



CHAPTER 5

Running the Dell Diagnostics

Unlike many diagnostic programs, the Dell Diagnostics helps you check the computer's hardware without any additional equipment and without destroying any data. By using the diagnostics, you can have confidence in the computer system's operation. If you find a problem that you cannot solve by yourself, the diagnostic tests can provide you with important information you will need when talking to Dell's technical assistance representative.

NOTICE: Use the Dell Diagnostics to test only Dell computer systems. If you use this program with other computers, incorrect computer responses or error messages may result.

Features of the Dell Diagnostics

The Dell Diagnostics provides a series of menus and options from which you choose particular device groups or devices. You can also control the sequence in which the tests are run. The diagnostic menus also have these helpful features:

- Options that let you run tests individually or collectively
- An option that allows you to choose the number of times a test is repeated
- The ability to display or print test results or to save them in a file
- Options to temporarily suspend testing if an error is detected or to terminate testing when an adjustable error limit is reached
- Help messages that briefly describe each test and its parameters
- Status messages that inform you whether device group or device tests are completed successfully
- Error messages that appear if any problems are detected

When to Use the Dell Diagnostics

Whenever a major component or device in the computer system does not function properly, you may have a component failure. As long as the microprocessor and the input and output components of the computer system (the monitor, keyboard, and diskette drive) are working, you can use the Dell Diagnostics. If you know what component(s) you need to test, simply select the appropriate diagnostic device group(s) or subtest(s). If you are unsure about the scope of the problem, read the rest of the information in this section.

Starting the Dell Diagnostics

You can run the Dell Diagnostics from either the utility partition on your hard-disk drive or from a set of diskettes that you create from the *Dell OpenManage Server Assistant* CD.

To run the diagnostics from the utility partition, perform the following steps:

1. Start the utility partition by pressing <F10> during the power-on self-test (POST).
2. From the utility partition's main menu, select the **Run System Diagnostics** option from **Run System Utilities**.

See "Utility Partition" in "Using the *Dell OpenManage Server Assistant* CD" in the *User's Guide* for additional information about the utility partition.

To run the Dell Diagnostics from the diskettes, perform the following steps:

1. Create a set of diagnostics diskettes using the *Dell OpenManage Server Assistant* CD.
2. See "Utility Partition" in "Using the *Dell OpenManage Server Assistant* CD" in the *User's Guide* for information on creating diskettes.
3. Boot the system from the first diagnostics diskette.

If the system fails to boot, see Chapter 11, "Getting Help," for instructions on obtaining technical assistance.

When you start the diagnostics, the Dell logo screen appears, followed by a message telling you that the diagnostics is loading. Before the diagnostics loads into memory, a program tests the random-access memory (RAM) that will be used by the diagnostics.

If no errors are found in the RAM, the diagnostics loads, and the **Diagnostics** menu appears. The menu allows you to run all or specific diagnostic tests or to exit the Dell Diagnostics.



NOTE: Before you read the rest of this section, you may want to start the Dell Diagnostics so that you can see it on your monitor screen.

For a quick check of the system, select **Quickly Test All Devices**. This option runs only the device tests that do not require user interaction and that do not take a long

time to run. Dell recommends that you choose this option first to increase the chance of tracing the source of the problem quickly. For a complete check of the system, select **Fully Test All Devices**. To check a particular area of the system, choose **Select Devices to Test**.

Selecting **Exit to MS-DOS** exits the diagnostics and returns you to an MS-DOS® operating environment.

To select an option from the **Diagnostics** menu, highlight the option and press <Enter>, or press the key that corresponds to the highlighted letter in the option you choose.

How to Use the Dell Diagnostics

When you select **Select Devices to Test** from the **Diagnostics** menu, the main screen of the diagnostics appears.

Information on the main screen of the diagnostics is presented in the following areas:

- Two lines at the top of the main screen identify the diagnostics and give its version number.
- On the left side of the screen, the **Device Groups** area lists the diagnostic device groups in the order they will run if you select **All** under the **Run Tests** submenu. Press the up- or down-arrow key to highlight a device group.
- On the right side of the screen, the **Devices for Highlighted Group** area lists the specific devices within a particular test group.
- Two lines at the bottom of the screen make up the menu area. The first line lists the menu options you can select; press the left- or right-arrow key to highlight an option. The second line gives information about the highlighted option.

How to Use the Device Groups Menu

The **Device Groups** menu at the bottom of the screen provides options that enable you to select and run specific diagnostic tests from the diagnostics main screen. Press the left- and right-arrow keys to select the options on the menu. As you move from one menu option to another, a brief explanation of the highlighted option appears on the bottom line of the screen.

If you want more information about a device group or device, highlight the **About** option and press <Enter>. After you read the information, press <Esc> to return to the previous screen.

Device Groups Menu Options

Five options are listed at the bottom of the diagnostics main screen: **Run Tests**, **Devices**, **Select**, **Config**, and **Help**.

There are two ways to select a menu option:

- Look on the screen to see which letter in the option is capitalized, and type that letter (for example, type **r** to select the **Run Tests** option).
- Move the highlight to the option you want to select by pressing the left- or right- arrow key, and then press <Enter>.

Whenever one of the options is selected, additional choices become available.

The following subsections explain the menu options as listed from left to right in the **Device Groups** menu.

Run Tests

Run Tests displays seven options: **One**, **All**, **Select**, **Options**, **Results**, **Errors**, and **Help**. If you select **One**, all the devices within the highlighted device group run. If you select **All**, all of the tests in all of the device group tests run. (The device group tests run in the same order as they are listed.) If you choose **Select**, only the selected device groups or the devices that you selected within the device groups run. Before you test any device groups or devices, consider setting global parameters within **Options**. Global parameters offer you greater control over how the device group tests or device tests run and how results are reported. **Help** displays a series of help options, including **Menu**, **Keys**, **Device**, **Group**, and **Test**.

Devices

Most of the device groups consist of several devices. Use the **Devices** option to select individual devices within the device group(s).

When you select **Devices**, the following options are displayed: **Run Tests**, **Tests**, **Select**, **Parameters**, and **Help**. Table 5-1 lists all of the possible values for each option.

Table 5-1. Devices Options

Option	Functions
Run Tests	Displays five options: Run Tests , Tests , Select , Parameters , and Help .
Tests	Allows you to select individual devices to tailor the testing process to your particular needs. You can choose one or more devices from the list. When you choose Tests , four options are displayed: Run Tests , Select , Parameters , and Help .
Select	Allows you to choose one or more devices from a particular device group. Three options are displayed: One , All , and Help .
Parameters	Determines how a particular test will be run. Table 5-2 lists all of the possible values for each option. To change Parameters options, press the spacebar, the left- and right-arrow keys, or the plus (+) and minus (-) keys.
Help	Displays a list of help topics.

Table 5-2. Parameters Options

Option	Possible Values
Number of Times to Repeat Test(s)	0001 through 9999 ; or 0000 , which loops indefinitely until you press <Ctrl><Break>. The default is 0001 .
Maximum Errors Allowed	0000 through 9999 ; where 0000 means that there is no error limit. The default is 0001 .
Pause for User Response	Yes , No Allows you to decide whether tests will wait for user input. The default is Yes to wait for user input.
Message Logging	None , Errors , All Determines if any test results are saved to a file. The default is None .
Message Logging File Name	Specifies the name of the logging file if the Message Logging option is selected. The default is A: RESULT .

Select

The **Select** option in the **Device Groups** menu allows you to choose one or more devices from a particular device group. Three options are displayed: **One**, **All**, and **Help**.

Config

Choosing **Config** from the **Device Groups** menu display information about the particular device that is highlighted.

Error Messages

When you run a test in the diagnostics, error messages may result. Record the messages on a copy of the Diagnostics Checklist; also see Chapter 11, "Getting Help," for instructions on obtaining technical assistance.