

NETRA SPARC T5-1B SERVER MODULE

KEY FEATURES AND BENEFITS

- Extreme scalability and density with carrier grade availability
- Designed for mission critical applications in telecommunications, military, and emergency services deployments
- The ability to populate up to 10 blades in the carrier grade Netra Sun Blade 6000 System
- 16 cores per processor delivering a remarkable 2.5x the system throughput over previous generation
- 1.2x single-thread performance increase and double the L3 cache accelerates application performance and improves scalability
- SPARC T5-1B has twice as many compute cores as the previous generation (8 to 16) meaning double the threads (64 to 128)
- NEBS™ Level 3 certified for reliable operation under severe environmental conditions.
- Extended Netra Lifecycle
- Oracle VM Server for SPARC and Oracle Solaris Containers are the built-in, no-cost virtualization technology that comes with every SPARC T5-1B
- Runs Oracle Solaris 11 and 10 with guaranteed binary compatibility and support for legacy applications
- Integrated on-chip cryptographic acceleration provides high levels of security without sacrificing application performance.



Paired together, Oracle's Netra SPARC T5-1B and Oracle's Sun Netra 6000 chassis is a system designed for efficiency and high reliability. The Netra T5-1B takes

advantage of the Sun Netra 6000's flexible, modular network infrastructure making it a data-intensive and enterprise workload powerhouse producing the highest levels of performance, reliability, scalability and security.

The best gets better as the SPARC T5 beats the record-setting single-thread performance of its predecessor, the SPARC T4. With double the compute cores the SPARC T5 delivers a dramatic 2.5x increase in throughput performance.

Product Overview

The carrier grade Netra SPARC T5-1B server is part of Oracle's most powerful and efficient SPARC-based server family ever, and is designed with mission critical applications for telecommunications, military, and public sector in mind. The Netra T5-1B server module runs the Oracle Solaris operating system - the best UNIX system for Oracle deployments, provides virtualization capabilities through Oracle VM Server for SPARC, and offers systems management through Oracle Enterprise Manager and Ops Center. The single-socket Netra SPARC T5-1B Server Module comes equipped with the new SPARC T5 3.6GHz processor and is packed with 16 DIMM slots supporting up to 256GB DDR3 memory.

The SPARC T5 processor's increased single-threaded performance over previous generation systems enables deployment of Netra SPARC T5-1B systems end-to-end in the data center from back-end database to front-end Oracle applications. Utilizing its high single-thread and multi-thread performance, SPARC T5 systems can support a wide range of enterprise data center applications.

The increased core count (from 8 to 16) more than doubles the throughput performance while the faster processor speed delivers increased single-threaded performance, making Netra T5-1B systems world-class database servers and excellent compute building blocks for consolidation and virtualization. In addition to a single SPARC T5 processor and 16 DIMM slots, the Netra SPARC T5-1B features two drive slots for hot-pluggable 2.5 inch drives. The Netra SPARC T5-1B blade is both compact and powerful and has integrated GbE networking and built-in PCI Express expansion resulting in the power required to drive computing requirements for database, middleware, and web based applications.

The Netra SPARC T5-1B running the Oracle Solaris operating system and Oracle VM Server for SPARC is optimized for demanding telecommunications and enterprise workloads. The Netra SPARC T5-1B comes ready with Oracle Solaris Zones and Oracle VM virtualization technologies built in at no extra cost, for a faster and more-reliable IT infrastructure. Netra SPARC T5-1 server modules are also NEBS TM Level 3 certified for reliable operation under challenging environmental conditions.

All Oracle servers ship with full function server management tools included. 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.

Oracle's Premier Support customers have access to My Oracle Support and multi-server management tools in Oracle Enterprise Manager Ops Center, a critical-to-disk system management tool, which 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, which detects and reports potential issues to Oracle's support center without user intervention, assuring the maximum service levels and simplified support.

Sun Netra 6000 Modular System Architecture – Optimized Efficiency

The Netra SPARC T5-1B installs in the highly-efficient Sun Netra 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. The Sun Netra 6000 [modular system](#) provides up to 6.4 terabit-per-second headroom for future CPU and I/O architectures.

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

Netra SPARC T5-1B Specifications

| Key Applications |
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| <ul style="list-style-type: none"> • Services and core network infrastructure for telecommunications applications • End-to-end in the data center from back-end database to front-end Oracle applications • With both single-thread and multi-thread performance, the SPARC T5 systems are targeted for a wide range of enterprise and telco data center applications • Workload segments include database, application servers, and OSS/BSS |
| Architecture |
| <p>Processor</p> <ul style="list-style-type: none"> • Sixteen-core 3.6GHz SPARC T5 processor with 128 threads per system • Sixteen floating-point units • Sixteen cryptography units • On-chip Encryption Instruction Accelerators with direct non-privileged 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, RSA, SHA-1, SHA-224, SHA-256, SHA-384, SHA-512 <p>Cache</p> <ul style="list-style-type: none"> • Shared 8 MB, 8 banked, Level 3 Cache; 128 KB Level 2 unified cache per core |

Main Memory

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

System Architecture

- SPARC V9 architecture, ECC protected

Storage

- Internal Storage: up to two internal 300GB or 600GB 10,000 rpm SAS disk 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
- Four 3.0Gb/sec SAS interfaces, two per NEM
- 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 qualified to run with the T5-1B, however due to midplane restrictions, will only run at 2.0 speeds. Between switch and CPU, the Blade runs at PCIe 3.0. However, due to the midplane connector capabilities, from switch to the EM/NEM the speed is limited to PCIe 2.0.

Front Panel I/O Exposed via dongle cable:

- One RJ-45 serial console to server module ILOM
- Three USB 2.0 ports (2 external via dongle and 1 internal accepting USB drive)
- One VGA port

Software**Operating Systems**

- Preinstalled: Oracle Solaris 11.1 plus SRU3.5.1
- Supported options as control domain: Solaris 10 1/13, Solaris 10 9/10 plus Solaris 10 1/13 SPARC Bundle, or Solaris 10 8/11 plus Solaris 10 1/13 SPARC Bundle
- Minimum version of Solaris supported as a guest domain: Solaris 10 1/3

Software Included

- Oracle Solaris 11.1 plus SRU3.5.1 which includes Oracle VM Server 3.1 for SPARC and Oracle Electronic Prognosis
- 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 SPARC 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 (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/SNMP 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 Netra 6000 chassis power and cooling calculator:

<http://www.oracle.com/us/products/servers-storage/sun-power-calculators/calc/netra-6000-power-calculator-519736.html>

Warranty

The Netra SPARC T5-1B 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 server 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 Netra SPARC T5-1B, visit oracle.com or call +1.800.ORACLE1 to speak to an Oracle representative.



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Hardware and Software, Engineered to Work Together