Sun Server X4-2L
Frequently Asked Questions

Overview

Oracle’s Sun Server X4-2L system is the perfect integration of compute and storage in a single two-rack unit (2U) enclosure for clustered database and virtualized business applications. It is the industry’s unique and scalable enterprise-class, two-socket Sun x86 server. This compact server offers outstanding flexibility with three chassis options and the most internal storage capability. It also supports large flash storage configurations that accelerate I/O-intensive application performance, increase system reliability, and reduce power consumption.

Organizations today are faced with limited budgets, resources, and capacity. Global initiatives to go green increase the pressure to operate at the highest efficiencies. Clustered databases, virtualized workloads, and application and database server software help to address these limits by taking advantage of systems that have easy deployment, high performance, and continued expandability and efficiency. The Sun Server X4-2L fits ideally into this scenario, offering superior scalability in compute performance, memory capacity, network and I/O bandwidth, and featuring flash storage options for the acceleration of I/O-intensive applications. This server packs extensive expandability and ultimate storage flexibility into a 2U enclosure.

The new Sun Server X4-2L is based on the Intel Xeon processor E5-2600 v2 product family. Compared to the Sun Server X3-2L, it supports 50 percent more cores (up to 12 cores per processor) and achieves up to 35 percent performance gain.

The Sun Server X4-2L offers flexibility in three chassis configurations and offers superior scalability, up to 50.4 TB of disk storage or 10.4 TB of flash storage, and six PCIe 3.0 I/O expansion slots.

Oracle’s Sun x86 systems are the best x86 platforms for running Oracle software. They not only provide optimal performance and reliability based on an integrated and fully supported Oracle stack, but also they include everything needed for a cloud deployment. With the purchase of Oracle Premier Support, every Sun x86 system comes complete with virtualization, choice of operating systems, cloud provisioning, and Oracle’s unique application-to-disk system management environment—all at no extra charge. As a result, Sun x86 systems deliver up to 50 percent cost savings over three years when compared to similarly configured multivendor configurations. Sun x86 systems also serve as a key building block for Oracle engineered systems, such as Oracle Exadata, which also have achieved a 10x performance gain through integration and optimization.

Customer Benefits

The Sun Server X4-2L provides the following key customer benefits.

Superior Application and Database Performance

The Sun Server X4-2L can easily harness the required horsepower to run storage resource-intensive, clustered databases, made possible by flash storage options and two of the highest performing Intel Xeon processor E5-2600 v2 product family CPUs.

Flash storage options turbo charge the Sun Server X4-2L, resulting in accelerated application performance and greater reliability. Although processors have continuously increased in performance, the traditional disk drive, with its spinning components, has not kept up. To eliminate this I/O bottleneck, the Sun Server X4-2L features the new 400 GB, enterprise-grade multi-level cell (eMLC) Serial Advanced Technology Attachment (SATA-3) solid state drives (SSDs). These SSDs

1 Source: Edison Group, “The Oracle x86 Portfolio: Competitive Advantages in Total Cost of Ownership.” First publication July 2012.
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offer outstanding performance at 6.0 Gb/sec speed with the highest reliability, delivering more than 100 times the I/O performance compared to hard disk drives (HDDs). For I/O-intensive applications, SSDs provide faster application response times, greater reliability, and better power and cooling efficiencies than HDDs.

Abundant Storage

Similar to the previous-generation server, the new Sun Server X4-2L offers flexibility in storage options, eight or twenty-four 2.5-inch or twelve 3.5-inch front-accessible disk bays plus two additional rear-accessible 2.5-inch drive bays. This new server is able to support up to 50.4 TB disk capacities and up to 10.4 TB flash capacities in a 2U enclosure.

Energy Efficiencies

With an advanced cooling system unique to Oracle, the Sun Server X4-2L achieves system efficiencies which result in power savings and maximum uptime. Oracle Advanced System Cooling 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 which include power supply units, PCIe slots, Ethernet ports, exiting air, entering air, and thermal diodes. Oracle Advanced System Cooling helps reduce energy consumption in a way that other servers cannot.

The new high-capacity SSDs deliver more than 100 times the I/O performance, with the highest reliability, compared to HDDs, while consuming 80 percent less energy.

Best-in-Class Manageability

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 hardware drivers certified by Oracle.

The Sun Server X4-2L offers hot-swappable and redundant RAID-enabled disks, cooling fans, and power supply units. Combining these enterprise-class reliability, availability, and serviceability (RAS) capabilities with integrated and cloud-ready management tools, the Sun Server X4-2L is designed to maximize uptime, simplify system management, and reduce operational expenses.

Frequently Asked Questions

What is the Sun Server X4-2L?

The Sun Server X4-2L is a two-socket, 2U enterprise-class x86 rackmount server based on the Intel Xeon processor E5-2600 v2 product family.

How does the new Sun Server X4-2L compare with the Sun Server X3-2L?

Compared to the Sun Server X3-2L, Oracle’s Sun Server X4-2L offers 50 percent more cores (up to 12 cores per processor) and achieves up to 35 percent performance gain. It is based on the Intel Xeon Processor E5-2600 v2 product family and offers flexibility in three chassis configurations for improved scalability, more storage, and up to 512 GB memory at a full 1,600 MHz bandwidth, using new 32 GB load-reduced dual inline memory modules (DIMMs).

What kind of applications and workloads is the Sun Server X4-2L best suited to run?

With superior scalability in compute performance, memory capacity, I/O bandwidth, and expandability, as well as flexibility in storage configurations, the Sun Server X4-2L is...
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the ideal server for clustered databases, virtualized workloads, and application and database software.

What flash storage options are available on the Sun Server X4-2L?
The Sun Server X4-2L supports the new 400 GB, eMLC SATA-3 SSDs and Sun Flash Accelerator F80 PCIe Card with 800 GB, eMLC, with a total internal flash capacity up to 13.6 TB. These flash storage options turbo charge the server to run I/O-intensive applications more rapidly and efficiently while consuming up to 80 percent less power than traditional HDDs.

What memory and I/O expansion features are supported on the Sun Server X4-2L?
The Sun Server X4-2L has 16 DDR3 DIMM slots, four onboard 10GBase-T ports and six low-profile PCIe 3.0 slots.

For more information on supported PCIe cards, visit the Systems Wiki.

What disk cage options are supported on the Sun Server X4-2L?
The server comes in three disk cage options:

- Eight 2.5-inch SAS disk bays (HDDs or SSDs) plus DVD-R/W drive
- Twelve 3.5-inch SAS disk bays (HDDs or SSDs)
- Twenty-four 2.5-inch SAS disk bays (HDDs or SSDs)

For more information visit Oracle’s Systems Wiki.

What operating systems have been certified to run on the Sun Server X4-2L?
The Sun Server X4-2L is certified to run Oracle Linux, Oracle VM, Oracle Solaris, Red Hat Enterprise Linux, SUSE Linux Enterprise Server, VMware, and Microsoft Windows.

For a list of supported Operating System versions visit the Systems Wiki.

What software is preinstalled on the Sun Server X4-2L?
You have the option to request pre-installation of Oracle Solaris, Oracle Linux, or Oracle VM on the server in the factory.

What system management options are available for the Sun Server X4-2L?
The Sun Server X4-2L includes an embedded service processor, known as Oracle Integrated Lights Out Manager (Oracle ILOM). Oracle ILOM helps to simplify data center management, system configuration, and lifecycle management by providing a rich set of management interfaces for monitoring the health of the server and for remote management.

Each Sun Server X4-2L also includes another embedded tool called Oracle System Assistant (OSA), which assists with each step of configuring the server and provisioning the operating system. Using a graphic wizard, OSA checks for firmware and driver updates from Oracle, applies those updates, and then ensures that the operating system is installed correctly with the
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latest drivers. In addition, OSA can be used to configure RAID, BIOS settings, and Oracle ILOM settings.

The Oracle Hardware Management Pack is a set of command-line tools and agents that assist with automating server configuration through tools running on the host operating system. These tools provide a means for scripting RAID, BIOS, and Oracle ILOM configuration as well as updating all embedded firmware. In addition, the Oracle Hardware Management Pack provides agents that monitor the health of the storage subsystem and provide remote SNMP monitoring.

Finally, Oracle Enterprise Manager Ops Center is an enterprise tool that can discover and manage all Oracle servers. This tool provides complete lifecycle control of servers by configuring the server, installing the operating system, and configuring virtual machines.

For more information on Oracle Enterprise Manager Ops Center visit Oracle.com.

Can the server configuration options be customized?

The Sun Server X4-2L can be customized to the configuration you specify through the Oracle factory’s assemble-to-order (ATO) process.

Do we support single-processor configurations on this product?

Yes Sun Server X4-2L supports single processor configurations at general availability on September 12, 2013.

What are the limitations for the single processor configurations?

Due to the Intel Xeon E5-2600 v2 processor family architecture, the DIMMs and I/O connecting to CPU0 are not usable, resulting in the same limitation as with Sun Server X3-2L. Please see the detailed comparison of dual and single processor configurations below:

I/O cover kits are automatically added to all single processor configuration BOMs by the Configurator. These I/O cover kits are used to prevent customers from using non-functional Ethernet ports and PCIe slots as stated in the table above.

Can I upgrade from a single processor to a dual processor configuration later?

No we do not support upgrades from single to dual processor configurations.

What high-availability features are available in the Sun Server X4-2L?

This enterprise-class x86 server is designed with RAS in mind. It offers hot-swappable and redundant RAID-enabled disks, cooling fans, and power supply units. Combining these RAS capabilities with Oracle ILOM, the Sun Server X4-2L is designed to maximize uptime, simplify system management, and reduce administration costs.

<table>
<thead>
<tr>
<th>Supported Options</th>
<th>Sun Fire X4270 M2 Single-processor Configurations</th>
<th>Sun Server X3-2L and Sun Server X4-2L Single-processor Configurations</th>
<th>Sun Server X3-2L and Sun Server X4-2L Dual-processor Configurations</th>
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</thead>
<tbody>
<tr>
<td>No. of onboard Ethernet Ports</td>
<td>Four 1000 Base-T</td>
<td>Two 1000/10GBase-T (port 2 &amp; 3 disabled)</td>
<td>Four 1000/10GBase-T</td>
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<tr>
<td>No. of PCIe Slots</td>
<td>5</td>
<td>3 (slot 1, 2 &amp; 3 disabled)</td>
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<tr>
<td>Max. No. Processors</td>
<td>1</td>
<td>1</td>
<td>2</td>
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<tr>
<td>Min. No. DIMMs</td>
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<td>Max. No. DIMMs</td>
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Where can I find more information about the Sun Server X4-2L?
Contact an Oracle sales representative directly or call 1-800-Oracle1 or contact an Oracle authorized reseller.

For more information, visit:
Sun Server X4-2L

What are the power requirements for the Sun Server X4-2L?
The online power calculator provides an estimate on the idle and operating power level of the server.
Sun Server X4-2L Power Calculator

What is the automated service request support for Oracle Premier Support customers?
Automated service request is one of the features available in Oracle Enterprise Manager Ops Center, whereby potential issues are detected and reported to the Oracle support center without user intervention, ensuring maximum service levels and simplifying support. Oracle Enterprise Manager Ops Center is included at no extra charge for Oracle's x86 Oracle Premier Support customers.

What is included with Oracle Premier Support for x86 systems?
For more information, please see:
Oracle Premier Support for Systems

What is included with the Sun Server X4-2L base chassis package?
The 2U base chassis includes the motherboard, six low-profile PCIe 3.0 slots (one with 16 lanes and six with 8 lanes), Oracle ILOM service processor, Trusted Platform Module (TPM) version 1.2, four onboard 10GBase-T ports, six USB 2.0 ports (two front, two rear, and two internal; one can be preloaded for Oracle System Assistant), two 1,000 W platinum-rated power supplies with up to 91 percent efficiency, one tool-less slide rail kit, and one cable management arm.
The base chassis does not include the disk cages. These are configuration options and need to be ordered separately. DVD is included only with the eight 2.5-inch disk bays configuration.