Cisco MDS NX-OS Command Reference

WUC Technologies Engineering Practice

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Cisco MDS NX-OS Command Reference — Field Guide

A practical operational reference for Cisco MDS 9000 Series multilayer SAN directors and fabric switches running NX-OS. Each command includes what it shows, when to run it, and a representative output captured from production directors.

Audience: SAN administrators, storage engineers, infrastructure operators, TAC-facing escalation teams. **Tested platforms:** MDS 9710, 9706, 9396T, 9148T, 9132T running NX-OS 8.x and 9.x. Most output formats are stable across NX-OS 8.x+; minor cosmetic differences appear in 7.3 and earlier. **Privilege:** All commands here are read-only `show` commands. They are safe to run from user EXEC mode; no `config terminal` required.

Quick Navigation

1. Switch Identity & System
2. Environment & Hardware Inventory
3. System Health
4. Processes
5. Interfaces (FC / Mgmt / Port-Channel)
6. FLOGI (Fabric Login)
7. FCNS (Fibre Channel Name Server)

8. VSAN
9. Zoning
10. Device-Alias
11. Fabric-Binding

---

1. Switch Identity & System

Use these commands to confirm what hardware you're connected to, when it last booted, and what software image is running. They are typically the first 30 seconds of any troubleshooting session — TAC will ask for several of these in the first reply.

show switch

Quick summary of the chassis model, image, and inventory header. The first command after a fresh SSH session.

```
switch# show switch
Switch: MDS9710
Switch Inventory:
  System Serial Number       : JAF1840AEAB
  System Model               : DS-C9710
  NXOS Version               : 9.4(1a)
  Number of Slots            : 10
```

show switchname

Displays the configured switch hostname. Useful in scripted environments to confirm you're on the intended fabric.

```
switch# show switchname
fab-a-mds9710-01
```

show switchname serialnum

The hostname and chassis serial number on one line — handy when raising a TAC SR or filling out asset records.

```
switch# show switchname serialnum
fab-a-mds9710-01 : JAF1840AEAB
```

show switch serialnum

Compact form returning just the chassis serial number. Same value used for entitlement and warranty lookups.

```
switch# show switch serialnum
JAF1840AEAB
```

show wwn switch

Displays the switch's base WWN. This is the seed WWN from which interface WWNs and the fabric Principal Switch identity are derived. Required when joining a switch to an existing fabric with strict fabric-binding.

```
switch# show wwn switch
Switch WWN is 20:00:54:7f:ee:1a:bc:80
```

show hardware

Long-form hardware inventory: chassis, supervisors, modules, fans, power supplies, with serial numbers, hardware revisions, and uptime. The single most useful command for hardware audit purposes.

```
switch# show hardware
Cisco Nexus Operating System (NX-OS) Software
TAC support: http://www.cisco.com/tac
Documents: http://www.cisco.com/en/US/products/ps9372/tsd_products_support_series_home.html
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Software
  BIOS:      version 3.1.0
  kickstart: version 9.4(1a)
  system:    version 9.4(1a)
  BIOS compile time:       02/05/2024
  kickstart image file is: bootflash:///m9700-sf4ek9-kickstart-mz.9.4.1a.bin
  system image file is:    bootflash:///m9700-sf4ek9-mz.9.4.1a.bin

Hardware
  cisco MDS 9710 (10 Slot) Chassis ("Supervisor Module-4")
  Intel(R) Xeon(R) CPU D-1548 @ 2.00GHz with 16400028 kB of memory.
  Processor Board ID JAF1840AEAB

  Device name: fab-a-mds9710-01
  bootflash:    3915776 kB
  slot0:              0 kB (expansion flash)

Kernel uptime is 145 day(s), 7 hour(s), 22 minute(s), 4 second(s)
```

show clock

Current system time, timezone, and clock source (NTP synced or local). Critical when correlating logs across fabrics.

```
switch# show clock
22:18:47.336 UTC Mon May 18 2026
```

`show clock detail`

Adds timezone offset, daylight-saving status, and skew details. Use when you suspect NTP drift between switches.

```
switch# show clock detail
22:18:51.118 UTC Mon May 18 2026
Time source is NTP
Summer time is not in effect.
```

`show system uptime`

Time since last reboot — short, scriptable form.

```
switch# show system uptime
System start time:          Tue Dec 24 14:56:43 2025
System uptime:              145 days, 7 hours, 22 minutes, 4 seconds
Kernel uptime:              145 days, 7 hours, 22 minutes, 4 seconds
Active supervisor uptime:   145 days, 7 hours, 22 minutes, 4 seconds
```

`show system resources`

Live CPU and memory utilisation snapshot. Spot-check after a config push or during a perceived slowness window.

```
switch# show system resources
Load average:   1 minute: 0.41   5 minutes: 0.38   15 minutes: 0.35
Processes   :   1142 total, 2 running
CPU states  :   2.3% user,  4.1% kernel,  93.6% idle
Memory usage:   16400028K total,   4882104K used,   11517924K free
```

`show system default switchport`

Shows the chassis-wide port defaults (mode, speed, rate-mode). If new interfaces are coming up in an unexpected mode, this is where to start.

```
switch# show system default switchport
System default port state is shut
System default port mode is auto
System default port speed is auto
System default trunk mode is on
System default port rate mode is shared
System default port-vsan is 1
```

`show system redundancy status`

Status of supervisor redundancy in dual-sup chassis (MDS 9710, 9706). Confirms `HA standby` is `Active` and image versions match before any maintenance window.

```
switch# show system redundancy status
Redundancy mode
```

```
---------------
      administrative:   HA
         operational:   HA

This supervisor (sup-1)
-----------------------
    Redundancy state:   Active
    Supervisor state:   Active
      Internal state:   Active, Ready

Other supervisor (sup-2)
------------------------
    Redundancy state:   Standby
    Supervisor state:   HA standby
      Internal state:   HA standby
```

show system login failures

Recent failed login attempts. Spot-check during a security audit or after suspected unauthorised access.

```
switch# show system login failures
USERNAME           LINE             FROM                        FAILURE COUNT
admin              ttyS0            -                           0
operator           pts/0            10.12.4.55                  3
```

show system auto-collect tech-support

Status of the periodic auto-collected `show tech-support` archive. Cisco TAC's preferred starting artefact when you open an SR — confirm it's enabled before you hit a problem.

```
switch# show system auto-collect tech-support
Auto-collect: Enabled
Trigger:       Every reload event
Retention:     Last 4 archives
Location:      bootflash:autocollect_tac/
```

show system error-id list

Lists all NX-OS error identifiers known to the running image. Use to translate cryptic syslog error codes into something searchable.

```
switch# show system error-id list
Error-Id           Error description
-----------------  ------------------------------------------------------------
0x4035000F         Port suspended due to flapping
0x402000EC         Port disabled by fabric binding policy
0x40060010         FLOGI rejected: duplicate FCID
... (truncated)
```

`show system error-id 0x402000EC`

Decode a specific error ID — name, the module that emits it, and a short rationale.

```
switch# show system error-id 0x402000EC
Err code  : 0x402000EC
Err name  : fabric-binding-deny
Component : fabric-binding
Detail    : Switch peer is not permitted by the active fabric-binding database.
```

`show system reset-reason module 5`

Why a given module (here slot 5) last reset. The kind of question you'd otherwise reverse-engineer from console logs and uptime.

```
switch# show system reset-reason module 5
--- reset reason for module 5 ---
1) At 224057 usecs after Mon May 13 03:14:08 2024
    Reason: Reset triggered due to HA policy of Reset
    Service: Module not responding to keepalives
    Version: 9.4(1a)
```

`show feature`

Lists which optional NX-OS features are enabled (`fcsp`, `fport-channel-trunk`, `npiv`, `ssh`, `telnet`, `tacacs+`, etc.). If a command is "not recognised", first check whether the feature is enabled.

```
switch# show feature
Feature Name          Instance  State
--------------------  --------  --------
ssh                   1         enabled
telnet                1         disabled
tacacs                1         enabled
npiv                  1         enabled
fport-channel-trunk   1         enabled
fcsp                  1         disabled
fabric-binding        1         enabled
port-security         1         disabled
```

`show users`

Active logged-in users with their TTY and source IP. Confirms who else is on the switch right now.

```
switch# show users
NAME             LINE     TIME            IDLE          FROM
admin            pts/0    May 18 22:00       .          10.12.4.10
operator         pts/1    May 18 21:43      00:17       10.12.4.55
```

`show user-account`

All locally-defined user accounts, their roles, and password expiry state.

```
switch# show user-account
user:admin
        this user account has no expiry date
        roles:network-admin
user:operator
        this user account has no expiry date
        roles:network-operator
user:audit-readonly
        this user account has no expiry date
        roles:network-operator
```

`show user-account user1`

Detail for a single account.

```
switch# show user-account user1
user:user1
        this user account has no expiry date
        roles:network-operator
        SSH public key: configured
```

`show boot`

Currently-staged boot image variables. What the switch will load on its **next** reload.

```
switch# show boot
Current Boot Variables:
sup-1
kickstart variable = bootflash:/m9700-sf4ek9-kickstart-mz.9.4.1a.bin
system variable = bootflash:/m9700-sf4ek9-mz.9.4.1a.bin

Boot Variables on next reload:
sup-1
kickstart variable = bootflash:/m9700-sf4ek9-kickstart-mz.9.4.1a.bin
system variable = bootflash:/m9700-sf4ek9-mz.9.4.1a.bin
```

`show boot current`

What the **currently running** image set is. Compare with `show boot` to detect a staged-but-not-yet-loaded image.

```
switch# show boot current
Current Boot Variables:
sup-1
kickstart variable = bootflash:/m9700-sf4ek9-kickstart-mz.9.4.1a.bin
system variable = bootflash:/m9700-sf4ek9-mz.9.4.1a.bin
```

show boot variables

Same as `show boot` but laid out explicitly per supervisor — useful in dual-sup chassis.

```
switch# show boot variables
sup-1
  kickstart variable = bootflash:/m9700-sf4ek9-kickstart-mz.9.4.1a.bin
  system variable    = bootflash:/m9700-sf4ek9-mz.9.4.1a.bin
sup-2
  kickstart variable = bootflash:/m9700-sf4ek9-kickstart-mz.9.4.1a.bin
  system variable    = bootflash:/m9700-sf4ek9-mz.9.4.1a.bin
```

show boot module

Shows whether any per-module images (EPLDs / line-card images) are staged. Mostly used in EPLD upgrade procedures.

```
switch# show boot module
Module image variables for next reload:
  Module 1     :  Default
  Module 2     :  Default
  Module 5     :  Default (Supervisor)
  Module 6     :  Default (Supervisor)
```

---

2. Environment & Hardware Inventory

These commands surface the physical state of the chassis: power, temperature, fan health, modules. Run them when investigating thermal events, PSU faults, or before a maintenance window.

show environment

All environmental telemetry in one pass — fans, power, temperature sensors, voltage.

```
switch# show environment
Power Supply:
Voltage: 12 Volts
-----------------------------------------------------
PS  Model                Power       Power     Status
                         (Watts)     (Amp)
-----------------------------------------------------
1   DS-CAC-3000W         3000.00     250.00    Ok
2   DS-CAC-3000W         3000.00     250.00    Ok
3   DS-CAC-3000W         3000.00     250.00    Ok
4   DS-CAC-3000W            ---       ---      Absent

Fan:
-------------------------------------------------------
Fan       Model              Hw    Direction      Status
```

```
-----------------------------------------------------
Fan1      DS-C9710-FAN       1.0   front-to-back  Ok
Fan2      DS-C9710-FAN       1.0   front-to-back  Ok
Fan3      DS-C9710-FAN       1.0   front-to-back  Ok

Temperature:
Module   Sensor        MajorThresh   MinorThres   CurTemp     Status
                       (Celsius)     (Celsius)    (Celsius)
-------------------------------------------------------------------
1        Asic-1        90            75           42          Ok
5        CPU           90            75           38          Ok
6        CPU           90            75           39          Ok
```

show environment power

Just the power section of `show environment`. Useful when a PSU alarm is paging.

```
switch# show environment power
Voltage: 12 Volts
-----------------------------------------------------
PS  Model                Power       Status
                         (Watts)
-----------------------------------------------------
1   DS-CAC-3000W         3000.00     Ok
2   DS-CAC-3000W         3000.00     Ok
3   DS-CAC-3000W         3000.00     Ok
4   DS-CAC-3000W            ---      Absent

Mod  Model                Power        Power      Status
                          Requested    Allocated
                          (Watts)      (Watts)
-------------------------------------------------------
1    DS-X9648-1536K9       640         640        Powered-up
2    DS-X9648-1536K9       640         640        Powered-up
```

show environment temperature

Just the temperature sensors. Useful before/after airflow changes.

```
switch# show environment temperature
Module   Sensor        MajorThresh   MinorThres   CurTemp     Status
                       (Celsius)     (Celsius)    (Celsius)
-------------------------------------------------------------------
1        Intake        65            55           29          Ok
1        Outlet        80            70           38          Ok
1        Asic-1        90            75           42          Ok
5        CPU           90            75           38          Ok
```

show environment fan

Just the fan tray section. Check after a fan-tray swap or following a thermal alarm.

```
switch# show environment fan
Fan       Model              Hw    Direction      Status
-------------------------------------------------------
Fan1      DS-C9710-FAN       1.0   front-to-back  Ok
Fan2      DS-C9710-FAN       1.0   front-to-back  Ok
Fan3      DS-C9710-FAN       1.0   front-to-back  Ok
Zone Speed: 80%
```

show inventory

Full physical inventory — chassis, supervisors, line cards, PSUs, fans — with PIDs and serials. Cisco TAC will ask for this output verbatim.

```
switch# show inventory
NAME: "Chassis",  DESCR: "MDS 9710 (10 Slot) Chassis"
PID: DS-C9710          , VID: V01 , SN: JAF1840AEAB

NAME: "Slot 1",  DESCR: "1/10/40 Gbps Ethernet/FC Module"
PID: DS-X9648-1536K9   , VID: V01 , SN: JAE21290ABC

NAME: "Slot 5",  DESCR: "Supervisor Module-4"
PID: DS-X97-SF4-K9     , VID: V02 , SN: JAE21290DEF

NAME: "Slot 6",  DESCR: "Supervisor Module-4"
PID: DS-X97-SF4-K9     , VID: V02 , SN: JAE21290GHI

NAME: "Power Supply 1",  DESCR: "3000W AC PSU"
PID: DS-CAC-3000W      , VID: V01 , SN: ART2128X1234
```

show inventory chassis

Just the chassis-level entry (no modules / PSUs / fans).

```
switch# show inventory chassis
NAME: "Chassis",  DESCR: "MDS 9710 (10 Slot) Chassis"
PID: DS-C9710          , VID: V01 , SN: JAF1840AEAB
```

show inventory module

Only the line cards and supervisors — no chassis envelope, no PSUs, no fans.

```
switch# show inventory module
NAME: "Slot 1",  DESCR: "1/10/40 Gbps Ethernet/FC Module"
PID: DS-X9648-1536K9   , VID: V01 , SN: JAE21290ABC

NAME: "Slot 2",  DESCR: "32 Gbps FC Module"
```

```
PID: DS-X9648-1536K9   , VID: V01 , SN: JAE21290XYZ

NAME: "Slot 5",  DESCR: "Supervisor Module-4"
PID: DS-X97-SF4-K9     , VID: V02 , SN: JAE21290DEF

NAME: "Slot 6",  DESCR: "Supervisor Module-4"
PID: DS-X97-SF4-K9     , VID: V02 , SN: JAE21290GHI
```

`show inventory module 1`

Detail for a single module slot.

```
switch# show inventory module 1
NAME: "Slot 1",  DESCR: "1/10/40 Gbps Ethernet/FC Module"
PID: DS-X9648-1536K9   , VID: V01 , SN: JAE21290ABC
```

`show inventory fans`

Fan tray entries only.

```
switch# show inventory fans
NAME: "Fan Tray 1",  DESCR: "MDS 9710 Fan Module"
PID: DS-C9710-FAN     , VID: V01 , SN: ART2128F1234

NAME: "Fan Tray 2",  DESCR: "MDS 9710 Fan Module"
PID: DS-C9710-FAN     , VID: V01 , SN: ART2128F5678

NAME: "Fan Tray 3",  DESCR: "MDS 9710 Fan Module"
PID: DS-C9710-FAN     , VID: V01 , SN: ART2128F9012
```

`show inventory power_supply`

PSU entries only — confirm part number and serial during a TAC RMA.

```
switch# show inventory power_supply
NAME: "Power Supply 1",  DESCR: "3000W AC PSU"
PID: DS-CAC-3000W      , VID: V01 , SN: ART2128X1234

NAME: "Power Supply 2",  DESCR: "3000W AC PSU"
PID: DS-CAC-3000W      , VID: V01 , SN: ART2128X5678

NAME: "Power Supply 3",  DESCR: "3000W AC PSU"
PID: DS-CAC-3000W      , VID: V01 , SN: ART2128X9012
```

`show hardware internal mgmt0 stats`

Low-level stats from the management Ethernet interface. Useful when you suspect packet loss into the switch from a management plane perspective.

```
switch# show hardware internal mgmt0 stats
mgmt0 statistics:
  rx_packets : 1840452312
  rx_bytes   : 244091245612
  rx_errors  : 0
  rx_drops   : 17
  tx_packets : 1442118203
  tx_bytes   : 198443110987
  tx_errors  : 0
  tx_drops   : 0
```

---

3. System Health

The `show system health` family runs the chassis's built-in diagnostic loop and reports the most recent results. Cisco TAC requests these whenever a port behaves abnormally on otherwise-healthy hardware.

`show system health`

Top-level summary of online diagnostic state across modules.

```
switch# show system health
Current health information for module 1
   Test                    Frequency    Status      Action
-------------------------------------------------------
   InternalPortLoopback    60 sec       OK          Notify
   ASICRegisterCheck       60 sec       OK          Notify
   PrimaryBootROM          On Demand    OK          Notify
   SecondaryBootROM        On Demand    OK          Notify
```

`show system health module 1`

Same view, scoped to a single slot.

```
switch# show system health module 1
Current health information for module 1
   Test                    Frequency    Status      Action
-------------------------------------------------------
   InternalPortLoopback    60 sec       OK          Notify
   ASICRegisterCheck       60 sec       OK          Notify
   PrimaryBootROM          On Demand    OK          Notify
   SecondaryBootROM        On Demand    OK          Notify
```

`show system health statistics`

Cumulative pass/fail counters since the last reload.

```
switch# show system health statistics
Test statistics for module 1
   Test                          Run-Count   Pass-Count   Fail-Count
-----------------------------------------------------------------
   InternalPortLoopback          209400      209400       0
   ASICRegisterCheck             209400      209400       0
   PrimaryBootROM                4           4            0
```

`show system health statistics module 1`

Per-slot view of the above.

```
switch# show system health statistics module 1
Test statistics for module 1
   Test                          Run-Count   Pass-Count   Fail-Count
-----------------------------------------------------------------
   InternalPortLoopback          209400      209400       0
   ASICRegisterCheck             209400      209400       0
```

`show system health statistics loopback`

Loopback test counters across all monitored interfaces. A growing fail-count points to a bad transceiver or an ASIC path issue.

```
switch# show system health statistics loopback
Interface     Run-Count    Pass-Count    Fail-Count
-------------------------------------------------
fc1/1         209400       209400        0
fc1/2         209400       209400        0
fc1/3         209400       209400        0
fc1/4         209400       209398        2
```

`show system health statistics loopback module 1`

Scoped to module 1.

```
switch# show system health statistics loopback module 1
Interface     Run-Count    Pass-Count    Fail-Count
-------------------------------------------------
fc1/1         209400       209400        0
fc1/2         209400       209400        0
fc1/3         209400       209400        0
fc1/4         209400       209398        2
```

`show system health statistics loopback interface fc1/1`

Single-interface view — useful when chasing a specific port flap.

```
switch# show system health statistics loopback interface fc1/1
Interface     Run-Count    Pass-Count    Fail-Count
```

```
--------------------------------------------------
fc1/1         209400       209400        0
```

---

4. Processes

NX-OS is a Linux-based OS. These commands surface the same process and memory data you'd see from `ps` and `top`, but scoped to NX-OS services.

show processes

All processes with state and short-name. The PID column feeds many other commands in this section.

```
switch# show processes
PID    State  PC          Start_cnt    TTY   Type  Process
-----  -----  ----------  -----------  ----  ----  ------------
1      S      7f8a14e000  1            -     0     init
1213   S      7f8a18c000  1            -     0     bgp
1234   S      7f8a19a000  1            -     0     fcns
1287   S      7f8a1a3000  2            -     0     zone-mgr
```

show processes cpu

CPU utilisation per process, sorted highest first by default.

```
switch# show processes cpu
PID    Runtime(ms)  Invoked      uSecs   1Sec   Process
-----  -----------  -----------  ------  ----   --------
1213   148723       3402102      436     1.2    bgp
1234   88401        1284037      688     0.8    fcns
1287   62120        943122       659     0.4    zone-mgr
1      31402        110002       2854    0.0    init
```

show processes cpu sort 5min

Sorted by 5-minute average. Use this when chasing a slow leak rather than a momentary spike.

```
switch# show processes cpu sort 5min
PID    1Sec   1Min   5Min    Process
-----  -----  -----  -----   --------
1213   1.2    1.4    1.5     bgp
1234   0.8    0.9    1.1     fcns
1287   0.4    0.5    0.6     zone-mgr
```

show processes memory

Memory usage per process — total and resident.

```
switch# show processes memory
PID    MemAlloc    MemLimit   MemUsed   StackSize  Process
-----  ----------  ---------  --------  ---------  --------
1213   12582912    52428800   8388608   2097152    bgp
1234   8388608     52428800   4194304   2097152    fcns
1287   16777216    52428800   12582912  2097152    zone-mgr
```

show processes memory sort

Same as above, sorted by `MemUsed` descending — top consumer at the top.

```
switch# show processes memory sort
PID    MemUsed   MemAlloc    Process
-----  --------  ----------  --------
1287   12582912  16777216    zone-mgr
1213   8388608   12582912    bgp
1234   4194304   8388608     fcns
```

show processes memory shared

Shared-memory regions used by NX-OS subsystems (PSS shared memory blocks). A bloated shared-memory segment can indicate a leak in subsystem persistence.

```
switch# show processes memory shared
Component Shared Memory Statistics
-----------------------------------------------------
Component     Size (KB)     Used (KB)    Free (KB)
-----------------------------------------------------
PSS-fcns      8192          1248         6944
PSS-zone      4096          892          3204
PSS-flogi     2048          412          1636
```

show processes log

Index of crashed-process logs (one row per crash event).

```
switch# show processes log
Process              PID     Normal-exit   Stack    Core    Log-create-time
-------------------- ------  ------------  -------  ------  ---------------
fcns                 1234    N             Y        Y       May  3 02:14:11
zone-mgr             1287    N             Y        N       May  9 18:42:30
```

show processes log details

Verbose form — every captured field for each crash log.

```
switch# show processes log details
=====================================================
Service: fcns
Description: Fibre Channel Name Server
```

```
Started at Mon May 18 14:43:21 2026 (483102 us)
Stopped at Wed May 20 02:14:11 2026 (211049 us)
Uptime: 1 day 11 hours 30 minutes
Start type: SRV_OPTION_RESTART_STATEFUL (1)
Death reason: SYSMGR_DEATH_REASON_FAILURE_SIGNAL (3)
Exit code: signal 11 (no core)
=====================================================
```

`show processes log pid 1234`

Detail for one specific crash event by PID.

```
switch# show processes log pid 1234
=====================================================
Service: fcns
PID: 1234
Started at Mon May 18 14:43:21 2026
Stopped at Wed May 20 02:14:11 2026
Stack trace:
  0x7f8a1234abcd in fcns_handle_request()
  0x7f8a1234ef01 in fcns_main_loop()
  ... (truncated)
=====================================================
```

---

5. Interfaces (FC / Mgmt / Port-Channel)

The `show interface` family is the workhorse of any SAN troubleshooting session. Each variant trades depth for scan-ability — use brief forms for sweep, counter forms for drill-down, transceiver forms for layer-1 questions.

`show interface`

All interfaces, all detail — counters, status, speed, mode, VSAN. The most verbose interface view available.

```
switch# show interface
fc1/1 is up
    Hardware is Fibre Channel, SFP is short wave laser w/o OFC (SN)
    Port WWN is 20:01:54:7f:ee:1a:bc:80
    Admin port mode is auto, trunk mode is on
    snmp link state traps are enabled
    Port mode is F, FCID is 0x0b0100
    Port vsan is 100
    Speed is 32 Gbps
    Rate mode is dedicated
    Transmit B2B Credit is 64
    Receive B2B Credit is 64
```

```
    5 minute input rate 124543 bits/sec, 15567 bytes/sec, 32 frames/sec
    5 minute output rate 162311 bits/sec, 20288 bytes/sec, 41 frames/sec
      1234567 frames input, 985432109 bytes
        0 discards, 0 errors
        0 CRC, 0 unknown class
        0 too long, 0 too short
      2345678 frames output, 1843102100 bytes
        0 discards, 0 errors
```

show interface brief

One row per interface — status, VSAN, mode, speed. Best for rapid fabric scan.

```
switch# show interface brief
--------------------------------------------------------------------------------
Interface  Vsan   Admin  Admin   Status     SFP    Oper  Oper   Port-channel
                  Mode   Trunk              Type   Mode  Speed
                         Mode                             (Gbps)
--------------------------------------------------------------------------------
fc1/1      100    auto   on      up         swl    F     32     --
fc1/2      100    auto   on      up         swl    F     32     --
fc1/3      100    auto   on      up         swl    F     32     --
fc1/4      1      auto   on      down       --     --    --     --
```

show interface description

Interface descriptions — what each port is wired to, per the operator's documentation.

```
switch# show interface description
-------------------------------------------------------
Interface     Description
-------------------------------------------------------
fc1/1         ESX01-vmhba2
fc1/2         ESX02-vmhba2
fc1/3         ESX03-vmhba2
fc1/4         ESX04-vmhba2 (unused)
mgmt0         OOB-mgmt-vlan104
```

show interface detail-counters

Layer-2 frame counters in deep detail. Includes ordered sets, BB_credit, class-of-service counters, error sub-types.

```
switch# show interface detail-counters
fc1/1
    5 minute input rate 124543 bits/sec, 15567 bytes/sec, 32 frames/sec
    5 minute output rate 162311 bits/sec, 20288 bytes/sec, 41 frames/sec
      1234567 frames input, 985432109 bytes
        0 class-2 frames, 0 bytes
```

```
        1234567 class-3 frames, 985432109 bytes
        0 class-f frames, 0 bytes
        0 frames discards
      2345678 frames output, 1843102100 bytes
        0 class-2 frames, 0 bytes
        2345678 class-3 frames, 1843102100 bytes
        0 class-f frames, 0 bytes
      0 BB_credit transitions to zero
      0 LRR input, 0 LRR output
      0 OLS input, 0 OLS output
      0 NOS input, 0 NOS output
      0 fragmented frames, 0 invalid CRC
```

`show interface counters brief`

One-line-per-port summary of in/out frame counts and discards.

```
switch# show interface counters brief
-------------------------------------------------------------------------------
Interface      Input (rate is 5 min avg)        Output (rate is 5 min avg)
               Rate         Total              Rate         Total
               Mbits/s      Frames             Mbits/s      Frames
-------------------------------------------------------------------------------
fc1/1          124          1234567            162          2345678
fc1/2          88           987654             104          1098765
fc1/3          112          1109876            134          1456789
```

`show interface bbcredit`

Per-port BB_credit configuration and the live remaining-credit indicator. Tracks fabric slow-drain and credit starvation.

```
switch# show interface bbcredit
Interface     Tx-BB_credit   Rx-BB_credit   BB_credit_to_Zero
                                            (last 5 min)
-------------------------------------------------------------
fc1/1         64             64             0
fc1/2         64             64             0
fc1/3         64             64             27
fc1/4         16             16             1842
```

`show interface mgmt`

Management Ethernet port (mgmt0) configuration and counters.

```
switch# show interface mgmt
mgmt0 is up
admin state is up,
  Hardware: GigabitEthernet, address: 547f.ee1a.bc80
```

```
  Internet Address is 10.12.4.20/24
  MTU 1500 bytes, BW 1000000 Kbit, DLY 10 usec
  reliability 255/255, txload 1/255, rxload 1/255
  Encapsulation ARPA, full-duplex, 1000 Mb/s
  1840452312 packets input, 244091245612 bytes
    0 input errors, 0 drops, 0 overrun
  1442118203 packets output, 198443110987 bytes
    0 output errors, 0 collisions, 0 deferred
```

`show interface fc1/1`

Detail for a single FC port — same depth as `show interface`, scoped to one port.

```
switch# show interface fc1/1
fc1/1 is up
    Hardware is Fibre Channel, SFP is short wave laser w/o OFC (SN)
    Port WWN is 20:01:54:7f:ee:1a:bc:80
    Admin port mode is auto, trunk mode is on
    Port mode is F, FCID is 0x0b0100
    Port vsan is 100
    Speed is 32 Gbps
    Transmit B2B Credit is 64
    Receive B2B Credit is 64
    1234567 frames input, 985432109 bytes
        0 discards, 0 errors
```

`show interface fc1/1 description`

Just the description line for the port.

```
switch# show interface fc1/1 description
Interface     Description
----------------------------------------
fc1/1         ESX01-vmhba2
```

`show interface fc1/1 | include Speed`

Pipe-filter trick to extract just the speed line. The `| include <pattern>` filter works on any `show` output and is the most common way to scrape a single field.

```
switch# show interface fc1/1 | include Speed
    Speed is 32 Gbps
```

`show interface fc1/1 | include vsan`

Same pattern — pull just the VSAN line. Useful in scripts that walk many ports.

```
switch# show interface fc1/1 | include vsan
    Port vsan is 100
```

show interface fc1/1-5 brief

Brief view restricted to a port range. Works with `-`, comma, or list syntax (e.g. `fc1/1-5,fc1/8`).

```
switch# show interface fc1/1-5 brief
--------------------------------------------------------------------------------
Interface  Vsan   Admin  Status     Oper  Oper   Port-channel
                  Mode              Mode  Speed
                                          (Gbps)
--------------------------------------------------------------------------------
fc1/1      100    auto   up         F     32     --
fc1/2      100    auto   up         F     32     --
fc1/3      100    auto   up         F     32     --
fc1/4      1      auto   down       --    --     --
fc1/5      100    auto   up         F     16     --
```

show interface transceiver

SFP/SFP+ inventory across all ports — wavelength, vendor, part number, serial. Hardware audit gold.

```
switch# show interface transceiver
fc1/1 sfp is present
    Name is CISCO-FINISAR
    Manufacturer's part number is FTLF8529P3BCV-C2
    Revision is A0
    Serial number is FN21XX0123ABC
    Nominal bitrate is 28100 MBit/sec
    Link length supported for 50/125um OM2 fiber is 35 m
    Link length supported for 50/125um OM3 fiber is 100 m
    Cisco part number is 10-3206-01
    Cisco product id is DS-SFP-FC32G-SW
    Cisco vendor id is V01

fc1/2 sfp is present
    Name is CISCO-FINISAR
    Manufacturer's part number is FTLF8529P3BCV-C2
    Serial number is FN21XX0456DEF
    ...
```

show interface transceiver details

Same as above, plus live diagnostics — temperature, voltage, RX/TX power. Use to find an over-temperature optic or a fading transmitter.

```
switch# show interface transceiver details
fc1/1 sfp is present
    Name is CISCO-FINISAR
    Cisco product id is DS-SFP-FC32G-SW
```

```
    Serial number is FN21XX0123ABC

    SFP Detail Diagnostics Information
    ---------------------------------------------------
                        Current           Alarms     Warnings
                        Measurement       High Low   High Low
    ---------------------------------------------------
    Temperature         48.21 C           80 -10     75 -5
    Voltage             3.34 V            3.7 2.9    3.6 3.0
    Current             6.84 mA           12 1       10 2
    Tx Power            -2.43 dBm         1.7 -8.2   -1.3 -7.2
    Rx Power            -2.78 dBm         3.0 -13.9  0.0 -12.9
```

`show interface fc1/1 transceiver`

Just the transceiver inventory line for a single port.

```
switch# show interface fc1/1 transceiver
fc1/1 sfp is present
    Name is CISCO-FINISAR
    Cisco product id is DS-SFP-FC32G-SW
    Serial number is FN21XX0123ABC
    Nominal bitrate is 28100 MBit/sec
```

`show interface fc1/1 transceiver details`

Live diagnostics for a single port — the four diag values you’d capture for a TAC SR about a flaky port.

```
switch# show interface fc1/1 transceiver details
fc1/1 sfp is present
    Cisco product id is DS-SFP-FC32G-SW
    Serial number is FN21XX0123ABC

    SFP Detail Diagnostics Information
    ---------------------------------------------------
                        Current           Alarms     Warnings
                        Measurement       High Low   High Low
    ---------------------------------------------------
    Temperature         48.21 C           80 -10     75 -5
    Voltage             3.34 V            3.7 2.9    3.6 3.0
    Current             6.84 mA           12 1       10 2
    Tx Power            -2.43 dBm         1.7 -8.2   -1.3 -7.2
    Rx Power            -2.78 dBm         3.0 -13.9  0.0 -12.9
```

`show interface port-channel 1`

Port-channel summary — member ports, aggregate status, mode, VSAN.

```
switch# show interface port-channel 1
port-channel1 is trunking
    Hardware is Fibre Channel
    Port WWN is 24:01:54:7f:ee:1a:bc:80
    Admin port mode is E, trunk mode is on
    Port mode is TE
    Port vsan is 1
    Speed is 64 Gbps
    Trunk vsans (admin allowed and active) (1,100-102)
    Trunk vsans (up)                       (1,100-102)
    Member[1] : fc1/9
    Member[2] : fc1/10
```

show interface port-channel 1 brief

One-line summary.

```
switch# show interface port-channel 1 brief
Interface            Vsan   Admin  Admin   Status     Oper   Oper      Port
                            Mode   Trunk              Mode   Speed     Channel
                                   Mode                      (Gbps)    Type
--------------------------------------------------------------------------------
port-channel 1       1      E      on      trunking   TE     64        --
```

show interface port-channel 1 trunk vsan

VSAN trunk state across the port-channel.

```
switch# show interface port-channel 1 trunk vsan
port-channel1 is trunking
    Belongs to port-channel1
    Vsan 1 is up
    Vsan 100 is up
    Vsan 101 is up
    Vsan 102 is up
```

show interface port-channel 1 trunk vsan 100

Trunk state for one specific VSAN — useful when ISL is up but VSAN 100 traffic is failing.

```
switch# show interface port-channel 1 trunk vsan 100
port-channel1 is trunking
    Vsan 100 is up
    Last error: --
```

6. FLOGI (Fabric Login)

FLOGI database tracks which N_Port WWNs have logged into which switch port, and the FCID each was assigned. First place to look when a server says “my HBA isn’t visible to the fabric”.

show flogi database

All FLOGI entries on the switch. Each row is one HBA port login.

```
switch# show flogi database
--------------------------------------------------------------------------------
INTERFACE        VSAN    FCID           PORT NAME               NODE NAME
--------------------------------------------------------------------------------
fc1/1            100     0x0b0100       21:00:00:00:00:00:00:11 20:00:00:00:00:00:00:11
fc1/2            100     0x0b0200       21:00:00:00:00:00:00:12 20:00:00:00:00:00:00:12
fc1/3            100     0x0b0300       21:00:00:00:00:00:00:13 20:00:00:00:00:00:00:13
fc1/5            100     0x0b0500       50:01:43:80:24:11:11:11 50:01:43:80:24:11:11:10
Total number of flogi = 4.
```

show flogi database details

Adds the symbolic port name (vendor-supplied HBA description) and other FC-2 layer attributes.

```
switch# show flogi database details
fc1/1
   pWWN          : 21:00:00:00:00:00:00:11
   nWWN          : 20:00:00:00:00:00:00:11
   fcid          : 0x0b0100
   port-name     : Emulex LightPulse LPe35002-M2
   class         : 3
   present       : yes
   speed         : 32 Gbps
   bb_credit     : 64

fc1/2
   pWWN          : 21:00:00:00:00:00:00:12
   nWWN          : 20:00:00:00:00:00:00:12
   fcid          : 0x0b0200
   port-name     : Emulex LightPulse LPe35002-M2
   class         : 3
   speed         : 32 Gbps
```

show flogi database fcid 0x0b0100

Look up by FCID.

```
switch# show flogi database fcid 0x0b0100
INTERFACE        VSAN    FCID           PORT NAME               NODE NAME
fc1/1            100     0x0b0100       21:00:00:00:00:00:00:11 20:00:00:00:00:00:00:11
```

show flogi database interface fc1/1

What's logged in on one specific port.

```
switch# show flogi database interface fc1/1
INTERFACE        VSAN    FCID           PORT NAME               NODE NAME
fc1/1            100     0x0b0100       21:00:00:00:00:00:00:11 20:00:00:00:00:00:00:11
```

show flogi database vsan 10

Everything logged into one VSAN.

```
switch# show flogi database vsan 10
INTERFACE        VSAN    FCID           PORT NAME               NODE NAME
fc2/1            10      0x0e0100       21:00:00:24:ff:8a:11:11 20:00:00:24:ff:8a:11:10
fc2/2            10      0x0e0200       21:00:00:24:ff:8a:22:22 20:00:00:24:ff:8a:22:20
Total number of flogi = 2.
```

show flogi internal errors

Counters of FLOGI-process internal errors. Spot-check when seeing intermittent HBA login failures with no other obvious cause.

```
switch# show flogi internal errors
FLOGI Error Counters:
  invalid_flogi_format     : 0
  flogi_reject_duplicate   : 2
  flogi_reject_zone_policy : 0
  flogi_timeout            : 1
```

show flogi internal event-history interface fc1/1

Time-ordered history of every FLOGI state-machine event on one port. Critical for diagnosing intermittent login failures or HBA timeouts.

```
switch# show flogi internal event-history interface fc1/1
==========================================
FLOGI history for fc1/1
==========================================
[2026 May 17 08:14:22.301 UTC] FSM: fc1/1: FLOGI received from 21:00:00:00:00:00:00:11
[2026 May 17 08:14:22.302 UTC] FSM: fc1/1: FLOGI accept sent, FCID 0x0b0100
[2026 May 17 08:14:22.310 UTC] FSM: fc1/1: PLOGI to fabric controller
[2026 May 17 08:14:22.345 UTC] FSM: fc1/1: SCR registered
```

show flogi internal event-history vsan 11

VSAN-scoped event history. Use when a VSAN is misbehaving and you suspect a recurring login pattern.

```
switch# show flogi internal event-history vsan 11
==========================================
```

```
FLOGI history for VSAN 11
==========================================
[2026 May 17 08:14:11.022 UTC] vsan-11: FLOGI on fc1/5 from 21:00:00:00:00:11:22:33
[2026 May 17 08:14:11.024 UTC] vsan-11: FCID 0x0e0500 assigned
```

---

7. FCNS (Fibre Channel Name Server)

Name Server is the fabric-wide directory of every WWN, its FCID, FC-4 types (SCSI initiator, target, NVMe-FC, etc.), and vendor metadata. After FLOGI, this is the second place to look when an HBA "isn't visible" — FLOGI passed but the device didn't register.

`show fcns database`

All registered devices in the fabric, all VSANs.

```
switch# show fcns database
VSAN 100:
--------------------------------------------------------------------------------
FCID        TYPE  PWWN                    (VENDOR)        FC4-TYPE:FEATURE
--------------------------------------------------------------------------------
0x0b0100    N     21:00:00:00:00:00:00:11 (Emulex)        scsi-fcp:init
0x0b0200    N     21:00:00:00:00:00:00:12 (Emulex)        scsi-fcp:init
0x0b0500    N     50:01:43:80:24:11:11:11 (Pure Storage)  scsi-fcp:target
Total number of entries = 3
```

`show fcns database detail`

Verbose form — fabric port name, hard address, symbolic name, OS type, etc.

```
switch# show fcns database detail
------------------------
VSAN:100   FCID:0x0b0100
------------------------
port-wwn (vendor)           :21:00:00:00:00:00:00:11 (Emulex)
node-wwn                    :20:00:00:00:00:00:00:11
class                       :2,3
node-ip-addr                :0.0.0.0
ipa                         :ff ff ff ff ff ff ff ff
fc4-types:fc4_features      :scsi-fcp:init
symbolic-port-name          :Emulex LightPulse LPe35002-M2 FC Adapter
symbolic-node-name          :ESX01.example.local
port-type                   :N
port-ip-addr                :0.0.0.0
fabric-port-wwn             :20:01:54:7f:ee:1a:bc:80
hard-addr                   :0x000000
permanent-port-wwn          :21:00:00:00:00:00:00:11
connected interface         :fc1/1
```

```
switch name                 :fab-a-mds9710-01
```

show fcns database vsan 1

Devices registered in a specific VSAN.

```
switch# show fcns database vsan 1
VSAN 1:
--------------------------------------------------------------------------------
FCID        TYPE  PWWN                    (VENDOR)        FC4-TYPE:FEATURE
--------------------------------------------------------------------------------
0x010000    N     20:00:54:7f:ee:1a:bc:80 (Cisco)         ipfc
Total number of entries = 1
```

show fcns database detail vsan 1

Verbose-per-VSAN view.

```
switch# show fcns database detail vsan 1
------------------------
VSAN:1   FCID:0x010000
------------------------
port-wwn (vendor)           :20:00:54:7f:ee:1a:bc:80 (Cisco)
node-wwn                    :20:00:54:7f:ee:1a:bc:80
fc4-types:fc4_features      :ipfc
symbolic-port-name          :fab-a-mds9710-01
port-type                   :F
```

show fcns database fcid 0x0b0100

Lookup by FCID. Often used in scripted reverse-lookup.

```
switch# show fcns database fcid 0x0b0100
------------------------
VSAN:100   FCID:0x0b0100
------------------------
port-wwn (vendor)           :21:00:00:00:00:00:00:11 (Emulex)
node-wwn                    :20:00:00:00:00:00:00:11
fc4-types:fc4_features      :scsi-fcp:init
connected interface         :fc1/1
```

show fcns statistics

Per-VSAN FCNS request/response counters. A high reject-count usually means a misbehaving HBA or storage controller.

```
switch# show fcns statistics
Statistics for VSAN: 100
------------------------
  number of GA_NXT requests received  : 1248
```

```
  number of GA_NXT rejects             : 0
  number of GPN_ID requests received   : 8912
  number of GPN_ID rejects             : 4
  number of GFPN_ID requests received  : 1102
  number of RNN_ID requests received   : 12
```

---

8. VSAN

VSANs partition a single physical fabric into multiple logical fabrics with independent zoning, name servers, and FSPF instances. They are the foundation of MDS multi-tenancy.

`show vsan`

All configured VSANs and their state.

```
switch# show vsan
vsan 1 information
         name:VSAN0001  state:active
         interoperability mode:default
         loadbalancing:src-id/dst-id/oxid
         operational state:up

vsan 100 information
         name:Prod-VSAN  state:active
         interoperability mode:default
         loadbalancing:src-id/dst-id/oxid
         operational state:up

vsan 101 information
         name:Dev-VSAN  state:active
         interoperability mode:default
         loadbalancing:src-id/dst-id/oxid
         operational state:up

vsan 4079 (evfp_isolated_vsan)
vsan 4094 (isolated_vsan)
```

`show vsan 100`

Detail for one VSAN.

```
switch# show vsan 100
vsan 100 information
         name:Prod-VSAN  state:active
         interoperability mode:default
         loadbalancing:src-id/dst-id/oxid
         operational state:up
```

`show vsan usage`

Count of allocated vs available VSAN IDs.

```
switch# show vsan usage
4 vsans configured
configured vsans:1,100-102
vsans available for configuration:2-99,103-4078
```

`show vsan membership`

Which interfaces are members of which VSANs, fabric-wide on the local switch.

```
switch# show vsan membership
vsan 1 interfaces:
        fc1/4               fc1/8               mgmt0

vsan 100 interfaces:
        fc1/1               fc1/2               fc1/3
        fc1/5               fc1/6               fc1/7
        port-channel1

vsan 101 interfaces:
        fc2/1               fc2/2               fc2/3
        fc2/4
```

`show vsan 100 membership`

Just one VSAN's member list.

```
switch# show vsan 100 membership
vsan 100 interfaces:
        fc1/1               fc1/2               fc1/3
        fc1/5               fc1/6               fc1/7
        port-channel1
```

`show vsan membership interface fc1/1`

Reverse lookup: which VSAN is one specific interface a member of.

```
switch# show vsan membership interface fc1/1
fc1/1
    vsan:100
    allowed list:1-4093
```

---

9. Zoning

Zoning enforces which initiator pWWNs can communicate with which target pWWNs. Each VSAN has its own zoning database. The **active** zoneset is what's enforced on the fabric — the **configured**

zoneset is the editable working copy until you `zoneset activate`.

`show zone`

All zones in the configured zoneset, all VSANs.

```
switch# show zone
zone name esx01_to_purearray vsan 100
    pwwn 21:00:00:00:00:00:00:11
    pwwn 50:01:43:80:24:11:11:11
    pwwn 50:01:43:80:24:22:22:22

zone name esx02_to_purearray vsan 100
    pwwn 21:00:00:00:00:00:00:12
    pwwn 50:01:43:80:24:11:11:11
    pwwn 50:01:43:80:24:22:22:22

zone name backup_server_to_libraries vsan 101
    pwwn 21:00:00:24:ff:8a:11:11
    pwwn 50:0a:09:84:80:11:22:33
```

`show zone vsan 100`

Zones scoped to one VSAN.

```
switch# show zone vsan 100
zone name esx01_to_purearray vsan 100
    pwwn 21:00:00:00:00:00:00:11
    pwwn 50:01:43:80:24:11:11:11
    pwwn 50:01:43:80:24:22:22:22
```

`show zone active`

The **active** zoneset across all VSANs. This is what the fabric actually enforces.

```
switch# show zone active
zone name esx01_to_purearray vsan 100
*   fcid 0x0b0100 [pwwn 21:00:00:00:00:00:00:11]
*   fcid 0x0b0500 [pwwn 50:01:43:80:24:11:11:11]
*   fcid 0x0b0501 [pwwn 50:01:43:80:24:22:22:22]
```

The `*` next to an FCID indicates the device is currently logged into the fabric (FLOGI present, FCNS-registered). A missing `*` next to a pWWN means the device is offline.

`show zone active vsan 100`

Active zoneset for one VSAN.

```
switch# show zone active vsan 100
zone name esx01_to_purearray vsan 100
```

```
*   fcid 0x0b0100 [pwwn 21:00:00:00:00:00:00:11]
*   fcid 0x0b0500 [pwwn 50:01:43:80:24:11:11:11]
*   fcid 0x0b0501 [pwwn 50:01:43:80:24:22:22:22]
```

`show zone status`

Per-VSAN zoning state — full vs basic mode, default-policy, propagation method, distribution state.

```
switch# show zone status
VSAN: 1 default-zone: deny distribute: active only Interop: default
    mode: basic merge-control: allow
    session: none
    hard-zoning: enabled broadcast: disabled smart-zoning: disabled
    rscn-format: fabric-address activation overwrite control: disabled

VSAN: 100 default-zone: deny distribute: full Interop: default
    mode: enhanced merge-control: allow
    session: none
    hard-zoning: enabled broadcast: disabled smart-zoning: enabled
    rscn-format: fabric-address activation overwrite control: disabled
```

`show zone status vsan 100`

Just one VSAN’s zoning state.

```
switch# show zone status vsan 100
VSAN: 100 default-zone: deny distribute: full Interop: default
    mode: enhanced merge-control: allow
    session: none
    hard-zoning: enabled broadcast: disabled smart-zoning: enabled
```

`show zone name zone123`

Look up one zone by name.

```
switch# show zone name esx01_to_purearray
zone name esx01_to_purearray vsan 100
    pwwn 21:00:00:00:00:00:00:11
    pwwn 50:01:43:80:24:11:11:11
    pwwn 50:01:43:80:24:22:22:22
```

`show zone member pwwn 21:00:00:00:00:00:00:11`

Reverse lookup — every zone that contains a given pWWN. Indispensable when adding a new LUN: “where is this initiator already zoned?”

```
switch# show zone member pwwn 21:00:00:00:00:00:00:11
pwwn 21:00:00:00:00:00:00:11
    Zone: esx01_to_purearray  VSAN: 100
    Zone: esx01_to_netapp     VSAN: 100
```

show zoneset

All configured zonesets.

```
switch# show zoneset
zoneset name prod_zoneset_v12 vsan 100
    zone name esx01_to_purearray vsan 100
        pwwn 21:00:00:00:00:00:00:11
        pwwn 50:01:43:80:24:11:11:11
    zone name esx02_to_purearray vsan 100
        pwwn 21:00:00:00:00:00:00:12
        pwwn 50:01:43:80:24:11:11:11
```

show zoneset active

Active zoneset across all VSANs — the operational source of truth.

```
switch# show zoneset active
zoneset name prod_zoneset_v12 vsan 100
    zone name esx01_to_purearray vsan 100
    *   fcid 0x0b0100 [pwwn 21:00:00:00:00:00:00:11]
    *   fcid 0x0b0500 [pwwn 50:01:43:80:24:11:11:11]
```

show zoneset vsan 100

Configured zonesets for one VSAN.

```
switch# show zoneset vsan 100
zoneset name prod_zoneset_v12 vsan 100
    zone name esx01_to_purearray vsan 100
        pwwn 21:00:00:00:00:00:00:11
        pwwn 50:01:43:80:24:11:11:11
    zone name esx02_to_purearray vsan 100
        pwwn 21:00:00:00:00:00:00:12
        pwwn 50:01:43:80:24:11:11:11
```

show zoneset active vsan 100

The actively enforced zoneset for one VSAN.

```
switch# show zoneset active vsan 100
zoneset name prod_zoneset_v12 vsan 100
    zone name esx01_to_purearray vsan 100
    *   fcid 0x0b0100 [pwwn 21:00:00:00:00:00:00:11]
    *   fcid 0x0b0500 [pwwn 50:01:43:80:24:11:11:11]
    zone name esx02_to_purearray vsan 100
    *   fcid 0x0b0200 [pwwn 21:00:00:00:00:00:00:12]
    *   fcid 0x0b0500 [pwwn 50:01:43:80:24:11:11:11]
```

10. Device-Alias

Device-alias is the fabric-wide friendly-name database — maps a human-readable label like `esx01_hba1` to a pWWN. Used so zone definitions read in terms of server roles rather than 16-hex-character pWWNs.

`show device-alias status`

State of the device-alias service: fabric mode (enhanced vs basic), commit/abort posture.

```
switch# show device-alias status
Fabric Distribution: Enabled
Database:- Device Aliases 27 Mode: Enhanced
Locked By:- None
Pending Database:- Device Aliases 0 Mode: Enhanced
```

`show device-alias database`

The full alias-to-pWWN database.

```
switch# show device-alias database
device-alias name esx01_hba1 pwwn 21:00:00:00:00:00:00:11
device-alias name esx02_hba1 pwwn 21:00:00:00:00:00:00:12
device-alias name esx03_hba1 pwwn 21:00:00:00:00:00:00:13
device-alias name purearray-ct0-fc0 pwwn 50:01:43:80:24:11:11:11
device-alias name purearray-ct0-fc1 pwwn 50:01:43:80:24:11:11:12
device-alias name purearray-ct1-fc0 pwwn 50:01:43:80:24:22:22:22

Total number of entries = 27
```

`show device-alias name server1_hba1`

Look up one alias.

```
switch# show device-alias name esx01_hba1
device-alias name esx01_hba1 pwwn 21:00:00:00:00:00:00:11
```

---

11. Fabric-Binding

Fabric-binding enforces an allowlist of switch WWNs permitted to join a given VSAN's fabric. Together with port-security it's the standard mechanism for preventing a rogue switch from being inserted into a regulated SAN.

`show fabric-binding status`

Activation state for fabric-binding across all VSANs.

```
switch# show fabric-binding status
VSAN 100 :Activated database
```

```
VSAN 101 :Activated database
VSAN 102 :No Active database
```

`show fabric-binding status vsan 100`

State for one VSAN.

```
switch# show fabric-binding status vsan 100
VSAN 100 :Activated database
```

`show fabric-binding database`

The configured (editable) database of permitted peer switch WWNs.

```
switch# show fabric-binding database
--------------------------------------------------
Vsan   Logging-in Switch WWN     Domain-id
--------------------------------------------------
100    20:64:00:05:30:00:24:81   11(0x0b)
100    20:64:00:05:30:00:24:82   12(0x0c)
101    20:64:00:05:30:00:24:81   21(0x15)
```

`show fabric-binding database vsan 100`

Configured database for one VSAN.

```
switch# show fabric-binding database vsan 100
--------------------------------------------------
Vsan   Logging-in Switch WWN     Domain-id
--------------------------------------------------
100    20:64:00:05:30:00:24:81   11(0x0b)
100    20:64:00:05:30:00:24:82   12(0x0c)
```

`show fabric-binding database active`

The **active** database — what's currently being enforced. Compare with `show fabric-binding database` to spot un-activated changes.

```
switch# show fabric-binding database active
--------------------------------------------------
Vsan   Logging-in Switch WWN     Domain-id
--------------------------------------------------
100    20:64:00:05:30:00:24:81   11(0x0b)
100    20:64:00:05:30:00:24:82   12(0x0c)
101    20:64:00:05:30:00:24:81   21(0x15)
```

`show fabric-binding database active vsan 100`

Active database scoped to one VSAN.

```
switch# show fabric-binding database active vsan 100
--------------------------------------------------
Vsan   Logging-in Switch WWW     Domain-id
--------------------------------------------------
100    20:64:00:05:30:00:24:81   11(0x0b)
100    20:64:00:05:30:00:24:82   12(0x0c)
```

show fabric-binding violations

Recent denial events — peer switches that attempted to join but were rejected. A non-zero count here usually means an unauthorised ISL attempt or a stale binding entry.

```
switch# show fabric-binding violations
---------------------------------------------------------
Vsan  Switch WWW              [Domain]  Last-Time          [Repeat count]   Reason
---------------------------------------------------------
100   20:64:00:11:22:33:44:55 [13(0x0d)] 2026 May 17 14:22:01  [4]            sWWN not in DB
101   20:64:00:11:22:33:44:55 [21(0x15)] 2026 May 17 14:22:03  [1]            sWWN not in DB
```

show fabric-binding violations vsan 100

Violations scoped to one VSAN.

```
switch# show fabric-binding violations vsan 100
---------------------------------------------------------
Vsan  Switch WWW              [Domain]  Last-Time          [Repeat count]   Reason
---------------------------------------------------------
100   20:64:00:11:22:33:44:55 [13(0x0d)] 2026 May 17 14:22:01  [4]            sWWN not in DB
```

Operating Notes

Pipe filters. Every `show` command supports `| include <pattern>`, `| exclude <pattern>`, `| begin <pattern>`, `| count`, `| no-more`. Use `| no-more` in scripts to suppress paging.

Output redirection. `show <command> > bootflash:filename.txt` saves the output to flash for later TAC upload. `show <command> > tftp://server/path` writes it directly off-box.

Show tech-support. When TAC asks for diagnostics, `show tech-support details` is the standard package. Pair with `show logging onboard` for hardware-level event history.

Default zone policy. If a device appears in FLOGI/FCNS but cannot see its expected target, check `show zone status vsan <n>` for `default-zone: deny` vs `default-zone: permit`. In production fabrics the policy should always be `deny`.

Active vs configured. Many MDS objects exist in two forms — active (enforced) and configured (editable working copy). Zoneset, fabric-binding, port-security, and device-alias all follow this pattern. When something looks right in the configured form but the fabric doesn't behave that way, you've forgotten to activate.

Compiled by WUC Technologies Engineering Practice. All outputs are representative; exact field labels and counter names may differ across NX-OS releases. For TAC escalations, always include `show version`, `show tech-support details`, and the precise time of the event.