



CHAPTER 8

Managing FLOGI, Name Server, FDMI, and RSCN Databases

This chapter describes the fabric login (FLOGI) database, the name server features, the Fabric-Device Management Interface, and Registered State Change Notification (RSCN) information provided in the Cisco MDS 9000 Family. It includes the following sections:

- [About FLOGI, page 8-1](#)
- [Displaying FLOGI Details, page 8-1](#)
- [Name Server Proxy, page 8-3](#)
- [FDMI, page 8-6](#)
- [Displaying FDMI, page 8-6](#)
- [RSCN, page 8-8](#)
- [Default Settings, page 8-15](#)

About FLOGI

In a Fibre Channel fabric, each host or disk requires an FC ID. Use the **show flogi** command to verify if a storage device is displayed in the FLOGI table as in the next section. 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.

Displaying FLOGI Details

To view the FLOGI database details, use the **show flogi database** command. See Examples [8-1](#) to [8-4](#).

Example 8-1 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
```

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```
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.

Example 8-2 Displays the FLOGI Database by Interface

```
switch# show flogi database interface fc1/11
```

| INTERFACE | VSAN | FCID | PORT NAME | NODE NAME |
|-----------|------|----------|-------------------------|-------------------------|
| fc1/11 | 1 | 0xa002ef | 21:00:00:20:37:18:17:d2 | 20:00:00:20:37:18:17:d2 |
| fc1/11 | 1 | 0xa002e8 | 21:00:00:20:37:38:a7:c1 | 20:00:00:20:37:38:a7:c1 |
| fc1/11 | 1 | 0xa002e4 | 21:00:00:20:37:6b:d7:18 | 20:00:00:20:37:6b:d7:18 |
| fc1/11 | 1 | 0xa002e2 | 21:00:00:20:37:18:d2:45 | 20:00:00:20:37:18:d2:45 |
| fc1/11 | 1 | 0xa002e1 | 21:00:00:20:37:39:90:6a | 20:00:00:20:37:39:90:6a |
| fc1/11 | 1 | 0xa002e0 | 21:00:00:20:37:36:0b:4d | 20:00:00:20:37:36:0b:4d |
| fc1/11 | 1 | 0xa002dc | 21:00:00:20:37:5a:5b:27 | 20:00:00:20:37:5a:5b:27 |
| fc1/11 | 1 | 0xa002da | 21:00:00:20:37:18:6f:90 | 20:00:00:20:37:18:6f:90 |
| fc1/11 | 1 | 0xa002d9 | 21:00:00:20:37:5b:cf:b9 | 20:00:00:20:37:5b:cf:b9 |
| fc1/11 | 1 | 0xa002d6 | 21:00:00:20:37:46:78:97 | 0:00:00:20:37:46:78:97 |

Total number of flogi = 10.

Example 8-3 Displays the FLOGI Database by VSAN

```
switch# show flogi database vsan 1
```

| INTERFACE | VSAN | FCID | PORT NAME | NODE NAME |
|-----------|------|----------|-------------------------|-------------------------|
| fc1/3 | 1 | 0xef02ef | 22:00:00:20:37:18:17:d2 | 20:00:00:20:37:18:17:d2 |
| fc1/3 | 1 | 0xef02e8 | 22:00:00:20:37:38:a7:c1 | 20:00:00:20:37:38:a7:c1 |
| fc1/3 | 1 | 0xef02e4 | 22:00:00:20:37:6b:d7:18 | 20:00:00:20:37:6b:d7:18 |
| fc1/3 | 1 | 0xef02e2 | 22:00:00:20:37:18:d2:45 | 20:00:00:20:37:18:d2:45 |
| fc1/3 | 1 | 0xef02e1 | 22:00:00:20:37:39:90:6a | 20:00:00:20:37:39:90:6a |
| fc1/3 | 1 | 0xef02e0 | 22:00:00:20:37:36:0b:4d | 20:00:00:20:37:36:0b:4d |
| fc1/3 | 1 | 0xef02dc | 22:00:00:20:37:5a:5b:27 | 20:00:00:20:37:5a:5b:27 |
| fc1/3 | 1 | 0xef02da | 22:00:00:20:37:18:6f:90 | 20:00:00:20:37:18:6f:90 |
| fc1/3 | 1 | 0xef02d9 | 22:00:00:20:37:5b:cf:b9 | 20:00:00:20:37:5b:cf:b9 |
| fc1/3 | 1 | 0xef02d6 | 22:00:00:20:37:46:78:97 | 20:00:00:20:37:46:78:97 |

Total number of flogi = 10.

Example 8-4 Displays the FLOGI Database by FC ID

```
switch# show flogi database fcid 0xef02e2
```

| INTERFACE | VSAN | FCID | PORT NAME | NODE NAME |
|-----------|------|----------|-------------------------|-------------------------|
| fc1/3 | 1 | 0xef02e2 | 22:00:00:20:37:18:d2:45 | 20:00:00:20:37:18:d2:45 |

Total number of flogi = 1.

For more information, see the “Default Company ID List” section on page 11-11 and refer to the “Loop Monitoring” section in the *Cisco MDS 9000 Family Troubleshooting Guide*.

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Name Server Proxy

The name server functionality maintains a database containing the attributes for all hosts and storage devices in each VSAN. Name servers allow a database entry to be modified by a device that originally registered the information.

The proxy feature is useful when you want to modify (update or delete) the contents of a database entry that was previously registered by a different device.

This section includes the following topics:

- [About Registering Name Server Proxies, page 8-3](#)
- [Registering Name Server Proxies, page 8-3](#)
- [About Rejecting Duplicate pWWN, page 8-3](#)
- [Rejecting Duplicate pWWNs, page 8-4](#)
- [About Name Server Database Entries, page 8-4](#)
- [Displaying Name Server Database Entries, page 8-4](#)

About Registering Name Server Proxies

All name server registration requests come from the same port whose parameter is registered or changed. If it does not, then the request is rejected.

This authorization enables WWNs to register specific parameters for another node.

Registering Name Server Proxies

To register the name server proxy, follow these steps:

| | Command | Purpose |
|--------|---|---|
| Step 1 | switch# config t switch(config)# | Enters configuration mode. |
| Step 2 | switch(config)# fcns proxy-port 21:00:00:e0:8b:00:26:d0 vsan 2 | Configures a proxy port for the specified VSAN. |

About Rejecting Duplicate pWWN

You can prevent a malicious or accidental login when using another device's pWWN by enabling the **reject-duplicate-pwwn** option. If you disable this option, these pWWNs are allowed to log in to the fabric and replace the first device in the name server database.

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Rejecting Duplicate pWWNs

To reject duplicate pWWNs, follow these steps:

| | Command | Purpose |
|--------|---|---|
| Step 1 | switch# config t switch(config)# | Enters configuration mode. |
| Step 2 | switch(config)# fcns reject-duplicate-pwwn vsan 1 | Logs out devices when they log into the fabric if the pWWNs already exist. |
| | switch(config)# no fcns reject-duplicate-pwwn vsan 1 | Overwrites the first device entry in the name server database with the new device having the same pWWN (default). |

To reject duplicate pWWNs, refer to the *Cisco MDS 9000 NX-OS Fabric Configuration Guide*.

About Name Server Database Entries

The name server stores name entries for all hosts in the FCNS database. The name server permits an Nx port to register attributes during a PLOGI (to the name server) to obtain attributes of other hosts. These attributes are deregistered when the Nx port logs out either explicitly or implicitly.

In a multiswitch fabric configuration, the name server instances running on each switch shares information in a distributed database. One instance of the name server process runs on each switch.

Displaying Name Server Database Entries

Use the **show fcns** command to display the name server database and statistical information for a specified VSAN or for all VSANs (see Examples 8-5 to 8-8).

Example 8-5 Displays the Name Server Database

```
switch# show fcns database
-----
FCID          TYPE  PWWN                               (VENDOR)          FC4-TYPE:FEATURE
-----
0x010000      N     50:06:0b:00:00:10:a7:80             (Cisco)            scsi-fcp fc-gs
0x010001      N     10:00:00:05:30:00:24:63 (Cisco)            ipfc
0x010002      N     50:06:04:82:c3:a0:98:52 (Company 1)        scsi-fcp 250
0x010100      N     21:00:00:e0:8b:02:99:36 (Company A)        scsi-fcp
0x020000      N     21:00:00:e0:8b:08:4b:20 (Company A)
0x020100      N     10:00:00:05:30:00:24:23 (Cisco)            ipfc
0x020200      N     21:01:00:e0:8b:22:99:36 (Company A)        scsi-fcp
```

Example 8-6 Displays the Name Server Database for the Specified VSAN

```
switch# show fcns database vsan 1
VSAN 1:
-----
FCID          TYPE  PWWN                               (VENDOR)          FC4-TYPE:FEATURE
-----
0x030001      N     10:00:00:05:30:00:25:a3 (Cisco)            ipfc
0x030101      NL    10:00:00:00:77:99:60:2c (Interphase)
```

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```
0x030200    N    10:00:00:49:c9:28:c7:01
0xec0001    NL    21:00:00:20:37:a6:be:14 (Seagate)    scsi-fcp
```

Total number of entries = 4

Example 8-7 Displays the Name Server Database Details

```
switch# show fcns database detail
-----
VSAN:1      FCID:0x030001
-----
port-wwn (vendor)    :10:00:00:05:30:00:25:a3 (Cisco)
node-wwn             :20:00:00:05:30:00:25:9e
class                :2,3
node-ip-addr         :0.0.0.0
ipa                  :ff ff ff ff ff ff ff ff
fc4-types:fc4_features:ipfc
symbolic-port-name   :
symbolic-node-name   :
port-type            :N
port-ip-addr         :0.0.0.0
fabric-port-wwn     :00:00:00:00:00:00:00:00
hard-addr            :0x000000
-----
VSAN:1      FCID:0xec0200
-----
port-wwn (vendor)    :10:00:00:5a:c9:28:c7:01
node-wwn             :10:00:00:5a:c9:28:c7:01
class                :3
node-ip-addr         :0.0.0.0
ipa                  :ff ff ff ff ff ff ff ff
fc4-types:fc4_features:
symbolic-port-name   :
symbolic-node-name   :
port-type            :N
port-ip-addr         :0.0.0.0
fabric-port-wwn     :22:0a:00:05:30:00:26:1e
hard-addr            :0x000000
Total number of entries = 2
```

Example 8-8 Displays the Name Server Statistics

```
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
```

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FDMI

Cisco MDS 9000 Family switches provide support for the Fabric-Device Management Interface (FDMI) functionality, as described in the FC-GS-4 standard. FDMI enables management of devices such as Fibre Channel Host Bus Adapters (HBAs) through in-band communications. This addition complements the existing Fibre Channel name server and management server functions.

Using the FDMI functionality, the NX-OS software can extract the following management information about attached HBAs and host operating systems without installing proprietary host agents:

- Manufacturer, model, and serial number
- Node name and node symbolic name
- Hardware, driver, and firmware versions
- Host operating system (OS) name and version number

All FDMI entries are stored in persistent storage and are retrieved when the FDMI process is started.

Displaying FDMI

Use the `show fDMI` command to display the FDMI database information (see Examples 8-9 to 8-11).

Example 8-9 *Displays All HBA Management Servers*

```
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
```

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```
CT Payload Len      :2040
Port-id: 21:01:00:e0:8b:2a:f6:54
```

Example 8-10 Displays HBA Details for a Specified VSAN

```
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
```

Example 8-11 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
```

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RSCN

The Registered State Change Notification (RSCN) is a Fibre Channel service that informs hosts about changes in the fabric. Hosts can receive this information by registering with the fabric controller (through SCR). These notifications provide a timely indication of one or more of the following events:

- Disks joining or leaving the fabric.
- A name server registration change.
- A new zone enforcement.
- IP address change.
- Any other similar event that affects the operation of the host.

This section includes the following topics:

- [About RSCN Information, page 8-8](#)
- [Displaying RSCN Information, page 8-8](#)
- [About the multi-pid Option, page 8-9](#)
- [Suppressing Domain Format SW-RSCNs, page 8-10](#)
- [Clearing RSCN Statistics, page 8-10](#)
- [RSCN Timer Configuration Distribution Using CFS, page 8-11](#)
- [Verifying the RSCN Timer Configuration, page 8-12](#)
- [RSCN Timer Configuration Distribution, page 8-12](#)

About RSCN Information

Apart from sending these events to registered hosts, a switch RSCN (SW-RSCN) is sent to all reachable switches in the fabric.



Note

The switch sends an RSCN to notify registered nodes that a change has occurred. It is up to the nodes to query the name server again to obtain the new information. The details of the changed information are not delivered by the switch in the RSCN sent to the nodes.

Displaying RSCN Information

Use the **show rscn** command to display RSCN information (see Examples 8-12 and 8-13).

Example 8-12 Displays Register Device 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
```


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**Note**

The SCR table is not configurable. It is populated when hosts send SCR frames with RSCN information. If hosts do not receive RSCN information, then the **show rscn scr-table** command will not return entries.

Example 8-13 Displays RSCN Counter Information

```
switch# show rscn statistics vsan 1
Statistics for VSAN: 1
-----
Number of SCR received           = 8
Number of SCR ACC sent           = 8
Number of SCR RJT sent           = 0
Number of RSCN received         = 0
Number of RSCN sent             = 24
Number of RSCN ACC received     = 24
Number of RSCN ACC sent         = 0
Number of RSCN RJT received     = 0
Number of RSCN RJT sent         = 0
Number of SW-RSCN received      = 6
Number of SW-RSCN sent          = 15
Number of SW-RSCN ACC received  = 15
Number of SW-RSCN ACC sent      = 6
Number of SW-RSCN RJT received  = 0
Number of SW-RSCN RJT sent     = 0
```

About the multi-pid Option

If the RSCN **multi-pid** option is enabled, then RSCNs generated to the registered Nx ports may contain more than one affected port IDs. In this case, zoning rules are applied before putting the multiple affected port IDs together in a single RSCN. By enabling this option, you can reduce the number of RSCNs. For example: Suppose you have two disks (D1, D2) and a host (H) connected to switch 1. Host H is registered to receive RSCNs. D1, D2 and H belong to the same zone. If disks D1 and D2 are online at the same time, then one of the following applies:

- The **multi-pid** option is disabled on switch 1: two RSCNs are generated to host H—one for the disk D1 and another for disk D2.
- The **multi-pid** option is enabled on switch 1: a single RSCN is generated to host H, and the RSCN payload lists the affected port IDs (in this case, both D1 and D2).

**Note**

Some Nx ports may not understand multi-pid RSCN payloads. If not, disable the RSCN **multi-pid** option.

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Configuring the multi-pid Option

To configure the **multi-pid** option, follow these steps:

| | Command | Purpose |
|--------|--|---|
| Step 1 | switch# config t switch(config)# | Enters configuration mode. |
| Step 2 | switch(config)# rscn multi-pid vsan 105 | Sends RSCNs in a multi-pid format for VSAN 105. |

Suppressing Domain Format SW-RSCNs

A domain format SW-RSCN is sent whenever the local switch name or the local switch management IP address changes. This SW-RSCN is sent to all other domains and switches over the ISLs. The remote switches can issue GMAL and GIELN commands to the switch that initiated the domain format SW-RSCN to determine what changed. Domain format SW-RSCNs can cause problems with some non-Cisco MDS switches (refer to the [Cisco MDS 9000 Family Switch-to-Switch Interoperability Configuration Guide](#)).

To suppress the transmission of these SW RSCNs over an ISL, follow these steps:

| | Command | Purpose |
|--------|--|---|
| Step 1 | switch# config t switch(config)# | Enters configuration mode. |
| Step 2 | switch(config)# rscn suppress domain-swrsn vsan 105 | Suppresses transmission of domain format SW-RSCNs for VSAN 105. |



Note

You cannot suppress transmission of port address or area address format RSCNs.

Clearing RSCN Statistics

You can clear the counters and later view the counters for a different set of events. For example, you can keep track of how many RSCNs or SW-RSCNs are generated on a particular event (such as ONLINE or OFFLINE events). You can use these statistics to monitor responses for each event in the VSAN.

Use the **clear rscn statistics** command to clear the RSCN statistics for the specified VSAN.

```
switch# clear rscn statistics vsan 1
```

After clearing the RSCN statistics, you can view the cleared counters by issuing the **show rscn** command.

```
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
```

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```

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

```

RSCN Timer Configuration Distribution Using CFS

Because the timeout value for each switch is configured manually, a misconfiguration occurs when different switches time out at different times. This means different N ports in a network can receive RSCNs at different times. Cisco Fabric Services (CFS) alleviates this situation by automatically distributing configuration information to all switches in a fabric. This also reduces the number of SW-RSCNs.

RSCN supports two modes, distributed and nondistributed. In distributed mode, RSCN uses CFS to distribute configuration to all switches in the fabric. In nondistributed mode, only the configuration commands on the local switch are affected.



Note

All configuration commands are not distributed. Only the **rscn event-tov tov vsan vsan** command is distributed.

The RSCN timer is registered with CFS during initialization and switchover. For high availability, if the RSCN timer distribution crashes and restarts or a switchover occurs, it resumes normal functionality from the state prior to the crash or switchover.



Note

Before performing a downgrade, make sure that you revert the RSCN timer value in your network to the default value. Failure to do so will disable the links across your VSANs and other devices.

Compatibility across various Cisco MDS NX-OS releases during an upgrade or downgrade is supported by **conf-check** provided by CFS. If you attempt to downgrade from Cisco MDS SAN-OS Release 3.0, you are prompted with a **conf-check** warning. You are required to disable RSCN timer distribution support before you downgrade.

By default, the RSCN timer distribution capability is disabled and is therefore compatible when upgrading from any Cisco MDS SAN-OS release earlier than Release 3.0.

Configuring the RSCN Timer

RSCN maintains a per-VSAN event list queue, where the RSCN events are queued as they are generated. When the first RSCN event is queued, a per VSAN timer starts. Upon time-out, all the events are dequeued and coalesced RSCNs are sent to registered users. The default timer values minimize the number of coalesced RSCNs sent to registered users. Some deployments require smaller event timer values to track changes in the fabric.



Note

The RSCN timer value must be the same on all switches in the VSAN. See the [“RSCN Timer Configuration Distribution” section on page 8-12](#).

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**Note**

Before performing a downgrade, make sure that you revert the RSCN timer value in your network to the default value. Failure to do so will disable the links across your VSANs and other devices.

To configure the RSCN timer, follow these steps:

| | Command | Purpose |
|--------|--|--|
| Step 1 | switch# config t switch(config)# | Enters configuration mode. |
| Step 2 | switch(config)# rscn distribute | Enables RSCN timer configuration distribution. |
| Step 3 | switch(config)# rscn event-tov 300 vsan 10 | Sets the event time-out value in milliseconds for the selected VSAN. In this example, the event time-out value is set to 300 milliseconds for VSAN 12. The range is 0 to 2000 milliseconds. Setting a zero (0) value disables the timer. |
| | switch(config)# no rscn event-tov 300 vsan 10 | Reverts to the default value (2000 milliseconds for Fibre Channel VSANs or 1000 milliseconds for FICON VSANs). |
| Step 4 | switch(config)# rscn commit vsan 10 | Commits the RSCN timer configuration to be distributed to the switches in VSAN 10. |

Verifying the RSCN Timer Configuration

You verify the RSCN timer configuration using the **show rscn event-tov vsan** command.

```
switch# show rscn event-tov vsan 10
Event TOV : 1000 ms
```

RSCN Timer Configuration Distribution

Because the timeout value for each switch is configured manually, a misconfiguration occurs when different switches time out at different times. This means different N-ports in a network can receive RSCNs at different times. Cisco Fabric Services (CFS) infrastructure alleviates this situation by automatically distributing the RSCN timer configuration information to all switches in a fabric. This also reduces the number of SW-RSCNs. Refer to the *Cisco MDS 9000 Family NX-OS System Management Configuration Guide*.

RSCN supports two modes, distributed and nondistributed. In distributed mode, RSCN uses CFS to distribute configuration to all switches in the fabric. In nondistributed mode, only the configuration commands on the local switch are affected.

**Note**

All configuration commands are not distributed. Only the **rscn event-tov tov vsan vsan** command is distributed.

**Note**

Only the RSCN timer configuration is distributed.

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The RSCN timer is registered with CFS during initialization and switchover. For high availability, if the RSCN timer distribution crashes and restarts or a switchover occurs, it resumes normal functionality from the state prior to the crash or switchover.



Note

You can determine the compatibility when downgrading to an earlier Cisco MDS NX-OS release using **show incompatibility system** command. You must disable RSCN timer distribution support before downgrading to an earlier release.



Note

By default, the RSCN timer distribution capability is disabled and is compatible when upgrading from any Cisco MDS SAN-OS release earlier than 3.0.



Note

For CFS distribution to operate correctly for the RSCN timer configuration, all switches in the fabric must be running Cisco SAN-OS Release 3.0(1) or later, or Cisco NX-OS 4.1(1b).

This section includes the following topics:

- [Enabling RSCN Timer Configuration Distribution, page 8-13](#)
- [Locking the Fabric, page 8-13](#)
- [Committing the RSCN Timer Configuration Changes, page 8-14](#)
- [Discarding the RSCN Timer Configuration Changes, page 8-14](#)
- [Clearing a Locked Session, page 8-14](#)
- [Displaying RSCN Configuration Distribution Information, page 8-14](#)

Enabling RSCN Timer Configuration Distribution

To enable RSCN timer configuration distribution, follow these steps:

| | Command | Purpose |
|--------|--|---|
| Step 1 | switch# config t switch(config)# | Enters configuration mode. |
| Step 2 | switch(config)# rscn distribute | Enables RSCN timer distribution. |
| | switch(config)# no rscn distribute | Disables (default) RSCN timer distribution. |

Locking the Fabric

The first action that modifies the database creates the pending database and locks the feature in the VSAN. Once you lock the fabric, the following situations apply:

- No other user can make any configuration changes to this feature.
- A copy of the configuration database becomes the pending database along with the first active change.

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Committing the RSCN Timer Configuration Changes

If you commit the changes made to the active database, the configuration is committed to all the switches in the fabric. On a successful commit, the configuration change is applied throughout the fabric and the lock is released.

To commit RSCN timer configuration changes, follow these steps:

| | Command | Purpose |
|--------|--|---------------------------------|
| Step 1 | switch# config t switch(config)# | Enters configuration mode. |
| Step 2 | switch(config)# rscn commit vsan 10 | Commits the RSCN timer changes. |

Discarding the RSCN Timer Configuration Changes

If you discard (abort) the changes made to the pending database, the configuration database remains unaffected and the lock is released.

To discard RSCN timer configuration changes, follow these steps:

| | Command | Purpose |
|--------|--|--|
| Step 1 | switch# config t switch(config)# | Enters configuration mode. |
| Step 2 | switch(config)# rscn abort vsan 10 | Discards the RSCN timer changes and clears the pending configuration database. |

Clearing a Locked Session

If you have changed the RSCN timer configuration and have forgotten to release the lock by either committing or discarding the changes, an administrator can release the lock from any switch in the fabric. If the administrator performs this task, your changes to the pending database are discarded and the fabric lock is released.



Tip

The pending database is only available in the volatile directory and are subject to being discarded if the switch is restarted.

To use administrative privileges and release a locked DPVM session, use the **clear rscn session vsan** command in EXEC mode.

```
switch# clear rscn session vsan 10
```

Displaying RSCN Configuration Distribution Information

Use the **show cfs application name rscn** command to display the registration status for RSCN configuration distribution.

```
switch# show cfs application name rscn

Enabled       : Yes
Timeout       : 5s
Merge Capable : Yes
Scope         : Logical
```

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Use the **show rscn session status vsan** command to display session status information for RSCN configuration distribution.



Note

A merge failure results when the RSCN timer values are different on the merging fabrics.

```
switch# show rscn session status vsan 1
Session Parameters for VSAN: 1
-----
Last Action           : Commit
Last Action Result    : Success
Last Action Failure Reason : None
```

Use the **show rscn pending** command to display the set of configuration commands that would take effect when you commit the configuration.



Note

The pending database includes both existing and modified configuration.

```
switch# show rscn pending
rscn event-tov 2000 ms vsan 1
rscn event-tov 2000 ms vsan 2
rscn event-tov 300 ms vsan 10
```

Use the **show rscn pending-diff** command to display the difference between pending and active configurations. The following example shows the time-out value for VSAN 10 was changed from 2000 milliseconds (default) to 300 milliseconds.

```
switch# show rscn pending-diff
- rscn event-tov 2000 ms vsan 10
+ rscn event-tov 300 ms vsan 10
```

Default Settings

Table 8-1 lists the default settings for RSCN.

Table 8-1 Default RSCN Settings

| Parameters | Default |
|---------------------------------------|--|
| RSCN timer value | 2000 milliseconds for Fibre Channel VSANs 1000 milliseconds for FICON VSANs |
| RSCN timer configuration distribution | Disabled |

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