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SPARC SERVERS

SPARC T5-1B SERVER MODULE

Paired together, Oracle's SPARC T5-1B and Oracle's Sun Blade 6000 chassis are a system designed for efficiency and high reliability. The SPARC T5-1B server module takes advantage of the Sun Blade 6000 chassis' flexible, modular network infrastructure to be a data-intensive and enterprise-workload powerhouse that produces the highest levels of performance, reliability, scalability, and security.

The best keeps getting better as the SPARC T5 processor beats the record-setting single-thread performance of its predecessor, the SPARC T4 processor. Add in a doubling of compute cores, and the SPARC T5 delivers a whopping 2.3x increase in throughput performance.

KEY FEATURES

- 16 cores per processor deliver a remarkable 2.3x the system throughput over the previous generation

- 1.2x single-thread performance increase and double the L3 cache accelerates application performance and improves scalability

- SPARC T5-1B server module has twice as many compute cores as the previous generation (8 to 16), providing double the threads (64 to 128)

- The ability to pack up to 10 SPARC T5-1B blades in a network-integrated, highly efficient Sun Blade 6000 infrastructure

- Oracle VM Server for SPARC and Oracle Solaris Zones are the built-in, no-cost virtualization technologies that come with every SPARC T5-1B server

- Runs Oracle Solaris 11, recommended by Oracle for enhanced performance and functionality. Can also run Oracle Solaris 10, 9 and 8, with guaranteed binary compatibility and support for legacy applications

- Integrated on-chip cryptographic acceleration provides high levels of security without sacrificing application performance

- Onboard 10 Gigabit Ethernet (GbE) for secure computing and high-speed networking

KEY BENEFITS

- Deploy enterprise workloads more quickly and easily

- Reduce business risk

- Grow at your pace, while maximizing reliability and uptime

Product Overview

As the single-socket entry in the SPARC T5 processor server space, the SPARC T5-1B server module comes equipped with the new SPARC T5 3.6 GHz processor and is packed with 16 DIMM slots supporting up to 512 GB DDR3 memory.

The performance profile of the SPARC T5 processor increases single-threaded performance over the previous generation SPARC T4 processors. This enables implementation of the SPARC T5-1B server modules end to end in the data center from back-end database to front-end Oracle applications. Utilizing its high single-thread and multithread performance, the SPARC T5 processors are targeted for a wide range of enterprise data center applications.

The core count increase (from 8 to 16) results in more than doubled throughput performance. A faster processor speed of 3.6 GHz—compared to the SPARC T4-1B's 2.85 GHz— results in an increased single-threaded performance and an improved throughput performance. This makes the SPARC T5 processor –based servers world-class database systems and excellent compute building blocks. The SPARC T5-1B server modules are ideal platforms for consolidation and virtualization—and that includes SPARC legacy platforms.

In addition to one SPARC T5 processor and 16 DIMM slots, the SPARC T5-1B server module features two drive slots for hot-pluggable 2.5 inch drives. The SPARC T5-1B blade is both compact and powerful and has built-in PCI Express expansion resulting in the power required to drive computing requirements for database, middleware, and Web-based applications.

The SPARC T5-1B server module, Oracle Solaris, and Oracle VM Server for SPARC are optimized for the enterprise for demanding workloads. The SPARC T5-1B server comes ready with Oracle Solaris Zones and Oracle VM technology, for faster and more reliable consolidation and virtualization in your IT infrastructure at no extra cost.

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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 also includes 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 T5-1B server module is part of Oracle's most powerful and efficient SPARC-based server family ever. Based on SPARC T5, SPARC T4, and SPARC M5 processors—which all share the same processor 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.

Sun Blade 6000 Chassis Modular Architecture—Optimized Efficiency

The SPARC T5-1B server installs in the highly efficient Sun Blade 6000 chassis, supporting up to 10 full-featured, top-performance Oracle blade server modules and PCIe expansion in a compact 10U chassis, with I/O throughput up to 258 Gb/sec. each. The Sun Blade 6000 chassis provides up to 6.4 terabit-per-second headroom for future CPU and I/O architectures.

Designed for high reliability and efficiency, the Sun Blade 6000 chassis provides a flexible, modular network infrastructure. With the Sun Blade 6000 chassis and SPARC T5-1B blade server, customers are able to greatly reduce their time to revenue and virtually eliminate downtime for I/O upgrades.

SPARC T5-1B Server Module Specifications

Key Applications
• End to end in the data center from back-end database to front-end Oracle applications
• With both single-thread and multithread performance, the SPARC T5 processors are targeted for a wide range of enterprise data center applications
• Workload segments include database, application servers, and ERP applications
Architecture
Processor
• Sixteen-core 3.6 GHz SPARC T5 processor with 128 threads per system
• Sixteen floating-point units
• Sixteen cryptography units
• On-chip Encryption Instruction Accelerators with direct nonprivileged support for 16 industry-standard cryptographic algorithms plus random number generation in each of the eight cores: AES, Camellia, CRC32c, DES, 3DES, DH, DSA, ECC, Kasumi, MD5,

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RSA, SHA-1, SHA-224, SHA-256, SHA-384, SHA-512

Cache

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

Main Memory

Three memory configurations supported:

- 128 GB (using 16x 8 GB 1,066 MHz DDR3 DIMMs)
- 256 GB (using 16x 16 GB 1,066 MHz DDR3 DIMMs)
- 512 GB (using 16x 32 GB 1,066 MHz DDR3 DIMMs)

System Architecture

- SPARC V9 architecture, ECC protected

Storage

- Internal Storage: Up to two internal 300 GB or 600 GB 10,000 rpm SAS disk drives, or 100 GB SATA solid state drives
- 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: oracle.com/storage
- The controller is capable of supporting integrated RAID levels 0, 1

Standard/Integration Interfaces

Network

- Two 10/100/1000 Base-T Ethernet ports using the Intel Ethernet Controller I350
- One dedicated 10/100 Base-T Ethernet port for the management network, which can be optionally shared with the main network ports if desired

I/O

- Four x8 PCIe busses: Two dedicated to NEMs, two dedicated to EMs
- Two 10/100/1000 GbE interfaces, one per NEM
- 10/100 Ethernet management port to chassis monitoring module (CMM)
- Cards that are categorized as PCIe 3.0 are supported in the SPARC T5-1B server, and will run at PCIe 2.0 speeds.

Front Panel I/O Exposed Via Dongle Cable

- One RJ-45 serial console to server module Oracle ILOM
- Three USB 2.0 ports (two external via dongle and one internal accepting USB drive)
- One VGA port

Software

Operating Systems

Oracle recommends Oracle Solaris 11 for enhanced performance and functionality

- Oracle Solaris 11.1 and Oracle Solaris 10 1/3 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)
Virtualization
• Built-in, no-cost Oracle VM Server for SPARC and Oracle Solaris Zones provide the flexibility and power of up to 128 virtual systems in a single SPART T5-1B server module

Networking

ONC, ONC+, NFS, WebNFS, TCP/IP, SunLink, OSI, MHS, IPX/SPX, SMB technologies, and XML

Management

Oracle Integrated Lights Out Manager (Oracle ILOM) is the service processor embedded on all Oracle's SPARC T-Series servers. Oracle ILOM enables full out-of-band management, providing a "just like being there" remote management capability.

Oracle ILOM service processors provide the following features:

- Accessible from the host operating system
- Remote keyboard, video, mouse and storage (RKVMS)
- Rich standards support:
- WS-MAN
- IPv6
- SSH 2.0
- LDAP, Microsoft Active Directory, and Radius Support
- Email/SMTP alerts, fully configurable remote syslog
- System serial console redirection via serial port and LAN
- Integration with automatic service request (ASR) for qualified products to automatically initiate service when specific hardware faults occur

Dimensions and Weight

- Height: 327.2 mm (12.9 in.)
- Width: 44.5 mm (1.8 in.)
- Depth: 511.7 mm (20.1 in.)
- Weight: 7.7 kg (17.0 lb.) fully configured

Power and Cooling

Sun Blade 6000 chassis power and cooling calculator:

http://www.oracle.com/us/products/servers-storage/sun-power-calculators/calc/6000chassis-power-calculator.html

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Warranty

The SPARC T5-1B server module comes with a one-year warranty. Visit oracle.com/us/support/policies/ for more information about Oracle's hardware warranty.

Complete Support

With Oracle Premier Support, you'll get the services you need to maximize the return on your Oracle SPARC investment—our complete system support includes 24/7 hardware service, expert technical support, proactive tools, and updates to Oracle Solaris, Oracle VM, and integrated software (such as firmware)—all for a single price. Learn more at oracle.com/support.

Contact Us

For more information about Oracle's SPARC T5-1B server module, visit oracle.com or call +1.800.ORACLE1 to speak to an Oracle representative.

Hardware and Software, Engineered to Work Together

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