



## 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. If you do not configure a domain ID, the local switch uses a random ID.



**Caution**

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Changes to fcdomain parameters should not be performed on a daily basis. These changes should be 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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This chapter includes the following sections:

- [About fcdomain Phases, page 13-2](#)
- [Domain Restart, page 13-3](#)
- [Domain Configuration, page 13-3](#)
- [Switch Priority, page 13-5](#)
- [fcdomain Initiation, page 13-6](#)
- [Displaying fcdomain Information, page 13-6](#)
- [Default Settings, page 13-7](#)

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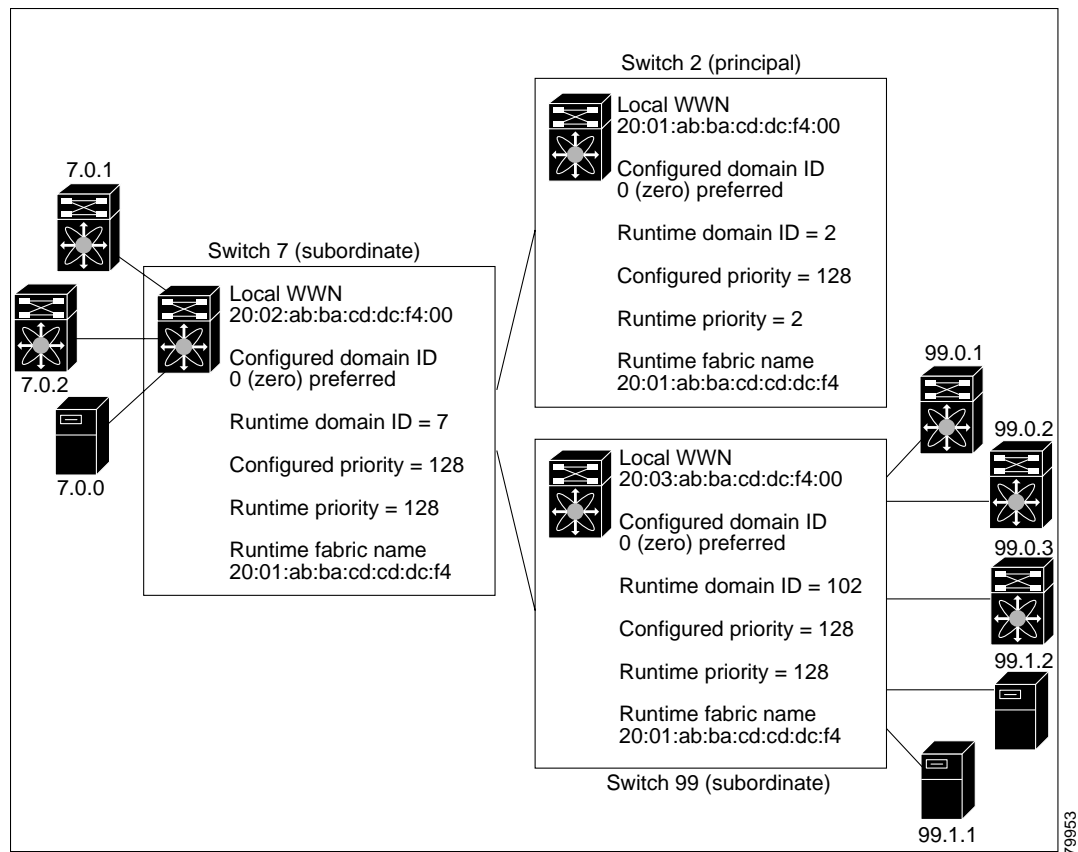
## About fcdomain Phases

This section describes each fcdomain phase:

- 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.

Figure 13-1 shows a sample fcdomain configuration.

**Figure 13-1** Sample fcdomain Configuration



### Note

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

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## Domain Restart

Fibre Channel domains can be started disruptively or nondisruptively. If you perform a disruptive restart, reconfigured fabric (RCF) frames are sent to other switches in the fabric. If you perform a nondisruptive restart, build fabric (BF) frames are sent to other switches in the fabric.



### Note

A static domain is specifically configured by the user and may be different from the runtime domain. If the domain IDs are different, the runtime domain ID changes to take on the static domain ID after the next restart.

You can apply most of the configurations to their corresponding runtime values. Each of the following sections provide further details to show 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`** option to apply most of the configurations to their corresponding runtime values.

To restart the fabric disruptively or nondisruptively, perform this task:

	Command	Purpose
Step 1	<code>switch# config t</code> <code>switch(config)#</code>	Enters configuration mode.
Step 2	<code>switch(config)# fcdomain restart</code>	Reconfigures the fabric without traffic disruption.
	<code>switch(config)# fcdomain restart disruptive</code>	Reconfigures the fabric with data traffic disruption.

## Domain Configuration

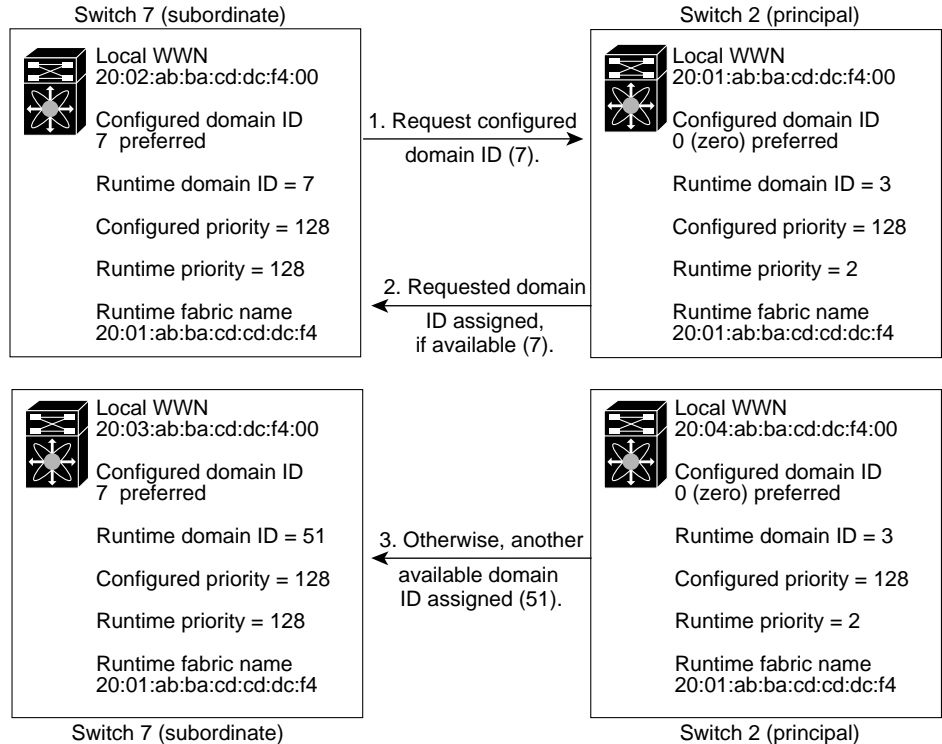
The configured domain ID can be **preferred** or **static**. By default, the configured domain is **0** and the configured type is **preferred**. If you do not configure a domain ID, the local switch sends a random ID in its request.

When a subordinate switch requests a domain, the following process takes place:

1. The local switch sends a configured domain ID request to the principal switch.
2. The top portion of [Figure 13-2](#) shows the principal switch assigning the requested domain ID as requested. If the requested ID is unavailable, the principal switch assigns another ID as shown in the bottom portion of [Figure 13-2](#).

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Figure 13-2 Configuration Process Using the preferred Option



The behavior of a subordinate switch depends on the allowed domain ID lists, the configured domain ID, and the domain ID assigned by principal switch.

- When the received domain ID is not within the allowed list, the requested domain ID becomes the runtime domain ID and all interfaces are isolated.
- When the assigned and requested domain IDs are the same, the **preferred** and **static** options are not relevant, and the assigned domain ID becomes the runtime domain ID.
- When the assigned and requested domain IDs are different, the following cases apply:
  - If the configured type is **static**, the assigned domain ID is discarded, all local interfaces are isolated, and the local switch assigns itself the configured domain ID, which becomes the runtime domain ID.
  - If the configured type is **preferred**, the local switch accepts the domain ID assigned by the principal switch, and the assigned domain ID becomes the runtime domain ID.

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



**Note**

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 13-3.)

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**Caution**

You must enter the **fcdomain restart** command if you want to apply the configured domain changes to the runtime domain.

To specify a **preferred** or a **static** domain ID, perform this task:

	Command	Purpose
Step 1	switch# <b>config t</b> switch(config)#	Enters configuration mode.
Step 2	switch(config)# <b>fcdomain domain 3 preferred</b>	Configures the switch to request a preferred domain ID 3 and accepts any value assigned by the principal switch.
Step 3	switch(config)# <b>no fcdomain domain 3 preferred</b>	Resets the configured domain ID to 0 (default). The configured domain ID becomes 0 preferred.
	switch(config)# <b>fcdomain domain 2 static</b>	Configures the switch to accept only a specific value and moves the local interfaces to an isolated state if the requested domain ID is not granted.
	switch(config)# <b>no fcdomain domain 18 static</b>	Resets the configured domain ID to factory defaults. The configured domain ID becomes 0 preferred.

## 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 13-3.](#)) This configuration is applicable to both disruptive and nondisruptive restarts.

To configure the priority for the principal switch, perform this task:

	Command	Purpose
Step 1	switch# <b>config t</b> switch(config)#	Enters configuration mode.
Step 2	switch(config)# <b>fcdomain priority 25</b>	Configures a priority of 25 for the local switch.
	switch(config)# <b>no fcdomain priority 25</b>	Reverts the priority to the factory default (128).

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## fcdomain Initiation

By default, the fcdomain feature is enabled on each switch. If you disable the fcdomain feature in a switch, that switch can no longer participate with other switches in the fabric. The fcdomain configuration is applied to runtime through a disruptive restart.

Use the **no fcdomain** command to disable the fcdomain feature.

To disable fcdomains, perform this task:

	Command	Purpose
Step 1	switch# <b>config t</b>	Enters configuration mode.
Step 2	switch(config)# <b>no fcdomain</b>	Disables the fcdomain configuration.
	switch(config)# <b>fcdomain</b>	Enables the fcdomain configuration.

## Displaying fcdomain Information

Use the **show fcdomain** command to display global information about fcdomain configurations. (See [Example 13-1](#).)



### Note

In [Example 13-1](#), the fcdomain feature is disabled. Consequently, the runtime fabric name is the same as the configured fabric name.

### Example 13-1 Displays the Global fcdomain Information

```
switch# show fcdomain
The local switch is the Principal Switch.
Local switch run time information:
  Local switch WWN:      10:00:00:0d:ec:19:cb:0e
  Running fabric name:  10:00:00:0d:ec:19:cb:0e
  Running priority:     128
  Current domain ID:    0x69(105)

Local switch configuration information:
  Configured fabric name:
  Configured priority:   128
  Configured domain ID:  0x0(0) (preferred)

Principal switch run time information:
  Running priority: 128
```

Use the **show fcdomain domain-list** command to display the list of domain IDs of all switches. This list provides the WWN of the switches owning each domain ID. (See [Example 13-2](#).)

### Example 13-2 Displays the fcdomain Lists

```
switch# show fcdomain domain-list
Domain ID      WWN
-----
0x2(2)        10:00:00:c0:dd:00:90:a3
0x61(97)      10:00:00:c0:dd:07:00:f7 [Local] [Principal]
Number of domains: 2
```

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## Default Settings

Table 13-1 lists the default settings for all fcdomain parameters.

**Table 13-1**      *Default fcdomain Parameters*

Parameters	Default
fcdomain feature	Enabled.
Configured domain ID	0 (zero).
Configured domain	Preferred.
Priority	128.

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