

# SPARC T5-8 Server

## ORACLE<sup>®</sup> SPARC SERVERS



### KEY FEATURES

- Uses the extremely fast SPARC T5 microprocessor to deliver outstanding performance for a wide range of enterprise applications
- Available with either four or eight SPARC T5 processors thereby allowing future upgrades for the four processor system
- Near linear scalability for up to eight sockets to accelerate critical business workloads
- 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 enhanced performance and functionality. Can also run Oracle Solaris 10, 9 and 8, with guaranteed

Enterprises today need the computing power to run business-critical applications, to exploit Big Data to maximum advantage, to use analytics to discover growth and opportunities, and turn social streams into market intelligence. Optimized to accelerate enterprise applications, this high-end server delivers outstanding performance and virtualization capabilities in a compact design. It offers great value and flexibility to grow your business to any scale while maximizing reliability and uptime

### Product Overview

The SPARC T5-8 server is an 8U rack system offering extremely high performance, scalability, and RAS features. In combination with Oracle Solaris, this high-end server accelerates a broad range of Oracle and non-Oracle applications including database and middleware software. Oracle's unique advantage of engineering the hardware and software to work together delivers best-in-class products that are optimized to solve unique business challenges with world-record performance, unmatched value and investment protection

Utilizing modular design architecture, the SPARC T5-8 server is powered by either four or eight SPARC T5 CPUs delivering exceptional multi-thread and single-thread performance. SPARC T5 CPUs are directly connected to each other in order to provide extremely low latency and increased application acceleration. With 16 cores and 16 memory slots per SPARC T5 processor, the SPARC T5-8 server provides extremely high compute density with up to 128 cores and 4 TB of system memory, all within a simple and compact rack enclosure. 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.

The SPARC T5-8 server offers massive I/O, making it an ideal platform for virtualization and other I/O-intensive applications. Up to 16 hot-plug low-profile PCIe 3.0 slots provide I/O flexibility and choice in network connections, such as Fibre Channel, InfiniBand, or Ethernet. This extensibility virtually eliminates downtime typically needed to perform I/O upgrades and maintenance. Four integrated 10 Gigabit Ethernet ports provide additional I/O bandwidth.

The SPARC T5-8 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

binary compatibility and support for legacy applications

- Designed for extremely high levels of mainframe-class 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

contribute to increased uptime and ease of system serviceability in the case of hardware 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, 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 T5-8 server is part of Oracle's powerful and efficient SPARC-based server family. Based on processors, which share the same core, the SPARC-based server family provides seamless scalability from 1 up 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's 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 T5-8 Server Specifications

### ARCHITECTURE

#### Processor

- Sixteen-core 3.6 GHz SPARC T5 processor
- Up to 128 threads per processor for a maximum 1,024 threads per system
- Sixteen floating-point units
- Sixteen cryptography units per SPARC T5 processor
- On-chip Encryption Instruction Accelerators with direct non-privileged 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 the 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)

Two memory configurations supported with the eight processor system:

- 2 TB (using 128x 16 GB 1,066 MHz DDR3 DIMMs)

- 4 TB (using 128x 32 GB 1,066 MHz DDR3 DIMMs)

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#### System Architecture

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SPARC V9 architecture, ECC protected

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#### STANDARD/INTEGRATION INTERFACES

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- 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

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Internal disk	<ul style="list-style-type: none"> <li>• Up to eight 300 GB or 600 GB 2.5 in. SAS drives or 100 GB, 300 GB or 400 GB SSD drives.</li> <li>• Optional Sun Flash Accelerator F40 PCIe Card or F80 PCIe Card</li> </ul>
External storage	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> .

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#### POWER SUPPLIES

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- Four hot-swappable AC 3,000 W redundant (2 + 2) power supplies
  - Voltage 200 to 240 VAC, frequency 50/60 Hz
  - Maximum operating input current at 200-240 V AC: 30 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: 6000 W (Actual power draw may exceed rating by no more than 10%)
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#### KEY RAS FEATURES

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- Hot-plug disk drives
  - Hot-plug 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

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##### Operating System

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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

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- Oracle Solaris 11.1 which includes Oracle VM Server for SPARC 3.0
  - Oracle Solaris ZFS (default file system)
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##### Virtualization

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- 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 T5-8 server

#### ENVIRONMENT

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)	8.2 B	10 B
Sound Pressure Level - LpAm (energy average of 4 bystander positions)	65.7 dBA	83.2 dBA

#### Cooling

22,185 BTU/hr / 730 cfm max

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

- **Safety:** UL/CSA 60950-1 (2nd Ed), EN 60950-1(2nd Ed), IEC 60950-1(2nd Ed) CB Scheme with all country deviations, CNS 14336-1
- **EMI/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: 350 mm (13.8 in); 8U
- Width: 445 mm (17.5 in.)
- Depth: 800 mm (31.5 in.)
- Weight: Approx. 118.6 kg (261.5 lbs.), without rackmount kit for the eight processor system



#### CONTACT US

For more information about SPARC T5-8 Server, visit [oracle.com](http://oracle.com) or call +1.800.ORACLE1 to speak to an Oracle representative.

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