storage shelf commands

ONTAP commands

NetApp
February 04, 2026

This PDF was generated from https://docs.netapp.com/us-en/ontap-cli-96/storage-shelf-show.html on February 04, 2026. Always check docs.netapp.com for the latest.

Table of Contents

storage shelf commands . . . 1
- storage shelf show . . . 1
  - Description . . . 1
  - Parameters . . . 1
  - Examples . . . 13
- storage shelf acp configure . . . 29
  - Description . . . 29
  - Parameters . . . 29
  - Examples . . . 29
- storage shelf acp show . . . 30
  - Description . . . 30
  - Parameters . . . 30
  - Examples . . . 31
- storage shelf acp module show . . . 32
  - Description . . . 32
  - Parameters . . . 33
  - Examples . . . 34
- storage shelf drawer show-phy . . . 38
  - Description . . . 38
  - Parameters . . . 38
  - Examples . . . 39
- storage shelf drawer show-slot . . . 42
  - Description . . . 42
  - Parameters . . . 42
  - Examples . . . 42
- storage shelf drawer show . . . 44
  - Description . . . 44
  - Parameters . . . 44
  - Examples . . . 46
- storage shelf firmware show-update-status . . . 47
  - Description . . . 47
  - Parameters . . . 47
  - Examples . . . 48
- storage shelf firmware update . . . 48
  - Description . . . 48
  - Parameters . . . 49
  - Examples . . . 49
  - Related Links . . . 49
- storage shelf location-led modify . . . 49
  - Description . . . 50
  - Parameters . . . 50
  - Examples . . . 50
- storage shelf location-led show . . . 50

Description . . . 50
Parameters . . . 50
Examples . . . 51
storage shelf port show . . . 51
Description . . . 51
Parameters . . . 52
Examples . . . 54

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 that 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 the 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|nsm100|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 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 rate 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 sens- ors that match the sensor IDs you specify.

[-voltage-sensor-location <text>,…] - Voltage Sensor Location

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

[-error-type {unknown|acpp|bay|bootdevice|coinbattery|configuration|current|dimm|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.

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

Displays information only about the storage shelves with PCIe Ports from the specified module.

[-nsm-port-id <integer>,…] - Port ID

Displays information only about the storage shelves with PCIe Ports that match the specified ID.

[-nsm-port-type {cpu|disk|cx5|ethernet}] - Port Type

Displays information only about the storage shelves with PCIe Ports that match the specified type.

[-nsm-port-state {ok|off-link-disabled|off-dll-link|link-down|no-drive}] - Port State

Displays information only about the storage shelves with PCIe Ports that match the specified state.

[-nsm-port-bay <integer>,…] - Port Bay

Displays information only about the storage shelves with PCIe Ports that match the specified bay.

[-nsm-port-disk-id <integer>,…] - Port Disk ID

Displays information only about the storage shelves with PCIe Ports that match the specified disk ID.

[-nsm-port-is-installed {true|false}] - Port Is Disk Installed

Displays information only about the storage shelves with PCIe Ports that have a disk installed.

[-nsm-port-is-error {true|false}] - Port Has Error

Displays information only about the storage shelves with PCIe Ports that have errors.

[-nsm-port-speed {2.5|5.0|8.0}] - Port Speed

Displays information only about the storage shelves with PCIe Ports that match the specified speed.

[-nsm-port-speed-max {2.5|5.0|8.0}] - Max Port Speed

Displays information only about the storage shelves with PCIe Ports that match the specified maximum speed.

[-nsm-port-lane-width <integer>,…] - Port Lane Width

Displays information only about the storage shelves with PCIe Ports that match the specified lane width.

[-nsm-port-lane-width-max <integer>,…] - Max Port Lane Width

Displays information only about the storage shelves with PCIe Ports that match the specified maximum lane width.

[-dimm-module-id {A|B}] - DIMM Module ID

Displays information only about the storage shelves with DIMMs from the specified module.

[-dimm-id <integer>,…] - DIMM ID

Displays information only about the storage shelves with DIMMs that match the specified ID.

[-dimm-serial-number <text>,…] - DIMM Serial Number

Displays information only about the storage shelves with DIMMs that match the specified serial number.

[-dimm-part-number <text>,…] - DIMM Part Number

Displays information only about the storage shelves with DIMMs that match the specified part number.

[-dimm-vendor <text>,…] - DIMM Vendor

Displays information only about the storage shelves with DIMMs that match the specified vendor.

[-dimm-type <text>,…] - DIMM Type

Displays information only about the storage shelves with DIMMs that match the specified type.

[-dimm-size <text>,…] - DIMM Size

Displays information only about the storage shelves with DIMMs that match the specified size.

[-dimm-speed <text>,…] - DIMM Speed

Displays information only about the storage shelves with DIMMs that match the specified speed.

[-dimm-location <text>,…] - DIMM Location

Displays information only about the storage shelves with DIMMs that match the specified location.

[-dimm-op-status {unknown|normal|error|not-supported|not-installed}] - DIMM Operational Status

Displays information only about the storage shelves with DIMMs that match the specified operational status.

[-boot-device-module-id {A|B}] - Boot Device Module ID

Displays information only about the storage shelves with boot devices from the specified module.

[-boot-device-id <integer>,…] - Boot Device ID

Displays information only about the storage shelves with boot devices that match the specified ID.

[-boot-device-serial-number <text>,…] - Boot Device Serial Number

Displays information only about the storage shelves with boot devices that match the specified serial number.

[-boot-device-part-number <text>,…] - Boot Device Part Number

Displays information only about the storage shelves with boot devices that match the specified part number.

[-boot-device-vendor <text>,…] - Boot Device Vendor

Displays information only about the storage shelves with boot devices that match the specified vendor.

[-boot-device-type <text>,…] - Boot Device Type

Displays information only about the storage shelves with boot devices that match the specified type.

[-boot-device-size <text>,…] - Boot Device Size

Displays information only about the storage shelves with boot devices that match the specified size.

[-boot-device-op-status {unknown|normal|error|not-supported|not-installed}] - Boot Device Operational Status

Displays information only about the storage shelves with boot devices that match the specified operational status.

[-coin-battery-module-id {A|B}] - Coin Battery Module ID

Displays information only about the storage shelves with coin batteries from the specified module.

[-coin-battery-id <integer>,…] - Coin Battery ID

Displays information only about the storage shelves with coin batteries that match the specified ID.

[-coin-battery-voltage <integer>,…] - Coin Battery Voltage (mV)

Displays information only about the storage shelves with coin batteries that match the specified voltage.

[-coin-battery-op-status {unknown|normal|error|low|high|not-supported|not-installed}] - Coin Battery Operational Status

Displays information only about the storage shelves with coin batteries that match the specified operational status.

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
    ----------------  --------  ---------------  -----------  ------
-----------
                 1.1         1  6000832415       DS2246       IOM6
Critical
                 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:                                          Module is
                                     Monitor   Is     Reporting FW Update
Latest   Swap Operational Module
     ID Part No.     ES Serial No.   is Active Master Element   Progress
FW Rev. FW Rev. Count Status      Location
    --- ------------ -------------- --------- ------ ---------
------------ ------- ------- ----- ----------- --------------
      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:
                                                          Crest  Power
Reset   PSU              Operational
     ID Type Part#        Serial#         Power Rating   Factor Drawn
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
     ID     (V) Status                  Sensor Location
    --- ------- ----------------------- ------------------------
      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
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
    ----- --- --------- ----------------- ----------- ---------- ------
-----------
        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      500605ba00c1cdfe          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:
                                                                 Crest  Power
Reset   PSU              Operational
     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
```

```
       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      500605ba00c1cdfe          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 specifed 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 (in-band):

```
fas2750-2n-rtp-1::> storage shelf acp show
  Node                Channel                Connectivity
       ------------------  --------------------   ----------------------
  fas2750-rtp-1a      in-band                active
  fas2750-rtp-1b      in-band                active
  2 entries were displayed.
```

The following example displays ACP connectivity on each node (out of band):

```
fas2750-2n-rtp-1::> storage shelf acp show
        Node                Channel                Connectivity
  ------------------  --------------------   ----------------------
  fas2750-rtp-1a      out-of-band            full-connectivity
  fas2750-rtp-1b      out-of-band            full-connectivity
  2 entries were displayed.
```

The following example displays the -instance output of the storage acp show (in-band) command. Use this command to display details on connectivity and configuration.

```
fas2750-2n-rtp-1::> storage shelf acp show -instance
                 Node: fas2750-rtp-1a
        Channel: in-band
        Enable Status: true
    Connection Status: active
Node: fas2750-rtp-1b
        Channel: in-band
        Enable Status: true
    Connection Status: active
    2 entries were displayed.
```

The following example displays the -instance output of the storage acp show (out-of-band) command. Use this command to display details on connectivity and configuration.

```
fas2750-2n-rtp-1::> storage shelf acp show -instance
     Node: fas2750-rtp-1a
        Channel: out-of-band
  Enable Status: true
     Port: e0P
     IP Address: 192.168.1.74
         Subnet: 192.168.0.1
        Netmask: 255.255.252.0
    Connection Status: full-connectivity
Node: fas2750-rtp-1b
        Channel: out-of-band
  Enable Status: true
     Port: e0P
     IP Address: 192.168.1.75
         Subnet: 192.168.0.1
        Netmask: 255.255.252.0
    Connection Status: full-connectivity
    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 dis play 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 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|nsm100|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.
```

storage shelf port show

Display storage shelf ports

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

Description

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

- Shelf Name
- ID
- Module
- State

- Internal?

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

Parameters

{ [-fields <fieldname>,…]

Displays output in column style about the specified fields for all shelf ports.

| [-cables]

Displays information about all cables connected to the shelf ports.

| [-instance]

Displays expanded information for all shelf ports in the system. If a shelf and ID are specified, then this parameter displays the same detailed information for the specified port as does the -shelf and -id parameters.

[-shelf <text>] - Shelf Name

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

[-id <integer>] - Port ID

Displays the ports that match the specified ID.

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

Displays the ports that are present for the specified node.

[-module-id {A|B}] - Module ID

Displays the ports from the specified shelf module ID.

[-is-internal {true|false}] - Is Port Internal?

Displays the ports that are internal.

[-location <text>] - Location

Displays the ports with the specified location.

[-is-cable-connected {true|false}] - Is Cable Connected?

Displays the ports that have cables connected to them.

[-is-error {true|false}] - Any Errors?

Displays the ports for which errors have been logged.

[-connector-state {connected|disconnected|error}] - Connector State

Displays the ports with the specified connector state.

[-connector-serial-number <text>] - Connector Serial Number

Displays the ports with the specified connector serial number.

[-connector-type {QSFP|QSFP+|QSFP28|Mini-SAS-HD}] - Connector Type

Displays the ports with the specified connector type.

[-cable-vendor <text>] - Cable Vendor

Displays the ports that are connected to a cable from the specified vendor.

[-cable-part-number <text>] - Cable Part Number

Displays the ports that are connected to a cable with the specified part number.

[-cable-technology {active-copper|passive-copper|optical}] - Cable Technology

Displays the ports that are connected to a cable with the specified technology.

[-cable-length <text>] - Cable Length

Displays the ports that are connected to a cable with the specified length.

[-cable-id <text>] - Cable ID

Displays the ports that are connected to a cable with the specified ID.

[-cable-end {end_0|end_1}] - Cable End

Displays the ports that are connected to a cable with the specified cable end.

[-designator <text>] - Designator

Displays the ports with the specified designator.

[-wwn <text>] - Local Device WWN

Displays the ports with the specified WWN.

[-remote-wwn <text>] - Remote Device WWN

Displays the ports connected to the specified remote WWN.

[-remote-phy <text>] - Remote Phy

Displays the ports connected to the specified remote PHY.

[-swap-count <integer>] - Swap Count

Displays the ports with the specified swap count.

[-mac <MAC Address>] - Local MAC Address

Displays the ports with the specified MAC address.

[-remote-mac <MAC Address>] - Remote MAC Address

Displays the ports connected to the specified MAC address.

[-remote-port <text>] - Remote Port

Displays the ports connected to the specified port.

[-remote-chassis <text>] - Remote Chassis

Displays the ports connected to the specified chassis.

[-remote-device <text>] - Remote Device

Displays the ports connected to the specified device.

[-vlan-id <integer>] - VLAN ID

Displays the ports with the specified VLAN ID.

Examples

The following example displays information about all shelf ports:

```
cluster1::> storage shelf port show

Shelf ID Module State        Internal?
-------- -- ------ ------------ ---------
1.4
       0 A      connected    false
       1 A      connected    false
       2 B      connected    false
       3 B      connected    false
4 entries were displayed.
```

The following example displays expanded information about port 0 in shelf 1.4:

```
cluster1::> storage shelf port show -shelf 1.4 -id 0
Shelf Name: 1.4
                 Port ID: 0
              Module ID: A
      Is Port Internal?: false
               Location: rear of the shelf at the top left, on shelf
module A
    Is Cable Connected?: true
           Any Errors?: false
        Connector State: connected
Connector Serial Number: 616930439
         Connector Type: qsfp+
           Cable Vendor: Molex Inc.
      Cable Part Number: 112-00431+A0
       Cable Technology: passive-copper
           Cable Length: 5m
               Cable ID: 500a0980000b6c3f-50000d1703544b80
              Cable End: end_1
             Designator: sqr
       Local Device WWN: 500A0980000B6C3F
      Remote Device WWN: 50000D1703544B80
             Remote Phy: 12
             Swap Count: 0
```

The following example displays information about the cables:

```
cluster1::> storage shelf port show -cables

Shelf: 1.4

ID Vendor     Part Number   Technology     Length   Type        Serial
Number
-- ---------- ------------- -------------- -------- -----------
--------------
 0 Molex Inc. 112-00431+A0  passive-copper 5m       qsfp+       616930439
 1 Molex Inc. 112-00431+A0  passive-copper 5m       qsfp+       616930364
 2 Molex Inc. 112-00431+A0  passive-copper 5m       qsfp+       616930452
 3 Molex Inc. 112-00431+A0  passive-copper 5m       qsfp+       616930474
4 entries were displayed.
```

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