NetApp

storage shelf commands

ONTAP 9.3 commands

NetApp
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storage shelf commands

storage shelf show

Display a list of storage shelves

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

Description

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

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

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

Parameters

{ [-fields <fieldname>,…]
Displays the specified fields for all the storage shelves, in column style output.

| [-bay]
Displays the following details about the disk bays in the storage shelf:

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

| [-connectivity]
Displays the following details about the connectivity from the node to the storage shelf:

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

| **[-cooling]**

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

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

| **[-errors]**

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

- Error type
- Error description

| **[-module]**

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

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

| **[-port]**

Displays the following details about the storage shelf ports:

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

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

| [-power]

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

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

| [-instance] }

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

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

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

[-shelf <text>] - Shelf Name

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

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

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

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

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

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

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

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

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

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

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

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

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

[-vendor <text>] - Shelf Vendor

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

`[-initiator <text>,…]` - **Initiator**

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

`[-fan-location <text>,…]` - Fan Location

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

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

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

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

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

`[-module-id <text>,…]` - Module ID

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

`[-module-location <text>,…]` - Module Location

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

`[-module-part-number <text>,…]` - Module Part Number

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

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

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

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

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

`[-enclosure-type <text>,…]` - Module Enclosure Type

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

`[-es-serial-number <text>,…]` - ES Electronics Element Serial Number

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

`[-sas-port-id <text>,…]` - Port ID

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

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

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

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

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

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

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

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

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

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

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

specify.

```
[-sas-port-op-status {error|normal|off|unknown|byp-bad-term|bad-zone-
recovery|byp_clk_thr|byp_comma_los|byp_crc_brst_thr|byp_data_timeout|byp_drv_faul
t|byp_drv_pcycle|byp_drv_pwr|byp_drv_self|byp_gen|byp_init|byp_lip_brst_thr|byp_l
ip_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_xmi
t_fault|diag_transmit|inserted|loopback|status_unknown|warn_high_clk_delta|warn_h
igh_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_emula
te_reserve|phy_dis_inval_dword|phy_dis_inval_dword_burst|phy_dis_loss_dword|phy_d
is_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|ph
y_dis_phy_unused|phy_ena|phy_ena_not_attach|phy_ena_unknown|phy_unknown}] - Port
Operational Status
```

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

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

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

```
[-fc-port-id <text>,…] - Fibre Channel Port ID
```

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

```
[-fc-port-mode
{unknown|circle|square|sil|disk|in|out|unused|host|dcm|aux1|aux2|hi_ho|a_to_b|b_t
o_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_faul
t|byp_drv_pcycle|byp_drv_pwr|byp_drv_self|byp_gen|byp_init|byp_lip_brst_thr|byp_l
ip_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_xmi
t_fault|diag_transmit|inserted|loopback|status_unknown|warn_high_clk_delta|warn_h
igh_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_emula
te_reserve|phy_dis_inval_dword|phy_dis_inval_dword_burst|phy_dis_loss_dword|phy_d
is_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|ph
y_dis_phy_unused|phy_ena|phy_ena_not_attach|phy_ena_unknown|phy_unknown}] - Fibre
Channel Port Operational Status
```

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

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

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

```
[-psu-location <text>,…] - Power Supply Unit Location
```

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

`[-psu-type <text>,…]` - Power Supply Unit Type

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

`[-psu-part-number <text>,…]` - Power Supply Unit Part Number

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

`[-psu-serial-number <text>,…]` - Power Supply Unit Serial Number

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

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

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

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

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

`[-psu-fw-version <text>,…]` - Power Supply Unit Firmware Version

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

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

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

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

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

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

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

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

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

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

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

`[-temp-sensor-location <text>,…]` - Sensor Location

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

Displays information only about the storage shelves with voltage 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|configuration|current|disk|internal|fan|module|port|power|temperature|voltage}]` - Error Type

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

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

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

Examples

The following example displays information about all storage shelves:

```
cluster1::> storage shelf show
Module  Operational
         Shelf Name  Shelf ID  Serial Number    Model        Type
Status
    ----------------  --------  --------------  -----------  ------
-----------
                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:

Phy #	IOM	Port Type	WWPN	Operational Status	Negotiated	Power Status	Port 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:

```
cluster1::> storage shelf acp show
    Node                 Channel                Connectivity
    -----------------    -------------------    ---------------------
    stor-8020-1          in-band                active
    stor-8020-2          in-band                active
    stor-8060-1          out-of-band            full-connectivity
    stor-8060-2          out-of-band            full-connectivity
    4 entries were displayed.
```

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

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

storage shelf acp module show

Show modules connected to the cluster

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

Description

Displays information about the modules connected to each node

Parameters

{ [-fields <fieldname>,…]

If you specify the -fields <field-name>", … parameter, the command output also includes the specified field or fields. You can use '-fields ?' to 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}] - IOM Type
    Selects the modules that match the specified IOM type (IOM3/IOM6/IOM6E).

[-last-contact <integer>] - Last Contact (secs)
    Selects the modules that match the specified last contact.

[-state {unknown|initializing|discovery-complete|awaiting-inband|no-inband|active|awaiting-bootp|updating-firmware|connection-error|firmware-update-required|rebooting|fail|unsupported|degraded|shelf-off}] - Local Node State
    Selects the modules that match the specified state.

[-stack-id {<integer>|-}] - Stack ID
    Selects the modules that match the specified stack ID.

[-shelf-id <text>] - Shelf ID
    Selects the modules that match the specified shelf ID.

[-adapter-name <text>] - Adapter Name
    Selects the modules that match the specified adapter name.

[-error-id <integer>,…] - Error ID
    Selects the modules that match the specified error ID.

[-error-text <text>,…] - Error Text
    The error text, in case of a module error.

[-corrective-action <text>,…] - Corrective Action
    The corrective action, in case of a module error.

[-error-type {No-Error|Connection-Issue|Connection-Activity|Module-Error|Shelf-Error}] - Error Type
    Selects the modules that match the specified error type.

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

    Selects the modules that match the specified error severity.

Examples

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

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

stor-v4-1a-1b-02  1.10.A            Active
                  1.10.B            Active
                  1.254.B           Active
                  1.254.A           Active
8 entries were displayed.
```

The following example displays the -instance output of the storage shelf acp module show. More details on each module can be seen here.

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

```
Node: stor-v4-1a-1b-01
                Module Name: 1.254.B
                Mac Address: 00:a0:98:32:d6:ac
                   IOM Type: IOM6
        Shelf Serial Number: 6000368103
                 IP Address: 192.168.2.173
           Protocol Version: 1.2.2. 8
                Assigner ID: 1.2.2. 8
                      State: Active
               Last Contact: 215
Node: stor-v4-1a-1b-01
                Module Name: 1.254.A
                Mac Address: 00:a0:98:32:d6:dc
                   IOM Type: IOM6
        Shelf Serial Number: 6000368103
                 IP Address: 192.168.2.221
           Protocol Version: 1.2.2. 8
                Assigner ID: 1.2.2. 8
                      State: Active
               Last Contact: 218
Node: stor-v4-1a-1b-02
                Module Name: 1.106.A
                Mac Address: 00:a0:98:19:53:ee
                   IOM Type: IOM6E
        Shelf Serial Number: SHJMS000000001A
                 IP Address: 192.168.3.239
           Protocol Version: 2.1.1.21
                Assigner ID: 2.1.1.21
                      State: Initializing
               Last Contact: 206
Node: stor-v4-1a-1b-02
                Module Name: 1.106.B
                Mac Address: 00:a0:98:19:55:16
                   IOM Type: IOM6E
        Shelf Serial Number: SHJMS000000001A
                 IP Address: 192.168.1.23
           Protocol Version: 2.1.1.21
                Assigner ID: 2.1.1.21
                      State: Initializing
               Last Contact: 209
Node: stor-v4-1a-1b-02
                Module Name: 1.10.B
                Mac Address: 00:a0:98:32:d6:ac
                   IOM Type: IOM6
        Shelf Serial Number: 6000368103
                 IP Address: 192.168.2.173
```

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

 8 entries were displayed.
```

storage shelf drawer show-phy

Display a list of PHYs per drawer

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

Description

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

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

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

Parameters

{ [-fields <fieldname>,…]

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

| [-instance]

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

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

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

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

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

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

Displays the PHYs that match the specified PHY number.

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

Displays the PHYs that are present for the specified node.

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

Displays the PHYs with the specified type.

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

Displays the PHYs that match the specified physical-id.

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

Displays the PHYs with the specified attached sas address.

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

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

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

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

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

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

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

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

Examples

The following example displays information about all drawer PHYs:

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

```
         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

 Selects the node that matches this parameter value.

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

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

 • running - Disk shelf firmware update is in progress.

 • idle - Disk shelf firmware update is not in progress.

`[-in-progress-count <integer>]` - Number of Shelves with Earlier Revisions Being Updated

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

Examples

```
cluster1::*> storage shelf firmware show-update-status
                   Update   In-Progress
Node               Status        Count
------------------ ------- -----------
cluster-n1         running          10
cluster-n2         idle              -
cluster-n3         running           7
```

storage shelf firmware update

Update Shelf Firmware

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

Description

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

Parameters

{ [-shelf <text>] - Shelf Name

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

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

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

[-refresh <true>] - Refresh

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

Examples

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

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

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

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

The following example updates the firmware on shelf 1.2:

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

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

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

The following example refreshes the firmware on shelf 1.2:

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

Related Links

- storage firmware download

storage shelf location-led modify

Modify the state of the shelf Location LED

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

Description

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

Parameters

`-shelf-name <text>` - Shelf Name
    This parameter specifies the shelf whose LED is to be turned on or turned off.

`[-led-status {on|off}]` - Location LED
    This parameter specifies whether the shelf location LED needs to be turned on or turned off.

Examples

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

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

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

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

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

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

storage shelf location-led show

Display the Location LED status

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

Description

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

Parameters

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

| [-instance]

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

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

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

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

Selects the nodes that match this parameter value.

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

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

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

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

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

Shows the state of the shelf location LED.

Examples

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

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