

Oracle Server X5-2

Frequently Asked Questions

Overview

Oracle Server X5-2 is powered by two Intel® Xeon® processor E5-2600 v3 product family CPUs and 24 memory slots. With up to 18 cores per socket, this server supports the highest performing processor and delivers extreme compute density in a compact 1U enclosure. When compared with the previous-generation server, this system increases memory capacity by 50 percent, to 768 GB, and increases memory bandwidth by 33 percent. With more than 50 percent increase in processing power and 17 percent increase in I/O bandwidth versus the previous generation, Oracle Server X5-2 provides the optimal balance of cores, memory, and I/O throughput, making it the highest performing server in its class for enterprise applications.

Built for the demands of enterprise and virtualization workloads, this server offers four low-profile PCIe 3.0 expansion slots (two 16-lane and two 8-lane). Four embedded 10GBase-T ports free up PCIe slots for additional network and storage connectivity. Each Oracle Server X5-2 includes a SAS-3 (12 Gb/sec) RAID controller in one of the 8-lane PCIe slots and includes eight small form factor drive bays. The server can be configured with up to 9.6 TB of hard disk drive capacity or up to 3.2 TB of conventional solid state drive flash capacity.

Designed as an optimal server for running Oracle Database in a clustered configuration, Oracle Server X5-2 can be combined with Oracle Real Application Clusters (Oracle RAC) to achieve high availability, performance, and agility. In order to achieve accelerated performance for Oracle Database, Oracle Server X5-2 introduces hot-swappable, high-bandwidth flash that is ideal as Database Smart Flash Cache, a feature of Oracle Database. Using Oracle's unique NVM Express design,

Oracle Server X5-2 supports up to four small form factor NVMe drives for a total capacity of 6.4 TB.

With 106 GB/sec of bidirectional I/O bandwidth, combined with the high core and memory density, Oracle Server X5-2 is an ideal server for consolidating enterprise virtual machines. With a standard, efficient power profile, Oracle Server X5-2 can be deployed easily into existing data centers as the building block of a private cloud or infrastructure-as-a-service (IaaS) implementation. When combined with Oracle Fabric Interconnect and Oracle SDN, Oracle Server X5-2 server packs in the most VMs per rack while enabling faster live migration and cable consolidation.

Customer Benefits

Oracle Server X5-2 provides the following key customer benefits.

Perfect Balance of High Performance and Energy Efficiency

This server offers superior scalability. With up to 768 GB of memory capacity and faster memory access, Oracle Server X5-2 can easily meet the current and future demands of memory-intensive workloads. The four 10GBase-T ports onboard are offered at no extra cost, reducing network delays and drastically improving application response time.

With an advanced cooling system unique to Oracle, Oracle Server X5-2 achieves system efficiencies that 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

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been designed into key areas of this server to ensure efficient fan usage by organizing all major subsystems into cooling zones. This capability helps reduce energy consumption in a way that other servers cannot.

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 server lifecycle 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.

Oracle Server X5-2 offers hot-swappable and redundant RAID-enabled cooling fans, disks, and power supply units. Combining these enterprise-class reliability, availability, and serviceability (RAS) capabilities with integrated and cloud-ready management tools, Oracle Server X5-2 is designed to maximize uptime, simplify system management, and reduce operational expenses.

Frequently Asked Questions

What is Oracle Server X5-2?

Oracle Server X5-2 is designed from the ground up to be the best two-socket server for running Oracle Database in a clustered configuration and also for high-density

virtualization environments that require an optimal balance among core density, memory footprint, and I/O bandwidth. With support for up to four high-bandwidth NVM Express (NVMe) flash drives, Oracle Database can be accelerated using Database Smart Flash Cache. Each server comes with built-in, proactive fault detection, and advanced diagnostics, along with firmware that is already optimized for Oracle software, to deliver extreme reliability for enterprise workloads. Allowing for more than 1,500 cores and 34 TB of memory in a single rack, the compact 1U chassis provides 50 percent more cores and 50 percent more memory compared to the previous generation.

How does Oracle Server X5-2 compare with Oracle's Sun Server X4-2?

Oracle Server X5-2 is based on the Intel Xeon Processor E5-2600 v3 product family and supports 50 percent more cores (up to 18 cores per processor) than its predecessor. With 24 DIMM slots supporting a full 2,133 MHz, this server supports increased memory capacity of 50 percent and increased memory bandwidth of 33 percent over the previous generation. Oracle Server X5-2 supports up to eight drives and an optional DVD-RW. In addition, each Oracle Server X5-2 now includes a SAS-3 (12 Gb/sec) RAID controller in one of the eight-lane PCIe slots. In order to achieve accelerated performance for Oracle Database, Oracle Server X5-2 introduces hot-swappable, high-bandwidth flash that is ideal as Database Smart Flash Cache. Using Oracle's unique NVM Express design, Oracle Server X5-2 supports up to four small form factor NVMe drives for a total capacity of 6.4 TB. Significant generational improvements enable faster execution of enterprise workloads and higher server consolidation ratios in virtualized environments.

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What kind of applications and workloads is Oracle Server X5-2 best suited to run?

Oracle's x86 systems are the best x86 platforms to run Oracle software. With an optimal balance of compute power, memory capacity, and I/O capability in a compact and energy-efficient 1U enclosure, the versatility of Oracle Server X5-2 makes it ideal for the following customers:

- Oracle Database clusters including Oracle RAC deployments
- Enterprise-class applications in virtualized environments
- Environments requiring highly reliable x86-based infrastructure

What flash storage options are available on Oracle Server X5-2?

Oracle Server X5-2 supports 400 GB SAS SSDs, for 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.

Oracle Server X5-2 supports up to four 1.6 TB small form factor high bandwidth NVMe drives, for a total capacity of 6.2 TB. These drives are ideal for Database Smart Flash Cache-enabled environments.

What memory and I/O expansion features are supported on Oracle Server X5-2?

Oracle Server X5-2 includes 24 DDR4 DIMM slots, and can be configured with 8 GB or 16 GB RDIMMs or 32 GB LRDIMMs. Four onboard 10GBase-T ports are included

with the server, and four low-profile PCIe 3.0 slots (including one internal slot for SAS HBA) are available for configuring a number of Ethernet, InfiniBand and Fibre Channel option cards.

For more information on supported PCIe cards, visit the [Systems wiki](#).

Does the memory for Oracle Server X5-2 support ECC (error-correcting code)?

Yes.

What disk cage options are supported on Oracle Server X5-2?

This server offers the following disk cage option:



- Eight 2.5-inch SAS drive bays for HDD and SSD
 - Four drive bays support NVMe
- DVD-RW (optional)

Is it possible to mix SAS2 & SAS3 HDDs in the drive bays?

Yes, it is allowed to mix HDDs.

Can I populate HDDs or SSDs in NVMe capable drive slots?

Yes, it is allowed.

For more information, visit Oracle's [Systems wiki](#).

What operating systems are certified to run on Oracle Server X5-2?

Oracle Server X5-2 is certified to run Oracle Linux, Oracle VM, Oracle Solaris, Red Hat Enterprise Linux,

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SUSE Linux Enterprise Server, VMware, and Microsoft Windows Server.

To see a list of supported operating system versions, visit Oracle's [Systems wiki](#).

What system management options are available for Oracle Server X5-2?

Oracle Server X5-2 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 server lifecycle management by providing a rich set of management interfaces for monitoring the health of the system and for remote server management.

Each Oracle Server X5-2 also can be configured with an optional embedded tool called Oracle System Assistant, which assists with each step of configuring the server and provisioning the operating system. Oracle System Assistant 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, Oracle System Assistant can be used to configure RAID, BIOS settings, and Oracle ILOM settings.

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, 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 installed in a data center. 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?

Oracle Server X5-2 can be customized to the configuration you specify through the Oracle factory's assemble-to-order (ATO) process.

What high-availability features are available in Oracle Server X5-2?

Oracle Server X5-2 offers hot-swappable and redundant RAID-enabled cooling fans, disks, and power supply units. Combining these enterprise-class RAS capabilities with Oracle ILOM, Oracle Solaris, or Oracle Linux, Oracle Server X5-2 is designed to maximize uptime, simplify system management, and reduce operational expenses.

Where can I find more information about Oracle Server X5-2?

Contact an Oracle sales representative directly or call 1-800-Oracle1.

For more information, visit:

[Oracle Server X5-2](#)

What are the power requirements for Oracle Server X5-2?

The online power calculator provides an estimate of the idle and operating power level of the server.

[Oracle Server X5-2 power calculator](#)

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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 x86 customers with Oracle Premier Support.

What is included with Oracle Premier Support?

For more information, please see:

[Oracle Premier Support](#)

What is included in the Oracle Server X5-2 base chassis?

The 1U base chassis includes the motherboard, four low-profile PCIe 3.0 slots (two with 16 lanes and two with 8 lanes; one of the four is internal and is occupied by 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.



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