



CHAPTER 6

Troubleshooting

This chapter helps you identify and solve problems that might occur while you are using the Cisco CDE110.

If you are unable to resolve your server problems on your own, contact Cisco Technical Support. See “Obtaining Technical Assistance” at:

<http://www.cisco.com/en/US/docs/general/whatsnew/whatsnew.html#wp63091>

Resetting the System

Before going through in-depth troubleshooting, first attempt to reset your system using one of the methods below.

To do this:	Press:
Soft boot reset to clear the system memory and reload the operating system.	<Ctrl+Alt+Del>
Clear system memory, restart POST, and reload the operating system.	Reset button
Cold boot reset. Turn the system power off and then on. This clears system memory, restarts POST, reloads the operating system, and halts power to all peripherals.	Power off/on

Problems Following Initial System Installation

Problems that occur at initial system startup are usually caused by an incorrect installation or configuration. Hardware failure is a less frequent cause. If the problem you are experiencing is with a specific software application, see the “[Problems with Application Software That Ran Correctly Earlier](#)” section on page 6-4.

First Steps Checklist

- Did you press the system power on/off switch on the front panel to turn the server on (power on light should be lit)?
- Is power available at the wall outlet?

- Are the power supplies plugged in? Check the power cable on the back of the server and at the power source.
- Is the system power cord properly connected to the system and plugged into a NEMA (National Electrical Manufacturing Association) 5-15R outlet for 100-120V or a NEMA 6-15R outlet for 200-240V?
- Are all cables correctly connected and secured?
- If the system has a hard disk drive, is it properly formatted or configured?
- Are all device drivers properly installed?
- Are the configuration settings made in Setup correct?
- Is the operating system properly loaded? Refer to the operating system documentation.

Hardware Diagnostic Testing

This section provides a more detailed approach to identifying a hardware problem and locating its source.



Caution

Turn off devices before disconnecting cables. Before disconnecting any peripheral cables from the system, turn off the system and any external peripheral devices. Failure to do so can cause permanent damage to the system and/or the peripheral devices.

1. Turn off the system and all external peripheral devices. Disconnect each of devices from the system, except for the keyboard and the video monitor.
2. Make sure the system power cord is plugged into a properly grounded outlet.
3. Make sure your video display monitor and keyboard are correctly connected to the system. Turn on the video monitor. Set its brightness and contrast controls to at least two thirds of their maximum ranges (see the documentation supplied with your video display monitor).
4. Turn on the system. If the power LED does not light, see the [“Power Light Does Not Light” section on page 6-3](#).

Verifying Proper Operation of Key System Lights

As POST determines the system configuration, it tests for the presence of each mass storage device installed in the system. As each device is checked, its activity light should turn on briefly. Check for the following:

- If system LEDs are illuminated, see the [“LED Information” section on page 6-5](#) for a description of the LED lights and steps that need to be taken to correct the problem.

Confirming Loading of the Operating System

Once the system boots up, the operating system prompt appears on the screen. The prompt varies according to the operating system. If the operating system prompt does not appear, see the [“No Characters Appear on Screen” section on page 6-3](#).

Specific Problems and Corrective Actions

This section provides possible solutions for specific problems:

Try the solutions below in the order given. If you cannot correct the problem, contact your service representative or authorized dealer for help. See “Obtaining Technical Assistance” at <http://www.cisco.com/en/US/docs/general/whatsnew/whatsnew.html#wp63091> for information.

Power Light Does Not Light

Check the following:

- Did you press the power-on button?
- Is the system operating normally? If so, the power LED might be defective or the cable from the front panel to the server board might be loose.
- Have you securely plugged the server power cord into the power supply?
- Is the power supply correctly set to 110V or 235V, depending on your power output?
- For AC, will other items plugged into the same power outlet function correctly?

No Characters Appear on Screen

Check the following:

- Is the keyboard functioning? Test it by turning the “Num Lock” function on and off to make sure the Num Lock light is functioning.
- Is the video monitor plugged in and turned on? If you are using a switch box, is it switched to the correct system?
- Are the brightness and contrast controls on the video monitor properly adjusted?
- Is the video monitor signal cable properly installed?
- Does this video monitor work correctly if plugged into a different system?
- Is the onboard video controller enabled in the BIOS?

Characters Are Distorted or Incorrect

Check the following:

- Are the brightness and contrast controls properly adjusted on the video monitor? See the manufacturer’s documentation.
- Are the video monitor’s signal and power cables properly installed?
- Does this video monitor work correctly if plugged into a different system?

System Cooling Fans Do Not Rotate Properly

If the system cooling fans are not operating properly, it is an indication of possible system component failure.

Check the following:

- Is the power-on light lit? If not, see the [“Power Light Does Not Light” section on page 6-3](#).
- Are any other front panel LEDs lit?
- Have any of the fan motors stopped? Use the server management subsystem to check the fan status.
- Have your fans speeded up in response to an overheating situation?
- Have your fans speeded up in response to a fan that has failed?

Cannot Connect to a Server

Make sure the network cable is securely attached to the correct connector at the system back panel.

Try a different network cable.

- Make sure the driver is loaded and the protocols are bound.
- Make sure the hub port is configured for the same duplex mode as the network controller.
- Make sure the correct networking software is installed.
- If you are directly connecting two servers (without a hub), you will need a crossover cable.
- Check the network controller LEDs next to the NIC connectors.

Diagnostics Pass But the Connection Fails

- Make sure the network cable is securely attached.

The Server Hangs When the Drivers Are Loaded

- Certain drivers may require interrupts that are not shared with other PCI drivers. For these drivers, it may be necessary to alter settings so that interrupts are not shared. See the documentation that came with your PCI card(s) for information on changing interrupts.

Problems with Application Software That Ran Correctly Earlier

Problems that occur after the system hardware and software have been running correctly sometimes indicate equipment failure. However, they can also be caused by file corruption or changes to the software configuration.

Check the following:

- Make sure all necessary files are installed.
- If the problems are intermittent, there may be a loose cable, dirt in the keyboard (if keyboard input is incorrect), a marginal power supply, or other random component failures.
- If you suspect that a transient voltage spike, power outage, or brownout might have occurred, reload the software and try running it again. Symptoms of voltage spikes include a flickering video display, unexpected system reboots, and the system not responding to user commands.

**Note**

For AC power, if you are getting random errors in your data files, they may be getting corrupted by voltage spikes on your power line. If you are experiencing any of the above symptoms that might indicate voltage spikes on the power line, you may want to install a surge suppressor between the power outlet and the system power cord.

Hard Drive(s) Are Not Recognized

Check the following:

- Make sure the drive is not disabled in BIOS Setup.
- Make sure the drive is connected correctly and that it is plugged into the power supply.

LED Information

The Cisco CDE110 includes LEDs that can aid in troubleshooting your system. [Table 6-1](#) defines these LEDs with a description of their use.

Table 6-1 LED Definitions

LED Name	Function	Location	Color	Notes
ID	Aid in server identification from the back panel	Control panel	Blue	Press ID LED button or user Server Management software to turn on the LED.
System fault	Visible fault warning	Control panel	Green or Amber	Green = No Fault Green blinking = degraded Amber = critical error or non-recoverable Amber blinking = non-critical error
ATA drive activity	Control panel	Control panel	Green	Blinking = Activity. No action required.
Power LED	Identify the power state of the system	Control Panel	Green	Off = Power is off (off or S5) On = Power on or S0) Slow Blink = Low power state (S1 – S3)

BIOS Error Messages

When a recoverable error occurs during the POST, the BIOS displays an error message describing the problem. See [Table 6-2](#).

Table 6-2 BIOS Error Messages

Error Message	Explanation
GA20 Error	An error occurred with Gate A20 when switching to protected mode during the memory test.
Pri Master HDD Error Pri Slave HDD Error Sec Master HDD Error Sec Slave HDD Error	Could not read sector from corresponding drive.
Pri Master Drive - ATAPI Incompatible Pri Slave Drive - ATAPI Incompatible Sec Master Drive - ATAPI Incompatible Sec Slave Drive - ATAPI Incompatible	Corresponding drive is not an ATAPI (Advanced Technology Attachment Packet Interface) device. Run Setup to make sure device is selected correctly.
CMOS Battery Low	The battery may be losing power. Replace the battery soon.
CMOS Display Type Wrong	The display type is different from what has been stored in CMOS. Check Setup to make sure type is correct.
CMOS Checksum Bad	The CMOS checksum is incorrect. CMOS memory may have been corrupted. Run Setup to reset values.
CMOS Settings Wrong	CMOS values are not the same as the last boot. Either these values have been corrupted or the battery has failed.
CMOS Date/Time Not Set	The time and/or date values stored in CMOS are invalid. Run Setup to set correct values.
DMA Error	Error during read/write test of DMA (Direct Memory Access) controller.
FDC Failure	Error occurred trying to access diskette drive controller.
HDC Failure	Error occurred trying to access hard disk controller.
Checking NVRAM.....	NVRAM (Non-Volatile Random Access Memory) is being checked to see if it is valid.
Update OK!	NVRAM was invalid and has been updated.
Updated Failed	NVRAM was invalid but was unable to be updated.
Keyboard Error	Error in the keyboard connection. Make sure keyboard is connected properly.
KB/Interface Error	Keyboard interface test failed.
Memory Size Decreased	Memory size has decreased since the last boot. If no memory was removed, then memory may be bad.
Memory Size Increased	Memory size has increased since the last boot. If no memory was added, there may be a problem with the system.

Table 6-2 BIOS Error Messages (continued)

Error Message	Explanation
Memory Size Changed	Memory size has changed since the last boot. If no memory was added or removed, then memory may be bad.
No Boot Device Available	System did not find a device to boot.
Off Board Parity Error	A parity error occurred on an off-board card. This error is followed by an address.
On Board Parity Error	A parity error occurred in onboard memory. This error is followed by an address.
Parity Error	A parity error occurred in onboard memory at an unknown address.
NVRAM / CMOS / PASSWORD cleared by Jumper	NVRAM, CMOS, and passwords have been cleared. The system should be powered down and the jumper removed.
<CTRL_N> Pressed	CMOS is ignored and NVRAM is cleared. User must enter Setup.
GA20 Error	An error occurred with Gate A20 when switching to protected mode during the memory test.
Pri Master HDD Error Pri Slave HDD Error Sec Master HDD Error Sec Slave HDD Error	Could not read sector from corresponding drive.
Pri Master Drive - ATAPI Incompatible Pri Slave Drive - ATAPI Incompatible Sec Master Drive - ATAPI Incompatible Sec Slave Drive - ATAPI Incompatible	Corresponding drive is not an ATAPI (Advanced Technology Attachment Packet Interface) device. Run Setup to make sure device is selected correctly.
CMOS Battery Low	The battery may be losing power. Replace the battery soon.
CMOS Display Type Wrong	The display type is different from what has been stored in CMOS. Check Setup to make sure type is correct.

BIOS POST Beep Codes

Table 6-3 lists the POST error beep codes. Prior to system video initialization, the BIOS uses these beep codes to inform users of error conditions. Please note that not all error conditions are supported by BIOS beep codes.



Note

Contact Cisco Technical Support if an error in Table 6-3 and Table 6-4 occurs. See “Obtaining Technical Assistance” at <http://www.cisco.com/en/US/docs/general/whatsnew/whatsnew.html#wp63091>.

Table 6-3 POST Error Beep Codes

Number of Beeps	Reason for the beeps and action to take
1, 2, or 3	Memory error.

Table 6-3 *POST Error Beep Codes (continued)*

Number of Beeps	Reason for the beeps and action to take
4 – 7 or 9 – 11	Fatal error indicating a possible serious system problem.
8	System video error.

In addition to the beep codes above, additional beep codes are provided if an Intel Remote Management Module (RMM) is installed. The RMM provide the following additional beep codes.

Table 6-4 *Error Beep Codes Provided by the Intel Remote Management Module*

Number of Beeps	Reason for the beeps and action to take
1	Control panel CMOS clear has been initiated.
1-5-1-1	Processor failure.
1-5-2-1	No processor is installed or the CPU 1 socket is empty.
1-5-2-3	Processor configuration error or CPU 1 socket is empty.
1-5-2-4	Front-side bus select configuration error.
1-5-4-2	DC power unexpectedly lost.
1-5-4-3	Chipset control failure.