SUN SERVER X4-8

Oracle's Sun Server X4-8 achieves leading performance, outstanding scalability, and unmatched reliability, availability, and serviceability. It's the most powerful, expandable system of Oracle's x86 servers, ideal for very large memory-optimized databases, scale-up applications, and enterprise workloads requiring extreme I/O bandwidth, memory and core count. It packs 50 percent more cores and memory slots, while increasing I/O bandwidth. Oracle's unique industry-leading 5U form factor supports 60 percent higher rack-level core and memory slot density than competitors.

Product Overview

Using a modular system design, the Sun Server X4-8 is powered by four or eight CPU modules, each containing one Intel® Xeon® Processor E7-8895 v2 and 24 memory slots. With 15 cores per socket, this server delivers extreme compute density in a compact 5U enclosure. When compared with the previous-generation server, this system increases memory capacity by 50 percent, to 6 TB, and it increases memory bandwidth by 25 percent and doubles internal storage to 9.6 TB. With more than a 50 percent increase in processing power and a 350 percent increase in I/O bandwidth versus the previous generation, the Sun Server X4-8 provides the highest level of scale-up throughput computing, making it the densest and fastest performing server in its class.

Further, the Sun Server X4-8 introduces a new flexible processor, the Intel Xeon Processor E7-8895 v2, which allows a server to be reconfigured and repurposed remotely for varying workloads, without any change to the physical configuration of the server. The Intel Xeon Processor E7-8895 v2, combined with Oracle innovations in the system BIOS and operating system kernel software, enable a unique elastic feature that allows this processor to run up to 400 MHz faster than the standard Intel Xeon Processor E7-8890 v2. This flexible processor technology simplifies infrastructure requirements and enables greater server reuse. The ability to change the characteristics of the server for varying workloads, by time of day, offers tremendous flexibility.

With Oracle's optimized memory implementation, the Sun Server X4-8 runs faster and consumes less power than competitive eight-socket servers. These DIMMs achieve 1,333 MHz at one, two, and three DIMMs per channel, all with low-voltage DIMMs.

With up to 396 GB/sec worth of I/O bandwidth, the Sun Server X4-8 is an ideal platform for I/O-intensive enterprise applications. The system consists of 16 industry-standard, low-profile PCIe Gen 3 slots providing I/O flexibility and a wide range of connectivity choices, such as Fibre Channel, InfiniBand, or Ethernet. This innovative system design enables hot-pluggable functionality, implemented through the use of up to eight dual PCIe card carriers (DPCC) that

each contains up to two PCIe Gen 3 cards. This feature helps to eliminate downtime typically needed to perform I/O upgrades and maintenance.

The Sun Server X4-8 offers two flash integration options for application and database acceleration: Oracle's Sun Flash Accelerator F80 PCIe Card and solid state drives (SSDs). These flash options deliver up to 1,000,000 IOPS, turbo-charging applications while eliminating bottlenecks.

The Sun Server X4-8 includes RAS features that increase overall server uptime. Real-time monitoring of the health of the CPU, memory, and I/O subsystems, coupled with off-lining capability of failed components, increases the system availability. The modular system design enables hot-swappable components such as I/O, disk drives with RAID-enabled redundancy, and redundant and hot-swappable fans and power supplies to be serviced from the front or rear of the system. There is no need for top access to any of the system subassemblies. Exhaustive system diagnostics and hardware-assisted error reporting and logging enable identification of failed components for ease of service.

With an advanced cooling system unique to Oracle, the Sun Server X4-8 achieves system efficiencies that result in power savings and maximum uptime. Oracle Advanced Cooling System utilizes remote temperature sensors for fan speed control, minimizing power consumption while keeping optimal temperatures inside the server. These remote temperature sensors have been designed into key areas of this server to ensure appropriate fan usage in zones that include power supply units, PCIe slots, Ethernet ports, exiting air, entering air, and thermal diodes. This feature helps reduce energy consumption in a way that other servers cannot.

The blade-like modular design of the Sun Server X4-8 helps you save time and money. This system design is forward compatible with future generation processors, eliminating the need for forklift upgrades. It provides flexibility for data center growth while minimizing the costs associated with data center refreshes.

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 capabilities 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 hardware drivers certified by Oracle.

Oracle Premier Support customers have access to My Oracle Support and multi-server management tools in Oracle Enterprise Manager Ops Center. Oracle Enterprise Manager Ops Center, a critical component of Oracle's application-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.

Oracle's x86 systems are the best enterprise x86 platforms for running Oracle software. They provide optimal performance and reliability based on an integrated and fully supported Oracle stack, as well as everything you need for a cloud deployment. Every x86 system from Oracle comes complete with virtualization, choice of operating systems, cloud provisioning, and Oracle's unique application-to-disk management environment—all at no extra charge. Oracle's x86 systems also serve as a key building block for Oracle's engineered systems, such as Oracle Exadata, which have achieved a 10x performance gain through integration and optimization.

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The Upgrade Advantage Program (UAP) is a trade-in program that offers up-front discounts on new Oracle systems for the trade-in of older, eligible systems from Oracle and competitors. Oracle also provides free return shipping and free state-of-the-art recycling of the old system so you needn't worry about the disposal of hazardous waste.

Sun Server X4-8 Specifications

CPU Module Architecture
CPU Module—Processors
• Four or eight CPU modules, each with one Intel® Xeon® Processor E7-8895 v2 product family CPU • Up to 15 cores per processor
CPU Module—Memory
• Up to 192 DIMMs (24 per CPU module) • 16 GB DDR3-1600 GHz ECC registered DIMMs or 32 GB DDR3-1,600 GHz load-reduced ECC DIMMs (LRDIMM) • 6 TB maximum memory capacity
Interfaces
Standard I/O
• Two 1 GbE network ports via RJ-45 connectors • VGA: one VGA 1,280 x1,024x8 MB @ 60 Hz graphics controller port • USB: four USB ports (two external, two internal) • Serial: one serial management RS232 RJ-45 port
Internal Storage
• Eight 2.5-inch hot swappable SAS-2 hard disk drives (HDDs) or eight 2.5-inch eMLC SATA-3 solid state drives (SSDs) for up to 9.6 TB of internal storage
I/O Expansion
• Sixteen PCIe Gen 3 slots (8x8 slots, 8x16 slots), hot swappable via DPCC
Systems Management
Interfaces
• VGA 2D graphics controller embedded, which support resolutions up to 1,600x1,200x16 bits @ 60 Hz (1,024x768 when viewed remotely via Oracle ILOM remote keyboard, video, mouse, and storage [RKVMS]) • Dedicated 10/100/1GbE network management port via RJ-45 connector • In-band, out-of-band, and side-band network management access • RJ-45 serial management port
Service Processor
Oracle Integrated Lights Out Manager provides: • Remote keyboard, video, mouse and storage • Full remote management through command-line, IPMI, and browser interfaces • Remote media capability (DVD, CD, ISO image) • Advanced power management and monitoring • Active Directory, LDAP, RADIUS support • Dual Oracle ILOM flash • Signed Oracle ILOM • Direct virtual media redirection

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Installation
• Oracle System Assistant provides: • Task-driven hardware updating and configuration   • OS installation   • Simple download of latest Oracle firmware, drivers, tools, and documentation   • Cross-OS command-line tools for RAID, BIOS, and Oracle ILOM configuration   • Cross-OS firmware updating tool

Monitoring
• Comprehensive fault detection and notification   • In-band, out-of-band, and side-band SNMP monitoring V1, V2c, V3   • Syslog and SMTP alerts, WS-MAN   • Automatically create a service request for key hardware faults with Oracle's automated service request (ASR)

Oracle Enterprise Manager Ops Center
• Deployment and provisioning of server bare metal   • Cloud and virtualization management   • Inventory control and patch management   • OS observability for performance monitoring and tuning   • Automated service request generation   • Connects to Oracle Enterprise Manager Cloud Control application management   • Enables control of native Oracle Solaris, Oracle Linux, Red Hat Linux, SUSE Linux, and Microsoft Windows when running in virtual machines

Software

Operating Systems
• Oracle Solaris (preinstall option)   • Oracle Linux (preinstall option)   • Oracle VM (preinstall option)   • Red Hat Enterprise Linux   • SUSE Linux Enterprise Server   • Microsoft Windows Server   • VMware   For more information on software go to: https://wikis.oracle.com/display/SystemsComm/Home#tab:x86-Systems-Options-and-Downloads

Virtualization
• Oracle VM (preinstall option)   • VMware

Environment

• Operating temperature: 5° C to 35° C (41° F to 95° F)   • Nonoperating temperature: -40 º C to 70 º C (-40 º F to 158 º F)   • Operating relative humidity: 10%–90%, noncondensing   • Acoustic noise: 7.7 B operating, 6.8 B idling–(LwAd: 1 B=10 dB)

Power

• Rated line voltage: 200–240 VAC (50/60 Hz)   • Rated input current: 23 A (12 A max per cord)   • Four hot-swappable front accessible power supplies with N+N redundancy

The Sun Server X4-8 system offers leading reliability with unmatched x86 RAS features, making it the most powerful of Oracle's x86 servers.

RELATED PRODUCTS
• Sun Server X4-4

RELATED SERVICES
The following services are available from Oracle support services:
• Support
• Installation
• Eco-optimization services

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- [Power Calculator](#)

Regulations

- Safety: UL/CSA 60950-1, EN 60950-1, IEC 60950- 1 (CB Scheme with all country differences), North America (NRTL), European Union (EU), International CB Scheme, 2006/95/EC (73/23/EEC) Low Voltage Directive
- EMC: EN 55022, CNS-13438 Class A (Taiwan), FCC CFR 47 CFR 15B Class A (Code of Federal Regulations, Title 47, Part 15, Subpart B Class A (United States), ICES-003 (A) NMB-3 (A) Class A (Canada), ETSI EN300386 (V1.6.1), VCCI: 2008 Class A (Japan), KN 22 RRL Public Notice 2009-9 (Dec 21, 2009)
- Immunity: EN55024 (Immunity), EN61000-3-2, EN61000-3-3
- Other: Restriction of Hazardous Substances (RoHS) Directive 2011/65/EU, Waste Electrical and Electronic Equipment (WEEE) Directive 2002/96/EC, Low Voltage Directive 2006/95/EC, and EMC Directive 2004/108/EC

Certifications

- Safety Marks: UL
- Regulatory Marks: CE, FCC, EAC, C-Tick, VCCI, BSMI, KCC, ICES-003 (A), NMB-3 (A), WEEE symbol, China RoHS symbol
- Other: Altitude:

  Operating altitude: 0 m to 3,000 m (0 ft to 9,840 ft) maximum ambient temperature is derated by one degree C per 300 m above 900 m, except in China where regulations may limit installations to a maximum altitude of 2,000 m.
- Nonoperating altitude: 0 m to 12,000 m (0 ft to 40,000 ft)

Dimensions and Weight

- Height: 219.25 mm (8.63 in.)
- Width: 445 mm (17.5 in.)
- Depth: 834 mm (32.8 in.)
- Weight: 99.79 kg (220 lbs.) maximum

Included Installation Kits

- Tool-less rack mounting slide rail kit

Warranty

The Sun Server X4-8 comes with a one-year warranty. For more information, visit http://www.oracle.com/goto/sun/warranty.

Support

Only Oracle offers a single point of accountability and complete, integrated support for the entire Oracle stack including 24/7 hardware service, expert technical support, proactive tools, and software updates. Visit oracle.com/sun/services for information on Oracle's service program offerings for Sun products.

Contact Us

For more information Oracle's Sun Server X4-8 system, visit http://www.oracle.com/goto/x4-8 oracle.com or call +1.800.786.0404 to speak to an Oracle representative.

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