



storage shelf commands

ONTAP 9.5 commands

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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|psm3e|iom12b}] - Shelf Module Type

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

[-connection-type {unknown|fc|sas|nvme}] - 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|phy_dis_illegal}}] - 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|phy_dis_illegal}}] - 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
Normal
      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
Capable	ID Type Part#	Serial#	Factor	Drawn
	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	rear of the shelf on the lower left power supply
2	12.300 normal	rear of the shelf on the lower left power supply
3	5.70 normal	rear of the shelf on the lower

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
2	0	normal	rear of the shelf on the lower left
3	0	normal	rear of the shelf on the lower
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
2	2970	normal	rear of the shelf on the lower left
3	3000	normal	rear of the shelf on the lower
4	2970	normal	rear of the shelf on the lower

right power supply

Temperature:

-- Thresholds °C --

ID	Temp °C	Is Ambient	Low Crit	Low Warn	High Crit	High Warn	Operational 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
-----
-----
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

```


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 - - -

```

FC Ports:

ID	Port	Type	Status
-	-	-	-

Bays:

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

```

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 -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	ID	Disk	Bay	Type	Operational 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
-----
-----
      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|iom12b}] - 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.

[-power-cycle-count <integer>] - Power Cycle count

Number of times a shelf power cycle has been performed on a shelf

[-power-off-count <integer>] - Power Off count

Number of times a shelf power off has been performed on a shelf

[-power-on-count <integer>] - Power On count

Number of times a shelf power on has been performed on a shelf

[-expander-reset-count <integer>] - Expander reset count

Number of times an expander reset has been performed on a module

[-expander-power-cycle-count <integer>] - Expander power cycle count

Number of times an expander power cycle has been performed on a module

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
Power Cycle Count: 0
  Power Off Count: 0
    Power On Count: 0
Expander Reset Count: 0
Expander Power Cycle Count: 0
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
  Power Cycle Count: 0
    Power Off Count: 0
      Power On Count: 0
  Expander Reset Count: 0
  Expander Power Cycle Count: 0
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
  Power Cycle Count: 0
    Power Off Count: 0
      Power On Count: 0
  Expander Reset Count: 0
  Expander Power Cycle Count: 0
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
    Power Cycle Count: 0
    Power Off Count: 0
    Power On Count: 0
    Expander Reset Count: 0
    Expander Power Cycle Count: 0
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
    Power Cycle Count: 0
    Power Off Count: 0
    Power On Count: 0
    Expander Reset Count: 0
    Expander Power Cycle Count: 0
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
    Power Cycle Count: 0
    Power Off Count: 0
    Power On Count: 0
    Expander Reset Count: 0
    Expander Power Cycle Count: 0
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
                Power Cycle Count: 0
                Power Off Count: 0
                Power On Count: 0
                Expander Reset Count: 0
Expander Power Cycle Count: 0
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
                Power Cycle Count: 0
                Power Off Count: 0
                Power On Count: 0
                Expander Reset Count: 0
Expander Power Cycle Count: 0
```

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
	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
2				
	0	disk	00c500503d0e3d85	enabled/enabled
	1	disk	-	enabled/enabled
	2	disk	-	enabled/enabled
	3	disk	00c50050e9173f85	enabled/enabled
	4	disk	-	enabled/enabled
	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
3				
	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 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

Selects the node that matches this parameter value.

[-update-status {running|idle}] - Disk Shelf Firmware Update Status

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

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

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

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

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

[-refresh <>true>] - Refresh

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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