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show aaa accounting

To display the accounting configuration, use the **show aaa accounting** command.

show aaa accounting

Syntax Description

This command has no other arguments or keywords.

Command Default

None.

Command Modes

EXEC mode.

Command History

Release	Modification
2.0(x)	This command was introduced.

Usage Guidelines

None.

Examples

The following example displays accounting log configuration:

```
switch# show aaa accounting
         default: local
```

Related Commands

Command	Description
aaa accounting default	Configures the default accounting method.

show aaa authentication

To display configured authentication information, use the **show aaa authentication** command.

show aaa authentication [**login** {**error-enable** | }]

Syntax Description

login error-enable	(Optional) Displays the authentication login error message enable configuration.
login **mschap**	(Optional) Displays the authentication login MS-CHAP enable configuration.

Command Default

None.

Command Modes

EXEC mode.

Command History

Release	Modification
1.3(1)	This command was introduced.
2.0(x)	Added the login error-enable option.
3.0(1)	Added the **login mschap** option.

Usage Guidelines

None.

Examples

The following example displays the configured authentication parameters:

```
switch# show aaa authentication
         default: group TacServer local none
         console: local
         iscsi: local
         dhchap: local
```

The following example displays the authentication login error message enable configuration:

```
switch# show aaa authentication login error-enable
disabled
```

The following example displays the authentication login MS-CHAP enable configuration:

```
switch# show aaa authentication login mschap
disabled
```

show aaa authentication login ascii-authentication

To display configured ascii authentication method, use the show aaa authentication login ascii-authentication command.

show aaa authentication login ascii-authentication

Syntax Description

This command has no arguments or keywords.

Command Default

None.

Command Modes

EXEC mode.

Command History

Release	Modification
NX-OS 4.1(3a)	enable the password aging command changed from show aaa authentication login password-aging enable to show aaa authentication login ascii-authentication.

Usage Guidelines

None.

Examples

The following example shows how to enable ascii authentication:

```
switch#(config)# aaa authentication login ascii-authentication
switch#(config)#
```

Related Commands

Command	Description
aaa authentication login ascii-authentication	Enables the ascii authentication method.

show aaa authentication login chap enable

To display CHAP authentication for login, use the show aaa authentication login chap enable command.

show aaa authentication login chap enable

Syntax Description

This command has no arguments or keywords.

Command Default

None.

Command Modes

EXEC mode.

Command History

Release	Modification
NX-OS 5.0(1a)	This command was introduced.

Usage Guidelines

None.

Examples

The following example shows how to display CHAP authentication for login:

```
switch# show aaa authentication login chap enable
CHAP is enabled
switch#
```

Related Commands

Command	Description
aaa authentication login chap enable	Enables CHAP authentication for login.

show aaa authentication login mschapv2

To display MS-CHAPv2 authentication for login, use the show aaa authentication login mschapv2 command.

show aaa authentication login mschapv2

Syntax Description

This command has no arguments or keywords.

Command Default

None.

Command Modes

EXEC mode.

Command History

Release	Modification
NX-OS 4.2(1)	This command was introduced.

Usage Guidelines

None.

Examples

The following example shows how to display MS-CHAPv2 authentication for login:

```
switch# show aaa authentication login mschapv2
MSCHAP V2 is disabled
switch#
```

Related Commands

Command	Description
aaa authentication login mschapv2 enable	Enables MS-CHAPv2 authentication for login.

show aaa authorization all

To display all authorization information, use the aaa authorization all command.

show aaa authorization all

Syntax Description

This command has no arguments or keywords.

Command Default

None.

Command Modes

EXEC mode.

Command History

Release	Modification
NX-OS 4.2(1)	This command was introduced.

Usage Guidelines

None.

Examples

The following example shows how to display all authorization information:

```
switch# show aaa authorization all
AAA command authorization:
         default authorization for config-commands: local
         default authorization for commands: local
```

show aaa groups

To display configured server groups, use the **show aaa groups** command.

show aaa groups

Syntax Description

This command has no arguments or keywords.

Command Default

None.

Command Modes

EXEC mode.

Command History

Release	Modification
1.3(1)	This command was introduced.

Usage Guidelines

None.

Examples

This example shows how to display configured server groups:

```
switch# show aaa groups
radius
TacServer
```

show aaa user default-role

To display the AAA user default role configuration, use the **show aaa user default-role** command.

show aaa user default-role

Syntax Description

This command has no arguments or keywords.

Command Default

None

Command Modes

Any command mode

Command History

Release	Modification
1.3(1)	This command was introduced.

Usage Guidelines

User the **aaa user default-role** command to configure the AAA user default role.

This command does not require a license.

Examples

This example shows how to display the AAA user default role configuration:

```
switch# show aaa user default-role
enabled
```

Related Commands

Command	Description
aaa user default-role	Enables the AAA user default role.

show accounting log

To display the accounting log contents, use the **show accounting log** command.

show accounting log [*size*]

Syntax Description

size	(Optional) Specifies the size of the log to display in bytes. The range is 0 to 250000.

Command Default

None.

Command Modes

EXEC mode.

Command History

Release	Modification
2.0(x)	This command was introduced.

Usage Guidelines

None.

Examples

The following example displays the entire accounting log:

```
switch# show accounting log
2002:stop:snmp_1033151784_171.71.49.83:admin:
Fri Sep 27 18:36:24 2002:start:_1033151784:root
Fri Sep 27 18:36:28 2002:update:::fcc configuration requested
Fri Sep 27 18:36:33 2002:start:snmp_1033151793_171.71.49.83:admin
Fri Sep 27 18:36:33 2002:stop:snmp_1033151793_171.71.49.83:admin:
Fri Sep 27 18:39:28 2002:start:snmp_1033151968_171.71.49.96:admin
Fri Sep 27 18:39:28 2002:stop:snmp_1033151968_171.71.49.96:admin:
Fri Sep 27 18:39:28 2002:start:_1033151968:root
Fri Sep 27 18:39:31 2002:update:::fcc configuration requested
Fri Sep 27 18:39:37 2002:start:snmp_1033151977_171.71.49.96:admin
Fri Sep 27 18:39:37 2002:stop:snmp_1033151977_171.71.49.96:admin:
Fri Sep 27 18:39:37 2002:start:snmp_1033151977_171.71.49.96:admin
Fri Sep 27 18:42:12 2002:start:snmp_1033152132_171.71.49.96:admin
Fri Sep 27 18:42:12 2002:stop:snmp_1033152132_171.71.49.96:admin:
Fri Sep 27 18:42:12 2002:start:snmp_1033152132_171.71.49.96:admin
Fri Sep 27 18:42:40 2002:start:snmp_1033152160_171.71.49.96:admin
...
```

The following example displays 400 bytes of the accounting log:

```
switch# show accounting log 400
Tue Dec  8 22:06:59 1981:start:/dev/pts/2_376697219:admin:
Tue Dec  8 22:07:03 1981:stop:/dev/pts/2_376697219:admin:shell terminated
Tue Dec  8 22:07:13 1981:start:/dev/pts/2_376697233:admin:
Tue Dec  8 22:07:53 1981:stop:/dev/pts/2_376697233:admin:shell terminated
Tue Dec  8 22:08:15 1981:update:/dev/ttyS0_376628597:admin:iSCSI Interface Vsan Enabled
```

Related Commands

Command	Description
clear accounting log	Clears the accounting log.

show analytics port-sampling

To display the SAN analytics port sampling information, use the **show analytics port-sampling** command.

show analytics port-sampling module *number*

Syntax Description

module *number*	Module number.

Command Default

None.

Command Modes

Privileged EXEC (#)

Command History

Release	Modification
8.4(1)	The command output was modified.
8.3(1)	This command was introduced.

Examples

This example shows how to check the port sampling status and the instantaneous network processing unit (NPU) load:

Note The star symbol (*) next to a port indicates that the port is currently being sampled.

```
switch# show analytics port-sampling module 1
Sampling Window Size: 12
Rotation Interval: 30
NPU LOAD : 64%      [SCSI 64%, NVMe 0%]
================================================================================
  Port                Monitored Start Time           Monitored End Time
================================================================================
  fc4/25              04/01/19 - 05:25:29            04/01/19 - 05:25:59
  fc4/26              04/01/19 - 05:25:29            04/01/19 - 05:25:59
  fc4/27              04/01/19 - 05:25:29            04/01/19 - 05:25:59
  fc4/28              04/01/19 - 05:25:29            04/01/19 - 05:25:59
  fc4/29              04/01/19 - 05:25:29            04/01/19 - 05:25:59
  fc4/30              04/01/19 - 05:25:29            04/01/19 - 05:25:59
  fc4/31              04/01/19 - 05:25:29            04/01/19 - 05:25:59
  fc4/32              04/01/19 - 05:25:29            04/01/19 - 05:25:59
  fc4/33              04/01/19 - 05:25:29            04/01/19 - 05:25:59
  fc4/34              04/01/19 - 05:25:29            04/01/19 - 05:25:59
  fc4/35              04/01/19 - 05:25:29            04/01/19 - 05:25:59
  fc4/36              04/01/19 - 05:25:29            04/01/19 - 05:25:59
  fc4/37*             04/01/19 - 05:25:59            -
  fc4/38*             04/01/19 - 05:25:59            -
  fc4/39*             04/01/19 - 05:25:59            -
  fc4/40*             04/01/19 - 05:25:59            -
  fc4/41*             04/01/19 - 05:25:59            -
  fc4/42*             04/01/19 - 05:25:59            -
  fc4/43*             04/01/19 - 05:25:59            -
  fc4/44*             04/01/19 - 05:25:59            -
```

```
  fc4/45*            04/01/19 - 05:25:59           -
  fc4/46*            04/01/19 - 05:25:59           -
  fc4/47*            04/01/19 - 05:25:59           -
  fc4/48*            04/01/19 - 05:25:59           -
================================================================================
! - Denotes port is link down but analytics enabled.
* - Denotes port in active analytics port sampling window.
```

Related Commands

Command	Description
analytics type	Enables the SAN Analytics feature on an interface or a range of interfaces.
feature analytics	Enables the SAN Analytics feature on a switch.
show analytics flow	Displays the SAN analytics type.
show analytics query	Displays the SAN analytics query information.
ShowAnalytics	Displays the SAN analytics information in a tabular format.

show analytics query

To display the SAN analytics query information, use the **show analytics query** command.

show analytics query {*"query_string"* [**clear**] [**differential**] | **all** | **name** *query_name* [**result**]}

Syntax Description

"query_string"	Query syntax.
clear	Clears all the minimum, maximum, and peak metrics after each fetch.
differential	Fetches only updated metrics.
all	Displays all queries.
name *query_name*	Query name.
result	Result of a push query name.

Command Default

None.

Command Modes

Privileged EXEC (#)

Command History

Release	Modification
8.3(1)	This command was modified. The command was changed from **show analytics query** {*"query_string"* | *id* **result**} to **show analytics query** {*"query_string"* [**clear**] [**differential**] | **all** | **name** *query_name* [**result**]}.
8.2(1)	This command was introduced.

Usage Guidelines

The **show analytics query** command is a pull query (one-time query) which is used to extract flow metrics that are stored in a database at the instant the query was executed. The output is in JSON format. Only one pull query can be executed at a time.

The *"query_string"* is a query syntax where you can specify query semantics such as **select**, **table**, **limit**, and so on. For example, "select all from fc-scsi.port." For more information, see the "Cisco MDS 9000 Series NX-OS SAN Analytics and Telemetry Configuration Guide."

Examples

This example shows the output of all the flow metrics of the SCSI initiator ITL flow view instance:

```
switch#  show analytics query 'select all from fc-scsi.scsi_initiator_itl_flow'
{ "values": {
        "1": {
                "port": "fc1/1",
                "vsan": "10",
                "app_id": "255",
                "initiator_id": "0xe80041",
                "target_id": "0xd60200",
                "lun": "0000-0000-0000-0000",
```

```
                "active_io_read_count": "0",
                "active_io_write_count": "1",
                "total_read_io_count": "0",
                "total_write_io_count": "1162370362",
                "total_seq_read_io_count": "0",
                "total_seq_write_io_count": "1",
                "total_read_io_time": "0",
                "total_write_io_time": "116204704658",
                "total_read_io_initiation_time": "0",
                "total_write_io_initiation_time": "43996934029",
                "total_read_io_bytes": "0",
                "total_write_io_bytes": "595133625344",
                "total_read_io_inter_gap_time": "0",
                "total_write_io_inter_gap_time": "41139462314556",
                "total_time_metric_based_read_io_count": "0",
                "total_time_metric_based_write_io_count": "1162370358",
                "total_time_metric_based_read_io_bytes": "0",
                "total_time_metric_based_write_io_bytes": "595133623296",
                "read_io_rate": "0",
                "peak_read_io_rate": "0",
                "write_io_rate": "7250",
                "peak_write_io_rate": "7304",
                "read_io_bandwidth": "0",
                "peak_read_io_bandwidth": "0",
                "write_io_bandwidth": "3712384",
                "peak_write_io_bandwidth": "3739904",
                "read_io_size_min": "0",
                "read_io_size_max": "0",
                "write_io_size_min": "512",
                "write_io_size_max": "512",
                "read_io_completion_time_min": "0",
                "read_io_completion_time_max": "0",
                "write_io_completion_time_min": "89",
                "write_io_completion_time_max": "416",
                "read_io_initiation_time_min": "0",
                "read_io_initiation_time_max": "0",
                "write_io_initiation_time_min": "34",
                "write_io_initiation_time_max": "116",
                "read_io_inter_gap_time_min": "0",
                "read_io_inter_gap_time_max": "0",
                "write_io_inter_gap_time_min": "31400",
                "write_io_inter_gap_time_max": "118222",
                "peak_active_io_read_count": "0",
                "peak_active_io_write_count": "5",
                "read_io_aborts": "0",
                "write_io_aborts": "0",
                "read_io_failures": "0",
                "write_io_failures": "0",
                "read_io_timeouts": "0",
                "write_io_timeouts": "1",
                "read_io_scsi_check_condition_count": "0",
                "write_io_scsi_check_condition_count": "0",
                "read_io_scsi_busy_count": "0",
                "write_io_scsi_busy_count": "0",
                "read_io_scsi_reservation_conflict_count": "0",
                "write_io_scsi_reservation_conflict_count": "0",
                "read_io_scsi_queue_full_count": "0",
                "write_io_scsi_queue_full_count": "0",
                "sampling_start_time": "1528535447",
                "sampling_end_time": "1528697457"
        },
        .
        .
        .
```

```
"5": {
        "port": "fc1/8",
        "vsan": "10",
        "app_id": "255",
        "initiator_id": "0xe80001",
        "target_id": "0xe800a1",
        "lun": "0000-0000-0000-0000",
        "active_io_read_count": "0",
        "active_io_write_count": "1",
        "total_read_io_count": "0",
        "total_write_io_count": "1138738309",
        "total_seq_read_io_count": "0",
        "total_seq_write_io_count": "1",
        "total_read_io_time": "0",
        "total_write_io_time": "109792480881",
        "total_read_io_initiation_time": "0",
        "total_write_io_initiation_time": "39239145641",
        "total_read_io_bytes": "0",
        "total_write_io_bytes": "583034014208",
        "total_read_io_inter_gap_time": "0",
        "total_write_io_inter_gap_time": "41479779998852",
        "total_time_metric_based_read_io_count": "0",
        "total_time_metric_based_write_io_count": "1138738307",
        "total_time_metric_based_read_io_bytes": "0",
        "total_time_metric_based_write_io_bytes": "583034013184",
        "read_io_rate": "0",
        "peak_read_io_rate": "0",
        "write_io_rate": "7074",
        "peak_write_io_rate": "7903",
        "read_io_bandwidth": "0",
        "peak_read_io_bandwidth": "0",
        "write_io_bandwidth": "3622144",
        "peak_write_io_bandwidth": "4046336",
        "read_io_size_min": "0",
        "read_io_size_max": "0",
        "write_io_size_min": "512",
        "write_io_size_max": "512",
        "read_io_completion_time_min": "0",
        "read_io_completion_time_max": "0",
        "write_io_completion_time_min": "71",
        "write_io_completion_time_max": "3352",
        "read_io_initiation_time_min": "0",
        "read_io_initiation_time_max": "0",
        "write_io_initiation_time_min": "26",
        "write_io_initiation_time_max": "2427",
        "read_io_inter_gap_time_min": "0",
        "read_io_inter_gap_time_max": "0",
        "write_io_inter_gap_time_min": "25988",
        "write_io_inter_gap_time_max": "868452",
        "peak_active_io_read_count": "0",
        "peak_active_io_write_count": "5",
        "read_io_aborts": "0",
        "write_io_aborts": "0",
        "read_io_failures": "0",
        "write_io_failures": "0",
        "read_io_timeouts": "0",
        "write_io_timeouts": "1",
        "read_io_scsi_check_condition_count": "0",
        "write_io_scsi_check_condition_count": "0",
        "read_io_scsi_busy_count": "0",
        "write_io_scsi_busy_count": "0",
        "read_io_scsi_reservation_conflict_count": "0",
        "write_io_scsi_reservation_conflict_count": "0",
        "read_io_scsi_queue_full_count": "0",
```

```
                "write_io_scsi_queue_full_count": "0",
                "sampling_start_time": "1528535447",
                "sampling_end_time": "1528697457"
        }
}}
```


This example shows the output of all the flow metrics of the NVMe initiator ITN flow view instance:


```
switch# show analytics query 'select all from fc-nvme.nvme_initiator_itn_flow'
{ "values": {
        "1": {
                "port": "fc1/9",
                "vsan": "5",
                "app_id": "255",
                "initiator_id": "0xa40160",
                "target_id": "0xa4018c",
                "connection_id": "0000-0000-0000-0000",
                "namespace_id": "1",
                "active_io_read_count": "0",
                "active_io_write_count": "0",
                "total_read_io_count": "414106348",
                "total_write_io_count": "0",
                "total_seq_read_io_count": "0",
                "total_seq_write_io_count": "0",
                "total_read_io_time": "204490863437",
                "total_write_io_time": "0",
                "total_read_io_initiation_time": "132775579977",
                "total_write_io_initiation_time": "0",
                "total_read_io_bytes": "16226866588672",
                "total_write_io_bytes": "0",
                "total_read_io_inter_gap_time": "19198018763772",
                "total_write_io_inter_gap_time": "0",
                "total_time_metric_based_read_io_count": "414106244",
                "total_time_metric_based_write_io_count": "0",
                "total_time_metric_based_read_io_bytes": "16226860198912",
                "total_time_metric_based_write_io_bytes": "0",
                "read_io_rate": "0",
                "peak_read_io_rate": "16826",
                "write_io_rate": "0",
                "peak_write_io_rate": "0",
                "read_io_bandwidth": "0",
                "peak_read_io_bandwidth": "656438400",
                "write_io_bandwidth": "0",
                "peak_write_io_bandwidth": "0",
                "read_io_size_min": "1024",
                "read_io_size_max": "262144",
                "write_io_size_min": "0",
                "write_io_size_max": "0",
                "read_io_completion_time_min": "16",
                "read_io_completion_time_max": "7057",
                "write_io_completion_time_min": "0",
                "write_io_completion_time_max": "0",
                "read_io_initiation_time_min": "16",
                "read_io_initiation_time_max": "5338",
                "write_io_initiation_time_min": "0",
                "write_io_initiation_time_max": "0",
                "read_io_inter_gap_time_min": "32",
                "read_io_inter_gap_time_max": "83725169",
                "write_io_inter_gap_time_min": "0",
                "write_io_inter_gap_time_max": "0",
                "peak_active_io_read_count": "11",
                "peak_active_io_write_count": "0",
                "read_io_aborts": "24",
```

```
            "write_io_aborts": "0",
            "read_io_failures": "80",
            "write_io_failures": "0",
            "read_io_timeouts": "0",
            "write_io_timeouts": "0",
            "read_io_nvme_lba_out_of_range_count": "0",
            "write_io_nvme_lba_out_of_range_count": "0",
            "read_io_nvme_ns_not_ready_count": "0",
            "write_io_nvme_ns_not_ready_count": "0",
            "read_io_nvme_reservation_conflict_count": "0",
            "write_io_nvme_reservation_conflict_count": "0",
            "read_io_nvme_capacity_exceeded_count": "0",
            "write_io_nvme_capacity_exceeded_count": "0",
            "sampling_start_time": "1512847422",
            "sampling_end_time": "1513166516"
        },
.
.
.
        "5": {
            "port": "fc1/9",
            "vsan": "5",
            "app_id": "255",
            "initiator_id": "0xa40165",
            "target_id": "0xa40190",
            "connection_id": "0000-0000-0000-0000",
            "namespace_id": "1",
            "active_io_read_count": "0",
            "active_io_write_count": "0",
            "total_read_io_count": "33391955",
            "total_write_io_count": "643169087",
            "total_seq_read_io_count": "0",
            "total_seq_write_io_count": "0",
            "total_read_io_time": "13005795783",
            "total_write_io_time": "131521212441",
            "total_read_io_initiation_time": "5696099596",
            "total_write_io_initiation_time": "71938348902",
            "total_read_io_bytes": "1309083368448",
            "total_write_io_bytes": "329302572544",
            "total_read_io_inter_gap_time": "19175084866843",
            "total_write_io_inter_gap_time": "19182318062480",
            "total_time_metric_based_read_io_count": "33391919",
            "total_time_metric_based_write_io_count": "643168808",
            "total_time_metric_based_read_io_bytes": "1309074355200",
            "total_time_metric_based_write_io_bytes": "329302429696",
            "read_io_rate": "0",
            "peak_read_io_rate": "574",
            "write_io_rate": "0",
            "peak_write_io_rate": "9344",
            "read_io_bandwidth": "0",
            "peak_read_io_bandwidth": "19122176",
            "write_io_bandwidth": "0",
            "peak_write_io_bandwidth": "4784384",
            "read_io_size_min": "1024",
            "read_io_size_max": "262144",
            "write_io_size_min": "512",
            "write_io_size_max": "512",
            "read_io_completion_time_min": "16",
            "read_io_completion_time_max": "5123",
            "write_io_completion_time_min": "27",
            "write_io_completion_time_max": "2254",
            "read_io_initiation_time_min": "16",
            "read_io_initiation_time_max": "3650",
            "write_io_initiation_time_min": "12",
```

```
                "write_io_initiation_time_max": "1377",
                "read_io_inter_gap_time_min": "32",
                "read_io_inter_gap_time_max": "3234375975",
                "write_io_inter_gap_time_min": "32",
                "write_io_inter_gap_time_max": "38886219",
                "peak_active_io_read_count": "6",
                "peak_active_io_write_count": "16",
                "read_io_aborts": "6",
                "write_io_aborts": "18",
                "read_io_failures": "30",
                "write_io_failures": "261",
                "read_io_timeouts": "0",
                "write_io_timeouts": "0",
                "read_io_nvme_lba_out_of_range_count": "0",
                "write_io_nvme_lba_out_of_range_count": "0",
                "read_io_nvme_ns_not_ready_count": "0",
                "write_io_nvme_ns_not_ready_count": "0",
                "read_io_nvme_reservation_conflict_count": "0",
                "write_io_nvme_reservation_conflict_count": "0",
                "read_io_nvme_capacity_exceeded_count": "0",
                "write_io_nvme_capacity_exceeded_count": "0",
                "sampling_start_time": "1512847422",
                "sampling_end_time": "1513166516"
        }
}}
```

This example shows an output of specific flow metrics for a specific initiator ID of an initiator ITL flow view type:

```
switch# show analytics query 'select port,initiator_id, target_id,lun,
total_read_io_count,total_write_io_count,read_io_rate, write_io_rate from
fc-scsi.scsi_initiator_itl_flow where initiator_id=0xe80001'
{ "values": {
        "1": {
                "port": "fc1/8",
                "initiator_id": "0xe80001",
                "target_id": "0xe800a1",
                "lun": "0000-0000-0000-0000",
                "total_read_io_count": "0",
                "total_write_io_count": "1139010960",
                "read_io_rate": "0",
                "write_io_rate": "7071",
                "sampling_start_time": "1528535447",
                "sampling_end_time": "1528697495"
        }
}}
```

This example shows an output of specific flow metrics for a specific initiator ID and LUN of an initiator ITL flow view type:

```
switch#   show analytics query 'select port,initiator_id, target_id,lun,
total_read_io_count,total_write_io_count,read_io_rate, write_io_rate from
fc-scsi.scsi_initiator_itl_flow where initiator_id=0xe80001 and lun= 0000-0000-0000-0000'
{ "values": {
        "1": {
                "port": "fc1/8",
                "initiator_id": "0xe80001",
                "target_id": "0xe800a1",
                "lun": "0000-0000-0000-0000",
```

```
                "total_read_io_count": "0",
                "total_write_io_count": "1139453979",
                "read_io_rate": "0",
                "write_io_rate": "7070",
                "sampling_start_time": "1528535447",
                "sampling_end_time": "1528697559"
        }
}}
```

This example shows an output of specific flow metrics for a specific LUN with the output sorted for the write_io_rate flow metrics of a target ITL flow view type:

```
switch#   show analytics query 'select port,initiator_id, target_id,lun,total_read_io_count,
total_write_io_count,read_io_rate, write_io_rate from fc-scsi.scsi_initiator_itl_flow where

lun= 0000-0000-0000-0000 sort write_io_rate'
{ "values": {
        "1": {
                "port": "fc1/6",
                "initiator_id": "0xe80020",
                "target_id": "0xd60040",
                "lun": "0000-0000-0000-0000",
                "total_read_io_count": "0",
                "total_write_io_count": "1103394068",
                "read_io_rate": "0",
                "write_io_rate": "6882",
                "sampling_start_time": "1528535447",
                "sampling_end_time": "1528697630"
        },
        "2": {
                "port": "fc1/6",
                "initiator_id": "0xe80021",
                "target_id": "0xe80056",
                "lun": "0000-0000-0000-0000",
                "total_read_io_count": "0",
                "total_write_io_count": "1119199742",
                "read_io_rate": "0",
                "write_io_rate": "6946",
                "sampling_start_time": "1528535447",
                "sampling_end_time": "1528697630"
        },
        "3": {
                "port": "fc1/8",
                "initiator_id": "0xe80000",
                "target_id": "0xe80042",
                "lun": "0000-0000-0000-0000",
                "total_read_io_count": "0",
                "total_write_io_count": "1119506589",
                "read_io_rate": "0",
                "write_io_rate": "6948",
                "sampling_start_time": "1528535447",
                "sampling_end_time": "1528697630"
        },
        "4": {
                "port": "fc1/8",
                "initiator_id": "0xe80001",
                "target_id": "0xe800a1",
                "lun": "0000-0000-0000-0000",
                "total_read_io_count": "0",
                "total_write_io_count": "1139953183",
                "read_io_rate": "0",
                "write_io_rate": "7068",
```

```
                "sampling_start_time": "1528535447",
                "sampling_end_time": "1528697630"
        },
        "5": {
                "port": "fc1/1",
                "initiator_id": "0xe80041",
                "target_id": "0xd60200",
                "lun": "0000-0000-0000-0000",
                "total_read_io_count": "0",
                "total_write_io_count": "1163615698",
                "read_io_rate": "0",
                "write_io_rate": "7247",
                "sampling_start_time": "1528535447",
                "sampling_end_time": "1528697630"
        }
}}
```

This example shows an output of specific flow metrics for a specific LUN with the output limited to three records and sorted for the write_io_rate flow metrics of an initiator ITL flow view type:

```
switch#   show analytics query 'select port,initiator_id, target_id,lun,total_read_io_count,
total_write_io_count,read_io_rate, write_io_rate from fc-scsi.scsi_initiator_itl_flow where

lun= 0000-0000-0000-0000 sort write_io_rate limit 3'
{ "values": {
        "1": {
                "port": "fc1/6",
                "initiator_id": "0xe80020",
                "target_id": "0xd60040",
                "lun": "0000-0000-0000-0000",
                "total_read_io_count": "0",
                "total_write_io_count": "1103901828",
                "read_io_rate": "0",
                "write_io_rate": "6885",
                "sampling_start_time": "1528535447",
                "sampling_end_time": "1528697704"
        },
        "2": {
                "port": "fc1/8",
                "initiator_id": "0xe80000",
                "target_id": "0xe80042",
                "lun": "0000-0000-0000-0000",
                "total_read_io_count": "0",
                "total_write_io_count": "1120018575",
                "read_io_rate": "0",
                "write_io_rate": "6940",
                "sampling_start_time": "1528535447",
                "sampling_end_time": "1528697704"
        },
        "3": {
                "port": "fc1/6",
                "initiator_id": "0xe80021",
                "target_id": "0xe80056",
                "lun": "0000-0000-0000-0000",
                "total_read_io_count": "0",
                "total_write_io_count": "1119711583",
                "read_io_rate": "0",
                "write_io_rate": "6942",
                "sampling_start_time": "1528535447",
                "sampling_end_time": "1528697704"
        }
```

```
}}
```

These examples show how to clear all the minimum, maximum, and peak flow metrics:

- This example show the output before clearing the all the minimum, maximum, and peak flow metrics:

Note You must execute the clear command twice for the first time for clearing all the minimum, maximum, and peak flow metrics. Thereafter, you can execute the clear command once for clearing the flow metrics.

```
switch# show analytics query "select all from
fc-scsi.scsi_target_itl_flow where port=fc1/17"
{ "values": {
        "1": {
                "port": "fc1/17",
                "vsan": "1",
                "app_id": "255",
                "target_id": "0xef0040",
                "initiator_id": "0xef0000",
                "lun": "0000-0000-0000-0000",
                "active_io_read_count": "0",
                "active_io_write_count": "1",
                "total_read_io_count": "0",
                "total_write_io_count": "84701",
                "total_seq_read_io_count": "0",
                "total_seq_write_io_count": "1",
                "total_read_io_time": "0",
                "total_write_io_time": "7007132",
                "total_read_io_initiation_time": "0",
                "total_write_io_initiation_time": "2421756",
                "total_read_io_bytes": "0",
                "total_write_io_bytes": "86733824",
                "total_read_io_inter_gap_time": "0",
                "total_write_io_inter_gap_time": "2508109021",
                "total_time_metric_based_read_io_count": "0",
                "total_time_metric_based_write_io_count": "84701",
                "total_time_metric_based_read_io_bytes": "0",
                "total_time_metric_based_write_io_bytes": "86733824",
                "read_io_rate": "0",
                "peak_read_io_rate": "0",
                "write_io_rate": "8711",
                "peak_write_io_rate": "8711",
                "read_io_bandwidth": "0",
                "peak_read_io_bandwidth": "0",
                "write_io_bandwidth": "8920576",
                "peak_write_io_bandwidth": "8920576",
                "read_io_size_min": "0",
                "read_io_size_max": "0",
                "write_io_size_min": "1024",
                "write_io_size_max": "1024",
                "read_io_completion_time_min": "0",
                "read_io_completion_time_max": "0",
                "write_io_completion_time_min": "74",
                "write_io_completion_time_max": "844",
                "read_io_initiation_time_min": "0",
                "read_io_initiation_time_max": "0",
                "write_io_initiation_time_min": "24",
                "write_io_initiation_time_max": "775",
```

```
            "read_io_inter_gap_time_min": "0",
            "read_io_inter_gap_time_max": "0",
            "write_io_inter_gap_time_min": "26903",
            "write_io_inter_gap_time_max": "287888",
            "peak_active_io_read_count": "0",
            "peak_active_io_write_count": "3",
            "read_io_aborts": "0",
            "write_io_aborts": "0",
            "read_io_failures": "0",
            "write_io_failures": "0",
            "read_io_timeouts": "0",
            "write_io_timeouts": "0",
            "read_io_scsi_check_condition_count": "0",
            "write_io_scsi_check_condition_count": "0",
            "read_io_scsi_busy_count": "0",
            "write_io_scsi_busy_count": "0",
            "read_io_scsi_reservation_conflict_count": "0",
            "write_io_scsi_reservation_conflict_count": "0",
            "read_io_scsi_queue_full_count": "0",
            "write_io_scsi_queue_full_count": "0",
            "sampling_start_time": "1530683133",
            "sampling_end_time": "1530684301"
    },
    "2": {
            "port": "fc1/17",
            "vsan": "1",
            "app_id": "255",
            "target_id": "0xef0040",
            "initiator_id": "0xef0020",
            "lun": "0000-0000-0000-0000",
            "active_io_read_count": "0",
            "active_io_write_count": "0",
            "total_read_io_count": "0",
            "total_write_io_count": "84700",
            "total_seq_read_io_count": "0",
            "total_seq_write_io_count": "1",
            "total_read_io_time": "0",
            "total_write_io_time": "6973333",
            "total_read_io_initiation_time": "0",
            "total_write_io_initiation_time": "2400011",
            "total_read_io_bytes": "0",
            "total_write_io_bytes": "86732800",
            "total_read_io_inter_gap_time": "0",
            "total_write_io_inter_gap_time": "2508096990",
            "total_time_metric_based_read_io_count": "0",
            "total_time_metric_based_write_io_count": "84700",
            "total_time_metric_based_read_io_bytes": "0",
            "total_time_metric_based_write_io_bytes": "86732800",
            "read_io_rate": "0",
            "peak_read_io_rate": "0",
            "write_io_rate": "8711",
            "peak_write_io_rate": "8711",
            "read_io_bandwidth": "0",
            "peak_read_io_bandwidth": "0",
            "write_io_bandwidth": "8920576",
            "peak_write_io_bandwidth": "8920576",
            "read_io_size_min": "0",
            "read_io_size_max": "0",
            "write_io_size_min": "1024",
            "write_io_size_max": "1024",
            "read_io_completion_time_min": "0",
            "read_io_completion_time_max": "0",
            "write_io_completion_time_min": "74",
            "write_io_completion_time_max": "1134",
```

```
                "read_io_initiation_time_min": "0",
                "read_io_initiation_time_max": "0",
                "write_io_initiation_time_min": "24",
                "write_io_initiation_time_max": "345",
                "read_io_inter_gap_time_min": "0",
                "read_io_inter_gap_time_max": "0",
                "write_io_inter_gap_time_min": "26789",
                "write_io_inter_gap_time_max": "298809",
                "peak_active_io_read_count": "0",
                "peak_active_io_write_count": "3",
                "read_io_aborts": "0",
                "write_io_aborts": "0",
                "read_io_failures": "0",
                "write_io_failures": "0",
                "read_io_timeouts": "0",
                "write_io_timeouts": "0",
                "read_io_scsi_check_condition_count": "0",
                "write_io_scsi_check_condition_count": "0",
                "read_io_scsi_busy_count": "0",
                "write_io_scsi_busy_count": "0",
                "read_io_scsi_reservation_conflict_count": "0",
                "write_io_scsi_reservation_conflict_count": "0",
               "read_io_scsi_queue_full_count": "0",
                "write_io_scsi_queue_full_count": "0",
                "sampling_start_time": "1530683133",
                "sampling_end_time": "1530684301"
        }
}}
```


- This examples shows the output after clearing all the minimum, maximum, and peak flow metrics. The metrics that were cleared are highlighted in the output.


```
switch# show analytics query "select all from
fc-scsi.scsi_target_itl_flow where port=fc1/17" clear
{ "values": {
        "1": {
                "port": "fc1/17",
               "vsan": "1",
                "app_id": "255",
                "target_id": "0xef0040",
                "initiator_id": "0xef0000",
                "lun": "0000-0000-0000-0000",
                "active_io_read_count": "0",
                "active_io_write_count": "0",
                "total_read_io_count": "0",
                "total_write_io_count": "800615",
                "total_seq_read_io_count": "0",
                "total_seq_write_io_count": "1",
                "total_read_io_time": "0",
                "total_write_io_time": "66090290",
                "total_read_io_initiation_time": "0",
                "total_write_io_initiation_time": "22793874",
                "total_read_io_bytes": "0",
                "total_write_io_bytes": "819829760",
                "total_read_io_inter_gap_time": "0",
                "total_write_io_inter_gap_time": "23702347887",
                "total_time_metric_based_read_io_count": "0",
                "total_time_metric_based_write_io_count": "800615",
                "total_time_metric_based_read_io_bytes": "0",
                "total_time_metric_based_write_io_bytes": "819829760",
                "read_io_rate": "0",
                "peak_read_io_rate": "0",
```

```
                "write_io_rate": "0",
                "peak_write_io_rate": "0",
                "read_io_bandwidth": "0",
                "peak_read_io_bandwidth": "0",
                "write_io_bandwidth": "0",
                "peak_write_io_bandwidth": "0",
                "read_io_size_min": "0",
                "read_io_size_max": "0",
                "write_io_size_min": "0",
                "write_io_size_max": "0",
                "read_io_completion_time_min": "0",
                "read_io_completion_time_max": "0",
                "write_io_completion_time_min": "0",
                "write_io_completion_time_max": "0",
                "read_io_initiation_time_min": "0",
                "read_io_initiation_time_max": "0",
                "write_io_initiation_time_min": "0",
                "write_io_initiation_time_max": "0",
                "read_io_inter_gap_time_min": "0",
                "read_io_inter_gap_time_max": "0",
                "write_io_inter_gap_time_min": "0",
                "write_io_inter_gap_time_max": "0",
                "peak_active_io_read_count": "0",
                "peak_active_io_write_count": "0",
                "read_io_aborts": "0",
                "write_io_aborts": "0",
                "read_io_failures": "0",
                "write_io_failures": "0",
                "read_io_timeouts": "0",
                "write_io_timeouts": "0",
                "read_io_scsi_check_condition_count": "0",
                "write_io_scsi_check_condition_count": "0",
                "read_io_scsi_busy_count": "0",
                "write_io_scsi_busy_count": "0",
                "read_io_scsi_reservation_conflict_count": "0",
                "write_io_scsi_reservation_conflict_count": "0",
                "read_io_scsi_queue_full_count": "0",
                "write_io_scsi_queue_full_count": "0",
                "sampling_start_time": "1530683133",
                "sampling_end_time": "1530684428"
        },
}}
```

These examples show how to stream only the ITL flow metrics that have changed between streaming intervals:

- This example shows the output before using the differential option:

```
switch# show analytics query "select port, target_id, initiator_id,lun,
total_write_io_count from fc-scsi.scsi_target_itl_flow where port=fc1/17"
differential
{ "values": {
        "1": {
                "port": "fc1/17",
                "target_id": "0xef0040",
               "initiator_id": "0xef0000",
                "lun": "0001-0000-0000-0000",
                "total_write_io_count": "1515601",
                "sampling_start_time": "1530683133",
                "sampling_end_time": "1530683484"
        },
```

```
        "2": {
                "port": "fc1/17",
                "target_id": "0xef0040",
                "initiator_id": "0xef0020",
                "lun": "0000-0000-0000-0000",
                "total_write_io_count": "1515601",
                "sampling_start_time": "1530683133",
                "sampling_end_time": "1530683484"
        },
        "3": {
                "port": "fc1/17",
                "target_id": "0xef0040",
                "initiator_id": "0xef0020",
                "lun": "0001-0000-0000-0000",
                "total_write_io_count": "1515600",
                "sampling_start_time": "1530683133",
                "sampling_end_time": "1530683484"
        },
        "4": {
                "port": "fc1/17",
                "target_id": "0xef0040",
                "initiator_id": "0xef0000",
                "lun": "0000-0000-0000-0000",
                "total_write_io_count": "1515600",
                "sampling_start_time": "1530683133",
                "sampling_end_time": "1530683484"
        }
}}
```

- This example shows the output with the differential option and shows only the records that have changed:

```
switch# show analytics query "select port, target_id,
initiator_id,lun,total_write_io_count from fc-scsi.scsi_target_itl_flow where port=fc1/17"

differential
{ "values": {
       "1": {
                "port": "fc1/17",
                "target_id": "0xef0040",
                "initiator_id": "0xef0000",
                "lun": "0001-0000-0000-0000",
                "total_write_io_count": "1892021",
                "sampling_start_time": "1530683133",
                "sampling_end_time": "1530683534"
        },
        "2": {
                "port": "fc1/17",
                "target_id": "0xef0040",
                "initiator_id": "0xef0020",
                "lun": "0000-0000-0000-0000",
                "total_write_io_count": "1892021",
                "sampling_start_time": "1530683133",
                "sampling_end_time": "1530683534"
        },
        "3": {
                "port": "fc1/17",
                "target_id": "0xef0040",
                "initiator_id": "0xef0000",
                "lun": "0000-0000-0000-0000",
                "total_write_io_count": "1892021",
                "sampling_start_time": "1530683133",
```

```
                    "sampling_end_time": "1530683534"
            }
    }}
```

This example shows an output of all the installed push analytics queries:

```
switch# show analytics query all
Total queries:7
============================
Query Name      :init
Query String    :select all from fc-scsi.scsi_initiator
Query Type      :periodic, interval 30

Query Name      :targettl
Query String    :select all from fc-scsi.scsi_target_tl_flow
Query Type      :periodic, interval 30
Query Options   :differential clear

Query Name      :port
Query String    :select all from fc-scsi.logical_port
Query Type      :periodic, interval 30

Query Name      :targetit
Query String    :select all from fc-scsi.scsi_target_it_flow
Query Type      :periodic, interval 30

Query Name      :targetitl
Query String    :select all from fc-scsi.scsi_target_itl_flow
Query Type      :periodic, interval 30
Query Options   :differential clear

Query Name      :inititl
Query String    :select all from fc-scsi.scsi_initiator_itl_flow
Query Type      :periodic, interval 30

Query Name      :initit
Query String    :select all from fc-scsi.scsi_initiator_it_flow
Query Type      :periodic, interval 30
```

This example shows how to view an installed push analytics query:

```
switch# show analytics query name tartl
Query Name      :tartl
Query String    :select all from fc-scsi.scsi_target_tl_flow
Query Type      :periodic, interval 30
```

This example shows the output of a push query that has already been configured:

```
switch# show analytics query name iniitl result
{ "values": {
        "1": {
                "port": "fc1/6",
                "vsan": "10",
                "app_id": "255",
                "initiator_id": "0xe800a0",
                "target_id": "0xd601e0",
                "lun": "0000-0000-0000-0000",
                "active_io_read_count": "0",
                "active_io_write_count": "7",
```

```
                "total_read_io_count": "0",
                "total_write_io_count": "1008608573",
                "total_seq_read_io_count": "0",
                "total_seq_write_io_count": "1",
                "total_read_io_time": "0",
                "total_write_io_time": "370765952314",
                "total_read_io_initiation_time": "0",
                "total_write_io_initiation_time": "52084968152",
                "total_read_io_bytes": "0",
                "total_write_io_bytes": "2065630357504",
                "total_read_io_inter_gap_time": "0",
                "total_write_io_inter_gap_time": "16171468343166",
                "total_time_metric_based_read_io_count": "0",
                "total_time_metric_based_write_io_count": "1008608566",
                "total_time_metric_based_read_io_bytes": "0",
                "total_time_metric_based_write_io_bytes": "2065630343168",
                "read_io_rate": "0",
                "peak_read_io_rate": "0",
                "write_io_rate": "16070",
                "peak_write_io_rate": "32468",
                "read_io_bandwidth": "0",
                "peak_read_io_bandwidth": "0",
                "write_io_bandwidth": "32912384",
                "peak_write_io_bandwidth": "66494976",
                "read_io_size_min": "0",
                "read_io_size_max": "0",
                "write_io_size_min": "2048",
                "write_io_size_max": "2048",
                "read_io_completion_time_min": "0",
                "read_io_completion_time_max": "0",
                "write_io_completion_time_min": "111",
                "write_io_completion_time_max": "9166",
                "read_io_initiation_time_min": "0",
                "read_io_initiation_time_max": "0",
                "write_io_initiation_time_min": "36",
                "write_io_initiation_time_max": "3265",
                "read_io_inter_gap_time_min": "0",
                "read_io_inter_gap_time_max": "0",
                "write_io_inter_gap_time_min": "100",
                "write_io_inter_gap_time_max": "1094718",
                "peak_active_io_read_count": "0",
                "peak_active_io_write_count": "23",
                "read_io_aborts": "0",
                "write_io_aborts": "0",
                "read_io_failures": "0",
                "write_io_failures": "0",
                "read_io_timeouts": "0",
                "write_io_timeouts": "0",
                "read_io_scsi_check_condition_count": "0",
                "write_io_scsi_check_condition_count": "0",
                "read_io_scsi_busy_count": "0",
                "write_io_scsi_busy_count": "0",
                "read_io_scsi_reservation_conflict_count": "0",
                "write_io_scsi_reservation_conflict_count": "0",
                "read_io_scsi_queue_full_count": "0",
                "write_io_scsi_queue_full_count": "0",
                "sampling_start_time": "1529993232",
                "sampling_end_time": "1529993260"
        },
        "2": {
                "port": "fc1/6",
                "vsan": "10",
                "app_id": "255",
                "initiator_id": "0xe800a1",
```

```
                "target_id": "0xd601e1",
                "lun": "0000-0000-0000-0000",
                "active_io_read_count": "0",
                "active_io_write_count": "8",
                "total_read_io_count": "0",
                "total_write_io_count": "1004271260",
                "total_seq_read_io_count": "0",
                "total_seq_write_io_count": "1",
                "total_read_io_time": "0",
                "total_write_io_time": "370004164726",
                "total_read_io_initiation_time": "0",
                "total_write_io_initiation_time": "51858511487",
                "total_read_io_bytes": "0",
                "total_write_io_bytes": "2056747540480",
                "total_read_io_inter_gap_time": "0",
                "total_write_io_inter_gap_time": "16136686881766",
                "total_time_metric_based_read_io_count": "0",
                "total_time_metric_based_write_io_count": "1004271252",
                "total_time_metric_based_read_io_bytes": "0",
                "total_time_metric_based_write_io_bytes": "2056747524096",
                "read_io_rate": "0",
                "peak_read_io_rate": "0",
                "write_io_rate": "16065",
                "peak_write_io_rate": "16194",
                "read_io_bandwidth": "0",
                "peak_read_io_bandwidth": "0",
                "write_io_bandwidth": "32901632",
                "peak_write_io_bandwidth": "33165824",
                "read_io_size_min": "0",
                "read_io_size_max": "0",
                "write_io_size_min": "2048",
                "write_io_size_max": "2048",
                "read_io_completion_time_min": "0",
                "read_io_completion_time_max": "0",
                "write_io_completion_time_min": "114",
                "write_io_completion_time_max": "9019",
                "read_io_initiation_time_min": "0",
                "read_io_initiation_time_max": "0",
                "write_io_initiation_time_min": "37",
                "write_io_initiation_time_max": "3158",
                "read_io_inter_gap_time_min": "0",
                "read_io_inter_gap_time_max": "0",
                "write_io_inter_gap_time_min": "101",
                "write_io_inter_gap_time_max": "869035",
                "peak_active_io_read_count": "0",
                "peak_active_io_write_count": "19",
                "read_io_aborts": "0",
                "write_io_aborts": "0",
                "read_io_failures": "0",
                "write_io_failures": "0",
                "read_io_timeouts": "0",
                "write_io_timeouts": "0",
                "read_io_scsi_check_condition_count": "0",
                "write_io_scsi_check_condition_count": "0",
                "read_io_scsi_busy_count": "0",
                "write_io_scsi_busy_count": "0",
                "read_io_scsi_reservation_conflict_count": "0",
                "write_io_scsi_reservation_conflict_count": "0",
                "read_io_scsi_queue_full_count": "0",
                "write_io_scsi_queue_full_count": "0",
                "sampling_start_time": "1529993232",
                "sampling_end_time": "1529993260"
}
```

```
}}
```

Related Commands

Command	Description
analytics type	Enables the SAN Analytics feature on an interface or a range of interfaces.
clear analytics	Resets all flow metrics for a view instance.
feature analytics	Enables the SAN Analytics feature on a switch.
purge analytics	Deletes a view instance and its associated flow metrics.
show analytics flow	Displays the SAN analytics type.
show analytics port-sampling	Displays the SAN analytics port sampling information.
ShowAnalytics	Displays the SAN analytics information in a tabular format.

show analytics schema

To display the list of view instances and flow metrics supported in SAN Analytics, use the **show analytics schema** command.

show analytics schema {**fc-nvme** | **fc-scsi**} {**view-instance** *instance-name* | **views**}

Syntax Description

fc-nvme	Non-Volatile Memory Express (NVMe) analytics type.
fc-scsi	Small Computer System Interface (SCSI) analytics type.
view-instance *instance-name*	Specifies a view instance.
views	Lists view instances.

Command Default

Displays analytics schema.

Command Modes

Privileged EXEC (#)

Command History

Release	Modification
8.4(1)	This command was introduced.

Examples

This example shows the list of view instances supported in the *fc-scsi* analytics type:

```
switch# show analytics schema fc-scsi views

fc-scsi db schema tables:
        port
        logical_port
        app
        scsi_target
        scsi_initiator
        scsi_target_app
        scsi_initiator_app
        scsi_target_tl_flow
        scsi_target_it_flow
        scsi_initiator_it_flow
        scsi_target_itl_flow
        scsi_initiator_itl_flow
        scsi_target_io
        scsi_initiator_io
```

This example shows the list of view instances supported in the *fc-nvme* analytics type:

```
switch# show analytics schema fc-nvme views

fc-nvme db schema tables:
        port
        logical_port
```

```
        app
        nvme_target
        nvme_initiator
        nvme_target_app
        nvme_initiator_app
        nvme_target_tn_flow
        nvme_target_it_flow
        nvme_initiator_it_flow
        nvme_target_itn_flow
        nvme_initiator_itn_flow
        nvme_target_io
        nvme_initiator_io
```

This example shows the list of flow metrics supported in the *fc-scsi.port* view instance:

Note The *exceed_count* counters in the output will be supported in a future Cisco MDS NX-OS Release.

```
switch# show analytics schema fc-scsi view port

fc-scsi.port table schema columns:
        *port
         scsi_target_count
         scsi_initiator_count
         io_app_count
         logical_port_count
         scsi_target_app_count
         scsi_initiator_app_count
         active_io_read_count
         active_io_write_count
         scsi_target_it_flow_count
         scsi_initiator_it_flow_count
         scsi_target_itl_flow_count
         scsi_initiator_itl_flow_count
         scsi_target_tl_flow_count
         total_abts_count
         total_read_io_count
         total_write_io_count
         total_seq_read_io_count
         total_seq_write_io_count
         total_read_io_time
         total_write_io_time
         total_read_io_initiation_time
         total_write_io_initiation_time
         total_read_io_bytes
         total_write_io_bytes
         total_read_io_inter_gap_time
         total_write_io_inter_gap_time
         total_time_metric_based_read_io_count
         total_time_metric_based_write_io_count
         total_time_metric_based_read_io_bytes
         total_time_metric_based_write_io_bytes
         read_io_rate
         peak_read_io_rate
         write_io_rate
         peak_write_io_rate
         read_io_bandwidth
         peak_read_io_bandwidth
         write_io_bandwidth
         peak_write_io_bandwidth
```

```
read_io_size_min
read_io_size_max
write_io_size_min
write_io_size_max
read_io_completion_time_min
read_io_completion_time_max
write_io_completion_time_min
write_io_completion_time_max
read_io_initiation_time_min
read_io_initiation_time_max
write_io_initiation_time_min
write_io_initiation_time_max
read_io_inter_gap_time_min
read_io_inter_gap_time_max
write_io_inter_gap_time_min
write_io_inter_gap_time_max
peak_active_io_read_count
peak_active_io_write_count
read_io_aborts
write_io_aborts
read_io_failures
write_io_failures
read_io_timeouts
write_io_timeouts
read_io_scsi_check_condition_count
write_io_scsi_check_condition_count
read_io_scsi_busy_count
write_io_scsi_busy_count
read_io_scsi_reservation_conflict_count
write_io_scsi_reservation_conflict_count
read_io_scsi_queue_full_count
write_io_scsi_queue_full_count
read_io_rate_exceed_count
write_io_rate_exceed_count
read_io_bandwidth_exceed_count
write_io_bandwidth_exceed_count
read_io_size_min_exceed_count
read_io_size_max_exceed_count
write_io_size_min_exceed_count
write_io_size_max_exceed_count
read_io_initiation_time_min_exceed_count
read_io_initiation_time_max_exceed_count
write_io_initiation_time_min_exceed_count
write_io_initiation_time_max_exceed_count
read_io_completion_time_min_exceed_count
read_io_completion_time_max_exceed_count
write_io_completion_time_min_exceed_count
write_io_completion_time_max_exceed_count
read_io_inter_gap_time_min_exceed_count
read_io_inter_gap_time_max_exceed_count
write_io_inter_gap_time_min_exceed_count
write_io_inter_gap_time_max_exceed_count
read_io_abort_exceed_count
write_io_abort_exceed_count
read_io_failure_exceed_count
write_io_failure_exceed_count
sampling_start_time
sampling_end_time

(* - indicates the metric is a 'key' for the table)
```

This example shows the list of flow metrics supported in the *fc-nvme.port* view instance:

Note The *exceed_count* counters in the output will be supported in a future Cisco MDS NX-OS Release.

```
switch# show analytics schema fc-nvme view port

fc-nvme.port table schema columns:
        *port
         nvme_target_count
         nvme_initiator_count
         io_app_count
         logical_port_count
         nvme_target_app_count
         nvme_initiator_app_count
         active_io_read_count
         active_io_write_count
         nvme_target_it_flow_count
         nvme_initiator_it_flow_count
         nvme_target_itn_flow_count
         nvme_initiator_itn_flow_count
         nvme_target_tn_flow_count
         total_abts_count
         total_read_io_count
         total_write_io_count
         total_seq_read_io_count
         total_seq_write_io_count
         total_read_io_time
         total_write_io_time
         total_read_io_initiation_time
         total_write_io_initiation_time
         total_read_io_bytes
         total_write_io_bytes
         total_read_io_inter_gap_time
         total_write_io_inter_gap_time
         total_time_metric_based_read_io_count
         total_time_metric_based_write_io_count
         total_time_metric_based_read_io_bytes
         total_time_metric_based_write_io_bytes
         read_io_rate
         peak_read_io_rate
         write_io_rate
         peak_write_io_rate
         read_io_bandwidth
         peak_read_io_bandwidth
         write_io_bandwidth
         peak_write_io_bandwidth
         read_io_size_min
         read_io_size_max
         write_io_size_min
         write_io_size_max
         read_io_completion_time_min
         read_io_completion_time_max
         write_io_completion_time_min
         write_io_completion_time_max
         read_io_initiation_time_min
         read_io_initiation_time_max
         write_io_initiation_time_min
         write_io_initiation_time_max
         read_io_inter_gap_time_min
         read_io_inter_gap_time_max
         write_io_inter_gap_time_min
         write_io_inter_gap_time_max
```

```
peak_active_io_read_count
peak_active_io_write_count
read_io_aborts
write_io_aborts
read_io_failures
write_io_failures
read_io_timeouts
write_io_timeouts
read_io_nvme_lba_out_of_range_count
write_io_nvme_lba_out_of_range_count
read_io_nvme_ns_not_ready_count
write_io_nvme_ns_not_ready_count
read_io_nvme_reservation_conflict_count
write_io_nvme_reservation_conflict_count
read_io_nvme_capacity_exceeded_count
write_io_nvme_capacity_exceeded_count
read_io_rate_exceed_count
write_io_rate_exceed_count
read_io_bandwidth_exceed_count
write_io_bandwidth_exceed_count
read_io_size_min_exceed_count
read_io_size_max_exceed_count
write_io_size_min_exceed_count
write_io_size_max_exceed_count
read_io_initiation_time_min_exceed_count
read_io_initiation_time_max_exceed_count
write_io_initiation_time_min_exceed_count
write_io_initiation_time_max_exceed_count
read_io_completion_time_min_exceed_count
read_io_completion_time_max_exceed_count
write_io_completion_time_min_exceed_count
write_io_completion_time_max_exceed_count
read_io_inter_gap_time_min_exceed_count
read_io_inter_gap_time_max_exceed_count
write_io_inter_gap_time_min_exceed_count
write_io_inter_gap_time_max_exceed_count
read_io_abort_exceed_count
write_io_abort_exceed_count
read_io_failure_exceed_count
write_io_failure_exceed_count
sampling_start_time
sampling_end_time

(* - indicates the metric is a 'key' for the table)
```

Related Commands

Command	Description
analytics query	Installs a push analytics query.
purge analytics	Deletes a view instance and its associated flow metrics.
purge analytics	Deletes a view instance and its associated flow metrics.
show analytics query	Displays the SAN analytics query information.

show analytics system-load

To display the network processing unit (NPU) load per module, use the **show analytics system-load** command.

show analytics system-load

Syntax Description

This command has no arguments or keywords.

Command Default

Displays NPU load for modules.

Command Modes

Privileged EXEC (#)

Command History

Release	Modification
8.4(1)	The command output was modified.
8.3(2)	This command was introduced.

Usage Guidelines

This command provides the system load information based on all ITL counts, including active and inactive ITL counts. Hence, we recommend that you use the **purge analytics query** *"query_string"* command to remove the inactive ITL counts, and then run this command to get the active ITL counts.

Examples

This example shows how to display the NPU load per module:

```
switch# show analytics system-load
 n/a - not applicable
 ---------------------------------- Analytics System Load Info
-------------------------------
 | Module | NPU Load (in %) | ITLs   ITNs   Both  |        Hosts        |       Targets
    |
 |        | SCSI NVMe Total | SCSI   NVMe   Total | SCSI   NVMe   Total | SCSI   NVMe
Total |

-----------------------------------------------------------------------------------------------

 |   1    | 0    0    0     | 0      0      0     | 0      0      0     | 0      0      0
    |
 |   4    | 64   0    64    | 20743  0      20743 | 0      0      0     | 346    0      346
   |
 |   5    | 0    0    0     | 0      0      0     | 0      0      0     | 0      0      0
    |
 |   8    | 0    0    0     | 0      0      0     | 0      0      0     | 0      0      0
    |
 |   12   | 0    12   12    | 0      300    300   | 0      0      0     | 0      40     40
    |
 |   13   | 0    0    0     | 0      0      0     | 0      0      0     | 0      0      0
    |
 |   18   | 0    13   13    | 1      1      2     | 1      1      2     | 0      0      0
    |
 | Total  | n/a  n/a  n/a   | 20744  301    21045 | 1      1      2     | 346    40     386
   |

As of Mon Apr  1 05:31:10 2019
```

Related Commands

Command	Description
show analytics port-sampling	Displays the SAN analytics port sampling information.
show analytics query	Displays the SAN analytics query information.

show analytics flow congestion-drops

To display the packet drops on a per-flow basis, use the **show analytics flow congestion-drops** command.

show analytics flow congestion-drops [**vsan** *number*] [**module** *number* **port** *number*]

Syntax Description

vsan *number*	VSAN number.
module *number*	Module number.
port *number*	Port number.

Command Default

Displays packet drops on a per-flow basis.

Command Modes

Privileged EXEC (#)

Command History

Release	Modification
8.4(1)	This command was changed from **show analytics type fc-scsi flow congestion-drops** [**vsan** *number*] [**module** *number* **port** *number*] to **show analytics flow congestion-drops** [**vsan** *number*] [**module** *number* **port** *number*].
8.2(1)	This command was introduced.

Examples

This example displays flows where frames are dropped due to congestion. The source and destination FCIP, differential frame drop count for the IT pair, and timestamp of the drops are displayed.

Note The congestion drop entries are updated every 20 seconds.

```
switch# show analytics flow congestion-drops
|=============================================================================================|
|        | Source    |Destination| Congestion    |     Timestamp                |             |
| INTF   | VSAN |  FCID     |  FCID     | Drops(delta)  |                              |
|=============================================================================================|
| fc2/13| 0002 | 0x9900E1  | 0x640000  |  00000105     | 1. 09/13/17 11:09:48.762     |
| fc2/13| 0002 | 0x9900E1  | 0x640000  |  00000002     | 2. 09/13/17 09:05:39.527     |
| fc2/13| 0002 | 0x990000  | 0x640020  |  00000002     | 3. 09/13/17 09:05:39.527     |
|=============================================================================================|
| fc2/31| 0002 | 0x640000  | 0x9900E1  |  00000084     | 1. 09/12/17 08:17:11.905     |
| fc2/31| 0002 | 0x640000  | 0x9900E1  |  00000076     | 2. 09/12/17 05:50:37.721     |
| fc2/31| 0002 | 0x640000  | 0x9900E1  |  00000067     | 3. 09/12/17 03:24:03.319     |
| fc2/31| 0002 | 0x640000  | 0x9900E1  |  00000088     | 4. 09/12/17 00:57:28.019     |
| fc2/31| 0002 | 0x640000  | 0x9900E1  |  00000088     | 5. 09/11/17 22:30:53.723     |
| fc2/31| 0002 | 0x640000  | 0x9900E1  |  00000086     | 6. 09/11/17 20:04:18.001     |
| fc2/31| 0002 | 0x640000  | 0x9900E1  |  00000026     | 7. 09/11/17 17:37:24.273     |
| fc2/31| 0002 | 0x640000  | 0x9900E1  |  00000076     | 8. 09/11/17 15:10:50.240     |
| fc2/31| 0002 | 0x640000  | 0x9900E1  |  00000074     | 9. 09/11/17 12:44:15.866     |
| fc2/31| 0002 | 0x640000  | 0x9900E1  |  00000087     |10. 09/11/17 10:17:41.402     |
| fc2/31| 0002 | 0x640000  | 0x9900E1  |  00000086     |11. 09/11/17 07:51:10.412     |
```

```
| fc2/31| 0002 | 0x640000  | 0x9900E1  |  00000084     |12. 09/11/17 05:24:35.981     |
| fc2/31| 0002 | 0x640000  | 0x9900E1  |  00000083     |13. 09/11/17 02:58:01.067     |
| fc2/31| 0002 | 0x640000  | 0x9900E1  |  00000086     |14. 09/11/17 00:31:26.709     |
| fc2/31| 0002 | 0x640000  | 0x9900E1  |  00000079     |15. 09/10/17 22:04:51.399     |
| fc2/31| 0002 | 0x640000  | 0x9900E1  |  00000084     |16. 09/10/17 19:38:17.217     |
| fc2/31| 0002 | 0x640000  | 0x9900E1  |  00000082     |17. 09/10/17 17:11:42.594     |
| fc2/31| 0002 | 0x640000  | 0x9900E1  |  00000086     |18. 09/10/17 14:44:52.786     |
| fc2/31| 0002 | 0x640000  | 0x9900E1  |  00000089     |19. 09/10/17 12:18:18.394     |
| fc2/31| 0002 | 0x640000  | 0x9900E1  |  00000087     |20. 09/10/17 09:51:44.067     |
|==============================================================================================|
```

Related Commands

Command	Description
show analytics port-sampling	Displays the SAN analytics port sampling information.
show analytics query	Displays the SAN analytics query information.
ShowAnalytics	Displays the SAN analytics information in a tabular format.

show arp

To display Address Resolution Protocol (ARP) entries, use the **show arp** command.

show arp

Syntax Description

This command has no arguments or keywords.

Command Default

None.

Command Modes

EXEC mode.

Command History

Release	Modification
1.0(2)	This command was introduced.

Usage Guidelines

None.

Examples

This example shows how to display the ARP table:

```
switch# show arp
Protocol Address           Age (min)           Hardware Addr   Type   Interface
Internet  171.1.1.1        0      0006.5bec.699c  ARPA  mgmt0
Internet  172.2.0.1        4    0000.0c07.ac01  ARPA  mgmt0
```

Related Commands

Command	Description
clear arp-cache	Clears the arp-cache table entries.

show autonomous-fabric-id database

To display the contents of the AFID database, use the **show autonomous-fabric-id database** command in EXEC mode.

show autonomous-fabric-id database

Syntax Description

This command has no arguments or keywords.

Command Default

None

Command Modes

EXEC mode.

Command History

Release	Modification
2.1(1a)	This command was introduced.

Usage Guidelines

None.

Examples

The following example shows contents of the AFID database:

```
switch# show autonomous-fabric-id database
SWITCH WWN                      Default-AFID
------------------------------------------------------------
20:00:00:0c:91:90:3e:80            5
Total:   1 entry in default AFID table
SWITCH WWN                      AFID     VSANS
------------------------------------------------------------
20:00:00:0c:91:90:3e:80           10     1,2,5-8
Total: 1 entry in AFID table
```

Related Commands

Command	Description
autonomous-fabric-id (IVR topology database configuration)	Configures an autonomous fabric ID into the Inter-VSAN Routing (IVR) topology database.
autonomous-fabric-id (IVR service group configuration)	Configures an autonomous fabric ID into the IVR service group.
autonomous-fabric-id-database	Configures an autonomous fabric ID (AFID) database.

show banner motd

To display a configured message of the day (MOTD) banner, use the **show banner motd** command.

show banner motd

Syntax Description

This command has no arguments or keywords.

Command Default

None.

Command Modes

EXEC mode.

Command History

Release	Modification
1.3(4)	This command was introduced.

Usage Guidelines

The configured MOTD banner is displayed before the login prompt on the terminal whenever a user logs in to a switch.

Examples

The following example displays the configured banner message:

```
switch# show banner motd
Testing the MOTD Feature
```

The configured message is visible the next time you log in to the switch:

```
 Testing the MOTD Featureswitch login:
```

Related Commands

Command	Description
banner motd	Configures the required banner message.

show boot

To display the boot variables or modules, use the **show boot** command.

show boot [**module** [*slotvariable-name*] | **sup-1** | **sup-2** | **variables**]

Syntax Description

module	(Optional) Displays the boot variables for modules.
slot	Specifies a module by the slot number.
variable-name	Specifies the variable. Maximum length is 80 characters.
sup-1	(Optional) Displays the upper sup configuration.
sup-2	(Optional) Displays the lower sup configuration.
variables	(Optional) Displays the list of boot variables.

Command Default

None.

Command Modes

EXEC mode.

Command History

Release	Modification
1.2(2)	This command was introduced.

Usage Guidelines

None.

Examples

The following example displays the current contents of the boot variable:

```
switch# show boot
kickstart variable = bootflash:/kickstart-image
system variable = bootflash:/system-image
Module 2
asm-sfn variable = bootflash:/asm-image
```

The following example displays the images on the specified module:

```
switch# show boot module
Module 2
asm-sfn variable = bootflash:/asm-image
```

The following example displays a list of all boot variables:

```
switch# show boot variables
List of boot variables are:
     asm-sfn
  system
     kickstart
```

show boot auto-copy

To display state of the auto-copy feature, use the **show boot auto-copy** command.

show boot auto-copy [**list**]

Syntax Description

list	(Optional) Displays the list of files to be auto-copied

Command Default

None.

Command Modes

EXEC mode.

Command History

Release	Modification
1.2(1)	This command was introduced.

Usage Guidelines

None.

Examples

The following example shows the message that displays on the console when you enable the auto-copy feature:

```
switch(config)# boot auto-copy
 Auto-copy administratively enabled
```

The following example shows the message that displays on the console when you disable the auto-copy feature:

```
switch(config)# boot auto-copy
 Auto-copy administratively disabled
```

The following example displays the current state of the auto-copy feature when it is enabled:

```
switch# show boot auto-copy
Auto-copy feature is enabled
```

The following example displays the current state of the auto-copy feature when it is disabled:

```
switch# show boot auto-copy
Auto-copy feature is disabled
```

The following example displays the ilc1.bin image being copied to the standby supervisor module's bootflash, and once this is successful, the next file will be lasilc1.bin. This command only displays files on the active supervisor module.

```
switch# show boot auto-copy list
File: /bootflash/ilc1.bin
Bootvar: ilce
File:/bootflash/lasilc1.bin
Bootvar: lasilc
```

The following example displays a typical message when the auto-copy option is disabled or if no files are copied:

```
switch# show boot auto-copy list
No file currently being auto-copied
```

show callhome

To display Call Home information configured on a switch, use the **show callhome** command.

show callhome [**destination-profile** [**profile** {*profile* | **full-txt-destination** | **short-txt-destination** | **XML-destination**}] | **last** {**action status** | **merge status**} | **pending** | **pending-diff** | **script-mapping** | **transport-email** | **user-def-cmds**]

Syntax Description

destination-profile	(Optional) Displays the Call Home destination profile information.
profile	(Optional) Specifies the destination profile.
profile	Specifies a user-defined destination profile.
full-txt-destination	Specifies the full text destination profile.
short-txt-destination	Specifies the short text destination profile.
XML-destination	Specifies the XML destination profile.
last action status	(Optional) Displays the status of the last CFS commit or discard operation.
last merge status	(Optional) Displays the status of the last CFS merge operation.
pending	(Optional) Displays the status of pending Call Home configuration.
pending-diff	(Optional) Displays the difference between running and pending Call Home configurations.
script-mapping	(Optional) Displays the scripts that are configured for each alert-group.
transport-email	(Optional) Displays the Call Home e-mail transport information.
user-def-cmds	(Optional) Displays the CLI commands configured for each alert group.

Command Default

None

Command Modes

Privilege EXEC(#)

Command History

Release	Modification
1.0(2)	This command was introduced.
2.0(x)	Added **last action status**, **pending**, and **pending-diff** options.
3.0(1)	Added the **user-def-cmds** argument.
7.3(1)DY(1)	Added the **script-mapping** keyword.

Usage Guidelines

Note The **script-mapping** option is only for use by certain customers. Do not configure it if you are not approved by Cisco to use it.

Examples

The following example shows configured Call Home information:

```
switch# show callhome

callhome enabled
Callhome Information:
contact person name:who@where
contact person's email:person@place.com
contact person's phone number:310-408-4000
street addr:1234 Picaboo Street, Any city, Any state, 12345
site id:Site1ManhattanNewYork
customer id:Customer1234
contract id:Andiamo1234
switch priority:0
duplicate message throttling : enabled
periodic inventory : disabled
periodic inventory time-period : 7 days
distribution of callhome configuration data using cfs : disabled
```

The following example shows all destination profile information:

```
switch# show callhome destination-profile

XML destination profile information
maximum message size:250000
email addresses configured:
findout@.cisco.com
Short-txt destination profile information
maximum message size:4000
email addresses configured:
person1@epage.company.com
full-txt destination profile information
maximum message size:250000
email addresses configured:
person2@company2.com
```

The following example shows the full-text destination profile:

```
switch# show callhome destination-profile profile full-txt-destination

full-txt destination profile information
maximum message size:250000
email addresses configured:
person2@company2.com
```

The following example shows the short-text destination profile:

```
switch# show callhome destination-profile profile short-txt-destination
Short-txt destination profile information
maximum message size:4000
email addresses configured:
person2@company2.com
```

The following example shows the XML destination profile:

```
switch# show callhome destination-profile profile XML-destination
XML destination profile information
maximum message size:250000
email addresses configured:
findout@.cisco.com
```

The following example shows email and SMTP information:

```
switch# show callhome transport-email
from email addr:user@company1.com
reply to email addr:pointer@company.com
return receipt email addr:user@company1.com
smtp server:server.company.com
smtp server port:25
```

The following example shows user-defined CLI commands for the alert groups:

```
switch# show callhome user-def-cmds
User configured commands for alert groups :
alert-group test user-def-cmd "show version"
```

Related Commands

Command	Description
alert-group	Customizes a Call Home alert group with user-defined **show** commands.
callhome	Configures Call Home.
callhome test	Sends a dummy test message to the configured destination(s).

show callhome transport

To display the Call Home transport configuration, use the show callhome transport command.

show callhome transport

Syntax Description

This command has no arguments or keywords.

Command Default

Enabled.

Command Modes

EXEC mode.

Command History

Release	Modification
NX-OS 5.2(1)	Changed the command output.
NX-OS 5.0(1a)	This command was introduced.

Usage Guidelines

None.

Examples

The following example shows how to display the Call Home transport when the proxy is not configured :

```
switch# show callhome transport
http vrf:management
from email addr:S1-2@cisco.com
smtp server:171.69.21.28
smtp server port:25
smtp server vrf:management
smtp server priority:0
http proxy server:10.64.65.62
http proxy server port:8080
http proxy status:Enabled
switch#
```

Related Commands

Command	Description
callhome	Configures the Call Home function.

show cdp

To display CDP parameters configured globally or for a specific interface, use the **show cdp** command.

show cdp {**all** | **entry** [**all** | **name** *cdp-name*] | **global** | **interface** [**gigabitethernet** *slot* / *port* | **mgmt 0**] | **neighbors** [**detail** | **interface** {**gigabitethernet** *slot* / *port* | **mgmt 0**}] | **traffic interface** [**gigabitethernet** *slot* / *port* | **mgmt 0**]}

Syntax Description

all	Displays all enabled CDP interfaces.
entry	Displays CDP database entries.
all	(Optional) Displays all CDP entries in the database
name *cdp-name*	(Optional) Displays CDP entries that match a specified name. Maximum length is 256 characters.
global	Displays global CDP parameters.
interface	Displays CDP information for neighbors on a specified interface.
gigabitethernet *slot*/*port*	(Optional) Specifies the Gigabit Ethernet interface at the slot number and port number separated by a slash (/).
mgmt 0	(Optional) Specifies the Ethernet management interface.
neighbors	Displays all CDP neighbors.
detail	(Optional) Displays detailed information for all CDP neighbors
interface	Displays CDP information for neighbors on a specified interface.
traffic	Displays CDP traffic statistics for an interface.

Command Default

None.

Command Modes

EXEC mode.

Command History

Release	Modification
1.1(1)	This command was introduced.

Usage Guidelines

This command is allowed only on the active supervisor module in the Cisco MDS 9500 Series.

Examples

The following example displays all CDP-capable interfaces and parameters:

```
switch# show cdp all
GigabitEthernet4/1 is up
    CDP enabled on interface
```

```
    Sending CDP packets every 60 seconds
    Holdtime is 180 seconds
GigabitEthernet4/8 is down
    CDP enabled on interface
    Sending CDP packets every 60 seconds
    Holdtime is 180 seconds
mgmt0 is up
    CDP enabled on interface
    Sending CDP packets every 100 seconds
    Holdtime is 200 seconds
```

The following example displays all CDP neighbor entries:

```
switch# show cdp entry all
----------------------------------------
Device ID:Switch
System Name:
Interface address(es):
Platform: cisco WS-C2950T-24, Capabilities: Switch IGMP Filtering
Interface: mgmt0, Port ID (outgoing port): FastEthernet0/24
Holdtime: 152 sec

Version:
Cisco Internetwork Operating System Software
IOS (tm) C2950 Software (C2950-I6Q4L2-M), Version 12.1(19)EA1c, RELEASE SOFTWARE
 (fc2)
Copyright (c) 1986-2004 by cisco Systems, Inc.
Compiled Mon 02-Feb-04 23:29 by yenanh

Advertisement Version: 2
Native VLAN: 1
Duplex: full
```

The following example displays the specified CDP neighbor:

```
switch# show cdp entry name 0
----------------------------------------
Device ID:0
Entry address(es):
    IP Address: 209.165.200.226
Platform: DS-X9530-SF1-K9, Capabilities: Host
Interface: GigabitEthernet4/1, Port ID (outgoing port): GigabitEthernet4/1
Holdtime: 144 sec
Version:
1.1(0.144)
Advertisement Version: 2
Duplex: full
```

The following example displays global CDP parameters:

```
switch# show cdp global
Global CDP information:
    CDP enabled globally
    Sending CDP packets every 60 seconds
    Sending a holdtime value of 180 seconds
    Sending CDPv2 advertisements is enabled
```

The following example displays CDP parameters for the management interface:

```
switch# show cdp interface mgmt 0
mgmt0 is up
    CDP enabled on interface
```

```
    Sending CDP packets every 60 seconds
    Holdtime is 180 seconds
```

The following example displays CDP parameters for the Gigabit Ethernet interface:

```
switch# show cdp interface gigabitethernet 4/1
GigabitEthernet4/1 is up
    CDP enabled on interface
    Sending CDP packets every 80 seconds
    Holdtime is 200 seconds
```

The following example displays CDP neighbors (brief):

```
switch# show cdp neighbors
Capability Codes: R - Router, T - Trans-Bridge, B - Source-Route-Bridge
                  S - Switch, H - Host, I - IGMP, r - Repeater
Device ID        Local Intrfce   Hldtme  Capability  Platform      Port ID
0                Gig4/1          135     H           DS-X9530-SF1- Gig4/1
069038732(Kiowa2 mgmt0           132     T S         WS-C5500      8/11
069038747(Kiowa3 mgmt0           156     T S         WS-C5500      6/20
069038747(Kiowa3 mgmt0           158     T S         WS-C5500      5/22
```

The following example displays CDP neighbors (detail):

```
switch# show CDP neighbor detail
----------------------------------------
Device ID:Switch
System Name:
Interface address(es):
Platform: cisco WS-C2950T-24, Capabilities: Switch IGMP Filtering
Interface: mgmt0, Port ID (outgoing port): FastEthernet0/24
Holdtime: 137 sec

Version:
Cisco Internetwork Operating System Software
IOS (tm) C2950 Software (C2950-I6Q4L2-M), Version 12.1(19)EA1c, RELEASE SOFTWARE
 (fc2)
Copyright (c) 1986-2004 by cisco Systems, Inc.
Compiled Mon 02-Feb-04 23:29 by yenanh

Advertisement Version: 2
Native VLAN: 1
Duplex: full
```

The following example displays the specified CDP neighbor (detail):

```
switch# show CDP neighbors interface gigabitethernet 4/1 detail
----------------------------------------
Device ID:0
Entry address(es):
    IP Address: 209.165.200.226
Platform: DS-X9530-SF1-K9, Capabilities: Host
Interface: GigabitEthernet4/1, Port ID (outgoing port): GigabitEthernet4/1
Holdtime: 144 sec
Version:
1.1(0.144)
Advertisement Version: 2
Duplex: full
```

The following example displays CDP traffic statistics for the management interface:

```
switch# show cdp traffic interface mgmt 0
```

```
----------------------------------------
Traffic statistics for mgmt0
Input Statistics:
    Total Packets: 1148
    Valid CDP Packets: 1148
        CDP v1 Packets: 1148
        CDP v2 Packets: 0
    Invalid CDP Packets: 0
        Unsupported Version: 0
        Checksum Errors: 0
        Malformed Packets: 0
Output Statistics:
    Total Packets: 2329
        CDP v1 Packets: 1164
        CDP v2 Packets: 1165
    Send Errors: 0
```

The following example displays CDP traffic statistics for the Gigabit Ethernet interface:

```
switch# show cdp traffic interface gigabitethernet 4/1
----------------------------------------
Traffic statistics for GigabitEthernet4/1
Input Statistics:
    Total Packets: 674
    Valid CDP Packets: 674
        CDP v1 Packets: 0
        CDP v2 Packets: 674
    Invalid CDP Packets: 0
        Unsupported Version: 0
        Checksum Errors: 0
        Malformed Packets: 0
Output Statistics:
    Total Packets: 674
        CDP v1 Packets: 0
        CDP v2 Packets: 674
    Send Errors: 0
```

show cfs

To display Cisco Fabric Services (CFS) information, use the **show cfs** command.

show cfs {**application** [**name** *app-name*] | **lock** [**name** *app-name*] | **merge status** [**name** *app-name*] | **peers** [**name** *app-name*] | **status** [**name** *app-name*]}

Syntax Description

application	Displays locally registered applications.
name *app-name*	(Optional) Specifies a local application information by name. Maximum length is 64 characters.
lock	Displays the state of application logical or physical locks.
merge status	(Optional) Displays CFS merge information.
peers	Displays logical or physical CFS peers.
status	Displays if CFS distribution is enabled or disabled. Enabled is the default configuration.

Command Default

None.

Command Modes

EXEC mode.

Command History

Release	Modification
2.0(1b)	This command was introduced.
2.1(1a)	• Added **status** keyword. • Replaced vsan with fctimer for the fctimer application in the Application field in the command output.
3.0(1)	Modified the **show cfs application** example with output that shows which applications support CFS distribution over IP and Fibre Channel and those that support only CFS distribution over Fibre Channel.

Usage Guidelines

None.

Note As soon as the customer encounters the syslog " %VSHD_4_VSHD_ROLE_DATABASE_OUT_OF _SYNC", Role configuration database is found to be different between the switches during merge. Role configuration database is recommended to be identical among all switches in the fabric. Edit the configuration on one of the switches to obtain the desire role configuration database and then commit it. For more information, Refer to the System Messages Guide.

Examples

The following example shows how to display CFS physical peer information for all applications:

```
switch# show cfs peers
Physical Fabric
-------------------------------------------------
 Switch WWN               IP Address
-------------------------------------------------
 20:00:00:05:30:00:61:de 209.165.200.226 [Local]
 20:00:00:0d:ec:08:66:c0 209.165.200.226
 20:00:00:05:30:00:f1:e2 209.165.200.226
 20:00:00:05:30:00:eb:46 209.165.200.226
 20:00:00:05:30:00:cb:56 209.165.200.227
20:00:00:05:30:00:5b:5e 209.165.200.228
 20:00:00:05:30:00:34:9e 209.165.200.229
Total number of entries = 7
```

The following example shows how to display CFS information for all applications on the switch:

```
switch# show cfs application
-----------------------------------------------
 Application    Enabled   Scope
-----------------------------------------------
ntp            No        Physical-all
fscm           Yes       Physical-fc
role           No        Physical-all
rscn           No        Logical
radius         No        Physical-all
fctimer        No        Physical-fc
syslogd        No        Physical-all
callhome       No        Physical-all
fcdomain       Yes       Logical
device-alias   Yes       Physical-fc
Total number of entries = 10
```

Note The **show cfs application** command displays only those applications that are registered with CFS. Conditional services that use CFS do not appear in the output unless those services are running.

The following example shows how to display CFS information for the device alias application:

```
switch# show cfs application name device-alias
 Enabled        : Yes
 Timeout        : 5s
 Merge Capable  : Yes
 Scope          : Physical
```

The following example shows how to display CFS merge operation information for the device alias application:

```
switch# show cfs merge status device-alias
Physical  Merge Status: Success
 Local Fabric
------------------------------------------------------------
 Switch WWN               IP Address
------------------------------------------------------------
 20:00:00:05:30:00:34:9e 209.165.200.226 [Merge Master]
 20:00:00:05:30:00:5b:5e 209.165.200.227
 20:00:00:05:30:00:61:de 209.165.200.228
 20:00:00:05:30:00:cb:56 209.165.200.229
 20:00:00:05:30:00:eb:46 209.165.200.230
 20:00:00:05:30:00:f1:e2 209.165.200.231
```

The following example shows whether or not CFS distribution is enabled:

```
switch# show cfs status

Fabric distribution Enabled
switch#
```

show cfs regions

To display the list of distribution-enabled applications with peers in a region, use the show cfs region command.

show cfs regions [**brief** [**region-id**] | **name** [**name app-name**] | **region** [**region-id**]]

Syntax Description

brief *region-id*	(Optional) Displays all configured regions and applications without peers.
name name *app-name*	(Optional) Displays all peers and region information for a given application.
region *region-id*	(Optional) Displays all configured applications with peers.

Command Default

None.

Command Modes

EXEC mode.

Command History

Release	Modification
3.2(1)	This command was introduced.

Usage Guidelines

None.

Examples

The following example shows all the region information with peers:

```
switch# show cfs regions
Region-ID  : 1
Application: callhome
Scope      : Physical-all
--------------------------------------------------------------------------
 Switch WWN              IP Address
--------------------------------------------------------------------------
 20:00:00:0d:ec:04:99:c0 209.165.200.226 [Local]
                         switch-
 20:00:00:0d:ec:04:99:c1 209.165.200.226
                         switch-2.cisco.com
 20:00:00:0d:ec:04:99:c2 209.165.200.226
                         switch-3.cisco.com
Total number of entries = 3
Region-ID  : 1
Application: ntp
Scope      : Physical-all
--------------------------------------------------------------------------
 Switch WWN              IP Address
--------------------------------------------------------------------------
 20:00:00:0d:ec:06:55:c0 209.165.200.226 [Local]
                         switch-1
Total number of entries = 1
```

The following example shows the list of applications without peers in a region:

```
switch# show cfs regions brief
--------------------------------------
```

```
 Region         Application   Enabled
--------------------------------------
   1            callhome      yes
   1            ntp           yes
```

The following example shows the peer and region information for a given application in a region:

```
switch# show cfs regions name callhome
Region-ID  : 1
Application: callhome
Scope      : Physical-all
--------------------------------------------------------------------------------
 Switch WWN              IP Address
--------------------------------------------------------------------------------
 20:00:00:0d:ec:06:55:c0 209.165.200.226 [Local]
                         switch 1
Total number of entries = 1
```

Related Commands

Command	Description
cfs regions	Creates a region that restricts the scope of application distribution to a selected switch.

show cfs static peers

To display all the configured static peers with status, use the show cfs static peers command.

show cfs static peers

Syntax Description

This command has no arguments or keywords.

Command Default

None.

Command Modes

EXEC mode.

Command History

Release	Modification
4.1(1b)	This command was introduced.

Usage Guidelines

None.

Examples

The following example displays the CFS static peers:

```
------------------------------------------------------------------------------
 IP address                      WWN name                 Status
------------------------------------------------------------------------------
 1.2.3.4              00:00:00:00:00:00:00:00          Un Reachable
 1.2.3.5              00:00:00:00:00:00:00:00          Un Reachable
 10.64.66.47          20:00:00:0d:ec:06:55:c0          Reachable
 10.64.66.56          20:00:08:00:88:04:99:80          Local
Total number of entries = 4
```

Related Commands

Command	Description
cfs static peers	Displays configured static peers with status.

show cfs status

To display the Cisco Fabric Services (CFS) status, use the show cfs region command.

show cfs status

Syntax Description

This command has no arguments or keywords.

Command Default

None.

Command Modes

EXEC mode

Command History

Release	Modification
4.1(1b)	This command was introduced.

Usage Guidelines

None.

Examples

The following example displays the CFS status:

```
switch# show cfs status
Distribution: Enabled
Distribution over IP: Enabled (static)
IPv4 multicast address : 239.255.70.83
IPv6 multicast address : ff15::efff:4563
```

Related Commands

Command	Description
cfs enable	Starts CFS.

show cimserver

To display the Common Information Model (CIM) configurations and settings, use the **show cimserver** command.

show cimserver [**certificateName** | **HttpsStatus** | **HttpStatus** | **status**]

Syntax Description

certificateName	(Optional) Displays the installed Secure Socket Layer (SSL) certificate.
HttpsStatus	(Optional) Displays the HTTPS (secure) protocol settings for the CIM server.
HttpStatus	(Optional) Displays the HTTP (non-secure) protocol for the CIM server.
status	(Optional) Displays the CIM server status.

Command Default

None.

Command Modes

EXEC mode.

Command History

Release	Modification
1.3(1)	This command was introduced.
5.2(1)	This command was deprecated.

Usage Guidelines

None.

Examples

The following example displays CIM server certificate files:

```
switch# show cimserver certificateName
cimserver certificate file name is servcert.pem
```

The following example displays the CIM server configuration:

```
switch# show cimserver
 cimserver is enabled
 cimserver Http is not enabled
 cimserver Https is enabled
 cimserver certificate file name is servcert.pem
```

The following example displays the CIM server HTTPS status:

```
switch# show cimserver httpsstatus
 cimserver Https is enabled
```

The following example displays the CIM server HTTP status:

```
switch# show cimserver httpstatus
 cimserver Http is not enabled
```

show cimserver indications

To display cimserver indications such as filters, recipients, and subscriptions, use the show cimserver indication command.

show cimserver indication

Syntax Description

This command has no arguments or keywords:

Command Default

None.

Command Modes

EXEC mode

Command History

Release	Modification
3.3(1a)	This command was introduced.
5.2(1)	This command was deprecated.

Usage Guidelines

None.

Examples

The following example displays the cimserver indications:

```
switch# show cimserver indication
Filter:           root/cimv2:Feb 7, 2008 2:32:11 PM
Query:            "SELECT * FROM CISCO_LinkUp"
Query Language:   WQL
----------------------------------------
Handler:           root/cimv2:CIM_ListenerDestinationCIMXML.Thu Feb 07 14:32:44 IST
20081202374964083
Destination:       http://10.77.91.110:59901
PersistenceType:   Transient
----------------------------------------
Namespace:         root/cimv2
Filter:            root/cimv2:Feb 7, 2008 2:32:11 PM
Handler:           root/cimv2:CIM_ListenerDestinationCIMXML.Thu Feb 07 14:32:44 IST
20081202374964083
Query:             "SELECT * FROM CISCO_LinkUp"
Destination:       http://10.77.91.110:59901
SubscriptionState: Enabled
The following example displays the cimserver's indication filters:
switch# show cimserver indication filters
Filter:           root/cimv2:Feb 7, 2008 2:32:11 PM
Query:            "SELECT * FROM CISCO_LinkUp"
Query Language:   WQL
The following example displays the cimserver's indication recipient:
switch# show cimserver indication recipients
Handler:           root/cimv2:CIM_ListenerDestinationCIMXML.Thu Feb 07 14:32:44 IST
20081202374964083
Destination:       http://10.77.91.110:59901
PersistenceType:   Transient
The following example displays the subscriptions on cimserver:
switch# show cimserver indication subscriptions
Namespace:         root/cimv2
```

```
Filter:            root/cimv2:Feb 7, 2008 2:32:11 PM
Handler:           root/cimv2:CIM_ListenerDestinationCIMXML.Thu Feb 07 14:32:44 IST
20081202374964083
Query:             "SELECT * FROM CISCO_LinkUp"
Destination:       http://10.77.91.110:59901
SubscriptionState: Enabled
```

show cimserver logs

To display the cimserver logs, use the show cimserver logs command.

show cimserver logs

Syntax Description

This command has no arguments or keywords.

Command Default

None.

Command Modes

EXEC mode

Command History

Release	Modification
3.3(1a)	This command was introduced.
5.2(1)	This command was deprecated.

Usage Guidelines

None.

Examples

The following example displays the cimserver logs:

```
switch# show cimserver logs
02/07/2008-16:38:14 INFO    cimserver: Sent response to: localhost
02/07/2008-16:38:26 INFO    cimserver: Received request from: 10.77.91.110
02/07/2008-16:38:27 INFO    cimserver: Sent response to: 10.77.91.110
```

Related Commands

Command	Description
cimserver loglevel	Enters cimsever log level filters.

show cimserver status

To display the cimserver status, use the show cimserver status command.

show cimserver status

Syntax Description

This command has no arguments or keywords.

Command Default

None.

Command Modes

EXEC mode

Command History

Release	Modification
3.3(1a)	This command was introduced.
5.2(1)	This command was deprecated.

Usage Guidelines

None.

Examples

The following example displays the cimserver status:

```
switch# show cimserver status
cimserver is enabled
```

Related Commands

Command	Description
cimserver enable	Starts the cimserver.

show cli alias

To display configured aliases on a switch, use the **show cli alias** command.

show cli alias [**name** *name*]

Syntax Description

name *name*	(Optional) Specifies an alias name. The maximum size of the name is 31 characters.

Command Default

None.

Command Modes

EXEC mode.

Command History

Release	Modification
3.0(1)	This command was introduced.

Usage Guidelines

The **show cli alias** command shows the default alias and other user-defined aliases. The default alias is **alias**, which means **show cli alias**.

Examples

The following example displays CLI aliases:

```
switch# show cli alias
CLI alias commands
==================
alias  :show cli alias
env    :show environment
clock  :show clock
```

The following example displays a specific alias by name:

```
switch# show cli alias name qos
qos :show qos
```

Related Commands

Command	Description
cli alias name	Defines a command alias name.

show cli variables

To display user-defined session and persistent CLI variables, use the **show cli variables** command.

show cli variables

Syntax Description

This command has no arguments or keywords.

Command Default

None.

Command Modes

EXEC mode.

Command History

Release	Modification
3.0(1)	This command was introduced.

Usage Guidelines

The **show CLI variables** command shows all available CLI variables, including user-defined session CLI variables, user-defined persistent CLI variables, and system-defined CLI variables. There is no distinction between the types of CLI variables in the output.

Examples

The following example displays CLI variables:

```
switch# show cli variables
VSH Variable List
-----------------
TIMESTAMP="2005-10-24-21.29.33"
testinterface="fc 1/1"
```

Note The TIMESTAMP variable shown in the output in the preceding example is a predefined variable supported by Cisco MDS NX-OS. For more information about the TIMESTAMP variable, refer to the *Cisco MDS 9000 Family CLI Configuration Guide* .

Related Commands

Command	Description
cli var name	Defines a CLI session variable.
cli var name (configuration)	Defines a CLI persistent variable.

show clock

To display the system date and time and verify the time zone configuration, use the **show clock** command.

show clock

Syntax Description

This command has no arguments or keywords.

Command Default

None.

Command Modes

EXEC mode.

Command History

Release	Modification
1.0(2)	This command was introduced.

Usage Guidelines

None.

Examples

The following example displays the system date, time, and time zone configuration:

```
switch# show clock
Fri Mar 14 01:31:48 UTC 2003
```

show cloud discovery

To display discovery information about the cloud, use the **show cloud discovery** command.

show cloud discovery {**config** | **stats** | **status**}

Syntax Description

config	Displays global discovery configuration information.
stats	Displays discovery statistics information.
status	Displays discovery status information.

Command Default

None.

Command Modes

EXEC mode.

Command History

Release	Modification
3.0(1)	This command was introduced.
3.2(2c)	This command was deprecated.

Usage Guidelines

None.

Examples

The following example shows information about a cloud:

```
switch# show cloud discovery config
Auto discovery: Enabled
```

The following example shows statistics about a cloud:

```
switch# show cloud discovery stats
Global statistics
    Number of Auto Discovery                      = 4
    Number of Manual (demand) Discovery                     = 0
    Number of cloud discovery (ping) messages sent = 17
    Number of cloud discovery (ping) success       = 1
```

Related Commands

Command	Description
cloud discover	Initiates manual, on-demand cloud discovery.
cloud discovery	Configures cloud discovery.
cloud-discovery	Enables discovery of cloud memberships.
show cloud membership	Displays information about members of a cloud.

show cloud membership

To display membership information about the cloud, use the **show cloud membership** command.

show cloud membership [**all** | **interface** {**gigabitethernet** *slot/port* | **port-channel** *number*} | **unresolved**]

Syntax Description

all	(Optional) Displays all clouds and cloud members.
interface	(Optional) Displays all members of a cloud containing a specified interface.
gigabitethernet *slot/port*	Specifies a Gigabit Ethernet interface by slot and port number. The range is 1 to 6.
port-channel *number*	Specifies a PortChannel interface. The range is 1 to 128.
unresolved	(Optional) Displays unresolved members of the cloud.

Command Default

None.

Command Modes

EXEC mode.

Command History

Release	Modification
3.0(1)	This command was introduced.
3.2(2c)	This command was deprecated.

Usage Guidelines

None.

Examples

The following example displays the members of clouds:

```
switch# show cloud membershp
Undiscovered Cloud
    port-channel 1[20:00:00:05:30:00:a7:9e] IP Addr fe80::205:30ff:fe00:a412
    port-channel 1.250[20:00:00:05:30:00:a7:9e] IP Addr 3000:2::1
    port-channel 1.250[20:00:00:05:30:00:a7:9e] IP Addr fe80::205:30ff:fe00:a412
  #members=3
Cloud 2
    port-channel 1[20:00:00:05:30:00:a7:9e] IP Addr 3000:1::1
  #members=1
Cloud 3
    GigabitEthernet1/1[20:00:00:05:30:00:a7:9e] IP Addr 10.10.10.1
  #members=1
Cloud 4
    GigabitEthernet1/2[20:00:00:05:30:00:a7:9e] IP Addr 10.10.60.1
  #members=1
```

Related Commands

Command	Description
cloud discover	Initiates manual, on-demand cloud discovery.
cloud discovery	Configures cloud discovery.
cloud-discovery enable	Enables discovery of cloud memberships.
show cloud discovery	Displays discovery information about a cloud.

show consistency-checker

To verify the consistency between various internal system tables, use the **show consistency-checker** command.

show consistency-checker { {**acl-table-status** | **fib-table-status**} [**module** *number*] | **pss**}

Syntax Description

acl-table-status	Compares software and hardware access control list (ACL) table status.
fib-table-status	Compares software and hardware forwarding information base (FIB) table status.
module *number*	(Optional) Module number.
pss	Checks for inconsistency across memory, shared, and persistent data.

Command Default

Displays consistency information for all modules.

Command Modes

Privileged EXEC (#)

Command History

Release	Modification
8.4(1)	This command was introduced.

Usage Guidelines

The **show consistency-checker** command is a troubleshooting tool that helps to identify inconsistent state between software and hardware tables in the switch. Such conditions are abnormal and may lead to data forwarding issues in the switch. Programmatic checking by this command assures accuracy of checks and reduces the time to identify the table inconsistencies.

This command should be used as part of troubleshooting when data forwarding issues are suspected. It compares the software state of the supervisor with the hardware state of supported I/O modules. The specified consistency check is done at the time the command is issued and the results are displayed. Detailed information about detected inconsistencies is displayed to direct further detailed debugging.

Examples

The following example runs the ACL Consistency Checker for module 3 on demand and displays the results. This example shows the abnormal case of test failure.

```
switch# show coonsistency-checker acl-table-status module 3
Running ACL Consistency checker. Please wait, while consistency checks are in progress!!!

------------------------------------------------------------------------------------------------------------------------

                                                    MODULE-3

Validating ingress ACL IPS entries for all fwd-engine...
Validating egress ACL IPS entries for all fwd-engine...
Validating ingress ACL FC entries
fwd-engine 0...
fwd-engine 1...
fwd-engine 2...
Validating egress ACL FC entries
fwd-engine 0...
fwd-engine 1...
fwd-engine 2...
```

```
DETAILED SUMMARY:
input
    Fwd-Engine: all
        Shadow & Hardware Sync Errors:
            Mismatch Count: HW(1) SW(1)
Hardware Mismatch Entries:
   d ALL     0      0      0 ANY       NA   4       22   0    0  78   0    0 |    1  0    0      0
 0
Shadow Mismatch Entries:
   d ALL     0      0      0  15  2ec ANY       -    4       22   0    0  78   0    0 |    1  0    0
   0      0

output
============================================================
SUMMARY:
MODULE : 3
    TIME TAKEN:                      61.23 seconds
    IPS HARDWARE & SHADOW SYNC STATUS: FAILED
    FC HARDWARE & SHADOW SYNC STATUS: PASSED
    FC DUPLICATE CHECKS:             PASSED
============================================================
```

The following example runs the FIB Consistency Checker for module 1 on demand and displays the results. This example shows the abnormal case of test failures.

```
switch# show consistency-checker fib-table-status module 1
Running FC FIB Consistency checker. Please wait, while consistency checks are in progress!!!

--------------------------------------------------------------------------------
                                  MODULE-1

Validating FIB IPS Fwd Hardware and Software Entries
fwd-engine 0...
Validating FIB FC Fwd Hardware and Software Entries
fwd-engine 0...
fwd-engine 1...
fwd-engine 2...
Validating FIB FC ADJ Hardware and Shadow Entries...
fwd-engine 0...
fwd-engine 1...
fwd-engine 2...

DETAILED SUMMARY:
Fwd Engine: 0
 FORWARDING TABLE
All fields in hex except VSAN

Route                Fwd   Fwd  | Num   Grp   Path  Adj
Type   VSAN D ID     Idx   DRAM | Path  Idx   Idx   Idx   VDC  FE
----   ---- ------  -----  ---- + ----  ----  ----  ----  ---  --
 Hardware Mismatch Entries:
wka    0000 fffffe   07d2  1d01 | 1     ....  ....  004c  01   00 0

 Software Mismatch Entries:
wka    0000 fffffe   07d2  1d01 | 1     ....  ....  004f  01   00 0

Fwd Engine: 0
 ADJACENCY TABLE
M:multicast I:D_IDX_CTL S:span B:bundle F:fcoe_bit
All fields in hex.

Adj                                          | Fwd
Idx   DIdx/fcoe_base M I B Span  fcoe_bit    | Idx
----- ------------------------------------ + ----
 Hardware Mismatch Entries:
```

```
00001    000         F F F 00000    T        | 0017 0

 Software Mismatch Entries:
00001    03e        F F F 00000      F       | 0017 0
============================================================
SUMMARY:
Module : 1
    Time Taken:                         31.24 seconds
    FWDFC Table Hardware & Software Sync Status: PASSED
    FWDIPS Table Hardware & Software Sync Status: FAILED
         Hardware Mismatch Counts: 1
         Software Mismatch Counts: 1
    ADJFC Table Hardware & Software Sync Status: FAILED
         Hardware Mismatch Counts: 1
         Software Mismatch Counts: 1
============================================================
```

The following example displays the persistent storage service (PSS) Consistency Checker information on an active supervisor. This example shows the abnormal case of test failure.

```
switch# show consistency-checker pss
PSS CONSISTENCY CHECK RESULT FOR ELTM: SUCCESS
---------------------------------------------------------------
No inconsistency detected in ELTM data
===============================================================
PSS CONSISTENCY CHECK RESULT FOR ETHPM: SUCCESS
---------------------------------------------------------------
No inconsistency detected in ethpm persistent, runtime and shared data.
===============================================================
-----------------------------------------------------------
ATTRIBUTE NAME         : Flogi info Runtime Data
INCONSISTENT INTERFACE : fc2/13
-----------------------------------------------------------
PSS CONSISTENCY CHECK RESULT FOR FPORT_SVR: FAILURE
---------------------------------------------------------------
Please collect tech-support for fport_svr for more details.
===============================================================
PSS CONSISTENCY CHECK RESULT FOR STP: SUCCESS
---------------------------------------------------------------
No inconsistency detected in STP CBL data
===============================================================
PSS CONSISTENCY CHECK RESULT FOR VLAN_MGR: SUCCESS
---------------------------------------------------------------
No inconsistency detected in vlan_mgr persistent, runtime and shared data.
===============================================================
```

Related Commands

Command	Description
show module	Displays module information, including the online diagnostic test status.

show consistency-checker analytics

To identify inconsistencies in SAN analytics components such as NPU, modules, queries, database, analytics ACL entries, and so on, use the **show consistency-checker analytics** command.

show consistency-checker analytics

Command Default

None.

Command Modes

Privileged EXEC (#)

Command History

Release	Modification
9.2(1)	This command was introduced.

Usage Guidelines

This command is a troubleshooting tool that helps to identify inconsistencies in SAN analytics components such as NPU, modules, queries, database, port-sampling configuration and so on. Such inconsistencies are abnormal and may lead to issues on the switch. Programmatic checking by this command assures accuracy of checks and reduces the time to identify such inconsistencies.

This command should be used as part of troubleshooting when SAN analytics issues are suspected. The specified consistency check is done at the time the command is issued and the results are displayed. Detailed information about the detected inconsistencies is displayed to direct further detailed debugging.

The following example displays how to display the inconsistencies in SAN analytics:

```
switch# show consistency-checker analytics


Analytics Consistency Checker:

Checking for Analytics related consistency checks for the SUP:

Checking for queries consistency...  - Skipped (Queries not configured) Checking for global database consistency... - Passed Checking for query_id consistency...  - Passed

Checking for Analytics related consistencies for the Line Cards:

Module 1 :


Checking for ifindex consistency...  - Passed Checking for ACL consistency...
Running config: SCSI+NVME both for interface fc1/3 Running config: SCSI+NVME both for interface fc1/4 ACL TCAM: SCSI+NVME both for interface fc1/3 ACL TCAM: SCSI+NVME both for
 interface fc1/4 Running config and ACL TCAM entries are consistent for all interfaces Checking for extra entries in ACL. Please wait...
No extra analytics entry found for non-analytics interfaces. Consistency check successful.
Checking for bcm status...
BCM Status passed successfully.
Checking for Port-Sampling Config Consistency.....
========>>>>>>> Skipped (Not Configured on SUP and Linecard)


No EIOA drops seen
No MPP drops seen
XGMAC9 Port Link =>  UP!!!


Both XFI links are UP!

Traps observed in ncpmgr: 0
```

Related Commands

Command	Description
show consistency-checker	Verifies the consistency between various internal system tables.

show copyright

To display the NX-OS software copyright statement, use the **show copyright** command in EXEC mode.

show copyright

Syntax Description

This command has no arguments or keywords.

Command Default

None.

Command Modes

EXEC mode.

Command History

Release	Modification
3.0(2)	This command was introduced.
NX-OS 4.1(1b)	Changed the command output from SAN-OS to NX-OS.

Usage Guidelines

Use the **show copyright** command to verify the copyright statement of the current NX-OS image.

Examples

The following example displays copyright information for NX-OS software:

```
switch# show copyright
Cisco Nexus Operating System (NX-OS) Software
TAC support: http://www.cisco.com/tac
Copyright (c) 2002-2008, Cisco Systems, Inc. All rights reserved.
The copyrights to certain works contained in this software are
owned by other third parties and used and distributed under
license. Certain components of this software are licensed under
the GNU General Public License (GPL) version 2.0 or the GNU
Lesser General Public License (LGPL) Version 2.1. A copy of each
such license is available at
http://www.opensource.org/licenses/gpl-2.0.php and
http://www.opensource.org/licenses/lgpl-2.1.php
switch#
```

show cores

To display a list of core bundles in the switch core repository, use the **show cores** command.

show cores

Syntax Description

This command has no arguments or keywords.

Command Default

None.

Command Modes

Privileged EXEC (#)

Command History

Release	Modification
1.0(2)	This command was introduced.

Usage Guidelines

The core repository can hold around 10 core bundles. Each platform has different limits. Therefore, it is important to copy core bundles to mass storage and then delete them from the repository to free up space.

Examples

This example shows the list of core bundles in the switch core repository:

```
switch# show cores
Module  Instance  Process-name     PID       Date(Year-Month-Day Time)
------  --------  ---------------  --------  -------------------------
5       1         kernel           1         2021-04-20 08:18:55
```

Related Commands

Command	Description
clear cores	Deletes all core bundles.
clear *core_file*	Deletes a single core bundle.
copy	Copies files from source to destination.
system cores	Automatically copies core bundles.
system kernel	Enables kernel core logging.

show crypto ca certificates

To display configured trust point certificates, use the **show crypto ca certificates** command.

show crypto ca certificates *trustpoint-label*

Syntax Description

trustpoint-label	Specifies the name of the trust point. The maximum size is 64 characters.

Command Default

None.

Command Modes

EXEC mode.

Command History

Release	Modification
3.0(1)	This command was introduced.

Usage Guidelines

This command displays the important fields in the identity certificate, if present, followed by those in the CA certificate (or each CA certificate if it is a chain, starting from the lowest to the self-signed root certificate), or the trust point. If the trust point name is not specified, all trust point certificate details are displayed.

Examples

The following example displays configured trust point certificates:

```
switch# show crypto ca certificates
Trustpoint: admin-ca
certificate:
subject= /CN=switch160
issuer= /C=US/O=cisco/CN=Aparna CA2
serial=6CDB2D9E000100000006
notBefore=Jun  9 10:51:45 2005 GMT
notAfter=May  3 23:10:36 2006 GMT
MD5 Fingerprint=0A:22:DC:A3:07:2A:9F:9A:C2:2C:BA:96:EC:D8:0A:95
purposes: sslserver sslclient ike
CA certificate 0:
subject= /C=US/O=cisco/CN=Aparna CA2
issuer= /emailAddress=amandke@cisco.com/C=IN/ST=Maharashtra/L=Pune/O=cisco/OU=ne
tstorage/CN=Aparna CA1
serial=14A3A877000000000005
notBefore=May  5 18:43:36 2005 GMT
notAfter=May  3 23:10:36 2006 GMT
MD5 Fingerprint=32:50:26:9B:16:B1:40:A5:D0:09:53:0A:98:6C:14:CC
purposes: sslserver sslclient ike
CA certificate 1:
subject= /emailAddress=amandke@cisco.com/C=IN/ST=Maharashtra/L=Pune/O=cisco/OU=n
etstorage/CN=Aparna CA1
issuer= /emailAddress=amandke@cisco.com/C=IN/ST=Karnataka/L=Bangalore/O=Cisco/OU
=netstorage/CN=Aparna CA
serial=611B09A1000000000002
notBefore=May  3 23:00:36 2005 GMT
notAfter=May  3 23:10:36 2006 GMT
MD5 Fingerprint=65:CE:DA:75:0A:AD:B2:ED:69:93:EF:5B:58:D4:E7:AD
purposes: sslserver sslclient ike
CA certificate 2:
subject= /emailAddress=amandke@cisco.com/C=IN/ST=Karnataka/L=Bangalore/O=Cisco/O
```

```
U=netstorage/CN=Aparna CA
issuer= /emailAddress=amandke@cisco.com/C=IN/ST=Karnataka/L=Bangalore/O=Cisco/OU
=netstorage/CN=Aparna CA
serial=0560D289ACB419944F4912258CAD197A
notBefore=May  3 22:46:37 2005 GMT
notAfter=May  3 22:55:17 2007 GMT
MD5 Fingerprint=65:84:9A:27:D5:71:03:33:9C:12:23:92:38:6F:78:12
purposes: sslserver sslclient ike
```

Related Commands

Command	Description
crypto ca authenticate	Authenticates the certificate of the CA.
show ca trustpoints	Displays trust point configurations.

show crypto ca crl

To display configured certificate revocation lists (CRLs), use the **show crypto ca crl** command.

show crypto ca crl trustpoint-label

Syntax Description

trustpoint-label	Specifies the name of the trust point. The maximum size is 64 characters.

Command Default

None.

Command Modes

EXEC mode.

Command History

Release	Modification
3.0(1)	This command was introduced.

Usage Guidelines

This command lists serial numbers of revoked certificates in the CRL of the specified trust point.

Examples

The following example displays a configured CRL:

```
switch# show crypto ca crl admin-ca
Trustpoint: admin-ca
CRL:
Certificate Revocation List (CRL):
        Version 2 (0x1)
        Signature Algorithm: sha1WithRSAEncryption
        Issuer: /emailAddress=rviyyoka@cisco.com/C=IN/ST=Kar/L=Bangalore/O=Cisco
 Systems/OU=1/CN=cisco-blr
        Last Update: Sep 22 07:05:23 2005 GMT
        Next Update: Sep 29 19:25:23 2005 GMT
        CRL extensions:
            X509v3 Authority Key Identifier:
            keyid:CF:72:E1:FE:14:60:14:6E:B0:FA:8D:87:18:6B:E8:5F:70:69:05:3F
            1.3.6.1.4.1.311.21.1:
                ...
Revoked Certificates:
    Serial Number: 1E0AE838000000000002
        Revocation Date: Mar 15 09:12:36 2005 GMT
    Serial Number: 1E0AE9AB000000000003
        Revocation Date: Mar 15 09:12:45 2005 GMT
    Serial Number: 1E721E50000000000004
        Revocation Date: Apr  5 11:04:20 2005 GMT
    Serial Number: 3D26E445000000000005
        Revocation Date: Apr  5 11:04:16 2005 GMT
    Serial Number: 3D28F8DF000000000006
        Revocation Date: Apr  5 11:04:12 2005 GMT
    Serial Number: 3D2C6EF3000000000007
        Revocation Date: Apr  5 11:04:09 2005 GMT
    Serial Number: 3D4D7DDC000000000008
        Revocation Date: Apr  5 11:04:05 2005 GMT
    Serial Number: 5BF1FE87000000000009
        Revocation Date: Apr  5 11:04:01 2005 GMT
    Serial Number: 5BF22FB300000000000A
```

```
    Revocation Date: Apr  5 11:03:45 2005 GMT
Serial Number: 5BFA4A4900000000000B
    Revocation Date: Apr  5 11:03:42 2005 GMT
Serial Number: 5C0BC225000000000000C
    Revocation Date: Apr  5 11:03:39 2005 GMT
Serial Number: 5C0DA95E00000000000D
    Revocation Date: Apr  5 11:03:35 2005 GMT
Serial Number: 5C137769000000000000E
    Revocation Date: Apr  5 11:03:31 2005 GMT
Serial Number: 4864FD5A00000000000F
    Revocation Date: Apr  5 11:03:28 2005 GMT
Serial Number: 48642E2E000000000010
    Revocation Date: Apr  5 11:03:24 2005 GMT
Serial Number: 486D4230000000000011
    Revocation Date: Apr  5 11:03:20 2005 GMT
Serial Number: 7FCB75B9000000000012
    Revocation Date: Apr  5 10:39:12 2005 GMT
Serial Number: 1A7519000000000013
    Revocation Date: Apr  5 10:38:52 2005 GMT
Serial Number: 20F1B0000000000014
    Revocation Date: Apr  5 10:38:38 2005 GMT
Serial Number: 436E43A90000000000023
    Revocation Date: Sep  9 09:01:23 2005 GMT
    CRL entry extensions:
        X509v3 CRL Reason Code:
        Cessation Of Operation
Serial Number: 152D3C5E000000000047
    Revocation Date: Sep 22 07:12:41 2005 GMT
Serial Number: 1533AD7F000000000048
    Revocation Date: Sep 22 07:13:11 2005 GMT
Serial Number: 1F9EB8EA00000000006D
    Revocation Date: Jul 19 09:58:45 2005 GMT
    CRL entry extensions:
        X509v3 CRL Reason Code:
        Cessation Of Operation
Serial Number: 1FCA9DC600000000006E
    Revocation Date: Jul 19 10:17:34 2005 GMT
    CRL entry extensions:
        X509v3 CRL Reason Code:
        Cessation Of Operation
Serial Number: 2F1B5E2E000000000072
    Revocation Date: Jul 22 09:41:21 2005 GMT
    CRL entry extensions:
        X509v3 CRL Reason Code:
        Cessation Of Operation
Signature Algorithm: sha1WithRSAEncryption
    4e:3b:4e:7a:55:6b:f2:ec:72:29:70:16:2a:fd:d9:9a:9b:12:
    f9:cd:dd:20:cc:e0:89:30:3b:4f:00:4b:88:03:2d:80:4e:22:
    9f:46:a5:41:25:f4:a5:26:b7:b6:db:27:a9:64:67:b9:c0:88:
    30:37:cf:74:57:7a:45:5f:5e:d0
```

Related Commands

Command	Description
crypto ca crl request	Configures a CRL or overwrites the existing one for the trust point CA.

show crypto ca remote-certstore

To display configured remote certstores, use the show crypto ca remote-certstore command.

show crypto ca remote certstore

Syntax Description

This command has no arguments or keywords.

Command Default

None.

Command Modes

EXEC mode.

Command Default

None.

Command History

Release	Modification
NX-OS 5.0(1a)	This command was introduced.

Usage Guidelines

None.

Note In the current 5.0 release only ssh-client will use remote certstore. Other applications like ike, callhome will continue using local certstore irrespective of the configurations.

Examples

The following example shows how to display configured remote certstores:

```
switch# show crypto ca remote-certstore
Remote Certstore:LDAP
CRL Timer : 10 Hours
LDAP Server group : Ldap1
switch#
```

Related Commands

Command	Description
crypto certificatemap mapname	Specifies the certificate map that will be used for filtering the certificate request.

show crypto ca trustpoints

To display trust point configurations, use the **show crypto ca trustpoints** command.

show crypto ca trustpoints

Syntax Description

This command has no arguments or keywords.

Command Default

None.

Command Modes

EXEC mode.

Command History

Release	Modification
3.0(1)	This command was introduced.

Usage Guidelines

None.

Examples

The following example displays configured trust points:

```
switch# show crypto ca trustpoints
trustpoint: CAname; key:
revokation methods:  crl
```

Related Commands

Command	Description
crypto ca authenticate	Authenticates the certificate of the CA.
crypto ca trustpoint	Declares the trust point certificate authority that the switch should trust.
show crypto ca certificates	Displays configured trust point certificates.

show crypto certificatemap

To display certificatemap filters, use the show crypto certificatemap command.

show crypto certificatemap

Syntax Description

This command has no arguments or keywords.

Command Default

None.

Command Modes

EXEC mode.

Command Default

None.

Command History

Release	Modification
NX-OS 5.0(1a)	This command was introduced.

Usage Guidelines

None.

Examples

The following example shows how to display certificatemap filters:

```
switch# show crypto certificatemap
Map Name: map1
Subject name: /DCBU
Altname Email: koukumar@cisco.com
Altname UPN:
switch#
```

Related Commands

Command	Description
crypto certificatemap mapname	Specifies the certificate map that will be used for filtering the certificate request.

show crypto global domain ipsec

To display global IPsec crypto map set information, use the **show crypto global domain ipsec** command.

show crypto global domain ipsec [**interface gigabitethernet** *slot*/*port* | **security-association lifetime**]

Syntax Description

interface gigabitethernet *slot/port*	(Optional) Displays crypto IPsec domain information for the specified Gigabit Ethernet interface slot and port.
security-association lifetime	(Optional) Displays crypto IPsec domain security association lifetime parameters.

Command Default

None.

Command Modes

EXEC mode.

Command History

Release	Modification
2.0(x)	This command was introduced.

Usage Guidelines

To use this command, IPsec must be enabled using the **crypto ipsec enable** command.

Examples

The following example shows how to display crypto global domain IPsec statistics:

```
switch# show crypto global domain ipsec
IPSec global statistics:
        Number of crypto map sets: 2
```

The following example shows how to display crypto global domain IPsec statistics for an interface:

```
switch# show crypto global domain ipsec interface gigabitethernet 1/2
IPSec interface statistics:
        IKE transaction stats: 0 num
        Inbound SA stats: 0 num, 512 max
        Outbound SA stats: 0 num, 512 max
```

The following example shows how to display crypto global domain IPsec security association lifetime parameters:

```
switch# show crypto global domain ipsec security-association lifetime
Security Association Lifetime: 4500 megabytes/3600 seconds
```

Related Commands

Command	Description
crypto global domain ipsec security-association lifetime	Configures global attributes for IPsec.
crypto ipsec enable	Enables IPsec.

show crypto ike domain ipsec

To display IKE protocol information, use the **show crypto ike domain ipsec** command.

show crypto ike domain ipsec [**initiator** [**address** *ip-address*] | **keepalive** | **key** [**address** *ip-address*] | **policy** [*policy-number*] | **sa**]

Syntax Description

initiator	(Optional) Displays initiator configuration information.
address *ip-address*	Specifies the initiator peer IP address.
keepalive	(Optional) Displays keepalive for the IKE protocol in seconds
key	(Optional) Displays pre-shared authentication keys.
policy *policy-number*	Displays IKE configuration policies for IPsec. The range is 1 to 255.
sa	(Optional) Displays IKE Security Associations for IPsec.

Command Default

To use this command, the IKE protocol must be enabled using the **crypto ike enable** command.

Command Modes

EXEC mode.

Command History

Release	Modification
2.0(x)	This command was introduced.

Usage Guidelines

To use this command, the IKE protocol must be enabled using the **crypto ike enable** command.

Examples

The following example shows how to display IKE keepalive value configuration information:

```
switch# show crypto ike domain ipsec keepalive
keepalive 3600
```

Related Commands

Command	Description
crypto ike domain ipsec	Enters IKE configuration mode.
crypto ike enable	Enables the IKE protocol.

show crypto key mypubkey rsa

To display any RSA public key configurations, use the **show crypto key mypubkey rsa** command.

show crypto key mypubkey rsa

Syntax Description

This command has no arguments or keywords.

Command Default

None.

Command Modes

EXEC mode.

Command History

Release	Modification
3.0(1)	This command was introduced.

Usage Guidelines

None.

Examples

The following example displays RSA public key configurations:

```
switch# show crypto key mupubkey rsa
key label: myrsa
key size: 512
exportable: yes
```

Related Commands

Command	Description
crypto ca enroll	Requests certificates for the switch's RSA key pair.
crypto key generate rsa	Generates an RSA key pair.
rsakeypair	Configures trust point RSA key pair details

show crypto map domain ipsec

To map configuration information for IPsec, use the **show crypto map domain ipsec** command.

`show crypto map domain ipsec [interface gigabitethernet` *slot* `/` *port* `|tag` *tag-name*`]`

Syntax Description

interface gigabitethernet *slot*/*port*	(Optional) Displays IPsec map information for a specific Gigabit Ethernet interface.
tag *tag-name*	(Optional) Displays IPsec map information for a specific tag name. The maximum length is 63 characters.

Command Default

Displays all IPsec map information.

Command Modes

EXEC mode.

Command History

Release	Modification
2.0(x)	This command was introduced.

Usage Guidelines

To use this command, IPsec must be enabled using the **crypto ipsec enable** command.

Examples

The following example shows how to display IPsec crypto map information:

```
switch# show crypto map domain ipsec
Crypto Map "cm10" 1 ipsec
        Peer = 10.10.10.4
        IP ACL = aclmds10
            permit ip 10.10.10.1 255.255.255.255 10.10.10.4 255.255.255.255
        Transform-sets: 3des-md5, 3des-sha, des-md5, des-sha,
        Security Association Lifetime: 450 gigabytes/3600 seconds
        PFS (Y/N): N
Crypto Map "cm10" 2 ipsec
        Peer = Auto Peer
        IP ACL = acl10
            permit ip 10.10.10.0 255.255.255.0 10.10.10.0 255.255.255.0
        Transform-sets: 3des-md5, 3des-sha, des-md5, des-sha,
        Security Association Lifetime: 450 gigabytes/3600 seconds
        PFS (Y/N): N
Crypto Map "cm11" 1 ipsec
        Peer = 10.10.11.2
        IP ACL = aclany
            permit ip any any
        Transform-sets: 3des-md5, 3des-sha, des-md5, des-sha,
        Security Association Lifetime: 450 gigabytes/3600 seconds
        PFS (Y/N): N
Crypto Map "cm50" 1 ipsec
        Peer = 10.10.50.2
        IP ACL = aclany
            permit ip any any
        Transform-sets: 3des-md5,
```

```
        Security Association Lifetime: 450 gigabytes/3600 seconds
        PFS (Y/N): N
Interface using crypto map set cm50:
    GigabitEthernet1/2.1
Crypto Map "cm51" 1 ipsec
        Peer = 10.10.51.2
        IP ACL = aclany
            permit ip any any
        Transform-sets: 3des-md5,
        Security Association Lifetime: 450 gigabytes/3600 seconds
        PFS (Y/N): N
Interface using crypto map set cm51:
    GigabitEthernet1/2.2
Crypto Map "cm60" 1 ipsec
        Peer = 10.10.60.2
        IP ACL = acl60
            permit ip 10.10.60.0 255.255.255.0 10.10.60.0 255.255.255.0
        Transform-sets: 3des-md5,
        Security Association Lifetime: 450 gigabytes/3600 seconds
        PFS (Y/N): N
Interface using crypto map set cm60:
    GigabitEthernet1/2
Crypto Map "cm100" 1 ipsec
        Peer = 10.10.100.221
        IP ACL = aclmds100
            permit ip 10.10.100.231 255.255.255.255 10.10.100.221 255.255.255.255
        Transform-sets: 3des-md5, 3des-sha, des-md5, des-sha,
        Security Association Lifetime: 450 gigabytes/3600 seconds
        PFS (Y/N): N
Crypto Map "cm100" 2 ipsec
        Peer = Auto Peer
        IP ACL = acl100
            permit ip 10.10.100.0 255.255.255.0 10.10.100.0 255.255.255.0
        Transform-sets: 3des-md5, 3des-sha, des-md5, des-sha,
        Security Association Lifetime: 450 gigabytes/3600 seconds
        PFS (Y/N): N
```

Related Commands

Command	Description
crypto ipsec enable	Enables IPsec.
crypto map domain ipsec	Enters IPsec map configuration mode.

show crypto sad domain ipsec

To display IPsec security association database information, use the **show crypto sad domain ipsec** command.

show crypto sad domain ipsec [**interface gigabitethernet** *slot* / *port* [{**inbound** | **outbound**} **sa-index** *index*]]

Syntax Description

interface gigabitethernet *slot*/*port*	(Optional) Displays IPsec security association information for a specific Gigabit Ethernet interface.
inbound	(Optional) Specifies the inbound association.
outbound	(Optional) Specifies the outbound association.
sa-index *index*	(Optional) Specifies the security association index. The range is 0 to 2147483647.

Command Default

None.

Command Modes

EXEC mode.

Command History

Release	Modification
2.0(x)	This command was introduced.

Usage Guidelines

To use this command, IPsec must be enabled using the **crypto ipsec enable** command.

Examples

The following example shows how to display IPsec security association information:

```
switch# show crypto sad domain ipsec
interface: GigabitEthernet4/1
    Crypto map tag: cm10, local addr. 10.10.10.1
    protected network:
    local ident (addr/mask): (10.10.10.0/255.255.255.0)
    remote ident (addr/mask): (10.10.10.4/255.255.255.255)
    current_peer: 10.10.10.4
      local crypto endpt.: 10.10.10.1, remote crypto endpt.: 10.10.10.4
      mode: tunnel, crypto algo: esp-3des, auth algo: esp-md5-hmac
    current outbound spi: 0x30e000f (51249167), index: 0
      lifetimes in seconds:: 120
      lifetimes in bytes:: 423624704
    current inbound spi: 0x30e0000 (51249152), index: 0
      lifetimes in seconds:: 120
      lifetimes in bytes:: 423624704
```

Related Commands

Command	Description
crypto ipsec enable	Enables IPsec.

show crypto spd domain ipsec

To display the security policy database (SPD), use the **show crypto spd domain ipsec** command.

`show crypto spd domain ipsec` [`interface gigabitethernet` *slot* `/` *port* [`policy` *number*]]

Syntax Description

interface gigabitethernet *slot*/*port*	(Optional) Displays SPD information for a specific Gigabit Ethernet interface.
policy *number*	(Optional) Specifies a SPD policy number.

Command Default

Displays all SPD information.

Command Modes

EXEC mode.

Command History

Release	Modification
2.0(x)	This command was introduced.

Usage Guidelines

To use this command, IPsec must be enabled using the **crypto ipsec enable** command.

Examples

The following example shows how to display the SPD:

```
switch# show crypto spd domain ipsec
Policy Database for interface: GigabitEthernet1/1, direction: Both
#   0:      deny  udp any port eq 500 any
#   1:      deny  udp any any port eq 500
#   2:      permit ip any any
#  63:      deny  ip any any
Policy Database for interface: GigabitEthernet1/2, direction: Both
#   0:      deny  udp any port eq 500 any
#   1:      deny  udp any any port eq 500
#   3:      permit ip 10.10.50.1 255.255.255.255 10.10.50.2 255.255.255.255
#   4:      permit ip 10.10.51.1 255.255.255.255 10.10.51.2 255.255.255.255
#  63:      deny  ip any any
```

Related Commands

Command	Description
crypto ipsec enable	Enables IPsec.

show crypto ssh-auth-map

To display mapping filters applied for SSH authentication, use the show crypto ssh-auth-map command.

show crypto ssh-auth-map

Syntax Description

This command has no arguments or keywords.

Command Default

None.

Command Modes

EXEC mode.

Command Default

None.

Command History

Release	Modification
NX-OS 5.0(1a)	This command was introduced.

Usage Guidelines

None.

Examples

The following example shows how to display mapping filters applied for SSH authentication:

```
switch# show crypto ssh-auth-map
Issuer Name: /DCBU
Map1: map1
Map2: map2
switch#
```

Related Commands

Command	Description
crypto certificatemap mapname	Specifies the certificate map that will be used for filtering the certificate request.

show crypto transform-set domain ipsec

To display transform set information for IPsec, use the **show crypto transform-set domain ipsec** command.

show crypto transform-set domain ipsec [*set-name*]

Syntax Description

set-name	(Optional) Specifies the transform set name. Maximum length is 63 characters.

Command Default

Displays information for all transform sets.

Command Modes

EXEC mode.

Command History

Release	Modification
2.0(x)	This command was introduced.

Usage Guidelines

To use this command, IPsec must be enabled using the **crypto ipsec enable** command.

Examples

The following example shows how to display information for all IPsec transform sets:

```
switch# show crypto transform-set domain ipsec
Transform set: ipsec_default_transform_set {esp-aes-256-ctr esp-aes-xcbc-mac}
    will negotiate {tunnel}
```

Related Commands

Command	Description
crypto ipsec enable	Enables IPsec.
crypto transform-set domain ipsec	Configures IPsec transform set information.

show debug

To display all Cisco SME related debug commands configured on the switch, use the show debug command.

show debug {**cluster** {**bypass** | **sap sap bypass**} | **sme bypass**}

Syntax Description

cluster	Displays all the debugging flags.
bypass	Displays the bypass flags.
sap sap	Displays all debugging flags of SAP. Specifies the SAP in the range from 1 to 65535.
sme	Displays all the debugging flags of Cisco SME.
bypass	Displays all the bypass flags of Cisco SME.

Command Default

None.

Command Modes

EXEC mode.

Command History

Release	Modification
3.2(2c)	This command was introduced.
NX-OS 4.1(1c)	Added the syntax description.

Usage Guidelines

None.

Examples

The following example shows all debug commands configured on the switch:

```
switch# show debug
ILC helper:
 ILC_HELPER errors debugging is on
 ILC_HELPER info debugging is on
```

Related Commands

Commands	Description
debug sme	Debugs Cisco SME features.

show debug logfile

To display the debug messages that are saved in the debug log file, use the **show debug logfile** command.

show debug logfile filename

Syntax Description

filename	Specifies the debug log file name. Maximum length is 80 characters.

Command Default

None.

Command Modes

EXEC mode.

Command History

This command was introduced in Cisco MDS SAN-OS Release 1.0(2).

Usage Guidelines

None.

Examples

The following example displays the debug messages in the specified debug log file.

```
switch# show debug logfile SampleFile
2004 Jun 28 00:14:17 snmpd[2463]: header_fspfLinkEntry : Sending GETNEXT request
 for fspfLsrTable for vsanIndex  =0,fspfLsrDomainId = 0, fspfLsrType = 0
2004 Jun 28 00:14:17 snmpd[2463]: header_fspfLinkEntry : Sending GETNEXT request
 for fspfLsrTable for vsanIndex  =0,fspfLsrDomainId = 0, fspfLsrType = 0
2004 Jun 28 00:14:17 snmpd[2463]: header_fspfLinkEntry : Recd rsp for GETNEXT fo
r entry (vsanIndex=1,fspfLsrDomainId = 10, fspfLsrType=0, fspfLinkIndex = 1,fspf
LinkNbrDomainId = 84, fspfLinkPortIndex = 67331,fspfLinkNbrPortIndex = 66064, fs
pfLinkType = 1,fspfLinkCost = 500
2004 Jun 28 00:14:17 snmpd[2463]: header_fspfLinkEntry : Sending GETNEXT request
 for fspfLsrTable for vsanIndex  =1,fspfLsrDomainId = 209, fspfLsrType = 0
2004 Jun 28 00:14:17 snmpd[2463]: header_fspfLinkEntry : Sending GETNEXT request
 for fspfLsrTable for vsanIndex  =16777216,fspfLsrDomainId = 3506438144, fspfLsr
Type = 0
2004 Jun 28 00:14:17 snmpd[2463]: header_fspfLinkEntry : Sending GETNEXT request
 for fspfLsrTable for vsanIndex  =33554432,fspfLsrDomainId = 4009754624, fspfLsr
Type = 16777216
```

show debug npv

To display the N Port Virtualization (NPV) debug commands configured on the switch, use the show debug npv command.

show debug npv

Syntax Description

This command has no arguments or keywords.

Command Default

None.

Command Modes

EXEC mode.

Command History

Release	Modification
3.2(1)	This command was introduced.

Usage Guidelines

None.

Examples

The following example shows all NPV debug commands configured on the switch:

```
switch# show debug npv
N_port Virtualizer:
 FC Receive Packets debugging is on
 FC Transmit Packets debugging is on
 FC Receive Packet header debugging is on
 FC Transmit Packet header debugging is on
 MTS Receive Packets debugging is on
 MTS Transmit Packets debugging is on
 MTS Receive Packet header/payload debugging is on
 MTS Transmit Packet header/payload debugging is on
 High Availability debugging is on
 FSM Transitions debugging is on
 Error debugging is on
 Warning debugging is on
 Trace debugging is on
 Trace Detail debugging is on
 Demux debugging is on
 Dequeue debugging is on
 Packets debugging is on
 Database debugging is on
 Timers debugging is on
 External Interface FSM Events debugging is on
 External Interface FSM Errors debugging is on
 External Interface FSM Trace debugging is on
 FLOGI FSM Events debugging is on
 FLOGI FSM Errors debugging is on
 FLOGI FSM Trace debugging is on
 Server Interface FSM Events debugging is on
 Server Interface FSM Errors debugging is on
 Server Interface FSM Trace debugging is on
 Events debugging is on
```

Related Commands

Command	Description
debug npv	Enables debugging NPV configurations.

show debug sme

To display all Cisco SME related debug commands configured on the switch, use the show debug command.

show debug {**cluster** {**bypass** | **sap sap**} | **sme bypass**}

Syntax Description

cluster	Displays all the debugging flags.
bypass	Displays the bypass flags.
sap sap	Displays all debugging flags of SAP. Specifies the SAP in the range from 1 to 65535.
sme	Displays all the debugging flags of Cisco SME.
bypass	Displays all the bypass flags of Cisco SME.

Command Default

None.

Command Modes

EXEC mode.

Command History

Release	Modification
3.2(2)	This command was introduced.

Usage Guidelines

None.

Examples

The following example shows all debug commands configured on the switch:

```
switch# show debug
ILC helper:
 ILC_HELPER errors debugging is on
 ILC_HELPER info debugging is on
```

Related Commands

Commands	Description
debug sme	Debugs Cisco SME features.

show device-alias

To display the device name information, use the **show device-alias** command.

show device-alias {**database** [**pending** | **pending-diff**] | **name** *device-name* [**pending**] | **pwwn** *pwwn-id* [**pending**] | **session** {**rejected** | **status**} | **statistics** | **status**}

Syntax Description

database	Displays the entire device name database.
pending	(Optional) Displays the pending device name database information.
pending-diff	(Optional) Displays pending differences in the device name database information.
name *device-name*	Displays device name database information for a specific device name.
pwwn *pwwn-id*	Displays device name database information for a specific pWWN. The format is *hh*:*hh*:*hh*:*hh*:*hh*:*hh*:*hh*:*hh*, where *h* is a hexadecimal number.
session	Displays the session information.
rejected	Display the rejected command list.
status	Displays the device-alias session status.
statistics	Displays device name database statistics.
status	Displays the device name database status.

Command Default

None.

Command Modes

EXEC mode.

Command History

Release	Modification
6.2(9)	Added the rejected keyword to the syntax description.
2.0(x)	This command was introduced.

Usage Guidelines

To make use of fcaliases as device names instead of using the cryptic device name, add only one member per fcalias.

The device-alias configuration best practice has been described in the configuration guide.

Examples

The following example shows the set of rejected device-alias commands in a session:

```
switch(config-device-alias-db)# show device-alias session rejected
To avoid command rejections, within a device alias session
Do not reuse:
a) a device alias name while configuring a rename command
b) a PWWN while configuring an add or delete command
```

```
c) a device alias name already renamed while configuring add command
Rejected commands must be committed in a separate device alias session
which may cause traffic interruption for those devices. Plan accordingly.
Refer to this command in the NX-OS Command Reference Guide
for more information about device alias configuration best practices


Rejected Command List
---------------------
device-alias name Dev1 pwwn 01:01:01:01:02:02:02:02
device-alias name Dev20 pwwn 01:01:01:01:02:02:02:02
switch(config-device-alias-db)#
```

The following examples shows the device-alias session status:

```
switch(config)# show device-alias session status
Last Action Time Stamp     : Tue Jul  1 01:54:21 2014
Last Action                : Commit
Last Action Result         : Success
Last Action Failure Reason : none
switch(config)#
```

The following example shows how to display the contents of the device alias database:

```
switch# show device-alias database
device-alias name efg pwwn 21:00:00:20:37:9c:48:e5
device-alias name fred pwwn 10:00:00:00:c9:2d:5a:de
device-alias name myalias pwwn 21:21:21:21:21:21:21:21
device-alias name test pwwn 21:00:00:20:37:6f:db:bb
device-alias name test2 pwwn 21:00:00:20:37:a6:be:35
Total number of entries = 5
```

The following example shows how to display all global fcaliases and all VSAN dependent fcaliases:

```
switch# show device-alias name efg
device-alias name efg pwwn 21:00:00:20:37:9c:48:e5
```

The following example shows how to display all global fcaliases and all VSAN dependent fcaliases:

```
switch# show device-alias statistics
        Device Alias Statistics
========================================
Lock requests sent: 1
Database update requests sent: 1
Unlock requests sent: 1
Lock requests received: 0
Database update requests received: 0
Unlock requests received: 0
Lock rejects sent: 0
Database update rejects sent: 0
Unlock rejects sent: 0
Lock rejects received: 0
Database update rejects received: 0
Unlock rejects received: 0
Merge requests received: 5
Merge request rejects sent: 0
Merge responses received: 0
Merge response rejects sent: 0
Activation requests received: 5
Activation request rejects sent: 0
Activation requests sent: 0
```

```
Activation request rejects received: 0
v_226# pwwn 21:00:00:20:37:6f:dc:0e
```

Related Commands

Command	Description
device-alias name	Configures device alias names.
device-alias database	Configures device alias information.
device-alias distribute	Enables device alias CFS distribution.

show device-alias status

To view the current device alias mode setting, use the device-alias status command.

show device-alias status

Syntax Description

This command has no arguments or keywords.

Command Default

Basic mode.

Command Modes

EXEC mode.

Command History

Release	Modification
3.1(1)	This command was introduced.

Usage Guidelines

None.

Examples

The following example shows how to display the device alias status:

```
switch# show device-alias status
Fabric Distribution: Enabled
Database:- Device Aliases 0 Mode: Basic
Locked By:- User "admin" SWWN 20:00:00:0d:ec:30:90:40
Pending Database:- Device Aliases 0 Mode: Basic
```

Related Commands

Command	Description
device-alias commit	Commits changes to the active device alias database.
device-alias database	Configures and activates the device alias database.

show diagnostic bootup level

To display the diagnostic bootup level information (bypass or complete) that is currently in place on the device, use the show diagnostic bootup level command.

show diagnostic bootup level

Syntax Description

This command has no arguments or keywords.

Command Default

None.

Command Modes

EXEC mode.

Command History

Release	Modification
6.2(1)	This command was introduced.

Usage Guidelines

None.

Examples

The following example shows how to display the diagnostic bootup level information (bypass or complete) that is currently in place on the device:

```
switch# show diagnostic bootup level
Current bootup diagnostic level: complete
switch#
```

Related Commands

Commands	Description
debug sme	Debugs Cisco SME features.

show diagnostic content module

To display information about diagnostic test content for a module, use the show diagnostic content module command.

show diagnostic content module {**module-number** | **all**}

Syntax Description

module-number	Displays the module number. The range is from 1 to 10.
all	Displays all module ID.

Command Default

None.

Command Modes

EXEC mode.

Command History

Release	Modification
6.2(1)	This command was introduced.

Usage Guidelines

None.

Examples

The following example shows how to display information about diagnostic test content for a module:

```
switch# show diagnostic content module 1
Module 1: 2/4/8/10/16 Gbps Advanced FC Module
Diagnostics test suite attributes:
B/C/* - Bypass bootup level test / Complete bootup level test
 / NA
P/*   - Per port test / NA
M/S/* - Only applicable to active / standby unit / NA
D/N/* - Disruptive test / Non-disruptive test / NA
H/O/* - Always enabled monitoring test / Conditionally enable
d test / NA
F/*   - Fixed monitoring interval test / NA
X/*   - Not a health monitoring test / NA
E/*   - Sup to line card test / NA
L/*   - Exclusively run this test / NA
T/*   - Not an ondemand test / NA
A/I/* - Monitoring is active / Monitoring is inactive / NA
switch#
```

Related Commands

Commands	Description
debug sme	Debugs Cisco SME features.

show diagnostic description module

To display the diagnostic test description for a module, use the show diagnostic description module command.

show diagnostic description module module-number test [**test-id test-name** | **all**]

Syntax Description

module-number	Displays the module number. The range is from 1 to 10.
test	Displays the diagnostic test selection.
test-id	Displays the diagnostic test ID.
test-name	Displays the test name.
all	Displays all test ID.

Command Default

None.

Command Modes

EXEC mode.

Command History

Release	Modification
6.2(1)	This command was introduced.

Usage Guidelines

None.

Examples

The following example shows how to display the diagnostic test description for a module:

```
switch# show diagnostic description module 1 test all
ASICRegisterCheck :
        A health monitoring test,enabled by default that chec
ks read/write
        access to scratch registers on ASICs on the module.
PrimaryBootROM :
        A health monitoring test that verifies the primary Bo
otROM
        state.
SecondaryBootROM :
        A health monitoring test that verifies the secondary
BootROM
        state.
EOBCPortLoopback :
switch#
```

Related Commands

Commands	Description
debug sme	Debugs Cisco SME features.

show diagnostic events

To display the diagnostic events by error and information event type, use the show diagnostic events command.

show diagnostic events [**error** | **info**]

Syntax Description

error	Displays the error event type.
info	Displays the information event type.

Command Default

None.

Command Modes

EXEC mode.

Command History

Release	Modification
6.2(1)	This command was introduced.

Usage Guidelines

None.

Examples

The following example shows how to display the diagnostic events by error event type:

```
switch# show diagnostic events error
switch#
```

Related Commands

Commands	Description
debug sme	Debugs Cisco SME features.

show diagnostic isl result interface

To display the results of a Single Hop or Multihop Traffic Test on Cisco MDS 9700 Series Switches, use the **show diagnostic isl result interface** command.

show diagnostic isl result interface *interface id*

Syntax Description

interface id	Specifies the slot and port of an interface.

Command Default

None

Command Modes

Previleged EXEC mode

Command History

Release	Modification
8.3(1)	This command was introduced.

This example shows the results of a Single Hop Traffic Test:

```
switch# show  diagnostic isl result interface fc 5/3
-------------------------------------------------------------
 Single hop  Traffic test Result for port: fc5/3
Packets Transmitted:                            30621868
Packets Recieved:                               30621868
ISL traffic Efficiency (percent):               100.0000
-------------------------------------------------------------
```

show diagnostic ondemand setting

To display the information about on demand diagnostic settings, use the show diagnostic ondemand setting command.

show diagnostic ondemand setting

Syntax Description

This command has no arguments or keywords.

Command Default

None.

Command Modes

EXEC mode.

Command History

Release	Modification
6.2(1)	This command was introduced.

Usage Guidelines

None.

Examples

The following example shows how to display the information about on demand diagnostic settings:

```
switch# show diagnostic ondemand setting
Test iterations = 1
        Action on test failure = continue until test failure
limit reaches 1
switch#
switch#
```

Related Commands

Commands	Description
debug sme	Debugs Cisco SME features.

show diagnostic result interface fc test link-diag

To display the results of the link diagnostics tests that are performed on a diagnostic port and to check the host bus adapter (HBA) capability, use the **show diagnostic result interface fc test link-diag** command.

show diagnostic result interface fc *slot/port* **test link-diag** [**peer-capability**]

Syntax Description

slot/port	Slot and the port numbers of the Fibre Channel interface.
peer-capability	Displays the link diagnostics capabilities of the peer device.

Command Default

None

Command Modes

Previleged EXEC mode

Command History

Release	Modification
8.2(1)	This command was introduced.

Usage Guidelines

The following command output displays the results of the link diagnostics tests that are performed on a diagnostic port:

```
switch# show diagnostic result interface fc7/28 test link-diag
PWWN of peer port: 21:00:00:24:ff:17:09:ac
Status: Supported (Reflector)
Reflector loopback capabilities:  Xcvr-optical Electrical
Time of Test: Thu Sep 14 00:20:11 2017
Total time taken: 30 seconds
===============|=============|=============|=====================|=============|=============

                   |                 |                 |     Discards              |
Latency (ns)  |
Loopback Level     |    Tx Frames    |    Rx Frames    |  IN    |  OUT   |BAD
WORDS|In-Switch|External|    Status
===============|=============|=============|======|======|=======|=======|======|=============
Remote-Switched(R) |                0|                0|       0|       0|        0|
  0|       0|       -NA-
Mac(R)             |                0|                0|       0|       0|        0|
  0|       0|       -NA-
Xcvr-optical(R)    |          1000000|          1000000|       0|       0|        0|
2136|     632|    Success
Electrical(R)      |            20000|            20000|            -NA-           |
-NA-|    -NA-|    Success
=====================================================================================


Overall Status                          : Success
Cable Length (approx. +/- 5 metres)     : 38.2 metres
```

The following command output displays the result of the terminated tests on a diagnostic port:

```
switch# show diagnostic result interface fc1/23 test link-diag
PWWN of peer port: 10:00:00:90:fa:c7:e1:e9
```

```
Status: Supported (Reflector)
Reflector loopback capabilities:  Remote-switched MAC Xcvr-optical
Time of Test: Wed Sep 20 12:54:59 2017
Total time taken: 10 seconds
===============|=============|=============|=====================|==============|==============

                  |                |                |     Discards              |
Latency (ns)  |
Loopback Level     |    Tx Frames    |    Rx Frames    |  IN    |  OUT   |BAD
WORDS|In-Switch|External|    Status
===============|=============|=============|======|======|=======|=======|======|==============
Remote-Switched(R) |                0|                0|       0|       0|        0|
  0|       0|       -NA-
Mac(R)             |                0|                0|       0|       0|        0|
  0|       0|       -NA-
Xcvr-optical(R)    |              439|              439|            -NA-           |
  0|       0|    Stopped
Electrical(R)      |                0|                0|       0|       0|        0|
  0|       0|       -NA-
=====================================================================================

Overall Status                          : User Stop/Module Reload/PortDown/ELS error
                                          [DIAG TEST STOPPED]
Cable Length (approx. +/- 5 metres)     : -NA-
```

The following command output displays the link diagnostics capabilities of the peer device:

```
switch# show diagnostic result interface fc1/1 test link-diag peer-capability
pWWN of Peer Port: 10:23:34:90:fa:cd:16:6c
Status: Supported (Reflector)
Reflector loopback capabilities: Remote-switched MAC Xcvr-optical
```

Related Commands

Command	Description
diagnostic start interface fc test link-diag	Runs link diagnostics tests on a diagnostic port.
diagnostic stop interface fc test link-diag	Stops the link diagnostics tests that are running on a diagnostic port.
switchport link-diag	Enables the link diagnostic mode on a diagnostic port.
show diagnostic test link-diag status	Checks the status of the link diagnostics tests that are running on the switch.

show diagnostic result module

To display the information about the diagnostic test result for a module, use the show diagnostic result module command.

show diagnostic result module module-number all [**detail** | **statistics** | **test**]

Syntax Description

module-number	Displays the module number. The range is from 1 to 10.
detail	(Optional) Displays the detailed result.
statistics	Displays the statistics result.
test	Displays the diagnostic test selection.
all	Displays all test ID.

Command Default

None.

Command Modes

EXEC mode.

Command History

Release	Modification
6.2(1)	This command was introduced.

Usage Guidelines

None.

Examples

The following example shows how to display the detailed information about the diagnostic test result for a module:

```
switch# show diagnostic result module 1 detail
Current bootup diagnostic level: complete
Module 1: 2/4/8/10/16 Gbps Advanced FC Module
  Diagnostic level at card bootup: complete
        Test results: (. = Pass, F = Fail, I = Incomplete,
        U = Untested, A = Abort, E = Error disabled)
        ------------------------------------------------------
------------------
        1) ASICRegisterCheck .
                Error code ------------------> DIAG TEST SUCC
ESS
                Total run count -------------> 23
                Last test execution time ----> Fri Jun 26 21:
25:33 2009
                First test failure time ----->  n/a
                Last test failure time ------>  n/a
--More--
switch#
```

Related Commands

Commands	Description
debug sme	Debugs Cisco SME features.

show diagnostic simulation module

To display the information about a simulated diagnostic result for a module, use the show diagnostic simulation module command.

show diagnostic simulation module module-number

Syntax Description

module-number	Displays the module number. The range is from 1 to 10.

Command Default

None.

Command Modes

EXEC mode.

Command History

Release	Modification
6.2(1)	This command was introduced.

Usage Guidelines

None.

Examples

The following example shows how to display the information about a simulated diagnostic result for a module:

```
switch# show diagnostic simulation module 1
Card(1): 2/4/8/10/16 Gbps Advanced FC Module
_____________________________________________________
    -NA-
switch#
```

Related Commands

Commands	Description
debug sme	Debugs Cisco SME features.

show diagnostic status module

To display test status for a module, use the show diagnostic status module command.

show diagnostic status module module-number

Syntax Description

module-number	Displays the module number. The range is from 1 to 10.

Command Default

None.

Command Modes

EXEC mode.

Command History

Release	Modification
6.2(1)	This command was introduced.

Usage Guidelines

None.

Examples

The following example shows how to displays test status for a module:

```
switch# show diagnostic status module 1
<BU>-Bootup Diagnostics, <HM>-Health Monitori
ng Diagnostics
                <OD>-OnDemand Diagnostics, <SCH>-Scheduled Di
agnostics
==============================================
Card:(1) 2/4/8/10/16 Gbps Advanced FC Module
==============================================
Current running test               Run by
    -NA-                           -NA-
Currently Enqueued Test            Run by
    -NA-                           -NA-
indapex-03#
switch#
switch#
```

Related Commands

Commands	Description
debug sme	Debugs Cisco SME features.

show diagnostic status module

To display the test status for all tests on a module, use the show diagnostic status module command.

show diagnostic status module module-number

Syntax Description

module-number	Displays the module number. The range is from 1 to 10.

Command Default

None.

Command Modes

EXEC mode.

Command History

Release	Modification
6.2(1)	This command was introduced.

Usage Guidelines

None.

Examples

The following example shows how to display the test status for all tests on a module:

```
switch# show diagnostic status module 1
<BU>-Bootup Diagnostics, <HM>-Health Monitori
ng Diagnostics
               <OD>-OnDemand Diagnostics, <SCH>-Scheduled Di
agnostics
==============================================
Card:(1) 2/4/8/10/16 Gbps Advanced FC Module
==============================================
Current running test               Run by
    -NA-                           -NA-
Currently Enqueued Test            Run by
    -NA-                           -NA-
switch#
```

Related Commands

Commands	Description
debug sme	Debugs Cisco SME features.

show diagnostic test link-diag status

To check the status of the link diagnostics tests that are running on all the ports in a switch, use the **show diagnostic test link-diag status** command

show diagnostic test link-diag status

Syntax Description

This command has no arguments or keywords.

Command Default

None

Command Modes

Previleged EXEC mode

Command History

Release	Modification
8.2(1)	This command was introduced.

Displaying the Status of Link Diagnostics Test

The following command output displays the status of the link diagnostics tests that are performed on a diagnostic port:

```
switch# show diagnostic test link-diag status
-------------------------------------------------------------------------------------------------------------
Index  Diag-Interface    Gen-Interface    Link-diag Status
-------------------------------------------------------------------------------------------------------------

                                        Remote-Switched(R)      MAC(R)
Electrical(R)    Xcvr-optical(R)
-------------------------------------------------------------------------------------------------------------
1       fc1/23            fc1/9              NA               Success               NA
           Running
```

Related Commands

Command	Description
switchport link-diag	Enables the link diagnostic mode on a diagnostic port.
diagnostic result interface fc test link-diag	Displays the results of the link diagnostics tests that are performed on a diagnostic port.
diagnostic start interface fc test link-diag	Runs link diagnostics tests on a diagnostic port.
diagnostic stop interface fc test link-diag	Stops the link diagnostics tests that are running on a diagnostic port.

show dmm discovery-log

To display SCSI device discovery logs, use the **show dmm discovery-log** command in EXEC mode.

show dmm discovery-log {**all** | **error**}

Syntax Description

all	Displays all entries in the device discovery SCSI log.
error	Displays error entries in the device discovery SCSI log.

Command Default

None.

Command Modes

EXEC mode.

Command History

Release	Modification
3.2(1)	This command was introduced.

Usage Guidelines

You must connect to an SSM on your switch to execute DMM **show** commands. Use the **show module** command to determine the slot number of an SSM on your switch. Use the **attach module** command to connect to the SSM.

Examples

The following example displays error entries:

```
switch# attach module 3
Attaching to module 3 ...
To exit type 'exit', to abort type '$.'
Bad terminal type: "ansi". Will assume vt100.
module-3# show dmm discovery-log error
005 State: 3
CDB: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
Sts:0x02 SnsKey:0x02 AscAscq:0x0403
Time:    5(ms)
LogIndex:26 HostPWWN:2c:fc:00:05:30:01:9e:88  TargetPWWN:50:06:01:62:30:60:36:64
OPC: 0x00 Lun:0x0000000000000006 State: 3
CDB: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
Sts:0x02 SnsKey:0x02 AscAscq:0x0403
Time:    4(ms)
```

Related Commands

Command	Description
dmm module	Enables DMM configuration on a module.
show dmm srvr-vt-login	Enables the DMM feature.

show dmm fp-port

To display front panel ports on a line card, use the **show dmm fp-port** command in EXEC mode.

show dmm fp-port

Syntax Description

This command has no arguments or keywords.

Command Default

None.

Command Modes

EXEC mode.

Command History

Release	Modification
3.2(1)	This command was introduced.

Usage Guidelines

You must connect to an SSM on your switch to execute DMM **show** commands. Use the **show module** command to determine the slot number of an SSM on your switch. Use the **attach module** *slot* command to connect to the SSM.

Examples

The following example displays front panel ports:

```
switch# attach module 3
Attaching to module 3 ...
To exit type 'exit', to abort type '$.'
Bad terminal type: "ansi". Will assume vt100.
module-3# show dmm fp-port
Cisco DMM Front Panel Port Map
--------------------------------------------------------------------
 Port     Index     Mirage Id    DPP Id
--------------------------------------------------------------------
  1           0           1          2
  2           1           1          2
  3           2           1          2
  4           3           1          2
  5           4           2          3
  6           5           2          3
  7           6           2          3
  8           7           2          3
  9           8           3          6
 10           9           3          6
 11          10           3          6
 12          11           3          6
 13          12           4          7
 14          13           4          7
 15          14           4          7
 16          15           4          7
 17          16           1          1
 18          17           1          1
 19          18           1          1
 20          19           1          1
 21          20           2          4
 22          21           2          4
 23          22           2          4
```

```
24          23          2           4
25          24          3           5
26          25          3           5
27          26          3           5
28          27          3           5
29          28          4           8
30          29          4           8
31          30          4           8
32          31          4           8
```

Related Commands

Command	Description
dmm module	Enables DMM configuration on a module.
show dmm srvr-vt-login	Enables the DMM feature.

show dmm ip-peer

To display information about the IP peers the DMM interface is connected to, use the **show dmm ip-peer** command in EXEC mode.

show dmm ip-peer

Syntax Description

This command has no arguments or keywords.

Command Default

None.

Command Modes

EXEC mode.

Command History

Release	Modification
3.2(1)	This command was introduced.

Usage Guidelines

You must connect to an SSM on your switch to execute DMM **show** commands. Use the **show module** command to determine the slot number of an SSM on your switch. Use the **attach module** *slot* command to connect to the SSM.

Examples

The following example displays DMM IP peer information:

```
switch# attach module 3
Attaching to module 3 ...
To exit type 'exit', to abort type '$.'
Bad terminal type: "ansi". Will assume vt100.
module-3# show dmm ip-peer
                  Cisco DMM IP Peer Table
------------------------------------------------------------------------
 No      Type              SD   IP Address      TCP State
------------------------------------------------------------------------
  1      CONFIG_STATION    23    10.100.2.1      DOWN
  2      PEER_SSM          22    10.100.1.20     UP
  3      CONFIG_STATION    19    10.100.2.1      DOWN
```

show dmm job

To display DMM job information, use the **show dmm job** command in EXEC mode.

show dmm job *job-id* {**detail** | **job-fsm-eventlog** | **job-infra-fsm-eventlog** | **lun_tokens** **token** *tok-pwwn* | **session** | [**session_id** *sess-id*] [**session-event-log**] | **storage** [**tgt-pwwn** *tgt-pwwn*] **vi-pwwn** *vi-pwwn* [**lun-event-log** *lun-id* | **tgt-event-log**]}

Syntax Description

job-id	Specifies the job ID. The range is 0 to 18446744073709551615.
detail	Displays detailed job information.
job-fsm-eventlog	Displays the Job FSM Event Log.
job-infra-fsm-eventlog	Displays the Job Infra FSM Event Log.
lun_tokens	Displays a list of job LUN tokens.
token *tok-pwwn*	Specifies the storage port world-wide name.
session	Displays job session information.
sess-id	(Optional) Specifies the job session. The range is 0 to 2147483647255.
session-event-log	(Optional) Displays the Session FSM Event Log.
storage	Displays the storage ports discovered by DMM.
tgt-pwwn *tgt-pwwn*	(Optional) Specifies the storage port world-wide name. The format is hh:hh:hh:hh:hh:hh:hh:hh, where h is a hexadecimal number.
vi-pwwn *vi-pwwn*	(Optional) Specifies the Virtual Initiator port world-wide name. The format is hh:hh:hh:hh:hh:hh:hh:hh, where h is a hexadecimal number.
lun-event-log *lun-id*	(Optional) Displays the Virtual Initiator and Target LUN FSM event log and specifies the LUN ID.
tgt-event-log	(Optional) Displays the Virtual Initiator and Target FSM Event Log.

Command Default

None.

Command Modes

EXEC mode.

Command History

Release	Modification
6.2(2)	Removed the session-id keyword from the syntax description. Changed the command output.
3.2(1)	This command was introduced.

Usage Guidelines

You must connect to an SSM on your switch to execute DMM **show** commands. Use the **show module** command to determine the slot number of an SSM on your switch. Use the **attach module** *slot* command to connect to the SSM.

Examples

The following example shows how to display a summary of the jobs:

```
switch# show dmm job
================================================================================

                      Data Mobility Manager Job Information
================================================================================

 Num Job Identifier     Name                    Type  Mode  Method DMM GUI IP Peer SSM
DPP Session  Status    Est. Time of Completion
================================================================================

  1         1         CLI_JOB_0x1               SRVR  ONL  METHOD-2 127.0.0.1  NOT_APPL
      1         IN_PROGRESS      Wed Jun 30 07:10:16 1971
Number of Jobs :1
switch#
```

Related Commands

Command	Description
dmm module	Enables DMM configuration on a module.
show dmm srvr-vt-login	Enables the DMM feature.

show dmm module

To display DMM module information use the show dmm module command.

show dmm module module-id vi-list

Syntax Description

module-id	Specifies the module ID. The range is 1 to 13.
vi-list	Displays the VI list.

Command Default

None.

Command Modes

EXEC mode.

Command History

Release	Modification
NX-OS 4.1(1b)	Added the vi-list to syntax description and the command output.
3.2(1)	This command was introduced.

Usage Guidelines

The show dmm module command displays the list of VIs assigned to each data movement engine. A storage based data migration job uses one of these VIs. Use the command to choose the VI and then use the **dmm module job set-vi** command to specify the VI.

Examples

The following example shows how to display a summary of all the jobs:

```
switch# show dmm module 4 vi-list
================================================================================
DPP-Id   VI-pWWN                  VI-nWWN                Outstanding jobs
================================================================================
1        24:53:00:05:30:00:64:22  24:52:00:05:30:00:64:22  0
2        20:0d:00:05:30:00:64:22  2c:c4:00:05:30:00:64:21  0
3        20:0f:00:05:30:00:64:22  20:0e:00:05:30:00:64:22  0
4        24:55:00:05:30:00:64:22  24:54:00:05:30:00:64:22  0
5        24:57:00:05:30:00:64:22  24:56:00:05:30:00:64:22  0
6        20:11:00:05:30:00:64:22  20:10:00:05:30:00:64:22  0
7        24:51:00:05:30:00:64:22  24:50:00:05:30:00:64:22  0
8        24:59:00:05:30:00:64:22  24:58:00:05:30:00:64:22  0
```

Related Commands

Command	Description
dmm module	Enables DMM configuration on a module.
dmm module job set-vi	Specifies the VI for the storage based job.
show dmm srvr-vt-login	Enables the DMM feature.

show dmm srvr-vt-login

To display server virtual target login information, use the **show dmm srvr-vt-login** command in EXEC mode.

show dmm srvr-vt-login [**job-id** *job-id*] **server-pwwn** *srvr-pwwn* **vt-pwwn** *vt-pwwn* {**fc_rdrt-fsm-eventlog** | **login-fsm-eventlog**}

Syntax Description

job-id *job-id*	(Optional) Specifies the job ID. The range is 0 to 18446744073709551615.
server-pwwn *srvr-pwwn*	Specifies the server port world-wide name. The format is hh:hh:hh:hh:hh:hh:hh:hh, where h is a hexadecimal number.
vt-pwwn *vt-pwwn*	Specifies the VT port worldwide name. The format is hh:hh:hh:hh:hh:hh:hh:hh, where h is a hexadecimal number.
fc_rdrt-fsm-eventlog	Displays the server VT FC-Redirect FSM event log.
login-fsm-eventlog	Displays the server VT FSM event log.

Command Default

None.

Command Modes

EXEC mode.

Command History

Release	Modification
3.2(1)	This command was introduced.

Usage Guidelines

You must connect to an SSM on your switch to execute DMM **show** commands. Use the **show module** command to determine the slot number of an SSM on your switch. Use the **attach module** command to connect to the SSM.

Examples

The following example shows how to display the server VT login summary:

```
switch# show dmm srvr-vt-login
================================================================================================
           Data Mobility Manager Server VT Login Information
================================================================================================
  Id  Job Id    VSAN Srvr pWWN                 Srvr FCID VT pWWN                   VT FCID
      State (FC Redirect/Login)
================================================================================================
  1   1187978941    1  21:32:00:0d:ec:02:2d:82   0x660000  21:36:00:0d:ec:02:2d:82   0x660003
    (READY/WAITING_PLOGI)
  2   1187978941    1  21:32:00:0d:ec:02:2d:82   0x660000  21:34:00:0d:ec:02:2d:82   0x66000a
    (READY/WAITING_PLOGI)
Number of Logins :2
```

The following example shows how to display the event log for a specified VT:

```
switch# show dmm srvr-vt-login  job-id 1187978941 server-pwwn 21:32:00:0d:ec:02:2d:82 vt-pwwn
 21:36:00:0d:ec:02:2d:82 login-fsm-e
```

```
================================================================================================
Server/VT Login FSM Event Log -> Job Id : 1187978941 Server : 21:32:00:0d:ec:02:2d:82  VT
: 21:36:00:0d:ec:02:2d:82
================================================================================================
Log Entry: 1 time: Fri Aug 24 11:09:19 2007
    Curr state: DMM_SRVR_VT_LOGIN_S_NULL
    Triggered event: DMM_SRVR_VT_LOGIN_E_START_ACTION
Log Entry: 2 time: Fri Aug 24 11:09:19 2007
    Curr state: DMM_SRVR_VT_LOGIN_S_WAITING_PLOGI
    Triggered event: DMM_SRVR_VT_LOGIN_E_LOGIN_DONE_OK
```

Related Commands

Command	Description
dmm module	Enables DMM configuration on a module.
show dmm srvr-vt-login	Displays the DMM feature.

show dmm vt

To display virtual target information, use the **show dmm vt** command in EXEC mode.

show dmm vt vt-job-id *job-id* **pwwn** *vt-pwwn* **vt-fsm-eventlog**

Syntax Description

vt-job-id *job-id*	Specifies the virtual target job ID. The range is 0 to 18446744073709551615.
pwwn *vt-pwwn*	Specifies the virtual target port worldwide name. The format is hh:hh:hh:hh:hh:hh:hh:hh, where h is a hexadecimal number.
vt-fsm-eventlog	Displays the virtual target (VT) Finite State Machine (FSM) event log.

Command Default

None.

Command Modes

EXEC mode.

Command History

Release	Modification
3.2(1)	This command was introduced.

Usage Guidelines

You must connect to an SSM on your switch to execute DMM **show** commands. Use the **show module** command to determine the slot number of an SSM on your switch. Use the **attach module** *slot* command to connect to the SSM.

Examples

The following example shows how to display the virtual target information:

```
switch# attach module 3
Attaching to module 3 ...
To exit type 'exit', to abort type '$.'
Bad terminal type: "ansi". Will assume vt100.
module-3# show dmm vt
================================================================================
                      Data Mobility Manager VT Information
================================================================================
  Id Job Id      VT pWWN                    VSAN FCID       IF-IDX      PORT    STATE
================================================================================
  1  1177009472  2f:00:00:05:30:01:9e:88    3    0xee00a0   0x1110000   0x10    VT_UP
  2  1177009472  2c:fe:00:05:30:01:9e:88    3    0xee00a1   0x1110000   0x10    VT_UP
Number of VTs :2
```

Related Commands

Command	Description
dmm module	Enables DMM configuration on a module.
show dmm srvr-vt-login	Displays the DMM feature.

show dpvm

To display dynamic port VSAN membership (DPVM) information, use the **show dpvm** command.

show dpvm {**database** [**active**] | **pending** | **pending-diff** | **ports** [**vsan** *vsan-id*] | **status**}

Syntax Description

database	Displays both the configured and active DPVM databases.
active	Displays only the active DPVM database.
pending	Displays pending DPVM operations.
pending-diff	Displays differences between the pending DPVM operations and the active DPVM database.
ports	Displays DPVM information for the ports.
vsan *vsan-id*	Specifies a VSAN ID. The range is from 0 to 4093.
status	Displays DPVM status information.

Command Default

None.

Command Modes

EXEC mode.

Command History

Release	Modification
2.0(x)	This command was introduced.

Usage Guidelines

To use this command, DPVM must be enabled using the **dpvm enable** command.

Examples

The following example shows how to display DPVM database information:

```
switch# show dpvm database
pwwn 00:00:00:00:00:00:00:01 vsan 1
pwwn 00:00:00:00:00:00:00:02 vsan 1
[Total 2 entries]
```

Related Commands

Command	Description
dpvm database	Configures the DPVM database.

show dpvm merge statistics

To display the DPVM merge statistics, use the show dpvm merge statistics command.

show dpvm merge statistics

Syntax Description

This command has no arguments or keywords.

Command Default

None.

Command Modes

EXEC mode.

Command History

Release	Modification
NX-OS 4.1(1b)	This command was introduced.

Usage Guidelines

None.

Examples

The following example shows how to display the DPVM merge statistics:

```
switch# show dpvm merge statistics
DPVM merge statistics:
======================
 Merge request received     : 0
 Merge response sent        : 0
 Merge response received    : 0
 Activate request sent      : 0
 Activate response received : 0
 Application response sent  : 0
 Merge success received     : 0
 Merge failure received     : 0
switch#
```

Related Commands

Command	Description
clear dpvm merge statistics	Clears the DPVM merge statistics.

show dpvm merge status

To display the DPVM merge status, use the dpvm merge status command.

show dpvm merge status

Syntax Description

This command has no arguments or keywords.

Command Default

None.

Command Modes

EXEC mode.

Command History

Release	Modification
NX-OS 4.1(1b)	Enhanced the command output.

Usage Guidelines

None.

Examples

The following example shows how to display the conflict in DPVM database:

```
switch# show dpvm merge status
Last Merge Time Stamp     : Fri Aug  8 15:46:36 2008
Last Merge State          : Fail
Last Merge Result         : Fail
Last Merge Failure Reason : DPVM DB conflict found during merge [cfs_status: 76] Last Merge
 Failure Details     : DPVM merge failed due to database conflict
Local Switch WWN          : 20:00:00:0d:ec:24:e5:00
Remote Switch WWN         : 20:00:00:0d:ec:09:d5:c0

------------------------------------------------------------------------------
        Conflicting DPVM member(s)                    Loc VSAN   Rem VSAN
------------------------------------------------------------------------------
dev-alias dpvm_dev_alias_1 [21:00:00:04:cf:cf:45:ba]    1313       1414
dev-alias dpvm_dev_alias_2 [21:00:00:04:cf:cf:45:bb]    1313       1414
dev-alias dpvm_dev_alias_3 [21:00:00:04:cf:cf:45:bc]    1313       1414
[Total 3 conflict(s)]
switch#
```

show environment

To display status of chassis clock, chassis fan modules, power supply modules, power supply redundancy mode and power usage summary, module temperature thresholds and alarm status, use the **show environment** command.

show environment [**clock** | **fan** [**detail**] | **power** [**detail** | **ampere**] | **temperature** [**module** *module* | **xbar** *xbar*]]

Syntax Description

clock	(Optional) Displays status of chassis clock modules.
fan	(Optional) Displays status of chassis fan modules.
fan detail	(Optional) Displays status of fan modules including fan speeds.
power	(Optional) Displays status of power supply modules, power supply redundancy mode and power usage summary.
power detail	(Optional) Displays power capacity and power distribution information.
power ampere	(Optional) Displays power information in Amperes instead of Watts.
temperature	(Optional) Displays module temperature thresholds and alarm status of temperature sensors.
temperature module *module*	(Optional) Displays temperature information for the specified *module* only.
temperature xbar *xbar*	Displays temperature information for the specified *xbar* only.

Command Default

Displays all types of switch environment information (clocks, fans, power and temperature).

Command Modes

EXEC mode.

Command History

Release	Modification
9.4(3)	The temperature sensor alarm and warning thresholds for Fabric switches were changed.
	The power capacity and power distribution information of the PSU is added to the **show environment power** command.
1.0(2)	This command was introduced.

Usage Guidelines

Starting from MDS NX-OS Release 9.4(3), alarm and warning thresholds have been lowered for air intake temperature sensors s1 and s2, and exhaust temperature sensors s3 and s4 for the following switches:

- Cisco MDS 9132T 32-Gbps 32-Port Fibre Channel Switch
- Cisco MDS 9396T 32-Gbps 96-Port Fibre Channel Switch
- Cisco MDS 9148T 32-Gbps 48-Port Fibre Channel Switch

- Cisco MDS 9220i 32-Gbps Multiservice Fabric Switch
- Cisco MDS 9148V 64-Gbps 48-Port Fibre Channel
- Cisco MDS 9124V 64-Gbps 24-Port Fibre Channel
- Cisco MDS 9396V 64-Gbps 96-Port Fibre Channel

Note All other switches retain their original temperature alarm thresholds.

When a major temperature alarm occurs then the switch shuts down immediately and automatically. Investigate the environment for the source of the high temperature and remedy before repowering the switch.

For air flow intake sensors: When a major temperature threshold is exceeded in a Director switch on the active supervisor module then only that module is powered down. If an HA standby supervisor is present then it becomes the active supervisor nondisruptively. If a standby supervisor is not present then the whole switch is powered down disruptively after two minutes unless the temperature is reduced below the major threshold. Configured alerts are sent every 5 seconds until power down. If a major temperature threshold is exceeded on a switching module then only that module is powered down. If a major temperature threshold is exceeded on a Fabric switch the whole switch is powered down.

When a minor threshold is exceeded, a minor temperature alarm occurs. Reduce the ambient air temperature or clear intake and exhaust air flow from obstructions, as necessary, to ensure adequate switch cooling.

The following actions are taken by the switch when a major or minor alarm is raised:

- Related syslog messages are logged.
- Call Home alerts are sent (if configured).
- SNMP notifications are sent (if configured).

Examples

The following example displays the power capacity and power distribution of the system on Cisco MDS Director switches:

```
switch# show environment power
Power Supply:
Voltage: 50 Volts
Power                              Actual       Actual        Total
Supply    Model                    Output        Input     Capacity         Status
-------  -------------------  -----------  -----------  -----------  --------------
1        ------------                0 W          0 W          0 W        Absent
2        ------------                0 W          0 W          0 W        Absent
3        ------------                0 W          0 W          0 W        Absent
4        ------------                0 W          0 W          0 W        Absent
5        DS-CAC97-3KW             1228 W       1291 W       3000 W        Ok
6        DS-CAC97-3KW             1238 W       1305 W       3000 W        Ok
7        DS-CAC97-3KW             1229 W       1295 W       3000 W        Ok
8        ------------                0 W          0 W          0 W        Absent


                                  Actual        Power
Module    Model                    Draw    Allocated     Status
-------  -------------------  -----------  -----------  --------------
1        DS-X9448-768K9           397 W        650 W    Powered-Up
2        DS-X9848-480K9           381 W        500 W    Powered-Up
```

```
3        DS-X9824-960K9             600 W        740 W    Powered-Up
4        DS-X9448-768K9             385 W        650 W    Powered-Up
5        DS-X97-SF4-K9              100 W        120 W    Powered-Up
6        DS-X97-SF4-K9              103 W        120 W    Powered-Up
7        DS-X9648-1536K9            280 W        350 W    Powered-Up
8        DS-X9334-K9                440 W        480 W    Powered-Up
9        DS-X9648-1536K9            282 W        350 W    Powered-Up
10       DS-X9334-K9                N/A            0 W    Powered-Dn
Xb1      DS-X9710-FAB3               91 W        150 W    Powered-Up
Xb2      DS-X9710-FAB3               94 W        150 W    Powered-Up
Xb3      DS-X9710-FAB3               96 W        150 W    Powered-Up
Xb4      DS-X9710-FAB3               93 W        150 W    Powered-Up
Xb5      DS-X9710-FAB3               90 W        150 W    Powered-Up
Xb6      DS-X9710-FAB3               93 W        150 W    Powered-Up
fan1     DS-C9710-FAN                40 W        600 W    Powered-Up
fan2     DS-C9710-FAN                40 W        600 W    Powered-Up
fan3     DS-C9710-FAN                45 W        600 W    Powered-Up

N/A - Per module power not available


Power Usage Summary:
--------------------
Power Supply redundancy mode (configured)               Non-Redundant(combined)
Power Supply redundancy mode (operational)              Non-Redundant(combined)

Total Power Capacity (based on configured mode)              9000 W
Total Power of all Inputs (cumulative)                       9000 W
Total Power Output (actual draw)                             3695 W
Total Power Input  (actual draw)                             3891 W
Total Power Allocated (budget)                               6660 W
Total Power Available for additional modules                 2340 W
```

The following example displays the power capacity and power distribution of the system on Cisco MDS fabric switches:

```
switch# show environment power
Power Supply:
Voltage: 12 Volts
------------------------------------------------------------------------------
PS  Model                Power       Actual     Actual      Power     Status
                                     Output     Input
                         (Watts)     (Watts)    (Watts)     (Amp)
------------------------------------------------------------------------------
1   ------------           0.00      0.00        0.00        0.00     Shutdown
2   DS-CAC-500W-I         500.00   89.50 W     107.00        42.00     Ok


Mod Model                Power     Power       Power     Power       Status
                         Requested Requested   Allocated Allocated
                         (Watts)   (Amp)       (Watts)   (Amp)
--- -------------------  --------  ----------  --------- ----------  ----------
1    DS-C9124V-K9-SUP     350.00    29.00      350.00    29.00       Powered-Up


Power Usage Summary:
--------------------
Power Supply redundancy mode:                 Redundant
Power Supply redundancy operational mode:     Non-Redundant

Total Power Capacity                              500.00 W
```

```
Total Power Allocated (budget)                    350.00 W
                                                 -------------
Total Power Available                             150.00 W
                                                 -------------
Total Power Output (actual draw)                   89.00 W
Total Power Input  (actual draw)                  107.00 W
Clock:
----------------------------------------------------------
Clock           Model                Hw         Status
----------------------------------------------------------
A               Clock Module         --         NotSupported/None


Fan:
-------------------------------------------------------------------------------------------------------------
Fan             Model                Hw         Status        Airflow direction        Fan
 Speed[Fan0-Fan1] (rpm)
-------------------------------------------------------------------------------------------------------------
ChassisFan1     FAN Module 1         --         Ok              Front to Back
  7219  -  5421
ChassisFan2     FAN Module 2         --         Ok              Front to Back
  7200  -  5367
ChassisFan3     FAN Module 3         --         Ok              Front to Back
  7267  -  5421
ChassisFan4     FAN Module 4         --         Ok              Front to Back
  7228  -  5476
Fan_in_PS1      --                   --         Shutdown                NA
      --
Fan_in_PS2      --                   --         Ok              Front to Back
      --
Fan Air Filter : NotSupported


Temperature:
----------------------------------------------------------------------
Module   Sensor        MajorThresh   MinorThres   CurTemp     Status
                        (Celsius)     (Celsius)    (Celsius)
----------------------------------------------------------------------
1        Outlet1  (s1)   90             80          33         Ok
1        Outlet2  (s2)   90             80          35         Ok
1        Intake1  (s3)   90             80          31         Ok
1        CPU      (s5)   100            83          38         Ok
1        IOSlice0 (s6)   125            115         59         Ok
```

The following example displays the power details of the system on Cisco MDS fabric switches:

```
switch# show environment power detail
Power Supply:
Voltage: 50 Volts
Power                              Actual       Actual        Total
Supply    Model                    Output        Input     Capacity         Status
-------  ------------------  -----------  -----------  -----------  --------------
1        DS-CAC97-3KW             243 W        290 W       3000 W        Ok
2        DS-CAC97-3KW               0 W          0 W          0 W        Powered-dn
3        DS-CAC97-3KW             252 W        320 W       3000 W        Ok
4        DS-CAC97-3KW             293 W        345 W       3000 W        Ok

Mod  Power-Status  Reason
---  ------------  --------------------------
2    Powered-dn     Configured Power down


                                  Actual        Power
Module    Model                    Draw    Allocated     Status
-------  ------------------  -----------  -----------  --------------
```

```
1        DS-X9448-768K9             N/A          650 W    Powered-Up
2        DS-X9648-1536K9            N/A            0 W    Present
3        DS-X97-SF4-K9               88 W        120 W    Powered-Up
4        supervisor                 N/A          120 W    Powered-Up
5        DS-X9748-3072K9            N/A            0 W    Present
Xb1      DS-X9706-FAB3               33 W         85 W    Powered-Up
Xb2      xbar                       N/A           85 W    Absent
Xb3      DS-X9706-FAB3               31 W         85 W    Powered-Up
Xb4      DS-X9706-FAB3               42 W         85 W    Powered-Up
Xb5      DS-X9706-FAB3               41 W         85 W    Powered-Up
Xb6      DS-X9706-FAB3               41 W         85 W    Powered-Up
fan1     DS-C9706-FAN                 0 W        250 W    Powered-Up
fan2     DS-C9706-FAN                 0 W        250 W    Powered-Up
fan3     DS-C9706-FAN                 0 W        250 W    Powered-Up

N/A - Per module power not available


Power Usage Summary:
--------------------
Power Supply redundancy mode (configured)                PS-Redundant
Power Supply redundancy mode (operational)               PS-Redundant

Total Power Capacity (based on configured mode)               6000 W
Total Power of all Inputs (cumulative)                        9000 W
Total Power Output (actual draw)                               788 W
Total Power Input  (actual draw)                               955 W
Total Power Allocated (budget)                                3264 W
Total Power Available for additional modules                  2736 W


Power Usage details:
--------------------
Power reserved for Supervisor(s):                              240 W
Power reserved for Fabric Module(s):                           510 W
Power reserved for Fan Module(s):                              750 W
Total power reserved for Sups,Fabrics,Fans:                   1500 W

Are all inlet cables connected: Yes

Power supply details:
---------------------
PS_1
50V Voltage: 50.943V
50V Current: 5.470A
3.4V Voltage: 3.388V
3.4V Current: 1.710A
50V Temperature: 52C
3.4V Temperature: 46C
Total Capacity    3000 W   Voltage:50V
Cable 1    capacity:    3000 W
Cable 1    connected to 220v AC
Software-Alarm: No
Hardware alarm_bits reg0: 0x02
Reg0 bit1: restarted successfully

PS_2
50V Voltage: 0.000V
50V Current: 0.000A
3.4V Voltage: 0.000V
3.4V Current: 0.000A
50V Temperature: 34C
3.4V Temperature: 36C
Total Capacity       0 W   Voltage:50V
```

```
Cable 1    capacity:       0 W
Cable 1    connected to 220v AC
Software-Alarm: Yes
Hardware alarm_bits reg0: 0x40, reg1: 0x40, reg3: 0x03
Reg0 bit6: Invalid access
Reg1 bit6: powercycle had occured, forceshut bit was set
Reg3 bit0: 3.4V output under voltage
Reg3 bit1: 50V output1 under voltage

PS_3
50V Voltage: 51.060V
50V Current: 5.660A
3.4V Voltage: 3.363V
3.4V Current: 1.632A
50V Temperature: 53C
3.4V Temperature: 43C
Total Capacity    3000 W   Voltage:50V
Cable 1    capacity:    3000 W
Cable 1    connected to 220v AC
Software-Alarm: No
Hardware alarm_bits reg0: 0x02
Reg0 bit1: restarted successfully

PS_4
50V Voltage: 50.900V
50V Current: 6.400A
3.4V Voltage: 3.415V
3.4V Current: 1.765A
50V Temperature: 49C
3.4V Temperature: 52C
Total Capacity    3000 W   Voltage:50V
Cable 1    capacity:    3000 W
Cable 1    connected to 220v AC
Software-Alarm: No
Hardware alarm_bits reg0: 0x42, reg3: 0x10
Reg0 bit1: restarted successfully
Reg0 bit6: Invalid access
Reg3 bit4: reserved
```

The following example displays the status and alarm states of the clock, fan, power supply and temperature sensors on Cisco MDS Director switches:

```
switch# show environment
Power Supply:
Voltage: 50 Volts
Power                              Actual       Actual        Total
Supply    Model                    Output        Input     Capacity          Status
-------  -------------------  -----------  -----------  -----------  --------------
1        ------------                0 W          0 W          0 W        Absent
2        ------------                0 W          0 W          0 W        Absent
3        ------------                0 W          0 W          0 W        Absent
4        ------------                0 W          0 W          0 W        Absent
5        DS-CAC97-3KW             1228 W       1291 W       3000 W        Ok
6        DS-CAC97-3KW             1236 W       1305 W       3000 W        Ok
7        DS-CAC97-3KW             1229 W       1296 W       3000 W        Ok
8        ------------                0 W          0 W          0 W        Absent


                                  Actual        Power
Module    Model                    Draw    Allocated     Status
-------  -------------------  -----------  -----------  --------------
1        DS-X9448-768K9           397 W        650 W    Powered-Up
2        DS-X9848-480K9           380 W        500 W    Powered-Up
```

```
3        DS-X9824-960K9             600 W        740 W    Powered-Up
4        DS-X9448-768K9             385 W        650 W    Powered-Up
5        DS-X97-SF4-K9              101 W        120 W    Powered-Up
6        DS-X97-SF4-K9              103 W        120 W    Powered-Up
7        DS-X9648-1536K9            279 W        350 W    Powered-Up
8        DS-X9334-K9                440 W        480 W    Powered-Up
9        DS-X9648-1536K9            282 W        350 W    Powered-Up
10       DS-X9334-K9                N/A            0 W    Powered-Dn
Xb1      DS-X9710-FAB3               91 W        150 W    Powered-Up
Xb2      DS-X9710-FAB3               94 W        150 W    Powered-Up
Xb3      DS-X9710-FAB3               96 W        150 W    Powered-Up
Xb4      DS-X9710-FAB3               93 W        150 W    Powered-Up
Xb5      DS-X9710-FAB3               90 W        150 W    Powered-Up
Xb6      DS-X9710-FAB3               93 W        150 W    Powered-Up
fan1     DS-C9710-FAN                40 W        600 W    Powered-Up
fan2     DS-C9710-FAN                40 W        600 W    Powered-Up
fan3     DS-C9710-FAN                45 W        600 W    Powered-Up

N/A - Per module power not available


Power Usage Summary:
--------------------
Power Supply redundancy mode (configured)                Non-Redundant(combined)
Power Supply redundancy mode (operational)               Non-Redundant(combined)

Total Power Capacity (based on configured mode)               9000 W
Total Power of all Inputs (cumulative)                        9000 W
Total Power Output (actual draw)                              3693 W
Total Power Input  (actual draw)                              3892 W
Total Power Allocated (budget)                                6660 W
Total Power Available for additional modules                  2340 W

Clock:
----------------------------------------------------------
Clock           Model                Hw         Status
----------------------------------------------------------
A               Clock Module         --         NotSupported/None
B               Clock Module         --         NotSupported/None


Fan:
-----------------------------------------------------
Fan             Model                Hw         Status
-----------------------------------------------------
Fan1(sys_fan1)  DS-C9710-FAN         0.2        Ok
Fan2(sys_fan2)  DS-C9710-FAN         0.2        Ok
Fan3(sys_fan3)  DS-C9710-FAN         0.2        Ok
Fan_in_PS1      --                   --         Absent
Fan_in_PS2      --                   --         Absent
Fan_in_PS3      --                   --         Absent
Fan_in_PS4      --                   --         Absent
Fan_in_PS5      --                   --         Ok
Fan_in_PS6      --                   --         Ok
Fan_in_PS7      --                   --         Ok
Fan_in_PS8      --                   --         Absent
Fan Zone Speed %(Hex): Zone 1: 40.78(0x68)


Temperature:
--------------------------------------------------------------------------
Module   Sensor        MajorThresh   MinorThres   CurTemp     Status
                       (Celsius)     (Celsius)    (Celsius)
--------------------------------------------------------------------------
```

```
1         IOSlice0 (s1)   125             115         49          Ok
1         IOSlice1 (s2)   125             115         48          Ok
1         IOSlice2 (s3)   125             115         56          Ok
1         IOSlice3 (s4)   125             115         60          Ok
1         IOSlice4 (s5)   125             115         57          Ok
1         IOSlice5 (s6)   125             115         62          Ok
1         Crossbar0 (s7)  125             115         85          Ok
1         Crossbar1 (s8)  125             115         84          Ok
1         Arb1-mux (s9)   125             105         57          Ok
1         Arb2-mux (s10)  125             105         58          Ok
2         Crossbar1(s1)   125             115         77          Ok
2         Crossbar2(s2)   125             115         78          Ok
2         Arb-mux (s3)    125             105         50          Ok
2         L2L3Dev1(s5)    125             110         54          Ok
2         L2L3Dev2(s6)    125             110         38          Ok
2         L2L3Dev3(s7)    125             110         47          Ok
2         L2L3Dev4(s8)    125             110         58          Ok
2         L2L3Dev5(s9)    125             110         39          Ok
2         L2L3Dev6(s10)   125             110         54          Ok
2         L2L3Dev7(s11)   125             110         62          Ok
2         L2L3Dev8(s12)   125             110         40          Ok
2         L2L3Dev9(s13)   125             110         56          Ok
2         L2L3Dev10(s14)  125             110         56          Ok
2         L2L3Dev11(s15)  125             110         44          Ok
2         L2L3Dev12(s16)  125             110         61          Ok
3         Crossbar1(s1)   125             115         66          Ok
3         Crossbar2(s2)   125             115         70          Ok
3         Arb-mux (s3)    125             115         59          Ok
3         L2L3Dev1(s5)    125             115         45          Ok
3         L2L3Dev2(s6)    125             115         39          Ok
3         L2L3Dev3(s7)    125             115         54          Ok
3         L2L3Dev4(s8)    125             115         50          Ok
3         L2L3Dev5(s9)    125             115         66          Ok
3         L2L3Dev6(s10)   125             115         63          Ok
3         L2L3Dev7(s11)   125             115         64          Ok
3         L2L3Dev8(s12)   125             115         66          Ok
3         L2L3Dev9(s13)   125             115         50          Ok
3         L2L3Dev10(s14)  125             115         56          Ok
3         L2L3Dev11(s15)  125             115         40          Ok
3         L2L3Dev12(s16)  125             115         51          Ok
4         IOSlice0 (s1)   125             115         49          Ok
4         IOSlice1 (s2)   125             115         50          Ok
4         IOSlice2 (s3)   125             115         51          Ok
4         IOSlice3 (s4)   125             115         55          Ok
4         IOSlice4 (s5)   125             115         56          Ok
4         IOSlice5 (s6)   125             115         58          Ok
4         Crossbar0 (s7)  125             115         82          Ok
4         Crossbar1 (s8)  125             115         82          Ok
4         Arb1-mux (s9)   125             105         50          Ok
4         Arb2-mux (s10)  125             105         52          Ok
5         Inlet  (s1)     60              42          18          Ok
5         CPU1CORE1(s2)   114             94          34          Ok
5         CPU1CORE2(s3)   104             94          34          Ok
5         CPU1CORE3(s4)   104             94          34          Ok
5         CPU1CORE4(s5)   104             94          34          Ok
5         CPU1CORE5(s6)   104             94          34          Ok
5         CPU1CORE6(s7)   104             94          34          Ok
5         CPU1CORE7(s8)   104             94          34          Ok
5         CPU1CORE8(s9)   104             94          34          Ok
5         DDR4DIMM1(s10)  95              85          23          Ok
5         DDR4DIMM2(s11)  95              85          23          Ok
5         DDR4DIMM3(s12)  95              85          23          Ok
5         DDR4DIMM4(s13)  95              85          23          Ok
5         L2L3Dev1(s14)   125             115         37          Ok
```

```
5        L2L3Dev1(s15)   125             115         40          Ok
5        L2L3Dev1(s16)   125             115         43          Ok
6        Inlet  (s1)     60              42          27          Ok
6        CPU1CORE1(s2)   104             94          36          Ok
6        CPU1CORE2(s3)   104             94          36          Ok
6        CPU1CORE3(s4)   104             94          36          Ok
6        CPU1CORE4(s5)   104             94          36          Ok
6        CPU1CORE5(s6)   104             94          36          Ok
6        CPU1CORE6(s7)   104             94          36          Ok
6        CPU1CORE7(s8)   104             94          36          Ok
6        CPU1CORE8(s9)   104             94          36          Ok
6        DDR4DIMM1(s10)  95              85          32          Ok
6        DDR4DIMM2(s11)  95              85          32          Ok
6        DDR4DIMM3(s12)  95              85          32          Ok
6        DDR4DIMM4(s13)  95              85          32          Ok
6        L2L3Dev1(s14)   125             115         49          Ok
6        L2L3Dev1(s15)   125             115         52          Ok
6        L2L3Dev1(s16)   125             115         55          Ok
7        Crossbar0 (s1)  125             115         43          Ok
7        Crossbar1 (s2)  125             115         47          Ok
7        Arb-mux  (s3)   125             105         50          Ok
7        CPU      (s4)   125             105         47          Ok
7        PCISW    (s5)   125             105         40          Ok
7        IOSlice0 (s6)   125             115         33          Ok
7        IOSlice1 (s7)   125             115         33          Ok
7        IOSlice2 (s8)   125             115         37          Ok
8        Crossbar0 (s1)  125             115         66          Ok
8        Crossbar1 (s2)  125             115         65          Ok
8        Arb-mux  (s3)   125             115         43          Ok
8        CPU      (s4)   125             115         52          Ok
8        L2L3Dev0 (s5)   125             115         43          Ok
8        IOSlice0 (s6)   125             115         42          Ok
8        IOSlice1 (s7)   125             115         40          Ok
8        IOSlice2 (s8)   125             115         41          Ok
8        FC-IP 0 (s9)    95              85          41          Ok
8        FC-IP 1 (s10)   95              85          46          Ok
9        Crossbar0 (s1)  125             115         44          Ok
9        Crossbar1 (s2)  125             115         45          Ok
9        Arb-mux  (s3)   125             105         46          Ok
9        CPU      (s4)   125             105         43          Ok
9        PCISW    (s5)   125             105         39          Ok
9        IOSlice0 (s6)   125             115         32          Ok
9        IOSlice1 (s7)   125             115         33          Ok
9        IOSlice2 (s8)   125             115         33          Ok
xbar-1   Crossbar1(s1)   125             115         45          Ok
xbar-1   Crossbar2(s2)   125             115         42          Ok
xbar-2   Crossbar1(s1)   125             115         48          Ok
xbar-2   Crossbar2(s2)   125             115         43          Ok
xbar-3   Crossbar1(s1)   125             115         52          Ok
xbar-3   Crossbar2(s2)   125             115         46          Ok
xbar-4   Crossbar1(s1)   125             115         52          Ok
xbar-4   Crossbar2(s2)   125             115         45          Ok
xbar-5   Crossbar1(s1)   125             115         45          Ok
xbar-5   Crossbar2(s2)   125             115         40          Ok
xbar-6   Crossbar1(s1)   125             115         41          Ok
xbar-6   Crossbar2(s2)   125             115         40          Ok
```

The following example displays the status and alarm states of the clock, fan, power supply and temperature sensors on Cisco MDS fabric switches:

```
switch# show environment
Power Supply:
```

```
Voltage: 12 Volts
-------------------------------------------------------
PS  Model                Power       Power     Status
                         (Watts)     (Amp)
-------------------------------------------------------
1   ------------           0.00      0.00     NotSupported
2   DS-CAC-650W-E        649.92     54.16     Ok


Mod Model                Power     Power       Power     Power       Status
                         Requested Requested   Allocated Allocated
                        (Watts)   (Amp)       (Watts)   (Amp)
--- -------------------  -------   ----------  --------- ----------  ----------
1    DS-C9148T-K9-SUP     349.92    29.16      349.92    29.16       Powered-Up


Power Usage Summary:
--------------------
Power Supply redundancy mode:                 Redundant
Power Supply redundancy operational mode:     Non-Redundant

Total Power Capacity                             649.92 W

Total Power Allocated (budget)                   349.92 W
                                                -------------
Total Power Available                            300.00 W
                                                -------------
Clock:
----------------------------------------------------------
Clock           Model                Hw         Status
----------------------------------------------------------
A               Clock Module         --         Shutdown/None


Fan:
-----------------------------------------------------------------------------------------------------------
Fan             Model                Hw         Status        Airflow direction        Fan
 Speed[Fan0-Fan1] (rpm)
-----------------------------------------------------------------------------------------------------------
ChassisFan1     FAN Module 1         --         Ok              Back to Front
  6033  -  4470
ChassisFan2     FAN Module 2         --         Ok              Back to Front
  6047  -  4541
ChassisFan3     FAN Module 3         --         Ok              Back to Front
  5875  -  4530
ChassisFan4     FAN Module 4         --         Ok              Back to Front
  6026  -  4518
Fan_in_PS1      --                   --         Shutdown                NA
      --
Fan_in_PS2      --                   --         Ok              Back to Front
      --
Fan Air Filter : NotSupported
```

The following example displays the temperature alarm thresholds and current of the system on Cisco MDS fabric switches:

```
switch# show environment temperature
Temperature:
----------------------------------------------------------------------
Module   Sensor        MajorThresh   MinorThres   CurTemp     Status
                       (Celsius)     (Celsius)    (Celsius)
----------------------------------------------------------------------
```

```
1        Intake1  (s1)   60              45          40         Ok
1        Intake2  (s2)   60              45          36         Ok
1        Outlet1  (s3)   70              55          50         Ok
1        Outlet2  (s4)   70              55          47         Ok
1        AXE35    (s5)   125             105         62         Ok
1        IOSlice0 (s6)   125             115         53         Ok
1        IOSlice1 (s7)   125             115         54         Ok
1        IOSlice2 (s8)   125             115         52         Ok
1        CPU      (s9)   85              80          49         Ok
1        Crossbar (s10)  125             115         60         Ok
1        Arbiter  (s11)  125             115         43         Ok
1        IOSlice3 (s12)  125             115         46         Ok
1        IOSlice4 (s13)  125             115         45         Ok
1        IOSlice5 (s14)  125             115         46         Ok
```

The following example displays the status of the fan on Cisco MDS fabric switches:

```
switch# show environment fan detail
Fan:
----------------------------------------------------------------------------------------------------------------
Fan             Model                Hw         Status        Airflow direction        Fan
 Speed[Fan0-Fan1] (rpm)
----------------------------------------------------------------------------------------------------------------
ChassisFan1     FAN Module 1         --         Failure         NA                  NA
ChassisFan2     FAN Module 2         --         Ok              Back to Front
  15835  -  11973
ChassisFan3     FAN Module 3         --         Ok              Back to Front
  16413  -  11868
ChassisFan4     FAN Module 4         --         Failure         NA                  NA
Fan_in_PS1      --                   --         Ok              Back to Front
      --
Fan_in_PS2      --                   --         Shutdown               NA
      --
Fan Air Filter : NotSupported

Details:
----------------------------------------
Mod        Fan                LED Status
----------------------------------------
1          ChassisFan1          Amber
2          ChassisFan2          Green
3          ChassisFan3          Green
4          ChassisFan4          Amber
```

Related Commands

Command	Description
show hardware	Displays all hardware components on a system.
callhome	Configure callhome alerts.
snmp-server host traps	Configure SNMP trap receivers.

show event manager environment

To display the name and value of Embedded Event Manager (EEM) environment variables, use the show event manager environment command.

show event manager environment {**variable-name** | **all**}

Syntax Description

variable-name	Displays information about the specified environment variable.
all	Displays information about all environment variables.

Command Default

None.

Command Modes

EXEC mode.

Command History

Release	Modification
NX-OS 4.1(3)	This command was introduced.

Usage Guidelines

None.

Examples

The following example shows all the EEM environment variables:

```
switch# show event manager environment all
switch#
```

Related Commands

Command	Description
event manager environment	Displays an EEM environment variable.

show event manager policy

To display the registered Embedded Event Manager (EEM) policies, use the show event manager policy command.

show event manager policy [**detail**] [**policy-name** | **inactive**]

Syntax Description

detail	(Optional) Displays details of all policies.
policy-name	(Optional) Specifies a policy-name policy to display.
inactive	(Optional) Displays only those policies that are inactive.

Command Default

None.

Command Modes

EXEC mode.

Command History

Release	Modification
NX-OS 4.1(3)	This command was introduced.

Usage Guidelines

None.

Examples

The following example shows how to display the EEM policies:

```
switch# show event manager policy
```

switch

Related Commands

Command	Description
event manager applet	Displays an applet with the Emedded Event manager.

show fabric switch information

To display the switch name, switch model, running version and memory details of all MDS switches in a fabric, use the **show fabric switch information** command.

show fabric switch information [**vsan** *vsan-id*]

Syntax Description

vsan-id *vsan-id*	(Optional) Specifies the VSAN range. The range is from 1 to 4093.

Command Default

Without the VSAN option this command displays information about switches in all the VSANs.

Command Modes

EXEC mode.

Command History

Release	Modification
9.4(4)	Information about the switch serial number is added to the output.
6.2(9)	Added a note.
6.2(7)	This command was introduced.

Usage Guidelines

If some parameters are missing for a switch wait a few seconds and try the command again.

Starting from MDS NX-OS 6.2(7) the **Sup Memory** information is displayed.

Starting from MDS NX-OS 9.4(4) the **Serial Number** information is displayed.

Examples

The following examples displays the switch name, switch model, running version and memory details of all switches in the fabric in the given VSAN 1 for NX-OS versions up to but not including MDS NX-OS 9.4(4) release:

```
switch# show fabric switch information vsan 1

VSAN 1:
--------------------------------------------------------------------------
Switch Name                     Model         Version       Sup Memory
--------------------------------------------------------------------------
sw3-gd99-9148s           DS-C9148S48PK9   9.4(4)       4 GB
minishan-scale           DS-C9148S48PK9   9.4(4)       4 GB
mdsng-sca                DS-C9710         9.4(4)       8 GB
```

Examples

The following examples display switch information for switches in VSAN 1 starting from MDS NX-OS 9.4(4):

```
switch# show fabric switch information vsan 1

VSAN 1:
-----------------------------------------------------------------------------------------------
Switch Name                     Model         Version       Sup Memory   Serial No
-----------------------------------------------------------------------------------------------
SMA-9220I-F32-NPIV-EDGE          DS-C9220I-K9  9.4(4)              8 GB   JPG2434003V
```

```
SMA-9396T-F32-NPV-EDGE          DS-C9396T-K9  9.4(4)             6 GB   JPG2213006T
SMA-9718-F32-NPIV-CORE          DS-C9718      9.4(4)            14 GB   JAF1626BPAD
```

show fabric-binding

To display configured fabric binding information, use the **show fabric-binding** command in EXEC mode.

show fabric-binding {**database** [**active**] [**vsan** *vsan-id*] | **efmd statistics** [**vsan** *vsan-id*] | **statistics** [**vsan** *vsan-id*] | **status** [**vsan** *vsan-id*] | **violations** [**last** *number*]}

database	Displays configured database information.
active	Displays the active database configuration information.
vsan *vsan-id*	(Optional) Specifies the FICON-enabled VSAN ID. The range is 1 to 4093.
efmd statistics	Displays Exchange Fabric Membership Data (EFMD) statistics.
statistics	Displays fabric binding statistics.
status	Displays fabric binding status.
violations	Displays violations in the fabric binding configuration.
last *number*	(Optional) Specifies recent violations. The range is 1 to 100.

Command Default

None.

Command Modes

EXEC mode.

Command History

Release	Modification
1.3(1)	This command was introduced.

Usage Guidelines

None.

Examples

The following example displays configured fabric binding database information:

```
switch# show fabric-binding database
-------------------------------------------------
Vsan   Logging-in Switch WWN     Domain-id
-------------------------------------------------
1      21:00:05:30:23:11:11:11   0x66(102)
1      21:00:05:30:23:1a:11:03    0x19(25)
1      20:00:00:05:30:00:2a:1e   0xea(234)
4      21:00:05:30:23:11:11:11   0x66(102)
4      21:00:05:30:23:1a:11:03    0x19(25)
61     21:00:05:30:23:1a:11:03    0x19(25)
61     21:00:05:30:23:11:11:11   0x66(102)
[Total 7 entries]
```

The following example displays active fabric binding information:

```
switch# show fabric-binding database active
-------------------------------------------------
```

```
Vsan   Logging-in Switch WWN     Domain-id
-------------------------------------------------
1      21:00:05:30:23:11:11:11   0x66(102)
1      21:00:05:30:23:1a:11:03    0x19(25)
1      20:00:00:05:30:00:2a:1e   0xea(234)
61     21:00:05:30:23:1a:11:03    0x19(25)
61     21:00:05:30:23:11:11:11   0x66(102)
61     20:00:00:05:30:00:2a:1e   0xef(239)
```

The following example displays active VSAN-specific fabric binding information:

```
switch# show fabric-binding database active vsan 61
-------------------------------------------------
Vsan   Logging-in Switch WWN     Domain-id
-------------------------------------------------
61     21:00:05:30:23:1a:11:03    0x19(25)
61     21:00:05:30:23:11:11:11   0x66(102)
61     20:00:00:05:30:00:2a:1e   0xef(239)
[Total 3 entries]
```

The following example displays configured VSAN-specific fabric binding information:

```
switch# show fabric-binding database vsan 4
-------------------------------------------------
Vsan   Logging-in Switch WWN     Domain-id
-------------------------------------------------
4      21:00:05:30:23:11:11:11   0x66(102)
4      21:00:05:30:23:1a:11:03    0x19(25)
[Total 2 entries]
```

The following example displays fabric binding statistics:

```
switch# show fabric-binding statistics
Statistics For VSAN: 1
-----------------------
Number of sWWN permit: 0
Number of sWWN deny  : 0
Total Logins permitted  : 0
Total Logins denied     : 0
Statistics For VSAN: 4
-----------------------
Number of sWWN permit: 0
Number of sWWN deny  : 0
Total Logins permitted  : 0
Total Logins denied     : 0
Statistics For VSAN: 61
-----------------------
Number of sWWN permit: 0
Number of sWWN deny  : 0
Total Logins permitted  : 0
Total Logins denied     : 0
Statistics For VSAN: 345
-----------------------
Number of sWWN permit: 0
Number of sWWN deny  : 0
Total Logins permitted  : 0
Total Logins denied     : 0
Statistics For VSAN: 346
-----------------------
Number of sWWN permit: 0
Number of sWWN deny  : 0
Total Logins permitted  : 0
Total Logins denied     : 0
```

```
Statistics For VSAN: 347
------------------------
Number of sWWN permit: 0
Number of sWWN deny  : 0
Total Logins permitted  : 0
Total Logins denied     : 0
Statistics For VSAN: 348
------------------------
Number of sWWN permit: 0
Number of sWWN deny  : 0
Total Logins permitted  : 0
Total Logins denied     : 0
Statistics For VSAN: 789
------------------------
Number of sWWN permit: 0
Number of sWWN deny  : 0
Total Logins permitted  : 0
Total Logins denied     : 0
Statistics For VSAN: 790
------------------------
Number of sWWN permit: 0
Number of sWWN deny  : 0
Total Logins permitted  : 0
Total Logins denied     : 0
```

The following example displays fabric binding status for each VSAN:

```
switch# show fabric-binding status
VSAN 1 :Activated database
VSAN 4 :No Active database
VSAN 61 :Activated database
VSAN 345 :No Active database
VSAN 346 :No Active database
VSAN 347 :No Active database
VSAN 348 :No Active database
VSAN 789 :No Active database
VSAN 790 :No Active database
```

The following example displays EFMD statistics:

```
switch# show fabric-binding efmd statistics
EFMD Protocol Statistics for VSAN 1
---------------------------------------
Merge Requests -> Transmitted : 0 , Received : 0
Merge Accepts  -> Transmitted : 0 , Received : 0
Merge Rejects  -> Transmitted : 0 , Received : 0
Merge Busy     -> Transmitted : 0 , Received : 0
Merge Errors   -> Transmitted : 0 , Received : 0
EFMD Protocol Statistics for VSAN 4
---------------------------------------
Merge Requests -> Transmitted : 0 , Received : 0
Merge Accepts  -> Transmitted : 0 , Received : 0
Merge Rejects  -> Transmitted : 0 , Received : 0
Merge Busy     -> Transmitted : 0 , Received : 0
Merge Errors   -> Transmitted : 0 , Received : 0
EFMD Protocol Statistics for VSAN 61
---------------------------------------
Merge Requests -> Transmitted : 0 , Received : 0
Merge Accepts  -> Transmitted : 0 , Received : 0
Merge Rejects  -> Transmitted : 0 , Received : 0
Merge Busy     -> Transmitted : 0 , Received : 0
Merge Errors   -> Transmitted : 0 , Received : 0
```

The following example displays EFMD statistics for a specified VSAN:

```
switch# show fabric-binding efmd statistics vsan 4
EFMD Protocol Statistics for VSAN 4
---------------------------------------
Merge Requests -> Transmitted : 0 , Received : 0
Merge Accepts  -> Transmitted : 0 , Received : 0
Merge Rejects  -> Transmitted : 0 , Received : 0
Merge Busy     -> Transmitted : 0 , Received : 0
Merge Errors   -> Transmitted : 0 , Received : 0
```

The following example displays fabric binding violations:

```
switch# show fabric-binding violations
-------------------------------------------------------------------------------
VSAN Switch WWN [domain] Last-Time [Repeat count] Reason
-------------------------------------------------------------------------------
3 20:00:00:05:30:00:4a:1e [*] Nov 25 05:44:58 2003 [2] sWWN not found
3 20:00:00:05:30:00:4a:1e [0xeb] Nov 25 05:46:14 2003 [2] Domain mismatch
4 20:00:00:05:30:00:4a:1e [*] Nov 25 05:46:25 2003 [1] Database mismatch
```

show fc2

To display FC2 information, use the **show fc2** command.

show fc2 {**bind** | **classf** | **exchange** | **exchresp** | **flogi** | **nport** | **plogi** | **plogi_pwwn** | **port** [**brief**] | **socket** | **sockexch** | **socknotify** | **socknport** | **vsan**}

Syntax Description

bind	Displays FC2 socket bindings.
classf	Displays FC2 classf sessions.
exchange	Displays FC2 active exchanges.
exchresp	Displays FC2 active responder exchanges.
flogi	Displays FC2 FLOGI table.
nport	Displays FC2 local N ports.
plogi	Displays FC2 PLOGI sessions.
plogi_pwwn	Displays FC2 PLOGI pWWN entries.
port brief	Displays FC2 physical port table.
socket	Displays FC2 active sockets.
sockexch	Displays FC2 active exchanges for each socket.
socknotify	Displays FC2 local N port PLOGI/LOGO notifications for each socket.
socknport	Displays FC2 local N ports per each socket.
vsan	Displays FC2 VSAN table.

Command Default

None.

Command Modes

EXEC mode.

Command History

Release	Modification
1.0(2)	This command was introduced.

Usage Guidelines

None.

Examples

The following example displays FC2 active socket information:

```
switch# show fc2 socket
SOCKET   REFCNT PROTOCOL      PID   RCVBUF  RMEM_USED     QLEN    NOTSK
b2a64b20        2        0     1421    65535          0        0        0
```

```
b2a647e0        3        0     1418   262142          0        0        0
b2a644a0        3        0     1417    65535          0        0        0
b2a64160        3        0     1417   262142          0        0        0
b294b180        3        0     1411    65535          0        0        0
b294ae40        3        0     1411    65535          0        0        0
b294a7c0        3        0     1410    65535          0        0        0
b294a480        2        7     1410    65535          0        0        0
b294a140        3        0     1409   262142          0        0        0
b278bb20        3        0     1409   262142          0        0        0
b278b4a0        3        0     1407    65535          0        0        0
b278b160        3        0     1407   256000          0        0        0
b278ae20        3        0     1407    65535          0        0        0
b1435b00        3        0     1408    65535          0        0        0
b1434e00        3        0     1406    65535          0        0        0
b1434ac0        3        0     1406   131072          0        0        0
b1434780        3        0     1406    65535          0        0        0
b1434440        2        0     1405   131072          0        0        0
b1434100        3        0     1405   262142          0        0 b1434440
b22e2420        2        0     1372    65535          0        0        0
...
```

The following example displays FC2 socket binding information:

```
switch# show fc2 bind
  SOCKET RULE   SINDEX   VSAN     D_ID     MASK TYPE  SUBTYPE M_VALUES
b23ba0c0   16  6081000      1        0        0    0 00:00:00 00:00:00:00:00:00:00:00
b2a647e0    7 ffffffff  65535   fffffd   ffffff   22 03:01:00 14:15:16:00:00:00:00:00
b294b180    7 ffffffff  65535   fffffd   ffffff    1 02:01:00 61:62:00:00:00:00:00:00
b294ae40    7 ffffffff  65535   fffc00   ffff00   22 01:01:00 1b:00:00:00:00:00:00:00
b294a7c0    7 ffffffff  65535   fffffd   ffffff    1 01:01:00 10:00:00:00:00:00:00:00
...
```

The following example displays FC2 local N port information:

```
switch# show fc2 nport
REF   VSAN   D_ID   MASK   FL   ST  IFINDEX   CF   TC 2-SO   IC   RC   RS   CS
 EE 3-SO   IC   RC   RS   CS   EE
  1  65535 fffffd ffffff    3    0 ffffffff c800 0128 8000 0000 0000 2112 0064 0
008 8000 0000 0000 2112 0064 0000
  6  65535 fffc00 ffff00  18b    0 ffffffff c800 0128 8000 0000 0000 2112 0064 0
008 8000 0000 0000 2112 0064 0000
  2  65535 fffffa ffffff    3    0 ffffffff c800 0128 8000 0000 0000 2112 0064 0
008 8000 0000 0000 2112 0064 0000
  1  65535 fffffc ffffff    3    0 ffffffff c800 0128 8000 0000 0000 2112 0064 0
008 8000 0000 0000 2112 0064 0000
...
```

The following example displays FC2 PLOGI session information:

```
switch# show fc2 plogi
HIX  ADDRESS   VSAN   S_ID   D_ID  IFINDEX   FL  STATE   CF   TC 2-SO   IC   RC
  RS   CS   EE 3-SO   IC   RC   RS   CS   EE EECNT TCCNT 2CNT 3CNT REFCNT
2157 af364064      1 fffc6c 123400 ffffffff 0000      0 0000 0001 8000 0000 2000
 0256 0001 0001 8000 0000 2000 0256 0001 0000     0     0    0    0      1
```

The following example displays FC2 physical port information:

```
switch# show fc2 port
 IX ST MODE EMUL   TXPKTS   TXDROP    TXERR   RXPKTS   RXDROP  R_A_TOV  E_D_TOV
F-SO   RC   RS   CS   EE 2-SO   RS 3-SO   RS
  0  D    1    0        0        0        0        0        0    10000     2000
8000 0000 2112 0001 0001 8000 0256 8000 0256
```

```
  1  D    1    0        0        0        0        0        0    10000     2000
8000 0000 2112 0001 0001 8000 0256 8000 0256
  2  D    1    0        0        0        0        0        0    10000     2000
8000 0000 2112 0001 0001 8000 0256 8000 0256
  3  D    1    0        0        0        0        0        0    10000     2000
8000 0000 2112 0001 0001 8000 0256 8000 0256
  4  D    1    0        0        0        0        0        0    10000     2000
8000 0000 2112 0001 0001 8000 0256 8000 0256
...
```

The following example displays FC2 local N port PLOGI notifications for each socket:

```
switch# show fc2 socknotify
  SOCKET  ADDRESS REF   VSAN   D_ID   MASK   FL   ST  IFINDEX
b2a64160 b27f01e4   6  65535 fffc00 ffff00  18b    0 ffffffff
b294a7c0 b27f01e4   6  65535 fffc00 ffff00  18b    0 ffffffff
af8a3a60 b27f01e4   6  65535 fffc00 ffff00  18b    0 ffffffff
```

The following example displays FC2 local N ports for each socket:

```
switch# show fc2 socknport
  SOCKET  ADDRESS REF   VSAN   D_ID   MASK   FL   ST  IFINDEX
b2a64160 b27f01e4   6  65535 fffc00 ffff00  18b    0 ffffffff
b294b180 b27f0294   1  65535 fffffd ffffff    3    0 ffffffff
b294a7c0 b27f01e4   6  65535 fffc00 ffff00  18b    0 ffffffff
b278ae20 b27f0134   2  65535 fffffa ffffff    3    0 ffffffff
b1434e00 b27f0134   2  65535 fffffa ffffff    3    0 ffffffff
b1434780 b27f0084   1  65535 fffffc ffffff    3    0 ffffffff
af8a3a60 b27f01e4   6  65535 fffc00 ffff00  18b    0 ffffffff
```

The following example displays FC2 VSAN table:

```
switch# show fc2 vsan

  VSAN     X_ID  E_D_TOV  R_A_TOV                      WWN
     1        4     2000    10000  20:01:00:05:30:00:58:1f
     2        1     2000    10000  20:02:00:05:30:00:58:1f
     3        1     2000    10000  20:03:00:05:30:00:58:1f
     4        1     2000    10000  20:04:00:05:30:00:58:1f
     5        1     2000    10000  20:05:00:05:30:00:58:1f
     6        1     2000    10000  20:06:00:05:30:00:58:1f
     7        1     2000    10000  20:07:00:05:30:00:58:1f
     8        1     2000    10000  20:08:00:05:30:00:58:1f
     9        1     2000    10000  20:09:00:05:30:00:58:1f
    10        1     2000    10000  20:0a:00:05:30:00:58:1f
    11        1     2000    10000  20:0b:00:05:30:00:58:1f
    12        1     2000    10000  20:0c:00:05:30:00:58:1f
    13        1     2000    10000  20:0d:00:05:30:00:58:1f
    14        1     2000    10000  20:0e:00:05:30:00:58:1f
    15        1     2000    10000  20:0f:00:05:30:00:58:1f
    16        1     2000    10000  20:10:00:05:30:00:58:1f
    17        1     2000    10000  20:11:00:05:30:00:58:1f
    18        1     2000    10000  20:12:00:05:30:00:58:1f
....
```

show fcalias

To display the member name information in a Fibre Channel alias (fcalias), use the **show fcalias** command.

show fcalias [**name fcalias-name**] [**pending**] [**vsan** *vsan-id*]

Syntax Description

name *fcalias-name*	(Optional) Displays fcalias information for a specific name. The maximum length is 64.
pending	(Optional) Displays pending fcalias information.
vsan *vsan-id*	(Optional) Displays fcalias information for a VSAN. The range is 1 to 4093.

Command Default

Displays a list of all global fcaliases and all VSAN dependent fcaliases.

Command Modes

EXEC mode.

Command History

Release	Modification
1.0(2)	This command was introduced.
2.0(x)	Added the pending keyword.

Usage Guidelines

To make use of fcaliases as device names instead of using the cryptic device name, add only one member per fcalias.

Examples

The following example displays fcalias configuration information:

```
switch# show fcalias vsan 1
fcalias name Alias2 vsan 1
fcalias name Alias1 vsan 1
  pwwn 21:00:00:20:37:6f:db:dd
  pwwn 21:00:00:20:37:9c:48:e5
```

Related Commands

Command	Description
fcalias name	Configures fcalias names.

show fcanalyzer

To display the list of hosts configured for a remote capture, use the **show fcanalyzer** command.

show fcanalyzer

Syntax Description

This command has no arguments or keywords.

Command Default

None.

Command Modes

EXEC mode.

Command History

Release	Modification
1.0(2)	This command was introduced.

Usage Guidelines

The default keyword shown with the ActiveClient entry specifies that the default port is used to connect to the client.

Examples

The following example displays configured hosts:

```
switch# show fcanalyzer

PassiveClient = 10.21.0.3
PassiveClient = 10.21.0.3
ActiveClient = 10.21.0.3, DEFAULT
```

show fcc

To view FCC settings, use the **show fcc** commands.

show fcc [**statistics interface** {**fc** *slot* / *port* | **fcip** *fcip-id* | **iscsi** *slot* / *port*}]

Syntax Description

statistics interface	(optional) Displays FCC statistics for a specified interface.
fc *slot*/*port*	(optional) Specifies a Fibre Channel interface.
fcip *fcip-id*	(optional) Specifies an FCIP interface. The range is 1 to 255.
iscsi *slot*/*port*	(optional) Specifies an iSCSI interface.

Command Default

None.

Command Modes

EXEC mode.

Command History

Release	Modification
1.0(2)	This command was introduced.

Usage Guidelines

None.

Examples

The following example displays FCC information:

```
switch# show fcc
fcc is disabled
fcc is applied to frames with priority up to 4
```

show fcdomain

To display the Fibre Channel domain (fcdomain) information, use the show fcdomain command.

show fcdomain [**address-allocation** [**cache**] | **allowed** | **domain-list** | **fcid persistent** [**unused**] | **pending** [**vsan vsan-id**] | **pending-diff** [**vsan vsan-id**] | **session-status** [**vsan vsan-id**] | **statistics** [**interface** {**fc** *slot / port* [**vsan vsan-id**] | **fcip** *fcip-id* [**vsan vsan-id**] | **iscsi** *slot / port*} | **port-channel** [**vsan vsan-id**]] | **status** | **vsan vsan-id**]

Note On a Cisco Fabric Switch for HP c-Class BladeSystem and on a Cisco Fabric Switch for IBM BladeCenter, the syntax differs as follows:**interface bay** *port* **| ext** *port* }

Syntax Description

address-allocation	(Optional) Displays statistics for the FC ID allocation.
cache	(Optional) Reassigns the FC IDs for a device (disk or host) that exited and reentered the fabric for the principal switch. In the cache content, VSAN refers to the VSAN that contains the device, WWN refers to the device that owned the FC IDs, and mask refers to a single or entire area of FC IDs.
allowed	Displays a list of allowed domain IDs.
domain-list	Displays a list of domain IDs granted by the principal switch.
fcid persistent	Displays persistent FC IDs (across reboot).
unused pending	Displays the pending configuration.
vsan vsan-id	Specifies a VSAN ID. The range is 1 to 4093.
pending-diff	Displays the difference between the running configuration and the pending configuration.
session-status	Displays the last action performed by FC domain.
statistics	Displays the statistics of FC domain.
interface	Specifies an interface.
fc *slot*/*port*	Specifies a Fibre Channel interface on a Cisco MDS 9000 Family Switch.
bay *port* **| ext** *port*	(Optional) Specifies a Fibre Channel interface on a Cisco MDS 9124 Fabric Switch, a Cisco Fabric Switch for HP c-Class BladeSystem, and a Cisco Fabric Switch for IBM BladeCenter.
fcip *fcip-id*	Specifies an FCIP interface. The range is 1 to 255.
iscsi *slot*/*port*	Specifies an iSCSI interface.
port-channel	Specifies a PortChannel interface. The range is 1 to 128.
status	Displays all VSAN-independent information in FC domain.

Command Default

None.

Command Modes

EXEC mode.

Command History

Release	Modification
6.2(3)	Added the Optimized mode: Disabled, in the command output.
1.0(2)	This command was introduced.
2.1(1a)	The domain-list display was modified to include a virtual IVR description.
3.0(1)	Added the **pending**, **pending-diff**, **session-status**, and **status** options.

Usage Guidelines

Entering the **show fcdomain** with no arguments displays all VSANs. The VSANs should be active or you will get an error.

Examples

The following example displays the fcdomain information for VSAN 1:

```
switch# show fcdomain vsan 1
The local switch is a Subordinated Switch.
Local switch run time information:
        State: Stable
        Local switch WWN:    20:01:00:05:30:00:51:1f
        Running fabric name: 10:00:00:60:69:22:32:91
        Running priority: 128
        Current domain ID: 0x64(100) ß verify domain id
Local switch configuration information:
        State: Enabled
        Auto-reconfiguration: Disabled
        Contiguous-allocation: Disabled
        Configured fabric name: 41:6e:64:69:61:6d:6f:21
  Optimize Mode: Disabled
        Configured priority: 128
        Configured domain ID: 0x64(100) (preferred)
Principal switch run time information:
        Running priority: 2
Interface               Role          RCF-reject
----------------    -------------    ------------
fc2/1               Downstream       Disabled
fc2/2               Downstream       Disabled
fc2/7               Upstream         Disabled
----------------    -------------    ------------
```

The following example displays the fcdomain domain-list information for VSAN 76:

```
switch# show fcdomain domain-list vsan 76
Number of domains: 3
Domain ID              WWN
---------    ----------------------
0xc8(200)    20:01:00:05:30:00:47:df [Principal]
 0x63(99)    20:01:00:0d:ec:08:60:c1 [Local]
 0x61(97)    50:00:53:0f:ff:f0:10:06 [Virtual (IVR)]
```

Table 1: show fcdomain Field Descriptions, on page 163 describes the significant fields shown in the **show fcdomain domain-list** command output.

Table 1: show fcdomain Field Descriptions

Field	Description
Domain ID	Lists the domain IDs corresponding to the WWN.
WWN	Indicates the WWN of the switch (physical or virtual) that requested the corresponding domain ID.
Principal	Indicates which row of the display lists the WWN and domain ID of the principal switch in the VSAN.
Local	Indicates which row of the display lists the WWN and domain ID of the local switch (the switch where you entered the **show fcdomain domain-list** command).
Virtual (IVR)	Indicates which row of the display lists the WWN of the virtual switch used by the Inter-VSAN Routing (IVR) manager to obtain the domain ID.

The following example displays the allowed domain ID lists:

```
switch# show fcdomain
 allowed vsan 1
Assigned or unallowed domain IDs: 1-96,100,111-239.
[Interoperability Mode 1] allowed domain IDs: 97-127.
[User] configured allowed domain IDs: 50-110.
```

The following example shows the status of CFS distribution for allowed domain ID lists:

```
switch# show fcdomain status
CFS distribution is enabled
```

The following example displays pending configuration changes:

```
switch# show fcdomain pending vsan 10
Pending Configured Allowed Domains
---------------------------------
VSAN 10
Assigned or unallowed domain IDs: 1-9,24,100,231-239.
[User] configured allowed domain IDs: 10-230.
```

The following example displays the differences between the pending configuration and the current configuration:

```
switch# show fcdomain pending-diff vsan 10
Current Configured Allowed Domains
---------------------------------
VSAN 10
Assigned or unallowed domain IDs: 24,100.
[User] configured allowed domain IDs: 1-239.
Pending Configured Allowed Domains
---------------------------------
VSAN 10
Assigned or unallowed domain IDs: 1-9,24,100,231-239.
[User] configured allowed domain IDs: 10-230.
```

The following example displays the status of the distribution session:

```
switch# show fcdomain session-status vsan 1
```

```
Last Action: Distribution Enable
Result: Success
```

Related Commands

Command	Description
fcdomain	Configures the Fibre Channel domain feature.

show fcdroplatency

To display the configured Fibre Channel latency parameters, use the **show fcdroplatency** command.

show fcdroplatency [**network** | **switch**]

Syntax Description

network	(Optional) Network latency in milliseconds.
switch	(Optional) Switch latency in milliseconds.

Command Default

None.

Command Modes

EXEC mode.

Command History

Release	Modification
1.0(2)	This command was introduced.

Usage Guidelines

None.

Examples

The following example displays the configured Fibre Channel latency parameters:

```
switch# show
fcdroplatency
switch latency value:4000 milliseconds
network latency value:5000 milliseconds
```

show fcflow stats

To display the configured Fibre Channel flow (fcflow) information, use the **show fcflow stats** command.

show fcflow stats [**aggregated** | **usage**] **module** *slot* [**index** *flow-index*]

Syntax Description

aggregated	(optional) Displays aggregated fcflow statistics.
usage	(optional) Displays flow index usage.
module slot	Displays fcflow statistics for a module in the specified slot.
index *flow-index*	(optional) Specifies an fcflow index.

Command Default

None.

Command Modes

EXEC mode.

Command History

Release	Modification
1.0(2)	This command was introduced.

Usage Guidelines

None.

Examples

The following example displays aggregated fcflow details for the specified module:

```
switch# show fcflow stats aggregated module 2
```

Idx VSAN # frames # bytes ---- ---- -------- ------- 0000 4 387,653 674,235,875 0001 6 34,402 2,896,628

The following example displays fcflow details for the specified module:

```
switch# show fcflow stats module 2
```

Idx VSAN D ID S ID mask # frames # bytes ---- ---- ----------- ----------- ----- -------- ------- 0000 4 032.001.002 007.081.012 ff.ff.ff 387,653 674,235,875 0001 6 004.002.001 019.002.004 ff.00.00 34,402 2,896,628

The following example displays fcflow index usage for the specified module:

```
switch# show fcflow stats usage module 2
2 flows configured
configured flow : 3,7
```

show fcfwd

To display the configured fcfwd tables and statistics, use the **show fcfwd** command.

show fcfwd {**idxmap** [**interface-toport** | **port-to-interface** | **statistics**] | **pcmap** [**interface**] | **sfib** [**multicast** | **statistics** | **unicast**] | **spanmap** [**rx** | **tx**]}

Syntax Description

idxmap	Displays the FC forward index tables.
interface-to-port	(Optional) Displays the interface index to port index table.
port-to-interface	(Optional) Displays the port index to interface index table.
statistics	(Optional) Displays index table statistics.
pcmap	Displays the FC forward PortChannel table.
interface	(Optional) Displays PortChannel tables for an interface.
sfib	Displays software forwarding tables.
multicast	(Optional) Displays multicast software forwarding tables.
statistics	(Optional) Displays software forwarding statistics.
unicast	(Optional) Displays unicast software forwarding tables.
spanmap	Displays SPAN map tables.
rx	(Optional) Displays SPAN map tables in the ingress -rx direction.
tx	(Optional) Displays SPAN map tables in the egress -tx direction.

Command Default

None.

Command Modes

EXEC mode.

Command History

Release	Modification
1.0(2)	This command was introduced.

Usage Guidelines

None.

Examples

The following example displays fcfwd SPAN map receive information:

```
switch# show fcfwd spanmap rx
SPAN source information: size [c8]
dir source               vsan   bit   drop_thresh destination
```

show fcid-allocation

Use the **show fcid allocation** command to display the Fibre Channel area list of company IDs.

show fcid-allocation area company-id [**company-id**]

Syntax Description

area	Selects the auto area list of company IDs.
company-id	Selects company ID list.
company-id	(Optional) Selects the individual company ID (also known as Organizational Unit Identifier, or OUI) to display.

Command Default

None.

Command Modes

EXEC mode.

Command History

Release	Modification
2.0	New command

Examples

The following example shows the Fibre Channel area company list of company IDs:

```
switch# show fcid-allocation area company-id
Fcid area allocation company id info:
    00:50:2E
    00:50:8B
    00:60:B0
    00:A0:B8
    00:E0:69
    00:E0:8B
    00:32:23 +
Total company ids: 7
+ - Additional user configured company ids.
* - Explicitly deleted company ids from default list.
switch#
```

Table 2: show fcid-allocation area company Field Descriptions, on page 168 describes the significant fields shown in the display.

Table 2: show fcid-allocation area company Field Descriptions

Field	Description
+	Indicates a company ID added to the default list.
–	Indicates a company ID deleted from the default list.

show fcip

To display FCIP profile information, use the show fcip command.

show fcip {**host-map** *fcip-id* | **profile** [*profile-id* | **all**] | **summary** | **tape-session** {**summary** | **tunnel** *tunnel-id* {**host-end** | **target-end**}} | **target-map** *fcip-id* | **wa-login-list** *tunnel-id*}

Syntax Description

host-map *fcip-id*	Displays the information for a specified map. The range is 1 to 255.
profile	Displays the information for a profile.
profile-id	(Optional) Specifies the profile ID. The range is 1 to 255.
all	(Optional) Specifies all profile IDs.
summary	Displays summary information.
tape-session	Displays tape session information.
tunnel *tunnel-id*	Displays information for a specified FCIP tunnel ID. The range is 1 to 255.
host-end	Displays information for the host end.
target-end	Displays information for the target end.
target-map *fcip-id*	Displays information for a specified target map. The range is 1 to 255.
wa-login-list *tunnel-id*	Displays the write acceleration login list for a specified FCIP tunnel ID. The range is 1 to 255.

Command Default

None.

Command Modes

EXEC mode.

Command History

Release	Modification
6.2(5)	Added the command output for FCIP Profiles for Cisco MDS 9250i Multiservice Fabric Switch.
1.1(1)	This command was introduced.
2.0(x)	Added the host-map , summary , and target-map keywords.
3.0(1)	Added the **tape-session**, **tunnel**, **host-end**, **target-end**, and **wa-login-list** keywords.

Usage Guidelines

None.

Examples

The following example displays FCIP Profiles for SSN-16/18+4

```
switch# show fcip profile
```

```
--------------------------------------------------------------------------------
ProfileId Ipaddr TcpPort
--------------------------------------------------------------------------------
1 10.10.100.150 3225
2 10.10.100.150 3226
40 40.1.1.2 3225
100 100.1.1.2 3225
200 200.1.1.2 3225
```

The following example displays FCIP Profiles for Cisco MDS 9250i Multiservice Fabric Switch:

```
switch# show fcip profile
--------------------------------------------------------------------------------
ProfileId Ipaddr TcpPort
--------------------------------------------------------------------------------
1 20.1.1.1 3225
2 20.1.1.1 2000
3 20.1.1.1 3000
4 20.1.1.1 4000
5 20.1.1.1 5000
6 20.1.1.1 6000
7 30.1.1.1 3225
8 31.1.1.1 3225
9 32.1.1.1 3225
10 33.1.1.1 3225
11 34.1.1.1 3225
12 35.1.1.1 3225
```

The following example displays all FCIP profiles:

```
switch# show fcip profile all
---------------------------------------------------
ProfileId       Ipaddr          TcpPort
---------------------------------------------------
1               41.1.1.2        3225
2               10.10.100.154   3225
3               43.1.1.2        3225
4               44.1.1.100      3225
6               46.1.1.2        3225
7               47.1.1.2        3225
```

The following example displays information for a specified FCIP profile for SSN-16/18+4:

```
switch# show fcip profile 7
FCIP Profile 7
    Internet Address is 47.1.1.2 (interface GigabitEthernet4/7)
    Listen Port is 3225
    TCP parameters
        SACK is disabled
        PMTU discovery is enabled, reset timeout is 3600 sec
        Keep alive is 60 sec
        Minimum retransmission timeout is 300 ms
        Maximum number of re-transmissions is 4
        Send buffer size is 0 KB
        Maximum allowed bandwidth is 1000000 kbps
        Minimum available bandwidth is 15000 kbps
        Estimated round trip time is 1000 usec
```

The following example displays information for the Specified FCIP Profile Information for Cisco MDS 9250i Multiservice Fabric Switch:

```
switch# show fcip profile 1
```

```
FCIP Profile 1
Internet Address is 20.1.1.1 (interface IPStorage1/1)
Tunnels Using this Profile: fcip1
Listen Port is 3225
TCP parameters
SACK is enabled
PMTU discovery is enabled, reset timeout is 3600 sec
Keep alive is 60 sec
Minimum retransmission timeout is 200 ms
Maximum number of re-transmissions is 4
Send buffer size is 16384 KB
Maximum allowed bandwidth is 5000000 kbps
Minimum available bandwidth is 4000000 kbps
Configured round trip time is 1000 usec
Congestion window monitoring is enabled, burst size is 50 KB
Auto jitter detection is enabled
```

The following example displays the FCIP Summary information (SSN-16/18+4):

```
switch# show fcip summary
--------------------------------------------------------------------------------
Tun prof Eth-if peer-ip Status T W T Enc Comp Bandwidth rtt
E A A max/min (us)
--------------------------------------------------------------------------------
10 91 GE4/1 3.3.3.2 UP N N N N N 1000M/1000M 2000
11 11 GE3/1.601 30.1.1.2 DOWN N N N N N 1000M/500M 1000
12 12 GE3/1.602 30.1.2.2 DOWN N N N N N 1000M/500M 1000
13 0 0.0.0.0 DOWN N N N N N
14 0 0.0.0.0 DOWN N N N N N
15 0 0.0.0.0 DOWN N N N N N
16 0 0.0.0.0 DOWN N N N N N
17 0 0.0.0.0 DOWN N N N N N
18 0 0.0.0.0 DOWN N N N N N
19 0 0.0.0.0 DOWN N N N N N
20 92 GE4/2 3.3.3.1 UP N N N N N 1000M/1000M 2000
21 21 GE3/2.601 30.1.1.1 DOWN N N N N N 1000M/500M 1000
22 22 GE3/2.602 30.1.2.1 DOWN N N N N N 1000M/500M 1000
```

The following example displays the FCIP Summary (Cisco MDS 9250i Multiservice Fabric Switch):

```
switch# show fcip summary
--------------------------------------------------------------------------------
Tun prof IPS-if peer-ip Status T W T Enc Comp Bandwidth rtt
E A A max/min (us)
--------------------------------------------------------------------------------
1 1 IPS1/1 20.1.1.2 TRNK Y N N N A 5000M/4000M 1000
2 2 IPS1/1 20.1.1.2 TRNK Y N N N A 1000M/800M 1000
3 3 IPS1/1 20.1.1.2 DOWN N N N N N 1000M/800M 1000
4 4 IPS1/1 20.1.1.2 DOWN N N N N N 1000M/800M 1000
5 5 IPS1/1 20.1.1.2 DOWN N N N N N 1000M/800M 1000
6 6 IPS1/1 20.1.1.2 DOWN N N N N N 1000M/800M 1000
7 7 IPS1/2.1 30.1.1.2 TRNK Y N N N M2 1000M/800M 1000
8 8 IPS1/2.2 31.1.1.2 TRNK Y N N N M2 1000M/800M 1000
9 9 IPS1/2.3 32.1.1.2 DOWN N N N N N 1000M/800M 1000
10 10 IPS1/2.4 33.1.1.2 DOWN N N N N N 1000M/800M 1000
11 11 IPS1/2.5 34.1.1.2 DOWN N N N N N 1000M/800M 1000
12 12 IPS1/2.6 35.1.1.2 DOWN N N N N N 1000M/800M 1000
```

Table 3: show fcip summary Field Descriptions, on page 172 describes the significant fields shown in the previous display.

Table 3: show fcip summary Field Descriptions

Field	Description
Tun	Tunnel number for the row. For example, a number 1 indicates tunnel fcip1 and a number 2 indicates fcip2.
prof	Tunnel profile.
Eth-if	Ethernet interface to which this tunnel is bound.
peer-ip	IP address of the tunnel peer port on the far end of the tunnel.
Status	State of the tunnel (UP or DOWN).
TE	Tunnel operating in TE mode (**Y**es or **N**o).
WA	Write acceleration enabled (**Y**es or **N**o).
TA	Tape acceleration enabled (**Y**es or **N**o).
Enc	Encryption enabled (**Y**es or **N**o).
Bandwidth max/min	Maximum and minimum bandwidth configured in the profile to which this tunnel is bound.
rtt (us)	Round trip time (RTT) in microseconds.

Related Commands

Command	Description
fcip enable	Configures FCIP parameters.

show fcip counters

To display FCIP tunnel statistics, use the **show fcip counters** command in privileged EXEC mode. This command also displays the statistics for all TCP connections present in an FCIP tunnel.

show fcip counters

Syntax Description

This command has no arguments or keywords.

Command Default

None.

Command Modes

EXEC mode

Command History

Release	Modification
1.1(1)	This command was introduced.
6.2(11c)	This command was modified to display statistics for all TCP connections in an FCIP tunnel.

Usage Guidelines

None.

Examples

The following example shows statistics for an FCIP tunnel with 4 data and 1 control TCP connections:

```
switch# show fcip counters
fcip5
    TCP Connection Information
      5 Active TCP connections
        30 Attempts for active connections, 1 close of connections
        Path MTU 2500 bytes
        Current retransmission timeout is 200 ms
        Current Send Buffer Size: 66648 KB, Requested Send Buffer Size: 65536 KB
        CWM Burst Size: 50 KB
        Measured RTT : 500000 us Min RTT: 7640 us Max RTT: 0 us
        Round trip time: Smoothed 8 ms, Variance: 4 Jitter: 150 us
 CONN<0>
    Data connection: Local 10.10.9.1:65433, Remote 10.10.9.2:5000
    TCP Parameters
      Advertized window: Current: 1112 KB, Maximum: 24580 KB, Scale: 6
      Peer receive window: Current: 4095 KB, Maximum: 4095 KB, Scale: 6
      Congestion window: Current: 873 KB, Slow start threshold: 1840 KB
    TCP Connection Rate
      Input Bytes: 0.00 MB/sec, Output Bytes: 0.00 MB/sec
      Input Frames: 0/sec, Output Frames: 0/sec
 CONN<1>
    Data connection: Local 10.10.9.1:65431, Remote 10.10.9.2:5000
    TCP Parameters
      Advertized window: Current: 1116 KB, Maximum: 24580 KB, Scale: 6
      Peer receive window: Current: 4095 KB, Maximum: 4095 KB, Scale: 6
      Congestion window: Current: 876 KB, Slow start threshold: 1842 KB
    TCP Connection Rate
      Input Bytes: 0.00 MB/sec, Output Bytes: 0.00 MB/sec
      Input Frames: 0/sec, Output Frames: 0/sec
 CONN<2>
    Data connection: Local 10.10.9.1:65429, Remote 10.10.9.2:5000
```

```
    TCP Parameters
      Advertized window: Current: 1117 KB, Maximum: 24580 KB, Scale: 6
      Peer receive window: Current: 4095 KB, Maximum: 4095 KB, Scale: 6
      Congestion window: Current: 877 KB, Slow start threshold: 1842 KB
    TCP Connection Rate
      Input Bytes: 0.00 MB/sec, Output Bytes: 0.00 MB/sec
      Input Frames: 0/sec, Output Frames: 0/sec
  CONN<3>
    Data connection: Local 10.10.9.1:65427, Remote 10.10.9.2:5000
    TCP Parameters
      Advertized window: Current: 1118 KB, Maximum: 24580 KB, Scale: 6
      Peer receive window: Current: 4095 KB, Maximum: 4095 KB, Scale: 6
      Congestion window: Current: 878 KB, Slow start threshold: 1843 KB
    TCP Connection Rate
      Input Bytes: 0.00 MB/sec, Output Bytes: 0.00 MB/sec
      Input Frames: 0/sec, Output Frames: 0/sec
  CONN<4>
    Control connection: Local 10.10.9.1:65425, Remote 10.10.9.2:5000
    TCP Parameters
      Advertized window: Current: 1107 KB, Maximum: 24580 KB, Scale: 6
      Peer receive window: Current: 4089 KB, Maximum: 4089 KB, Scale: 6
      Congestion window: Current: 50 KB, Slow start threshold: 2070 KB
    TCP Connection Rate
      Input Bytes: 0.00 MB/sec, Output Bytes: 0.00 MB/sec
      Input Frames: 0/sec, Output Frames: 0/sec
    5 minutes input rate 120 bits/sec, 15 bytes/sec, 0 frames/sec
    5 minutes output rate 160 bits/sec, 20 bytes/sec, 0 frames/sec
      1060823 frames input, 2307076112 bytes
         4675 Class F frames input, 448880 bytes
         1056148 Class 2/3 frames input, 2306627232 bytes
         0 Reass frames
         0 Error frames timestamp error 0
      2788188 frames output, 6079611624 bytes
         4691 Class F frames output, 454176 bytes
         2783497 Class 2/3 frames output, 6079157448 bytes
0 Error frames
```

Related Commands

Command	Description
show fcip	Displays FCIP profile information.
show ips stats	Displays IP storage statistics.

show fc-management

To display the Fibre Channel Common Transport (FC-CT) management security information, use the show fc-management command.

{**show fc-management database** | **status**}

Syntax Description

database	Displays the FC-CT management security database.
status	Displays the management security information.

Command Default

None.

Command Modes

EXEC mode.

Command History

Release	Modification
6.2(9)	This command was introduced.

Usage Guidelines

None

Examples

The following example shows how to display the FC-CT management security database:

```
switch(config)# show fc-management database
Fc-Management Security Database
---------------------------------------------------------------
VSAN       PWWN              FC-CT Permissions per FC services
---------------------------------------------------------------
1    01:01:01:01:01:01:01:01   Zone(RW), Unzoned-NS(RW), FCS(RW), FDMI(RW)
---------------------------------------------------------------
Total 1 entries
switch(config)#
```

The following example shows how to display the management security information**:**

```
switch(config)# show fc-management status
Mgmt Security Enabled
switch(config)#
```

Related Commands

Command	Description
fc-management database	Configures the FC-CT management security database.

show fcns database

To display the results of the discovery, or to display the name server database for a specified VSAN or for all VSANs, use the **show fcns database** command.

show fcns database {**detail** [**vsan vsan-id**] | **domain domain-id** [**detail**] [**vsan vsan-range**] | **fcid fcid-id** [**detail**] **vsan vsan-range** | **local** [**detail**] [**vsan vsan-range**] | **vsan vsan-id**}

Syntax Description

detail	Displays all objects in each entry.
vsan vsan-id	(Optional) Displays entries for a specified VSAN ID. The range is 1 to 4093.
domain domain-id	Displays entries in a domain.
vsan vsan-range	Displays the VSAN range. The range is 1 to 4093.
fcid fcid-id	Displays entry for the given port.
local	Displays local entries.

Command Default

None.

Command Modes

EXEC mode.

Command History

Release	Modification
NX-OS 4.2(1)	Changed the command output for show fcns database and show fcns database detail. (Two attributes are added to the command output Connected Interface :fc3/4 Switch Name (IP address) :rbadri-vegas11 (10.64.66.50)
NX-OS 4.1(3)	Changed the command output for show fcns database detail.
1.2(2)	This command was introduced.

Usage Guidelines

The discovery can take several minutes to complete, especially if the fabric is large or if several devices are slow to respond.

Virtual enclosure ports can be viewed using the **show fcns database** command.

Examples

The following example displays the contents of the FCNS database:

```
switch# show fcns database
VSAN 1:
--------------------------------------------------------------------------
FCID        TYPE  PWWN                    (VENDOR)        FC4-TYPE:FEATURE
--------------------------------------------------------------------------
0x460100    N     10:00:00:00:c9:32:89:e6 (Emulex)        scsi-fcp:init
0x460200    N     21:00:00:e0:8b:09:4e:d3 (Qlogic)        scsi-fcp:init
0x460300    N     21:01:00:e0:8b:29:4e:d3 (Qlogic)        scsi-fcp:init
0x460423    NL    21:00:00:04:cf:cf:45:ba (Seagate)       scsi-fcp
```

```
Total number of entries = 4
VSAN 2:
--------------------------------------------------------------------------
FCID        TYPE  PWWN                    (VENDOR)        FC4-TYPE:FEATURE
--------------------------------------------------------------------------
0x8e0000    N     21:01:00:e0:8b:2e:85:8a (Qlogic)        scsi-fcp:init
0x9509b5    N     50:00:53:00:00:6b:30:02 (Cisco)         scsi-fcp:init sdv
Total number of entries = 2
```

The following example displays the detailed contents of the FCNS database:

```
switch# show fcns database detail
------------------------
VSAN:1     FCID:0x460100
------------------------
port-wwn (vendor)                  :10:00:00:00:c9:32:89:e6 (Emulex)
node-wwn                                :20:00:00:00:c9:32:89:e6
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                    :
symbolic-node-name                :Emulex LP9002 FV3.90A7 DV8.0.16.34
port-type                                 :N
port-ip-addr                             :0.0.0.0
fabric-port-wwn                       :20:85:00:05:30:00:4a:de
hard-addr                                 :0x000000
permanent-port-wwn (vendor) :10:00:00:00:c9:32:89:e6 (Emulex)
Connected Interface             :fc3/5
Switch Name (IP address)      :rbadri-vegas11 (10.64.66.50)
------------------------
VSAN:1     FCID:0x460200
------------------------
port-wwn (vendor)              :21:00:00:e0:8b:09:4e:d3 (Qlogic)
node-wwn                       :20:00:00:e0:8b:09:4e:d3
class                           :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              :
symbolic-node-name                :
port-type                                 :N
port-ip-addr                             :0.0.0.0
fabric-port-wwn                       :20:84:00:05:30:00:4a:de
hard-addr                                 :0x000000
permanent-port-wwn (vendor) :21:00:00:e0:8b:09:4e:d3 (Qlogic)
Connected Interface             :fc3/4
Switch Name (IP address)      :rbadri-vegas11 (10.64.66.50)
------------------------
VSAN:1     FCID:0x460300
------------------------
port-wwn (vendor)              :21:01:00:e0:8b:29:4e:d3 (Qlogic)
node-wwn                       :20:01:00:e0:8b:29:4e:d3
class                           :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             :
symbolic-node-name             :
port-type                       :N
port-ip-addr                    :0.0.0.0
fabric-port-wwn                :20:8d:00:05:30:00:4a:de
hard-addr                       :0x000000
permanent-port-wwn (vendor) :21:01:00:e0:8b:29:4e:d3 (Qlogic)
```

```
Connected Interface              :fc3/13
Switch Name (IP address)       :rbadri-vegas11 (10.64.66.50)
------------------------
VSAN:1     FCID:0x460423
------------------------
port-wwn (vendor)             :21:00:00:04:cf:cf:45:ba (Seagate)
node-wwn                      :20:00:00:04:cf:cf:45:ba
class                          :3
node-ip-addr                  :0.0.0.0
ipa                            :ff ff ff ff ff ff ff ff
fc4-types:fc4_features        :scsi-fcp
symbolic-port-name            :
symbolic-node-name            :
port-type                      :NL
port-ip-addr                   :0.0.0.0
fabric-port-wwn               :20:81:00:05:30:00:4a:de
hard-addr                      :0x000000
permanent-port-wwn (vendor) :00:00:00:00:00:00:00:00
Connected Interface                  :fc3/1
Switch Name (IP address)       :rbadri-vegas11 (10.64.66.50)
Total number of entries = 4
================================================================
```

The following example shows how to display the output for the virtual devices.

```
------------------------
VSAN:2     FCID:0x9509b5
------------------------
port-wwn (vendor)               :50:00:53:00:00:6b:30:02 (Cisco)
node-wwn                            :50:00:53:00:00:6b:30:02
class                                 :-
node-ip-addr                        :0.0.0.0
ipa                                   :ff ff ff ff ff ff ff ff
fc4-types:fc4_features         :scsi-fcp:init sdv
symbolic-port-name                :
symbolic-node-name               :
port-type                                 :N
port-ip-addr                              :0.0.0.0
fabric-port-wwn                       :20:0e:00:0d:ec:25:ef:00
hard-addr                         :0x000000
permanent-port-wwn (vendor) :00:00:00:00:00:00:00:00
Connected Interface               :Virtual Device
Switch Name (IP address)     :Not Available
Total number of entries = 2
```

The following example shows how to display the output for a non-cisco switches:

```
switch# show fcns database detail
------------------------
VSAN:1     FCID:0x6600e2
------------------------
port-wwn (vendor)                  :21:00:00:0c:50:02:c6:f7 (Seagate)
node-wwn                                :20:00:00:0c:50:02:c6:f7
class                                         :3
node-ip-addr                            :0.0.0.0
ipa                                           :ff ff ff ff ff ff ff ff
fc4-types:fc4_features             :scsi-fcp
symbolic-port-name                :
symbolic-node-name               :
port-type                         :NL
port-ip-addr                      :0.0.0.0
fabric-port-wwn                  :20:02:00:0d:ec:11:d4:82
hard-addr                                    :0x000000
```

```
permanent-port-wwn (vendor) :00:00:00:00:00:00:00:00
Connected to                            :fc1/2
Switch Name (IP address)        :rbadri-paradise1 (10.64.66.58)
------------------------
VSAN:1     FCID:0x6b0f23
------------------------
port-wwn (vendor)                    :21:00:00:04:cf:cf:45:50 (Seagate)
node-wwn                                 :20:00:00:04:cf:cf:45:50
class                                          :3
node-ip-addr                             :0.0.0.0
ipa                                             :ff ff ff ff ff ff ff ff
fc4-types:fc4_features              :scsi-fcp
symbolic-port-name                 :SEAGATE ST336753FC      0005
symbolic-node-name                :
port-type                                    :NL
port-ip-addr                              :0.0.0.0
fabric-port-wwn                        :20:0f:00:60:69:80:62:4a
hard-addr                         :0x000000
permanent-port-wwn (vendor) :00:00:00:00:00:00:00:00
Connected to                            :Non-Cisco Switch
Switch Name (IP address)     :bs11 (10.64.66.57)
```

Related Commands

Command	Description
asm mgmt-vsan	Displays the CPP interface configuration for a specified interface.

show fcns statistics

To display the statistical information for a specified VSAN or for all VSANs, use the **show fcns statistics** command.

show fcns statistics [**detail**] [**vsan vsan-id**]

Syntax Description

detail	(Optional) Displays detailed statistics.
vsan vsan-id	(Optional) Displays statistics for the specified VSAN ID. The range is 1 to 4093.

Command Default

None.

Command Modes

EXEC mode.

Command History

Release	Modification
1.0(2)	This command was introduced.

Usage Guidelines

None.

Examples

The following example displays statistical information for a specified VSAN:

```
switch# show fcns statistics

registration requests received = 27
deregistration requests received = 0
queries received = 57
queries sent = 10
reject responses sent = 14
RSCNs received = 0
RSCNs sent = 0
switch#
```

show fc-redirect active-configs

To display all active configurations on a switch, use the show fc-redirect active-configs command.

show fc-redirect active-configs

Syntax Description

This command has no arguments or keywords.

Command Default

None.

Command Modes

EXEC mode.

Command History

Release	Modification
3.2(1)	This command was introduced.

Usage Guidelines

This command is used to verify that there are no active configurations running on the switch during the following operations:

- Downgrading from 3.2.1 image (supporting FC-Redirect) to an older image where FC-Redirect is not supported.
- Decommissioning a local switch.

Note Active configuration implies configurations created by applications running on the current switch or applications created on remote switches for hosts or targets connected to the local switch.

Examples

The following example displays the active configurations running on the switch:

```
switch# show fc-redirect active-configs
Config#1
==========
Appl UUID       = 0x00D8 (ISAPI CFGD Service)
SSM Slot        = 2
SSM Switch WWN  = 20:00:00:05:30:00:90:9e (LOCAL)
Vt PWWN         = 2f:ea:00:05:30:00:71:64
Tgt PWWN        = 21:00:00:20:37:38:63:9e (LOCAL)
Local Host PWWN = 21:00:00:e0:8B:0d:12:c6
Config#2
==========
Appl UUID       = 0x00D8 (ISAPI CFGD Service)
SSM Slot        = 2
SSM Switch WWN  = 20:00:00:05:30:00:90:9e (LOCAL)
Vt PWWN         = 2f:ea:00:05:30:00:71:65
Tgt PWWN        = 21:00:00:20:37:18:67:2c
Local Host PWWN = 21:00:00:e0:8B:0d:12:c6
Config#3
==========
Appl UUID       = 0x00D8 (ISAPI CFGD Service)
SSM Slot        = 2
SSM Switch WWN  = 20:00:00:0d:EC:20:13:00 (REMOTE)
```

```
Vt PWWN         = 2f:ea:00:05:30:00:71:66
Tgt PWWN        = 21:00:00:20:37:18:64:92
Local Host PWWN = 21:00:00:e0:8B:0d:12:c6
```

Related Commands

Command	Description
clear fc-redirect config vt	Clears the active configurations on the local switch.

show fc-redirect configs

To display all the current configuration mode on a switch, use the show fc-redirect configs command.

show fc-redirect configs

Syntax Description

This command has no arguments or keywords.

Command Default

None.

Command Modes

EXEC mode

Command History

Release	Modification
3.2(1)	This command was introduced.
3.3(1a)	Added the configuration mode information to the command output.

Usage Guidelines

None.

Examples

The following example displays the current configuration mode on a switch :

```
switch# show fc-redirect configs
Configuration Mode    = MODE_V1
Config#1
==========
Appl UUID          = 0x00D8 (ISAPI CFGD Service)
SSM Slot           = 2
SSM Switch WWN     = 20:00:00:05:30:00:90:9e (LOCAL)
Vt PWWN            = 2f:ea:00:05:30:00:71:61
Tgt PWWN           = 21:00:00:20:37:38:89:86
Host  1: Host PWWN = 21:00:00:e0:8b:0d:12:c6
         VI   PWWN = 2f:ec:00:05:30:00:71:61
Config#2
==========
Appl UUID          = 0x00D8 (ISAPI CFGD Service)
SSM Slot           = 2
SSM Switch WWN     = 20:00:00:05:30:00:90:9e (LOCAL)
Vt PWWN            = 2f:ea:00:05:30:00:71:62
Tgt PWWN           = 21:00:00:20:37:38:a9:0a
Host  1: Host PWWN = 21:00:00:e0:8b:0d:12:c7
         VI   PWWN = 2f:ec:00:05:30:00:71:62
```

Related Commands

Command	Description
show fc-redirect active-configs	Displays all active configurations on a switch.

show fc-redirect peer-switches

To display all the peer switches in the fabric running FC-Redirect, use the show fc-redirect peer-switches command.

show fc-redirect peer-switches

Syntax Description

This command has no arguments or keywords.

Command Default

None.

Command Modes

EXEC mode

Command History

Release	Modification
3.2(1)	This command was introduced.
3.3(1a)	Added the FC-Redirect version of the switch and configuration mode to the command output.

Usage Guidelines

This command is used to verify the fabric state and is used for troubleshooting.

Note To find the switch IP address for the list of switch WWNs, use the show cfs peers command.

Examples

The following example displays the peer switches in the fabric running FC-Redirect:

```
switch# show fc-redirect peer-switches
------------------------------------------------------------------
 num  Switch WWN                 State  FCR-Ver Cfg-Mode
------------------------------------------------------------------
   1  20:00:00:0d:EC:20:13:00     UP      2       V2
```

Table 4: Show FC-Redirect Peer Switch States, on page 184 lists the output for the show fc-redirect peer-switches command states.

Table 4: Show FC-Redirect Peer Switch States

State	Description
Up	The peer switch is fully synchronized with the local switch.
Down	The communication with the peer switch is not available.
Syncing	The local switch is synchronizing its configuration with the peer switch.
Error	Connection with peer switch is not available.

Related Commands

Command	Description
show fc-redirect active-configs	Displays all active configurations on a switch.

show fcroute

To view specific information about existing Fibre Channel and FSPF configurations, Use the **show fcroute** command.

show fcroute {**distance** | **label** [**label**] **vsan vsan-id** | **multicast** [**fc-id vsan vsan-id** | **vsan vsan-id**] | **summary** [**vsan vsan-id**] | **unicast** [[**host**] **fc-id fc-mask vsan vsan-id** | **vsan vsan-id**]}

Syntax Description

distance	Displays FC route preference.
label label	Displays label routes.
vsan vsan-id	Specifies the ID of the VSAN (from 1 to 4093).
multicast	Displays FC multicast routes.
fc-id	Specifies the Fibre Channel ID.
summary	Displays the FC routes summary.
unicast	Displays FC unicast routes.
vsan vsan-id	Specifies the ID of the VSAN (from 1 to 4093).

Command Default

None.

Command Modes

EXEC mode.

Command History

Release	Modification
1.0(2)	This command was introduced.

Usage Guidelines

When the number of routes are displayed in the command output, both visible and hidden routes are included in the total number of routes.

Examples

The following example displays administrative distance:

```
switch# show fcroute distance
        Route
UUID    Distance        Name
----    --------        ----
10      20              RIB
22      40              FCDOMAIN
39      80              RIB-CONFIG
12      100             FSPF
17      120             FLOGI
21      140             TLPM
```

```
14      180             MCAST
64      200             RIB-TEST
```

The following example displays multicast routing information:

```
switch# show fcroute multicast
VSAN FC ID    # Interfaces
---- -------- ------------
1    0xffffff 0
2    0xffffff 1
3    0xffffff 1
4    0xffffff 0
5    0xffffff 0
6    0xffffff 0
7    0xffffff 0
8    0xffffff 0
9    0xffffff 0
10   0xffffff 0
```

The following example displays FCID information for a specified VSAN:

```
switch# show fcroute multicast vsan 3
VSAN FC ID    # Interfaces
---- -------- ------------
3    0xffffff 1
```

The following example displays FCID and interface information for a specified VSAN:

```
switch# show fcroute multicast 0xffffff vsan 2
VSAN FC ID    # Interfaces
---- -------- ------------
2    0xffffff 1
  fc1/1
```

The following example displays unicast routing information:

```
switch# show fcroute unicast
D:direct R:remote P:permanent V:volatile A:active N:non-active
                                                  # Next
Protocol VSAN    FC ID/Mask     RCtl/Mask Flags Hops   Cost
-------- ---- -------- -------- ---- ---- ----- ------ ----
static   1    0x010101 0xffffff 0x00 0x00 D P A 1      10
static   2    0x111211 0xffffff 0x00 0x00 R P A 1      10
fspf     2    0x730000 0xff0000 0x00 0x00 D P A 4      500
fspf     3    0x610000 0xff0000 0x00 0x00 D P A 4      500
static   4    0x040101 0xffffff 0x00 0x00 R P A 1      103
static   4    0x040102 0xffffff 0x00 0x00 R P A 1      103
static   4    0x040103 0xffffff 0x00 0x00 R P A 1      103
static   4    0x040104 0xffffff 0x00 0x00 R P A 1      103
static   4    0x111211 0xffffff 0x00 0x00 D P A 1      10
```

The following example displays unicast routing information for a specified VSAN:

```
switch# show fcroute unicast vsan 4
D:direct R:remote P:permanent V:volatile A:active N:non-active
                                                  # Next
Protocol VSAN    FC ID/Mask     RCtl/Mask Flags Hops   Cost
-------- ---- -------- -------- ---- ---- ----- ------ ----
static   4    0x040101 0xffffff 0x00 0x00 R P A 1      103
static   4    0x040102 0xffffff 0x00 0x00 R P A 1      103
static   4    0x040103 0xffffff 0x00 0x00 R P A 1      103
```

```
static   4    0x040104 0xffffff 0x00 0x00 R P A 1      103
static   4    0x111211 0xffffff 0x00 0x00 D P A 1      10
```

The following example displays unicast routing information for a specified FCID:

```
switch# show fcroute unicast 0x040101 0xffffff vsan 4
D:direct R:remote P:permanent V:volatile A:active N:non-active
                                                  # Next
Protocol VSAN    FC ID/Mask     RCtl/Mask Flags Hops   Cost
-------- ---- -------- -------- ---- ---- ----- ------ ----
static   4    0x040101 0xffffff 0x00 0x00 R P A 1      103
  fc1/2 Domain 0xa6(166)
```

The following example displays route database information:

```
switch# show fcroute summary
FC route database created Tue Oct 29 01:24:23 2002
VSAN    Ucast   Mcast   Label   Last Modified Time
----    -----   -----   -----   ------------------
1       2       1       0       Tue Oct 29 18:07:02 2002
2       3       1       0       Tue Oct 29 18:33:24 2002
3       2       1       0       Tue Oct 29 18:10:07 2002
4       6       1       0       Tue Oct 29 18:31:16 2002
5       1       1       0       Tue Oct 29 01:34:39 2002
6       1       1       0       Tue Oct 29 01:34:39 2002
7       1       1       0       Tue Oct 29 01:34:39 2002
8       1       1       0       Tue Oct 29 01:34:39 2002
9       1       1       0       Tue Oct 29 01:34:39 2002
10      1       1       0       Tue Oct 29 01:34:39 2002
Total   19      10      0
```

The following example displays route database information for a specified VSAN:

```
switch# show fcroute summary
vsan 4
FC route database created Tue Oct 29 01:24:23 2002
VSAN    Ucast   Mcast   Label   Last Modified Time
----    -----   -----   -----   ------------------
4       6       1       0       Tue Oct 29 18:31:16 2002
Total   6       1       0
```

show fcroute-map

To display the preferred path route map configuration and status, use the **show fcroute-map** command.

show *fcroute-map* [*vsan vsan-id route-map-identifier*]

Syntax Description

vsan *vsan-id*	Specifies a VSAN ID. The range is 1 to 4093.
route-map-identifier	Specifies the route map identifier. The range is 1 to 65535.

Command Default

None.

Command Modes

EXEC mode.

Command History

Release	Modification
3.0(3)	This command was introduced.

Usage Guidelines

Use this command to display the preferred path route map configuration and status before and after activation.

Examples

The following example displays the fcroute map output before preferred path route map activation.

```
switch# show fcroute-map
Fcroute Map: Vsan 2 Route ID: 12 [Status: Pending]
Match Criteria
==============
Source FCID Source FCID Mask Dest FCID     Dest FCID Mask    Status
----------- ---------------- --------- -------------- --------------
0x123456    0xffffff         0x567890      0xffffff          Pending
Set Criteria
============
Preference select strict: Yes (Operational: Yes)
Preference Level Interface IVR Nexthop Vsan Status
---------------- --------------- ------------------
   1              fc8/1 --                  Pending
   5              fc8/2 3                   Pending
```

The following example displays the fcroute map output after preferred path route map activation.

```
switch# show fcroute-map
Fcroute Map: Vsan 2 Route ID: 12 [Status: Active]
Match Criteria
==============
Source FCID Source FCID Mask Dest FCID     Dest FCID Mask    Status
----------- ---------------- --------- -------------- -------------
0x123456    0xffffff         0x567890      0xffffff          Active
Set Criteria
============
Preference select strict: Yes (Operational: Yes)
Preference Level Interface IVR Nexthop Vsan Status
---------------- --------------- ------------------
```

```
1            fc8/1 --                  Active*
5            fc8/2 3                   Active
```

Note The asterisk (*) indicates the currently active path.

show fcs

To display the status of the fabric configuration, Use the **show fcs** commands.

show *fcroute-map* [*vsan vsan-id route-map-identifier*]

Syntax Description

database	Displays local database of FCS.
vsan *vsan-id*	Specifies a VSAN ID. The range is 1 to 4093.
ie	Displays Interconnect Element objects information.
nwwn *wwn*	(Optional) Specifies a node WWN ID. The format is *hh*:*hh*:*hh*:*hh*:*hh*:*hh*:*hh*:*hh*.
vsan *vsan-id*	(Optional) Specifies a VSAN ID. The range is 1 to 4093.
platform	Displays Platform Objects Information.
name *string*	(Optional) Specifies a platform name. Maximum length is 255 characters.
port	Displays Port Objects Information.
pwwn *wwn*	(Optional) Specifies a port WWN id. The format is *hh*:*hh*:*hh*:*hh*:*hh*:*hh*:*hh*:*hh*.
statistics	Displays statistics for FCS packets.
vsan	Displays list of all the VSANs and plat-check-mode for each.

Command Default

None.

Command Modes

EXEC mode.

Command History

Release	Modification
1.0(2)	This command was introduced.

Usage Guidelines

The FCS Switch Mgmt-Addresses field for a switch (an FCS Interconnect Element) is only populated with IP addresses from interfaces that are in up state, even if the switch has local management addresses configured on down interfaces, such as the mgmt0 interface or IPFC interfaces.

Examples

The following example displays FCS database information:

```
switch# show fcs database
FCS Local Database in VSAN: 1
-------------------------------
Switch WWN               : 20:01:00:05:30:00:16:df
Switch Domain Id         : 0x7f(127)
Switch Mgmt-Addresses    : snmp://172.22.92.58/eth-ip
```

```
                          http://172.22.92.58/eth-ip
Fabric-Name              : 20:01:00:05:30:00:16:df
Switch Logical-Name      : 172.22.92.58
Switch Information List  : [Cisco Systems*DS-C9509*0*20:00:00:05:30:00
Switch Ports:
--------------------------------------------------------------------
Interface  pWWN                      Type     Attached-pWWNs
--------------------------------------------------------------------
fc2/1      20:41:00:05:30:00:16:de  TE       20:01:00:05:30:00:20:de
fc2/2      20:42:00:05:30:00:16:de  Unknown  None
fc2/17     20:51:00:05:30:00:16:de  TE       20:0a:00:05:30:00:20:de
FCS Local Database in VSAN: 5
------------------------------
Switch WWN               : 20:05:00:05:30:00:12:5f
Switch Domain Id         : 0xef(239)
Switch Mgmt-Addresses    : http://172.22.90.171/eth-ip
                           snmp://172.22.90.171/eth-ip
                           http://10.10.15.10/vsan-ip
                           snmp://10.10.15.10/vsan-ip
Fabric-Name              : 20:05:00:05:30:00:12:5f
Switch Logical-Name      : 172.22.90.171
Switch Information List  : [Cisco Systems*DS-C9509**20:00:00:05:30:00:12:5e]
Switch Ports:
--------------------------------------------------------------------
Interface  pWWN                      Type     Attached-pWWNs
--------------------------------------------------------------------
fc3/1      20:81:00:05:30:00:12:5e  TE       22:01:00:05:30:00:12:9e
fc3/2      20:82:00:05:30:00:12:5e  TE       22:02:00:05:30:00:12:9e
fc3/3      20:83:00:05:30:00:12:5e  TE       22:03:00:05:30:00:12:9e
```

The following example displays Interconnect Element object information for a specific VSAN:

```
switch# show fcs ie vsan  1
IE List for VSAN: 1
--------------------------------------------------------------------
IE-WWN                   IE-Type                          Mgmt-Id
--------------------------------------------------------------------
20:01:00:05:30:00:16:df  Switch (Local)                   0xfffc7f
20:01:00:05:30:00:20:df  Switch (Adjacent)                0xfffc64
[Total 2 IEs in Fabric]
```

This command displays Interconnect Element object information for a specific WWN:

```
switch# show fcs ie nwwn 20:01:00:05:30:00:16:df vsan 1
IE Attributes
-------------
Domain-Id = 0x7f(127)
Management-Id = 0xfffc7f
Fabric-Name = 20:01:00:05:30:00:16:df
Logical-Name = 172.22.92.58
Management Address List =
        snmp://172.22.92.58/eth-ip
        http://172.22.92.58/eth-ip
Information List:
        Vendor-Name = Cisco Systems
        Model Name/Number = DS-C9509
        Release-Code = 0
```

This command displays platform information:

```
switch# show fcs platform name SamplePlatform vsan 1
Platform Attributes
-------------------
```

```
Platform Node Names:
        11:22:33:44:55:66:77:88
Platform Type = Gateway
Platform Management Addresses:
        1.1.1.1
```

This command displays platform information within a specified VSAN:

```
switch# show fcs platform vsan 1
Platform List for VSAN: 1
Platform-Names
--------------
SamplePlatform
[Total 1 Platforms in Fabric]
```

This command displays FCS port information within a specified VSAN:

```
switch# show fcs port vsan 24
Port List in VSAN: 24
                -- IE WWN: 20:18:00:05:30:00:16:df  --
------------------------------------------------------------------------
Port-WWN                 Type      Module-Type            Tx-Type
------------------------------------------------------------------------
20:41:00:05:30:00:16:de  TE_Port   SFP with Serial Id      Shortwave Laser
20:51:00:05:30:00:16:de  TE_Port   SFP with Serial Id      Shortwave Laser
[Total 2 switch-ports in IE]
                -- IE WWN: 20:18:00:05:30:00:20:df  --
------------------------------------------------------------------------
Port-WWN                 Type      Module-Type            Tx-Type
------------------------------------------------------------------------
20:01:00:05:30:00:20:de  TE_Port   SFP with Serial Id      Shortwave Laser
20:0a:00:05:30:00:20:de  TE_Port   SFP with Serial Id      Shortwave Laser
[Total 2 switch-ports in IE]
```

This command displays ports within a specified WWN:

```
switch# show fcs port pwwn 20:51:00:05:30:00:16:de vsan 24
Port Attributes
---------------
Port Type = TE_Port
Port Number = 0x1090000
Attached-Port-WWNs:
        20:0a:00:05:30:00:20:de
Port State = Online
```

This command displays FCS statistics:

```
switch# show fcs statistics
FCS Statistics for VSAN: 1
--------------------------
FCS Rx Get Reqs   :2
FCS Tx Get Reqs   :7
FCS Rx Reg Reqs   :0
FCS Tx Reg Reqs   :0
FCS Rx Dereg Reqs :0
FCS Tx Dereg Reqs :0
FCS Rx RSCNs      :0
FCS Tx RSCNs      :3
FCS Rx RJTs       :3
FCS Tx RJTs       :0
FCS Rx ACCs       :4
FCS Tx ACCs       :2
```

```
FCS No Response   :0
FCS Retransmit    :0
FCS Statistics for VSAN: 30
---------------------------
FCS Rx Get Reqs   :2
FCS Tx Get Reqs   :2
FCS Rx Reg Reqs   :0
FCS Tx Reg Reqs   :0
FCS Rx Dereg Reqs :0
FCS Tx Dereg Reqs :0
FCS Rx RSCNs      :0
FCS Tx RSCNs      :0
FCS Rx RJTs       :0
FCS Tx RJTs       :0
FCS Rx ACCs       :2
FCS Tx ACCs       :2
FCS No Response   :0
FCS Retransmit    :0
```

show fcsp

To display the status of the Fibre Channel Security Protocol (FC-SP) configuration, use the **show fcsp** command.

show fcs p [**asciiwwn** *ascii-wwn* | **dhchap** [**database**] | **interface fc** *slot/port* [**statistics** | **wwn**] | **fcip** *interface-number* [**statistics** | **wwn**]]

Syntax Description

asciiwwn *ascii-wwn*	(Optional) Displays the ASCII representation of the WWN used with AAA server.
dhchap	(Optional) Displays the DHCHAP hash algorithm status.
database	(Optional) Displays the contents of the local DHCHAP database.
interface	(Optional) Displays the FC-SP settings for a FC or FCIP interface.
fc *slot/port*	(Optional) Displays the Fibre Channel interface in the specified slot and port.
statistics	(Optional) Displays the statistics for the specified interface.
wwn	(Optional) Displays the FC-SP identity of the other device.
fcip *interface-number*	(Optional) Displays the description of the specified FCIP interface. The range is 1 to 255.

Command Default

None.

Command Modes

EXEC mode.

Command History

Release	Modification
1.3(1)	This command was introduced.

Usage Guidelines

None.

Examples

The following example displays DHCHAP configurations in FC interfaces:

```
switch# show fcsp interface fc1/9

fc1/9:
        fcsp authentication mode:SEC_MODE_ON
        Status: Successfully authenticated
```

The following example displays DHCHAP statistics for a FC interfaces:

```
switch# show fcsp interface fc1/9 statistics

fc1/9:
        fcsp authentication mode:SEC_MODE_ON
        Status: Successfully authenticated
        Statistics:
```

```
        FC-SP Authentication Succeeded:5
        FC-SP Authentication Failed:0
        FC-SP Authentication Bypassed:0
```

The following example displays the FC-SP WWN of the device connected through a specified interface:

```
switch# show fcsp interface fc 2/1 wwn
fc2/1:
        fcsp authentication mode:SEC_MODE_ON
        Status: Successfully authenticated
        Other device's WWN:20:00:00:e0:8b:0a:5d:e7
```

The following example displays hash algorithm and DHCHAP groups configured for the local switch:

```
switch# show fcsp dhchap
Supported Hash algorithms (in order of preference):
DHCHAP_HASH_MD5
DHCHAP_HASH_SHA_1
Supported Diffie Hellman group ids (in order of preference):
DHCHAP_GROUP_NULL
DHCHAP_GROUP_1536
DHCHAP_GROUP_1024
DHCHAP_GROUP_1280
DHCHAP_GROUP_2048
```

The following example displays the DHCHAP local password database:

```
switch# show fcsp dhchap database
DHCHAP Local Password:
        Non-device specific password:********
        Password for device with WWN:29:11:bb:cc:dd:33:11:22 is ********
        Password for device with WWN:30:11:bb:cc:dd:33:11:22 is ********
Other Devices' Passwords:
        Password for device with WWN:00:11:22:33:44:aa:bb:cc is ********
```

The following example displays he ASCII representation of the device WWN:

```
switch# show fcsp asciiwwn 30:11:bb:cc:dd:33:11:22
Ascii representation of WWN to be used with AAA servers:Ox_3011bbccdd331122
```

Related Commands

Command	Description
fcsp enable	Enables the FC-SP feature for this switch.

show fcsp interface

To display the FC-SP- related information for a specific interface, use the show fcsp interface command.

show fcsp interface {**fc** *slot/port* | **fcip** *slot/port*}

Syntax Description

fc slot/port	Specifies FC slot number and port number.
fcip slot/port	Specifies FCIP slot number and port number.

Command Default

None.

Command Modes

EXEC mode.

Command History

Release	Modification
NX-OS 4.2(1)	This command was introduced.

Usage Guidelines

Only ISLs with FC-SP port mode turned on and available on ESP capable switches or blades are displayed.

Examples

The following example shows how to display the FC-SP related information for a specific interface:

```
switch# show fcsp interface fc7/41
fc7/41:
fcsp authentication mode:SEC_MODE_OFF
ESP is enabled
configured mode is: GCM
programmed ingress SA: 300, 303
programmed egress SA: 300
Status:FC-SP protocol in progress
```

Related Commands

Command	Description
fcsp enable	Enables FC-SP.

show fctimer

To view the Fibre Channel timers (fctimer), use the **show fctimer** command.

show fctimer [**d_s_tov** [**vsan vsan-id**] | **distribution status** | **e_d_tov** [**vsan vsan-id**] | **f_s_tov** [**vsan vsan-id**] | **last action status** | **pending** | **pending-diff** | **r_a_tov** [**vsan vsan-id**] | **session-status** | [**vsan** *vsan-id*]]

Syntax Description

d_s_tov	(Optional) Displays the distributed services time out value (D_S_TOV) in milliseconds.
vsan *vsan-id*	(Optional) Displays information for a VSAN. The range is 1 to 4093.
distribution status	(Optional) Displays Cisco Fabric Services (CFS) distribution status information.
e_d_tov	(Optional) Displays the error detection time out value (E_D_TOV) in milliseconds.
f_s_tov	(Optional) Displays the fabric stability time out value (F_S_TOV) in milliseconds.
last action status	(Optional) Displays the status of the last CFS commit or discard operation.
pending	(Optional) Displays the status of pending fctimer commands.
pending-diff	(Optional) Displays the difference between pending database and running config.
r_a_tov	(Optional) Displays the resource allocation time out value (R_A_TOV) in milliseconds.
session-status	(Optional) Displays the state of fctimer CFS session.

Command Default

None.

Command Modes

EXEC mode.

Command History

Release	Modification
1.3(1)	This command was introduced.
2.0(x)	Added the distribution status , last action status , pending , pending-diff , and session-status keywords.

Usage Guidelines

None.

Examples

The following example displays configured global TOVs:

```
switch# show fctimer
F_S_TOV   D_S_TOV   E_D_TOV   R_A_TOV
---------------------------------------:
5000 ms   5000 ms   2000 ms   10000 ms
```

The following example displays configured TOVs for a specified VSAN:

```
switch# show fctimer vsan 10
vsan no.  F_S_TOV   D_S_TOV   E_D_TOV   R_A_TOV
-------------------------------------------------
10        5000 ms   5000 ms   3000 ms   10000 ms
```

Related Commands

Command	Description
fctimer	Configures fctimer parameters.

show fc-tunnel

To display configured Fibre Channel tunnel information, use the **show fc-tunnel** command.

show fc-tunnel [**explicit-path** [*name*] | **tunnel-id-map**]

Syntax Description

explicit-path	(Optional) Displays all configured explicit paths.
name	(Optional) Specifies the explicit path name. The maximum length is 16 characters.
tunnel-id-map	(Optional) Displays the mapping information for the outgoing interface.

Command Default

None.

Command Modes

EXEC mode.

Command History

Release	Modification
6.2(5)	This command was deprecated.
1.2(1)	This command was introduced.

Usage Guidelines

Multiple tunnel IDs can terminate at the same interface.

Examples

The following example displays the FC tunnel status:

```
switch# show fc-tunnel
fc-tunnel is enabled
```

The following example displays the FC tunnel egress mapping information:

```
switch# show fc-tunnel tunnel-id-map
tunnel id egress interface
    150     fc3/1
 100  fc3/1
```

The following example displays explicit mapping information of the FC tunnel:

```
switch# show fc-tunnel explicit-path
Explicit path name: Alternate1
       10.20.1.2 loose
       10.20.1.3 strict
Explicit path name: User2
       10.20.50.1 strict
       10.20.50.4 loose
```

show fdmi

To display the Fabric-Device Management Interface (FDMI) database information, use the **show fdmi** command.

show fdmi database [**detail** [**hba-id** [*hba-id* **vsan** *vsan-id* | **vsan** *vsan-id*] | **vsan** *vsan-id*]]

Syntax Description

database	Displays the FDMI database contents.
detail	(Optional) Specifies detailed FDMI information.
hba-id	(Optional) Displays detailed information for the specified HBA entry.
hba-id	(Optional) Displays detailed information for the specified HBA entry.
vsan *vsan-id*	(Optional) Specifies FDMI information for the specified VSAN. The range is 1 to 4093.

Command Default

None.

Command Modes

EXEC mode.

Command History

Release	Modification
9.4(2)	**show fdmi database detail** command displays all the virtual device information.
1.3(1)	This command was introduced.

Usage Guidelines

None.

Examples

The following example displays all HBA end devices:

```
switch# show fdmi database
Registered HBA List for VSAN 1
  10:00:00:00:c9:32:8d:77
  21:01:00:e0:8b:2a:f6:54
switch# show fdmi database detail
Registered HBA List for VSAN 1
-------------------------------
HBA-ID: 10:00:00:00:c9:32:8d:77
-------------------------------
Node Name        :20:00:00:00:c9:32:8d:77
Manufacturer     :Emulex Corporation
Serial Num       :0000c9328d77
Model            :LP9002
Model Description:Emulex LightPulse LP9002 2 Gigabit PCI Fibre Channel Adapter
Hardware Ver     :2002606D
Driver Ver       :SLI-2 SW_DATE:Feb 27 2003, v5-2.20a12
ROM Ver          :3.11A0
Firmware Ver     :3.90A7
OS Name/Ver      :Window 2000
```

```
CT Payload Len   :1300000
  Port-id: 10:00:00:00:c9:32:8d:77
--------------------------------
HBA-ID: 21:01:00:e0:8b:2a:f6:54
--------------------------------
Node Name        :20:01:00:e0:8b:2a:f6:54
Manufacturer     :QLogic Corporation
Serial Num       :\74262
Model            :QLA2342
Model Description:QLogic QLA2342 PCI Fibre Channel Adapter
Hardware Ver     :FC5010409-10
Driver Ver       :8.2.3.10 Beta 2 Test 1 DBG (W2K VI)
ROM Ver          :1.24
Firmware Ver     :03.02.13.
OS Name/Ver      :500
CT Payload Len   :2040
  Port-id: 21:01:00:e0:8b:2a:f6:54
```

The following example displays the details of all HBA physical and virtual end devices:

```
switch# show fdmi database detail
Registered HBA List for VSAN 1
--------------------------------
HBA-ID: 10:00:00:10:9b:e0:ff:0c
--------------------------------
Node Name        :20:00:00:10:9b:e0:ff:0c
Manufacturer     :Emulex Corporation
Serial Num       :FP13662272
Model            :LPe36002-M64
Model Description:Emulex LPe36002-M64 2-Port 64Gb Fibre Channel Adapter
Hardware Ver     :0000000
Driver Ver       :12.6.0.2
ROM Ver          :12.8.351.47
Firmware Ver     :12.8.351.47
OS Name/Ver      :Linux 4.18.0-193.el8.x86_64 #1 SMP Fri Mar 27 14:35:58 UTC 2020
CT Payload Len   :245760
  Port-id: 10:00:00:10:9b:e0:ff:0c
    Supported FC4 types:1 scsi-fcp fc-gs NVMe
    Supported Speed    :16G 32G 64G
    Current Speed      :32G
    Maximum Frame Size :2048
    OS Device Name     :/sys/class/scsi_host/host13
    Host Name          :localhost.localdomain
--------------------------------
HBA-ID: 21:00:00:24:ff:7e:e6:14
--------------------------------
Node Name        :20:00:00:24:ff:7e:e6:14
Manufacturer     :QLogic Corporation
Serial Num       :RFD1604J61197
Model            :QLE2742
Model Description:Cisco QLE2742 Dual Port 32Gb FC to PCIe Gen3 x8 Adapter
Hardware Ver     :BK3210407-43 02
Driver Ver       :10.01.00.63.08.0-k
ROM Ver          :3.62
Firmware Ver     :8.08.05 (d0d5)
  Port-id: 21:00:00:24:ff:7e:e6:14
    Supported FC4 types:scsi-fcp
    Supported Speed    :8G 16G 32G
    Current Speed      :16G
    Maximum Frame Size :2048
    OS Device Name     :qla2xxx:host9
    Host Name          :localhost.localdomain
  Port-id: 21:04:00:24:ff:7e:e6:14
    Supported FC4 types:scsi-fcp
```

```
    Supported Speed    :8G 16G 32G
    Current Speed      :16G
    Maximum Frame Size :2048
    OS Device Name     :qla2xxx:host15
    Host Name          :localhost.localdomain
  Port-id: 21:05:00:24:ff:7e:e6:14
    Supported FC4 types:scsi-fcp
    Supported Speed    :8G 16G 32G
    Current Speed      :16G
    Maximum Frame Size :2048
    OS Device Name     :qla2xxx:host16
    Host Name          :localhost.localdomain
  Port-id: 21:06:00:24:ff:7e:e6:14
    Supported FC4 types:scsi-fcp
    Supported Speed    :8G 16G 32G
    Current Speed      :16G
    Maximum Frame Size :2048
    OS Device Name     :qla2xxx:host17
    Host Name          :localhost.localdomain
  Port-id: 21:07:00:24:ff:7e:e6:14
    Supported FC4 types:scsi-fcp
    Supported Speed    :8G 16G 32G
    Current Speed      :16G
    Maximum Frame Size :2048
    OS Device Name     :qla2xxx:host18
    Host Name          :localhost.localdomain
```

The following example displays VSAN 1 specific FDMI information:

```
switch# show fdmi database detail vsan 1
Registered HBA List for VSAN 1
-------------------------------
HBA-ID: 10:00:00:00:c9:32:8d:77
-------------------------------
Node Name        :20:00:00:00:c9:32:8d:77
Manufacturer     :Emulex Corporation
Serial Num       :0000c9328d77
Model            :LP9002
Model Description:Emulex LightPulse LP9002 2 Gigabit PCI Fibre Channel Adapter
Hardware Ver     :2002606D
Driver Ver       :SLI-2 SW_DATE:Feb 27 2003, v5-2.20a12
ROM Ver          :3.11A0
Firmware Ver     :3.90A7
OS Name/Ver      :Window 2000
CT Payload Len   :1300000
  Port-id: 10:00:00:00:c9:32:8d:77
-------------------------------
HBA-ID: 21:01:00:e0:8b:2a:f6:54
-------------------------------
Node Name        :20:01:00:e0:8b:2a:f6:54
Manufacturer     :QLogic Corporation
Serial Num       :\74262
Model            :QLA2342
Model Description:QLogic QLA2342 PCI Fibre Channel Adapter
Hardware Ver     :FC5010409-10
Driver Ver       :8.2.3.10 Beta 2 Test 1 DBG (W2K VI)
ROM Ver          :1.24
Firmware Ver     :03.02.13.
OS Name/Ver      :500
CT Payload Len   :2040
  Port-id: 21:01:00:e0:8b:2a:f6:54
```

The following example displays details for the specified HBA entry:

```
switch# show fdmi database detail Hba-id 21:01:00:e0:8b:2a:f6:54 vsan 1
Node Name        :20:01:00:e0:8b:2a:f6:54
Manufacturer     :QLogic Corporation
Serial Num       :\74262
Model            :QLA2342
Model Description:QLogic QLA2342 PCI Fibre Channel Adapter
Hardware Ver     :FC5010409-10
Driver Ver       :8.2.3.10 Beta 2 Test 1 DBG (W2K VI)
ROM Ver          :1.24
Firmware Ver     :03.02.13.
OS Name/Ver      :500
CT Payload Len   :2040
  Port-id: 21:01:00:e0:8b:2a:f6:54
```

show ficon

To display configured FICON information, use the **show ficon** command.

show ficon [**control-device sb3** [**vsan** *vsan-id*] | **first-available port-number** | **port default-state** | **port-numbers** {**assign** [*slot* | **logical-port** | **slot** *slot*] | **interface**} | **stat** | **vsan** *vsan-id* [**allegiance** | **directory-history** [**key-counter** *value*] | **file** {**all** | **name** *filename* [**portaddress** *port*]}] | **interface** {**fc slot** */* *port* | **fcip** *fcip-id* | **port-channel** *port*} | **portaddress** [*port* [**counters**] | **portnumber** [*port-numbers* | **duplicate** | **undefined**] [**brief**] [**installed**]]]

Syntax Description

control-device sb3	(Optional) Displays FICON control device information.
vsan *vsan-id*	Specifies FICON information for the specified VSAN ranging from1 to 4093.
first-available port-number	(Optional) Displays the available port numbers.
port default-state	(Optional) Displays the default FICON port prohibit state.
port-numbers	(Optional) Displays FICON port numbers.
assign *slot*	(Optional) Displays the FICON port numbers assigned to the specified slot, 1 though 6.
logical port	(Optional) Displays FICON port numbers assigned to logical interfaces.
slot *slot*	(Optional) Displays the FICON port numbers assigned to the specified slot, 1 though 6.
interface	(Optional) Displays FICON information for an interface.
stat	(Optional) Displays information about FICONSTAT.
allegiance	(Optional) Displays FICON device allegiance information.
directory-history	(Optional) Displays FICON directory history.
key-counter *value*	(Optional) Specifies a key counter.
file	(Optional) Displays FICON information for a file.
all	(Optional) Specifies all files.
name *filename*	(Optional) Specifies the name for a file.
portaddress *port*	(Optional) Specifies a port address for a file.
fc *slot*/*port*	Specifies a Fibre Channel interface.
fcip *fcip-id*	Specifies an FC IP interface.
port-channel *port*	Specifies a PortChannel interface.
counters	(Optional) Displays counter information for the port address.

portnumber *port-numbers*	(Optional) Displays FICON information for a port number in the specified range, 0 through 153 or 0x0 through 0x99.
duplicate	(Optional) Displays FICON interfaces with duplicate port numbers and port addresses.
undefined	(Optional) Displays FICON interfaces without port numbers and port addresses.
brief	(Optional) Displays brief FICON information for the port address.
installed	(Optional) Displays FICON information for the installed port address.

Command Default

None.

Command Modes

EXEC mode.

Command History

Release	Modification
1.3(1)	This command was introduced.
3.0(1)	• Added the **port-numbers** and **stat** options. • Added the **portnumber** keyword.
3.0(2)	Added the **port default-state** option.

Usage Guidelines

If FICON is not enabled on a VSAN, you will not be able to view FICON configuration information for that VSAN.

Examples

The following example displays configured FICON information:

```
switch# show ficon
Ficon information for VSAN 20
  Ficon is online
  VSAN is active
  Host port control is Enabled
  Host offline control is Enabled
  User alert mode is Enabled
  SNMP port control is Enabled
  Host set director timestamp is Enabled
  Active=Saved is Disabled
  Number of implemented ports are 240
  Key Counter is 73723
  FCID last byte is 0
  Date/Time is set by host to Sun Jun 26 00:04:06.991999 1904
  Device allegiance is locked by Host
  Codepage is us-canada
  Saved configuration files
    IPL
    _TSIRN00
```

The following example displays the default prohibit state:

```
switch# show ficon port default-state
Port default state is allow-all
```

The following example displays assigned FICON port numbers:

```
switch# show ficon port-numbers assign
ficon slot 1 assign port-numbers 0-31
ficon slot 2 assign port-numbers 32-63
ficon slot 3 assign port-numbers 64-95
ficon slot 4 assign port-numbers 96-127
ficon logical-port assign port-numbers 128-153
```

The following example displays port address information:

```
switch# show ficon vsan 2 portaddress
Port Address 1 is not installed in vsan 2
    Port number is 1, Interface is fc1/1
    Port name is
    Port is not admin blocked
    Prohibited port addresses are 0,241-253,255
Port Address 2 is not installed in vsan 2
    Port number is 2, Interface is fc1/2
    Port name is
    Port is not admin blocked
    Prohibited port addresses are 0,241-253,255
...
Port Address 239 is not installed in vsan 2
    Port name is
    Port is not admin blocked
    Prohibited port addresses are 0,241-253,255
Port Address 240 is not installed in vsan 2
    Port name is
    Port is not admin blocked
    Prohibited port addresses are 0,241-253,255
```

The following example displays port address information in a brief format:

```
switch# show ficon vsan 2 portaddress 50-55 brief
--------------------------------------------------------------------------------
Port    Port    Interface          Admin     Status           Oper   FCID
Address Number                     Blocked                    Mode
--------------------------------------------------------------------------------
50      50      fc2/18             on             fcotAbsent       --     --
51      51      fc2/19             off       fcotAbsent       --     --
52      52      fc2/20             off       fcotAbsent       --     --
53      53      fc2/21             off       fcotAbsent       --     --
54      54      fc2/22             off       notConnected     --     --
55      55      fc2/23             off       up               FL     0xea0000
56  55          off       up               FL     0xea0000
```

The following example displays port address counter information:

```
switch# show ficon vsan 20 portaddress 8 counters
Port Address 8(0x8) is up in vsan 20
    Port number is 8(0x8), Interface is fc1/8
    Version presented 1, Counter size 32b
    242811 frames input, 9912794 words
      484 class-2 frames, 242302 class-3 frames
      0 link control frames, 0 multicast frames
      0 disparity errors inside frames
      0 disparity errors outside frames
```

```
      0 frames too big, 0 frames too small
      0 crc errors, 0 eof errors
      0 invalid ordered sets
      0 frames discarded c3
      0 address id errors
    116620 frames output, 10609188 words
      0 frame pacing time
    0 link failures
    0 loss of sync
    0 loss of signal
    0 primitive seq prot errors
    0 invalid transmission words
    1 lrr input, 0 ols input, 5 ols output
    0 error summary
```

The following example displays the contents of the specified FICON configuration file:

```
switch# show ficon vsan 3 file IPL
FICON configuration file IPL      in vsan 3
    Port address 1
        Port name is
        Port is not blocked
        Prohibited port addresses are 0,81-253,255
    Port address 2
        Port name is
        Port is not blocked
        Prohibited port addresses are 0,81-253,255
    Port address 3
        Port name is
        Port is not blocked
        Prohibited port addresses are 0,81-253,255
    Port address 4
        Port name is
        Port is not blocked
        Prohibited port addresses are 0,81-253,255
...
Port address 80
        Port name is
        Port is not blocked
        Prohibited port addresses are 0,81-253,255
    Port address 254
        Port name is
        Port is not blocked
        Prohibited port addresses are 0,81-253,255
```

The following example displays all FICON configuration files:

```
switch# show ficon vsan 2
Ficon information for VSAN 2
  Ficon is enabled
  VSAN is active
  Host control is Enabled
  Host offline control is Enabled
  Clock alert mode is Disabled
  User alert mode is Disabled
  SNMP control is Disabled
  Active=Saved is Disabled
  Number of implemented ports are 240
  Key Counter is 9
  FCID last byte is 0
  Date/Time is same as system time (Sun Dec 14 01:26:30.273402 1980)
  Device Allegiance not locked
  Codepage is us-canada
```

```
  Saved configuration files
    IPL
    IPLFILE1
```

The following example displays the specified port addresses for a FICON configuration file:

```
switch# show ficon vsan 2 file iplfile1 portaddress 1-7
FICON configuration file IPLFILE1 in vsan 2
    Port address 1
        Port name is
        Port is not blocked
        Prohibited port addresses are 0,241-253,255
    Port address 2
        Port name is
        Port is not blocked
        Prohibited port addresses are 0,241-253,255
    Port address 3
        Port name is P3
        Port is not blocked
        Prohibited port addresses are 0,241-253,255
...
    Port address 7
        Port name is
        Port is not blocked
        Prohibited port addresses are 0,241-253,255
```

The following example displays the specified port address when FICON is enabled:

```
switch# show ficon
 vsan 2 portaddress 55
Port Address 55 is not installed in vsan 2
    Port number is 55, Interface is fc2/23
    Port name is
    Port is not admin blocked
    Prohibited port addresses are 0,241-253,255
    Admin port mode is FL
    Port mode is FL, FCID is 0xea0000
```

The following example displays two port addresses configured with different states:

```
switch# show ficon vsan 2 portaddress 2
Port Address 2(0x2) is not installed in vsan 2
    Port number is 2(0x2), Interface is fc1/2
    Port name is
    Port is not admin blocked
    Prohibited port addresses are 0,241-253,255(0,0xf1-0xfd,0xff)
    Admin port mode is auto
    Peer was type model manufactured by
switch# show ficon vsan 2 portaddress 1
Port Address 2(0x2) is not installed in vsan 2
    Port number is 2(0x2), Interface is fc1/2
    Port name is
 Port name is SampleName
    Port is admin blocked
 Prohibited port addresses are 0,241-253,255(0,0xf1-0xfd,0xff)
    Admin port mode is auto
    Peer was type model manufactured by
```

The following example displays control unit information:

```
switch# show ficon control-device sb3
Control Unit Image:0x80b9c2c
```

```
VSAN:20 CU:0x20fe00 CUI:0 CUD:0 CURLP:(nil)
ASYNC LP:(nil) MODE:1 STATE:1 CQ LEN:0 MAX:0
PRIMARY LP:   VSAN:0 CH:0x0 CHI:0 CU:0x0 CUI:0
ALTERNATE LP: VSAN:0 CH:0x0 CHI:0 CU:0x0 CUI:0
Logical Path:0x80b9fb4
VSAN:20 CH:0x200600 CHI:15 CU:0x20fe00 CUI:0 STATE:1 FLAGS:0x1
LINK: OH:0x0 OC:0x0 IH:0x0 IC:0x0
DEV:  OH:0x0 OC:0x0 IH:0x0 IC:0x0
SENSE: 00 00 00 00 00 00 00 46
       30 20 00 00 00 00 00 00
       00 00 00 00 00 00 00 00
       00 00 00 00 00 00 00 00
IUI:0x0 DHF:0x0 CCW:0x0 TOKEN:0x0 PCCW:0x0 FCCW:0x0 PTOKEN:0x0 FTOKEN:0x0
CMD:0x0 CCW_FLAGS:0x0 CCW_COUNT:0 CMD_FLAGS:0x0 PRIO:0x0 DATA_COUNT:0
STATUS:0x0 FLAGS:0x0 PARAM:0x0 QTP:0x0 DTP:0x0
CQ LEN:0 MAX:0 DESTATUS:0x0
```

The following example displays the history buffer for the specified VSAN:

```
switch# show ficon vsan 20 director-history
Director History Buffer for vsan 20
-------------------------------------------
Key Counter           Ports Address
                      Changed
-------------------------------------------
74556                 43
74557                 44
74558                 45
74559                 46
74560                 47
74561                 48
74562                 49
74563                 50
74564                 51
74565                 52
74566                 53
74567                 54
74568                 55
74569                 56
74570                 57
74571                 58
74572                 59
74573                 60
74574                 61
74575                 62
74576                 63
74577                 64
74578
74579
74580                 1-3,5,10,12,14-16,34-40,43-45,47-54,56-57,59-64
74581                 3,5
74582                 64
74583
74584                 1-3,10,12,14-16,34-40,43-45,47-54,56-57,59-64
74585                 1
74586                 2
74587                 3
```

The following example displays the running configuration information:

```
switch# show running-config
...
ficon vsan 2
```

```
portaddress 1
block
name SampleName
prohibit portaddress 3
portaddress 3
prohibit portaddress 1
file IPL
```

The following example displays the available port numbers:

```
switch# show ficon first-available port-number
Port number 129(0x81) is available
```

show ficon vsan diagnostics

To display the FICON diagnostics status, use the **show ficon vsan diagnostics** command.

show ficon vsan *ID* **diagnostics**

Syntax Description

vsan *ID*	Specifies the VSAN ID. Range is 1–4093.

Command Default

None.

Command Modes

Privileged EXEC (#)

Command History

Release	Modification
8.4(2b)	This command was introduced.

Usage Guidelines

The interval in the command output is the performance interval for gathering of performance and health information for all the FICON ports in a fabric. All switches must have FICON diagnostics enabled with a nonzero interval for the IBM z/OS to display useful data. The diagnostics interval is set by z/OS during CUP device initialization on any or all the switches in the fabric and then will be propagated to the other switches in the fabric as part of fabric services. For more information, see the appropriate IBM z/OS documentation.

Examples

The following example displays how to enable FICON diagnostics on VSAN 10:

```
switch# show ficon vsan 10 diagnostics
Diagnostics: Enabled
  interval : 30
  version  : 1
  CFS      : Enabled
```

Related Commands

Command	Description
ficon distribute	Enables Cisco Fabric Services (CFS) distribution on a FICON switch.
ficon vsan diagnostics	Enables FICON diagnostics in a VSAN.

show file

To display the contents of a specified file in the file system, use the **show file** command.

show file filename [**cksum** | **md5sum**]

Syntax Description

filename	Specifies a filename.
cksum	(Optional) Displays CRC checksum for a file.
md5sum	(Optional) Displays MD5 checksum for a file.

Command Default

None.

Command Modes

EXEC mode.

Command History

Release	Modification
1.0(2)	This command was introduced.

Usage Guidelines

None.

Examples

The following example displays the contents of the test file that resides in the slot0 directory:

```
switch# show file slot0:test
config t
Int fc1/1
no shut
end
show int
```

The following example displays the contents of a file residing in the current directory:

```
switch# show file myfile
```

The following example displays the CRC checksum for a file:

```
switch# show file bootflash:vboot-1 cksum
838096258
```

The following example displays the MD5 checksum for a file:

```
switch# show file bootflash:vboot-1 md5sum
3d8e05790155150734eb8639ce98a331
```

show flex-attach

To display the FlexAttach distribution status, use the show flex-attach command.

show flex-attach

Syntax Description

This command has no arguments or keywords.

Command Default

None.

Command Modes

EXEC mode

Command History

Release	Modification
3.3(1a)	This command was introduced.

Usage Guidelines

None.

Examples

The following example displays the FlexAttach distribution status:

```
switch# show flex-attach
Fabric distribution status
----------------------
fabric distribution enabled
Last Action Time Stamp     : Sun Mar  2 02:32:04 2008
Last Action                : Commit
Last Action Result         : Success
Last Action Failure Reason : none
```

Related Commands

Command	Description
show flex-attach virtual-pwwn	Displays the current list of virtual pWWNs on a specified interface.

show flex-attach info

To display the FlexAttach information, use the show flex-attach info command.

show flex-attach info

Syntax Description

This command has no arguments or keywords.

Command Default

None.

Command Modes

Exec mode

Command History

Release	Modification
3.3(1a)	This command was introduced.

Usage Guidelines

None.

Examples

The following example displays the FlexAttach information:

```
switch# show flex-attach info
Global Auto Flag : TRUE
------------------------------------------------------------
               Local Interface->vpwwn
------------------------------------------------------------
vsan       intf       vpwwn                     auto    intf-state
------------------------------------------------------------
all        fc1/1      20:00:00:05:30:01:71:ba   auto    DOWN
all        fc1/2      20:01:00:05:30:01:71:ba   auto    DOWN
all        fc1/3      20:02:00:05:30:01:71:ba   auto    DOWN
all        fc1/4      20:03:00:05:30:01:71:ba   auto    DOWN
all        fc1/20     20:13:00:05:30:01:71:ba   auto    DOWN
all        fc1/21     20:14:00:05:30:01:71:ba   auto    DOWN
all        fc1/22     20:15:00:05:30:01:71:ba   auto    DOWN
all        fc1/23     20:16:00:05:30:01:71:ba   auto    DOWN
all        fc1/24     20:17:00:05:30:01:71:ba   auto    DOWN
Number of local virtual pwwn entries = 24
------------------------------------------------------------------------
               Remote Interface->vpwwn
------------------------------------------------------------------------
swwn                     vsan     intf     vpwwn                     auto
------------------------------------------------------------------------
20:00:00:05:30:01:6e:1c  all      fc1/1    23:46:00:05:30:01:6e:1e   auto
20:00:00:05:30:01:6e:1c  all      fc1/2    23:47:00:05:30:01:6e:1e   auto
20:00:00:05:30:01:6e:1c  all      fc1/3    23:48:00:05:30:01:6e:1e   auto
20:00:00:05:30:01:6e:1c  all      fc1/4    23:49:00:05:30:01:6e:1e   auto
20:00:00:05:30:01:6e:1c  all      fc1/5    23:4a:00:05:30:01:6e:1e   auto
20:00:00:05:30:01:6e:1c  all      fc1/6    23:4b:00:05:30:01:6e:1e   auto
20:00:00:05:30:01:6e:1c  all      fc1/7    23:4c:00:05:30:01:6e:1e   auto
20:00:00:05:30:01:6e:1c  all      fc1/8    23:4d:00:05:30:01:6e:1e   auto
20:00:00:05:30:01:6e:1c  all      fc1/9    23:4e:00:05:30:01:6e:1e   auto
20:00:00:05:30:01:6e:1c  all      fc1/10   23:4f:00:05:30:01:6e:1e   auto
20:00:00:05:30:01:6e:1c  all      fc1/11   23:50:00:05:30:01:6e:1e   auto
20:00:00:05:30:01:6e:1c  all      fc1/12   23:51:00:05:30:01:6e:1e   auto
```

```
20:00:00:05:30:01:6e:1c   all      fc1/13   23:52:00:05:30:01:6e:1e   auto
20:00:00:05:30:01:6e:1c   all      fc1/14   23:53:00:05:30:01:6e:1e   auto
20:00:00:05:30:01:6e:1c   all      fc1/15   23:54:00:05:30:01:6e:1e   auto
20:00:00:05:30:01:6e:1c   all      fc1/23   23:5c:00:05:30:01:6e:1e   auto
20:00:00:05:30:01:6e:1c   all      fc1/24   23:5d:00:05:30:01:6e:1e   auto
Number of remote virtual pwwn entries = 24
------------------------------------------------------------
                PWWN -> VPWWN Mappings
------------------------------------------------------------
pwwn                      vpwwn
------------------------------------------------------------
20:14:00:05:30:01:71:11    20:14:00:05:30:01:71:99
20:14:00:05:30:01:71:44    20:14:00:05:30:01:71:88
Number of real pwwn to virtual pwwn entries = 2
------------------------------------------------------------
                OXID INFO
------------------------------------------------------------
vsan       sid          did          oxid       els-cmd      phy-pwwn
       vpwwn
------------------------------------------------------------
Number of outstanding ELS frames = 0
-------------------------------------------------------------------------------
                srv fcid to srv ifindex map
-------------------------------------------------------------------------------
--
vsan    srvfcid  srvif  pwwn                    vpwwn                    flogi?
-------------------------------------------------------------------------------
--
Number of logged-in devices = 0
```

Related Commands

Command	Description
show flex-attach	Displays the FlexAttach distribution status.
show flex-attach merger status	Displays the FlexAttach merger status.
show flex-attach virtual-pwwn	Displays the current list of virtual pWWN on a specified interface.

show flex-attach merge status

To display the FlexAttach merger status, use the show flex-attach merge status command.

show flex-attach merger status

Syntax Description

This command has no arguments or keywords.

Command Default

None.

Command Modes

Exec mode

Command History

Release	Modification
3.3(1a)	This command was introduced.

Usage Guidelines

None.

Examples

The following example displays the FlexAttach merge status:

```
switch# show flex-attach merge status
Flex-Attach merge status
----------------
Status         : Success
Failure reason :
```

Related Commands

Command	Description
show flex-attach	Displays the FlexAttach distribution status.
show flex-attach virtual-pwwn	Displays the current list of virtual pWWN on a specified interface.

show flex-attach virtual-pwwn

To display the current list of virtual pWWN on a specified interface, use the show flex-attach virtual-pwwn command.

show flex-attach virtual-pwwn

Syntax Description

This command has no arguments or keywords.

Command Default

None.

Command Modes

Exec mode

Command History

Release	Modification
3.3(1a)	This command was introduced.

Usage Guidelines

None.

Examples

The following example displays the current list of virtual pWWN on an interface:

```
switch# show flex-attach virtual-pwwn
Global auto virtual port WWN generation enabled
             VIRTUAL PORT WWNS ASSIGNED TO INTERFACES
------------------------------------------------------------------------------
-----
VSAN     INTERFACE  VIRTUAL-PWWN              AUTO    LAST-CHANGE
------------------------------------------------------------------------------
-----
all      fc1/1      20:00:00:05:30:01:71:ba   TRUE   Sat Mar  1 14:10:07 2008
all      fc1/2      20:01:00:05:30:01:71:ba   TRUE   Sat Mar  1 14:10:07 2008
all      fc1/19     20:12:00:05:30:01:71:ba   TRUE   Sat Mar  1 14:10:07 2008
all      fc1/20     20:13:00:05:30:01:71:ba   TRUE   Sat Mar  1 14:10:07 2008
all      fc1/21     20:14:00:05:30:01:71:ba   TRUE   Sat Mar  1 14:10:07 2008
all      fc1/22     20:15:00:05:30:01:71:ba   TRUE   Sat Mar  1 14:10:07 2008
all      fc1/23     20:16:00:05:30:01:71:ba   TRUE   Sat Mar  1 14:10:07 2008
all      fc1/24     20:17:00:05:30:01:71:ba   TRUE   Sat Mar  1 14:10:07 2008
Number of virtual pwwn assigned to local interfaces = 24
                   VIRTUAL PORT WWNS ASSIGNED TO PHYSICAL PORT WWNs
------------------------------------------------------------------------------
-----
PWWN                      VIRTUAL-PWWN              LAST-CHANGE
------------------------------------------------------------------------------
-----
20:14:00:05:30:01:71:11   20:14:00:05:30:01:71:99  Sat Mar  1 14:56:07 2008
20:14:00:05:30:01:71:44   20:14:00:05:30:01:71:88  Sat Mar  1 14:56:07 2008
Number of virtual pwwn assigned to real pwwns = 2
```

Related Commands

Command	Description
flex-attach virtual-pwwn auto	Enables the FlexAttach virtual pWWN on a specific interface.

Command	Description
flex-attach virtual-pwwn interface	Sets the user-specified FlexAttach virtual pWWN.

show flogi

To list all the FLOGI sessions through all interfaces across all VSANs, use the **show flogi** command.

show flogi auto-area-list | **database** {**fcid fcid-id** | **interface** {**fa slot**/**port** | **fc slot**/**port** | **fv module-number**} | **vsan vsan-id**}

Note On a Cisco Fabric Switch for HP c-Class BladeSystem and on a Cisco Fabric Switch for IBM BladeCenter, the syntax differs as follows:**interface bay** *port* **| ext** *port* }

Syntax Description

auto-area-list	Displays the list of OUIs that are allocated areas.
database	Displays information about FLOGI sessions.
fcid fcid-id	Displays FLOGI database entries based on the FCID allocated. The format is 0xhhhhhh.
interface	Displays FLOGI database entries based on the logged in interface.
fa slot/port	Specifies the FA port interface to configure by slot and port number on all switches.
fc slot/port	(Optional) Specifies the Fibre Channel interface to configure by slot and port number on an MDS 9000 Family switch.
bay *port* **| ext** *port*	(Optional) Specifies the Fibre Channel interface by bay or by external port on a Cisco Fabric Switch for HP c-Class BladeSystem or on a Cisco Fabric Switch for IBM BladeCenter. The range is 0 to 48.
fv module-number	Specifies the Fibre Channel Virtualization interface by module on all switches.
vsan *vsan-id*	Displays FLOGI database entries based on the VSAN ID. The range is1 to 4093.

Command Default

None.

Command Modes

EXEC mode.

Command History

Release	Modification
1.0(2)	This command was introduced.
3.1(2)	Added the **interface bay** | **ext** option.

Usage Guidelines

Output of this command is first sorted by interface and then by VSANs.

In a Fibre Channel fabric, each host or disk requires an FCID. Use the **show flogi database** command to verify if a storage device is displayed in the Fabric login (FLOGI) table as in the examples below. If the required device is displayed in the FLOGI table, the fabric login is successful. Examine the FLOGI database on a switch that is directly connected to the host HBA and connected ports.

Examples

The following example displays details on the FLOGI database:

```
switch# show flogi database
--------------------------------------------------------------------------------
INTERFACE  VSAN    FCID           PORT NAME               NODE NAME
--------------------------------------------------------------------------------
sup-fc0    2     0xb30100  10:00:00:05:30:00:49:63  20:00:00:05:30:00:49:5e
fc9/13     1     0xb200e2  21:00:00:04:cf:27:25:2c  20:00:00:04:cf:27:25:2c
fc9/13     1     0xb200e1  21:00:00:04:cf:4c:18:61  20:00:00:04:cf:4c:18:61
fc9/13     1     0xb200d1  21:00:00:04:cf:4c:18:64  20:00:00:04:cf:4c:18:64
fc9/13     1     0xb200ce  21:00:00:04:cf:4c:16:fb  20:00:00:04:cf:4c:16:fb
fc9/13     1     0xb200cd  21:00:00:04:cf:4c:18:f7  20:00:00:04:cf:4c:18:f7
Total number of flogi = 6.
```

The following example displays the FLOGI interface.

```
switch# show flogi database interface fc 1/11
INTERFACE       VSAN   FCID           PORT NAME               NODE NAME
-------------------- ---- -------- ----------------------- ----------------------
fc9/13    1 0xa002ef 21:00:00:20:37:18:17:d2 20:00:00:20:37:18:17:d2
fc9/13    1 0xa002e8 21:00:00:20:37:38:a7:c1 20:00:00:20:37:38:a7:c1
fc9/13    1 0xa002e4 21:00:00:20:37:6b:d7:18 20:00:00:20:37:6b:d7:18
fc9/13    1 0xa002e2 21:00:00:20:37:18:d2:45 20:00:00:20:37:18:d2:45
fc9/13    1 0xa002e1 21:00:00:20:37:39:90:6a 20:00:00:20:37:39:90:6a
fc9/13    1 0xa002e0 21:00:00:20:37:36:0b:4d 20:00:00:20:37:36:0b:4d
fc9/13    1 0xa002dc 21:00:00:20:37:5a:5b:27 20:00:00:20:37:5a:5b:27
fc9/13    1 0xa002da 21:00:00:20:37:18:6f:90 20:00:00:20:37:18:6f:90
fc9/13    1 0xa002d9 21:00:00:20:37:5b:cf:b9 20:00:00:20:37:5b:cf:b9
fc9/13    1 0xa002d6 21:00:00:20:37:46:78:97 20:00:00:20:37:46:78:97
Total number of flogi = 10.
```

The following example displays the FLOGI VSAN:

```
switch# show flogi database vsan 1
--------------------------------------------------------------------------------
INTERFACE  VSAN    FCID           PORT NAME               NODE NAME
--------------------------------------------------------------------------------
fc9/13      1     0xef02ef  22:00:00:20:37:18:17:d2  20:00:00:20:37:18:17:d2
fc9/13      1     0xef02e8  22:00:00:20:37:38:a7:c1  20:00:00:20:37:38:a7:c1
fc9/13      1     0xef02e4  22:00:00:20:37:6b:d7:18  20:00:00:20:37:6b:d7:18
fc9/13      1     0xef02e2  22:00:00:20:37:18:d2:45  20:00:00:20:37:18:d2:45
fc9/13      1     0xef02e1  22:00:00:20:37:39:90:6a  20:00:00:20:37:39:90:6a
fc9/13      1     0xef02e0  22:00:00:20:37:36:0b:4d  20:00:00:20:37:36:0b:4d
fc9/13      1     0xef02dc  22:00:00:20:37:5a:5b:27  20:00:00:20:37:5a:5b:27
fc9/13      1     0xef02da  22:00:00:20:37:18:6f:90  20:00:00:20:37:18:6f:90
fc9/13      1     0xef02d9  22:00:00:20:37:5b:cf:b9  20:00:00:20:37:5b:cf:b9
fc9/13      1     0xef02d6  22:00:00:20:37:46:78:97  20:00:00:20:37:46:78:97
Total number of flogi = 10.
```

The following example displays the FLOGI FCID:

```
switch# show flogi database fcid 0xef02e2
--------------------------------------------------------------------------------
INTERFACE  VSAN    FCID           PORT NAME               NODE NAME
--------------------------------------------------------------------------------
fc9/13      1     0xef02e2  22:00:00:20:37:18:d2:45  20:00:00:20:37:18:d2:45
Total number of flogi = 1.
```

Related Commands

Command	Description
show fcns database	Displays all the local and remote name server entries.

show flogi database details

To display the Fibre Channel IDs (FCIDs) that are capable of using the Virtual Machine Identifier (VMID) feature, use the **show flogi database details** command.

show flogi database details

Syntax Description

This command has no arguments or keywords.

Command Default

None

Command Modes

User EXEC (#)
Privileged EXEC (#)

Command History

Release	Modification
8.2(1)	This command was introduced.

Examples

This following example shows the FCIDs that are capable of using the VMID feature. The letters under the **FLAGS** field indicate the following:

- **A**: Indicates area FCID allocation.
- **M**: Indicates that the corresponding FCID is capable of using the VMID feature.
- **P**: Indicates that the allocation was performed based on the persistency table.
- **V**: Indicates FDISC.

```
switch# show flogi database details
--------------------------------------------------------------------------------
INTERFACE VSAN FCID     PORT NAME    NODE NAME    FLAGS
--------------------------------------------------------------------------------
fc1/7     1    0xef0000 20:07:8c:60:4f:10:0f:e0 20:01:8c:60:4f:10:0f:e1     P
fc1/7     1    0xef0001 20:19:8c:60:4f:19:bf:25 21:00:00:20:38:de:c3:9f   VPM

Total number of flogi = 2.
```

Related Commands

Command	Description
show vmis database	Displays all the entries in the VMIS database.

show flogi database interface

To list all the FLOGI sessions through all of the interfaces, use the **show flogi database interface** command.

show flogi database interface {**fa slot**/**port** | **fc slot**/**port** | **fv module-number** | **port-channel port-channel number details**}

Syntax Description

fa slot/port	Specifies the FA port interface to configure by slot and port number on all switches.
fc slot/port	Specifies the Fibre Channel interface to configure by slot and port number on an MDS 9000 Family switch.
fv module-number	Specifies the Fibre Channel virtualization interface by module on all switches.
port-channel	Specifies the PortChannel interface.
port-channel number	Specifies the PortChannel number. The range is from 1 to 256.
details	Specifies FCID allocation details.

Command Default

None.

Command Modes

EXEC mode.

Command History

Release	Modification
NX-OS 4.1(3)	This command was introduced.

Usage Guidelines

None.

Examples

The following example shows how to display the PortChannel FCID allocation details:

```
switch# show flogi database interface port-channel 1 details
No flogi sessions found.
switch#
```

Related Commands

Command	Description
show fcns database	Displays all the local and remote name server entries.

show fpm

To display Fabric Performance Monitor information, use the **show fpm** command.

show fpm { **congested-device database** [**exclude** | **local** | **remote** | **static**] **vsan** *id* | **dirl exclude** | **fpin vsan** *id* | **ingress-rate-limit** { **events** | **status** } **interface fc** *slot/port* | **registration** { **congestion-signal** | **summary** } **vsan** *id* }

Syntax Description

congested-device database	Displays congested device database.
exclude	Displays the list of devices that are explicitly excluded from congestion actions.
local	Displays the list of local devices.
remote	Displays the list of remote devices.
static	Displays the list of devices that are explicitly configured for congestion actions.
dirl exclude	Displays the list of interfaces that are explicitly excluded from DIRL actions.
fpin	Displays Fabric Performance Impact Notifications (FPIN) information.
ingress-rate-limit	Displays ingress rate limit information.
events	Displays ingress rate limit events.
status	Displays the information about interface ingress-rate limit status.
interface fc *slot/port*	Specifies an interface.
registration	Displays information about the devices registered for congestion notifications.
congestion-signal	Displays information about the devices registered for congestion signal primitives.
summary	Displays a summary of the registered devices.
vsan *id*	Specifies a VSAN.

Command Modes

Privileged EXEC (#)

Command History

Release	Modification
8.5(1)	This command was introduced.

Examples

This example shows the number of devices registered for FPIN in each VSAN:

```
switch# show fpm fpin
C: Congestion Notification Descriptor
P: Peer Congestion Notification Descriptor
```

```
L: Link Integrity Notification Descriptor
D: Delivery Notification Descriptor
U: Priority Update Notification Descriptor
A: Alarm Signal
W: Warning Signal

VSAN: 1
--------------------------------------------------------------------------------------------
FCID                    |           RDF            | FPIN sent  | Last FPIN sent timestamp
PWWN                    | Registered | Negotiated  |   count    |
                        |         Timestamp        |            |
--------------------------------------------------------------------------------------------
0xdc06e0                | L          | L           | L:       0 | L: --
10:00:00:10:9b:95:41:22 | Tue Feb  2 03:38:13 2021 |            |


VSAN: 50
--------------------------------------------------------------------------------------------
FCID                    |           RDF            | FPIN sent  | Last FPIN sent timestamp
PWWN                    | Registered | Negotiated  |   count    |
                        |         Timestamp        |            |
--------------------------------------------------------------------------------------------
0x7d0000                | CPLD       | CPL         | L:       0 | L: --
21:00:f4:e9:d4:54:ac:f8 | Mon Feb  1 15:32:26 2021 | C:       0 | C: --
                        |            |             | P:       0 | P: --

0x7d0020                | CPLD       | CPL         | L:       0 | L: --
21:00:f4:e9:d4:54:ac:f9 | Mon Feb  1 15:32:27 2021 | C:       0 | C: --
                        |            |             | P:       0 | P: --
```

This example shows a summary of RDF and EDC registrations:

```
switch# show fpm registration summary
C: Congestion Notification Descriptor
P: Peer Congestion Notification Descriptor
L: Link Integrity Notification Descriptor
D: Delivery Notification Descriptor
U: Priority Update Notification Descriptor
A: Alarm Signal
W: Warning Signal

VSAN: 1
------------------------------------------------------------------------
FCID     | PWWN                    | FPIN          | Congestion Signal
         |                         | Registrations | Registrations
------------------------------------------------------------------------
0xdc06e0 | 10:00:00:10:9b:95:41:22 | L             | --

VSAN: 50
------------------------------------------------------------------------
FCID     | PWWN                    | FPIN          | Congestion Signal
         |                         | Registrations | Registrations
------------------------------------------------------------------------
0x7d0000 | 21:00:f4:e9:d4:54:ac:f8 | CPLD          | AW
0x7d0020 | 21:00:f4:e9:d4:54:ac:f9 | CPLD          | AW
```

This example shows EDC registration in detail:

```
switch# show fpm registration congestion-signal
A: Alarm
W: Warning
```

```
ms: milliseconds

VSAN: 1
--------------------------------------------------------------------------------------------------
No registered devices found

VSAN: 50
--------------------------------------------------------------------------------------------------
FCID     | PWWN                    |     Device Tx    |     Device Rx    |  Negotiated Tx
         |                         | Capa- | Interval | Capa- | Interval | Capa- | Interval

         |                         | bility|  (ms)    | bility|  (ms)    | bility|  (ms)
--------------------------------------------------------------------------------------------------
0x7d0020 | 21:00:f4:e9:d4:54:ac:f9 | AW    |       10 | AW    |       10 | AW    |     1000
0x7d0000 | 21:00:f4:e9:d4:54:ac:f8 | AW    |       10 | AW    |       10 | AW    |     1000
```

This example shows the list of devices that were detected as congested devices by port monitor:

```
switch# show fpm congested-device database local
VSAN: 1
-----------------------------------
No congested devices found

VSAN: 50
--------------------------------------------------------------------------------------------------
PWWN                    | FCID     | Event type   | Detect type | Detect Time
--------------------------------------------------------------------------------------------------
21:00:f4:e9:d4:54:ac:f8 | 0x7d0000 | credit-stall | local-pmon  | Thu Jan 28 05:08:31 2021
```

This example shows a list of remote devices that are congested:

```
switch# show fpm congested-device database remote
VSAN: 1
-----------------------------------
No congested devices found

VSAN: 50
-----------------------------------
No congested devices found

VSAN: 70
-----------------------------------
No congested devices found

VSAN: 80
-----------------------------------
No congested devices found

VSAN: 1001
--------------------------------------------------------------------------------------------------
PWWN                    | FCID     | Event type   | Detect type | Detect Time
--------------------------------------------------------------------------------------------------
21:00:34:80:0d:6c:a7:63 | 0xec0000 | credit-stall | remote      | Thu Jan 28 05:12:00 2021
```

This example shows the list of devices that were manually included as congested devices:

```
switch# show fpm congested-device database static
VSAN: 1
-----------------------------------
```

```
No congested devices found

VSAN: 50
------------------------------------------------
PWWN                    | FCID     | Event type
------------------------------------------------
21:00:f4:e9:d4:54:ac:f8 | 0x7d0000 | credit-stall
```

This example shows the list of congested devices that are excluded:

```
switch# show fpm congested-device database exclude
VSAN: 1
----------------------------------
No congested devices found

VSAN: 50
----------------------------------
PWWN                    | FCID
----------------------------------
21:00:f4:e9:d4:54:ac:f8 | 0x7d0000
```

This example shows the configured DIRL reduction and recovery percentages:

```
switch# show fpm ingress-rate-limit status
dirl reduction rate:50%
dirl recovery rate:25%
-------------------------------------------------------------------------------
Interface  Current rate  Rate-limit-type  Previous action  Last update time
           limit(%)
-------------------------------------------------------------------------------
fc4/12     10.6435          dynamic          recovered        Wed Jan 27 20:23:34 2021

fc7/5      12.9567          dynamic          recovered        Wed Jan 27 20:23:34 2021
```

This example shows the configured DIRL reduction and recovery percentages for the port fc4/12:

```
switch# show fpm ingress-rate-limit status interface fc4/12
dirl reduction rate:50%
dirl recovery rate:25%
-------------------------------------------------------------------------------
Interface  Current rate  Rate-limit-type  Previous action  Last update time
           limit(%)
-------------------------------------------------------------------------------
fc4/12     10.6435          dynamic          recovered        Wed Jan 27 20:23:34 2021
```

This example shows the list of interfaces that are excluded from DIRL rate reduction:

```
switch# show fpm dirl exclude
All target device connected interface are excluded from DIRL
--------------
Interface
--------------
fc4/19
fc4/21
fc7/13
```

Related Commands

Command	Description
feature fpm	Enables Fabric Performance Monitor (FPM).

show fspf

To display global FSPF information, use the **show fspf** command.

show fspf [**database vsan vsan-id** [**detail** | **domain domain-id detail**] | **interface** | **vsan vsan-id interface** [**fc** *slot/port* | **port-channel port-channel**]]

Note On a Cisco Fabric Switch for HP c-Class BladeSystem and on a Cisco Fabric Switch for IBM BladeCenter, the syntax differs as follows:**interface [bay** *port* **| ext** *port*]

Syntax Description

database	(Optional) Displays the FSPF link state database.
vsan *vsan-id*	(Optional) Specifies the VSAN ID. The range is 1 to 4093.
detail	(Optional) Displays detailed FSPF information.
domain domain-id	(Optional) Specifies the domain of the database. The range is 0 to 255.
interface	(Optional) Specifies the FSPF interface.
fc slot/port	(Optional) Specifies the Fibre Channel interface to configure by slot and port number on an MDS 9000 Family switch.
bay *port* **| ext** *port*	(Optional) Specifies the Fibre Channel interface by bay or by external port on a Cisco Fabric Switch for HP c-Class BladeSystem or on a Cisco Fabric Switch for IBM BladeCenter. The range is 0 to 48.
port-channel port-channel	(Optional) Specifies the PortChannel interface. The range is 1 to 256.

Command Default

None.

Command Modes

EXEC mode.

Command History

Release	Modification
9.4(1)	Updated the command **show fspf database vsan 1** to display link type as alphanumerical.
1.0(2)	This command was introduced.

Usage Guidelines

If no other parameters are given, all the LSRs in the database are displayed. If more specific information is required, then the domain number of the owner of the LSR may be given. **Detail** gives more detailed information on each LSR.

Examples

The following example displays FSPF interface information:

```
switch# show fspf interface vsan 1 fc1/1
```

```
FSPF interface fc1/1 in VSAN 1
FSPF routing administrative state is active
Interface cost is 500
Timer intervals configured, Hello 20 s, Dead 80 s, Retransmit 5 s
FSPF State is FULL
Neighbor Domain Id is 0x0c(12), Neighbor Interface index is 0x0f100000
Statistics counters :
   Number of packets received : LSU  8  LSA  8  Hello 118  Error packets 0
   Number of packets transmitted : LSU  8  LSA  8  Hello 119  Retransmitted LSU
 0
  Number of times inactivity timer expired for the interface = 0
```

The following example displays FSPF database information beginning from Cisco MDS NX-OS Release 9.4(1):

```
switch# show fspf database vsan 1
FSPF Link State Database for VSAN 1 Domain 0xd8(216)
LSR Type                = 1
Advertising domain ID   = 0xd8(216)
LSR Age                 = 646
LSR Incarnation number  = 0x80001c06
LSR Checksum            = 0x0e03
Number of links         = 5
    NbrDomainId           IfIndex(Interface Name)  NbrIfIndex  Link Type   Cost
    ---------------------------------------------------------------------------
      0xe3(227)  0x00010312(              fc4/19)  0x00010011        P2P     62
      0xe3(227)  0x00010313(              fc4/20)  0x0001000e        P2P     62
      0xdb(219)  0x0004003b(      port-channel60)  0x0004003b    FCIP PC    100
      0xdb(219)  0x000400ff(     port-channel256)  0x000400ff      FC PC     31
      0x59(89)   0x00fb0200(           vfc-po513)  0x00fb0200     VFC PC     50
```

The following example displays FSPF database information prior to Cisco MDS NX-OS Release 9.4(1):

```
switch# show fspf database vsan 1
FSPF Link State Database for VSAN 1 Domain 0x0c(12)
LSR Type                = 1
Advertising domain ID   = 0x0c(12)
LSR Age                 = 1686
LSR Incarnation number  = 0x80000024
LSR Checksum            = 0x3caf
Number of links         = 2
 NbrDomainId      IfIndex   NbrIfIndex    Link Type         Cost
---------------------------------------------------------------------------
   0x65(101) 0x0000100e     0x00001081               1          500
   0x65(101) 0x0000100f     0x00001080               1          500
FSPF Link State Database for VSAN 1 Domain 0x65(101)
LSR Type                = 1
Advertising domain ID   = 0x65(101)
LSR Age                 = 1685
LSR Incarnation number  = 0x80000028
LSR Checksum            = 0x8443
Number of links         = 6
 NbrDomainId      IfIndex   NbrIfIndex    Link Type         Cost
---------------------------------------------------------------------------
   0xc3(195) 0x00001085     0x00001095               1          500
   0xc3(195) 0x00001086     0x00001096               1          500
   0xc3(195) 0x00001087     0x00001097               1          500
   0xc3(195) 0x00001084     0x00001094               1          500
    0x0c(12) 0x00001081     0x0000100e               1          500
    0x0c(12) 0x00001080     0x0000100f               1          500
FSPF Link State Database for VSAN 1 Domain 0xc3(195)
LSR Type                = 1
```

```
Advertising domain ID   = 0xc3(195)
LSR Age                 = 1686
LSR Incarnation number  = 0x80000033
LSR Checksum            = 0x6799
Number of links         = 4
 NbrDomainId      IfIndex   NbrIfIndex    Link Type         Cost
--------------------------------------------------------------------------------
   0x65(101) 0x00001095     0x00001085               1          500
   0x65(101) 0x00001096     0x00001086               1          500
   0x65(101) 0x00001097     0x00001087               1          500
   0x65(101) 0x00001094     0x00001084               1          500
```

This command displays FSPF information for a specified VSAN:

```
switch# show fspf vsan 1
FSPF routing for VSAN 1
FSPF routing administration status is enabled
FSPF routing operational status is UP
It is an intra-domain router
Autonomous region is 0
SPF hold time is 0 msec
MinLsArrival = 1000 msec , MinLsInterval = 5000 msec
Local Domain is 0x65(101)
Number of LSRs = 3, Total Checksum = 0x0001288b
Protocol constants :
   LS_REFRESH_TIME = 1800 sec
   MAX_AGE         = 3600 sec
Statistics counters :
   Number of LSR that reached MaxAge = 0
   Number of SPF computations        = 7
   Number of Checksum Errors         = 0
   Number of Transmitted packets :  LSU 65 LSA 55 Hello 474 Retranmsitted LSU 0
   Number of received packets :  LSU 55 LSA 60 Hello 464 Error packets 10
```

show hardware

To display switch hardware inventory details, use the **show hardware** command.

show hardware [**ipc-channel status**]

Syntax Description

ipc-channel status	(Optional) Displays the status of the interprocess communication (IPC) channels.

Command Default

None.

Command Modes

EXEC mode.

Command History

Release	Modification
1.2(1)	This command was introduced.
NX-OS 4.1(1b)	Changed the command output from SAN-OS to NX-OS.

Usage Guidelines

None.

Examples

The following example displays the switch hardware inventory details:

```
switch# show hardware
Cisco Nexus Operating System (NX-OS) Software
TAC support: http://www.cisco.com/tac
Copyright (c) 2002-2008, Cisco Systems, Inc. All rights reserved.
The copyrights to certain works contained in this software are
owned by other third parties and used and distributed under
license. Certain components of this software are licensed under
the GNU General Public License (GPL) version 2.0 or the GNU
Lesser General Public License (LGPL) Version 2.1. A copy of each
such license is available at
http://www.opensource.org/licenses/gpl-2.0.php and
http://www.opensource.org/licenses/lgpl-2.1.php
Software
  BIOS:      version 3.17.0
  loader:    version N/A
  kickstart: version 4.0(3) [gdb]
  system:    version 4.0(3) [gdb]
  BIOS compile time:       03/23/08
  kickstart image file is: bootflash:/n7000-s1-kickstart.4.0.3.gbin.S17
  kickstart compile time:  7/24/2008 12:00:00 [07/28/2008 03:28:06]
  system image file is:    bootflash:/n7000-s1-dk9.4.0.3.gbin.S17
  system compile time:     7/24/2008 12:00:00 [07/28/2008 04:10:26]
Hardware
  cisco Nexus7000 C7010 (10 Slot) Chassis ("Supervisor module-1X")
  Intel(R) Xeon(R) CPU C5528 @ 2.13GHz with 8167228 kB of memory.
  Processor Board ID JAB10380101
  Device name: switch
  bootflash:    1023120 kB
  slot0:              0 kB (expansion flash)
  bootflash:  251904 kB
  slot0:      251904 kB
```

```
Kernel uptime is 0 day(s), 10 hour(s), 32 minute(s), 43 secon
Last reset at 231551 usecs after  Wed Jul 30 00:07:18 2008
  Reason: Reset Requested by CLI command reload
  System version: 4.0(3)
  Service:
plugin
  Core Plugin, Ethernet Plugin
CMP (Module 6) no response
--------------------------------
Switch hardware ID information
--------------------------------
Switch is booted up
  Switch type is : Nexus7000 C7010 (10 Slot) Chassis
  Model number is MOSPORT10P
  H/W version is 0.403
  Part Number is 73-10900-04
  Part Revision is 03
  Manufacture Date is Year 11 Week 25
  Serial number is TBM11256507
  CLEI code is
--------------------------------
Chassis has 10 Module slots and 5 Fabric slots
--------------------------------
Module1  empty
Module2  ok
  Module type is : 10/100/1000 Mbps Ethernet Module
  1 submodules are present
  Model number is NURBURGRING
  H/W version is 0.407
  Part Number is 73-10098-04
  Part Revision is 13
  Manufacture Date is Year 10 Week 44
  Serial number is JAB104400P0
  CLEI code is
Module3  empty
Module4  empty
Module5  empty
Module6  ok
  Module type is : Supervisor module-1X
  0 submodules are present
  Model number is CATALUNYA
  H/W version is 0.311
  Part Number is 73-10877-03
  Part Revision is 09
  Manufacture Date is Year 10 Week 38
  Serial number is JAB10380101
  CLEI code is TBD
Module7  empty
Module8  empty
Module9  empty
Module10  empty
Xbar1  ok
  Module type is : Fabric card module
  0 submodules are present
  Model number is Estoril
  H/W version is 0.203
  Part Number is 73-10624-02
  Part Revision is 06
  Manufacture Date is Year 10 Week 43
  Serial number is JAB104300HM
  CLEI code is
Xbar2  empty
Xbar3  empty
```

```
Xbar4  empty
Xbar5  empty
-------------------------------------
Chassis has 3 PowerSupply Slots
-------------------------------------
PS1 ok
  Power supply type is: 0.00W 220v AC
  Model number is FIORANO
  H/W version is 0.103
  Part Number is 341-0230-01
  Part Revision is 03
  Manufacture Date is Year 11 Week 17
  Serial number is DTH1117T005
  CLEI code is
PS2 ok
  Power supply type is: 0.00W 220v AC
  Model number is FIORANO
  H/W version is 0.103
  Part Number is 341-0230-01
  Part Revision is 03
  Manufacture Date is Year 11 Week 17
  Serial number is DTH1117T009
  CLEI code is
PS3 absent
---------------------------------
Chassis has 4 Fan slots
---------------------------------
Fan1(sys_fan1) ok
  Model number is
  H/W version is 0.0
  Part Number is
  Part Revision is
  Manufacture Date is Year 0 Week 0
  Serial number is
  CLEI code is
Fan2(sys_fan2) ok
  Model number is
  H/W version is 0.0
  Part Number is
  Part Revision is
  Manufacture Date is Year 0 Week 0
  Serial number is
  CLEI code is
Fan3(fab_fan1) ok
  Model number is
  H/W version is 0.0
  Part Number is
  Part Revision is
  Manufacture Date is Year 0 Week 0
  Serial number is
  CLEI code is
switch#
```

The following example displays the status of the IPC channel:

```
switch# show hardware ipc-channel status
Active IPC-Channel:             A
switch#
```

show hardware capacity

To display the information about the hardware capabilities and current hardware utilization by the system, use the show hardware capacity command.

show hardware capacity [**eobc** | **fabric-utilization** | **forwarding** | **interface** | **module** | **power**]

Syntax Description

eobc	Displays the EOBC resources.
fabric-utilization	Displays the fabric utilization.
forwarding	Displays the L2 L3 forwarding resources.
interface	Displays the interface resources.
module	Displays the SUP, LC, Xbar.
power	Displays the power supply.

Command Default

None.

Command Modes

EXEC mode.

Command History

Release	Modification
6.2(1)	This command was introduced.

Usage Guidelines

None.

Examples

The following example shows how to display the information about the hardware capabilities and current hardware utilization by the system:

```
switch# show hardware capacity fabric-utilization
--------------------------------------------------------------------------------
Fabric Planes:
A -- Unicast fabric packets
B -- Multicast/Multidestination fabric packets
--------------------------------------------------------------------------------
Bandwidth is in Gbps and shared by both Fabric Planes (A+B)
-----------------------------PEAK FABRIC UTILIZATION-----------------------------
Mod Fab Fab Fab  ASIC Band Fab      Ingress                  Egress
    Lnk Mod ASIC Port wdth Pln Util%       Time         Util%       Time
--------------------------------------------------------------------------------
1    9   3    1   16   55   A     4 2009-06-26@21:06:04    4 2009-06-26@21:06:04
1    9   3    1   16   55   B     0          --            0          --
1   10   3    1   17   55   A     6 2009-06-26@21:06:04    6 2009-06-26@21:06:04
1   10   3    1   17   55   B     0          --            0          --
1   11   3    2    0   55   A     4 2009-06-26@21:06:19    4 2009-06-26@21:06:19
1   11   3    2    0   55   B     0          --            0          --
1   12   3    2   24   55   A     0          --            0          --
1   12   3    2   24   55   B     0          --            0          --
```

```
1   13   4    1   16   55   A     3 2009-06-26@21:06:04    3 2009-06-26@21:06:04
1   13   4    1   16   55   B     0         --             0         --
1   14   4    1   17   55   A     3 2009-06-26@21:06:04    3 2009-06-26@21:06:04
1   14   4    1   17   55   B     0         --             0         --
1   15   4    2    0   55   A     3 2009-06-26@21:06:19    3 2009-06-26@21:06:19
1   15   4    2    0   55   B     0         --             0         --
1   16   4    2   24   55   A     0         --             0         --
1   16   4    2   24   55   B     0         --             0         --
1   17   5    1   16   55   A     3 2009-06-26@21:06:04    3 2009-06-26@21:06:04
1   17   5    1   16   55   B     0         --             0         --
1   18   5    1   17   55   A     3 2009-06-26@21:06:04    3 2009-06-26@21:06:04
1   18   5    1   17   55   B     0         --             0         --
1   19   5    2    0   55   A     3 2009-06-26@21:06:19    3 2009-06-26@21:06:19
1   19   5    2    0   55   B     0         --             0         --
1   20   5    2   24   55   A     0         --             0         --
--More--
```

```
switch(config)# show hardware capacity power
Power Resources Summary:
------------------------
Power Supply redundancy mode(administratively):  PS-Redundant
Power Supply redundancy mode(operationally):     PS-Redundant
Total Power Capacity                             6000.00 W
Power reserved for SUP,Fabric,and Fan Module(s)  3230.00 W (
53.83 % )
Power currently used by Modules                   650.00 W (
10.83 % )
Total Power Available                            2120.00 W (
35.33 % )
Total Power Output (actual draw)                    0.00 W
switch#
```

Related Commands

Commands	Description
debug sme	Debugs Cisco SME features.

show hardware fabric crc status

To display the status of the internal CRC detection and isolation functionality, use the **show hardware fabric crc status** command.

show hardware fabric crc status

This command has no arguments and keywords.

Command Default

None.

Command Modes

EXEC mode.

Release	Modification
8.5(1)	This command was introduced.

The following example displays how to verify the CRC status:

```
switch# show hardware fabric crc status
Hardware Fabric CRC Action : log-only
Hardware Fabric CRC Feature threshold per module stage : 3
Hardware Fabric CRC Feature sampling time in hours : 24
```

Related Commands

Command	Description
hardware fabric crc	Enables internal CRC detection and isolation function.

show hardware fabric-mode

To display fabric operation mode, use the **show hardware fabric mode** command.

show hardware fabric-mode

Syntax Description

This command has no arguments or keywords.

Command Default

None.

Command Modes

EXEC mode.

Command History

Release	Modification
NX-OS 4.1(1b)	This command was introduced.

Usage Guidelines

None.

Examples

The following example displays the fabric operation mode:

```
switch# show hardware fabric-mode
Fabric mode supports Gen3 and above linecards.
switch#
```

Related Commands

Command	Description
show hardware	Displays brief information about the list of field replacable units (FRUs) in the switch.

show hardware internal rxwait-history

To display the RxWait history information of a physical device hardware, use the **show hardware internal rxwait-history** command.

show hardware internal rxwait-history [**module number** | **port number**]

Syntax Description

module *number*	(Optional) Species a module number.
port *number*	(Optional) Specifies a port number.

Command Default

Displays the RxWait history information of a physical device hardware.

Command Modes

Privileged EXEC (#)

Release	Modification
8.2(1)	This command was introduced.
8.4(1)	The **show hardware internal rxwait-history** command was changed to the **show interface** [*interface-range*] **rxwait-history** command. This command was modified to run at the supervisor level.

Usage Guidelines

Use the **show interface** [*interface-range*] **rxwait-history** command instead of the **show hardware internal rxwait-history** command. This command does not require a license.

Examples

This example displays the RxWait history for FCoE slow drain congestion:

```
switch# show hardware internal rxwait-history module 10 port 41
RxWait history for port Eth10/41:
  ==============================
       000000000000000000000000000000000000000000000000000000000000
  1000
   900
   800
   700 ############################################################
   600 ############################################################
   500 ############################################################
   400 ############################################################
   300 ############################################################
   200 ############################################################
   100 ############################################################
      0....5....1....1....2....2....3....3....4....4....5....5....6
                0    5    0    5    0    5    0    5    0    5    0

            RxWait per second (last 60 seconds)
                   # = RxWait (ms)

     33333333331
     000000000000000079999999999999999200000000000000000000000000
```

```
   ............................................................
   000000000000000096666666666666663000000000000000000000000000
60
54
48
42 ###########
36 ###########
30 ###########
24 ###########
18 ###########
12 ###########
 6 ############
  0....5....1....1....2....2....3....3....4....4....5....5....6
            0    5    0    5    0    5    0    5    0    5    0

          RxWait per minute (last 60 minutes)
                 # = RxWait (secs)
```

```
     000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000
3600
3240
2880
2520
2160
1800
1440
1080
 720
 360
    0....5....1....1....2....2....3....3....4....4....5....5....6....6....7.7
              0    5    0    5    0    5    0    5    0    5    0    5    0 2

    RxWait per hour (last 72 hours)
                 # = RxWait (secs)
```

Command	Description
show hardware	Displays information of the physical device hardware.
show interface [*interface-range*] **rxwait-history**	Displays the RxWait history graph for Ethernet interfaces.

show hardware internal txwait-history

To display the TxWait history information of a physical device hardware, use the **show hardware internal txwait-history** command.

show hardware internal txwait-history [**module number** | **port number**]

Syntax Description

module *number*	(Optional) Species a module number.
port *number*	(Optional) Specifies a port number.

Command Default

Displays the TxWait history information of a physical device hardware.

Command Modes

Privileged EXEC (#)

Release	Modification
8.2(1)	This command was introduced.
8.4(1)	The **show hardware internal txwait-history** command was changed to the **show interface** [*interface-range*] **txwait-history** command. This command was modified to run at the supervisor level.

Usage Guidelines

Use the **show interface** [*interface-range*] **txwait-history** command instead of the **show hardware internal txwait-history** command. This command does not require a license.

Examples

This example displays the TxWait history for FCoE slow-drain congestion:

```
switch# show hardware internal txwait-history module 2 port 16
TxWait history for port Eth2/16:
  ==============================
       6666666666666666666667666666666666666666666666666666666666666666
       7667777777777777776671777676677776767777777776777676768778676
       2853241601145111129728012626411014272052114264119551532106 17
  1000
   900
   800
   700 ############################################################
   600 ############################################################
   500 ############################################################
   400 ############################################################
   300 ############################################################
   200 ############################################################
   100 ############################################################
      0....5....1....1....2....2....3....3....4....4....5....5....6
                0    5    0    5    0    5    0    5    0    5    0

             TxWait per second (last 60 seconds)
                    # = TxWait (ms)
```

```
   44444444444
   00000000006000000000000000000000000000000000000000000000000000
   ............................................................
   33433332333000000000000000000000000000000000000000000000000000
60
54
48
42 ############
36 ############
30 ############
24 ############
18 ############
12 ############
 6 ############
  0....5....1....1....2....2....3....3....4....4....5....5....6
            0    5    0    5    0    5    0    5    0    5    0

         TxWait per minute (last 60 minutes)
                # = TxWait (secs)
```

```
    000000000000000000000000000000000000000000000000000000000000000000000000000000000000
3600
3240
2880
2520
2160
1800
1440
1080
 720
 360
   0....5....1....1....2....2....3....3....4....4....5....5....6....6....7.7
             0    5    0    5    0    5    0    5    0    5    0    5    0 2

   TxWait per hour (last 72 hours)
                # = TxWait (secs)
```

Command	Description
show hardware	Displays information of the physical device hardware.
show interface [*interface-range*] **txwait-history**	Displays the TxWait history graph for Fibre Channel and Ethernet interfaces.

show hosts

To display DNS host configuration details, use the **show hosts** command.

show hosts

Syntax Description

This command has no arguments or keywords.

Command Default

None.

Command Modes

EXEC mode.

Command History

Release	Modification
1.0(2)	This command was introduced.

Usage Guidelines

None.

Examples

The following example displays the configures hosts including the default domain, domain list, and name servers:

```
switch# show hosts
```

Default domain is cisco.com

Domain list: ucsc.edu harvard.edu yale.edu stanford.edu

Name/address lookup uses domain service

```
Name servers are 15.1.0.1 15.2.0.0
```

show incompatibility system

To display the high availability compatibility status between the current system image on both supervisors and the new system image to be installed on both supervisors, use the **show incompatibility system** command.

show incompatibility system [**bootflash:** | **slot0:** | **volatile:**] *image-filename*

Syntax Description

bootflash:	(Optional) Source or destination location for internal bootflash memory.
slot0:	(Optional) Source or destination location for the CompactFlash memory or PCMCIA card.
volatile:	(Optional) Source or destination location for the volatile directory.
image-filename	Specifies the name of the system image.

Command Default

None.

Command Modes

EXEC mode.

Command History

Release	Modification
1.2(1)	This command was introduced.
3.0(1)	Provided an example to show that the command output provides the commands needed to disable incompatible features.

Usage Guidelines

If the high availability compatibility is strict then the upgrade to that image will be disruptive for both supervisors.

If the high availability compatibility is loose , the synchronization may happen without errors, but some resources may become unusable when a switchover happens.

Examples

The following example displays kernel core settings:

```
switch# show incompatibility system bootflash:old-image-y
The following configurations on active are incompatible with the system image
1) Feature Index : 67 , Capability : CAP_FEATURE_SPAN_FC_TUNNEL_CFG
Description : SPAN - Remote SPAN feature using fc-tunnels
Capability requirement : STRICT
2) Feature Index : 119 , Capability : CAP_FEATURE_FC_TUNNEL_CFG
Description : fc-tunnel is enabled
Capability requirement : STRICT
```

The following example shows commands needed to disable incompatible features:

```
switch# show incompatibility system bootflash:m9200-ek9-mz.1.3.4b.bin
The following configurations on active are incompatible with the system image:
1) Service : cfs , Capability : CAP_FEATURE_CFS_ENABLED_DEVICE_ALIAS
Description : CFS - Distribution is enabled for DEVICE-ALIAS
Capability requirement : STRICT
Disable command : no device-alias distribute
```

show in-order-guarantee

To display the present configured state of the in-order delivery feature, use the **show in-order-guarantee** command.

show in-order-guarantee

Syntax Description

This command has no arguments or keywords.

Command Default

None.

Command Modes

EXEC mode.

Command History

Release	Modification
1.3(4)	This command was introduced.

Usage Guidelines

None.

Examples

The following example displays the present configuration status of the in-order delivery feature:

```
switch# show in-order-guarantee
global inorder delivery configuration:guaranteed
VSAN specific settings
vsan 1 inorder delivery:guaranteed
vsan 101 inorder delivery:not guaranteed
vsan 1000 inorder delivery:guaranteed
vsan 1001 inorder delivery:guaranteed
vsan 1682 inorder delivery:guaranteed
vsan 2001 inorder delivery:guaranteed
vsan 2009 inorder delivery:guaranteed
vsan 2456 inorder delivery:guaranteed
vsan 3277 inorder delivery:guaranteed
vsan 3451 inorder delivery:guaranteed
vsan 3452 inorder delivery:guaranteed
vsan 3453 inorder delivery:guaranteed
```

show install all failure-reason

To identify the cause of a nondisruptive software upgrade failure, use the show install all failure-reason command when prompted by the system.

show install all failure-reason

Syntax Description

This command has no arguments or keywords.

Command Default

None.

Command Modes

EXEC mode.

Command History

Release	Modification
3.1(1)	This command was introduced.

Usage Guidelines

If an upgrade failure is due to some other cause, nothing is displayed when you enter the command. This command displays a valid output only if a service aborts an upgrade and a message instructing you to issue this command is returned to the CLI.

Examples

The following example displays the output during an unsuccessful nondisruptive software upgrade, and it shows the reason for the failure:

```
Do you want to continue with the installation (y/n)?  [n] y

Install is in progress, please wait.

Notifying services about the upgrade.
[#                   ]   0% -- FAIL. Return code 0x401E0066 (request timed out).

Please issue "show install all failure-reason" to find the cause of the failure.

Install has failed. Return code 0x401E0066 (request timed out).
Please identify the cause of the failure, and try 'install all' again.
switch# show install all failure-reason
Service: "cfs" failed to respond within the given time period.
switch#
```

Related Commands

Command	Description
show install all status	Displays the status of an installation or ISSU.

show install all impact

To display the software compatibility matrix of a specific image, use the **show install all impact** command.

show install all impact [**asm-sfn** *image-filename*] [**kickstart** *image-filename*] [**ssi** *image-filename*] [**system** *image-filename*]

Syntax Description

asm-sfn	(Optional) Specifies the ASM SFN boot variable.
image-filename	(Optional) Specifies the name of an image.
kickstart	(Optional) Specifies the kickstart boot variable.
ssi	(Optional) Specifies the SSI boot variable.
system	(Optional) Specifies the system boot variable.

Command Default

None.

Command Modes

EXEC mode.

Command History

Release	Modification
1.2(1)	This command was introduced.

Usage Guidelines

None.

Examples

Use the **show install all impact** command to view the effect of updating the system from the running image to another specified image:

```
switch# show install all impact
Verifying image bootflash:/ilc1.bin
[####################] 100% -- SUCCESS
Verifying image bootflash:/vk73a
[####################] 100% -- SUCCESS
Verifying image bootflash:/vs73a
[####################] 100% -- SUCCESS
Extracting "slc" version from image bootflash:/vs73a.
[####################] 100% -- SUCCESS
Extracting "slc" version from image bootflash:/vs73a.
[####################] 100% -- SUCCESS
Extracting "system" version from image bootflash:/vs73a.
[####################] 100% -- SUCCESS
Extracting "kickstart" version from image bootflash:/vk73a.
[####################] 100% -- SUCCESS
Extracting "loader" version from image bootflash:/vk73a.
[####################] 100% -- SUCCESS
Extracting "slc" version from image bootflash:/vs73a.
[####################] 100% -- SUCCESS
Compatibility check is done:
Module  bootable          Impact  Install-type  Reason
------  --------  --------------  ------------  ------
```

```
     2       yes  non-disruptive          none
     4       yes  non-disruptive          none
     6       yes  non-disruptive          none
     9       yes  non-disruptive          none
Images will be upgraded according to following table:
Module       Image       Running-Version           New-Version  Upg-Required
------  ----------  --------------------  --------------------  ------------
     2         slc                1.2(1)                1.2(1)            no
     2        bios      v1.0.7(03/20/03)      v1.0.7(03/20/03)            no
     4         slc                1.2(1)                1.2(1)            no
     4        ilce                1.2(1)                1.2(1)            no
     4        bios      v1.0.7(03/20/03)      v1.0.7(03/20/03)            no
     6      system                1.2(1)                1.2(1)            no
     6   kickstart                1.2(1)                1.2(1)            no
     6        bios      v1.0.7(03/20/03)      v1.0.7(03/20/03)            no
     6      loader               1.0(3a)               1.0(3a)            no
     9         slc                1.2(1)                1.2(1)            no
     9        bios      v1.0.7(03/20/03)      v1.0.7(03/20/03)            no
```

The following command displays the error message that is displayed if a wrong image is provided:

```
switch# show install all impact system bootflash:
Compatibility check failed. Return code 0x40930003 (Invalid bootvar specified in
 the input).
```

show install all status

To display the on going **install all** command status or the log of the last installed **install all** command from a console, SSH, or Telnet session, use the **show install all status** command.

show install all status

Syntax Description

This command has no arguments or keywords.

Command Default

None.

Command Modes

EXEC mode.

Command History

Release	Modification
1.3(1)	This command was introduced.

Usage Guidelines

This command only displays the status of an **install all** command that is issued from the CLI, not Fabric Manager.

The show install all status command also displays the status of nondisruptive software upgrades on the Cisco MDS 9124 Fabric Switch (after the switch has rebooted and comes up with the new image). Actions that occurred before the reboot are not displayed in the output. So, if you issue the install all command via a Telnet session, the Telnet session will be disconnected when the switch reboots. After you reconnect to the switch using Telnet, the upgrade may already be complete; in this case, the show install all status command will display the status of the upgrade.

Examples

Use the **show install all status** command to view the output of a **install all** command process.

```
switch# show
 install all status
There is an on-going installation... <---------------------- in progress installation
Enter Ctrl-C to go back to the prompt.
Verifying image bootflash:/b-1.3.0.104
 -- SUCCESS
Verifying image bootflash:/i-1.3.0.104
 -- SUCCESS
Extracting "system" version from image bootflash:/i-1.3.0.104.
 -- SUCCESS
Extracting "kickstart" version from image bootflash:/b-1.3.0.104.
 -- SUCCESS
Extracting "loader" version from image bootflash:/b-1.3.0.104.
 -- SUCCESS
switch# show install all status
This is the log of last installation.          <<<<<< log of last install
Verifying image bootflash:/b-1.3.0.104
 -- SUCCESS
Verifying image bootflash:/i-1.3.0.104
 -- SUCCESS
Extracting "system" version from image bootflash:/i-1.3.0.104.
 -- SUCCESS
Extracting "kickstart" version from image bootflash:/b-1.3.0.104.
```

```
 -- SUCCESS
Extracting "loader" version from image bootflash:/b-1.3.0.104.
 -- SUCCESS
```

Use the show install all status command to view the output of a nondisrtuptive software upgrade process on the Cisco MDS 9124 Fabric Switch.

```
switch# show install all status
This is the log of last installation.
Continuing with installation process, please wait.
The login will be disabled until the installation is completed.
Status for linecard upgrade.
 -- SUCCESS
Performing supervisor state verification.
 -- SUCCESS
Install has been successful.
```

ShowIntStats

You can check the statistics of an interface, use the **ShowInStats** command.

ShowInStats { **--general-stats --link-stats --congestion-stats --transceiver-detail-stats --brief --e --f --np --edge --core --errorsonly --outfile** *OUTFILE* **--appendfile** *APPENDFILE* **--d** }

Syntax Description

--general-stats	Displays general statistics for Fibre Channel interfaces.
--link-stats	Displays physical link statistics for Fibre Channel interfaces.
--congestion-stats	Displays congestion statistics for Fibre Channel interfaces.
--transceiver-detail-stats	Displays transceiver(SFP) detailed statistics for Fibre Channel interfaces.
--brief	Displays the interface brief values, description, peer pwwn and device-alias or switchname information for Fibre Channel interfaces.
--e *number*	Displays only operational (T)E ports in interface range or list for Fibre Channel interfaces.
--f	Displays only operational (T)F ports in interface range or list for Fibre Channel interfaces.
--np	Displays only operational (T)NP ports in interface range or list for Fibre Channel interfaces.
--edge	Displays only operational logical-type edge ports in interface range or list for Fibre Channel interfaces.
--core	Displays only operational logical-type core ports in interface range or list for Fibre Channel interfaces.
--errorsonly	Displays only interfaces with non-zero counts.
--outfile*OUTFILE*	Write output to file on bootflash on switch. If file exists already it will be overwritten.
--appendfile*APPENDFILE*	Append output to file on bootflash on switch. If file does not exist it will be created.
--d	Include port description if found.

Command Default

Displays information for all interfaces on the switch.

Command Modes

Privileged EXEC (#)

Command History

Release	Modification
9.4(1)	This command was introduced.

Usage Guidelines

You can specify a range of interfaces by issuing a command with the following example format:

ShowInStats fc1/1-5

Examples

The following example displays the statistics of interfaces:

```
switch# ShowIntStats
2023/07/21 18:27:15 Link Stats:
```

		Link	Sync	Signal	Invalid	Invalid	NOS	NOS	OLS	OLS
LRR Intf Rx	LRR Intf Tx	FEC Corrected	FEC Failures Uncorrected	Loss Loss BB_SCs	Words BB_SCr	CRCs	Rx	Tx	Rx	Tx
fc1/1		3	0	0	0	0	0	3	3	4
0	4	0	0	0	0					
fc1/2		0	0	0	0	0	0	0	0	1
0	2	0	0	0	0					
fc1/3		1	0	0	0	0	0	1	1	2
2	2	0	0	0	0					
fc1/4		1	0	0	3051	0	0	1	1	2
2	2	0	0	0	0					
fc1/5		1	0	0	0	0	0	1	1	2
2	2	0	0	0	0					
fc1/6		1	0	0	0	0	1	1	2	2
2	2	0	0	0	0					
fc1/7		0	0	0	0	0	0	0	0	0
0	0	0	0	0	0					
fc1/8		0	0	0	0	0	0	0	0	0
0	0	0	0	0	0					
fc1/9		0	0	0	0	0	0	0	0	0
0	0	0	0	0	0					
fc1/10		0	0	0	0	0	0	0	0	0
0	0	0	0	0	0					
fc1/11		0	0	0	0	0	0	0	0	1
0	2	0	0	0	0					
fc1/12		0	0	0	0	0	0	0	0	1
0	2	0	0	0	0					
fc1/13		0	0	0	0	0	0	0	0	1
0	2	0	0	0	0					
fc1/14		1	0	1	0	0	4	3	2	2
4	0	1	2	0	0					
fc1/15		1	0	1	0	0	2	2	2	2
4	0	0	2	0	0					
fc1/16		1	1	0	0	0	1	1	1	2
3	1	0	2	0	0					
fc1/17		0	0	0	0	0	0	0	0	0
0	0	0	0	0	0					
fc1/18		0	0	0	0	0	0	0	0	0
0	0	0	0	0	0					
fc1/19		0	0	0	0	0	1	0	1	1
2	0	44222135	0	0	0					
fc1/20		0	0	0	0	0	0	0	0	1
1	1	58311348	0	0	0					
fc1/21		0	0	0	0	0	0	0	0	1
1	1	2776734	0	0	0					
fc1/22		0	0	0	0	0	0	0	0	1
1	1	32918274	0	0	0					
fc1/23		0	0	0	0	0	0	0	1	1
2	0	52394	0	0	0					
fc1/24		3	0	0	0	0	0	3	3	4

```
|   0 |   4 |         0 |           0 |      0 |       0 |
| fc1/25          |        3 |     0 |      0 |       0 |        0 |   0 |   3 |   3 |   4
|   0 |   4 |         0 |           0 |      0 |       0 |
| fc1/26          |        3 |     0 |      0 |       0 |        0 |   0 |   3 |   3 |   4
|   0 |   4 |         0 |           0 |      0 |       0 |
| fc1/27          |        3 |     0 |      0 |       0 |        0 |   0 |   3 |   3 |   4
|   0 |   4 |         0 |           0 |      0 |       0 |
| fc1/28          |        0 |     0 |      0 |       0 |        0 |   0 |   0 |   0 |   1
|   0 |   2 |         0 |           0 |      0 |       0 |
| fc1/29          |        0 |     0 |      0 |       0 |        0 |   0 |   0 |   0 |   1
|   0 |   2 |  48458710 |           0 |      0 |       0 |
| fc1/30          |        0 |     0 |      0 |       0 |        0 |   0 |   0 |   0 |   1
|   0 |   2 |         0 |           0 |      0 |       0 |
| fc1/31          |        0 |     0 |      0 |       0 |        0 |   0 |   0 |   0 |   0
|   0 |   0 |         0 |           0 |      0 |       0 |
| fc1/32          |        0 |     0 |      0 |       0 |        0 |   0 |   0 |   0 |   1
|   0 |   1 |         0 |           0 |      0 |       0 |
| fc1/33          |        0 |     0 |      0 |       0 |        0 |   0 |   0 |   0 |   1
|   0 |   2 |         0 |           0 |      0 |       0 |
| fc1/34          |        1 |     0 |      0 |       0 |        0 |   0 |   1 |   1 |   2
|   2 |   2 |         0 |           0 |      0 |       0 |
| fc1/35          |        1 |     0 |      0 |       0 |        0 |   0 |   1 |   1 |   2
|   2 |   2 |      1930 |           0 |      0 |       0 |
| fc1/36          |        1 |     0 |      0 |       0 |        0 |   0 |   1 |   1 |   2
|   2 |   2 |        53 |           0 |      0 |       0 |
| fc1/37          |        1 |     0 |      0 |       0 |        0 |   0 |   1 |   1 |   2
|   2 |   2 |         0 |           0 |      0 |       0 |
| fc1/38          |        1 |     0 |      0 |       0 |        0 |   0 |   1 |   1 |   2
|   2 |   2 |         0 |           0 |      0 |       0 |
| fc1/39          |        0 |     0 |      0 |       0 |        0 |   0 |   0 |   0 |   1
|   0 |   2 |         0 |           0 |      0 |       0 |
| fc1/40          |        0 |     0 |      0 |       0 |        0 |   0 |   0 |   0 |   1
|   1 |   1 |         0 |           0 |      0 |       0 |
| fc1/41          |        0 |     0 |      0 |       0 |        0 |   0 |   0 |   0 |   1
|   1 |   1 |         0 |           0 |      0 |       0 |
| fc1/42          |        0 |     0 |      0 |       0 |        0 |   0 |   0 |   0 |   1
|   1 |   1 |    460053 |           0 |      0 |       0 |
| fc1/43          |        0 |    12 |      0 |       0 |        0 |   0 |   0 |   0 |   1
|   0 |   2 |     39898 |           0 |      0 |       0 |
| fc1/44          |       62 | 11386 |      1 |      62 |        6 |   0 |  62 |   0 |  67
|  58 |  72 |  45455329 |          23 |      0 |       0 |
| fc1/45          |        0 |     0 |      0 |       0 |        0 |   0 |   0 |   0 |   1
|   1 |   1 |     56572 |           0 |      0 |       0 |
| fc1/46          |        0 |     0 |      0 |       0 |        0 |   0 |   0 |   0 |   1
|   0 |   2 |         0 |           0 |      0 |       0 |
| fc1/47          |        0 |     0 |      0 |       0 |        0 |   0 |   0 |   0 |   1
|   1 |   1 |    154536 |           0 |      0 |       0 |
| fc1/48          |        0 |     0 |      0 |       0 |        0 |   0 |   0 |   0 |   1
|   1 |   1 |         0 |           0 |      0 |       0 |
| port-channel21  |        0 |     0 |      0 |       0 |        0 |   0 |   0 |   0 |   3
|   0 |   6 |         0 |           0 |      0 |       0 |
| port-channel22  |       62 | 11386 |      1 |      62 |        6 |   0 |  62 |   0 |  71
|  61 |  77 |  45600392 |          23 |      0 |       0 |
| port-channel31  |        0 |     0 |      0 |       0 |        0 |   0 |   0 |   0 |   0
|   0 |   0 |         0 |           0 |      0 |       0 |
| port-channel32  |        0 |    12 |      0 |       0 |        0 |   0 |   0 |   0 |   5
|   3 |   7 |    499951 |           0 |      0 |       0 |
| port-channel41  |        4 |     0 |      0 |    3051 |        0 |   1 |   4 |   5 |   8
|   8 |   8 |         0 |           0 |      0 |       0 |
| port-channel42  |        8 |     1 |      2 |       0 |        0 |   7 |  11 |  10 |  16
|  21 |  11 |      1984 |           6 |      0 |       0 |
| port-channel131 |        0 |     0 |      0 |       0 |        0 |   1 |   0 |   2 |   5
|   7 |   3 | 104595439 |           0 |      0 |       0 |
```

```
| port-channel132 |        0 |     0 |      0 |       0 |       0 |   0 |   0 |   0 |   0
|   0 |   0 |         0 |           0 |      0 |      0
```

You can also specify arguments (a range of interfaces or multiple specified interfaces) to display interface statistics. You can specify a range of interfaces by issuing a command in the following format:

-stats fc1/1-5

Note The spaces are required before and after the dash (-) and before and after the comma (,).

The following example displays the link statistics of a specified interface:

```
switch# ShowIntStats --link-stats fc1/1
2023/07/21 18:27:24 Link Stats:

------+--------+----+------+------+------+----+----+----+----+----+----+--------+---------+------+------
|       | Link     | Sync | Signal | Invalid | Invalid | NOS | NOS | OLS | OLS | LRR | LRR
 | FEC       | FEC         |        |        |
| Intf  | Failures | Loss | Loss   | Words   | CRCs    | Rx  | Tx  | Rx  | Tx  | Rx  | Tx
 | Corrected | Uncorrected | BB_SCs | BB_SCr |
+-----+--------+----+------+------+------+----+----+----+----+----+----+--------+---------+------+------+
| fc1/1 |        3 |    0 |      0 |       0 |       0 |   0 |   3 |   3 |   4 |   0 |   4
 |         0 |           0 |      0 |      0 |

------+--------+----+------+------+------+----+----+----+----+----+----+--------+---------+------+------
```

The following example displays the link statistics for a range of interfaces:

```
switch# ShowIntStats --link-stats fc1-10
2023/07/21 18:27:37 Link Stats:

------+--------+----+------+------+------+----+----+----+----+----+----+--------+---------+------+------
|       | Link     | Sync | Signal | Invalid | Invalid | NOS | NOS | OLS | OLS | LRR | LRR
 | FEC       | FEC         |        |        |
| Intf  | Failures | Loss | Loss   | Words   | CRCs    | Rx  | Tx  | Rx  | Tx  | Rx  | Tx
 | Corrected | Uncorrected | BB_SCs | BB_SCr |
+-----+--------+----+------+------+------+----+----+----+----+----+----+--------+---------+------+------+
| fc1/1  |        3 |    0 |      0 |       0 |       0 |   0 |   3 |   3 |   4 |   0 |
4 |         0 |           0 |      0 |      0 |
| fc1/2  |        0 |    0 |      0 |       0 |       0 |   0 |   0 |   0 |   1 |   0 |
2 |         0 |           0 |      0 |      0 |
| fc1/3  |        1 |    0 |      0 |       0 |       0 |   0 |   1 |   1 |   2 |   2 |
2 |         0 |           0 |      0 |      0 |
| fc1/4  |        1 |    0 |      0 |    3051 |       0 |   0 |   1 |   1 |   2 |   2 |
2 |         0 |           0 |      0 |      0 |
| fc1/5  |        1 |    0 |      0 |       0 |       0 |   0 |   1 |   1 |   2 |   2 |
2 |         0 |           0 |      0 |      0 |
| fc1/6  |        1 |    0 |      0 |       0 |       0 |   1 |   1 |   2 |   2 |   2 |
2 |         0 |           0 |      0 |      0 |
| fc1/7  |        0 |    0 |      0 |       0 |       0 |   0 |   0 |   0 |   0 |   0 |
0 |         0 |           0 |      0 |      0 |
| fc1/8  |        0 |    0 |      0 |       0 |       0 |   0 |   0 |   0 |   0 |   0 |
0 |         0 |           0 |      0 |      0 |
| fc1/9  |        0 |    0 |      0 |       0 |       0 |   0 |   0 |   0 |   0 |   0 |
```

```
0 |         0 |           0 |       0 |       0 |
| fc1/10 |         0 |     0 |       0 |       0 |       0 |    0 |    0 |    0 |    0 |    0 |
0 |         0 |           0 |       0 |       0 |
```

The following example displays the general statistics for a range of interfaces:

```
switch# ShowIntStats --general-stats fc1/1-4
2023/07/21 18:27:57 General Stats:

```

CF Intf	Frames Mcast Rx	Frames Mcast Tx	C3 Frames Bcast Rx	C3 Frames Bcast Tx	C2 Frames Ucast Rx	C2 Frames Ucast Tx	CF Frames Rx	CF Frames Tx	Frames Rx	Frames Tx
fc1/1	29819972	44716994	29819972	44716994	0	0	0	0	0	0
fc1/2	71	112	71	112	0	0	0	0	0	0
fc1/3	314596	309500	0	0	0	0	0	314596	309500	0
fc1/4	45	3045	0	0	0	0	0	45	3045	0

The following example displays the congestion statistics for a range of interfaces:

```
switch# ShowIntStats --congestion-stats fc1/1-4
2023/07/21 18:28:32 Congestion Stats:

```

Intf	TBBZ	RBBZ	TxWait	TxWait % last 1s/1m/1h/72h	Timeout Discards	Credit Loss	Active LR Rx	Active LR Tx	LRR Rx	LRR Tx
fc1/1	9	4	0	0%/0%/0%/0%	0	0	0	0	0	4
fc1/2	5	2	0	0%/0%/0%/0%	0	0	1	0	0	2
fc1/3	5	4	0	0%/0%/0%/0%	0	0	0	2	2	2
fc1/4	5	4	0	0%/0%/0%/0%	0	0	0	2	2	2

The following example displays the details of the transceiver (SFP) statistics for a range of interfaces:

```
switch# ShowIntStats --transceiver-stats fc1/1-15
2023/07/21 18:29:06 Transceiver(SFP) Detail Stats:

```

		Cisco		Serial		Nominal	
	Tx	Rx	Tx				

```
| Intf   | Name           | PID              | Number       | Sync | Bit Rate  | Temp   |
Voltage | Current | Power    | Power       | Fault |
+------+----------+------------+---------+----+--------+------+------+------+-------+---------+----+
| fc1/1  | CISCO-FINISAR | DS-SFP-FC16G-SW | FNS18150XH6 |   in | 14000Mb/s | 45.34C |
3.33V |  7.71mA | -2.81dBm |    -2.90dBm |     0 |
| fc1/2  |   CISCO-AVAGO | DS-SFP-FC32G-SW | AVD2101W00P |   in | 28000Mb/s | 43.39C |
3.30V |  7.50mA |  0.23dBm |    -1.00dBm |     0 |
| fc1/3  | CISCO-FINISAR | DS-SFP-FC16G-SW | FNS18283Q6Z |   in | 14000Mb/s | 54.66C |
3.30V |  8.54mA | -3.51dBm |    -3.00dBm |     0 |
| fc1/4  | CISCO-FINISAR | DS-SFP-FC16G-SW | FNS18150RLK |   in | 14000Mb/s | 53.76C |
3.32V |  7.97mA | -2.90dBm |   -11.78dBm |     0 |
| fc1/5  | CISCO-FINISAR | DS-SFP-FC16G-SW | FNS18400JV0 |   in | 14000Mb/s | 49.35C |
3.32V |  8.10mA | -3.10dBm |    -2.72dBm |     0 |
| fc1/6  | CISCO-FINISAR | DS-SFP-FC16G-SW | FNS18020AJZ |   in | 14000Mb/s | 52.11C |
3.31V |  7.85mA | -2.83dBm |    -4.45dBm |     0 |
| fc1/7  | CISCO-FINISAR | DS-SFP-FC16G-SW | FNS18400DD0 |   no | 14000Mb/s | 54.80C |
3.33V |  8.01mA | -3.20dBm | -28.24dBm-- |     0 |
| fc1/8  | CISCO-FINISAR | DS-SFP-FC16G-SW | FNS180116DQ |   no | 14000Mb/s | 52.80C |
3.31V |  8.07mA | -2.98dBm | -27.45dBm-- |     0 |
| fc1/9  | CISCO-FINISAR | DS-SFP-FC16G-SW | FNS18400EC5 |   no | 14000Mb/s | 53.55C |
3.32V |  8.06mA | -3.32dBm | -25.09dBm-- |     0 |
| fc1/10 | CISCO-FINISAR | DS-SFP-FC16G-SW | FNS18021LXY |   no | 14000Mb/s | 54.33C |
3.31V |  8.04mA | -3.17dBm | -27.96dBm-- |     0 |
| fc1/11 | CISCO-FINISAR | DS-SFP-FC16G-SW | FNS18021KTD |   in | 14000Mb/s | 53.63C |
3.31V |  7.94mA | -3.24dBm |    -3.01dBm |     0 |
| fc1/12 | CISCO-FINISAR | DS-SFP-FC16G-SW | FNS180116E6 |   in | 14000Mb/s | 54.29C |
3.31V |  8.02mA | -2.89dBm |    -2.62dBm |     0 |
| fc1/13 | CISCO-FINISAR | DS-SFP-FC16G-SW | FNS18400JVS |   in | 14000Mb/s | 52.54C |
3.31V |  7.85mA | -3.10dBm |    -4.02dBm |     0 |
| fc1/14 | CISCO-FINISAR | DS-SFP-FC32G-SW | FNS21240LWJ |   in | 28000Mb/s | 53.53C |
3.32V |  7.67mA | -1.38dBm |    -1.29dBm |     0 |
| fc1/15 |   CISCO-AVAGO | DS-SFP-FC32G-SW | AVD2101W02S |   in | 28000Mb/s | 48.12C |
3.29V |  7.50mA | -0.30dBm |    -1.41dBm |     0 |

------+----------+------------+---------+----+--------+------+------+------+-------+---------+-----
Note: Only ports having transceiver are displayed
```

The following example displays the breif details such as device alias for a range of interfaces:

```
switch# ShowIntStats --brief fc1/1-4
2023/07/21 18:31:20 Interface Brief + Device-alias + Peer PWWN + Description:

-----+----+-----+------+------+---+-----+------+------+------+----------------+----------------+--------
|       |      |       | Admin |          |     |      | Oper   |         |         |
Device-alias             |                         |              |
|       |      | Admin | Trunk |          |     | Oper | Speed  | Port    | logical | Name
 or                |  F Port                     |              |
| Intf   | VSAN | Mode   | Mode  | Status   | SFP | Mode | (Gbps) | Channel | Type    |
Switchname             | Peer PWWN               | Description |
+-----+----+-----+------+------+---+-----+------+------+------+----------------+----------------+--------+
| fc1/1 | 1000 |     F |   off |       up | swl |    F |     16 |      -- |    edge |
                   NA |                       NA |          -- |
| fc1/2 | 1000 |     F |   off |       up | swl |    F |     32 |      -- |    edge |
M9148V-N24_init_qle2742_1 | 21:00:34:80:0d:6d:72:52 |          -- |
| fc1/3 |    1 |     E |    on | trunking | swl |   TE |     16 |      41 |    core |
                   NA |                       NA |          -- |
| fc1/4 |    1 |     E |    on | trunking | swl |   TE |     16 |      41 |    core |
                   NA |                       NA |          -- |

-----+----+-----+------+------+---+-----+------+------+------+----------------+----------------+--------
Note: Only upto 64 characters of discription are displayed
```

The following example displays the error statistics for a range of interfaces:

```
switch# ShowIntStats --errorsonly fc1/44-48
2023/07/21 18:34:37 Link Stats:

------+-------+-----+-----+------+------+---+---+---+---+---+---+-------+---------+-----+-----
|        | Link     | Sync  | Signal | Invalid | Invalid | NOS | NOS | OLS | OLS | LRR |
LRR | FEC       | FEC         |        |        |
| Intf   | Failures | Loss  | Loss   | Words   | CRCs    | Rx  | Tx  | Rx  | Tx  | Rx  |
Tx  | Corrected | Uncorrected | BB_SCs | BB_SCr |
+------+-------+-----+-----+------+------+---+---+---+---+---+---+-------+---------+-----+-----+
| fc1/44 |       62 | 11386 |      1 |      62 |       6 |   0 |  62 |   0 |  67 |  58 |
72 |  45470689 |          23 |      0 |      0 |
| fc1/45 |        0 |     0 |      0 |       0 |       0 |   0 |   0 |   0 |   1 |   1 |
 1 |     56593 |           0 |      0 |      0 |
| fc1/46 |        0 |     0 |      0 |       0 |       0 |   0 |   0 |   0 |   1 |   0 |
 2 |         0 |           0 |      0 |      0 |
| fc1/47 |        0 |     0 |      0 |       0 |       0 |   0 |   0 |   0 |   1 |   1 |
 1 |    154611 |           0 |      0 |      0 |
| fc1/48 |        0 |     0 |      0 |       0 |       0 |   0 |   0 |   0 |   1 |   1 |
 1 |         0 |           0 |      0 |      0 |

------+-------+-----+-----+------+------+---+---+---+---+---+---+-------+---------+-----+-----
```

The following example displays the port channel statistics of the specified port channel:

```
switch# ShowIntStats port-channel144
2023/07/21 18:38:19 Link Stats:

-----------+-------+----+-----+------+------+---+---+---+---+---+---+-------+---------+-----+-----
|                 | Link     | Sync | Signal | Invalid | Invalid | NOS | NOS | OLS | OLS |
 LRR | LRR | FEC       | FEC         |        |        |
| Intf            | Failures | Loss | Loss   | Words   | CRCs    | Rx  | Tx  | Rx  | Tx  |
 Rx  | Tx  | Corrected | Uncorrected | BB_SCs | BB_SCr |
+-----------+-------+----+-----+------+------+---+---+---+---+---+---+-------+---------+-----+-----+
| port-channel144 |        0 |    0 |      0 |       0 |       0 |   2 |   0 |   2 |   2 |
   2 |   2 |    139627 |           0 |      0 |      0 |

-----------+-------+----+-----+------+------+---+---+---+---+---+---+-------+---------+-----+-----
```

show interface

To display information about the status of an interface, use the **show interface** command.

```
show interface [interface-range] [ aggregate-counters [brief] |bbcredit
|brief |capabilities |counters [detailed [all]] |[brief |errors |snmp |
storm-control |[ module module ] ] |debounce |description |fcoe |flowcontrol [
module module ] |mac-address |priority-flow-control [[ vl vl | module module ] |
rxwait-history |snmp-ifindex |standby |status [err-disabled |err-vlans |
error policy [detail] |switchport |transceiver [calibration |details |
sprom ] |trunk [ module module | vlan vlan-range | vsan vsan-range ] |txwait-history ] ]
]
```

Syntax Description

interface-range	(Optional) Displays the type of interface.
aggregate-counters	(Optional) Displays interface aggregate counters for Fibre Channel interfaces.
aggregate-counters brief	(Optional) Display brief aggregate counter information.
bbcredit	(Optional) Displays buffer-to-buffer credit information for Fibre Channel interfaces.
brief	(Optional) Displays brief information for Fibre Channel and Ethernet interfaces.
capabilities	(Optional) Displays hardware port capabilities for Fibre Channel and Ethernet interfaces.
counters	(Optional) Displays the interface counter information for Fibre Channel and Ethernet interfaces.
counters detailed	(Optional) Displays extended counters for interfaces.
counters detailed all	(Optional) Displays all counters for interfaces.
counters detailed brief	(Optional) Displays one line counters for each interface.
counters detailed errors	(Optional) Displays error counters only for interfaces.
counters detailed snmp	(Optional) Displays SNMP counters only for interfaces.
counters detailed storm-control	Optional) Displays storm control counters only for Ethernet interfaces.
module *module*	(Optional) Displays interface counter information of a module for Ethernet interfaces.
debounce	(Optional) Displays debounce time information for Ethernet interfaces.
description	(Optional) Displays the interface description for Fibre Channel and Ethernet interfaces.

fcoe	(Optional) Displays Fiber Channel over Ethernet (FCoE) information for Ethernet interface.
flowcontrol	(Optional) Displays flow control information for Ethernet interfaces.
flowcontrol module *module*	(Optional) Displays flow control information for Ethernet interfaces on the specifed module only.
mac-address	(Optional) Displays Ethernet MAC address for Ethernet interfaces.
priority-flow-control	Optional) Displays PFC information for Ethernet interfaces.
priority-flow-control vl *vl*	(Optional) Displays PFC information for the specified virtual lane.
priority-flow-control module *module*	(Optional) Displays PFC information for Ethernet interfaces on the specified module.
rxwait-history	(Optional) Displays the RxWait history graphs for Ethernet interfaces.
snmp-ifindex	(Optional) Displays SNMP interface index for the interfaces.
standby	(Optional) Displays the management interface link information for the standby supervisor. Available only for **mgmt0** type interface.
status	(Optional) Displays status for the interfaces.
status err-disabled	(Optional) Displays error disabled status for the interfaces.
status err-vlans	(Optional) Displays VLANs that have errors for the interfaces.
status error policy	(Optional) Displays error policy information for Ethernet interfaces.
status error policy detail	(Optional) Displays extended error policy information for Ethernet interfaces.
switchport	(Optional) Displays switch port information for interfaces.
transceiver	(Optional) Displays the transceiver information for the interfaces.
transceiver calibrations	(Optional) Displays transceiver calibration information for the interfaces.
transceiver details	(Optional) Displays transceiver DOM information for the interface.
transceiver sprom	(Optional) Displays transceiver SPROM information for the interfaces.
trunk	(Optional) Displays the trunking status of all VSANs for Fibre Channel and Ethernet interfaces.
trunk module *module*	(Optional) Displays VSAN trunk status information for the specified module only.
trunk vlan *vlan-range*	(Optional) Displays VLAN trunk status information for the interfaces.
trunk vsan *vsan-range*	(Optional) Displays the trunking status of the specified VSANs for the interfaces. The range is 1–4093.

txwait-history	(Optional) Displays the TxWait history graphs for the interfaces.

Command Default

Displays information for all interfaces on the switch.

Command Modes

Privileged EXEC (#)

Command History

Release	Modification
9.4(4)	Average frame size was added to the output.
9.4(3)	Ethernet MAC statistics for IPStorage interfaces was added to the output.
9.4(3)	**Rate Stats** was added to the **show interface counters detailed** output.
9.2(2)	Transceiver information was added to the output.
9.2(1)	The interface status was enhanced to indicate when the TTS configuration mismatches with the peer configuration.
9.2(1)	Added the **standby** keyword for the **mgmt** interface option.

Release	Modification
8.4(2)	The output of the **show interface** *interface-range* **counters detailed** command was restructured to provide an easier to understand and parse format. The following interface counters were added: • Rx 5 min rate bit/sec • Tx 5 min rate bit/sec • Rx 5 min rate bytes/sec • Tx 5 min rate bytes/sec • Rx 5 min rate frames/sec • Tx 5 min rate frames/sec • Rx B2B credit remaining • Rx B2B credit remaining for VL 0 • Rx B2B credit remaining for VL 1 • Rx B2B credit remaining for VL 2 • Rx B2B credit remaining for VL 3 • Tx B2B credit remaining • Tx B2B credit remaining for VL 0 • Tx B2B credit remaining for VL 1 • Tx B2B credit remaining for VL 2 • Tx B2B credit remaining for VL 3 • Tx Low Priority B2B credit remaining • Last clearing of "show interface" counters
8.4(2)	Added virtual link (VL) information for port-channels in the **show interface** *interface-range* **counters detailed** command output.
8.4(2)	The **show interface fcip** *fcip-id* command output was modified to display RTT statistics for each TCP connection.
8.4(1)	This command was modified. The **show hardware internal rxwait-history**, **show hardware internal txwait-history**, and **show process creditmon txwait-history module** *number* **port** *number* commands are replaced by the **show interface** *interface-range* **rxwait-history** and **show interface** *interface-range* **txwait-history** commands. Added Buffer-to-Buffer State Change SOF (BB_SCs) and Buffer-to-Buffer State Change R_RDY (BB_SCr) counter information in the **show interface counters detailed** command. Added VL information in the **show interface** *interface-range* **counters**, **show interface** *interface-range* **counters detailed**, and **show interface** *interface-range* **aggregate-counters** command outputs.

Release	Modification
8.3(1)	This command was modified. Changed the **details** keyword to **detailed** keyword for the **counters** option. Added beacon status in the command output.
6.2(7)	Added FEC-related command output.
6.2(5)	Added the Cisco MDS 9250i Multiservice Fabric Switch output to the **show interface capabilities** command.
6.2(5)	Added the command output for detailed FCIP Interface Standard Counter Information, FCIP Interface Summary of Counters for a Specified Interface, and brief FCIP Interface Counter Information for Cisco MDS 9250i Multiservice Fabric Switch.
6.2(3)	Deprecated the **show interface counters performance** command.
6.2(1)	Added the **performance**, **module interval** keywords to the syntax description.
4.1(1b)	Added the command output for BB_credit information for a switch port.
4.1(1b)	Added the command output for interface capabilities on a 48-port module.
3.1(2)	Added the **bay** | **ext** interface.
3.0(1)	Added the **capabilities** option for Fibre Channel interfaces.
1.3(1)	Added the **bbcredit** keyword and support for CPP and fv interfaces.
1.0(2)	This command was introduced.

Usage Guidelines

You can specify a range of interfaces by issuing a command with the following example format:

interfacefc1/1-5,fc2/5-7

The spaces are allowed before and after the dash (-) and before and after the comma (,).

The **show interface mgmt** *number* **standby** command displays the status of the standby supervisor mgmt0 interface. The following message is displayed during an ISSU/D when the management port on the standby supervisor is down:

```
Warning: Standby supervisor mgmt0 link is down. Proceeding with the install will cause the
 standby supervisor to become active. This will result in loss of out of band management
access to the switch.
```

In the **show interface** *port/slot* **counters** [**detailed**] command output, the *Transmit B2B credit transitions to zero* counter increments every time the transmit buffer-to-buffer credits goes to zero. When the ISLs are configured in the TX credit double-queue mode using the **system default tx-credit double-queue** command, some TX B2B credits are reserved for high-priority traffic and remaining credits are used for low-priority traffic from the total TX B2B credits configuration. Hence, when ISLs are in TX credit double-queue mode, this counter does not increment though the low-priority credits go to zero because the high-priority credits are still available.

For interfaces in R_RDY mode, the BB_credits can all be in one queue (single-queue) or split into high-priority and low-priority queues (double-queue). This is configured via **system default tx-credit double-queue** command. The *double-queue* mode allocates 15 BB_credits to high-priority and the remaining 485 (default on E ports) to low-priority.

If a link is configured in the *single-queue* mode on one side of the link and the double-queue mode on the other side, the Rx credits on the *single-queue* side of the link do not display the exact number of Tx credits remaining on the *double-queue* mode side of the link. The reason is that in the *double-queue* mode, Tx credits are restricted to send 485 frames (low-priority) at a time even at line rate. In the steady state, 6 extra (proxy) Rx credits are available and this adds up to 491 Rx BB_credits available at all times. Hence, there will a minimum of 9 Rx BB_credits displayed on the switch in the *single-queue* mode in the **show interface range bbcredit** command output. Rx transitions to zero counter will not increment in this case.

16-Gbps Switching Modules and Switches do not display per VL TxWait values even when the links are operating in ER_RDY mode. If the port-channel members include members from 16-Gbps Switching Modules or Switches and 32-Gbps Switching Modules or Switches and the links are operating in R_RDY and ER_RDY modes, the TxWait value is displayed as below:

- TxWait value for links operating in R_RDY mode is displayed as an aggregate value of all the links, including the links operating in ER_RDY mode.
- TxWait value for links operating in ER_RDY mode is displayed as an aggregate value of all the ER_RDY links per VL.

Port-channel member interfaces should be uniformly in either R_RDY or ER_RDY mode. They should only be in both modes when the members are being reconfigured from one mode to the other. For links operating in ER_RDY mode, the VL data in the output displays the available BB_credits for VL0, VL1, VL2, and VL3 respectively. This command output is applicable for Cisco MDS NX-OS Release 8.4(1a) and earlier releases. The command output varies if you are using Cisco MDS NX-OS Release 8.4(2) or later releases.

Both Forward Error Correction (FEC) and Transmitter Training Signal (TTS) must be configured on Cisco MDS 48-Port 64-Gbps Fibre Channel Switching Module (DS-X9748-3072K9) to use FEC at 16-Gbps speed. A message is displayed in the **show interface** command output when only FEC is configured.

Table 5: Interface Types for the Show Interface Command, on page 264 lists the interface types that are supported by the **show interface** command.

Table 5: Interface Types for the Show Interface Command

Interface Type	Description
fc *slot/port*	Displays the Fibre Channel interface in the specified slot or port.
fc-tunnel *tunnel-id*	Displays description of the specified Fibre Channel tunnel 1–4095.
fcip *interface-number*	Specifies an FCIP interface. The range is 1–255.
fv *slot/dpp-number/fv-port*	Displays information for the virtual F port (FV port) interface in the specified slot along with the data path processor (DPP) number and the FV port number.
gigabitethernet *slot/port*[**.***subinterface*]	Displays information for the specified interface only. An optional subinterface may be specified by appending a period and the subinterface number. The subinterface range is 1-4093.
iscsi *slot/port*	Displays the description of the iSCSI interface in the specified slot and port.
IPStorage*interface-range*	Displays information only for the specified IPStorage interfaces.
mgmt 0	Displays the description of the management interface.

Interface Type	Description
port-channel *port-channel*-[**.***subinterface*]	Displays the port-channel interface specified by the port-channel number. The range is 1–128. An optional subinterface may be specified by appending a period (.) indicator and the subinterface number. The port channel number range is 1–128. The subinterface range is 1–4093 .
sup-fc0	Displays the in-band interface details.
vsan *vsan-id*	Displays information for a VSAN. The range is 1–4093 .

The following table provides descriptions of the detailed interface counters:

Table 6: Descriptions of the Interface Counters detailed

Interface Counters	Descriptions
Rx 5 min rate bit/sec	The number of received frames in bits per second as an average over 5 minutes.
Tx 5 min rate bit/sec	The number of transmitted frames in bits per second as an average over 5 minutes.
Rx 5 min rate bytes/sec	The number of received frames in bytes per second as an average over 5 minutes.
Tx 5 min rate bytes/sec	The number of transmitted frames in bytes per second as an average over 5 minutes.
Rx 5 min rate frames/sec	The number of received frames per second as an average over 5 minutes.
Tx 5 min rate frames/sec	The number of transmitted frames per second as an average over 5 minutes.
Rx total frames	The number of frames received.
Rx total bytes	The number of frames received, in bytes.
Rx class-2 frames	The number of class 2 frames received.
Rx class-2 bytes	The number of class 2 frames received, in bytes.
Rx class-2 frames discarded	The number of class 2 received frames discarded.
Rx class-2 port reject frames	The number of class 2 received frames rejected by port.
Rx class-3 frames	The number of class 3 frames received.
Rx class-3 bytes	The number of class 3 frames received, in bytes.
Rx class-f frames	The number of class f frames received.
Rx class-f bytes	The number of class f frames received, in bytes.
Rx total discards	The total number of received frames that were discarded.
Rx total errors	The total number of received frames that had errors.

Interface Counters	Descriptions
Tx total discards	The total number of transmitted frames that were discarded.
Tx total errors	The total number of transmitted frames that had errors.
Tx total frames	The number of frames transmitted.
Tx total bytes	The number of frames transmitted, in bytes.
Tx class-2 frames	The number of class 2 frames transmitted.
Tx class-2 bytes	The number of class 2 frames transmitted, in bytes.
Tx class-3 frames	The number of class 3 frames transmitted.
Tx class-3 bytes	The number of class 3 frames transmitted, in bytes.
Rx class-3 frames discarded	The number of class 3 received frames that were discarded.
Tx class-f frames	The number of class f frames transmitted.
Tx class-f bytes	The number of class f frames transmitted, in bytes.
Rx class-f frames discarded	The number of class f received frames that were discarded.
Rx total multicast	The total number of multicast frames received.
Tx total multicast	The total number of multicast frames transmitted.
Rx total broadcast	The total number of broadcast frames received.
Tx total broadcast	The total number of broadcast frames transmitted.
Rx total unicast	The total number of unicast frames received.
Tx total unicast	The total number of unicast frames transmitted.
Rx Link failures	The number of times a Fibre Channel link was down because of the received Offline Sequence (OLS) or Not Operational Sequence (NOS) errors.
Rx Sync losses	The number of times a Fibre Channel port experienced loss of synchronization in Rx.
Rx Signal losses	The number of times a Fibre Channel port experienced loss of laser signal.
Rx Invalid transmission words	The number of times invalid transmission words were received by a port.
Rx Invalid CRCs	The number of times frames with Internal Cyclic Redundancy Check (CRC) errors were received by a port.
Rx Delimiter errors	The number of times frames are received with delimiter (start-of-frame [So]) errors.

Interface Counters	Descriptions
Rx Link Reset(LR) while link is active	The number of times a Fibre Channel port received Link Reset (LR) primitive sequence when the port was active.
Tx Link Reset(LR) while link is active	The number of times a Fibre Channel port transmitted Link Reset (LR) primitive sequence when the port was active.
Rx Offline Sequences (OLS)	The number of times a Fibre Channel port received Offline State (OLS) primitive sequence.
Tx Offline Sequences (OLS)	The number of times a Fibre Channel port transmitted Offline State (OLS) primitive sequence.
Rx Runt frames	The number of times a Fibre Channel port receives frames that are shorter than the minimum allowable frame length regardless of the CRC/FCS error.
Rx Jabber frames	The number of times a Fibre Channel port receives frames that are longer than the maximum frame length and also have a CRC/FCS error.
Rx too long	The number of times long frames were received beyond the configured maximum Fibre Channel frame size.
Rx too short	The number of times short frames were received beyond the configured maximum Fibre Channel frame size.
Rx Link Reset Responses (LRR)	The number of times a Fibre Channel port received Link Reset Responses (LRR) primitive sequence when the port was active.
Tx Link Reset Responses (LRR)	The number of times a Fibre Channel port transmitted Link Reset Responses (LRR) primitive sequence when the port was active.
Rx Non-Operational Sequences (NOS)	The number of times a Fibre Channel link received Not Operational Sequence (NOS) primitive sequence.
Tx Non-Operational Sequences (NOS)	The number of times a Fibre Channel link transmitted Not Operational Sequence (NOS) primitive sequence.
Rx frames with EOF aborts	The number of times frames are received with End of Frame Abort(EOFa).
Rx unknown class frames	The number of times unknown class frames were received.
Rx FEC corrected blocks	The number of received transmission block errors corrected by FEC.
Rx FEC uncorrected blocks	The number of received transmission block errors unable to be corrected by FEC.

Interface Counters	Descriptions
Rx F8 type LIP sequence errors	The number of times frames are received with F8 type LIP sequence errors.
Tx F8 type LIP sequence errors	The number of times frames are transmitted with F8 type LIP sequence errors.
Rx Non F8 type LIP sequence errors	The number of times frames are received with non-F8 type LIP sequence errors.
Tx Non F8 type LIP sequence errors	The number of times frames are transmitted with non-F8 type LIP sequence errors.
Zone drops	The number of frames that were dropped due to zoning not configured for a device on a port group.
FIB drops for ports 1–16	The number of frames that were dropped due to forwarding lookup miss on a port group.
XBAR errors for ports 1–16	The number of frames that were dropped due to fabric switching (crossbar) errors on a port group.
Other drop count	The number of frames that were dropped due to other errors on a port group.
Tx Timeout Discards	The number of times timeout discards were transmitted.
Tx Credit Loss	The number of times Credit Loss Recovery was initiated after 1 second (F or NP port) or 1.5 seconds (E port) of continuous zero Tx credits. This transmits a Link Reset to reset the credits on the link.
Tx B2B credit transitions to zero	The number of times the interface was at zero Tx BB_credits remaining and unable to transmit.
Rx B2B credit transitions to zero	The number of times the interface was at zero Rx BB_credits remaining.
TxWait 2.5us due to lack of transmit credits	The number of times an interface was at zero Tx credits for 2.5 microseconds and there were output frames to transmit.
Percentage TxWait not available for last 1s/1m/1h/72h	The percentage of TxWait as calculated in the last 1 second, 1 minute, 1 hour, and 72-hour intervals.
TxWait 2.5us due to lack of transmit credits for VL 0	The number of times an interface was at zero Tx credits for 2.5 microseconds on virtual link 0 and there were output frames to transmit.
TxWait 2.5us due to lack of transmit credits for VL 1	The number of times an interface was at zero Tx credits for 2.5 microseconds on virtual link 1 and there were output frames to transmit.
TxWait 2.5us due to lack of transmit credits for VL 2	The number of times an interface was at zero Tx credits for 2.5 microseconds on virtual link 2 and there were output frames to transmit.

Interface Counters	Descriptions
TxWait 2.5us due to lack of transmit credits for VL 3	The number of times an interface was at zero Tx credits for 2.5 microseconds on virtual link 3 and there were output frames to transmit.
Tx B2B credit transitions to zero for VL 0	The number of times the interface was at zero Tx BB_credits remaining and unable to transmit on virtual link 0.
Tx B2B credit transitions to zero for VL 1	The number of times the interface was at zero Tx BB_credits remaining and unable to transmit on virtual link 1.
Tx B2B credit transitions to zero for VL 2	The number of times the interface was at zero Tx BB_credits remaining and unable to transmit on virtual link 2.
Tx B2B credit transitions to zero for VL 3	The number of times the interface was at zero Tx BB_credits remaining and unable to transmit on virtual link 3.
Rx B2B credit transitions to zero for VL 0	The number of times the interface was at zero Rx BB_credits remaining for virtual link 0.
Rx B2B credit transitions to zero for VL 1	The number of times the interface was at zero Rx BB_credits remaining for virtual link 1.
Rx B2B credit transitions to zero for VL 2	The number of times the interface was at zero Rx BB_credits remaining for virtual link 2.
Rx B2B credit transitions to zero for VL 3	The number of times the interface was at zero Rx BB_credits remaining for virtual link 3.
BB_SCs credit resend actions	The number of times port detected lost frames(s) and corrected the peer credit accounting by resending extra credits (R_RDYs).
BB_SCr Tx credit increment actions	The number of times port detected lost R_RDY(s) and corrected the local credit accounting by incrementing TX B2B credit available status.
Rx B2B credit remaining	The number of receive BB_credits remaining.
Rx B2B credit remaining for VL 0	The number of receive BB_credits remaining in virtual link 0.
Rx B2B credit remaining for VL 1	The number of receive BB_credits remaining in virtual link 1.
Rx B2B credit remaining for VL 2	The number of receive BB_credits remaining in virtual link 2.
Rx B2B credit remaining for VL 3	The number of receive BB_credits remaining in virtual link 3.
Tx B2B credit remaining	The number of transmit BB_credits remaining.

Interface Counters	Descriptions
Tx B2B credit remaining for VL 0	The number of transmit BB_credits remaining in virtual link 0.
Tx B2B credit remaining for VL 1	The number of transmit BB_credits remaining in virtual link 1.
Tx B2B credit remaining for VL 2	The number of transmit BB_credits remaining in virtual link 2.
Tx B2B credit remaining for VL 3	The number of transmit BB_credits remaining in virtual link 3.
Tx Low Priority B2B credit remaining	The number of low-priority transmit BB_credits remaining.
Last clearing of "show interface" counters	The duration since the interface counters were last cleared.

Examples

The following example shows how to display information all interfaces.

Note This command output is applicable for Cisco MDS NX-OS Release 9.4(4) and later releases.

```
switch# show interface
    fc1/1 is up
    Hardware is Fibre Channel, SFP is short wave laser w/o OFC (SN)
    Port WWN is 20:01:00:2a:6a:26:a1:e0
    Peer port WWN is 21:10:00:24:ff:98:01:01
    Admin port mode is F, trunk mode is on
    snmp link state traps are enabled
    Port mode is F, FCID is 0xe90c00
    Port vsan is 1
    Admin Speed is auto
    Operating Speed is 4 Gbps
    Rate mode is dedicated
    Port flow-control is R_RDY
    Transmit B2B Credit is 16
    Receive B2B Credit is 64
    B2B State Change: Admin(on), Oper(down)
    Receive data field Size is 2112
    Beacon is turned off
    Logical type is edge
    5 minutes input rate 0 bits/sec,0 bytes/sec, 0 frames/sec
    5 minutes output rate 0 bits/sec,0 bytes/sec, 0 frames/sec
      16 frames input, 1312 bytes, 82 bytes/frame average frame size
        0 discards,0 errors
        0 invalid CRC/FCS,0 unknown class
        0 too long,0 too short
      17 frames output, 1232 bytes, 72 bytes/frame average frame size
        0 discards,0 errors
      0 input OLS,0  LRR,0 NOS,0 loop inits
      1 output OLS,1 LRR, 0 NOS, 0 loop inits
    64 receive B2B credit remaining
    16 transmit B2B credit remaining
    16 low priority transmit B2B credit remaining
    0 timeout discards, 0 credit loss
    0 link failures, 0 sync losses, 0 signal losses
```

```
    Percentage TxWait for last 1s/1m/1h/72h: 0%/0%/0%/0%
    Interface last changed at Sat Apr 19 17:08:22 2025
    Last clearing of "show interface" counters: never
    Transceiver Information:
      Serial number is FNS190413TV
      Cisco pid is DS-SFP-FC16G-SW
      Temperature 40.12 C, Voltage 3.34 V, Current 8.76 mA, TxPower -3.61 dBm, R
xPower -3.92 dBm
      Power control is not supported, Power is on

fc1/2 is up
    Hardware is Fibre Channel, SFP is short wave laser w/o OFC (SN)
    Port WWN is 20:02:00:2a:6a:26:a1:e0
    Peer port WWN is 21:10:00:24:ff:98:01:02
    Admin port mode is F, trunk mode is on
    snmp link state traps are enabled
    Port mode is F, FCID is 0xe90b00
    Port vsan is 1
    Admin Speed is auto
    Operating Speed is 4 Gbps
    Rate mode is dedicated
    Port flow-control is R_RDY
    Transmit B2B Credit is 16
    Receive B2B Credit is 64
    B2B State Change: Admin(on), Oper(down)
    Receive data field Size is 2112
    Beacon is turned off
    Logical type is edge
    5 minutes input rate 0 bits/sec,0 bytes/sec, 0 frames/sec
    5 minutes output rate 0 bits/sec,0 bytes/sec, 0 frames/sec
      14 frames input, 1124 bytes, 80 bytes/frame average frame size
        0 discards,0 errors
        0 invalid CRC/FCS,0 unknown class
        0 too long,0 too short
      15 frames output, 1036 bytes, 69 bytes/frame average frame size
        0 discards,0 errors
      0 input OLS,0  LRR,0 NOS,0 loop inits
      1 output OLS,1 LRR, 0 NOS, 0 loop inits
    64 receive B2B credit remaining
    16 transmit B2B credit remaining
    16 low priority transmit B2B credit remaining
    0 timeout discards, 0 credit loss
    0 link failures, 0 sync losses, 0 signal losses
    Percentage TxWait for last 1s/1m/1h/72h: 0%/0%/0%/0%
    Interface last changed at Sat Apr 19 17:08:23 2025
    Last clearing of "show interface" counters: never
    Transceiver Information:
      Serial number is FNS18030X24
      Cisco pid is DS-SFP-FC8G-SW
      Temperature 42.39 C, Voltage 3.30 V, Current 8.00 mA, TxPower -3.30 dBm, R
xPower -3.72 dBm
      Power control is not supported, Power is on

fc1/3 is trunking
    Hardware is Fibre Channel, SFP is short wave laser w/o OFC (SN)
    Port WWN is 20:03:00:2a:6a:26:a1:e0
    Peer port WWN is 20:03:00:de:fb:74:e4:60
    Admin port mode is auto, trunk mode is on
    snmp link state traps are enabled
    Port mode is TE
    Port vsan is 1
    Admin Speed is auto
    Operating Speed is 4 Gbps
    Rate mode is dedicated
```

```
    Port flow-control is R_RDY
    Transmit B2B Credit is 500
    Receive B2B Credit is 64
    B2B State Change: Admin(on), Oper(up), Negotiated Value(14)
    Receive data field Size is 2112
    Beacon is turned off
    Logical type is core
    Trunk vsans (admin allowed and active) (1)
    Trunk vsans (up)                       (1)
    Trunk vsans (isolated)                 ()
    Trunk vsans (initializing)             ()
    5 minutes input rate 32 bits/sec,4 bytes/sec, 0 frames/sec
    5 minutes output rate 32 bits/sec,4 bytes/sec, 0 frames/sec
      493 frames input, 42776 bytes, 86 bytes/frame average frame size
        0 discards,0 errors
        0 invalid CRC/FCS,0 unknown class
        0 too long,0 too short
      493 frames output, 45400 bytes, 92 bytes/frame average frame size
        0 discards,0 errors
      0 input OLS,0  LRR,0 NOS,0 loop inits
      1 output OLS,2 LRR, 0 NOS, 1 loop inits
    64 receive B2B credit remaining
    500 transmit B2B credit remaining
    485 low priority transmit B2B credit remaining
    0 timeout discards, 0 credit loss
    0 link failures, 0 sync losses, 0 signal losses
    Percentage TxWait for last 1s/1m/1h/72h: 0%/0%/0%/0%
    Interface last changed at Sat Apr 19 17:08:25 2025
    Last clearing of "show interface" counters: never
    Transceiver Information:
      Serial number is FNS19130U1L
      Cisco pid is DS-SFP-FC16G-SW
      Temperature 43.41 C, Voltage 3.33 V, Current 8.62 mA, TxPower -2.50 dBm, R
xPower -3.96 dBm
      Power control is not supported, Power is on
```

The following example shows how to display information about a Fibre Channel interface:

```
switch# show interface fc1/5
fc1/5 is up
    Hardware is Fibre Channel, SFP is long wave laser cost reduced
    Port WWN is 20:05:00:2a:6a:64:af:80
    Peer port WWN is c0:50:76:c9:10:88:1c:c1
    Admin port mode is auto, trunk mode is off
    snmp link state traps are enabled
    Port mode is F, FCID is 0xc00400
    Port vsan is 69
    Admin Speed is auto max 16 Gbps
    Operating Speed is 16 Gbps
    Rate mode is dedicated
    Port flow-control is R_RDY
    Transmit B2B Credit is 90
    Receive B2B Credit is 32
    B2B State Change: Admin(on), Oper(down)
    Receive data field Size is 2112
    Beacon is turned off
    Logical type is edge
    Peer is type 008561  model T01 manufactured by IBM, ficon tag is 0x80A8
    5 minutes input rate 0 bits/sec,0 bytes/sec, 0 frames/sec
    5 minutes output rate 0 bits/sec,0 bytes/sec, 0 frames/sec
      72 frames input,3748 bytes
        0 discards,0 errors
        0 invalid CRC/FCS,0 unknown class
        0 too long,0 too short
      72 frames output,4636 bytes
```

```
      0 discards,0 errors
    0 input OLS,0  LRR,0 NOS,0 loop inits
    0 output OLS,0 LRR, 0 NOS, 0 loop inits
  32 receive B2B credit remaining
  90 transmit B2B credit remaining
  90 low priority transmit B2B credit remaining
  0 FC-Aborts
  0 Zone drops
  0 FIB drops for ports 1-8
  0 XBAR errors for ports 0-0
  0 Other drop count for ports 5-5
  0 timeout discards, 0 credit loss
  0 link failures, 0 sync losses, 0 signal losses
  0 Transmit B2B credit transitions to zero
  0 Receive B2B credit transitions to zero
  0 2.5us TxWait due to lack of transmit credits
  Percentage TxWait for last 1s/1m/1h/72h: 0%/0%/0%/0%
  Interface last changed at Fri Nov 15 00:38:52 2024
  Last clearing of "show interface" counters: 3d13h
  Transceiver Information:
    Serial number is FNS183116F7
    Cisco pid is DS-SFP-FC16G-LW
   Temperature 39.40 C, Voltage 3.28 V, Current 35.00 mA, TxPower 0.48 dBm, RxPower 1.01
dBm
    Power control is not supported, Power is on
```

The following example shows how to display the status of the standby supervisor's mgmt0 link. The command is issued from the active supervisor:

```
switch# show interface mgmt 0 standby
mgmt0 is up
    Hardware address is 70:18:a7:7e:f8:94
    MTU 1500 bytes
```

The following example shows how to display detailed information for an interface:

Note This command output is applicable for Cisco MDS NX-OS Release 8.4(2) and later releases.

```
switch# show interface fc1/1 counters detailed
fc1/1
  Rx 5 min rate bit/sec:                                                0
  Tx 5 min rate bit/sec:                                                0
  Rx 5 min rate bytes/sec:                                              0
  Tx 5 min rate bytes/sec:                                              0
  Rx 5 min rate frames/sec:                                             0
  Tx 5 min rate frames/sec:                                             0

 Total Stats:
  Rx total frames:                                                      0
  Tx total frames:                                                      0
  Rx total bytes:                                                       0
  Tx total bytes:                                                       0
  Rx total multicast:                                                   0
  Tx total multicast:                                                   0
  Rx total broadcast:                                                   0
  Tx total broadcast:                                                   0
  Rx total unicast:                                                     0
  Tx total unicast:                                                     0
```

```
 Rx total discards:                                                  0
 Tx total discards:                                                  0
 Rx total errors:                                                    0
 Tx total errors:                                                    0
 Rx class-2 frames:                                                  0
 Tx class-2 frames:                                                  0
 Rx class-2 bytes:                                                   0
 Tx class-2 bytes:                                                   0
 Rx class-2 frames discards:                                         0
 Rx class-2 port reject frames:                                      0
 Rx class-3 frames:                                                  0
 Tx class-3 frames:                                                  0
 Rx class-3 bytes:                                                   0
 Tx class-3 bytes:                                                   0
 Rx class-3 frames discards:                                         0
 Rx class-f frames:                                                  0
 Tx class-f frames:                                                  0
 Rx class-f bytes:                                                   0
 Tx class-f bytes:                                                   0
 Rx class-f frames discards:                                         0

Link Stats:
 Rx Link failures:                                                   0
 Rx Sync losses:                                                     0
 Rx Signal losses:                                                   0
 Rx Primitive sequence protocol errors:                              0
 Rx Invalid transmission words:                                      0
 Rx Invalid CRCs:                                                    0
 Rx Delimiter errors:                                                0
 Rx fragmented frames:                                               0
 Rx frames with EOF aborts:                                          0
 Rx unknown class frames:                                            0
 Rx Runt frames:                                                     0
 Rx Jabber frames:                                                   0
 Rx too long:                                                        0
 Rx too short:                                                       0
 Rx FEC corrected blocks:                                            0
 Rx FEC uncorrected blocks:                                          0
 Rx Link Reset(LR) while link is active:                             0
 Tx Link Reset(LR) while link is active:                             0
 Rx Link Reset Responses(LRR):                                       0
 Tx Link Reset Responses(LRR):                                       0
 Rx Offline Sequences(OLS):                                          0
 Tx Offline Sequences(OLS):                                          0
 Rx Non-Operational Sequences(NOS):                                  0
 Tx Non-Operational Sequences(NOS):                                  0
 BB_SCs credit resend actions:                                       0
 BB_SCr Tx credit increment actions:                                 0

Loop Stats:
 Rx F8 type LIP sequence errors:                                     0
 Tx F8 type LIP sequence errors:                                     0
 Rx Non F8 type LIP sequence errors:                                 0
 Tx Non F8 type LIP sequence errors:                                 0

Congestion Stats:
 Tx Timeout discards:                                                0
 Tx Credit loss:                                                     0
 TxWait 2.5us due to lack of transmit credits:                       0
 Percentage TxWait for last 1s/1m/1h/72h:                  0%/0%/0%/0%
 RxWait 2.5us due to lack of receive credits:                        0
 Percentage RxWait for last 1s/1m/1h/72h:                  0%/0%/0%/0%
 Rx B2B credit remaining:                                            1
 Tx B2B credit remaining:                                            0
```

```
  Tx Low Priority B2B credit remaining:                                  0
  Rx B2B credit transitions to zero:                                     0
  Tx B2B credit transitions to zero:                                     1

 Other Stats:
  Zone drops:                                                            0
  FIB drops for ports  1-24:                                             0
  XBAR errors for ports  1-24:                                           0
  Other drop count:                                                      0
  Tx FC-Aborts:                                                          0

 Last clearing of "show interface" counters :                          never
```

The following example shows how to display detailed counters information for all interfaces:

Note This command output is applicable for Cisco MDS NX-OS Release 8.4(2) and later releases. The command output varies if you are using Cisco MDS NX-OS Release 8.4(1a) or earlier releases.

```
switch# show interface counters detailed
fc1/1
  Rx 5 min rate bit/sec:                                                 0
  Tx 5 min rate bit/sec:                                                 0
  Rx 5 min rate bytes/sec:                                               0
  Tx 5 min rate bytes/sec:                                               0
  Rx 5 min rate frames/sec:                                              0
  Tx 5 min rate frames/sec:                                              0

 Total Stats:
  Rx total frames:                                                       0
  Tx total frames:                                                       0
  Rx total bytes:                                                        0
  Tx total bytes:                                                        0
  Rx total multicast:                                                    0
  Tx total multicast:                                                    0
  Rx total broadcast:                                                    0
  Tx total broadcast:                                                    0
  Rx total unicast:                                                      0
  Tx total unicast:                                                      0
  Rx total discards:                                                     0
  Tx total discards:                                                     0
  Rx total errors:                                                       0
  Tx total errors:                                                       0
  Rx class-2 frames:                                                     0
  Tx class-2 frames:                                                     0
  Rx class-2 bytes:                                                      0
  Tx class-2 bytes:                                                      0
  Rx class-2 frames discards:                                            0
  Rx class-2 port reject frames:                                         0
  Rx class-3 frames:                                                     0
  Tx class-3 frames:                                                     0
  Rx class-3 bytes:                                                      0
  Tx class-3 bytes:                                                      0
  Rx class-3 frames discards:                                            0
  Rx class-f frames:                                                     0
  Tx class-f frames:                                                     0
  Rx class-f bytes:                                                      0
  Tx class-f bytes:                                                      0
  Rx class-f frames discards:                                            0
```

```
 Link Stats:
  Rx Link failures:                                                    0
  Rx Sync losses:                                                      0
  Rx Signal losses:                                                    0
  Rx Primitive sequence protocol errors:                               0
  Rx Invalid transmission words:                                       0
  Rx Invalid CRCs:                                                     0
  Rx Delimiter errors:                                                 0
  Rx fragmented frames:                                                0
  Rx frames with EOF aborts:                                           0
  Rx unknown class frames:                                             0
  Rx Runt frames:                                                      0
  Rx Jabber frames:                                                    0
  Rx too long:                                                         0
  Rx too short:                                                        0
  Rx FEC corrected blocks:                                             0
  Rx FEC uncorrected blocks:                                           0
  Rx Link Reset(LR) while link is active:                              0
  Tx Link Reset(LR) while link is active:                              0
  Rx Link Reset Responses(LRR):                                        0
  Tx Link Reset Responses(LRR):                                        0
  Rx Offline Sequences(OLS):                                           0
  Tx Offline Sequences(OLS):                                           0
  Rx Non-Operational Sequences(NOS):                                   0
  Tx Non-Operational Sequences(NOS):                                   0
  BB_SCs credit resend actions:                                        0
  BB_SCr Tx credit increment actions:                                  0

 Loop Stats:
  Rx F8 type LIP sequence errors:                                      0
  Tx F8 type LIP sequence errors:                                      0
  Rx Non F8 type LIP sequence errors:                                  0
  Tx Non F8 type LIP sequence errors:                                  0

 Congestion Stats:
  Tx Timeout discards:                                                 0
  Tx Credit loss:                                                      0
  TxWait 2.5us due to lack of transmit credits:                        0
  Percentage TxWait for last 1s/1m/1h/72h:                     0%/0%/0%/0%
  RxWait 2.5us due to lack of receive credits:                         0
  Percentage RxWait for last 1s/1m/1h/72h:                     0%/0%/0%/0%
  Rx B2B credit remaining:                                             1
  Tx B2B credit remaining:                                             0
  Tx Low Priority B2B credit remaining:                                0
  Rx B2B credit transitions to zero:                                   0
  Tx B2B credit transitions to zero:                                   1

 Other Stats:
  Zone drops:                                                          0
  FIB drops for ports  1-24:                                           0
  XBAR errors for ports  1-24:                                         0
  Other drop count:                                                    0
  FC-Aborts:                                                           0

 Last clearing of "show interface" counters :                      never

fc1/2
   Rx 5 min rate bit/sec:                                              0
   Tx 5 min rate bit/sec:                                              0
   Rx 5 min rate bytes/sec:                                            0
   Tx 5 min rate bytes/sec:                                            0
   Rx 5 min rate frames/sec:                                           0
   Tx 5 min rate frames/sec:                                           0
```

```
Total Stats:
 Rx total frames:                                                0
 Tx total frames:                                                0
 Rx total bytes:                                                 0
 Tx total bytes:                                                 0
 Rx total multicast:                                             0
 Tx total multicast:                                             0
 Rx total broadcast:                                             0
 Tx total broadcast:                                             0
 Rx total unicast:                                               0
 Tx total unicast:                                               0
 Rx total discards:                                              0
 Tx total discards:                                              0
 Rx total errors:                                                0
 Tx total errors:                                                0
 Rx class-2 frames:                                              0
 Tx class-2 frames:                                              0
 Rx class-2 bytes:                                               0
 Tx class-2 bytes:                                               0
 Rx class-2 frames discards:                                     0
 Rx class-2 port reject frames:                                  0
 Rx class-3 frames:                                              0
 Tx class-3 frames:                                              0
 Rx class-3 bytes:                                               0
 Tx class-3 bytes:                                               0
 Rx class-3 frames discards:                                     0
 Rx class-f frames:                                              0
 Tx class-f frames:                                              0
 Rx class-f bytes:                                               0
 Tx class-f bytes:                                               0
 Rx class-f frames discards:                                     0

Link Stats:
 Rx Link failures:                                               0
 Rx Sync losses:                                                 0
 Rx Signal losses:                                               0
 Rx Primitive sequence protocol errors:                          0
 Rx Invalid transmission words:                                  0
 Rx Invalid CRCs:                                                0
 Rx Delimiter errors:                                            0
 Rx fragmented frames:                                           0
 Rx frames with EOF aborts:                                      0
 Rx unknown class frames:                                        0
 Rx Runt frames:                                                 0
 Rx Jabber frames:                                               0
 Rx too long:                                                    0
 Rx too short:                                                   0
 Rx FEC corrected blocks:                                        0
 Rx FEC uncorrected blocks:                                      0
 Rx Link Reset(LR) while link is active:                         0
 Tx Link Reset(LR) while link is active:                         0
 Rx Link Reset Responses(LRR):                                   0
 Tx Link Reset Responses(LRR):                                   0
 Rx Offline Sequences(OLS):                                      0
 Tx Offline Sequences(OLS):                                      0
 Rx Non-Operational Sequences(NOS):                              0
 Tx Non-Operational Sequences(NOS):                              0
 BB_SCs credit resend actions:                                   0
 BB_SCr Tx credit increment actions:                             0

Loop Stats:
 Rx F8 type LIP sequence errors:                                 0
 Tx F8 type LIP sequence errors:                                 0
```

```
  Rx Non F8 type LIP sequence errors:                                  0
  Tx Non F8 type LIP sequence errors:                                  0

 Congestion Stats:
  Tx Timeout discards:                                                 0
  Tx Credit loss:                                                      0
  TxWait 2.5us due to lack of transmit credits:                        0
  Percentage TxWait for last 1s/1m/1h/72h:                   0%/0%/0%/0%
  RxWait 2.5us due to lack of receive credits:                         0
  Percentage RxWait for last 1s/1m/1h/72h:                   0%/0%/0%/0%
  Rx B2B credit remaining:                                             1
  Tx B2B credit remaining:                                             0
  Tx Low Priority B2B credit remaining:                                0
  Rx B2B credit transitions to zero:                                   0
  Tx B2B credit transitions to zero:                                   1

 Other Stats:
  Zone drops:                                                          0
  FIB drops for ports  1-24:                                           0
  XBAR errors for ports  1-24:                                         0
  Other drop count:                                                    0
  FC-Aborts:                                                           0

 Last clearing of "show interface" counters :                      never

...
```

The following example shows how to display detailed counters for all interfaces and the links are operating in the Extended Receiver Ready (ER_RDY) or high-low (double-queue) mode:

Note This command output is applicable for Cisco MDS NX-OS Release 8.4(2) and later releases. The command output varies if you are using Cisco MDS NX-OS Release 8.4(1a) or earlier releases.

```
switch# show interface counters detailed
fc1/1
  Rx 5 min rate bit/sec:                                             192
  Tx 5 min rate bit/sec:                                             256
  Rx 5 min rate bytes/sec:                                            24
  Tx 5 min rate bytes/sec:                                            32
  Rx 5 min rate frames/sec:                                            0
  Tx 5 min rate frames/sec:                                            0

Total Stats:
  Rx total frames:                                                   325
  Tx total frames:                                                   328
  Rx total bytes:                                                  21304
  Tx total bytes:                                                  27008
  Rx total multicast:                                                  0
  Tx total multicast:                                                  0
  Rx total broadcast:                                                  0
  Tx total broadcast:                                                  0
  Rx total unicast:                                                  325
  Tx total unicast:                                                  328
  Rx total discards:                                                   0
  Tx total discards:                                                   0
  Rx total errors:                                                     0
  Tx total errors:                                                     0
  Rx class-2 frames:                                                   0
```

```
  Tx class-2 frames:                                                  0
  Rx class-2 bytes:                                                   0
  Tx class-2 bytes:                                                   0
  Rx class-2 frames discards:                                         0
  Rx class-2 port reject frames:                                      0
  Rx class-3 frames:                                                  6
  Tx class-3 frames:                                                  9
  Rx class-3 bytes:                                                 384
  Tx class-3 bytes:                                                 504
  Rx class-3 frames discards:                                         0
  Rx class-f frames:                                                319
  Tx class-f frames:                                                319
  Rx class-f bytes:                                               20920
  Tx class-f bytes:                                               26504
  Rx class-f frames discards:                                         0

Link Stats:
  Rx Link failures:                                                   0
  Rx Sync losses:                                                     0
  Rx Signal losses:                                                   0
  Rx Primitive sequence protocol errors:                              0
  Rx Invalid transmission words:                                      0
  Rx Invalid CRCs:                                                    0
  Rx Delimiter errors:                                                0
  Rx fragmented frames:                                               0
  Rx frames with EOF aborts:                                          0
  Rx unknown class frames:                                            0
  Rx Runt frames:                                                     0
  Rx Jabber frames:                                                   0
  Rx too long:                                                        0
  Rx too short:                                                       0
  Rx FEC corrected blocks:                                            0
  Rx FEC uncorrected blocks:                                          0
  Rx Link Reset(LR) while link is active:                             2
  Tx Link Reset(LR) while link is active:                             1
  Rx Link Reset Responses(LRR):                                       3
  Tx Link Reset Responses(LRR):                                       2
  Rx Offline Sequences(OLS):                                          2
  Tx Offline Sequences(OLS):                                          3
  Rx Non-Operational Sequences(NOS):                                  0
  Tx Non-Operational Sequences(NOS):                                  0

Loop Stats:
  Rx F8 type LIP sequence errors:                                     0
  Tx F8 type LIP sequence errors:                                     0
  Rx Non F8 type LIP sequence errors:                                 5
  Tx Non F8 type LIP sequence errors:                                 2

Congestion Stats:
 Tx Timeout discards:                                                 0
  Tx Credit loss:                                                     0
  BB_SCs credit resend actions:                                       0
  BB_SCr Tx credit increment actions:                                 0
  TxWait 2.5us due to lack of transmit credits:                       0
  Percentage TxWait not available for last 1s/1m/1h/72h:      0%/0%/0%/0%
  Rx B2B credit remaining for VL 0:                                  15
  Rx B2B credit remaining for VL 1:                                  15
  Rx B2B credit remaining for VL 2:                                  40
  Rx B2B credit remaining for VL 3:                                 430
  Tx B2B credit remaining for VL 0:                                  15
  Tx B2B credit remaining for VL 1:                                  15
  Tx B2B credit remaining for VL 2:                                  40
  Tx B2B credit remaining for VL 3:                                 430
  Rx B2B credit transitions to zero for VL 0:                         6
```

```
  Rx B2B credit transitions to zero for VL 1:                          0
  Rx B2B credit transitions to zero for VL 2:                          0
  Rx B2B credit transitions to zero for VL 3:                          0
  Tx B2B credit transitions to zero for VL 0:                          8
  Tx B2B credit transitions to zero for VL 1:                          1
  Tx B2B credit transitions to zero for VL 2:                          1
  Tx B2B credit transitions to zero for VL 3:                          1

Last clearing of "show interface" counters :                       never
.
.
.
```

The following example shows how to display detailed counters for a particular interface.

Note This command output is applicable for Cisco MDS NX-OS Release 9.4(4) and later releases.

```
switch# show interface fc1/1 counters detailed
fc1/1
 Rate Stats:
  Rx 5 min rate bit/sec:                                               0
  Tx 5 min rate bit/sec:                                               0
  Rx 5 min rate bytes/sec:                                             0
  Tx 5 min rate bytes/sec:                                             0
  Rx 5 min rate frames/sec:                                            0
  Tx 5 min rate frames/sec:                                            0

 Total Stats:
  Rx total frames:                                                    16
  Tx total frames:                                                    17
  Rx total bytes:                                                   1312
  Tx total bytes:                                                   1232
  Rx bytes/frame average frame size:                                  82
  Tx bytes/frame average frame size:                                  72
  Rx total multicast:                                                  0
  Tx total multicast:                                                  0
  Rx total broadcast:                                                  0
  Tx total broadcast:                                                  0
  Rx total unicast:                                                   16
  Tx total unicast:                                                   17
  Rx total discards:                                                   0
  Tx total discards:                                                   0
  Rx total errors:                                                     0
  Tx total errors:                                                     0
  Rx class-2 frames:                                                   0
  Tx class-2 frames:                                                   0
  Rx class-2 bytes:                                                    0
  Tx class-2 bytes:                                                    0
  Rx class-2 frames discards:                                          0
  Rx class-2 port reject frames:                                       0
  Rx class-3 frames:                                                  16
  Tx class-3 frames:                                                  17
  Rx class-3 bytes:                                                 1312
  Tx class-3 bytes:                                                 1232
  Rx class-3 frames discards:                                          0
  Rx class-f frames:                                                   0
  Tx class-f frames:                                                   0
  Rx class-f bytes:                                                    0
```

```
  Tx class-f bytes:                                                   0
  Rx class-f frames discards:                                         0

 Link Stats:
  Rx Link failures:                                                   0
  Rx Sync losses:                                                     0
  Rx Signal losses:                                                   0
  Rx Primitive sequence protocol errors:                              0
  Rx Invalid transmission words:                                      0
  Rx Invalid CRCs:                                                    0
  Rx Delimiter errors:                                                0
  Rx fragmented frames:                                               0
  Rx frames with EOF aborts:                                          0
  Rx unknown class frames:                                            0
  Rx Runt frames:                                                     0
  Rx Jabber frames:                                                   0
  Rx too long:                                                        0
  Rx too short:                                                       0
  Rx Link Reset(LR) while link is active:                             0
  Tx Link Reset(LR) while link is active:                             0
  Rx Link Reset Responses(LRR):                                       0
  Tx Link Reset Responses(LRR):                                       1
  Rx Offline Sequences(OLS):                                          0
  Tx Offline Sequences(OLS):                                          1
  Rx Non-Operational Sequences(NOS):                                  0
  Tx Non-Operational Sequences(NOS):                                  0
  BB_SCs credit resend actions:                                       0
  BB_SCr Tx credit increment actions:                                 0

 Loop Stats:
  Rx F8 type LIP sequence errors:                                     0
  Tx F8 type LIP sequence errors:                                     0
  Rx Non F8 type LIP sequence errors:                                 0
  Tx Non F8 type LIP sequence errors:                                 0

 Congestion Stats:
  Tx Timeout discards:                                                0
  Tx Credit loss:                                                     0
  TxWait 2.5us due to lack of transmit credits:                       0
  Percentage TxWait for last 1s/1m/1h/72h:                  0%/0%/0%/0%
  Rx B2B credit remaining:                                            0
  Tx B2B credit remaining:                                            0
  Tx Low Priority B2B credit remaining:                               0
  Rx B2B credit transitions to zero:                                  1
  Tx B2B credit transitions to zero:                                  3

 Last clearing of "show interface" counters :                      never
```

The following example shows how to display detailed counters for a specific port channel interface which is operating in R_RDY and ER_RDY modes:

```
switch# show interface port-channel 4 counters detailed
port-channel4
      39709968 frames, 85296973744 bytes received
      0 class-2 frames, 0 bytes received
      0 class-2 discards
      0 F_BSY frames, 0 F_RJT frames
          generated against class-2 frames
      0 port reject frames
      39709950 class-3 frames, 85296972600 bytes received
      18 class-f frames, 1144 bytes received
      0 discards, 0 errors received
      0 discards, 0 errors transmitted
```

```
      3061772 frames, 6576648708 bytes transmitted
      0 class-2 frames, 0 bytes transmitted
      3061754 class-3 frames, 6576647592 bytes transmitted
      0 class-3 frames discarded
      18 class-f frames, 1116 bytes transmitted
      0 class-f frames discarded
      0 multicast packets received, 0 transmitted
      0 broadcast packets received, 0 transmitted
      39709968 unicast packets received, 3061772 transmitted
      0 timeout discards, 0 credit loss
      0 link failures, 0 sync losses,       0 signal losses
      0 primitive sequence protocol errors
      0 invalid transmission words
      0 invalid CRCs, 0 Delimiter Errors
      0 address identifier errors
      0 link reset received while link is active
      0 link reset transmitted while link is active
      0 Offline Sequence errors received
      0 Offline Sequence errors transmitted
      0 frames received that are shorter than
          the minimum allowable frame length
          regardless of the CRC/FCS error
      0 frames received that are longer than
          the maximum frame length and also have a
          CRC/FCS error
      2.5us TxWait due to lack of transmit credits for VL 0-3: 0, 0, 0, 8470722
      6582015 2.5us TxWait due to lack of transmit credits
      0 frames received with length greater
          than what was agreed to in FLOGI/PLOGI
      0 frames received with length less than
          the minimum indicated by the frame header
      0 link reset responses received
      0 link reset responses transmitted
      0 non-operational sequences received
      0 non-operational sequences transmitted
      0 fragmented frames received
      0 frames received with EOF aborts
      0 unknown class frames received
      0 8b10b disparity errors
      0 frames discarded
      0 Exchange Link Parameters switch fabric
          internal link service request failures
      Transmit B2B credit transitions to zero for VL 0-3: 0, 0, 0, 643676
      Receive B2B credit transitions to zero for VL 0-3: 0, 0, 0, 0
      1297804 Transmit B2B credit transitions to zero
      0 Receive B2B credit transitions to zero
      0 Enhanced Inter Switch Link (EISL) frames
          discarded
      0 framing errors
      0 F8 type LIP sequence errors received
      0 F8 type LIP sequence errors issued
      0 Non F8 type LIP sequence errors received
      0 Non F8 type LIP sequence errors issued
      0 fec corrected blocks
      0 fec uncorrected blocks
      0 BB_SCs credit resend actions, 0 BB_SCr Tx credit increment actions
Percentage TxWait not available for last 1s/1m/1h/72h: 0%/16%/0%/0%
```

The following example shows how to display Ethernet MAC statistics for an IPStorage interface used for FCIP from Cisco MDS 9000 NX-OS Release 9.4(3):

```
switch# show interface IPStorage 1/1 counters detailed
IPStorage1/1
 Rate Stats:
  Rx 5 minutes input rate bits/sec:                                  0
  Rx 5 minutes input rate bytes/sec:                                 0
  Rx 5 minutes input rate packets/sec:                               0
  Tx 5 minutes input rate bits/sec:                                  0
  Tx 5 minutes input rate bytes/sec:                                 0
  Tx 5 minutes input rate packets/sec:                               0

 Total Stats:
  Rx packets input:                                                  0
  Rx bytes:                                                          0
  Rx multicast frames:                                               0
  Rx broadcast frames:                                               0
  Rx errors:                                                         0
  Rx queue drops:                                                    0
  Rx if-down drops:                                                  0
  Rx RED drops:                                                      0
  Rx bad ether type drops:                                           0
  Rx bad protocol drops:                                             0
  Tx packets output:                                                 0
  Tx bytes:                                                          0
  Tx underruns:                                                      0
  Tx multicast frames:                                               0
  Tx broadcast frames:                                               0
  Tx errors:                                                         0
  Tx collisions:                                                     0
  Tx ARP drops:                                                      0
  Tx if-down drops:                                                  0

 MAC Error Stats
  Rx packets with FCS or align errors:                               0
  Rx packets with length < min:                                      0
  Rx packets with length < min & FCS error:                          0
  Rx packets with length > max:                                      0
  Rx packets with length > max & FCS error:                          0
  Rx packets with PCI error:                                         0
  Rx packets with GMX/SPX/PCI error:                                 0
  Rx packets dropped by RED buffer exhaustion:                       0
  Rx free buffers went below RED threshold count:                    0
  Rx L2 multicast packets:                                           0
  Rx L2 broadcast packets:                                           0
  Rx packets dropped by dest MAC filter:                             0
  Rx packets dropped due to a full receive FIFO:                     0
  Rx total MAC errors:                                               0
  Tx packets dropped in PKO queue:                                   0
  Tx packets sent with single collision:                             0
  Tx packets sent with multiple collisions:                          0
  Tx packets dropped due to excessive collisions:                    0
  Tx packets delayed count:                                          0
  Tx total MAC errors:                                               0
```

The following example shows how to display aggregate counters information for an interface:

```
switch# show interface fc1/3 aggregate-counters
fc1/3
    5 minutes input rate 192 bits/sec, 24 bytes/sec, 0 frames/sec
    5 minutes output rate 160 bits/sec, 20 bytes/sec, 0 frames/sec
    40022 frames input, 2081144 bytes
      0 class-2 frames, 0 bytes
```

```
    40022 class-3 frames, 2081144 bytes
    0 class-f frames, 0 bytes
    0 discards, 0 errors, 0 CRC/FCS
    0 unknown class, 0 too long, 0 too short
  40022 frames output, 1760968 bytes
    0 class-2 frames, 0 bytes
    40022 class-3 frames, 1760968 bytes
    0 class-f frames, 0 bytes
    0 discards, 0 errors
  0 input OLS, 0 LRR, 0 NOS, 0 loop inits
  0 output OLS, 0 LRR, 0 NOS, 0 loop inits
  0 link failures, 0 sync losses, 0 signal losses
   0 transmit B2B credit transitions to zero
   0 receive B2B credit transitions to zero
    32 receive B2B credit remaining
    80 transmit B2B credit remaining
    80 low priority transmit B2B credit remaining
```

The following example shows how to display aggregate counters information for an interface and the link is operating in the ER_RDY or high-low (double-queue) mode:

```
switch# show interface fc1/1 aggregate-counters
fc1/1
    5 minutes input rate 128 bits/sec, 16 bytes/sec, 0 frames/sec
     5 minutes output rate 160 bits/sec, 20 bytes/sec, 0 frames/sec
    9344 frames input, 531016 bytes
      0 discards, 0 errors, 0 CRC/FCS
      0 unknown class, 0 too long, 0 too short
    9344 frames output, 537392 bytes
      0 discards, 0 errors
    0 Zone drops
    0 FIB drops for ports 1-16
    0 XBAR errors for ports 1-16
    0 Other drop count for ports 1-1
    2 input OLS, 5 LRR, 1 NOS, 0 loop inits
    11 output OLS, 11 LRR, 1 NOS, 0 loop inits
    1 link failures, 0 sync losses, 0 signal losses
    Transmit B2B credit transitions to zero for VL 0-3: 12, 8, 8, 8
    Receive B2B credit transitions to zero for VL 0-3: 8, 4, 4, 4
    Transmit B2B credit remaining for VL 0-3: 15, 15, 40, 430
    Receive B2B credit remaining for VL 0-3: 15, 15, 40, 430
```

This example displays the TxWait history graphs for the Fibre Channel interface 1/19:

```
switch# show interface fc 1/19 txwait-history

TxWait history for port fc1/19:
===============================
     99999999999999999999999999999999999999999999999999999999999999999
     22222222122222222222212222221222221222222222222222222222222212
     44344445804444244454554544547445549434053544443431444443445 4
1000
900 ############################################################
800 ############################################################
700 ############################################################
600 ############################################################
500 ############################################################
400 ############################################################
300 ############################################################
```

```
200 ############################################################
100 ############################################################
    0....5....1....1....2....2....3....3....4....4....5....5....6
              0    5    0    5    0    5    0    5    0    5    0

          Tx Credit Not Available per second (last 60 seconds)
                 # = TxWait (ms)

   55555554
   55522222000000000000000000000000000000000000000000000000000
   ............................................................
   43022229000000000000000000000000000000000000000000000000000
60
54 #######
48 #######
42 ########
36 ########
30 ########
24 ########
18 ########
12 ########
 6 ########
  0....5....1....1....2....2....3....3....4....4....5....5....6
            0    5    0    5    0    5    0    5    0    5    0

          Tx Credit Not Available per minute (last 60 minutes)
                 # = TxWait (secs)



     000000000000000000000000000000000000000000000000000000000000000000000
3600
3240
2880
2520
2160
1800
1440
1080
 720
 360
    0....5....1....1....2....2....3....3....4....4....5....5....6....6....7.7
              0    5    0    5    0    5    0    5    0    5    0    5    0 2

          Tx Credit Not Available per hour (last 72 hours)
                 # = TxWait (secs)
```

This example displays the RxWait history graphs for the Ethernet interface 1/47:

```
switch# show interface eth1/47 rxwait-history

RxWait history for port Eth1/47:
  ==============================

       788777778777777877777778877877877778777877777777777877777778
       900999990999999099999990099099099990999099999999999199999990
  1000
   900
   800
   700
   600
```

```
 500
 400
 300
 200
 100 ############################################################
    0....5....1....1....2....2....3....3....4....4....5....5....6
              0    5    0    5    0    5    0    5    0    5    0

          RxWait per second (last 60 seconds)
                 # = RxWait (ms)

             1
   4444444445570000000000000000000000000000000000000000000000000
   ..............................................................
   7777777775870000000000000000000000000000000000000000000000000
60
54
48
42
36
30
24
18           #
12           #
 6 ############
  0....5....1....1....2....2....3....3....4....4....5....5....6
            0    5    0    5    0    5    0    5    0    5    0

          RxWait per minute (last 60 minutes)
                 # = RxWait (secs)


     2                 1                           1
     7                2 5                          9
     000000000000000006060002000000000000000000000009000000000000000000000001
3600
3240
2880
2520
2160
1800
1440
1080
 720
 360 #                                            #
    0....5....1....1....2....2....3....3....4....4....5....5....6....6....7.7
              0    5    0    5    0    5    0    5    0    5    0    5    0 2

    RxWait per hour (last 72 hours)
                 # = RxWait (secs)
```

The following example shows that TTS must be configured on the Cisco MDS 48-Port 64-Gbps Fibre Channel Switching Module (DS-X9748-3072K9) to use FEC at 16-Gbps speed:

```
switch# show interface fc7/1
fc7/1 is down (FEC on this module requires TTS to function at 16 Gbps)
...
```

To resolve this error, configure the **switchport fec tts** command on the interface.

The following example shows how to display the buffer to buffer credit information for a switch port:

```
switch# show interface fc1/1 bbcredit
fc1/1 is up
    Transmit B2B Credit is 16
    Receive B2B Credit is 16
      17 receive B2B credit remaining
      16 transmit B2B credit remaining
```

The following example shows how to display information about the in-band interface:

```
switch# show interface sup-fc0
sup-fc0 is up
    Hardware is FastEthernet, address is 0000.0000.0000
    MTU 2596 bytes, BW 1000000 Kbit
    66 packets input, 7316 bytes
    Received 0 multicast frames, 0 compressed
    0 input errors, 0 frame, 0 overrun 0 fifo
    64 packets output, 28068 bytes, 0 underruns
    0 output errors, 0 collisions, 0 fifo
    0 carrier errors
```

The following example shows how to display information about a VSAN interface:

```
switch# show interface vsan 2
vsan2 is up, line protocol is up
    WWPN is 10:00:00:05:30:00:59:1f, FCID is 0xb90100
    Internet address is 10.1.1.1/24
    MTU 1500 bytes, BW 1000000 Kbit
    0 packets input, 0 bytes, 0 errors, 0 multicast
    0 packets output, 0 bytes, 0 errors, 0 dropped
```

The following example shows how to display description information for all interfaces:

```
switch# show interface description
fc1/1
    no description
fc1/2
    no description
fc1/15
fcAnl
sup-fc0 is up
mgmt0 is up
vsan1 - IPFC interface
port-channel 15
no description
port-channel 98
no description
```

The following example shows how to display the debounce time information for Ethernet interfaces:

```
switch# show interface ethernet1/3 debounce

--------------------------------------------------------------------------------
Port          Debounce time   Value(ms)    Debounce(link-up)    Value(ms)
--------------------------------------------------------------------------------
```

```
Eth1/3        enable              100
```

The following example shows how to display the FCoE interface information:

```
switch# show interface ethernet1/3 fcoe
Ethernet1/3 is FCoE UP
vfc1/3 is bound
```

The following example shows how to display the flow control information for Ethernet interfaces:

```
switch# show interface ethernet1/3 flowcontrol

--------------------------------------------------------------------------------
Port          Send FlowControl  Receive FlowControl  RxPause   TxPause
              admin    oper     admin    oper
--------------------------------------------------------------------------------
Eth1/3        off      off      off      off         0         0
```

The following example shows how to display the interface layer 2 information for Ethernet interfaces:

```
switch# show interface ethernet1/3 switchport
Name: Ethernet1/3
  Switchport: Enabled
  Switchport Monitor: Not enabled
  Operational Mode: trunk
  Access Mode VLAN: 1 (default)
  Trunking Native Mode VLAN: 1 (default)
  Trunking VLANs Allowed: 1-4094
  Administrative private-vlan primary host-association: none
  Administrative private-vlan secondary host-association: none
  Administrative private-vlan primary mapping: none
  Administrative private-vlan secondary mapping: none
  Administrative private-vlan trunk native VLAN: none
  Administrative private-vlan trunk encapsulation: dot1q
  Administrative private-vlan trunk normal VLANs: none
  Administrative private-vlan trunk private VLANs: none
  Operational private-vlan: none
```

The following example shows how to display brief information for a range of interfaces:

```
switch# show interface fc1/1-16 brief
--------------------------------------------------------------------------------
Interface  Vsan   Admin  Admin   Status           Oper  Oper   Port-channel
                  Mode   Trunk                    Mode  Speed
                         Mode                           (Gbps)
--------------------------------------------------------------------------------
fc1/1      1      auto   on      down             --    --     --
fc1/2      1      auto   on      fcotAbsent       --    --     --
fc1/3      1      F      --      notConnected     --    --     --
fc1/4      1      auto   on      fcotAbsent       --    --     --
fc1/5      1      F      --      up               F     2      --
fc1/6      1      auto   on      fcotAbsent       --    --     --
fc1/7      1      auto   on      down             --    --     --
fc1/8      1      auto   on      fcotAbsent       --    --     --
```

```
fc1/9      1      auto   on      fcotAbsent       --    --     --
fc1/10     1      auto   on      fcotAbsent       --    --     --
fc1/11     1      auto   on      down             --    --     --
fc1/12     1      auto   on      fcotAbsent       --    --     --
fc1/13     1      auto   on      down             --    --     --
fc1/14     1      auto   on      fcotAbsent       --    --     --
fc1/15     1      auto   on      down             --    --     --
fc1/16     1      auto   on      fcotAbsent       --    --     --
--------------------------------------------------------------------------------
Interface          Status   IP Address               Speed        MTU
--------------------------------------------------------------------------------
sup-fc0            up       --                       1 Gbps       2596
--------------------------------------------------------------------------------
Interface          Status   IP Address               Speed        MTU
--------------------------------------------------------------------------------
mgmt0              up       173.95.112/24         100 Mbps     1500
--------------------------------------------------------------------------------
Interface          Status   IP Address               Speed        MTU
--------------------------------------------------------------------------------
vsan1                 up    10.1.1.1/24              1 Gbps       1500
```

The following example shows how to display counter information for an FCIP interface:

```
switch# show interface fcip 3 counters
fcip3
    TCP Connection Information
      2 Active TCP connections
        Control connection: Local 43.1.1.2:3225, Remote 43.1.1.1:65532
        Data connection: Local 43.1.1.2:3225, Remote 43.1.1.1:65534
      30 Attempts for active connections, 0 close of connections
    TCP Parameters
      Path MTU 1500 bytes
      Current retransmission timeout is 300 ms
      Round trip time: Smoothed 10 ms, Variance: 5
      Advertised window: Current: 122 KB, Maximum: 122 KB, Scale: 1
      Peer receive window: Current: 114 KB, Maximum: 114 KB, Scale: 1
      Congestion window: Current: 2 KB, Slow start threshold: 1048560 KB
    5 minutes input rate 64 bits/sec, 8 bytes/sec, 0 frames/sec
    5 minutes output rate 64 bits/sec, 8 bytes/sec, 0 frames/sec
      910 frames input, 84652 bytes
         910 Class F frames input, 84652 bytes
         0 Class 2/3 frames input, 0 bytes
         0 Error frames timestamp error 0
      908 frames output, 84096 bytes
         908 Class F frames output, 84096 bytes
         0 Class 2/3 frames output, 0 bytes
         0 Error frames 0 reass frames
```

The following example displays display detailed counters information for all interfaces:

```
switch# show interface counters
fc1/1
    5 minutes input rate 0 bits/sec, 0 bytes/sec, 0 frames/sec
    5 minutes output rate 0 bits/sec, 0 bytes/sec, 0 frames/sec
    0 frames input, 0 bytes
      0 class-2 frames, 0 bytes
      0 class-3 frames, 0 bytes
      0 class-f frames, 0 bytes
      0 discards, 0 errors, 0 CRC/FCS
      0 unknown class, 0 too long, 0 too short
    0 frames output, 0 bytes
      0 class-2 frames, 0 bytes
```

```
      0 class-3 frames, 0 bytes
      0 class-f frames, 0 bytes
      0 discards, 0 errors
    0 FC-Aborts
    0 Zone drops
    0 FIB drops for ports 1-24
    0 XBAR errors for ports 1-24
    0 Other drop count for ports 1-1
    0 timeout discards, 0 credit loss
    0 input OLS, 0 LRR, 0 NOS, 0 loop inits
    0 output OLS, 0 LRR, 0 NOS, 0 loop inits
    0 link failures, 0 sync losses, 0 signal losses
    1 Transmit B2B credit transitions to zero
    0 Receive B2B credit transitions to zero
    0 2.5us TxWait due to lack of transmit credits
    Percentage TxWait for last 1s/1m/1h/72h: 0%/0%/0%/0%
    0 2.5us RxWait due to lack of receive credits
    Percentage RxWait for last 1s/1m/1h/72h: 0%/0%/0%/0%
    1 receive B2B credit remaining
    0 transmit B2B credit remaining
    0 low priority transmit B2B credit remaining
    Last clearing of "show interface" counters: never
fc1/2
    5 minutes input rate 0 bits/sec, 0 bytes/sec, 0 frames/sec
    5 minutes output rate 0 bits/sec, 0 bytes/sec, 0 frames/sec
    0 frames input, 0 bytes
      0 class-2 frames, 0 bytes
      0 class-3 frames, 0 bytes
      0 class-f frames, 0 bytes
      0 discards, 0 errors, 0 CRC/FCS
      0 unknown class, 0 too long, 0 too short
    0 frames output, 0 bytes
      0 class-2 frames, 0 bytes
      0 class-3 frames, 0 bytes
      0 class-f frames, 0 bytes
      0 discards, 0 errors
    Tx FC-Aborts
    0 Zone drops
    0 FIB drops for ports 1-24
    0 XBAR errors for ports 1-24
    0 Other drop count for ports 2-2
    0 timeout discards, 0 credit loss
    0 input OLS, 0 LRR, 0 NOS, 0 loop inits
    0 output OLS, 0 LRR, 0 NOS, 0 loop inits
    0 link failures, 0 sync losses, 0 signal losses
    1 Transmit B2B credit transitions to zero
    0 Receive B2B credit transitions to zero
    0 2.5us TxWait due to lack of transmit credits
    Percentage TxWait for last 1s/1m/1h/72h: 0%/0%/0%/0%
    0 2.5us RxWait due to lack of receive credits
    Percentage RxWait for last 1s/1m/1h/72h: 0%/0%/0%/0%
    1 receive B2B credit remaining
    0 transmit B2B credit remaining
    0 low priority transmit B2B credit remaining
    Last clearing of "show interface" counters: never
...
```

The following example displays display detailed counters information for fc1/2 interfaces:

```
switch# show interface fc1/2  counters
fc1/2
    5 minutes input rate 0 bits/sec, 0 bytes/sec, 0 frames/sec
    5 minutes output rate 0 bits/sec, 0 bytes/sec, 0 frames/sec
    0 frames input, 0 bytes
      0 class-2 frames, 0 bytes
```

```
    0 class-3 frames, 0 bytes
    0 class-f frames, 0 bytes
    0 discards, 0 errors, 0 CRC/FCS
    0 unknown class, 0 too long, 0 too short
  0 frames output, 0 bytes
    0 class-2 frames, 0 bytes
    0 class-3 frames, 0 bytes
    0 class-f frames, 0 bytes
    0 discards, 0 errors
  Tx FC-Aborts
  0 Zone drops
  0 FIB drops for ports 1-24
  0 XBAR errors for ports 1-24
  0 Other drop count for ports 2-2
  0 timeout discards, 0 credit loss
  0 input OLS, 0 LRR, 0 NOS, 0 loop inits
  0 output OLS, 0 LRR, 0 NOS, 0 loop inits
  0 link failures, 0 sync losses, 0 signal losses
  1 Transmit B2B credit transitions to zero
  0 Receive B2B credit transitions to zero
  0 2.5us TxWait due to lack of transmit credits
  Percentage TxWait for last 1s/1m/1h/72h: 0%/0%/0%/0%
  0 2.5us RxWait due to lack of receive credits
  Percentage RxWait for last 1s/1m/1h/72h: 0%/0%/0%/0%
  1 receive B2B credit remaining
  0 transmit B2B credit remaining
  0 low priority transmit B2B credit remaining
  Last clearing of "show interface" counters: never
```

The following example displays detailed counters for a specific FCIP interface (Cisco MDS 9250i Multiservice Fabric Switch):

```
switch# show interface fcip 1 counters

fcip1
TCP Connection Information
5 Active TCP connections
23 Attempts for active connections, 5 close of connections
Path MTU 1500 bytes
Current retransmission timeout is 200 ms
Current Send Buffer Size: 149580 KB, Requested Send Buffer Size: 125000 KB
CWM Burst Size: 50 KB
CONN<0>
Data connection: Local 10.1.1.6:3225, Remote 10.1.1.12:65489
TCP Parameters
Advertized window: Current: 24580 KB, Maximum: 24580 KB, Scale: 7
Peer receive window: Current: 4095 KB, Maximum: 4095 KB, Scale: 6
Congestion window: Current: 3686 KB, Slow start threshold: 3998 KB
Measured RTT : 500000 us Min RTT: 500000 us Max RTT: 0 us
Round trip time: Smoothed 24 ms, Variance: 12 Jitter: 150 us
TCP Connection Rate
Input Bytes: 0.00 MB/sec, Output Bytes: 0.00 MB/sec
Input Frames: 0/sec, Output Frames: 0/sec
CONN<1>
Data connection: Local 10.1.1.6:3225, Remote 10.1.1.12:65487
TCP Parameters
Advertized window: Current: 24580 KB, Maximum: 24580 KB, Scale: 7
Peer receive window: Current: 487 KB, Maximum: 487 KB, Scale: 6
Congestion window: Current: 438 KB, Slow start threshold: 462 KB
Measured RTT : 500000 us Min RTT: 500000 us Max RTT: 0 us
Round trip time: Smoothed 24 ms, Variance: 12 Jitter: 150 us
TCP Connection Rate
Input Bytes: 0.00 MB/sec, Output Bytes: 0.00 MB/sec
```

```
Input Frames: 0/sec, Output Frames: 0/sec
CONN<2>
Data connection: Local 10.1.1.6:3225, Remote 10.1.1.12:65485
TCP Parameters
Advertized window: Current: 24580 KB, Maximum: 24580 KB, Scale: 7
Peer receive window: Current: 477 KB, Maximum: 477 KB, Scale: 6
Congestion window: Current: 429 KB, Slow start threshold: 453 KB
Measured RTT : 500000 us Min RTT: 500000 us Max RTT: 0 us
Round trip time: Smoothed 24 ms, Variance: 12 Jitter: 150 us
TCP Connection Rate
Input Bytes: 0.00 MB/sec, Output Bytes: 0.00 MB/sec
Input Frames: 0/sec, Output Frames: 0/sec
CONN<3>
Data connection: Local 10.1.1.6:3225, Remote 10.1.1.12:65483
TCP Parameters
Advertized window: Current: 24580 KB, Maximum: 24580 KB, Scale: 7
Peer receive window: Current: 488 KB, Maximum: 488 KB, Scale: 6
Congestion window: Current: 439 KB, Slow start threshold: 463 KB
Measured RTT : 500000 us Min RTT: 500000 us Max RTT: 0 us
Round trip time: Smoothed 24 ms, Variance: 12 Jitter: 150 us
TCP Connection Rate
Input Bytes: 0.00 MB/sec, Output Bytes: 0.00 MB/sec
Input Frames: 0/sec, Output Frames: 0/sec
CONN<4>
Control connection: Local 10.1.1.6:3225, Remote 10.1.1.12:65481
TCP Parameters
Advertized window: Current: 8121 KB, Maximum: 24580 KB, Scale: 7
Peer receive window: Current: 331 KB, Maximum: 332 KB, Scale: 6
Congestion window: Current: 50 KB, Slow start threshold: 373 KB
Measured RTT : 19 us Min RTT: 20 us Max RTT: 23 us
Round trip time: Smoothed 1 ms, Variance: 1 Jitter: 150 us
TCP Connection Rate
Input Bytes: 0.00 MB/sec, Output Bytes: 0.00 MB/sec
Input Frames: 0/sec, Output Frames: 0/sec
5 minutes input rate 288 bits/sec, 36 bytes/sec, 0 frames/sec
5 minutes output rate 224 bits/sec, 28 bytes/sec, 0 frames/sec
1158 frames input, 140560 bytes
1158 Class F frames input, 140560 bytes
0 Class 2/3 frames input, 0 bytes
0 Reass frames
0 Error frames timestamp error 0
1160 frames output, 121564 bytes
1160 Class F frames output, 121564 bytes
0 Class 2/3 frames output, 0 bytes
0 Error frames
IP compression statistics
101228 rxbytes
65375 rxbytes compressed, 1224 rxbytes non-compressed
1.52 rx compression ratio
84968 txbytes
57154 txbytes compressed, 0 txbytes non-compressed
1.49 tx compression ratio
IP compression flow control statistics
0 bytes queued for hw compression
0 queued for hardware compression
0 queued for hardware decompression
0 slowed tcp flow control
0 accelerated tcp flow control
0 side band flow control ON
0 side band flow control OFF
IP compression hung statistics
0 times compression engine hung detected
0 jobs replayed for hardware compression
0 jobs replayed for hardware decompression
```

```
0 compression jobs not processed during compression engine reset
0 compression response job not processed during compression engine reset
0 decompression jobs not processed during decompression engine reset
0 decompression response job not processed during decompression engine reset
```

The following example displays brief counters for a range of FCIP interfaces (Cisco MDS 9250i Multiservice Fabric Switch):

```
switch# show interface fcip 1-12 counters brief
-------------------------------------------------------------------------
Interface Input (rate is 5 min avg)     Output (rate is 5 min avg)
--------------------------- ----------------------------
 Rate Total           Rate Total
 MB/s Frames          MB/s Frames
-------------------------------------------------------------------------
fcip1  191 1155974124        225 1363537690
fcip2  173 1046686124        227 1372311228
fcip3  0 0       0   0
fcip4  0 0       0   0
fcip5  0 0       0   0
fcip6  0 0       0   0
fcip7  189 1143612956        221 1339130294
fcip8  194 1167499884        218 1317700800
fcip9  0 0       0   0
fcip10 0 0       0   0
```

The following example shows how to display brief counter information for all interfaces:

```
switch# show interface counters brief
-------------------------------------------------------------------------------
Interface          Input (rate is 5 min avg)      Output (rate is 5 min avg)
                   ----------------------------  ----------------------------
                   Rate     Total                Rate     Total
                   MB/s     Frames               MB/s     Frames
-------------------------------------------------------------------------------
fc9/1              0        0                    0        0
fc9/2              0        0                    0        0
fc9/3              0        0                    0        0
fc9/4              0        0                    0        0
...
-------------------------------------------------------------------------------
Interface          Input (rate is 5 min avg)      Output (rate is 5 min avg)
                   ----------------------------  ----------------------------
                   Rate     Total                Rate     Total
                   MB/s     Frames               MB/s     Frames
-------------------------------------------------------------------------------
iscsi4/1           0        0                    0        0
iscsi4/2           0        0                    0        0
iscsi4/3           0        0                    0        0
iscsi4/4           0        0                    0        0
...
vsan10 is up, line protocol is up
    WWPN is 10:00:00:05:30:00:07:23, FCID is 0xee0001
    Internet address is 10.1.1.5/24
    MTU 1500 bytes, BW 1000000 Kbit
    0 packets input, 0 bytes, 0 errors, 0 multicast
    0 packets output, 0 bytes, 0 errors, 0 dropped
-------------------------------------------------------------------------------
Interface          Input (rate is 5 min avg)      Output (rate is 5 min avg)
                   ----------------------------  ----------------------------
                   Rate     Total                Rate     Total
                   MB/s     Frames               MB/s     Frames
```

```
--------------------------------------------------------------------------------
port-channel 100   0        0                     0        0
--------------------------------------------------------------------------------
Interface          Input (rate is 5 min avg)      Output (rate is 5 min avg)
                   ---------------------------    ---------------------------
                   Rate     Total                 Rate     Total
                   Mbits/s  Frames                Mbits/s  Frames
--------------------------------------------------------------------------------
fcip2              0        0                     0        0
fcip3              9        0                     9        0
fcip6              8        0                     8        0
fcip7              8        0                     8        0
```

The following example displays the FCIP interface counters for a specified interface (Cisco MDS 9250i Multiservice Fabric Switch):

```
switch# show interface fcip 1
fcip1 is trunking
Hardware is IPStorage
Port WWN is 20:2b:54:7f:ee:1c:2f:a0
Peer port WWN is 20:2b:00:2a:6a:1b:4f:90
Admin port mode is auto, trunk mode is on
snmp link state traps are enabled
Port mode is TE
Port vsan is 1
Speed is 5 Gbps
Trunk vsans (admin allowed and active) (1-2)
Trunk vsans (up) (1)
Trunk vsans (isolated) (2)
Trunk vsans (initializing) ()
Interface last changed at Fri Sep 15 05:23:27 2000
Using Profile id 1 (interface IPStorage1/1)
Peer Information
Peer Internet address is 20.1.1.2 and port is 3225
Write acceleration mode is configured off
Tape acceleration mode is configured off
Tape Accelerator flow control buffer size is automatic
FICON XRC Accelerator is configured off
Ficon Tape acceleration configured off for all vsans
IP Compression is enabled and set for auto
Maximum number of TCP connections is 4
QOS control code point is 0
QOS data code point is 0
TCP Connection Information
4 Active TCP connections
Local 20.1.1.1:3225, Remote 20.1.1.2:65461
0 host table full 0 target entries in use
9 Attempts for active connections, 1 close of connections
TCP Parameters
Path MTU 2500 bytes
Current retransmission timeout is 200 ms
Round trip time: Smoothed 2 ms, Variance: 3 Jitter: 157 us
Advertized window: Current: 21 KB, Maximum: 24580 KB, Scale: 5
Peer receive window: Current: 22 KB, Maximum: 23 KB, Scale: 5
Congestion window: Current: 50 KB, Slow start threshold: 1950 KB
Current Send Buffer Size: 16406 KB, Requested Send Buffer Size: 16384 KB
CWM Burst Size: 50 KB
Measured RTT : 14 us Min RTT: 14 us Max RTT: 118 us
5 minutes input rate 1606903776 bits/sec, 200862972 bytes/sec, 91958 frames/sec
5 minutes output rate 1895828792 bits/sec, 236978599 bytes/sec, 108506 frames/sec
1150774702 frames input, 2513619834588 bytes
5299 Class F frames input, 702192 bytes
```

```
1150769403 Class 2/3 frames input, 2513619132396 bytes
45778 Reass frames
0 Error frames timestamp error 0
1357408380 frames output, 2964570149576 bytes
4646 Class F frames output, 515904 bytes
1357403734 Class 2/3 frames output, 2964569633672 bytes
0 Error frames
```

The following example shows how to display information about a Gigabit Ethernet interface:

```
switch# show interface gigabitethernet 4/1
GigabitEthernet4/1 is up
    Hardware is GigabitEthernet, address is 0005.3000.2e12
    Internet address is 100.1.1.2/24
    MTU 1500 bytes, BW 1000000 Kbit
    Port mode is IPS
    Speed is 1 Gbps
    Beacon is turned off
    5 minutes input rate 32 bits/sec, 4 bytes/sec, 0 frames/sec
    5 minutes output rate 88 bits/sec, 11 bytes/sec, 0 frames/sec
    637 packets input, 49950 bytes
      0 multicast frames, 0 compressed
      0 input errors, 0 frame, 0 overrun 0 fifo
    659 packets output, 101474 bytes, 0 underruns
      0 output errors, 0 collisions, 0 fifo
      0 carrier errors
```

The following example shows how to display information about an iSCSI interface:

```
switch# show interface iscsi 2/1
iscsi2/1 is up
    Hardware is GigabitEthernet
    Port WWN is 20:41:00:05:30:00:50:de
    Admin port mode is ISCSI
    Port mode is ISCSI
    Speed is 1 Gbps
    iSCSI initiator is identified by name
    Number of iSCSI session: 7, Number of TCP connection: 7
    Configured TCP parameters
        Local Port is 3260
        PMTU discover is disabled
        Keepalive-timeout is 1 sec
        Minimum-retransmit-time is 300 ms
        Max-retransmissions 8
        Sack is disabled
        Minimum available bandwidth is 0 kbps
        Estimated round trip time is 0 usec
    5 minutes input rate 265184 bits/sec, 33148 bytes/sec, 690 frames/sec
    5 minutes output rate 375002168 bits/sec, 46875271 bytes/sec, 33833 frames/sec
    iSCSI statistics
      6202235 packets input, 299732864 bytes
        Command 6189718 pdus, Data-out 1937 pdus, 1983488 bytes, 0 fragments
      146738794 packets output, 196613551108 bytes
        Response 6184282 pdus (with sense 4), R2T 547 pdus
        Data-in 140543388 pdus, 189570075420 bytes
```

The following example shows how to display transceiver information for a Fibre Channel interface:

```
switch# show interface fc2/5 transceiver
fc2/5 fcot is present
```

```
    name is CISCO-INFINEON
    part number is V23848-M305-C56C
    revision is A3
    serial number is 30000474
    fc-transmitter type is short wave laser
    cisco extended id is unknown (0x0)
```

The following example shows how to display information about a Fibre Channel tunnel interface:

```
switch# show interface fc-tunnel 200
fc-tunnel 200 is up
Dest   IP Addr: 200.200.200.7   Tunnel ID: 200
Source IP Addr: 200.200.200.4   LSP ID: 1
Explicit Path Name:
```

The following example shows how to display hardware port information for a Fibre Channel interface:

```
switch# show interface fc1/24 capabilities
 Min Speed is 1 Gbps
 Max Speed is 4 Gbps
 FC-PH Version (high, low)                          (0,6)
 Receive data field size (max/min)                  (2112/256)  bytes
 Transmit data field size (max/min)                 (2112/128)  bytes
 Classes of Service supported are                   Class 2, Class 3, Class F
 Class 2 sequential delivery                        supported
 Class 3 sequential delivery                        supported
 Hold time (max/min)                                (100/1) micro sec
 BB state change notification                       supported
 Maximum BB state change notifications              14
 Rate Mode change                                   supported
 Rate Mode Capabilities                             Shared        Dedicated
  Receive BB Credit modification supported             yes             yes
  FX mode Receive BB Credit (min/max/default)     (0/0/0)        (1/60/16)
  ISL mode Receive BB Credit (min/max/default)         --         (2/60/16)
  Performace buffer modification supported             no               no
 Out of Service capable                             yes
 Beacon mode configurable                           yes
```

Note The maximum credit can be configured only if we move other ports to minimum credits.

show interface ioa

To display IOA interface, use the show interface ioa command.

show interface ioa *slot/port* {**brief** | **counters brief** | **description**}

Syntax Description

slot /port	Specifies an IOA slot or port number. The range is from 1 to 16 for the slot and for the port the range is from 1 to 4.
brief	Specifies brief information about the interface.
counters	Specifies the interface counters.
description	Specifies the interface description.

Command Default

None.

Command Modes

Configuration mode.

Command History

Release	Modification
NX-OS 6.2(5)	Added the show interface ioa 1/1 counters brief command to show the average for 5minutes , 12 hour and 24 hour respectively.
NX-OS 4.2(1)	This command was introduced.

Usage Guidelines

None.

Examples

The following example shows how to displayan IOA interface:

```
switch# show interface ioa 2/1
ioa2/1 is down (Not in any Cluster)
0 device packets in, 0 device packets out
0 device bytes in, 0 device bytes out
0 peer packets in, 0 peer packets out
0 peer bytes in, 0 peer bytes out
0 i-t create request, 0 i-t create destroy
0 i-t activate request, 0 i-t deactivate request
```

The following example shows how to display IOA interface counters:

```
switch# show interface ioa 2/1 counters
ioa1/1
4454232796 device packets in, 375748229 device packets out
8948409208760 device bytes in, 24047886946 device bytes out
526563297 peer packets in, 2471396408 peer packets out
45198770258 peer bytes in, 4697995629324 peer bytes out
8 i-t create request, 4 i-t create destroy
8 i-t activate request, 0 i-t deactivate request
```

The following example shows how to display IOA interface counters in brief:

```
switch# show int ioa 2/1 counters brief
--------------------------------------------------------------------------------
Interface To Device (rate is 5 min avg) To Peer (rate is 5 min avg)
---------------------------- ------------------------------
Rate Total Rate Total
MB/s Bytes MB/s Bytes
--------------------------------------------------------------------------------
ioa1/1 0.56 24049257618 109.66 4698262901274
sjc-sw2# show ioa int int ioa 2/1 summary
---- ---------------------- ---- ------------- ---- ---
FLOW HOST VSAN STATUS COMP ACC
TARGET
---- ---------------------- ---- ------------- ---- ---
1 10:00:00:00:00:00:03:00 200 ACTIVE YES WA
11:00:00:00:00:00:03:00
2 10:00:00:00:00:00:02:00 200 ACTIVE NO WA
11:00:00:00:00:00:02:00
3 10:00:00:00:00:00:01:00 100 ACTIVE YES TA
11:00:00:00:00:00:01:00
4 10:00:00:00:00:00:00:00 100 ACTIVE NO TA
11:00:00:00:00:00:00:00
switch(config-if)# show interface ioa 1/1 counters brief
--------------------------------------------------------------------------------
Interface          Rate          Rate          Rate          Total
                        MB/s          MB/s          MB/s          Bytes
                       (5min)        (12hr)        (24hr)         (MB)
--------------------------------------------------------------------------------
                       To  Device (Average)
ioa1/1              0.00        0.00             0.00             0.02
                       To  Peer   (Average)
                        0.00             0.00         0.00             0.05
```

Related Commands

Command	Description
show ioa cluster summary	Displays the summary of all the IOA clusters.

show interface priority-flow-control

To display the RxPause, TxPause, RxWait, and TxWait values for Ethernet ports used for FCoE, use the **show interface priority-flow-control** command.

show interface priority-flow-control [**module** *number* | **vl** *value*]

Syntax Description

module *number*	Module number.
vl *value*	Virtual link value.

Command Default

Displays the priority-flow-control information.

Command Modes

Privileged EXEC (#)

Command History

Release	Modification
8.4(1)	The command output was modified.
8.2(1)	This command was introduced.

Examples

The following example displays the RxPause, TxPause, RxWait, and TxWait values for Ethernet ports used for FCoE:

```
switch# show interface priority-flow-control
RxPause: No. of pause frames received
TxPause: No. of pause frames transmitted
TxWait: Time in 2.5uSec a link is not transmitting data[received pause]
RxWait: Time in 2.5uSec a link is not receiving data[transmitted pause]
================================================================================================
Interface       Admin  Oper  (VL bmap) VL  RxPause    TxPause RxWait-2.5us(sec) TxWait-2.5us(sec)
================================================================================================

Epo540          Auto    NA      (8)     3    456200000  0         0(0)       152866694355(382166)
Eth2/1          Auto    On      (8)     3    4481929    0         0(0)       5930346153(14825)
...snip
Eth2/48         Auto    Off
Eth3/1          Auto    On      (8)     3    0          0         0(0)             0(0)
...snip
Eth3/6          Auto    Off
Eth3/7          Auto    On      (8)     3    0          0         0(0)             0(0)
```

The following example displays the RxPause, TxPause, RxWait, and TxWait values for Ethernet ports used for FCoE on virtual link 3:

```
switch# show interface priority-flow-control vl 3
RxPause: No. of pause frames received
TxPause: No. of pause frames transmitted
TxWait: Time in 2.5uSec a link is not transmitting data[received pause]
RxWait: Time in 2.5uSec a link is not receiving data[transmitted pause]
================================================================================
Interface         Admin Oper (VL bmap) VL  RxPause TxPause RxWait-2.5us(sec) TxWait-2.5us(sec)
```

```
================================================================================================

Eth1/1            Auto  Off
Eth1/2            Auto  Off
Eth1/3            Auto  On   (8)        3   0       0       0(0)              0(0)
Eth1/4            Auto  On   (8)        3   0       0       0(0)              0(0)
Eth1/5            Auto  Off
Eth1/6            Auto  Off
Eth1/7            Auto  Off
Eth1/8            Auto  Off
Eth1/9            Auto  Off
Eth1/10           Auto  Off
Eth1/11           Auto  Off
Eth1/12           Auto  Off
Eth1/13           Auto  Off
Eth1/14           Auto  Off
Eth1/15           Auto  On   (8)        3   0       0       0(0)              0(0)
Eth1/16           Auto  On   (8)        3   0       0       0(0)              0(0)
Eth1/17           Auto  Off
Eth1/18           Auto  Off
Eth1/19           Auto  Off
Eth1/20           Auto  Off
Eth1/21           Auto  Off
Eth1/22           Auto  Off
Eth1/23           Auto  Off
Eth1/24           Auto  Off
Eth1/25           Auto  Off
Eth1/26           Auto  Off
Eth1/27           Auto  Off
Eth1/28           Auto  Off
Eth1/29           Auto  Off
Eth1/30           Auto  Off
Eth1/31           Auto  Off
Eth1/32           Auto  Off
Eth1/33           Auto  Off
Eth1/34           Auto  Off
Eth1/35           Auto  Off
Eth1/36           Auto  Off
Eth1/37           Auto  Off
Eth1/38           Auto  Off
Eth1/39           Auto  Off
Eth1/40           Auto  Off
Eth1/41           Auto  Off
Eth1/42           Auto  Off
Eth1/43           Auto  Off
Eth1/44           Auto  Off
Eth1/45           Auto  Off
Eth1/46           Auto  Off
Eth1/47           Auto  Off
Eth1/48           Auto  Off
Eth3/1            Auto  Off
```

Related Commands

Command	Description
show interface	Displays status of an interface.

show interface sme

To display the information about Cisco SME interface, use the show interface sme command.

show interface sme *slot/port* {**brief** | **counters** | **description**}

Syntax Description

slot	Identifies the number of the MPS-18/4 module slot.
port	Identifies the number of the Cisco SME port.
brief	Displays the brief information about Cisco SME interface.
counters	Displays the interface counters.
description	Displays the description of the interface.

Command Default

None.

Command Modes

EXEC mode.

Command History

Release	Modification
3.2(2)	This command was introduced.

Usage Guidelines

None.

Examples

The following example displays the brief description of the Cisco SME interface:

```
switch# show interface sme 3/1 brief
--------------------------------------------------------------------------------
Interface          Status        Cluster
--------------------------------------------------------------------------------
sme3/1             up            c2
```

The following example displays the counters of the interface:

```
switch# show interface sme 3/1 description
sme3/1
    5 minutes input rate 0 bits/sec, 0 bytes/sec, 0.00 KB/sec
    5 minutes output rate 0 bits/sec, 0 bytes/sec, 0.00 KB/sec
    SME statistics
      input 0 bytes, 5 second rate 0 bytes/sec, 0.00 KB/sec
        clear 0 bytes, encrypt 0 bytes, decrypt 0
        compress 0 bytes, decompress 0 bytes
      output 0 bytes, 5 second rate 0 bytes/sec, 0.00 KB/sec
        clear 0 bytes, encrypt 0 bytes, decrypt 0
        compress 0 bytes, decompress 0 bytes
          compression ratio 0:0
      flows 0 encrypt, 0 clear
      clear luns 0, encrypted luns 0
      errors
         0 CTH, 0 authentication
```

```
0 key generation, 0 incorrect read
0 incompressible, 0 bad target responses
```

Related Commands

Command	Description
interface sme	Configures Cisco SME interface on the switch.

show interface transceiver

To display the SFP and X2 digital monitoring information for a transceiver, use the show interface transceiver details command.

show interface *fc-id* **transceiver details**

Syntax Description

fc-id	Specifies the Fiber Channel interface ID.
transceiver details	

Command Default

None.

Command Modes

Exec mode

Command History

Release	Modification
3.0	This command was introduced.

Usage Guidelines

Note The output for the **show interface transceiver** command will vary based on the transceiver type, name, part number, revision, and link length of the device.

When the small form-factor pluggable (SFP) port is shut down and the laser is turned off, the value of the *Current* field in the output will be close to zero and the *Tx power* value will be at a minimum (close to -40 dBm).

When the SFP port is shutdown and the laser is not turned off, the *Current* and *Tx power* values in the output will stay at operational levels. The *Rx power* value will depend on the behavior of the remote side of the link and the interface status—the value can be at an operational level, at a minimum (close to -40 dBm), or N/A.

This command displays the attributes of a transceiver such as, the vendor, the kind of laser it emits and receives, compatible fiber-optic cable, distances supported, vendor's firmware revision, faults the unit experienced since the last insertion or since the last linecard boot (whichever is the latest) and the diagnostics information (if supported by the unit).

Examples

The following example displays the SFP digital monitoring information for a transceiver (DOM unsupported SFP):

```
switch#show interface fc4/1 transceiver details
fc4/1 sfp is present
    name is CISCO-FINISAR
    part number is FTRJ8519P1BNL-C1
    revision is A
    serial number is FNS0838B0CX
    fc-transmitter type is short wave laser w/o OFC (SN)
    fc-transmitter supports intermediate distance link length
```

```
    media type is multi-mode, 62.5m (M6)
    Supported speed is 200 MBytes/sec
    Nominal bit rate is 2100 MBits/sec
    Link length supported for 50/125mm fiber is 500 m(s)
    Link length supported for 62.5/125mm fiber is 300 m(s)
    cisco extended id is unknown (0x0)
    no tx fault, rx loss, no sync exists, Diag mon type 136
    Digital diagnostics feature not supported in SFP
```

The following example displays the X2 digital monitoring information for a transceiver:

```
switch# show interface fc1/1 transceiver details
fc1/1 sfp is present
    name is CISCO
    part number is FTLX8541E2-C1
    revision is C
    serial number is FNS11151B0V
    FC Transceiver Type is X2 Medium
    FC Connector Type is SC
    Bit Encoding is NRZ
    Protocol Type is 10GbE
    Standards Compliance Codes :
    10GbE Code Byte 0 : 10GBASE-SR
    Fiber type Byte 0 : MM-Generic
    Fiber type Byte 1 : Unspecified
    Transmission Range is 30 (in 10m increments)
    cisco extended id is Unknown (0x0)
    no tx fault, rx loss, no sync exists, Diag mon type 193
    SFP Detail Diagnostics Information
  ------------------------------------------------------------------------------
                                  Alarms                  Warnings
                               High        Low         High          Low
  ------------------------------------------------------------------------------
  Temperature  41.35 C         74.00 C     -4.00 C     70.00 C        0.00 C
  Voltage       0.00 V          0.00 V      0.00 V      0.00 V        0.00 V
  Current       8.10 mA        12.00 mA     4.00 mA    11.00 mA       5.00 mA
  Tx Power     -2.58 dBm        3.00 dBm  -11.30 dBm   -1.00 dBm     -7.30 dBm
  Rx Power    -28.54 dBm --     3.00 dBm  -13.90 dBm   -1.00 dBm     -9.90 dBm
  Transmit Fault Count = 7
  ------------------------------------------------------------------------------
  Note: ++  high-alarm; +  high-warning; --  low-alarm; -  low-warning
```

Related Commands

Command	Description
show interface	Displays the status of an interface.

show interface vfc

To display the virtual Fibre Channel interface (VFC) information, use the **show interface vfc** command.

show interface vfc *ID/slot* [**brief** | **counters** [**detailed**] | **description** | **trunk vsan** *ID*]

Syntax Description

ID/slot	Virtual interface identifier or slot.
brief	(Optional) Displays brief information of the interface.
counters	(Optional) Displays information of the interface counters.
detailed	(Optional) Displays detailed information of the interface counters.
description	(Optional) Displays the description of the interface.
trunk	(Optional) Displays trunk information of the interface.
vsan *ID*	(Optional) Trunk VSAN ID.

Command Default

Displays VFC information.

Command Modes

Privileged EXEC (#)

Command History

Release	Modification
8.4(1)	The command output was modified.
8.2(1)	This command was introduced.

Examples

The following example displays the detailed configuration and statistics of a specified virtual Fibre Channel interface:

```
switch# show interface vfc 9/11 counters detailed
vfc9/11
    3108091433 fcoe in packets
    6564116595616 fcoe in octets
    30676987 fcoe out packets
    2553913687 fcoe out octets
    0 2.5us TxWait due to pause frames (VL3)
    134795 2.5us RxWait due to pause frames (VL3)
    0 Tx frames with pause opcode (VL3)
    0 Rx frames with pause opcode (VL3)
    Percentage pause in TxWait per VL3  for last 1s/1m/1h/72h: 0%/0%/0%/0%
    Percentage pause in RxWait per VL3  for last 1s/1m/1h/72h: 0%/0%/0%/0%
```

The following example displays a brief information of a specified virtual Fibre Channel interface:

```
switch# show interface vfc 1/1 brief
```

```
--------------------------------------------------------------------------------
Interface   Vsan   Admin  Admin   Status       Bind             Oper    Oper
                   Mode   Trunk               Info             Mode    Speed
                          Mode                                         (Gbps)
--------------------------------------------------------------------------------
vfc1/1      10     E      on      errDisabled  Ethernet1/1       --    --
```

Related Commands

Command	Description
show interface	Displays status of an interface.

show inventory

To display the system hardware inventory, use the **show inventory** command.

show inventory

Syntax Description

This command has no arguments or keywords.

Command Default

None.

Command Modes

EXEC mode.

Command History

Release	Modification
2.0(x)	This command was introduced.

Usage Guidelines

This command displays information about the field replaceable units (FRUs) in the switch, including product IDs, serial numbers, and version IDs.

Examples

The following example displays the system inventory information:

```
switch# show inventory
NAME: "Chassis",  DESCR: "MDS 9506 chassis"
PID: DS-C9506            ,  VID: 0.1,  SN: FOX0712S007
NAME: "Slot 1",  DESCR: "2x1GE IPS, 14x1/2Gbps FC Module"
PID: DS-X9302-14K9       ,  VID: 0.301,  SN: JAB083100JY
NAME: "Slot 5",  DESCR: "Supervisor/Fabric-1"
PID: DS-X9530-SF1-K9     ,  VID: 0.0,  SN: JAB0747080H
NAME: "Slot 6",  DESCR: "Supervisor/Fabric-1"
PID: DS-X9530-SF1-K9     ,  VID: 4.0,  SN: JAB074004VE
NAME: "Slot 17",  DESCR: "MDS 9506 Power Supply"
PID: DS-CAC-1900W        ,  VID: 1.0,  SN: DCA0702601V
NAME: "Slot 18",  DESCR: "MDS 9506 Power Supply"
PID: DS-CAC-1900W        ,  VID: 1.0,  SN: DCA0702601U
NAME: "Slot 19",  DESCR: "MDS 9506 Fan Module"
PID: DS-6SLOT-FAN        ,  VID: 0.1,  SN: FOX0638S150
```

show ioa cluster

To display detailed information of all the IOA clusters, use the show ioa cluster command.

show ioa cluster cluster name

Syntax Description

cluster name	Specifies IOA cluster name. The maximum size is 31 characters.

Command Default

None.

Command Modes

Cluster Configuration submode.

Command History

Release	Modification
6.2(5)	Added the show ioa cluster tape_vault flows command output. (with and without delice alias).
NX-OS 4.2(1)	This command was introduced.

Usage Guidelines

None.

Examples

```
The following example shows how to display detailed information of all IOA clusters:
switch# show ioa cluster
IOA Cluster is tape_vault
Cluster ID is 0x213a000dec3ee782
Cluster status is online
Is between sites SJC and RTP
Total Nodes are 2
Cluster Infra Status : Operational
Cluster is Administratively Up
Cluster Config Version : 26
SSL for ICN : Not Configured
switch#
The following example shows how to display the interfaces in an IOA cluster:
switch# show ioa cluster tape_vault interface
Interface ioa2/1 belongs to 172.23.144.97(L)(M)
  Status is up
Interface ioa2/2 belongs to 172.23.144.97(L)(M)
  Status is up
Interface ioa2/1 belongs to 172.23.144.98
  Status is up
Interface ioa2/2 belongs to 172.23.144.98
  Status is up
switch#
The following example shows how to display the summary of interfaces in a IOA cluster:
switch# show ioa cluster tape_vault interface summary
--------------------------------------------------------------------------------
Switch             Interface         Status       Flows
--------------------------------------------------------------------------------
172.23.144.97(L)   ioa2/1            up           --
172.23.144.97(L)   ioa2/2            up           --
172.23.144.98      ioa2/1            up           --
```

```
172.23.144.98      ioa2/2            up           --
switch#
The following example shows how to display the N ports configuration:
switch# show ioa cluster tape_vault nports
--------------------------------------------------------------------------------
P-WWN Site Vsan
--------------------------------------------------------------------------------
10:00:00:00:00:00:00:01 SJC 100
11:00:00:00:00:00:00:01 RTP 100
10:00:00:00:00:00:00:02 SJC 100
10:00:00:00:00:00:00:02 RTP 100
The following example shows how to display an IOA cluster node:
sjc-sw1# show ioa cluster tape_vault node
Node 172.23.144.95 is local switch
  Node ID is 1
  Status is online
  Belongs to Site sjc
  Node is the master switch
Node 172.23.144.96 is remote switch
  Node ID is 2
  Status is offline
  Belongs to Site new_jersey
  Node is not master switch
switch#
The following example shows how to display an IOA cluster node summary:
switch# show ioa cluster tape_vault node summary
--------------------------------------------------------------------------------
Switch Site Status Master
--------------------------------------------------------------------------------
172.23.144.97(L) SJC online yes
172.23.144.98 RTP online no
The following example shows how to display the configured flow information without device
alias:
switch# show ioa cluster tape_vault flows
--------------------------------------------------------------------------------
Host WWN,                VSAN     WA  TA  Comp  Status    Switch,Interface
Target WWN                                              Pair
--------------------------------------------------------------------------------
10:00:00:00:00:00:00:01, 100      Y    Y    N   online    172.23.144.97, ioa2/1
11:00:00:00:00:00:00:01, 100                              172.23.144.98, ioa2/1
10:00:00:00:00:00:00:02, 100      Y    Y    Y   online    172.23.144.97, ioa2/2
11:00:00:00:00:00:00:02, 100                              172.23.144.98, ioa2/2
switch#
The following example shows how to display the configured flow information with device
alias:
sjc-sw2# show ioa cluster tape_vault flows
--------------------------------------------------------------------------------
Host WWN,                VSAN     WA  TA  Comp  Status    Switch,Interface
Target WWN                                              Pair
--------------------------------------------------------------------------------
host-1                  , 100      Y    Y    N   online     172.23.144.97, ioa2/1
target-1                , 100                               172.23.144.98, ioa2/1
host-2                  , 100      Y    Y    Y   online     172.23.144.97, ioa2/2
target-2                , 100                               172.23.144.98, ioa2/2
The following example shows how to display the detailed information of the flows that are
accelerated in the cluster:
switch# show ioa cluster tape_vault flows detail
Host 10:00:00:00:00:00:00:01, Target 11:00:00:00:00:00:00:01, VSAN 100
  Is online
  Belongs to flowgroup fg1
  Is enabled for WA, TA,
  Is assigned to
    Switch 172.23.144.97    Interface ioa2/1 (Host Site)
    Switch 172.23.144.98    Interface ioa2/1 (Target Site)
```

```
Host 10:00:00:00:00:00:00:02, Target 11:00:00:00:00:00:00:02, VSAN 100
  Is online
  Belongs to flowgroup fg1
  Is enabled for WA, TA, Compressi
  Is assigned to
    Switch 172.23.144.97    Interface ioa2/2 (Host Site)
    Switch 172.23.144.98    Interface ioa2/2 (Target Site)
```

Related Commands

Command	Description
interface ioa	Configures the IOA interface.

show ioa cluster summary

To display a summary of all the IOA clusters, use the show ioa cluster summary command.

show ioa cluster summary

Syntax Description

This command has no arguments or keywords.

Command Default

None.

Command Modes

Configuration mode.

Command History

Release	Modification
NX-OS 4.2(1)	This command was introduced.

Usage Guidelines

None.

Examples

The following example shows how to display IOA cluster summary information:

```
switch# show ioa cluster summary
--------------------------------------------------------------------------------
Cluster          Sites              Status    Master Switch
--------------------------------------------------------------------------------
tape_vault       SJC,               online    172.23.144.97
                 RTP
tape_vault_site2 SAC,               online    172.23.144.97
                 SJC
switch#
```

Related Commands

Command	Description
interface ioa	Configures the IOA interface.

show ioa internal interface ioa

To display summary of all the IOA clusters, use the show ioa internal interface ioa command.

show ioa internal interface ioa slot number {**els-table** | **errors** | **init-pwwn pwwn targ-pwwn pwwn vsan vsan-id counters brief** | **plogi-info** | **stats** | **summary** | **trace log** | **vit-table**}

Syntax Description

slot number	Specifies the IOA slot or port number. The range is from 1 to 16 for the slot and for the port the range is from 1 to 4.
els-table	Specifies the IOA ELS table.
errors	Specifies IOA errors.
init-pwwn pwwn	Specifies the initiator PWWN.
targ-pwwn pwwn	Specifies the target PWWN.
vsan vsan-id	Specifies the VSAN ID. The range is from 1 to 4093.
counters	Specifies interface counters.
brief	Specifies brief information about the interface.
plogi-info	Specifies PLOGI counters for IOA interface.
stats	Specifies the IOA statistics.
summary	Specifies the IOA host map table.
trace log	Specifies the IOA stats
vit-table	Specifies the IOA vit table.

Command Default

None.

Command Modes

Configuration mode.

Command History

Release	Modification
NX-OS 4.2(1)	This command was introduced.

Usage Guidelines

None.

Examples

The following example shows how to display an IOA host map table:

```
switch# show ioa int int ioa 2/1 summary
---- ---------------------- ---- ------------- ---- ---
FLOW HOST VSAN STATUS COMP ACC
TARGET
```

```
---- ---------------------- ---- ------------- ---- ---
1 10:00:00:00:00:00:03:00 200 ACTIVE YES WA
11:00:00:00:00:00:03:00
2 10:00:00:00:00:00:02:00 200 ACTIVE NO WA
11:00:00:00:00:00:02:00
3 10:00:00:00:00:00:01:00 100 ACTIVE YES TA
11:00:00:00:00:00:01:00
4 10:00:00:00:00:00:00:00 100 ACTIVE NO TA
11:00:00:00:00:00:00:00
```

The following example shows how to display IOA statistics:

```
switch# show ioa int int ioa 2/1 stats
Adapter Layer Stats
4457312829 device packets in, 376008035 device packets out
8954596919462 device bytes in, 24064514554 device bytes out
526927441 peer packets in, 2473105321 peer packets out
45230025550 peer bytes in, 4701244024682 peer bytes out
8 i-t create request, 4 i-t create destroy
8 i-t activate request, 0 i-t deactivate request
0 i-t create error, 0 i-t destroy error
0 i-t activate error, 0 i-t deactivate error
48 i-t-n not found, 0 i-t-n stale logo timer expiry
4 logo sent, 8 logo timer started
4 logo timer fired, 4 logo timer cancelled
4 plogi 4 plogi-acc 4 logo-acc 4 prli 4 prli-acc 0 els-q-err
to-device 214279940 orig pkts 12743547488 orig bytes
to-peer 8748538 orig pkts 682386268 orig bytes
0 queued 0 flushed 0 discarded
LRTP Stats
0 retransmitted pkts, 0 flow control
2464072014 app sent 2464072014 frags sent 0 tx wait
0 rexmt bulk attempts 0 rexmt bulk pkts 2 delayed acks
376008013 in-order 0 reass-order 0 reass-wait 0 dup-drop
376008013 app deliver 376008013 frags rcvd
150919428 pure acks rx 376008013 data pkts rx 0 old data pkts
0 remove reass node, 0 cleanup reass table
Tape Accelerator statistics
2 Host Tape Sessions
0 Target Tape Sessions
Host End statistics
Received 26275926 writes, 26275920 good status, 2 bad status
Sent 26275914 proxy status, 10 not proxied
Estimated Write buffer 4 writes 524288 bytes
Received 0 reads, 0 status
Sent 0 cached reads
Read buffer 0 reads, 0 bytes
Host End error recovery statistics
Sent REC 0, received 0 ACCs, 0 Rejects
Sent ABTS 0, received 0 ACCs
Received 0 RECs, sent 0 ACCs, 0 Rejects
Received 0 SRRs, sent 0 ACCs, 0 Rejects
Received 0 TMF commands
Target End statistics
Received 0 writes, 0 good status, 0 bad status
Write Buffer 0 writes, 0 bytes
Received 0 reads, 0 good status, 0 bad status
Sent 0 reads, received 0 good status, 0 bad status
Sent 0 rewinds, received 0 good status, 0 bad status
Estimated Read buffer 0 reads, 0 bytes
Target End error recovery statistics
Sent REC 0, received 0 ACCs, 0 Rejects
Sent SRR 0, received 0 ACCs
Sent ABTS 0, received 0 ACCs
```

```
Write Accelerator statistics
Received 726357548 frames, Sent 529605035 frames
0 frames dropped, 0 CRC errors
0 rejected due to table full, 0 scsi busy
0 ABTS sent, 0 ABTS received
0 tunnel synchronization errors
Host End statistics
Received 188004026 writes, 188004000 XFER_RDY
Sent 188004026 proxy XFER_RDY, 0 not proxied
Estimated Write buffer 1146880 bytes
Timed out 0 exchanges, 0 writes
Target End statistics
Received 0 writes, 0 XFER_RDY
Write buffer 0 bytes
TCP flow control 0 times, 0 bytes current
Timed out 0 exchanges, 0 writes
Compression Statistics
Pre Comp Batch size 131072
Post Comp Batch size 2048
4375494911078 input bytes, 50140348947 output compressed bytes
0 non-compressed bytes, 0 incompressible bytes
0 compression errors
0 Compression Ratio
De-Compression Statistics
0 input bytes, 0 output decompressed bytes
11883488326 non-compressed bytes
0 de-compression errors
```

The following example shows how to display the initiator PWWN:

```
switch# show ioa int int ioa 2/1 init-pwwn 10:00:00:00:00:00:03:00 targ-pwwn
11:00:00:00:00:00:03:00 vsan 200 counters
Adapter Layer Stats
1366529601 device packets in, 160768174 device packets out
2699458644986 device bytes in, 10289163140 device bytes out
160844041 peer packets in, 165188790 peer packets out
18652597246 peer bytes in, 47736122724 peer bytes out
0 i-t create request, 0 i-t create destroy
0 i-t activate request, 0 i-t deactivate request
0 i-t create error, 0 i-t destroy error
0 i-t activate error, 0 i-t deactivate error
0 i-t-n not found, 0 i-t-n stale logo timer expiry
1 logo sent, 2 logo timer started
1 logo timer fired, 1 logo timer cancelled
1 plogi 1 plogi-acc 1 logo-acc 1 prli 1 prli-acc 0 els-q-err
to-device 80384094 orig pkts 4662277452 orig bytes
to-peer 0 orig pkts 0 orig bytes
0 queued 0 flushed 0 discarded
LRTP Stats
0 retransmitted pkts, 0 flow control
160768190 app sent 160768190 frags sent 0 tx wait
0 rexmt bulk attempts 0 rexmt bulk pkts 1 delayed acks
160768162 in-order 0 reass-order 0 reass-wait 0 dup-drop
160768162 app deliver 160768162 frags rcvd
75879 pure acks rx 160768162 data pkts rx 0 old data pkts
0 remove reass node, 0 cleanup reass table
Write Accelerator statistics
Received 1607681842 frames, Sent 1527297774 frames
0 frames dropped, 0 CRC errors
0 rejected due to table full, 0 scsi busy
0 ABTS sent, 0 ABTS received
0 tunnel synchronization errors
Host End statistics
Received 80384094 writes, 80384082 XFER_RDY
```

```
Sent 80384094 proxy XFER_RDY, 0 not proxied
Estimated Write buffer 524288 bytes
Timed out 0 exchanges, 0 writes
Target End statistics
Received 0 writes, 0 XFER_RDY
Write buffer 0 bytes
TCP flow control 0 times, 0 bytes current
Timed out 0 exchanges, 0 writes
```

The following example shows how to display the initiator PWWN:

```
switch# show ioa int int ioa 2/1 init-pwwn 10:00:00:00:00:00:03:00 targ-pwwn
11:00:00:00:00:00:03:00 vsan 200 counters brief
------------------------------------------------------------------------------
Interface Input (rate is 5 min avg) Output (rate is 5 min avg)
---------------------------- ----------------------------
Rate Total Rate Total
MB/s Frames MB/s Frames
------------------------------------------------------------------------------
ioa1/1
Device 60 9573683 0 1126308
Peer 0 1126833 1 1157161
switch#
```

show ip access-list

To display the IP access control lists (IP-ACLs) currently active, use the **show ip access-list** command.

show ip access-list [*list-number* | **usage**]

Syntax Description

list-number	(Optional) Specifies the IP-ACL. The range is 1 to 256.
usage	(Optional) Specifies the interface type.

Command Default

None.

Command Modes

EXEC mode.

Command History

Release	Modification
1.2(1)	This command was introduced.

Usage Guidelines

None.

Examples

The following example displays configured IP-ACLs:

```
switch# show ip access-list usage
Access List Name/Number          Filters IF   Status    Creation Time
-------------------------------- ------- ---- --------- -------------
abc                              3       7    active    Tue Jun 24 17:51:40 2003
x1                               3       1    active    Tue Jun 24 18:32:25 2003
x3         0   1   not-ready Tue Jun 24 18:32:28 2003
```

The following example displays a summary of the specified IP-ACL:

```
switch# show ip access-list abc
ip access-list abc permit tcp any any (0 matches)
ip access-list abc permit udp any any (0 matches)
ip access-list abc permit icmp any any (0 matches)
ip access-list abc permit ip 10.1.1.0 0.0.0.255 (2 matches)
ip access-list abc permit ip 10.3.70.0 0.0.0.255 (7 matches)
```

show ip arp

To display IP neighbors for the system, use the **show ip arp** command.

show ips arp interface gigabitethernet *slot / port*

Syntax Description

interface	(Optional) Displays the IP neighbors for a specified interface.
cpp *module-number*	(Optional) Specifies the virtualization IP over Fibre Channel (IPFC) interface by control plane processor (CPP) module number. The range is 1 to 6.
gigabitethernet *slot/port*	(Optional) Specifies the Gigabit Ethernet interface by slot and port number. The range is 1 to 6.
mgmt	(Optional) Specifies the management interface.
vsan *vsan-id*	(Optional) Specifies the IPFC VSAN interface by VSAN ID. The range is 1 to 4093.

Command Default

None.

Command Modes

EXEC mode.

Command History

Release	Modification
3.0(1)	This command was introduced.

Usage Guidelines

None.

Examples

The following example displays IP neighbor information:

```
switch# show ip arp
IP Address       Age(min)   Link-layer Addr         Type  Interface
209.165.200.226 0          0006.d623.4008          ARPA  GigabitEthernet1/1
209.165.200.227 5          0002.b3d9.ba6f          ARPA  GigabitEthernet1/1
209.165.200.228 11         0004.23bd.677b          ARPA  GigabitEthernet1/1
209.165.200.229 67         0000.0c07.ac01          ARPA  mgmt0
209.165.200.230 0          000e.d68f.c3fc          ARPA  mgmt0
209.165.200.231 0          000e.d68f.43fc          ARPA  mgmt0
209.165.200.232 1067       00e0.8152.7f8d          ARPA  mgmt0
```

Related Commands

Command	Description
show ip interface	Displays IP interface status and configuration information.
show ip traffic	Displays IP protocol statistics for the system.

show ip interface

To display IP interface status and configuration information, use the **show ip interface** command.

show ip interface [**cpp** *module-number* | **gigabitethernet** *slot/port* | **mgmt** | **port-channel** *number* | **vsan** *vsan-id*]

Syntax Description

cpp *module-number*	(Optional) Specifies the virtualization IP over Fibre Channel (IPFC) interface by CPP module number. The range is 1 to 6.
gigabitethernet *slot/port*	(Optional) Specifies the Gigabit Ethernet interface by slot and port number. The range is 1 to 6.
mgmt	(Optional) Specifies the management interface.
port-channel *number*	(Optional) Specifies the PortChannel interface. The range is 1 to 256.
vsan *vsan-id*	(Optional) Specifies the IPFC VSAN interface by VSAN ID. The range is 1 to 4093.

Command Default

None.

Command Modes

EXEC mode.

Command History

Release	Modification
3.0(1)	This command was introduced.

Usage Guidelines

None.

Examples

The following example displays IP interface status and configuration information:

```
switch# show ip interface
GigabitEthernet1/1 is up
  Internet address is 10.10.10.1/24
  Broadcast address is 255.255.255.255
GigabitEthernet1/2 is up
  Internet address is 10.10.60.1/24
  Broadcast address is 255.255.255.255
GigabitEthernet2/2 is up
  Internet address is 10.10.20.1/24
  Broadcast address is 255.255.255.255
mgmt0 is up
  Internet address is 172.22.31.110/24
  Broadcast address is 255.255.255.255
```

Related Commands

Command	Description
show ip arp	Displays IP neighbors for the system.

Command	Description
show ip traffic	Displays IP protocol statistics for the system.

show ip route

To display the currently active IP routes currently active, use the **show ip route** command.

show ip route [**configured**]

Syntax Description

configured	(Optional) Displays configured IP routes.

Command Default

None.

Command Modes

EXEC mode.

Command History

Release	Modification
1.0(2)	This command was introduced.

Usage Guidelines

None.

Examples

The following example displays active IP routes:

```
switch# show ip route
Codes: C - connected, S - static
Default gateway is 172.22.95.1
C 10.0.0.0/24 is directly connected, vsan1
C 172.22.95.0/24 is directly connected, mgmt0
```

The following example displays configured IP routes.

```
switch# show ip route configured
         default      172.22.31.1          0.0.0.0      0            mgmt0
      10.10.11.0       10.10.11.1    255.255.255.0      0 GigabitEthernet1/1
      10.10.50.0       10.10.50.1    255.255.255.0      0 GigabitEthernet1/2.1
      10.10.51.0       10.10.51.1    255.255.255.0      0 GigabitEthernet1/2.2
      10.10.60.0       10.10.60.1    255.255.255.0      0 GigabitEthernet1/2
     172.22.31.0    172.22.31.110    255.255.255.0      0            mgmt0
```

show ip routing

To display the IP routing state, use the **show ip routing** command.

show ip routing

Syntax Description

This command has no arguments or keywords.

Command Default

None.

Command Modes

EXEC mode.

Command History

Release	Modification
1.0(2)	This command was introduced.

Usage Guidelines

None.

Examples

The following example shows the IP routing state:

```
switch# show ip routing
ip routing is disabled
```

show ip traffic

To display IP protocol statistics for the system, use the **show ip traffic** command.

show ip traffic [**interface gigabitethernet** *slot/port*]

Syntax Description

interface	(Optional) Displays the IP neighbors for a specified interface.
gigabitethernet *slot/port*	(Optional) Specifies the Gigabit Ethernet interface by slot and port number. The range is 1 to 6.

Command Default

None.

Command Modes

EXEC mode.

Command History

Release	Modification
3.0(1)	This command was introduced.

Usage Guidelines

None.

Examples

The following example displays IP protocol statistics for the Gigabit Ethernet interface:

```
switch# show ip traffic interface gigabitethernet 2/2
IP Statistics for GigabitEthernet2/2
  Rcvd:  0 total, 0 local destination
         0 errors, 0 unknown protocol, 0 dropped
  Sent:  30 total, 0 forwarded 0 dropped
  Frags: 0 reassembled, 0 timeouts, 0 couldn't reassemble
         0 fragmented, 0 fragments created, 0 couldn't fragment
ICMP Statistics:
  Rcvd:  0 total, 0 errors, 0 unreachables, 0 time exceeded
         0 echo, 0 echo reply, 0 mask requests, 0 mask replies
         0 redirects, 0 timestamp requests, 0 timestamp replies
  Sent:  0 total, 0 errors, 0 unreachables, 0 time exceeded
         0 echo, 0 echo reply, 0 mask requests, 0 mask replies
         0 redirects, 0 timestamp requests, 0 timestamp replies
```

Related Commands

Command	Description
show ip arp	Displays IP neighbors for the system.
show ip interface	Displays IP interface status and configuration information.

show ips arp

To display the IP storage ARP cache information, use the show ips arp command.

show ips arp interface gigabitethernet *slot / port*

Syntax Description

interface gigabitethernet *slot*/*port*	Specifies a Gigabit Ethernet interface by the slot and port.

Command Default

None.

Command Modes

EXEC mode.

Command History

Release	Modification
1.1(1)	This command was introduced.

Usage Guidelines

Use the **show ips arp interface gigabitethernet** command to display the ARP cache on the Gigabit Ethernet interfaces. This command takes the main Ethernet interface and as a parameter and returns the ARP cache for that interface.

Examples

The following example displays ARP caches in the specified interface:

```
switch# show ips arp interface gigabitethernet 4/1
Protocol         Address   Age (min)   Hardware Addr  Type   Interface
Protocol         Address   Age (min)   Hardware Addr  Type   Interface
Internet     172.22.91.1    2    -  00:00:0c:07:ac:01  ARPA  GigabitEthernet4/4
Internet     172.22.91.2    0    -  00:02:7e:6b:a8:08  ARPA  GigabitEthernet4/4
Internet    172.22.91.17    0    -  00:e0:81:20:45:f5  ARPA  GigabitEthernet4/4
Internet    172.22.91.18    0    -  00:e0:81:05:f7:64  ARPA  GigabitEthernet4/4
Internet    172.22.91.30    0    -  00:e0:18:2e:9d:19  ARPA  GigabitEthernet4/4
...
```

show ips ip route

To show the IP storage route table information, use the show ips ip route command.

show ips ip route interface gigabitethernet *slot / port*

Syntax Description

interface gigabitethernet *slot/port*	Specifies a Gigabit Ethernet interface by the slot and port.

Command Default

None.

Command Modes

EXEC mode.

Command History

Release	Modification
1.1(1)	This command was introduced.

Usage Guidelines

None.

Examples

The following example displays the IP route table information for a Gigabit Ethernet interface:

```
switch# show ips ip route interface gigabitethernet 8/1
Codes: C - connected, S - static
No default gateway
C 10.1.3.0/24 is directly connected, GigabitEthernet8/1
```

show ips ipv6

To display an IPv6 storage routing table, use the **show ips ipv6** command.

show ips ipv6 {**neighbors interface gigabitethernet** *slot/port* | **prefix-list interface gigabitethernet** *slot/port* | **route interface gigabitethernet** *slot/port* | **routers interface gigabitethernet** *slot/port* | **traffic interface gigabitethernet** *slot/port*}

Syntax Description

neighbors	Displays the IPv6 neighbors table.
interface	Displays the interface status and configuration.
gigabitethernet	Displays a Gigabit Ethernet interface.
slot/port	Specifies the slot and port number.
prefix-list	Displays the IPv6 prefix-list table.
route	Displays the IPv6 route table.
routers	Displays the IPv6 routers table.
traffic	Displays the IPv6 traffic table.

Command Default

None.

Command Modes

EXEC mode.

Command History

Release	Modification
3.1(0)	This command was introduced.

Usage Guidelines

You can use the **show ips ipv6 command to display information about IPv6 routing.**

Examples

The following example displays IPv6 neighbors information:

```
switch# show ips ipv6 neighbours interface gigabitethernet 1/1
IPv6 Address                              Age (min)  Link-layer Addr  State  Inter
face
fe80::206:d6ff:fe23:4008                  0          0006.d623.4008      S   GigabitEthernet1/1
```

The following example displays the IPv6 prefix-list information:

```
switch# show ips ipv6 prefix-list interface gigabitethernet 1/1
Prefix                                  Prefix-len   Addr
     Valid   Preferred
2000::                                    64         2000::205:30ff:fe01:a6be
       1000     1000
```

The following example displays the IPv6 routing table:

```
switch# show ips ipv6 route interface gigabitethernet 4/2
IPv6 Routing Table - 4 entries
Codes: C - Connected, L - Local, S - Static, G - Gateway, M - Multicast
C 3000:8::/64 is directly connected, GigabitEthernet4/2.250
C 3000:7::/64 is directly connected, GigabitEthernet4/2
C fe80::/64 is directly connected, GigabitEthernet4/2
C fe80::/64 is directly connected, GigabitEthernet4/2.250
M ff02::/32 is multicast, GigabitEthernet4/2
M ff02::/32 is multicast, GigabitEthernet4/2.250
```

The following example displays IPv6 routers information:

```
switch# show ips ipv6 routers interface gigabitethernet 1/1
Addr                              Lifetime   Expire
fe80::206:d6ff:fe23:4008          3600      3600
```

The following example displays IPv6 traffic statistics:

```
switch#  show ips ipv6 traffic interface gigabitethernet 4/2
IPv6 statistics:
  Rcvd:  0 total
        0 bad header, 0 unknown option, 0 unknown protocol
        0 fragments, 0 total reassembled
        0 reassembly timeouts, 0 reassembly failures
  Sent:  20 generated
        0 fragmented into 0 fragments, 0 failed
        2 no route
ICMP statistics:
  Rcvd: 0 input, 0 checksum errors, 0 too short
        0 unknown info type, 0 unknown error type
        unreach: 0 routing, 0 admin, 0 neighbor, 0 address, 0 port
        parameter: 0 error, 0 header, 0 option
        0 hopcount expired, 0 reassembly timeout,0 too big
        0 echo request, 0 echo reply
        0 group query, 0 group report, 0 group reduce
        0 router solicit, 0 router advert, 0 redirects
        0 neighbor solicit, 0 neighbor advert
  Sent: 20 output, 0 rate-limited
        unreach: 0 routing, 0 admin, 0 neighbor, 0 address, 0 port
        parameter: 0 error, 0 header, 0 option
        0 hopcount expired, 0 reassembly timeout,0 too big
        0 echo request, 0 echo reply
        0 group query, 6 group report, 0 group reduce
        2 router solicit, 0 router advert, 0 redirects
        0 neighbor solicit, 12 neighbor advert
```

Related Commands

Command	Description
ipv6 enable	Enables IPv6 processing.
show ipv6 route	Displays IPv6 routes configured on the system.

show ips netsim

To display a summary of the IP Network Simulator interface status currently operating, use the **show ips netsim** command.

show ips netsim

Syntax Description

This command has no arguments or keywords.

Command Default

None.

Command Modes

EXEC.

Command History

Release	Modification
3.1(1)	This command was introduced.

Usage Guidelines

None.

Examples

The following example shows the IP Network Simulator interfaces operating in network simulation mode:

```
switch# show ips netsim
Following ports operate in network simulator mode
GigabitEthernet2/3 and GigabitEthernet2/4
```

Related Commands

Command	Description
ips netsim enable	Enables two Gigabit Ethernet interfaces to operate in network simulation mode.

show ip sockets

To display the information about IP sockets, use the **show ip sockets** command.

show ip sockets [**all** | **listening**]

Syntax Description

all	(Optional) Displays open IP sockets.
listening	(Optional) Displays listening IP sockets.

Command Default

None.

Command Modes

EXEC mode.

Command History

Release	Modification
9.4.1	This command was introduced.

Usage Guidelines

None.

Examples

The following example displays IP sockets:

```
switch# show ip sockets listening
Active Internet connections (only servers)
Proto  Recv-Q  Send-Q   Local Address     Foreign Address           State PID/Program name
tcp 0 0 198.51.100.1:9004 203.0.113.1:*  LISTEN 24451/nxos_dc
tcp 0 0 198.51.100.1:9005 203.0.113.1:*  LISTEN 24451/nxos_dc
tcp 0 0 198.51.100.1:9006 203.0.113.1:*  LISTEN 5843/rpcbind
tcp 0 0 198.51.100.1:9007 203.0.113.1:*  LISTEN 24451/nxos_dc
tcp 0 0 198.51.100.1:9008 203.0.113.1:*  LISTEN 5871/rpc.mountd
tcp 0 0 198.51.100.1:9009 203.0.113.1:*  LISTEN 7038/xinetd
tcp 0 0 198.51.100.1:9010 203.0.113.1:*  LISTEN -
tcp 0 0 198.51.100.1:9011 203.0.113.1:*  LISTEN 7426/snmpd
tcp 0 0 198.51.100.1:9012 203.0.113.1:*  LISTEN 7038/xinetd
tcp 0 0 198.51.100.1:9013 203.0.113.1:*  LISTEN 7038/xinetd
tcp 0 0 198.51.100.1:9014 203.0.113.1:*  LISTEN 7038/xinetd
tcp 0 0 198.51.100.1:9015 203.0.113.1:*  LISTEN 7038/xinetd
tcp 0 0 198.51.100.1:9016 203.0.113.1:*  LISTEN 7038/xinetd
tcp 0 0 198.51.100.1:9017 203.0.113.1:*  LISTEN 7318/dcos-xinetd
```

show ips stats

To display IP storage statistics, use the show ips stats command.

show ips stats {**buffer** | **dma-bridge** | **icmp** | **ip** | **mac**} **interface gigabitethernet** *slot* / *port*
show ips stats {**hw-comp** | **tcp**} {**all** | **interface gigabitethernet** *slot* / *port*}

Syntax Description

buffer	Displays IP storage buffer information.
dma-bridge	Displays the direct memory access (DMA) statistics.
icmp	Displays ICMP statistics.
ip	Displays IP statistics.
mac	Displays MAC statistics.
hw-comp	Displays hardware compression statistics.
tcp	Displays TCP statistics
all	Displays statistical information for all interfaces.
interface gigabitethernet *slot*/*port*	Specifies a Gigabit Ethernet interface by the slot and port.

Command Default

None.

Command Modes

EXEC mode.

Command History

Release	Modification
1.1(1)	This command was introduced.

Usage Guidelines

Use the **show ips stats icmp interface gigabitethernet** command to obtain ICMP statistics for the selected interface.

Use the **show ips stats ip interface gigabitethernet 2/1** command to obtain IP statistics for the selected interface.

Use the **show ips stats mac interface gigabitethernet** command to obtain Ethernet statistics for the selected interface.

Use the **show ips stats tcp interface gigabitethernet** command to obtain TCP statistics along with the connection list and TCP state or the selected interface.

Examples

The following example displays iSCSI buffer statistics:

```
switch# show ips stats buffer interface gigabitethernet 1/2
Buffer Statistics for port GigabitEthernet1/2
    Mbuf stats
```

```
      164248 total mbufs, 82119 free mbufs, 0 mbuf alloc failures
      123186 mbuf high watermark, 20531 mbuf low watermark
      0 free shared mbufs, 0 shared mbuf alloc failures
      82124 total clusters, 77005 free clusters, 0 cluster alloc failures
      86230 mbuf high watermark, 78017 mbuf low watermark
      0 free shared clusters, 0 shared cluster alloc failures
    Ether channel stats
      0 tcp segments sent, 0 tcp segments received
      0 xmit packets sent, 0 xmit packets received
      0 config packets sent, 0 config packets received
      0 MPQ packet send errors
```

The following example displays ICMP statistics:

```
switch# show ips stats icmp interface gigabitethernet 8/1
ICMP Statistics for port GigabitEthernet8/1
    2 ICMP messages received
    0 ICMP messages dropped due to errors
    ICMP input histogram
      2 echo request
    ICMP output histogram
      2 echo reply
```

The following example displays IP statistics:

```
switch# show ips stats ip interface gigabitethernet 8/1
Internet Protocol Statistics for port GigabitEthernet8/1
    22511807 total received, 22509468 good, 2459 error
    0 reassembly required, 0 reassembled ok, 0 dropped after timeout
    27935633 packets sent, 0 outgoing dropped, 0 dropped no route
    0 fragments created, 0 cannot fragment
```

The following example displays MAC statistics:

```
switch# show ips stats mac interface gigabitethernet 8/1
DPP HW GigabitEthernet8/1 statistics

  dropped         : 0          octs,   0          pkts
  oversize        : 0          pkts,   0          crcpkts
  runt            : 0          pkts,   0          crcpkts
  inband          : 88542331034 octs,   1193721449 pkts,      0      err
  pci raw         : 0          pkts
  fcs_align_err   : 0          pkts

  total           : 2642985114 octs,   1193721449 pkts

  length of [pkts]:-
   [64B]          : 226          [65B-127B]       : 1138408009
   [128B-255B]    : 55292581     [256B-511B]      : 20497
   [512B-1023B]   : 90           [1024B-1518B]    : 0
   [1519B-MAX]    : 46
```

The following example displays TCP statistics:

```
switch# show ips stats tcp interface gigabitethernet 8/1
TCP Statistics for port GigabitEthernet8/1
    Connection Stats
      0 active openings, 0 accepts
      0 failed attempts, 0 reset received, 0 established
    Segment stats
      23657893 received, 29361174 sent, 0 retransmitted
      0 bad segments received, 0 reset sent
```

```
TCP Active Connections
  Local  Address        Remote Address        State      Send-Q   Recv-Q
  10.1.3.3:3260         10.1.3.106:51935      ESTABLISH  0        0
  10.1.3.3:3260         10.1.3.106:51936      ESTABLISH  0        0
  10.1.3.3:3260         10.1.3.106:51937      ESTABLISH  0        0
  10.1.3.3:3260         10.1.3.106:51938      ESTABLISH  0        0
  10.1.3.3:3260         10.1.3.106:51939      ESTABLISH  0        0
  10.1.3.3:3260         10.1.3.106:51940      ESTABLISH  0        0
  10.1.3.3:3260         10.1.3.106:51941      ESTABLISH  0        0
  10.1.3.3:3260         10.1.3.106:51942      ESTABLISH  0        0
  10.1.3.3:3260         10.1.3.106:51943      ESTABLISH  0        0
  10.1.3.3:3260         10.1.3.106:51944      ESTABLISH  0        0
  10.1.3.3:3260         10.1.3.115:1026       ESTABLISH  0        0
  10.1.3.3:3260         10.1.3.115:1027       ESTABLISH  0        0
  10.1.3.3:3260         10.1.3.115:1028       ESTABLISH  0        0
  10.1.3.3:3260         10.1.3.115:1029       ESTABLISH  0        0
  10.1.3.3:3260         10.1.3.115:1030       ESTABLISH  48       0
  10.1.3.3:3260         10.1.3.115:1031       ESTABLISH  48       0
  10.1.3.3:3260         10.1.3.115:1032       ESTABLISH  0        0
  10.1.3.3:3260         10.1.3.115:1033       ESTABLISH  0        0
  10.1.3.3:3260         10.1.3.115:1034       ESTABLISH  0        0
  0.0.0.0:3260          0.0.0.0:0             LISTEN     0        0
```

show ips stats fabric interface

To display the fabric-related statistics for the given iSCSI or FCIP interface on a Cisco MDS 9000 18/4-Port Multi Service Module IPS linecared, use the show ips stats fabric interface command.

show ips stats fabric interface [**iscsi** *slot/port* | **fcip** **N**]

Syntax Description

iscsi *slot/port*	(Optional) Displays Data Path Processor (DPP) fabric statistics for the iSCSI interface.
fcip *N*	(Optional) Displays DPP fabric statistics for the fcip interface.

Command Default

None.

Command Modes

EXEC mode.

Command History

Release	Modification
3.2(1)	This command was introduced.

Usage Guidelines

This command also displays information on flow control specific to DPP.

Examples

The following example shows the statistics for iSCSI on the specified interface:

```
switch# show ips stats fabric interface interface iscsi 1/1
DPP Fabric statistics for iscsi 1/1
    Software Egress Counters
      14049 good frames, 0 bad header cksum, 0 bad FIFO SOP
      0 parity error, 0 FC CRC error, 0 timestamp expired error
      0 unregistered port index, 0 unknown internal type
      0 RDL ok, 0 RDL drop (too big), 0 RDL ttl_1
      0 idle poll count, 0 loopback
      0 FCC PQ, 0 FCC EQ, 0 FCC generated
      Flow Control: 0 [0], 0 [1], 0 [2], 0 [3]
    Software Ingress Counters
      0 good frames, 0 header cksum error, 0 FC CRC error
      0 iSCSI CRC error, 0 descriptor SOP error, 0 parity error
      0 frames soft queued, 0 current Q, 0 max Q, 0 low memory
      0 out of memory drop, 0 queue full drop
      0 RDL ok, 0 RDL drop (too big)
      Flow Control: 0 [0], 0 [1], 0 [2], 0 [3]
```

The following example shows the statistics for FCIP on the specified interface:

```
switch# show ips stats fabric interface fcip 1
DPP Fabric statistics for fcip1
    Software Egress Counters
      14049 good frames, 0 bad header cksum, 0 bad FIFO SOP
      0 parity error, 0 FC CRC error, 0 timestamp expired error
      0 unregistered port index, 0 unknown internal type
      0 RDL ok, 0 RDL drop (too big), 0 RDL ttl_1
```

```
  0 idle poll count, 0 loopback
  0 FCC PQ, 0 FCC EQ, 0 FCC generated
  Flow Control: 0 [0], 0 [1], 0 [2], 0 [3]
Software Ingress Counters
  0 good frames, 0 header cksum error, 0 FC CRC error
  0 iSCSI CRC error, 0 descriptor SOP error, 0 parity error
  0 frames soft queued, 0 current Q, 0 max Q, 0 low memory
  0 out of memory drop, 0 queue full drop
  0 RDL ok, 0 RDL drop (too big)
  Flow Control: 0 [0], 0 [1], 0 [2], 0 [3]
```

Related Commands

Command	Description
clear ips stats fabric interface	Clears the statistics for the given iSCSI or FCIP interface on a Cisco MDS 9000 18/4-Port Multi Service Module IPS linecard.

show ips stats netsim

To display IP Network Simulator interface statistics, use the **show ips stats netsim** command.

show ips stats netsim ingress gigabitethernet *slot/port*

Syntax Description

ingress	Specifies the ingress direction.
gigabitethernet *slot/port*	Specifies the the slot and port number of the Gigabit Ethernet interface.

Command Default

None.

Command Modes

EXEC.

Command History

Release	Modification
3.1(1)	This command was introduced.

Usage Guidelines

The parameters displayed by default are delay, bandwidth, queue size, and queue delay. The network statistics displayed are number of packets dropped, queue size, number of packets reordered, and average speed.

Examples

The following example shows the IP Network Simulator statistics for interface 2/3:

```
switch# show ips stats netsim ingress gigabitethernet 2/3
Network Simulator Configuration for Ingress on GigabitEthernet2/3
Delay : 50000 microseconds
Rate : 1000000 kbps
Max_q : 100000 bytes
Max_qdelay : 600000 clocks
Random Drop % : 1.00%
Network Simulator Statistics for Ingress on GigabitEthernet2/3
Dropped (tot) = 28
Dropped (netsim) = 14
Reordered (netsim) = 0
Max Qlen(pkt) = 7
Qlen (pkt) = 0
Max Qlen (byte) = 326
Qlen (byte) = 0
Mintxdel(poll) = 852
Mintxdel(ethtx) = 360
empty = 757
txdel = 8
late = 617
Average speed = 0 Kbps
```

Related Commands

Command	Description
ips netsim enable	Enables two Gigabit Ethernet interfaces to operate in the network simulation mode.

show ips status

To display the IP storage status, use the show ips status command.

show ips status [**module** *slot*]

Syntax Description

module *slot*	(Optional) Identifies the module in the specified slot.

Command Default

None.

Command Modes

EXEC mode.

Command History

Release	Modification
1.1(1)	This command was introduced.

Usage Guidelines

None.

Examples

The following example displays the IP storage status for all modules on the switch:

```
switch# show ips status
        Port 8/1 READY
        Port 8/2 READY
        Port 8/3 READY
        Port 8/4 READY
        Port 8/5 READY
        Port 8/6 READY
        Port 8/7 READY
        Port 8/8 READY
```

The following example displays the IP storage status for the module in slot 9:

```
switch# show ips status module 9
        Port 9/1 READY
        Port 9/2 READY
        Port 9/3 READY
        Port 9/4 READY
        Port 9/5 READY
        Port 9/6 READY
        Port 9/7 READY
        Port 9/8 READY
```

show ipv6 access-list

To display a summary of IPv6 access control lists (ACLs), use the **show ipv6 access-list** command.

show ipv6 access-list [**list-name**]

Syntax Description

list-name	(Optional) Specifies the name of the ACL. The maximum size is 64.

Command Default

None.

Command Modes

EXEC mode.

Command History

Release	Modification
3.1(0)	This command was introduced.

Usage Guidelines

None**.**

Examples

The following example displays an IPv6 access control list:

```
switch# show ipv6 access-list
Access List Name/Number          Filters IF   Status    Creation Time
-------------------------------- ------- ---- --------- -------------
abc                              3       7    active    Tue Jun 24 17:51:40 2003
x1                               3       1    active    Tue Jun 24 18:32:25 2003
x3                               0       1    not-ready Tue Jun 24 18:32:28 2003
```

Related Commands

Command	Description
ipv6 access-list	Configures an IPv6-ACL.

show ipv6 interface

To display IPv6 interface status and configuration information, use the **show ipv6 interface** command.

show ipv6 interface [**gigabitethernet** *slot/port* | **mgmt 0** | **port-channel** *port-channel-number* | **vsan** *vsan-id*]

Syntax Description

gigabitethernet *slot/port*	(Optional) Displays a Gigabit Ethernet interface.
mgmt 0	(Optional) Displays the management interface.
port-channel	(Optional) Displays a PortChannel interface.
port-channel-*number*	(Optional) Specifies the PortChannel number. The range is 1 to 128.
vsan	(Optional) Displays an IPFC VSAN interface.
vsan-id	(Optional) Specifies the VSAN ID. The range is 1 to 4093.

Command Default

None.

Command Modes

EXEC mode.

Command History

Release	Modification
3.1(0)	This command was introduced.

Usage Guidelines

None.

Examples

The following example displays IPv6 interface information:

```
switch# show ipv6 interface
GigabitEthernet1/2 is up
  IPv6 is enabled
  Global address(es):
    5000::1/64
  Link-local address(es):
    fe80::205:30ff:fe01:a6bf
  ND DAD is disabled
  ND reachable time is 30000 milliseconds
  ND retransmission time is 1000 milliseconds
  Stateless autoconfig for addresses disabled
GigabitEthernet2/2 is up
  IPv6 is enabled
  Global address(es):
    6000::1/64
  Link-local address(es):
    fe80::205:30ff:fe00:a413
  ND DAD is disabled
  ND reachable time is 30000 milliseconds
  ND retransmission time is 1000 milliseconds
  Stateless autoconfig for addresses disabled
```

Related Commands

Command	Description
ipv6 address	Configures an IPv6 address.
ipv6 nd	Configures IPv6 neighbor discovery commands.
ipv6 route	Configures an IPv6 static route.
show ipv6 neighbors	Displays information about IPv6 neighbors for the system.
show ipv6 route	Displays the IPv6 routes configured on the system.

show ipv6 neighbours

To display IPv6 neighbors configuration information, use the **show ipv6** neighbours command.

show ipv6 neighbours [**interface** {**gigabitethernet** *slot/port* | **mgmt 0** | **vsan** *vsan-id*}]

Syntax Description

interface	(Optional) Displays the IP interface status and configuration.
gigabitethernet *slot/port*	(Optional) Displays a Gigabit Ethernet interface slot and port number.
mgmt 0	(Optional) Displays the management interface.
vsan *vsan-id*	(Optional) Displays an IPFC VSAN interface and specifies the VSAN ID. The range is 1 to 4093

Command Default

None.

Command Modes

EXEC mode.

Command History

Release	Modification
3.1(0)	This command was introduced.

Usage Guidelines

None.

Examples

The following example displays information about IPv6 neighbor discovery:

```
switch# show ipv6 neighbours gigabitethernet 2/1
IPv6 Address                                Age Link-layer Addr State Interface
2001:0DB8:0:4::2                              0 0003.a0d6.141e  REACH Ethernet2
FE80::XXXX:A0FF:FED6:141E                     0 0003.a0d6.141e  REACH Ethernet2
2001:0DB8:1::45a                              - 0002.7d1a.9472  REACH Ethernet2
```

Related Commands

Command	Description
ipv6 nd	Configures IPv6 neighbor discovery commands.

show ipv6 route

To display the IPv6 routes configured on the system, use the **show ipv6 route** command.

show ipv6 route

Syntax Description

This command has no arguments or keywords.

Command Default

None.

Command Modes

EXEC mode.

Command History

Release	Modification
3.1(0)	This command was introduced.

Usage Guidelines

None.

Examples

The following example displays information about an IPv6 route:

```
switch# show ipv6 route
IPv6 Routing Table
Codes: C - Connected, L - Local, S - Static G - Gateway
C    5000::/64
     via fe80::205:30ff:fe01:a6bf, GigabitEthernet1/2
C    6000::/64
     via fe80::205:30ff:fe00:a413, GigabitEthernet2/2
L    fe80::/10
     via ::
L    ff00::/8
     via ::
```

Related Commands

Command	Description
ipv6 route	Configures an IPv6 route.

show ipv6 routing

To display IPv6 unicast routing information, use the **show ipv6 routing** command.

show ipv6 routing

Syntax Description

This command has no arguments or keywords.

Command Default

None.

Command Modes

EXEC mode.

Command History

Release	Modification
3.1(0)	This command was introduced.

Usage Guidelines

None**.**

Examples

The following example displays the ipv6 routing information:

```
switch# show ipv6 routing
ipv6 routing is enabled
```

Related Commands

Command	Description
ipv6 routing	Enables IPv6 unicast routing.

show ipv6 traffic

To display IPv6 protocol statistics for the system, use the **show ipv6 traffic** command.

show ipv6 traffic [**interface** {**gigabitethernet** *slot*/*port* | **mgmt 0** | **port-channel** *number* | **vsan** *vsan-id*}]

Syntax Description

interface	(Optional) Displays the IP interface status and configuration.
gigabitethernet *slot/port*	(Optional) Displays a Gigabit Ethernet interface slot and port number.
mgmt 0	(Optional) Displays the management interface.
port-channel *number*	(Optional) Dispalys the PortChannel interface. The range is 1 to 256.
vsan *vsan-id*	(Optional) Displays a IPFC VSAN interface and specifies the VSAN ID. The range is 1 to 4093.

Command Default

None.

Command Modes

EXEC mode.

Command History

Release	Modification
3.1(0)	This command was introduced.

Usage Guidelines

None.

Examples

The following example displays IPv6 protocol statistics on the system:

```
switch# show ipv6 traffic
IPv6 Statistics:
  Rcvd:  1 total, 0 local destination
         0 errors, 0 truncated, 0 too big
         0 unknown protocol, 0 dropped
         0 fragments, 0 reassembled
         0 couldn't reassemble, 0 reassembly timeouts
  Sent:  0 generated, 0 forwarded 0 dropped
         0 fragmented, 0 fragments created, 0 couldn't fragment
ICMPv6 Statistics:
  Rcvd:  0 total, 0 errors, 0 unreachables, 0 time exceeded
         0 too big, 0 param probs, 0 admin prohibs
         0 echos, 0 echo reply, 0 redirects
         0 group query, 0 group report, 0 group reduce
         0 router solicit, 0 router advert
         0 neighbor solicit, 0 neighbor advert
  Sent:  74 total, 0 errors, 0 unreachables, 0 time exceeded
         0 too big, 0 param probs, 0 admin prohibs
         0 echos, 0 echo reply, 0 redirects
         0 group query, 53 group report, 0 group reduce
         0 router solicit, 0 router advert
         0 neighbor solicit, 21 neighbor advert
```

The following example displays IPv6 traffic on Gigabit Ethernet interface 2/2:

```
switch# show ipv6 traffic interface gigabitethernet 2/2
IPv6 Statistics for GigabitEthernet2/2
  Rcvd:  10 total, 0 local destination
         0 errors, 0 truncated, 0 too big
         0 unknown protocol, 0 dropped
         0 fragments, 0 reassembled
         0 couldn't reassemble, 0 reassembly timeouts
  Sent:  54 generated, 0 forwarded 0 dropped
         0 fragmented, 0 fragments created, 0 couldn't fragment
ICMPv6 Statistics for GigabitEthernet2/2
  Rcvd:  4 total, 0 errors, 0 unreachables, 0 time exceeded
         0 too big, 0 param probs, 0 admin prohibs
         0 echos, 0 echo reply, 0 redirects
         0 group query, 2 group report, 0 group reduce
         0 router solicit, 0 router advert
         0 neighbor solicit, 2 neighbor advert
  Sent:  21 total, 0 errors, 0 unreachables, 0 time exceeded
         0 too big, 0 param probs, 0 admin prohibs
         0 echos, 0 echo reply, 0 redirects
         0 group query, 6 group report, 3 group reduce
         2 router solicit, 0 router advert
         2 neighbor solicit, 8 neighbor advert
```

show isapi dpp

To obtain a list of ITLs for a specific Data Path Processor (DPP), use the show isapi dpp command.

show isapi dpp dpp-number

Syntax Description

dpp-number	Specifies the slot along with the DPP number.

Command Default

None.

Command Modes

EXEC mode.

Command History

Release	Modification
3.2(1)	This command was introduced.

Usage Guidelines

None.

Examples

The following example displays the ISAPI infomation for DPP number 7:

```
module-3# show isapi dpp 7 queue
I_T 0x837c9140 [vsan 42 host 0x8d0005 vt 8d0014/92:81:00:00:08:50:ca:d4]: 0 tasks, mtu 2048,
 seqid 99, abts 0 BSY

Q 837cc380: LUN 3, status 0x22, R/W access 0x0/0x0, 0 tasks, 0 busy/TSF, 0 ho
  Tasks:

Q 837cbd80: LUN 2, status 0x22, R/W access 0x0/0x0, 0 tasks, 0 busy/TSF, 0 ho
  Tasks:

Q 837cb100: LUN 1, status 0x22, R/W access 0x0/0x0, 0 tasks, 0 busy/TSF, 0 ho
  Tasks:

Q 837cb080: LUN 0, status 0x22, R/W access 0x0/0x0, 0 tasks, 0 busy/TSF, 0 ho
  Tasks:
```

Related Commands

Command	Description
show isapi dpp all queue	Displays ITLs for all DPPs on the SSM.

show isapi tech-support santap file

To display ISAPI information for troubleshooting, use the show isapi tech-support santap file command.

show isapi tech-support santap file [**name**]

Syntax Description

name	(Optional) Specifies the name of the file. The file is stored on modflash.

Command Default

None.

Command Modes

Configuration mode.

Command History

Release	Modification
NX-OS 4.1(1b)	Added Usage Guidelines.

Usage Guidelines

SANTap tech support, collected through the above CLI, is stored in the line card modflash. It includes ISAPI tech support and the outputs of the show debug santap event-history and show santap tech-support command. These two outputs are not present in ISAPI tech support, and are not collected after a DPP crash.

The size of the modflash is limited, close to 60 MB in 4.1(1). If less space remains on modflash than the size of the output file, an unusable truncated file may get created. To ensure that the SANTap tech support file gets created in the modflash properly, enough space (at least 20 MB) should be made available before entering the command. Copy a tech support file after collecting the tech support, and delete it from the modflash.

ISAPI tech support collected through the show isapi tech-support file <filename> is stored in the line card log directory.

The size of the log directory also is limited to 180 MB. This is shared for some other purposes as well. Again, at least 20 MB should be made available in the log directory before collecting ISAPI tech support, and the file should be copied out and deleted from the log directory once done.

The following commands may be used for copying and deleting files from the modflash and log directories on the line card:

copy log:// module / file name target fs (entered on the supervisor module) will copies the isapi tech support file from /var/log/external.

copy modflash:// module -1/ file name target fs (entered on the supervisor module) copies the santap-isapi tech support file from the line card modflash.

clear debug-logfile filename (entered on the line card module) deletes logfiles in the line card log directory.

delete modflash://module-1/ filename (entered on the supervisor module) deletes logfiles in the line card modflash.

Examples

The following example shows how to display the ISAPI infomation for troubleshooting:

```
switch# attach module 13
Attaching to module 13 ...
To exit type 'exit', to abort type '$.'
```

```
Bad terminal type: "ansi". Will assume vt100.
switch# show isapi tech-support santap file cisco
Re-directing tech support information to file: cisco
switch#
```

Related Commands

Command	Description
show isapi dpp all queue	Displays ITLs for all DPPs on the SSM.

show iscsi global

To display global iSCSI configured information, use the **show iscsi global** command.

show iscsi global

Syntax Description

This command has no arguments or keywords.

Command Default

None.

Command Modes

EXEC mode.

Command History

Release	Modification
1.1(1)	This command was introduced.

Usage Guidelines

None.

Examples

The following example displays all configured iSCSI initiators:

```
switch# show iscsi global
iSCSI Global informationAuthentication: CHAP, NONEImport FC Target: EnabledInitiator idle
timeout: 300 secondsDynamic Initiator: iSLBNumber of target node: 1Number of portals: 2Number
 of session: 0Failed session: 0, Last failed initiator name:
```

show iscsi initiator

To display information about all the iSCSI nodes that are remote to the switch, use the **show iscsi initiator** command.

show iscsi initiator [**configured** [*initiator-name*] | **detail** | **fcp-session** [**detail**] | **iscsi-session** [**detail**] | **summary** [**name**]]

Syntax Description

configured	(Optional) Displays the configured information for the iSCSI initiator.
initiator-name	(Optional) Specifies the name of an initiator.
detail	(Optional) Displays detailed iSCSI initiator information.
fcp-session	(Optional) Displays the Fibre Channel session details.
iscsi-session	(Optional) Displays iSCSI session details.
summary	(Optional) Displays summary information.
name	(Optional) Displays initiator name information.

Command Default

None.

Command Modes

EXEC mode.

Command History

Release	Modification
1.1(1)	This command was introduced.

Usage Guidelines

If no parameter is provided the command lists all the active iSCSI initiators. If the iSCSI node name is provided then the command lists the details of that iSCSI initiator.

Examples

The following example displays all iSCSI initiators:

```
switch# show iscsi initiator

iSCSI Node name is iqn.1987-05.com.cisco.01.15cee6e7925087abc82ed96377653c8
    iSCSI alias name: iscsi7-lnx
    Node WWN is 23:10:00:05:30:00:7e:a0 (dynamic)
    Member of vsans: 1
    Number of Virtual n_ports: 1
    Virtual Port WWN is 23:12:00:05:30:00:7e:a0 (dynamic)
      Interface iSCSI 8/3, Portal group tag: 0x382
        VSAN ID 1, FCID 0xdc0100
iSCSI Node name is iqn.1987-05.com.cisco:02.91b0ee2e8aa1.iscsi16-w2k
    iSCSI alias name: ISCSI16-W2K
    Node WWN is 23:1f:00:05:30:00:7e:a0 (dynamic)
    Member of vsans: 1
    Number of Virtual n_ports: 1
    Virtual Port WWN is 23:28:00:05:30:00:7e:a0 (dynamic)
```

```
      Interface iSCSI 8/3, Portal group tag: 0x382
        VSAN ID 1, FCID 0xdc0101
iSCSI Node name is iqn.1987-05.com.cisco.01.b6ca466f8b4d8e848ab17e92f24bf9cc
    iSCSI alias name: iscsi6-lnx
    Node WWN is 23:29:00:05:30:00:7e:a0 (dynamic)
    Member of vsans: 1, 2, 3, 4
    Number of Virtual n_ports: 1
    Virtual Port WWN is 23:2a:00:05:30:00:7e:a0 (dynamic)
      Interface iSCSI 8/3, Portal group tag: 0x382
        VSAN ID 4, FCID 0xee0000
        VSAN ID 3, FCID 0xee0100
        VSAN ID 2, FCID 0xee0000
        VSAN ID 1, FCID 0xdc0102
...
```

The following example displays detailed Information for all iSCSI initiators:

```
switch# show iscsi initiator
 detail
iSCSI Node name is iqn.1987-05.com.cisco.01.15cee6e7925087abc82ed96377653c8
    iSCSI alias name: iscsi7-lnx
    Node WWN is 23:10:00:05:30:00:7e:a0 (dynamic)
    Member of vsans: 1
    Number of Virtual n_ports: 1
    Virtual Port WWN is 23:10:00:05:30:00:7e:a0 (dynamic)
      Interface iSCSI 8/3, Portal group tag is 0x382
        VSAN ID 1, FCID 0xdc0100
        No. of FC sessions: 3
        No. of iSCSI sessions: 2
        iSCSI session details
          Target node: iqn.com.domainname.172.22.93.143.08-03.gw.22000020374b5247
          Statistics:
            PDU: Command: 0, Response: 0
            Bytes: TX: 0, RX: 0
            Number of connection: 1
          TCP parameters
            Connection Local 10.1.3.3:3260, Remote 10.1.3.107:34112
            Path MTU 1500 bytes
            Current retransmission timeout is 300 ms
            Round trip time: Smoothed 2 ms, Variance: 1
            Advertised window: Current: 6 KB, Maximum: 6 KB, Scale: 3
            Peer receive window: Current: 250 KB, Maximum: 250 KB, Scale: 2
            Congestion window: Current: 8 KB
          Target node: iqn.com.domainname.172.22.93.143.08-03.gw.22000020374b5247
          Statistics:
            PDU: Command: 0, Response: 0
            Bytes: TX: 0, RX: 0
            Number of connection: 1
          TCP parameters
            Connection Local 10.1.3.3:3260, Remote 10.1.3.107:34112
            Path MTU 1500 bytes
            Current retransmission timeout is 300 ms
            Round trip time: Smoothed 2 ms, Variance: 1
            Advertised window: Current: 6 KB, Maximum: 6 KB, Scale: 3
            Peer receive window: Current: 250 KB, Maximum: 250 KB, Scale: 2
            Congestion window: Current: 8 KB
...
```

show iscsi session

To display iSCSI session information, use the show iscsi session command.

show iscsi session [**incoming**] [**initiator** *name*] [**outgoing**] [**target** *name*] [**detail**]

Syntax Description

incoming	(Optional) Displays incoming iSCSI sessions.
initiator *name*	(Optional) Displays specific iSCSI initiator session information. Maximum length is 80 characters.
outgoing	(Optional) Displays outgoing iSCSI sessions
target *name*	(Optional) Displays specific iSCSI target session information. Maximum length is 80 characters.
detail	(Optional) Displays detailed iSCSI session information.

Command Default

None.

Command Modes

EXEC mode.

Command History

Release	Modification
1.1(1)	This command was introduced.

Usage Guidelines

All the parameters are optional in the **show iscsi session** commands. If no parameter is provided the command lists all the active iSCSI initiator or target sessions. If the IP address or iSCSI node name is provided, then the command lists details of all sessions from that initiator or to that target.

Examples

The following command displays the iSCSI session information:

```
switch# show iscsi session
Initiator iqn.1987-05.com.cisco.01.15cee6e7925087abc82ed96377653c8
  Session #1
    Target iqn.com.domainname.172.22.93.143.08-03.gw.22000020374b5247
    VSAN 1, ISID 000000000000, Status active, no reservation
  Session #2
    Target iqn.com.domainname.172.22.93.143.08-03.gw.220000203738e77d
    VSAN 1, ISID 000000000000, Status active, no reservation
Initiator iqn.1987-05.com.cisco:02.91b0ee2e8aa1.iscsi16-w2k
  Session #1
    Discovery session, ISID 00023d00022f, Status active
  Session #2
    Target iqn.com.domainname.172.22.93.143.08-03.gw.2200002037388bc2
    VSAN 1, ISID 00023d000230, Status active, no reservation
...
```

The following command displays the specified iSCSI target:

```
switch# show iscsi session target iqn.com.domainname.172.22.93.143.08-03.gw.220000203738e77d
```

```
Initiator iqn.1987-05.com.cisco.01.15cee6e7925087abc82ed96377653c8
  Session #1
    Target iqn.com.domainname.172.22.93.143.08-03.gw.220000203738e77d
    VSAN 1, ISID 000000000000, Status active, no reservation
```

Note On the IPS module, you can verify what iSCSI initiator IQN has been assigned which pWWN when it logs in by using the **show zone active vsan** *vsan-id* command. switch# **zone name iscsi_16_A vsan 16*** fcid 0x7700d4 [pwwn 21:00:00:20:37:c5:2d:6d]* fcid 0x7700d5 [pwwn 21:00:00:20:37:c5:2e:2e]* fcid 0x770100 [symbolic-nodename iqn.1987-05.com.cisco.02.BC3FEEFC431B199F81F33E97E2809C14.NUYEAR]

The following command displays the specified iSCSI initiator:

```
switch# show iscsi session initiator iqn.1987-05.com.cisco:02.91b0ee2e8aa1.iscsi16-w2k
Initiator iqn.1987-05.com.cisco:02.91b0ee2e8aa1.iscsi16-w2k
  Session #1
    Discovery session, ISID 00023d00022f, Status active
  Session #2
    Target iqn.com.domainname.172.22.93.143.08-03.gw.2200002037388bc2
    VSAN 1, ISID 00023d000230, Status active, no reservation
  Session #3
    Target iqn.com.domainname.172.22.93.143.08-03.gw.210000203739ad7f
    VSAN 1, ISID 00023d000235, Status active, no reservation
  Session #4
    Target iqn.com.domainname.172.22.93.143.08-03.gw.210000203739aa3a
    VSAN 1, ISID 00023d000236, Status active, no reservation
  Session #5
    Target iqn.com.domainname.172.22.93.143.08-03.gw.210000203739ada7
    VSAN 1, ISID 00023d000237, Status active, no reservation
  Session #6
    Target iqn.com.domainname.172.22.93.143.08-03.gw.2200002037381ccb
    VSAN 1, ISID 00023d000370, Status active, no reservation
  Session #7
    Target iqn.com.domainname.172.22.93.143.08-03.gw.2200002037388b54
    VSAN 1, ISID 00023d000371, Status active, no reservation
  Session #8
    Target iqn.com.domainname.172.22.93.143.08-03.gw.220000203738a194
    VSAN 1, ISID 00023d000372, Status active, no reservation
  Session #9
    Target iqn.com.domainname.172.22.93.143.08-03.gw.2200002037360053
    VSAN 1, ISID 00023d000373, Status active, no reservation
```

show iscsi stats

To display the iSCSI statistics information, use the show iscsi stats command.

show iscsi stats [**iscsi** *slot / port*] [**clear** | **detail**]

Syntax Description

iscsi *slot/port*	(Optional) Displays statistics for the specified iSCSI interface.
clear	(Optional) Clears iSCSI statistics for the session or interface.
detail	(Optional) Displays detailed iSCSI statistics for the session or interface.

Command Default

None.

Command Modes

EXEC mode.

Command History

Release	Modification
1.1(1)	This command was introduced.

Usage Guidelines

None.

Examples

The following command displays brief iSCSI statistics:

```
switch# show iscsi stats
iscsi8/1
    5 minutes input rate 23334800 bits/sec, 2916850 bytes/sec, 2841 frames/sec
    5 minutes output rate 45318424 bits/sec, 5664803 bytes/sec, 4170 frames/sec
    iSCSI statistics
      86382665 packets input, 2689441036 bytes
        3916933 Command pdus, 82463404 Data-out pdus, 2837976576 Data-out bytes,
 0 fragments
      131109319 packets output, 2091677936 bytes
        3916876 Response pdus (with sense 0), 1289224 R2T pdus
        125900891 Data-in pdus, 93381152 Data-in bytes
iscsi8/2
    5 minutes input rate 0 bits/sec, 0 bytes/sec, 0 frames/sec
    5 minutes output rate 0 bits/sec, 0 bytes/sec, 0 frames/sec
    iSCSI statistics
      0 packets input, 0 bytes
        0 Command pdus, 0 Data-out pdus, 0 Data-out bytes, 0 fragments
      0 packets output, 0 bytes
        0 Response pdus (with sense 0), 0 R2T pdus
        0 Data-in pdus, 0 Data-in bytes
iscsi8/3
    5 minutes input rate 272 bits/sec, 34 bytes/sec, 0 frames/sec
    5 minutes output rate 40 bits/sec, 5 bytes/sec, 0 frames/sec
    iSCSI statistics
      30 packets input, 10228 bytes
        0 Command pdus, 0 Data-out pdus, 0 Data-out bytes, 0 fragments
      30 packets output, 1744 bytes
```

```
        0 Response pdus (with sense 0), 0 R2T pdus
        0 Data-in pdus, 0 Data-in bytes
iscsi8/4
    5 minutes input rate 0 bits/sec, 0 bytes/sec, 0 frames/sec
    5 minutes output rate 0 bits/sec, 0 bytes/sec, 0 frames/sec
    iSCSI statistics
      0 packets input, 0 bytes
        0 Command pdus, 0 Data-out pdus, 0 Data-out bytes, 0 fragments
      0 packets output, 0 bytes
        0 Response pdus (with sense 0), 0 R2T pdus
        0 Data-in pdus, 0 Data-in bytes
iscsi8/5
    5 minutes input rate 0 bits/sec, 0 bytes/sec, 0 frames/sec
    5 minutes output rate 0 bits/sec, 0 bytes/sec, 0 frames/sec
    iSCSI statistics
      0 packets input, 0 bytes
        0 Command pdus, 0 Data-out pdus, 0 Data-out bytes, 0 fragments
      0 packets output, 0 bytes
        0 Response pdus (with sense 0), 0 R2T pdus
        0 Data-in pdus, 0 Data-in bytes
iscsi8/6
    5 minutes input rate 0 bits/sec, 0 bytes/sec, 0 frames/sec
    5 minutes output rate 0 bits/sec, 0 bytes/sec, 0 frames/sec
    iSCSI statistics
      0 packets input, 0 bytes
        0 Command pdus, 0 Data-out pdus, 0 Data-out bytes, 0 fragments
      0 packets output, 0 bytes
        0 Response pdus (with sense 0), 0 R2T pdus
        0 Data-in pdus, 0 Data-in bytes
iscsi8/7
    5 minutes input rate 0 bits/sec, 0 bytes/sec, 0 frames/sec
    5 minutes output rate 0 bits/sec, 0 bytes/sec, 0 frames/sec
    iSCSI statistics
      0 packets input, 0 bytes
        0 Command pdus, 0 Data-out pdus, 0 Data-out bytes, 0 fragments
      0 packets output, 0 bytes
        0 Response pdus (with sense 0), 0 R2T pdus
        0 Data-in pdus, 0 Data-in bytes
iscsi8/8
    5 minutes input rate 0 bits/sec, 0 bytes/sec, 0 frames/sec
    5 minutes output rate 0 bits/sec, 0 bytes/sec, 0 frames/sec
    iSCSI statistics
      0 packets input, 0 bytes
        0 Command pdus, 0 Data-out pdus, 0 Data-out bytes, 0 fragments
      0 packets output, 0 bytes
        0 Response pdus (with sense 0), 0 R2T pdus
        0 Data-in pdus, 0 Data-in bytes
```

The following command displays detailed iSCSI statistics:

```
switch# show iscsi stats detail
iscsi8/1
    5 minutes input rate 0 bits/sec, 0 bytes/sec, 0 frames/sec
    5 minutes output rate 0 bits/sec, 0 bytes/sec, 0 frames/sec
    iSCSI statistics
      0 packets input, 0 bytes
        0 Command pdus, 0 Data-out pdus, 0 Data-out bytes, 0 fragments
      0 packets output, 0 bytes
        0 Response pdus (with sense 0), 0 R2T pdus
        0 Data-in pdus, 0 Data-in bytes
  iSCSI Forward:
    Command: 0 PDUs (Received: 0)
    Data-Out (Write): 0 PDUs (Received 0), 0 fragments, 0 bytes
  FCP Forward:
```

```
    Xfer_rdy: 0 (Received: 0)
    Data-In: 0 (Received: 0), 0 bytes
    Response: 0 (Received: 0), with sense 0
    TMF Resp: 0
  iSCSI Stats:
    Login: attempt: 0, succeed: 0, fail: 0, authen fail: 0
    Rcvd: NOP-Out: 0, Sent: NOP-In: 0
          NOP-In: 0, Sent: NOP-Out: 0
          TMF-REQ: 0, Sent: TMF-RESP: 0
          Text-REQ: 0, Sent: Text-RESP: 0
          SNACK: 0
          Unrecognized Opcode: 0, Bad header digest: 0
          Command in window but not next: 0, exceed wait queue limit: 0
          Received PDU in wrong phase: 0
  FCP Stats:
    Total: Sent: 0
           Received: 0 (Error: 0, Unknown: 0)
    Sent: PLOGI: 0, Rcvd: PLOGI_ACC: 0, PLOGI_RJT: 0
          PRLI: 0, Rcvd: PRLI_ACC: 0, PRLI_RJT: 0, Error resp: 0
          LOGO: 0, Rcvd: LOGO_ACC: 0, LOGO_RJT: 0
          ABTS: 0, Rcvd: ABTS_ACC: 0
          TMF REQ: 0
          Self orig command: 0, Rcvd: data: 0, resp: 0
    Rcvd: PLOGI: 0, Sent: PLOGI_ACC: 0
          LOGO: 0, Sent: LOGO_ACC: 0
          PRLI: 0, Sent: PRLI_ACC: 0
          ABTS: 0
  iSCSI Drop:
    Command: Target down 0, Task in progress 0, LUN map fail 0
             CmdSeqNo not in window 0, No Exchange ID 0, Reject 0
             Persistent Resv 0    Data-Out: 0, TMF-Req: 0
  FCP Drop:
    Xfer_rdy: 0, Data-In: 0, Response: 0
  Buffer Stats:
    Buffer less than header size: 0, Partial: 0, Split: 0
    Pullup give new buf: 0, Out of contiguous buf: 0, Unaligned m_data: 0
iscsi8/2
    5 minutes input rate 0 bits/sec, 0 bytes/sec, 0 frames/sec
    5 minutes output rate 0 bits/sec, 0 bytes/sec, 0 frames/sec
    iSCSI statistics
      0 packets input, 0 bytes
        0 Command pdus, 0 Data-out pdus, 0 Data-out bytes, 0 fragments
      0 packets output, 0 bytes
        0 Response pdus (with sense 0), 0 R2T pdus
        0 Data-in pdus, 0 Data-in bytes
  iSCSI Forward:
    Command: 0 PDUs (Received: 0)
    Data-Out (Write): 0 PDUs (Received 0), 0 fragments, 0 bytes
  FCP Forward:
    Xfer_rdy: 0 (Received: 0)
    Data-In: 0 (Received: 0), 0 bytes
    Response: 0 (Received: 0), with sense 0
...
```

The following command displays detailed statistics for the specified iSCSI interface:

```
switch# show iscsi stats iscsi 8/1
iscsi8/1
    5 minutes input rate 0 bits/sec, 0 bytes/sec, 0 frames/sec
    5 minutes output rate 0 bits/sec, 0 bytes/sec, 0 frames/sec
    iSCSI statistics
      0 packets input, 0 bytes
        0 Command pdus, 0 Data-out pdus, 0 Data-out bytes, 0 fragments
      0 packets output, 0 bytes
```

```
0 Response pdus (with sense 0), 0 R2T pdus
0 Data-in pdus, 0 Data-in bytes
```

show iscsi virtual-target

To display all the iSCSI nodes that are local to the switch, use the **show iscsi virtual-target** command.

show iscsi virtual-target [**configured**] [*name*]

Syntax Description

configured	(optional) Displays the information for all iSCSI ports.
name	(Optional) Displays iSCSI information for the specified virtual-target.

Command Default

None.

Command Modes

EXEC mode.

Command History

Release	Modification
1.1(1)	This command was introduced.

Usage Guidelines

If no parameter is provided the command lists all the active iSCSI virtual targets. If the iSCSI node name is provided then the command lists the details of that iSCSI virtual target.

Examples

The following example displays information on all the iSCSI virtual targets:

```
switch# show iscsi virtual-target
target: abc1
    Port WWN 21:00:00:20:37:a6:b0:bf
    Configured node
target: iqn.com.domainname.172.22.93.143.08-03.gw.22000020374b5247
    Port WWN 22:00:00:20:37:4b:52:47 , VSAN 1
    Auto-created node
...
target: iqn.com.domainname.172.22.93.143.08-03.gw.210000203739aa39
    Port WWN 21:00:00:20:37:39:aa:39 , VSAN 1
    Auto-created node
```

The following example displays a specified iSCSI virtual target:

```
switch# show iscsi virtual-target iqn.com.domainname.172.22.93.143.08-03.gw.210000203739a95b
target: iqn.com.domainname.172.22.93.143.08-03.gw.210000203739a95b
    Port WWN 21:00:00:20:37:39:a9:5b , VSAN 1
    Auto-created node
```

The following example displays the trespass status for a virtual target:

```
switch# show iscsi virtual-target iqn.abc
target: abc
    Port WWN 00:00:00:00:00:00:00:00
    Configured node
    all initiator permit is disabled
    trespass support is  enabled S
```

show islb cfs-session status

To display iSCSI server load balancing (iSLB) Cisco Fabric Services information, use the **show islb cfs-session status** command.

show islb cfs-session status

Syntax Description

This command has no arguments or keywords.

Command Default

None.

Command Modes

EXEC mode.

Command History

Release	Modification
3.0(1)	This command was introduced.

Usage Guidelines

None.

Examples

The following example displays iSLB session informations.

```
ips-hac2# show islb cfs-session status
last action               : fabric distribute disable
last action result        : success
last action failure cause : success
```

Related Commands

Command	Description
show islb initiator	Displays iSLB initiator information.
show islb merge status	Displays iSLB merge status information.
show islb pending	Displays iSLB pending configurations.
show islb pending-diff	Displays iSLB pending configuration differences.
show islb session	Displays iSLB session information.
show islb status	Displays iSLB CFS status information.
show islb virtual-target	Displays iSLB virtual target information.
show islb vrrp	Displays iSLB VRRP load balancing information.

show islb initiator

To display iSCSI server load balancing (iSLB) Cisco Fabric Services information, use the **show islb initiator** command.

show islb initiator [**name node-name** [**detail** | **fcp-session** [**detail**] | **iscsi-session** [**detail**]] | **configured** [**name initiator-name**] | **detail** | **fcp-session** [**detail**] | **iscsi-session** [**detail**] | **summary** [**name**]]

Syntax Description

name *node-name*	Displays the initiator node name. The maximum size is 80.
detail	Displays more detailed information.
fcp-session	Displays Fibre Channel session details.
iscsi-session	Displays iSLB session details.
configured	Displays iSLB initiator configured information.
name *initiator-name*	Displays the configured initiator name. The maximum size is 223.
summary	Displays iSLB initiator summary information.

Command Default

None.

Command Modes

EXEC mode.

Command History

Release	Modification
3.0(1)	This command was introduced.

Usage Guidelines

None.

Examples

The following example shows iSLB initiator configuration information:

```
switch# show islb initiator configured
iSCSI Node name is 1.1.1.1
    No. of PWWN: 2
      Port WWN is 23:01:00:0c:85:90:3e:82
      Port WWN is 23:02:00:0c:85:90:3e:82
    Load Balance Metric: 1000
    Number of Initiator Targets: 0
iSCSI Node name is 2.2.2.2
    Load Balance Metric: 1000
    Number of Initiator Targets: 0
```

Related Commands

Command	Description
show islb cfs-session status	Displays iSLB session status and status information.

Command	Description
show islb merge status	Displays iSLB merge status information.
show islb pending	Displays iSLB pending configurations.
show islb pending-diff	Displays iSLB pending configuration differences.
show islb session	Displays iSLB session information.
show islb status	Displays iSLB CFS status information.
show islb virtual-target	Displays iSLB virtual target information.
show islb vrrp	Displays iSLB VRRP load balancing information.

show islb merge status

To display iSCSI server load balancing (iSLB) merge status information, use the **show islb merge status** command.

show islb merge status

Syntax Description

This command has no arguments or keywords.

Command Default

None.

Command Modes

EXEC mode.

Command History

Release	Modification
3.0(1)	This command was introduced.

Usage Guidelines

None.

Examples

The following example shows iSLB merge status information:

```
switch# show islb merge status
Merge Status: SUCCESS
```

Related Commands

Command	Description
show islb cfs-session status	Displays iSLB session information.
show islb initiator	Displays iSLB initiator information.
show islb pending	Displays iSLB pending configurations.
show islb pending-diff	Displays iSLB pending configuration differences.
show islb session	Displays iSLB session information.
show islb status	Displays iSLB CFS status information.
show islb virtual-target	Displays iSLB virtual target information.
show islb vrrp	Displays iSLB VRRP load balancing information.

show islb pending

To display iSCSI server load balancing (iSLB) pending configurations, use the **show islb pending** command.

show islb pending

Syntax Description

This command has no arguments or keywords.

Command Default

None.

Command Modes

EXEC mode.

Command History

Release	Modification
3.0(1)	This command was introduced.

Usage Guidelines

None.

Examples

The following example shows iSLB pending configuration information:

```
switch# show islb pending
iscsi initiator idle-timeout 10
```

islb initiator ip-address 10.1.1.1static pWWN 23:01:00:0c:85:90:3e:82static pWWN 23:06:00:0c:85:90:3e:82username test1

```
islb initiator ip-address 10.1.1.2static nWWN 23:02:00:0c:85:90:3e:82
```

Related Commands

Command	Description
show islb initiator	Displays iSLB initiator information.
show islb cfs-session status	Displays iSLB session information.
show islb merge status	Displays iSLB merge status information.
show islb pending-diff	Displays iSLB pending configuration differences.
show islb session	Displays iSLB session information.
show islb status	Displays iSLB CFS status information.
show islb virtual-target	Displays iSLB virtual target information.
show islb vrrp	Displays iSLB VRRP load balancing information.

show islb pending-diff

To display iSCSI server load balancing (iSLB) pending configuration differences, use the **show islb pending-diff** command.

show islb pending-diff

Syntax Description

This command has no arguments or keywords.

Command Default

None.

Command Modes

EXEC mode.

Command History

Release	Modification
3.0(1)	This command was introduced.

Usage Guidelines

None.

Examples

The following example shows iSLB pending configuration differences:

```
switch# show islb pending-diff
+iscsi initiator idle-timeout 10islb initiator ip-address 10.1.1.1+ static pWWN
23:06:00:0c:85:90:3e:82+islb initiator ip-address 10.1.1.2+ static nWWN
23:02:00:0c:85:90:3e:82
```

Related Commands

Command	Description
show islb cfs-session status	Displays iSLB session information.
show islb initiator	Displays iSLB initiator information.
show islb merge status	Displays iSLB merge status information.
show islb pending	Displays iSLB pending configurations.
show islb session	Displays iSLB session information.
show islb status	Displays iSLB CFS status information.
show islb virtual-target	Displays iSLB virtual target information.
show islb vrrp	Displays iSLB VRRP load balancing information.

show islb session

To display iSLB session information, use the **show islb session** command.

show islb session [**detail** | **incoming** | **initiator initiator-node-name** | **iscsi slot-number** | **outgoing** | **target target-node-name**]

Syntax Description

detail	(Optional) Displays detailed iSLB session information.
incoming	(Optional) Displays incoming iSLB sessions.
initiator *initiator-node-name*	(Optional) Displays session information for a specific iSLB initiator. The maximum size for the initiator node name is 80.
iscsi *slot-port*	(Optional) Specifies the iSCSI interface.
outgoing	(Optional) Displays outgoing iSLB sessions.
target	(Optional) Displays session information for a specific iSLB target. The maximum size for the target node name is 80.

Command Default

None.

Command Modes

EXEC mode.

Command History

Release	Modification
3.0(1)	This command was introduced.

Usage Guidelines

None.

Examples

The following example shows iSLB session information:

```
switch# show islb session
Initiator iqn.1987-05.com.cisco.01.15cee6e7925087abc82ed96377653c8
  Session #1
      Target iqn.com.domainname.172.22.93.143.08-03.gw.22000020374b5247
      VSAN 1, ISID 000000000000, Status active, no reservation

  Session #2
      Target iqn.com.domainname.172.22.93.143.08-03.gw.220000203738e77d
      VSAN 1, ISID 000000000000, Status active, no reservation
Initiator iqn.1987-05.com.cisco:02.91b0ee2e8aa1.iscsi16-w2k
  Session #1
     Discovery session, ISID 00023d00022f, Status active

  Session #2
      Target iqn.com.domainname.172.22.93.143.08-03.gw.2200002037388bc2
     VSAN 1, ISID 00023d000230, Status active, no reservation
```

Related Commands

Command	Description
show islb cfs-session status	Displays iSLB session information.
show islb initiator	Displays iSLB initiator information.
show islb merge status	Displays iSLB merge status information.
show islb pending	Displays iSLB pending configurations.
show islb pending-diff	Displays iSLB CFS pending configuration differences.
show islb status	Displys iSLB CFS status information.
show islb virtual-target	Displays iSLB virtual target information.
show islb vrrp	Displays iSLB VRRP load-balancing information.

show islb status

To display iSCSI server load balancing (iSLB) Cisco Fabric Services status, use the **show islb status** command.

show islb status

Syntax Description

This command has no arguments or keywords.

Command Default

None.

Command Modes

EXEC mode.

Command History

Release	Modification
3.0(1)	This command was introduced.

Usage Guidelines

None.

Examples

The following example shows iSLB CFS status:

```
switch# show islb status
iSLB Distribute is enabled
iSLB CFS Session does not exist
```

Related Commands

Command	Description
show islb cfs-session status	Displays iSLB session information.
show islb initiator	Displays iSLB initiator information.
show islb merge status	Displays iSLB merge status information.
show islb pending	Displays iSLB pending configurations.
show islb pending-diff	Displays iSLB CFS pending configuration differences.
show islb session	Displays iSLB session information.
show islb virtual-target	Displays iSLB virtual target information.
show islb vrrp	Displays iSLB VRRP load balancing information.

show islb virtual-target

To display information about iSLB virtual targets, use the **show islb virtual-target** command.

show islb virtual-target [**name** | **configured name**]

Syntax Description

name	(Optional) Specifies the iSLB virtual target name. The range is 16 bytes to 223 bytes.
configured	(Optional) Displays information about configured iSLB virtual targets.

Command Default

None.

Command Modes

EXEC mode.

Command History

Release	Modification
3.0(1)	This command was introduced.

Usage Guidelines

None.

Examples

The following example shows an iSLB target:

```
switch# show islb virtual-target newtarget0987654321
target: newtarget0987654321
    Configured node (iSLB)
    No. of initiators permitted: 1
      initiator fromtarget1234567890 is permitted
    All initiator permit is enabled
    Trespass support is  disabled
    Revert to primary support is  disabled
```

The following example shows all configured iSLB virtual targets:

```
switch# show islb virtual-target configured
target: testtarget1234567
    Configured node (iSLB)
    No. of initiators permitted: 1
      initiator trespass is permitted
    All initiator permit is disabled
    Trespass support is  disabled
    Revert to primary support is  disabled
target: testertarget987654321
    Port WWN 10:20:30:40:50:60:70:80
    Configured node (iSLB)
    No. of initiators permitted: 1
      initiator mytargetdevice is permitted
    All initiator permit is disabled
    Trespass support is  disabled
    Revert to primary support is  disabled
target: newtarget0987654321
    Configured node (iSLB)
    No. of initiators permitted: 1
```

```
      initiator fromtarget1234567890 is permitted
    All initiator permit is enabled
    Trespass support is  disabled
    Revert to primary support is  disabled
target: mytargetdevice123
    Configured node (iSLB)
    All initiator permit is disabled
    Trespass support is  enabled
    Revert to primary support is  disabled
```

Related Commands

Command	Description
show islb cfs-session status	Displays iSLB session information.
show islb initiator	Displays iSLB initiator information.
show islb merge status	Displays iSLB merge status information.
show islb pending	Displays iSLB pending configurations.
show islb pending-diff	Displays iSLB CFS pending configuration differences.
show islb session	Displays iSLB session information.
show islb status	Displays iSLB CFS status information.
show islb vrrp	Displays iSLB VRRP load-balancing information.

show islb vrrp

To display iSLB VRRP load balancing information, use the **show islb vrrp** command.

show islb vrrp [**assignment** [**initiator node-name** [**vr group-number**] | **vr group-number**] | **interface** [**switch WWN** [**vr group-number**] | **vr group-number**] | **summary** [**vr group-number**] | **vr group-number**]

Syntax Description

assignment	(Optional) Displays iSLB VRRP initiator to interface assignment.
initiator *node-name*	(Optional) Displays a specific iSLB initiator's interface assignment. The maximum is 80.
vr *group-number*	(Optional) Displays information for a specific VR group. The range is 1 to 255.
interface	(Optional) Displays iSLB VRRP interface information.
switch *WWN*	(Optional) Displays a interface information for a specific switch. The format of WWN is *hh:hh:hh:hh:hh:hh:hh:hh* .
summary	(Optional) Displays iSLB VRRP load-balancing summary information.

Command Default

None.

Command Modes

EXEC mode.

Command History

Release	Modification
3.0(1)	This command was introduced.

Usage Guidelines

None.

Examples

The following example shows iSLB VRRP interface information:

```
switch# show islb vrrp interface vr 41
-- Interfaces For Load Balance --
    Interface GigabitEthernet1/1.441
        Switch wwn: 20:00:00:0d:ec:02:cb:00
        VRRP group id: 41, VRRP IP address: 209.165.200.226
            Interface VRRP state: backup
            Interface load: 3000
            Interface redirection: enabled
            Group redirection: enabled
        Number of physical IP address: 1
            (1) 209.165.200.226
        Port vsan: 1
        Forwarding mode: store-and-forward
        Proxy initiator mode: disabled
        iSCSI authentication: CHAP or None
    Interface GigabitEthernet1/2.441
        Switch wwn: 20:00:00:0d:ec:02:cb:00
```

```
        VRRP group id: 41, VRRP IP address: 209.165.200.226
            Interface VRRP state: backup
            Interface load: 2000
            Interface redirection: enabled
            Group redirection: enabled
        Number of physical IP address: 1
            (1) 10.10.122.114
        Port vsan: 1
        Forwarding mode: store-and-forward
        Proxy initiator mode: disabled
        iSCSI authentication: CHAP or None
    Interface GigabitEthernet2/1.441
        Switch wwn: 20:00:00:0d:ec:0c:6b:c0
        VRRP group id: 41, VRRP IP address: 209.165.200.226
            Interface VRRP state: backup
            Interface load: 2000
            Interface redirection: enabled
            Group redirection: enabled
        Number of physical IP address: 1
            (1) 10.10.122.111
        Port vsan: 1
        Forwarding mode: store-and-forward
        Proxy initiator mode: disabled
        iSCSI authentication: CHAP or None
    Interface GigabitEthernet2/2.441
        Switch wwn: 20:00:00:0d:ec:0c:6b:c0
        VRRP group id: 41, VRRP IP address: 209.165.200.226
            Interface VRRP state: master
            Interface load: 1000
            Interface redirection: enabled
            Group redirection: enabled
        Number of physical IP address: 1
            (1) 10.10.122.112
        Port vsan: 1
        Forwarding mode: store-and-forward
        Proxy initiator mode: disabled
        iSCSI authentication: CHAP or None
    Interface GigabitEthernet2/3.441
        Switch wwn: 20:00:00:0d:ec:0c:6b:c0
        VRRP group id: 41, VRRP IP address: 209.165.200.226
            Interface VRRP state: backup
            Interface load: 2000
            Interface redirection: enabled
            Group redirection: enabled
        Number of physical IP address: 1
            (1) 10.10.122.113
        Port vsan: 1
        Forwarding mode: store-and-forward
        Proxy initiator mode: disabled
        iSCSI authentication: CHAP or None
```

The following example shows iSLB VRRP summary information:

```
switch# show islb vrrp summary
                        -- Groups For Load Balance --
------------------------------------------------------------------------------
              VR Id             VRRP Address Type             Configured Status
------------------------------------------------------------------------------
                 41                          IPv4                       Enabled
                 42                          IPv4                       Enabled
                      -- Interfaces For Load Balance --
------------------------------------------------------------------------------
 VR Id         VRRP IP              Switch WWN                 Ifindex      Load
------------------------------------------------------------------------------
```

```
    41   10.10.122.112 20:00:00:0d:ec:02:cb:00  GigabitEthernet1/1.441      3000
    41   10.10.122.112 20:00:00:0d:ec:02:cb:00  GigabitEthernet1/2.441      2000
    41   10.10.122.112 20:00:00:0d:ec:0c:6b:c0  GigabitEthernet2/1.441      2000
M   41   10.10.122.112 20:00:00:0d:ec:0c:6b:c0  GigabitEthernet2/2.441      1000
    41   10.10.122.112 20:00:00:0d:ec:0c:6b:c0  GigabitEthernet2/3.441      2000
M   42   10.10.142.111 20:00:00:0d:ec:0c:6b:c0  GigabitEthernet2/1.442      2000
    42   10.10.142.111 20:00:00:0d:ec:0c:6b:c0  GigabitEthernet2/2.442      1000
    42   10.10.142.111 20:00:00:0d:ec:0c:6b:c0  GigabitEthernet2/3.442      2000
                  -- Initiator To Interface Assignment --
--------------------------------------------------------------------------------
Initiator  VR Id         VRRP IP              Switch WWN                  Ifindex
--------------------------------------------------------------------------------
iqn.1987-05.com.cisco:01.09ea2e99c97
              41   10.10.122.112 20:00:00:0d:ec:0c:6b:c0  GigabitEthernet2/1.441
iqn.1987-05.com.cisco:01.5ef81885f8d
              41   10.10.122.112 20:00:00:0d:ec:0c:6b:c0  GigabitEthernet2/3.441
iqn.1987-05.com.cisco:01.8fbdb3fdf8
              41   10.10.122.112 20:00:00:0d:ec:02:cb:00  GigabitEthernet1/1.441
iqn.1987-05.com.cisco:01.99eddd9b134
              41   10.10.122.112 20:00:00:0d:ec:02:cb:00  GigabitEthernet1/1.441
iqn.1987-05.com.cisco:01.a1398a8c6bc6
              41   10.10.122.112 20:00:00:0d:ec:0c:6b:c0  GigabitEthernet2/3.441
iqn.1987-05.com.cisco:01.e15c63d09d18
              41   10.10.122.112 20:00:00:0d:ec:02:cb:00  GigabitEthernet1/2.441
iqn.1987-05.com.cisco:01.e9aab57a51e0
              41   10.10.122.112 20:00:00:0d:ec:02:cb:00  GigabitEthernet1/1.441
iqn.1987-05.com.cisco:01.ecc2b77b6086
              41   10.10.122.112 20:00:00:0d:ec:0c:6b:c0  GigabitEthernet2/2.441
iqn.1987-05.com.cisco:01.f047da798a44
              41   10.10.122.112 20:00:00:0d:ec:02:cb:00  GigabitEthernet1/2.441
iqn.1987-05.com.cisco:01.f686f5cd11f
              41   10.10.122.112 20:00:00:0d:ec:0c:6b:c0  GigabitEthernet2/1.441
```

The following example shows iSLB VRRP summary information for vr 41:

```
switch# show islb vrrp summary vr 41
                        -- Groups For Load Balance --
--------------------------------------------------------------------------------
               VR Id             VRRP Address Type             Configured Status
--------------------------------------------------------------------------------
                  41                           IPv4                        Enabled
                       -- Interfaces For Load Balance --
--------------------------------------------------------------------------------
 VR Id         VRRP IP              Switch WWN                  Ifindex      Load
--------------------------------------------------------------------------------
    41   10.10.122.112 20:00:00:0d:ec:02:cb:00  GigabitEthernet1/1.441      3000
    41   10.10.122.112 20:00:00:0d:ec:02:cb:00  GigabitEthernet1/2.441      2000
    41   10.10.122.112 20:00:00:0d:ec:0c:6b:c0  GigabitEthernet2/1.441      2000
M   41   10.10.122.112 20:00:00:0d:ec:0c:6b:c0  GigabitEthernet2/2.441      1000
    41   10.10.122.112 20:00:00:0d:ec:0c:6b:c0  GigabitEthernet2/3.441      2000
                  -- Initiator To Interface Assignment --
--------------------------------------------------------------------------------
Initiator  VR Id         VRRP IP              Switch WWN                  Ifindex
--------------------------------------------------------------------------------
iqn.1987-05.com.cisco:01.09ea2e99c97
              41   10.10.122.112 20:00:00:0d:ec:0c:6b:c0  GigabitEthernet2/1.441
iqn.1987-05.com.cisco:01.5ef81885f8d
              41   10.10.122.112 20:00:00:0d:ec:0c:6b:c0  GigabitEthernet2/3.441
iqn.1987-05.com.cisco:01.8fbdb3fdf8
              41   10.10.122.112 20:00:00:0d:ec:02:cb:00  GigabitEthernet1/1.441
iqn.1987-05.com.cisco:01.99eddd9b134
              41   10.10.122.112 20:00:00:0d:ec:02:cb:00  GigabitEthernet1/1.441
iqn.1987-05.com.cisco:01.a1398a8c6bc6
              41   10.10.122.112 20:00:00:0d:ec:0c:6b:c0  GigabitEthernet2/3.441
```

```
iqn.1987-05.com.cisco:01.e15c63d09d18
             41   10.10.122.112 20:00:00:0d:ec:02:cb:00  GigabitEthernet1/2.441
iqn.1987-05.com.cisco:01.e9aab57a51e0
             41   10.10.122.112 20:00:00:0d:ec:02:cb:00  GigabitEthernet1/1.441
iqn.1987-05.com.cisco:01.ecc2b77b6086
             41   10.10.122.112 20:00:00:0d:ec:0c:6b:c0  GigabitEthernet2/2.441
iqn.1987-05.com.cisco:01.f047da798a44
             41   10.10.122.112 20:00:00:0d:ec:02:cb:00  GigabitEthernet1/2.441
iqn.1987-05.com.cisco:01.f686f5cd11f
             41   10.10.122.112 20:00:00:0d:ec:0c:6b:c0  GigabitEthernet2/1.441
```

The following example shows complete iSLB VRRP load balancing information.

```
switch# show islb vrrp

-- Groups For Load Balance --
    VRRP group id 41
        Address type: IPv4
        Configured status: Enabled
    VRRP group id 42
        Address type: IPv4
        Configured status: Enabled
-- Interfaces For Load Balance --
    Interface GigabitEthernet1/1.441
        Switch wwn: 20:00:00:0d:ec:02:cb:00
        VRRP group id: 41, VRRP IP address: 209.165.200.226
            Interface VRRP state: backup
            Interface load: 3000
            Interface redirection: enabled
            Group redirection: enabled
        Number of physical IP address: 1
            (1) 10.10.122.115
        Port vsan: 1
        Forwarding mode: store-and-forward
        Proxy initiator mode: disabled
        iSCSI authentication: CHAP or None
    Interface GigabitEthernet1/2.441
        Switch wwn: 20:00:00:0d:ec:02:cb:00
        VRRP group id: 41, VRRP IP address: 209.165.200.226
            Interface VRRP state: backup
            Interface load: 2000
            Interface redirection: enabled
            Group redirection: enabled
        Number of physical IP address: 1
            (1) 10.10.122.114
        Port vsan: 1
        Forwarding mode: store-and-forward
        Proxy initiator mode: disabled
        iSCSI authentication: CHAP or None
    Interface GigabitEthernet2/1.441
        Switch wwn: 20:00:00:0d:ec:0c:6b:c0
        VRRP group id: 41, VRRP IP address: 209.165.200.226
            Interface VRRP state: backup
            Interface load: 2000
            Interface redirection: enabled
            Group redirection: enabled
        Number of physical IP address: 1
            (1) 10.10.122.111
        Port vsan: 1
        Forwarding mode: store-and-forward
        Proxy initiator mode: disabled
        iSCSI authentication: CHAP or None
    Interface GigabitEthernet2/2.441
        Switch wwn: 20:00:00:0d:ec:0c:6b:c0
```

```
        VRRP group id: 41, VRRP IP address: 209.165.200.226
            Interface VRRP state: master
            Interface load: 1000
            Interface redirection: enabled
            Group redirection: enabled
        Number of physical IP address: 1
            (1) 10.10.122.112
        Port vsan: 1
        Forwarding mode: store-and-forward
        Proxy initiator mode: disabled
        iSCSI authentication: CHAP or None
    Interface GigabitEthernet2/3.441
        Switch wwn: 20:00:00:0d:ec:0c:6b:c0
        VRRP group id: 41, VRRP IP address: 209.165.200.226
            Interface VRRP state: backup
            Interface load: 2000
            Interface redirection: enabled
            Group redirection: enabled
        Number of physical IP address: 1
            (1) 10.10.122.113
        Port vsan: 1
        Forwarding mode: store-and-forward
        Proxy initiator mode: disabled
        iSCSI authentication: CHAP or None
    Interface GigabitEthernet2/1.442
        Switch wwn: 20:00:00:0d:ec:0c:6b:c0
        VRRP group id: 42, VRRP IP address: 209.165.200.226
            Interface VRRP state: master
            Interface load: 2000
            Interface redirection: enabled
            Group redirection: enabled
        Number of physical IP address: 1
            (1) 10.10.142.111
        Port vsan: 1
        Forwarding mode: store-and-forward
        Proxy initiator mode: disabled
        iSCSI authentication: CHAP or None
    Interface GigabitEthernet2/2.442
        Switch wwn: 20:00:00:0d:ec:0c:6b:c0
        VRRP group id: 42, VRRP IP address: 209.165.200.226
            Interface VRRP state: backup
            Interface load: 1000
            Interface redirection: enabled
            Group redirection: enabled
        Number of physical IP address: 1
            (1) 10.10.142.112
        Port vsan: 1
        Forwarding mode: store-and-forward
        Proxy initiator mode: disabled
        iSCSI authentication: CHAP or None
    Interface GigabitEthernet2/3.442
        Switch wwn: 20:00:00:0d:ec:0c:6b:c0
        VRRP group id: 42, VRRP IP address: 209.165.200.226
            Interface VRRP state: backup
            Interface load: 2000
            Interface redirection: enabled
            Group redirection: enabled
        Number of physical IP address: 1
            (1) 10.10.142.113
        Port vsan: 1
        Forwarding mode: store-and-forward
        Proxy initiator mode: disabled
        iSCSI authentication: CHAP or None
-- Initiator To Interface Assignment --
```

```
Initiator iqn.1987-05.com.cisco:01.09ea2e99c97
    VRRP group id: 41, VRRP IP address: 209.165.200.226
    Assigned to switch wwn: 20:00:00:0d:ec:0c:6b:c0
        ifindex: GigabitEthernet2/1.441
    Waiting for the redirected session request: False
    Initiator weighted load: 1000
Initiator iqn.1987-05.com.cisco:01.5ef81885f8d
    VRRP group id: 41, VRRP IP address: 209.165.200.226
    Assigned to switch wwn: 20:00:00:0d:ec:0c:6b:c0
        ifindex: GigabitEthernet2/3.441
    Waiting for the redirected session request: False
    Initiator weighted load: 1000
Initiator iqn.1987-05.com.cisco:01.8fbdb3fdf8
    VRRP group id: 41, VRRP IP address: 209.165.200.226
    Assigned to switch wwn: 20:00:00:0d:ec:02:cb:00
        ifindex: GigabitEthernet1/1.441
    Waiting for the redirected session request: False
    Initiator weighted load: 1000
Initiator iqn.1987-05.com.cisco:01.99eddd9b134
    VRRP group id: 41, VRRP IP address: 209.165.200.226
    Assigned to switch wwn: 20:00:00:0d:ec:02:cb:00
        ifindex: GigabitEthernet1/1.441
    Waiting for the redirected session request: False
    Initiator weighted load: 1000
Initiator iqn.1987-05.com.cisco:01.a1398a8c6bc6
    VRRP group id: 41, VRRP IP address: 209.165.200.226
    Assigned to switch wwn: 20:00:00:0d:ec:0c:6b:c0
        ifindex: GigabitEthernet2/3.441
    Waiting for the redirected session request: False
    Initiator weighted load: 1000
Initiator iqn.1987-05.com.cisco:01.e15c63d09d18
    VRRP group id: 41, VRRP IP address: 209.165.200.226
    Assigned to switch wwn: 20:00:00:0d:ec:02:cb:00
        ifindex: GigabitEthernet1/2.441
    Waiting for the redirected session request: False
    Initiator weighted load: 1000
Initiator iqn.1987-05.com.cisco:01.e9aab57a51e0
    VRRP group id: 41, VRRP IP address: 209.165.200.226
    Assigned to switch wwn: 20:00:00:0d:ec:02:cb:00
        ifindex: GigabitEthernet1/1.441
    Waiting for the redirected session request: False
    Initiator weighted load: 1000
Initiator iqn.1987-05.com.cisco:01.ecc2b77b6086
    VRRP group id: 41, VRRP IP address: 209.165.200.226
    Assigned to switch wwn: 20:00:00:0d:ec:0c:6b:c0
        ifindex: GigabitEthernet2/2.441
    Waiting for the redirected session request: False
    Initiator weighted load: 1000
Initiator iqn.1987-05.com.cisco:01.f047da798a44
    VRRP group id: 41, VRRP IP address: 209.165.200.226
    Assigned to switch wwn: 20:00:00:0d:ec:02:cb:00
        ifindex: GigabitEthernet1/2.441
    Waiting for the redirected session request: False
    Initiator weighted load: 1000
Initiator iqn.1987-05.com.cisco:01.f686f5cd11f
    VRRP group id: 41, VRRP IP address: 209.165.200.226
    Assigned to switch wwn: 20:00:00:0d:ec:0c:6b:c0
        ifindex: GigabitEthernet2/1.441
    Waiting for the redirected session request: False
    Initiator weighted load: 1000
```

Related Commands

Command	Description
show islb cfs-session status	Displays iSLB session information.
show islb initiator	Displays iSLB initiator information.
show islb merge status	Displays iSLB merge status information.
show islb pending	Displays iSLB pending configurations.
show islb pending-diff	Displays iSLB CFS pending configuration differences.
show islb session	Displays iSLB session information.
show islb status	Displays iSLB CFS status information.
show islb virtual-target	Displays iSLB virtual target information.

show isns

To display Internet Storage Name Service (iSNS) information, use the **show isns** command.

show isns {**config** | **database** [**full** | **virtual-targets** [**local** | **switch** *switch-wwn*]] | **entity** [**all** [**detail**] | **id** *entity-id*] | **iscsi global config** [**all** | **switch** *switch-wwn*] | **node** [**all** [**detail**] | **configured** | **detail** | **name** *node-name* | **virtual** [**switch** *switch-wwn* [**detail**]]] | **portal** [**all** [**detail**] | **detail** | **ipaddress** *ip-address* **port** *tcp-port* | **virtual** [**switch** *switch-wwn* [**detail**]]] | **profile** [*profile-name* [**counters**] | **counters**] | **query** *profile-name* {**gigabitethernet** *slot* / *port* | **port-channel** *port*} | **stats**}

Syntax Description

config	Displays iSNS server configuration.
database	Displays the iSNS database contents.
full	(Optional) Specifies all virtual targets or registered nodes in database.
virtual-targets	(Optional) Specifies just virtual targets.
local	(Optional) Specifies only local virtual targets.
switch *switch-wwn*	(Optional) Specifies a specific switch WWN. The format is *hh*:*hh*:*hh*:*hh*:*hh*:*hh*:*hh*:*hh*, where *h* is a hexadecimal number.
entity	Displays entity attributes.
all	(Optional) Specifies all information.
detail	(Optional) Specifies detailed information.
id *entity-id*	(Optional) Specifies an entity ID. Maximum length is 255.
iscsi global config	Displays iSCSI global configuration for import of Fibre Channel targets.
node	Displays node attributes.
configured	Specifies configured nodes with detailed information.
name *node-name*	(Optional) Specifies the node name. Maximum length is 255.
virtual	Specifies virtual targets.
portal	Displays portal attributes.
ipaddress *ip-address*	Specifies the IP address for the portal.
port *tcp-port*	(Optional) Specifies the TCP port for the portal. The range is 1 to 66535.
profile	(Optional) Displays iSNS profile information.
profile-name	Specifies a profile name. Maximum length is 64 characters.
counters	(Optional) Specifies statistics for the interfaces.
query profile-name	Specifies a query to send to the iSNS server.

gigabitethernet *slot*/*port*	Specifies a Gigabit Ethernet interface.
port-channel *port*	Specifies a PortChannel interface. The range is 1 to 128.
stats	Displays iSNS server statistics.

Command Default

None.

Command Modes

EXEC mode.

Command History

Release	Modification
1.3(1)	This command was introduced.
2.0(x)	Added **config**, **database**, **entity**, **iscsi**, **node**, **portal**, and **stats** options.

Usage Guidelines

To access all but the **profile** and **query** options for this command, you must perform the **isns-server enable** command.

Examples

The following example shows how to display the iSNS configuration:

```
switch# show isns config
Server Name: ips-hac1(Cisco Systems) Up since: Mon Apr 27 06:59:49 1981
    Index: 1    Version: 1     TCP Port: 3205
    fabric distribute (remote sync): ON
    ESI
       Non Response Threshold: 5 Interval(seconds): 60
   Database contents
       Number of Entities: 1
       Number of Portals: 0
       Number of ISCSI devices: 2
       Number of Portal Groups: 0
```

The following example displays a specified iSNS profile:

```
switch# show isns profile ABC
iSNS profile name ABC
tagged interface GigabitEthernet2/3
iSNS Server 10.10.100.204
```

The following example displays all iSNS profiles.

```
switch# show isns profile
iSNS profile name ABC
tagged interface GigabitEthernet2/3
iSNS Server 10.10.100.204
iSNS profile name NBV
tagged interface GigabitEthernet2/5
iSNS Server 10.10.100.201
```

The following example displays iSNS PDU statistics for a specified iSNS profile:

```
switch# show isns profile ABC counters
iSNS profile name ABC
```

```
tagged interface GigabitEthernet2/3
iSNS statistics
  Input 54 pdus (registration/deregistration pdus only)
    Reg pdus 37,  Dereg pdus 17
  Output 54 pdus (registration/deregistration pdus only)
    Reg pdus  37,  Dereg pdus 17
iSNS Server  10.10.100.204
```

The following example displays iSNS PDU statistics for all iSNS profiles:

```
switch# show isns profile counters
iSNS profile name ABC
tagged interface GigabitEthernet2/3
iSNS statistics
  Input 54 pdus (registration/deregistration pdus only)
    Reg pdus 37,  Dereg pdus 17
  Output 54 pdus (registration/deregistration pdus only)
    Reg pdus  37,  Dereg pdus 17
iSNS Server  10.10.100.204
iSNS profile name NBV
tagged interface GigabitEthernet2/5
iSNS statistics
  Input 54 pdus (registration/deregistration pdus only)
    Reg pdus 37,  Dereg pdus 17
  Output 54 pdus (registration/deregistration pdus only)
    Reg pdus  37,  Dereg pdus 17
iSNS Server  10.10.100.201
```

Related Commands

Command	Description
isns-server enable	Enables the iSNS server.

show ivr

To display various Inter-VSAN Routing (IVR) configurations, use the **show ivr** command.

show ivr [**pending** | **pending-diff** | **session status** | **virtual-domains** [**vsan** *vsan-id*] | **virtual-fcdomain-add-status** | **vsan-topology** [**active** | **configured**] | **zone** [**active** | **name** *name* [**active**]] | **zoneset** [**active** | **brief** | **fabric** | **name** *name* | **status**]]

Syntax Description

pending	(Optional) Displays the IVR pending configuration.
pending-diff	(Optional) Displays the IVR pending configuration differences with the active configuration.
session	(Optional) Displays the IVR session status.
status	(Optional) Displays the status of the configured IVR session.
virtual-domains	(Optional) Displays IVR virtual domains for all local VSANs.
vsan *vsan-id*	(Optional) Specifies a VSAN ID. The range is 1 to 4093.
virtual-fcdomain-add-status	(Optional) Displays IVR virtual fcdomain status.
vsan-topology	(Optional) Displays the IVR VSAN topology
active	(Optional) Displays the active IVR facilities.
configured	(Optional) Displays the configured IVR facilities
zone	(Optional) Displays the Inter-VSA Zone (IVZ) configurations.
name *name*	(Optional) Specifies the name as configured in the database.
zoneset	(Optional) Displays the Inter-VSA Zone Set (IVZS) configurations.
brief	(Optional) Displays configured information in brief format.
fabric	(Optional) Displays the status of active zone set in the fabric.

Command Default

None.

Command Modes

EXEC mode.

Command History

Release	Modification
1.3(1)	This command was introduced.
2.0(1b)	Added the pending and pending-diff keywords.

Usage Guidelines

To access this command, you must perform the **ivr enable** command.

Examples

The following example displays the status of the IVR virtual domain configuration:

```
switch# show ivr virtual-fcdomain-add-status
IVR virtual domains are added to fcdomain list in VSANS: 1
(As well as to VSANs in interoperability mode 2 or 3)
```

The following example displays IVR-enabled switches for a specified VSAN:

```
switch# show ivr enabled-switches vsan 2
AFID    VSAN    DOMAIN      CAPABILITY  SWITCH WWN
-------------------------------------------------------------------
   1      2     0x62( 98)    00000001    20:00:00:05:30:01:1b:c2 *
Total:   1 ivr-enabled VSAN-Domain pair>
```

The following example displays the status of the IVR session:

```
switch# show ivr session status
Last Action                : None
Last Action Result         : None
Last Action Failure Reason : None
```

The following example displays the configured IVR VSAN topology:

```
switch# show ivr vsan-topology
AFID  SWITCH WWN                 Active   Cfg. VSANS
-------------------------------------------------------------
   1  20:00:00:05:30:00:3c:5e     yes     yes  3,2000
   1  20:00:00:05:30:00:58:de     yes     yes  2,2000
   1  20:00:00:05:30:01:1b:c2 *   yes     yes  1-2
   1  20:02:00:44:22:00:4a:05     yes     yes  1-2,6
   1  20:02:00:44:22:00:4a:07     yes     yes  2-5
Total:   5 entries in active and configured IVR VSAN-Topology
Current Status: Inter-VSAN topology is ACTIVE
Last activation time: Sat Mar 22 21:46:15 1980
```

The following example displays the active IVR VSAN topology:

```
switch# show ivr vsan-topology active
AFID  SWITCH WWN                 Active   Cfg. VSANS
-------------------------------------------------------------
   1  20:00:00:05:30:00:3c:5e     yes     yes  3,2000
   1  20:00:00:05:30:00:58:de     yes     yes  2,2000
   1  20:00:00:05:30:01:1b:c2 *   yes     yes  1-2
   1  20:02:00:44:22:00:4a:05     yes     yes  1-2,6
   1  20:02:00:44:22:00:4a:07     yes     yes  2-5
Total:   5 entries in active IVR VSAN-Topology
Current Status: Inter-VSAN topology is ACTIVE
Last activation time: Sat Mar 22 21:46:15
```

The following example displays the configured IVR VSAN topology:

```
switch# show ivr vsan-topology configured
AFID  SWITCH WWN                 Active   Cfg. VSANS
-------------------------------------------------------------
   1  20:00:00:05:30:00:3c:5e     yes     yes  3,2000
   1  20:00:00:05:30:00:58:de     yes     yes  2,2000
   1  20:00:00:05:30:01:1b:c2 *   yes     yes  1-2
   1  20:02:00:44:22:00:4a:05     yes     yes  1-2,6
   1  20:02:00:44:22:00:4a:07     yes     yes  2-5
Total:   5 entries in configured IVR VSAN-Topology
```

The following example displays the combined user-defined and the automatically discovered IVR VSAN topology database:

```
switch(config)# show ivr vsan-topology
AFID  SWITCH WWN                Active   Cfg. VSANS
--------------------------------------------------------------
   1  20:00:00:0d:ec:04:99:00     yes      no  1-4
   1  20:00:00:0d:ec:0e:9c:80 *   yes      no  2,6-7,9
   1  20:00:00:0d:ec:0e:b0:40     yes      no  1-3,5,8
   1  20:00:00:0d:ec:04:99:00      no     yes  1-4
   1  20:00:00:0d:ec:0e:9c:80 *    no     yes  2,6-7,9
   1  20:00:00:0d:ec:0e:b0:40      no     yes  1-3,5,8
Total:   6 entries in active and configured IVR VSAN-Topology
```

Table 7: show ivr vsan-topology Field Descriptions, on page 380 describes the significant fields shown in the **show ivr vsan-topology** display.

Table 7: show ivr vsan-topology Field Descriptions

Field	Description
AFID	Autonomous fabric ID (AFID)
Switch WWN	Switch world wide number
Active	Automatically discovered
Cfg.	Manually configured
VSANS	VSANs configured

The following example displays the IVZ configuration:

```
switch# show ivr zone
zone name Ivz_vsan2-3
    pwwn 21:00:00:e0:8b:02:ca:4a vsan 3
    pwwn 21:00:00:20:37:c8:5c:6b vsan 2
zone name ivr_qa_z_all
    pwwn 21:00:00:e0:8b:06:d9:1d vsan 1
    pwwn 21:01:00:e0:8b:2e:80:93 vsan 4
    pwwn 10:00:00:00:c9:2d:5a:dd vsan 1
    pwwn 10:00:00:00:c9:2d:5a:de vsan 2
    pwwn 21:00:00:20:37:5b:ce:af vsan 6
    pwwn 21:00:00:20:37:39:6b:dd vsan 6
    pwwn 22:00:00:20:37:39:6b:dd vsan 3
    pwwn 22:00:00:20:37:5b:ce:af vsan 3
    pwwn 50:06:04:82:bc:01:c3:84 vsan 5
```

The following example displays the active IVZS configuration:

```
switch# show ivr zoneset active
zoneset name IVR_ZoneSet1
  zone name Ivz_vsan2-3
    pwwn 21:00:00:e0:8b:02:ca:4a vsan 3
    pwwn 21:00:00:20:37:c8:5c:6b vsan 2
```

The following example displays information for a specified IVZ:

```
switch# show ivr zone name Ivz_vsan2-3
```

```
zone name Ivz_vsan2-3
    pwwn 21:00:00:e0:8b:02:ca:4a vsan 3
    pwwn 21:00:00:20:37:c8:5c:6b vsan 2
```

The following example displays the specified zone in the active IVZS:

```
switch# show ivr zone name Ivz_vsan2-3 active
zone name Ivz_vsan2-3
    pwwn 21:00:00:e0:8b:02:ca:4a vsan 3
    pwwn 21:00:00:20:37:c8:5c:6b vsan 2
```

The following example displays the IVZS configuration:

```
switch# show ivr zoneset
zoneset name ivr_qa_zs_all
  zone name ivr_qa_z_all
    pwwn 21:00:00:e0:8b:06:d9:1d vsan 1
    pwwn 21:01:00:e0:8b:2e:80:93 vsan 4
    pwwn 10:00:00:00:c9:2d:5a:dd vsan 1
    pwwn 10:00:00:00:c9:2d:5a:de vsan 2
    pwwn 21:00:00:20:37:5b:ce:af vsan 6
    pwwn 21:00:00:20:37:39:6b:dd vsan 6
    pwwn 22:00:00:20:37:39:6b:dd vsan 3
    pwwn 22:00:00:20:37:5b:ce:af vsan 3
    pwwn 50:06:04:82:bc:01:c3:84 vsan 5
zoneset name IVR_ZoneSet1
  zone name Ivz_vsan2-3
    pwwn 21:00:00:e0:8b:02:ca:4a vsan 3
    pwwn 21:00:00:20:37:c8:5c:6b vsan 2
```

The following example displays brief information for an IVR VSAN topology:

```
switch# show ivr vsan-topology configured
AFID  SWITCH WWN                 Active   Cfg. VSANS
--------------------------------------------------------------
   1  20:00:00:05:30:00:3c:5e     yes     yes  3,2000
   1  20:00:00:05:30:00:58:de     yes     yes  2,2000
   1  20:00:00:05:30:01:1b:c2 *   yes     yes  1-2
   1  20:02:00:44:22:00:4a:05     yes     yes  1-2,6
   1  20:02:00:44:22:00:4a:07     yes     yes  2-5
Total:   5 entries in configured IVR VSAN-Topology
```

The following example displays brief information for the active IVZS:

```
switch# show ivr zoneset brief Active
zoneset name IVR_ZoneSet1
  zone name Ivz_vsan2-3
```

The following example displays the status information for the IVZ:

```
switch# show ivr zoneset brief status
Zoneset Status

_______________
    name               : IVR_ZoneSet1
    state              : activation success
    last activate time : Sat Mar 22 21:38:46 1980
    force option       : off
status per vsan:

___________________
     vsan     status

     ____     ______
     2        active
```

The following example displays the specified zone set:

```
switch# show ivr zoneset name IVR_ZoneSet1
zoneset name IVR_ZoneSet1
  zone name Ivz_vsan2-3
    pwwn 21:00:00:e0:8b:02:ca:4a vsan 3
    pwwn 21:00:00:20:37:c8:5c:6b vsan 2
```

Related Commands

Command	Description
ivr distribute	Enables IVR CFS distribution.
ivr enable	Enables IVR.

show ivr aam

To display IVR AAM status, use the **show ivr aam** command.

show ivr aam

Syntax Description

This command has no arguments or keywords.

Command Default

None.

Command Modes

EXEC mode.

Command History

Release	Modification
NX-OS 5.0(1a)	This command was introduced.

Usage Guidelines

None.

Examples

The following example shows how to display IVR AAM status:

```
switch(config)# show ivr aam
AAM mode status
--------------------------
AAM is disabled
switch(config)#
```

Related Commands

Command	Description
show fc-redirect-active configs	Displays all active configurations on a switch.

show ivr aam pre-deregister-check

To display IVR pre de-register check status, use the show ivr amm pre-deregister-check command.

show ivr aam pre-deregister-check

Syntax Description

This command has no arguments or keywords.

Command Default

None.

Command Modes

EXEC mode.

Command History

Release	Modification
NX-OS 4.2(1)	This command was introduced.

Usage Guidelines

None.

Examples

The following example shows how to display IVR de-register with check entries:

```
switch(config)# show ivr aam pre-deregister-check
AAM pre-deregister check status
--------------------------
FAILURE
There are merged entries or AAM has not been enabled with the following switches:
switch swwn 20:00:00:05:30:00:15:de
User has two options:
1. User can go ahead to issue ivr commit, but the above switches in the fabric may fail to
 deregister.
2. User may also run "ivr abort", then resolve above switches and re-issue the ivr aam
deregister.
Warning: IVR AAM pre-deregister-check status may not be up-to-date. Please issue the command
 "ivr aam pre-deregi
ster-check" to get updated status.
switch(config)#
```

The following example shows how to display IVR deregister without check status entries:

```
switch(config)# ivr aam pre-deregister-check
switch(config)# show ivr aam pre-deregister-check
AAM pre-deregister check status
--------------------------
SUCCESS
Warning: IVR AAM pre-deregister-check status may not be up-to-date. Please issue the command
 "ivr aam pre-deregister
-check" to get updated status.
switch(config)#
```

Related Commands

Command	Description
ivr enable	Enables the inter-VSAN Routing (IVR) feature.

show ivr diagnostics

To run a diagnostic analysis of the state of the InterVSAN Routing (IVR) feature, use the **show ivr diagnostics** command.

show ivr diagnostics

Command Default

None

Command Modes

Privileged EXEC (#)

Command History

Release	Modification
9.2(2)	Check progress, flags, and VSAN information was added.
1.1(1)	This command was introduced.

Usage Guidelines

This command checks the state of virtual domains and devices in IVR. It displays any errors detected for each.

Examples

The following example displays how to execute IVR diagnostics:

```
switch# show ivr diagnostics
Performing IVR Diagnostics...
Checking Zoneset...
Checking Vsan Topology...
Checking PV...
Device 50:06:01:61:49:e4:5c:b0 - Unexpected PV global flags: ARVS complete=0 FICON_CHECK
inprogress=1 all=0x00e
Device 50:06:01:61:49:e4:5c:b0 Vsan: 7 - Unexpected per-VSAN PV flags: RW_VSAN sync=0 NS_REG
 done=0 REWR done=0 RSCN_OFFLINE pending=1 DEVICE followup=1 all=0x052
Device 50:06:01:61:49:e4:5c:b1 - Unexpected PV global flags: ARVS complete=0 FICON_CHECK
inprogress=1 all=0x00e
Device 50:06:01:61:49:e4:5c:b1 Vsan: 7 - Unexpected per-VSAN PV flags: RW_VSAN sync=0 NS_REG
 done=0 REWR done=0 RSCN_OFFLINE pending=1 DEVICE followup=1 all=0x052
Performing Mock Refresh...
Checking PVM...
AFID:1 Vsan:7 Virtual domain:201 - Unexpected global flags: ROUTE added=0 all=0x000
AFID:1 Vsan:7 Virtual domain:201 - Unexpected Adv Switch flags: DBASE synced=0 DOM_NS
synced=0 all=0x002
AFID:1 Vsan:7 Virtual domain:201 Pwwn: 50:06:01:61:49:e4:5c:b0 - Unexpected flags: INITIAL
 sync=0 RSCN_OFFLINE pending=1 all=0x006
AFID:1 Vsan:7 Virtual domain:201 Pwwn: 50:06:01:61:49:e4:5c:b1 - Unexpected flags: INITIAL
 sync=0 RSCN_OFFLINE pending=1 all=0x006
Checking DEP...
Checking VDRI...
Checking FCNS database consistency results...
Done
```

Related Commands

Command	Description
feature ivr	Enables the IVR feature.

show ivr fcdomain database

To display the IVR fcdomain database that contains the persistent FC ID mapping, use the **show ivr fcdomain database** command.

show ivr fcdomain database [**autonomous-fabric-num** *afid-num* **vsan** *vsan-id*]

Syntax Description

autonomous-fabric-num *afid-num*	(Optional) Specifies the AFID. The range is 1 to 64.
vsan *vsan-id*	(Optional) Specifies the VSAN ID. The range is 1 to 4093.

Command Default

None.

Command Modes

EXEC mode.

Command History

Release	Modification
2.1(2)	This command was introduced.

Usage Guidelines

None.

Examples

The following example displays all IVR fcdomain database entries:

```
switch# show ivr fcdomain database
-------------------------------------------------
  AFID  Vsan  Native-AFID  Native-Vsan  Virtual-domain
-------------------------------------------------
    1     2        10          11         0xc(12)
   21    22        20          11         0xc(12)
Number of Virtual-domain entries: 2
-------------------------------------------------
  AFID  Vsan          Pwwn           Virtual-fcid
-------------------------------------------------
   21    22  11:22:33:44:55:66:77:88  0x114466
   21    22  21:22:33:44:55:66:77:88  0x0c4466
   21    22  21:22:33:44:55:66:78:88  0x0c4466
Number of Virtual-fcid entries: 3
```

The following example displays the IVR fcdomain database entries for a specific AFID and VSAN:

```
switch# show ivr fcdomain database autonomous-fabric-num 21 vsan 22
-------------------------------------------------
  AFID  Vsan  Native-AFID  Native-Vsan  Virtual-domain
-------------------------------------------------
   21    22        20          11         0xc(12)
Number of Virtual-domain entries: 1
-------------------------------------------------
  AFID  Vsan          Pwwn           Virtual-fcid
-------------------------------------------------
   21    22  11:22:33:44:55:66:77:88  0x114466
   21    22  21:22:33:44:55:66:77:88  0x0c4466
```

```
   21    22  21:22:33:44:55:66:78:88  0x0c4466
Number of Virtual-fcid entries: 3
```

Related Commands

Command	Description
ivr fcdomain database autonomous-fabric-num	Creates IVR persistent FC IDs.

show ivr service-group

To display an inter-VSAN routing (IVR) service groups, use the **show ivr service-group** command.

show ivr service-group [**active** | **configured**]

Syntax Description

active	(Optional) Displays active IVR service groups.
configured	(Optional) Displays configured IVR service groups.

Command Default

None.

Command Modes

EXEC mode.

Command History

Release	Modification
3.0(1)	This command was introduced.

Usage Guidelines

You can configure a maximum of 16 IVR service groups.

Examples

The following example displays IIVR service groups:

```
switch# show ivr service-group
IVR CONFIGURED Service Group
====================================
SG-ID SG-NAME AFID VSANS
--------------------------------------------------------------------------------
1 sg-100 1 200-201,250,270
2 sg-200 1 100-101,150,170
Total: 2 entries in configured service group table
IVR ACTIVE Service Group
====================================
SG-ID SG-NAME AFID VSANS
--------------------------------------------------------------------------------
1 sg-100 1 200-201,250,270
2 sg-200 1 100-101,150,170
Total: 2 entries in active service group table
```

Related Commands

Command	Description
clear ivr service-group database	Clears an IVR service group database.
ivr service-group name	Configures an IVR service group.

show ivr virtual-fcdomain-add-status2

To display the Request Domain ID (RDI) mode in a specific AFID and VSAN for all IVR-enabled switches, use the show ivr virtual-fcdomain-add-status2 command.

show ivr virtual-fcdomain-add-status2

Syntax Description

This command has no arguments or keywords.

Command Default

None.

Command Modes

Exec mode

Command History

Release	Modification
3.3(1a)	This command was introduced.

Usage Guidelines

None.

Examples

The following example displays the RDI mode in the local switch:

```
switch# show ivr virtual-fcdomain-add-status2
IVR virtual domains are added to fcdomain list in VSANS: 2 for afid 1
```

Related Commands

Command	Description
ivr virtual-fcdomain-add2	Configures the RDI mode in a specific AFID and VSAN for all IVR-enabled switches.

show ivr virtual-switch-wwn

To display an inter-VSAN routing (IVR) virtual switch WWN, use the **show ivr virtual-switch-wwn** command.

show ivr virtual-switch-wwn native-switch-wwn switch-wwn native-vsan vsan-id

Syntax Description

native-switch-wwn *switch-wwn*	Specifies the sWWN of the native switch. The format is in dotted hex.
native-vsan *vsan-id*	Specifies the ID of the native VSAN. The range is 1 to 4093.

Command Default

None.

Command Modes

EXEC mode.

Command History

Release	Modification
3.0(1)	This command was introduced.

Usage Guidelines

The sWWN of the virtual switch must be present in the fabric binding database of all the VSANs where the virtual switch is in use. If the sWWN is not in the database, you must add it before attempting to implement FICON over IVR.

Examples

The following example displays an IVR virtual sWNN:

```
switch# show ivr virtual-switch-wwn native-switch-wwn
20:00:00:0d:ec:00:8c:c0 native-vsan 1
virtual switch wwn : 20:01:00:0d:ec:00:8c:c1
```

Related Commands

Command	Description
show ivr	Displays IVR information.

show kernel core

To display kernel core configuration information, use the **show kernel core** command.

show kernel core {**limit** | **module** *slot* | **target**}

Syntax Description

limit	Displays the configured line card limit.
module *slot*	Displays the kernel core configuration for a module in the specified slot.
target	Displays the configured target IP address.

Command Default

None.

Command Modes

EXEC mode.

Command History

Release	Modification
1.1(1)	This command was introduced.

Usage Guidelines

None.

Examples

The following examples display kernel core settings:

```
switch# show kernel core limit
2
switch# show kernel core target
10.50.5.5
switch# show kernel core module 5
module 5 core is enabled
         level is header
         dst_ip is 10.50.5.5
         src_port is 6671
         dst_port is 6666
         dump_dev_name is eth1
         dst_mac_addr is 00:00:0C:07:AC:01
```

show ldap-search-map

To display LDAP configuration information, use the show ldap-search-map command.

show ldap-search-map

Syntax Description

This command has no argument or keywords.

Command Default

None.

Command Modes

EXEC mode.

Command History

Release	Modification
NX-OS 5.0(1a)	This command was introduced.

Usage Guidelines

None.

Examples

```
The following example shows how to display LDAP configuration information:
switch# show ldap-search-map
total number of search maps : 0
switch#
```

Related Commands

Command	Description
ldap-server host	Displays LDAP server Ip address.

show ldap-server

To display the configured parameters for all the LDAP servers, use the show ldap-server command.

show ldap-server

Syntax Description

This command has no argument or keywords.

Command Default

None.

Command Modes

EXEC mode.

Command History

Release	Modification
NX-OS 5.0(1a)	This command was introduced.

Usage Guidelines

None.

Examples

```
The following example shows how to display the configured parameters for all the LDAP
servers:
switch# show ldap-server
timeout : 3
        port : 65534
    deadtime : 5
total number of servers : 2
following LDAP servers are configured:
    a:
                idle time:0
                test user:test
                test password:********
        timeout: 3    port: 1    rootDN:
        enable-ssl: true
    ipaddress:
                idle time:0
                test user:test
                test password:********
        timeout: 3    port: 65534    rootDN:
        enable-ssl: false
switch#
```

Related Commands

Command	Description
ldap-server host	Displays LDAP server Ip address.

show ldap-server groups

To display the configured parameter for all the LDAP server groups, use the show ldap-server groups command.

show ldap-server groups

Syntax Description

This command has no argument or keywords.

Command Default

None.

Command Modes

EXEC mode.

Command History

Release	Modification
NX-OS 5.0(1a)	This command was introduced.

Usage Guidelines

None.

Examples

```
The following example shows how to display the configured parameters for all the LDAP server
 groups:
switch# show ldap-server groups
total number of groups: 3
following LDAP server groups are configured:
    group ldap:
Authentication: Search and Bind
        Authentication Mech: Default(PLAIN)
    group a:
Authentication: Bind and Search
        CERT-DN match enabled
        Group validation enabled
        Authentication Mech: PLAIN
    group name:
Authentication: Search and Bind
        Authentication Mech: Default(PLAIN)
switch#
```

Related Commands

Command	Description
ldap-server host	Displays LDAP server Ip address.

show license

To display license information, use the **show license** command.

show license [**brief** | **default** | **file** *filename* | **host-id** *license-name* | **usage**]

Syntax Description

brief	(Optional) Displays a list of license files installed on a switch.
default	(Optional) Displays services using a default license.
file *filename*	(Optional) Displays information for a specific license file.
host-id *license-name*	(Optional) Displays host ID used to request node-locked license.
usage	(Optional) Displays information about the current license usage. **Note** On the Cisco MDS 9132T switches, the **show license usage** command does not display any license associated to the LEM module, if present, and is intentional. All ports on the LEM module are licensed and usable and the licensing information can be verified using the **show port-license** command.

Command Default

None.

Command Modes

EXEC mode.

Command History

Release	Modification
1.3(2)	This command was introduced.
3.1(2)	Added the **default** keyword.

Usage Guidelines

None.

Examples

The following example displays a specific license installed on a switch:

```
switch# show license file fcports.lic
fcports.lic:
SERVER this_host ANY
VENDOR cisco
FEATURE fcports cisco 1.000 permanent 30 HOSTID=VDH=4C0AF664 \
        SIGN=24B2B68AA676 <------------------------ fcport license
```

The following example displays a list of license files installed on a switch:

```
switch# show license brief
fcports.lic
ficon.lic
```

The following example displays all licenses installed on a switch:

```
switch# show license
fcports.lic:
SERVER this_host ANY
VENDOR cisco
FEATURE fcports cisco 1.000 permanent 30 HOSTID=VDH=4C0AF664 \
        SIGN=24B2B68AA676 <-------------------------fcport license
ficon.lic:
FEATURE ficon cisco 1.000 permanent uncounted HOSTID=VDH=4C0AF664 \
        SIGN=CB7872B23700 <-----------------------------ficon license
```

The following example displays the host IDs, required to request node locked license:

```
switch# show license host-id
License hostid:VDH=4C0AF664
```

The following example displays information about current license usage:

```
switch# show license usage
Feature                 Installed   License Status  ExpiryDate   Comments
                                    Count
--------------------------------------------------------------------------------------------
FM_SERVER_PKG           Yes         -       Unused   never        license missing
MAINFRAME_PKG           No          -       Unused                Grace Period 57days15hrs
ENTERPRISE_PKG          Yes         -       InUse    never        -
SAN_EXTN_OVER_IP        No          0       Unused                -
SAN_EXTN_OVER_IP_IPS4   No          0       Unused
--------------------------------------------------------------------------------------------
```

The following example displays information about current license usage on a Cisco MDS 9132T switch:

```
switch# show license usage
Feature                           Ins  Lic   Status Expiry Date Comments
                                       Count
--------------------------------------------------------------------------------
FM_SERVER_PKG                      No    -   Unused             -
ENTERPRISE_PKG                     No    -   Unused             -
PORT_ACTIV_9132U_PKG               No    8   In use never       -
--------------------------------------------------------------------------------
```

The following example displays services using a default license:

```
switch# show license default
Feature                             Default License Count
--------------------------------------------------------------------------------
FM_SERVER_PKG                       -
ENTERPRISE_PKG                      -
PORT_ACTIVATION_PKG                 12
10G_PORT_ACTIVATION_PKG             0
--------------------------------------------------------------------------------
```

show line

To configure a virtual terminal line, use the **show line** command.

show line [**com1** [**user-input-string**] | **console** [**connected** | **user-input-string**]]

Syntax Description

com1	(Optional) Displays auxiliary line configuration.
user-input-string	(Optional) Displays the user-input initial string.
console	(Optional) Displays console line configuration.
connected	(Optional) Displays the physical connection status.

Command Default

None.

Command Modes

EXEC mode.

Command History

Release	Modification
1.2(1)	This command was introduced.
3.0(1)	Modified examples for Supervisor-1 and Supervisor-2 modules.

Usage Guidelines

None.

Examples

The following example displays output from an MDS switch with a Supervisor-1 module:

```
switch# show line console
line Console:
Speed: 9600 bauds
Databits: 8 bits per byte
Stopbits: 1 bit(s)
Parity: none
Modem In: Enable
Modem Init-String -
default : ATE0Q1&D2&C1S0=1\015
Statistics: tx:12842 rx:366 Register Bits:RTS|CTS|DTR|DSR|CD|RI
```

The following example displays output from an MDS switch with a Supervisor-2 module:

```
switch# show line console
line Console:
Speed: 9600 bauds
Databits: 8 bits per byte
Stopbits: 1 bit(s)
Parity: none
Modem In: Enable
Modem Init-String -
default :
ATE0Q0V1&D0&C0S0=1\015
Statistics: tx:12842 rx:366 Register Bits:RTS|CTS|DTR|DSR|CD|RI
```

The following example displays output from an MDS switch with a Supervisor-1 module:

```
switch# show line com1
line Aux:
Speed: 9600 bauds
Databits: 8 bits per byte
Stopbits: 1 bit(s)
Parity: none
Modem In: Enable
Modem Init-String -
default : ATE0Q1&D2&C1S0=1\015
Statistics: tx:17 rx:0 Register Bits:RTS|DTR
```

The following example displays output from an MDS switch with a Supervisor-2 module:

```
switch# show line com1
line Aux:
Speed: 9600 bauds
Databits: 8 bits per byte
Stopbits: 1 bit(s)
Parity: none
Modem In: Enable
Modem Init-String -
default :
ATE0Q0V1&D0&C0S0=1\015
Statistics: tx:17 rx:0 Register Bits:RTS|DTR
```

Related Commands

Command	Description
clear line	Deleted configured line sessions.
line aux	Configures the auxiliary COM 1 port.
line console	Configures primary terminal line.

show loadbalancing hash-type

To display the selected egress link of the load balancing calculation for a specific hash type, use the **show loadbalancing hash-type** command.

show loadbalancing hash-type *type* **vsan** *id* *source-fcid* *destination-fcid* [*exchange-id*]

Syntax Description

hash-type *type*	Specifies the hashing method. The following are the different types of hashing methods: **1a** - ECMP hashing method a. **1b** - ECMP hashing method b. **2a** - Port channel hashing method a. **2b** - Port channel hashing method b.
vsan *id*	Specifies the VSAN ID. Range is 1–4093.
source-fcid	Specifies the source FCID. Range is 0x0—0xffffff.
destination-fcid	Specifies the destination FCID. Range is 0x0—0xffffff.
exchange-id	(Optional) Specifies the exchange ID. Range is 0x0— 0xffff. **Note** This option is not used when source FCID/destination FCID load balancing is configured for the specified VSAN.

Command Modes

Privileged EXEC (#)

Command History

Release	Modification
8.5(1)	This command was introduced.

Usage Guidelines

Use this command to verify the port channel load balancing method used by the switches on each end of a port channel. When they are the same, then exchanges or source/destination pair traffic (depending on the VSAN load balancing method) will be load balanced to the same link.

This command can be used for any source and destination FCIDs, whether or not they are online.

The link number displayed is the *n*th link in the list of the port channel members in the **show port-channel database** command for a port channel egress port or of the lowest cost link in the **show fspf database** command for an ECMP egress port.

Examples

The following example displays that link 3 will be chosen among the 4 links for hash type 2a for source FCID 0x830001 and destination FCID 0x790000 in VSAN 1000:

```
switch# show loadbalancing hash-type 2a vsan 1000 0x830001 0x790000 4
Link : 3 will be chosen among 4 links for this hash method

switch# show fspf database vsan 1000 domain 0x7a

FSPF Link State Database for VSAN 1000 Domain 0x7a(122)
LSR Type                = 1
Advertising domain ID   = 0x7a(122)
LSR Age                 = 251
LSR Incarnation number  = 0x80000a0d
LSR Checksum            = 0xf977
Number of links         = 4
    NbrDomainId                           IfIndex  NbrIfIndex  Link Type   Cost
    ------------------------------------------------------------------------------
      0x79(121)  0x00040063(     port-channel100)  0x00040063          1      1
      0x83(131)  0x00040078(     port-channel121)  0x00040078          1     15
      0x7e(126)  0x00040069(     port-channel106)  0x00040069          1      7
      0x7f(127)  0x0004006c(     port-channel109)  0x0004006c          1      7
```

Related Commands

Command	Description
show port-channel database	Displays the available paths to a destination.
show vsan	Displays the configured load balancing scheme.
vsan hash-method	Configures the VSAN hash method.
vsan loadbalancing	Configures the VSAN load balancing scheme.

show loadbalancing module

To display the egress link that will be selected by the load balancing feature for a specific unicast flow, use the **show loadbalancing module** command.

show loadbalancing module *number* **vsan** *id source-fcid destination-fcid* [*exchange-id*] *links*

Syntax Description

module *number*	Specifies the ingress module number. Range is platform dependent.
vsan *id*	Specifies the VSAN ID. Range is 1–4093.
source-fcid	Specifies the source FCID. Range is 0x0—0xffffff.
destination-fcid	Specifies the destination FCID. Range is 0x0—0xffffff.
exchange-id	(Optional) Specifies the exchange ID. Range is 0x0— 0xffff. **Note** This option is not used when flow based load balancing is configured for the specified VSAN.
links	Specifies the number of links.

Command Modes

Privileged EXEC (#)

Command History

Release	Modification
4.1(1i)	This command was introduced.

Usage Guidelines

The source and destination FCIDs specified must both be logged in to the fabric. Further, any traffic between the source and destination must traverse the switch where the command is executed.

Examples

The following example displays that interface fc1/30 is the egress link used for traffic with source FCID 0x010200 ingressing on module 1 in VSAN 1 to destination FCID 0x090000:

```
switch# show loadbalancing module 1 vsan 1 0x010200 0x090000
Interface fc1/30 is used
```

Related Commands

Command	Description
show vsan	Displays the configured load balancing scheme.
vsan hash-method	Configures the VSAN hash method.
vsan loadbalancing	Configures the VSAN load balancing scheme.

show locator-led status

To show the status of locator LEDs on the system, use the **show locator-led status** command.

show locator-led status

Syntax Description

This command has no arguments or keywords.

Command Default

None

Command Modes

Any command mode

network-adminnetwork-operatorvdc-adminvdc-operator

Command History

Release	Modification
6.2(1)	This command was introduced.

Usage Guidelines

This command does not require a license.

Examples

The following example shows the locator LED status for the system:

```
switch# show locator-led status
```

Component	Locator LED Status

Chassis	off
Module 1	off
Module 2	off
Module 3	off
Module 4	off
Module 5	off
Module 6	off

Xbar 2	off
Xbar 3	off
Xbar 5	off
Xbar 6	off
PowerSupply 1	off
PowerSupply 2	off
PowerSupply 3	off
Fan 1	off
Fan 2	off
Fan 3	off

Related Commands

Command	Description
locator-led	Blinks an LED on the system.

show logging

To display the current message logging information, use the **show logging** command .

show logging [**console** | **format** | **info** | **last lines** | **level** *facility* | **logfile** | **module** [**kernel**] | **monitor** | **nvram** [**last lines**] | **onboard information** | **onboard** [**internal power**] | **pending** | **pending-diff** | **server** | **status** | **timezone**]

Syntax Description

console	(Optional) Displays console logging configuration.
format	(Optional) Show logging format for syslog.
info	(Optional) Displays logging configuration. **Note** The **show logging** and **show logging info** commands provide the same output and can be used interchangeably to display system message logging information.
kernel	(Optional) Logs the kernel system logs from the line cards into the Supervisor module.
last lines	(Optional) Displays last few lines of the log file. The range is 1 to 9999.
level *facility*	(Optional) Displays facility logging configuration. Facility values include **aaa**, **acl**, **auth**, **authpriv**, **bootvar**, **callhome**, **cdp**, **cfs**, **cimserver**, **cron**, **daemon**, **device-alias**, **dstats**, **ethport**, **fc2d**, **fcc**, **fcd**, **fcdomain**, **fcns**, **fcsp-mgr**, **fdmi**, **ficon**, **flogi**, **fspf**, ftp, **ike**, **ipacl**, **ipconf**, **ipfc**, **ips**, **ipsec**, **isns**, kernel, **license**, localn, lpr, mail, **mcast**, **module**, **news**, **platform**, **port**, **port-security**, **pmon**, **qos**, **radius**, **rdl**, **rib**, **rlir**, **rscn**, **scsi-target**, **security**, **syslog**, **sysmgr**, **systemhealth**, **tacacs**, **tlport**, **user**, **uucp**, **vni**, **vrrp-cfg**, vsan, **vshd**, **wwm**, **xbar**, and **zone**.
logfile	(Optional) Displays contents of the log file.
module	(Optional) Displays module linecard logging configuration.
module kernel	(Optional) Show line card kernel logging configuration
monitor	Displays monitor logging configuration.
nvram	Displays NVRAM log.
onboard *information*	(Optional) Displays onboard failure logging (OBFL) information. The types of information include **boot-uptime**, **cpu-hog**, **device-version**, **endtime**, **environmental-history**, **error-stats**, **exception-log**, **interrupt-stats**, **mem-leak**, **miscellaneous-error**, **module**, **obfl-history**, **obfl-logs**, **register-log**, **stack-trace**, **starttime**, **status**, and **system-health**.
onboard internal power	(Optional) Displays the status of PSU.
pending	(Optional) Displays the server address pending configuration.

pending-diff	(Optional) Displays the server address pending configuration differences with the active configuration.
server	(Optional) Displays server logging configuration.
status	(Optional) Displays the status of the last operation.
timezone	(Optional) Show timezone for syslog.

Command Default

None.

Command Modes

EXEC mode.

Command History

Release	Modification
9.4(4)	**format** and **timezone** keywords are added. The **The following example displays logging information:** command is updated with **Logging format rfc5424** and **Logging timezone utc** related information.
9.4(3)	**power** keyword is added.
8.4(1)	Added the **pmon** keyword to the list of supported facilities.
5.2(1)	Added a new comment.
3.0(1)	Added the **onboard** keyword.
2.0(x)	Added the pending, pending-diff, and **status** keywords.
1.3(1)	This command was introduced.

Usage Guidelines

None.

Examples

The following example displays module linecard logging configuration:

```
switch# show logging module
Logging linecard:                enabled (Severity: notifications)
switch#
```

The following example displays level for module linecard manager logging configuration:

```
switch# show logging level module
Facility        Default Severity        Current Session Severity
--------        ----------------        ------------------------
module                  5                       1
0(emergencies)          1(alerts)       2(critical)
3(errors)               4(warnings)     5(notifications)
6(information)          7(debugging)
switch#
```

The following example verifies that the logging module kernel is configured with the specified severity level:

```
switch# show logging module kernel
Logging module kernel:          enabled (Severity: alerts)
```

The following example displays current system message logging:

```
switch# show logging

Logging console:                enabled (Severity: information)
Logging monitor:                enabled (Severity: notifications)
Logging linecard:               enabled (Severity: notifications)
Logging server:                 disabled
Logging origin_id :             disabled
Logging rate-limit:             enabled
Logging logfile:                enabled
        Name - messages: Severity - notifications Size - 10485760

Logging persistent :            disabled (Reason: Logflash CF card not online.)

Logging format rfc5424:         enabled
System timestamp format rfc5424:disabled
Logging timezone utc:           enabled


Syslog History Table: '1' maximum table entries
saving level 'warnings' or higher
1201 messages ignored, 0 dropped, 63 table entries flushed
SNMP notifications disabled

        entry number 64: SMA-4-ACTIVATION_COMPLETED
         Activation of policy name edge successful.
        Timestamp: 12929540


Facility        Default Severity        Current Session Severity
--------        ----------------        ------------------------
aaa                     3                       3
aam                     2                       2
acl                     2                       2
auth                    0                       0
authpriv                3                       3
bloggerd                4                       4
bootvar                 5                       5
callhome                2                       2
capability              2                       2
cdp                     2                       2
cert_enroll             2                       2
cfs                     3                       3
clis                    3                       3
confcheck               2                       2
cron                    3                       3
daemon                  3                       3
device-alias            3                       3
dstats                  2                       2
eem_policy_dir          2                       2
epp                     5                       5
ethport                 5                       5
evmc                    5                       5
evms                    2                       2
fabric_start_cfg_mgr    2                       2
fc-tunnel               5                       5
fc2d                    2                       2
fcdomain                3                       3
fcns                    2                       2
fcs                     2                       2
```

```
fdmi                  2                     2
feature-mgr           2                     2
flogi                 2                     2
fs-daemon             2                     2
fspf                  3                     3
ftp                   3                     3
ipacl                 2                     2
ipconf                5                     5
ipfc                  2                     2
ips                   5                     5
kern                  3                     3
licmgr                6                     6
local0                3                     3
local1                3                     3
local2                3                     3
local3                3                     3
local4                3                     3
local5                3                     3
local6                3                     3
local7                3                     3
lpr                   3                     3
mail                  3                     3
mcast                 2                     2
module                5                     5
monitor               3                     3
mvsh                  2                     2
news                  3                     3
ntp                   2                     2
platform              5                     5
plugin                2                     2
port                  5                     6
port-channel          5                     5
port-resources        5                     5
port-security         3                     3
qos                   3                     3
radius                3                     3
rdl                   2                     2
res_mgr               5                     5
rib                   2                     2
rlir                  2                     2
rscn                  2                     2
scsi-target           2                     2
securityd             3                     3
sma                   5                     5
smm                   4                     4
snmpd                 2                     2
snmpmib_proc          2                     2
span                  3                     3
syslog                3                     3
sysmgr                3                     3
SystemHealth          4                     4
user                  3                     3
uucp                  3                     3
vni                   2                     2
vrrp-cfg              3                     3
vrrp-eng              3                     3
vsan                  2                     2
vshd                  5                     5
wwn                   3                     3
xbar                  5                     5
xmlma                 3                     3
zone                  2                     2

0(emergencies)        1(alerts)       2(critical)
```

```
3(errors)               4(warnings)     5(notifications)
6(information)          7(debugging
...
```

The following example displays the port monitor logging status:

```
switch# show logging level pmon
Facility        Default Severity        Current Session Severity
--------        ----------------        ------------------------
PMon                  2                          4
```

The following example displays console logging status:

```
switch# show logging
 console

Logging console:                enabled (Severity: notifications)
```

The following example displays logging facility status:

```
switch# show logging
 facility
Facility        Default Severity        Current Session Severity
--------        ----------------        ------------------------
kern                    6                       4
user                    3                       3
mail                    3                       3
daemon                  7                       7
auth                    0                       0
syslog                  3                       3
lpr                     3                       3
news                    3                       3
uucp                    3                       3
cron                    3                       3
authpriv                3                       3
ftp                     3                       3
local0                  3                       3
local1                  3                       3
local2                  3                       3
local3                  3                       3
local4                  3                       3
local5                  3                       3
local6                  3                       3
local7                  3                       3
fspf                    3                       3
fcdomain                2                       2
module                  5                       5
zone                    2                       2
vni                     2                       2
ipconf                  2                       2
ipfc                    2                       2
xbar                    3                       3
fcns                    2                       2
fcs                     2                       2
acl                     2                       2
tlport                  2                       2
port                    5                       5
port_channel            5                       5
fcmpls                  0                       0
wwn                     3                       3
fcc                     2                       2
qos                     3                       3
```

```
vrrp_cfg                2                       2
fcfwd                   0                       0
ntp                     2                       2
platform                5                       5
vrrp_eng                2                       2
callhome                2                       2
mcast                   2                       2
rscn                    2                       2
securityd               2                       2
vhbad                   2                       2
rib                     2                       2
vshd                    5                       5
0(emergencies)          1(alerts)       2(critical)
3(errors)               4(warnings)     5(notifications)
6(information)          7(debugging)
```

The following example displays logging information:

```
switch# show logging info
Logging console:                enabled (Severity: information)
Logging monitor:                enabled (Severity: notifications)
Logging linecard:               enabled (Severity: notifications)
Logging timestamp:              Seconds
Logging server:                 disabled
Logging origin_id :             disabled
Logging rate-limit:             enabled
Logging logfile:                enabled
        Name - messages: Severity - notifications Size - 10485760

Logging persistent :            disabled (Reason: Logflash CF card not online.)

Logging format rfc5424:         enabled
System timestamp format rfc5424:disabled
Logging timezone utc:           enabled


Syslog History Table: '1' maximum table entries
saving level 'warnings' or higher
51 messages ignored, 0 dropped, 60 table entries flushed
SNMP notifications disabled

        entry number 61: AUTHPRIV-3-SYSTEM_MSG
         pam_aaa:Authentication failed from console - login
        Timestamp: 10030336


Facility        Default Severity        Current Session Severity
--------        ----------------        ------------------------
aaa                     3                       3
aam                     2                       2
acl                     2                       2
auth                    0                       0
authpriv                3                       3
bloggerd                4                       4
bootvar                 5                       5
callhome                2                       2
capability              2                       2
cdp                     2                       2
cert_enroll             2                       2
cfs                     3                       3
clis                    3                       3
confcheck               2                       2
cron                    3                       3
daemon                  3                       3
```

```
device-alias            3                   3
dstats                  2                   2
eem_policy_dir          2                   2
epp                     5                   5
ethport                 5                   5
evmc                    5                   5
evms                    2                   2
fabric_start_cfg_mgr    2                   2
fc-tunnel               5                   5
fc2d                    2                   2
fcdomain                3                   3
fcns                    2                   2
fcs                     2                   2
fdmi                    2                   2
feature-mgr             2                   2
flogi                   2                   2
fs-daemon               2                   2
fspf                    3                   3
ftp                     3                   3
ipacl                   2                   2
ipconf                  5                   5
ipfc                    2                   2
ips                     5                   5
kern                    3                   3
licmgr                  6                   6
local0                  3                   3
local1                  3                   3
local2                  3                   3
local3                  3                   3
local4                  3                   3
local5                  3                   3
local6                  3                   3
local7                  3                   3
lpr                     3                   3
mail                    3                   3
mcast                   2                   2
module                  5                   5
monitor                 3                   3
mvsh                    2                   2
news                    3                   3
ntp                     2                   2
platform                5                   5
plugin                  2                   2
port                    5                   6
port-channel            5                   5
port-resources          5                   5
port-security           3                   3
qos                     3                   3
radius                  3                   3
rdl                     2                   2
res_mgr                 5                   5
rib                     2                   2
rlir                    2                   2
rscn                    2                   2
scsi-target             2                   2
securityd               3                   3
sma                     5                   5
smm                     4                   4
snmpd                   2                   2
snmpmib_proc            2                   2
span                    3                   3
syslog                  3                   3
sysmgr                  3                   3
SystemHealth            4                   4
```

```
user                    3                       3
uucp                    3                       3
vni                     2                       2
vrrp-cfg                3                       3
vrrp-eng                3                       3
vsan                    2                       2
vshd                    5                       5
wwn                     3                       3
xbar                    5                       5
xmlma                   3                       3
zone                    2                       2

0(emergencies)          1(alerts)       2(critical)
3(errors)               4(warnings)     5(notifications)
6(information)          7(debugging)
```

The following example displays last few lines of a log file:

```
switch# show logging
 last 2
Nov  8 16:48:04 excal-113 %LOG_VSHD-5-VSHD_SYSLOG_CONFIG_I: Configuring console
from pts/1 (171.71.58.56)
Nov  8 17:44:09 excal-113 %LOG_VSHD-5-VSHD_SYSLOG_CONFIG_I: Configuring console
from pts/0 (171.71.58.72)
```

The following example displays monitor logging status.

```
switch# show logging
 monitor

Logging monitor:                enabled (Severity: information)
```

The following example displays server information:

```
switch# show logging
 server

Logging server:                 enabled
{172.22.95.167}
        server severity:        debugging
        server facility:        local7
{172.22.92.58}
        server severity:        debugging
        server facility:        local7
```

The following example shows onboard failure logging for boot-uptime for module 2:

```
switch# show logging onboard module 2 boot-uptime
---------------------------
    Module:  2
---------------------------


Wed Nov  9 12:05:56 2005:  Boot Record
-------------------------------------------------------------------------------
Boot Time..........:  Wed Nov  9 12:05:56 2005
Slot Number........:  2
Serial Number......:  JAB0912026U
Bios Version.......:    v0.0.8(08/18/05)
Alt Bios Version...:    v0.0.8(08/18/05)
Firmware Version...:  3.0(1) [build 3.0(0.276)]
```

```
Wed Nov  9 11:58:04 2005:  Card Uptime Record
-----------------------------------------
Uptime: 273, 0 days 0 hour(s) 4 minute(s) 33 second(s)
Reset Reason: Reset Requested by CLI command reload (9)
Card Mode.......................:  Runtime



Wed Nov  9 12:05:56 2005:  Card Uptime Record
-----------------------------------------
Uptime: 32, 0 days 0 hour(s) 0 minute(s) 32 second(s)
Reset Reason: Unknown (0)
Card Mode.......................:  Runtime
```

The following example shows onboard failure logging for boot-uptime:

```
switch# show logging onboard boot-uptime
---------------------------
    Module:  2
---------------------------


Wed Nov  9 12:05:56 2005:  Boot Record
-------------------------------------------------------------------------------
Boot Time.........:  Wed Nov  9 12:05:56 2005
Slot Number.......:  2
Serial Number.....:  JAB0912026U
Bios Version......:    v0.0.8(08/18/05)
Alt Bios Version...:    v0.0.8(08/18/05)
Firmware Version...:  3.0(1) [build 3.0(0.276)]


Wed Nov  9 11:58:04 2005:  Card Uptime Record
-----------------------------------------
Uptime: 273, 0 days 0 hour(s) 4 minute(s) 33 second(s)
Reset Reason: Reset Requested by CLI command reload (9)
Card Mode.......................:  Runtime



Wed Nov  9 12:05:56 2005:  Card Uptime Record
-----------------------------------------
Uptime: 32, 0 days 0 hour(s) 0 minute(s) 32 second(s)
Reset Reason: Unknown (0)
Card Mode.......................:  Runtime


---------------------------
    Module:  5
---------------------------


Wed Nov  9 12:05:05 2005:  Boot Record
-------------------------------------------------------------------------------
Boot Time.........:  Wed Nov  9 12:05:05 2005
Slot Number.......:  5
Serial Number.....:  JAB091100TS
Bios Version......:  00.01.01 (Oct 25 2005 - 15:48:45)
Alt Bios Version...:  00.01.01 (Oct 25 2005 - 15:48:45)
Firmware Version...:  3.0(1) [build 3.0(0.274)]
```

```
Wed Nov  9 11:58:04 2005:  Card Uptime Record
-----------------------------------------------
Uptime: 503255, 5 days 19 hour(s) 47 minute(s) 35 second(s)
Reset Reason: Reset reason: Reset Requested by CLI command reload (9)
Card Mode.......................:  Runtime



Wed Nov  9 12:05:05 2005:  Card Uptime Record
-----------------------------------------------
Uptime: 172, 0 days 0 hour(s) 2 minute(s) 52 second(s)
Reset Reason: Reset reason: Unknown (0)
Card Mode.......................:  Runtime
```

The following example shows onboard failure logging for device-version:

```
switch# show logging onboard device-version
----------------------------
    Module:  2
----------------------------

Device Version Record
-------------------------------------------------------------------------
Timestamp                  Device Name      Instance Hardware Software
                                                 Num  Version  Version
-------------------------------------------------------------------------
Wed Nov  9 12:05:56 2005   Stratosphere           0        1        1
Wed Nov  9 12:05:56 2005   Stratosphere           1        1        1
Wed Nov  9 12:05:56 2005   Skyline-asic           0        1        1
Wed Nov  9 12:05:56 2005   Tuscany-asic           0        1        0
Wed Nov  9 12:05:56 2005   X-Bus IO               0        6        0
Wed Nov  9 12:05:56 2005   Power Mngmnt Epl       0        6        0
----------------------------
    Module:  5
----------------------------

Device Version Record
-------------------------------------------------------------------------
Timestamp                  Device Name      Instance Hardware Software
                                                 Num  Version  Version
-------------------------------------------------------------------------
Wed Nov  9 12:05:05 2005   Power Mngmnt Epl       0        7        0
Wed Nov  9 12:05:05 2005   IO FPGA Molakini       0        8        0
Wed Nov  9 12:05:05 2005   bellagio2              0        1        0
Wed Nov  9 12:05:05 2005   BabyCaesar             0        1        0
```

The following example show onboard failure logging for system health:

```
switch# show logging onboard system-health

Feature supported only on active-sup
----------------------------
    Module:  5
----------------------------
Wed Nov  9 12:04:58 2005@345463 (5/31/0x0): System health started with pid 2607
Wed Nov  9 12:05:05 2005@943388 (5/31/0xb): Module Supervisor 5, swid 31 came online
Wed Nov  9 12:05:05 2005@944275 (5/31/0xb): LC config removed for module 7
Wed Nov  9 12:05:05 2005@944454 (5/31/0xb): LC config removed for module 8
Wed Nov  9 12:05:05 2005@944592 (5/31/0xb): LC config removed for module 9
Wed Nov  9 12:05:05 2005@944717 (5/31/0xb): LC config removed for module 10
```

```
Wed Nov  9 12:05:05 2005@944846 (5/31/0xb): LC config removed for module 11
Wed Nov  9 12:05:05 2005@944969 (5/31/0xb): LC config removed for module 12
Wed Nov  9 12:05:05 2005@945094 (5/31/0xb): LC config removed for module 13
Wed Nov  9 12:05:05 2005@945222 (5/31/0xb): LC config removed for module 14
Wed Nov  9 12:05:05 2005@945343 (5/31/0xb): LC config removed for module 15
Wed Nov  9 12:05:05 2005@945470 (5/31/0xb): LC config removed for module 16
Wed Nov  9 12:05:50 2005@814217 (2/29/0x0): System health started with pid 397
Wed Nov  9 12:05:56 2005@904068 (5/31/0xb): LC inserted for module 2
Wed Nov  9 12:05:59 2005@167373 (5/31/0xb): Module Linecard 2, swid 29 came online
switch# show logging onboard
boot-uptime            exception-log          obfl-logs
cpu-hog                interrupt-stats        register-log
device-version         mem-leak               stack-trace
endtime                miscellaneous-error    starttime
environmental-history  module                 status
error-stats            obfl-history           system-health
```

The following example show onboard failure logging for obfl-logs:

```
switch# show logging onboard obfl-logs
Module:  1 not online.


OBFL: Status:

    Module:  2 OBFL Log:                                    Enabled
    cpu-hog                                                 Enabled
    environmental-history                                   Enabled
    error-stats                                             Enabled
    exception-log                                           Enabled
    interrupt-stats                                         Enabled
    mem-leak                                                Enabled
    miscellaneous-error                                     Enabled
    obfl-log (boot-uptime/device-version/obfl-history)      Enabled
    register-log                                            Enabled
    stack-trace                                             Enabled


OBFL: Memory Leak:
----------------------------
    Module:  2
----------------------------


OBFL: Stack Trace:
----------------------------
    Module:  2
----------------------------
OBFL: Environment History:
----------------------------
    Module:  2
----------------------------

========== Sensor Temperature History Log ==========
----------------------------------------------------
Wed Nov  9 12:05:50 2005 sensor 0 temperature 31
Wed Nov  9 12:05:50 2005 sensor 1 temperature 31
Wed Nov  9 12:05:50 2005 sensor 2 temperature 29
Wed Nov  9 12:06:20 2005 sensor 0 temperature 33
Wed Nov  9 12:06:20 2005 sensor 1 temperature 34
Wed Nov  9 12:06:50 2005 sensor 0 temperature 35
Wed Nov  9 12:06:50 2005 sensor 1 temperature 36
Wed Nov  9 12:07:20 2005 sensor 1 temperature 38
Wed Nov  9 12:08:50 2005 sensor 0 temperature 37
```

```
Wed Nov  9 12:08:50 2005 sensor 1 temperature 40

========== Sensor Temperature Error Log ==========
-------------------------------------------------
Wed Nov  9 12:05:50 2005 Start of Service: sensor 0 initial temperature 31
Wed Nov  9 12:05:50 2005 Start of Service: sensor 1 initial temperature 31
Wed Nov  9 12:05:50 2005 Start of Service: sensor 2 initial temperature 29


OBFL: Interrupt Statistics:
---------------------------
    Module:  2
---------------------------


-------------------------------------------------------------------------------
 INTERRUPT COUNTS INFORMATION FOR DEVICE ID 63 DEVICE: Stratosphere
-------------------------------------------------------------------------------
                                    |        |        |   Time Stamp    |In|Port
   Interrupt Counter Name           | Count  | Thresh |MM/DD/YY HH:MM:SS|st|Rang
                                    |        |        |                 |Id|e
-------------------------------------------------------------------------------
FCP_LAF_MISC_INT_DT_IN_OBUF        |7       |0       |11/09/05 12:06:00|00|1
FCP_MAC_SR1_LR_DETECTED            |1       |0       |11/09/05 12:06:00|00|1
FCP_MAC_SR1_LRR_DETECTED           |1       |0       |11/09/05 12:06:00|00|1
FCP_MAC_SR1_OLS_DETECTED           |1       |0       |11/09/05 12:06:00|00|1
FCP_MAC_SR2_LRR_IDLE_RECEIVED      |1       |0       |11/09/05 12:06:00|00|1
FCP_MAC_SR2_AL_NON_F8_LIP_RECEIVED |2       |0       |11/09/05 12:06:00|00|1
FCP_MAC_SR2_AL_LIP_RECEIVED        |1       |0       |11/09/05 12:06:00|00|1
FCP_MAC_SR2_AL_ARB_F0_RECEIVED     |1       |0       |11/09/05 12:06:00|00|1
FCP_LAF_MISC_INT_DT_IN_OBUF        |2       |0       |11/09/05 12:06:00|00|2
FCP_MAC_SR1_OLS_DETECTED           |1       |0       |11/09/05 12:06:00|00|2
FCP_MAC_SR2_AL_NON_F8_LIP_RECEIVED |2       |0       |11/09/05 12:06:00|00|2
FCP_MAC_SR2_AL_LIP_RECEIVED        |3       |0       |11/09/05 12:06:00|00|2
FCP_LAF_MISC_INT_DT_IN_OBUF        |b       |0       |11/09/05 12:06:00|00|3
FCP_MAC_SR1_LR_DETECTED            |3       |0       |11/09/05 12:06:00|00|3
FCP_MAC_SR1_LRR_DETECTED           |2       |0       |11/09/05 12:06:00|00|3
FCP_MAC_SR1_OLS_DETECTED           |2       |0       |11/09/05 12:06:00|00|3
FCP_MAC_SR2_LR_IDLE_RECEIVED       |1       |0       |11/09/05 12:06:00|00|3
FCP_MAC_SR2_LRR_IDLE_RECEIVED      |2       |0       |11/09/05 12:06:00|00|3
FCP_MAC_SR2_AL_NON_F8_LIP_RECEIVED |3       |0       |11/09/05 12:06:00|00|3
FCP_MAC_SR2_AL_LIP_RECEIVED        |1       |0       |11/09/05 12:06:00|00|3
FCP_MAC_SR2_AL_ARB_F0_RECEIVED     |2       |0       |11/09/05 12:06:00|00|3
FCP_LAF_MISC_INT_DT_IN_OBUF        |2       |0       |11/09/05 12:06:00|00|4
FCP_MAC_SR1_LRR_DETECTED           |1       |0       |11/09/05 12:06:00|00|4
FCP_MAC_SR1_OLS_DETECTED           |3       |0       |11/09/05 12:06:00|00|4
FCP_MAC_SR2_LRR_IDLE_RECEIVED      |1       |0       |11/09/05 12:06:00|00|4
FCP_MAC_SR2_AL_NON_F8_LIP_RECEIVED |3       |0       |11/09/05 12:06:00|00|4
FCP_MAC_SR2_AL_LIP_RECEIVED        |3       |0       |11/09/05 12:06:00|00|4
FCP_LAF_MISC_INT_DT_IN_OBUF        |d       |0       |11/09/05 12:06:05|00|1
FCP_MAC_SR1_LRR_DETECTED           |2       |0       |11/09/05 12:06:05|00|1
FCP_MAC_SR1_OLS_DETECTED           |2       |0       |11/09/05 12:06:05|00|1
FCP_MAC_SR2_LRR_IDLE_RECEIVED      |2       |0       |11/09/05 12:06:05|00|1
FCP_MAC_SR2_AL_LIP_RECEIVED        |2       |0       |11/09/05 12:06:05|00|1
FCP_MAC_SR2_AL_ARB_F0_RECEIVED     |2       |0       |11/09/05 12:06:05|00|1
FCP_LAF_MISC_INT_DT_IN_OBUF        |3       |0       |11/09/05 12:06:05|00|2
FCP_MAC_SR1_LR_DETECTED            |1       |0       |11/09/05 12:06:05|00|2
FCP_MAC_SR1_OLS_DETECTED           |3       |0       |11/09/05 12:06:05|00|2
FCP_MAC_SR2_LR_IDLE_RECEIVED       |1       |0       |11/09/05 12:06:05|00|2
FCP_MAC_SR2_AL_NON_F8_LIP_RECEIVED |4       |0       |11/09/05 12:06:05|00|2


OBFL: Error Statistics:
---------------------------
```

```
    Module:  2
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OBFL: System Bootup Record:
----------------------------
    Module:  2
----------------------------


Wed Nov  9 12:05:56 2005:  Boot Record
-------------------------------------------------------------------------------
Boot Time..........:  Wed Nov  9 12:05:56 2005
Slot Number........:  2
Serial Number......:  JAB0912026U
Bios Version.......:    v0.0.8(08/18/05)
Alt Bios Version...:    v0.0.8(08/18/05)
Firmware Version...:  3.0(1) [build 3.0(0.276)]


Wed Nov  9 12:05:56 2005:  Card Uptime Record
----------------------------------------------
Uptime: 32, 0 days 0 hour(s) 0 minute(s) 32 second(s)
Reset Reason: Unknown (0)
Card Mode..........................:  Runtime



OBFL: Device Versions in Switch:
----------------------------
    Module:  2
----------------------------

Device Version Record
-------------------------------------------------------------------------
Timestamp                 Device Name      Instance Hardware Software
                                                Num  Version  Version
-------------------------------------------------------------------------
Wed Nov  9 12:05:56 2005  Stratosphere           0        1        1
Wed Nov  9 12:05:56 2005  Stratosphere           1        1        1
Wed Nov  9 12:05:56 2005  Skyline-asic           0        1        1
Wed Nov  9 12:05:56 2005  Tuscany-asic           0        1        0
Wed Nov  9 12:05:56 2005  X-Bus IO               0        6        0
Wed Nov  9 12:05:56 2005  Power Mngmnt Epl       0        6        0


OBFL: Exception Log:
----------------------------
    Module:  2
----------------------------


OBFL: Register Log:
----------------------------
    Module:  2
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OBFL: Miscellaneous Error Logs:
----------------------------
    Module:  2
----------------------------
```

```
LC Config Record: Wed Nov  9 12:05:40 2005@471600
lc_copy_from_sup_to_lc() failure for sdwrap: 121


OBFL: Status:

    Module:  5 OBFL Log:                                    Enabled
    error-stats                                             Enabled
    exception-log                                           Enabled
    miscellaneous-error                                     Enabled
    obfl-log (boot-uptime/device-version/obfl-history)  Enabled
    system-health                                           Enabled
    stack-trace                                             Enabled


OBFL: Memory Leak:
----------------------------
    Module:  5
----------------------------
mem-leak: This option not supported on SUP.


OBFL: Stack Trace:
----------------------------
    Module:  5
----------------------------
stack-trace: This option not supported on SUP.


OBFL: Environment History:
----------------------------
    Module:  5
----------------------------

========== Sensor Temperature History Log ==========
--------------------------------------------------
Wed Nov  9 12:05:06 2005 sensor 0 temperature 36
Wed Nov  9 12:05:06 2005 sensor 1 temperature 35
Wed Nov  9 12:05:06 2005 sensor 2 temperature 31


OBFL: Interrupt Statistics:
----------------------------
    Module:  5
----------------------------
interrupt-stats: This option not supported on SUP.


OBFL: Error Statistics:
----------------------------
    Module:  5
----------------------------

------------------------------------------------------------------
Date (mm/dd/yy)=11/09/05  Time (hs:mn:sec): 12:10:05
Baby Ceaser data

------------------------------------------------------------------
Date (mm/dd/yy)=11/09/05  Time (hs:mn:sec): 12:10:05
Arbiter Bellagio2 data
GROUP:4
bkt_tx_perr_drop_cnt           0
bkr_rx_req_fifo_drop_cnt       0
bkr_rx_req_fifo_perr_drop_cnt  0
```

```
bkr_rx_di_lut_perr_drop_cnt    0
fil_drop_cnt                   0
crm_gid_drop_cnt               0
ser_rxs_perr_cnt               0
top_ddr_rx_perr_cnt            0
Bucket Counters
 Bkt Cos  Gresend            Grant          Request  Rresend
-------------------------------------------------------------
   0   0        0                0                0        0
   0   1        0                0                0        0
   0   2        0                0                0        0
   0   3        0             1127             1127        0
  64   0        0                0                0        0
  64   1        0                0                0        0
  64   2        0                0                0        0
  64   3        0                0                0        0
 128   0        0                0                0        0
 128   1        0                0                0        0
 128   2        0                0                0        0
 128   3        0                0                0        0
 192   0        0                0                0        0
 192   1        0                0                0        0
 192   2        0                0                0        0
 192   3        0               73               73        0
 256   0        0                0                0        0
 256   1        0                0                0        0
 256   2        0                0                0        0
 256   3        0                0                0        0
 320   0        0                0                0        0
 320   1        0                0                0        0
 320   2        0                0                0        0
 320   3        0                0                0        0
 384   0        0                0                0        0
 384   1        0                0                0        0
 384   2        0                0                0        0
 384   3        0                0                0        0
 448   0        0                0                0        0
 448   1        0                0                0        0
 448   2        0                0                0        0
 448   3        0                0                0        0
 512   0        0                0                0        0
 512   1        0                0                0        0
 512   2        0                0                0        0
 512   3        0                0                0        0
 576   0        0                0                0        0
 576   1        0                0                0        0
 576   2        0                0                0        0
 576   3        0                0                0        0
 640   0        0                0                0        0
 640   1        0                0                0        0
 640   2        0                0                0        0
 640   3        0                0                0        0
 704   0        0                0                0        0
 704   1        0                0                0        0
 704   2        0                0                0        0
 704   3        0                0                0        0
 768   0        0                0                0        0
 768   1        0                0                0        0
 768   2        0                0                0        0
 768   3        0                0                0        0
 832   0        0                0                0        0
 832   1        0                0                0        0
 832   2        0                0                0        0
 832   3        0                0                0        0
```

```
 896   0        0                0                0        0
 896   1        0                0                0        0
 896   2        0                0                0        0
 896   3        0                0                0        0
 960   0        0                0                0        0
 960   1        0                0                0        0
 960   2        0                0                0        0
 960   3        0                0                0        0
LDI Counters
LDI COS  OUT_REQ   CREDIT CREDITNA
---------------------------------
  0   0        0    14164       63
  0   1        0    41874       63
  0   2        0    41874       63
  0   3        0    41905       63
  1   0        0    14164       63
  1   1        0    41874       63
  1   2        0    41874       63
  1   3        0    41904       63
  2   0        0    14164       63
  2   1        0    41874       63
  2   2        0    41874       63
  2   3        0    41902       63
  3   0        0    14164       63
  3   1        0    41874       63
  3   2        0    41874       63
  3   3        0    41903       63
  4   0        0    14164       63
  4   1        0    41873       63
  4   2        0    41873       63
  4   3        0    41903       63
  5   0        0    14164       63
  5   1        0    41873       63
  5   2        0    41873       63
  5   3        0    41903       63
  6   0        0    14164       63
  6   1        0    41872       63
  6   2        0    41872       63
  6   3        0    41903       63
  7   0        0    14164       63
  7   1        0    41872       63
  7   2        0    41872       63
  7   3        0    41903       63
  8   0        0    14163       63
  8   1        0    41871       63
  8   2        0    41871       63
  8   3        0    41902       63
  9   0        0    14163       63
  9   1        0    41871       63
  9   2        0    41871       63
  9   3        0    41902       63
 10   0        0    14163       63
 10   1        0    41871       63
 10   2        0    41871       63
 10   3        0    41901       63
 11   0        0    14163       63
 11   1        0    41871       63
 11   2        0    41871       63
 11   3        0    41901       63
 12   0        0    14163       63
 12   1        0    41870       63
 12   2        0    41870       63
 12   3        0    41901       63
 13   0        0    14163       63
```

```
13   1         0    41870       63
13   2         0    41870       63
13   3         0    41900       63
14   0         0    14163       63
14   1         0    41869       63
14   2         0    41869       63
14   3         0    41900       63
15   0         0    14163       63
15   1         0    41869       63
15   2         0    41869       63
15   3         0    41900       63
16   0         0    14163       63
16   1         0    41869       63
16   2         0    41869       63
16   3         0    41900       63
17   0         0    14162       63
17   1         0    41868       63
17   2         0    41868       63
17   3         0    41899       63
18   0         0    14162       63
18   1         0    41868       63
18   2         0    41868       63
18   3         0    41898       63
19   0         0    14162       63
19   1         0    41868       63
19   2         0    41868       63
19   3         0    41898       63
20   0         0    14162       63
20   1         0    41868       63
20   2         0    41868       63
20   3         0    41898       63
21   0         0    14162       63
21   1         0    41867       63
21   2         0    41867       63
21   3         0    41898       63
22   0         0    14162       63
22   1         0    41867       63
22   2         0    41867       63
22   3         0    41897       63
23   0         0    14162       63
23   1         0    41866       63
23   2         0    41866       63
23   3         0    41897       63
24   0         0        0        0
24   1         0        0        0
24   2         0        0        0
24   3         0        0        0
25   0         0        0        0
25   1         0        0        0
25   2         0        0        0
25   3         0        0        0
26   0         0        0        0
26   1         0        0        0
26   2         0        0        0
26   3         0        0        0
27   0         0        0        0
27   1         0        0        0
27   2         0        0        0
27   3         0        0        0
28   0         0        0        0
28   1         0        0        0
28   2         0        0        0
28   3         0        0        0
29   0         0        0        0
```

```
29    1         0         0         0
29    2         0         0         0
29    3         0         0         0
30    0         0         0         0
30    1         0         0         0
30    2         0         0         0
30    3         0         0         0
31    0         0         0         0
31    1         0         0         0
31    2         0         0         0
31    3         0         0         0
32    0         0         0         0
32    1         0         0         0
32    2         0         0         0
32    3         0         0         0
33    0         0         0         0
33    1         0         0         0
33    2         0         0         0
33    3         0         0         0
34    0         0         0         0
34    1         0         0         0
34    2         0         0         0
34    3         0         0         0
35    0         0         0         0
35    1         0         0         0
35    2         0         0         0
35    3         0         0         0
36    0         0         0         0
36    1         0         0         0
36    2         0         0         0
36    3         0         0         0
37    0         0         0         0
37    1         0         0         0
37    2         0         0         0
37    3         0         0         0
38    0         0         0         0
38    1         0         0         0
38    2         0         0         0
38    3         0         0         0
39    0         0         0         0
39    1         0         0         0
39    2         0         0         0
39    3         0         0         0
40    0         0         0         0
40    1         0         0         0
40    2         0         0         0
40    3         0         0         0
41    0         0         0         0
41    1         0         0         0
41    2         0         0         0
41    3         0         0         0
42    0         0         0         0
42    1         0         0         0
42    2         0         0         0
42    3         0         0         0
43    0         0         0         0
43    1         0         0         0
43    2         0         0         0
43    3         0         0         0
44    0         0         0         0
44    1         0         0         0
44    2         0         0         0
44    3         0         0         0
45    0         0         0         0
```

```
45   1         0         0         0
45   2         0         0         0
45   3         0         0         0
46   0         0         0         0
46   1         0         0         0
46   2         0         0         0
46   3         0         0         0
47   0         0         0         0
47   1         0         0         0
47   2         0         0         0
47   3         0         0         0
48   0         0         0         0
48   1         0         0         0
48   2         0         0         0
48   3         0         0         0
49   0         0         0         0
49   1         0         0         0
49   2         0         0         0
49   3         0         0         0
50   0         0         0         0
50   1         0         0         0
50   2         0         0         0
50   3         0         0         0
51   0         0         0         0
51   1         0         0         0
51   2         0         0         0
51   3         0         0         0
52   0         0         0         0
52   1         0         0         0
52   2         0         0         0
52   3         0         0         0
53   0         0         0         0
53   1         0         0         0
53   2         0         0         0
53   3         0         0         0
54   0         0         0         0
54   1         0         0         0
54   2         0         0         0
54   3         0         0         0
55   0         0         0         0
55   1         0         0         0
55   2         0         0         0
55   3         0         0         0
56   0         0         0         0
56   1         0         0         0
56   2         0         0         0
56   3         0         0         0
57   0         0         0         0
57   1         0         0         0
57   2         0         0         0
57   3         0         0         0
58   0         0         0         0
58   1         0         0         0
58   2         0         0         0
58   3         0         0         0
59   0         0         0         0
59   1         0         0         0
59   2         0         0         0
59   3         0         0         0
60   0         0         0         0
60   1         0         0         0
60   2         0         0         0
60   3         0         0         0
61   0         0         0         0
```

```
 61   1        0        0        0
 61   2        0        0        0
 61   3        0        0        0
 62   0        0        0        0
 62   1        0        0        0
 62   2        0        0        0
 62   3        0        0        0
 63   0        0        0        0
 63   1        0        0        0
 63   2        0        0        0
 63   3        0        0        0

----------------------------------------------------------------
Date (mm/dd/yy)=11/09/05  Time (hs:mn:sec): 12:10:05
Arbiter Bellagio2 data
GROUP:10
bkt_tx_perr_drop_cnt           0
bkr_rx_req_fifo_drop_cnt       0
bkr_rx_req_fifo_perr_drop_cnt  0
bkr_rx_di_lut_perr_drop_cnt    0
fil_drop_cnt                   0
crm_gid_drop_cnt               0
ser_rxs_perr_cnt               0
top_ddr_rx_perr_cnt            0
Bucket Counters
 Bkt Cos  Gresend            Grant          Request  Rresend
-------------------------------------------------------------
   0   0        0                0                0        0
   0   1        0                0                0        0
   0   2        0                0                0        0
   0   3        0               73               73        0
  64   0        0                0                0        0
  64   1        0                0                0        0
  64   2        0                0                0        0
  64   3        0                0                0        0
 128   0        0                0                0        0
 128   1        0                0                0        0
 128   2        0                0                0        0
 128   3        0                0                0        0
 192   0        0                0                0        0
 192   1        0                0                0        0
 192   2        0                0                0        0
 192   3        0               59               59        0
 256   0        0                0                0        0
 256   1        0                0                0        0
 256   2        0                0                0        0
 256   3        0                0                0        0
 320   0        0                0                0        0
 320   1        0                0                0        0
 320   2        0                0                0        0
 320   3        0                0                0        0
 384   0        0                0                0        0
 384   1        0                0                0        0
 384   2        0                0                0        0
 384   3        0                0                0        0
 448   0        0                0                0        0
 448   1        0                0                0        0
 448   2        0                0                0        0
 448   3        0                0                0        0
 512   0        0                0                0        0
 512   1        0                0                0        0
 512   2        0                0                0        0
 512   3        0                0                0        0
 576   0        0                0                0        0
```

```
 576   1        0                0                0        0
 576   2        0                0                0        0
 576   3        0                0                0        0
 640   0        0                0                0        0
 640   1        0                0                0        0
 640   2        0                0                0        0
 640   3        0                0                0        0
 704   0        0                0                0        0
 704   1        0                0                0        0
 704   2        0                0                0        0
 704   3        0                0                0        0
 768   0        0                0                0        0
 768   1        0                0                0        0
 768   2        0                0                0        0
 768   3        0                0                0        0
 832   0        0                0                0        0
 832   1        0                0                0        0
 832   2        0                0                0        0
 832   3        0                0                0        0
 896   0        0                0                0        0
 896   1        0                0                0        0
 896   2        0                0                0        0
 896   3        0                0                0        0
 960   0        0                0                0        0
 960   1        0                0                0        0
 960   2        0                0                0        0
 960   3        0                0                0        0
LDI Counters
LDI COS  OUT_REQ   CREDIT CREDITNA
---------------------------------
  0   0        0     9471       63
  0   1        0        0        0
  0   2        0        0        0
  0   3        0     9548       63
  1   0        0     9471       63
  1   1        0        0        0
  1   2        0        0        0
  1   3        0     9487       63
  2   0        0        0        0
  2   1        0        0        0
  2   2        0        0        0
  2   3        0        0        0
  3   0        0        0        0
  3   1        0        0        0
  3   2        0        0        0
  3   3        0        0        0
  4   0        0        0        0
  4   1        0        0        0
  4   2        0        0        0
  4   3        0        0        0
  5   0        0        0        0
  5   1        0        0        0
  5   2        0        0        0
  5   3        0        0        0
  6   0        0        0        0
  6   1        0        0        0
  6   2        0        0        0
  6   3        0        0        0
  7   0        0        0        0
  7   1        0        0        0
  7   2        0        0        0
  7   3        0        0        0
  8   0        0        0        0
  8   1        0        0        0
```

```
 8   2          0          0          0
 8   3          0          0          0
 9   0          0          0          0
 9   1          0          0          0
 9   2          0          0          0
 9   3          0          0          0
10   0          0          0          0
10   1          0          0          0
10   2          0          0          0
10   3          0          0          0
11   0          0          0          0
11   1          0          0          0
11   2          0          0          0
11   3          0          0          0
12   0          0          0          0
12   1          0          0          0
12   2          0          0          0
12   3          0          0          0
13   0          0          0          0
13   1          0          0          0
13   2          0          0          0
13   3          0          0          0
14   0          0          0          0
14   1          0          0          0
14   2          0          0          0
14   3          0          0          0
15   0          0          0          0
15   1          0          0          0
15   2          0          0          0
15   3          0          0          0
16   0          0          0          0
16   1          0          0          0
16   2          0          0          0
16   3          0          0          0
17   0          0          0          0
17   1          0          0          0
17   2          0          0          0
17   3          0          0          0
18   0          0          0          0
18   1          0          0          0
18   2          0          0          0
18   3          0          0          0
19   0          0          0          0
19   1          0          0          0
19   2          0          0          0
19   3          0          0          0
20   0          0          0          0
20   1          0          0          0
20   2          0          0          0
20   3          0          0          0
21   0          0          0          0
21   1          0          0          0
21   2          0          0          0
21   3          0          0          0
22   0          0          0          0
22   1          0          0          0
22   2          0          0          0
22   3          0          0          0
23   0          0          0          0
23   1          0          0          0
23   2          0          0          0
23   3          0          0          0
24   0          0          0          0
24   1          0          0          0
```

```
24   2         0         0         0
24   3         0         0         0
25   0         0         0         0
25   1         0         0         0
25   2         0         0         0
25   3         0         0         0
26   0         0         0         0
26   1         0         0         0
26   2         0         0         0
26   3         0         0         0
27   0         0         0         0
27   1         0         0         0
27   2         0         0         0
27   3         0         0         0
28   0         0         0         0
28   1         0         0         0
28   2         0         0         0
28   3         0         0         0
29   0         0         0         0
29   1         0         0         0
29   2         0         0         0
29   3         0         0         0
30   0         0         0         0
30   1         0         0         0
30   2         0         0         0
30   3         0         0         0
31   0         0         0         0
31   1         0         0         0
31   2         0         0         0
31   3         0         0         0
32   0         0         0         0
32   1         0         0         0
32   2         0         0         0
32   3         0         0         0
33   0         0         0         0
33   1         0         0         0
33   2         0         0         0
33   3         0         0         0
34   0         0         0         0
34   1         0         0         0
34   2         0         0         0
34   3         0         0         0
35   0         0         0         0
35   1         0         0         0
35   2         0         0         0
35   3         0         0         0
36   0         0         0         0
36   1         0         0         0
36   2         0         0         0
36   3         0         0         0
37   0         0         0         0
37   1         0         0         0
37   2         0         0         0
37   3         0         0         0
38   0         0         0         0
38   1         0         0         0
38   2         0         0         0
38   3         0         0         0
39   0         0         0         0
39   1         0         0         0
39   2         0         0         0
39   3         0         0         0
40   0         0         0         0
40   1         0         0         0
```

```
40    2          0          0          0
40    3          0          0          0
41    0          0          0          0
41    1          0          0          0
41    2          0          0          0
41    3          0          0          0
42    0          0          0          0
42    1          0          0          0
42    2          0          0          0
42    3          0          0          0
43    0          0          0          0
43    1          0          0          0
43    2          0          0          0
43    3          0          0          0
44    0          0          0          0
44    1          0          0          0
44    2          0          0          0
44    3          0          0          0
45    0          0          0          0
45    1          0          0          0
45    2          0          0          0
45    3          0          0          0
46    0          0          0          0
46    1          0          0          0
46    2          0          0          0
46    3          0          0          0
47    0          0          0          0
47    1          0          0          0
47    2          0          0          0
47    3          0          0          0
48    0          0          0          0
48    1          0          0          0
48    2          0          0          0
48    3          0          0          0
49    0          0          0          0
49    1          0          0          0
49    2          0          0          0
49    3          0          0          0
50    0          0          0          0
50    1          0          0          0
50    2          0          0          0
50    3          0          0          0
51    0          0          0          0
51    1          0          0          0
51    2          0          0          0
51    3          0          0          0
52    0          0          0          0
52    1          0          0          0
52    2          0          0          0
52    3          0          0          0
53    0          0          0          0
53    1          0          0          0
53    2          0          0          0
53    3          0          0          0
54    0          0          0          0
54    1          0          0          0
54    2          0          0          0
54    3          0          0          0
55    0          0          0          0
55    1          0          0          0
55    2          0          0          0
55    3          0          0          0
56    0          0          0          0
56    1          0          0          0
```

```
 56   2         0         0         0
 56   3         0         0         0
 57   0         0         0         0
 57   1         0         0         0
 57   2         0         0         0
 57   3         0         0         0
 58   0         0         0         0
 58   1         0         0         0
 58   2         0         0         0
 58   3         0         0         0
 59   0         0         0         0
 59   1         0         0         0
 59   2         0         0         0
 59   3         0         0         0
 60   0         0         0         0
 60   1         0         0         0
 60   2         0         0         0
 60   3         0         0         0
 61   0         0         0         0
 61   1         0         0         0
 61   2         0         0         0
 61   3         0         0         0
 62   0         0         0         0
 62   1         0         0         0
 62   2         0         0         0
 62   3         0         0         0
 63   0         0         0         0
 63   1         0         0         0
 63   2         0         0         0
 63   3         0         0         0


OBFL: System Bootup Record:
----------------------------
    Module:  5
----------------------------


OBFL: Device Versions in Switch:
----------------------------
    Module:  5
----------------------------


OBFL: Exception Log:
----------------------------
    Module:  5
----------------------------


OBFL: Register Log:
----------------------------
    Module:  5
----------------------------
register-log: This option not supported on SUP.


OBFL: Miscellaneous Error Logs:
----------------------------
    Module:  5
----------------------------.
```

Starting from Cisco MDS 9000 NX-OS Release 9.4(3), the **show logging onboard internal power** command displays the status of the PSU:

```
switch# show logging onboard internal power

----------------------------
Module: 3 show clock
----------------------------
2024-12-02 04:14:24

-------------------------------
-------------------------------


Mon Dec  2 02:06:13 2024 (556263 us)
PS_OK PS_4 registers
0x00-0x1F: 0x40 0x26 0x42 0x00 0x00 0x00 0xC7 0xFF 0x0D 0xFF 0x00 0xFF 0xFF 0xFF 0x04 0xFF
 0x00 0xFF 0xFF 0xFF 0x00 0xFF 0x00 0x01 0x14 0xB4 0xFF 0xFF 0xFF 0xFF 0xFF 0xFF
0x20-0x3F: 0xFF 0xFF 0x00 0xFF 0xFF 0xFF 0x5A 0xFF 0x00 0xFF 0xFF 0xFF 0xFF 0xFF 0x00 0xFF
 0xFF 0xFF 0xFF 0xFF 0xFF 0xFF 0xFF 0xFF 0xFF 0xFF 0xFF 0xFF 0xFF 0xFF 0xFF 0xFF
0x40-0x5F: 0x40 0xFF 0x01 0xFF 0xFF 0x0F 0xFF 0xFF 0x28 0xFF 0xFF 0xFF 0xFF 0xFF 0xFF 0xFF
 0xFF 0xFF 0xFF 0xFF 0xFF 0xFF 0xFF 0xFF 0xFF 0xFF 0xFF 0xFF 0xFF 0xFF 0xFF 0xFF
0x60-0x62: 0xFF 0xFF 0x0D

Mon Dec  2 02:06:13 2024 (292513 us)
PS_OK PS_3 registers
0x00-0x1F: 0x40 0x26 0x02 0x00 0x00 0x00 0xC8 0xFF 0x0D 0xFF 0x00 0xFF 0xFF 0xFF 0x04 0xFF
 0x00 0xFF 0xFF 0xFF 0x00 0xFF 0x00 0x00 0xA8 0xBE 0xFF 0xFF 0xFF 0xFF 0xFF 0xFF
0x20-0x3F: 0xFF 0x00 0x00 0x00 0x00 0x00 0x5B 0xFF 0x00 0xFF 0xFF 0xFF 0xFF 0xFF 0x00 0xFF
 0xFF 0xFF 0xFF 0xFF 0xFF 0xFF 0xFF 0xFF 0xFF 0xFF 0xFF 0xFF 0xFF 0xFF 0xFF 0xFF
0x40-0x5F: 0x40 0x00 0x01 0xFF 0xFF 0x0F 0x00 0x00 0x28 0xFF 0xFF 0xFF 0xFF 0xFF 0xFF 0xFF
 0xFF 0xFF 0xFF 0xFF 0xFF 0xFF 0xFF 0xFF 0xFF 0xFF 0xFF 0xFF 0xFF 0xFF 0xFF 0xFF
0x60-0x62: 0xFF 0xFF 0x0D

Mon Dec  2 02:06:13 2024 ( 27734 us)
PS_OK PS_2 registers
0x00-0x1F: 0x40 0x26 0x42 0x00 0x00 0x00 0xC6 0xFF 0x0D 0xFF 0x00 0xFF 0xFF 0xFF 0x04 0xFF
 0x00 0xFF 0xFF 0xFF 0x00 0xFF 0x00 0x01 0x06 0x18 0xFF 0xFF 0xFF 0xFF 0xFF 0xFF
0x20-0x3F: 0xFF 0xFF 0x00 0xFF 0xFF 0xFF 0x5A 0xFF 0x00 0xFF 0xFF 0xFF 0xFF 0xFF 0x00 0xFF
 0xFF 0xFF 0xFF 0xFF 0xFF 0xFF 0xFF 0xFF 0xFF 0xFF 0xFF 0xFF 0xFF 0xFF 0xFF 0xFF
0x40-0x5F: 0x40 0xFF 0x01 0xFF 0xFF 0x0F 0xFF 0xFF 0x28 0xFF 0xFF 0xFF 0xFF 0xFF 0xFF 0xFF
 0xFF 0xFF 0xFF 0xFF 0xFF 0xFF 0xFF 0xFF 0xFF 0xFF 0xFF 0xFF 0xFF 0xFF 0xFF 0xFF
0x60-0x62: 0xFF 0xFF 0x0D

Mon Dec  2 02:06:12 2024 (763641 us)
PS_OK PS_1 registers
0x00-0x1F: 0x40 0x26 0x02 0x00 0x00 0x00 0xC7 0xFF 0x0D 0xFF 0x00 0xFF 0xFF 0xFF 0x04 0xFF
 0x00 0xFF 0xFF 0xFF 0x00 0xFF 0x00 0x00 0x7F 0x64 0xFF 0xFF 0xFF 0xFF 0xFF 0xFF
0x20-0x3F: 0xFF 0x00 0x00 0x00 0x00 0x00 0x5B 0xFF 0x00 0xFF 0xFF 0xFF 0xFF 0xFF 0x00 0xFF
 0xFF 0xFF 0xFF 0xFF 0xFF 0xFF 0xFF 0xFF 0xFF 0xFF 0xFF 0xFF 0xFF 0xFF 0xFF 0xFF
0x40-0x5F: 0x40 0x00 0x01 0xFF 0xFF 0x0F 0x00 0x00 0x28 0xFF 0xFF 0xFF 0xFF 0xFF 0xFF 0xFF
 0xFF 0xFF 0xFF 0xFF 0xFF 0xFF 0xFF 0xFF 0xFF 0xFF 0xFF 0xFF 0xFF 0xFF 0xFF 0xFF
0x60-0x62: 0xFF 0xFF 0x0D
```

The following example shows that RFC 5424 format is enabled for syslog logging messages and RFC 5424 timestamps are enabled for system logs:

```
switch# show logging format
Logging format rfc5424:         enabled
System timestamp format rfc5424:enabled
```

The following example shows that syslog messages are logged UTC timezone:

```
switch# show logging timezone
Logging timezone utc:           enabled
```

Related Commands

Command	Description
logging	Configures logging parameters.

show logging onboard flow-control request-timeout

To display the Onboard Failure Logging (OBFL) request timeout for a source-destination pair per module with the timestamp information, use the **show logging onboard flow-control request-timeout** command.

show logging onboard flow-control request-timeout

Command Default

Displays the OBFL request timeout for a source-destination pair, per module, with the timestamp information.

Command Modes

EXEC mode.

Command History

Release	Modification
5.0(1a)	This command was introduced.

Examples

This example shows how to display the request timeout for a source-destination pair per module with the timestamp information for the supervisor CLI:

```
switch# show logging onboard flow-control request-timeout
----------------------------
    Module:  1
----------------------------
----------------------------
    Module:  2
----------------------------
-------------------------------------------------------------------------------
|  Dest  |   Source   |Events|      Timestamp         |       Timestamp        |
|  Intf  |    Intf    | Count|       Earliest         |         Latest         |
-------------------------------------------------------------------------------
|sup-fc0 |fc2/48,     |    24|Wed Oct 31 14:31:35 2012|Wed Oct 31 14:31:36 2012|
-------------------------------------------------------------------------------
|sup-fc0 |fc2/9,      |  7158|Mon Feb  7 10:49:20 2011|Mon Feb  7 10:52:59 2011|
|        |fc2/23,     |      |                        |                        |
|        |fc2/24,     |      |                        |                        |
-------------------------------------------------------------------------------
|sup-fc0 |fc2/9,      |  7907|Mon Feb  7 10:45:17 2011|Mon Feb  7 10:49:20 2011|
|        |fc2/23,     |      |                        |                        |
-------------------------------------------------------------------------------
|sup-fc0 |fc2/23,     |     2|Mon Feb  7 10:45:17 2011|Mon Feb  7 10:45:17 2011|
-------------------------------------------------------------------------------
```

Related Commands

Command	Description
logging	Configures logging parameters.

show mcast

To display multicast information, use the **show mcast** command.

show mcast [**vsan vsan-id**]

Syntax Description

vsan *vsan-id*	(Optional) Specifies the number of the VSAN. The range is 1 to 4093.

Command Default

None.

Command Modes

EXEC mode.

Command History

Release	Modification
2.0(x)	This command was introduced.

Usage Guidelines

None.

Examples

The following example displays multicast information:

```
switch# show mcast

Multicast root for VSAN 1
        Configured root mode : Principal switch
        Operational root mode : Principal switch
        Root Domain ID : 0x15(21)
Multicast root for VSAN 73
        Configured root mode : Principal switch
        Operational root mode : Principal switch
        Root Domain ID : 0x65(101)
Multicast root for VSAN 99
        Configured root mode : Principal switch
        Operational root mode : Principal switch
        Root Domain ID : 0xe4(228)
Multicast root for VSAN 4001
        Configured root mode : Principal switch
        Operational root mode : Principal switch
        Root Domain ID : 0xe9(233)
Multicast root for VSAN 4002
        Configured root mode : Principal switch
        Operational root mode : Principal switch
        Root Domain ID : 0x78(120)
Multicast root for VSAN 4003
        Configured root mode : Principal switch
        Operational root mode : Principal switch
        Root Domain ID : 0xe0(224)
Multicast root for VSAN 4004
        Configured root mode : Principal switch
        Operational root mode : Lowest domain switch
        Root Domain ID : 0x01(1)
```

Related Commands

Command	Description
mcast root	Configures the multicast root VSAN.

show module

To display the status of a module, use the **show module** command.

show module [*slot* | **uptime** | **xbar** *number*]

Syntax Description

slot	(Optional) Specifies the slot number for the switching module.
uptime	(Optional) Displays the length of time since the control processor on each module has been reset. This is independent of the running time of the module forwarding hardware.
xbar *number*	(Optional) Displays information about the specified crossbar. *number* is an integer 1 to 6.

Command Default

None.

Command Modes

EXEC mode.

Command History

Release	Modification
1.3(4)	This command was introduced.
3.0(1)	Added the **recovery-steps** and **xbar** options.
4.1(1b)	Support added for 12 and 24 port modules.
8.1(1)	Removed **diag**, **recover-steps** and **resources** keywords.

Usage Guidelines

Each module goes through a testing and an initializing stage before displaying an 'ok' status.

This table describes the module states listed in the **show module** command output.

Table 8: Module States

Module Status Output	Description
`powered up`	The module is receiving electrical power. Once the module is powered up, the software begins booting.
`testing`	The module has established connection with the supervisor module and is performing bootup diagnostics.
`initializing`	The diagnostics have completed successfully and the configuration is being downloaded.
`failure`	The module has failed to initialize successfully after three attempts. This may be due to a software or hardware issue.

Module Status Output	Description
ok	The module is online and ready for use.
power-dn	The module is powered off in the configuration.
power-denied	There is insufficient power for the module to power up.
active	This module is the active supervisor module and the switch is ready to be configured.
ha-standby	The standby supervisor is synchronised with the active supervisor and ready to take over in the event of failure of the active supervisor.
standby	The warm switchover mechanism is enabled on the standby supervisor module.

The **uptime** option displays the time that the control processor of a module has been running. This is reset each time the processor reloads including for nondistruptive reloads due to ISSU/D or CLI command. The forwarding hardware is not included in this uptime. It is only reset when the module is power cycled. Fabric modules do not have a control processor onboard and so are not displayed with this option.

Examples

The following example displays information about all modules on the switch:

```
switch# show module
Mod  Ports  Module-Type                      Model              Status
---  -----  -------------------------------- ------------------ ------------
2    32     Advanced Services Module         DS-X9032-SMV       powered-dn
4    32     Advanced Services Module         DS-X9032-SMV       powered-dn
5    0      Supervisor/Fabric-1              DS-X9530-SF1-K9    active *
6    0      Supervisor/Fabric-1              DS-X9530-SF1-K9    ha-standby
8    32     1/2 Gbps FC Module               DS-X9032           ok

Mod  Sw           Hw      World-Wide-Name(s) (WWN)
---  -----------  ------  --------------------------------------------------
5    1.2(2)       0.610   --
6    1.2(2)       0.610   --
8    1.2(2)       0.3     21:c1:00:0b:46:79:f1:40 to 21:e0:00:0b:46:79:f1:40

Mod  MAC-Address(es)                         Serial-Num
---  --------------------------------------  ----------
5    00-d0-97-38-b4-01 to 00-d0-97-38-b4-05  JAB06350B0H
6    00-d0-97-38-b3-f9 to 00-d0-97-38-b3-fd  JAB06350B1R
8    00-05-30-00-2b-e2 to 00-05-30-00-2b-e6  jab062407x4
* this terminal session
```

The following example displays uptime information for all modules in the switch:

```
switch#  show module uptime
------ Module 1 -----
Module Start Time:   Wed Apr 14 18:12:48 2004
Up Time:             16 days, 5 hours, 59 minutes, 41 seconds
------ Module 6 -----
Module Start Time:   Wed Apr 14 18:11:57 2004
Up Time:             16 days, 6 hours, 0 minutes, 32 second
```

The following example displays information about all fabric modules in the switch:

```
switch# show module xbar
Xbar Ports  Module-Type                    Model              Status
---  -----  --------------------------------- ------------------ ------------
1    0      Fabric Module 1                 DS-13SLT-FAB1      ok
2    0      Fabric Module 2                 DS-13SLT-FAB2      ok

Xbar Sw              Hw      World-Wide-Name(s) (WWN)
---  --------------  ------  --------------------------------------------------
1    NA              0.0     --
2    NA              0.111   --

Xbar MAC-Address(es)                         Serial-Num
---  --------------------------------------  ----------
1    NA                                      JAF1207ARRS
2    NA                                      JAE1212BPR0

* this terminal session
```

Related Commands

Command	Description
poweroff module	Configures electrical power for a module.
out-of-service	Configures electrical power for a supervisor.

show monitor session

To display specific information about a SPAN session, use the **show monitor session** command.

show monitor session [**session-id** | **all** | **range session-id**]

Syntax Description

session-id	(Optional) Specifies the SPAN session ID. The range is 1 to 48.
all	(Optional) Displays the SPAN session configuration for all sessions.
range	(Optional) Displays the SPAN session configuration for a range of sessions.

Command Default

None.

Command Modes

Any mode

Command History

Release	Modification
6.2(1)	This command was introduced.

Usage Guidelines

None.

Examples

The following example displays local span session for all created sessions:

```
switch(config-monitor)# show monitor session all
   session 1
---------------
mode              : extended
ssn direction     : both
state             : up
source intf       :
    rx            : fc1/38
    tx            : fc1/38
    both          : fc1/38
source VLANs      :
    rx            :
    tx            :
    both          :
source exception  :
filter VLANs      : filter not specified
destination ports : fc1/1
Feature       Enabled   Value   Modules Supported       Modules Not-Supported
------------------------------------------------------------------------------
rate-limiter  Yes       100%     5                       -
MTU-Trunc     No
Sampling      No
Legend:
  MCBE  = Multicast Best Effort
  L3-TX = L3 Multicast Egress SPAN
  Ex-SP = Module(s) with Exception SPAN source allocated in the session
```

The following example displays local span session in the both mode (bi-directional):

```
switch(config-monitor)# show monitor session 1
   session 1
---------------
mode              : extended
ssn direction     : both
state             : up
source intf       :
    rx            : fc1/38
    tx            : fc1/38
    both          : fc1/38
source VLANs      :
    rx            :
    tx            :
    both          :
source exception  :
filter VLANs      : filter not specified
destination ports : fc1/1
Feature       Enabled   Value   Modules Supported       Modules Not-Supported
-------------------------------------------------------------------------------
rate-limiter  Yes       100%     5                       -
MTU-Trunc     No
Sampling      No
Legend:
  MCBE  = Multicast Best Effort
  L3-TX = L3 Multicast Egress SPAN
  Ex-SP = Module(s) with Exception SPAN source allocated in the session
```

The following example displays local span session in rx mode(uni-directional):

```
switch(config-monitor)# show monitor session 1
   session 1
---------------
ssn direction     : rx
state             : up
source intf       :
    rx            : fc1/38
    tx            :
    both          :
source VLANs      :
    rx            :
    tx            :
    both          :
source exception  :
filter VLANs      : filter not specified
destination ports : fc1/1
Feature       Enabled   Value   Modules Supported       Modules Not-Supported
-------------------------------------------------------------------------------
rate-limiter  Yes       100%     5                       -
MTU-Trunc     No
Sampling      No
Legend:
  MCBE  = Multicast Best Effort
  L3-TX = L3 Multicast Egress SPAN
  Ex-SP = Module(s) with Exception SPAN source allocated in the session
```

The following example displays local span session in tx mode(uni-directional):

```
switch(config)# monitor session 1 tx
switch(config-monitor)# source interface fc1/38 tx
switch(config-monitor)# destination interface fc1/1
switch(config-monitor)# no shut
switch(config-monitor)# show monitor session 1
```

```
   session 1
---------------
ssn direction     : tx
state             : up
source intf       :
    rx            :
    tx            : fc1/38
    both          :
source VLANs      :
    rx            :
    tx            :
    both          :
source exception  :
filter VLANs      : filter not specified
destination ports : fc1/1
Feature       Enabled   Value   Modules Supported       Modules Not-Supported
-------------------------------------------------------------------------------
rate-limiter  Yes       100%     5                       -
MTU-Trunc     No
Sampling      No
Legend:
  MCBE  = Multicast Best Effort
  L3-TX = L3 Multicast Egress SPAN
  Ex-SP = Module(s) with Exception SPAN source allocated in the session
```

The following example displays the rspan session in both direction or both mode:

```
switch(config-monitor)# show monitor session 1
   session 1
---------------
mode              : extended
ssn direction     : both
state             : up
source intf       :
    rx            : fc1/38
    tx            : fc1/38
    both          : fc1/38
source VLANs      :
    rx            :
    tx            :
    both          :
source exception  :
filter VLANs      : filter not specified
destination ports : fc1/1
Feature       Enabled   Value   Modules Supported       Modules Not-Supported
-------------------------------------------------------------------------------
rate-limiter  Yes       100%     5                       -
MTU-Trunc     No
Sampling      No
Legend:
  MCBE  = Multicast Best Effort
  L3-TX = L3 Multicast Egress SPAN
  Ex-SP = Module(s) with Exception SPAN source allocated in the session
```

The following example displays the remote rspan session in tx direction or tx mode(uni-directional):

```
switch(config)# monitor session 1 tx
switch(config-monitor)# source interface fc1/38
switch(config-monitor)# destination interface fc1/1
switch(config-monitor)# no shut
switch(config-monitor)# show monitor session 1
   session 1
---------------
```

```
ssn direction     : tx
state             : up
source intf       :
    rx            :
    tx            : fc1/38
    both          :
source VLANs      :
    rx            :
    tx            :
    both          :
source exception  :
filter VLANs      : filter not specified
destination ports : fc1/1
Feature       Enabled   Value   Modules Supported       Modules Not-Supported
------------------------------------------------------------------------------
rate-limiter  Yes       100%     5                       -
MTU-Trunc     No
Sampling      No
Legend:
  MCBE  = Multicast Best Effort
  L3-TX = L3 Multicast Egress SPAN
  Ex-SP = Module(s) with Exception SPAN source allocated in the session
```

The following example displays the local span session with port-channel as source in rx mode:

```
switch(config)# monitor session 1 rx
switch(config-monitor)# source interface port-channel 1
switch(config-monitor)# destination
description   destination
switch(config-monitor)# destination interface fc1/1
switch(config-monitor)# no shut
switch(config-monitor)# show monitor session 1
   session 1
---------------
mode              : extended
ssn direction     : both
state             : up
source intf       :
    rx            : Po1
    tx            : Po1
    both          : Po1
source VLANs      :
    rx            :
    tx            :
    both          :
source exception  :
filter VLANs      : filter not specified
destination ports : fc1/1
Feature       Enabled   Value   Modules Supported       Modules Not-Supported
------------------------------------------------------------------------------
rate-limiter  Yes       100%     5                       -
MTU-Trunc     No
Sampling      No
Legend:
  MCBE  = Multicast Best Effort
  L3-TX = L3 Multicast Egress SPAN
  Ex-SP = Module(s) with Exception SPAN source allocated in the session
```

The following example displays the local span session with port-channel as source in rx mode:

```
switch(config)# monitor session 1 rx
switch(config-monitor)# source interface port-channel 1
switch(config-monitor)# destination
```

```
switch(config-monitor)# destination interface fc1/1
switch(config-monitor)# no shut
switch(config-monitor)# show monitor session 1
   session 1
---------------
ssn direction     : rx
state             : up
source intf       :
    rx            : Po1
    tx            :
    both          :
source VLANs      :
    rx            :
    tx            :
    both          :
source exception  :
filter VLANs      : filter not specified
destination ports : fc1/1
Feature       Enabled   Value   Modules Supported       Modules Not-Supported
------------------------------------------------------------------------------
rate-limiter  Yes       100%     5                       -
MTU-Trunc     No
Sampling      No
Legend:
  MCBE  = Multicast Best Effort
  L3-TX = L3 Multicast Egress SPAN
  Ex-SP = Module(s) with Exception SPAN source allocated in the session
The following example displays the local span session with port-channel as source in tx
mode:
switch(config)# monitor session 1 tx
switch(config-monitor)# source interface port-channel 1
switch(config-monitor)# destination interface fc1/1
switch(config-monitor)# no shut
switch(config-monitor)# show monitor session 1
   session 1
---------------
ssn direction     : tx
state             : up
source intf       :
    rx            :
    tx            : Po1
    both          :
source VLANs      :
    rx            :
    tx            :
    both          :
source exception  :
filter VLANs      : filter not specified
destination ports : fc1/1
Feature       Enabled   Value   Modules Supported       Modules Not-Supported
------------------------------------------------------------------------------
rate-limiter  Yes       100%     5                       -
MTU-Trunc     No
Sampling      No
Legend:
  MCBE  = Multicast Best Effort
  L3-TX = L3 Multicast Egress SPAN
  Ex-SP = Module(s) with Exception SPAN source allocated in the session
The following example displays the local span session with VSAN as source:
switch(config)# monitor session 1
switch(config-monitor)# source vsan 1
switch(config-monitor)# destination interface fc1/1
switch(config-monitor)# no shut
switch(config-monitor)#
```

```
sw-luke(config-monitor)# show monitor session 1
   session 1
---------------
mode              : extended
ssn direction     : both
state             : up
source intf       :
    rx            :
    tx            :
    both          :
source VLANs      :
    rx            :
    tx            :
    both          :
source VSANs      :
    rx            : 1
source exception  :
filter VLANs      : filter not specified
destination ports : fc1/1
Feature       Enabled   Value   Modules Supported       Modules Not-Supported
-------------------------------------------------------------------------------
rate-limiter  Yes       100%     5                       -
MTU-Trunc     No
Sampling      No
Legend:
  MCBE  = Multicast Best Effort
  L3-TX = L3 Multicast Egress SPAN
  Ex-SP = Module(s) with Exception SPAN source allocated in the session
```

The following example displays the local span session with VSAN as source with VSAN filter option:

```
switch(config)# monitor session 1
switch(config-monitor)# source vsan 1
switch(config-monitor)# destination interface fc1/1
switch(config-monitor)# source filter vsan 1
switch(config-monitor)# no shut
sw-luke(config-monitor)# show monitor session 1
   session 1
---------------
mode              : extended
ssn direction     : both
state             : up
source intf       :
    rx            :
    tx            :
    both          :
source VLANs      :
    rx            :
    tx            :
    both          :
source VSANs      :
    rx            : 1
source exception  :
filter VLANs      : filter not specified
    VSANs         : 1
destination ports : fc1/1
Feature       Enabled   Value   Modules Supported       Modules Not-Supported
-------------------------------------------------------------------------------
rate-limiter  Yes       100%     5                       -
MTU-Trunc     No
Sampling      No
Legend:
  MCBE  = Multicast Best Effort
```

```
L3-TX = L3 Multicast Egress SPAN
Ex-SP = Module(s) with Exception SPAN source allocated in the session
```

Related Commands

Command	Description
monitor session source interface	Configures the SPAN traffic in both ingress (rx) and egress (tx) directions.

show npv flogi-table

To display the information about N Port Virtualization (NPV) FLOGI session, use the show npv flogi-table command.

show npv flogi-table

Syntax Description

This command has no arguments or keywords.

Command Default

None.

Command Modes

EXEC mode.

Command History

Release	Modification
3.2(1)	This command was introduced.

Usage Guidelines

None.

Examples

The following example displays the information on NPV FLOGI session:

```
switch# show npv flogi-table
--------------------------------------------------------------------------------
SERVER EXTERNAL
INTERFACE VSAN FCID PORT NAME NODE NAME INTERFACE
--------------------------------------------------------------------------------
fc1/13 1 0x330100 2f:ff:00:06:2b:10:c1:14 2f:ff:00:06:2b:10:c1:14 fc1/4
fc1/13 1 0x333500 2f:bf:00:06:2b:10:c1:14 2f:bf:00:06:2b:10:c1:14 fc1/4
fc1/13 1 0x333600 2f:9f:00:06:2b:10:c1:14 2f:9f:00:06:2b:10:c1:14 fc1/3
fc1/13 1 0x333800 2f:7f:00:06:2b:10:c1:14 2f:7f:00:06:2b:10:c1:14 fc1/2
fc1/13 1 0x333e00 2f:3f:00:06:2b:10:c1:14 2f:3f:00:06:2b:10:c1:14 fc1/4
fc1/13 1 0x334a00 2e:bf:00:06:2b:10:c1:14 2e:bf:00:06:2b:10:c1:14 fc1/3
fc1/13 1 0x335400 2e:7f:00:06:2b:10:c1:14 2e:7f:00:06:2b:10:c1:14 fc1/4
fc1/13 1 0x336200 2d:ff:00:06:2b:10:c1:14 2d:ff:00:06:2b:10:c1:14 fc1/1
fc1/13 1 0x336f00 2d:9f:00:06:2b:10:c1:14 2d:9f:00:06:2b:10:c1:14 fc1/2
fc1/13 1 0x337300 2d:5f:00:06:2b:10:c1:14 2d:5f:00:06:2b:10:c1:14 fc1/2
fc1/13 1 0x337900 2c:ff:00:06:2b:10:c1:14 2c:ff:00:06:2b:10:c1:14 fc1/1
fc1/13 1 0x338500 2c:bf:00:06:2b:10:c1:14 2c:bf:00:06:2b:10:c1:14 fc1/2
fc1/13 1 0x338a00 2c:9f:00:06:2b:10:c1:14 2c:9f:00:06:2b:10:c1:14 fc1/1
```

Related Commands

Command	Description
show npv status	Displays the NPV current status.

show npv internal info

To display internal N Port Virtualization (NPV) information, use the show npv internal info command.

show npv internal info

Syntax Description

This command has no arguments or keywords.

Command Default

None.

Command Modes

EXEC mode.

Command History

Release	Modification
3.2(1)	This command was introduced.

Usage Guidelines

None.

Examples

The following example displays the NPV internal information:

```
switch# show npv internal info
NPV Globals:
============
NPV mode: ENABLED
Switch-Name: 209.165.200.226
Switch Mgmt IP Address: 209.165.200.226
proxy logo Retries: 1
Internal FLOGI max timeout Retries: -1
NS Registration max timeout Retries: 5
timer group handle: 0x30038fe0
Number of Active External Interfaces: 0
External Interface Info:
========================
Interface Information:
  ifindex: fc1/1, VSAN: 1, internal FLOGI fcid: 0x1e0000
  FSM current state: NPIVP_EXT_IF_ST_FLOGI_FAILED
  Internal FLOGI Fail Reason: Mismatch in VSAN for this upstream port
  fabric pwwn: 20:05:00:05:30:00:ca:16, fabric nwwn: 20:0a:00:05:30:00:ca:17
  my pwwn: 20:01:00:05:30:01:71:b8, my nwwn: 20:01:00:05:30:01:71:b9
Port Parameters:
  Rx B2B Credits: 16, Multiplier: 0, Buff Size: 2112
  Tx B2B Credits: 16, Multiplier: 0, Buff Size: 2112, bbscn: 0
  bbscn_capable: TRUE bbscn_max: 14, port_bbscn: 0
Timer & Retry Information:
  Busy Timer              (1), id: 21045, active: FALSE time remaining: 0
  Fail Retry Timer        (7), id: 4209, active: TRUE time remaining: 1
  FDISC Response Timer    (2), id: 00, active: FALSE time remaining: 0
  Error Clear Timer       (6), id: 71, active: TRUE time remaining: 433
Statistics:
  flogi retry count            : 113
  ns registration retry count  : 0
  number of flogis accepted: 0
  login failures out of ids: 0
  other login failures     : 0
```

```
  timed out login_failures : 0
  pending queue size       : 0
FLOGIs on this interface :
Interface Information:
  ifindex: fc1/5, VSAN: 1, internal FLOGI fcid: 0x000000
  FSM current state: NPIVP_EXT_IF_ST_PREINIT_DONE
  fabric pwwn: 00:00:00:00:00:00:00:00, fabric nwwn: 00:00:00:00:00:00:00:00
  my pwwn: 00:00:00:00:00:00:00:00, my nwwn: 00:00:00:00:00:00:00:00
Port Parameters:
  Rx B2B Credits: 0, Multiplier: 0, Buff Size: 0
  Tx B2B Credits: 0, Multiplier: 0, Buff Size: 0, bbscn: 0
  bbscn_capable: FALSE bbscn_max: 0, port_bbscn: 0
Timer & Retry Information:
  Busy Timer              (1), id: 00, active: FALSE time remaining: 0
  Fail Retry Timer        (7), id: 00, active: FALSE time remaining: 0
  FDISC Response Timer    (2), id: 00, active: FALSE time remaining: 0
  Error Clear Timer       (6), id: 71, active: TRUE time remaining: 433
Statistics:
  flogi retry count            : 0
  ns registration retry count  : 0
  number of flogis accepted: 0
  login failures out of ids: 0
  other login failures     : 0
  timed out login_failures : 0
  pending queue size       : 0
FLOGIs on this interface :
Server Interface Info:
======================
Interface Information:
  ifindex: fc1/4,  VSAN: 1, NPIV enable: FALSE,  lcp init done: FALSE
  Selected External Interface:
  FSM current state: NPIVP_SVR_IF_ST_WAITING_EXTERNAL_INTERFACE
Port Parameters:
  rxbbcredit: 0 rxbufsize: 0
  txbbcredit: 0 txbufsize: 0 txbbscn: 0
  bbscn_capable: FALSE bbscn_max: 0,  port_bbscn: 0
Statistics:
  number of FLOGIs: 0
```

Related Commands

Command	Description
debug npv	Enables debugging NPV configurations.
show debug npv	Displays the NPV debug commands configured on the switch.

show npv internal info traffic-map

To display internal N port virtualization (NPV) information about a traffic map, use the show npv internal info traffic-map command.

show npv internal info traffic-map

Syntax Description

This command has no arguments or keywords.

Command Default

None.

Command Modes

EXEC mode

Command History

Release	Modification
4.1(1b)	Command output has been changed.
3. 3(1a)	This command was introduced.

Usage Guidelines

None.

Examples

The following example displays NPV internal information:

```
switch# show npv internal info traffic-map
NPV Traffic Map Information:
------------------------------------------------------
Server-If       Last Change Time        External-If(s)
------------------------------------------------------
fc1/10          2147469648.265604868    fc1/9,fc1/13
fc1/20          2147469648.265604868    fc1/9,fc1/13
------------------------------------------------------
switch#
```

Related Commands

Command	Description
show npv traffic-map	Displays NPV traffic map.

show npv status

To display the N Port Virtualization (NPV) current status, use the show npv status command.

show npv status

Syntax Description

This command has no arguments or keywords.

Command Default

None.

Command Modes

EXEC mode.

Command History

Release	Modification
3.2(1)	This command was introduced.

Usage Guidelines

None.

Examples

The following example displays the current status of NPV:

```
switch# show npv status
External Interfaces:
====================
Number of External Interfaces: 6
Interface: fc1/1, FCID: 0x330037, State: Up
Interface: fc1/2, FCID: 0x330038, State: Up
Interface: fc1/3, FCID: 0x330039, State: Up
Interface: fc1/4, FCID: 0x33003a, State: Up
Interface: fc1/23, FCID: 0x7d0007, State: Up
Interface: fc1/24, FCID: 0x7d0006, State: Up
Server Interfaces:
==================
Number of Server Interfaces: 4
Interface: fc1/13, NPIV: Yes, State: Up
Interface: fc1/14, NPIV: Yes, State: Up
Interface: fc1/15, NPIV: Yes, State: Up
```

Related Commands

Command	Description
show npv flogi-table	Displays the information about NPV FLOGI session.

show npv traffic-map

To display an N Port Virtualization (NPV) traffic map, use the show npv traffic-map command.

show npv traffic-map

Syntax Description

This command has no arguments or keywords.

Command Default

None.

Command Modes

EXEC mode.

Command History

Release	Modification
3.3(1a)	This command was introduced.

Usage Guidelines

None.

Examples

The following example displays the NPV traffic map information:

```
switch# show npv traffic-map
NPV Traffic Map Information:
----------------------------------------
Server-If       External-If(s)
----------------------------------------
fc1/10          fc1/9,fc1/13
fc1/20          fc1/9,fc1/13
----------------------------------------
switch#
```

Related Commands

Command	Description
show npv flogi-table	Displays information about NPV FLOGI sessions.
show npv internal info traffic-map	Displays internal information about the traffic map.

show npv traffic-map proposed

To display a proposed remapping of server interfaces to external interfaces based on recent external interface loads, use the **show npv traffic-map proposed** command.

show npv traffic-map proposed

Command Default

None.

Command Modes

Privileged EXEC (#)

Command History

Release	Modification
8.5(1)	This command was introduced.

Usage Guidelines

The proposed server to external interface map is based on the load of the server link over the previous sample period. This is calculated as (transmit bytes + receive bytes) / 2. The load values are updated at the end of each sampling period.

The first two columns show the interface the server is connected to and its current load. The 3rd and 4th columns show which external interface the server is mapped to and the total load on that uplink. The 5th and 6th columns show the proposed external interface to map the server interface to and the expected total load on that interface after all the proposed remapping is done. The 7th column shows the total external interface link speed to give an idea of the available capacity on it.

This command can only be used on switches in Cisco NPV mode.

Examples

The following example displays a proposed remapping of server interfaces to external interfaces:

```
switch# show npv traffic-map proposed

Proposed server-uplink mapping.
Statistics collected every 5 mins.
Load values may be rounded off during display.
'*' indicates change from the currently applied traffic map.
--------------------------------------------------------------------------
Server Interface------------ External Interface-----------------------
      Load   Current Mapping  Load   Proposed Mapping  Load   Speed
Name (Gbps)         Name      (Gbps)       Name          (Gbps) (Gbps)
--------------------------------------------------------------------------
fc1/6   2.8    port-channel122 2.8    port-channel122     5.6   32
fc1/3   2.6    fc1/33          5.3    fc1/33              2.6   8
*fc1/4  1.4    fc1/33          5.3    port-channel122     5.6   32
*fc1/5  1.3    fc1/33          5.3    port-channel122     5.6   32
```

Related Commands

Command	Description
npv traffic-map analysis clear	Resets the load values that were collected for NPV external interface load balancing.
npv traffic-map load-balancing disruptive	Configures automatic rebalancing of external interfaces.
npv traffic-map server-interface	Configures NPV traffic map server interface.

show ntp authentication-keys

To display a list of configured Network Time Protocol (NTP) authentication keys, use the **show ntp authentication-keys** command.

show ntp authentication-keys

Command Default

Displays NTP authentication keys.

Command Modes

Privileged EXEC (#)

Command History

Release	Modification
5.0(1a)	This command was introduced.

Usage Guidelines

No NTP keys are configured by default. Authentication keys are always stored in the switch configuration in an encrypted format. If a user configures a key as *clear text*, the key will automatically be converted before installation into the configuration.

Examples

The following example displays NTP authentication keys in encrypted format:

```
switch# show ntp authentication-keys
------------------------------
 Auth key         MD5  String
                  (Encrypted)
------------------------------
     42             nac1_12
     43             nac1_13
```

Related Commands

Command	Description
ntp authentication-key	Configures an NTP authentication key for a device to synchronize to a time source after enabling NTP authentication.
show scheduler schedule	Displays scheduler schedule.
ntp trusted-key	Configures one or more keys that a time source must provide in its packets for the device to synchronize to it.
show ntp trusted-keys	Display the NTP trusted keys.

show ntp authentication-status

To display the status of NTP message authentication, use the **show ntp authentication-status** command.

show ntp authentication-status

Command Default

Displays the NTP message authentication status.

Command Modes

Privileged EXEC (#)

Command History

Release	Modification
5.0(1a)	This command was introduced.

Usage Guidelines

Use the **show logging level pmon** command to verify the configured port monitor severity level.

Examples

The following example displays that NTP message authentication is enabled:

```
status# show ntp authentication-status
Authentication enabled.
```

Related Commands

Command	Description
ntp authenticate	Configure authentication for NTP exchanges to prevent the system from synchronizing with unauthenticated, unconfigured NTP peers.

show ntp logging-status

To display the status of NTP event logging to syslog, use the **show ntp logging-status** command.

show ntp logging-status

Command Default

Displays the NTP event logging to syslog status.

Command Modes

Privileged EXEC (#)

Command History

Release	Modification
5.0(1a)	This command was introduced.

Examples

The following example displays that NTP event logging to syslog is enabled:

```
switch# show ntp logging-status
NTP logging enabled.
```

Related Commands

Command	Description
ntp logging	Enables NTP syslogs.

show ntp peers

To display all the configured NTP peers, use the **show ntp peers** command.

show ntp peers

Command Default

Displays all NTP peers.

Command Modes

Privileged EXEC (#)

Command History

Release	Modification
2.0(x)	This command was introduced.

Examples

The following example displays all the configured NTP peers:

```
switch# show ntp peers
-------------------------------------------------
  Peer IP Address               Serv/Peer
-------------------------------------------------
  190.0.1.1                     Peer (configured)
  190.0.2.1                     Peer (configured)
```

Related Commands

Command	Description
ntp peer	Configures a device as an NTP peer.

show ntp peer-status

To display the status of all the configured NTP servers and peers, use the **show ntp peer-status** command.

show ntp peer-status

Command Default

Displays the status of all NTP servers and peers.

Command Modes

Privileged EXEC (#)

Command History

Release	Modification
2.0(x)	This command was introduced.

Usage Guidelines

This command is useful for debugging connectivity of the switch with other NTP devices. Information about each peer is displayed in the table, one peer per line. The first character of each line is a status flag. A legend above the table shows the meaning of this flag. NTP servers and peers that are in synchronization and used for local time updates have an equal (=) flag. There must be at least one device with this flag for the time on the local switch to be updated. Passive peers are peers that are currently unsynchronized. This means the local switch will not use time updates from these peers. The *remote* column shows the source IP address of the peer. The accuracy of the peer's source clock, or stratum, is shown in the *st* column. The higher the stratum value, the lower the accuracy of the peer's clock source, 16 being the lowest accuracy. The polling interval, in seconds, is shown in the *poll* column. The reachability field in the *reach* column is a circular bit map of the last 8 transactions with that peer, *1* indicating success and *0* indicating failure, the most recent transaction in the lowest significant bit. The round-trip time between the local switch and peer, in seconds, is shown in the *delay* column.

Examples

The following example displays the status of all the configured NTP servers and peers:

```
switch# show ntp peer-status
Total peers : 2
* - selected for sync, + -  peer mode(active),
- - peer mode(passive), = - polled in client mode
    remote               local                st   poll   reach delay
+190.0.1.1             0.0.0.0              16   16       0   0.00000
=190.0.2.1             0.0.0.0              16   16       0   0.00000
```

Related Commands

Command	Description
ntp peer	Configures a device as an NTP peer.
ntp server	Configures a device as an NTP server.

show ntp pending-diff

To display the differences between the pending NTP configuration changes and the active NTP configuration, use the **show ntp pending-diff** command.

show ntp pending-diff

Command Default

Displays the differences between the pending NTP configuration changes and active NTP configuration.

Command Modes

Privileged EXEC (#)

Command History

Release	Modification
2.0(x)	This command was introduced.

Usage Guidelines

This command displays any differences between the active configuration and the NTP CFS configuration session. Each line is prepended by a + or - flag where + indicates that the line will be added to the active configuration when the NTP CFS session is committed and - indicates that the line will be removed.

Examples

The following example displays the differences between the pending NTP configuration changes and active NTP configuration:

```
switch# show ntp pending-diff
-ntp peer 192.168.56.78
```

Related Commands

Command	Description
ntp peer	Configures a device as an NTP peer.
ntp server	Configures a device as an NTP server.

show ntp pending peers

To display the uncommitted (pending) NTP configuration for the current NTP CFS session, use the **show ntp pending peers** command.

show ntp pending peers

Command Default

Displays the pending NTP configuration for the current session.

Command Modes

Privileged EXEC (#)

Command History

Release	Modification
2.0(x)	This command was introduced.

Examples

The following example displays the pending NTP configuration for the current session:

```
switch# show ntp pending peers
ntp server 192.168.12.34
ntp peer 192.168.56.78
```

Related Commands

Command	Description
ntp peer	Configures a device as an NTP peer.
ntp server	Configures a device as an NTP server.

show ntp rts-update

To display status of the RTS internal time synchronization between modules, use the **show ntp rts-update** command.

show ntp rts-update

Command Default

Displays the RTS update status.

Command Modes

Privileged EXEC (#)

Command History

Release	Modification
2.0(x)	This command was introduced.

Usage Guidelines

The method of keeping the clocks synchronized between modules varies by platform. This is an internal mechanism which cannot be modified by the user.

Examples

The following example displays that RTS update status is enabled:

```
switch# show ntp rts-update
RTS update is enabled
```

show ntp session status

To display the NTP CFS session status, use the **show ntp session status** command.

show ntp session status

Command Default

Displays the NTP CFS session status.

Command Modes

Privileged EXEC (#)

Command History

Release	Modification
2.0(x)	This command was introduced.

The information displayed by this command is as follows:

Last Action Time Stamp: The timestamp of the reported action.

Last Action:

Status	Explanation
Distribution Enable	Specifies that the CFS distribution for NTP was enabled.
Distribution Disable	Specifies that the CFS distribution for NTP was disabled.
Commit	Specifies that the pending NTP configuration to an NTP CFS enabled peer was applied and the CFS lock was released.
Abort	Specifies that the NTP CFS distribution session was aborted and the CFS lock was released.
Clear	Specifies that the NTP information was cleared.

Last Action Result:

Status	Explanation
Success	Specifies that the NTP configuration changes were successfully committed.
Fail	Specifies that the NTP configuration changes were not committed.
In Progress	Specifies that the NTP configuration changes are in progress of being committed.
Partial Success	Specifies that the only some NTP configuration changes were successfully committed.

Last Action Failure Reason: A text message with further details about the last failure.

Examples

The following example displays the NTP CFS session status:

```
switch# show ntp session status
Last Action Time Stamp     : Thu Mar 19 13:42:24 2020
```

```
Last Action                : Commit
Last Action Result         : Success
Last Action Failure Reason : none
```

Related Commands

Command	Description
clear ntp session	Aborts the current NTP CFS session and removes any pending configuration.
ntp commit	Applies pending NTP configuration to an NTP CFS enabled peers in a fabric.
ntp distribute	Enables CFS distribution of NTP configuration.

show ntp source-interface

To display information about the configured NTP source interface, use the **show ntp source-interface** command.

show ntp source-interface

Command Default

Displays information about the configured NTP source interface.

Command Modes

Privileged EXEC (#)

Command History

Release	Modification
4.1(3)	This command was introduced.

Examples

The following example displays that management 0 is configured as the NTP source interface:

```
switch# show ntp source-interface
Source interface  mgmt0
```

Related Commands

Command	Description
ntp source-interface	Overrides the default source address of NTP packets sent from a switch.

show ntp statistics

To display NTP statistics, use the **show ntp statistics** command.

show ntp statistics { **io** | **local** | **memory** | **peer** { **ipaddr** *ip-address* | **name** *name* } }

Syntax Description

io	Displays NTP packet handling statistics.
local	Displays NTP packet type statistics.
memory	Displays NTP memory statistics.
peer	Displays NTP peer statistics..
ipaddr *ip-address*	Specifies peer IP address.
name *name*	Specifies peer name.

Command Default

Displays NTP statistics.

Command Modes

Privileged EXEC (#)

Command History

Release	Modification
2.0(x)	This command was introduced.

Usage Guidelines

This command is useful for debugging the NTP process on the switch. The following tables provide definitions for the fields displayed in the **show ntp statistics** command outputs:

Table 9: Table 1: Field Descriptions for show ntp statistics io Command

Field	Description
Time since reset	Time in seconds since the NTP process was started.
Receive buffers	Total number of UDP client-receive buffers.
Free receive buffers	Number of available client-receive buffers.
Used receive buffers	Number of unavailable client-receive buffers.
Low water refills	Total number of times buffers were added, which also indicates the number of times there were low memory resources during buffer creation.
Dropped packets	Total number of NTP packets dropped by the system.
Ignored packets	Total number of NTP packets ignored by the system.
Received packets	Total number of NTP packets received by the system.
Packets sent	Total number of NTP packets transmitted by the system.

Packets not sent	Total number of NTP packets not sent by the system due to an error.
Interrupts handled	Total number of NTP timer interrupts handled by the system.
Received by int	Total number of pulses received that triggered an interrupt.

Table 10: Table 2: Field Descriptions for show ntp statistics local Command

Field	Description
System uptime	Length of time that the system has been running.
Time since reset	Time in hours since the system was last rebooted.
Old version packets	Number of packets that match the previous NTP version.
New version packets	Number of packets that match the current NTP version.
Unknown version number	Number of packets with an unknown NTP version.
Bad packet format	Number of NTP packets that were received and dropped by the system due to an invalid packet format.
Packets processed	Number of NTP packets received and processed by the system.
Bad authentication	Number of packets not verified as authentic.

Table 11: Table 3: Field Descriptions for show ntp statistics memory Command

Field	Description
Time since reset	Time in hours since the system was last rebooted.
Total peer memory	Total peer memory available for the allocation of memory to peer structures.
Free peer memory	Existing peer memory.
Calls to findpeer	The number of calls to the *findpeer()* subroutine. This subroutine looks for matching peer structures in the peer list.
New peer allocations	Number of allocations from the free peer memory.
Peer demobilizations	Number of structures returned to the free peer memory.
Hash table counts	The count of peers in each hash table.

Examples

The following example displays the NTP packet handling statistics:

```
switch# show ntp statistics io
time since reset:     11152
receive buffers:      9
free receive buffers: 9
used receive buffers: 9
low water refills:    0
dropped packets:      0
ignored packets:      0
```

```
received packets:     3
packets sent:         2
packets not sent:     0
interrupts handled:   3
received by int:      3
```

The following example displays the NTP packet type statistics:

```
switch# show ntp statistics local
system uptime:          11166
time since reset:       11166
bad stratum in packet:  0
old version packets:    4
new version packets:    0
unknown version number: 0
bad packet format:      0
packets processed:      0
bad authentication:     0
```

The following example displays the NTP memory statistics:

```
switch# show ntp statistics memory
time since reset:     11475
total peer memory:    15
free peer memory:     15
calls to findpeer:    0
new peer allocations: 0
peer demobilizations: 0
hash table counts:      0   0   0   0   0   0   0   0
                        0   0   0   0   0   0   0   0
                        0   0   0   0   0   0   0   0
                        0   0   0   0   0   0   0   0
```

Related Commands

Command	Description
clear ntp	Clears NTP information.
debug ntp	Debugging for the NTP feature.
ntp peer	Configures a device as an NTP peer.
ntp server	Configures a device as an NTP server.

show ntp status

To display NTP CFS status, use the **show ntp status** command.

show ntp status

Command Default

Displays NTP CFS status.

Command Modes

Privileged EXEC (#)

Command History

Release	Modification
2.0(x)	This command was introduced.

Examples

The following example displays the NTP CFS status:

```
switch# show ntp status
Distribution : Disabled
Last operational state: No session
```

Related Commands

Command	Description
ntp distribute	Enables CFS distribution of NTP configuration.

show ntp trusted-keys

To display NTP trusted keys, use the **show ntp trusted-keys** command.

show ntp trusted-keys

Command Default

Displays NTP trusted keys.

Command Modes

Privileged EXEC (#)

Command History

Release	Modification
5.0(1a)	This command was introduced.

Examples

The following example displays the NTP trusted keys:

```
switch# show ntp trusted-keys
Trusted Keys:
42
```

Related Commands

Command	Description
ntp authentication-key	Configures an NTP authentication key for a device to synchronize to a time source after enabling NTP authentication.
ntp trusted-key	Configures one or more keys that a time source must provide in its NTP packets for the device to synchronize to it.

show nvram hardware-log

To display the logs of hardware initiated switch resets, use the **show nvram hardware-log** command.

show nvram hardware-log [**raw**]

Syntax Description

raw	Displays the hardware initiated switch reset logs stored in NVRAM in raw format.

Command Default

None.

Command Modes

EXEC mode.

Command History

Release	Modification
9.4(1)	This command was introduced.

Usage Guidelines

This command is intended for use by Cisco only.

This command is supported on the following fabric switches:

- MDS 9132T
- MDS 9396T
- MDS 9148T
- MDS 9148V
- MDS 9124V
- MDS 9396V

This command requires switch EPLD bundle 9.4(1) or later to be applied. The EPLD bundle must be applied before the command will function. For more information refer to Cisco MDS 9000 Series EPLD Release Notes, Release 9.4(1).

Examples

The following example shows how to display hardware initiated switch reset logs:

```
mds9396v# show nvram hardware-log
----------------------------------
 Log  Instance - 0x20
----------------------------------
Post Code           ::P0V92 NIC FAIL
System Status       ::
                    PSU1_SEATED_L
                    PSU2_SEATED_L
                    PSU1_ALERT_L
                    PSU2_AC_OK
                    PSU2_DC_OK
                    Pwr_dm1_stable
                    Pwr_dm2_stable
                    Pwr_dm3_stable
Cpu Error           ::
```

```
Reset Cause         ::
                    Power failure
                    power on reset
Secure Boot Status  ::
                    SJ_status_o_0
IOFPGA_SPI_CS_SEL is primary BIOS
-----------------------------------
 Log  Instance - 0xe0
-----------------------------------
Post Code           ::CPU error 0/1/2
System Status       ::
                    PSU1_SEATED_L
                    PSU2_SEATED_L
                    PSU1_AC_OK
                    PSU2_AC_OK
                    PSU1_DC_OK
                    PSU2_DC_OK
                    Pwr_dm1_stable
                    Pwr_dm2_stable
                    Pwr_dm3_stable
Cpu Error           ::
                    Cpu_err0_L
Reset Cause         ::
                    Power failure
                    power on reset
Secure Boot Status  ::
IOFPGA_SPI_CS_SEL is primary BIOS
-----------------------------------
 Log  Instance - 0xc0
-----------------------------------
Post Code           ::CPU error 0/1/2
System Status       ::
                    PSU1_SEATED_L
                    PSU2_SEATED_L
                    PSU1_AC_OK
                    PSU2_AC_OK
                    PSU1_DC_OK
                    PSU2_DC_OK
                    Pwr_dm1_stable
                    Pwr_dm2_stable
                    Pwr_dm3_stable
Cpu Error           ::
                    Cpu_err0_L
                    Cpu_err2_L
Reset Cause         ::
                    Power failure
                    power on reset
Secure Boot Status  ::
IOFPGA_SPI_CS_SEL is primary BIOS
-----------------------------------
 Log  Instance - 0xa0
-----------------------------------
Post Code           ::CPU error 0/1/2
System Status       ::
                    PSU1_SEATED_L
                    PSU2_SEATED_L
                    PSU1_AC_OK
                    PSU2_AC_OK
                    PSU1_DC_OK
                    PSU2_DC_OK
                    Pwr_dm1_stable
                    Pwr_dm2_stable
                    Pwr_dm3_stable
Cpu Error           ::
```

```
                    Cpu_err0_L
Reset Cause         ::
                    Power failure
                    power on reset
Secure Boot Status  ::
IOFPGA_SPI_CS_SEL is primary BIOS
-----------------------------------
 Log  Instance - 0x80
-----------------------------------
Post Code           ::CPU error 0/1/2
System Status       ::
                    PSU1_SEATED_L
                    PSU2_SEATED_L
                    PSU1_AC_OK
                    PSU2_AC_OK
                    PSU1_DC_OK
                    PSU2_DC_OK
                    Pwr_dm1_stable
                    Pwr_dm2_stable
                    Pwr_dm3_stable
Cpu Error           ::
                    Cpu_err0_L
                    Cpu_err2_L
Reset Cause         ::
                    Power failure
                    power on reset
Secure Boot Status  ::
IOFPGA_SPI_CS_SEL is primary BIOS
-----------------------------------
 Log  Instance - 0x60
-----------------------------------
Post Code           ::CPU error 0/1/2
System Status       ::
                    PSU1_SEATED_L
                    PSU2_SEATED_L
                    PSU1_AC_OK
                    PSU2_AC_OK
                    PSU1_DC_OK
                    PSU2_DC_OK
                    Pwr_dm1_stable
                    Pwr_dm2_stable
                    Pwr_dm3_stable
Cpu Error           ::
                    Cpu_err0_L
Reset Cause         ::
                    Power failure
                    power on reset
Secure Boot Status  ::
IOFPGA_SPI_CS_SEL is primary BIOS
-----------------------------------
 Log  Instance - 0x40
-----------------------------------
Post Code           ::CPU error 0/1/2
System Status       ::
                    PSU1_SEATED_L
                    PSU2_SEATED_L
                    PSU1_AC_OK
                    PSU2_AC_OK
                    PSU1_DC_OK
                    PSU2_DC_OK
                    Pwr_dm1_stable
                    Pwr_dm2_stable
                    Pwr_dm3_stable
Cpu Error           ::
```

```
                    Cpu_err0_L
                    Cpu_err2_L
Reset Cause         ::
                    Power failure
                    power on reset
Secure Boot Status  ::
IOFPGA_SPI_CS_SEL is primary BIOS
mds9396v#
```

The following example shows how to display hardware initiated switch reset logs in raw format:

```
mds9396v# show nvram hardware-log raw
--------------------------------
 Log  Instance - 0x20
--------------------------------
Start Sig LSB       :: 0xaaaa
Start Sig MSB       :: 0x5555
CpuTime             :: 0x147
Post Code           :: 0x5
Dm1 power status    :: 0x0
Fan Status          :: 0x8003
System Status       :: 0x13a8
Cpu Error           :: 0x3e
Reset Cause         :: 0x80000400
Secure Boot Status  :: 0x234
End Sig LSB         :: 0xaaaa
End Sig MSB         :: 0x5555
--------------------------------
--------------------------------
 Log  Instance - 0xe0
--------------------------------
Start Sig LSB       :: 0xaaaa
Start Sig MSB       :: 0x5555
CpuTime             :: 0xc7a
Post Code           :: 0xd2
Dm1 power status    :: 0x0
Fan Status          :: 0x8003
System Status       :: 0x13fc
Cpu Error           :: 0x3a
Reset Cause         :: 0x80000400
Secure Boot Status  :: 0x2190
End Sig LSB         :: 0xaaaa
End Sig MSB         :: 0x5555
--------------------------------
--------------------------------
 Log  Instance - 0xc0
--------------------------------
Start Sig LSB       :: 0xaaaa
Start Sig MSB       :: 0x5555
CpuTime             :: 0x222d
Post Code           :: 0xd2
Dm1 power status    :: 0x0
Fan Status          :: 0x8003
System Status       :: 0x13fc
Cpu Error           :: 0x2a
Reset Cause         :: 0x80000400
Secure Boot Status  :: 0x2190
End Sig LSB         :: 0xaaaa
End Sig MSB         :: 0x5555
--------------------------------
--------------------------------
 Log  Instance - 0xa0
--------------------------------
Start Sig LSB       :: 0xaaaa
Start Sig MSB       :: 0x5555
```

```
CpuTime             :: 0x222c
Post Code           :: 0xd2
Dm1 power status    :: 0x0
Fan Status          :: 0x8003
System Status       :: 0x13fc
Cpu Error           :: 0x3a
Reset Cause         :: 0x80000400
Secure Boot Status  :: 0x2190
End Sig LSB         :: 0xaaaa
End Sig MSB         :: 0x5555
--------------------------------
--------------------------------
 Log  Instance - 0x80
--------------------------------
Start Sig LSB       :: 0xaaaa
Start Sig MSB       :: 0x5555
CpuTime             :: 0x119e
Post Code           :: 0xd2
Dm1 power status    :: 0x0
Fan Status          :: 0x8003
System Status       :: 0x13fc
Cpu Error           :: 0x2a
Reset Cause         :: 0x80000400
Secure Boot Status  :: 0x2190
End Sig LSB         :: 0xaaaa
End Sig MSB         :: 0x5555
--------------------------------
--------------------------------
 Log  Instance - 0x60
--------------------------------
Start Sig LSB       :: 0xaaaa
Start Sig MSB       :: 0x5555
CpuTime             :: 0x119e
Post Code           :: 0xd2
Dm1 power status    :: 0x0
Fan Status          :: 0x8003
System Status       :: 0x13fc
Cpu Error           :: 0x3a
Reset Cause         :: 0x80000400
Secure Boot Status  :: 0x2190
End Sig LSB         :: 0xaaaa
End Sig MSB         :: 0x5555
--------------------------------
--------------------------------
 Log  Instance - 0x40
--------------------------------
Start Sig LSB       :: 0xaaaa
Start Sig MSB       :: 0x5555
CpuTime             :: 0xc77
Post Code           :: 0xd2
Dm1 power status    :: 0x0
Fan Status          :: 0x8003
System Status       :: 0x13fc
Cpu Error           :: 0x2a
Reset Cause         :: 0x80000400
Secure Boot Status  :: 0x2190
End Sig LSB         :: 0xaaaa
End Sig MSB         :: 0x5555
--------------------------------
mds9396v#
```

Related Commands

Command	Description
show system reset-reason	Displays reason for software initiated switch resets

show nxapi

To display the status of NX-API and its elements, use the **show nxapi** command.

show nxapi

Syntax Description

This command has no arguments or keywords.

Command Default

None.

Command Modes

EXEC mode.

Command History

Release	Modification
7.3(0)D1(1)	This command was introduced.

Example

The following example shows how to display the status of NX-API and its elements.

```
switch# show nxapi

NX-API:       Enabled         Sandbox:      Enabled
HTTP Port:    8080            HTTPS Port:   Disabled
```

Related Commands

Command	Description
feature nxapi	Enables the NX-API feature.
nxapi sandbox	Enables the NX-API Developer Sandbox.
nxapi http port *port-number*	Configures an HTTP port to access the NX-API Developer Sandbox.
nxapi https port *port-number*	Configures an HTTPS port to access the NX-API Developer Sandbox.

show port index-allocation

To display port index allocation information, use the **show port index-allocation** command.

show port {**index-allocation startup** | **naming**}

Syntax Description

index-allocation	Displays port index allocation information.
startup	Displays port index allocation information at startup.
naming	Displays port naming information.

Command Default

None.

Command Modes

EXEC mode.

Command History

Release	Modification
3.0(1)	This command was introduced.
3.1(2)	Added the naming keyword.

Usage Guidelines

All software releases prior to Cisco SAN-OS Release 3.0(1) support Generation 1 hardware. Cisco SAN-OS Release 3.0(1) and later support Generation 2 hardware. You can combine Generation 1 and Generation 2 switching modules, with either Supervisor-1 modules or Supervisor-2 modules. However, combining switching modules and supervisor modules has the following limitations:

- Supervisor-1 modules only support a maximum of 256 port indexes, regardless of type of switching modules.
- Supervisor-2 modules support a maximum of 1024 port indexes when all switching modules in the chassis are Generation 2.
- Supervisor-2 modules only support a maximum of 256 port indexes when both Generation 1 and Generation 2 switching modules are installed in the chassis.

Note The Cisco MDS 9124 switch does not support the show port index-allocation startup command; however, it does support the show port index-allocation command.

Note On a switch where the maximum number of port indexes is 256, any module that exceeds that limit does not power up.

Examples

The following example displays port index allocation information at startup on a Cisco MDS switch with only Generation 1 switching modules installed:

```
switch# show port index-allocation startup
Startup module index distribution:
-----------------------------------------------------+
Slot | Allowed |      Alloted indices info            |
     |  range  | Total |          Index values        |
-----|---------|-------|------------------------------|
 1   |   0-  31|   32  | 0-31                         |
 2   |  32-  63|   32  | 32-63                        |
 3   |  64-  95|   32  | 64-95                        |
SUP  |  -----  |    3  | 253-255                      |
```

The following example displays current port index allocation on a Cisco MDS switch with only Generation 1 switching modules installed:

```
switch# show port index-allocation
Module index distribution:
-----------------------------------------------------+
Slot | Allowed |      Alloted indices info            |
     |  range  | Total |          Index values        |
-----|---------|-------|------------------------------|
 1   |   0-  31|   32  | 0-31                         |
 2   |  32-  63|   32  | 32-63                        |
 3   |  64-  95|   32  | 64-95                        |
 4   |  96- 127|   -   | (None)                       |
SUP  |  -----  |    3  | 253-255                      |
```

The following example displays port index allocation information at startup on a Cisco MDS switch with Generation 1 and Generation 2 switching modules installed:

```
switch# show port index-allocation startup
Startup module index distribution:
-----------------------------------------------------+
Slot | Allowed |      Alloted indices info            |
     |  range  | Total |          Index values        |
-----|---------|-------|------------------------------|
 4   |   0- 255|   32  | 0-31                         |
 5   |   0- 255|   32  | 32-63                        |
 6   |   0- 255|   32  | 96-127                       |
 9   |   0- 255|   24  | 64-87                        |
SUP  |  -----  |    3  | 253-255                      |
```

The following example shows the current port index allocation on a Cisco MDS switch with Generation 1 and Generation 2 switching modules installed:

```
switch# show port index-allocation
Module index distribution:
-----------------------------------------------------+
Slot | Allowed |      Alloted indices info            |
     |  range  | Total |          Index values        |
-----|---------|-------|------------------------------|
 1   |   0- 255|   -   | (None)                       |
 2   |   0- 255|   -   | (None)                       |
 3   |   0- 255|   -   | (None)                       |
 4   |   0- 255|   32  | 0-31                         |
 5   |   0- 255|   32  | 32-63                        |
 6   |   0- 255|   32  | 96-127                       |
 9   |   0- 255|   24  | 64-87                        |
10   |   0- 255|   -   | (None)                       |
11   |   0- 255|   -   | (None)                       |
12   |   0- 255|   -   | (None)                       |
13   |   0- 255|   -   | (None)                       |
```

show port-channel

Use the **show port-channel** command to view information about existing PortChannel configurations.

show port-channel {**compatibility-parameters** | **consistency** [**detail**] | **database** [**interface port-channel** *port-channel-number*] | **summary** | **usage**}

Syntax Description

compatibility-parameters	Displays compatibility parameters.
consistency	Displays the database consistency information of all modules.
detail	Displays detailed database consistency information.
database	Displays PortChannel database information.
interface port-channel port-channel-number	Specifies the PortChannel number. The range is 1 to 256.
summary	Displays PortChannel summary.
usage	Displays PortChannel number usage.

Command Default

None.

Command Modes

EXEC mode.

Command History

Release	Modification
1.0(2)	This command was introduced.
3.0(1)	• Increased the **interface port-channel** range to 256. • Modified the output of the **compatibility-parameters** option.

Usage Guidelines

None.

Examples

The following example displays the PortChannel summary:

```
switch# show port-channel summary
 NEW
```

The following example displays the PortChannel compatibility parameters:

```
switch# show port-channel compatibility-parameters
Parameters that have to be consistent across all members in a port-channel.
1. physical port layer
Members must have the same interface type, such as fibre channel, ethernet
or fcip.
2. port mode
Members must have the same port mode configured, either E or AUTO. If they
```

```
are configured in AUTO port mode, they have to negotiate E mode when they
come up. If a member negotiates a different mode, it will be suspended.
3. trunk mode
Members must have the same trunk mode configured. If they are configured in
AUTO trunking mode, they have to negotiate the same trunking mode when they
come up. If a member negotiates a different mode, it will be suspended.
4. speed
Members must have the same speed configured. If they are configured in AUTO
speed, they have to negotiate the same speed when they come up. If a member
negotiates a different speed, it will be suspended.
5. MTU
Members have to have the same MTU configured. This only applies to ethernet
port-channel.
6. ethernet port index
This only applies to ethernet port-channel. Each ethernet port-channel
could only have two ethernet ports. They must be in the same slot, their
port indices must be adjacent and the lower number must be odd. Example:
Gigabitethernet 8/5 - 6.
7. rate mode
Members must have the same rate mode configured. Rate Mode applies only to
isola FC ports
8. Maximum Speed Mismatch
Members must be configured to auto-negotiate to the same maximum speed.
9. Resources Unavailable
Members must be able to acquire resources required to maintain
compatibility. Check shared resources like speed, rate-mode and port mode.
10. Out of Service
Members must be in-service.
11. port VSAN
Members must have the same port VSAN.
12. port allowed VSAN list
Members must have the same port allowed VSAN list.
13. IP address
Members must not have IP address configured. This only applies to ethernet
port-channel.
14. IPv6 configuration
Members must not have any IPv6 configuration. This only applies to ethernet
port-channel.
15. port-security active bindings
Members must all be permitted by the activated port-security bindings and
fabric-bindings in all the allowed VSANs.
16. FC receive buffer size
Members must have the same fc receive buffer size. If the configured
receive buffer size is not compatible with the port capability then the
port will be error disabled
17. IP ACLs
Members must not have IP ACLs configured individually on them. This only
applies to ethernet port-channel.
18. sub interfaces
Members must not have sub-interfaces.
19. Access VLAN
Members must have same Access VLAN configured.
20. Native VLAN
Members must have same Native VLAN configured.
21. Duplex Mode
Members must have same Duplex Mode configured.
22. Ethernet Layer
Members must have same Ethernet Layer (switchport/no-switchport) configured.
23. Span Port
Members cannot be SPAN ports.
```

The following example displays the PortChannel database:

```
switch# show port-channel database
```

```
 port-channel 2
    Administrative channel mode is on
    Operational channel mode is on
    Last membership update succeeded
    First operational port is fc2/2
    1 port in total, 1 port up
    Ports:   fc2/2    [up]
```

The **show port-channel consistency** command has two options: without details **and with details**.

Command without details:

```
switch# show port-channel consistency
 Database is consistentswitch#
```

Command with details:

```
switch# show port-channel consistency detail
Authoritative port-channel database:
============================================
totally 1 port-channels
port-channel 2:
    1 ports, first operational port is fc2/2
    fc2/2    [up]
============================================
database 1: from module 5
============================================
totally 1 port-channels
port-channel 2:
    1 ports, first operational port is fc2/2
    fc2/2    [up]
============================================
database 2: from module 2
============================================
totally 1 port-channels
port-channel 2:
    1 ports, first operational port is fc2/2
    fc2/2    [up]
============================================
```

The **show port-channel usage** command displays details of the used and unused PortChannel numbers.

```
switch# show port-channel usage
Totally 2 port-channel numbers used===================================Used  :   3, 9Unused:
   1-2, 4-8, 10-256
```

show port-channel compatibility-parameters

To display the PortChannel compatibility parameters, use the show port-channel compatibility-parameters command.

show port-channel compatibility-parameters

Syntax Description

This command has no arguments or keywords.

Command Default

None.

Command Modes

EXEC mode.

Command History

Release	Modification
NX-OS 4.1(3)	This command was introduced.

Usage Guidelines

None.

Examples

The following example shows how to display the PortChannel compatibility parameters:

```
switch# show port-channel compatibility-parameters
Parameters that have to be consistent across all members in a port-channel.
1. physical port layer
Members must have the same interface type, such as fibre channel, ethernet
or fcip.
2. port mode
Members must have the same port mode configured, either E or AUTO. If they
are configured in AUTO port mode, they have to negotiate E mode when they
come up. If a member negotiates a different mode, it will be suspended.
3. trunk mode
Members must have the same trunk mode configured. If they are configured in
AUTO trunking mode, they have to negotiate the same trunking mode when they
come up. If a member negotiates a different mode, it will be suspended.
4. speed
Members must have the same speed configured. If they are configured in AUTO
speed, they have to negotiate the same speed when they come up. If a member
negotiates a different speed, it will be suspended.
5. MTU
Members have to have the same MTU configured. This only applies to ethernet
port-channel.
6. ethernet port index
This only applies to ethernet port-channel. Each ethernet port-channel
could only have two ethernet ports. They must be in the same slot, their
port indeces must be adjacent and the lower number must be odd. Example:
Gigabitethernet 8/5 - 6.
7. rate mode
Members must have the same rate mode configured. Rate Mode applies only to
isola FC ports
8. Maximum Speed Mismatch
Members must be configured to auto-negotiate to the same maximum speed.
9. Resources Unavailable
Members must be able to acquire resources required to maintain
compatibility. Check shared resources like speed, rate-mode and port mode.
```

```
10. Out of Service
Members must be in-service.
11. MEDIUM
Members have to have the same medium type configured. This only applies to
ethernet port-channel.
12. Span mode
Members must have the same span mode.
13. admin channel mode
Port Channel admin channel mode must be active.
14. port VSAN
Members must have the same port VSAN.
15. port allowed VSAN list
Members must have the same port allowed VSAN list.
16. IP address
Members must not have IP address configured. This only applies to ethernet
port-channel.
17. IPv6 configuration
Members must not have any IPv6 configuration. This only applies to ethernet
port-channel.
18. port-security active bindings
Members must all be permitted by the activated port-security bindings and
fabric-bindings in all the allowed VSANs.
19. FC receive buffer size
Members must have the same fc receive buffer size. If the configured
receive buffer size is not compatible with the port capability then the
port will be error disabled
20. IP ACLs
Members must not have IP ACLs configured individually on them. This only
applies to ethernet port-channel.
21. sub interfaces
Members must not have sub-interfaces.
22. Duplex Mode
Members must have same Duplex Mode configured.
23. Ethernet Layer
Members must have same Ethernet Layer (switchport/no-switchport) configured.
24. Span Port
Members cannot be SPAN ports.
25. Storm Control
Members must have same storm-control configured.
26. Flow Control
Members must have same flowctrl configured.
27. Capabilities
Members must have common capabilities.
28. port
Members port VLAN info.
29. port
Members port does not exist.
30. switching port
Members must be switching port, Layer 2.
31. port access VLAN
Members must have the same port access VLAN.
--More--
```

Related Commands

Command	Description
show port-channel summary	Displays PortChannel summary.

show port-channel consistency

To display the PortChannel distributed database consistency, use the show port-channel consistency command.

show port-channel consistency detail

Syntax Description

detail	Specifies the PortChannel distributed database in all modules.

Command Default

None.

Command Modes

EXEC mode.

Command History

Release	Modification
NX-OS 4.1(3)	This command was introduced.

Usage Guidelines

None.

Examples

The following example shows how to display the Port Channel distributed database consistency:

```
switch# show port-channel consistency detail
Authoritative port-channel database:
================================================
total 1 port-channels
port-channel 1:
    1 ports, first operational port is none
    fc1/1    [down]
================================================
database 1: from module 1
================================================
total 1 port-channels
port-channel 1:
    1 ports, first operational port is none
    fc1/1    [down]
================================================
switch#
```

Related Commands

Command	Description
show port-channel compatibity-parameters	Displays PortChannel compatibility parameters.

show port-channel database

To display the PortChannel database, use the show port-channel database command.

show port-channel database [**detail**] [**interface** | **port-channel** *number*]

Syntax Description

detail	Specifies to display the detailed information of the PortChannels.
interface	Specifies the PortChannel interface.
port-channel *number*	Specifies the PortChannel number. The range is from 1 to 256.

Command Default

None.

Command Modes

EXEC mode.

Command History

Release	Modification
8.4(2)	Added the **detail** keyword. The command output is modified to display the administrative status of the PortChannel mode for each member of the PortChannel.
4.1(2)	This command was introduced.

Examples

The following example shows how to display the PortChannel database:

Note This command output is applicable for Cisco MDS NX-OS Release 8.4(2) and later releases. The command output varies if you are using Cisco MDS NX-OS Release 8.4(1a) or earlier releases.

```
switch# show port-channel database

port-channel1
    Administrative channel mode is active
    Last membership update succeeded
    First operational port is fcip3
    2 ports in total, 2 ports up
    Ports:   fcip1    [up]
             fcip3    [up] *

port-channel2
    Administrative channel mode is active
    Last membership update succeeded
    First operational port is fcip5
    6 ports in total, 5 ports up
    Ports:   fcip5    [up] *
             fcip6    [up]
             fcip7    [up]
             fcip11   [up]
```

```
            fcip12   [down]
            fcip13   [up]

port-channel3
    Administrative channel mode is active
    Last membership update succeeded
    First operational port is fcip9
    3 ports in total, 3 ports up
    Ports:   fcip8    [up]
             fcip9    [up] *
             fcip10   [up]
```

The following example shows how to display the detailed information of the PortChannels:

```
switch# show port-channel database detail
port-channel1
    Administrative channel mode is active
    Ports:
-------------------------------------------------------------------------------------------------------------
Interface Channel  Port           Port         Local WWN                Peer WWN
   Port Up Time
          mode     Status         Mode
          (oper)
-------------------------------------------------------------------------------------------------------------
* fcip1    active   up             E     22:5a:84:78:ac:09:35:00  58:c6:04:f3:24:3b:d8:b5
 2020-04-27T10:57:59+05:30
  fcip3    active   up             E     22:76:84:78:ac:09:35:00  58:c6:04:f3:24:3b:d8:99
 2020-04-27T10:58:02+05:30

port-channel2
    Administrative channel mode is active
    Ports:
-------------------------------------------------------------------------------------------------------------
Interface Channel  Port           Port         Local WWN                Peer WWN
   Port Up Time
          mode     Status         Mode
          (oper)
-------------------------------------------------------------------------------------------------------------

  fcip5    active   up             E     22:6e:84:78:ac:09:35:00  58:c6:04:f3:24:3b:d8:31
 2020-04-27T10:47:36+05:30
  fcip6    active   up             E     22:6f:84:78:ac:09:35:00  58:c6:04:f3:24:3b:d8:32
 2020-04-27T10:47:38+05:30
  fcip7    active   up             E     20:1a:84:78:ac:09:35:00  58:c6:04:f3:24:3b:d8:19
 2020-04-27T10:47:38+05:30
  fcip11   active   up             E     20:1b:84:78:ac:09:35:00  58:c6:04:f3:24:3b:d8:1a
 2020-04-27T10:47:36+05:30
  fcip12   --       down           --    00:00:00:00:00:00:00:00  00:00:00:00:00:00:00:00
 --
* fcip13   active   up             E     20:a2:84:78:ac:09:35:00  23:62:8c:60:4f:32:43:80
 2020-04-27T10:37:28+05:30

port-channel3
    Administrative channel mode is active
    Ports:
-------------------------------------------------------------------------------------------------------------
Interface Channel  Port           Port         Local WWN                Peer WWN
   Port Up Time
          mode     Status         Mode
          (oper)
-------------------------------------------------------------------------------------------------------------

  fcip8    active   up             E     20:aa:84:78:ac:09:35:00  23:6a:8c:60:4f:32:43:80
```

```
 2020-04-27T10:37:24+05:30
* fcip9    active   up            E     20:b6:84:78:ac:09:35:00  23:72:8c:60:4f:32:43:80
 2020-04-27T10:37:24+05:30
  fcip10   active   up            E     20:b7:84:78:ac:09:35:00  23:73:8c:60:4f:32:43:80
 2020-04-27T10:37:55+05:30
```

Related Commands

Command	Description
show port-channel consistency	Displays PortChannel distributed database consistency.

show port-channel internal

To display the PortChannel internal status, use the show port-channel internal command.

show port-channel internal event-history {**all** | **debugs** | **errors** | **interface** {**fa** | **fc** | **gigabitethernet** **slot number** **port-channel** **port-channel number** | **lock** | **msgs** | **pcp**} **info** {**all** | **interface**} **mem-stats** **detail**}

Syntax Description

event-history	Specifies a PortChannel.
all	Specifies interface event transition for all interfaces.
debugs	Specifies debug logs for a PortChannel.
errors	Specifies error logs for a PortChannel.
interface	Specifies interface event transitions.
fa	Specifies the FA port interface.
fc	Specifies the Fiber Channel interface.
gigabitethernet	Specifies the Ethernet interface.
slot number	Specifies the slot number.
port-channel	Specifies the PortChannel interface.
port-channel number	Specifies the PortChannel number. The range is from 1 to 256.
lock	Specifies lock log of the PortChannel.
msgs	Specifies message logs of the PortChannel.
pcp	Specifies interface PCP event transition.
info	Specifies internal information.
all	Specifies PortChannel global information.
interface	Specifies PortChannel interface information.
mem-stats	Specifies memory allocation statistics of the PortChannel.
detail	Specifies detail memory statistics for the PortChannel.

Command Default

None.

Command Modes

EXEC mode.

Command History

Release	Modification
NX-OS 4.1(3)	This command was introduced.

Usage Guidelines

None.

Examples

The following example shows how to configure the error logs for the PortChannel:

```
switch# show port-channel internal event-history errors
1) Event:E_DEBUG, length:99, at 268834 usecs after Thu Nov  6 12:44:17 2008
    [102] pcm_port_ac_add_eval(1420): pc: port-channel 2 last port 1000000 for t
his msg. send hw_config
2) Event:E_DEBUG, length:158, at 268821 usecs after Thu Nov  6 12:44:17 2008
    [102] pcm_port_ac_add_eval(1384): Added pc: port-channel 2 pinfo->nports=0x1
,port 1000000 for this msg. pinfo->bundle=0x1,mbr->bundle=0xfffe,ports_to_add=0x
1
3) Event:E_DEBUG, length:99, at 444720 usecs after Thu Nov  6 12:24:11 2008
    [102] pcm_port_ac_rem_eval(1655): pc: port-channel 1 last port 1000000 for t
his msg. send hw_config
4) Event:E_DEBUG, length:143, at 444702 usecs after Thu Nov  6 12:24:11 2008
    [102] pcm_port_ac_rem_eval(1645): removed pc: port-channel 1 pinfo->nports=0
x1,port 1000000 for this msg. pinfo->bundle=0x0,mbr->bundle=0xfffe
5) Event:E_DEBUG, length:72, at 462673 usecs after Thu Nov  6 12:23:59 2008
    [102] abort_members(1235): port-channel 2: reverting newly changed ports
6) Event:E_DEBUG, length:86, at 462660 usecs after Thu Nov  6 12:23:59 2008
    [102] split_members(1319): port-channel 2: fc1/1 is already in another port-
channel [1]
7) Event:E_DEBUG, length:68, at 293493 usecs after Thu Nov  6 12:19:05 2008
    [102] pcm_pc_ac_get_wwn(244): wwn request setting pinfo->bundle=0x1f
8) Event:E_DEBUG, length:65, at 292875 usecs after Thu Nov  6 12:19:05 2008
    [102] pcm_alloc_pc(494): pcallocpc setting pinfo->bundle to 0xFFFF
9) Event:E_DEBUG, length:73, at 535797 usecs after Thu Nov  6 12:02:03 2008
    [102] abort_members(1235): port-channel 20: reverting newly changed ports
10) Event:E_DEBUG, length:87, at 535784 usecs after Thu Nov  6 12:02:03 2008
    [102] split_members(1319): port-channel 20: fc1/1 is already in another port
-channel [1]
11) Event:E_DEBUG, length:68, at 533069 usecs after Thu Nov  6 12:02:03 2008
    [102] pcm_pc_ac_get_wwn(244): wwn request setting pinfo->bundle=0x13
12) Event:E_DEBUG, length:65, at 532434 usecs after Thu Nov  6 12:02:03 2008
    [102] pcm_alloc_pc(494): pcallocpc setting pinfo->bundle to 0xFFFF
13) Event:E_DEBUG, length:72, at 425969 usecs after Thu Nov  6 12:01:33 2008
    [102] abort_members(1235): port-channel 5: reverting newly changed ports
14) Event:E_DEBUG, length:86, at 425955 usecs after Thu Nov  6 12:01:33 2008
    [102] split_members(1319): port-channel 5: fc1/1 is already in another port-
channel [1]
15) Event:E_DEBUG, length:67, at 423106 usecs after Thu Nov  6 12:01:33 2008
    [102] pcm_pc_ac_get_wwn(244): wwn request setting pinfo->bundle=0x4
16) Event:E_DEBUG, length:65, at 422473 usecs after Thu Nov  6 12:01:33 2008
    [102] pcm_alloc_pc(494): pcallocpc setting pinfo->bundle to 0xFFFF
17) Event:E_DEBUG, length:72, at 612546 usecs after Thu Nov  6 12:01:22 2008
    [102] abort_members(1235): port-channel 2: reverting newly changed ports
18) Event:E_DEBUG, length:86, at 612534 usecs after Thu Nov  6 12:01:22 2008
    [102] split_members(1319): port-channel 2: fc1/1 is already in another port-
channel [1]
19) Event:E_DEBUG, length:67, at 56546 usecs after Thu Nov  6 12:00:16 2008
    [102] pcm_pc_ac_get_wwn(244): wwn request setting pinfo->bundle=0x1
20) Event:E_DEBUG, length:65, at 55927 usecs after Thu Nov  6 12:00:16 2008
    [102] pcm_alloc_pc(494): pcallocpc setting pinfo->bundle to 0xFFFF
21) Event:E_DEBUG, length:72, at 65985 usecs after Thu Nov  6 11:53:31 2008
    [102] abort_members(1235): port-channel 2: reverting newly changed ports
```

```
22) Event:E_DEBUG, length:86, at 65972 usecs after Thu Nov  6 11:53:31 2008
    [102] split_members(1319): port-channel 2: fc1/1 is already in another port-
channel [1]
23) Event:E_DEBUG, length:67, at 63276 usecs after Thu Nov  6 11:53:31 2008
    [102] pcm_pc_ac_get_wwn(244): wwn request setting pinfo->bundle=0x1
24) Event:E_DEBUG, length:65, at 62639 usecs after Thu Nov  6 11:53:31 2008
    [102] pcm_alloc_pc(494): pcallocpc setting pinfo->bundle to 0xFFFF
25) Event:E_DEBUG, length:90, at 942691 usecs after Thu Nov  6 11:48:04 2008
    [102] pcm_pc_create(923): port-channel interface <250> out of existing suppo
rted range 129
26) Event:E_DEBUG, length:40, at 942678 usecs after Thu Nov  6 11:48:04 2008
    [102] pcm_search_pc(733): invalid id 249


27) Event:E_DEBUG, length:40, at 175505 usecs after Mon Nov  3 13:25:07 2008
    [102] pcm_search_pc(733): invalid id 249
28) Event:E_DEBUG, length:40, at 346351 usecs after Mon Nov  3 13:23:58 2008
    [102] pcm_search_pc(733): invalid id 255
29) Event:E_DEBUG, length:40, at 634271 usecs after Mon Nov  3 13:17:10 2008
    [102] pcm_search_pc(733): invalid id 249
30) Event:E_DEBUG, length:73, at 1815 usecs after Thu Oct 30 17:16:05 2008
    [102] abort_members(1235): port-channel 20: reverting newly changed ports
31) Event:E_DEBUG, length:87, at 1802 usecs after Thu Oct 30 17:16:05 2008
    [102] split_members(1319): port-channel 20: fc1/1 is already in another port
-channel [1]
32) Event:E_DEBUG, length:68, at 999046 usecs after Thu Oct 30 17:16:04 2008
    [102] pcm_pc_ac_get_wwn(244): wwn request setting pinfo->bundle=0x13
33) Event:E_DEBUG, length:65, at 998412 usecs after Thu Oct 30 17:16:04 2008
    [102] pcm_alloc_pc(494): pcallocpc setting pinfo->bundle to 0xFFFF
34) Event:E_DEBUG, length:73, at 841236 usecs after Thu Oct 30 17:15:58 2008
    [102] abort_members(1235): port-channel 20: reverting newly changed ports
```

The following example shows how to display interface event transition for all interfaces:

```
switch# show port-channel internal event-history all
Low Priority Pending queue: len(0), max len(1) [Fri Nov  7 16:53:01 2008]
High Priority Pending queue: len(0), max len(14) [Fri Nov  7 16:53:01 2008]
PCM Control Block info:
pcm_max_channels        : 128
pcm_max_channel_in_use  : 32
pcm_max_eports          : 256
pcm_max_eports_inuse    : 0
bsup_dit_address : 0, rc=0x802b003e
has Generation-1 Line Card
Total of 1 Generation-1 Line cards
PCM total_vlans info: 0x0
g_pcm_cb.path.num_ports: 0
==================================================
PORT CHANNELS:
port-channel 1
channel     : 1
bundle      : 0
ifindex     : 0x4000000
pcport mode : NONE
admin mode  : on
oper mode   : on
nports      : 0
--More--
```

The following example shows how to display PortChannel global information:

```
switch# show port-channel internal info all
Low Priority Pending queue: len(0), max len(1) [Sun Nov  9 10:03:32 2008]
High Priority Pending queue: len(0), max len(14) [Sun Nov  9 10:03:32 2008]
```

```
PCM Control Block info:
pcm_max_channels        : 128
pcm_max_channel_in_use  : 32
pcm_max_eports          : 256
pcm_max_eports_inuse    : 0
bsup_dit_address : 0, rc=0x802b003e
has Generation-1 Line Card
Total of 1 Generation-1 Line cards
PCM total_vlans info: 0x0
g_pcm_cb.path.num_ports: 0
==================================================
PORT CHANNELS:
port-channel 1
channel     : 1
bundle      : 0
ifindex     : 0x4000000
pcport mode : NONE
admin mode  : on
oper mode   : on
nports      : 0
```

The following example shows how to display detail memstats for the PortChannel:

```
switch# show port-channel internal mem-stats detail
Private Mem stats for UUID : Malloc track Library(103) Max types: 5
--------------------------------------------------------------------------------
TYPE NAME                                          ALLOCS                  BYTES
                                                 CURR    MAX       CURR        MAX
   0 MT_MEM_other                                   0      0          0          0
   1 MT_MEM_mtrack_default                          0      0          0          0
   2 MT_MEM_mtrack_hdl                             30     31      13848      15484
   3 MT_MEM_mtrack_info                           390    518       6240       8288
   4 MT_MEM_mtrack_lib_name                       585    713      20466      24956
--------------------------------------------------------------------------------
Total bytes: 40554 (39k)
--------------------------------------------------------------------------------
Private Mem stats for UUID : Non mtrack users(0) Max types: 67
--------------------------------------------------------------------------------
TYPE NAME                                          ALLOCS                  BYTES
                                                 CURR    MAX       CURR        MAX
   0 [r-xp]/isan/bin/pcm                            0      0          0          0
   1 [r-xp]/isan/lib/convert/libsysstr.so           0      0          0          0
   2 [r-xp]/isan/lib/convert/libvdb.so              0      0          0          0
   3 [r-xp]/isan/lib/libaccounting.so.0.0.0         0      1          0         65
   4 [r-xp]/isan/lib/libacfg.so.0.0.0               0      8          0      51684
--More--
```

Related Commands

Command	Description
show port-channel database	Displays PortChannel database.

show port-channel summary

To display the PortChannel summary, use the show port-channel summary command.

show port-channel summary

Syntax Description

This command has no arguments or keywords.

Command Default

None.

Command Modes

EXEC mode.

Command History

Release	Modification
NX-OS 4.1(3)	This command was introduced.

Usage Guidelines

None.

Examples

The following example shows how to display the PortChannel summary:

```
switch# show port-channel summary
--------------------------------------------------------------------------------
Interface                 Total Ports        Oper Ports        First Oper Port
--------------------------------------------------------------------------------
port-channel 1                 1                 0                  --
switch#
```

Related Commands

Command	Description
show port-channel internal	Displays the PortChannel internal status.

show port-channel usage

To display the PortChannel usage, use the show port-channel usage command.

show port-channel usage

Syntax Description

This command has no arguments or keywords.

Command Default

None.

Command Modes

EXEC mode.

Command History

Release	Modification
NX-OS 4.1(3)	This command was introduced.

Usage Guidelines

None.

Examples

The following example shows how to display the PortChannel usage:

```
switch# show port-channel usage
Totally 1 port-channel number used
==================================
Used  :   1
Unused:   2 - 256
switch#
```

Related Commands

Command	Description
show port-channel summary	Displays the PortChannel usage.

show port-group-monitor

To display the the details about the Port Group Monitor (PGM) policy specified by [NAME] along with the counters information, use the show port-group-monitor command.

show port-group-monitor name

Syntax Description

name	Displays a policy name.

Command Default

None.

Command Modes

EXEC mode.

Command History

Release	Modification
NX-OS 4.2(1)	This command was introduced.

Usage Guidelines

None.

Examples

The following example shows how to display Port Group Monitor policy name:

```
switch# show port-group-monitor pgmon
Policy Name  : pgmon
Admin status : Not Active
Oper status  : Not Active
Port type    : All Port Groups
-------------------------------------------------------------------------------------------Counter
 Threshold Interval %ge Rising Threshold %ge Falling Threshold In Use------- ---------
-------- -------------------- ---------------------- ------RX Performance Delta 60 80 20
YesTX Performance Delta 60 80 20
Yes-------------------------------------------------------------------------------------------switch#
```

The following example shows how to display Port Group Monitor:

```
switch# show port-group-monitor
-------------------------------------------------------------------------------------------
Port Group Monitor : enabled
-------------------------------------------------------------------------------------------
Policy Name  : pgm1
Admin status : Not Active
Oper status  : Not Active
Port type    : All Port Groups
-------------------------------------------------------------------------------------------
Counter Threshold Interval %ge Rising Threshold %ge Falling Threshold In Use
------- --------- -------- -------------------- ---------------------- ------
RX Performance Delta 60 50 10 Yes
TX Performance Delta 60 50 10 Yes
-------------------------------------------------------------------------------------------
Policy Name  : pgm2
Admin status : Not Active
Oper status  : Not Active
```

```
Port type    : All Port Groups
------------------------------------------------------------------------------------------------
Counter Threshold Interval %ge Rising Threshold %ge Falling Threshold In Use
------- --------- -------- -------------------- ---------------------- ------
RX Performance Delta 60 80 10 Yes
TX Performance Delta 60 80 10 Yes
------------------------------------------------------------------------------------------------
Policy Name  : default
Admin status : Not Active
Oper status  : Not Active
Port type    : All Port Groups
------------------------------------------------------------------------------------------------
Counter Threshold Interval %ge Rising Threshold %ge Falling Threshold In Use
------- --------- -------- -------------------- ---------------------- ------
RX Performance Delta 60 80 20 Yes
TX Performance Delta 60 80 20 Yes
------------------------------------------------------------------------------------------------
```

Related Commands

Command	Description
show port-group-monitor status	Displays Port Group Monitor status.

show port-group-monitor active

To display Port Group Monitor active policies along with the counters information, use the show port-group-monitor active command.

show port-group-monitor active

Syntax Description

This command has no arguments or keywords.

Command Default

None.

Command Modes

EXEC mode.

Command History

Release	Modification
NX-OS 4.2(1)	This command was introduced.

Usage Guidelines

None.

Examples

The following example shows how to display Port Group Monitor active policies:

```
Policy Name  : pgmon
Admin status : Active
Oper status  : Active
Port type    : All Port Groups
-------------------------------------------------------------------------------------------Counter
 Threshold Interval %ge Rising Threshold %ge Falling Threshold In Use------- ---------
-------- ------------------- ---------------------- ------RX Performance Delta 60 80 20
YesTX Performance Delta 60 80 20
Yes-------------------------------------------------------------------------------------------
```

Related Commands

Command	Description
show port-group-monitor status	Displays Port Group Monitor status.

show port-group-monitor status

To display Port Group Monitor (PGM) status, use the show port-group-monitor status command.

show port-group-monitor status

Syntax Description

This command has no arguments or keywords.

Command Default

None.

Command Modes

EXEC mode.

Command History

Release	Modification
NX-OS 4.2(1)	This command was introduced.

Usage Guidelines

None.

Examples

The following example shows how to display Port Group Monitor status:

```
switch# show port-group-monitor status
Port Group Monitor : EnabledActive Policies : pgmonLast 10 logs
switch#
```

Related Commands

Command	Description
show port-group-monitor	Displays Port Group Monitor information.

show port-license

To display the licensing usage on a Cisco MDS 9124, use the show port-license command.

show port-license

Command Default

None.

Command Modes

EXEC mode.

Command History

Release	Modification
3.1(1)	This command was introduced.

Usage Guidelines

None.

Examples

The following example displays the default port activation license configuration for the Cisco MDS 9124 switch:

```
switch# show port-license
 Available port activation licenses are 0
-----------------------------------------
  Interface    Port Activation License
-----------------------------------------
  fc1/1             acquire
  fc1/2             acquire
  fc1/3             acquire
  fc1/4             acquire
  fc1/5             acquire
  fc1/6             acquire
  fc1/7             acquire
  fc1/8             acquire
  fc1/9             eligible
  fc1/10            eligible
  fc1/11            eligible
  ...
  fc1/24            eligible
```

Related Commands

Command	Description
port-license	Makes a port eligible or ineligible to receive a license. Also used to acquire a license for a port.

show port-monitor

To configure the counter details of the policy, use the show port-monitor command.

show port-monitor [**name**]

Syntax Description

name	Displays a policy name.

Command Default

None.

Command Modes

Configuration mode.

Command History

Release	Modification
4.1(1b)	This command was introduced.

Usage Guidelines

The show port-monitor command can also take a string name of policy and displays the details of that policy only.

Examples

The following example shows how to display the counter details of the policy:

```
switch# show port-monitor
--------------------------------------------------------------------------------
-----------
Port Monitor : enabled
--------------------------------------------------------------------------------
-----------
Policy Name  : pgmon
Admin status : Active
Oper status  : Active
Port type    : All Access Ports
--------------------------------------------------------------------------------
-------------------------
Counter                  Threshold  Interval Rising Threshold event Falling Thre
shold  event Portguard
-------                  ---------  -------- ---------------- ----- ------------
------ ----- --------------
Link Loss                Delta      60       5                4     1
       4     Not enabled
Sync Loss                Delta      60       5                4     1
       4     Not enabled
ASIC Error Pkt from Port Delta      300      5                4     0
       4     Not enabled
ASIC Error Pkt to xbar   Delta      60       3                4     0
       4     Not enabled
ASIC Error Pkt from xbar Delta      300      5                4     0
--More--
switch#
```

Related Commands

Command	Description
show port-monitor	Shows port monitor policies.

show port-monitor active

To display the details of all operationally active policies, use the show port-monitor active command.

show port-monitor active

Syntax Description

This command has no arguments or keywords.

Command Default

None.

Command Modes

EXEC mode.

Command History

Release	Modification
4.2.6	Changed the command output.
NX-OS 4.1(1b)	This command was introduced.

Usage Guidelines

Policies can be either operationally active or administratively active as shown by the show port-monitor active command. An administratively active policy is not active on the line card and can be activated operationally by enabling the port monitor.

Examples

The following example shows how to display the details of all operationally active policies:

```
switch(config)# show port-monitor active
Policy Name  : pgmon
Admin status : Active
Oper status  : Active
Port type    : All Access Ports
------------------------------------------------------------------------------
-------------------------
Counter                   Threshold  Interval Rising Threshold event Falling Thre
shold  event Portguard
-------                   ---------  -------- ---------------- ----- ------------
------ ----- --------------
Link Loss                 Delta      60       5                4     1
       4     Not enabled
Sync Loss                 Delta      60       5                4     1
       4     Not enabled
ASIC Error Pkt from Port Delta      300      5                4     0
       4     Not enabled
ASIC Error Pkt to xbar   Delta      60       3                4     0
       4     Not enabled
ASIC Error Pkt from xbar Delta      300      5                4     0
       4     Not enabled
------------------------------------------------------------------------------
-------------------------
--More--
switch(config)#
```

Related Commands

Command	Description
show port-monitor status	Shows the current status of the port monitor.

show port-monitor status

To display the current status of the port monitor feature along with the last 10 alarms or logs generated by port monitor, use the show port-monitor status command.

show port-monitor status

Syntax Description

This command has no argument or keywords.

Command Default

None.

Command Modes

EXEC mode.

Command History

Release	Modification
NX-OS 4.1(1b)	This command was introduced.

Usage Guidelines

None.

Examples

The following example shows the current status of the port monitor feature:

```
switch# show port-monitor status
Port Monitor    : Enabled
Active Policies : pgm2
Last 10 logs :
switch#
```

Related Commands

Command	Description
show call home	Displays configured Call Home information.

show port-resources module

To display information about port resources in a Generation 2 module, use the **show port-resources** command.

show port-resources module *slot*

Syntax Description

slot	Specifies the module number. The range is 1 to 6.

Command Default

None.

Command Modes

EXEC mode.

Command History

Release	Modification
3.0(1)	This command was introduced.

Usage Guidelines

None.

Examples

The following example displays the Generation 2 module shared resources configuration:

```
switch(config-if)# show port-resources module 1
Module 1
  Available dedicated buffers for global buffer #0 [port-group 1] are 2150
  Available dedicated buffers for global buffer #1 [port-group 2] are 2150
  Available dedicated buffers for global buffer #2 [port-group 3] are 2150
  Available dedicated buffers for global buffer #3 [port-group 4] are 2148
  Available dedicated buffers for global buffer #4 [port-group 5] are 2150
  Available dedicated buffers for global buffer #5 [port-group 6] are 2150
  Available dedicated buffers for global buffer #6 [port-group 7] are 2150
  Available dedicated buffers for global buffer #7 [port-group 8] are 650
  Available dedicated buffers for global buffer #8 [port-group 9] are 2150
  Available dedicated buffers for global buffer #9 [port-group 10] are 2150
  Available dedicated buffers for global buffer #10 [port-group 11] are 2150
  Available dedicated buffers for global buffer #11 [port-group 12] are 2150

 Port-Group 1
  Total bandwidth is 64.0 Gbps
  Allocated dedicated bandwidth is 64.0 Gbps
  --------------------------------------------------------------------
  Interfaces in the Port-Group       B2B Credit  Bandwidth  Rate Mode
                                        Buffers     (Gbps)
  --------------------------------------------------------------------
  fc1/1                                   500       16.0  dedicated
  fc1/2                                   500       16.0  dedicated
  fc1/3                                   500       16.0  dedicated
  fc1/4                                   500       16.0  dedicated

Port-Group 6
  Total bandwidth is 64.0 Gbps
  Allocated dedicated bandwidth is 64.0 Gbps
  --------------------------------------------------------------------
  Interfaces in the Port-Group       B2B Credit  Bandwidth  Rate Mode
                                        Buffers     (Gbps)
```

```
  --------------------------------------------------------------------
  fc4/21                                  4090       16.0  dedicated
  fc4/22                                    10       16.0  dedicated
  fc4/23                                    10       16.0  dedicated
  fc4/24                                    10       16.0  dedicated

switch# show port-resources module 2
Module 2
Available dedicated buffers are 5164
Port-Group 1
 Total bandwidth is 12.8 Gbps
 Total shared bandwidth is 4.8 Gbps
 Allocated dedicated bandwidth is 8.0 Gbps
--------------------------------------------------------------------
Interfaces in the Port-Group B2B Credit Bandwidth Rate Mode
                               Buffers (Gbps)
--------------------------------------------------------------------
fc2/1                                16       4.0 shared
fc2/2                                16       4.0 shared
fc2/3                                16       4.0 shared
fc2/4                                16       4.0 shared
fc2/5                                16       4.0 dedicated
fc2/6                                16       4.0 dedicated
Port-Group 2
 Total bandwidth is 12.8 Gbps
 Total shared bandwidth is 4.8 Gbps
 Allocated dedicated bandwidth is 8.0 Gbps
--------------------------------------------------------------------
Interfaces in the Port-Group B2B Credit Bandwidth Rate Mode
                               Buffers (Gbps)
--------------------------------------------------------------------
fc2/7                                16       4.0 shared
fc2/8                                16       4.0 shared
fc2/9                                16       4.0 shared
fc2/10                               16       4.0 shared
fc2/11                               16       4.0 dedicated
fc2/12                               16       4.0 dedicated
Port-Group 3
 Total bandwidth is 12.8 Gbps
 Total shared bandwidth is 4.8 Gbps
 Allocated dedicated bandwidth is 8.0 Gbps
--------------------------------------------------------------------
Interfaces in the Port-Group B2B Credit Bandwidth Rate Mode
                               Buffers (Gbps)
--------------------------------------------------------------------
fc2/13                               16       4.0 shared
fc2/14                               16       4.0 shared
fc2/15                               16       4.0 shared
fc2/16                              250       4.0 dedicated
fc2/17                               16       2.0 dedicated
fc2/18                               16       2.0 dedicated
Port-Group 4
 Total bandwidth is 12.8 Gbps
 Total shared bandwidth is 0.8 Gbps
 Allocated dedicated bandwidth is 12.0 Gbps
--------------------------------------------------------------------
Interfaces in the Port-Group B2B Credit Bandwidth Rate Mode
                               Buffers (Gbps)
--------------------------------------------------------------------
fc2/19                               16       1.0 shared
fc2/20                               16       1.0 shared
fc2/21                               16       1.0 shared
fc2/22                               16       4.0 dedicated
```

```
fc2/23                                16       4.0 dedicated
fc2/24                                16       4.0 dedicated
```

Related Commands

Command	Description
show module	Verifies the status of a module.

show port-security

To display configured port security feature information, use the **show port-security database** command.

show port-security {**database** [**active** [**vsan** *vsan-id*]] | **fwwn** *fwwn-id* **vsan** *vsan-id* | **interface** {**fc** *slot/port* | **port-channel** *port*} **vsan** *vsan-id* | **vsan** *vsan-id* | **pending** [**vsan** *vsan-id*] | **pending-diff** [**vsan** *vsan-id*] | **statistics** [**vsan** *vsan-id*] | **status** [**vsan** *vsan-id*] | **violations** [**last** *count* | **vsan** *vsan-id*]}

Syntax Description

database	Displays database-related port security information.
active	(Optional) Displays the activated database information.
vsan *vsan-id*	(Optional) Displays information for the specified database.
fwwn *fwwn-id*	(Optional) Displays information for the specified fabric WWN.
interface	(Optional) Displays information for an interface.
fc *slot/port*	Displays information for the specified Fibre Channel interface.
port-channel *port*	Displays information for the specified PortChannel interface. The range is 1 to 128.
pending	Displays the server address pending configuration.
pending-diff	Displays the server address pending configuration differences with the active configuration.
statistics	Displays port security statistics.
status	Displays the port security status on a per VSAN basis.
violations	Displays violations in the port security database.
last count	(Optional) Displays the last number of lines in the database. The range is 1 to 100.

Command Default

None.

Command Modes

EXEC mode.

Command History

Release	Modification
1.2(1)	This command was introduced.
2.0(x)	Added the pending and pending-diff keywords.

Usage Guidelines

The access information for each port can be individually displayed. If you specify the FWWN or interface options, all devices that are paired in the active database (at that point) with the given FWWN or the interface are displayed.

The **show port-security** command issued with the **last** *number* option displays only the specified number of entries that appear first.

Examples

The following example displays the contents of the port security database:

```
switch# show port-security database
-------------------------------------------------------------------------------------
VSAN   Logging-in Entity             Logging-in Point  (          Interface)
-------------------------------------------------------------------------------------
1      21:00:00:e0:8b:06:d9:1d(pwwn)  20:0d:00:05:30:00:95:de(fc1/13)
1      50:06:04:82:bc:01:c3:84(pwwn)  20:0c:00:05:30:00:95:de(fc1/12)
2      20:00:00:05:30:00:95:df(swwn)  20:0c:00:05:30:00:95:de(port-channel 128)
3     20:00:00:05:30:00:95:de(swwn)  20:01:00:05:30:00:95:de(fc1/1)
[Total 4 entries]
```

The following example displays the output of the active port security database in VSAN 1:

```
switch# show port-security database vsan 1
-------------------------------------------------------------------------------
Vsan   Logging-in Entity             Logging-in Point        (Interface)
-------------------------------------------------------------------------------
1                 *                  20:85:00:44:22:00:4a:9e (fc3/5)
1      20:11:00:33:11:00:2a:4a(pwwn)  20:81:00:44:22:00:4a:9e (fc3/1)
[Total 2 entries]
```

The following example displays the active database.

```
switch# show port-security database active
-------------------------------------------------------------------------------------
VSAN   Logging-in Entity             Logging-in Point  (          Interface)    Learnt
-------------------------------------------------------------------------------------
1      21:00:00:e0:8b:06:d9:1d(pwwn)  20:0d:00:05:30:00:95:de(fc1/13)                 Yes
1      50:06:04:82:bc:01:c3:84(pwwn)  20:0c:00:05:30:00:95:de(fc1/12)                 Yes
2      20:00:00:05:30:00:95:df(swwn)  20:0c:00:05:30:00:95:de(port-channel 128)
       Yes
3     20:00:00:05:30:00:95:de(swwn)  20:01:00:05:30:00:95:de(fc1/1)
[Total 4 entries]
```

The following example displays the wildcard fwwn port security in VSAN 1:

```
switch# show port-security database fwwn 20:85:00:44:22:00:4a:9e vsan 1
Any port can login thru' this fwwn
```

The following example displays the configured FWWN port security in VSAN 1:

```
switch# show port-security database fwwn 20:01:00:05:30:00:95:de vsan 1
20:00:00:0c:88:00:4a:e2(swwn)
```

The following example displays the interface port information in VSAN 2:

```
switch# show port-security database interface fc 1/1 vsan 2
20:00:00:0c:88:00:4a:e2(swwn)
```

The following example displays the port security statistics:

```
switch# show port-security statistics
Statistics For VSAN: 1
-----------------------
Number of pWWN permit: 2
```

```
Number of nWWN permit: 2
Number of sWWN permit: 2
Number of pWWN deny  : 0
Number of nWWN deny  : 0
Number of sWWN deny  : 0
Total Logins permitted  : 4
Total Logins denied     : 0
Statistics For VSAN: 2
------------------------
Number of pWWN permit: 0
Number of nWWN permit: 0
Number of sWWN permit: 2
Number of pWWN deny  : 0
Number of nWWN deny  : 0
Number of sWWN deny  : 0
...
```

The following example displays the status of the active database and the autolearn configuration:

```
switch# show port-security status
VSAN 1 :Activated database, auto-learning is enabled
VSAN 2 :No Active database, auto-learning is disabled
...
```

The following example displays the previous 100 violations:

```
switch# show port-security violations
-------------------------------------------------------------------------------------------
VSAN  Interface    Logging-in Entity        Last-Time       [Repeat count]
-------------------------------------------------------------------------------------------
1  fc1/13    21:00:00:e0:8b:06:d9:1d(pwwn)        Jul  9 08:32:20 2003       [20]
      20:00:00:e0:8b:06:d9:1d(nwwn)
1  fc1/12    50:06:04:82:bc:01:c3:84(pwwn)        Jul  9 08:32:20 2003       [1]
      50:06:04:82:bc:01:c3:84(nwwn)
2  port-channel 1  20:00:00:05:30:00:95:de(swwn)  Jul  9 08:32:40 2003                [1]
[Total 2 entries]
```

Related Commands

Command	Description
port-security	Configures port security parameters.

show process creditmon credit-loss-event-history

To display the credit loss event history, use the **show processes creditmon credit-loss-event-history** command.

show process creditmon credit-loss-event-history module module-number

Syntax Description

module	Displays credit loss event history for a module.
module-number	Displays the module number.

Command Default

None.

Command Modes

EXEC mode.

Command History

Release	Modification
6.2(1)	This command is not supported for new MDS NG products but no changes made for the old MDS.
NX-OS 5.x	This command was introduced.

Usage Guidelines

None.

Examples

The following examples displays the credit loss event history for a module:

```
switch# show process creditmon credit-loss-event-history module 1
switch#
```

The following examples displays the credit loss event history:

```
switch# show process creditmon credit-loss-event-history
Module: 01
Module: 02
Module: 03
Module: 04
CLI is not supported on module 5
Module: 06
Module: 07
```

Related Commands

Command	Description
show process creditmon credit-loss-events	Displays the credit loss information.

show process creditmon credit-loss-events

To display the credit loss events information, use the **show processes creditmon credit-loss-events** command.

show process creditmon credit-loss-events module module-number

Syntax Description

module	Displays credit loss events information for a module.
module-number	Displays the module number.

Command Default

None.

Command Modes

EXEC mode.

Command History

Release	Modification
6.2(9)	This command is supported in MDS NG products but no changes made for the old MDS.
6.2(1)	This command is not supported for new MDS NG products but no changes made for the old MDS.
NX-OS 5.x	This command was introduced.

Usage Guidelines

In Cisco MDS 9710, 9706, 9250i and 9148S Series Switches, this command can be executed from configuration terminal mode itself. There are no changes in the old MDS, attach the module and execute the command.

Examples

The following examples displays the credit loss events information for a module:

```
switch# show process creditmon credit-loss-events module 9
Module: 09      Credit Loss Events: NO
switch#
```

The following examples displays the credit loss events information for a module:

Related Commands

Command	Description
show process creditmon credit-loss-event-history	Displays the credit monitor event history information.

show process creditmon event-history

To display the credit monitor event history information, use the **show processes creditmon event-history** command.

show process creditmon event-history

Syntax Description

This command has no argument or keywords.

Command Default

None.

Command Modes

EXEC mode.

Command History

Release	Modification
6.2(9)	This command is supported for new MDS NG products but no changes made for the old MDS.
6.2(1)	This command is not supported for new MDS NG products but no changes made for the old MDS.
NX-OS 5.x	This command was introduced.

Usage Guidelines

None.

Examples

The following examples displays the credit monitor event history information:

switch# attach module 2

```
switch# show process creditmon credit event-history
1) Event:CREDITMON_EVENT_MONITOR_OFF, length:4, at 10202 usec
s after Tue Apr 16 00:06:05 2013
interface =
2) Event:CREDITMON_EVENT_MONITOR_OFF, length:4, at 10199 usec
s after Tue Apr 16 00:06:05 2013
interface =
3) Event:CREDITMON_EVENT_MONITOR_OFF, length:4, at 10197 usec
s after Tue Apr 16 00:06:05 2013
interface =
4) Event:CREDITMON_EVENT_MONITOR_OFF, length:4, at 10194 usec
s after Tue Apr 16 00:06:05 2013
interface =
Module: 09      Credit Loss Events: NO
switch#
```

Related Commands

Command	Description
show process creditmon credit-loss-events	Displays the credit loss event information.

show process creditmon slowport-monitor-events

To display the credit monitor slow port statistics information, use the **show process** creditmon slowport-monitor-events command.

show process creditmon slowport-monitor-events module module-number

Syntax Description

module	Displays slowport monitor events for a module.
module-number	Displays the module number.

Command Default

None.

Command Modes

EXEC mode.

Command History

Release	Modification
6.2(9)	This command was introduced.

Usage Guidelines

None.

Examples

The following examples displays the creditmon slowport monitor statistics information for platform MDS 9710, 9706, 9250i and MDS 9148S:

```
switch# show process creditmon slowport-monitor-events
Module: 01 Slowport Detected: YES
================================================================================
Interface = fc1/37
----------------------------------------------------------------
| admin | slowport | oper | Timestamp |
| delay | detection | delay | |
| (ms) | count | (ms) | |
----------------------------------------------------------------
| 1 | 2 | 4 | 1. Mon Jun 30 16:19:06.068 2014 |
----------------------------------------------------------------
================================================================================
Interface = fc1/39
----------------------------------------------------------------
| admin | slowport | oper | Timestamp |
| delay | detection | delay | |
| (ms) | count | (ms) | |
----------------------------------------------------------------
| 1 | 2 | 4 | 1. Thu Jul 3 11:26:15.876 2014 |
----------------------------------------------------------------
================================================================================
Interface = fc1/40
----------------------------------------------------------------
| admin | slowport | oper | Timestamp |
| delay | detection | delay | |
| (ms) | count | (ms) | |
----------------------------------------------------------------
```

```
| 1 | 2 | 2 | 1. Thu Jul 3 11:26:15.537 2014 |
-----------------------------------------------------------------
```

Related Commands

Command	Description
system timeout slowport-monitor	Configures the system timeout values for the hardware slow port monitoring.

show process creditmon txwait-history

To display the TxWait history information of a physical device hardware, use the **show process creditmon txwait-history** command.

show process creditmon txwait-history [**module number**[**port number**]]

Syntax Description

module *number*	(Optional) Species a module number.
port *number*	(Optional) Specifies a port number.

Command Default

Displays the TxWait history information of a physical device hardware.

Command Modes

Privileged EXEC (#)

Release	Modification
5.x	This command was introduced.
8.4(1)	The **show process creditmon txwait-history** command was changed to the **show interface** [*interface-range*] **txwait-history** command.

Usage Guidelines

Use the **show interface** [*interface-range*] **txwait-history** command instead of the **show process creditmon txwait-history** command.

Examples

This example displays the transmit-wait history graph for 16-Gbps modules:

```
switch# show process creditmon txwait-history module 1 port 19

TxWait history for port fc1/19:
==============================
     9999999999999999999999999999999999999999999999999999999999999999
     2222222212222222222221222222122222212222222222222222222222212
     4434444580444424445545544547445549434053544443431444443445 4
1000
 900 ############################################################
800 ############################################################
700 ############################################################
600 ############################################################
500 ############################################################
400 ############################################################
300 ############################################################
200 ############################################################
100 ############################################################
    0....5....1....1....2....2....3....3....4....4....5....5....6
              0    5    0    5    0    5    0    5    0    5    0

          Tx Credit Not Available per second (last 60 seconds)
                 # = TxWait (ms)

   55555554
   5552222200000000000000000000000000000000000000000000000000000000
```

```
   ............................................................
   430222290000000000000000000000000000000000000000000000000000
60
54 #######
48 #######
42 ########
36 ########
30 ########
24 ########
18 ########
12 ########
 6 ########
  0....5....1....1....2....2....3....3....4....4....5....5....6
            0    5    0    5    0    5    0    5    0    5    0

          Tx Credit Not Available per minute (last 60 minutes)
                 # = TxWait (secs)
```

```
     000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000
3600
3240
2880
2520
2160
1800
1440
1080
 720
 360
    0....5....1....1....2....2....3....3....4....4....5....5....6....6....7.7
              0    5    0    5    0    5    0    5    0    5    0    5    0 2

          Tx Credit Not Available per hour (last 72 hours)
                 # = TxWait (secs)
```

Command	Description
show hardware	Displays information of the physical device hardware.
show interface [*interface-range*] **txwait-history**	Displays the TxWait history graph for Fibre Channel and Ethernet interfaces.

show processes

To display general information about all the processes, use the **show processes** command.

show processes [**cpu** | **log** [**details** | **pid** *process-id*] | **memory**]

Syntax Description

cpu	(Optional) Displays processes CPU information.
log	(Optional) Displays information about process logs.
details	(Optional) Displays detailed process log information.
pid *process-id*	(Optional) Displays process information about a specific process ID. The range is 0 to 2147483647.
memory	(Optional) Displays processes memory information.

Command Default

None.

Command Modes

EXEC mode.

Command History

Release	Modification
1.0(2)	This command was introduced.

Usage Guidelines

None.

Examples

The following examples display general information about system processes:

```
switch# show process
PID    State  PC        Start_cnt    TTY   Process
-----  -----  --------  -----------  ----  -------------
  868      S  2ae4f33e            1     -  snmpd
  869      S  2acee33e            1     -  rscn
  870      S  2ac36c24            1     -  qos
  871      S  2ac44c24            1     -  port-channel
  872      S  2ac7a33e            1     -  ntp
    -     ER         -            1     -  mdog
    -     NR         -            0     -  vbuilder
PID: process ID.
State: process state
        D   uninterruptible sleep (usually IO)
        R   runnable (on run queue)
        S   sleeping
        T   traced or stopped
        Z   a defunct ("zombie") process
 NR  not-running
 ER  should be running but currently not-running
PC: Current program counter in hex format
Start_cnt: how many times a process has been started.
TTY: Terminal that controls the process. A "-" usually means a daemon not
     running on any particular tty.
```

```
Process: name of the process.

=====================================================
2. show processes cpu (new output)
Description: show cpu utilization information about the processes.
switch# show processes cpu
PID    Runtime(ms)  Invoked   uSecs  1Sec   Process
-----  -----------  --------  -----  -----  -----------
  842         3807    137001     27    0.0  sysmgr
 1112         1220     67974     17    0.0  syslogd
 1269          220     13568     16    0.0  fcfwd
 1276         2901     15419    188    0.0  zone
 1277          738     21010     35    0.0  xbar_client
 1278         1159      6789    170    0.0  wwn
 1279          515     67617      7    0.0  vsan
Runtime(ms): cpu time the process has used, expressed in milliseconds
Invoked: Number of times the process has been invoked.
uSecs:   Microseconds of CPU time in average for each process invocation.
1Sec:    CPU utilization in percentage for the last 1 second.
=====================================================
3. show processes mem
Description: show memory information about the processes.
PID    MemAlloc  StackBase/Ptr      Process
-----  --------  -----------------  ----------------
 1277    120632  7ffffcd0/7fffefe4  xbar_client
 1278     56800  7ffffce0/7ffffb5c  wwn
 1279   1210220  7ffffce0/7ffffbac  vsan
 1293    386144  7fffcf0/7fffebd4  span
 1294   1396892  7ffffce0/7fffdff4  snmpd
 1295    214528  7fffcf0/7ffff904  rscn
 1296     42064  7ffffce0/7ffffb5c  qos
MemAlloc: total memory allocated by the process.
StackBase/Ptr: process stack base and current stack pointer in hex format
=====================================================
3. show processes log
Description: list all the process logs
switch# show processes log
Process           PID     Normal-exit  Stack-trace  Core     Log-create-time
----------------  ------  -----------  -----------  -------  ---------------
fspf              1339             N            Y        N  Jan  5 04:25
lichen               1559             N            Y        N  Jan  2 04:49
rib               1741             N            Y        N  Jan  1 06:05
Normal-exit: whether or not the process exited normally.
Stack-trace: whether or not there is a stack trace in the log.
Core: whether or not there exists a core file.
Log-create-time: when the log file got generated.
```

The following example displays the detail log information about a particular process:

```
switch# show processes log pid 1339
Service: fspf
Description: FSPF Routing Protocol Application
Started at Sat Jan  5 03:23:44 1980 (545631 us)
Stopped at Sat Jan  5 04:25:57 1980 (819598 us)
Uptime: 1 hours 2 minutes 2 seconds
Start type: SRV_OPTION_RESTART_STATELESS (23)
Death reason: SYSMGR_DEATH_REASON_FAILURE_SIGNAL (2)
Exit code: signal 9 (no core)
CWD: /var/sysmgr/work
Virtual Memory:
    CODE      08048000 - 0809A100
    DATA      0809B100 - 0809B65C
    BRK       0809D988 - 080CD000
    STACK     7FFFFD20
```

```
    TOTAL     23764 KB
Register Set:
    EBX 00000005         ECX 7FFFF8CC         EDX 00000000
    ESI 00000000         EDI 7FFFF6CC         EBP 7FFFF95C
    EAX FFFFFDFE         XDS 8010002B         XES 0000002B
    EAX 0000008E (orig)  EIP 2ACE133E         XCS 00000023
    EFL 00000207         ESP 7FFFF654         XSS 0000002B
Stack: 1740 bytes. ESP 7FFFF654, TOP 7FFFFD20
0x7FFFF654: 00000000 00000008 00000003 08051E95 ................
0x7FFFF664: 00000005 7FFFF8CC 00000000 00000000 ................
0x7FFFF674: 7FFFF6CC 00000001 7FFFF95C 080522CD ........\....".."
0x7FFFF684: 7FFFF9A4 00000008 7FFFFC34 2AC1F18C ........4......*
```

The following examples displays the CPU utilization statistics and details about the processes running on the device:

```
switch# sh processes cpu

CPU utilization for five seconds: 2%/0%; one minute: 2%; five minutes: 2%
PID    Runtime(ms)  Invoked   uSecs  5Sec    1Min    5Min    TTY  Process
1Sec
-----  -----------  --------  -----  ------  ------  ------  ---  --------------------
------
    1        33240   1282998      0   0.00%   0.00%   0.00%    -                 init
0.00%
  937          120       288      0   0.00%   0.00%   0.00%    -            dcos_sshd
0.00%
  941          180      8868      0   0.03%   0.00%   0.00%    3                  vsh
0.00%

switch# sh processes memory

PID    MemAlloc  MemLimit    MemUsed     StackBase/Ptr      Process
-----  --------  ----------  ----------  -----------------  ----------------
    1    172032  0           2441216     ffeedad0/0         init
 2001  18718720  0           475197440   ff9b26c0/0         vsh
 2284   8593408  0           95387648    ff942330/0         dcos_sshd
 2287  17637376  0           474038272   ffb111f0/0         vsh
 2827  18718720  0           475197440   fff0dd60/0         vsh
 3631  18718720  0           475197440   ffe00660/0         vsh
 3636  18718720  0           475197440   ffb0c820/0         vsh
```

show qos

To display the current QoS settings along with a the number of frames marked high priority, use the **show qos** command.

show qos {**class-map** [**name** *class-name*] | **dwrr** | **policy-map** [**name** *policy-name*] | **service policy** [**interface fc** *slot / port* | **vsan** *vsan-id*] | **statistics**}

Syntax Description

class-map	Displays QoS class maps.
name *class-name*	(Optional) Specifies a class map name. The maximum length is 63 alphanumeric characters.
dwrr	Displays deficit weighted round robin queue weights.
policy-map	Displays QoS policy-maps.
name *policy-name*	(Optional) Specifies a policy map name. The maximum length is 63 alphanumeric characters.
service policy	Displays QoS service policy associations.
interface fc *slot*/*port*	(Optional) Specifies a Fibre Channel interface.
vsan *vsan-id*	(Optional) Specifies a VSAN ID. The range is 1 to 4093.
statistics	Displays QoS related statistics.

Command Default

None.

Command Modes

EXEC mode.

Command History

Release	Modification
1.3(1)	This command was introduced.

Usage Guidelines

To access all but the **statistics** option for this command, you must perform the **qos enable** command.

Examples

The following example displays the contents of all class maps:

```
switch# show qos class-map
qos class-map MyClass match-any
    match dest-wwn 20:01:00:05:30:00:28:df
    match src-wwn 23:15:00:05:30:00:2a:1f
    match src-intf fc2/1
qos class-map Class2 match-all
    match src-intf fc2/14
qos class-map Class3 match-all
    match src-wwn 20:01:00:05:30:00:2a:1f
```

The following example displays the contents of a specified class map:

```
switch# show qos class-map name MyClass
qos class-map MyClass match-any
    match dest-wwn 20:01:00:05:30:00:28:df
    match src-wwn 23:15:00:05:30:00:2a:1f
    match src-intf fc2/1
```

The following example displays all configured policy maps:

```
switch# show qos policy-map
qos policy-map MyPolicy
    class MyClass
    priority medium
qos policy-map Policy1
    class Class2
    priority low
```

The following example displays a specified policy map:

```
switch# show qos policy-map name MyPolicy
qos policy-map MyPolicy
    class MyClass
        priority medium
```

The following example displays scheduled DWRR configurations:

```
switch# show qos dwrr
qos dwrr-q high weight 50
qos dwrr-q medium weight 30
qos dwrr-q low weight 20
```

The following example displays all applied policy maps:

```
switch# show qos service policy
qos service policy MyPolicy vsan 1
qos service policy Policy1 vsan 4
```

The following example displays QoS statistics:

```
switch# show qos statistics
Total number of FC frames transmitted from the Supervisor= 301431
Number of highest-priority FC frames transmitted         = 137679
Current priority of FC control frames = 7    (0 = lowest; 7 = highest)
```

show radius

To display the RADIUS Cisco Fabric Services (CFS) distribution status and other details, use the **show radius** command.

show radius {**distribution status** | **pending** | **pending-diff**}

Syntax Description

distribution status	Displays the status of the RADIUS CFS distribution.
pending	Displays the pending configuration that is not yet applied.
pending-diff	Displays the difference between the active configuration and the pending configuration.

Command Default

None.

Command Modes

EXEC mode.

Command History

Release	Modification
2.0(x)	This command was introduced.

Usage Guidelines

None.

Examples

The following example displays the RADIUS distribution status:

```
switch# show radius distribution status
session ongoing: no
session db: does not exist
merge protocol status: merge activation done
last operation: none
last operation status: none
```

Related Commands

Command	Description
radius distribute	Enables RADIUS CFS distribution.

show radius-server

To display all configured RADIUS server parameters, use the **show radius-server** command.

show radius-server [*server-nameipv4-addressipv6-address*] [**directed-request** | **groups** | **sorted** | **statistics**]

Syntax Description

server-name	(Optional) Specifies the RADIUS server DNS name. The maximum character size is 256.
ipv4-address	(Optional) Specifies the RADIUS server IP address in the format *A.B.C.D* .
ipv6-address	(Optional) Specifies the RADIUS server IP address in the format *X:X::X* .
directed-request	(Optional) Displays an enabled directed request RADIUS server configuration.
groups	(Optional) Displays configured RADIUS server group information.
sorted	(Optional) Displays RADIUS server information sorted by name.
statistics	(Optional) Displays RADIUS statistics for the specified RADIUS server.

Command Default

None.

Command Modes

EXEC mode.

Command History

Release	Modification
1.3(1)	This command was introduced.
3.0(1)	• Added the *server-name* , *ipv4-address* , and *ipv6-address* arguments. • Added the **directed-request** and **statistics** options.

Usage Guidelines

Only administrators can view the RADIUS preshared key.

Examples

The following example shows the output of the **show radius-server** command:

```
switch# show radius-server

Global RADIUS shared secret:Myxgqc
retransmission count:5
timeout value:10
following RADIUS servers are configured:
        myradius.cisco.users.com:
                available for authentication on port:1812
                available for accounting on port:1813
        172.22.91.37:
                available for authentication on port:1812
                available for accounting on port:1813
                RADIUS shared secret:23MHcUnD
        10.10.0.0:
                available for authentication on port:1812
```

```
            available for accounting on port:1813
RADIUS shared secret:hostkey----> for administrators only
```

show rdp

To display RDP details of a device like port speed, link error status, SFP diagnostics parameters, port congestion, use the **show rdp** command. This information is retrieved from the device specified and represents information from the perspective of that device.

show rdp fcid *fcid_id* **vsan** *vsan_id* [**cs** *class_number*]

Syntax Description

fcid *fcid_id*	Specifies the FCID of a device. The range is 0x0 to 0xffffff.
vsan *vsan_id*	Specifies the VSAN ID. The range is 1 to 4093.
cs *class_number*	Specifies the class of the frame. The supported value is 2.

Command Default

None.

Command Modes

EXEC mode.

Command History

Release	Modification
8.4(1)	The command output was modified to add the *Port Congestion* information.
8.3(1)	This command was modified to include the following keywords and arguments: • **cs** • *class_number* This command is available in NX-API.
8.2(1)	This command was introduced.

Examples

The following example displays the RDP frame details for a specified FCID and VSAN:

Note This output was taken with Emulex LPe32002-M2 FV12.8.266.8 DV12.8.266.6 HBA that was running on Linux OS.

```
switch# show rdp fcid 0xaa0260 vsan 1
---------------------------------------------------------------
                  RDP frame details
---------------------------------------------------------------
Link Service Request Info:
------------------------------

Port Speed Descriptor Info:
------------------------------
Port speed capabilities : 16G 8G 4G
Port Oper speed         : Unknown Oper speed

Link Error Status:
```

```
------------------------------
VN PHY port type               : FC
Link failure count             : 0
Loss of sync count             : 0
Loss of signal count           : 0
Primitive sequence proto error : 0
Invalid Transmission word      : 0
Invalid CRC count              : 0

Port Name Descriptor:
------------------------------
Node WWN            : 20:00:8c:60:4f:54:54:00
Port WWN            : 21:01:8c:60:4f:54:54:00
Attached Node WWN   : 50:08:01:60:00:89:07:51
Attached Port WWN   : 50:08:01:60:00:89:08:51

SFP Diag params:
------------------------------
SFP flags       : SFP+  Optical
SFP Tx Type     : Short Wave

FEC Status:
------------------------------
Corrected blocks   : 0
Uncorrected blocks : 0

Buffer Credit Descriptor:
------------------------------
Rx B2B credit   : 1
Tx B2B credit   : 16
Port RTT        : 0 ns

Optical Product Data:
------------------------------
Vendor Name    : CISCO-AVAGO
Model No.      : AFBR-57F5PZ-CS1
Serial No.     : AVA1602J0FY
Revision       : B2
Date           : 120112

Port Congestion:
------------------------------
Tx Zero Credit Count      : 3
Rx Zero Credit Count      : 0
Tx Delay Count            : 0
Delay Interval            : 2500
Tx Discard Count          : 0
Tx Discard Interval       : 500
Active State Tx LR Count  : 0
Active State Rx LR Count  : 0

  ------------------------------------------------------------------------------
              Current              Alarms                 Warnings
              Measurement     High        Low         High          Low
  ------------------------------------------------------------------------------
  Temperature   26.89 C         75.00 C     -5.00 C     70.00 C        0.00 C
  Voltage        3.28 V          3.63 V      2.97 V      3.46 V        3.13 V
  Current        7.37 mA        10.50 mA     2.50 mA    10.50 mA       2.50 mA
  Tx Power      -2.49 dBm        1.70 dBm  -13.01 dBm   -1.30 dBm     -9.00 dBm
  Rx Power     -23.87 dBm        3.00 dBm  -15.92 dBm    0.00 dBm    -11.90 dBm
  ------------------------------------------------------------------------------
  Note: ++  high-alarm; +  high-warning; --  low-alarm; -  low-warning
```

Related Commands

Command	Description
show tech-support	Displays technical information that is useful while troubleshooting.
show cores	Displays information about all cores available for uploading from the active supervisor

show rlir

To display the information about Registered Link Incident Report (RLIR), Link Incident Record Registration (LIRR), and Distribute Registered Link Incident Record (DRLIR) frames, use the **show rlir** command.

show rlir {**erl** [**vsan** *vsan-id*] | **history** | **recent** [**interface fc** *slot/port* | **portnumber** *port-number*] | **statistics** [**vsan** *vsan-id*]}

Note On a Cisco Fabric Switch for HP c-Class BladeSystem and on a Cisco Fabric Switch for IBM BladeCenter, the syntax differs as follows:**interface bay** *port* **| ext** *port* }

Syntax Description

erl	Displays Established Registration List (ERL) information.
vsan *vsan-id*	(Optional) Specifies a VSAN ID. The range is 1 to 4093.
history	Displays link incident history.
recent	Displays recent link incident.
interface	(Optional) Specifies an interface.
fc *slot/port*	(Optional) Specifies a Fibre Channel interface on a Cisco MDS 9000 Family Switch.
bay *port* **| ext** *port* }	Specifies a Fibre Channel interface on a Cisco MDS 9124 Fabric Switch, a Cisco Fabric Switch for HP c-Class BladeSystem, and a Cisco Fabric Switch for IBM BladeCenter.
portnumber *port-number*	(Optional) Specifies a port number for the link incidents. The range is 1 to 224.
statistics	Displays RLIR statistics.

Command Default

None.

Command Modes

EXEC mode.

Command History

Release	Modification
1.3(2)	This command was introduced.
3.0(3)	Modified the **show rlir erl** command.
3.1(2)	Added the **bay** *port* **| ext** *port* keywords and arguments.

Usage Guidelines

If available, the host timestamp (marked by the *) is printed along with the switch timestamp. If the host timestamp is not available, only the switch timestamp is printed.

Examples

The following example displays the RLIR statistics for all VSANs:

```
switch# show rlir statistics
Statistics for VSAN: 1
------------------------
Number of LIRR received      = 0
Number of LIRR ACC sent      = 0
Number of LIRR RJT sent      = 0
Number of RLIR sent          = 0
Number of RLIR ACC received  = 0
Number of RLIR RJT received  = 0
Number of DRLIR received     = 0
Number of DRLIR ACC sent     = 0
Number of DRLIR RJT sent     = 0
Number of DRLIR sent         = 0
Number of DRLIR ACC received = 0
Number of DRLIR RJT received = 0
Statistics for VSAN: 4
------------------------
Number of LIRR received      = 0
Number of LIRR ACC sent      = 0
Number of LIRR RJT sent      = 0
Number of RLIR sent          = 0
Number of RLIR ACC received  = 0
Number of RLIR RJT received  = 0
Number of DRLIR received     = 0
Number of DRLIR ACC sent     = 0
Number of DRLIR RJT sent     = 0
Number of DRLIR sent         = 0
Number of DRLIR ACC received = 0
Number of DRLIR RJT received = 0
Statistics for VSAN: 61
------------------------
Number of LIRR received      = 0
Number of LIRR ACC sent      = 0
Number of LIRR RJT sent      = 0
Number of RLIR sent          = 0
Number of RLIR ACC received  = 0
Number of RLIR RJT received  = 0
Number of DRLIR received     = 0
Number of DRLIR ACC sent     = 0
Number of DRLIR RJT sent     = 0
Number of DRLIR sent         = 0
Number of DRLIR ACC received = 0
Number of DRLIR RJT received = 0
```

The following example displays the RLIR statistics for a specified VSAN:

```
switch# show rlir statistics vsan 4
Statistics for VSAN: 4
------------------------
Number of LIRR received      = 0
Number of LIRR ACC sent      = 0
Number of LIRR RJT sent      = 0
Number of RLIR sent          = 0
Number of RLIR ACC received  = 0
Number of RLIR RJT received  = 0
Number of DRLIR received     = 0
Number of DRLIR ACC sent     = 0
Number of DRLIR RJT sent     = 0
Number of DRLIR sent         = 0
```

```
Number of DRLIR ACC received = 0
Number of DRLIR RJT received = 0
```

The following example displays the RLIR statistics for all ERLs:

```
switch# show rlir erl
Established Registration List for VSAN: 2
-------------------------------------------
FC-ID       LIRR FORMAT    REGISTERED FOR
-------------------------------------------
0x0b0200    0x18           always receive
Total number of entries = 1
Established Registration List for VSAN: 100
-------------------------------------------
FC-ID       LIRR FORMAT    REGISTERED FOR
-------------------------------------------
0x0b0500    0x18           conditional receive
0x0b0600    0x18           conditional receive
Total number of entries = 2
```

The following example displays the ERLs for the specified VSAN:

```
switch# show rlir erl vsan 100
Established Registration List for VSAN: 100
-------------------------------------------
FC-ID       LIRR FORMAT    REGISTERED FOR
-------------------------------------------
0x0b0500    0x18           conditional receive
0x0b0600    0x18           conditional receive
Total number of entries = 2
```

The following example displays the RLIR preferred host configuration:

```
switch# show rlir erl
Established Registration List for VSAN: 5
-------------------------------------------
FC-ID       LIRR FORMAT     REGISTERED FOR
-------------------------------------------
0x772c00    0x18            conditional receive(*)
0x779600    0x18            conditional receive
0x779700    0x18            conditional receive
0x779800    0x18            conditional receive
Total number of entries = 4
(*) - Denotes the preferred host
```

The following example displays the RLIR history.

```
switch# show rlir history
Link incident history
-------------------------------------------------------------------------------------------
 Host Time Stamp         Switch Time Stamp       VSAN   Domain   Port    Intf        Link
Incident Loc/Rem
-------------------------------------------------------------------------------------------
 Sep 20 12:42:44 2006    Sep 20 12:42:44 2006    ****    ****    0x0b    fc1/12      Loss
of sig/sync LOC
 Reported Successfully to: [0x640001] [0x640201]
 Sep 20 12:42:48 2006    Sep 20 12:42:48 2006    ****    ****    0x0b    fc1/12      Loss
of sig/sync LOC
 Reported Successfully to: [0x640001] [0x640201]
 *** ** **:**:** ****    Sep 20 12:42:51 2006    1001    230     0x12    ****        Loss
of sig/sync REM
 Reported Successfully to: [0x640001] [0x640201]
```

```
 Sep 20 12:42:55 2006    Sep 20 12:42:55 2006    ****    ****    0x0b    fc1/12      Loss
of sig/sync LOC
 Reported Successfully to: None [No Registrations]
 *** ** **:**:** ****    Sep 20 12:45:56 2006    1001    230     0x12    ****        Loss
of sig/sync REM
 Reported Successfully to: None [No Registrations]
 *** ** **:**:** ****    Sep 20 12:45:56 2006    1001    230     0x12    ****        Loss
of sig/sync REM
 Reported Successfully to: None [No Registrations]
 Sep 20 12:52:45 2006    Sep 20 12:52:45 2006    ****    ****    0x0b    fc1/12      Loss
of sig/sync LOC
 Reported Successfully to: None [No Registrations]
 **** - Info not required/unavailable
```

The following example displays recent RLIRs for a specified interface:

```
switch# show rlir recent interface fc1/1-4
Recent link incident records
-------------------------------------------------------------------------------
Host Time Stamp          Switch Time Stamp        Port Intf   Link Incident
-------------------------------------------------------------------------------
Thu Dec 4 05:02:29 2003  Wed Dec 3 21:02:56 2003   2   fc1/2  Implicit Incident
Thu Dec 4 05:02:54 2003  Wed Dec 3 21:03:21 2003   4   fc1/4  Implicit Incident
```

The following example displays the recent RLIRs for a specified port number.

```
switch# show rlir recent portnumber 1-4
Recent link incident records
-------------------------------------------------------------------------------
Host Time Stamp          Switch Time Stamp        Port Intf    Link Incident
-------------------------------------------------------------------------------
Thu Dec 4 05:02:29 2003  Wed Dec 3 21:02:56 2003   2   fc1/2   Implicit Incident
Thu Dec 4 05:02:54 2003  Wed Dec 3 21:03:21 2003   4   fc1/4   Implicit Incident
```

show rmon

To display the remote monitoring (RMON) configuration or onboard log, use the **show rmon** command.

show rmon {**alarms** | **events** | **hcalarms** | **logs**}

Syntax Description

alarms	Displays the configured 32-bit RMON alarms.
events	Displays the configured RMON events.
hcalarms	Displays the configured 64-bit high-capacity (HC) RMON alarms.
logs	Displays the RMON event logs.

Command Default

None.

Command Modes

EXEC mode

Command History

Release	Modification
2.0(x)	This command was introduced.
2.1(2)	Added the **logs** option.
3.0(1)	Added the **hcalarms** option.

Usage Guidelines

None.

Examples

The following example displays the configured RMON alarms:

```
switch# show rmon alarms
Alarm 20 is active, owned by test
Monitors 1.3.6.1.2.1.2.2.1.16.30 every 30 second(s)
 Taking delta samples, last value was 17
 Rising threshold is 15, assigned to event 1
 Falling threshold is 0, assigned to event 0
 On startup enable rising or falling alarm
```

The following example displays the configured RMON events:

```
switch# show rmon events
Event 4 is active, owned by administrator@london_op_center
Description is WARNING(4)
Event firing causes log and trap to community public, last fired 03:32:43
```

The following example displays the configured high-capacity RMON alarms:

```
switch# show rmon hcalarms
High Capacity Alarm 1 is active, owned by cseSysCPUUtilization.0@test
 Monitors 1.3.6.1.4.1.9.9.305.1.1.1.0 every 10 second(s)
 Taking absolute samples, last value was 0
```

```
 Rising threshold is 60, assigned to event 4
 Falling threshold is 59, assigned to event 4
 On startup enable rising alarm
 Number of Failed Attempts is 0
The following example displays the RMON event log located on the switch:
switch# show rmon logs
Event 4
    1 WARNING(4)Falling alarm 1, fired at 0 days 0:02:23 uptime
      iso.3.6.1.4.1.9.9.305.1.1.1.0=17 <= 59
Event 5
    1 INFORMATION(5)Startup Falling alarm 1, fired at 0 days 0:02:23 uptime
      iso.3.6.1.4.1.9.9.305.1.1.1.0=17 <= 59
    2 INFORMATION(5)Falling alarm 1, fired at 0 days 0:02:33 uptime
      iso.3.6.1.4.1.9.9.305.1.1.1.0=17 <= 59
```

Related Commands

Command	Description
rmon alarm	Configures the 32-bit RMON alarm.
rmon event	Configures an RMON event.
rmon hcalarm	Configures the 64-bit RMON alarm.
show snmp host	Displays the SNMP trap destination information.

show rmon status

To display the count of currently configured and maximum RMON alarm and hcalarm, use the **show rmon status** command.

show rmon status

Syntax Description

This command has no arguments or keywords.

Command Default

None.

Command Modes

EXEC mode.

Command History

Release	Modification
3.3(1a)	This command was introduced.

Usage Guidelines

None.

Examples

The following example displays the count of currently configured and maximum RMON alarms and hcalarms:

```
switch# show rmon status
Maximum allowed 32 bit or 64 bit alarms : 512
Number of 32 bit alarms configured : 0
Number of 64 bit hcalarms configured : 0
```

Related Commands

Command	Description
show rmon alarms	Displays the RMON alarm table.
show rmon hcalarms	Displays the RMON hcalarm table.
show rmon events	Displays the RMON event table.
show rmon logs	Displays the RMON event log table.

show role

To display the description about the various Cisco SME role configurations, use the show role command.

show role

Syntax Description

This command has no arguments or keywords.

Command Default

None.

Command Modes

EXEC mode.

Command History

Release	Modification
3.3(1a)	This command was introduced.
NX-OS 4.1(1c)	Changed the command output.

Usage Guidelines

Execute the setup sme command to set up the Cisco SME administrator and Cisco SME recovery roles and then use the show role command to display the role details.

Examples

The following example displays the Cisco SME role configurations:

```
switch# setup sme
Set up four roles necessary for SME, sme-admin, sme-stg-admin, sme-kmc-admin and
sme-rec-officer? (yes/no) [no] yes
SME setup done

switch# show role


Role: sme-admin
  Description: new role
  Vsan policy: permit (default)
  ----------------------------------------------
  Rule    Type    Command-type    Feature
  ----------------------------------------------
  1       permit  show            sme
  2       permit  config          sme
  3       permit  debug           sme

Role: sme-storage
  Description: new role
  Vsan policy: permit (default)
  ----------------------------------------------
  Rule    Type    Command-type    Feature
  ----------------------------------------------
  1       permit  show            sme-stg-admin
  2       permit  config          sme-stg-admin
  3       permit  debug           sme-stg-admin

Role: sme-kmc
  Description: new role
  Vsan policy: permit (default)
```

```
  ----------------------------------------------
  Rule    Type    Command-type    Feature
  ----------------------------------------------
  1       permit  show            sme-kmc-admin
  2       permit  config          sme-kmc-admin
  3       permit  debug           sme-kmc-admin

Role: sme-recovery
  Description: new role
  Vsan policy: permit (default)
  ----------------------------------------------
  Rule    Type    Command-type    Feature
  ----------------------------------------------
```

1 permit config sme-recovery-officer

Related Commands

Command	Description
setup sme	Sets up the Cisco SME administrator and Cisco SME recovery roles.

show role

To display roles (and their associated rules) configured on the switch, including those roles that have not yet been committed to persistent storage, use the **show role** command.

show role [**name string** | **pending** | **pending-diff** | **session status** | **status**]

Syntax Description

name string	(Optional) Specifies a name of the role.
pending	(Optional) Displays uncommitted role configuration for fabric distribution.
pending-diff	(Optional) Displays the differences between the pending configuration and the active configuration.
session status	(Optional) Displays the session status for a role.
status	(Optional) Displays the status of the latest Cisco Fabric Services (CFS) operation.

Command Default

None.

Command Modes

EXEC mode.

Command History

Release	Modification
1.0(2)	This command was introduced.
2.0(x)	Added the **pending**, **pending-diff**, **session**, and **status** options.

Usage Guidelines

The rules are displayed by rule number and are based on each role. All roles are displayed even if role name is not specified.

Only network-admin role can access this command.

Examples

The following example shows how to display information for all roles:

```
switch# show role

Role: network-admin
Description: Predefined Network Admin group. This role cannot be modified
Access to all the switch commands
Role: network-operator
Description: Predefined Network Operator group. This role cannot be modified
Access to Show commands and selected Exec commands
Role: svc-admin
Description: Predefined SVC Admin group. This role cannot be modified
Access to all SAN Volume Controller commands
Role: svc-operator
Description: Predefined SVC Operator group. This role cannot be modified
Access to selected SAN Volume Controller commands
Role: default-role
  Description: This is a system defined role and applies to all users
```

```
  vsan policy: permit (default)
  ----------------------------------------------
  Rule    Type    Command-type      Feature
  ----------------------------------------------
    1.   permit      show              system
    2.   permit      show                snmp
    3.   permit      show              module
    4.   permit      show            hardware
    5.   permit      show         environment
Role: sangroup
Description: SAN management group
--------------------------------------
Rule   Type   Command-type   Feature
--------------------------------------
  1.   permit    config           *
  2.     deny    config        fspf
  3.   permit     debug        zone
  4.   permit      exec      fcping
```

The following example displays the role session status:

```
switch# show role session status
Last Action                : None
Last Action Result         : None
Last Action Failure Reason : None
```

Related Commands

Command	Description
role abort	Enables authorization role CFS distribution.
role commit	Enables authorization role CFS distribution.
role distribute	Enables authorization role CFS distribution.
role name	Configures authorization roles.

show rscn

To display Registered State Change Notification (RSCN) information, use the **show rscn** command.

show rscn {**event-tov vsan vsan-id** | **pending vsan vsan-id** | **pending-diff vsan vsan-id** | **scr-table** [**vsan vsan-id**] | **statistics** [**vsan vsan-id**]}

Syntax Description

event-tov	Displays the event timeout value.
vsan vsan-id	Specifies a VSAN ID. The range is 1 to 4093.
pending	Displays the pending configuration.
pending-diff	Displays the difference between the active and the pending configuration.
scr-table	Displays the State Change Registration table.
statistics	Displays RSCN statistics.

Command Default

None.

Command Modes

EXEC mode.

Command History

Release	Modification
1.0(2)	This command was introduced.
3.0(1)	Added the **event-tov**, **pending**, and **pending-diff** options.

Usage Guidelines

The SCR table cannot be configured. It is only populated if one or more Nx ports send SCR frames to register for RSCN information. If the **show rscn scr-table** command does not return any entries, no Nx port is interested in receiving RSCN information.

Examples

The following example displays RSCN information:

```
switch# show rscn scr-table vsan 1
SCR table for VSAN: 1
---------------------------------------------
FC-ID         REGISTERED FOR
---------------------------------------------
0x1b0300      fabric detected rscns
Total number of entries = 1
```

The following example displays RSCN statistics.

```
switch# show rscn statistics vsan 1
Statistics for VSAN: 1
-------------------------
Number of SCR received         = 0
Number of SCR ACC sent         = 0
```

```
Number of SCR RJT sent         = 0
Number of RSCN received        = 0
Number of RSCN sent            = 0
Number of RSCN ACC received    = 0
Number of RSCN ACC sent        = 0
Number of RSCN RJT received    = 0
Number of RSCN RJT sent        = 0
Number of SW-RSCN received     = 0
Number of SW-RSCN sent         = 0
Number of SW-RSCN ACC received = 0
Number of SW-RSCN ACC sent     = 0
Number of SW-RSCN RJT received = 0
Number of SW-RSCN RJT sent     = 0
```

The following example shows the RSCN event timeout value configured on VSAN 1:

```
switch# show rscn event-tov vsan 1
Event TOV : 2000 ms
switch#
```

The following example shows the difference between the active RSCN configuration and the pending RSCN configuration on VSAN 1:

```
switch# show rscn pending-diff vsan 1
-  rscn event-tov 2000
+  rscn event-tov 20
switch#
```

show running radius

To display the RADIUS configuration, use the **show running radius** command.

show running radius all

Syntax Description

all	Displays running config with defaults.

Command Default

None.

Command Modes

EXEC mode.

Command History

Release	Modification
NX-OS 4.1(3)	Changed the command output.
2.0(x)	This command was introduced.

Usage Guidelines

None.

Examples

The following example shows how to display the RADIUS configuration:

```
switch# show running radius
version 4.1(3)
radius distribute
radius-server key 7 "fewhg"
radius-server timeout 1
radius-server retransmit 0
radius-server deadtime 1
radius-server host 10.10.1.1 authentication accounting
radius commit
aaa group server radius radius
switch#
The following example shows how to display the running config with defaults:
switch# show running radius all
version 4.1(3)
radius distribute
radius-server key 7 "fewhg"
radius-server timeout 1
radius-server retransmit 0
radius-server deadtime 1
radius-server host 10.10.1.1 auth-port 1812 acct-port 1813 authentication accoun
ting
radius-server host 10.10.1.1 test username test password test idle-time 0
radius commit
aaa group server radius radius
    server 10.10.1.1
    deadtime 0
switch#
```

Related Commands

Command	Description
radius distribute	Enables RADIUS CFS distribution.

show running-config

To display the running configuration file, use the **show running-config** command.

show running-config [**diff** | **interface** [**cpp** | **fc** | **fc** *slot/port* | **fc-tunnel** *tunnel-id* | **fcip** *fcip-number* | **gigabitethernet** *slot/port* | **iscsi** *slot/port* | **mgmt 0** | **port-channel** | **svc** | **vsan** *vsan-id*] | **vsan** *vsan-id*]

Note On a Cisco Fabric Switch for HP c-Class BladeSystem and on a Cisco Fabric Switch for IBM BladeCenter, the syntax differs as follows:**interface bay** *port* **| ext** *port* }

Syntax Description

diff	(Optional) Displays the difference between the running and startup configurations.
interface	(Optional) Displays running configuration information for a range of interfaces.
cpp	(Optional) Displays the virtualization interface.
fc *slot/port*	(Optional) Specifies a Fibre Channel interface on a Cisco MDS 9000 Family Switch.
bay *port* **| ext** *port*	Specifies a Fibre Channel interface on a Cisco MDS 9124 Fabric Switch, a Cisco Fabric Switch for HP c-Class BladeSystem, and a Cisco Fabric Switch for IBM BladeCenter.
fc-tunnel *tunnel-id*	(Optional) Displays description of the specified FC tunnel from 1 to 4095.
fcip *fcip-number*	Displays the description of the specified FCIP interface from 1 to 255.
gigabitethernet *slot/port*	Displays the description of the Gigabit Ethernet interface in the specified slot and port.
iscsi *slot/port*	Displays the description of the iSCSI interface in the specified slot and port.
mgmt 0	Displays the description of the management interface.
port-channel	Displays the description of the PortChannel interface.
sup-fc	Displays the inband interface details.
svc	Displays the virtualization interface specific to the CSM module.
vsan *vsan-id*	Displays VSAN-specific information. The ID ranges from 1 to 4093.

Command Default

None.

Command Modes

EXEC mode.

Command History

Release	Modification
1.0(2)	This command was introduced.

Usage Guidelines

If the running configuration is different from the startup configuration, issue the **show startup-config diff** command to view the differences.

Examples

The following example displays the configuration currently running on the switch:

```
switch# show running-config

Building Configuration ...
 interface fc1/1
 interface fc1/2
 interface fc1/3
 interface fc1/4
 interface mgmt0
ip address 209.165.200.226 209.165.200.227
no shutdown
vsan database
boot system bootflash:isan-237; sup-1
boot kickstart bootflash:boot-237 sup-1
callhome
ip default-gateway 209.165.200.226
switchname switch
trunk protocol enable
username admin password 5 /AFDAMD4B2xK2  role network-admin
```

The following example displays the difference between the running configuration and the startup configuration:

```
switch# show running-config
 diff
Building Configuration ...
*** Startup-config
--- Running-config
***************** 1,16 ****
  fcip enable
  ip default-gateway 209.165.200.226
  iscsi authentication none
  iscsi enable
! iscsi import target fc
  iscsi virtual-target name vt
    pWWN 21:00:00:04:cf:4c:52:c1
  all-initiator-permit
--- 1,20 ----
  fcip enable
+ aaa accounting logsize 500
+
+
+
  ip default-gateway 209.165.200.226
  iscsi authentication none
  iscsi enable
! iscsi initiator name junk
  iscsi virtual-target name vt
    pWWN 21:00:00:04:cf:4c:52:c1
  all-initiator-permit
```

The following example displays running configuration information for a span destination interface—in this case, the management interface:

```
switch(config)# show running-config interface fc1/16
!Time: Tue Mar 26 22:52:27 2013
version 6.2(1)
interface fc1/1
  switchport speed 4000
  switchport mode SD
  no shutdown
switch(config)#
```

The following example displays running configuration information for a specified feature—in this case, VSANS:

```
switch# show running-config
 feature vsan
vsan database
vsan 2 suspend
vsan 3
vsan 4
vsan database
vsan 3 interface fc1/1
```

show running-config callhome

To display the Call Home configuration, use the show running-config callhome command.

show running-config callhome

Syntax Description

This command has no arguments or keywords.

Command Default

Enabled.

Command Modes

EXEC mode.

Command History

Release	Modification
NX-OS 5.0(1a)	This command was introduced.

Usage Guidelines

None.

Examples

The following example shows how to display the Call Home configuration:

```
switch# show running-config callhome
version 5.0(1a)
callhome
transport email from isola-77@cisco.com
transport email reply-to someone@cisco.com
transport email smtp-server 72.163.129.201 port 1
transport email mail-server 10.64.74.94 port 25 priority 4
transport email mail-server 192.168.1.10 port 25 priority 50
transport email mail-server mail-server-1.cisco.com port 25 priority 100
switch#
```

Related Commands

Command	Description
callhome	Configures the Call Home function.

show running-config fcsp

To display the detailed run time information relevent to FC-SP, use the show running-config fcsp command.

show running-config fcsp

Syntax Description

This command has no arguments or keywords.

Command Default

None.

Command Modes

EXEC mode.

Command History

Release	Modification
NX-OS 4.2(1)	This command was introduced.

Usage Guidelines

None.

Examples

The following example shows how to display the FC-SP details:

```
switch# show running-config fcsp
feature fcsp
fcsp esp sa 300
  key 0x00000000000000000000000000123456
  salt 0x123456
interface fc8/48
  fcsp off
  fcsp esp manual
    ingress-sa 300
    egress-sa 300version 4.1(2)
feature fcsp
fcsp esp sa 300
```

Related Commands

Command	Description
fcsp enable	Enables FC-SP.

show running-config telemetry

To display the existing telemetry configuration, use the **show running-config telemetry** command.

show running-config telemetry

Syntax Description

This command has no arguments or keywords.

Command Default

Displays telemetry running configuration.

Command Modes

Privileged EXEC (#)

Command History

Release	Modification
8.3(1)	This command was introduced.

Examples

This example shows how to display running telemetry configuration:

```
switch# show running-config telemetry

!Command: show running-config telemetry
!Running configuration last done at: Thu Jun 14 08:14:24 2018
!Time: Thu Jun 14 08:14:40 2018

version 8.3(1)
feature telemetry

telemetry
    destination-group 1
        ipv6 address 1:2::3:4 port 50008
        ipv6 address 1:1::1:1 port 50009
    destination-group 100
        ip address 1.2.3.4 port 50003
        ip address 1.2.3.4 port 50004
```

Related Commands

Command	Description
destination-group	Creates a destination group and enters destination group configuration mode.
feature telemetry	Enables the SAN Telemetry Streaming feature.
ip (destination-group)	Configures an IPv4 or IPv6 destination address for a destination group.
sensor-group	Creates a sensor group and enters sensor group configuration.
show telemetry	Displays telemetry configuration.
telemetry	Enters SAN Telemetry Streaming configuration mode.

show san-ext-tuner

To display SAN extension tuner information, use the **show san-ext-tuner** command.

show san-ext-tuner {**interface gigabitethernet** *slot* / *port* [**nport pwwn** *pwwn-id* **vsan** *vsan-id* **counters**] | **nports**}

Syntax Description

interface	Displays SAN extension tuner information for a specific Gigabit Ethernet interface.
gigabitethernet *slot*/*port*	Specifies a Gigabit Ethernet interface.
nport	(Optional) Specifies an N port.
pwwn *pwwn-id*	(Optional) Specifies a pWWN ID. The format is *hh*:*hh*:*hh*:*hh*:*hh*:*hh*:*hh*:*hh*, where *h* is a hexadecimal number.
vsan *vsan-id*	(Optional) Specifies a VSAN ID. The range is 1 to 4093.
counters	(Optional) Specifies SAN extension tuner counters.
nports	Displays SAN extension tuner information for all nports.

Command Default

None.

Command Modes

EXEC mode.

Command History

Release	Modification
2.0(x)	This command was introduced.

Usage Guidelines

None.

Examples

The following example shows how to display SAN extension tuner N port information:

```
switch# show san-ext-tuner nports
```

Related Commands

Command	Description
san-ext-tuner	Enters SAN extension tuner configuration mode.

show santap module

To display the SANTap configuration on the Storage Services Module (SSM), use the **show santap module** command in EXEC mode.

show santap module slot {**avt** [**name** | **brief**] | **avtlun** | **cvt** [**cvt-id** | **brief**] | **dvt** [**name** | **brief**] | **dvtlun** | **rvt** [**name** | **brief**] | **rvtlun** | **session** [**session-id** | **brief**] | **tech-support**}

Syntax Description

slot	Displays SANTap configuration for a module in the specified slot.
avt	Displays the appliance virtual target (AVT) configuration.
name	(Optional) Specifies the user name.
brief	(Optional) Displays a brief format version of the display.
avtlun	Displays the appliance AVT LUN configuration.
cvt	Displays the control virtual target (CVT) configuration.
cvt-id	(Optional) Specifies a user configured CVT ID. The range is 1 to 65536.
dvt	Displays the data virtual target (DVT) configuration.
dvtlun	Displays the DVT LUN configuration.
rvt	Displays the remote virtual target (AVT) configuration.
rvtlun	Displays the RVT LUN configuration.
session	Displays the SANTap session information.
session-id	(Optional) Specifies a user configured session ID. The range is 1 to 65536.
tech-support	Displays information for technical support.

Command Default

None.

Command Modes

EXEC mode.

Command History

Release	Modification
2.1(1a)	This command was introduced.
3.1(2)	Added the **tech-support** option.

Usage Guidelines

None.

Examples

The following example displays the SANTap AVT configuration:

```
switch# show santap module 2 avt
 AVT Information :
        avt pwwn     = 2a:4b:00:05:30:00:22:25
        avt nwwn     = 2a:60:00:05:30:00:22:25
        avt id       = 12
        avt vsan     = 4
        avt if_index = 0x1080000
        hi pwwn      = 21:00:00:e0:8b:07:61:aa
        tgt pwwn     = 22:00:00:20:37:88:20:ef
        tgt vsan     = 1
```

The following example displays the SANTap AVT LUN configuration:

```
switch# show santap module 2 avtlun
 AVT LUN Information :
        avt pwwn     = 2a:4b:00:05:30:00:22:25
        avt lun      = 0x0
        xmap id      = 16
        avt id       = 12
        tgt lun      = 0x0
```

The following example displays the SANTap CVT configuration:

```
switch# show santap module 2 cvt
 CVT Information :
        cvt pwwn     = 25:3c:00:05:30:00:22:25
        cvt nwwn     = 25:3d:00:05:30:00:22:25
        cvt id       = 1
        cvt xmap_id  = 2
        cvt vsan     = 10
```

The following example displays the SANTap DVT configuration:

```
switch# show santap module 2 dvt
 DVT Information :
        dvt pwwn     = 22:00:00:20:37:88:20:ef
        dvt nwwn     = 20:00:00:20:37:88:20:ef
        dvt id       = 3
        dvt mode     = 3
        dvt vsan     = 3
        dvt fp_port  = 0
        dvt if_index = 0x1080000
        dvt name     = MYDVT
```

The following example displays the SANTap DVT LUN configuration:

```
switch# show santap module 2 dvtlun
 DVT LUN Information :
        dvt pwwn     = 22:00:00:20:37:88:20:ef
        dvt lun      = 0x0
        xmap id      = 8
        dvt id       = 3
        dvt mode     = 0
        dvt vsan     = 3
        tgt pwwn     = 22:00:00:20:37:88:20:ef
        tgt lun      = 0x0
        tgt vsan     = 1
```

The following example displays the SANTap configuration session:

```
switch# show santap module 2 session
 Session Information :
        session id    = 1
        host pwwn     = 21:00:00:e0:8b:07:61:aa
        dvt pwwn      = 22:00:00:20:37:88:20:ef
        dvt lun       = 0x0
        tgt pwwn      = 00:00:00:00:00:00:00:00
        tgt lun       = 0x0
        adt pwwn      = 77:77:77:77:77:77:77:77
        adt lun       = 0x0
        num ranges    = 0
        dvt id        = 0
        vdisk id      = 0
        session state = 0
        mrl requested = 1
        pwl requested = 1
        iol requested = 0
```

The following example displays the SANTap RVT configuration:

```
switch# show santap module 2 rvt
 RVT Information :
        rvt pwwn     = 2a:61:00:05:30:00:22:25
        rvt nwwn     = 2a:62:00:05:30:00:22:25
        rvt id       = 17
        rvt vsan     = 4
        rvt if_index = 0x1080000
```

The following example displays the SANTap RVT LUN configuration:

```
switch# show santap module 2 rvtlun
 RVT LUN Information :
        rvt pwwn     = 2a:61:00:05:30:00:22:25
        rvt lun      = 0x0
        xmap id      = 22
        rvt id       = 17
        app pwwn     = 22:00:00:20:37:39:b1:00
        app lun      = 0x0
        app vsan     = 1
```

The following example displays information for technical support:

```
switch# show santap module 4 tech-support
 DVT Information :
        dvt pwwn     = 22:00:00:20:37:39:b1:00
        dvt nwwn     = 20:00:00:20:37:39:b1:00
        dvt id       = 0x83fe924
        dvt mode     = 3
        dvt vsan     = 1
        dvt if_index = 0x1180000
        dvt fp_port  = 1
        dvt name     = MYDVT3
        dvt tgt-vsan = 2
        dvt io timeout            = 10 secs
        dvt lun size handling     = 1
        dvt app iofail behaviour  = 0
        dvt quiesce behavior      = 0
        dvt tgt iofail behavior   = 0
        dvt appio failover time   = 0 secs
        dvt inq data behavior     = 0
 DVT Information :
        dvt pwwn     = 22:00:00:20:37:88:20:ef
```

```
        dvt nwwn     = 20:00:00:20:37:88:20:ef
        dvt id       = 0x8405bbc
        dvt mode     = 3
        dvt vsan     = 1
        dvt if_index = 0x1186000
        dvt fp_port  = 7
        dvt name     = MYDVT3
        dvt tgt-vsan = 2
        dvt io timeout            = 10 secs
        dvt lun size handling     = 1
        dvt app iofail behaviour  = 0
        dvt quiesce behavior      = 0
        dvt tgt iofail behavior   = 0
        dvt appio failover time   = 0 secs
        dvt inq data behavior     = 0
 DVT Information :
        dvt pwwn     = 22:00:00:20:37:39:87:70
        dvt nwwn     = 20:00:00:20:37:39:87:70
        dvt id       = 0x8405b2c
        dvt mode     = 3
        dvt vsan     = 3
        dvt if_index = 0x118c000
        dvt fp_port  = 13
        dvt name     = MYDVT3
        dvt tgt-vsan = 2
        dvt io timeout            = 10 secs
        dvt lun size handling     = 1
        dvt app iofail behaviour  = 0
        dvt quiesce behavior      = 0
        dvt tgt iofail behavior   = 0
        dvt appio failover time   = 0 secs
        dvt inq data behavior     = 0
 CVT Information :
        cvt pwwn     = 29:5d:33:33:33:33:33:36
        cvt nwwn     = 29:5e:33:33:33:33:33:36
        cvt id       = 0x83b11e4
        cvt xmap_id  = 0x83b1204
        cvt vsan     = 2
        cvt name     =
------------------------------------------------------------------------
VSAN                 USAGE COUNT
------------------------------------------------------------------------
2                    4
switch#
```

Table 12: show santap Field Descriptions, on page 551 describes the significant fields shown in the previous displays.

Table 12: show santap Field Descriptions

Field	Description
app lun	Displays the appliance LUN.
app pwwn	Displays the appliance port world wide name.
app vsan	Displays the appliance VSAN number.
avt id	Displays the AVT ID number.
avt if_index	Displays the AVT interface index number.

Field	Description
avt lun	Displays the AVT LUN.
avt nwwn	Displays the AVT Node port world wide name.
avt pwwn	Displays the AVT port world wide name.
avt vsan	Displays the AVT VSAN number.
cvt id	Displays the CVT ID number.
cvt nwwn	Displays the CVT Node port world wide name.
cvt pwwn	Displays the CVT port world wide name.
cvt vsan	Displays the CVT VSAN number.
cvt xmap_id	Displays the CVT Xmap ID number.
dvt fp_port	Displays the DVT fabric port number.
dvt id	Displays the DVT.
dvt if_index	Displays the DVT interface index number.
dvt lun	Displays the DVT LUN.
dvt mode	Displays the DVT mode.
dvt name	Displays the DVT name.
dvt nwwn	Displays the DVT Node port world wide name.
dvt pwwn	Displays the DVT port world wide name.
dvt vsan	Displays the DVT VSAN number.
hi pwwn	Displays the <TBD> port world-wide name.
host pwwn	Displays the host port world wide name.
iol requested	Displays the <TBD> requested.
mrl requested	Displays the <TBD> requested.
num ranges	Displays the number ranges.
pwl requested	Displays the <TBD> requested.
rvt id	Displays the RVT ID number.
rvt if_index	Displays the RVT interface index.
rvt lun	Displays the RVT LUN.
rvt nwwn	Displays the RVT Node port world wide name.

Field	Description
rvt pwwn	Displays the RVT port world wide name.
rvt vsan	Displays the RVT VSAN number.
session id	Displays the session ID number.
session state	Displays the session state.
tgt lun	Displays the target LUN.
tgt pwwn	Displays the target port world wide name.
tgt vsan	Displays the target VSAN number.
vdisk id	Displays the virtual disk ID number.
xmap id	Displays the Xmap ID number.

Related Commands

Command	Description
santap module	Configures the mapping between the SSM and the VSAN where the appliance is configured.

show santap module dvt

To display the SANTap DVT configuration on the Storage Service Module (SSM), use the show santap module dvt command in the EXEC mode.

show santap module slot dvt {**name** | **brief**}

Syntax Description

slot	Specifies the module number. The range is from 1 to 9.
name	Specifies the user name for DVT.
brief	Displays SANTap DVT configuration in a brief format.

Command Default

None.

Command Modes

EXEC mode.

Command History

Release	Modification
NX-OS 4.1(1b)	This command was introduced.

Usage Guidelines

None.

Examples

The following example displays the SANTap DVT configuration:

```
switch# show santap module 2 dvt
DVT Information :
        dvt pwwn     = 22:00:00:20:37:88:20:ef
        dvt nwwn     = 20:00:00:20:37:88:20:ef
        dvt id       = 3
        dvt mode     = 3
        dvt vsan     = 3
        dvt fp_port  = 0
        dvt if_index = 0x1080000
        dvt name     = MYDVT
```

Related Commands

Command	Description
show santap vttbl	Displays the SANTap VTTBL configuration.

show santap module dvt brief

To display the SANTap Data Virtual Target (DVT) configuration in a brief format on the Storage Service Module (SSM), use the show santap module dvt brief command in the EXEC mode.

show santap module dvt brief slot

Syntax Description

slot	Displays SANTap configuration for a module in the specified slot.

Command Default

None.

Command Modes

EXEC mode.

Command History

Release	Modification
3.2(1)	This command was introduced.

Usage Guidelines

None.

Examples

The following example displays the SANTap module DVT brief infomation for slot 13:

```
switch# show santap module 13 dvt brief
--------------------------------------------------------------------------------
DVT WWN                 DVT ID               MD  DVT VSAN    DVTIFIDX
--------------------------------------------------------------------------------
50:06:0e:80:00:c3:e0:46 139639316            3   30          0x1604000
switch# attach  module 13
Attaching to module 13 ...
To exit type 'exit', to abort type '$.'
Bad terminal type: "xterm". Will assume vt100.
```

The following example displays the SANTap VTTBL DVT configuration:

```
switch# attach module 2
module-3# show santap vttbl dvt 50:00:1f:e1:50:0c:3b:09
DVT Entry  :
        Activated        : FALSE
        Number LUNs     : 16
        Possible Hosts  :
             hi_pwwn = 10:00:00:00:c9:3f:90:21 : 4 LUNs
             hi_pwwn = 10:00:00:00:c9:4c:c0:e5 : 2 LUNs
             hi_pwwn = 21:00:00:e0:8b:0c:7d:21 : 2 LUNs
             hi_pwwn = 10:00:00:00:c9:56:ed:f2 : 2 LUNs
             hi_pwwn = 50:06:0b:00:00:60:2a:a0 : 4 LUNs
             hi_pwwn = 21:00:00:e0:8b:92:62:92 : 2 LUNs
```

The following example displays the SANTap vttbl DVT host configuration:

```
switch# show santap vttbl dvt 50:00:1f:e1:50:0c:3b:09 host 10:00:00:00:c9:3f:90:21
HI-LIST Entry  :
        State               : PRLI
        UA Power On         : 1
```

```
        FIT Created         : 1
        NVP Index           : 0x10000000c93f9021

    HI-LUNS Entry  :
        Number of LUNs    : 4
        DVT ID              : 0x83f978c
        HI Index            : 0
        LUNs Installed      : TRUE
        Target Lun, DVT Lun pairs :

        (0, 0)(1, 1)(2, 2)(3, 3)
```

Related Commands

Command	Description
show santap vttbl	Displays the SANTap VTTBL configuration.

show santap module dvtlun

To display the SANTap DVT LUN configuration on the Storage Service Module (SSM), use the show santap module dvt lun command in the EXEC mode.

show santap module slot dvtlun {**brief** | **dvt-pwwn**}

Syntax Description

slot	Specifies the module number. The range is from 1 to 9.
brief	Displays SANTap DVT LUN configuration in a brief format.
dvt-pwwn	Displays the DVT port world wide name (pWWN).

Command Default

None.

Command Modes

EXEC mode.

Command History

Release	Modification
NX-OS 4.1(1b)	This command was introduced.

Usage Guidelines

None.

Examples

The following example displays the SANTap DVT LUN configuration:

```
switch# show santap module 2 dvtlun
 DVT LUN Information :
        dvt pwwn     = 22:00:00:20:37:88:20:ef
        dvt lun      = 0x0
        xmap id      = 8
        dvt id       = 3
        dvt mode     = 0
        dvt vsan     = 3
        tgt pwwn     = 22:00:00:20:37:88:20:ef
        tgt lun      = 0x0
        tgt vsan     = 1
```

Related Commands

Command	Description
show santap vttbl	Displays the SANTap VTTBL configuration.

show santap vttbl dvt

To display the SANTap VTTBL DVT configuration on the Storage Service Module (SSM), use the show santap vttbl dvt command in the EXEC mode.

show santap vttbl dvt dvt-pwwn

Syntax Description

vttbl	Displays SANtap VTTBL configuration.
dvt	Displays SANtap DVT configuration.
dvt-pwwn	Displays the DVT port world wide name (pWWN).

Command Default

None.

Command Modes

EXEC mode.

Command History

Release	Modification
NX-OS 4.1(1b)	This command was introduced.

Usage Guidelines

None.

Examples

The following example displays the SANTap VTTBL DVT configuration:

```
switch# show santap vttbl dvt 50:00:1f:e1:50:0c:3b:09
DVT Entry  :
        Activated        : FALSE
        Number LUNs     : 16
        Possible Hosts  :
             hi_pwwn = 10:00:00:00:c9:3f:90:21 : 4 LUNs
             hi_pwwn = 10:00:00:00:c9:4c:c0:e5 : 2 LUNs
             hi_pwwn = 21:00:00:e0:8b:0c:7d:21 : 2 LUNs
             hi_pwwn = 10:00:00:00:c9:56:ed:f2 : 2 LUNs
             hi_pwwn = 50:06:0b:00:00:60:2a:a0 : 4 LUNs
             hi_pwwn = 21:00:00:e0:8b:92:62:92 : 2 LUNs
```

Related Commands

Command	Description
show santap vttbl	Displays the SANTap VTTVL configuration.

show santap vttbl dvt host

To display the SANTap VTTBL DVT host configuration on the Storage Service Module (SSM), use the show santap vttbl dvt host command in the EXEC mode.

show santap vttbl dvt dvt-pwwn host host-pwwn

Syntax Description

dvt-pwwn	Displays the DVT port world wide name (pWWN).
host pwwn	Displays the host pWWN.

Command Default

None.

Command Modes

EXEC mode.

Command History

Release	Modification
NX-OS 4.1(1b)	This command was introduced.

Usage Guidelines

None.

Examples

The following example displays the SANTap VTTBL DVT host configuration:

```
switch# show santap vttbl dvt 50:00:1f:e1:50:0c:3b:09 host 10:00:00:00:c9:3f:90:21
HI-LIST Entry  :
        State               : PRLI
        UA Power On         : 1
        FIT Created         : 1
        NVP Index           : 0x10000000c93f9021

    HI-LUNS Entry  :
        Number of LUNs    : 4
        DVT ID              : 0x83f978c
        HI Index            : 0
        LUNs Installed      : TRUE
        Target Lun, DVT Lun pairs :

        (0, 0)(1, 1)(2, 2)(3, 3)
```

Related Commands

Command	Description
show santap vttbl	Displays the SANTap VTTBL configuration.

show scheduler

To display command scheduler information, use the **show scheduler** command.

show scheduler {**config** | **job** [**name** *jobname*] | **logfile** | **schedule** [**name** *schedulename*]}

Syntax Description

config	Displays command scheduler configuration information.
job	Displays job information.
name *jobname*	(Optional) Restricts the output to a specific job name. Maximum length is 31 characters.
logfile	Displays the log file.
schedule	Displays schedule information.
name *schedulename*	(Optional) Restricts the output to a specific schedule name. Maximum length is 31 characters.

Command Default

None.

Command Modes

EXEC mode.

Command History

Release	Modification
2.0(x)	This command was introduced.

Usage Guidelines

To use this command, the command scheduler must be enabled using the **scheduler enable** command.

Examples

The following example shows how to configure the e-mail transport:

```
switch# config t
   Enter configuration commands, one per line. End with CNTL/Z.
   switch(config)# scheduler transport email from sw2@sjtac.cisco.com
   switch(config)# scheduler transport email reply-to sw2@sjtac.cisco.com
   switch(config)# scheduler transport email smtp-server  13.7.3.2
```

The following example shows how to display the job information:

```
switch# show scheduler job name test_1
Job Name: test_1
---------------
config t
.81@ptEFACadmiQSAp8config t c=====================================
==========================
switch#
```

The following example displays the command scheduler configuration information:

```
switch# show scheduler config
config terminal
```

```
  scheduler enable
end
```

The following example displays the command scheduler schedule information:

```
switch# show scheduler schedule configureVsan99
Schedule Name : configureVsan99
----------------------------------
User Name : admin
Schedule Type : Run once on Tue Aug 10 09:48:00 2004
Last Execution Time: Tue Aug 10 09:48:00 2004
-----------------------------------------------
Job Name       Status
-----------------------------------------------
addMemVsan99   Success (0)
```

The following example displays the command scheduler log file information:

```
switch# show scheduler logfile
Job Name : addMemVsan99 Job Status: Success (0)
Schedule Name : configureVsan99 User Name : admin
Completion time: Tue Aug 10 09:48:00 2004
-------------------------- Job Output --------------------------
'config terminal'
'vsan database'
'vsan 99 interface fc1/1'
'vsan 99 interface fc1/2'
'vsan 99 interface fc1/3'
'vsan 99 interface fc1/4'
```

The following example displays the command scheduler configuration information:

```
switch# show scheduler config
config terminal
  feature scheduler
  scheduler logfile size 16
  scheduler transport email from sw2@sjtac.cisco.com
  scheduler transport email reply-to  sw2@sjtac.cisco.com
  scheduler transport email smtp-server 13.7.3.2
end
config terminal
 scheduler job name backup_config
copy running-config startup-config
 show interface mgmt0
 copy startup-config tftp://13.7.3.2/

end
config terminal
  scheduler schedule name test
    time daily 11:23
    job name backup_config
    email-addr zawoo@cisco.com
end
config terminal
  scheduler schedule name te
    end
```

Related Commands

Command	Description
scheduler enable	Enables the command scheduler.

Command	Description
scheduler job name	Configures command scheduler jobs.
scheduler schedule name	Configures command schedules.

show scsi-flow

To display SCSI flow information, use the **show scsi-flow** command.

{**show scsi-flow** [**flow-id flow-id**] | **statistics** [**flow-id flow-id lun lun-number**]}

Syntax Description

flow-id *flow-id*	(Optional) Displays a specific SCSI flow index.
statistics	Displays the statistics for the SCSI flow.
lun lun-number	(Optional) Displays statics for a specific LUN number.

Command Default

None

Command Modes

EXEC mode.

Command History

Release	Modification
2.0(2)	This command was introduced.

Examples

The following example displays SCSI flow services configuration for all SCSI flow identifiers:

```
switch# show scsi-flow
Flow Id: 3
        Initiator VSAN: 101
        Initiator WWN: 21:00:00:e0:8b:05:76:28
        Target VSAN: 102
        Target WWN: 21:00:00:20:37:38:7f:7d
        Target LUN: ALL LUNs
        Flow Verification Status:
        -------------------------
           Initiator Verification Status:   success
           Target Verification Status:      success
           Initiator Linecard Status:       success
           Target Linecard Status:          success
        Feature Status:
        ---------------
          Write-Acceleration enabled
            Write-Acceleration Buffers: 1024
            Configuration Status:  success
          Statistics enabled
            Configuration Status:  success
Flow Id: 4
        Initiator VSAN: 101
        Initiator WWN: 21:00:00:e0:8b:05:76:28
        Target VSAN: 102
        Target WWN: 21:00:00:20:37:38:a7:89
        Target LUN: ALL LUNs
        Flow Verification Status:
        -------------------------
           Initiator Verification Status:   success
           Target Verification Status:      success
```

```
   Initiator Linecard Status:       success
   Target Linecard Status:          success
Feature Status:
---------------
  Write-Acceleration enabled
    Write-Acceleration Buffers: 1024
    Configuration Status:  success
```

Table 13: show scsi-flow Field Descriptions, on page 564 describes the significant fields shown in the **show scsi-flow** command output.

Table 13: show scsi-flow Field Descriptions

Field	Description
Initiator Verification Status	Verifies that the name server, FLOGI server, and zone server information for the initiator on the local switch are correct.
Target Verification Status	Verifies that the names sever and zone server information for the target on the local switch are correct.
Initiator Linecard Status	Verifies that the initiator is connected to an SSM and if DPP provisioning is enabled for the module.
Target Linecard Status	Verifies in the following order:1. The target switch sees the proper name server and zone server information for the initiator.2. The target switch sees the proper name server, FLOGI server and zone server information for the target.3. The target is connected to an SSM and if DPP provisioning is enabled for that module.

The following example displays SCSI flow services configuration for a specific SCSI flow identifier:

```
switch# show scsi-flow flow-id 3
Flow Id: 3
        Initiator VSAN: 101
        Initiator WWN: 21:00:00:e0:8b:05:76:28
        Target VSAN: 102
        Target WWN: 21:00:00:20:37:38:7f:7d
        Target LUN: ALL LUNs
        Flow Verification Status:
        -------------------------
           Initiator Verification Status:   success
           Target Verification Status:      success
           Initiator Linecard Status:       success
           Target Linecard Status:          success
        Feature Status:
        ---------------
          Write-Acceleration enabled
            Write-Acceleration Buffers: 1024
            Configuration Status:  success
          Statistics enabled
            Configuration Status:  success
```

The following example displays SCSI flow services statistics for all SCSI flow identifiers:

```
switch# show scsi-flow statistics
Stats for flow-id 4 LUN=0x0000
------------------------------
 Read Stats
```

```
  I/O Total count=2
  I/O Timeout count=0
  I/O Total block count=4
  I/O Max block count=2
  I/O Min response time=5247 usec
  I/O Max response time=10160 usec
  I/O Active Count=0
 Write Stats
  I/O Total count=199935
  I/O Timeout count=0
  I/O Total block count=12795840
  I/O Max block count=64
  I/O Min response time=492 usec
  I/O Max response time=10056529 usec
  I/O Active Count=16
 Non Read-Write Stats
  Test Unit Ready=4
  Report LUN=38
  Inquiry=50
  Read Capacity=3
  Mode Sense=0
  Request Sense=0
 Total Stats
  Rx Frame Count=3792063
  Rx Frame Byte Count=6549984752
  Tx Frame Count=3792063
  Tx Frame Byte Count=6549984752
 Error Stats
  SCSI Status Busy=0
  SCSI Status Reservation Conflict=0
  SCSI Status Task Set Full=0
  SCSI Status ACA Active=0
  Sense Key Not Ready=0
  Sense Key Medium Error=0
  Sense Key Hardware Error=0
  Sense Key Illegal Request=0
  Sense Key Unit Attention=28
  Sense Key Data Protect=0
  Sense Key Blank Check=0
  Sense Key Copy Aborted=0
  Sense Key Aborted Command=0
  Sense Key Volume Overflow=0
  Sense Key Miscompare=0
```

The following example displays SCSI flow services statistics for a specific SCSI flow identifier:

```
switch# show scsi-flow statistics flow-id 4
Stats for flow-id 4 LUN=0x0000
------------------------------
 Read Stats
  I/O Total count=2
  I/O Timeout count=0
  I/O Total block count=4
  I/O Max block count=2
  I/O Min response time=5247 usec
  I/O Max response time=10160 usec
  I/O Active Count=0
 Write Stats
  I/O Total count=199935
  I/O Timeout count=0
  I/O Total block count=12795840
  I/O Max block count=64
  I/O Min response time=492 usec
```

```
I/O Max response time=10056529 usec
I/O Active Count=16
```

show_scsi-target

To display information about existing SCSI target configurations, use the **show scsi-target** command.

show scsi-target {**auto-poll** | **custom-list** | **devices** [**vsan vsan-id**] [**fcid fcid-id**] | **disk** [**vsan vsan-id**] [**fcid fcid-id**] | **lun** [**vsan vsan-id**] [**fcid fcid-id**] [**os** [**aix** | **all** | **hpux** | **linux** | **solaris** | **windows**] | **pwwn** | **status** | **tape** [**vsan vsan-id**] [**fcid fcid-id**]]}

Syntax Description

auto-poll	Displays SCSI target auto polling information.
custom-list	Displays customized discovered targets.
devices	Displays discovered scsi-target devices information.
vsan vsan-range	(Optional) Specifies the VSAN ID or VSAN range. The ID range is 1 to 4093.
fcid fcid-id	(Optional) Specifies the FCID of the SCSI target to display.
disk	Displays discovered disk information.
lun	Displays discovered SCSI target LUN information.
os	Discovers the specified operating system.
aix	(Optional) Specifies the AIX operating system.
all	(Optional) Specifies all operating systems.
hpux	(Optional) Specifies the HPUX operating system.
linux	(Optional) Specifies the Linux operating system.
solaris	(Optional) Specifies the Solaris operating system.
windows	(Optional) Specifies the Windows operating system.
status	Displays SCSI target discovery status.
pwwn	Displays discover pWWN information for each OS.
tape	Displays discovered tape information.

Command Default

None.

Command Modes

EXEC mode.

Command History

Release	Modification
1.3(4)	This command was introduced.

Usage Guidelines

Use the **show scsi-target auto-poll** command to verify automatic discovery of online SCSI targets.

Examples

The following example displays the status of a SCSI discovery:

```
switch# show scsi-target status
discovery completed
```

The following example displays a customized discovered targets:

```
switch# show scsi-target custom-list---------------
VSAN DOMAIN---------------1   56
```

The following example displays discovered disk information:

```
switch# show scsi-target disk
--------------------------------------------------------------------------------
VSAN    FCID        PWWN                      VENDOR    MODEL             REV
--------------------------------------------------------------------------------
1       0x9c03d6    21:00:00:20:37:46:78:97   Company 4 ST318203FC        0004
1       0x9c03d9    21:00:00:20:37:5b:cf:b9   Company 4 ST318203FC        0004
1       0x9c03da    21:00:00:20:37:18:6f:90   Company 4 ST318203FC        0004
1       0x9c03dc    21:00:00:20:37:5a:5b:27   Company 4 ST318203FC        0004
1       0x9c03e0    21:00:00:20:37:36:0b:4d   Company 4 ST318203FC        0004
1       0x9c03e1    21:00:00:20:37:39:90:6a   Company 4 ST318203 CLAR18   3844
1       0x9c03e2    21:00:00:20:37:18:d2:45   Company 4 ST318203 CLAR18   3844
1       0x9c03e4    21:00:00:20:37:6b:d7:18   Company 4 ST318203 CLAR18   3844
1       0x9c03e8    21:00:00:20:37:38:a7:c1   Company 4 ST318203FC        0004
1       0x9c03ef    21:00:00:20:37:18:17:d2   Company 4 ST318203FC        0004
```

The following example displays the discovered LUNs for all OSs:

```
switch# show scsi-target lun os all
ST336607FC from SEAGATE (Rev 0006)
FCID is 0xed0001 in VSAN 7, PWWN is 21:00:00:04:cf:fb:42:f8
--------------------------------------------------------------------------------
OS  LUN    Capacity Status  Serial Number    Device-Id
           (MB)
--------------------------------------------------------------------------------
WIN 0x0    36704    Online  3JA1B9QA00007338 C:1 A:0 T:3 20:00:00:04:cf:fb:42:f8
AIX 0x0    36704    Online  3JA1B9QA00007338 C:1 A:0 T:3 20:00:00:04:cf:fb:42:f8
SOL 0x0    36704    Online  3JA1B9QA00007338 C:1 A:0 T:3 20:00:00:04:cf:fb:42:f8
LIN 0x0    36704    Online  3JA1B9QA00007338 C:1 A:0 T:3 20:00:00:04:cf:fb:42:f8
HP  0x0    36704    Online  3JA1B9QA00007338 C:1 A:0 T:3 20:00:00:04:cf:fb:42:f8
```

The following example displays the discovered LUNs for the Solaris OS:

```
switch# show scsi-target lun os solaris
ST336607FC from SEAGATE (Rev 0006)
FCID is 0xed0001 in VSAN 7, PWWN is 21:00:00:04:cf:fb:42:f8
--------------------------------------------------------------------------------
OS  LUN    Capacity Status  Serial Number    Device-Id
           (MB)
--------------------------------------------------------------------------------
SOL 0x0    36704    Online  3JA1B9QA00007338 C:1 A:0 T:3 20:00:00:04:cf:fb:42:f8
```

The following example displays auto-polling information. Each user is indicated by the internal UUID number, which indicates that a CSM or an IPS module is in the chassis:

```
switch# show scsi-target auto-poll
```

```
auto-polling is enabled, poll_start:0 poll_count:1 poll_type:0
USERS OF AUTO POLLING
---------------------
uuid:54
```

The following example displays the port WWN that is assigned to each OS (Windows, AIX, Solaris, Linux, or HPUX):

```
switch# show scsi-target pwwn
------------------------------
OS     PWWN
------------------------------
WIN    24:91:00:05:30:00:2a:1e
AIX    24:92:00:05:30:00:2a:1e
SOL    24:93:00:05:30:00:2a:1e
LIN    24:94:00:05:30:00:2a:1e
HP     24:95:00:05:30:00:2a:1e
```

show sdv

To display information about SAN device virtualization (SDV), use the **show sdv** command in EXEC mode.

show sdv {**database** [**pending vsan** *vsan-id* | **vsan** *vsan-id*] | **merge status vsan** *vsan-id* | **pending-diff vsan** *vsan-id* | **session status vsan** *vsan-id* | **statistics vsan** *vsan-id* | **virtual-device name** *device-name* **vsan** *vsan-id* | **zone** [**active vsan** *vsan-id* | **vsan** *vsan-id*]}

Syntax Description

database	Displays the SDV database.
pending	(Optional) Displays the pending SDV database.
vsan *vsan-id*	(Optional) Specifies the number of the VSAN. The range is 1 to 4093.
merge status	Displays the SDV merge status.
pending-diff	Displays the SDV pending differences.
session	Displays the SDV session status.
statistics	Displays the SDV statistics.
virtual-device	Displays the SDV virtual devices.
name *device-name*	Specifies the name of the virtual target. The maximum size is 32.
zone	Specifies the zone.
active	(Optional) Specifies the active VSAN.

Command Default

None.

Command Modes

EXEC mode.

Command History

Release	Modification
3.1(2)	This command was introduced.
NX-OS 4.1(1b)	Changed the command output.

Usage Guidelines

None.

Examples

The following example shows how to display SDV database information:

```
switch# show sdv database vsan 1
[ WWN:50:00:53:00:00:1a:30:01 FCID:0xcd01a3 Real-FCID:0x7f000e ]
 *pwwn 20:0e:0d:00:00:01:12:10 primary
  pwwn 20:0e:0d:00:00:01:12:11
```

The following example displays merge status:

```
switch# show sdv merge status vsan 1
Merge Status for VSAN    : 1
------------------------------
Last Merge Time Stamp    : None
Last Merge State         : None
Last Merge Result        : SUCCESS
Last Merge Failure Reason: None [cfs_status: 0]
```

Related Commands

Command	Description
sdv enable	Enables the SAN device virtualization feature.
sdv virtual-device	Specifies the virtual target.

show secure-erase algorithm

To display the list of all Secure Erase algorithms, use the show secure-erase algorithm command.

show secure-erase module module-id algorithm algorithm name

Syntax Description

module module-id	Displays the slot number of the SSM on which Secure Erase is provisioned.
algorithm name	Displays the algorithm name.

Command Default

None.

Command Modes

Exec mode

Command History

Release	Modification
6.2(1)	This command was deprecated.
3.3(1a)	This command was introduced.

Usage Guidelines

None.

Examples

The following example displays the list of Secure Erase algorithms:

```
switch# show secure-erase module 4 algorithm name 1
switch# Algorithm : 1
Step 0:
faa8bd6c1e838b6b9b0818f30d48f5eecc7e7f572d9d8ac50a9a78b73bf128eb7a71ff40a7c07f55dda1d31f875bca26b170d6b3c0735
55e06d6229f6a5dedeaa0583f0d1ebe28fca8a7cac936d6f0a453af4174fbbcba29f711047cb48e984a3c097519138a628bc6e662bd3d28237d09
1f68a8df05f50effc55390a12ee2c6
Step 1:
05574293e17c749464f7e70cf2b70a11338180a8d262753af5658748c40ed714858e00bf583f80aa225e2ce078a435d94e8f294c3f8ca
aa1f929dd6095a212155fa7c0f2e141d70357583536c9290f5bac50be8b044345d608eefb834b7167b5c3f68ae6ec759d7439199d42c2d7dc82f6
e0975720fa0af1003aac6f5ed11d39
Step 2:
12345678987654356789098765456712345678987654356789098765456712345678987654356789098765456712345678987654356789
09876545671234567898765435678909876545671234567898765435678909876545671234567898765435678909876545671234567898765435
67890987654567123456789876543
```

The following example displays all available Secure Erase algorithms on a module:

```
switch# show secure-erase module 4 algorithm
```

Related Commands

Command	Description
show secure-erase job	Displays the contents of a particular Secure Erase job.

show secure-erase job

To display the contents of a particular job, use the show secure-erase job command.

show secure-erase module module-id job job-id

Syntax Description

module module-id	Displays the slot number of the SSM on which Secure Erase is provisioned.
job-id	Displays the unique number to identify a Secure Erase job.

Command Default

None.

Command Modes

Exec mode

Command History

Release	Modification
6.2(1)	This command was deprecated.
3.3(1a)	This command was introduced.

Usage Guidelines

None.

Examples

The following example displays the contents of a particular Secure Erase job:

```
switch# show secure-erase module 4 job 2
```

The following example displays the contents of all Secure Erase jobs configured on a module:

```
switch# show secure-erase module 16 job
```

Related Commands

Command	Description
show secure-erase algorithm	Displays the list of Secure Erase algorithms.

show secure-erase job detail

To display the contents of a particular job in detail, use the show secure-erase job detail command.

show secure-erase module module-id job job-id detail

Syntax Description

module module-id	Displays the slot number of the SSM on which Secure Erase is provisioned.
job-id	Displays the unique number to identify a Secure Erase job.

Command Default

None.

Command Modes

Exec mode

Command History

Release	Modification
6.2(1)	This command was deprecated.
3.3(1a)	This command was introduced.

Usage Guidelines

None.

Examples

The following example displays the contents of a Secure Erase job in a brief form:

```
switch# show secure-erase module 4 job 2 detail
```

Related Commands

Command	Description
show secure-erase job	Displays the contents of a Secure Erase job.

show secure-erase vsan

To display a list of all VIs in the VSAN, use the show secure-erase vsan command.

show secure-erase module module-id vsan vsan-id

Syntax Description

module module-id	Displays the slot number of the SSM on which Secure Erase is provisioned.
vsan-id	Displays the VSAN ID of the target.

Command Default

None.

Command Modes

Exec mode

Command History

Release	Modification
6.2(1)	This command was deprecated.
3.3(1a)	This command was introduced.

Usage Guidelines

None.

Examples

The following example displays the list of all VIs in the VSAN:

```
switch# show secure-erase module 4 vsan 1
```

Related Commands

Command	Description
show secure-erase algorithm	Displays the list of Secure Erase algorithms.
show secure-erase job	Displays the contents of a particular Secure Erase job.

show sme cluster

To display the information about the Cisco SME cluster, use the show sme cluster command.

show sme cluster {**cluster name** {**detail** | **interface** {**detail** | **node** {**A.B.C.D** | **X:X::X** | **DNS name sme slot/port**} | **sme slot/port** | **summary**} | **it-nexus** | **key database** {**detail** | **guid guid name** {**detail** | **summary**} | **summary**} | **load-balancing** | **lun crypto-status** | **node** { {**A.B.C.D** | **X:X::X** | **DNS name**} | **summary**} | **recovery officer** {**index** | **detail index** | **summary index**} | **summary** | **tape** {**detail** | **summary**} | **tape-bkgrp tape group name volgrp volume group name**} | **detail** | **summary**}

Syntax Description

cluster cluster name	Displays Cisco SME cluster information. The maximum length is 32 characters.
detail	Displays Cisco SME cluster details.
interface	Displays information about Cisco SME cluster interface.
node	Display information about Cisco SME cluster remote interface.
A.B.C.D	Specifies the IP address of the remote switch in IPv4 format.
X:X::X	Specifies the IP address of the remote switch in IPv6 format.
DNS name	Specifies the name of the remote database.
sme	Specifies the Cisco SME interface.
slot	Identifies the MPS-18/4 module slot.
port	Identifies the Cisco SME port.
interface summary	Displays Cisco SME cluster interface summary.
it-nexus	Displays the initiator to target connections (IT-nexus) in the Cisco SME cluster.
key database	Shows the Cisco SME cluster key database.
detail	Shows the Cisco SME cluster key database details.
guid guid name	Displays Cisco SME cluster key database guid. The maximum length is 64.
summary	Displays Cisco SME cluster key database summary.
load-balancing	Displays the load balancing status of the cluster.
lun	Displays the logical unit numbers (LUNs) in a cluster.
crypto-status	Displays the crypto status of the LUNs.
node summary	Displays Cisco SME cluster node summary.
recovery officer detail	Displays Cisco SME cluster recovery officer detail.
recovery officer summary	Displays Cisco SME cluster recovery officer summary.

index	Specifies recovery officer index. The range is 1to 8.
detail index	Specifies recovery officer detail index. The range is 1to 8.
summary index	Specifies recovery officer summary index. The range is 1to 8.
tape detail	Displays Cisco SME tape detail
tape summary	Displays the tape summary
tape-bkgrp tape group name	Displays the crypto tape backup group name. The maximum length is 32 characters.
volgrp volume group name	Displays tape volume group name.The maximum length is 32 characters.
detail	Displays Cisco SME cluster details.
summary	Shows Cisco SME cluster summary.

Command Default

None.

Command Modes

EXEC mode.

Command History

Release	Modification
3.2(2)	This command was introduced.
NX-OS 4.1(1c)	Added the syntax description.

Usage Guidelines

None.

Examples

The following example displays the configuration details about a cluster:

```
switch# show sme cluster c1
Cluster ID is 0x2b2a0005300035e1
 Cluster status is online
 Security mode is advanced
 Total Nodes are 1
 Recovery Scheme is 2 out of 5
 Fabric[0] is Fabric_name-excal10
 KMC server 10.21.113.117:8800 is provisioned, connection state is initializing
 Master Key GUID is 10af119cfd79c17f-ee568878c049f94d, Version: 0
 Shared Key Mode is Not Enabled
 Auto Vol Group is Not Enabled
 Tape Compression is Not Enabled
 Tape Key Recycle Policy is Not Enabled
 Key On Tape is Not Enabled
 Cluster Infra Status : Operational
 Cluster is Administratively Up
 Cluster Config Version : 24
```

The following example displays the cluster interface information:

```
switch# show sme cluster clustername1 interface it-nexus
```

```
 --------------------------------------------------------------------------------
    Host WWN                 VSAN    Status    Switch        Interface
    Target WWN
--------------------------------------------------------------------------------
10:00:00:00:c9:4e:19:ed,
2f:ff:00:06:2b:10:c2:e2      4093     online    switch     sme4/1
```

The following example displays the specific recovery officer of a cluster:

```
switch# show sme cluster clustername1 recovery officer

Recovery Officer 1 is set
  Master Key Version is 0
  Recovery Share Version is 0
  Recovery Share Index is 1
  Recovery Scheme is 1 out of 1
  Recovery Officer Label is
  Recovery share protected by a password
Key Type is master key share
    Cluster is clustername1, Master Key Version is 0
    Recovery Share Version is 0, Share Index is 1
```

Related Commands

Command	Description
clear sme	Clears Cisco SME configuration.
show sme cluster	Displays information about Cisco SME cluster.

show sme transport

To display the Cisco SME cluster transport information, use the show sme transport command.

show sme transport ssl truspoint

Syntax Description

ssl	Displays transport Secure Sockets Layer (SSL) information.
trustpoint	Displays transport SSL trustpoint information.

Command Default

None.

Command Modes

EXEC mode.

Command History

Release	Modification
3.2(2c)	This command was introduced.
NX-OS 4.1(1c)	Added the syntax of the command.

Usage Guidelines

None.

Examples

The following example displays the internal cluster errors:

```
switch# show sme transport ssl trustpoint
SME Transport SSL trustpoint is trustpoint-label
```

Related Commands

Command	Description
clear sme	Clears Cisco SME configuration.
show sme cluster	Displays information about Cisco SME cluster.

show snmp

To display SNMP status and setting information, use the **show snmp** command.

show snmp [**community** | **engineID** | **group** | **host** | **sessions** | **trap** | **user** [*user-name*] [**engineID** *engine-id*]]

Syntax Description

community	(Optional) Displays SNMP community strings.
engineID	(Optional) Displays SNMP engine IDs.
group	(Optional) Displays SNMP groups.
host	(Optional) Displays SNMP hosts.
sessions	(Optional) Displays SNMP sessions.
trap	(Optional) Displays SNMP traps.
user	(Optional) Displays SNMPv3 users.
user-name	(Optional) Specifies the user name. The maximum is 32.
engineID	(Optional) Displays the engine ID.
engine-id	(Optional) Specifies the engine ID. The maximum is 128.

Command Default

None.

Command Modes

EXEC mode.

Command History

Release	Modification
1.0(2)	This command was introduced.
2.0(x)	Added the **engineid**, **group**, and **sessions** keywords.
3.1(2)	Added the **trap** keyword.

Usage Guidelines

You can view the **show snmp community** output, only when the user role is assigned as network-admin.

Examples

The following example shows how to display SNMP traps:

```
switch# show snmp trap
--------------------------------------------------------------------------------
Trap type                                                              Enabled
--------------------------------------------------------------------------------
entity               : entity_mib_change                               Yes
entity               : entity_module_status_change                     Yes
entity               : entity_power_status_change                      Yes
```

```
entity               : entity_module_inserted                      Yes
entity               : entity_module_removed                       Yes
entity               : entity_unrecognised_module                  Yes
entity               : entity_fan_status_change                    Yes
entity               : entity_power_out_change                     Yes
link                 : delayed-link-state-change                   Yes
link                 : iflink-up                                   Yes
link                 : iflink-down                                 Yes
callhome             : event-notify                                No
callhome             : smtp-send-fail                              No
cfs                  : state-change-notif                          No
cfs                  : merge-failure                               No
rf                   : redundancy_framework                        Yes
aaa                  : server-state-change                         No
license              : notify-license-expiry                       Yes
license              : notify-no-license-for-feature               Yes
license              : notify-licensefile-missing                  Yes
--More--
```

The following example displays SNMP information:

```
switch# show snmp
sys contact:
sys location:
1631 SNMP packets input
        0 Bad SNMP versions
        0 Unknown community name
        0 Illegal operation for community name supplied
        0 Encoding errors
        64294 Number of requested variables
        1 Number of altered variables
        1628 Get-request PDUs
        0 Get-next PDUs
        1 Set-request PDUs
152725 SNMP packets output
        0 Too big errors
        1 No such name errors
        0 Bad values errors
        0 General errors
Community                      Access
---------                      ------
public                          rw
User                           Group                          Auth  Priv
____                           _____                          ____  ____
admin                          network-admin                  md5   no
```

The following example displays SNMP user details.

```
switch# show snmp user
User                           Group                          Auth  Priv
____                           _____                          ____  ____
steve                          network-admin                  md5   des
sadmin                         network-admin                  md5   des
stever                         network-operator               md5   des
```

The following example displays SNMP community information:

```
switch# show snmp community

Community                      Access
---------                      ------
private                         rw
```

```
public                          ro
v93RACqPNH                      ro
```

The following example displays SNMP host information:

```
switch# show snmp host
Host                            Port Version  Level  Type   SecName
____                            ____ _______  ______ ____   _______
171.16.126.34                   2162 v2c      noauth trap   public
171.16.75.106                   2162 v2c      noauth trap   public
171.31.124.81                   2162 v2c      noauth trap   public
171.31.157.193                  2162 v2c      noauth trap   public
171.31.157.98                   2162 v2c      noauth trap   public
171.31.49.25                    2162 v2c      noauth trap   public
171.31.49.32                    2188 v2c      noauth trap   public
171.31.49.49                    2162 v2c      noauth trap   public
171.31.49.49                    3514 v2c      noauth trap   public
171.31.49.54                    2162 v2c      noauth trap   public
171.31.58.54                    2162 v2c      noauth trap   public
171.31.58.81                    2162 v2c      noauth trap   public
171.31.58.97                    1635 v2c      noauth trap   public
171.31.58.97                    2162 v2c      auth   trap   public
171.31.58.97                    3545 v2c      auth   trap   public
172.22.00.43                    2162 v2c      noauth trap   public
172.22.00.65                    2162 v2c      noauth trap   public
172.22.05.234                   2162 v2c      noauth trap   public
172.22.05.98                    1050 v2c      noauth trap   public
```

The following example displays SNMP engine ID information:

```
switch# show snmp engineID
Local SNMP engineID:[Dec] 128:000:000:009:003:000:013:236:008:040:192
switch#
```

The following example displays SNMP group information:

```
switch# show snmp group
groupname: network-admin
security model: any
security level: noAuthNoPriv
readview: network-admin-rd
writeview: network-admin-wr
notifyview: network-admin-rd
storage-type: permanent
row status: active
groupname: network-admin
security model: any
security level: authNoPriv
readview: network-admin-rd
writeview: network-admin-wr
notifyview: network-admin-rd
storage-type: permanent
row status: active
groupname: network-operator
security model: any
security level: noAuthNoPriv
readview: network-operator-rd
writeview: network-operator-wr
notifyview: network-operator-rd
storage-type: permanent
row status: active
groupname: network-operator
security model: any
```

```
security level: authNoPriv
readview: network-operator-rd
writeview: network-operator-wr
notifyview: network-operator-rd
storage-type: permanent
row status: active
```

show span drop-counters

To display the SPAN drop counters, use the show span drop-counters command.

show span drop-counters

Syntax Description

This command has no arguments or keywords.

Command Default

None.

Command Modes

EXEC mode

Command History

Release	Modification
3.3(1a)	This command was introduced.

Usage Guidelines

This command is supported only on a ISOLA platform.

Examples

The following example shows how to configure the SPAN drop counters:

```
switch# config
Enter configuration commands, one per line.  End with CNTL/Z.
switch(config)# span drop-counters
SPAN Drop-Counters for module 3 is: 0x0
SPAN Drop-Counters for module 7 is: 0x0
```

Related Commands

Command	Description
show span max-queued-packets	Displays the SPAN max-queued packets.

show span max-queued-packets

To display the SPAN max-queued packets, use the show span max-queued-packets command.

show span max-queued-packets

Syntax Description

This command has no arguments or keywords.

Command Default

None.

Command Modes

EXEC mode

Command History

Release	Modification
6.2(1)	This command was deprecated.
3.3(1a)	This command was introduced.

Usage Guidelines

This command is supported only ona ISOLA platform.

Examples

The following example displays the SPAN max-queued packets:

```
switch# show span max-queued-packets
max-queued-packets for SPAN sessions: 1
```

Related Commands

Command	Description
span max-queued-packets	Configures the SPAN max-queued packets.

show sprom

To display vendor ID, product component attributes and serial number information that can be used to track field replacable units, use the **show sprom** command.

show sprom {**backplane backplane-index** | **clock clock-module-index** | **fan** | **mgmt-module** | **module module-number sprom-index** | **powersupply powersupply-index** | **sup**}

Syntax Description

backplane *backplane-index*	Displays attributes that can be used to uniquely identify a switch. The range is 1 to 2.
clock *clock-module-index*	Displays attributes of the clock module. There are two clock modules in a switch. This module is absent in MDS9216 type switch. The range is 1 to 2.
fan	Displays attributes that uniquely identified fan.
mgmt-module	Displays attributes of management module. This module is only present in MDS9216 type switch.
module module-number sprom-index	Displays vendor ID, product's component attributes for the given switching module. There can be up to 4 sub components in a module. Each of them will have a SPROM associated with it.
powersupply *powersupply-index*	Displays attributes of the first or the second power supply. This contains information about the power supply capacity in watts when it is used in 110 Volts and 220 Volts. This information is used for power-budget allocation. The range is 1 to 2.
sup	Displays vendor ID, product's component attributes for the current supervisor module.

Command Default

None.

Command Modes

EXEC mode.

Command History

Release	Modification
1.0(2)	This command was introduced.

Usage Guidelines

Use the **show sprom** command to get unique information about a specific module, supervisor module, switch, power supply module, or a fan module. If you need to report a problem with a module, supervisor module, switch, power supply module, or a fan module and do not have access to the management station, then you can extract the serial number information from **show sprom**.

Examples

The following example displays management module information. This module and command are specific to the Cisco MDS 9216 switch:

```
switch# show sprom mgmt-module
DISPLAY SAM sprom contents:
Common block:
 Block Signature :0xabab
 Block Version   :2
 Block Length    :156
 Block Checksum  :0x1295
 EEPROM Size     :0
 Block Count     :2
 FRU Major Type  :0x0
 FRU Minor Type  :0x0
 OEM String      :Cisco Systems Inc
 Product Number  :SAM SMITH
 Serial Number   :12345678901
 Part Number     :SAM-SMITH-06
 Part Revision   :A0
 Mfg Deviation   :
 H/W Version     :1.0
 Mfg Bits        :1
 Engineer Use    :0
 snmpOID         :0.0.0.0.0.0.0.0
 Power Consump   :-200
 RMA Code        :0-0-0-0
Linecard Module specific block:
 Block Signature :0x6003
 Block Version   :2
 Block Length    :103
 Block Checksum  :0x3c7
 Feature Bits    :0x0
 HW Changes Bits :0x0
 Card Index      :9009
 MAC Addresses   :00-12-34-56-78-90
 Number of MACs  :4
 Number of EOBC links :4
 Number of EPLD  :0
 Port Type-Num   :200-16
 SRAM size       :0
 Sensor #1       :0,0
 Sensor #2       :0,0
 Sensor #3       :0,0
 Sensor #4       :0,0
 Sensor #5       :0,0
 Sensor #6       :0,0
 Sensor #7       :0,0
 Sensor #8       :0,0
```

The following command displays supervisor module information:

```
switch# show sprom sup
DISPLAY supervisor sprom contents:
Common block:
 Block Signature : 0xabab
 Block Version   : 2
 Block Length    : 156
 Block Checksum  : 0x10a8
 EEPROM Size     : 512
 Block Count     : 2
 FRU Major Type  : 0x6002
 FRU Minor Type  : 0x7d0
 OEM String      : Cisco Systems
 Product Number  : DS-X9530-SF1-K9
 Serial Number   : abcdefgh
 Part Number     : 73-7523-06
```

```
 Part Revision   : 0.0
 Mfg Deviation   : 0.0
 H/W Version     : 0.0
 Mfg Bits        : 0
 Engineer Use    : 0
 snmpOID         : 9.5.1.3.1.1.2.2000
 Power Consump   : -524
 RMA Code        : 0-0-0-0
Supervisor Module specific block:
 Block Signature : 0x6002
 Block Version   : 2
 Block Length    : 103
 Block Checksum  : 0x927
 Feature Bits    : 0x0
 HW Changes Bits : 0x0
 Card Index      : 9003
 MAC Addresses   : 00-05-30-00-18-be
 Number of MACs  : 4
 Number of EPLD  : 1
 EPLD A          : 0x0
 Sensor #1       : 75,60
 Sensor #2       : 60,55
 Sensor #3       : -127,-127
 Sensor #4       : -127,-127
 Sensor #5       : -128,-128
 Sensor #6       : -128,-128
 Sensor #7       : -128,-128
 Sensor #8       : -128,-128
```

Related Commands

Command	Description
show hardware	Displays brief information about the list of field replacable units in the switch.

show ssh

To display Secure Shell information (SSH), use the **show ssh** command.

show ssh { **key** [**dsa** | **rsa** | **rsa1**] | **server** | **version** }

Syntax Description

key	Displays SSH keys.
dsa	(Optional) Displays DSA SSH keys.
rsa	(Optional) Displays RSA SSH keys.
rsa1	(Optional) Displays RSA1 SSH keys.
server	Displays the SSH server status.
version	Display OpenSSH version

Command Default

None.

Command Modes

EXEC mode.

Command History

Release	Modification
1.0(2)	This command was introduced.

Usage Guidelines

To display the host key pair details for the specified key or for all keys, if no key is specified, use the **show ssh key** command. To display the status of the SSH protocol (enabled or disabled) and the versions that are enabled for that switch, use the **show ssh server** command.

Examples

The following example displays SSH server status:

```
switch# show ssh server
ssh is enabled
version 1 enabled
version 2 enabled
```

The following example displays host key pair details:

```
switch# show ssh key

rsa1 Keys generated:Sun Jan 13 07:16:26 1980
1024 35
fingerprint:
1024 67:76:02:bd:3e:8d:f5:ad:59:5a:1e:c4:5e:44:03:07
could not retrieve rsa key information
dsa Keys generated:Sun Jan 13 07:40:08 1980
ssh-dss AAAAB3NzaC1kc3MAAABBAJTCRQOydNRel2v7uiO6Fix+OTn8eGdnnDVxw5eJs5OcOEXOyjaW
cMMYsEgxc9ada1NElp8Wy7GPMWGOQYj9CU0AAAAVAMCcWhNN18zFNOIPo7cU3t7d0iEbAAAAQBdQ8UAO
i/Cti84qFb3kTqXlS9mEhdQUo0lHcH5bw5PKfj2Y/dLR437zCBKXetPj4p7mhQ6Fq5os8RZtJEyOsNsA
AABAA0oxZbPyWeR5NHATXiyXdPI7j9i8fgyn9FNipMkOF2Mn75Mi/lqQ4NIq0gQNvQOx27uCeQlRts/Q
```

```
wI4q68/eaw==
fingerprint:
512 f7:cc:90:3d:f5:8a:a9:ca:48:76:9f:f8:6e:71:d4:ae
```

show ssh ciphers

To display the ciphers used to encrypt the SSH connection, use the **show ssh ciphers** command.

show ssh ciphers

Syntax Description

This command has no arguments or keywords.

Command Default

None.

Command Modes

Exec mode.

Command History

Release	Modification
9.4(1)	This command was introduced.

Usage Guidelines

None.

Examples

The following example displays the ciphers used to encrypt the SSH connection.

```
switch# show ssh ciphers
Cipher                                          Status    FIPS
-------------------------------------------------------------
aes128-ctr                                   permitted     yes
aes192-ctr                                      denied     yes
aes256-ctr                                   permitted     yes
aes128-cbc                                      denied     yes
aes192-cbc                                      denied     yes
aes256-cbc                                      denied     yes
aes256-gcm@openssh.com                       permitted     yes
aes128-gcm@openssh.com                       permitted     yes
chacha20-poly1305@openssh.com                permitted      no
```

Related Commands

Command	Description
ssh ciphers all	Specifies ciphers to encrypt the connection
show ssh version	Displays the OpenSSH version

show ssl info

To display the Secure Socket Layer (SSL) protocol version, use the **show ssl info** command.

show ssl info

Syntax Description

This command has no other arguments or keywords.

Command Default

None.

Command Modes

EXEC mode.

Command History

Release	Modification
8.4(2)	This command was introduced.

Usage Guidelines

None.

The following example displays SSL version details:

```
switch# show ssl info

SSL version: CiscoSSL 1.0.2o.6.2.238-fips
```

show ssh kexalgos

To display the key exchange algorithms used in SSH handshake or connection, use the **show ssh kexalgos** command.

show ssh kexalgos

Syntax Description

This command has no arguments or keywords.

Command Default

None.

Command Modes

Exec mode.

Command History

Release	Modification
9.4(1)	This command was introduced.

Usage Guidelines

None.

Examples

The following example displays the macs used to detect traffic modification:

```
switch# show ssh kexalgos KexAlgorithm                                    Status    FIPS
------------------------------------------------------------
curve25519-sha256                          permitted      no
curve25519-sha256@libssh.org               permitted      no
ecdh-sha2-nistp256                         permitted     yes
ecdh-sha2-nistp384                         permitted     yes
ecdh-sha2-nistp521                         permitted     yes
diffie-hellman-group16-sha512              permitted     yes
diffie-hellman-group14-sha1                permitted     yes
diffie-hellman-group14-sha256              permitted      no
switch#
```

Related Commands

Command	Description
ssh kexalgos all	Allows you to customize the key exchange algorithms used in SSH handshake or connection
show ssh version	Displays the OpenSSH version

show ssh keytypes

To display the ssh key types used in SSH handshake or connection, use the **show ssh keytypes** command.

show ssh keytypes

Syntax Description

This command has no arguments or keywords.

Command Default

None.

Command Modes

Exec mode.

Command History

Release	Modification
9.4(1)	This command was introduced.

Usage Guidelines

None.

Examples

The following example displays the macs used to detect traffic modification:

```
switch# show ssh keytypes
Keytype                                          Status    FIPS
-------------------------------------------------------------
ecdsa-sha2-nistp256-cert-v01@openssh.com   permitted      no
ecdsa-sha2-nistp384-cert-v01@openssh.com   permitted      no
ecdsa-sha2-nistp521-cert-v01@openssh.com   permitted      no
ssh-rsa-cert-v01@openssh.com               permitted      no
ecdsa-sha2-nistp256                        permitted     yes
ecdsa-sha2-nistp384                        permitted     yes
ecdsa-sha2-nistp521                        permitted      no
rsa-sha2-256                               permitted      no
ssh-rsa                                    permitted     yes
ssh-dss                                       denied      no
ssh-ed25519                              unsupported      no
ssh-ed25519-cert-v01@openssh.com         unsupported      no
ssh-dss-cert-v01@openssh.com             unsupported      no
switch#
```

Related Commands

Command	Description
ssh keytypes all	Display the SSH key types used in SSH handshake or connection
show ssh version	Displays the OpenSSH version

show ssh macs

To display the message authentication codes used to detect traffic modification, use the **show ssh macs** command.

show ssh macs

Syntax Description

This command has no arguments or keywords.

Command Default

None.

Command Modes

Exec mode.

Command History

Release	Modification
9.4(1)	This command was introduced.

Usage Guidelines

None.

Examples

The following example displays the macs used to detect traffic modification:

```
switch# show ssh macs
MAC                                                   Status    FIPS
------------------------------------------------------------------
hmac-sha2-256-etm@openssh.com                      permitted      no
hmac-sha2-512-etm@openssh.com                      permitted      no
hmac-sha1-etm@openssh.com                          permitted      no
hmac-sha2-256                                      permitted     yes
hmac-sha2-512                                      permitted     yes
hmac-sha1                                          permitted     yes
hmac-sha1-96                                     unsupported      no
hmac-md5                                         unsupported      no
hmac-md5-96                                      unsupported      no
umac-64@openssh.com                              unsupported      no
umac-128@openssh.com                             unsupported      no
hmac-sha1-96-etm@openssh.com                     unsupported      no
hmac-md5-etm@openssh.com                         unsupported      no
umac-64-etm@openssh.com                          unsupported      no
umac-128-etm@openssh.com                         unsupported      no
```

Related Commands

Command	Description
ssh macs all	Specifies message authentication codes used to detect traffic modification
show ssh version	Displays the OpenSSH version

show ssh version

To display the version of SSH, use the **show ssh version** command.

show ssh version

Syntax Description

This command has no arguments or keywords.

Command Default

None.

Command Modes

EXEC mode.

Command History

Release	Modification
9.4(1)	This command was introduced.

Usage Guidelines

None.

Examples

```
switch# show ssh version
CiscoSSH 1.9.29, OpenSSH_8.3p1, CiscoSSL 1.1.1t.7.2.500
```

show ssm provisioning

To display the attributes of the Storage Services Module (SSM) installed, use the show ssm provisioning command.

show ssm provisioning

Syntax Description

This command has no other arguments or keywords.

Command Default

None.

Command Modes

EXEC mode.

Command History

Release	Modification
2.0(2)	This command was introduced.
2.1(1a)	Added Provisioning Status column to the display.

Usage Guidelines

None.

Examples

The following example provisions the SSM installed in the switch:

```
switch# show ssm provisioning
Module   Ports       Application        Provisioning Status
--------------------------------------------------------------
   4      1-32       scsi-flow                    success
```

Table 14: show ssm provisioning Field Descriptions, on page 597 describes the significant fields shown in the show ssm provisioning command output.

Table 14: show ssm provisioning Field Descriptions

Field	Description
Module	Slot where SSM is installed.
Ports	Ports available on the SSM.
Application	Feature configured on the SSM.
Provisioning Status	Displays the status of the SSM attributes.

Related Commands

Command	Description
ssm enable feature	Enables the SCSI flow feature on the SSM.

show startup-config

To display the startup configuration file, use the **show startup-config** command

show startup-config [**log**]

Syntax Description

log	(Optional) Displays execution log of last used ASCII startup configuration.

Command Default

None.

Command Modes

EXEC mode.

Command History

Release	Modification
1.0(2)	This command was introduced.

Usage Guidelines

None.

Examples

The following example displays the switch configuration at startup:

```
switch# show startup-config
vsan database
vsan 2
vsan 3
vsan 4
vsan 5
vsan 31
vsan 32 suspend
vsan 100
vsan 300
 interface port-channel 1
switchport mode E
switchport trunk mode off
 interface port-channel 2
fspf cost 100 vsan 2
switchport mode E
no switchport trunk allowed vsan all
switchport trunk allowed vsan add 1-99
switchport trunk allowed vsan add 101-4093
 interface port-channel 3
switchport mode E
switchport trunk mode off
 interface port-channel 4
switchport mode E
no switchport trunk allowed vsan all
switchport trunk allowed vsan add 1-99
switchport trunk allowed vsan add 101-4093
 interface port-channel 5
switchport mode E
no switchport trunk allowed vsan all
switchport trunk allowed vsan add 1-10interface port-channel 5
switchport mode E
no switchport trunk allowed vsan all
```

```
switchport trunk allowed vsan add 1-10
interface port-channel 8
switchport mode E
 interface vsan1
no shutdown
snmp-server community public rw
snmp-server user admin network-admin auth md5 0xe84b06201ae3bfb726a2eab9f485eb57
 localizedkey
snmp-server host 171.69.126.34 traps version 2c public udp-port 2162
snmp-server host 171.69.75.106 traps version 2c public udp-port 2162
vsan database
vsan 3 interface fc2/9
vsan 3 interface fc2/14
vsan 5 interface fc9/11
vsan 2 interface fc9/12
vsan 3 interface port-channel 3
vsan 3 interface port-channel 4
vsan 100 interface port-channel 8
boot system bootflash:/isan-8b-u sup-1
boot kickstart bootflash:/boot-3b sup-1
boot system bootflash:/isan-8b-u sup-2
boot kickstart bootflash:/boot-3b sup-2
ip default-gateway 172.22.90.1
power redundancy-mode combined force
username admin password 5 HyLyYqb4.q74Y  role network-admin
zone name Z1 vsan 1
  member pwwn 10:00:00:00:77:99:60:2c
  member pwwn 21:00:00:20:37:a6:be:14
zone default-zone permit vsan 1
zoneset distribute full vsan 51-58
zoneset name ZS1 vsan 1
  member Z1
zoneset  activate name ZS1 vsan 1
 interface fc2/1
switchport mode E
switchport trunk mode off
no shutdown
 interface fc2/2
 interface fc2/3
channel-group 1 force
no shutdown
interface fc2/6
channel-group 2 force
no shutdown
 interface fc2/7
switchport mode E
no shutdown
no switchport trunk allowed vsan all
switchport trunk allowed vsan add 1-25
interface fc2/9
switchport mode E
switchport trunk mode off
no shutdown
 interface fc2/10
channel-group 3 force
no shutdown
 interface fc2/12
channel-group 4 force
no shutdown
 interface fc2/14
switchport mode E
no shutdown
no switchport trunk allowed vsan all
switchport trunk allowed vsan add 1-99
```

```
switchport trunk allowed vsan add 101-4093
 interface fc2/15
channel-group 6 force
no shutdown
 interface fc2/16
channel-group 6 force
no shutdown
.
.
.
interface fc9/10
switchport mode F
no shutdown
 interface fc9/11
switchport trunk mode off
no shutdown
 interface fc9/12
switchport mode E
switchport speed 1000
switchport trunk mode off
no shutdown
 interface fc9/15
no shutdown
no switchport trunk allowed vsan all
switchport trunk allowed vsan add 1-99
switchport trunk allowed vsan add 101-4093
 interface fc9/16
switchport mode FL
no shutdown
 interface mgmt0
ip address 209.165.200.226 209.165.200.227
no shutdown
```

show switchname

To display the switch network name, use the **show switchname** command.

show switchname [**serialnum**]

Syntax Description

serialnum	(Optional) Displays switch serial number.

Command Default

None.

Command Modes

EXEC mode.

Command History

Release	Modification
1.0(2)	This command was introduced.

Usage Guidelines

None.

Examples

The following example displays the name of the switch:

```
switch# show switchname
switch-123
```

The following example displays the switch name and serial number:

```
switch# show switchname
switch-123
Serial Number #1   : FOX0712S007
Serial Number #2   :
```

show system

To display the system information, use the **show system** command.

show system {**cores** | **default** {**switchport** | **zone**} | **directory information** | **error-id** {**hex-id** | **list**} | **exception-info** | **pss shrink status** [**details**] | **redundancy status** | **reset-reason** [**module slot**] | **resources** | **standby manual-boot** | **uptime**}

Syntax Description

cores	Displays core transfer option.
default	Displays system default values.
switchport	Displays default values for switch port attributes.
zone	Displays default values for a zone.
directory information	Displays information of the system manager.
error-id	Displays description about errors.
hex-id	Specifies the error ID in hexadecimal format. The range is 0x0 to 0xffffffff.
list	Specifies all error IDs.
exception-info	Displays last exception log information.
pss shrink status	Displays the last PSS shrink status.
details	(Optional) Displays detailed information on the last PSS shrink status.
redundancy status	Displays Redundancy status.
reset-reason	Displays the last four reset reason codes.
module slot	(Optional) Specifies the module number to display the reset-reason codes.
resources	Displays the CPU and memory statistics.
standby manual-boot	Displays the standby manual boot option.
uptime	Displays how long the system has been up and running.

Command Default

None.

Command Modes

EXEC mode.

Command History

Release	Modification
NX-OS 4.1(3)	Changed the command output.
1.0(2)	This command was introduced.

Release	Modification
3.0(1)	Added the **zone** option.
3.0(1)	Added the standby manual-boot keyword.

Usage Guidelines

Use the **show system redundancy status** command to ensure that the system is ready to accept a switchover.

Examples

The following example shows how to display the system uptime:

```
switch# show system uptime
System start time:          Fri Dec 19 02:26:05 2008
System uptime:              18 days, 6 hours, 14 minutes, 19 seconds
Kernel uptime:              18 days, 4 hours, 48 minutes, 28 seconds
switch#
```

The following example shows how to display the system redundancy status:

```
switch# show system redundancy status
Redundancy mode
---------------
      administrative:   HA
         operational:   None
This supervisor (sup-2)
-----------------------
    Redundancy state:   Active
    Supervisor state:   Active
      Internal state:   Active with no standby
Other supervisor (sup-1)
------------------------
    Redundancy state:   Not present
```

The following example displays port states after the **system default switchport mode f** command is executed:

```
switch# show system default switchport
System default port state is down
System default trunk mode is on
System default port mode is F
```

The following example displays error information for a specified ID:

```
switch# show system error-id 0x401D0019
Error Facility: module
Error Description: Failed to stop Linecard Async Notification.
```

The following example displays the system health information:

```
switch# show system health
Current health information for module 2.
Test                    Frequency       Status          Action
-------------------------------------------------------------------
Bootflash                10 Sec         Enabled         Enabled
EOBC                      5 Sec         Enabled         Enabled
Loopback                  5 Sec         Enabled         Enabled
CF checksum               7 Sec         Enabled         Enabled
CF re-flash              30 Sec         Enabled         Enabled
-------------------------------------------------------------------
```

```
Current health information for module 3.
Test                    Frequency       Status          Action
------------------------------------------------------------------
Bootflash                10 Sec         Enabled         Enabled
EOBC                      5 Sec         Enabled         Enabled
Loopback                  5 Sec         Enabled         Enabled
------------------------------------------------------------------
Current health information for module 5.
Test                    Frequency       Status          Action
------------------------------------------------------------------
InBand                    5 Sec         Enabled         Enabled
Bootflash                10 Sec         Enabled         Enabled
EOBC                      5 Sec         Enabled         Enabled
Management Port           5 Sec         Enabled         Enabled
CF checksum               7 Sec         Halted          Enabled
CF re-flash              30 Sec         Halted          Enabled
------------------------------------------------------------------
```

The following example displays the system reset information:

```
switch# show system reset reason
----- reset reason for module 6 -----
1) At 520267 usecs after Tue Aug  5 16:06:24 1980
    Reason: Reset Requested by CLI command reload
    Service:
    Version: 1.2(0.73a)
2) At 653268 usecs after Tue Aug  5 15:35:24 1980
    Reason: Reset Requested by CLI command reload
    Service:
    Version: 1.2(0.45c)
3) No time
    Reason: Unknown
    Service:
    Version: 1.2(0.45c)
4) At 415855 usecs after Sat Aug  2 22:42:43 1980
    Reason: Power down triggered due to major temperature alarm
    Service:
    Version: 1.2(0.45c)
```

The following example displays system-related CPU and memory statistics:

```
switch# show system resources
Load average:   1 minute: 0.43   5 minutes: 0.17   15 minutes: 0.11
Processes   :   100 total, 2 running
CPU states  :   0.0% user,   0.0% kernel,   100.0% idle
Memory usage:   1027628K total,    313424K used,    714204K free
                   3620K buffers,   22278K cache
```

Use the **show system cores** command to display the currently configured scheme for copying cores:

```
switch# show system cores
Transfer of cores is enabled
```

Use the **show system default zone** command to display the default values for a zone:

```
switch# show system default zone
system default zone default-zone permit
system default zone distribute active only
```

show system default zone

To verify the configured default zone values, use the show system default zone command.

show system default zone

Syntax Description

This command has no other arguments or keywords.

Command Default

None.

Command Modes

EXEC mode.

Command History

Release	Modification
3.0(1)	This command was introduced.
3.2(1)	Added the basic default zoning mode option.

Usage Guidelines

None.

Examples

The following example shows the default values for default-zone as deny, distribute as active only, and zone mode as basic:

```
switch# show system default zone
system default zone default-zone deny
system default zone distribute active only
system default zone mode basic
```

The following example shows the default values for default-zone as permit, distribute as full, and zone mode as enhanced.

```
switch# show system default zone
system default zone default-zone permit
system default zone distribute active full
system default zone mode enhanced
```

Related Commands

Command	Description
no system default zone mode enhanced	Configures the default value of zone mode as basic.
no system default zone distribute full	Configures the default value of distribute as active only.
no system default zone default-zone permit	Configures the default value of default zone as deny.
system default zone distribute full	Configures the default value of distribute as full.
system default zone mode enhanced	Configures the default value of zone mode as enhanced.

show system device-connector info

To display the device connector system information, use the **show system device-connector info** command.

show system device-connector info

Syntax Description

This command has no arguments or keywords.

Command Default

None.

Command Modes

EXEC mode.

Command History

Release	Modification
9.4(1)	Command renamed from **show system internal intersight info** to **show system device-connector info**
9.3(2)	This command was introduced.

Usage Guidelines

This command was formerly called **show system device-connector info**.

Examples

The following example displays the device connector system information:

```
switch# show system device-connector info
Intersight connector.db Info:
AccountOwnershipState :Not Claimed
AccountOwnershipUser :
AccountOwnershipTime :0001-01-01T00:00:00Z
AccountOwnershipId :
DomainGroupMoid :5b2541877a7662743465ccad
AccountMoid :5960901ca94eba000127e335
CloudDns :svc.ucs-connect.com
CloudDnsList:
1.:svc-static1.ucs-connect.com
2. :svc.ucs-connect.com
3. :svc.intersight.com
4. :svc-static1.intersight.com
Identity :63931a496f72612d3922c706
CloudEnabled :true
ReadOnlyMode :false
LocalConfigLockout :false
TunneledKVM :false
HttpProxy:
ProxyHost :proxy-wsa.esl.cisco.com
ProxyPort :80
Preferenc :0
ProxyType :Manual
Target[1]:
ProxyHost :proxy-wsa.esl.cisco.com
ProxyPort :80
Preference :0
LogLevel :info
DbVersion :1
AutoUpgradeAdminState :Automatic
```

show system device-connector state

To display the device connector system information, use the **show system device-connector-state** command.

show system device-connector-state

Syntax Description

This command has no arguments or keywords.

Command Default

None.

Command Modes

EXEC mode.

Command History

Release	Modification
9.4(1)	Command renamed from **show system internal intersight state** to **show system device-connector-state**
9.3(2)	This command was introduced.

Usage Guidelines

This command was formerly called **show system device-connector state**.

Examples

The following example displays the device connector system information:

```
switch# show system device-connector-state
AdminState : true
ReadOnlyMode : false
ConnectionState : Connected
ConnectionStateQualifier :
ConnectionLastDownTimeTs :2022-12-09T11:21:33.653652476Z
AccountOwnershipState : Not Claimed
AccountOwnershipUser :
AccountOwnershipTime :0001-01-01T00:00:00Z
AccountOwnershipName :
Leadership : Primary
DeviceRegistrationMoid : 63931a496f72612d3922c706
```

show system health

To display configured Online Health Management System (OHMS) information, use the **show system health** command.

show system health [**loopback frame-length** | **module** *slot* | **statistics loopback** [**interface fc** *slot*/*port* | **module** *slot* **timelog** | **timelog**]]

Note On a Cisco Fabric Switch for HP c-Class BladeSystem and on a Cisco Fabric Switch for IBM BladeCenter, the syntax differs from **interface fc** *slot*/*port* as follows: **interface bay** *port* **| ext** *port* }

Syntax Description

loopback	(Optional) Displays the OHMS loopback test statistics.
frame-length	(Optional) Displays the loopback frame length.
module *slot*	(Optional) Displays module information.
statistics	(Optional) Displays OHMS statistics.
interface	(Optional) Specifies the required interface.
fc *slot*/*port*	Specifies a Fibre Channel interface on a Cisco MDS 9000 Family Switch.
bay *port* **| ext** *port*	Specifies a Fibre Channel interface on a Cisco MDS 9124 Fabric Switch, a Cisco Fabric Switch for HP c-Class BladeSystem, and a Cisco Fabric Switch for IBM BladeCenter.
iscsi *slot*/*port*	(Optional) Specifies the iSCSI interface at the specified slot and port.
timelog	(Optional) Displays the loopback round-trip times.

Command Default

None.

Command Modes

EXEC mode.

Command History

Release	Modification
1.3(4)	This command was introduced.
3.1(2)	Added the **bay** *port* **| ext** *port* keywords and arguments.

Usage Guidelines

None.

Examples

The following example displays the current health of all modules in the switch:

```
switch# show system health
Current health information for module 1.
```

```
Test                   Frequency       Status          Action
------------------------------------------------------------------
Bootflash               10 Sec         Running         Enabled
EOBC                     5 Sec         Running         Enabled
Loopback                 5 Sec         Running         Enabled
CF checksum              7 Days        Halted          Enabled
CF re-flash             30 Days        Halted          Enabled
------------------------------------------------------------------
Current health information for module 2.
Test                   Frequency       Status          Action
------------------------------------------------------------------
Bootflash               10 Sec         Running         Enabled
EOBC                     5 Sec         Running         Enabled
Loopback                 5 Sec         Running         Enabled
------------------------------------------------------------------
Current health information for module 5.
Test                   Frequency       Status          Action
------------------------------------------------------------------
Bootflash               10 Sec         Running         Enabled
EOBC                     5 Sec         Running         Enabled
Loopback                 5 Sec         Running         Enabled
------------------------------------------------------------------
Current health information for module 6.
Test                   Frequency       Status          Action
------------------------------------------------------------------
Bootflash               10 Sec         Running         Enabled
EOBC                     5 Sec         Running         Enabled
Loopback                 5 Sec         Running         Enabled
CF checksum              7 Days        Halted          Enabled
CF re-flash             30 Days        Halted          Enabled
------------------------------------------------------------------
Current health information for module 7.
Test                   Frequency       Status          Action
------------------------------------------------------------------
InBand                   5 Sec         Running         Enabled
Bootflash               10 Sec         Running         Enabled
EOBC                     5 Sec         Running         Enabled
Management Port          5 Sec         Running         Enabled
------------------------------------------------------------------
Current health information for module 8.
Test                   Frequency       Status          Action
------------------------------------------------------------------
InBand                   5 Sec         Running         Enabled
Bootflash               10 Sec         Running         Enabled
EOBC                     5 Sec         Running         Enabled
------------------------------------------------------------------
Current health information for module 10.
Test                   Frequency       Status          Action
------------------------------------------------------------------
Bootflash               10 Sec         Running         Enabled
EOBC                     5 Sec         Running         Enabled
Loopback                 5 Sec         Running         Enabled
------------------------------------------------------------------
Current health information for module 11.
Test                   Frequency       Status          Action
------------------------------------------------------------------
Bootflash               10 Sec         Running         Enabled
EOBC                     5 Sec         Running         Enabled
Loopback                 5 Sec         Running         Enabled
CF checksum              7 Days        Halted          Enabled
CF re-flash             30 Days        Halted          Enabled
------------------------------------------------------------------
Current health information for module 12.
Test                   Frequency       Status          Action
```

```
----------------------------------------------------------------
Bootflash               10 Sec         Running         Enabled
EOBC                     5 Sec         Running         Enabled
Loopback                 5 Sec         Running         Enabled
----------------------------------------------------------------
Current health information for module 13.
Test                   Frequency       Status          Action
----------------------------------------------------------------
Bootflash               10 Sec         Running         Enabled
EOBC                     5 Sec         Running         Enabled
----------------------------------------------------------------
```

The following example displays the health statistics for all modules:

```
switch# show system health statistics
Test statistics for module # 1
-------------------------------------------------------------------------------
Test Name           State            Freq(s)    Run    Pass    Fail CFail Errs
-------------------------------------------------------------------------------
Bootflash           Running             5s    12900   12900       0     0    0
EOBC                Running             5s    12900   12900       0     0    0
Loopback            Running             5s    12900   12900       0     0    0
-------------------------------------------------------------------------------
Test statistics for module # 3
-------------------------------------------------------------------------------
Test Name           State            Freq(s)    Run    Pass    Fail CFail Errs
-------------------------------------------------------------------------------
Bootflash           Running             5s    12890   12890       0     0    0
EOBC                Running             5s    12890   12890       0     0    0
Loopback            Running             5s    12892   12892       0     0    0
-------------------------------------------------------------------------------
Test statistics for module # 5
-------------------------------------------------------------------------------
Test Name           State            Freq(s)    Run    Pass    Fail CFail Errs
-------------------------------------------------------------------------------
InBand              Running             5s    12911   12911       0     0    0
Bootflash           Running             5s    12911   12911       0     0    0
EOBC                Running             5s    12911   12911       0     0    0
Management Port     Running             5s    12911   12911       0     0    0
-------------------------------------------------------------------------------
Test statistics for module # 6
-------------------------------------------------------------------------------
Test Name           State            Freq(s)    Run    Pass    Fail CFail Errs
-------------------------------------------------------------------------------
InBand              Running             5s    12907   12907       0     0    0
Bootflash           Running             5s    12907   12907       0     0    0
EOBC                Running             5s    12907   12907       0     0    0
-------------------------------------------------------------------------------
Test statistics for module # 8
-------------------------------------------------------------------------------
Test Name           State            Freq(s)    Run    Pass    Fail CFail Errs
-------------------------------------------------------------------------------
Bootflash           Running             5s    12895   12895       0     0    0
EOBC                Running             5s    12895   12895       0     0    0
Loopback            Running             5s    12896   12896       0     0    0
-------------------------------------------------------------------------------
```

The following example displays the statistics for a module:

```
switch# show system health statistics module 3
Test statistics for module # 3
-------------------------------------------------------------------------------
Test Name           State            Freq(s)    Run    Pass    Fail CFail Errs
```

```
--------------------------------------------------------------------------------
Bootflash           Running             5s    12932   12932       0     0    0
EOBC                Running             5s    12932   12932       0     0    0
Loopback            Running             5s    12934   12934       0     0    0
--------------------------------------------------------------------------------
```

The following example displays the loopback test statistics for the entire switch:

```
switch# show system health statistics loopback
-----------------------------------------------------------------
Mod Port Status               Run     Pass     Fail   CFail Errs
  1   16 Running             12953    12953       0       0    0
  3   32 Running             12945    12945       0       0    0
  8    8 Running             12949    12949       0       0    0
-----------------------------------------------------------------
```

The following example displays the loopback test statistics for a specified interface:

```
switch# show system health statistics loopback interface fc 3/1
-----------------------------------------------------------------
Mod Port Status               Run     Pass     Fail   CFail Errs
  3    1 Running                0        0        0       0    0
-----------------------------------------------------------------
```

The following table describes the status value for each module

Table 15: Shows the Status Value for Each Module

Status	Description
Running	OHMS test is running and there are no errors detected.
Failing	OHMS test has started to fail or in the process of failing.
Failed	OHMS test failed.
Stopped	OHMS test stopped. This is a transient state (for example, during upgrades and downgrades).
Exited	OHMS test process or thread exited while running the test.
Not Configured	OHMS test configured to not run on the module.
Int Failed	OHMS test failed because of internal failure.
Diag Failed	OHMS test failed in performing diagnostics.
Suspended	OHMS test suspended because of too many error conditions. OHMS cannot complete the test to determine the hardware status.
Halted	OHMS test is halted because the test is not intended to run on the module. (for example, a specific hardware of which a test is operating is not found on the module).
Enabled	OHMS is disabled by the user but not the test.
Disabled	OHMS test is disabled by the user.

Note Interface-specific counters will remain at zero unless the module-specific loopback test reports errors or failures.

The following example displays the loopback test time log for all modules:

```
switch# show system health statistics loopback timelog
-----------------------------------------------------------------
Mod        Samples     Min(usecs)     Max(usecs)     Ave(usecs)
  1           1872            149            364            222
  3           1862            415            743            549
  8           1865            134            455            349
-----------------------------------------------------------------
```

The following example displays the loopback test statistics for a specified module:

```
switch# show system health statistics loopback module 8 timelog
-----------------------------------------------------------------
Mod        Samples     Min(usecs)     Max(usecs)     Ave(usecs)
  8           1867            134            455            349
-----------------------------------------------------------------
```

The following example displays the loopback test statistics for an interface on a Cisco Fabric Switch for HP c-Class BladeSystem:

```
switch# show system health statistics loopback interface bay1
-----------------------------------------------------------------
Mod Port Status                Run     Pass     Fail   CFail Errs
  1   16 Running                 0        0        0       0    0
-----------------------------------------------------------------
```

The following example displays the frequency and status of the CRC checksum test and a flash update on a single module:

```
switch# show system health module 5
Current health information for module 5.
Test                    Frequency       Status          Action
-----------------------------------------------------------------
Bootflash                10 Sec         Running         Enabled
EOBC                      5 Sec         Running         Enabled
Loopback                  5 Sec         Running         Enabled
CF checksum               7 Days        Running         Enabled
CF re-flash              30 Days        Running         Enabled
-----------------------------------------------------------------
```

The following example displays the CRC checksum test and the flash update statistics on all modules:

```
switch# show system health statistics
Test statistics for module 2
-------------------------------------------------------------------------------
Test Name           State            Frequency  Run    Pass    Fail CFail Errs
-------------------------------------------------------------------------------
Bootflash           Running            10s     1130    1130       0     0    0
EOBC                Running             5s     2268    2268       0     0    0
Loopback            Running             5s     2279    2279       0     0    0
CF checksum         Failed             20s       11       0      23    12    0
CF re-flash         Suspended          30s       12       0       0     0   12
-------------------------------------------------------------------------------
```

```
Test statistics for module 3
------------------------------------------------------------------------------
Test Name           State            Frequency  Run    Pass    Fail CFail Errs
------------------------------------------------------------------------------
Bootflash           Running            10s     1295    1295       0     0    0
EOBC                Running             5s     2591    2591       0     0    0
------------------------------------------------------------------------------
Test statistics for module 4
------------------------------------------------------------------------------
Test Name           State            Frequency  Run    Pass    Fail CFail Errs
------------------------------------------------------------------------------
Bootflash           Running            10s     1299    1299       0     0    0
EOBC                Running             5s     2598    2598       0     0    0
Loopback            Running             5s     2598    2598       0     0    0
CF checksum         Running             7s     2275    2274       0     0    0
CF re-flash         Running            30s      434     434       0     0    0
------------------------------------------------------------------------------
Test statistics for module 5
------------------------------------------------------------------------------
Test Name           State            Frequency  Run    Pass    Fail CFail Errs
------------------------------------------------------------------------------
InBand              Running             5s     2615    2615       0     0    0
Bootflash           Running            10s     1307    1307       0     0    0
EOBC                Running             5s     2615    2615       0     0    0
Management Port     Running             5s     2615    2615       0     0    0
CF checksum         Running             7s     2289    2289       0     0    0
CF re-flash         Running            30s      437     436       0     0    0
------------------------------------------------------------------------------
```

Related Commands

Command	Description
system health module	Configures Online Health Management System (OHMS) features.

show system health isl result interface

To display the results of a Single Hop or Multihop Traffic Test, use the **show system health isl result interface** command.

show system health isl result interface *interface id*

Syntax Description

interface id	Specifies the slot and port of an interface.

Command Default

None

Command Modes

Previleged EXEC mode

Command History

Release	Modification
8.3(1)	This command was introduced.

This example shows the results of a Multihop Hop Traffic Test:

```
switch# show system health isl result interface fc 1/18
------------------------------------------------------------
Multi hop Traffic test Result for port:    fc1/7
Packets Transmitted:                              3065550
Packets Recieved:                                 3065550
ISL traffic Efficiency (percent):                 100.0000
------------------------------------------------------------
```

show system internal snmp lc

To display the active policies of the line card, use the show system internal snmp lc command.

show system internal snmp lc {**module-id** | **counters**}

Syntax Description

module-id	Specifies the module ID number.
counters	Displays the port monitor line card information for module counters.

Command Default

None.

Command Modes

EXEC mode.

Command History

Release	Modification
NX-OS 4.1(1b)	This command was introduced.

Usage Guidelines

None.

Examples

The following example shows the port monitor line card information:

```
switch# show system internal snmp lc 4
-------------------------------------------------------------------------------
-----------
No. of ports monitored: 0
-------------------------------------------------------------------------------
-----------
-------------------------------------------------------------------------------
-----------
Ports:
Time since activation: 23:51:52 UTC Jun 30 2000
-------------------------------------------------------------------------------
-----------
-------------------------------------------------------------------------------
-----------
Counter          Threshold  Interval Rising Threshold event Falling Threshold
event In Use
-------          ---------  -------- ---------------- ----- ------------------ -
---- ------
Link Loss        Delta      60       5                4     1                  4
     Yes
Sync Loss        Delta      60       5                4     1                  4
--More--
switch#
```

The following example shows the port monitor line card information for the module counter:

```
switch# show system internal snmp lc counters
switch#
```

Related Commands

Command	Description
show port monitor active	Shows port monitor active policies.

show system timestamp format

To display the logging timestamp format, use the **show system timestamp** format command.

show system timestamp format

Command Default

Display the logging timestamp format.

Command Modes

Privileged EXEC (#)

Command History

Release	Modification
8.4(1)	This command was introduced.

Examples

The following example displays that the logging timestamp format is set to RFC 5424 compliant:

```
switch# configure terminal
switch(config)# show system timestamp format
System timestamp format: rfc5424
```

The following example displays that the logging timestamp format is set to multiple formats:

```
switch# configure terminal
switch(config)# show system timestamp format
System timestamp format: mixed
```

Related Commands

Command	Description
system timestamp format	Configures the RFC 5424 compliant timestamp format.

show tacacs+

To display the TACACS+ Cisco Fabric Services (CFS) distribution status and other details, use the **show tacacs+** command.

show tacacs+ {**distribution status** | **pending** | **pending-diff**}

Syntax Description

distribution status	Displays the status of the TACACS+ CFS distribution.
pending	Displays the pending configuration that is not yet applied.
pending-diff	Displays the difference between the active configuration and the pending configuration.

Command Default

None.

Command Modes

EXEC mode.

Command History

Release	Modification
2.0(x)	This command was introduced.

Usage Guidelines

To use this command, TACACS+ must be enabled using the **tacacs+ enable** command.

Examples

The following example shows how to display the TACACS+ distribution status:

```
switch# show tacacs+ distribution status
session ongoing: no
session db: does not exist
merge protocol status: merge activation done
last operation: none
last operation status: none
```

Related Commands

Command	Description
tacacs+ distribute	Initiates TACACS+ configuration distribution.
tacacs+ enable	Enables TACACS+.

show tacacs-server

To display all configured TACACS+ server parameters, use the **show tacacs-server** command.

show tacacs-server [*server-nameipv4-addressipv6-address*] [**directed-request** | **groups** | **sorted** | **statistics**]

Syntax Description

server-name	(Optional) Specifies the TACACS+ server DNS name. The maximum is 256.
ipv4-address	(Optional) Specifies the TACACS+ server IP address in the format *A.B.C.D* .
ipv6-address	(Optional) Specifies the TACACS+ server IP address in the format *X:X::X* .
directed-request	(Optional) Displays an enabled directed request TACACS+ server configuration.
groups	(Optional) Displays configured TACACS+ server group information.
sorted	(Optional) Displays TACACS+ server information sorted by name.
statistics	(Optional) Displays TACACS+ statistics for the specified TACACS+ server.

Command Default

None.

Command Modes

EXEC mode.

Command History

Release	Modification
1.3(1)	This command was introduced.
3.0(1)	• Added the *server-name* , *ipv4-address* , and *ipv6-address* arguments. • Added the **directed-request** and **statistics** options.

Usage Guidelines

None.

Examples

The following command displays the configured TACACS+ server information:

```
switch# show tacacs-server
Global TACACS+ shared secret:tacacsPword
timeout value:30
total number of servers:3
following TACACS+ servers are configured:
        171.71.58.91:
                available on port:2
        cisco.com:
                available on port:49
        171.71.22.95:
                available on port:49
                TACACS+ shared secret:MyKey
```

The following command displays the configured TACACS+ server groups:

```
switch# show tacacs-server groups
total number of groups:1
following TACACS+ server groups are configured:
        group TacServer:
                server 171.71.58.91 on port 2
```

show tech-support

To display information useful to technical support when reporting a problem, use the **show tech-support** command in EXEC mode.

show tech-support [**aaa** | **aam** | **acl** [**details**][**commands**] | **all binary** {**bootflash:** | **logflash:** | **slot0:** } | **amm module** *number* | **analytics** | **assoc_mgr** | **biosd** | **bloggerd** | **bloggerd-all** | **bootvar** | **brief** | **callhome** | **cdp** | **cert-enroll** | **cfs** [**name** *application-name*][**commands**] | **cli** | **clis** [**brief**] | **clock_manager** | **commands** | **dcbx** | **details** [**include-time** | **commands**] | **device-alias** | **dftm module** *number* | **dhcp** | **eem** | **eltm** [**lc** {**vdc-once** | **vdc-specific**}[**detail**] | **sup-only**] | **epp** | **eth-qos** [**server-only**] [**all**][**snmp**] | **ethpm** | **ethport** | **fc-management** | **fc-redirect** | **fc2** [**commands**] | **fcdomain** [**commands**] | **fcns vsan** *id_range* | **fcoe** [**commands**] | **fcoe_mgr** | **fcs** | **fib module** *number* | **fib-all** | **flogi** | **forwarding** {**l2** | **l3** | **nve** | **otv**}**multicast**[**detail**] | **fspf** [**commands**] | **gold** | **gpixm** | **ha** [**standby**][**commands**] | **ilc_helper** | **im** | **inband** | **include-time** | **interface** | **l2fm** [**binary** {**bootflash:** | **logflash:** | **slot0:** } | [**clients** | **l2dbg**][**module** *number*] | [**detail**]] | **l2pt** [**detail**] | **lacp** [**all**] | **license** | **lim** | **link-diag** [**commands**] | **lldp** | **logging** | **module** {*number* | **all**} | **monitor** | **monitorc** | **monitorc-all** | **npacl** [**brief**] | **ntp** | **page** [**time-optimized**] | **pds** [**brief**] | **pfstat** | **pixm** | **pixm-all** | **pixmc** | **pixmc-all** | **pktmgr** [**brief**] | **plsm** | **pltfm-config** | **pnp** | **port** | **port-channel** | **port-security** [**vsan** *id_range*] | **qos** | **radius** | **rib** | **rlir** [**vsan** *id_range*] | **rscn** [**vsan** *id_range*] | **security** | **session-mgr** | **slowdrain** [**commands**] | **snm** | **snmp** | **stats_client** | **stp** | **sup-filesys** | **sysmgr** [**commands**] | **tacacs+** | **telemetry** | **time-optimized** [**include-time**] | **vlan** | **vntagc-all** | **vrrp** | **vsan** *id_range* [**commands**] | **vshd** | **xml** | **zone vsan** *id_range* [**commands**]]

Note On a Cisco Fabric Switch for HP c-Class BladeSystem and on a Cisco Fabric Switch for IBM BladeCenter, the syntax differs from **interface fc** *slot*/*port* as follows:**interface** {**bay** *port* **| ext** *port* }

Syntax Description

aaa	(Optional) Displays information for authentication, authorization, and accounting (AAA) troubleshooting.
aam	(Optional) Displays information for Abstract ACL Manager troubleshooting.
acl	(Optional) Displays information for ACL troubleshooting.
all	(Optional) Collects detailed information of all applications for troubleshooting.
amm module *number*	(Optional) Collects detailed information for Advanced Management Module (AMM) troubleshooting.
analytics	(Optional) Collects detailed information for analytics troubleshooting.
assoc_mgr	(Optional) Collects detailed information for assoc_mgr troubleshooting.
binary	Collects detailed information of all applications in binary format for troubleshooting.
biosd	(Optional) Collects BIOS install log for troubleshooting.
bloggerd	(Optional) Collects detailed information for bloggerd troubleshooting.

bloggerd-all	(Optional) Collects detailed information from all modules for bloggerd troubleshooting.
bootflash:	Bootflash directory.
bootvar	(Optional) Displays information for bootvar troubleshooting.
brief	(Optional) Displays a summary of the information for a component.
callhome	(Optional) Displays callhome troubleshooting information.
cdp	(Optional) Collect information for Cisco Discovery Protocol (CDP) troubleshooting.
cert-enroll	(Optional) Displays certificates information.
cfs	(Optional) Displays information for Cisco Fabric Services (CFS) troubleshooting.
cli	(Optional) Collects information for parser troubleshooting.
clients module *number*	(Optional) Displays information of the L2FM troubleshooting.
clis	(Optional) Collects information for CLI server troubleshooting.
clock_manager	(Optional) Collects information for clock manager troubleshooting.
commands	(Optional) Show commands that are executed as part of show tech-support commands.
dcbx	(Optional) Collects information for Data Center Bridging Exchange (DCBX) component.
details	(Optional) Displays detailed information for each **show** command.
device-alias	(Optional) Displays device alias information.
dftm module *number*	(Optional) Collects information for DFTM troubleshooting.
dhcp	(Optional) Collects information for DHCP troubleshooting.
eem	(Optional) Displays Embedded Event Manager (EEM) information for troubleshooting.
eltm	(Optional) Collects information for ELTM troubleshooting.
epp	(Optional) Collects information for exchange peer parameters (EPP) troubleshooting.
ethpm	(Optional) Collects information for Ethernet port manager (ethpm) troubleshooting.
ethport	(Optional) Collects information for Ethernet port (ethport) troubleshooting.
eth-qos	(Optional) Displays IP QoS manager information for troubleshooting.
fc2	(Optional) Displays fc2 information for troubleshooting.

fcdomain	(Optional) Displays information for Fibre Channel domain troubleshooting.
fc-management	(Optional) Displays Fibre Channel Common Transport (FC-CT) Management Security information for troubleshooting.
fcns	(Optional) Displays information for Fibre Channel Naming Server (FCNS) troubleshooting.
fcoe	(Optional) Collects information for Fibre Channel over Ethernet (FCoE) troubleshooting.
fcoe_mgr	(Optional) Collects information for Fibre Channel over Ethernet (FCoE) Manager troubleshooting.
fc-redirect	(Optional) Displays information for Fibre Channel redirect information troubleshooting.
fcs	(Optional) Collects information for Fabric Configuration Server (FCS) troubleshooting.
fib module *number*	(Optional) Collects information for Fibre Channel and FCoE FIB troubleshooting.
fib-all	(Optional) Collects information from all modules for Fibre Channel and FCoE FIB troubleshooting.
flogi	(Optional) Collects information for fabric login (FLOGI) troubleshooting.
forwarding	(Optional) Forwarding debug information.
fspf	(Optional) Displays information for FSPF troubleshooting.
gold	(Optional) Displays information for Generic Online Diagnostics (GOLD) troubleshooting.
gpixm	(Optional) Collects information for global PIXM troubleshooting.
ha	(Optional) Collects information for high availability (HA) troubleshooting.
ilc_helper	(Optional) Collects information for intelligent line card (ILC) helper troubleshooting.
im	(Optional) Collects information for IM troubleshooting.
inband	(Optional) Displays information for in-band management troubleshooting.
include-time	(Optional) Collects the tech-support information and captures the time taken to execute each command.
interface	(Optional) Collects information for interface level troubleshooting.
l2	Layer 2 debugging information.
l2dbg module *number*	(Optional) Captures additional information of the L2FM clients running on modules for troubleshooting.
l2fm	(Optional) Displays information for L2FM troubleshooting.

l2pt	(Optional) Displays information for L2PT troubleshooting.
l3	Layer 3 debugging information.
lacp	(Optional) Displays information for Link Aggregation Control Protocol (LACP) troubleshooting.
lc	(Optional) Collects information for modules troubleshooting only.
license	(Optional) Displays licensing information.
lim	(Optional) Collects information for LIM troubleshooting.
link-diag	(Optional) Collects information for link diagnostics troubleshooting.
lldp	(Optional) Collects information for Link Layer Discovery Protocol (LLDP) troubleshooting.
logflash:	Logflash directory.
logging	(Optional) Displays information for logging troubleshooting.
monitor	(Optional) Displays information for monitor troubleshooting.
monitorc	(Optional) Displays information for monitorc troubleshooting.
monitorc-all	(Optional) Displays information for module monitorc troubleshooting.
multicast	Multicast debugging information.
name *application-name*	(Optional) Specifies an application that uses the CFS infrastructure. Maximum length is 64 characters.
npacl	(Optional) Displays information for npacl troubleshooting.
ntp	(Optional) Displays information for Network Time Protocol (NTP) troubleshooting.
nve	Network Virtualization Edge (NVE) debugging information.
otv	Overlay Transport Virtualization (OTV) debugging information.
page	(Optional) Displays tech-support information page wise.
pds	(Optional) Displays PDS information for troubleshooting.
pfstat	(Optional) Collects information for pfstat troubleshooting.
pixm	(Optional) Collects information for local VDC PIXM troubleshooting.
pixm-all	(Optional) Collects information for PIXM troubleshooting.
pixmc	(Optional) Collects information for PIXMC troubleshooting.
pixmc-all	(Optional) Collects information for module PIXMC troubleshooting.
pktmgr	(Optional) Displays packet manager information for troubleshooting.

plsm	(Optional) Displays information for PLSM troubleshooting.
pltfm-config	(Optional) Collects information for platform configuration troubleshooting.
pnp	(Optional) Displays plug and play information for troubleshooting.
port	(Optional) Displays information for port manager troubleshooting.
port-channel	(Optional) Displays information for PortChannel troubleshooting.
port-security	(Optional) Displays information for port security troubleshooting.
qos	(Optional) Displays information for QoS troubleshooting.
radius	(Optional) Displays information for radius troubleshooting.
rib	(Optional) Collects information for routing information base (RIB) troubleshooting.
rlir	(Optional) Displays information for Registered Link Incident Report (RLIR) troubleshooting.
rscn	(Optional) Displays information for Registered State Change Notification (RSCN) troubleshooting.
security	(Optional) Displays information for security troubleshooting.
server-only	(Optional) Displays only IP QoS manager server information for troubleshooting.
session-mgr	(Optional) Collects information for session manager troubleshooting.
slot0:	External storage directory.
slowdrain	(Optional) Collects information for slowdrain troubleshooting.
snm	(Optional) Displays information for SNM troubleshooting.
snmp	(Optional) Displays information for SNMP troubleshooting.
standby	(Optional) Collects information from standby supervisor for high availability (HA) troubleshooting.
stats_client	(Optional) Displays information for status client troubleshooting.
stp	(Optional) Displays information for Spanning Tree Protocol (STP) troubleshooting.
sup-filesys	(Optional) Displays information for system file troubleshooting.
sup-only	(Optional) Collects only supervisor specific information for troubleshooting.
sysmgr	(Optional) Displays information for system management troubleshooting.
tacacs+	(Optional) Displays information for Terminal Access Controller Access Control device Plus (TACACS+) troubleshooting.
telemetry	(Optional) Displays information for telemetry troubleshooting.

time-optimized	(Optional) Collects tech-support information faster, but requires more memory and disk space.
vdc-once	Collects information for all modules.
vdc-specific	Collects only virtual device context (VDC) specific information.
vlan	(Optional) Collects information for VLAN troubleshooting.
vntagc-all	(Optional) Collects information for module VNTAGC troubleshooting.
vrrp	(Optional) Displays information for Virtual Router Redundancy Protocol (VRRP) troubleshooting.
vsan *vsan-id*	Displays information for VSAN troubleshooting. Specifies a VSAN ID. The range is 1 to 4093.
vshd	(Optional) Displays information for VSHD troubleshooting.
xml	(Optional) Collects information for XML troubleshooting.
zone	Displays information for zone server troubleshooting.

Command Default

The default output of the **show tech-support** command includes the output of the following **show** commands:

- show version
- show environment
- show module
- show hardware
- show running-config
- show interface
- show accounting log
- show process
- show process log
- show processes log details
- show flash

Command Modes

EXEC mode.

Command History

Release	Modification
1.3(4)	This command was introduced.
3.0(1)	Added the **fcdomain**, **port-channel**, and **zone** options.

Release	Modification
3.0(3)	Added the **cfs**, **fcip**, **fspf**, **fta**, **ip**, **license**, **prefpath**, and **vrrp** options.
3.1(1)	Added the **device-alias** keyword.
3.1(2)	Added the **bay** *port* **| ext** *port* keywords and arguments.

Usage Guidelines

The **show tech-support** command is useful when collecting a large amount of information about your switch for troubleshooting purposes. The output of this command can be provided to technical support representatives when reporting a problem.

The **show tech-support** command displays the output of several **show** commands at once. The output from this command varies depending on your configuration. Use the **show tech-support** command in EXEC mode to display general information about the switch when reporting a problem.

You can choose to have detailed information for each command or even specify the output for a particular interface, module, or VSAN.

Examples

The following example displays technical support information for a specific module:

```
switch# show tech-support module 1
'terminal length 0'
'show module '
Mod  Ports  Module-Type                      Model              Status
---  -----  -------------------------------- ------------------ ------------
1    16     1/2 Gbps FC/Supervisor           DS-X9216-K9-SUP    active *
2    32     1/2 Gbps FC Module               DS-X9032           ok
Mod  Sw           Hw      World-Wide-Name(s) (WWN)
---  -----------  ------  --------------------------------------------------
1    1.0(0.271)   0.0     20:01:00:05:30:00:21:9e to 20:10:00:05:30:00:21:9e
2    1.0(0.271)   0.0     20:41:00:05:30:00:21:9e to 20:60:00:05:30:00:21:9e
Mod  MAC-Address(es)                         Serial-Num
---  --------------------------------------  ----------
1    00-05-30-00-40-b6 to 00-05-30-00-40-ba
2    00-05-30-00-11-22 to 00-05-30-00-11-26
* this terminal session
'show environment'
Clock:
----------------------------------------------------------
Clock           Model                Hw         Status
----------------------------------------------------------
A               Clock Module         --         ok/active
B               Clock Module         --         ok/standby
Fan:
-----------------------------------------------------
Fan             Model                Hw         Status
-----------------------------------------------------
Chassis         DS-2SLOT-FAN         0.0        ok
PS-1            --                   --         ok
PS-2            --                   --         absent
Temperature:
--------------------------------------------------------------------
Module   Sensor   MajorThresh   MinorThres   CurTemp     Status
                  (Celsius)     (Celsius)    (Celsius)
--------------------------------------------------------------------
1        1        75           60           30          ok
1        2        65           50           28          ok
1        3        -127         -127         40          ok
```

```
1        4        -127          -127          36          ok
2        1        75            60            32          ok
2        2        65            50            26          ok
2        3        -127          -127          41          ok
2        4        -127          -127          31          ok
```

The **show tech-support brief** command provides a summary of the current running state of the switch.

```
switch# show tech-support brief
Switch Name           : vegas01
Switch Type           : DS-X9216-K9-SUP
Kickstart Image       : 1.3(2a) bootflash:///m9200-ek9-kickstart-mz.1.3.1.10.bin
System Image          : 1.3(2a) bootflash:///m9200-ek9-mz.1.3.1.10.bin
IP Address/Mask       : 10.76.100.164/24
Switch WWN            : 20:00:00:05:30:00:84:9e
No of VSANs           : 9
Configured VSANs      : 1-6,4091-4093
VSAN    1:    name:VSAN0001, state:active, interop mode:default
              domain id:0x6d(109), WWN:20:01:00:05:30:00:84:9f [Principal]
              active-zone:VR, default-zone:deny
VSAN    2:    name:VSAN0002, state:active, interop mode:default
              domain id:0x7d(125), WWN:20:02:00:05:30:00:84:9f [Principal]
              active-zone:<NONE>, default-zone:deny
VSAN    3:    name:VSAN0003, state:active, interop mode:default
              domain id:0xbe(190), WWN:20:03:00:05:30:00:84:9f [Principal]
              active-zone:<NONE>, default-zone:deny
VSAN    4:    name:VSAN0004, state:active, interop mode:default
              domain id:0x5a(90), WWN:20:04:00:05:30:00:84:9f [Principal]
              active-zone:<NONE>, default-zone:deny
VSAN    5:    name:VSAN0005, state:active, interop mode:default
              domain id:0x13(19), WWN:20:05:00:05:30:00:84:9f [Principal]
              active-zone:<NONE>, default-zone:deny
VSAN    6:    name:VSAN0006, state:active, interop mode:default
              domain id:0x1f(31), WWN:20:06:00:05:30:00:84:9f [Principal]
              active-zone:<NONE>, default-zone:deny
VSAN 4091:    name:VSAN4091, state:active, interop mode:default
              domain id:0x08(8), WWN:2f:fb:00:05:30:00:84:9f [Principal]
              active-zone:<NONE>, default-zone:deny
VSAN 4092:    name:VSAN4092, state:active, interop mode:default
              domain id:0x78(120), WWN:2f:fc:00:05:30:00:84:9f [Principal]
              active-zone:<NONE>, default-zone:deny
VSAN 4093:    name:VSAN4093, state:active, interop mode:default
              domain id:0x77(119), WWN:2f:fd:00:05:30:00:84:9f [Principal]
              active-zone:<NONE>, default-zone:deny
--------------------------------------------------------------------------------
Interface  Vsan   Admin  Admin   Status          FCOT   Oper  Oper   Port
                  Mode   Trunk                          Mode  Speed  Channel
                         Mode                                (Gbps)
--------------------------------------------------------------------------------
fc1/1      1      auto   on      fcotAbsent       --     --           --
fc1/2      1      auto   on      fcotAbsent       --     --           --
fc1/3      1      auto   on      fcotAbsent       --     --           --
fc1/4      1      auto   on      fcotAbsent       --     --           --
fc1/5      1      auto   on      notConnected     swl    --           --
fc1/6      1      auto   on      fcotAbsent       --     --           --
fc1/7      1      auto   on      fcotAbsent       --     --           --
fc1/8      1      auto   on      fcotAbsent       --     --           --
fc1/9      1      auto   on      fcotAbsent       --     --           --
fc1/10     1      auto   on      fcotAbsent       --     --           --
fc1/11     1      auto   on      fcotAbsent       --     --           --
fc1/12     1      auto   on      fcotAbsent       --     --           --
fc1/13     1      auto   on      fcotAbsent       --     --           --
```

```
fc1/14     1      auto   on      fcotAbsent       --     --           --
fc1/15     1      auto   on      fcotAbsent       --     --           --
fc1/16     1      auto   on      fcotAbsent       --     --           --
-------------------------------------------------------------------------------
Interface          Status                          Speed
                                                   (Gbps)
-------------------------------------------------------------------------------
sup-fc0            up                              1
-------------------------------------------------------------------------------
Interface               Status     IP Address        Speed        MTU
-------------------------------------------------------------------------------
mgmt0                   up         10.76.100.164/24  100 Mbps     1500
Power Supply:
------------------------------------------------------
PS  Model                Power     Power       Status
                         (Watts)   (Amp @42V)
------------------------------------------------------
1   WS-CAC-950W          919.38    21.89       ok
2                        --        --          absent
Mod Model                Power     Power       Power     Power       Status
                         Requested Requested   Allocated Allocated
                         (Watts)   (Amp @42V)  (Watts)   (Amp @42V)
--- -------------------  -------   ----------  --------- ----------  ----------
1    DS-X9216-K9-SUP     220.08    5.24        220.08    5.24        powered-up
2    DS-X9032            199.92    4.76        199.92    4.76        powered-up
Power Usage Summary:
--------------------
Power Supply redundancy mode:                   redundant
Total Power Capacity                            919.38   W
Power reserved for Supervisor(s)[-]             220.08   W
Power reserved for Fan Module(s)[-]             47.88    W
Power currently used by Modules[-]              199.92   W
                                                -------
Total Power Available                           451.50
```

The following example displays zone server information for VSAN 1:

```
switch# show tech-support zone vsan 1
`show zone status vsan 1`
VSAN: 1 default-zone: permit distribute: active only Interop: default
    mode: basic merge-control: allow session: none
    hard-zoning: enabled
Default zone:
    qos: disabled broadcast: disabled ronly: disabled
Full Zoning Database :
    Zonesets:0  Zones:0 Aliases: 0
Active Zoning Database :
    Name: vhost-zone  Zonesets:1  Zones:9
Status: Activation failed [Error: Unknown error Dom 21]:
        at 23:36:44 UTC Dec 19 2005
```

The following example displays a partial listing of output from the **show tech-support device-alias** command:

```
switch# show tech-support device-alias
`show device-alias database`
device-alias name dev2 pwwn 10:00:00:00:c9:2e:31:37
device-alias name sdv1 pwwn 50:00:53:00:00:85:c0:01
device-alias name svc1 pwwn 20:0f:00:05:30:00:eb:48
device-alias name sdv-1 pwwn 50:00:53:00:00:e9:7f:a1
device-alias name sdv-2 pwwn 50:00:53:00:01:4e:af:a1
device-alias name sdv-3 pwwn 50:00:53:00:01:da:2f:a1
device-alias name sdv-4 pwwn 50:00:53:00:01:cb:af:a1
```

```
device-alias name qloGics pwwn 21:00:00:e0:8b:06:61:d4
device-alias name sdv-501 pwwn 50:00:53:00:00:85:c1:f5
device-alias name sym-hba1 pwwn 50:06:04:82:ca:e1:26:83
device-alias name fred-hba1 pwwn 22:00:00:20:37:d2:03:ed
device-alias name fred-hba2 pwwn 22:00:00:20:37:d2:10:f9
device-alias name sdv1-4001 pwwn 50:00:53:00:01:0f:0f:a1
device-alias name sdv2-4001 pwwn 50:00:53:00:00:66:4f:a1
device-alias name HDS33074-C pwwn 50:06:0e:80:03:81:32:06
device-alias name clarion2345 pwwn 50:06:01:61:10:60:14:f5
device-alias name iscsi-alias pwwn 27:09:00:08:00:ad:00:03
device-alias name seaGate0306 pwwn 22:00:00:20:37:d2:03:d6
Total number of entries = 18
```

show tech-support details | i "show hardware internal sup-fc0 interface-stats" n 30

To display the hardware interface statistics technical support information, use the show tech-support details command.

show tech-support details
show hardware internal sup-fc0 interface-stats

Syntax Description

This command has no arguments or keywords.

Command Default

None.

Command Modes

EXEC mode

Command History

Release	Modification
9.3(2)	This command was introduced.

Usage Guidelines

None.

Examples

The following example shows how to display the hardware interface statistics technical support information:

```
switch(config)# show tech-support details | i "show hardware internal sup-fc0 interface-stats"
 n 30
Show tech details will take 4-8 minutes to complete. Please Wait ...
show tech-support fcoe will take 2-4 minutes to complete
`show hardware internal sup-fc0 interface-stats`

RMON counters                              Rx                  Tx
---------------------+--------------------+--------------------
total packets                       12049405             12049425
good packets                        12049405             12049425
64 bytes packets                           0                    0
65-127 bytes packets                 7898960              7631302
128-255 bytes packets                2304252              2407762
256-511 bytes packets                1817588              2007062
512-1023 bytes packets                 28230                 2701
1024-max bytes packets                   375                  598
broadcast packets                          0                    0
multicast packets                          0                    0
good octets                       1933665874           1983918950
total octets                               0                    0
XON packets                                0                    0
XOFF packets                               0                    0
management packets                         0                    0

Per Queue Stats
-------------------+--

Queue Idx    COS        Packet Count               Bytes               Drops
```

```
Csum Errors   Allocation Failure
-------+-----+-----------------+-----------------+-----------------+-----------------+-----------------
Queue 0    5,6,7                    0                    0                    0
        0                    0
Queue 1      3,4                    0                    0                    0
        0                    0
Queue 2        2                    0                    0                    0
        0                    0
Queue 3      0,1              12049405           1885468254                    0
        0                    0
Queue 4      n/a                    0                    0                    0
        0                    0
Queue 5      n/a                    0                    0                    0
        0                    0
```

Related Commands

Command	Description
show hardware	Displays all hardware components on a system.
show interface	Displays the status of an interface.

show tech-support fc-management

To display the Fibre Channel Common Transport (FC-CT) management security technical support information, use the show tech-support fc-management command.

show tech-support fc-management

Syntax Description

This command has no arguments or keywords.

Command Default

None.

Command Modes

EXEC mode

Command History

Release	Modification
6.2(9)	This command was introduced.

Usage Guidelines

None.

Examples

The following example shows how to display the FC-CT management security technical support information:

```
switch(config)# show tech-support fc-management
`show fc-management status`
Mgmt Security Enabled
`show fc-management database`
Fc-Management Security Database
-----------------------------------------------------------------
VSAN       PWWN              FC-CT Permissions per FC services
-----------------------------------------------------------------
1    01:01:01:01:01:01:01:01   Zone(RW), Unzoned-NS(RW), FCS(RW), FDMI(RW)
-----------------------------------------------------------------
Total 1 entries
 `show fc-management shared-db`
Empty Database
switch(config)#
```

Related Commands

Command	Description
show fc-management	Displays the FC-CT management security information.

show tech-support sme

To display the information for Cisco SME technical support, use the **show tech-support sme** command.

show tech-support sme compressed bootflash: | tftp:

Syntax Description

compressed	Saves the compressed Cisco SME .
bootflash:	Specifies the filename that need to be stored.
tftp:	Specifies the filename that need to be stored.

Command Default

None.

Command Modes

EXEC mode

Command History

Release	Modification
3.3(1c)	This command was introduced.
NX-OS 4.1(1c)	Added the Command output.

Usage Guidelines

None.

Examples

The following example displays the information for SME technical support:

```
sw-sme-n1# show tech-support sme
'show startup-config'
version 4.1(1)
username admin password 5 $1$jC/GIid6$PuNDstXwdAnwGaxxjdxi50  role network-admin
no password strength-check
feature telnet
ntp server 10.81.254.131
kernel core target 0.0.0.0
kernel core limit 1
aaa group server radius radius
snmp-server user admin network-admin auth md5 0x7eedfdadb219506ca61b0e2957cc7ef5
 priv 0x7eedfdadb219506ca61b0e2957cc7ef5 localizedkey
snmp-server host 171.71.49.157 informs version 2c public  udp-port 2162
snmp-server enable traps license
snmp-server enable traps entity fru
device-alias database
  device-alias name sme-host-171-hba0 pwwn 21:01:00:e0:8b:39:d7:57
  device-alias name sme-host-171-hba1 pwwn 21:00:00:e0:8b:19:d7:57
  device-alias name sme-host-172-hba0 pwwn 21:01:00:e0:8b:39:c2:58
  device-alias name sme-host-172-hba1 pwwn 21:00:00:e0:8b:19:c2:58
  device-alias name sme-sanblaze-port0-tgt0 pwwn 2f:ff:00:06:2b:0d:39:08
  device-alias name sme-sanblaze-port0-tgt1 pwwn 2f:df:00:06:2b:0d:39:08
--More--
```

show telemetry

To display the telemetry configuration, use the **show telemetry** command.

show telemetry {**control** {**database** [**destination-groups** | **destinations** | **sensor-groups** | **sensor-paths** | **subscriptions**] | **stats**} | **data collector** {**brief** | **details**} | **pipeline stats** | **transport** *session_id* [**errors** | **stats**]}

Syntax Description

control database	Telemetry database information.
control stats	Telemetry statistics information.
destination-groups	Telemetry database information of destination groups.
destinations	Telemetry database information of destination IP addresses.
sensor-groups	Telemetry database information of sensor groups.
sensor-paths	Telemetry database information of sensor paths.
subscriptions	Telemetry database information of subscriptions.
data collector	Telemetry data collector information.
brief	Brief information of the telemetry data collector.
details	Detailed information of telemetry data collector.
pipeline stats	Telemetry pipeline statistics.
transport *session_id*	Detailed session information for a specific transport session.
errors	Telemetry transport session errors.
stats	Telemetry transport session statistics.

Command Default

Displays telemetry configuration information.

Command Modes

Privileged EXEC (#)

Command History

Release	Modification
8.3(1)	This command was introduced.

Examples

This example displays the internal databases that reflect the configuration of STS:

```
switch# show telemetry control database ?
  <CR>
  >                   Redirect it to a file
```

```
  >>                  Redirect it to a file in append mode
  destination-groups  Show destination-groups
  destinations        Show destinations
  sensor-groups       Show sensor-groups
  sensor-paths        Show sensor-paths
  subscriptions       Show subscriptions
  |                   Pipe command output to filter

switch# show telemetry control database
Subscription Database size = 1
------------------------------------------------------------------------------
Subscription ID      Data Collector Type
------------------------------------------------------------------------------
100                  SDB

Sensor Group Database size = 1
------------------------------------------------------------------------------------------------
Row ID Sensor Group ID Sensor Group type Sampling interval(ms) Linked subscriptions  SubID

------------------------------------------------------------------------------------------------
1          100              Timer   /SDB       30000     /Running      1              100

Collection Time in ms (Cur/Min/Max): 53/9/81
Encoding Time in ms (Cur/Min/Max): 21/6/33
Transport Time in ms (Cur/Min/Max): 10470/1349/11036
Streaming Time in ms (Cur/Min/Max): 10546/9/11112

Collection Statistics:
  collection_id_dropped      = 0
  last_collection_id_dropped = 0
  drop_count                 = 0


Sensor Path Database size = 4
------------------------------------------------------------------------------------------------
Row ID  Subscribed Linked  Sec    Retrieve  Path                    Query:  Filter
                   Groups  Groups level     (GroupId):
------------------------------------------------------------------------------------------------
1       No         1       0      Self      analytics:inititl(100): NA :    NA
GPB Encoded Data size in bytes (Cur/Min/Max): 162310/162014/162320
JSON Encoded Data size in bytes (Cur/Min/Max): 0/0/0

2       No         1       0       Self      show_stats_fc1/3(100): NA :    NA
GPB Encoded Data size in bytes (Cur/Min/Max): 2390/2390/2390
JSON Encoded Data size in bytes (Cur/Min/Max): 0/0/0

3       No         1       0       Self      analytics:initit(100): NA :    NA
GPB Encoded Data size in bytes (Cur/Min/Max): 158070/157444/158082
JSON Encoded Data size in bytes (Cur/Min/Max): 0/0/0

4       No         1       0       Self      analytics:init(100):   NA :    NA
GPB Encoded Data size in bytes (Cur/Min/Max): 159200/158905/159212
JSON Encoded Data size in bytes (Cur/Min/Max): 0/0/0


Destination Group Database size = 1
> use-vrf : default
------------------------------------------------------------------------------
Destination Group ID  Refcount
------------------------------------------------------------------------------
100                   1

Destination Database size = 3
------------------------------------------------------------------------------
```

```
Dst IP Addr     Dst Port   Encoding   Transport  Count
------------------------------------------------------------------------------
10.30.217.80    50009      GPB        gRPC       1
2001:420:301:2005:3::11
                60003      GPB        gRPC       1
2001:420:54ff:a4::230:e5
              50013       GPB       gRPC       1

switch(conf-tm-dest)# show telemetry control database sensor-groups
Sensor Group Database size = 1
------------------------------------------------------------------------------------------------
Row ID     Sensor Group ID  Sensor Group type  Sampling interval(ms)  Linked subscriptions
  SubID
------------------------------------------------------------------------------------------------
1          100              Timer   /SDB       30000     /Running      1
   100
Collection Time in ms (Cur/Min/Max): 53/9/81
Encoding Time in ms (Cur/Min/Max): 21/21/33
Transport Time in ms (Cur/Min/Max): 10304/461/15643
Streaming Time in ms (Cur/Min/Max): 10380/9/15720

Collection Statistics:
  collection_id_dropped      = 0
  last_collection_id_dropped = 0
  drop_count                 = 0
```

This example displays the statistic regarding the internal databases configuration of STS:

```
switch# show telemetry control stats
show telemetry control stats entered

------------------------------------------------------------------------------
Error Description                                                 Error Count
------------------------------------------------------------------------------
Chunk allocation failures                                         0
Sensor path Database chunk creation failures                      0
Sensor Group Database chunk creation failures                     0
Destination Database chunk creation failures                      0
Destination Group Database chunk creation failures                0
Subscription Database chunk creation failures                     0
Sensor path Database creation failures                            0
Sensor Group Database creation failures                           0
Destination Database creation failures                            0
Destination Group Database creation failures                      0
Subscription Database creation failures                           0
Sensor path Database insert failures                              0
Sensor Group Database insert failures                             0
Destination Database insert failures                              0
Destination Group Database insert failures                        0
Subscription insert to Subscription Database failures             0
Sensor path Database delete failures                              0
Sensor Group Database delete failures                             0
Destination Database delete failures                              0
Destination Group Database delete failures                        0
Delete Subscription from Subscription Database failures           0
Sensor path delete in use                                         0
Sensor Group delete in use                                        0
Destination delete in use                                         0
Destination Group delete in use                                   0
Delete destination(in use) failure count                          0
Sensor path Sensor Group list creation failures                   0
Sensor path prop list creation failures                           0
Sensor path sec Sensor path list creation failures                0
```

```
Sensor path sec Sensor Group list creation failures          0
Sensor Group Sensor path list creation failures              0
Sensor Group Sensor subs list creation failures              0
Destination Group subs list creation failures                0
Destination Group Destinations list creation failures        0
Destination Destination Groups list creation failures        0
Subscription Sensor Group list creation failures             0
Subscription Destination Groups list creation failures       0
Sensor Group Sensor path list delete failures                0
Sensor Group Subscriptions list delete failures              0
Sensor Group Subscriptions unsupported data-source failures  0
Destination Group Subscriptions list delete failures         0
Destination Group Destinations list delete failures          0
Subscription Sensor Groups list delete failures              0
Subscription Destination Groups list delete failures         0
Destination Destination Groups list delete failures          0
Failed to delete Destination from Destination Group          0
Failed to delete Destination Group from Subscription         0
Failed to delete Sensor Group from Subscription              0
Failed to delete Sensor path from Sensor Group               0
Failed to get encode callback                                0
Failed to get transport callback                             0
```

This example displays the brief statistic regarding the data collection:

```
switch# show telemetry data collector brief
-------------------------------------------------------------------------------
Row ID         Collector Type       Successful        Failed            Skipped
-------------------------------------------------------------------------------
1              NX-API               0                 0                 0
2              SDB                  1513              902               0
```

This example displays detailed statistics regarding the data collection that includes breakdown of all sensor paths:

```
switch# show telemetry data collector details
-------------------------------------------------------------------------------
Row ID         Successful     Failed         Skipped        Sensor Path(GroupId)
-------------------------------------------------------------------------------
1              496            305            0              analytics:initit1(100)
2              16             0              0              show_stats_fc1/3(100)
3              507            294            0              analytics:initit(100)
4              498            303            0              analytics:init(100)
```

This example displays the statistics for the STS pipeline:

```
switch# show telemetry pipeline stats
Main Statistics:
    Timers:
        Errors:
            Start Fail        =     0

    Data Collector:
        Errors:
            Node Create Fail  =     0

    Event Collector:
        Errors:
            Node Create Fail  =     0    Node Add Fail     =     0
```

```
            Invalid Data      =     0

    Memory:
        Allowed Memory Limit                = 838860800 bytes
        Occupied Memory                     = 53399552 bytes

Queue Statistics:
    Request Queue:
        High Priority Queue:
            Info:
                Actual Size       =    50    Current Size      =     0
                Max Size          =     0    Full Count        =     0

            Errors:
                Enqueue Error     =     0    Dequeue Error     =     0

        Low Priority Queue:
            Info:
                Actual Size       =    50    Current Size      =     0
                Max Size          =     0    Full Count        =     0

            Errors:
                Enqueue Error     =     0    Dequeue Error     =     0

    Data Queue:
        High Priority Queue:
            Info:
                Actual Size       = 160000    Current Size      =     0
                Max Size          =     0    Full Count        =     0

            Errors:
                Enqueue Error     =     0    Dequeue Error     =     0

        Low Priority Queue:
            Info:
                Actual Size       =     2    Current Size      =     0
                Max Size          =     0    Full Count        =     0

            Errors:
                Enqueue Error     =     0    Dequeue Error     =     0
```

This example displays all configured transport sessions:

```
switch# show telemetry transport
Session Id      IP Address      Port       Encoding   Transport  Status
---------------------------------------------------------------------------------
2               10.30.217.80    50009      GPB        gRPC       Connected
0               2001:420:301:2005:3::11
                                60003      GPB        gRPC       Connected
1               2001:420:54ff:a4::230:e5
                                50013      GPB        gRPC       Transmit Error
---------------------------------------------------------------------------------

Retry buffer Size:             10485760
Event Retry Messages (Bytes):  0
Timer Retry Messages (Bytes):  10272300
Total Retries sent:            0
Total Retries Dropped:         5377
```

This example displays detailed session information for a specific transport session:

```
switch# show telemetry transport 0
Session Id:          2
IP Address:Port      10.30.217.80:50009
Transport:           GRPC
Status:              Connected
Last Connected:      Fri Jun 22 07:07:12.735 UTC
Last Disconnected:   Never
Tx Error Count:      0
Last Tx Error:       None
Event Retry Queue Bytes:       0
Event Retry Queue Size:        0
Timer Retry Queue Bytes:       0
Timer Retry Queue Size:        0
Sent Retry Messages:           0
Dropped Retry Messages:        0
```

This example displays details of a specific transport session:

```
switch# show telemetry transport 2 stats
Session Id:                    2
Connection Stats
   Connection Count            2
   Last Connected:             Fri Jun 22 07:07:12.735 UTC
   Disconnect Count            0
   Last Disconnected:          Never
Transmission Stats
   Compression:                disabled
   Source Interface:           not set()
   Transmit Count:             44
   Last TX time:               Fri Jun 22 07:14:16.533 UTC
   Min Tx Time:                227                ms
   Max Tx Time:                3511               ms
   Avg Tx Time:                1664               ms
   Cur Tx Time:                227                ms
```

This example displays detailed error statistics for a specific transport session:

```
switch# show telemetry transport 2 errors
Session Id:                    1
Connection Errors
   Connection Error Count:     0
Transmission Errors
   Tx Error Count:             1746
   Last Tx Error:              Fri Jun 22 07:15:07.970 UTC
   Last Tx Return Code:        UNAVAILABLE
```

Note The following return codes can be seen in the **show telemetry transport errors** output:

- OK—There were no errors detected.
- UNAVAILABLE—The configured IP address or port is not reachable. Check the configuration to verify if you have configured the correct IP address or port.
- DEADLINE_EXCEEDED—Receiver has not responded for more 30 seconds or there are network delays.

Related Commands

Command	Description
destination-group	Creates a destination group and enters destination group configuration mode.
feature telemetry	Enables the SAN Telemetry Streaming feature.
sensor-group	Creates a sensor group and enters sensor group configuration.
show running-config telemetry	Displays the existing telemetry configuration.
subscription	Creates a subscription node and enters subscription node configuration mode.
telemetry	Enters SAN Telemetry Streaming configuration mode.

show telnet server

To display the state of the Telnet access configuration, use the **show telnet server** command.

show telnet server

Syntax Description

This command has no arguments or keywords.

Command Default

None.

Command Modes

EXEC mode.

Command History

Release	Modification
1.0(2)	This command was introduced.

Usage Guidelines

None.

Examples

The following example displays the status of the Telnet server:

```
switch# show telnet server
telnet service enabled
```

show terminal

To display the terminal information, use the **show terminal** command

show terminal

Syntax Description

This command has no arguments or keywords.

Command Default

None.

Command Modes

EXEC mode.

Command History

Release	Modification
1.0(2)	This command was introduced.

Usage Guidelines

None.

Examples

The following example displays terminal information:

```
switch# show terminal
TTY:  Type: "vt100"
Length: 25 lines, Width: 80 columns
Session Timeout: 30 minutes
```

show time-stamp running-config last-changed

To display the time stamp on when the running configuration was last changed, use the **show time-stamp running-config last-changed** command.

show time-stamp running-config last-changed

Syntax Description

This command has no arguments or keywords.

Command Default

Displays only the configured information.

Command Modes

Privileged EXEC (#)

Command History

Release	Modification
8.3(1)	This command was introduced.

Examples

This example displays the output after a normal reload when there is no change made in running configuration:

```
switch# show time-stamp running-config last-changed
No configuration change since last restart
```

This example displays the output of the time stamp after making changes in running configuration:

```
switch# show time-stamp running-config last-changed
Running configuration last done at: Mon Jul 16 10:17:17 2018
```

This example displays the output of the **show running-configuration** command that shows information about the last changed configuration:

```
switch# show running-config

!Command: show running-config
!Running configuration last done at: Mon Jul 16 10:17:17 2018
!Time: Tue Jul 17 08:11:46 2018

version 8.3(1)
power redundancy-mode redundant

feature telemetry
feature nxapi
feature analytics
```

Related Commands

Command	Description
show running-config	Displays the running configuration.

Command	Description
show running-config diff	Displays the differences between the running configuration and the startup configuration.
show startup-config	Displays the startup configuration.

show tlport

To display configured TL port information, use the **show tlport** command

show tlport {**alpa-cache** | **discapp fcid** *fcid-id* [**vsan** *vsan-id*] [**verbose**] | **interface fc** *slot / port* {**all** | **private** | **proxied** | **topology** | **unsupported**} | **list** [**vsan** *vsan-id*]}

Syntax Description

alpa-cache	Displays the contents of the ALPA cache.
discapp	Displays private N port parameters.
fcid *fcid-id*	Specifies the FCID of the N port.
vsan *vsan-id*	(Optional) Specifies the N port VSAN ID. The range is 1 to 4093.
verbose	(Optional) Specifies the verbose mode.
interface	Displays TL ports in the selected interface.
fc *slot*/*port*	Specifies the Fiber Channel interface at the specified slot and port.
all	Displays all proxied and private devices on this TL port.
private	Displays all private devices on this TL port.
proxied	Displays all proxied devices on this TL port.
topology	Displays loop topology for this TL port.
unsupported	Displays all unsupported devices on this TL port.
list	Displays TL ports in all VSANs.

Command Default

None.

Command Modes

EXEC mode.

Command History

Release	Modification
NX-OS 5.0 and later releases	This command was deprecated.
1.0(2)	This command was introduced.

Usage Guidelines

The **show tlport** command displays the TL port interface configurations. This command provides a list of all TL ports configured on a box and displays the associated VSAN, the FCID for the port (only domain and area are valid), and the current operational state of the TL port (up or initializing).

Examples

The following example displays the TL ports in all VSANs:

```
switch# show tlport list
------------------------------
Interface Vsan FC-ID    State
------------------------ ------
fc1/16    1    0x420000 Init
fc2/26    1    0x150000 Up
```

The following example displays the detailed information for a specific TL port:

```
switch# show tlport interface fc1/16 all
fc1/16 is up, vsan 1, FCID 0x420000
-------------------------------------------------------------------------------- alpa pWWN
                    nWWN                    SCSI Type Device  FC-ID
-------------------------------------------------------------------------------- 0x01
20:10:00:05:30:00:4a:de 20:00:00:05:30:00:4a:de Initiator Proxied 0xfffc42 0x73
22:00:00:20:37:39:ae:54 20:00:00:20:37:39:ae:54 Target    Private 0x420073 0xef
20:10:00:05:30:00:4a:de 20:00:00:05:30:00:4a:de Initiator Switch  0x0000ef
```

The following example displays TL port information for private devices:

```
switch# show tlport int fc1/16 pri
fc1/16 is up, vsan 1, FCID 0x420000
------------------------------------------------------------------------
alpa pWWN                   nWWN                    SCSI Type FC-ID
------------------------------------------------------------------------
0x73 22:00:00:20:37:39:ae:54 20:00:00:20:37:39:ae:54 Target    0x420073
0x74 22:00:00:20:37:38:d3:de 20:00:00:20:37:38:d3:de Target    0x420074
```

The following example displays TL port information for proxied devices:

```
switch# show tlport int fc1/16 prox

fc1/16 is up, vsan 1, FCID 0x420000
------------------------------------------------------------------------
alpa pWWN                   nWWN                    SCSI Type FC-ID
------------------------------------------------------------------------
0x01 20:10:00:05:30:00:4a:de 20:00:00:05:30:00:4a:de Initiator 0xfffc42
0x02 21:00:00:e0:8b:01:95:e7 20:00:00:e0:8b:01:95:e7 Initiator 0x420100
```

The following example displays the contents of the alpa-cache:

```
switch# show tlport alpa-cache
-----------------------------------------------------
alpa              pWWN               Interface
-----------------------------------------------------
0x02  22:00:00:20:37:46:09:bd     fc1/2
0x04  23:00:00:20:37:46:09:bd     fc1/2
```

show topology

To display topology information for connected switches, use the **show topology** command.

show topology [**vsan vsan-id**]

Syntax Description

vsan *vsan-id*	(Optional) Displays information for a VSAN. The range is 1 to 4093.

Command Default

None.

Command Modes

EXEC mode.

Command History

Release	Modification
6.2(9)	Added a note.
2.0(x)	This command was introduced.

Usage Guidelines

None.

Note In scenarios where the show topology command output has few missing parameters like switchname, IP address etc. Please re-execute this command after few seconds.

Examples

The following example displays topology information:

```
switch# show topology

FC Topology for VSAN 1 :
--------------------------------------------------------------------------------
       Interface  Peer Domain Peer Interface     Peer IP Address(Switch Name)
--------------------------------------------------------------------------------
           fc4/15 0xef(239)            fc1/4  10.126.74.188(sw1-gd99)

FC Topology for VSAN 2 :
--------------------------------------------------------------------------------
       Interface  Peer Domain Peer Interface     Peer IP Address(Switch Name)
--------------------------------------------------------------------------------
           fc4/15 0x6e(110)            fc1/4  10.126.74.188(sw1-gd99)

FC Topology for VSAN 17 :
--------------------------------------------------------------------------------
       Interface  Peer Domain Peer Interface     Peer IP Address(Switch Name)
--------------------------------------------------------------------------------
           fc4/15  0x0c(12)            fc1/4  10.126.74.188(sw1-gd99)

FC Topology for VSAN 27 :
--------------------------------------------------------------------------------
       Interface  Peer Domain Peer Interface     Peer IP Address(Switch Name)
```

```
--------------------------------------------------------------------------------
            fc4/1  0x62(98)         Port 10   10.126.74.183(Brocade4100_110)
           fc4/10  0x41(65)           fc1/3  10.126.74.188(sw1-gd99)
           fc4/12  0x62(98)          Port 7   10.126.74.183(Brocade4100_110)
           fc4/13  0x62(98)         Port 13   10.126.74.183(Brocade4100_110)
           fc4/15  0x41(65)           fc1/4  10.126.74.188(sw1-gd99)

FC Topology for VSAN 72 :
--------------------------------------------------------------------------------
       Interface  Peer Domain Peer Interface     Peer IP Address(Switch Name)
--------------------------------------------------------------------------------
           fc4/15 0x9d(157)           fc1/4  10.126.74.188(sw1-gd99)

FC Topology for VSAN 99 :
--------------------------------------------------------------------------------
       Interface  Peer Domain Peer Interface     Peer IP Address(Switch Name)
--------------------------------------------------------------------------------
           fc4/15 0xd3(211)           fc1/4  10.126.74.188(sw1-gd99)

FC Topology for VSAN 311 :
--------------------------------------------------------------------------------
       Interface  Peer Domain Peer Interface     Peer IP Address(Switch Name)
--------------------------------------------------------------------------------
           fc4/15  0x0c(12)           fc1/4  10.126.74.188(sw1-gd99)

FC Topology for VSAN 312 :
--------------------------------------------------------------------------------
       Interface  Peer Domain Peer Interface     Peer IP Address(Switch Name)
--------------------------------------------------------------------------------
           fc4/15 0x66(102)           fc1/4  10.126.74.188(sw1-gd99)
```

show topology isl

To display ISL topology information for connected switches, use the **show topology** isl command.

show topology isl {**detail** | **port-channel port-channel number detail** | **vsan vsan-id**}

Syntax Description

isl	Displays ISL topology information.
detail	Displays the detailed ISL topology information.
port-channel	Displays the port channel topology information.
port-channel number	Displays the port channel number. The range is from 1 to 256.
vsan	Displays information for a VSAN.
vsan-id	Displays VSAN ID. The range is 1 to 4093.

Command Default

None.

Command Modes

EXEC mode.

Command History

Release	Modification
6.2(1)	This command was introduced.

Usage Guidelines

None.

Examples

The following example displays the ISL topology information:

```
switch1-12345# show topology isl
```

__________Local________	________Re
PC	Domain

-	0x01
-	0x01

2	0x01
2	0x01
4	0x01
4	0x01
5	0x01
5	0x01
6	0x01
6	0x01
7	0x01
7	0x01

```
switch1-12345#
```

The following example displays the detailed ISL topology information:

```
switch1-12345# show topology isl detail
```

_____________Local__________
PC

-
-
2

2
4
4
5
5
6
6
7
7

```
switch1-12345#
```

The following example displays ISL port channel topology information:

```
switch1-12345# show topology isl port-channel 4
```

___________Local_____________	_____
PC	Domai

4	0x01
4	0x01
4	0x01
4	0x01
4	0x01

4	0x
4	0x
4	0x

```
switch1-12345#
```

The following example displays detailed ISL port channel topology information:

```
switch1-12345# show topology isl port-channel 4 detail
```

_____Local_____
PC

4
4
4
4
4
4
4
4

```
switch1-12345#
```

The following example displays the VSAN ID topology information:

```
switch1-12345# show topology isl vsan 100
```

___________Local_________	________R
PC	Domain

-	0x01
-	0x01
2	0x01
2	0x01
4	0x01
4	0x01
5	0x01
5	0x01
6	0x01
6	0x01
7	0x01
7	0x01

```
switch1-12345#
```

The following example displays the detailed VSAN ID topology information:

```
switch1-12345# show topology isl vsan 100 detail
```

_____Local_____
PC

-
-
2
2
4
4
5
5
6
6
7
7

```
switch1-12345#
```

show trunk protocol

To display trunk protocol status, use the **show trunk protocol** command.

show trunk protocol

Syntax Description

This command has no arguments or keywords.

Command Default

None.

Command Modes

EXEC mode.

Command History

Release	Modification
1.0(2)	This command was introduced.

Usage Guidelines

None.

Examples

The following example displays trunk protocol status:

```
switch# show trunk protocol
Trunk protocol is enabled
```

show user-account

To display configured information about user accounts, use the **show user-account** command.

show user-account [**user-name** | **iscsi**]

Syntax Description

user-name	(Optional) Specifies the user name.
iscsi	(Optional) Displays the iSCSI user account information.

Command Default

None.

Command Modes

EXEC mode.

Command History

Release	Modification
1.0(2)	This command was introduced.

Usage Guidelines

None.

Examples

The following example displays information for a specified user:

```
switch# show user-account user1
user:user1
        this user account has no expiry date
        roles:network-operator
no password set. Local login not allowed
Remote login through RADIUS is possible
```

The following example displays information for all users:

```
switch# show user-account
show user-account
user:admin
        this user account has no expiry date
        roles:network-admin
user:usam
        expires on Sat May 31 00:00:00 2003
        roles:network-admin network-operator
user:msam
        this user account has no expiry date
        roles:network-operator
user:user1
        this user account has no expiry date
        roles:network-operator
no password set. local login not allowed
Remote login through RADIUS is possible
```

show username

To display username information (print the public key part of user keypair information), use the show username command.

show username username keypair

Syntax Description

username	Specifies name of the user.
keypair	Specifies SSH keypairs.

Command Default

None.

Command Modes

EXEC mode.

Command History

Release	Modification
NX-OS 5.0(1a)	This command was introduced.

Usage Guidelines

None.

Examples

The following example shows how to display username information:

```
switch# show username admin keypair
**************************************
rsa Keys generated:Tue Sep  1 01:27:38 2009
ssh-rsa AAAAB3NzaC1yc2EAAAABIwAAAIEA5KCbN1Yc5X8HbFZybBNa+sXMzBHGOj1jbuZGXJ3VKH3m
LTz4b9ceyP4FyeHR7QHxBPBr3jJ3zG9rioATOwaG7944F/cadU3THDkQXN0JCVnKrqTdOo5uiIeRe2Mu
MEPfIvnM7MkJGJC2mPHRQKHlF+R3UtJaeAWuiRdKLaKS8Y0=
bitcount:1024
fingerprint:
3f:a6:31:9c:e3:1f:12:e4:49:c9:20:3c:69:6f:d1:67
**************************************
dsa Keys generated:Tue Sep  1 01:38:12 2009
ssh-rsa AAAAB3NzaC1yc2EAAAABIwAAAIEA5KCbN1Yc5X8HbFZybBNa+sXMzBHGOj1jbuZGXJ3VKH3m
LTz4b9ceyP4FyeHR7QHxBPBr3jJ3zG9rioATOwaG7944F/cadU3THDkQXN0JCVnKrqTdOo5uiIeRe2Mu
MEPfIvnM7MkJGJC2mPHRQKHlF+R3UtJaeAWuiRdKLaKS8Y0=
bitcount:1024
fingerprint:
3f:a6:31:9c:e3:1f:12:e4:49:c9:20:3c:69:6f:d1:67
**************************************
switch#
```

Related Commands

Command	Description
role	Configures user roles.
show username	Displays username information.

show users

To display all CLI users currently accessing the switch, use the **show users** command.

show users

Syntax Description

This command has no arguments or keywords.

Command Default

None.

Command Modes

EXEC mode.

Command History

Release	Modification
1.0(2)	This command was introduced.

Usage Guidelines

None.

Examples

The following example displays all users:

```
switch# show users
admin    pts/7        Jan 12 20:56 (10.77.202.149)
admin    pts/9        Jan 12 23:29 (modena.cisco.com)
admin    pts/10       Jan 13 03:05 (dhcp-171-71-58-120.cisco.com)
admin    pts/11       Jan 13 01:53 (dhcp-171-71-49-49.cisco.com)
```

show version

To display the version of system software that is currently running on the switch, use the **show version** command.

show version [**clock-module epld** | **epld** *url* | **image** {**bootflash:** | **slot0:** | **volatile:**} *image-filename* | **module slot** [**epld**]]

Syntax Description

clock-module	(Optional) Displays all current EPLD versions on the clock module.
epld	(Optional) Displays all current versions of EPLDs on a specified module.
epld *url*	(Optional) Displays all EPLD versions that are available at the specified URL (bootflash:, ftp:, scp:, sftp:, slot0:, tftp:, or volatile:)
image	(Optional) Displays the software version of a given image.
bootflash:	(Optional) Specifies internal bootflash memory.
slot0:	(Optional) Specifies CompactFlash memory or PCMCIA card.
volatile:	(Optional) Specifies the volatile directory.
image-filename	(Optional) Specifies the name of the system or kickstart image.
module *slot*	(Optional) Displays the software version of a module in the specified slot.

Command Default

None.

Command Modes

EXEC mode.

Command History

Release	Modification
1.0(2)	This command was introduced.
1.0(3)	Command was modified.
3.0(1)	Added the **clock-module** option.
NX-OS 4.1(1b)	Changed the command output from SAN-OS to NX-OS.

Usage Guidelines

Use the **show version image** command to verify the integrity of the image before loading the images. This command can be used for both the system and kickstart images.

Use the **show version** command to verify the version on the active and standby supervisor modules before and after an upgrade.

Examples

The following examples display the versions of the system, kickstart, and failed images:

```
switch(boot)# show version image bootflash:system_image
<------------
system image
 image name: m9500-sf1ek9-mz.1.0.3.bin
 system:     version 1.0(3)
 compiled:   10/25/2010 12:00:00
switch(boot)# show version image bootflash:kickstart_image
<-------------
kickstart image
  image name: m9500-sf1ek9-kickstart-mz.1.0.3.upg.bin
  kickstart:  version 1.0(3)
  loader:     version 1.0(3)
  compiled:   10/25/2010 12:00:00
switch# show version image bootflash:bad_image
 <--------------
failure case
Md5 Verification Failed
Image integrity check failed
```

The following example displays current EPLD versions for a specified module.

```
switch# show version module 2 epld
Module Number                       2
EPLD Device                   Version
------------------------------------
Power Manager                   0x06
XBUS IO                         0x07
UD chip Fix                     0x05
Sahara                          0x05
```

The following example displays available EPLD versions.

```
switch# show version epld bootflash:m9000-epld-2.0.1b.img
MDS series EPLD image, built on Mon Sep 20 16:39:36 2004
Module Type                          EPLD Device         Version
------------------------------------------------------------------
MDS 9500 Supervisor 1                XBUS 1 IO              0x09
                                     XBUS 2 IO              0x0c
                                     UD Flow Control        0x05
                                     PCI ASIC I/F           0x04
1/2 Gbps FC Module (16 Port)         XBUS IO                0x07
                                     UD Flow Control        0x05
                                     PCI ASIC I/F           0x05
1/2 Gbps FC Module (32 Port)         XBUS IO                0x07
                                     UD Flow Control        0x05
                                     PCI ASIC I/F           0x05
Advanced Services Module             XBUS IO                0x07
                                     UD Flow Control        0x05
                                     PCI ASIC I/F           0x05
                                     PCI Bridge             0x05
IP Storage Services Module (8 Port)  Power Manager          0x07
                                     XBUS IO                0x03
                                     UD Flow Control        0x05
                                     PCI ASIC I/F           0x05
                                     Service Module I/F     0x0a
                                     IPS DB I/F             0x1a
IP Storage Services Module (4 Port)  Power Manager          0x07
                                     XBUS IO                0x03
                                     UD Flow Control        0x05
                                     PCI ASIC I/F           0x05
                                     Service Module I/F     0x1a
Caching Services Module Power        Manager                0x08
```

```
                                    XBUS IO                 0x03
                                    UD Flow Control         0x05
                                    PCI ASIC I/F            0x05
                                    Service Module I/F      0x72
                                    Memory Decoder 0        0x02
                                    Memory Decoder 1        0x02
MDS 9100 Series Fabric Switch       XBUS IO                 0x03
                                    PCI ASIC I/F            0x40000003
2x1GE IPS, 14x1/2Gbps FC Module     Power Manager           0x07
                                    XBUS IO                 0x05
                                    UD Flow Control         0x05
                                    PCI ASIC I/F            0x07
                                    IPS DB I/F              0x1a
```

The following example displays the entire output for the show version command:

```
switch# show version
Cisco Nexus Operating System (NX-OS) Software
TAC support: http://www.cisco.com/tac
Copyright (c) 2002-2008, Cisco Systems, Inc. All rights reserved.
The copyrights to certain works contained herein are owned by
other third parties and are used and distributed under license.
Some parts of this software are covered under the GNU Public
License. A copy of the license is available at
http://www.gnu.org/licenses/gpl.html.
Software
  BIOS:      version 1.1.0
  loader:    version 1.2(2)
  kickstart: version 4.1(1) [build 4.1(0.155)] [gdb]
  system:    version 4.1(1) [build 4.1(0.155)] [gdb]
  BIOS compile time:       10/24/03
  kickstart image file is: bootflash:///m9200-ek9-kickstart-mzg.4.1.0.155.bin
  kickstart compile time:  10/12/2020 25:00:00 [07/23/2008 10:00:56]
  system image file is:    bootflash:///m9200-ek9-mzg.4.1.0.155.bin
  system compile time:     12/25/2010 12:00:00 [07/23/2008 10:53:42]
Hardware
  cisco MDS 9216i (2 Slot) Chassis ("2x1GE IPS, 14x1/2Gbps FC/Supervisor")
  Intel(R) Pentium(R) III CPU  with 965712 kB of memory.
  Processor Board ID JAB1007017G
  Device name: 10.64.66.22
  bootflash:    1001448 kB
  slot0:              0 kB (expansion flash)
Kernel uptime is 1 day(s), 2 hour(s), 22 minute(s), 40 second(s)
Last reset at 800175 usecs after  Tue Jul 29 11:07:38 2008
  Reason: Reset Requested by CLI command reload
  System version: 4.1(0.151)
  Service:
switch#
```

The following examples display a before and after comparison scenario after the loader version is updated:

```
switch# show version
Cisco Nexus Operating System (NX-OS) Software
TAC support: http://www.cisco.com/tac
Copyright (c) 2002-2008, Cisco Systems, Inc. All rights reserved.
The copyrights to certain works contained herein are owned by
other third parties and are used and distributed under license.
Some parts of this software are covered under the GNU Public
License. A copy of the license is available at
http://www.gnu.org/licenses/gpl.html.
Software
  BIOS:      version 1.1.0
```

```
  loader:    version 1.2(2)<---------------existing version
kickstart: version 4.1(1) [build 4.1(0.155)] [gdb]
  system:    version 4.1(1) [build 4.1(0.155)] [gdb]
  BIOS compile time:       10/24/03
  kickstart image file is: bootflash:///m9200-ek9-kickstart-mzg.4.1.0.155.bin
  kickstart compile time:  10/12/2020 25:00:00 [07/23/2008 10:00:56]
  system image file is:    bootflash:///m9200-ek9-mzg.4.1.0.155.bin
  system compile time:     12/25/2010 12:00:00 [07/23/2008 10:53:42]
switch# show version
Cisco Nexus Operating System (NX-OS) Software
TAC support: http://www.cisco.com/tac
Copyright (c) 2002-2008, Cisco Systems, Inc. All rights reserved.
The copyrights to certain works contained herein are owned by
other third parties and are used and distributed under license.
Some parts of this software are covered under the GNU Public
License. A copy of the license is available at
http://www.gnu.org/licenses/gpl.html.
Software
  BIOS:      version 1.1.0
  loader:    version 4.1(0)<---------------new version
```

The following example displays the version details for a specified module:

```
switch# show ver mod 4
Mod No   Mod Type       SW Version           SW Interim Version
4        LC             1.0(3)               1.0(3)
```

show vmis database

To display all the entries in the Virtual Machine Identification Server (VMIS) database, use the **show vmis database** command.

show vmis database [**domain** *id* | **fcid** *id* | **global-vmid** *id* | **interface** {**fa** *slot*/*port* | **fc** *slot*/*port* | **fv** *module_number*/*DPP_number*/*port* | **port-channel** *number* | **vfc** *slot* | **vfc-port-channel** *id*} | **local** | **vem** [*id* **fcid** *id*] | **vmotion**] [**vsan** *id*]

Syntax Description

domain *id*	Specifies entries based on a domain ID. The range is from 1 to 239.
fcid *id*	Specifies entries based on a Fibre Channel ID (FCID). The FCID is in the form *0x0* to *0xffffff*.
global-vmid *id*	Specifies entries based on a Global Virtual Machine Identifier (VMID). The Global VMID is in the form *hhhhhhhh-hhhh-hhhh-hhhh-hhhhhhhhhhhh*, where *h* is a hexadecimal number.
interface	Specifies a port.
fa *slot*/*port*	Specifies an FA port.
fc *slot*/*port*	Specifies a Fibre Channel port.
fv *module_number*/*DPP_number*/*port*	Specifies a Fibre Channel virtualization port.
port-channel *number*	Specifies a port channel.
vfc *slot*	Specifies a virtual Fibre Channel interface.
vfc-port-channel *id*	Specifies entries based on a virtual Fibre Channel port channel interface. The range is from 513 to 4096.
local	Indicates the local entries corresponding to a local domain in a VMIS database.
vem *id*	Specifies ID of a VEM in a fabric. The VEM ID is in the form *hhhhhhhh-hhhh-hhhh-hhhh-hhhhhhhhhhhh*, where *h* is a hexadecimal number.
vmotion	Specifies virtual machines that have migrated between hypervisors.
vsan *id*	Specifies entries based on a VSAN ID. The range is from 1 to 4093.

Command Default

Displays all entries in the database.

Command Modes

User EXEC (#)
Privileged EXEC (#)

Command History

Release	Modification
8.2(1)	This command was introduced.

This example displays all the entries in the VMIS database. This is the database of all IDs in a SAN fabric. Locally connected IDs show the connecting interface; remotely connected IDs show the interface name as "--" in the output.

```
switch# show vmis database
Total 17 entries
--------------------------------------------------------------------------------
INTERFACE VSAN   FCID   LOCAL VEID  GLOBAL VEID
--------------------------------------------------------------------------------
fc1/7       1  0xef000a  0x01   9a07686b-0405-0607-0809-0a0b0c0d0e0f
fc1/7       1  0xef000a  0x02   66fb6a4e-0405-0607-0809-0a0b0c0d0e0f
fc1/7       1  0xef000a  0x03   325de425-0405-0607-0809-0a0b0c0d0e0f
fc1/7       1  0xef000a  0x04   0d509b51-0405-0607-0809-0a0b0c0d0e0f
fc1/7       1  0xef000a  0x05   b7d71b43-0405-0607-0809-0a0b0c0d0e0f
fc1/7       1  0xef000a  0x32   1b231602-0405-0607-0809-0a0b0c0d0e0f
fc1/7       1  0xef000b  0x01   e8e9161f-0405-0607-0809-0a0b0c0d0e0f
fc1/7       1  0xef000b  0x02   e7cd9011-0405-0607-0809-0a0b0c0d0e0f
fc1/7       1  0xef000b  0x03   8d43ef66-0405-0607-0809-0a0b0c0d0e0f
fc1/7       1  0xef000b  0x04   760f0e14-0405-0607-0809-0a0b0c0d0e0f
fc1/7       1  0xef000b  0x05   5a255233-0405-0607-0809-0a0b0c0d0e0f
fc1/7       1  0xef000b  0x1e   1b231602-0405-0607-0809-0a0b0c0d0e0f
--          10  0x4c0020  0x1e   ba581b3d-0405-0607-0809-0a0b0c0d0e0f
--          10  0x4c0020  0x1f   abd77e50-0405-0607-0809-0a0b0c0d0e0f
--          10  0x4c0020  0x20   f241b12e-0405-0607-0809-0a0b0c0d0e0f
--          10  0x4c0020  0x21   fb1eb741-0405-0607-0809-0a0b0c0d0e0f
--          10  0x4c0020  0x22   e3a9e279-0405-0607-0809-0a0b0c0d0e0f
```

This example shows the entries in a VSAN filtered by the hosting domain:

```
switch# show vmis database domain 0xef vsan 1
Total 12 entries
--------------------------------------------------------------------------------
INTERFACE VSAN FCID     LOCAL VEID  GLOBAL VEID
--------------------------------------------------------------------------------
fc1/7  1 0xef000a    0x01  9a07686b-0405-0607-0809-0a0b0c0d0e0f
fc1/7  1 0xef000a    0x02  66fb6a4e-0405-0607-0809-0a0b0c0d0e0f
fc1/7  1 0xef000a    0x03  325de425-0405-0607-0809-0a0b0c0d0e0f
fc1/7  1 0xef000a    0x04  0d509b51-0405-0607-0809-0a0b0c0d0e0f
fc1/7  1 0xef000a    0x05  b7d71b43-0405-0607-0809-0a0b0c0d0e0f
fc1/7  1 0xef000a    0x32  1b231602-0405-0607-0809-0a0b0c0d0e0f
fc1/7  1 0xef000b    0x01  e8e9161f-0405-0607-0809-0a0b0c0d0e0f
fc1/7  1 0xef000b    0x02  e7cd9011-0405-0607-0809-0a0b0c0d0e0f
fc1/7  1 0xef000b    0x03  8d43ef66-0405-0607-0809-0a0b0c0d0e0f
fc1/7  1 0xef000b    0x04  760f0e14-0405-0607-0809-0a0b0c0d0e0f
fc1/7  1 0xef000b    0x05  5a255233-0405-0607-0809-0a0b0c0d0e0f
fc1/7  1 0xef000b    0x1e  1b231602-0405-0607-0809-0a0b0c0d0e0f
```

This example shows the entries filtered by FCID. This example is filtered by a remote hypervisor N_Port FCID.

```
switch# show vmis database fcid 0x4c0020 vsan 10
Total 5 entries
--------------------------------------------------------------------------------
INTERFACE VSAN  FCID   LOCAL VEID  GLOBAL VEID
```

```
--------------------------------------------------------------------------------
--  10  0x4c0020   0x1e  ba581b3d-0405-0607-0809-0a0b0c0d0e0f
--  10  0x4c0020   0x1f  abd77e50-0405-0607-0809-0a0b0c0d0e0f
--  10  0x4c0020   0x20  f241b12e-0405-0607-0809-0a0b0c0d0e0f
--  10  0x4c0020   0x21  fb1eb741-0405-0607-0809-0a0b0c0d0e0f
--  10  0x4c0020   0x22  e3a9e279-0405-0607-0809-0a0b0c0d0e0f
```

This example shows the VMIS entries filtered by Global VM ID and VSAN:

```
switch# show vmis database global-vmid e8e9161f-0405-0607-0809-0a0b0c0d0e0f vsan 1
Total 1 entries
--------------------------------------------------------------------------------
INTERFACE VSAN FCID     LOCAL VEID                    GLOBAL VEID
--------------------------------------------------------------------------------
fc1/7      1   0xef000b     0x01             e8e9161f-0405-0607-0809-0a0b0c0d0e0f
```

This example shows the entries in a VSAN filtered by an interface:

```
switch# show vmis database interface fc1/7 vsan 1
Total 12 entries
--------------------------------------------------------------------------------
INTERFACE VSAN   FCID    LOCAL VEID            GLOBAL VEID
--------------------------------------------------------------------------------
fc1/7      1    0xef000a   0x01          9a07686b-0405-0607-0809-0a0b0c0d0e0f
fc1/7      1    0xef000a   0x02          66fb6a4e-0405-0607-0809-0a0b0c0d0e0f
fc1/7      1    0xef000a   0x03          325de425-0405-0607-0809-0a0b0c0d0e0f
fc1/7      1    0xef000a   0x04          0d509b51-0405-0607-0809-0a0b0c0d0e0f
fc1/7      1    0xef000a   0x05          b7d71b43-0405-0607-0809-0a0b0c0d0e0f
fc1/7      1    0xef000a   0x32          1b231602-0405-0607-0809-0a0b0c0d0e0f
fc1/7      1    0xef000b   0x01          e8e9161f-0405-0607-0809-0a0b0c0d0e0f
fc1/7      1    0xef000b   0x02          e7cd9011-0405-0607-0809-0a0b0c0d0e0f
fc1/7      1    0xef000b   0x03          8d43ef66-0405-0607-0809-0a0b0c0d0e0f
fc1/7      1    0xef000b   0x04          760f0e14-0405-0607-0809-0a0b0c0d0e0f
fc1/7      1    0xef000b   0x05          5a255233-0405-0607-0809-0a0b0c0d0e0f
fc1/7      1    0xef000b   0x1e          1b231602-0405-0607-0809-0a0b0c0d0e0f
```

This example shows the VMIS database entries of a specified local VSAN domain:

```
switch# show vmis database local vsan 1
Total 12 entries
--------------------------------------------------------------------------------
INTERFACE VSAN   FCID    LOCAL VEID             GLOBAL VEID
--------------------------------------------------------------------------------
fc1/7      1    0xef000a   0x01         9a07686b-0405-0607-0809-0a0b0c0d0e0f
fc1/7      1    0xef000a   0x02         66fb6a4e-0405-0607-0809-0a0b0c0d0e0f
fc1/7      1    0xef000a   0x03         325de425-0405-0607-0809-0a0b0c0d0e0f
fc1/7      1    0xef000a   0x04         0d509b51-0405-0607-0809-0a0b0c0d0e0f
fc1/7      1    0xef000a   0x05         b7d71b43-0405-0607-0809-0a0b0c0d0e0f
fc1/7      1    0xef000a   0x32         1b231602-0405-0607-0809-0a0b0c0d0e0f
fc1/7      1    0xef000b   0x01         e8e9161f-0405-0607-0809-0a0b0c0d0e0f
fc1/7      1    0xef000b   0x02         e7cd9011-0405-0607-0809-0a0b0c0d0e0f
fc1/7      1    0xef000b   0x03         8d43ef66-0405-0607-0809-0a0b0c0d0e0f
fc1/7      1    0xef000b   0x04         760f0e14-0405-0607-0809-0a0b0c0d0e0f
fc1/7      1    0xef000b   0x05         5a255233-0405-0607-0809-0a0b0c0d0e0f
fc1/7      1    0xef000b   0x1e         1b231602-0405-0607-0809-0a0b0c0d0e0f
```

This example shows the VEM IDs registered in a VSAN:

```
switch# show vmis database vem vsan 1
Total 2 entries
--------------------------------------------------------------------------------
INTERFACE VSAN    FCID            VEM ID
--------------------------------------------------------------------------------
fc1/7      1    0xef000a    11223344-5566-7788-99aa-bbccddeeffaa
fc1/7      1    0xef000b    00010203-0405-0607-0809-0a0b0cef000b
```

This example shows VM entries that have migrated between VEMs:

```
switch# show vmis database vmotion vsan 1
Total 2 entries
--------------------------------------------------------------------------------
INTERFACE VSAN   FCID    LOCAL VEID         GLOBAL VEID
--------------------------------------------------------------------------------
fc1/7      1    0xef000b   0x1e         1b231602-0405-0607-0809-0a0b0c0d0e0f
fc1/7      1    0xef000a   0x32         1b231602-0405-0607-0809-0a0b0c0d0e0f
```

This example shows the entries in a VSAN:

```
switch# show vmis database vsan 10
Total 5 entries
--------------------------------------------------------------------------------
INTERFACE VSAN    FCID      LOCAL VEID            GLOBAL VEID
--------------------------------------------------------------------------------
--         10   0x4c0020      0x1e          ba581b3d-0405-0607-0809-0a0b0c0d0e0f
--         10   0x4c0020      0x1f          abd77e50-0405-0607-0809-0a0b0c0d0e0f
--         10   0x4c0020      0x20          f241b12e-0405-0607-0809-0a0b0c0d0e0f
--         10   0x4c0020      0x21          fb1eb741-0405-0607-0809-0a0b0c0d0e0f
--         10   0x4c0020      0x22          e3a9e279-0405-0607-0809-0a0b0c0d0e0f
```

Related Commands

Command	Description
feature vmis	Enables the VMID feature.
show flogi database details	Displays VMID capable FLOGIs.
show vmis statistics	Displays VMIS statistics.

show vmis range

To display the virtual entity ID (VE ID) range that is configured for each VSAN, use the **show vmis range** command.

show vmis range

Syntax Description

This command has no arguments or keywords.

Command Default

None

Command Modes

User EXEC (#)
Privileged EXEC (#)

Command History

Release	Modification
8.2(1)	This command was introduced.

Examples

This example shows the VE ID range that is configured for each VSAN:

```
switch# show vmis range
VSAN     VEID Range
--------------------
1   1-255
10  1-255
20  1-255
30  1-255
```

Related Commands

Command	Description
feature vmis	Enables the VMID feature.
vmis range	Configure the range of VE IDs to be assigned to a hypervisor.

show vmis statistics

To display the statistics of local switch Virtual Machine Identification Server (VMIS) exchanges with locally attached hypervisor HBA driver clients (host side) and with other VMIS agents on other switches in the fabric (switch side) by VSAN, use the **show vmis statistics** command.

show vmis statistics

Syntax Description

This command has no arguments or keywords.

Command Default

None

Command Modes

User EXEC (#)
Privileged EXEC (#)

Command History

Release	Modification
8.2(1)	This command was introduced.

Examples

This example shows how to display the VMIS exchange statistics:

```
switch# show vmis statistics
VSAN : 1
-----Host Side-----
qfpa/qfpa_rsp/qfpa_rjt : 1/1/0
uvem/uvem_rsp/uvem_rjt : 1/1/0
ggvid/ggvid_rsp/ggvid_rjt : 0/0/0
gfvid/gfvid_rsp/gfvid_rjt : 0/0/0
gvemid/gvemid_rsp/gvemid_rjt : 0/0/0
gvem/gvem_rsp/gvem_rjt : 0/0/0
-----Switch Side-----
gvemd_tx/gvemd_rsp_tx/gvemd_rjt_tx : 0/0/0
gvemd_rx/gvemd_rsp_rx/gvemd_rjt_rx : 0/0/0
uvemd_tx/uvemd_rsp_tx/uvemd_rjt_tx : 0/0/0
uvemd_rx/uvemd_rsp_rx/uvemd_rjt_rx : 0/0/0
```

Related Commands

Command	Description
feature vmis	Enables the Virtual Machine Identifier (VMID) feature.

show vrrp

To display the VRRP configuration information, use the **show vrrp** command.

show vrrp [**ipv6 vr** *group-id* [**interface** {**gigabitethernet** *slot/port* {**configuration** | **statistics** | **status**} | **mgmt 0** {**configuration** | **statistics** | **status**} | **port-channel** *port-channel* {**configuration** | **statistics** | **status**} | **vsan** *vsan-id* {**configuration** | **statistics** | **status**}}]] | **statistics** | **vr** *group-id* [**interface** {**gigabitethernet** *slot/port* {**configuration** | **statistics** | **status**} | **mgmt 0** {**configuration** | **statistics** | **status**} | **port-channel** *port-channel* {**configuration** | **statistics** | **status**} | **vsan** *vsan-id* {**configuration** | **or statistics** | **status**}}]

Syntax Description

ipv6	(Optional) Displays IPv6 virtual router information.
vr	(Optional) Displays the virtual router information.
group-id	(Optional) Specifies the group ID. The range is 1 to 255.
interface	(Optional) Displays the interface type.
gigabitethernet	(Optional) Displays the Gigabit Ethernet interface.
slot/port	(Optional) Specifies the slot and port.
configuration	(Optional) Displays the VRRP configuration.
statistics	(Optional) Displays cumulative VRRP statistics.
status	(Optional) Displays VRRP operational status.
mgmt 0	(Optional) Displays the mgmt0 interface.
port-channel	(Optional) Displays the PortChannel interface.
port-channel	Specifies the Port Channel.
vsan	(Optional) Displays the VSAN interface.
vsan-id	(Optional) Specifies the VSAN ID.

Command Default

None.

Command Modes

EXEC mode.

Command History

Release	Modification
1.0(2)	This command was introduced.
3.0(1)	Added the **IPv6** option.

Usage Guidelines

None.

Examples

The following example displays VRRP configured information:

```
switch# show vrrp vr 7 interface vsan 2 configuration
vr id 7 configuration
admin state down
priority 100
no authentication
advertisement-Interval 1
preempt yes
tracking interface vsan1 priority 2
protocol IP
```

The following example displays VRRP status information:

```
switch# show vrrp vr 7 interface vsan 2 status
vr id 7 status
MAC address 00:00:5e:00:01:07
Operational state: init
```

The following example displays VRRP statistics:

```
switch# show vrrp vr 7 interface vsan 2 statistics

vr id 7 statistics
Become master 0
Advertisement 0
Advertisement Interval Error 0
Authentication Failure 0
TTL Error 0
Priority 0 Received 0
Priority 0 Sent 0
Invalid Type 0
Mismatch Address List 0
Invalid Authentication Type 0
Mismatch Authentication 0
Invalid Packet Length 0
```

The following example displays VRRP cumulative statistics:

```
switch# show vrrp statistics

Invalid checksum 0
Invalid version 0
Invalid VR ID 0
```

The following example displays VRRP IPv6 configuration information:

```
switch# show vrrp ipv6 vr 1 interface gigabitethernet 4/8 configuration

IPv6 vr id 1 configuration
admin state up
priority 100
associated ip: 2550:1::3:408:1 accept
advertisement-interval 100
preempt no
protocol IPv6
```

The following example displays VRRP IPv6 statistics information:

```
switch# show vrrp ipv6 vr 1 interface gigabitethernet 4/8 statistics
```

```
IPv6 vr id 1 statistics
Become master 1
Advertisement 0
Advertisement Interval Error 0
TTL Error 0
Priority 0 Received 0
Priority 0 Sent 0
Invalid Type 0
Mismatch Address List 0
Invalid Packet Length 0
```

The following example displays VRRP IPv6 status information:

```
switch# show vrrp ipv6 vr 1 interface gigabitethernet 4/8 status

IPv6 vr id 1 status
MAC address 00:00:5e:00:02:01
Operational state: master
Up time 17 hour(s),  21 min,  43 sec
Master IP address: fe80::20c:30ff:fe0c:f6c7
```

show vsan

To display information about configured VSAN, use the **show vsan** command.

show vsan [*vsan-id* [**membership**] | **membership interface** {**fc** *slot* / *port* | **fcip** *fcip-id* | **fv** *slot* / *dpp-number* / *fv-port* | **iscsi** *slot* / *port* | **portchannel** *portchannel-number* **.** *subinterface-number*}] | [**usage**]

Note On a Cisco Fabric Switch for HP c-Class BladeSystem and on a Cisco Fabric Switch for IBM BladeCenter, the syntax differs as follows:**interface bay** *port* **| ext** *port* }

Syntax Description

vsan vsan-id	(Optional) Displays information for the specified VSAN ID. The range is 1 to 4093.
membership	(Optional) Displays membership information.
interface	(Optional) Specifies the interface type.
fc *slot*/*port*	(Optional) Specifies a Fibre Channel interface on a Cisco MDS 9000 Family Switch.
bay | ext port	Specifies a Fibre Channel interface on a Cisco MDS 9124 Fabric Switch, a Cisco Fabric Switch for HP c-Class BladeSystem, and a Cisco Fabric Switch for IBM BladeCenter.
fcip *fcip-id*	(Optional) Specifies a FC IP interface ID. The range is 1 to 255.
fv *slot*/*dpp-number*/*fv-port*	(Optional) Specifies a virtual F port (FV port) interface in the specified slot along with the data path processor (DPP) number and the FV port number.
iscsi *slot*/*port*	(Optional) Specifies the iSCSI interface in the specified slot/port on a Cisco MDS 9000 Family switch.
port-channel *portchannel-number***.** *subinterface-number*	(Optional) Specifies a PortChannel interface specified by the PortChannel number followed by a dot (.) indicator and the subinterface number.
usage	(Optional) Displays VSAN usage in the system.

Command Default

None.

Command Modes

EXEC mode.

Command History

Release	Modification
1.2(2)	This command was modified.

Release	Modification
3.1(2)	Added the **bay** | **ext** interface.

Usage Guidelines

For the **show vsan membership interface** command, interface information is not displayed if interfaces are not configured on this VSAN.

The interface range must be in ascending order and non-overlapping. You can specify a range using a hyphen and several interfaces using commas:

- The interface range format for an FC interface range is **fc***slot*/*port* - *port* **, fc***slot*/*port* **, fc***slot*/*port* (For example, **show int fc1/1 - 3 , fc1/5 , fc2/5**)
- The interface range format for an FV interface range is **fv***slot*/*dpp*/*fvport* - *fvport* , **fv***slot*/*dpp*/*port* , **fv***slot*/*dpp*/*port* (For example, **show int fv2/1/1 - 3 , fv2/1/5 , fv2/2/5**)
- The format for a PortChannel is **port-channel** *portchannel-number***.***subinterface-number* (For example, **show int** port-channel **5.1***)*

Examples

The following examples display configured VSAN information:

```
switch# show vsan 1
vsan 1 information
         name:VSAN0001  state:active
         interoperability mode:yes ß verify mode
         loadbalancing:src-id/dst-id/oxid
         operational state:up
switch# show vsan usage
4 vsan configured
configured vsans:1-4
vsans available for configuration:5-4093
switch # show vsan 1 membership
vsan 1 interfaces:
        fc1/1   fc1/2   fc1/3   fc1/4   fc1/5   fc1/6   fc1/7   fc1/9
        fc1/10  fc1/11  fc1/12  fc1/13  fc1/14  fc1/15  fc1/16  port-channel 99
```

The following example displays membership information for all VSANs.

```
switch # show vsan membership

vsan 1 interfaces:
        fc2/16  fc2/15  fc2/14  fc2/13  fc2/12  fc2/11  fc2/10  fc2/9
        fc2/8   fc2/7   fc2/6   fc2/5   fc2/4   fc2/3   fc2/2   fc2/1
        fc1/16  fc1/15  fc1/14  fc1/13  fc1/12  fc1/11  fc1/10  fc1/9
        fc1/7   fc1/6   fc1/5   fc1/4   fc1/3   fc1/2   fc1/1
vsan 2 interfaces:
vsan 7 interfaces:
        fc1/8
vsan 100 interfaces:
vsan 4094(isolated vsan) interfaces:
```

The following example displays membership information for a specified interface:

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

```
         name:VSAN0001  state:active
         interoperability mode:default
         loadbalancing:src-id/dst-id/oxid
         operational state:up
vsan 2 information
         name:VmVSAN  state:active
         interoperability mode:default
         loadbalancing:src-id/dst-id/oxid
         operational state:up
vsan 3 information
         name:Disk_A  state:active
         interoperability mode:default
         loadbalancing:src-id/dst-id/oxid
         operational state:up
vsan 4 information
         name:Host_B  state:active
         interoperability mode:default
         loadbalancing:src-id/dst-id/oxid
         operational state:up
vsan 4094:isolated_vsan
switch# show vsan membership interface fv 2/1/3 , fv2/1/5 - 7
fv2/1/3
        vsan:2
        allowed list:1-4093
fv2/1/5
        vsan:3
        allowed list:1-4093
fv2/1/6
        vsan:4
        allowed list:1-4093
fv2/1/7
        vsan:4
        allowed list:1-409
switch# sh vsan membership interface bay 12
bay12
        vsan:1
        allowed list:1-4093
```

show wwn

To display the status of the WWN configuration, use the **show wwn** command.

show wwn {**oui** | **status** | **block-id** | **number** | **switch** | **vsan-wwn**}

Syntax Description

oui	Displays all OUIs in the OUI database.
status block-id number	Displays WWN usage and alarm status for a block ID. The range is 34 to 1793.
switch	Displays switch WWN.
vsan-wwn	Displays all user-configured VSAN WWNs.

Command Default

None.

Command Modes

EXEC mode.

Command History

Release	Modification
1.0(2)	This command was introduced.
3.0(1)	Added the **vsan-wwn** keyword.
7.3(0)D1(1)	The **oui** keyword was added.

Usage Guidelines

None.

Examples

The following example displays the WWN of the switch:

```
switch# show wwn switch
Switch WWN is 20:01:ac:16:5e:52:00:01
```

The following example displays a user-configured VSAN WWN:

```
switch# show wwn vsan-wwn
vsan wwn configured by user
---- ----------------------
100 20:64:08:00:88:0d:5f:81
```

show zone

To display zone information, use the **show zone** command.

show zone [**active** [**vsan** *vsan-id*] | **analysis** {**active vsan** *vsan-id* | **pending** {**active vsan** *vsan-id* | **vsan** *vsan-id* | **zoneset** *string* **vsan** *vsan-id*} | **vsan** *vsan-id* | **zoneset** *string* **vsan** *vsan-id*} | **ess** [**vsan** *vsan-id*] | **member** {**device-alias** *string* [**active** [**vsan** *vsan-id*] | **lun 0xhhhh** [**active** [**vsan** *vsan-id*] | **vsan** *vsan-id*] | **vsan** *vsan-id*] | **fcalias** *string* [**active** [**vsan** *vsan-id*] | **vsan** *vsan-id*] | **fcid 0xhhhhhh** [**active** [**vsan** *vsan-id*] | **lun 0xhhhh** [**active** [**vsan** *vsan-id*] | **vsan** *vsan-id*] | **vsan** *vsan-id*] | **pwwn hh:hh:hh:hh:hh:hh:hh:hh** [**active** [**vsan** *vsan-id*] | **lun 0xhhhh** [**active** [**vsan** *vsan-id*] | **vsan** *vsan-id*] | **vsan** *vsan-id*]} | **name** *string* [**active** [**vsan** *vsan-id*] | **pending** [**active** [**vsan** *vsan-id*] | **vsan** *vsan-id*]] | **vsan** *vsan-id*] | [**pending** [**active** [**vsan** *vsan-id*] | **vsan** *vsan-id*] | **pending-diff** [**vsan** *vsan-id*] | **policy** [**pending** [**vsan** *vsan-id*] | **vsan** *vsan-id*] | **smart-zoning auto-conv** {**log errors** | **status vsan** *vsan-id*} | **statistics** [**lun-zoning** [**vsan** *vsan-id*] | **read-only-zoning** [**vsan** *vsan-id*] | **vsan** *vsan-id*] | **status** [**global** | **vsan** *vsan-id*] | **vsan** *vsan-id*]

Syntax Description

active	(Optional) Displays zones which are part of an active zone set.
analysis	Displays a summary of zone database information.
device-alias *string*	Specifies a device name.
ess	Displays ESS information.
fcalias *string*	Specifies an fcalias name.
fcid *0xhhhhhh*	Specifies an FCID. The format is 0xhhhhhh, where h is a hexadecimal digit.
global	Displays global zone service parameters.
log errors	Displays the error logs.
lun *0xhhhh*	Specifies a LUN ID. The format is 0xhhhh, where h is a hexadecimal digit.
lun-zoning	This option is deprecated in this release.
member	Displays all zones in which the given member is part of.
name *string*	Specifies a zone name.
pending	Displays what zoning will be after all pending changes are applied.
pending-diff	Displays individual pending zone changes.
policy	Displays zone policies.
pwwn *hh:hh:hh:hh:hh:hh:hh:hh*	Specifies a port world wide name. The format is hh:hh:hh:hh:hh:hh:hh:hh, where h is a hexadecimal digit.
read-only-zoning	This option is deprecated in this release.
smart-zoning auto-conv	Displays the previous auto convert status.

statistics	Displays zone server request and response statistics.
status	Displays the current status of the zone server.
vsan *vsan-id*	Specifies a VSAN ID. The range is 1 to 4093.
zoneset *string*	Specifies a zoneset name.

Command Default

None.

Command Modes

EXEC mode.

Command History

Release	Modification
8.4(2)	The **show zone status vsan** *id* command output was modified to display the status of the Single Session feature.
6.2(9)	Added the combined zone database size for the show zone status command.
5.2(1)	Deprecated the **lun-zoning and read-only-zoning options.**
2.1(1a)	Modified the **show zone status** display.
1.3(4)	This command was introduced.

Usage Guidelines

None.

Examples

The following example displays configured zone information:

```
switch# show zone
zone name Zone3 vsan 1
  pwwn 21:00:00:20:37:6f:db:dd
  pwwn 21:00:00:20:37:9c:48:e5
zone name Zone2 vsan 2
  fwwn 20:41:00:05:30:00:2a:1e
  fwwn 20:42:00:05:30:00:2a:1e
  fwwn 20:43:00:05:30:00:2a:1e
zone name Zone1 vsan 1
  pwwn 21:00:00:20:37:6f:db:dd
  pwwn 21:00:00:20:37:a6:be:2f
  pwwn 21:00:00:20:37:9c:48:e5
  fcalias Alias1
zone name Techdocs vsan 3
  ip-address 10.15.0.0 255.255.255.0
```

The following example displays zone information for a specific VSAN:

```
switch# show zone vsan 1
zone name Zone3 vsan 1
  pwwn 21:00:00:20:37:6f:db:dd
  pwwn 21:00:00:20:37:9c:48:e5
zone name Zone2 vsan 1
  fwwn 20:41:00:05:30:00:2a:1e
  fwwn 20:42:00:05:30:00:2a:1e
```

```
  fwwn 20:43:00:05:30:00:2a:1e
  fwwn 20:44:00:05:30:00:2a:1e
  fwwn 20:45:00:05:30:00:2a:1e
  fwwn 20:46:00:05:30:00:2a:1e
  fwwn 20:47:00:05:30:00:2a:1e
  fwwn 20:48:00:05:30:00:2a:1e
  fwwn 20:49:00:05:30:00:2a:1e
  fwwn 20:4a:00:05:30:00:2a:1e
  fwwn 20:4b:00:05:30:00:2a:1e
  fwwn 20:4c:00:05:30:00:2a:1e
  fwwn 20:4d:00:05:30:00:2a:1e
  fwwn 20:4e:00:05:30:00:2a:1e
  fwwn 20:4f:00:05:30:00:2a:1e
  fwwn 20:50:00:05:30:00:2a:1e
  fwwn 20:51:00:05:30:00:2a:1e
  fwwn 20:52:00:05:30:00:2a:1e
  fwwn 20:53:00:05:30:00:2a:1e
  fwwn 20:54:00:05:30:00:2a:1e
  fwwn 20:55:00:05:30:00:2a:1e
  fwwn 20:56:00:05:30:00:2a:1e
  fwwn 20:57:00:05:30:00:2a:1e
  fwwn 20:58:00:05:30:00:2a:1e
  fwwn 20:59:00:05:30:00:2a:1e
  fwwn 20:5a:00:05:30:00:2a:1e
  fwwn 20:5b:00:05:30:00:2a:1e
  fwwn 20:5c:00:05:30:00:2a:1e
  fwwn 20:5d:00:05:30:00:2a:1e
  fwwn 20:5e:00:05:30:00:2a:1e
  fwwn 20:5f:00:05:30:00:2a:1e
  fwwn 20:60:00:05:30:00:2a:1e
zone name Zone1 vsan 1
  pwwn 21:00:00:20:37:6f:db:dd
  pwwn 21:00:00:20:37:a6:be:2f
  pwwn 21:00:00:20:37:9c:48:e5
  fcalias Alias1
```

The following example displays members of a specific zone:

```
switch# show zone name Zone1
zone name Zone1 vsan 1
  pwwn 21:00:00:20:37:6f:db:dd
  pwwn 21:00:00:20:37:a6:be:2f
  pwwn 21:00:00:20:37:9c:48:e5
  fcalias Alias1
```

The following example displays all zones to which a member belongs using the FCID:

```
switch# show zone member pwwn 21:00:00:20:37:9c:48:e5
          VSAN: 1
zone Zone3
zone Zone1
fcalias Alias1
```

The following example displays the number of control frames exchanged with other switches:

```
switch# show zone statistics
Statistics For VSAN: 1
********************************
Number of Merge Requests Sent: 24
Number of Merge Requests Recvd: 25
Number of Merge Accepts Sent: 25
Number of Merge Accepts Recvd: 25
Number of Merge Rejects Sent: 0
```

```
Number of Merge Rejects Recvd: 0
Number of Change Requests Sent: 0
Number of Change Requests Recvd: 0
Number of Change Rejects Sent: 0
Number of Change Rejects Recvd: 0
Number of GS Requests Recvd: 0
Number of GS Requests Rejected: 0
Statistics For VSAN: 2
********************************
Number of Merge Requests Sent: 4
.
.
.
Number of GS Requests Rejected: 0
```

The following example displays the status of the Single Session feature on VSAN 1:

```
switch# show zone status vsan 1
VSAN: 1 default-zone: deny distribute: active only Interop: default
    mode: basic merge-control: allow
    session:  cli [root] on pts/0 from 64.104.148.227 at 2019-01-09T06:19:40.55504Z
    single-session: enabled
    hard-zoning: enabled broadcast: unsupported
    smart-zoning: disabled
    rscn-format: fabric-address
    activation overwrite control: disabled
Default zone:
    qos: none broadcast: unsupported ronly: unsupported
Full Zoning Database :
    DB size: 360 bytes
    Zonesets:  2 Zones: 3 Aliases: 0 Attribute-groups: 1
Active Zoning Database :
    Database Not Available
Current Total Zone DB Usage: 360 / 4000000 bytes (0 % used)
Pending (Session) DB size:
    Full DB Copy size: 396 bytes
    Active DB Copy size: 0 bytes
SFC size: 396 / 4000000 bytes (0 % used)
Status:
```

The following example displays LUN-zoning details:

```
switch# show zone statistics lun-zoning
LUN zoning statistics for VSAN: 1
************************************************************
S-ID: 0x123456, D-ID: 0x22222, LUN: 00:00:00:00:00:00:00:00
------------------------------------------------------------
Number of Inquiry commands received: 10
Number of Inquiry data No LU sent: 5
Number of Report LUNs commands received: 10
Number of Request Sense commands received: 1
Number of Other commands received: 0
Number of Illegal Request Check Condition sent: 0
S-ID: 0x123456, D-ID: 0x22222, LUN: 00:00:00:00:00:00:00:01
------------------------------------------------------------
Number of Inquiry commands received: 1
Number of Inquiry data No LU sent: 1
Number of Request Sense commands received: 1
Number of Other commands received: 0
Number of Illegal Request Check Condition sent: 0
```

The following example displays read-only zone details:

```
switch# show zone statistics read-only-zoning
Read-only zoning statistics for VSAN: 2
************************************************************
S-ID: 0x33333, D-ID: 0x11111, LUN: 00:00:00:00:00:00:00:64
------------------------------------------------------------
Number of Data Protect Check Condition Sent: 12
switch(config)# 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
Default zone:
qos: none broadcast: disabled ronly: disabled
Full Zoning Database :
DB size: 4 bytes
Zonesets:0 Zones:0 Aliases: 0
Active Zoning Database :
Database Not Available
Current Total Zone DB Usage: 4 / 2097152 bytes (0 % used)
Pending (Session) DB size:
Full DB Copy size: n/a
Active DB Copy size: n/a
SFC size: 4 / 2097152 bytes (0 % used)
Status:
VSAN: 8 default-zone: deny distribute: full Interop: default
mode: basic merge-control: allow
session: none
hard-zoning: enabled broadcast: disabled
smart-zoning: disabled
rscn-format: fabric-address
Default zone:
qos: none broadcast: disabled ronly: disabled
Full Zoning Database :
DB size: 1946498 bytes
Zonesets:6 Zones:8024 Aliases: 0
Active Zoning Database :
DB size: 150499 bytes
Name: zoneset-1000 Zonesets:1 Zones:731
Current Total Zone DB Usage: 2096997 / 2097152 bytes (99 % used)
Pending (Session) DB size:
Full DB Copy size: n/a
Active DB Copy size: n/a
SFC size: 2096997 / 2097152 bytes (99 % used)
Status: Zoneset distribution failed [Error: Fabric changing Dom 33]:
at 17:05:06 UTC Jun 16 2014
VSAN: 9 default-zone: deny distribute: full Interop: default
mode: enhanced merge-control: allow
session: none
hard-zoning: enabled broadcast: enabled
smart-zoning: disabled
rscn-format: fabric-address
Default zone:
qos: none broadcast: disabled ronly: disabled
Full Zoning Database :
DB size: 2002584 bytes
Zonesets:4 Zones:7004 Aliases: 0 Attribute-groups: 1
Active Zoning Database :
DB size: 94340 bytes
Name: zoneset-hac13-200 Zonesets:1 Zones:176
Current Total Zone DB Usage: 2096924 / 2097152 b
Pending (Session) DB size:
```

```
Full DB Copy size: 0 bytes
Active DB Copy size: 0 bytes
SFC size: 0 / 2097152 bytes (0 % used)
Status: Activation completed at 17:28:04 UTC Jun 16 2014
VSAN: 12 default-zone: deny distribute: full Interop: default
mode: enhanced merge-control: allow
session: none
hard-zoning: enabled broadcast: enabled
smart-zoning: disabled
rscn-format: fabric-address
Default zone:
qos: none broadcast: disabled ronly: disabled
Full Zoning Database :
DB size: 84 bytes
Zonesets:0 Zones:1 Aliases: 0 Attribute-groups: 1
Active Zoning Database :
DB size: 144 bytes
Name: zs1 Zonesets:1 Zones:2
Current Total Zone DB Usage: 228 / 2097152 bytes (0 % used)
Pending (Session) DB size:
Full DB Copy size: 0 bytes
Active DB Copy size: 0 bytes
SFC size: 0 / 2097152 bytes (0 % used)
Status: Commit completed at 14:39:33 UTC Jun 27 201
switch(config)#
```

The following example checks the status of the **zoneset distribute vsan***id* command and displays the default zone attributes of a specific VSAN or all active VSANs:

```
switch# show zone status vsan 1
VSAN:1 default-zone:deny distribute:active only Interop:default
    mode:basic merge-control:allow
    session:none
    single-session: enabled
    hard-zoning:enabled
Default zone:
    qos:low broadcast:disabled ronly:disabled
Full Zoning Database :
    Zonesets:0  Zones:0 Aliases:0
Active Zoning Database :
    Database Not Available
Status:
```

Table 16: show zone status Field Descriptions, on page 682 describes the significant fields shown in the **show zone status vsan** display.

Table 16: show zone status Field Descriptions

Field	Description
VSAN:	VSAN number displayed.
default-zone:	Default-zone policy either permit or deny.
Default zone:	The Default zone field displays the attributes for the specified VSAN. The attributes include: Qos level, broadcast zoning enabled/disabled, and read-only zoning enabled/disabled.
distribute:	Distribute full-zone set (full) or active-zone set (active only).
Interop:	Display s interop mode. 100 = default, 1 = standard, 2 and 3 = Non-Cisco vendors.

Field	Description
mode:	Displays zoning mode either basic or enhanced.
merge control:	Displays merge policy either allow or restrict.
Hard zoning is enabled	If hardware resources (TCAM) becomes full, hard zoning is automatically disabled.
Full Zoning Database:	Displays values of zone database. Its zones filed displays the total number of zones present, which include those that does not belongs to any zonesets.
Active Zoning Database:	Displays values of active zone database.
Status:	Displays status of last zone distribution.

show zone analysis

To display detailed analysis and statistical information about the zoning database, use the show zone **analysis** command.

show zone analysis [**pending**] { **active** { **member-ratio** [**detail**] **vsan** *id* | **vsan** *id* } | **vsan** *id* | **zoneset** *name* **vsan** *id* }

Syntax Description

active	Displays analysis information for the active zone set.
member-ratio [**detail**]	Displays the zone member ratio information for a VSAN. This is only valid when the __zone_member_ratio system policy has been overridden and the zone member ratio is configured.
vsan *id*	Displays analysis information for the specified VSAN ID. The range is 1 to 4093.
zoneset *name*	Displays zone set analysis information for the specified zone set.

Command Default

None.

Command Modes

EXEC mode.

Command History

Release	Modification
8.5(1)	The **show zone analysis active vsan** *id* command output was modified to display the number of devices exceeding the zone member ratio limit. Added the **member-ratio**[**detail**] **vsan** *id* option.
3.0(1)	This command was introduced.

Usage Guidelines

None.

Examples

The following example displays detailed statistics and analysis of the active zoning database:

```
switch(config-zone)# show zone analysis active vsan 1
Zoning database analysis vsan 1
  Active zoneset: qoscfg
    Activated at: 14:40:55 UTC Mar 21 2014
    Activated by: Local [ CLI ]
    Default zone policy: Deny
    Number of devices zoned in vsan: 8/8 (Unzoned: 0)
    Number of zone members resolved: 10/18 (Unresolved: 8)
    Num zones: 4
    Number of IVR zones: 0
    Number of IPS zones: 0
    Number of devices exceeding zone member ratio threshold (1:20): 5
    Formatted size: 328 bytes / 4096 Kb
switch(config-zone)#
```

Table 17: show zone analysis Field Descriptions for the Active Zoning Database, on page 685 describes the fields displayed in the output of a **show zone analysis** command for the active zoning database.

Table 17: show zone analysis Field Descriptions for the Active Zoning Database

Field	Description
Active zoneset	Displays the active zone set name. If a zone set has changed in the full zoning database, an asterisk (*) appears after the zone set name. If the active zone set is not present in the full zoning database, a minus sign (-) appears after the zone set name.
Activated at	Displays the time the zone set was activated.

Activated from	Displays the agent that most recently modified the active zoning database. The agent can be one of the following three types:
	• Local: indicates that the active database was last modified locally through a configuration change from one of the following applications:
	  • CLI: The active zoning database was modified by the user from the Command Line Interface.
	  • SNMP: The active zoning database was modified by the user through the Simple Network Management Protocol (SNMP).
	  • GS: The active zoning database was modified from the Generic Services (GS) client.
	  • CIM: The active zoning database was modified by the applications using the Common Information Model (CIM).
	  • INTERNAL: The active zoning database was modified as a result of an internal activation either from Inter-VSAN Routing (IVR) or from the IP Storage services manager.
	• Merge: indicates that the active database was last modified by the Merge protocol. The interface on which the merge occurred is also displayed.
	• Remote: indicates that the active database was last modified by the Change protocol, initiated by a remote switch. The domain, IP address, and switch name of the switch initiating the change are also displayed.
	Note
	The switch name is displayed on the next line, aligned with the domain, only if the switch name is set. The default switch name *switch* and the *ip-address* are not displayed.

Default zoning policy: permit/deny	Displays the status of the default zoning policy for this VSAN.

Field	Description
Number of devices zoned in vsan: a/b (Unzoned: c | Default-zone: d)	Displays the number of devices that are present in the zoning configuration. • a = The number of unique resolved members in the active database. • b = The number of devices logged in, which is the same as the number of entries in the Fibre Channel name server (FCNS) database. • c = The number of devices logged in, but not zoned in the zoning configuration. • d = The number of devices in the default zone. d is displayed only if the default zoning policy is permit.
Number of zone members resolved: a/b (Unresolved: c)	Displays the number of members that are resolved in this VSAN in the form: a out of b members in the zone set are resolved. The number of resolved members is not necessarily unique. For example, if a pWWN member and a fWWN member resolve to the same FC ID, then that member is counted as two resolved members out of two members present. • a = The number of members resolved. • b = The total number of members present. • c = The total number of members unresolved.
Num zones	Displays the total number of zones that are present in the active zone set.
Number of IVR zones	Displays the number of zones added and activated by IVR.
Number of IPS zones	Displays the number of zones added and activated by the IP Storage services manager (IPS-MGR).
Number of devices exceeding zone member ratio threshold	Displays the number of devices exceeding the zone member ratio limit as configured by overriding the __zone_member_ratio system policy.
Formatted database size	Displays the total size of the active database when formatted to be sent over the wire. The formatted database size is displayed in kilobytes (KB) in this format: < *X* KB / *Y* KB, as in the following example. Formatted database size: < 1 KB/2000 KB In this example, the formatted database size is less than 1 KB out of the maximum size of 2000 KB.

The following example displays the list of devices exceeding the zone member ration in VSAN 1:

```
switch# show zone analysis active member-ratio vsan 1
VSAN 1
  Active zoneset: ZS1
  Total number of devices exceeding zone member ratio of 1:20 is 4

                                                      FC4      Zoned
  Zone Member                        Member Type      Features Count
```

```
  ------------------------------------------------------------------------
  zone123                          device-alias     init          22
  fc1/2 swwn 20:00:8c:60:4f:cf:78:81 interface      unknown       22
  zone456                          sym-nodename     unknown       22
  20:00:00:00:00:00:00:02          pwwn             init          22
```

The following example displays in detail the list of devices exceeding the zone member ratio in VSAN 1:

```
switch# show zone analysis active member-ratio detail vsan 1
VSAN 1
  Active zoneset: ZS1
  Total number of devices exceeding zone member ratio of 1:20 is 4

  Zone Member: device-alias host123
    FC4 Features: init
    Zoned Member count: 18
    Zoned With                                    Member Type      FC4 Features
    --------------------------------------------- ---------------- ------------
    10:00:00:00:00:00:00:01                        pwwn             unknown
    20:00:00:00:00:00:00:01                        pwwn             both
    10:00:00:00:00:00:00:02                        pwwn             unknown
    20:00:00:00:00:00:00:02                        pwwn             init
    0xec0001                                       fcid             target
    0xec0002                                       fcid             unknown
    0xec0003                                       fcid             unknown
    0xec0004                                       fcid             target
    80:00:00:00:00:00:00:01                        fwwn             unknown
    80:00:00:00:00:00:00:02                        fwwn             unknown
    host456                                        sym-nodename     unknown
    host457                                        sym-nodename     unknown
    fc1/2 swwn 20:00:8c:60:4f:cf:78:81             interface        unknown
    port-channel 19 swwn 20:00:8c:60:4f:cf:78:81   interface        unknown
    fc1/4 swwn 20:00:8c:60:4f:cf:78:82             interface        unknown
    port-channel 1 domain-id 65                    domain-interface unknown
    fc1/2 domain-id 80                             domain-interface unknown
    host122                                        device-alias     unknown

    Zone Member: interface fc1/2 swwn 20:00:8c:60:4f:cf:78:81
    FC4 Features: unknown
    Zoned Member count: 18
    Zoned With                                    Member Type      FC4 Features
    --------------------------------------------- ---------------- ------------
    10:00:00:00:00:00:00:01                        pwwn             unknown
    20:00:00:00:00:00:00:01                        pwwn             both
    10:00:00:00:00:00:00:02                        pwwn             unknown
    20:00:00:00:00:00:00:02                        pwwn             init
    0xec0001                                       fcid             target
    0xec0002                                       fcid             unknown
    0xec0003                                       fcid             unknown
    0xec0004                                       fcid             target
    80:00:00:00:00:00:00:01                        fwwn             unknown
    80:00:00:00:00:00:00:02                        fwwn             unknown
    host456                                        sym-nodename     unknown
    host457                                        sym-nodename     unknown
    port-channel 19 swwn 20:00:8c:60:4f:cf:78:81   interface        unknown
    fc1/4 swwn 20:00:8c:60:4f:cf:78:82             interface        unknown
    port-channel 1 domain-id 65                    domain-interface unknown
    fc1/2 domain-id 80                             domain-interface unknown
    host122                                        device-alias     unknown
    host123                                        device-alias     init
```

```
  Zone Member: sym-nodename host456
    FC4 Features: unknown
    Zoned Member count: 18
    Zoned With                                      Member Type      FC4 Features
    ----------------------------------------------- ---------------- ------------
    10:00:00:00:00:00:00:01                          pwwn             unknown
    20:00:00:00:00:00:00:01                          pwwn             both
    10:00:00:00:00:00:00:02                          pwwn             unknown
    20:00:00:00:00:00:00:02                          pwwn             init
    0xec0001                                         fcid             target
    0xec0002                                         fcid             unknown
    0xec0003                                         fcid             unknown
    0xec0004                                         fcid             target
    80:00:00:00:00:00:00:01                          fwwn             unknown
    80:00:00:00:00:00:00:02                          fwwn             unknown
    host456                                          sym-nodename     unknown
    fc1/2 swwn 20:00:8c:60:4f:cf:78:81               interface        unknown
    port-channel 19 swwn 20:00:8c:60:4f:cf:78:81     interface        unknown
    fc1/4 swwn 20:00:8c:60:4f:cf:78:82               interface        unknown
    port-channel 1 domain-id 65                      domain-interface unknown
    fc1/2 domain-id 80                               domain-interface unknown
    host122                                          device-alias     unknown
    host123                                          device-alias     init

  Zone Member: pwwn 20:00:00:00:00:00:00:02
    FC4 Features: init
    Zoned Member count: 18
    Zoned With                                      Member Type      FC4 Features
    ----------------------------------------------- ---------------- ------------
    10:00:00:00:00:00:00:01                          pwwn             unknown
    20:00:00:00:00:00:00:01                          pwwn             both
    10:00:00:00:00:00:00:02                          pwwn             unknown
    0xec0001                                         fcid             target
    0xec0002                                         fcid             unknown
    0xec0003                                         fcid             unknown
    0xec0004                                         fcid             target
    80:00:00:00:00:00:00:01                          fwwn             unknown
    80:00:00:00:00:00:00:02                          fwwn             unknown
    host456                                          sym-nodename     unknown
    host457                                          sym-nodename     unknown
    fc1/2 swwn 20:00:8c:60:4f:cf:78:81               interface        unknown
    port-channel 19 swwn 20:00:8c:60:4f:cf:78:81     interface        unknown
    fc1/4 swwn 20:00:8c:60:4f:cf:78:82               interface        unknown
    port-channel 1 domain-id 65                      domain-interface unknown
    fc1/2 domain-id 80                               domain-interface unknown
    host122                                          device-alias     unknown
    host123                                          device-alias     init
```

The following example displays detailed statistics and analysis of the full zoning database:

```
switch# sh zone analysis vsan 1
   Zoning database analysis vsan 1
     Full zoning database
       Last updated at: 14:36:56 UTC Oct 04 2005
       Last updated by: Local [CLI / SNMP / GS / CIM / INTERNAL] or
                        Merge [interface] or
                        Remote [Domain, IP-Address]
                               [Switch name]
       Num zonesets: 1
       Num zones: 1
       Num aliases: 0
       Num attribute groups: 0
       Formatted database size: < 1 Kb / 2000 kb ( < 1% usage)
```

```
Unassigned zones:
  zone name z1 vsan 1
```

Table 18: show zone analysis Field Descriptions for the Full Zoning Database, on page 689 describes the fields displayed in the output of a **show zone analysis** command for the full zoning database.

Table 18: show zone analysis Field Descriptions for the Full Zoning Database

Field	Description
Last updated at	Displays a time stamp showing when the full zoning database was last updated.

Last Updated by	Displays the agent that most recently modified the full zoning database. The agent can be one of the following three types:
	• Local: indicates that the full database was last modified locally through a configuration change from one of the following applications:
	  • CLI: The full zoning database was modified by the user from the Command Line Interface.
	  • SNMP: The full zoning database was modified by the user through the Simple Network Management Protocol (SNMP).
	  • GS: The full zoning database was modified from the Generic Services (GS) client.
	  • CIM: The full zoning database was modified by the applications using the Common Information Model (CIM).
	  • INTERNAL: The full zoning database was modified as a result of an internal activation either from Inter-VSAN Routing (IVR) or from the IP Storage services manager.
	• Merge: indicates that the full database was last modified by the Merge protocol. In this case, the interface on which the merge occurred is also displayed.
	• Remote: indicates that the full database was last modified by the Change protocol, initiated by a remote switch, when the full zone set distribution was enabled. The domain, IP address, and switch name of the switch initiating the change are also displayed.
	Note
	The switch name is displayed on the next line, aligned with the domain, only if the switch name is set. The default switch name *switch* and the *ip-address* are not displayed.

Num zonesets	Displays the total number of zone sets in the database.
Num zones	Displays the total number of zones in the database, including unassigned zones.
Num aliases	Displays the total number of aliases in the database, including unassigned FC aliases.
Num attribute groups	Displays the total number of attribute groups in the database. This field applies only when enhanced zoning is used.

Field	Description
Formatted database size	Displays the total size of the full database when formatted to be sent over the wire. The formatted database size is displayed in kilobytes in this format: < *X* KB / *Y* KB, as in the following example. Formatted database size: < 1 KB/2000 KB In this example, the formatted database size is less than 1 KB out of the maximum size of 2000 KB.
Unassigned zones	Displays all the unassigned zones in the VSAN. Only the names of the zones are displayed. The details about the members of the zone are not displayed in this section.

The following example displays zone set analysis information. See Table 18: show zone analysis Field Descriptions for the Full Zoning Database, on page 689 for a description of the fields in this example:

```
switch# show zone analysis zoneset zs1 vsan 1
Zoning database analysis vsan 1
  Zoneset analysis: zs1
    Num zonesets: 1
    Num zones: 0
    Num aliases: 0
    Num attribute groups: 0
    Formattted size: 20 bytes / 2048 Kb
```

Related Commands

Command	Description
zone compact database	Compacts a zone database in a VSAN.

show zone internal global-info

To display the zone global information, use the **show zone internal global-info** command.

show zone internal global-info

Syntax Description

This command has no arguments or keywords.

Command Default

None.

Command Modes

EXEC mode.

Command History

Release	Modification
5.2(6)	This command was introduced.

Usage Guidelines

None.

Examples

The following example displays the zone server internal state for a VSAN:

```
switch# show zone internal global-info
Global Default Zone Max-Limit :
    Global Default Zone Max-Limit: 16000
    Global Default Zone Member Max-Limit: 32000
    Global Default Zoneset Max-Limit: 1000
    Global Default Zone database size Max-Limit: 4000000 bytes
Global Full Database Counters :
    Zonesets: 0 Zones: 0 Huge id zones: 0
    Read-only Zones: 0 QoS Zones: 0
    Broadcast Zones: 0 Smart-zoning Zones: 0
    Aliases: 0 Attribute-groups: 0
    Members: 0 LUN Members: 0 DDAS Members: 0 Smart-zoning members: 0
    Adv Zoning3 Members(IPv4 + dom-If): 0 IPv6 Members: 0
Global Session Database Counters (diff) :
    Zonesets: 0 Zones: 0 Smart-zoning Zones: 0
    Aliases: 0 Attribute-groups: 0
    Members: 0 LUN Members: 0 DDAS Members: 0 Smart-zoning members: 0
Global Active Database Counters :
    Zonesets: 1 Zones: 5 Huge id zones: 0
    Read-only Zones: 0 QoS Zones: 0
    Broadcast Zones: 0 Smart-zoning Zones: 0
    Members: 6 LUN Members: 0 DDAS Members: 0 Smart-zoning members: 0
    Adv Zoning3 Members(IPv4 + dom-If): 0 IPv6 Members: 0
Global Session Active Database Counters (diff) :
    Zones: 0 Smart-zoning Zones: 0
    Members: 0 LUN Members: 0 DDAS Members: 0 Smart-zoning members: 0
Global ISSU Info:
    fs_upgrade = 0 system_upg = 0 lc_upgrade = 0
Global RSCN Generation Info: Enabled
Global Smart-zoning vsan counter: 1
Global port-address RSCN counter: 0
Global Zone EEM Limit :
    Global Zone EEM Limit: 16000
    Global Zone Member EEM Limit: 32000
```

```
    Global Zoneset EEM Limit: 1000
    Global Zone database size EEM Limit: 4000000 bytes
switch#
```

show zone internal vsan

To display the zone server internal state for a VSA, use the **show zone internal vsan** command.

show zone internal vsan vsan-id

Syntax Description

vsan-id	Specifies the VSAN ID. The range is from 1to 4093.

Command Default

None.

Command Modes

EXEC mode.

Command History

Release	Modification
5.2(6)	This command was introduced.

Usage Guidelines

None.

Examples

The following example displays the zone server internal state for a VSAN:

```
switch# show zone internal vsan 1
VSAN: 1 default-zone: deny(rw) distribute: active only
    E_D_TOV: 2000 R_A_TOV: 10000 D_S_TOV: 5000 F_S_TOV: 5000 F_D_TOV: 2000
    Interop: default IOD: disable bcast: unsupported dflt-bcast: unsupported dfl
t-qos: 0
    Smart-zoning: disabled    Inc Tmp SZ mode: 0    Tmp Smart-zoning: 0
    DBLock:-(F count:0) Ifindex Table Size: 5 Transit Frame Index: 0
    Total Transit Frame Count: 0 Transit Discard Count: 0
Full Database Counters :
    Zonesets: 0 Zones: 0 Huge id zones: 0
    Read-only Zones: 0 QoS Zones: 0
    Broadcast Zones: 0 Smart-zoning Zones: 0
    Aliases: 0 Attribute-groups: 0
    Members: 0 LUN Members: 0 DDAS Members: 0 Smart-zoning members: 0
    Adv Zoning3 Members(IPv4 + dom-If): 0 IPv6 Members: 0
switch#
```

show zone policy

To display the zone policies, use the show zone policy command.

show zone policy

Syntax Description

This command has no arguments or keywords.

Command Default

None.

Command Modes

EXEC mode.

Command History

Release	Modification
5.2(6)	This command was introduced.

Usage Guidelines

None.

Examples

The following example displays the zone policies:

```
switch# show zone policy
Vsan: 1
   Default-zone: deny
   Distribute: active only
   Broadcast: unsupported
   Merge control: allow
   Generic Service: read-write
   Smart-zone: disabled
switch#
```

show zone smart-zoning auto-conv

To display the previous auto convert status, use the show zone smart-zoning auto-conv command.

show zone smart-zoning auto-conv {**log errors** | **status vsan vsan-id**}

Syntax Description

log	Displays the logged messages.
errors	Displays the error logs for smart zoning auto convert.
status	Displays the previous auto convert status.
vsan	Displays the zones belonging to the specified VSAN.
vsan-id	VSAN ID. The range is from 1 to 4093.

Command Default

None.

Command Modes

EXEC mode.

Command History

Release	Modification
5.2(6)	This command was introduced.

Usage Guidelines

None.

Examples

The following example displays the previous auto convert status for a VSAN:

```
switch# show zone smart-zoning auto-conv status vsan 1
switch#
```

show zone-attribute-group

To display the device name information, use the **show zone-attribute-group** command.

{**show zone-attribute-group** [**name** *group-name*] | [**pending**] | [**vsan** *vsan-id*]}

Syntax Description

name *group-name*	Displays the entire device name database.
pending	Displays the pending device name database information.
vsan *vsan-id*	Specifies a VSAN ID. The range is 1 to 4093.

Command Default

None.

Command Modes

EXEC mode.

Command History

Release	Modification
2.0(x)	This command was introduced.

Usage Guidelines

None.

Examples

The following example shows how to display the contents of pending zone attribute groups.

```
switch# show zone-autoboot-group pending
zone-attribute-group name $default_zone_attr_group$ vsan 4061
zone-attribute-group name admin-group vsan 4061
  broadcast
```

Related Commands

Command	Description
zone-attribute-group name	Configures zone attribute groups.

show zoneset

To display the configured zone sets, use the **show zoneset** command.

show zoneset [[**active** [**vsan** *vsan-id*]] | [**brief** [**active** [**vsan** *vsan-id*] | **vsan** *vsan-id*]] | [**name** *zoneset-name* [**active vsan** *vsan-id*] | [**brief** [**active vsan** *vsan-id* | **vsan** *vsan-id*]] | [**pending** [**active vsan** *vsan-id* | **brief** [**active vsan** *vsan-id* | **vsan** *vsan-id*] | **vsan** *vsan-id*]] | [**vsan** *vsan-id*]] | [**pending** [**active vsan** *vsan-id*] | [**brief** [**active vsan** *vsan-id* | **vsan** *vsan-id*]] | [**vsan** *vsan-id*]] | [**vsan vsan-id**]]

Syntax Description

active	Displays only active zone sets.
vsan	Displays the VSAN.
vsan-id	Specifies the ID of the VSAN. The range is 1 to 4093
brief	Displays zone set members in a brief list.
name	Displays members of a specified zone set.
zoneset-name	Specifies the zone set name. The maximum is 64.
pending	Displays zone sets members that are in session.

Command Default

None.

Command Modes

EXEC mode

Command History

Release	Modification
1.2(2)	This command was modified.

Usage Guidelines

None.

Examples

The following example displays configured zone set information.

```
switch(config)# show zoneset vsan 1
zoneset name qoscfg vsan 1
  zone name qos1 vsan 1
    zone-attribute-group name qos1-attr-group vsan 1
    pwwn 50:08:01:60:01:5d:51:11
    pwwn 50:08:01:60:01:5d:51:10
    pwwn 50:08:01:60:01:5d:51:13

  zone name qos3 vsan 1
    zone-attribute-group name qos3-attr-group vsan 1
    pwwn 50:08:01:60:01:5d:51:11
    pwwn 50:08:01:60:01:5d:51:12
    pwwn 50:08:01:60:01:5d:51:13

  zone name sb1 vsan 1
    pwwn 20:0e:00:11:0d:10:dc:00
```

```
    pwwn 20:0d:00:11:0d:10:da:00
    pwwn 20:13:00:11:0d:15:75:00
    pwwn 20:0d:00:11:0d:10:db:00
```

The following example displays configured zone set information for a specific VSAN.

```
switch# show zoneset vsan 2-3
zoneset name ZoneSet2 vsan 1
  zone name Zone2 vsan 1
     fwwn 20:52:00:05:30:00:2a:1e
    fwwn 20:53:00:05:30:00:2a:1e
    fwwn 20:54:00:05:30:00:2a:1e
    fwwn 20:55:00:05:30:00:2a:1e
    fwwn 20:56:00:05:30:00:2a:1e
  zone name Zone1 vsan 1
    pwwn 21:00:00:20:37:6f:db:dd
    pwwn 21:00:00:20:37:a6:be:2f
    pwwn 21:00:00:20:37:9c:48:e5
    fcalias Alias1
zoneset name ZoneSet1 vsan 1
  zone name Zone1 vsan 1
    pwwn 21:00:00:20:37:6f:db:dd
    pwwn 21:00:00:20:37:a6:be:2f
    pwwn 21:00:00:20:37:9c:48:e5
    fcalias Alias1
```

ShowAnalytics

To display the SAN analytics information in a tabular format, use the **ShowAnalytics** command.

Note For information on view types, see the Cisco MDS 9000 Series NX-OS SAN Analytics and Telemetry Configuration Guide.

ShowAnalytics

Syntax Description

--errors	Displays error metrics for all ITLs.
--errorsonly	Displays only the error metrics for all ITLs.
--evaluate-npuload	Displays per port network processing unit (NPU) load.
-h, *--help*	(Optional) Provides information about the list of available keywords and arguments.
--info	Displays information specific to a view type.
--minmax	Displays minimum, maximum, and peak values for ITLs.
--outstanding-io	Displays outstanding IO per ITL for an interface.
--top	Displays the top ITLs based on key. The default key is I/O operations per second (IOPS).
--version	(Optional) Displays the SAN analytics version.
--vsan-thput	(Optional) Displays per VSAN SCSI throughput for interface.
--initiator-itl	Displays the SAN analytics information of an initiator-target-LUN (ITL) flow.
--target-itl	Displays the SAN analytics information of a target ITL flow.
--alias	(Optional) Displays device-alias information for initiators and targets.
--initiator id	(Optional) Displays the SAN analytics information for an initiator.
--interface slot/port	(Optional) Displays the SAN analytics information for an interface.
--key [*iops* | *thput* | *ect*]	(Optional) Specifies the key value for the *--top* option. The default key is IOPS.
--limit	(Optional) Specifies the maximum number of ITL records to display. The range is 1-20000. The default limit value is 20000.
--lun id	(Optional) Displays the SAN analytics information for a logical unit number (LUN).
--module	(Optional) Specifies the modules to be used in the *--evaluate-npuload* option.

--progress	(Optional) Specifies progress for the *--top* option. This option must not be used on a console.
--refresh	(Optional) Specifies to refresh output of the *--outstanding-io* option.
--target id	(Optional) Displays the SAN analytics information for a target.
--vsan id	(Optional) Displays the SAN analytics information for a VSAN. The VSAN ID range is from 1 to 4093.

Command Default

None.

Command Modes

Privileged EXEC (#)

Command History

Release	Modification
8.4(1a)	Added the **--alias** argument for the **--top** option.
8.4(1)	Added the **--errorsonly**, **--evaluate-npuload**, **--minmax**, **--outstanding-io**, **--top**, **--vsan-thput**, **--alias**, **--limit**, **--key**, **--limit**, **--module**, **--progress**, and **--refresh** options.
8.2(1)	This command was introduced.

Usage Guidelines

To display the SAN analytics information, you must enable the SAN Analytics feature on the switch and its interfaces. The **ShowAnalytics** command is different from a regular Cisco MDS NX-OS **show** command. Hence, the **ShowAnalytics** command does not support the command completion feature. The **ShowAnalytics** command uses python script to extract and display metrics in a tabular format. A future Cisco MDS NX-OS Release will allow you to modify the python script to customize the **ShowAnalytics** command output. The **ShowAnalytics** command is aliased to the *source sys/analytics.py* path.

The **ShowAnalytics** overlay CLI displays accumulative data of Exchange Completion Time (ECT) for the *--initiator-itl* and *--target-itl* options under the *--info* option. However, it displays instantaneous data for rate and bandwidth metrics.

If the active ITL count exceeds the documented limit, the **ShowAnalytics** overlay command displays a warning and exits. For information on the ITL count limit, see the Cisco MDS NX-OS Configuration Limits, Release 8.x.

If you configure a push query with the **clear** keyword as recommended by Virtual Instruments or DCNM, minimum and maximum flow metrics will not have accurate values.

This example shows how to get information about using the overlay CLI:

```
switch# ShowAnalytics --help

ShowAnalytics   --errors <options> | --errorsonly <options> | --evaluate-npuload <options> | --help | --info <options> | --minmax <options> | --outstanding-io <options> | --top
 <options> | --version |  --vsan-thput <options>


OPTIONS :
---------

 --errors                Provides error metrics for all ITLs
                         ShowAnalytics --errors [--initiator-itl <args> | --target-itl <args>]

      --initiator-itl         Provides errors metrics for initiator ITLs
                              Args :  [--interface <interface>] [--initiator <initiator_fcid>] [--target <target_fcid>] [--lun <lun_id>] [--alias] [--limit <itl_limit>]
      --target-itl            Provides errors metrics for target ITLs
                              Args :  [--interface <interface>] [--initiator <initiator_fcid>] [--target <target_fcid>] [--lun <lun_id>] [--alias] [--limit <itl_limit>]

 --errorsonly            Provides error metrics for ITLs. Only display ITLs with non-zero errors.
                         ShowAnalytics --errorsonly [--initiator-itl <args> | --target-itl <args>]
```

```
      --initiator-itl         Provides errors metrics for initiator ITLs
                              Args :  [--interface <interface>] [--initiator <initiator_fcid>] [--target <target_fcid>] [--lun <lun_id>] [--alias]
      --target-itl            Provides errors metrics for target ITLs
                              Args :  [--interface <interface>] [--initiator <initiator_fcid>] [--target <target_fcid>] [--lun <lun_id>] [--alias]

 --evaluate-npuload       Provides per port NPU load
                          This option must be run without analytics interface configurations
                          Args :  [--module <mod1,mod2> | --interface <int1,int2>]
                          Provides system wide data if --module and --interface arguments are not present

 --help                   Provides help about this utility

 --info                   Provide information about ITLs
                          ShowAnalytics --info [--initiator-itl <args> | --target-itl <args>]

      --initiator-itl         Provides ITL view for initiators ITLs
                              Args :  [--interface <interface>] [--initiator <initiator_fcid>] [--target <target_fcid>] [--lun <lun_id>] [--alias] [--limit <itl_limit>]

      --target-itl            Provides ITL view for target  ITLs
                              Args :  [--interface <interface>] [--initiator <initiator_fcid>] [--target <target_fcid>] [--lun <lun_id>] [--alias] [--limit <itl_limit>]

 --minmax                 Provide Min/Max/Peak values of ITLs
                          ShowAnalytics --minmax [--initiator-itl <args> | --target-itl <args>]

      --initiator-itl         Provides ITL view for initiators ITLs
                              Args :  [--interface <interface>] [--initiator <initiator_fcid>] [--target <target_fcid>] [--lun <lun_id>] [--alias] [--limit <itl_limit>]

      --target-itl            Provides ITL view for target  ITLs
                              Args :  [--interface <interface>] [--initiator <initiator_fcid>] [--target <target_fcid>] [--lun <lun_id>] [--alias] [--limit <itl_limit>]

 --outstanding-io         Provides Outstanding io per ITL for an interface
                          Args : [--interface <interface>] [--initiator <initiator_fcid>] [--target <target_fcid>] [--lun <lun_id>] [--limit] [--refresh]

 --top                    Provides top ITLs based on key. Default key is IOPS
                       Args : [--interface <interface>] [--initiator <initiator_fcid>] [--target <target_fcid>] [--lun <lun_id>] [--limit] [--key <IOPS|THPUT|ECT>] [--progress]
 [--alias]

 --version                Provides version details of this utility

 --vsan-thput             Provides per vsan scsi traffic rate for interface.
                          Args : [--interface <interface>]

ARGUMENTS:
---------

      --alias                           Prints device-alias for initiator and target. Terminal Emulator should support 511 width size.
      --initiator         <initiator_fcid>    Specifies initiator FCID in the format 0xDDAAPP
      --interface         <interface>         Specifies Interface in format module/port
      --key               <iops|thput|ect>    Defines the key value for the --top option
      --limit             <itl_limit>         Maximum number of ITL records to display. Valid range 1-20000. Default = 20000
      --lun               <lun_id>            Specifies LUN ID in the format XXXX-XXXX-XXXX-XXXX
      --module            <mod1,mod2>         Specifies module list for --evaluate-npuload option example 1,2
      --progress                              Provides progress for --top option. Should not be used on console
      --refresh                               Refreshes output of --outstanding-io
      --target            <target_fcid>       Specifies target FCID in the format 0xDDAAPP
      --vsan              <vsan_number>       Specifies vsan number

Note: --interface can take range of interfaces in case of --evaluate-npuload and port-channel only in case of --vsan-thput
```

Note

- All ShowAnalytics options support only the SCSI analytics type except the **--evaluate-npuload** option that supports both SCSI and NVMe analytics types.
- Run the **--evaluate-npuload** option before configuring the *analytics type* on interfaces. The **--evaluate-npuload** option does not work on a module even if one of the interface on the module is configured with an analytic type.
- The **--outstanding-io** option works only on F ports.

This example shows how to display the overlay CLI version:

```
switch# ShowAnalytics --version
ShowAnalytics 2.1
```

This example shows how to display the flow metrics of an initiator ITL:

```
switch# ShowAnalytics --info --initiator-itl
2019-04-08 11:26:23.074904

Interface fc3/33
+----------------------------------------+-------------+------------------+-----------------+
|        VSAN|Initiator|Target|LUN         |  Avg IOPS    |  Avg Throughput   |   Avg ECT       |
+----------------------------------------+-------------+------------------+-----------------+
```

```
|                                       | Read | Write | Read   |  Write   | Read   | Write   |
|                                       |      |       |        |          |        |         |
| 10|0x1c03e0|0xd601a0|0000-0000-0000-0000 |   0  | 24    |  0     | 12.1 KB/s|    0   | 2.2 ms  |
| 10|0x1c03e1|0xd601a1|0000-0000-0000-0000 |   0  | 21    |  0     | 10.8 KB/s|    0   | 2.2 ms  |
+---------------------------------------+------+-------+--------+----------+--------+---------+

Interface fc3/34
+---------------------------------------+-------------+------------------+------------------+
|        VSAN|Initiator|Target|LUN         |  Avg IOPS    |  Avg Throughput   |   Avg ECT        |
+---------------------------------------+-------------+------------------+------------------+
|                                       | Read | Write | Read   |   Write  | Read   | Write   |
|                                       |      |       |        |          |        |         |
| 10|0x1c0200|0xd60000|0000-0000-0000-0000 |   0  | 17    |   0    | 8.6 KB/s |    0   | 2.2 ms  |
| 10|0x1c0201|0xd60001|0000-0000-0000-0000 |   0  | 17    |   0    | 8.8 KB/s |    0   | 2.2 ms  |
+---------------------------------------+------+-------+--------+----------+--------+---------+

Interface fc3/35
+---------------------------------------+-------------+---------------------+-----------------+
|        VSAN|Initiator|Target|LUN         |  Avg IOPS    |  Avg Throughput      |   Avg ECT      |
+---------------------------------------+-------------+---------------------+-----------------+
|                                       | Read | Write | Read   |   Write     | Read   | Write  |
|                                       |      |       |        |             |        |        |
| 10|0x1c0220|0xd60020|0000-0000-0000-0000 |   0  | 33    |   0    |  16.8 KB/s  |   0    | 2.2 ms |
| 10|0x1c0221|0xd60021|0000-0000-0000-0000 |   0  | 28    |   0    |  14.2 KB/s  |   0    | 2.2 ms |
+---------------------------------------+------+-------+--------+-------------+--------+--------+
```

This example shows how to display the flow metrics of a target ITL:

```
switch# ShowAnalytics --info --target-itl
2019-04-09 11:11:17.974991

Interface fc8/15
+---------------------------------------+----------+----------------+--------------+
|         VSAN|Initiator|Target|LUN          |Avg IOPS  | Avg Throughput |  Avg ECT     |
+---------------------------------------+----------+----------------+--------------+
|                                       |Read|Write| Read | Write   | Read | Write |
|                                       |    |     |      |         |      |       |
| 3300|0x040001|0x030033|0000-0000-0000-0000 |  0 |4047 |  0   |15.8 MB/s|  0   |84.0 us|
| 3300|0x040003|0x030035|0000-0000-0000-0000 |  0 |4045 |  0   |15.8 MB/s|  0   |85.0 us|
| 3300|0x040005|0x030037|0000-0000-0000-0000 |  0 |4033 |  0   |15.8 MB/s|  0   |85.0 us|
| 3300|0x040007|0x030039|0000-0000-0000-0000 |  0 |4041 |  0   |15.8 MB/s|  0   |86.0 us|
| 3300|0x040009|0x03003b|0000-0000-0000-0000 |  0 |4048 |  0   |15.8 MB/s|  0   |86.0 us|
| 3300|0x04000b|0x03003d|0000-0000-0000-0000 |  0 |4040 |  0   |15.8 MB/s|  0   |86.0 us|
| 3300|0x04000d|0x03003f|0000-0000-0000-0000 |  0 |4055 |  0   |15.8 MB/s|  0   |86.0 us|
| 3300|0x04000f|0x030041|0000-0000-0000-0000 |  0 |4052 |  0   |15.8 MB/s|  0   |86.0 us|
| 3300|0x040011|0x030043|0000-0000-0000-0000 |  0 |4055 |  0   |15.8 MB/s|  0   |86.0 us|
| 3300|0x040013|0x030045|0000-0000-0000-0000 |  0 |4056 |  0   |15.8 MB/s|  0   |86.0 us|
+---------------------------------------+----------+----------------+--------------+

 Interface fc8/17
+---------------------------------------+----------+-----------------------+---------+
|        VSAN|Initiator|Target|LUN        | Avg IOPS  |      Avg Throughput    | Avg ECT |
+---------------------------------------+----------+-----------------------+---------+
|                                       |Read| Write| Read    |Write| Read   |   Write |
|                                       |    |      |         |     |        |         |
| 5|0xed0500|0xef0720|0001-0000-0000-0000 | 31 | 0    |31.5 KB/s|  0  |23.9 ms |    0    |
| 5|0xed0500|0xef0720|0002-0000-0000-0000 | 31 | 0    |31.2 KB/s|  0  |23.9 ms |    0    |
| 5|0xed0500|0xef0720|0003-0000-0000-0000 | 31 | 0    |31.0 KB/s|  0  |23.9 ms |    0    |
| 5|0xed0500|0xef0720|0004-0000-0000-0000 | 31 | 0    |31.5 KB/s|  0  |23.9 ms |    0    |
| 5|0xed0500|0xef0720|0005-0000-0000-0000 | 31 | 0    |31.8 KB/s|  0  |23.9 ms |    0    |
| 5|0xed0500|0xef0720|0006-0000-0000-0000 | 31 | 0    |31.5 KB/s|  0  |23.9 ms |    0    |
| 5|0xed0500|0xef0720|0007-0000-0000-0000 | 31 | 0    |31.8 KB/s|  0  |23.9 ms |    0    |
| 5|0xed0500|0xef0720|0008-0000-0000-0000 | 31 | 0    |31.2 KB/s|  0  |23.9 ms |    0    |
| 5|0xed0500|0xef0720|0009-0000-0000-0000 | 31 | 0    |31.2 KB/s|  0  |23.9 ms |    0    |
| 5|0xed0500|0xef0720|000a-0000-0000-0000 | 31 | 0    |31.5 KB/s|  0  |24.0 ms |    0    |
+---------------------------------------+----------+-----------------------+---------+
```

This example shows how to display all initiator ITLs and limit the output to 10 random records:

```
switch# ShowAnalytics --info --target-itl --interface fc8/15 --limit 10
2019-04-09 11:11:24.652190

 Interface fc8/15
+---------------------------------------+-------------+------------------+----------------+
|         VSAN|Initiator|Target|LUN          |  Avg IOPS    |  Avg Throughput  |   Avg ECT      |
+---------------------------------------+-------------+------------------+----------------+
|                                       | Read | Write |  Read |   Write  | Read |  Write  |
|                                       |      |       |       |          |      |         |
| 3300|0x040001|0x030033|0000-0000-0000-0000 |  0   | 4047  |  0    |15.8 MB/s |  0   | 84.0 us |
| 3300|0x040003|0x030035|0000-0000-0000-0000 |  0   | 4045  |  0    |15.8 MB/s |  0   | 85.0 us |
| 3300|0x040005|0x030037|0000-0000-0000-0000 |  0   | 4033  |  0    |15.8 MB/s |  0   | 85.0 us |
| 3300|0x040007|0x030039|0000-0000-0000-0000 |  0   | 4041  |  0    |15.8 MB/s |  0   | 86.0 us |
| 3300|0x040009|0x03003b|0000-0000-0000-0000 |  0   | 4048  |  0    |15.8 MB/s |  0   | 86.0 us |
| 3300|0x04000b|0x03003d|0000-0000-0000-0000 |  0   | 4040  |  0    |15.8 MB/s |  0   | 86.0 us |
| 3300|0x04000d|0x03003f|0000-0000-0000-0000 |  0   | 4055  |  0    |15.8 MB/s |  0   | 86.0 us |
| 3300|0x04000f|0x030041|0000-0000-0000-0000 |  0   | 4052  |  0    |15.8 MB/s |  0   | 86.0 us |
| 3300|0x040011|0x030043|0000-0000-0000-0000 |  0   | 4055  |  0    |15.8 MB/s |  0   | 86.0 us |
| 3300|0x040013|0x030045|0000-0000-0000-0000 |  0   | 4056  |  0    |15.8 MB/s |  0   | 86.0 us |
+---------------------------------------+-------------+------------------+----------------+
```

This example shows how to display the flow metrics of VSAN 10 of an initiator ITL:

```
switch# ShowAnalytics --info --initiator-itl --vsan 10
2019-04-08 11:26:23.074904
```

```
Interface fc3/33
+---------------------------------------+-------------+-----------------+---------------+
|        VSAN|Initiator|Target|LUN       |  Avg IOPS   |  Avg Throughput |  Avg ECT      |
+---------------------------------------+-------------+-----------------+---------------+
|                                       | Read | Write |  Read |   Write   |  Read | Write |
|                                       |              |                 |               |
| 10|0x1c03e0|0xd601a0|0000-0000-0000-0000 |  0   | 24    |   0   | 12.1 KB/s |   0   | 2.2 ms|
| 10|0x1c03e1|0xd601a1|0000-0000-0000-0000 |  0   | 21    |   0   | 10.8 KB/s |   0   | 2.2 ms|
+---------------------------------------+-------------+-----------------+---------------+

Interface fc3/34
+---------------------------------------+-------------+-----------------+---------------+
|        VSAN|Initiator|Target|LUN       |  Avg IOPS   |  Avg Throughput |   Avg ECT     |
+---------------------------------------+-------------+-----------------+---------------+
|                                       | Read | Write |  Read |   Write   |  Read  | Write |
|                                       |              |                 |               |
| 10|0x1c0200|0xd60000|0000-0000-0000-0000 |  0   | 17    |   0   | 8.6 KB/s  |    0   | 2.2 ms|
| 10|0x1c0201|0xd60001|0000-0000-0000-0000 |  0   | 17    |   0   | 8.8 KB/s  |    0   | 2.2 ms|
+---------------------------------------+-------------+-----------------+---------------+
```

This example shows how to display the flow metrics of interface fc8/15 of a target ITL:

```
switch# ShowAnalytics --info --target-itl --interface fc8/15
2019-04-09 11:11:17.974991

Interface fc8/15
+---------------------------------------+-------------+-----------------+---------------+
|         VSAN|Initiator|Target|LUN       |  Avg IOPS   |  Avg Throughput |   Avg ECT     |
+---------------------------------------+-------------+-----------------+---------------+
|                                       | Read | Write |  Read |   Write   | Read |  Write |
|                                       |              |                 |              |
| 3300|0x040001|0x030033|0000-0000-0000-0000 |  0   | 4047  |   0   | 15.8 MB/s |  0   | 84.0 us |
| 3300|0x040003|0x030035|0000-0000-0000-0000 |  0   | 4045  |   0   | 15.8 MB/s |  0   | 85.0 us |
| 3300|0x040005|0x030037|0000-0000-0000-0000 |  0   | 4033  |   0   | 15.8 MB/s |  0   | 85.0 us |
| 3300|0x040007|0x030039|0000-0000-0000-0000 |  0   | 4041  |   0   | 15.8 MB/s |  0   | 86.0 us |
| 3300|0x040009|0x03003b|0000-0000-0000-0000 |  0   | 4048  |   0   | 15.8 MB/s |  0   | 86.0 us |
| 3300|0x04000b|0x03003d|0000-0000-0000-0000 |  0   | 4040  |   0   | 15.8 MB/s |  0   | 86.0 us |
| 3300|0x04000d|0x03003f|0000-0000-0000-0000 |  0   | 4055  |   0   | 15.8 MB/s |  0   | 86.0 us |
| 3300|0x04000f|0x030041|0000-0000-0000-0000 |  0   | 4052  |   0   | 15.8 MB/s |  0   | 86.0 us |
| 3300|0x040011|0x030043|0000-0000-0000-0000 |  0   | 4055  |   0   | 15.8 MB/s |  0   | 86.0 us |
| 3300|0x040013|0x030045|0000-0000-0000-0000 |  0   | 4056  |   0   | 15.8 MB/s |  0   | 86.0 us |
+---------------------------------------+-------------+-----------------+---------------+
```

This example shows how to display the flow metrics and device alias information of interface fc1/28 of a target ITL and limit the output to 10 random records:

```
switch# ShowAnalytics --info --target-itl --alias  --interface fc1/28 --limit 10
2019-04-09 12:04:07.032501

Interface fc1/28
+---------------------------------------+-------------+-----------------+---------------+---------------------+-------------------+
|         VSAN|Initiator|Target|LUN       | Avg IOPS    |  Avg Throughput |      Avg ECT    |Initiator Device alias|Target Device alias|
+---------------------------------------+-------------+-----------------+---------------+---------------------+-------------------+
|                                       | Read| Write|   Read    |  Write    |   Read | Write  |                     |                   |
|                                       |             |                 |               |                     |                   |
| 108|0xbc09e9|0x500009|0001-0000-0000-0000 |  0  | 0    |    0      |    0      |   0    |   0    |                     | SB_112_port_T_8_9 |
| 108|0xbc09e9|0x500049|0000-0000-0000-0000 |  0  | 0    |    0      |    0      |   0    |   0    |                     | SB_112_port_T_10_9|
| 108|0xbc09e1|0xea0701|0001-0000-0000-0000 |  0  | 0    |    0      |    0      |   0    |   0    |                     | SB_112_port_T_12_1|
| 108|0xbc0915|0xea0701|0002-0000-0000-0000 |  12 | 10   |408.0 KB/s|320.0 KB/s |370.0 us|687.0 us| SB_112_port_I_1_1   | SB_112_port_T_12_1|
| 108|0xbc0917|0xea0703|0000-0000-0000-0000 |  56 | 52   | 1.8 MB/s |  1.6 MB/s |137.0 us|554.0 us| SB_112_port_I_1_3   | SB_112_port_T_12_3|
| 108|0xbc09e5|0x500005|0004-0000-0000-0000 |  0  | 0    |    0      |    0      |   0    |   0    |                     | SB_112_port_T_8_5 |
| 108|0xbc09e5|0x500045|0003-0000-0000-0000 |  0  | 0    |    0      |    0      |   0    |   0    |                     | SB_112_port_T_10_5|
| 108|0xbc09e7|0x500007|0002-0000-0000-0000 |  0  | 0    |    0      |    0      |   0    |   0    |                     | SB_112_port_T_8_7 |
| 108|0xbc0919|0x500045|0004-0000-0000-0000 |  22 | 18   |704.0 KB/s|584.0 KB/s |123.0 us|403.0 us| SB_112_port_I_1_5   | SB_112_port_T_10_5|
| 108|0xbc09e7|0x500047|0001-0000-0000-0000 |  0  | 0    |    0      |    0      |   0    |   0    |                     | SB_112_port_T_10_7|
+---------------------------------------+-------------+-----------------+---------------+---------------------+-------------------+
```

This example shows how to display the flow metrics of target ID 0xef0720 of a target ITL:

```
switch# ShowAnalytics --info --target-itl --target 0xef0720
2019-04-09 11:16:26.246741

 Interface fc8/17
+---------------------------------------+-----------+----------------+---------------+
|        VSAN|Initiator|Target|LUN       |  Avg IOPS  |  Avg Throughput |     Avg ECT    |
+---------------------------------------+-----------+----------------+---------------+
|                                       |Read|Write |  Read    | Write | Read    | Write |
|                                       |           |                |               |
| 5|0xed0500|0xef0720|0001-0000-0000-0000 |  40 | 0   |40.2 KB/s|  0    | 23.8 ms|  0    |
| 5|0xed0500|0xef0720|0002-0000-0000-0000 |  40 | 0   |40.0 KB/s|  0    | 23.9 ms|  0    |
| 5|0xed0500|0xef0720|0003-0000-0000-0000 |  40 | 0   |40.2 KB/s|  0    | 23.9 ms|  0    |
| 5|0xed0500|0xef0720|0005-0000-0000-0000 |  40 | 0   |40.0 KB/s|  0    | 23.9 ms|  0    |
| 5|0xed0500|0xef0720|0004-0000-0000-0000 |  40 | 0   |40.5 KB/s|  0    | 23.9 ms|  0    |
| 5|0xed0500|0xef0720|0006-0000-0000-0000 |  40 | 0   |40.2 KB/s|  0    | 23.9 ms|  0    |
| 5|0xed0500|0xef0720|0007-0000-0000-0000 |  40 | 0   |40.2 KB/s|  0    | 23.9 ms|  0    |
| 5|0xed0500|0xef0720|0008-0000-0000-0000 |  39 | 0   |39.8 KB/s|  0    | 23.9 ms|  0    |
| 5|0xed0500|0xef0720|0009-0000-0000-0000 |  40 | 0   |40.2 KB/s|  0    | 23.9 ms|  0    |
| 5|0xed0500|0xef0720|000a-0000-0000-0000 |  40 | 0   |40.2 KB/s|  0    | 23.9 ms|  0    |
| 5|0xed0500|0xef0720|000b-0000-0000-0000 |  40 | 0   |40.0 KB/s|  0    | 24.0 ms|  0    |
| 5|0xed0500|0xef0720|000c-0000-0000-0000 |  40 | 0   |40.5 KB/s|  0    | 24.0 ms|  0    |
| 5|0xed0500|0xef0720|000d-0000-0000-0000 |  40 | 0   |40.2 KB/s|  0    | 24.0 ms|  0    |
| 5|0xed0500|0xef0720|000e-0000-0000-0000 |  40 | 0   |40.0 KB/s|  0    | 24.0 ms|  0    |
```

```
| 5|0xed0500|0xef0720|000f-0000-0000-0000 |  40 | 0    |40.2 KB/s|  0    | 24.0 ms|  0    |
| 5|0xed0500|0xef0720|0010-0000-0000-0000 |  40 | 0    |40.2 KB/s|  0    | 24.0 ms|  0    |
| 5|0xed0500|0xef0720|0011-0000-0000-0000 |  40 | 0    |40.0 KB/s|  0    | 24.0 ms|  0    |
| 5|0xed0500|0xef0720|0012-0000-0000-0000 |  40 | 0    |40.2 KB/s|  0    | 24.0 ms|  0    |
| 5|0xed0500|0xef0720|0013-0000-0000-0000 |  40 | 0    |40.5 KB/s|  0    | 24.0 ms|  0    |
| 5|0xed0500|0xef0720|0014-0000-0000-0000 |  39 | 0    |39.8 KB/s|  0    | 24.0 ms|  0    |
+-----------------------------------------+-----------+----------------+---------------+
```

This example shows how to display the flow metrics of initiator ID 0xed0500, target ID 0xef0720, and LUN ID 0001-0000-0000-0000 of a target ITL:

```
switch# ShowAnalytics --info --target-itl --initiator 0xed0500 --target 0xef0720 --lun 0001-0000-0000-0000
2019-04-09 11:17:24.643292

B: Bytes, s: Seconds, Avg: Average, Acc: Accumulative,
ns: Nano Seconds, ms: Milli Seconds, us: Micro Seconds,
GB: Giga Bytes, MB: Mega Bytes, KB: Killo Bytes,
ECT: Exchange Completion Time, DAL: Data Access Latency


Interface : fc8/17
+-------------------------------+---------+---------+-----------+
| Metric                        |   Min   |   Max   |     Avg   |
+-------------------------------+---------+---------+-----------+
| Read  IOPS          (4sec Avg) |      NA |      NA |        39 |
| Write IOPS          (4sec Avg) |      NA |      NA |         0 |
| Read  Throughput    (4sec Avg) |      NA |      NA | 39.8 KB/s |
| Write Throughput    (4sec Avg) |      NA |      NA |         0 |
| Read  Size          (Acc Avg)  |  1024 B |  1024 B |    1024 B |
| Write Size          (Acc Avg)  |       0 |       0 |         0 |
| Read  DAL           (Acc Avg)  | 28.0 us | 30.0 ms |   23.8 ms |
| Write DAL           (Acc Avg)  |   0     |   0     |     0     |
| Read  ECT           (Acc Avg)  | 28.0 us | 30.0 ms |   23.8 ms |
| Write ECT           (Acc Avg)  |   0     |   0     |     0     |
| Read  Inter-IO-Gap  (Acc Avg)  | 73.2 us |   2.0 s |   25.0 ms |
| Write Inter-IO-Gap  (Acc Avg)  |   0     |   0     |     0     |
+-------------------------------+---------+---------+-----------+
```

For information on flow metrics, see the "Flow Metrics" section in the Cisco MDS 9000 Series SAN Analytics and SAN Telemetry Streaming Configuration Guide, Release 8.x.

This example shows how to display the flow metrics of initiator ID 0xed0500 and LUN ID 0001-0000-0000-0000 of a target ITL:

```
switch# ShowAnalytics --info --target-itl --initiator 0xed0500  --lun 0001-0000-0000-0000
2019-04-09 11:18:40.132828

 Interface fc8/17
+-----------------------------------------+-------------+-----------------+----------------+
|        VSAN|Initiator|Target|LUN        |  Avg IOPS   |   Avg Throughput |    Avg ECT     |
+-----------------------------------------+-------------+-----------------+----------------+
|                                         | Read | Write |  Read   | Write  |  Read   | Write |
|                                         |              |                 |                |
| 5|0xed0500|0xef0720|0001-0000-0000-0000 |   39 | 0     |39.8 KB/s|   0    | 23.8 ms |  0    |
+-----------------------------------------+-------------+-----------------+----------------+
```

This example shows how to display the top ITLs for IOPS:

```
switch# ShowAnalytics  --top

2019-06-13 10:56:49.099069

+--------+-----------------------------------------+------------------+
|  PORT  |        VSAN|Initiator|Target|LUN        |      Avg IOPS    |
+--------+-----------------------------------------+------------------+
|        |                                         |   Read  |  Write |
| fc8/10 | 5|0xed04b2|0xef0680|0001-0000-0000-0000 |   118   |   0    |
| fc8/10 | 5|0xed04b2|0xef0680|0003-0000-0000-0000 |   118   |   0    |
| fc8/10 | 5|0xed04b2|0xef0680|0002-0000-0000-0000 |   118   |   0    |
| fc8/10 | 5|0xed04b2|0xef0680|0005-0000-0000-0000 |   118   |   0    |
| fc8/10 | 5|0xed04b2|0xef0680|0006-0000-0000-0000 |   118   |   0    |
| fc8/10 | 5|0xed04b2|0xef0680|0007-0000-0000-0000 |   118   |   0    |
| fc8/10 | 5|0xed04b2|0xef0680|0008-0000-0000-0000 |   118   |   0    |
| fc8/10 | 5|0xed04b2|0xef0680|0009-0000-0000-0000 |   118   |   0    |
| fc8/10 | 5|0xed04b2|0xef0680|000a-0000-0000-0000 |   118   |   0    |
| fc8/10 | 5|0xed04b2|0xef0680|000b-0000-0000-0000 |   118   |   0    |
+--------+-----------------------------------------+------------------+
```

This example shows how to display the top ITLs for throughput progressively:

```
switch# ShowAnalytics  --top --key thput  --progress

2019-06-13 10:58:16.015546

+--------+-----------------------------------------+-------------------------+
|  PORT  |        VSAN|Initiator|Target|LUN        |      Avg THROUGHPUT     |
+--------+-----------------------------------------+-------------------------+
```

```
|        |                                          |     Read    |   Write    |
| fc8/10 | 5|0xed04b2|0xef0680|000f-0000-0000-0000 | 133.8 KB/s |     0      |
| fc8/10 | 5|0xed04b3|0xef0681|000a-0000-0000-0000 | 133.8 KB/s |     0      |
| fc8/10 | 5|0xed04b3|0xef0681|0014-0000-0000-0000 | 133.8 KB/s |     0      |
| fc8/10 | 5|0xed04b4|0xef0682|000f-0000-0000-0000 | 133.8 KB/s |     0      |
| fc8/10 | 5|0xed04b5|0xef0683|000a-0000-0000-0000 | 133.8 KB/s |     0      |
| fc8/10 | 5|0xed04b5|0xef0683|000f-0000-0000-0000 | 133.8 KB/s |     0      |
| fc8/10 | 5|0xed04b5|0xef0683|0013-0000-0000-0000 | 133.8 KB/s |     0      |
| fc8/10 | 5|0xed04b6|0xef0684|0013-0000-0000-0000 | 133.8 KB/s |     0      |
| fc8/10 | 5|0xed04b2|0xef0680|0004-0000-0000-0000 | 133.5 KB/s |     0      |
| fc8/10 | 5|0xed04b3|0xef0681|0009-0000-0000-0000 | 133.5 KB/s |     0      |
+--------+------------------------------------------+-------------+------------+
```

This example shows how to display the ITLs with the highest I/O operations per second (IOPS). The **--alias** option causes imitator and target device alias information to be displayed.

```
switch# ShowAnalytics --top --alias

2019-11-12 15:21:45.260304

+--------+------------------------------------------+-------------------+-------------------------------+-------------------------------+
|  PORT  |        VSAN|Initiator|Target|LUN         |      Avg IOPS     |  Initiator Device alias       |  Target Device alias          |
+--------+------------------------------------------+-------------------+-------------------------------+-------------------------------+
|        |                                          |   Read  |  Write  |                               |                               |
| fc8/20 | 5|0xed05de|0xef080c|0001-0000-0000-0000 |    45   |    0    | analytics-initiator-port16-45 | analytics-target-port16-45 |
| fc8/20 | 5|0xed05cb|0xef07f9|0002-0000-0000-0000 |    45   |    0    | analytics-initiator-port16-26 | analytics-target-port16-26 |
| fc8/20 | 5|0xed05b7|0xef07e5|0008-0000-0000-0000 |    44   |    0    | analytics-initiator-port16-6  | analytics-target-port16-6  |
| fc8/20 | 5|0xed05be|0xef07ec|000b-0000-0000-0000 |    43   |    0    | analytics-initiator-port16-13 | analytics-target-port16-13 |
| fc8/20 | 5|0xed05ca|0xef07f8|0013-0000-0000-0000 |    42   |    0    | analytics-initiator-port16-25 | analytics-target-port16-25 |
| fc8/20 | 5|0xed05d1|0xef07ff|0006-0000-0000-0000 |    41   |    0    | analytics-initiator-port16-32 | analytics-target-port16-32 |
| fc8/20 | 5|0xed05b9|0xef07e7|0014-0000-0000-0000 |    41   |    0    | analytics-initiator-port16-8  | analytics-target-port16-8  |
| fc8/20 | 5|0xed05d7|0xef0805|0002-0000-0000-0000 |    40   |    0    | analytics-initiator-port16-38 | analytics-target-port16-38 |
| fc8/20 | 5|0xed05d9|0xef0807|0003-0000-0000-0000 |    40   |    0    | analytics-initiator-port16-40 | analytics-target-port16-40 |
| fc8/20 | 5|0xed05d4|0xef0802|0013-0000-0000-0000 |    40   |    0    | analytics-initiator-port16-35 | analytics-target-port16-35 |
+--------+------------------------------------------+-------------------+-------------------------------+-------------------------------+
```

This example shows how to display the errors for all target ITLs and limit the output to 10 random records:

```
switch# ShowAnalytics --errors --target-itl --limit 10
2019-05-23 11:28:34.926267

 Interface fc8/7
+------------------------------------------+---------------------+-----------------+
|        VSAN|Initiator|Target|LUN        | Total SCSI Failures | Total FC Aborts |
+------------------------------------------+---------------------+-----------------+
|                                          |     Read | Write    |   Read | Write  |
|                                          |                     |                 |
| 5|0xed0332|0xef0592|000f-0000-0000-0000 |        0 | 0        |      0 | 0      |
| 5|0xed0342|0xef05a2|000a-0000-0000-0000 |        0 | 0        |      0 | 0      |
| 5|0xed0332|0xef0592|0008-0000-0000-0000 |        0 | 0        |      0 | 0      |
| 5|0xed0340|0xef05a0|0010-0000-0000-0000 |        0 | 0        |      0 | 0      |
| 5|0xed0322|0xef0582|0008-0000-0000-0000 |        0 | 0        |      0 | 0      |
| 5|0xed032c|0xef058c|0014-0000-0000-0000 |        0 | 0        |      0 | 0      |
| 5|0xed033a|0xef059a|000d-0000-0000-0000 |        0 | 0        |      0 | 0      |
| 5|0xed034a|0xef05aa|0005-0000-0000-0000 |        0 | 0        |      0 | 0      |
| 5|0xed033a|0xef059a|0007-0000-0000-0000 |        0 | 0        |      0 | 0      |
| 5|0xed034a|0xef05aa|0013-0000-0000-0000 |        0 | 0        |      0 | 0      |
+------------------------------------------+---------------------+-----------------+
```

This example shows how to display the errors of an initiator ITL:

```
switch# ShowAnalytics --errorsonly --initiator-itl
2019-04-09 11:27:42.496294

 Interface fc8/27
+------------------------------------------+---------------------+-----------------+
|         VSAN|Initiator|Target|LUN         | Total SCSI Failures | Total FC Aborts |
+------------------------------------------+---------------------+-----------------+
|                                          |     Read | Write    |   Read | Write  |
|                                          |                     |                 |
| 311|0x900000|0xc90000|0000-0000-0000-0000 |       0  | 42       |      0 | 0      |
+------------------------------------------+---------------------+-----------------+
```

This example shows how to display the device alias information and errors of an initiator ITL and limit the output to 10 random records:

```
switch# ShowAnalytics --errorsonly --initiator-itl --alias --limit 10
2019-04-09 12:06:19.847350

Interface fc1/26
+------------------------------------------+---------------------+---------------+-----------------------+--------------------+
|         VSAN|Initiator|Target|LUN         |Total SCSI Failures|Total FC Aborts|Initiator Device alias|Target Device alias|
+------------------------------------------+---------------------+---------------+-----------------------+--------------------+
|                                          |     Read | Write    |   Read | Write|                       |                    |
|                                          |                     |               |                       |                    |
| 108|0xee0467|0x70039b|0001-0000-0000-0000 |       0  | 1        |      0 | 0    |                       | SB_112_port_T_18_7|
| 108|0xee0401|0xbc092b|0002-0000-0000-0000 |       10 | 16       |      0 | 0    |                       | SB_112_port_T_0_1  |
```

```
| 108|0xee0441|0xbc092b|0003-0000-0000-0000 |       3  | 13     |      0 | 0    |   SB_112_port_I_7_1  | SB_112_port_T_0_1 |
| 108|0xee0401|0xbc0996|0001-0000-0000-0000 |       3  | 0      |      0 | 0    |                      |                   |
| 108|0xee0441|0xbc0996|0002-0000-0000-0000 |       0  | 3      |      0 | 0    |   SB_112_port_I_7_1  |                   |
| 108|0xee0481|0xbc0996|0004-0000-0000-0000 |       0  | 4      |      0 | 0    |                      |                   |
| 108|0xee0403|0xbc092d|0000-0000-0000-0000 |       12 | 8      |      0 | 0    |                      | SB_112_port_T_0_3 |
| 108|0xee0443|0xbc092d|0001-0000-0000-0000 |       3  | 12     |      0 | 0    |   SB_112_port_I_7_3  | SB_112_port_T_0_3 |
| 108|0xee0443|0xbc0998|0000-0000-0000-0000 |       1  | 0      |      0 | 0    |   SB_112_port_I_7_3  |                   |
+----------------------------------------+------------------+--------------+----------------------+-------------------+
```

This example shows how to display the minimum, maximum, and peak flow metrics of target ID 0xef0720 of a target ITL:

```
switch# ShowAnalytics --minmax --target-itl --target 0xef0720
2019-04-09 11:22:08.652598

 Interface fc8/17
+----------------------------------------+--------------+-----------------+-------------------+-------------+
|        VSAN|Initiator|Target|LUN        |   Peak IOPS*  | Peak Throughput* |    Read ECT*      |   Write ECT* |
+----------------------------------------+--------------+-----------------+-------------------+-------------+
|                                        |  Read | Write |    Read    | Write |   Min    |  Max     |  Min |  Max  |
|                                        |               |                 |                   |             |
| 5|0xed0500|0xef0720|0001-0000-0000-0000 | 11106 |  0    |10.8 MB/s |   0    | 28.0 us | 30.0 ms |   0  |   0   |
| 5|0xed0500|0xef0720|0002-0000-0000-0000 |  9232 |  0    | 9.0 MB/s |   0    | 28.0 us | 30.0 ms |   0  |   0   |
| 5|0xed0500|0xef0720|0003-0000-0000-0000 |  7421 |  0    | 7.2 MB/s |   0    | 28.0 us | 30.0 ms |   0  |   0   |
| 5|0xed0500|0xef0720|0004-0000-0000-0000 |  5152 |  0    | 5.0 MB/s |   0    | 29.0 us | 30.0 ms |   0  |   0   |
| 5|0xed0500|0xef0720|0005-0000-0000-0000 |  5163 |  0    | 5.0 MB/s |   0    | 30.0 us | 30.0 ms |   0  |   0   |
| 5|0xed0500|0xef0720|0006-0000-0000-0000 |  5154 |  0    | 5.0 MB/s |   0    | 30.0 us | 30.0 ms |   0  |   0   |
| 5|0xed0500|0xef0720|0007-0000-0000-0000 |  4801 |  0    | 4.7 MB/s |   0    | 29.0 us | 30.0 ms |   0  |   0   |
| 5|0xed0500|0xef0720|0008-0000-0000-0000 |  3838 |  0    | 3.7 MB/s |   0    | 64.0 us | 30.0 ms |   0  |   0   |
| 5|0xed0500|0xef0720|0009-0000-0000-0000 |  3053 |  0    | 3.0 MB/s |   0    | 40.0 us | 30.0 ms |   0  |   0   |
| 5|0xed0500|0xef0720|000a-0000-0000-0000 |  3061 |  0    | 3.0 MB/s |   0    | 33.0 us | 30.0 ms |   0  |   0   |
| 5|0xed0500|0xef0720|000b-0000-0000-0000 |  3053 |  0    | 3.0 MB/s |   0    | 30.0 us | 30.0 ms |   0  |   0   |
| 5|0xed0500|0xef0720|000c-0000-0000-0000 |  3058 |  0    | 3.0 MB/s |   0    | 37.0 us | 30.0 ms |   0  |   0   |
| 5|0xed0500|0xef0720|000d-0000-0000-0000 |  3058 |  0    | 3.0 MB/s |   0    | 29.0 us | 30.0 ms |   0  |   0   |
| 5|0xed0500|0xef0720|000e-0000-0000-0000 |  2517 |  0    | 2.5 MB/s |   0    | 29.0 us | 30.0 ms |   0  |   0   |
| 5|0xed0500|0xef0720|000f-0000-0000-0000 |  2405 |  0    | 2.3 MB/s |   0    | 29.0 us | 30.0 ms |   0  |   0   |
| 5|0xed0500|0xef0720|0010-0000-0000-0000 |  2410 |  0    | 2.4 MB/s |   0    | 36.0 us | 30.0 ms |   0  |   0   |
| 5|0xed0500|0xef0720|0011-0000-0000-0000 |  2405 |  0    | 2.3 MB/s |   0    | 33.0 us | 30.0 ms |   0  |   0   |
| 5|0xed0500|0xef0720|0012-0000-0000-0000 |  2411 |  0    | 2.4 MB/s |   0    | 30.0 us | 30.0 ms |   0  |   0   |
| 5|0xed0500|0xef0720|0013-0000-0000-0000 |  2408 |  0    | 2.4 MB/s |   0    | 37.0 us | 30.0 ms |   0  |   0   |
| 5|0xed0500|0xef0720|0014-0000-0000-0000 |  2284 |  0    | 2.2 MB/s |   0    | 29.0 us | 30.0 ms |   0  |   0   |
+----------------------------------------+--------------+-----------------+-------------------+-------------+
*These values are calculated since the metrics were last cleared.
```

This example shows how to display the device alias information, minimum, maximum, and peak flow metrics of interface fc1/28 of a target ITL and limit the output to 10 random records:

```
switch# ShowAnalytics --minmax --target-itl --alias  --interface fc1/28 --limit 10
2019-04-09 12:01:40.609197

Interface fc1/28
+----------------------------------------+--------------+-----------------+-------------------+-------------------+----------------------+--------------------+
|         VSAN|Initiator|Target|LUN         |  Peak IOPS*  |  Peak Throughput*   |     Read ECT*     |   Write ECT*      |Initiator Device alias| Target Device alias|
+----------------------------------------+--------------+-----------------+-------------------+-------------------+----------------------+--------------------+
|                                        | Read | Write |   Read    | Write    |   Min    |    Max    |    Min   | Max    |                      |                    |
|                                        |              |                 |                   |                   |                      |                    |
| 108|0xbc09e9|0x500009|0001-0000-0000-0000 |  110 | 116   | 1.6 MB/s | 4.3 MB/s | 10.0 us | 23.3 ms | 30.0 us |120.5 ms |                      | SB_112_port_T_8_9  |
| 108|0xbc09e9|0x500049|0000-0000-0000-0000 |  113 | 107   | 1.8 MB/s | 4.1 MB/s | 12.0 us | 28.2 ms | 27.0 us |119.2 ms |                      | SB_112_port_T_10_9 |
| 108|0xbc09e1|0xea0701|0001-0000-0000-0000 |  107 | 117   | 1.6 MB/s | 4.0 MB/s | 11.0 us | 26.1 ms | 33.0 us |120.7 ms |                      | SB_112_port_T_12_1 |
| 108|0xbc0915|0xea0701|0002-0000-0000-0000 |  342 | 340   | 2.5 MB/s | 3.7 MB/s |  9.0 us | 23.2 ms | 32.0 us |110.3 ms |  SB_112_port_I_1_1   | SB_112_port_T_12_1 |
| 108|0xbc0917|0xea0703|0000-0000-0000-0000 |  337 | 338   | 2.6 MB/s | 4.3 MB/s | 18.0 us | 21.3 ms | 34.0 us |150.8 ms |  SB_112_port_I_1_3   | SB_112_port_T_12_3 |
| 108|0xbc09e5|0x500005|0004-0000-0000-0000 |  99  | 98    | 1.6 MB/s | 2.6 MB/s |  7.0 us | 22.1 ms | 37.0 us |172.7 ms |                      | SB_112_port_T_8_5  |
| 108|0xbc09e5|0x500045|0003-0000-0000-0000 |  96  | 90    | 1.2 MB/s | 3.2 MB/s | 18.0 us | 22.5 ms | 39.0 us |248.9 ms |                      | SB_112_port_T_10_5 |
| 108|0xbc09e7|0x500007|0002-0000-0000-0000 |  100 | 99    | 1.2 MB/s | 2.8 MB/s | 19.0 us |172.1 ms |  4.0 us | 26.4 ms |                      | SB_112_port_T_8_7  |
| 108|0xbc0919|0x500045|0004-0000-0000-0000 |  346 | 329   | 2.5 MB/s | 4.1 MB/s | 11.0 us | 26.3 ms |  1.0 us | 10.0 ms | SB_112_port_I_1_5    | SB_112_port_T_10_5 |
| 108|0xbc09e7|0x500047|0001-0000-0000-0000 |  87  | 95    | 1.3 MB/s | 3.0 MB/s | 18.0 us | 25.5 ms | 34.0 us | 25.6 ms |                      | SB_112_port_T_10_7 |
+----------------------------------------+--------------+-----------------+-------------------+-------------------+----------------------+--------------------+
*These values are calculated since the metrics were last cleared.
```

This example shows how to display the NPU load for a range of interfaces:

```
switch# ShowAnalytics --eval --interface fc8/7-8
2019-05-09 10:56:54.021234
There are 2 interfaces to be evaluated. Expected time is 2 minutes 0 seconds
Do you want to continue [Yes|No]? [n]y
+-----------+--------+--------+---------+------+------+-------+------------+----------+
| Interface |        ITL/N Count         |      NPU Load %     |  Analyis   | Analysis |
|           |  SCSI  |  NVMe  |  Total  | SCSI | NVMe | Total | Start Time | End Time |
+-----------+--------+--------+---------+------+------+-------+------------+----------+
|   fc8/7   |  1000  |   0    |   1000  | 8.1  | 0.0  |  8.1  |  10:57:20  | 10:57:52 |
|   fc8/8   |  1000  |   0    |   1000  | 8.1  | 0.0  |  8.1  |  10:58:20  | 10:58:51 |
|           |        |        |         |      |      |       |            |          |
|   *Total  |  2000  |   0    |   2000  | 16.2 | 0.0  |  16.2 |            |          |
+-----------+--------+--------+---------+------+------+-------+------------+----------+
* This total is an indicative reference based on evaluated ports
```

Note Evaluating NPU load takes some time. If the connection to the switch is lost during the evaluation process, the process continues to run in the background until completion and the output is saved in a file. A syslog message is generated after the process is complete with the file name and the location of the file where the output is saved.

This example shows how to display the VSAN throughput information:

```
switch# ShowAnalytics --vsan-thput
2019-05-09 14:02:07.940600

Interface fc8/17
+------+--------+--------+--------+
| VSAN |   Throughput (4s avg)    |
|      | Read   | Write  | Total  |
|      | (MBps) | (MBps) | (MBps) |
+------+--------+--------+--------+
| 5    | 0.0    | 0.0    | 0.0    |
+------+--------+--------+--------+

Interface fc8/18
+------+--------+--------+--------+
| VSAN |   Throughput (4s avg)    |
|      | Read   | Write  | Total  |
|      | (MBps) | (MBps) | (MBps) |
+------+--------+--------+--------+
| 5    | 0.0    | 0.0    | 0.0    |
+------+--------+--------+--------+

Interface fc8/19
+------+--------+--------+--------+
| VSAN |   Throughput (4s avg)    |
|      | Read   | Write  | Total  |
|      | (MBps) | (MBps) | (MBps) |
+------+--------+--------+--------+
| 5    | 0.0    | 0.0    | 0.0    |
+------+--------+--------+--------+

Interface fc8/20
+------+--------+--------+--------+
| VSAN |   Throughput (4s avg)    |
|      | Read   | Write  | Total  |
|      | (MBps) | (MBps) | (MBps) |
+------+--------+--------+--------+
| 5    | 0.0    | 0.0    | 0.0    |
+------+--------+--------+--------+

Interface fc8/21
+------+--------+--------+--------+
| VSAN |   Throughput (4s avg)    |
|      | Read   | Write  | Total  |
|      | (MBps) | (MBps) | (MBps) |
+------+--------+--------+--------+
| 3500 | 301.9  | 302.8  | 604.7  |
+------+--------+--------+--------+

Interface fc8/22
+------+--------+--------+--------+
| VSAN |   Throughput (4s avg)    |
|      | Read   | Write  | Total  |
|      | (MBps) | (MBps) | (MBps) |
+------+--------+--------+--------+
| 3500 | 302.7  | 304.8  | 607.5  |
+------+--------+--------+--------+
Note: This data is only for SCSI
```

This example shows how to display the VSAN throughput information for a port channel:

```
switch# ShowAnalytics --vsan-thput --interface port-channel108
2019-05-09 15:01:32.538121

Interface port-channel108
+------+--------+--------+--------+
| VSAN |   Throughput (4s avg)    |
|      | Read   | Write  | Total  |
|      | (MBps) | (MBps) | (MBps) |
+------+--------+--------+--------+
| 1    | 0.0    | 0.0    | 0.0    |
| 5    | 145.9  | 0.0    | 145.9  |
| 3500 | 561.9  | 558.6  | 1120.5 |
+------+--------+--------+--------+
Note: This data is only for SCSI
```

This example shows how to display the outstanding IO per ITL for an interface:

```
switch# ShowAnalytics --outstanding-io --interface fc8/7
```

```
2019-05-20 11:59:48.306396

Interface : fc8/7  VSAN : 5  FCNS_type : Target

+---------------------------------------+----------------+
|          Initiator|Target|LUN         | Outstanding IO |
+---------------------------------------+----------------+
|                                       |  Read | Write  |
|                                       |               |
| 0xed0320|0xef0580|0001-0000-0000-0000 |    2  |  0     |
| 0xed0320|0xef0580|0002-0000-0000-0000 |    1  |  0     |
| 0xed0320|0xef0580|0003-0000-0000-0000 |    1  |  0     |
| 0xed0320|0xef0580|0004-0000-0000-0000 |    1  |  0     |
| 0xed0320|0xef0580|0005-0000-0000-0000 |    1  |  0     |
| 0xed0320|0xef0580|0006-0000-0000-0000 |    1  |  0     |
| 0xed0320|0xef0580|0007-0000-0000-0000 |    1  |  0     |
| 0xed0320|0xef0580|0008-0000-0000-0000 |    1  |  0     |
| 0xed0320|0xef0580|0009-0000-0000-0000 |    1  |  0     |
| 0xed0320|0xef0580|000a-0000-0000-0000 |    1  |  0     |
+---------------------------------------+----------------+
Instantaneous Qdepth : 11
```

Note The *Instantaneous Qdepth* value in the output represents the number of IOs that are currently active in the specified interface.

This example shows how to display the outstanding IO per ITL for an interface, limit the output to 10 records, and refresh the data periodically:

```
switch# ShowAnalytics --outstanding-io --interface fc8/7  --limit 10 --refresh
2019-05-20 12:00:21.028228

Interface : fc8/7  VSAN : 5  FCNS_type : Target

+---------------------------------------+----------------+
|          Initiator|Target|LUN         | Outstanding IO |
+---------------------------------------+----------------+
|                                       |  Read | Write  |
|                                       |               |
| 0xed0320|0xef0580|0001-0000-0000-0000 |    0  |  0     |
| 0xed0320|0xef0580|0002-0000-0000-0000 |    1  |  0     |
| 0xed0320|0xef0580|0003-0000-0000-0000 |    1  |  0     |
| 0xed0320|0xef0580|0004-0000-0000-0000 |    1  |  0     |
| 0xed0320|0xef0580|0005-0000-0000-0000 |    0  |  0     |
| 0xed0320|0xef0580|0006-0000-0000-0000 |    0  |  0     |
| 0xed0320|0xef0580|0007-0000-0000-0000 |    1  |  0     |
| 0xed0320|0xef0580|0008-0000-0000-0000 |    0  |  0     |
| 0xed0320|0xef0580|0009-0000-0000-0000 |    1  |  0     |
| 0xed0320|0xef0580|000a-0000-0000-0000 |    1  |  0     |
+---------------------------------------+----------------+
Estimated Qdepth : 6
```

Related Commands

Command	Description
analytics port-sampling	Enables port sampling on a module.
analytics query	Installs a push analytics query.
clear analytics	Resets all flow metrics for a view instance.
feature analytics	Enables the SAN Analytics feature on a switch.
purge analytics	Deletes a view instance and its associated flow metrics.
show analytics flow	Displays the SAN analytics type.
show analytics port-sampling	Displays the SAN analytics port sampling information.
show analytics query	Displays the SAN analytics query information.

ShowAnalyticsConsistency

To identify inconsistencies in SAN analytics components such as NPU, modules, queries, database, analytics ACL entries, and so on, use the **ShowAnalyticsConsistency** command.

ShowAnalyticsConsistency

Command Default

None.

Command Modes

Privileged EXEC (#)

Command History

Release	Modification
9.2(1)	This command was deprecated.
8.5(1)	This command was introduced.

Usage Guidelines

This command is a troubleshooting tool that helps to identify inconsistencies in SAN analytics components such as NPU, modules, queries, database, port-sampling configuration and so on. Such inconsistencies are abnormal and may lead to issues on the switch. Programmatic checking by this command assures accuracy of checks and reduces the time to identify such inconsistencies.

This command should be used as part of troubleshooting when SAN analytics issues are suspected. The specified consistency check is done at the time the command is issued and the results are displayed. Detailed information about the detected inconsistencies is displayed to direct further detailed debugging.

The following example displays how to display the inconsistencies in SAN analytics:

```
switch# ShowAnalyticsConsistency


Analytics Consistency Checker:

Checking for Analytics related consistency checks for the SUP:

Checking for queries consistency...  - Skipped (Queries not configured) Checking for global database consistency... - Passed Checking for query_id consistency...  - Passed

Checking for Analytics related consistencies for the Line Cards:

Module 1 :


Checking for ifindex consistency...  - Passed Checking for ACL consistency...
Running config: SCSI+NVME both for interface fc1/3 Running config: SCSI+NVME both for interface fc1/4 ACL TCAM: SCSI+NVME both for interface fc1/3 ACL TCAM: SCSI+NVME both for
 interface fc1/4 Running config and ACL TCAM entries are consistent for all interfaces Checking for extra entries in ACL. Please wait...
No extra analytics entry found for non-analytics interfaces. Consistency check successful.
Checking for bcm status...
BCM Status passed successfully.
Checking for Port-Sampling Config Consistency.....
========>>>>>>> Skipped (Not Configured on SUP and Linecard)


No EIOA drops seen
No MPP drops seen
XGMAC9 Port Link =>  UP!!!


Both XFI links are UP!

Traps observed in ncpmgr: 0
```

Related Commands

Command	Description
show consistency-checker	Verifies the consistency between various internal system tables.