



Troubleshooting

This appendix describes how to troubleshoot the Cisco MDS 9216 Switch installation, and it includes the following information:

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- [Troubleshooting the Power Supplies, page B-3](#)
- [Troubleshooting the Fan Module, page B-4](#)
- [Troubleshooting Switching and Services Modules, page B-4](#)
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Getting Started

Problems with the initial power up are often caused by a module that is not firmly connected to the backplane or a power supply that has been disconnected from the power cord connector.

Overheating can also cause problems with the system, though typically only after the system has been operating for an extended period of time. The most common cause of overheating is the failure of a fan module.

When the initial system boot is complete, verify the following:

- Power supplies are supplying power to the system. See the “[Removing and Installing Power Supplies](#)” section on page 2-31.
- The system fan module is operating. See the “[Removing and Installing the Fan Module](#)” section on page 2-33.
- The system software boots successfully. Refer to <http://www.cisco.com/univercd/cc/td/doc/product/sn5000/mds9000/index.htm> for the latest Cisco MDS 9000 Family configuration guides containing information on booting the system and initial configuration tasks.
- Verify that the system software is Cisco MDS SAN-OS Release 2.0(x) or later.
- The supervisor module and the switching or services module are installed correctly and each one initialized without problems. See the “[Removing and Installing Switching and Services Modules](#)” section on page 2-24 and the “[Verifying Installation of a Switching or Services Module](#)” section on page 2-29.

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If each of these conditions is met and the hardware installation is complete, refer to <http://www.cisco.com/univercd/cc/td/doc/product/sn5000/mds9000/index.htm> for the latest Cisco MDS 9000 Family configuration guides containing information on troubleshooting the software. However, if any of these conditions are not met, use the procedures in this appendix to isolate and, if possible, resolve the problem.

Solving Problems at the Component Level

The key to success when troubleshooting the system is to isolate the problem to a specific system component. The first step is to compare what the system is doing to what it should be doing. Because a startup problem can usually be attributed to a single component, it is more efficient to isolate the problem to a subsystem rather than troubleshoot each separate component in the system.

The Cisco MDS 9216 Switch includes the following subsystems:

- Power supply—The power supply includes the power supply fans.
- Fan module—The fan module should operate whenever system power is on. You should see the Fan LED turn green and should hear the fan module to determine whether or not it is operating. If the Fan LED is red, this indicates that one or more fans in the fan module is not operating. You should immediately contact your customer service representative (see the “[Contacting Customer Service](#)” section on page B-5). There are no installation adjustments that you can make if the fan module does not function properly at initial startup.



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- Supervisor module—The supervisor module contains the system operating software, so check your supervisor module if you have trouble with the system software. A Status LED indicates whether the supervisor module can initialize the module in slot 2, if present.
- Switching or services module—A Status LED on the module indicates if it was initialized by the supervisor module. A module that is partially installed in the backplane can cause the system to halt.

Identifying Startup Problems

LEDs indicate all system states in the startup sequence. By checking the LEDs, you can determine when and where the system failed in the startup sequence.

To identify startup problems, follow these steps:

- Step 1** Turn on the power supply by pressing the switch on (I). You should immediately hear the system fan module begin to operate. If you do not, see the “[Troubleshooting the Power Supplies](#)” section on page B-3. If you determine that the power supplies are functioning normally and the fan module is faulty, contact your customer service representative. If the system fan module does not function properly at initial startup, there are no installation adjustments that you can make. To replace the fan module, see the “[Removing and Installing the Fan Module](#)” section on page 2-33.

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- Step 2** Verify that the LEDs on the interface module are on as follows:
- The Status LED flashes orange once and stays orange during diagnostic boot tests. It turns green when the module is operational (online). If the system software cannot start up, this LED stays orange.
 - The System LED turns green, indicating that all chassis environmental monitors are reporting that the system is operational. If one (or more) environmental monitors reports a problem, the System LED is orange or red.
- If any LEDs on the supervisor module or interface module front panel are red or orange, contact your customer service representative (see the [“Contacting Customer Service”](#) section on page B-5).
- For a complete description of the supervisor module and interface module LEDs, see the [“LEDs on the Cisco MDS 9216 Switch Integrated Supervisor Module”](#) section on page 1-4 and the [“LEDs on the Interface Module”](#) section on page 1-6.
- Step 3** Verify that the Status LEDs on the supervisor module and on the switching or services module are green after the supervisor module completes initialization. This LED indicates that the modules are receiving power. It also indicates that the module is recognized by the supervisor module, and that it contains a valid Flash code version. This LED does not indicate the state of the individual interfaces on the switching module. If a Status LED is red or orange, contact your customer service representative (see the [“Contacting Customer Service”](#) section on page B-5).
- Step 4** Verify that the terminal is set correctly and that it is connected properly to the supervisor module console port if the boot information and system banner are not displayed.
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Troubleshooting the Power Supplies

To isolate a power supply problem, follow these steps:

- Step 1** Verify that the Input Ok LED on the power supply is green.
- a. If the Input Ok LED is green, the AC source is good and the power supply is functional.
 - b. If the Input Ok LED is off, first ensure that the power supply is flush with the back of the chassis. Press the power switch off (0), tighten the captive installation screw(s), and then press the power switch on (I).
 - c. If the Input Ok LED remains off, there might be a problem with the AC source, or the power cable.
 - d. Turn off the power to the switch by pressing both power switches to 0, connect the power cord to another power source if one is available, and press the power switch back on (I).
 - e. If the Input Ok LED is now green, the problem was the first power source.
 - f. If the Input Ok LED fails to light after you connect the power supply to a new power source, replace the power cord and press the switch on (I).
 - g. If the Input Ok LED lights at this point, return the first power cord for replacement.

If the Input Ok LED still fails to light when the switch is connected to a different power source with a new power cord, the power supply is probably faulty.

If a second power supply is available, install it in the second power supply bay and contact your customer service representative for further instructions.

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Step 2 Repeat [Step 1](#) if you have a second (redundant) power supply.

If you cannot resolve the problem or if you determine that either a power supply or backplane connector is faulty, contact your customer service representative (see the “[Contacting Customer Service](#)” section on page B-5).

Troubleshooting the Fan Module

To isolate a fan module problem, follow these steps:

Step 1 Verify that the Fan LED on the fan module is green.

If the Fan LED is not on, see the “[Solving Problems at the Component Level](#)” section on page B-2 to determine whether the power supply is functioning properly.

Step 2 Verify that the fan module is not seated in the backplane or has malfunctioned if the Fan LED is red.

- a. Loosen the captive installation screws, remove the fan module, and reinstall it to ensure that the fan module is seated properly.
- b. Tighten all captive installation screws and then restart the system.

If the Fan LED is still red, the system detects a fan module failure. Contact your customer service representative for instructions. (See “[Contacting Customer Service](#)” section on page B-5)

Troubleshooting Switching and Services Modules

To isolate a problem with a module in slot 2, follow these steps:

Step 1 Verify that all Status LEDs are on. If the Status LEDs on the interface module or the slot 2 module are red or off, the module might have shifted out of its slot.

Step 2 Reseat the module until both ejector levers are at 90 degrees to the rear of the chassis.

Step 3 Tighten the captive installation screws at the left and right of the module front panel.

Step 4 Restart the system.

If the Status LED on a module is orange, the module might be busy or disabled. Refer to <http://www.cisco.com/univercd/cc/td/doc/product/sn5000/mds9000/index.htm> for the latest Cisco MDS 9000 Family configuration guides containing information on configuring or enabling the interfaces. After the system reinitializes the interfaces, the Status LED on the module should be green.

If you cannot resolve a problem with the startup, gather the information listed under the “[Contacting Customer Service](#)” section, and contact your customer support representative for assistance as directed under the “[Obtaining Technical Assistance](#)” section in the Preface.

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**Note**

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<http://www.cisco.com/warp/public/687/Directory/DirTAC.shtm>

Contacting Customer Service

If you cannot solve a startup problem after using the troubleshooting suggestions in this appendix, contact your customer service representative for assistance and further instructions. Before you call, have the following information ready to help your service provider assist you as quickly as possible:

- Date you received the switch
- Chassis serial number
- Type of software and release number
- Maintenance agreement or warranty information
- Brief description of the problem
- Brief explanation of the steps you have already taken to isolate and resolve the problem

**Note**

If you have CLI access, run the **show sprom backplane 1** command to display the backplane contents, including the switch serial number.

See the “[Obtaining Technical Assistance](#)” section in the Preface.

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