



## Configuring Domain Parameters

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The Fibre Channel domain (fcdomain) feature performs principal switch selection, domain ID distribution, FC ID allocation, and fabric reconfiguration functions as described in the FC-SW-2 standards. The domains are configured on a per VSAN basis. If you do not configure a domain ID, the local switch uses a random ID.



### Caution

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made by an administrator or individual who is completely familiar with switch operations.

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### Tip

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When you change the configuration, be sure to save the running configuration. The next time you reboot the switch, the saved configuration is used. If you do not save the configuration, the previously saved startup configuration is used.

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## About fcdomain Phases

- Principal switch selection—This phase guarantees the selection of a unique principal switch across the fabric.

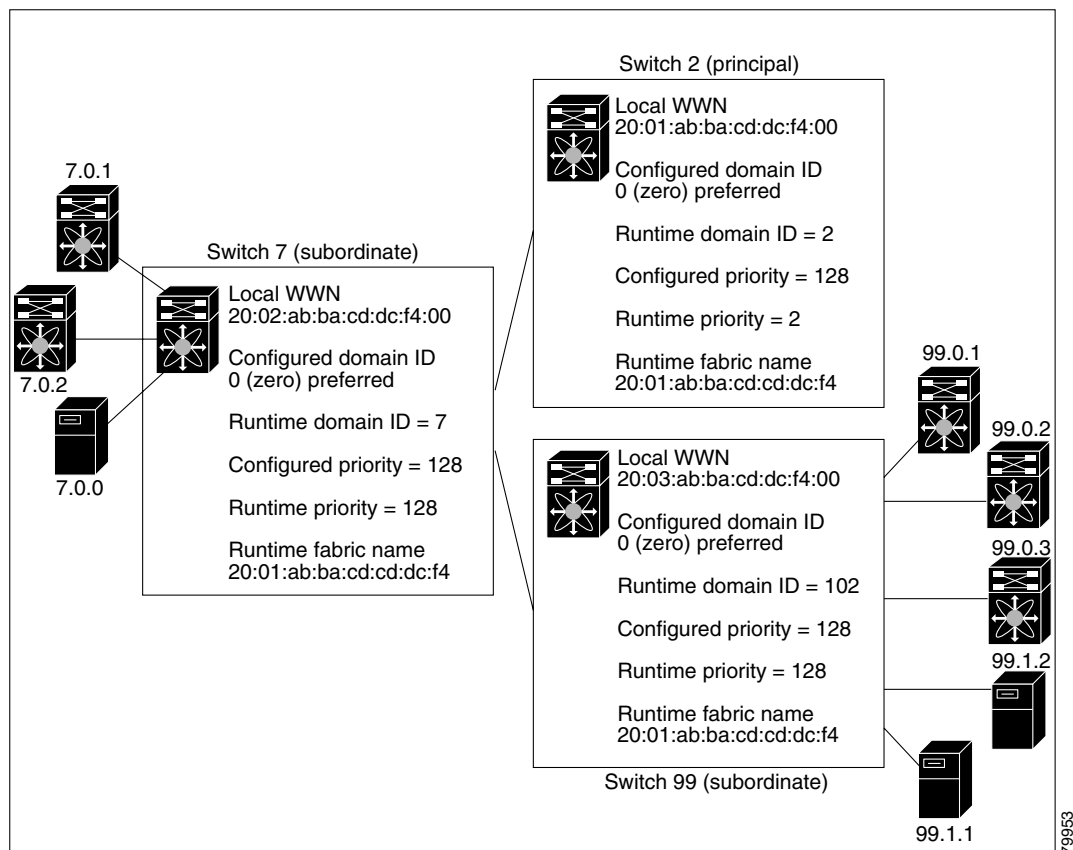
Domain ID distribution—This phase guarantees each switch in the fabric obtains a unique domain ID.

FC ID allocation—This phase guarantees a unique FC ID assignment to each device attached to the corresponding switch in the fabric.

Fabric reconfiguration—This phase guarantees a resynchronization of all switches in the fabric to ensure they simultaneously restart a new principal switch selection phase.

See [Figure 14-1](#).

**Figure 14-1** Sample fcdomain Configuration



### Note

Domain IDs and VSAN values used in all procedures are only provided as examples. Be sure to use IDs and values that apply to your configuration.

# Domain Restart



**Note**

the domain IDs are different, the runtime domain ID changes to take on the static domain ID after the next restart, either disruptive or non-disruptive.



**Tip**

If a VSAN is in interop mode, you cannot restart the fcdomain for that VSAN disruptively.

You can apply most of the configurations to their corresponding runtime values. Each of the following sections provide further details on how the fcdomain parameters are applied to the runtime values.

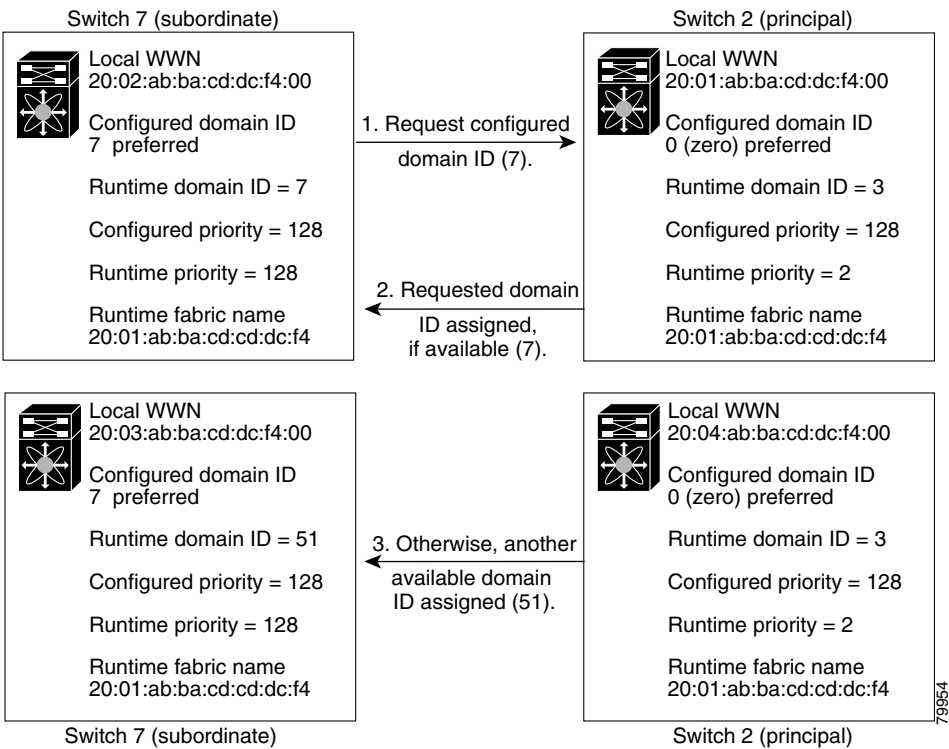
The **fcdomain restart** command applies your changes to the runtime settings. Use the **restart disruptive**

	Command	Purpose
Step 1	switch# <b>config t</b> switch(config)#	
Step 2	switch(config)# <b>fcdomain restart vsan 1</b>	
	<b>fcdomain restart disruptive</b> <b>vsan 1</b>	

# Domain Configuration

- 1.
- 2. The principal switch assigns the requested domain ID if available. Otherwise, it assigns another available domain ID.

Figure 14-2 Configuration Process Using the preferred Option



If you change the configured domain ID, the change is only accepted if the new domain ID is included in all the allowed domain ID lists currently configured in the VSAN. Alternatively, you can also configure zero-preferred domain ID.



The 0 (zero) value can be configured only if you use the preferred option.

While the static option can be applied to runtime after a disruptive or nondisruptive restart, the preferred option is applied to runtime only after a disruptive restart (see the [“Domain Restart” section on page 14-3](#)).



When the FICON feature is enabled in a given VSAN, the domain ID for that VSAN remains in the static state. You can change the static ID value but you cannot change it to the preferred option.



You must issue the \_\_\_\_\_ command if you want to apply the configured domain changes to the runtime domain.

To specify a preferred or a static domain ID, follow these steps:

Step 3		
		Enters configuration mode.
	<code>vsan 8</code>	<code>fcdomain domain 3 preferred</code>
		<code>no fcdomain domain 3 preferred vsan 8</code>
	<code>vsan 237</code>	<code>fcdomain domain 2 static</code>
	<code>vsan 237</code>	<code>no fcdomain domain 18 static</code>

# Switch Priority

By default, the configured priority is 128. The valid range to set the priority is between 1 and 254. Priority 1 has the highest priority. Value 255 is accepted from other switches, but cannot be locally configured.

Any new switch cannot become the principal switch when it joins a stable fabric. During the principal switch selection phase, the switch with the highest priority becomes the principal switch. If two switches have the same configured priority, the switch with the lower WWN becomes the principal switch.

The priority configuration is applied to runtime when the fcdomain is restarted (see the [“Domain Restart” section on page 14-3](#)). This configuration is applicable to both disruptive and nondisruptive restarts.

To configure the priority for the principal switch, follow these steps:

	Command	Purpose
Step 1		
Step 2	<code>fcdomain priority 25 VSAN 99</code>	
	<code>no fcdomain priority 25 VSAN 99</code>	

# Allowed Domain ID Lists



Tip

<code>config t</code>	
<code>fcdomain allowed 50-110 vsan 4</code>	
<code>no fcdomain allowed 50-110 vsan 5</code>	

# Merged Stable Fabrics

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	Command	Purpose
Step 1		
Step 2		
	<code>fcdomain auto-reconfigure 69</code>	

# Contiguous Domain Assignments

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	Command	Purpose
Step 1	<code>config t</code>	
Step 2	<code>fcdomain contiguous-allocation</code> <code>vsan 81-83</code>	<b>Note</b> <code>contiguous-allocation</code>

# fcdomain Initiation


## Fabric Name

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- When the fcdomain feature is enabled, the runtime fabric name is the same as the principal switch’s WWN.

The fabric name is applied to runtime through a disruptive restart when the fcdomain is configured as disabled (see the “Domain Restart” section on page 14-3).

To set the fabric name value for a disabled fcdomain, follow these steps:

<code>fcdomain fabric-name 20:1:ac:16:5e:0:21:01 vsan 3</code>	
<code>no fcdomain fabric-name 20:1:ac:16:5e:0:21:01 vsan 3010</code>	

## Incoming RCFs

The rcf-reject

rcf-reject

rcf-reject

<code>config t</code>	
<code>interface fc1/1 switch(config-if)#</code>	



<code>fcdomain rcf-reject vsan 1</code>	
<code>no fcdomain rcf-reject vsan 1</code>	

-

-

*in use*



If you connect to the switch from an AIX or HP-UX host, be sure to enable the persistent FC ID feature in the VSAN that connects these hosts.



Persistent FC IDs are enabled by default. This change of default behavior from releases prior to Cisco MDS SAN-OS Release 2.0(1b) prevents FC IDs from being changed after a reboot. You can disable this option for each VSAN.

A persistent FC ID assigned to an F port can be moved across interfaces and can continue to maintain the same persistent FC ID.



Persistent FC IDs with loop-attached devices (FL ports) need to remain connected to the same port in which they were configured.



## Enabling Persistent FC IDs

Step 1

Step 2

Command	Purpose
FCID(s) persistent feature is enabled.	
switch(config)#	

## Persistent FC IDs Manual Configuration

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Note

	Command	Purpose
Step 1		Enters configuration mode.
Step 2		Enters FC ID database configuration submode.
Step 3	<pre>33:e8:00:05:30:00:16:df fcid 0x070128</pre>	<pre>show fcdomain address-allocation vsan</pre>

## Unique Area FC IDs for Some HBAs



Note

interface fc1/9 and the storage port connects to interface fc 1/10 in the same switch.

Step 1

show flogi database

show flogi database

INTERFACE	VSAN	FCID	PORT NAME	NODE NAME
fc1/9	3	0x6f 03	50:05:08:b2:00:71:c8:c2	50:05:08:b2:00:71:c8:c0
fc1/10	3	0x6f 04	50:06:0e:80:03:29:61:0f	50:06:0e:80:03:29:61:0f



```
switch#
switch(config)#
switch(config-if)#
switch(config-if)#
switch#

switch#
...
Local switch configuration information:
  State: Enabled
  FCID persistence: Disabled
```

Step 4

```
conf t
    fcdomain fcid persistent vsan 1
end
```

Step 5

77 ee

Step 6

Step 7



Note

# Persistent FC ID Selective Purging

Table 14-1 Purged FC IDs

Persistent FC ID state	Persistent Usage State	Action

Step 1

Command	Purpose

# Displaying fcdomain Information



Note

Example 14-1 Displays the Global fcdomain Information

```

Local switch WWN:      20:01:00:0b:46:79:ef:41
Running fabric name: 20:01:00:0b:46:79:ef:41
Running priority: 128
Current domain ID: 0xed(237)

Local switch configuration information:
  State: Enabled
  FCID persistence: Disabled
  Auto-reconfiguration: Disabled
  Contiguous-allocation: Disabled
  Configured fabric name: 20:01:00:05:30:00:28:df
  Configured priority: 128
  Configured domain ID: 0x00(0) (preferred)

Principal switch run time information:
  Running priority: 128

No interfaces available.

```

### ***Displays the fcdomain Lists***

```

switch#

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)]

```

### ***Example 14-3 Displays the Allowed Domain ID Lists***

```

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.

```




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**interop 1**

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### ed VSAN

```
switch# show fcdomain fcid persistent vsan 1000
```

VSAN	WWN	FCID	Mask	Used	Assignment
1000	11:11:22:22:11:11:12:23	0x700101	SINGLE FCID	NO	STATIC
1000	44:44:33:33:22:22:11:11	0x701000	ENTIRE AREA	NO	DYNAMIC

### Example 14-5 Displays All Persistent FC IDs in the fcdomain

```
switch#  
Total entries 2.
```

Persistent FCIDs table contents:

VSAN	WWN	FCID	Mask	Used	Assignment
1000	11:11:22:22:11:11:22:22	0x700501	SINGLE FCID	NO	STATIC
1003	44:44:33:33:22:22:11:11	0x781000	ENTIRE AREA	YES	DYNAMIC

### Example 14-6 Displays fcdomain Statistics for a Specified VSAN

```
Number of 'Build Fabric's: 3  
Number of 'Fabric Reconfigurations': 0
```

### Example 14-7 Displays fcdomain Statistics for a Specified PortChannel

```
switch#  
Interface Statistics:  
      Transmitted      Received  
      -----  
      EFPs           13           9  
      DIAs            7           7  
      RDIs            0           0  
      ACCs           21          25  
      RJTs            1           1  
      BFs             2           2  
      RCFs            4           4  
      Error           0           0  
      Total          48          48  
Total Retries: 0  
Total Frames: 96  
      -----
```

### Example 14-8 Displays FC ID Information

```
show fcdomain address-allocation cache
```

### Example 14-9 Displays Address Allocation Information

**Table 14-2**      **Default fcdomain Parameters**[illegible]



*Default fcdomain Parameters (continued)*