CHAPTER 15

Advanced Features and Concepts

This chapter describes the advanced features provided in the Cisco MDS 9020 Fabric Switch. It includes the following sections:

- Fibre Channel Time Out Values, page 15-1
- The show tech-support Command, page 15-2
- Default Settings, page 15-5

Fibre Channel Time Out Values

You can modify Fibre Channel protocol related timer values for the switch by configuring the following time out values (TOVs):

- Distributed services TOV (D_S_TOV)—The valid range is from 5,000 to 10,000 milliseconds. The default is 5,000 milliseconds.
- Error detect TOV (E_D_TOV)—The valid range is from 1,000 to 10,000 milliseconds. The default is 2,000 milliseconds. This value is matched with the other end during port initialization.
- Resource allocation TOV (R_A_TOV)—The valid range is from 5,000 to 10,000 milliseconds. The default is 10,000 milliseconds. This value is matched with the other end during port initialization.

Note The fabric stability TOV (F_S_TOV) constant cannot be configured.

Timer Configuration

You can modify Fibre Channel protocol related timer values for the switch.

To configure FC timers, perform this task:

	Command	Purpose
Step 1	`switch# config t` `switch(config)`	Enters configuration mode.
Step 2	`switch(config)# fctimer R_A_TOV 6000`	Configures the R_A_TOV value to be 6000 ms.

Displaying Configured FC Timer Values

Use the **show fctimer** command to display the configured FC timer values (see Example 15-1).

Example 15-1 Displays Configured Global TOVs

```
switch# show fctimer
F_S_TOV    D_S_TOV    E_D_TOV    R_A_TOV
---------------------------------------
5000 ms    5000 ms    2000 ms    10000 ms
```

Note The F_S_TOV constant, though not configured, is displayed in the output of the **show fctimer** command.

The show tech-support Command

The **show tech-support** command is useful when collecting a large amount of information about your switch for troubleshooting purposes. The output of this command can be provided to technical support representatives when reporting a problem.

The **show tech-support** command displays the output of several **show** commands at once. The output from this command varies depending on your configuration. Use the **show tech-support** command in EXEC mode to display general information about the switch when reporting a problem.

You can choose to have detailed information for each command or even specify the output for a particular interface. Each command output is separated by line and the command precedes the output.

Note Explicitly set the **terminal length** command to 0 (zero) to disable auto-scrolling and enable manual scrolling. Use the **show terminal** command to view the configured the terminal size. After obtaining the output of this command, remember to reset you terminal length as required (see the "Setting the Terminal Length" section on page 2-16).

Tip You can save the output of this command to a file named dump_support.tgz and send it to a remote host by entering the **show tech-support create** command. If you save this file, verify you have sufficient space to do so. Each of these files may take about 1.8 MB.

The default output of the **show tech-support** command includes the output of the following commands:

- **show version**
- **show environment**
- **show module**
- **show hardware**
- **show running-config**
- **show interface**
- **show accounting log**
- **show processes**

Each command is discussed in Appendix B, "Command Reference." Refer to the *Cisco MDS 9000 Family Troubleshooting Guide* to obtain debug processes, procedures, and examples.

The show tech-support brief Command

Use the **show tech-support brief** command to obtain a quick, condensed review of your switch configurations. This command provides a summary of the current running state of the switch.

The **show tech-support brief** command is useful when collecting information about your switch for troubleshooting purposes. The output of this command can be provided to technical support representatives when reporting a problem. Example 15-2 shows an example of the **show tech-support brief** command.

Example 15-2 Displays the Condensed View of Switch Configurations

```
switch# show tech-support brief
CMD: show fcs database
  ---

FCS Local Database
------------------
Switch WWN          : 1000000dec19cb0e
Switch Domain Id    : 105
Fabric-Name         :
Switch Logical-Name : switch
Switch Ports:
-----------------------------------------------------------------
Interface  fWWN                     Type     Attached-pWWNs
-----------------------------------------------------------------
fc1/1      20:00:00:0d:ec:19:cb:0e  Unknown  None
fc1/2      20:01:00:0d:ec:19:cb:0e  Unknown  None
fc1/3      20:02:00:0d:ec:19:cb:0e  Unknown  None
fc1/4      20:03:00:0d:ec:19:cb:0e  Unknown  None
fc1/5      20:04:00:0d:ec:19:cb:0e  Unknown  None
fc1/6      20:05:00:0d:ec:19:cb:0e  Unknown  None
fc1/7      20:06:00:0d:ec:19:cb:0e  Unknown  None
fc1/8      20:07:00:0d:ec:19:cb:0e  Unknown  None
fc1/9      20:08:00:0d:ec:19:cb:0e  Unknown  None
fc1/10     20:09:00:0d:ec:19:cb:0e  Unknown  None
fc1/11     20:0a:00:0d:ec:19:cb:0e  Unknown  None
fc1/12     20:0b:00:0d:ec:19:cb:0e  Unknown  None
fc1/13     20:0c:00:0d:ec:19:cb:0e  Unknown  None
fc1/14     20:0d:00:0d:ec:19:cb:0e  Unknown  None
fc1/15     20:0e:00:0d:ec:19:cb:0e  Unknown  None
fc1/16     20:0f:00:0d:ec:19:cb:0e  Unknown  None
```

```
fc1/17     20:10:00:0d:ec:19:cb:0e  Unknown  None
fc1/18     20:11:00:0d:ec:19:cb:0e  Unknown  None
fc1/19     20:12:00:0d:ec:19:cb:0e  Unknown  None
fc1/20     20:13:00:0d:ec:19:cb:0e  Unknown  None

  CMD: show version
  ---

Cisco MDS 9000 FabricWare
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Software
  system:   2.1(2)
  system compile time:   Thu Apr 21 12:48:49 2005

Hardware
  switch uptime is 0 days 11 hours 14 minute(s) 0 second(s)

  Last reset at 40440 usecs after Mon Apr 25 11:01:12 2005
    Reason: PowerUp

  CMD: show interface brief
  ---

--------------------------------------------------------------------
Interface  Admin       Status            FCOT  Oper      Oper
           Mode                               Mode      Speed
                                                        (Gbps)
--------------------------------------------------------------------
fc1/1      auto        down              lwl     --
fc1/2      auto        down              swl     --
fc1/3      auto        down              --      --
fc1/4      auto        down              --      --
fc1/5      auto        down              --      --
fc1/6      auto        down              --      --
fc1/7      auto        down              --      --
fc1/8      auto        down              --      --
fc1/9      auto        down              swl     --
fc1/10     auto        down              --      --
fc1/11     auto        down              --      --
fc1/12     auto        down              --      --
fc1/13     auto        down              unk     --
fc1/14     auto        down              --      --
fc1/15     auto        down              --      --
fc1/16     auto        down              swl     --
fc1/17     auto        down              --      --
fc1/18     auto        down              --      --
fc1/19     auto        down              --      --
fc1/20     auto        down              elec    --

-----------------------------------------------
Interface               Status     IP Address
-----------------------------------------------
mgmt0                   up         10.20.83.122
```

The show tech-support create Command

Use the **show tech-support create** command creates a file (dump_support.tgz) in the volatile: file system containing a summary of your switch configurations and sends the file to a remote host. Example 15-3 shows an example of the **show tech-support create** command, creating and sending the file to the host address 10.20.33.130 under the user account soper1.

Example 15-3 Creating and Sending a Support File

```
switch # show tech-support create
This may take several seconds...
FTP the dump support file to another machine? (y/n) : y
Enter IP Address of remote computer: 10.20.33.130
Login name: soper1
Enter a valid remote directory path within the user's home directory.
Otherwise the file will be place in the user's home directory:
Would you like to continue downloading support file? (y/n) : y
Connected to 10.20.33.130 (10.20.33.130).
220 localhost.localdomain FTP server (Version wu-2.6.1-18) ready.
331 Password required for soper1.
Password:
230 User soper1 logged in.
cd /itasca/conf/images
Local directory now /itasca/conf/images
bin
200 Type set to I.
put dump_support.tgz
local: dump_support.tgz remote: dump_support.tgz
227 Entering Passive Mode (10,20,33,130,144,7)
150 Opening BINARY mode data connection for dump_support.tgz.
226 Transfer complete.
75614 bytes sent in 0.00731 secs (1e+04 Kbytes/sec)
Remote system type is UNIX.
Using binary mode to transfer files.
221-You have transferred 75614 bytes in 1 files.
221-Total traffic for this session was 76026 bytes in 1 transfers.
221 Thank you for using the FTP service on localhost.localdomain.
```

Default Settings

Table 15-1 lists the default settings for the features included in this chapter.

Table 15-1 Default Settings for Advanced Features

Parameters	Default
D_S_TOV	5,000 milliseconds.
E_D_TOV	2,000 milliseconds.
R_A_TOV	10,000 milliseconds.