

# **Configuring Fabric Configuration Servers**

This chapter describes the Fabric Configuration Server (FCS) feature provided in the Cisco Nexus 5000 Series switches. It includes the following sections:

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### **Information About FCS**

The Fabric Configuration Server (FCS) provides discovery of topology attributes and maintains a repository of configuration information of fabric elements. A management application is usually connected to the FCS on the switch through an N port. The FCS views the entire fabric based on the following objects:

- Interconnect element (IE) object—Each switch in the fabric corresponds to an IE object. One or more IE objects form a fabric.
- Port object—Each physical port in an IE corresponds to a port object. This includes the switch ports (xE and F ports) and their attached N ports.
- Platform object—A set of nodes may be defined as a platform object to make it a single manageable entity. These nodes are end-devices (host systems, storage subsystems) attached to the fabric. Platform objects reside at the edge switches of the fabric.

Each object has its own set of attributes and values. A null value may also be defined for some attributes.

In the Cisco Nexus 5000 Series switch environment, a fabric may consist of multiple VSANs. One instance of the FCS is present per VSAN.

FCS supports the discovery of virtual devices. The **fcs virtual-device-add** command, entered in FCS configuration submode, allows you to discover virtual devices in a particular VSAN or in all VSANs.

If you have attached a management application to a switch, all the frames directed towards the FCS in the switch are part of the port VSAN in the switch port (F port). Your view of the management application is limited only to this VSAN. However, information about other VSANs that this switch is part of can be obtained either through the SNMP or CLI.

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In Figure 26-1 Management Application 1 (M1) is connected through an F port with port VSAN ID 1, and Management Application 2 (M2) is connected through an F port with port VSAN ID 2. M1 can query the FCS information of switches S1 and S3, and M2 can query switches S3 and S4. Switch S2 information is not known to both of them. FCS operations can be done only on those switches that are visible in the VSAN. M2 can send FCS requests only for VSAN 2 even though S3 is also a part of VSAN 1.

#### Figure 26-1 FCSs in a VSAN Environment



### **FCS Characteristics**

FCSs have the following characteristics:

- Support network management including the following:
  - N port management application can query and obtain information about fabric elements.
  - SNMP manager can use the FCS management information base (MIB) to start discovery and obtain information about the fabric topology.
- Support TE ports in addition to the standard F and E ports.
- Can maintain a group of nodes with a logical name and management address when a platform registers with it. FCSs maintain a backup of all registrations in secondary storage and update it with every change. When a restart or switchover happens, FCSs retrieve the secondary storage information and rebuild its database.
- SNMP manager can query FCSs for all IEs, ports, and platforms in the fabric.

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# **Displaying FCS Discovery**

To display FCS discovery information using Device Manager, perform this task:

Step 1

Choose **FC > Advanced > Fabric Config Server**.

You see the Fabric Config Server dialog box as shown in Figure 26-2.

Figure 26-2	Fabric Config Server Dialog Box

🦷 sw-isola-220 - Fabric Config Server						
Discovery Interconnect Elements Platforms (Enclosures) Fabric Ports						
1 🖬 🖓						
VSAN Id	Status					
1	databaselnvalid	n/a				
300	databaselnvalid	n/a				
500	databaselnvalid	n/a				
1000	databaselnvalid	n/a				
Discover Refresh Help Close 4 row(s)						

- Step 2 Click the Discovery tab.
- Step 3 Click Discover to rediscover the fabric, or click Refresh to update the display.

## **Displaying FCS Elements**

To display FCS interconnect element information using Device Manager, perform this task:

Step 1	Choose FC > Advanced > Fabric Config Server.
	You see the Fabric Config Server dialog box.
Step 2	Click the Interconnect Elements tab.
	You see the dialog box shown in Figure 26-3.

Figure 26-3 FCS Interconnect Elements Tab							
🗣 sw172-22-46-220 - Fabric Config Server							
Discovery Interconnect Elements Platforms (Enclosures) Fabric Ports							
<b>H</b> 🕄 🏐							
VSAN Id, WWN	Туре	DomainId	MgmtId	FabricName	LogicalName	Vendo	
1, Cisco 10:00:00:0d:ec:19:d4:83	switch	0x6c(108)	0xfffc6c	Cisco 20:01:00:05:30:00:61:df	sw172-22-47-118		~
, Cisco 20:01:00:05:30:00:34:9f	switch	0x66(102)	0xfffc66	Cisco 20:01:00:05:30:00:61:df	sw172-22-46-220	Cisco S <sup>,</sup>	
L, Cisco 20:01:00:05:30:00:61:df	switch	0x64(100)	0xfffc64	Cisco 20:01:00:05:30:00:61:df	sw172-22-46-223		
L, Cisco 20:01:00:05:30:00:9a:5f	switch	0×65(101)	0xfffc65	Cisco 20:01:00:05:30:00:61:df	sw172-22-46-221		
L, Cisco 20:01:00:05:30:00:cb:57	switch	0x63(99)	0xfffc63	Cisco 20:01:00:05:30:00:61:df	sw172-22-46-224		
1, Cisco 20:01:00:05:30:00:eb:47	switch	0x62(98)	0xfffc62	Cisco 20:01:00:05:30:00:61:df	sw172-22-46-222		
l, Cisco 20:01:00:05:30:01:9b:43	switch	0x68(104)	0xfffc68	Cisco 20:01:00:05:30:00:61:df	sw172-22-46-174		
1, Cisco 20:01:00:0d:ec:08:66:c1	switch	0x67(103)	0xfffc67	Cisco 20:01:00:05:30:00:61:df	sw172-22-46-233		
1, Cisco 20:01:00:0d:ec:13:77:41	switch	0x61(97)	0xfffc61	Cisco 20:01:00:05:30:00:61:df	sw172-22-46-225		
2, Cisco 20:02:00:05:30:00:34:9f	switch	0xef(239)	0xfffcef	Cisco 20:02:00:05:30:00:61:df	sw172-22-46-220	Cisco S <sup>,</sup>	
2, Cisco 20:02:00:05:30:00:61:df	switch	0x63(99)	0xfffc63	Cisco 20:02:00:05:30:00:61:df	sw172-22-46-223		
2, Cisco 20:02:00:05:30:00:9a:5f	switch	0xee(238)	0xfffcee	Cisco 20:02:00:05:30:00:61:df	sw172-22-46-221		
2, Cisco 20:02:00:05:30:00:cb:57	switch	0×1(1)	0xfffc01	Cisco 20:02:00:05:30:00:61:df	sw172-22-46-224		
2, Cisco 20:02:00:05:30:00:eb:47	switch	0xec(236)	0xfffcec	Cisco 20:02:00:05:30:00:61:df	sw172-22-46-222		~
Refresh Help Close							

Step 3 Click **Close** to close the dialog box.

## **Creating an FCS Platform**

To create an FCS platform using Device Manager, perform this task:

Step 1	Choose FC > Advanced > Fabric Config Server.
	You see the Fabric Config Server dialog box.
Step 2	Click the Platforms (Enclosures) tab.
Step 3	Click Create.

You see the Create Fabric Config Server dialog box as shown in Figure 26-4.

Figure 26-4

Create Fabric Config Server Dialog Box

🔒 Device Manager 3.0(0.346) - sw-isola-220 172.22.48.220 [ad	lmin]	
Device Physical Interface FC FICON IP Security Admin Logs Help		
😑 @ 🖶 🌒 📄 🔏 🖺 🏖 聞 🕑 🐼 (VSAN Ali 👻   🤗	🥽 sw-isola-220 - Create Fabric Config Serv 🔀	
Device Summary	VSANIA	
🗧 🔒 sw-isola-220 - Fabric Config Server	Name:	^
Discovery Interconnect Elements Platforms (Enclosures) Eabric Po	Type: 💿 Gateway 🔿 Host 🔿 Storage	
	Node WWN(s):	
VSAN ld, Index Name Type ConfigSource NodeList N		
3 Create Delete Apply Refresh Help	Management Address(es):	
0 row(s)	(comma separated)	
4 🚆 2 4 6 8 10 12 14 16 18 20 22 24 26 28 30 32 34 36 38 40 42 44	Create Close	
<b></b>		✓
	📒 Up 📕 Down 📕 Fail 🔜 Minor 🔜 Unread	hable 🗖 OutOfService 🚽 🔓

- Step 4 Enter the VSAN ID, or choose the ID from the drop-down list of available VSAN IDs.
- **Step 5** Enter the Fabric Configuration Server name in the Name field.
- **Step 6** Choose the type of server (**Gateway**, **Host**, **Storage**).
- **Step 7** Enter the WWNs for the server.
- **Step 8** Enter the management addresses for the server.
- **Step 9** Click **Create** to create the server.

### **Displaying FCS Fabric Ports**

To display FCS discovery information using Device Manager, perform this task:

Step 1 Choose FC > Advanced > Fabric Config Server. You see the Fabric Config Server dialog box.
Step 2 Click the Fabric Ports tab. You see a list of fabric ports as shown in Figure 26-5.

🌎 sw-isola-220 - Fa	ıbric	Config Serve	er -				×
Discovery Interconnect Elements Platforms (Enclosures) Fabric Ports							
VSANId, WWN	Тү	ТХТүре	ModuleT	Interf	St	Attached	
300, Cisco 20:e9:00:0	auto	unknown	unknown	fc4/41	off		~
300, Cisco 20:ea:00:0	auto	unknown	unknown	fc4/42	off		
300, Cisco 20:eb:00:0	auto	unknown	unknown	fc4/43	off		
300, Cisco 20:ec:00:0	auto	unknown	unknown	fc4/44	off		
300, Cisco 20:ed:00:0	auto	unknown	unknown	fc4/45	off		
300, Cisco 20:ee:00:0	auto	unknown	unknown	fc4/46	off		
300, Cisco 20:ef:00:0	auto	unknown	unknown	fc4/47	off		
300, Cisco 20:f0:00:0	auto	unknown	unknown	fc4/48	off		
300, Cisco 22:01:00:0	auto	unknown	unknown	fc9/1	off		
300, Cisco 22:02:00:0	auto	unknown	unknown	fc9/2	off		
300, Cisco 22:03:00:0	auto	unknown	unknown	fc9/3	off		
300, Cisco 22:04:00:0	auto	unknown	unknown	fc9/4	off		
300, Cisco 22:05:00:0	auto	unknown	unknown	fc9/5	off		
300, Cisco 22:06:00:0	auto	unknown	unknown	fc9/6	off		
300, Cisco 22:07:00:0	auto	unknown	unknown	fc9/7	off		
300, Cisco 22:08:00:0	auto	unknown	unknown	fc9/8	off		
300, Cisco 22:09:00:0	auto	unknown	unknown	fc9/9	off		
300, Cisco 22:0a:00:0	auto	unknown	unknown	fc9/10	off		
300, Cisco 22:0b:00:0	auto	unknown	unknown	fc9/11	off		
300, Cisco 22:0c:00:0	auto	unknown	unknown	fc9/12	off		
300, Cisco 22:0d:00:0	auto	unknown	unknown	fc9/13	off		
300, Cisco 22:0e:00:0	auto	unknown	unknown	fc9/14	off		
300, Cisco 22:0f:00:0	auto	unknown	unknown	fc9/15	off		
300, Cisco 22:10:00:0	auto	unknown	unknown	fc9/16	off		
300, Cisco 22:11:00:0	auto	unknown	unknown	fc9/17	off		
300, Cisco 22:12:00:0	auto	unknown	unknown	fc9/18	off		
300, Cisco 22:13:00:0	auto	unknown	unknown	fc9/19	off		
	1.			1.000			
			Refresh		Help	Close	
144 row(s)							

#### Figure 26-5 FCS Fabric Ports Tab

**Step 3** Click **Refresh** to update the display.

## **Default Settings**

Table 26-1 lists the default FCS settings.

#### Table 26-1 Default FCS Settings

Parameters	Default
Global checking of the platform name	Disabled
Platform node type	Unknown