba00c1cdfd	6.0	6.0 on
Enabled	13	A	Disk	500605ba00c1c531	6.0	6.0 on
Enabled	14	A	Disk	500605ba00c1eb05	6.0	6.0 on
Enabled	15	A	Disk	500605ba00c1ec29	6.0	6.0 on
Enabled	16	A	Disk	500605ba00c1bc29	6.0	6.0 on
Enabled	17	A	Disk	500605ba00c1c471	6.0	6.0 on



Enabled						
	18	A	Disk	500605ba00c039a9	6.0	6.0 on
Enabled						
	19	A	Disk	500605ba00c1c4dd	6.0	6.0 on
Enabled						
	20	A	Disk	-	-	- -
Empty						
	21	A	Disk	-	-	- -
Empty						
	22	A	Disk	-	-	- -
Empty						
	23	A	Disk	-	-	- -
Empty						
	24	A	Disk	-	-	- -
Empty						
	25	A	Disk	-	-	- -
Empty						
	26	A	Disk	-	-	- -
Empty						
	27	A	Disk	-	-	- -
Empty						
	28	A	Disk	-	-	- -
Empty						
	29	A	Disk	-	-	- -
Empty						
	30	A	Disk	-	-	- -
Empty						
	31	A	Disk	-	-	- -
Empty						
	32	A	SIL	-	-	- -
Disabled						
	33	A	SIL	-	-	- -
Disabled						
	34	A	SIL	-	-	- -
Disabled						
	35	A	SIL	-	-	- -
Disabled						
	0	B	Square	500a098004af9e30	6.0	- -
Enabled						
	1	B	Square	500a098004af9e30	6.0	- -
Enabled						
	2	B	Square	500a098004af9e30	6.0	- -
Enabled						
	3	B	Square	500a098004af9e30	6.0	- -
Enabled						
	4	B	Circle	500a098005688dbf	6.0	- -

Enabled						
	5	B	Circle	500a098005688dbf	6.0	- -
Enabled						
	6	B	Circle	500a098005688dbf	6.0	- -
Enabled						
	7	B	Circle	500a098005688dbf	6.0	- -
Enabled						
	8	B	Disk	500605ba00c1cb8e	6.0	6.0 on
Enabled						
	9	B	Disk	500605ba00c1ea8e	6.0	6.0 on
Enabled						
	10	B	Disk	500605ba00c1d112	6.0	6.0 on
Enabled						
	11	B	Disk	500605ba00c1bc4a	6.0	6.0 on
Enabled						
	12	B	Disk	500605ba00c1cdfc	6.0	6.0 on
Enabled						
	13	B	Disk	500605ba00c1c532	6.0	6.0 on
Enabled						
	14	B	Disk	500605ba00c1eb06	6.0	6.0 on
Enabled						
	15	B	Disk	500605ba00c1ec2a	6.0	6.0 on
Enabled						
	16	B	Disk	500605ba00c1bc2a	6.0	6.0 on
Enabled						
	17	B	Disk	500605ba00c1c472	6.0	6.0 on
Enabled						
	18	B	Disk	500605ba00c039aa	6.0	6.0 on
Enabled						
	19	B	Disk	500605ba00c1c4de	6.0	6.0 on
Enabled						
	20	B	Disk	-	-	- -
Empty						
	21	B	Disk	-	-	- -
Empty						
	22	B	Disk	-	-	- -
Empty						
	23	B	Disk	-	-	- -
Empty						
	24	B	Disk	-	-	- -
Empty						
	25	B	Disk	-	-	- -
Empty						
	26	B	Disk	-	-	- -
Empty						
	27	B	Disk	-	-	- -

```

Empty
  28  B  Disk      -
Empty
  29  B  Disk      -
Empty
  30  B  Disk      -
Empty
  31  B  Disk      -
Empty
  32  B  SIL       -
Disabled
  33  B  SIL       -
Disabled
  34  B  SIL       -
Disabled
  35  B  SIL       -
Disabled
FC Ports:

```

```

          Port
      ID Port Type Status
-----
      - -      -

```

Bays:

```

Has          Operational
  ID Disk  Bay Type    Status
-----
  0 true  single-disk normal
  1 true  single-disk normal
  2 true  single-disk normal
  3 true  single-disk normal
  4 true  single-disk normal
  5 true  single-disk normal
  6 true  single-disk normal
  7 true  single-disk normal
  8 true  single-disk normal
  9 true  single-disk normal
 10 true  single-disk normal
 11 true  single-disk normal
 12 false single-disk normal
 13 false single-disk normal
 14 false single-disk normal
 15 false single-disk normal
 16 false single-disk normal
 17 false single-disk normal
 18 false single-disk normal
 19 false single-disk normal

```

```

20 false single-disk normal
21 false single-disk normal
22 false single-disk normal
23 false single-disk normal
cluster1::>

```

The following example displays information about the power supplies, voltage sensors and current sensors of the storage shelf 1.1:

```

cluster1::> storage shelf show -shelf 1.1 -power
Shelf Name: 1.1
          Stack ID: 1
          Shelf ID: 1
          Shelf UID: 50:0a:09:80:01:cb:d6:84
          Serial Number: 6000832415
          Module Type: IOM6
          Model: DS2246
          Shelf Vendor: NETAPP
          Disk Count: 12
          Connection Type: SAS
          Shelf State: Online
          Status: Normal
Power Supply Units:

```

Reset	PSU	Operational		Crest	Power	
ID	Type	Part#	Serial#	Power Rating	Factor	Drawn
Capable	Enabled	Firmware	Status			
---	----	-----	-----	-----	-----	-----
1	9C	114-00065+A1	XXT132835072	-	-	-
false	true	020F	normal			
2	9C	114-00065+A1	XXT132835073	-	-	-
false	true	020F	normal			

```

Voltage Sensors:
          Voltage Operational
          ID      (V) Status
          ---
          1      5.70 normal
          2     12.180 normal
          3      5.70 normal
          4     12.300 normal
Current Sensors:
          Current Operational
          ID      (mA) Status
          ---

```

```
1      0 normal
2      0 normal
3    3900 normal
4      0 normal
```

Errors:

-----

Critical condition is detected in storage shelf power supply unit "1".  
The unit might fail.

Critical over temperature failure for temperature sensor "1". Current  
temperature: "75" C ("167" F).

cluster1::>

The following example displays information about the cooling elements and temperature sensors inside the storage shelf 1.2:

```

cluster1::> storage shelf show -shelf 1.2 -cooling
Shelf Name: 1.2
      Stack ID: 1
      Shelf ID: 2
      Shelf UID: 50:0a:09:80:01:b9:75:41
      Serial Number: 6000647652
      Module Type: IOM6
      Model: DS2246
      Shelf Vendor: NETAPP
      Disk Count: 12
      Connection Type: SAS
      Shelf State: Online
      Status: Normal

Fans:
      Speed Operational
      ID (RPM) Status
      -- -----
      1  3000 normal
      2  3000 normal
      3  3000 normal
      4  2970 normal

Temperature:
      -- Thresholds °C --
      Temp Is      Low  Low High High Operational
      ID   °C Ambient Crit Warn Crit Warn Status
      --- ---
      1    23 true    0   5  42  40 normal
      2    26 false   5  10  55  50 normal
      3    24 false   5  10  55  50 normal
      4    39 false   5  10  70  65 normal
      5    25 false   5  10  55  50 normal
      6    36 false   5  10  70  65 normal
      7    25 false   5  10  60  55 normal
      8    27 false   5  10  60  55 normal

Errors:
      -----
      -
cluster1::>

```

The following example displays information about the connectivity from the node to the storage shelf 1.2:

```

cluster1::> storage shelf show -shelf 1.2 -connectivity
      Shelf Name: 1.2
      Stack ID: 1
      Shelf ID: 2
      Shelf UID: 50:0a:09:80:01:b9:75:41
Serial Number: 6000647652
      Module Type: IOM6
      Model: DS2246
      Shelf Vendor: NETAPP
      Disk Count: 12
Connection Type: SAS
      Shelf State: Online
      Status: Normal

Paths:
Controller          Initiator Initiator Side Switch Port Target Side Switch
Port      Target Port      TPGN
-----
stsw-8020-01      0a      -      -
-
stsw-8020-01      2b      -      -
-
stsw-8020-02      0a      -      -
-
stsw-8020-02      2b      -      -
-

Errors:
-----
-
cluster1::>

```

The following example displays information about the disk bays of the storage shelf 1.2:

```
cluster1::> storage shelf show -shelf 1.2 -bay
```

```
Shelf Name: 1.2
```

```
Stack ID: 1
```

```
Shelf ID: 2
```

```
Shelf UID: 50:0a:09:80:01:b9:75:41
```

```
Serial Number: 6000647652
```

```
Module Type: IOM6
```

```
Model: DS2246
```

```
Shelf Vendor: NETAPP
```

```
Disk Count: 12
```

```
Connection Type: SAS
```

```
Shelf State: Online
```

```
Status: Normal
```

```
Bays:
```

```
Has
```

```
Operational
```

ID	Disk	Bay Type	Status
0	true	single-disk	normal
1	true	single-disk	normal
2	true	single-disk	normal
3	true	single-disk	normal
4	true	single-disk	normal
5	true	single-disk	normal
6	true	single-disk	normal
7	true	single-disk	normal
8	true	single-disk	normal
9	true	single-disk	normal
10	true	single-disk	normal
11	true	single-disk	normal
12	false	single-disk	normal
13	false	single-disk	normal
14	false	single-disk	normal
15	false	single-disk	normal
16	false	single-disk	normal
17	false	single-disk	normal
18	false	single-disk	normal
19	false	single-disk	normal
20	false	single-disk	normal
21	false	single-disk	normal
22	false	single-disk	normal
23	false	single-disk	normal

```
Errors:
```

```
-----  
-
```

```
cluster1::>
```



The following example displays information about the ports of the storage shelf 1.2:

```
cluster1:> storage shelf show -shelf 1.2 -port
Shelf Name: 1.2
      Stack ID: 1
      Shelf ID: 2
      Shelf UID: 50:0a:09:80:01:b9:75:41
      Serial Number: 6000647652
      Module Type: IOM6
      Model: DS2246
      Shelf Vendor: NETAPP
      Disk Count: 12
      Connection Type: SAS
      Shelf State: Online
      Status: Normal

SAS Ports:
-- Port Speeds Gb/s -- Power
Port
Phy # IOM Port Type WWPN      Operational Negotiated Status
Status
-----
-----
      0  A  Square  500a098004b063b0      6.0      - -
Enabled
      1  A  Square  500a098004b063b0      6.0      - -
Enabled
      2  A  Square  500a098004b063b0      6.0      - -
Enabled
      3  A  Square  500a098004b063b0      6.0      - -
Enabled
      4  A  Circle  500a09800569f03f      6.0      - -
Enabled
      5  A  Circle  500a09800569f03f      6.0      - -
Enabled
      6  A  Circle  500a09800569f03f      6.0      - -
Enabled
      7  A  Circle  500a09800569f03f      6.0      - -
Enabled
      8  A  Disk    500605ba00c1cb8d      6.0      6.0 on
Enabled
      9  A  Disk    500605ba00c1ea8d      6.0      6.0 on
Enabled
     10  A  Disk    500605ba00c1d111      6.0      6.0 on
Enabled
     11  A  Disk    500605ba00c1bc49      6.0      6.0 on
Enabled
```

Enabled	12	A	Disk	500605ba00c1cdfd	6.0	6.0	on
Enabled	13	A	Disk	500605ba00c1c531	6.0	6.0	on
Enabled	14	A	Disk	500605ba00c1eb05	6.0	6.0	on
Enabled	15	A	Disk	500605ba00c1ec29	6.0	6.0	on
Enabled	16	A	Disk	500605ba00c1bc29	6.0	6.0	on
Enabled	17	A	Disk	500605ba00c1c471	6.0	6.0	on
Enabled	18	A	Disk	500605ba00c039a9	6.0	6.0	on
Enabled	19	A	Disk	500605ba00c1c4dd	6.0	6.0	on
Empty	20	A	Disk	-	-	-	-
Empty	21	A	Disk	-	-	-	-
Empty	22	A	Disk	-	-	-	-
Empty	23	A	Disk	-	-	-	-
Empty	24	A	Disk	-	-	-	-
Empty	25	A	Disk	-	-	-	-
Empty	26	A	Disk	-	-	-	-
Empty	27	A	Disk	-	-	-	-
Empty	28	A	Disk	-	-	-	-
Empty	29	A	Disk	-	-	-	-
Empty	30	A	Disk	-	-	-	-
Empty	31	A	Disk	-	-	-	-
Disabled	32	A	SIL	-	-	-	-
Disabled	33	A	SIL	-	-	-	-
Disabled	34	A	SIL	-	-	-	-

35	A	SIL	-	-	- -
Disabled					
0	B	Square	500a098004af9e30	6.0	- -
Enabled					
1	B	Square	500a098004af9e30	6.0	- -
Enabled					
2	B	Square	500a098004af9e30	6.0	- -
Enabled					
3	B	Square	500a098004af9e30	6.0	- -
Enabled					
4	B	Circle	500a098005688dbf	6.0	- -
Enabled					
5	B	Circle	500a098005688dbf	6.0	- -
Enabled					
6	B	Circle	500a098005688dbf	6.0	- -
Enabled					
7	B	Circle	500a098005688dbf	6.0	- -
Enabled					
8	B	Disk	500605ba00c1cb8e	6.0	6.0 on
Enabled					
9	B	Disk	500605ba00c1ea8e	6.0	6.0 on
Enabled					
10	B	Disk	500605ba00c1d112	6.0	6.0 on
Enabled					
11	B	Disk	500605ba00c1bc4a	6.0	6.0 on
Enabled					
12	B	Disk	500605ba00c1cdfc	6.0	6.0 on
Enabled					
13	B	Disk	500605ba00c1c532	6.0	6.0 on
Enabled					
14	B	Disk	500605ba00c1eb06	6.0	6.0 on
Enabled					
15	B	Disk	500605ba00c1ec2a	6.0	6.0 on
Enabled					
16	B	Disk	500605ba00c1bc2a	6.0	6.0 on
Enabled					
17	B	Disk	500605ba00c1c472	6.0	6.0 on
Enabled					
18	B	Disk	500605ba00c039aa	6.0	6.0 on
Enabled					
19	B	Disk	500605ba00c1c4de	6.0	6.0 on
Enabled					
20	B	Disk	-	-	- -
Empty					
21	B	Disk	-	-	- -
Empty					

```

22  B  Disk  -  -  -
Empty
23  B  Disk  -  -  -
Empty
24  B  Disk  -  -  -
Empty
25  B  Disk  -  -  -
Empty
26  B  Disk  -  -  -
Empty
27  B  Disk  -  -  -
Empty
28  B  Disk  -  -  -
Empty
29  B  Disk  -  -  -
Empty
30  B  Disk  -  -  -
Empty
31  B  Disk  -  -  -
Empty
32  B  SIL   -  -  -
Disabled
33  B  SIL   -  -  -
Disabled
34  B  SIL   -  -  -
Disabled
35  B  SIL   -  -  -
Disabled
FC Ports:
      Port
      ID Port Type Status
      ---
      - - -
Errors:
-----
-
cluster1::>

```

The following example displays error information about the storage shelves that have errors:

```
cluster1::> storage shelf show -errors
Shelf Name: 1.1
    Shelf UID: 50:0a:09:80:01:cb:d6:84
    Serial Number: 6000832415
Error Type      Description
-----
Power           Critical condition is detected in storage shelf
power supply unit "1". The unit might fail.
Temperature     Critical over temperature failure for temperature
sensor "1". Current temperature: "75" C ("167" F).
```

## storage shelf acp configure

Configure alternate control path (ACP)

**Availability:** This command is available to *cluster* administrators at the *admin* privilege level.

### Description

Configure the ACP connectivity on the cluster.

### Parameters

**-is-enabled {true|false} - Is Enabled?**

Configures the connectivity to the specified state.

**[-subnet <IP Address>] - Subnet**

Configures the connectivity to the specified subnet.

**[-netmask <IP Address>] - Netmask**

Configures the connectivity to the specified netmask.

**[-channel {out-of-band|in-band}] - Channel**

Configures the connectivity to the specified channel.

### Examples

The following example configures out-of-band ACP connectivity on each node:

```
cluster1::> storage shelf acp configure -is-enabled true -channel out-of-
band -subnet 192.168.0.1 -netmask 255.255.255.0
```

The following example configures in-band ACP connectivity on each node:

```
cluster1::> storage shelf acp configure -is-enabled true -channel in-band
```

The following example disables ACP connectivity on each node:

```
cluster1::> storage shelf acp configure -is-enabled false
```

## storage shelf acp show

Show connectivity information

**Availability:** This command is available to *cluster* administrators at the *admin* privilege level.

### Description

Displays information about the ACP connectivity on each node

### Parameters

**{ [-fields <fieldname>,...]**

If you specify the -fields <field-name> ", ... parameter, the command output also includes the specified field or fields. You can use '-fields ?' to display the fields to specify.

**| [-errors ]**

If you specify the -errors parameter, the command displays detailed information about all modules with errors.

**| [-instance ] }**

If you specify the -instance parameter, the command displays detailed information about all fields.

**[-node {<nodename>|local}] - Node**

Selects the nodes that match this parameter value.

**[-is-enabled {true|false}] - Is Enabled?**

Selects the nodes that are enabled or disabled.

**[-port <text>] - Port**

Selects the nodes that match the specified port on which ACP is configured.

**[-address <IP Address>] - IP Address**

Selects the nodes with the specified IP address.

**[-subnet <IP Address>] - Subnet**

Selects the nodes with the specified subnet.

**[-netmask <IP Address>] - Netmask**

Selects the nodes with the specified netmask.

**[-connection-status {no-connectivity|partial-connectivity|full-connectivity|additional-connectivity|unknown-connectivity|not-available|connection-disabled}] - Connection Status**

Selects the nodes with the specified connection status.

**[-error-id <integer>] - Error ID**

Selects the node with the specified error ID.

**[-error-type {No-Error|Connection-Issue|Connection-Activity|Module-Error|Shelf-Error}] - Error Type**

The error type, in case of a connection error.

**[-error-severity {unknown|notice|warning|error|critical}] - Error Severity**

The error severity, in case of a connection error.

**[-error-text <text>] - Error Text**

Selects the node with the specified error text.

**[-corrective-action <text>] - Corrective Action**

Selects the node with the specified corrective action.

**[-channel {unknown|out-of-band|in-band}] - Channel**

Selects the nodes that has channel configured out-of-band or in-band.

## Examples

The following example displays ACP connectivity on each node:

```
cluster1::> storage shelf acp show
```

Node	Channel	Connectivity
stor-8020-1	in-band	active
stor-8020-2	in-band	active
stor-8060-1	out-of-band	full-connectivity
stor-8060-2	out-of-band	full-connectivity

4 entries were displayed.

The following example displays the -instance output of the storage acp show. More details on the connectivity and configuration can be seen [here](#).

```

cluster1::> storage shelf acp show -instance
Node: stor-8020-1
    Channel: out-of-band
    Enable Status: enabled
    Port: e0P
    IP Address: 192.168.1.74
    Subnet: 192.168.0.1
    Netmask: 255.255.252.0
    Connection Status: full-connectivity
Node: stor-8020-1
    Channel: in-band
    Enable Status: enabled
    Connection Status: active
2 entries were displayed.

```

## storage shelf acp module show

Show modules connected to the cluster

**Availability:** This command is available to *cluster* administrators at the *admin* privilege level.

### Description

Displays information about the modules connected to each node

### Parameters

**{ [-fields <fieldname>,...]**

If you specify the -fields <field-name> ", ... parameter, the command output also includes the specified field or fields. You can use '-fields ?' to display the fields to specify

**| [-errors ]**

If you specify the -errors parameter, the command displays detailed information about all modules with errors.

**| [-instance ] }**

If you specify the -instance parameter, the command displays detailed information about all fields.

**[-node {<nodename>|local}] - Node**

Selects the modules that match this parameter value.

**[-mac-address <text>] - MAC Address**

Selects the module that match the specified MAC address.

**[-module-name <text>] - Module name**

Selects the module that match the specified module name.



**`[-module-address <IP Address>] - IP Address`**

Selects the module that match the specified IP address.

**`[-protocol-version <text>] - Protocol Version`**

Selects the modules that match the specified protocol version.

**`[-firmware-version <text>] - Firmware Version`**

Selects the modules that match the specified firmware version.

**`[-acpa-id <integer>] - ACPA assigner ID`**

Selects the modules that match the specified ACPA ID.

**`[-shelf-serial-number <text>] - Shelf Serial Number`**

Selects the modules that match the specified shelf serial number.

**`[-iom-type {Unknown|iom3|iom6|iom6e|iom12|iom12e|iom12f}] - IOM Type`**

Selects the modules that match the specified IOM type (IOM3/IOM6/IOM6E).

**`[-last-contact <integer>] - Last Contact (secs)`**

Selects the modules that match the specified last contact.

**`[-state {unknown|initializing|discovery-complete|awaiting-inband|no-inband|active|awaiting-bootp|updating-firmware|connection-error|firmware-update-required|rebooting|fail|unsupported|degraded|shelf-off}] - Local Node State`**

Selects the modules that match the specified state.

**`[-stack-id {<integer>|-}] - Stack ID`**

Selects the modules that match the specified stack ID.

**`[-shelf-id <text>] - Shelf ID`**

Selects the modules that match the specified shelf ID.

**`[-adapter-name <text>] - Adapter Name`**

Selects the modules that match the specified adapter name.

**`[-error-id <integer>,...] - Error ID`**

Selects the modules that match the specified error ID.

**`[-error-text <text>,...] - Error Text`**

The error text, in case of a module error.

**`[-corrective-action <text>,...] - Corrective Action`**

The corrective action, in case of a module error.

**`[-error-type {No-Error|Connection-Issue|Connection-Activity|Module-Error|Shelf-Error}] - Error Type`**

Selects the modules that match the specified error type.

## **[`-error-severity {unknown|notice|warning|error|critical}`] - Error Severity**

Selects the modules that match the specified error severity.

## **Examples**

The following example displays the ACP modules connected to each node:

```
cluster1::> storage shelf acp module show
Node                Module Name      State
-----
stor-v4-1a-1b-01    1.10.A          Active
                    1.10.B          Active
                    1.254.B         Active
                    1.254.A         Active

stor-v4-1a-1b-02    1.10.A          Active
                    1.10.B          Active
                    1.254.B         Active
                    1.254.A         Active

8 entries were displayed.
```

The following example displays the `-instance` output of the storage shelf acp module show. More details on each module can be seen [here](#).

```
cluster1::> storage shelf acp module show -instance
Node: stor-v4-1a-1b-01
    Module Name: 1.10.A
    Mac Address: 00:a0:98:19:53:ee
    IOM Type: IOM6E
    Shelf Serial Number: SHJMS000000001A
    IP Address: 192.168.3.239
    Protocol Version: 2.1.1.21
    Assigner ID: 2.1.1.21
    State: Active
    Last Contact: 203
Node: stor-v4-1a-1b-01
    Module Name: 1.10.B
    Mac Address: 00:a0:98:19:55:16
    IOM Type: IOM6E
    Shelf Serial Number: SHJMS000000001A
    IP Address: 192.168.1.23
    Protocol Version: 2.1.1.21
    Assigner ID: 2.1.1.21
    State: Active
    Last Contact: 206
```

Node: stor-v4-1a-1b-01  
Module Name: 1.254.B  
Mac Address: 00:a0:98:32:d6:ac  
IOM Type: IOM6  
Shelf Serial Number: 6000368103  
IP Address: 192.168.2.173  
Protocol Version: 1.2.2. 8  
Assigner ID: 1.2.2. 8  
State: Active  
Last Contact: 215

Node: stor-v4-1a-1b-01  
Module Name: 1.254.A  
Mac Address: 00:a0:98:32:d6:dc  
IOM Type: IOM6  
Shelf Serial Number: 6000368103  
IP Address: 192.168.2.221  
Protocol Version: 1.2.2. 8  
Assigner ID: 1.2.2. 8  
State: Active  
Last Contact: 218

Node: stor-v4-1a-1b-02  
Module Name: 1.106.A  
Mac Address: 00:a0:98:19:53:ee  
IOM Type: IOM6E  
Shelf Serial Number: SHJMS000000001A  
IP Address: 192.168.3.239  
Protocol Version: 2.1.1.21  
Assigner ID: 2.1.1.21  
State: Initializing  
Last Contact: 206

Node: stor-v4-1a-1b-02  
Module Name: 1.106.B  
Mac Address: 00:a0:98:19:55:16  
IOM Type: IOM6E  
Shelf Serial Number: SHJMS000000001A  
IP Address: 192.168.1.23  
Protocol Version: 2.1.1.21  
Assigner ID: 2.1.1.21  
State: Initializing  
Last Contact: 209

Node: stor-v4-1a-1b-02  
Module Name: 1.10.B  
Mac Address: 00:a0:98:32:d6:ac  
IOM Type: IOM6  
Shelf Serial Number: 6000368103  
IP Address: 192.168.2.173

```
Protocol Version: 1.2.2.8
    Assigner ID: 1.2.2.8
        State: Initializing
    Last Contact: 217
Node: stor-v4-1a-1b-02
    Module Name: 1.10.A
    Mac Address: 00:a0:98:32:d6:dc
        IOM Type: IOM6
Shelf Serial Number: 6000368103
    IP Address: 192.168.2.221
    Protocol Version: 1.2.2.8
        Assigner ID: 1.2.2.8
            State: Initializing
        Last Contact: 220

8 entries were displayed.
```

## storage shelf drawer show-phy

Display a list of PHYs per drawer

**Availability:** This command is available to *cluster* administrators at the *admin* privilege level.

### Description

The `storage shelf drawer show-phy` command displays information for drawer PHYs in the storage system. If no parameters are specified, the default command displays the following information about PHYs:

- Shelf Name
- Drawer Number
- PHY Number
- Type
- SAS Address
- State

To display detailed information about a single PHY, use the `-shelf`, `-drawer`, and `-phy` parameters.

### Parameters

**{ [-fields <fieldname>,...]**

Displays the specified fields for all drawer PHYs, in column style output.

**| [-instance ]**

Displays expanded information for all drawer PHYs in the system. If a shelf, drawer, and PHY are specified, then this parameter displays the same detailed information for the PHY you specify as does the `-shelf`, `-drawer`, and `-phy` parameters.

**[`-shelf <text>`] - Shelf Name**

Displays the PHYs in the storage shelf that matches the specified shelf name.

**[`-drawer <integer>`] - Drawer Number**

Displays the PHYs in the drawers that match the specified drawer number.

**[`-phy <integer>`] - PHY Number**

Displays the PHYs that match the specified PHY number.

**[`-node {<nodename>|local}`] - Node Name**

Displays the PHYs that are present for the specified node.

**[`-type {unknown|disk|virtual|input}`] - Type**

Displays the PHYs with the specified type.

**[`-physical-id <integer>`] - Physical ID**

Displays the PHYs that match the specified physical-id.

**[`-sas-address <text>`] - Attached SAS Address**

Displays the PHYs with the specified attached sas address.

**[`-state-a {unknown|enabled|disabled}`] - State Module A**

Displays the PHYs for which module A has the specified state.

**[`-state-b {unknown|enabled|disabled}`] - State Module B**

Displays the PHYs for which module B has the specified state.

**[`-status-a <Drawer PHY Status>`] - Status Module A**

Displays the PHYs with module A currently operating under the specified status.

**[`-status-b <Drawer PHY Status>`] - Status Module B**

Displays the PHYs with module B currently operating under the specified status.

## Examples

The following example displays information about all drawer PHYs:

```
cluster1::> storage shelf drawer show-phy
Shelf Drawer PHY #   Type      SAS Address      PHY State A/B
-----
2.5
      1
        0 disk    00c5005079183f85  enabled/enabled
        1 disk    -                      enabled/enabled
        2 disk    -                      enabled/enabled
        3 disk    00c50050e1183f85  enabled/enabled
        4 disk    -                      enabled/enabled
        5 disk    -                      enabled/enabled
```

2	6	disk	00c50050dd183f85	enabled/enabled
	7	disk	-	enabled/enabled
	8	disk	-	enabled/enabled
	9	disk	00c500502d163f85	enabled/enabled
	10	disk	-	enabled/enabled
	11	disk	-	enabled/enabled
	12	input	80090a5045e46f06	enabled/enabled
	13	input	80090a5045e46f06	enabled/enabled
	14	input	80090a5045e46f06	enabled/enabled
	15	input	80090a5045e46f06	enabled/enabled
	16	virtual	8a090a503dd01b17	enabled/enabled
	0	disk	00c500503d0e3d85	enabled/enabled
	1	disk	-	enabled/enabled
	2	disk	-	enabled/enabled
	3	disk	00c50050e9173f85	enabled/enabled
	4	disk	-	enabled/enabled
3	5	disk	-	enabled/enabled
	6	disk	00c50050a9163f85	enabled/enabled
	7	disk	-	enabled/enabled
	8	disk	-	enabled/enabled
	9	disk	00c5005021173f85	enabled/enabled
	10	disk	-	enabled/enabled
	11	disk	-	enabled/enabled
	12	input	80090a5045e46f06	enabled/enabled
	13	input	80090a5045e46f06	enabled/enabled
	14	input	80090a5045e46f06	enabled/enabled
	15	input	80090a5045e46f06	enabled/enabled
	16	virtual	8a090a503d90fd16	enabled/enabled
	0	disk	00c500503d163f85	enabled/enabled
	1	disk	-	enabled/enabled
	2	disk	-	enabled/enabled
	3	disk	00c50050bd163f85	enabled/enabled
	4	disk	-	enabled/enabled
	5	disk	-	enabled/enabled
	6	disk	00c50050c1d44085	enabled/enabled
	7	disk	-	enabled/enabled
	8	disk	-	enabled/enabled
	9	disk	00c50050f1d54085	enabled/enabled
	10	disk	-	enabled/enabled
	11	disk	-	enabled/enabled
	12	input	80090a5045e46f06	enabled/enabled
	13	input	80090a5045e46f06	enabled/enabled
	14	input	80090a5045e46f06	enabled/enabled
	15	input	80090a5045e46f06	enabled/enabled

```

      16  virtual  8a090a503d202a17  enabled/enabled
4
      0  disk     00c50050fdd54085  enabled/enabled
      1  disk     -                  enabled/enabled
      2  disk     -                  enabled/enabled
      3  disk     00c50050d9d44085  enabled/enabled
      4  disk     a0cc0050e5973712  enabled/enabled
      5  disk     -                  enabled/enabled
      6  disk     00c500506dd34085  enabled/enabled
      7  disk     -                  enabled/enabled
      8  disk     -                  enabled/enabled
      9  disk     00c5005045d64085  enabled/enabled
     10  disk     -                  enabled/enabled
     11  disk     -                  enabled/enabled
     12  input    80090a5045e46f06  enabled/enabled
     13  input    80090a5045e46f06  enabled/enabled
     14  input    80090a5045e46f06  enabled/enabled
     15  input    80090a5045e46f06  enabled/enabled
     16  virtual  8a090a503d100b17  enabled/enabled
5
      0  disk     00c50050c9d54085  enabled/enabled
      1  disk     -                  enabled/enabled
      2  disk     -                  enabled/enabled
      3  disk     00c50050f9d44085  enabled/enabled
      4  disk     -                  enabled/enabled
      5  disk     -                  enabled/enabled
      6  disk     00c5005081d34085  enabled/enabled
      7  disk     -                  enabled/enabled
      8  disk     -                  enabled/enabled
      9  disk     00c500505dd64085  enabled/enabled
     10  disk     -                  enabled/enabled
     11  disk     -                  enabled/enabled
     12  input    80090a5045e46f06  enabled/enabled
     13  input    80090a5045e46f06  enabled/enabled
     14  input    80090a5045e46f06  enabled/enabled
     15  input    80090a5045e46f06  enabled/enabled
     16  virtual  8a090a503df00a17  enabled/enabled

```

85 entries were displayed.  
cluster1::>

The following example displays expanded information for PHY 0 of drawer 1 in shelf 2.5:

```

cluster1::> storage shelf drawer show-phy -shelf 2.5 -drawer 1 -phy 0
Shelf: 2.5
    Drawer ID: 1
    PHY Number: 0
        Type: disk
    Physical ID: 1
    SAS Address: 00c5005079183f85
        State A: enabled
        State B: enabled
    Status A: enabled-12gbs
    Status B: enabled-12gbs
cluster1::>

```

## storage shelf drawer show-slot

Display a map between bay number and drawer/slot number

**Availability:** This command is available to *cluster* administrators at the *admin* privilege level.

### Description

The `storage shelf drawer show-slot` command maps each drawer and slot number to the corresponding bay number.

### Parameters

**{ [-fields <fieldname>,...]**

Displays the specified fields in column style output.

**| [-instance ]**

Displays all slot information.

**[-shelf <text>] - Shelf Name**

Displays the slots in the shelf that matches the specified shelf name.

**[-bay <integer>] - Bay Number**

Displays the slots that have the specified bay number.

**[-node {<nodename>|local}] - Node Name**

Displays the slots that are present for the specified node.

**[-drawer <integer>] - Drawer Number**

Displays the slots in the drawers that match the specified drawer number.

**[-slot <integer>] - Slot Number**

Displays the slots that match the specified slot number.



## **[-is-installed {yes|no}] - Is Disk Installed**

Displays the slots that have a disk installed.

### **Examples**

The following example displays the mapping from drawer and slot number to bay number:

```
cluster1::> storage shelf drawer show-slot
Shelf  Drawer  Slot  Bay  Installed?
-----
2.5
      1
        0    0  yes
        1    1  no
        2    2  no
        3    3  yes
        4    4  no
        5    5  no
        6    6  yes
        7    7  no
        8    8  no
        9    9  yes
       10   10  no
       11   11  no
      2
        0   12  yes
        1   13  no
        2   14  no
        3   15  yes
        4   16  no
        5   17  no
        6   18  yes
        7   19  no
        8   20  no
        9   21  yes
       10   22  no
       11   23  no
      3
        0   24  yes
        1   25  no
        2   26  no
        3   27  yes
        4   28  no
        5   29  no
        6   30  yes
        7   31  no
```

```

      8    32  no
      9    33  yes
     10    34  no
     11    35  no
4
      0    36  yes
      1    37  no
      2    38  no
      3    39  yes
      4    40  yes
      5    41  no
      6    42  yes
      7    43  no
      8    44  no
      9    45  yes
     10    46  no
     11    47  no
5
      0    48  yes
      1    49  no
      2    50  no
      3    51  yes
      4    52  no
      5    53  no
      6    54  yes
      7    55  no
      8    56  no
      9    57  yes
     10    58  no
     11    59  no
60 entries were displayed.
cluster1::>

```

## storage shelf drawer show

Display a list of drawers

**Availability:** This command is available to *cluster* administrators at the *admin* privilege level.

### Description

The `storage shelf drawer show` command displays information for storage shelf drawers in the storage system. If no parameters are specified, the default command displays the following information for the drawers:

- Shelf Name
- Drawer Number

- Status
- Closed/Open
- Disk Count
- Firmware

To display detailed information for a single drawer, use the `-shelf` and `-drawer` parameters.

## Parameters

**{ [-fields <fieldname>,...]**

Displays the specified fields for all drawers, in column style output.

**| [-errors ]**

Displays the following error status information about the drawers that have errors:

- Status
- Error Description

**| [-instance ]**

Displays expanded information for all drawers in the system. If a shelf and drawer are specified, then this parameter displays the same detailed information for the specified drawer as does the `-shelf` and `-drawer` parameters.

**[-shelf <text>] - Shelf Name**

Displays the drawers in the storage shelf that matches the specified shelf name.

**[-drawer <integer>] - Drawer Number**

Displays the drawers that match the specified drawer number.

**[-node {<nodename>|local}] - Node Name**

Displays the drawers that are present for the specified node.

**[-disk-count <integer>] - Drawer Disk Count**

Displays the drawers that have the specified disk count.

**[-part-number <text>] - Part Number**

Displays the drawers that have the specified part number.

**[-serial-number <text>] - Serial Number**

Displays the drawer that matches the specified serial number.

**[-is-closed {open|closed}] - Drawer is Closed?**

Displays the drawers that are closed or open.

**[-firmware-a <text>] - Firmware A**

Displays the the drawers for which module A has the specified firmware version.

### **[-firmware-b <text>] - Firmware B**

Displays the drawers for which module B has the specified firmware version.

### **[-path-a {unknown|ok|degraded|none}] - Path A**

Displays the drawers for which module A has the specified path status.

### **[-path-b {unknown|ok|degraded|none}] - Path B**

Displays about drawers for which module B has the specified path status.

### **[-is-supported {yes|no}] - Drawer is Supported?**

Displays the drawers that are supported (TRUE) or not supported (FALSE).

### **[-vendor <text>] - Vendor Name**

Displays the drawers that match the specified vendor.

### **[-mfg-date <text>] - Mfg. Date**

Displays the drawers that match the specified manufactured date.

### **[-fru-type <text>] - FRU Type**

Displays the drawers that match the specified FRU type.

### **[-status-a {unknown|normal|warning|error|critical}] - Status A**

Displays the drawers with module A currently operating under the specified status.

### **[-status-b {unknown|normal|warning|error|critical}] - Status B**

Displays the drawers with module B currently operating under the specified status.

### **[-error <text>] - Error**

Displays the drawers that match the specified error description.

## **Examples**

The following example displays information about all drawers:

```
cluster1::> storage shelf drawer show
Drawer   Disk
Shelf Drawer   Status A/B   Closed? Count   Firmware A/B
-----
2.5
      1   normal/normal   closed      4 00000634/00000634
      2   normal/normal   closed      4 00000634/00000634
      3   normal/normal   closed      4 00000634/00000634
      4   normal/normal   closed      5 00000634/00000634
      5   normal/normal   closed      4 00000634/00000634
5 entries were displayed.
cluster1::>
```

The following example displays expanded information about drawer 1 in shelf 2.5:

```
cluster1::> storage shelf drawer show -shelf 2.5 -drawer 1
Shelf: 2.5
    Drawer ID: 1
    Part Numer: 111-03071
    Serial Number: 021604008153
    Drawer is Closed?: closed
    Disk Count: 4
    Firmware A: 00000634
    Firmware B: 00000634
    Path A: ok
    Path B: ok
    Status A: normal
    Status B: normal
    Drawer is Supported?: yes
    Vendor Name: NETAPP
    Mfg. Date: 02/2016
    FRU Type: SASDRWR
    Error Description: -
cluster1::>
```

The following example displays error information about the drawers that have errors:

```
cluster1::> storage shelf drawer show -errors
Shelf Drawer    Status A/B      Error Description
-----
2.5
    2  warning/warning  Drawer open.
cluster1::>
```

## storage shelf firmware show-update-status

Display the Shelf Firmware Update (SFU) Status.

**Availability:** This command is available to *cluster* administrators at the *advanced* privilege level.

### Description

The `storage shelf firmware show-update-status` command displays the state of the Shelf Firmware Update process.

## Parameters

**{ [-fields <fieldname>,...]**

If you specify the `-fields <fieldname>`, ... parameter, the command output also includes the specified field or fields. You can use `-fields ?` to display the fields to specify.

**| [-instance ] }**

If you specify the `-instance` parameter, the command displays detailed information about all fields.

**[-node <nodename>] - Node (privilege: advanced)**

Selects the node that matches this parameter value.

**[-update-status {running|idle}] - Disk Shelf Firmware Update Status (privilege: advanced)**

Selects the nodes whose SFU process status matches this parameter value. Possible values are:

- `running` - Disk shelf firmware update is in progress.
- `idle` - Disk shelf firmware update is not in progress.

**[-in-progress-count <integer>] - Number of Shelves with Earlier Revisions Being Updated (privilege: advanced)**

Selects the nodes that matches the number of shelves the SFU process is updating to this parameter value. This specifies the number of shelves with earlier revisions that are being updated.

## Examples

```
cluster1::*> storage shelf firmware show-update-status
```

	Update	In-Progress
Node	Status	Count
cluster-n1	running	10
cluster-n2	idle	-
cluster-n3	running	7

## storage shelf firmware update

### Update Shelf Firmware

**Availability:** This command is available to *cluster* administrators at the *advanced* privilege level.

### Description

The `storage shelf firmware update` command updates the firmware on one or more shelves. You can download the latest firmware by using the [storage firmware download](#) command. You can specify a shelf whose firmware is to be updated by using the `-shelf` parameter. You can update the firmware on all the shelves by not providing the `-shelf` parameter. All the shelves of a specific module type can be updated by providing a value to the `-module-type` parameter.

## Parameters

**{ [-shelf <text>] - Shelf Name (privilege: advanced)**

This specifies the name of the shelf whose firmware is to be updated.

**| [-module-type {atfcx|esh4|iom3|iom6|iom6e|iom12|iom12e|iom12f|iom12b}] - Shelf Module Type (privilege: advanced) }**

Update the firmware on the shelves that match the module-type you specify.

**[-refresh <true>] - Refresh (privilege: advanced)**

Forces an update on the shelf with the highest revision of the applicable firmware, resulting in a refresh of the firmware image already present on the shelf.

## Examples

The following example updates the firmware on all the shelves in the cluster:

```
cluster1::*> storage shelf firmware update
```

The following example updates the firmware on all shelves with the IOM6 module type:

```
cluster1::*> storage shelf firmware update -module-type IOM6
```

The following example updates the firmware on shelf 1.2:

```
cluster1::*> storage shelf firmware update -shelf 1.2
```

The following example refreshes the firmware on all shelves with the IOM6 module type:

```
cluster1::*> storage shelf firmware update -refresh -module-type IOM6
```

The following example refreshes the firmware on shelf 1.2:

```
cluster1::*> storage shelf firmware update -refresh -shelf 1.2
```

## Related Links

- [storage firmware download](#)

## storage shelf location-led modify

Modify the state of the shelf Location LED

**Availability:** This command is available to *cluster* administrators at the *admin* privilege level.

## Description

The `storage shelf location-led modify` command modifies the on/off state of the shelf location LED.

## Parameters

**-shelf-name <text> - Shelf Name**

This parameter specifies the shelf whose LED is to be turned on or turned off.

**[-led-status {on|off}] - Location LED**

This parameter specifies whether the shelf location LED needs to be turned on or turned off.

## Examples

The following example turns on the shelf location LED of the specified shelf.

```
cluster1::> storage shelf location-led modify -node node1 -shelf-name 1.0  
-led-status on
```

```
Info: Shelf locate request successful for shelf "1.0".
```

The following example turns off the shelf location LED of the specified shelf.

```
cluster1::> storage shelf location-led modify -node node1 -shelf-name 1.0  
-led-status off
```

```
Info: Shelf locate request successful for shelf "1.0".
```

## storage shelf location-led show

Display the Location LED status

**Availability:** This command is available to *cluster* administrators at the *admin* privilege level.

## Description

The `storage shelf location-led show` command displays the state of shelf location LED.

## Parameters

**{ [-fields <fieldname>, ...]**

If you specify the `-fields <fieldname>, ...` parameter, the command output also includes the specified field or fields. You can use `'-fields ?'` to display the fields to specify.



**[ `-instance` ]**

If you specify the `-instance` parameter, the command displays detailed information about all fields.

**[ `-shelf-name <text>` ] - Shelf Name**

Selects the shelves whose shelf-name matches this parameter value.

**[ `-node {<nodename>|local}` ] - Node Name**

Selects the nodes that match this parameter value.

**[ `-stack-id <integer>` ] - Stack ID**

Selects the shelves whose stack-id matches this parameter value.

**[ `-shelf-id <integer>` ] - Shelf ID**

Selects the shelves whose shelf-id matches this parameter value.

**[ `-led-status {on|off}` ] - Location LED**

Shows the state of the shelf location LED.

## Examples

The following example shows the state of the shelf location LED for each shelf.

```
cluster1::> storage shelf location-led show
Shelf Name Stack ID Shelf ID LED Status
-----
      8.2         8         2 off
      8.3         8         3 off
      6.0         6         0 unsupported
      8.1         8         1 off
4 entries were displayed.
```

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