Dell EMC PowerEdge T40

Technical Specifications Guide

Regulatory Model: D24M Series
Regulatory Type: D24M003

Notes, cautions, and warnings

NOTE: A NOTE indicates important information that helps you make better use of your product.

CAUTION: A CAUTION indicates either potential damage to hardware or loss of data and tells you how to avoid the problem.

WARNING: A WARNING indicates a potential for property damage, personal injury, or death.

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Contents

1 Dell EMC PowerEdge T40 system overview....4
Front view of the system....5
Rear view of the system....6

2 Technical specifications....7
Chassis dimensions....8
System weight....8
Processor specifications....8
Supported operating systems....9
PSU specifications....9
System fan specifications....9
System battery specifications....9
Expansion card specifications....9
Memory specifications....10
Storage controller specifications....10
Drive specifications....10
Drives....10
Optical drives....11
Ports and connectors specifications....11
USB ports specifications....11
NIC port specifications....11
Serial connector specifications....11
DisplayPort specifications....11
Video specifications....11
Environmental specifications....11
Thermal restriction matrix....12
Particulate and gaseous contamination specifications....13

3 System diagnostics and indicator codes....14
Front panel indicator codes....14
NIC indicator codes....15
Power supply unit Built-in Self Test....15
Steps to confirm that power supply unit is defective....15
Enhanced Pre-Boot System Assessment — ePSA diagnostics....16
Running the ePSA Diagnostics....16
Diagnostics....16
Diagnostic error messages....17
System error messages....20

1

Dell EMC PowerEdge T40 system overview

The Dell EMC PowerEdge T40 system is a tower system that supports up to:

- One Intel Xeon E-series processor or Intel Core i3 processor or Intel Pentium Gold processor
- Up to three 3.5-Inch cabled SATA drives
- Four UDIMM slots
- One cabled AC power supply unit (PSU)

For more information about supported drives, see the Drive specifications section.

NOTE: All instances of SATA drives, and SSDs are referred to as drives in this document, unless specified otherwise.

Topics:

- Front view of the system
- Rear view of the system

Front view of the system

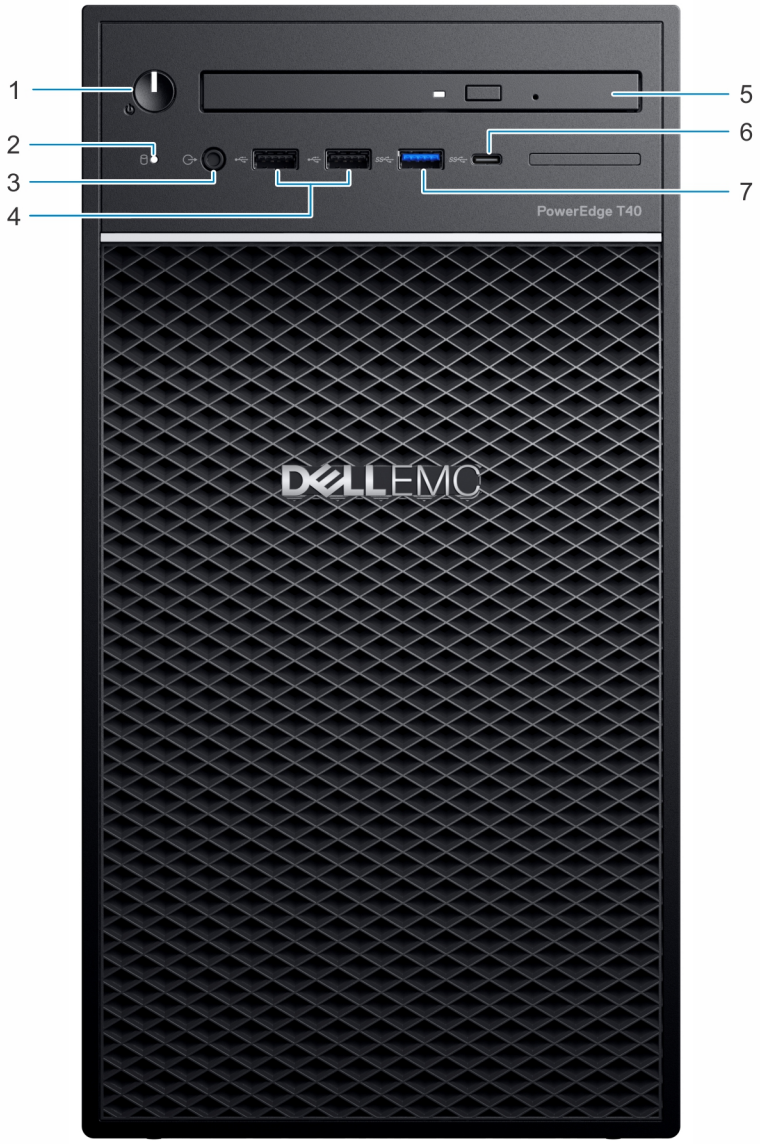

Figure 1. Front view of the system

1. Power button/Diagnostics indicator
2. Drive activity LED indicator
3. 3.5 mm Headphone port
4. USB 2.0 Type-A port (2)
5. Optical drive
6. USB 3.1 Type-C port
7. USB 3.0 Type-A port

For more information about the ports, see the Ports and connectors specifications section.

Rear view of the system

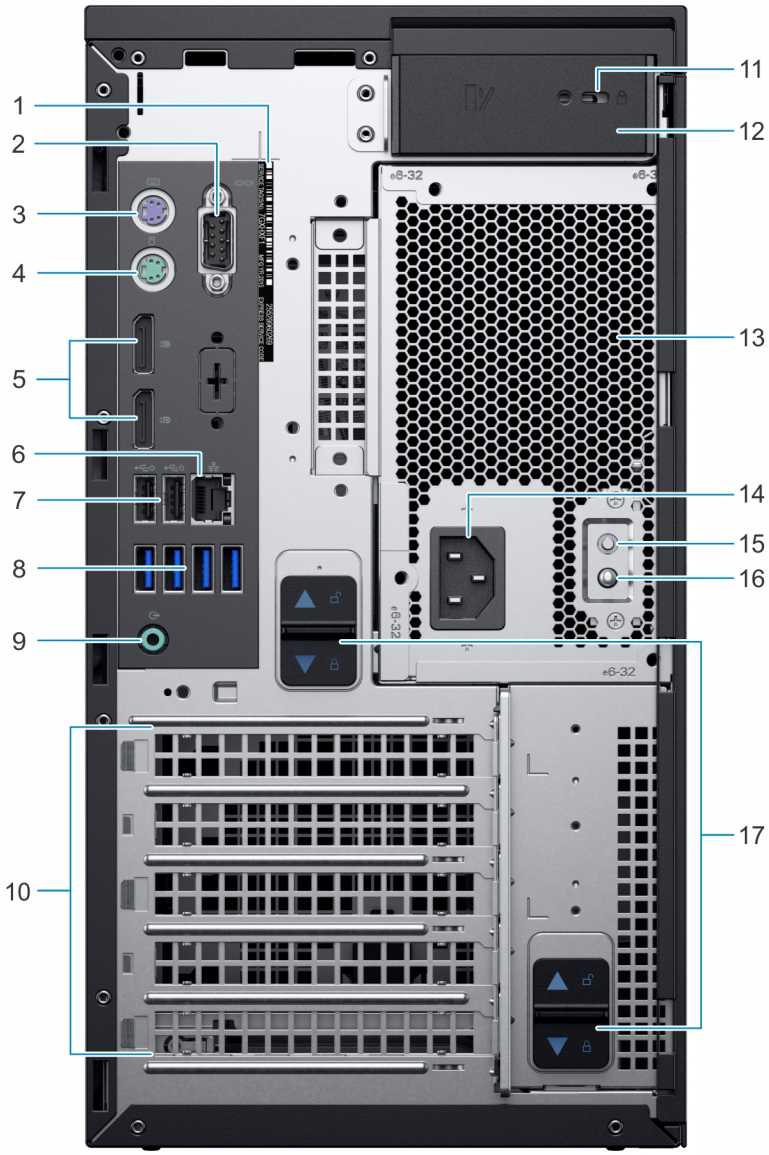

Figure 2. Rear view of the system

1. Service tag
2. Serial port
3. PS2 port (Keyboard)
4. PS2 port (Mouse)
5. Display Port (2)
6. NIC port
7. USB 2.0 Type-A with SmartPower (2)
8. USB 3.0 Type-A ports (4)
9. Audio line-out port
10. Expansion card slots (4)
11. Kensington/padlock slot
12. System cover release latch
13. Power Supply Unit (PSU)
14. Power connector port
15. Power Supply Unit (PSU) Built-in Self Test (BIST) button
16. Power Supply Unit (PSU) Built-in Self Test (BIST) LED
17. PSU assembly release latch

NOTE: For more information about the ports and connectors, see the Ports and connectors specifications section.

2

Technical specifications

The technical and environmental specifications of your system are outlined in this section.

Topics:

- Chassis dimensions
- System weight
- Processor specifications
- Supported operating systems
- PSU specifications
- System fan specifications
- System battery specifications
- Expansion card specifications
- Memory specifications
- Storage controller specifications
- Drive specifications
- Ports and connectors specifications
- Video specifications
- Environmental specifications

Chassis dimensions

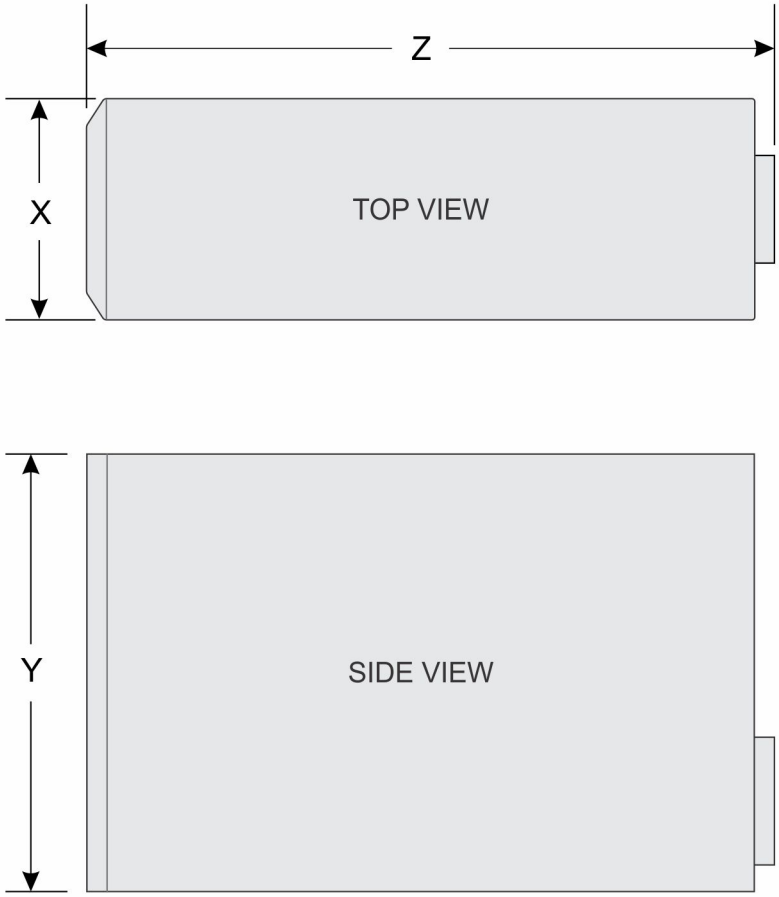

Figure 3. Chassis dimensions

Table 1. PowerEdge T40 chassis dimensions

X	Y	Z
176.6 mm (6.95 inches)	335 mm (13.18 inches)	359.5 mm (14.15 inches)

System weight

Table 2. PowerEdge T40 system weight

System configuration	Maximum weight (with all drives/SSDs)
1x 3.5-inch drive	8.4 Kg (18.52 lb)

Processor specifications

The PowerEdge T40 system supports the following processors:

Table 3. Processor Specifications

Supported processor	Model	UMA Graphics
Intel Xeon E	E series	Intel UHD Graphics P630
Intel Core i3	i3-9100	Intel UHD Graphics 630
Intel Pentium Gold	G5400	Intel UHD Graphics 610

NOTE: Processor availability is subject to change and may vary by region/country.

Supported operating systems

The PowerEdge T40 supports the following operating systems:

- Microsoft Windows Server 2016
- Microsoft Windows Server 2019
- Ubuntu 18.04 LTS

NOTE: For more information, go to www.dell.com/ossupport.

NOTE: For more information about the specific versions and additions, go to https://www.dell.com/support/home/Drivers/SupportedOS/poweredge-T40.

PSU specifications

The PowerEdge T40 system supports one cabled AC power supply unit (PSU).

Table 4. PSU specifications

PSU	Class	Heat dissipation (maximum)	Frequency	Voltage	Current
300 W AC	Bronze	1024 BTU/hr	50 – 60 Hz	100 – 240 V AC, autoranging	6A

NOTE: Heat dissipation is calculated by using the PSU wattage rating.

NOTE: The PowerEdge T40 system is also designed to connect to the IT power systems with a phase-to-phase voltage not exceeding 240 V.

System fan specifications

The PowerEdge T40 system supports the following:

- One system cooling fan located at the top of the system.
- One processor cooling fan located on the heat sink.

NOTE: When selecting or upgrading the system configuration, to ensure optimum power utilization, verify the system power consumption with the Dell Energy Smart Solution Advisor available at Dell.com/ESSA.

System battery specifications

The PowerEdge T40 system supports CR 2032 3.0-V lithium coin cell system battery.

Expansion card specifications

The PowerEdge T40 system supports up to three PCI express (PCIe) Generation 3 and once PCI card.

Table 5. Expansion card slots supported on the system board

PCIe slot	Slot Type	Processor Connection	PCIe slot height	Maximum Add-in Card Length
Slot 1	PCIe x16 Gen3	Processor	Full Height	Half length
Slot 2	PCI	Platform Controller Hub	Full Height	Half length
Slot 3	PCIe x4 Gen 3 (open ended)	Platform Controller Hub	Full Height	Half length
Slot 4	PCIe x4 Gen 3 (open ended)	Platform Controller Hub	Full Height	Half length

NOTE: The expansion cards are not hot swappable.

Memory specifications

CAUTION: Dell recommends you to use ECC DIMMs to minimize the risk of uncorrectable system error, data loss and/or silent data corruption. Non-ECC DIMM is not used for mission-critical applications.

NOTE: Non-ECC DIMMs are supported only in selected countries, for more information contact your sales representative.

Table 6. Memory specifications

DIMM Type	DIMM capacity	Minimum RAM	Maximum RAM
UDIMM, DDR4, ECC/Non-ECC	8 GB	8 GB	32 GB
	16 GB	16 GB	64 GB

Storage controller specifications

The PowerEdge T40 system supports Intel Virtual RAID on CPU (Intel VROC) software RAID.

NOTE: Intel VROC supports RAID modes 0, 1, 5, and 10.

NOTE: The PowerEdge T40 system does not support RAID 10 as RAID 10 is supported only on systems with 4 drives.

Drive specifications

Drives

The PowerEdge T40 system supports the following drive configurations:

Table 7. Drive configurations

Configuration	Capacity
Up to 3 x 3.5-inch drive cabled SATA drives.	1 / 2 / 4 TB

NOTE: The PowerEdge T40 system only supports entry drives.

Entry Drives : Least expensive drives used in applications where low usage and limited total number of drives are applicable. Due to restrictions on use, these drives are available in a small number of systems and configurations.

Optical drives

The PowerEdge T40 system supports the following optical drives.

Table 8. Supported optical drive type

Supported drive type	Supported number of drives
Slim 9.5 mm SATA DVD+/-RW drive	One

NOTE: External optical drives can be connected through the USB ports.

Ports and connectors specifications

USB ports specifications

The PowerEdge T40 system supports the USB ports mentioned below:

Table 9. PowerEdge T40 system USB specifications

Front Panel	Rear Panel
• Two USB 2.0-compliant Type-A ports • One USB 3.0 Type-A compliant port • One USB 3.1-compliant Type-C port	• Four USB 3.0 Type-A compliant ports • Two USB 2.0 Type-A compliant ports

NIC port specifications

The PowerEdge T40 system supports a Network Interface Controller (NIC) port on the back panel, which is available in 10/100/1000 Mbps NIC configurations.

Serial connector specifications

The PowerEdge T40 system supports one serial connector on the back panel, which is a 9-pin connector, Data Terminal Equipment (DTE), 16550-compliant.

DisplayPort specifications

The PowerEdge T40 system supports two DisplayPorts located on the back panel of the system.

Video specifications

The PowerEdge T40 system supports:

- Intel UHD Graphics P630 for Intel Xeon E processor
- Intel UHD Graphics 630 for Intel Core i3 processor
- Intel UHD Graphics 610 for Intel Pentium Gold processor

Environmental specifications

NOTE: For additional information about environmental certifications, refer to the *Product Environmental Datasheet* located with the Manuals & Documents on www.dell.com/support/home.

Table 10. Temperature specifications

Temperature	Specifications
Storage	-40–65°C (-40–149°F)
Continuous operation (for altitude less than 900 m or 2953 ft)	10–35°C (50–95°F) with no direct sunlight on the equipment
Fresh air	T40 do not support Fresh air (Expanded operating temperature)
Maximum temperature gradient (operating and storage)	20°C/h (36°F/h)

Table 11. Relative humidity specifications

Relative humidity	Specifications
Storage	5% to 95% RH with 27°C (80.6°F) maximum dew point. Atmosphere must be noncondensing at all times.
Operating	20% to 80% RH with 21°C (69.8 °F) maximum dew point.

Table 12. Maximum vibration specifications

Maximum vibration	Specifications
Operating	0.26 G_{rms} at 5 Hz to 350 Hz (all operation orientations)
Storage	1.88 G_{rms} at 10 Hz to 500 Hz for 15 minutes (all six sides tested)

Table 13. Maximum shock pulse specifications

Maximum shock pulse	Specifications
Operating	Six consecutively executed shock pulses in the positive and negative x, y, and z axis of 6G for up to 11 ms.
Storage	Six consecutively executed shock pulses in the positive and negative x, y, and z axis (one pulse on each side of the system) of 71 G for up to 2 ms.

Table 14. Maximum altitude specifications

Maximum altitude	Specifications
Operating	3048 m (10,000 ft)
Storage	12,000 m (39,370 ft)

Table 15. Operating temperature derating specifications

Operating temperature derating	Specifications
Up to 35°C (95°F)	Maximum temperature is reduced by 1°C/300 m (1°F/547 ft), above 900 m (2,953 ft).

Thermal restriction matrix

Table 16. Thermal restrictions matrix

Ambient	25°C	30°C	35°C
Processor	No restriction	No restriction	No restriction
DIMM	No restriction	No restriction	No restriction
Drive	Limited to entry drives with power less than 6.8W Or No restriction to 1 / 2 TB 7200 rpm and 4 TB 5400 rpm		

Ambient	25°C	30°C	35°C
	NOTE: **The PowerEdge T40 does not support enterprise-class drives.**		
Card	Limited to Tier 2 PCIe cards Or PCIe cards do not require system level cooling assistance up to a local ambient temperature of 55°C		

Particulate and gaseous contamination specifications

Table 17. Particulate contamination specifications

Particulate contamination	Specifications
Air filtration	Data center air filtration as defined by ISO Class 8 per ISO 14644-1 with a 95% upper confidence limit.

NOTE: **This condition applies only to data center environments. Air filtration requirements do not apply to IT equipment designed to be used outside a data center, in environments such as an office or factory floor.**

NOTE: **Air entering the data center must have MERV11 or MERV13 filtration.**

Conductive dust	Air must be free of conductive dust, zinc whiskers, or other conductive particles.

NOTE: **This condition applies to data center and non-data center environments.**

Corrosive dust	Air must be free of corrosive dust.

Residual dust present in the air must have a deliquescent point less than 60% relative humidity.

NOTE: **This condition applies to data center and non-data center environments.**

Table 18. Gaseous contamination specifications

Gaseous contamination	Specifications
Copper coupon corrosion rate	<300 Å/month per Class G1 as defined by ANSI/ISA71.04-2013
Silver coupon corrosion rate	<200 Å/month per Class G1 as defined by ANSI/ISA71.04-2013

NOTE: **Maximum corrosive contaminant levels measured at ≤50% relative humidity.**

3

System diagnostics and indicator codes

The diagnostic indicators on the system front panel display system status during system startup.

Topics:

- Front panel indicator codes
- NIC indicator codes
- Power supply unit Built-in Self Test
- Enhanced Pre-Boot System Assessment — ePSA diagnostics
- Diagnostics
- Diagnostic error messages
- System error messages

Front panel indicator codes

NOTE: No diagnostic indicators are lit when the system is turned off. To start the system, plug it into a working power source and press the power button.

Table 19. Front panel indicator codes

Icon	Description	Condition	Corrective action
	Drive indicator	The indicator flashes white if drives are being accessed.	Not applicable.
	Power-on indicator	The indicator displays solid and flashing amber if there is a component failure.	This is due to component failure in the system. For more information, see the Diagnostics section. If the problem persists, see the appropriate Troubleshooting section or the Getting help section.

NIC indicator codes

Each NIC on the back panel has an indicator that provides information about the network activity and link status. The activity LED indicates whether the NIC is currently connected or not. The link LED indicates the speed of the connected network.

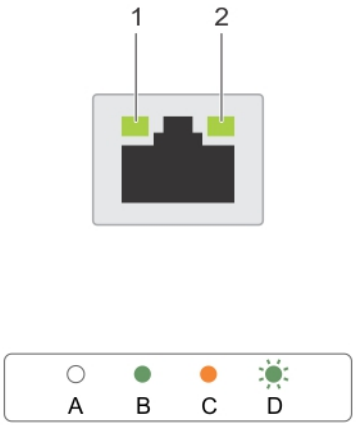

Figure 4. NIC indicators

1. link indicator
2. activity indicator

Table 20. NIC indicators

Convention	Status	Condition
A	Link and activity indicators are off	The NIC is not connected to the network.
B	Link indicator is green	The NIC is connected to a valid network at 10 Mbps or 100 Mbps port speed.
C	Link indicator is orange	The NIC is connected to a valid network at 1000 Mbps port speed.
D	Activity indicator is flashing yellow	Network data is being sent or received.

Power supply unit Built-in Self Test

PowerEdge T40 supports a power supply unit Built-in Self Test (BIST).

1. Turn off your server.
2. Disconnect the power cord from the power supply unit, and wait for 15 seconds.
3. After 15 seconds, connect the power cord back to the PSU
4. Press the PSU BIST button.
   - If the LED turns on and remains on while the BIST button is pressed, it indicates that the power supply unit is functional. Continue with troubleshooting steps for other devices.
   - If the LED does not turn on, it indicates PSU failure.

Steps to confirm that power supply unit is defective

Perform the steps to identify a faulty power supply unit

1. Disconnect the power cord from the power supply unit.

   CAUTION: Ensure that you take adequate safety precautions before accessing the components on your server.
2. Disconnect the internal PSU cables from the motherboard and each internal device.
3. Connect the power cord to the PSU

4. Press the PSU BIST button.
   - If the LED turns on and remains on while the BIST button is pressed, it indicates that the power-supply unit is functional. Continue with troubleshooting steps for other devices.
   - If the LED does not turn on, it indicates a power-supply unit failure. Replace the power supply unit.

Enhanced Pre-Boot System Assessment — ePSA diagnostics

The ePSA diagnostics (also known as system diagnostics) performs a complete check of your hardware. The ePSA is embedded with the BIOS and is launched by the BIOS internally. The embedded system diagnostics provides a set of options for particular devices or device groups allowing you to:

The ePSA diagnostics can be initiated on one-time boot menu by pressing F12 while powering on the computer.

- Run tests automatically or in an interactive mode.
- Repeat tests.
- Display or save test results.
- Run thorough tests to introduce additional test options to provide extra information about the failed device(s).
- View status messages that inform you if tests are completed successfully.
- View error messages that inform you of problems encountered during testing.

NOTE: Some tests for specific devices require user interaction. Always ensure that you are present at the computer terminal when the diagnostic tests are performed.

Running the ePSA Diagnostics

Invoke diagnostics boot by either of the methods that are suggested below:

1. Power on the system.
2. As the system boots, press the F12 key when the Dell logo is displayed.
3. In the boot menu screen, use Up/Down arrow key to select the **Diagnostics** option and then press **Enter**.

   NOTE: The Enhanced Pre-boot System Assessment window displays, listing all devices detected in the system. The diagnostics starts running the tests on all the detected devices.
4. Press the arrow in the lower-right corner to go to the page listing.
   The detected items are listed and tested.
5. To run a diagnostic test on a specific device, press Esc and click **Yes** to stop the diagnostic test.
6. Select the device from the left pane and click **Run Tests**.
7. If there are any issues, error codes are displayed.
   Note the error code and contact Dell.

Diagnostics

Power status light: Indicates the power status.

Solid Amber – The system is unable to boot to the operating system. This indicates that the power supply or another device in the system is failing.

Blinking Amber – The system is unable to boot to the operating system. This indicates that the power supply is normal but another device in the system is failing or not installed properly.

NOTE: To determine the device that is failing, see the light patterns .

Off – System is in hibernation or turned off.

The power status light blinks amber along with beep codes indicating failures.

For example, the power status light blinks amber two times followed by a pause, and then blinks five times followed by a pause. This 2,5 pattern continues until the computer is turned off indicating the Recovery image is not found.

The following table shows different light patterns and what they indicate:

Table 21. Diagnostic LED codes and Beep Codes

LED # of Flashes / Beep codes	Problem description	Faults
2,1	Faulty system board	Faulty system board
2,2	Faulty system board, power supply unit (PSU), or cabling	Faulty system board, power supply unit (PSU), or cabling
2,3	Faulty system board, CPU, or DIMMS	Faulty system board, power supply unit (PSU), or DIMMS
2,4	Faulty coin cell battery	Faulty coin cell battery
2,5	BIOS Recovery	AutoRecovery trigger, recovery image is not found or is invalid
2,6	CPU	CPU Error
2,7	Memory	Memory SPD failure
3,3	Memory	No memory detected
3,5	Memory	Modules incompatible or invalid configuration
3,6	BIOS Recovery	On-demand trigger, recovery image is not found
3,7	BIOS Recovery	On-demand trigger, recovery image is invalid

The system may emit a series of beeps during start-up if the errors or problems cannot be displayed. The repetitive beep codes help the user troubleshoot problems with the system.

Diagnostic error messages

Table 22. Diagnostic error messages

Error messages	Description
AUXILIARY DEVICE FAILURE	The touchpad or external mouse may be faulty. For an external mouse, check the cable connection. Enable the **Pointing Device** option in the System Setup program.
BAD COMMAND OR FILE NAME	Ensure that you have spelled the command correctly, put spaces in the proper place, and used the correct path name.
CACHE DISABLED DUE TO FAILURE	The primary cache internal to the microprocessor has failed. **Contact Dell**
CD DRIVE CONTROLLER FAILURE	The optical drive does not respond to commands from the computer.
DATA ERROR	The hard drive cannot read the data.
DECREASING AVAILABLE MEMORY	One or more memory modules may be faulty or improperly seated. Reinstall the memory modules or, if necessary, replace them.
DISK C: FAILED INITIALIZATION	The hard drive failed initialization. Run the hard drive tests in **Dell Diagnostics**.
DRIVE NOT READY	The operation requires a hard drive in the bay before it can continue. Install a hard drive in the hard drive bay.
ERROR READING PCMCIA CARD	The computer cannot identify the ExpressCard. Reinsert the card or try another card.
EXTENDED MEMORY SIZE HAS CHANGED	The amount of memory recorded in non-volatile memory (NVRAM) does not match the memory module installed in the computer. Restart the computer. If the error appears again, **Contact Dell**

Error messages	Description
THE FILE BEING COPIED IS TOO LARGE FOR THE DESTINATION DRIVE	The file that you are trying to copy is too large to fit on the disk, or the disk is full. Try copying the file to a different disk or use a larger capacity disk.
A FILENAME CANNOT CONTAIN ANY OF THE FOLLOWING CHARACTERS: \ / : * ? " < > | -	Do not use these characters in filenames.
GATE A20 FAILURE	A memory module may be loose. Reinstall the memory module or, if necessary, replace it.
GENERAL FAILURE	The operating system is unable to carry out the command. The message is usually followed by specific information. For example, Printer out of paper. Take the appropriate action.
HARD-DISK DRIVE CONFIGURATION ERROR	The computer cannot identify the drive type. Shut down the computer, remove the hard drive, and boot the computer from an optical drive. Then, shut down the computer, reinstall the hard drive, and restart the computer. Run the **Hard Disk Drive** tests in **Dell Diagnostics**.
HARD-DISK DRIVE CONTROLLER FAILURE 0	The hard drive does not respond to commands from the computer. Shut down the computer, remove the hard drive, and boot the computer from an optical drive. Then, shut down the computer, reinstall the hard drive, and restart the computer. If the problem persists, try another drive. Run the **Hard Disk Drive** tests in **Dell Diagnostics**.
HARD-DISK DRIVE FAILURE	The hard drive does not respond to commands from the computer. Shut down the computer, remove the hard drive, and boot the computer from an optical drive. Then, shut down the computer, reinstall the hard drive, and restart the computer. If the problem persists, try another drive. Run the **Hard Disk Drive** tests in **Dell Diagnostics**.
HARD-DISK DRIVE READ FAILURE	The hard drive may be defective. Shut down the computer, remove the hard drive, and boot the computer from an optical. Then, shut down the computer, reinstall the hard drive, and restart the computer. If the problem persists, try another drive. Run the **Hard Disk Drive** tests in **Dell Diagnostics**.
INSERT BOOTABLE MEDIA	The operating system is trying to boot to non-bootable media, such as an optical drive. Insert bootable media.
INVALID CONFIGURATION INFORMATION-PLEASE RUN SYSTEM SETUP PROGRAM	The system configuration information does not match the hardware configuration. The message is most likely to occur after a memory module is installed. Correct the appropriate options in the system setup program.
KEYBOARD CLOCK LINE FAILURE	For external keyboards, check the cable connection. Run the **Keyboard Controller** test in **Dell Diagnostics**.
KEYBOARD CONTROLLER FAILURE	For external keyboards, check the cable connection. Restart the computer, and avoid touching the keyboard or the mouse during the boot routine. Run the **Keyboard Controller** test in **Dell Diagnostics**.
KEYBOARD DATA LINE FAILURE	For external keyboards, check the cable connection. Run the **Keyboard Controller** test in **Dell Diagnostics**.
KEYBOARD STUCK KEY FAILURE	For external keyboards or keypads, check the cable connection. Restart the computer, and avoid touching the keyboard or keys during the boot routine. Run the **Stuck Key** test in **Dell Diagnostics**.
LICENSED CONTENT IS NOT ACCESSIBLE IN MEDIADIRECT	Dell MediaDirect cannot verify the Digital Rights Management (DRM) restrictions on the file, so the file cannot be played.

Error messages	Description
MEMORY ADDRESS LINE FAILURE AT ADDRESS, READ VALUE EXPECTING VALUE	A memory module may be faulty or improperly seated. Reinstall the memory module or, if necessary, replace it.
MEMORY ALLOCATION ERROR	The software you are attempting to run is conflicting with the operating system, another program, or a utility. Shut down the computer, wait for 30 seconds, and then restart it. Run the program again. If the error message still appears, see the software documentation.
MEMORY DOUBLE WORD LOGIC FAILURE AT ADDRESS, READ VALUE EXPECTING VALUE	A memory module may be faulty or improperly seated. Reinstall the memory module or, if necessary, replace it.
MEMORY ODD/EVEN LOGIC FAILURE AT ADDRESS, READ VALUE EXPECTING VALUE	A memory module may be faulty or improperly seated. Reinstall the memory module or, if necessary, replace it.
MEMORY WRITE/READ FAILURE AT ADDRESS, READ VALUE EXPECTING VALUE	A memory module may be faulty or improperly seated. Reinstall the memory module or, if necessary, replace it.
NO BOOT DEVICE AVAILABLE	The computer cannot find the hard drive. If the hard drive is your boot device, ensure that the drive is installed, properly seated, and partitioned as a boot device.
NO BOOT SECTOR ON HARD DRIVE	The operating system may be corrupted, **Contact Dell**.
NO TIMER TICK INTERRUPT	A chip on the system board may be malfunctioning. Run the **System Set** tests in **Dell Diagnostics**.
NOT ENOUGH MEMORY OR RESOURCES. EXIT SOME PROGRAMS AND TRY AGAIN	You have too many programs open. Close all windows and open the program that you want to use.
OPERATING SYSTEM NOT FOUND	Reinstall the operating system. If the problem persists, **Contact Dell**.
OPTIONAL ROM BAD CHECKSUM	The optional ROM has failed. **Contact Dell**.
SECTOR NOT FOUND	The operating system cannot locate a sector on the hard drive. You may have a defective sector or corrupted File Allocation Table (FAT) on the hard drive. Run the Windows error-checking utility to check the file structure on the hard drive. See **Windows Help and Support** for instructions (click **Start** > **Help and Support**). If a large number of sectors are defective, back up the data (if possible), and then format the hard drive.
SEEK ERROR	The operating system cannot find a specific track on the hard drive.
SHUTDOWN FAILURE	A chip on the system board may be malfunctioning. Run the **System Set** tests in **Dell Diagnostics**. If the message reappears, **Contact Dell**.
TIME-OF-DAY CLOCK LOST POWER	System configuration settings are corrupted. Connect your computer to an electrical outlet to charge the battery. If the problem persists, try to restore the data by entering the System Setup program, then immediately exit the program. If the message reappears, **Contact Dell**.
TIME-OF-DAY CLOCK STOPPED	The reserve battery that supports the system configuration settings may require recharging. Connect your computer to an electrical outlet to charge the battery. If the problem persists, **Contact Dell**.
TIME-OF-DAY NOT SET-PLEASE RUN THE SYSTEM SETUP PROGRAM	The time or date stored in the system setup program does not match the system clock. Correct the settings for the **Date and Time** options.
TIMER CHIP COUNTER 2 FAILED	A chip on the system board may be malfunctioning. Run the **System Set** tests in **Dell Diagnostics**.

Error messages	Description
UNEXPECTED INTERRUPT IN PROTECTED MODE	The keyboard controller may be malfunctioning, or a memory module may be loose. Run the **System Memory** tests and the **Keyboard Controller** test in **Dell Diagnostics** or **Contact Dell**.
X:\ IS NOT ACCESSIBLE. THE DEVICE IS NOT READY	Insert a disk into the drive and try again.

System error messages

Table 23. System error messages

System message	Description
Alert! Previous attempts at booting this system have failed at checkpoint [nnnn]. For help in resolving this problem, please note this checkpoint and contact Dell Technical Support	The computer failed to complete the boot routine three consecutive times for the same error.
CMOS checksum error	RTC is reset, **BIOS Setup** default has been loaded.
CPU fan failure	CPU fan has failed.
System fan failure	System fan has failed.
Hard-disk drive failure	Possible hard disk drive failure during POST.
Keyboard failure	Keyboard failure or loose cable. If reseating the cable does not solve the problem, replace the keyboard.
No boot device available	No bootable partition on hard disk drive, the hard disk drive cable is loose, or no bootable device exists. · If the hard drive is your boot device, ensure that the cables are connected and that the drive is installed properly and partitioned as a boot device. · Enter system setup and ensure that the boot sequence information is correct.
No timer tick interrupt	A chip on the system board might be malfunctioning or motherboard failure.
NOTICE - Hard Drive SELF MONITORING SYSTEM has reported that a parameter has exceeded its normal operating range. Dell recommends that you back up your data regularly. A parameter out of range may or may not indicate a potential hard drive problem	S.M.A.R.T error, possible hard disk drive failure.