Managing FLOGI, Name Server, and RSCN Databases

This chapter describes how to configure and manage FLOGI, name server and RSCN databases.

This chapter includes the following sections:

Managing FLOGI, Name Server and RSCN Databases

Fabric Login

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 fabric login (FLOGI) table as in the following examples. 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. The maximum number of FLOGIs or FDISCs per port is 256 and the maximum number of FLOGIs or FDISC per switch = 1000.

This example shows how to verify the storage devices in the fabric login (FLOGI) table:

```
switch# show flogi database
--------------------------------------------------------------------------------
INTERFACE  VSAN    FCID         PORT NAME                NODE NAME
--------------------------------------------------------------------------------
fc2/3      1      0xb200e2  21:00:00:04:cf:27:25:2c  20:00:00:04:cf:27:25:2c
fc2/3      1      0xb200e1  21:00:00:04:cf:4c:18:61  20:00:00:04:cf:4c:18:61
fc2/3      1      0xb200d1  21:00:00:04:cf:4c:18:64  20:00:00:04:cf:4c:18:64
fc2/3      1      0xb200ce  21:00:00:04:cf:4c:16:fb  20:00:00:04:cf:4c:16:fb
fc2/3      1      0xb200cd  21:00:00:04:cf:4c:18:f7  20:00:00:04:cf:4c:18:f7
vfc3/1     2      0xb30100  10:00:00:05:30:00:49:63  20:00:00:05:30:00:49:5e
Total number of flogi = 6.
```

This example shows how to verify the storage devices attached to a specific interface:

```
switch# show flogi database interface vfc1/1

INTERFACE  VSAN    FCID         PORT NAME                NODE NAME

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

vfc1/1     1      0x870000  20:00:00:1b:21:06:58:bc  10:00:00:1b:21:06:58:bc

Total number of flogi = 1.
```

This example shows how to verify the storage devices associated with VSAN 1:

```
switch# show flogi database vsan 1

show flogi database vsan 1
--------------------------------------------------------------------------------
INTERFACE VSAN FCID PORT NAME NODE NAME
--------------------------------------------------------------------------------
fc1/17 1 0xee0000 21:00:00:24:ff:17:08:2e 20:00:00:24:ff:17:08:2e
fc1/18 1 0xee0020 10:00:00:90:fa:dc:0f:08 20:00:00:90:fa:dc:0f:08
fc1/37 1 0xee00ef 50:06:01:6a:08:60:7c:67 50:06:01:60:88:60:7c:67
Total number of flogi = 3.
```

Name Server Proxy

The name server functionality maintains a database that contains 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 need to modify (update or delete) the contents of a database entry that was previously registered by a different device.

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.

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

You can register the name server proxy.

SUMMARY STEPS

1. **configure terminal**
2. **fcns proxy-port** *wwn-id* **vsan** *vsan-id*

DETAILED STEPS

	Command or Action	**Purpose**

Step 1	**configure terminal**
	
	Example:
	
	`switch# configure terminal`
	`switch(config)#`
		Enters global configuration mode.

Step 2	**fcns proxy-port** *wwn-id* **vsan** *vsan-id*
	
	Example:
	
	`switch(config)# fcns proxy-port`
	`11:22:11:22:33:44:33:44 vsan 300`
		Configures a proxy port for the specified VSAN.

Rejecting Duplicate pWWNs

By FC standard, NX-OS will accept a login on any interface of a pwwn that is already logged in on the same switch, same vsan, same fcdomain.

By default, any future flogi (with duplicate pwwn) on different switch in the same vsan, will be rejected and earlier FLOGI retained, which does not follow FC standards.

If you disable this option, any future flogi (with duplicate pwwn) on different switch in the same VSAN,will be allowed to succeed by deleting earlier FCNS entry.

To reject duplicate pWWNs, follow these steps:

SUMMARY STEPS

1. **configure terminal**
2. **fcns reject-duplicate-pwwn vsan** *vsan-id*
3. **no fcns reject-duplicate-pwwn vsan** *vsan-id*

DETAILED STEPS

	Command or Action	Purpose

Step 1	**configure terminal**
	
	 Example:
	
	 `switch# configure terminal`
	 `switch(config)#`
		Enters global configuration mode.

Step 2	**fcns reject-duplicate-pwwn vsan** *vsan-id*
	
	 Example:
	
	 `switch(config)# fcns reject-duplicate-pwwn vsan`
	 `100`
		Any future flogi (with duplicate pwwn) on different switch, will be rejected and earlier FLOGI retained (default).

Step 3	**no fcns reject-duplicate-pwwn vsan** *vsan-id*
	
	 Example:
	
	 `switch(config)# no fcns reject-duplicate-pwwn vsan`
	 ` 256`
		Any future flogi (with duplicate pwwn) on different switch, will be allowed to succeed by deleting earlier FCNS entry.
		
		 But you can still see the earlier entry in FLOGI database in the other switch.

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

This example shows how to display the name server database for all VSANs:

```
switch# show fcns database

VSAN 1:
```

```
-------------------------------------------------------------------------
FCID        TYPE  PWWN                         (VENDOR)    FC4-TYPE:FEATURE
-------------------------------------------------------------------------
0xe90000    N     20:00:00:6b:f1:70:08:ec (Cisco)         scsi-fcp:init fc-gs
0xec0020    N     21:00:00:24:ff:7f:37:05 (Company A)     scsi-fcp:target
0xec0040    N     50:08:01:60:01:59:49:33                 scsi-fcp:init
0xec0060    N     20:12:00:11:0d:9d:06:00                 scsi-fcp:init
0xec0080    N     50:08:01:60:08:df:19:11                 scsi-fcp:init
0xec00a0    N     20:00:d8:b1:90:41:1d:d1 (Cisco)
0xec00ef    N     50:06:01:61:08:60:7a:ab (Company B)     scsi-fcp:both
0xee0000    N     50:08:01:60:08:df:19:10                 scsi-fcp
0xee0020    N     20:13:00:11:0d:9d:07:00                 scsi-fcp:target
0xee0040    N     10:00:00:90:fa:d1:ef:12 (Company C)     scsi-fcp:init
0xee0060    N     20:00:00:6b:f1:70:08:ed (Cisco)         scsi-fcp:init fc-gs
0xef0020    N     50:08:01:60:01:59:49:32                 scsi-fcp
0xef0040    N     20:11:00:11:0d:96:e7:00                 scsi-fcp:init

Total number of entries = 13

VSAN 2:
-------------------------------------------------------------------------
FCID        TYPE  PWWN                         (VENDOR)    FC4-TYPE:FEATURE
-------------------------------------------------------------------------
0x5e0020    N     25:6b:28:6f:7f:21:03:f6 (Cisco)         npv
0x5e0040    N     25:6b:e0:0e:da:49:c2:2a (Cisco)         npv
0x5e0080    N     21:ed:00:2a:10:7a:89:1d (Cisco)         npv
0x840000    N     20:0f:2c:d0:2d:50:d3:48 (Cisco)         npv
0x840040    N     25:52:2c:d0:2d:50:d3:48 (Cisco)         npv

Total number of entries = 5
```

This example shows how to display the name server database and the statistical information for the specified VSANs:

```
switch# show fcns database vsan 1

VSAN 1:
-------------------------------------------------------------------------
FCID        TYPE  PWWN                         (VENDOR)    FC4-TYPE:FEATURE
-------------------------------------------------------------------------
0xe90000    N     20:00:00:6b:f1:70:08:ec (Cisco)         scsi-fcp:init fc-gs
0xec0020    N     21:00:00:24:ff:7f:37:05 (Company A)     scsi-fcp:target
0xec0040    N     50:08:01:60:01:59:49:33                 scsi-fcp:init
0xec0060    N     20:12:00:11:0d:9d:06:00                 scsi-fcp:init
0xec0080    N     50:08:01:60:08:df:19:11                 scsi-fcp:init
0xec00a0    N     20:00:d8:b1:90:41:1d:d1 (Cisco)
0xec00ef    N     50:06:01:61:08:60:7a:ab (Company B)     scsi-fcp:both
0xee0000    N     50:08:01:60:08:df:19:10                 scsi-fcp
0xee0020    N     20:13:00:11:0d:9d:07:00                 scsi-fcp:target
0xee0040    N     10:00:00:90:fa:d1:ef:12 (Company C)     scsi-fcp:init
0xee0060    N     20:00:00:6b:f1:70:08:ed (Cisco)         scsi-fcp:init fc-gs
0xef0020    N     50:08:01:60:01:59:49:32                 scsi-fcp
0xef0040    N     20:11:00:11:0d:96:e7:00                 scsi-fcp:init

Total number of entries = 13
```

This example shows how to display the name server database for all VSANs:

```
switch# show fcns database detail

show fcns database detail
-----------------------
VSAN:200 FCID:0xee0000
-----------------------
```

```
port-wwn (vendor) :21:00:00:24:ff:17:08:2e (Qlogic)
node-wwn :20:00:00:24:ff:17:08:2e
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 :QLE2742 FW:v8.05.44 DVR:v2.1.73.0
port-type :N
port-ip-addr :0.0.0.0
fabric-port-wwn :20:11:00:de:fb:53:a3:a0
hard-addr :0x000000
permanent-port-wwn (vendor) :21:00:00:24:ff:17:08:2e (Qlogic)
connected interface :fc1/17
switch name (IP address) :sw (192.168.1.1)
-----------------------
VSAN:200 FCID:0xee0020
```

This example shows how to display the name server database statistics for all VSANs:

```
switch# show fcns statistics

show fcns statistics
Name server statistics for vsan 1
===================================
registration requests received = 0
deregistration requests received = 0
queries received = 0
queries sent = 0
reject responses sent = 0
RSCNs received = 0
RSCNs sent = 0

Name server statistics for vsan 200
===================================
registration requests received = 18
deregistration requests received = 0
queries received = 78
queries sent = 0
reject responses sent = 0
RSCNs received = 0
RSCNs sent = 8

Name server statistics for vsan 201
===================================
registration requests received = 0
deregistration requests received = 0
queries received = 0
queries sent = 0
reject responses sent = 0
RSCNs received = 0
RSCNs sent = 0

Name server statistics for vsan 202
===================================
registration requests received = 0
deregistration requests received = 0
queries received = 0
queries sent = 0
reject responses sent = 0
RSCNs received = 0
RSCNs sent = 0
```

FDMI

Cisco Nexus N9K-C93180YC-FX and N9K-C93360YC-FX2 switches support 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 switch 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

This examples shows how to display all HBA details for a specified VSAN:

```
switch# show fdmi database detail vsan 1
```

This example displays HBA list for all VSANs:

```
switch# sh fdmi database
Registered HBA List for VSAN 10
  10:00:00:90:fa:c7:e1:f6
Registered HBA List for VSAN 108
  20:04:00:11:0d:dd:00:00
  20:05:00:11:0d:dd:00:00
```

This example displays the HBA list for a specific VSAN:

```
switch# sh fdmi database vsan 10
Registered HBA List for VSAN 10
  10:00:00:90:fa:c7:e1:f6
```

This example displays all the details of the HBA list:

```
switch# sh fdmi database detail
Registered HBA List for VSAN 10
------------------------------
HBA-ID: 10:00:00:90:fa:c7:e1:f6
------------------------------
Node Name       :20:00:00:90:fa:c7:e1:f6
Manufacturer    :Emulex Corporation
Serial Num      :FC61659139
Model           :LPe32002-M2
Model Description:Emulex LightPulse LPe32002-M2 2-Port 32Gb Fibre Channel Adapter
Hardware Ver    :0000000c
Driver Ver      :11.4.33.1
ROM Ver         :11.4.204.25
Firmware Ver    :11.4.204.25
OS Name/Ver     :VMware ESXi 6.7.0 Releasebuild-8169922
CT Payload Len  :245760
  Port-id: 10:00:00:90:fa:c7:e1:f6
    Supported FC4 types:1 scsi-fcp fc-gs
    Supported Speed   :8G 16G 32G
```

```
      Current Speed       :16G
      Maximum Frame Size :2048
      OS Device Name      :vmhba8
      Host Name           :localhost
Registered HBA List for VSAN 108
-------------------------------
HBA-ID: 20:04:00:11:0d:dd:00:00
-------------------------------
Node Name          :20:04:00:11:0d:23:b4:00
Manufacturer      :QLogic Corporation
Serial Num        :RFD1743U70327
Model             :QLE2742
Model Description:Cisco QLE2742 Dual Port 32Gb FC to PCIe Gen3 x8 Adapter
Hardware Ver      :BK3210407-43  B
Driver Ver        :8.07.00.34.Trunk-SCST.18-k
ROM Ver           :3.60
Firmware Ver      :8.08.204 (785ad0
  Port-id: 20:04:00:11:0d:dd:00:00
    Supported FC4 types:scsi-fcp 40 fc-av
    Supported Speed    :8G 16G 32G
    Current Speed      :32G
    Maximum Frame Size :2112
    OS Device Name      :qla2xxx:host7
    Host Name           :VirtuaLUN
-------------------------------
HBA-ID: 20:05:00:11:0d:dd:00:00
-------------------------------
Node Name          :20:05:00:11:0d:23:b5:00
Manufacturer      :QLogic Corporation
Serial Num        :RFD1743U70327
Model             :QLE2742
Model Description:Cisco QLE2742 Dual Port 32Gb FC to PCIe Gen3 x8 Adapter
Hardware Ver      :BK3210407-43  B
Driver Ver        :8.07.00.34.Trunk-SCST.18-k
ROM Ver           :3.60
Firmware Ver      :8.08.204 (785ad0
  Port-id: 20:05:00:11:0d:dd:00:00
    Supported FC4 types:scsi-fcp 40 fc-av
    Supported Speed    :8G 16G 32G
    Current Speed      :32G
    Maximum Frame Size :2112
    OS Device Name      :qla2xxx:host8
    Host Name           :VirtuaLUN
```

This example displays all the details of the HBA list for a specific VSAN:

```
switch# sh fdmi database detail vsan 10
Registered HBA List for VSAN 10
-------------------------------
HBA-ID: 10:00:00:90:fa:c7:e1:f6
-------------------------------
Node Name          :20:00:00:90:fa:c7:e1:f6
Manufacturer      :Emulex Corporation
Serial Num        :FC61659139
Model             :LPe32002-M2
Model Description:Emulex LightPulse LPe32002-M2 2-Port 32Gb Fibre Channel Adapter
Hardware Ver      :0000000c
Driver Ver        :11.4.33.1
ROM Ver           :11.4.204.25
Firmware Ver      :11.4.204.25
OS Name/Ver       :VMware ESXi 6.7.0 Releasebuild-8169922
CT Payload Len    :245760
  Port-id: 10:00:00:90:fa:c7:e1:f6
    Supported FC4 types:1 scsi-fcp fc-gs
    Supported Speed    :8G 16G 32G
```

```
            Current Speed      :16G
            Maximum Frame Size :2048
            OS Device Name     :vmhba8
            Host Name          :localhost
```

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 a State Change Registration (SCR) request). 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

A switch RSCN (SW-RSCN) is sent to registered hosts and 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

The following example shows how to display registered device information:

```
switch# show rscn scr-table vsan 1

show rscn scr-table vsan 1
SCR table for VSAN: 1
---------------------------------------------
FC-ID REGISTERED FOR
---------------------------------------------
0xee0000 fabric and nport detected rscns
0xee0020 fabric and nport detected rscns
0xee00ef fabric and nport detected rscns

Total number of entries = 3
```

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.

Multi-pid Option

If the RSCN multi-pid option is enabled, RSCNs generated to the registered Nx ports might 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, 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, one of the following actions 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 support multi-pid RSCN payloads. If so, disable the RSCN multi-pid option.

Note For the PORT_OFFLINE events, irrespective of whether the multi-pid option is enabled or disabled, multiple RSCNs are generated (depending on the number of ports) and sent immediately.

For the PORT_ONLINE events,

- if the multi-pid option is enabled, a single RSCN is generated irrespective of the number of ports and sent immediately. This RSCN includes multiple pages containing information about all the ports coming UP.

- if the multi-pid option is disabled, multiple RSCNs are generated (depending on the number of ports) and sent immediately.

Configuring the multi-pid Option

You can configure the **multi-pid** option.

SUMMARY STEPS

1. **configure terminal**
2. **rscn multi-pid vsan** *vsan-id*

DETAILED STEPS

	Command or Action	**Purpose**
Step 1	**configure terminal**	Enters global configuration mode.
	Example:	
	```switch# configure terminal``` ```switch(config)#```	
Step 2	**rscn multi-pid vsan** *vsan-id*	Sends RSCNs in a multi-pid format for the specified VSAN.
	Example:	
	```switch(config)# rscn multi-pid vsan 405```	

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 SAN switches.

You can suppress the transmission of these SW-RSCNs over an ISL.

SUMMARY STEPS

1. **configure terminal**
2. **rscn suppress domain-swrscn vsan** *vsan-id*

DETAILED STEPS

	Command or Action	Purpose

Step 1	**configure terminal**
	
	Example:
	`switch# configure terminal`
	`switch(config)#`
		Enters global configuration mode.

Step 2	**rscn suppress domain-swrscn vsan** *vsan-id*
	
	Example:
	`switch(config)# rscn suppress domain-swrscn vsan`
	`250`
		Suppresses transmission of domain format SW-RSCNs for the specified VSAN.

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.

This example shows how 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 entering the **show rscn statistics** command:

`switch# `**`show rscn statistics vsan 1`**

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. When a timeout occurs, all the events are dequeued and coalesced RSCNs are sent to registered users. The default timer values minimize the number of coalesced RSCNs that are 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.

Note CFS is enabled by default. All devices in the fabric must have CFS enabled, or they do not receive distributions. If CFS is disabled for an application, that application does not distribute any configuration, and it does not accept a distribution from other devices in the fabric. Use **cfs distribute** command to enable the CFS

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.

You can configure the RSCN timer.

SUMMARY STEPS

1. **configure terminal**
2. **rscn distribute**
3. **rscn event-tov** *timeout* **vsan** *vsan-id*
4. **no rscn event-tov** *timeout* **vsan** *vsan-id*
5. **rscn commit vsan** *vsan-id*

DETAILED STEPS

	Command or Action	**Purpose**

Step 1	**configure terminal**
	
	Example:
	
	`switch# configure terminal`
	`switch(config)#`
		Enters global configuration mode.

Step 2	**rscn distribute** **Example:** `switch(config)# rscn distribute`	Enables RSCN timer configuration distribution.
Step 3	**rscn event-tov** *timeout* **vsan** *vsan-id* **Example:** `switch(config)# rscn event-tov 1000 vsan 501`	Sets the event time-out value in milliseconds for the specified VSAN. The range is 0 to 2000 milliseconds. Setting a zero (0) value disables the timer.
Step 4	**no rscn event-tov** *timeout* **vsan** *vsan-id* **Example:** `switch(config)# no rscn event-tov 1100 vsan 245`	Reverts to the default value (2000 milliseconds for Fibre Channel VSANs).
Step 5	**rscn commit vsan** *vsan-id* **Example:** `switch(config)# rscn commit vsan 25`	Commits the RSCN timer configuration to be distributed to the switches in the specified VSAN.

Verifying the RSCN Timer Configuration

You verify the RSCN timer configuration using the **show rscn event-tov vsan** command. This example shows how to clear the RSCN statistics for VSAN 10:

```
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. 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, which also reduces the number of SW-RSCNs.

RSCN supports two modes, distributed and nondistributed. In distributed mode, RSCN uses Cisco Fabric Services (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.

Caution   Only the RSCN timer configuration 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.

Enabling RSCN Timer Configuration Distribution

You can enable RSCN timer configuration distribution.

SUMMARY STEPS

1. **configure terminal**
2. **rscn distribute**
3. **no rscn distribute**

DETAILED STEPS

	Command or Action	**Purpose**

Step 1	**configure terminal**
	
	Example:
	
	`switch# configure terminal`
	`switch(config)#`
		Enters global configuration mode.

Step 2	**rscn distribute** **Example:**	Enables RSCN timer distribution.

	Command or Action	Purpose
	`switch(config)# rscn distribute`	
Step 3	**no rscn distribute** **Example:** `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.

Committing 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.

You can commit RSCN timer configuration changes.

SUMMARY STEPS

1. **configure terminal**
2. **rscn commit vsan** *timeout*

DETAILED STEPS

	Command or Action	Purpose

Step 1	**configure terminal**
	
	Example:
	`switch# configure terminal`
	`switch(config)#`
		Enters global configuration mode.

Step 2	**rscn commit vsan** *timeout* **Example:** `switch(config)# rscn commit vsan 500`	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.

You can discard RSCN timer configuration changes.

SUMMARY STEPS

1. **configure terminal**

2. **rscn abort vsan** *timeout*

DETAILED STEPS

	Command or Action	Purpose
Step 1	**configure terminal** **Example:** ``` switch# configure terminal switch(config)# ```	Enters global configuration mode.
Step 2	**rscn abort vsan** *timeout* **Example:** ``` switch(config)# rscn abort vsan 800 ```	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.

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 RSCN session, use the **clear rscn session vsan** command in EXEC mode. This example shows how to clear the RSCN session for VSAN 10:

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

Displaying RSCN Configuration Distribution Information

This example shows how to display the registration status for RSCN configuration distribution:

```
switch# show cfs application name rscn

 Enabled       : Yes

 Timeout       : 5s

 Merge Capable : Yes

 Scope         : Logical
```

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

This example shows how 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 vsan 1

rscn event-tov 2000 ms vsan 1
```

This example shows how to display the difference between pending and active configurations:

```
switch# show rscn pending-diff vsan 10
- rscn event-tov 2000
+ rscn event-tov 1001
```

Default Settings for RSCN

The following table lists the default settings for RSCN.

Table 1: Default RSCN Settings

Parameters	Default
RSCN timer value	2000 milliseconds for Fibre Channel VSANs
RSCN timer configuration distribution	Disabled