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System Overview

Dell™ PowerEdge™ 1600SC Systems Service Manual

System Features

The system offers the following features:

- 533-MHz front side bus systems:
  - Up to two Intel® Xeon™ microprocessors with an internal processing speed of at least 2.0 GHz, a 533-MHz front side bus speed, and a 512-KB Level 2 cache
- 400-MHz front side bus systems:
  - Up to two Intel Xeon microprocessors with an internal processing speed of at least 1.8 GHz, a 400-MHz front side bus speed, and a 512-KB Level 2 cache

NOTE: Use the System Setup program to view microprocessor information. For more information, see "Using the System Setup Program."

- A minimum of 128 MB of ECC DDR 266 SDRAM memory, upgradable to a maximum of 4 GB by installing 128-, 256-, 512-MB, or 1-GB registered memory modules in the four memory module sockets on the system board
- Support for the following internal hard-drive configurations:
  - Up to six 1-inch Ultra3 SCSI hot-plug hard drives
  - Up to four 1-inch non-hot-plug SCSI or IDE hard drives
- Integrated SCSI controller for SCSI hard drives and integrated IDE controller for IDE hard drives, CD drive, and optional DVD and combination drives
- Optional single-channel RAID controller for SCSI RAID or optional quad-channel RAID controller for IDE RAID
- Two 5.25-inch peripheral drive bays that support the following optional drives: CD, DVD,

combination CD/DVD, or tape backup unit (SCSI or IDE)

The system board includes the following built-in features:

- Six PCI expansion slots: two 32-bit, 33-MHz PCI slots; two 64-bit, 66-MHz PCI slots; two 64-bit, 100-MHz PCI-X slots.
- An integrated VGA-compatible video subsystem with an ATI RAGE XL video controller. This video subsystem contains 8 MB of SDRAM video memory (nonupgradable). Maximum resolution is 1280 x 1024 pixels and 16.7 million colors (noninterlaced).
- An integrated Gigabit Ethernet NIC, capable of supporting 10-Mbps, 100-Mbps, and 1000-Mbps data rates.
- Systems management circuitry that monitors critical system voltages and temperatures. The systems management circuitry works in conjunction with the systems management software.
- Optional remote access card for remote systems management (not supported on systems with IDE hard drives).
- Optional hot-plug redundant power supplies.
- Chassis intrusion alarm, padlock tabs for internal security, and a bezel lock that prevents access to the hot-plug hard drives.

Standard systems include a diskette drive and IDE CD drive, installed in an externally accessible bay. An optional DVD or combination drive is also available.

The following software is included with the system:

- The System Setup program for quickly viewing and changing the system configuration information for the system. For more information on this program, see "Using the System Setup Program."
- Enhanced security features, including a system password and a setup password, available through the System Setup program.
- Diagnostics for evaluating the system's components and devices. For information on using the system diagnostics, see "Running the System Diagnostics."
- Optional tape backup software.

For a list of documents that provide more information on the system's features, see "Other Documents You May Need."

Supported Operating Systems

The system supports the following operating systems:

- Microsoft® Windows® Server 2003 Standard Edition

- Microsoft Windows 2000 Server
- Microsoft Windows 2000 SBS
- Red Hat Linux version 8.0
- Novell® NetWare® version 6.0 or later

Power Protection Devices

Certain devices protect the system from the effects of problems such as power surges and power failures.

- PDU — Uses circuit breakers to ensure that the AC current load does not exceed the PDU's rating.
- Surge protector — Prevents voltage spikes, such as those that may occur during an electrical storm, from entering the system through the electrical outlet and network port. They do not protect against brownouts, which occur when the voltage drops more than 20 percent below the normal AC line voltage level.
- Line conditioner — Maintains a system's AC power source voltage at a moderately constant level and provides protection from brownouts, but does not protect against a complete power loss.
- UPS — Uses battery power to keep the system running when AC power is unavailable. The battery is charged by AC power while it is available so that after AC power is lost, the battery can provide power to the system for a limited amount of time—from 15 minutes to approximately an hour. A UPS that provides only 5 minutes of battery power allows you to shutdown the system. Use surge protectors and PDUs with all universal power supplies, and ensure that the UPS is UL-safety approved.

Other Documents You May Need

The *System Information Guide* provides important safety and regulatory information. Warranty information may be included within this document or as a separate document.

- The *Setting Up Your System* document provides an overview of initially setting up the system.
- The *Installation and Troubleshooting Guide* describes how to troubleshoot the system and install or replace system components.
- Systems management software documentation describes the features, requirements, installation, and basic operation of the software.
- Operating system documentation describes how to install (if necessary), configure, and use the operating system software.

- Other documentation included on the CDs that came with the system describes the use of advanced system features.
- Documentation for any components purchased separately provides information to configure and install these options.
- Updates are sometimes included with the system to describe changes to the system, software, and/or documentation.

NOTE: Always read the updates first because they often supersede information in other documents.

- Release notes or readme files may be included to provide last-minute updates to the system or documentation, or advanced technical reference material intended for experienced users or technicians.

Specifications

Microprocessor	
Microprocessor type:	
533-MHz front side bus systems	Intel Xeon microprocessor with an internal processing speed of at least 2.0 GHz, a 533-MHz front side bus speed, and a 512-KB Level 2 cache
400-MHz front side bus systems	Intel Xeon microprocessor with an internal processing speed of at least 1.8 GHz, a 400-MHz front side bus speed, and a 512-KB Level 2 cache

Expansion Bus	
Bus type	PCI and PCI-X
Expansion slots	two 32-bit, 33-MHz PCI slots (5 V); two 64-bit, 66-MHz PCI slots (3.3 V); two 64-bit, 100-MHz PCI-X slots (3.3 V)

Memory

Architecture	72-bit ECC registered DDR 266 SDRAM
Memory module sockets	four
Memory module capacities	128, 256, 512 MB, or 1 GB
Minimum memory capacity	128 MB
Maximum memory capacity	4 GB

Drives	
Diskette drive	3.5-inch, 1.44-MB diskette drive
Hard drives	up to six 1-inch hot-plug Ultra3 SCSI drives, up to four 1-inch non-hot-plug Ultra3 SCSI drives, or up to four 1-inch non-hot-plug IDE drives
CD drive	one EIDE CD drive
Optional DVD or combination drive	optional IDE DVD or combination drive
Tape drive	optional internal SCSI or IDE tape backup unit

Externally Accessible Ports and Connectors	
Serial	one 9-pin connector
Parallel	25-pin connector
Video	15-pin connector
PS/2-style keyboard (with USB support)	6-pin mini-DIN connector
PS/2-compatible mouse	6-pin mini-DIN connector
USB	two USB-compliant 4-pin connectors
NIC	RJ-45 connector for integrated NIC

Video	
Video type	ATI Rage XL video controller; VGA connector

Video memory	8 MB

Power	
DC power supply (per power supply):	
Wattage	450 W
Voltage	100–240 VAC, 50–60 Hz
Heat dissipation	2275 BTU/hr maximum
Output hold up time	20 ms minimum
Maximum inrush current	Under typical line conditions and over the entire system ambient operating range, the inrush current may reach 55 A at 10 ms or less or 25 A at 150 ms or less.
System battery	CR2032 3.0-V lithium coin cell

Physical	
Height	44.7 cm (17.6 inches)
Width	21.8 cm (8.6 inches)
Depth	57.41 cm (22.6 inches)
Weight	33.11 kg (73 lb), maximum configuration

Environmental	
Temperature:	
Operating	10° to 35°C (50° to 95°F)
Storage	–40° to 65°C (–40° to 149°F)
Relative humidity:	
Operating	20% to 80% (noncondensing)
Storage	5% to 95% (noncondensing)
Maximum vibration:	
Operating	0.25 G (half-sine wave) at a sweep of 3 to 200 MHz for 15 minutes

Storage	0.5 G at 3 to 200 Hz for 15 minutes
Maximum shock:	
Operating	six consecutively executed shock pulses in the positive and negative x, y, and z axes (one pulse on each side of the system) of 36 G for up to 2.6 ms
Storage	six consecutively executed shock pulses in the positive and negative x, y, and z axes (one pulse on each side of the system) of 71 G for up to 2 ms
Altitude:	
Operating	–16 to 3048 m (–50 to 10,000 ft)
Storage	–16 to 10,668 m (–50 to 35,000 ft)

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