



SPARC Enterprise T1000 Server

Site Planning Guide



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SPARC® Enterprise T1000 Server Site Planning Guide

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Preface

This guide provides the specifications and site requirements you need when planning the installation of the SPARC Enterprise T1000 server.

Note – When mounting on Fujitsu 19-inch Rack, see the SPARC Enterprise Equipment Rack Mounting Guide (C120-H016) for the accurate information about the maintenance area.

FOR SAFE OPERATION

This manual contains important information regarding the use and handling of this product. Read this manual thoroughly. Use the product according to the instructions and information available in this manual. Keep this manual handy for further reference.

Fujitsu makes every effort to prevent users and bystanders from being injured or from suffering damage to their property. Use the product according to this manual.

Related Documentation

The latest versions of all the SPARC Enterprise Series manuals are available at the following Web sites:

Global Site

<http://www.fujitsu.com/sparcenterprise/manual/>

Japanese Site

<http://primeserver.fujitsu.com/sparcenterprise/manual/>

Title	Description	Manual Code
<i>SPARC Enterprise T1000 Server Product Notes</i>	Information about the latest product updates and issues	C120-E381
<i>SPARC Enterprise T1000 Server Getting Started Guide</i>	Information about where to find documentation to get your system installed and running quickly	C120-E379
<i>SPARC Enterprise T1000 Server Overview Guide</i>	Provides an overview of the features of this server	C120-E380
<i>SPARC Enterprise T1000 Server Installation Guide</i>	Detailed rackmounting, cabling, power on, and configuring information	C120-E383
<i>SPARC Enterprise T1000 Server Service Manual</i>	How to run diagnostics to troubleshoot the server, and how to remove and replace parts in the server	C120-E384
<i>SPARC Enterprise T1000 Server System Administration Guide</i>	How to perform administrative tasks that are specific to this server	C120-E385
<i>Advanced Lights out Management (ALOM) CMT v1.x Guide</i>	How to use the Advanced Lights Out Manager (ALOM) software	C120-E386
<i>SPARC Enterprise T1000 Server Safety and Compliance Guide</i>	Safety and compliance information about this server	C120-E382
<i>SPARC Enterprise Equipment Rack Mounting Guide</i>	Describes the installation requirements and items for consideration when installing the equipment rack	C120-H016

Note – Product Notes is available on the website only. Please check for the recent update on your product.

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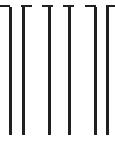
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SPARC Enterprise T1000 Server Site Planning Guide

This guide provides the specifications and site requirements you need when planning the installation of the SPARC Enterprise T1000 server.

For safety and compliance information, refer to the *SPARC Enterprise T1000 Server Safety and Compliance Guide* and the *Important Safety Information for Hardware Systems* document that came with your server.

This guide contains the following sections:

- “Physical Specifications” on page 2
- “Minimum Clearance for Service Access” on page 2
- “Environmental Specifications” on page 3
- “Power Source Requirements” on page 4
- “Acoustic Noise Emissions” on page 4
- “Agency Compliance Specifications” on page 4
- “General Site Preparation Notes” on page 5

Physical Specifications

Description	U.S.	Metric
Width	16.8 in.	425 mm
Depth	18.4 in.	467 mm
Height	1.75 in., 1 rack unit	43 mm
Weight (without PCI card and rackmounts)	20.5 lb	9.3 kg
Weight (with slide rails)	24 lb	10.9 kg

Minimum Clearance for Service Access

These are the minimum clearances needed for service.

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 SPARC Enterprise T1000 server has an autoranging power supply.

Description	Specification
Operating input voltage range	100 to 240 VAC, 50-60 Hz (Input voltage tolerance $\pm 10\%$)
Maximum operating input current	2.2 A at 100 to 120 VAC 1.1 A at 200 to 240 VAC
Typical operating input power	180 W
Maximum operating input power	220 W
Typical heat dissipation	614 BTU/hr. (647 KJ/hr)
Maximum heat dissipation	750 BTU/hr. (791 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	7.7 B
	Idling acoustic noise	7.7 B
LpAm (bystander positions)	Operating acoustic noise	66 dB
	Idling acoustic noise	66 dB

Agency Compliance Specifications

See the *SPARC Enterprise T1000 Server Safety and Compliance Guide* for a full list of agency compliance specifications.

General Site Preparation Notes

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

The server 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.

Ambient Temperature

An ambient temperature range of 69.8°F (21°C) to 73.4°F (23°C) is optimal for system reliability. At 71.6°F (22°C) 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 33.3 in.² (215 cm²) each. This equates to a 60% open area perforation pattern across the front (17.5 in. x 3.2 in.) and rear area of the server (445 mm x 81 mm). The impact of other open area characteristics that are more restrictive should be evaluated by the user.
- Allow a minimum of 0.2 in. (5 mm) clearance at the front of the system and 3.1 in. (80 mm) at the rear of the server when mounted. These clearance values are based on the 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 might improve 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 interference with the server exhaust vent.
- Ensure that air temperature rise through the system is approximately 59°F (15°C).

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