Sun SPARC™ Enterprise T2000 Server Site Planning Guide

Sun Microsystems, Inc.
www.sun.com

Part No. 819-7987-10
April 2007, Revision A

Submit comments about this document at: http://www.sun.com/hwdocs/feedback

Please
Recycle

Entrée et revue tecnical fournies par Fujitsu Limited sur des parties de ce matériel.

Contents

Sun SPARC Enterprise T2000 Server Site Planning Guide

This guide provides the specifications and site requirements you need when planning the installation of the server.

For safety and compliance information, refer to the *Sun SPARC Enterprise T2000 Server Safety and Compliance Guide* and the documentation that came with your server.

This guide contains the following sections:

Physical Specifications

Measure	U.S.	Metric
Width	17.3 inches	440 mm
Depth	24.3 inches	617 mm
Height (2 rack units)	3.5 inches	89 mm
Weight, approximate (without PCI cards and rack mounts)	40 lbs	18 kg

Minimum Clearance for Service Access

Description	Specification
Clearance, front of system	36 in. (91 cm)
Clearance, rear of system	36 in. (91 cm)

Environmental Specifications

Specification	Operating	Non-operating
Operating temperature:		
• Sea level to 3000 ft (900m)	• 41°F to 95°F (5°C to 35°C)	-40 to 60°C
• Above 3000 ft (900m)	• Decrease maximum temperature as altitude increases, 1.6°F/1000 ft (1°C/300m)	-40 to 60°C
Humidity	20 to 80% RH, non-condensing, 27°C wet bulb, IEC 60068-2-3&56	98% RH 38°C, non-condensing, IEC 60068-2-3&56
Altitude	0-3,000 meters (0-10,000 feet) IEC 60068-2-13	0 - 12,000 meters (0-40,000 feet) IEC 60068-2-13
Vibration	0.2 Gs, Swept sine 5-500-5Hz, 1 octave/min, all axes, IEC 60068-2-13	1.0 Gs, Swept sine 5-500-5Hz, 1 octave/min, all axes, IEC 60068-2-13
Shock	5 Gs peak 11 milliseconds, half-sine pulse, IEC 60068-2-27	30 Gs peak 11 milliseconds, half-sine pulse, IEC 60068-2-27

Power Source Requirements

The server has two autoranging power supplies. To ensure redundant operation of the power supplies, the two power cords should be connected to separate AC circuits.

Description	Specification
Operating input voltage range	100 to 240 VAC, 50-60 Hz
Maximum operating input current	4.5 A at 100 to 120 VAC 2.25 A at 200 to 240 VAC
Maximum operating input power	450 W
Maximum heat dissipation	1,365 BTU/hr. (1,440 KJ/hr.)

Acoustic Noise Emissions

Declared noise emissions are in accordance with ISO 9296 standards.

Description	Mode	Specification
LwAd (1 B = 10 dB)	Operating acoustic noise Idling acoustic noise	7.7 B 7.7 B
LpAm (bystander positions)	Operating acoustic noise Idling acoustic noise	62 dB 62 dB

Agency Compliance Specifications

See the *Sun SPARC Enterprise T2000 Server Safety and Compliance Guide* for a full list of agency compliance specifications.

Recommended Operating Environment

Your environmental control system must provide intake air for the server that complies with the limits specified in "Environmental Specifications" on page 3.

To avoid overheating, *do not* direct warmed air:

- Toward the front air intake of the server
- Toward the server access panels

Note – When you receive your system, place it in the environment in which you will install it. Leave it in its shipping crate at its final destination for 24 hours. This resting period prevents thermal shock and condensation.

The system has been tested to meet all functional requirements when operating in the operating environmental limits presented in "Environmental Specifications" on page 3. Operating computer equipment in extremes of temperature or humidity increases the failure rate of hardware components. To minimize the chance of component failure, use the server within the optimal temperature and humidity ranges.

Electrical Power

Good practice is to connect each power supply to a separate circuit, which enables the system to remain operational if one of the circuits fails. Consult your local electrical codes for any additional requirements.

Ambient Temperature

An ambient temperature range of 21˚C (69.8˚F) to 23˚C (73.4˚F) is optimal for system reliability. At 22˚C (71.6˚F) it is easy to maintain safe relative humidity levels. Operating in this temperature range provides a buffer if the environmental support systems fail.

Ambient Relative Humidity

Ambient relative humidity levels between 45% and 50% are the most suitable for data processing operations in order to:

- Prevent corrosion
- Provide an operating time buffer in the event of environmental control system failure
- Help avoid failures caused by the intermittent interference from static discharges that occur when relative humidity is too low

Electrostatic discharge (ESD) is easily generated and less easily dissipated in areas where the relative humidity is below 35%, and becomes critical when levels drop below 30%.

Airflow Considerations

- Ensure unobstructed airflow through the chassis.
- Ensure that inlet air enters at the front of the server and exits from the back.
- Ensure that ventilation openings, such as cabinet doors, for both the inlet and exhaust of the server provide a minimum open area of 235 cm^2 (34.3 in^2) each. This equates to a 60% open area perforation pattern across the front and rear area of the server (440 mm x 89 mm; 17.3 in x 3.5 in). The impact of other open area characteristics that are more restrictive should be evaluated by the user.
- Allow a minimum of 5 mm (0.2 in) clearance at the front of the system and 80 mm (3.1 in) at the rear of the server when mounted. These clearance values are based on the above inlet and exhaust impedance (available open area) and assume a uniform distribution of the open area across the inlet and exhaust areas. Clearance values greater than these are recommended for improved cooling performance.

Note – The combination of inlet and exhaust restrictions such as cabinet doors and the spacing of the server from the doors can affect the cooling performance of the server and should be evaluated by the user.

- Take care to prevent recirculation of exhaust air within a rack or cabinet.
- Manage cables to minimize interfering with the server exhaust vent.
- Ensure that air temperature rise through the system is approximately 10˚C (18˚F).