

# SPARC T5-4 Server

## ORACLE® SPARC SERVERS



### KEY FEATURES

- Uses the extremely fast SPARC T5 microprocessor to deliver outstanding performance for data warehouse, database and other enterprise applications Available with either two or four SPARC T5 processors thereby allowing future upgrades for the two processor system
- Scales to meet growing data center requirements by supporting a full range of workloads across database applications and web tiers
- Built-in, no-cost virtualization technology with Oracle VM Server for SPARC and Oracle Solaris Zones simplifies server consolidation, improves utilization, and reduces operational overhead
- Runs Oracle Solaris 11, recommended by Oracle for

In today's global dynamic economy, companies need to move faster, make intelligent decisions and launch better products and services more quickly and profitably. Oracle's SPARC T5-4 server is engineered for enterprise clouds, with extreme performance, simplified administration, built-in, zero-overhead virtualization, and advanced security. It redefines the mid-range with a cost-effective, high performing platform for Oracle application, database, and middleware deployments.

### Product Overview

The SPARC T5-4 server is a high-performing two or four-socket server based on the SPARC T5 processor and optimized for data-intensive and enterprise workloads. The SPARC T5-4 server delivers outstanding single-thread and multithread throughput performance, built-in no-cost encryption, and enterprise availability features, all in a modular and compact 5U design. It is an optimal server platform for demanding enterprise applications, server and application consolidation, and Oracle Database applications requiring the highest availability and performance.

Utilizing modular design architecture, the SPARC T5-4 server is powered by either two or four SPARC T5 processors and offers great scalability and capacity to accelerate critical business workloads. The advanced SPARC T5 processor includes integrated on-chip cryptographic support that provides wire speed encryption capabilities for secure data center operation - without paying a performance penalty or having to acquire additional hardware. With 16 cores and 16 memory slots per SPARC T5 processor, the SPARC T5-4 server provides high compute density with up to 64 cores and 2 TB of system memory, all within its 5U enclosure. From processor to memory to IO scalability, the SPARC T5-4 server allows organizations to extract the maximum value from its IT assets.

The SPARC T5-4 server comes integrated at no additional cost with Oracle VM Server for SPARC and Oracle Solaris. Oracle VM Server for SPARC helps lower total cost of ownership by virtualizing and consolidating business-critical applications, reducing administrative expenses. Protect your application software investment by moving existing Solaris applications unchanged to the SPARC T5-4 server using the guaranteed binary compatibility of Oracle Solaris, the #1 UNIX OS.

The SPARC T5-4 server provides enterprise-class RAS features including redundant, hot-plug fans, disks, and power supplies. Additionally, all 16 PCIe slots can accommodate hot-plug PCIe cards utilizing a PCIe hot-plug carrier. All these features contribute to increased uptime and ease of system serviceability in the case of hardware

enhanced performance and functionality. Can also run Oracle Solaris 10, 9 and 8, with guaranteed binary compatibility and support for legacy applications

- Designed for extremely high levels of reliability, availability and serviceability (RAS) to ensure continued access to critical data and functions and improve service levels
- Smart and simple design offers greater energy and space optimization, increasing asset utilization while decreasing operating costs
- Provides the most comprehensive lifecycle management framework available today through a unified portfolio of tools for systems and cloud
- Integrated on-chip cryptographic acceleration provides high levels of security without sacrificing application performance
- Optimized to accelerate Oracle database, business applications, and middleware software with extreme performance, mission-critical reliability and scale

failure.

All Oracle servers ship with full-function server management tools at no additional cost. Oracle Integrated Lights Out Manager (Oracle ILOM) utilizes industry-standard protocols to provide secure and comprehensive local and remote management. Oracle ILOM features also include power management and monitoring, fault detection, and notification. The integrated Oracle System Assistant guides system administrators through rapid server deployment, firmware updates, hardware configuration, and operating system installation with Oracle certified hardware drivers.

The SPARC T5-4 server is part of Oracle's powerful and efficient SPARC-based server family. Based on processors, which all share the same core, the SPARC-based server family provides seamless scalability from 1 to 32 processors and is designed with mission-critical applications in mind. All of the servers in the SPARC-based family run the Oracle Solaris operating system—the best UNIX system for Oracle deployments. They share the same virtualization capabilities through Oracle VM Server for SPARC and leverage the same systems management framework through Oracle Enterprise Manager Ops Center. This leads to unprecedented simplicity in the deployment of all enterprise workloads, enabling reduction of business risk, delivering savings in management costs, and unlocking flexibility to grow your business to any scale, while maximizing reliability and uptime.

Oracle Premier Support customers have access to My Oracle Support and multiserver management tools in Oracle Enterprise Manager Ops Center. Oracle Enterprise Manager Ops Center, a critical-to-disk system management tool, coordinates servers, storage, and networking for a complete cloud infrastructure as a service (IaaS). Oracle Enterprise Manager Ops Center also features an automated service request capability, whereby potential issues are detected and reported to Oracle's support center without user intervention, assuring the maximum service levels and simplified support.

## SPARC T5-4 Server Specifications

### ARCHITECTURE

#### Processor

- Sixteen-core 3.6 GHz SPARC T5 processor
- Up to 128 threads per processor for a maximum 512 threads per system
- Sixteen floating-point units per SPARC T5 processor
- Sixteen cryptography units per SPARC T5 processor
- On-chip Encryption Instruction Accelerators with direct nonprivileged support for 16 industry-standard cryptographic algorithms plus random number generation in each of the sixteen cores: AES, Camellia, CRC32c, DES, 3DES, DH, DSA, ECC, Kasumi, MD5, RSA, SHA-1, SHA-224, SHA-256, SHA-384, SHA-512

#### Cache Per Processor

Shared 8 MB, 8 banked, Level 3 Cache; 128 KB Level 2 unified cache per core

#### Main Memory

Two memory configurations supported with a two processor system:

- 512 GB (using 32x 16 GB 1,066 MHz DDR3 DIMMs)
- 1 TB (using 32x 32 GB 1,066 MHz DDR3 DIMMs)

Two memory configurations supported with a four processor system:

- 1 TB (using 64x 16 GB 1,066 MHz DDR3 DIMMs)
- 2 TB (using 64x 32 GB 1,066 MHz DDR3 DIMMs)

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### System Architecture

SPARC V9 architecture, ECC protected

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### STANDARD/INTEGRATED INTERFACES

- *Network: Four 10 GbE (100 Mbps/1 Gbps/10 Gbps) , full duplex only, auto-negotiating*
  - *Expansion bus: Sixteen low-profile PCIe 3.0 (x8 wired) slots accessed via a PCIe hot-plug carrier*
  - *Ports: Four external USB 3.0 ports (two front, two rear), one RJ45 serial management port, Console 10/100 network port, VGA port*
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### MASS STORAGE AND MEDIA

Internal disk	<ul style="list-style-type: none"> <li>• <i>Up to eight 300 GB or 600 GB 2.5 in. SAS drives or 100 GB, 300 GB or 400 GB SSD drives.</i></li> <li>• <i>Optional Sun Flash Accelerator F40 PCIe Card or F80 PCIe Card</i></li> </ul>
External storage	<p>Oracle offers a complete line of best-in-class, innovative storage, hardware, and software solutions, along with renowned world-class service and support. For more information, please refer to <a href="http://oracle.com/storage">oracle.com/storage</a>.</p>

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### POWER SUPPLIES

- *Two hot-swappable AC 3,000 W redundant (1 + 1) power supplies*
  - *Voltage 200 to 240 VAC, frequency 50/60 Hz*
  - *Maximum operating input current at 200-240 V AC: 16 A (16 A per cord) (Actual amperage draw may exceed rating by no more than 10%)*
  - *Maximum operating input power at 200-240 V AC: 3,000 W (Actual power draw may exceed rating by no more than 10%)*
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### KEY RAS FEATURES

- *Hot-pluggable disk drives*
  - *Hot-pluggable PCIe cards*
  - *Redundant, hot-swappable power supplies and fans*
  - *Environmental monitoring*
  - *Extended ECC, error correction, and parity checking memory*
  - *Easy component replacement*
  - *Integrated dual disk controllers with RAID 0, 1, and 1E/10*
  - *Electronic prognostics*
  - *Fault Management Architecture including Predictive Self Healing, a feature of Oracle Solaris*
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### SOFTWARE

#### Operating System

Oracle recommends Oracle Solaris 11 for enhanced performance and functionality

- *Oracle Solaris 11.1 and Oracle Solaris 10 1/13 plus patches*
  - *Control domain: Oracle Solaris 11.1, Oracle Solaris 10 1/13 plus patches*
  - *Guest domain:*
  - *Oracle Solaris 11.1*
  - *Oracle Solaris 10 1/13 \**
  - *Oracle Solaris 10 8/11 \**
  - *Oracle Solaris 10 9/10 \**
  - *\* Plus required patches*
  - *Applications certified only for Oracle Solaris 8 or Oracle Solaris 9 may be installed in an Oracle Solaris legacy zone in a Oracle Solaris 10 1/13 guest domain*
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#### Software Included

- *Oracle Solaris 11.1 which includes Oracle VM Server for SPARC 3.0*

Oracle Solaris ZFS (default file system)

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#### Virtualization

Built-in, no-cost Oracle VM Server for SPARC and Oracle Solaris Zones provide the flexibility and power of 128 virtual systems in a single SPARC T5-4 server

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**ENVIRONMENTALS**

Operating temperature	<ul style="list-style-type: none"> <li>5° C to 35° C (41° F to 95° F)</li> <li>Decrease in maximum temperature: above 900 m (2,952 ft.) 1° C/300 m (1.8° F/984 ft.)</li> </ul>
Nonoperating temperature	<ul style="list-style-type: none"> <li>-40° C to 65° C (-40° F to 149° F)</li> </ul>
Operating relative humidity	<ul style="list-style-type: none"> <li>10% to 90% relative humidity, noncondensing, 27° C (81° F) wet bulb</li> </ul>
Nonoperating relative humidity	<ul style="list-style-type: none"> <li>93% relative humidity, noncondensing, 38° C (100° F) wet bulb</li> </ul>
Operating altitude	<ul style="list-style-type: none"> <li>0 m to 3,000 m (0 ft. to 9,840 ft.) except in China markets where regulations may limit installations to a maximum altitude of 2,000 m</li> </ul>
Nonoperating altitude	<ul style="list-style-type: none"> <li>0 m to 12,000 m (0 ft. to 39,370 ft.)</li> </ul>

**Acoustic noise**

Description	Min. Fan Speed	Max. Fan Speed
Sound Power Level - LwAd (1 B = 10 dB)	7.8 B	9.4 B
Sound Pressure Level - LpAm (energy average of 4 bystander positions)	61.8 dBA	79.7 dBA

**Cooling**

10,717 BTU/hr / 387 cfm max

**REGULATIONS (MEETS OR EXCEEDS THE FOLLOWING REQUIREMENTS)**

- **Safety:** UL/CSA 60950-1 (2<sup>nd</sup> Ed), EN 60950-1(2<sup>nd</sup> Ed), IEC 60950-1(2<sup>nd</sup> Ed) CB Scheme with all country deviations, CNS 14336-1
- **EM/EMC:** EN 55022 Class A, 47 CFR 15B Class A, ICES-003 Class A, VCCI Class A, CISPR22 Class A, CNS 13438 Class A, KN22 Class A, EN 61000-3-2, EN 61000-3-3
- **Immunity:** EN 55024 and KN24
- **Regulatory markings:** CE, FCC, ICES-003, C-Tick, VCCI, GOST-R, BSMI, KC, cULus, S-Mark
- **European Union directives:** Restriction of Hazardous Substances (RoHS) Directive 2011/65/EU

**DIMENSIONS AND WEIGHT**

- Height: 215 mm (8.5 in.); 5U
- Width: 445 mm (17.5 in.)
- Depth: 800 mm (31.5 in.)
- Weight: Approx. 75.4 kg (166 lbs.), without rackmount kit for four processor system

**CONTACT US**

For more information about SPARC T5-4 Server, visit [oracle.com](http://oracle.com) or call +1.800.ORACLE1 to speak to an Oracle representative.

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**Integrated Cloud Applications & Platform Services**

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