Overview

Oracle’s Sun Server X4-2 system is the most versatile two-socket server for clustered computing and virtualization, packing the optimal balance of compute power, memory capacity, and I/O capability. It is an ideal server for a wide range of mission-critical business applications, such as middleware and enterprise business workloads in virtualized environments. Oracle’s x86 systems are designed and engineered to achieve the highest reliability for maximizing uptime.

Faced with ever-increasing computing needs and budget and power constraints, companies today want to set up infrastructures that offer optimal value, can be repurposed easily, and have reduced complexity. Data centers often standardize on a server that can run a wide range of business applications and can be managed easily. The versatility of Oracle’s Sun Server X4-2 makes it a perfect fit for this purpose, because it balances compute power, memory capacity, and I/O capability in a compact and energy-efficient 1U enclosure. This server is ideal for middleware workloads, enterprise business applications, system administration, and application development.

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

The Sun Server X4-2 offers the flexibility of two chassis configurations and offers superior scalability with up to eight hot-swappable disk bays, up to 9.6 TB of disk storage or 3.2 TB of flash storage, and four PCIe 3.0 expansion slots.

Oracle’s Sun x86 systems are the best x86 platforms for running Oracle software. They provide not only 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 system, 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’s engineered systems, such as Oracle Exadata, which have achieved a 10x performance gain through integration and optimization.

Customer Benefits

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

Perfect Balance of High Performance and Energy Efficiency

This server offers the flexibility of two chassis configurations and offers superior scalability. With up to 512 GB of memory capacity and faster memory access, the Sun Server X4-2 can easily meet the current and future demands of memory-intensive workloads. The four 10GBase-T ports onboard offer 10 times faster network connectivity than 1000Base-T interfaces at no extra cost, reducing network delays and drastically improving application response time.

With an advanced cooling system unique to Oracle, the Sun Server X4-2 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

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1 Source: Edison Group, “The Oracle x86 Portfolio: Competitive Advantages in Total Cost of Ownership.” First publication July 2012.
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 solid state drive (SSD) based on enterprise multi-level cell (eMLC) technology deliver more than 100 times more I/O performance with the highest reliability compared to hard disk drives (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 X4-2 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 X4-2 is designed to maximize uptime, simplify system management, and reduce operational expenses.

Frequently Asked Questions

What is the Sun Server X4-2?

Packing the optimal balance of compute power, memory capacity, and I/O capability into a compact and energy-efficient 1U enclosure, the Sun Server X4-2 is the most versatile two-socket x86 server for enterprise data centers to run a broad range of mission-critical business applications. This server is ideal for running middleware and enterprise business application workloads and as a platform for application development.

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

Compared to the Sun Server X3-2, Oracle’s Sun Server X4-2 supports 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 the flexibility of two chassis configurations with 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 X4-2 best suited to run?

Sun x86 systems are the best x86 platforms to run Oracle software. Delivering the optimal balance of compute power, memory capacity, and I/O capability in a compact and energy efficient 1U enclosure, the versatility of the Sun Server X4-2 makes it ideal for the following workloads:

- Middleware workloads, such as Oracle Fusion Middleware and Oracle WebLogic Suite
- Enterprise business applications, such as customer relationship management (CRM), enterprise resource
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Planning (ERP), and supply chain management (SCM)

- IT and web infrastructure applications, such as Oracle WebCenter, Oracle Enterprise Manager, Oracle Directory Service, and Oracle Identity Manager
- Application development software, such as Oracle Solaris Studio

What flash storage options are available on the Sun Server X4-2?

The Sun Server X4-2 supports the new 400 GB, eMLC serial advanced technology attachment (SATA-3) SSDs, with a total internal flash capacity up to 3.2 TB. These flash storage options all 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 X4-2?

The Sun Server X4-2 has 16 DDR3 DIMM slots, four onboard 10GBase-T ports, and four low-profile PCIe 3.0 slots (including one internal slot for SAS HBA).

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

What disk cage options are supported on the Sun Server X4-2?

The server comes in two disk cage options:

- Four 2.5-inch SAS disk bays (HDDs or SSDs) plus DVD R/W drive
- Eight 2.5-inch SAS disk bays for HDDs or SSDs

For more information visit Oracle’s Systems Wiki.

What operating systems have been certified to run on the Sun Server X4-2?

The Sun Server X4-2 is certified to run Oracle Linux, Oracle VM, Oracle Solaris, Red Hat Enterprise Linux, SUSE Linux Enterprise Server, VMware, and Microsoft Windows Server.

To see a list of supported operating system versions, visit Oracle’s Systems Wiki.

What software is preinstalled on the Sun Server X4-2?

The customer has 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 X4-2?

The Sun Server X4-2 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 X4-2 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 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 X4-2 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 X4-2 supports single processor configurations at general availability on September 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 the Sun Server X3-2. Please see the detailed comparison of dual and single processor configurations below:

Comparison of Sun Fire X4170 M2 Single-processor, Sun Server X4-2 Single-processor and dual-processor Sun Server X4-2

<table>
<thead>
<tr>
<th>Supported Options</th>
<th>Sun Fire X4170 M2 Single-processor Configurations</th>
<th>Sun Server X3-2 and Sun Server X4-2 Single-processor Configurations</th>
<th>Sun Server X3-2 and Sun Server X4-2 Dual-processor Configurations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number 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>
</tr>
<tr>
<td>Number of PCIe Slots</td>
<td>3</td>
<td>3 (slot 1 disabled)</td>
<td>4</td>
</tr>
<tr>
<td>Max. Number of Processors</td>
<td>1</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Min. Number of DIMMs</td>
<td>1</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Max. Number of DIMMs</td>
<td>9</td>
<td>8</td>
<td>16</td>
</tr>
</tbody>
</table>

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 X4-2?
The Sun Server X4-2 offers hot-swappable and redundant RAID-enabled disks, cooling fans, and power supply units. Combining these enterprise-class RAS capabilities with Oracle ILOM, Oracle Solaris, or Oracle Linux, the Sun Server X4-2 is designed to maximize uptime, simplify system management, and reduce operational expenses.

Where can I find more information about the Sun Server X4-2?
Contact an Oracle sales representative directly or call 1-800-Oracle1.

For more information, visit:
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What are the power requirements for the Sun Server X4-2?
The online power calculator provides an estimate of the idle and operating power level of the server.

Sun Server X4-2 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 Sun x86 premier support customers.

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

Oracle Premier Support

What is included in the Sun Server X4-2 base chassis?
The 1U base chassis includes the motherboard, four low-profile PCIe 3.0 slots (one with 16 lanes and three with 8 lanes; one of the four is internal and is reserved for the SAS HBA), 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 600 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 disk cages. These are required configuration options and need to be ordered separately. DVD is included with the four 2.5-inch disk bays configuration only.