



CHAPTER 6

Checking the Equipment

This chapter provides troubleshooting procedures for equipment that connects directly to the input/output (I/O) panel of the computer, such as the monitor, keyboard, mouse, or printer. Before performing any of the procedures in this chapter, see “Checking Connections and Switches,” in Chapter 2. Then perform the troubleshooting procedures for the equipment that is malfunctioning.

You need the following items to perform the procedures in this chapter:

- The *Dell OpenManage Server Assistant* CD
- A blank, formatted diskette
- The system documentation



NOTE: When you see the question Is the problem resolved? in a troubleshooting procedure, perform the operation that caused the problem.

Troubleshooting the Monitor

Troubleshooting video problems involves determining which of the following is the source of the problem:

- Monitor and monitor interface cable
- Video memory
- Video logic of the computer or a video expansion card

If information on the monitor screen is displayed incorrectly or not at all, complete the following steps to solve the problem:

1. Turn on the system, including any attached peripherals.
2. Adjust the switches and controls including the horizontal and vertical position and size, as specified in the monitor's documentation, to correct the video image.

Is the problem resolved?

Yes. You have fixed the problem

No. Go to step 3.

3. Run the Dell Diagnostics.

See Chapter 5, "Running the Dell Diagnostics." Does the monitor display text properly?

Yes. Go to step 5.

No. Go to step 4.

4. Run the video tests in the Dell Diagnostics.

See Chapter 5, "Running the Dell Diagnostics." Most of the tests in the **Video** test group require you to respond before the diagnostics continues with the next test.

Did the tests run successfully?

Yes. You have fixed the problem, or the problem is software-related. For information about installing video drivers, see the section about using the *Dell OpenManage Server Assistant* CD in the *User's Guide*.

No. Go to step 5.

5. Turn off the system and disconnect it from the electrical outlet. Swap the monitor with one of the same type that is working, and reconnect the system to the electrical outlet.
6. Run the video tests in the Dell Diagnostics again.

Did the tests run successfully?

Yes. The monitor must be replaced. See Chapter 10, "Getting Help," for instructions on obtaining technical assistance.

No. If a video expansion card is installed in the computer, see "Troubleshooting Expansion Cards," in Chapter 7. If no video expansion card is installed, the built-in video controller is faulty; see Chapter 10, "Getting Help," for instructions on obtaining technical assistance.

Troubleshooting the Keyboard

This procedure determines what kind of keyboard problem you have. If a system error message indicates a keyboard problem when you start the computer system or while the Dell Diagnostics is running, complete the following steps:

1. Look at the keyboard and the keyboard cable for any signs of damage. Press and release each key on the keyboard.

Do the keyboard and its cable appear to be free of physical damage, and do the keys work?

Yes. Go to step 3.

No. Go to step 2.

2. Swap the faulty keyboard with a working keyboard.

To swap a faulty keyboard, unplug the keyboard cable from the computer's back panel and plug in a working keyboard.

Is the problem resolved?

Yes. The keyboard must be replaced. See Chapter 10, "Getting Help," for instructions on obtaining technical assistance.

No. Go to step 3.

3. Run the keyboard tests in the Dell Diagnostics.

See Chapter 5, "Running the Dell Diagnostics."

Can you use the keyboard to select the keyboard tests?

Yes. Go to step 4.

No. Go to step 5.

4. Swap the faulty keyboard with a working keyboard.

5. Did the keyboard test run successfully?

Yes. The keyboard must be replaced. See Chapter 10, "Getting Help," for instructions on obtaining technical assistance.

No. The keyboard controller on the system board is faulty. See Chapter 10, "Getting Help," for instructions on obtaining technical assistance.

Troubleshooting the Basic I/O Functions

This procedure determines whether the computer's basic I/O functions are operational. If a system error message indicates an I/O port problem or the device connected to the port does not function properly, follow these steps:

1. Enter the System Setup program, and check the **Serial Port 1**, **Serial Port 2**, **Parallel Port**, and **Mouse** settings.

Are the communications and mouse ports enabled?

Yes. Go to step 3.

No. Go to step 2.

2. Enable the **Serial Port 1**, **Serial Port 2**, and **Parallel Port** settings and enable the **Mouse** setting; then reboot the system.

Is the problem resolved?

Yes. You have fixed the problem.

No. Go to step 3.

3. Check the contents of the start-up files.
See "Installing and Configuring Software," in Chapter 4.
Are the port configuration commands correct?
Yes. Go to step 5.
No. Go to step 4.
4. Change the necessary statements in the start-up files.
If the port problem is confined to a particular application, see the application's documentation for specific port configuration requirements.
Is the problem resolved?
Yes. You have fixed the problem.
No. Go to step 5.
5. Reboot the system from the diagnostics diskette, and run the serial ports test and/or the parallel ports test in the Dell Diagnostics.
Did the tests run successfully?
Yes. Go to step 6.
No. See Chapter 10, "Getting Help," for instructions on obtaining technical assistance.
6. If the problem persists, go to "Troubleshooting a Parallel Printer" or "Troubleshooting a Serial I/O Device" found later in this chapter, depending on which device appears to be malfunctioning.

Troubleshooting a Parallel Printer

If the procedure in "Troubleshooting the Basic I/O Functions" indicates that the problem is with a parallel printer, follow these steps:

1. Turn off the parallel printer and computer.
2. Swap the parallel printer interface cable with a known working cable.
3. Turn on the parallel printer and computer.
4. Attempt a print operation on the parallel printer.

Did the print operation run successfully?

Yes. The interface cable must be replaced. See Chapter 10, "Getting Help," for instructions on obtaining technical assistance.

No. Go to step 5.

5. Run the parallel printer's self-test.

Did the self-test run successfully?

Yes. Go to step 6.

No. The printer is probably defective. If the printer was purchased from Dell, see Chapter 10, "Getting Help," for instructions on obtaining technical assistance.

6. Attempt another print operation on the parallel printer.

Did the print operation run successfully?

Yes. You have fixed the problem.

No. See Chapter 10, "Getting Help" for instructions on obtaining technical assistance.

Troubleshooting a Serial I/O Device

If the procedure in "Troubleshooting the Basic I/O Functions" found earlier in this chapter, indicates that the problem is with a device connected to one of the serial ports, follow these steps:

1. Turn off the computer and any peripheral devices connected to the serial ports.

Are two serial devices connected to the computer?

Yes. Go to step 2.

No. Go to step 4.

2. Disconnect the devices from serial ports 1 and 2, and connect the malfunctioning serial device to the opposite port.

3. Turn on the computer and the reconnected serial device.

Is the problem resolved?

Yes. The serial port may be defective. See Chapter 10, "Getting Help," for instructions on obtaining technical assistance.

No. Go to step 4.

4. Swap the interface cable (that connects the device to the serial port) with a known working cable.

Is the problem resolved?

Yes. The interface cable must be replaced. See Chapter 10, "Getting Help," for instructions on obtaining technical assistance.

No. Go to step 5.

5. Turn off the computer and the serial device, and swap the device with a comparable working device.

For example, if the serial mouse has a problem, swap it with a serial mouse that you know is working properly.

6. Turn on the computer and the serial device.

Is the problem resolved?

Yes. The serial device must be replaced. See Chapter 10, “Getting Help” for instructions on obtaining technical assistance.

No. See Chapter 10, “Getting Help,” for instructions on obtaining technical assistance.

Troubleshooting a USB Device

If a system error message indicates a problem with the Universal Serial Bus (USB) ports or the device connected to the port does not function properly, perform the following steps:

1. Enter the System Setup program, and check that the USB ports are enabled.
2. Turn off the computer and any devices connected to the USB ports.

Are two USB devices connected to the computer?

Yes. Go to step 3.

No. Go to step 5.

3. Disconnect the devices from USB ports 1 and 2, and connect the malfunctioning device to the opposite port.
4. Turn on the computer and the reconnected device.

Is the problem resolved?

Yes. The USB port may be defective. See Chapter 10, “Getting Help,” for instructions on obtaining technical assistance.

No. Go to step 5.

5. If possible, swap the interface cable that connects the device to the USB port with a known working cable.

Is the problem resolved?

Yes. The interface cable must be replaced. See Chapter 10, “Getting Help,” for instructions on obtaining technical assistance.

No. Go to step 6.

6. Turn off the computer and the USB device, and swap the device with a comparable working device.
7. Turn on the computer and the USB device.

Is the problem resolved?

Yes. The USB device must be replaced. See Chapter 10, "Getting Help," for instructions on obtaining technical assistance.

No. See Chapter 10, "Getting Help," for instructions on obtaining technical assistance.

Troubleshooting the Integrated NIC

If you encounter problems with the computer's integrated network interface controller (NIC), the following actions may help you to diagnose the problem:

- Enter the System Setup program and confirm that the NIC is enabled.
See "Using the System Setup Program" in the *User's Guide* for instructions.
- Check the two light-emitting diodes (LEDs) on the corners of the NIC connector on the computer's back panel.
The green link LED (the LED closest to the serial and parallel ports) indicates that the adapter is connected to a valid link partner. The amber activity indicator lights if network data is being sent or received.
 - If the link light is not on, check all cable connections at the adapter and link partner.
 - Try changing the auto-negotiation setting on the link partner, if possible.
 - Try another port on the switch.
- If the activity indicator does not light, the network driver files may be damaged or deleted.
Reinstall the drivers.
- Make sure the appropriate drivers are installed and the protocols are bound.

