Lenovo System x3250 M5
Product Guide (withdrawn product)

The Lenovo System x3250 M5 single-socket 1U rack server is designed for small businesses and first-time server buyers looking for a solution to improve business efficiency. It delivers several innovative features in a compact 1U form factor with a competitive price. The System x3250 M5 provides next-generation performance in an innovative and compact design with flexible configuration options, built-in security, and systems management capabilities. It leverages the next-generation quad-core Intel Xeon processor E3-1200 v3 product family technology.

Suggested use: Small-to-medium businesses looking for file and printer servers, web serving, and small business infrastructure.

The following figure shows the System x3250 M5 server.

Figure 1. Lenovo System x3250 M5

Did you know?

The x3250 M5 offers a flexible and scalable design and a simple upgrade path to eight HDDs plus an optical drive at the same time. The flexible onboard Ethernet solution provides two standard integrated Gigabit Ethernet ports and two additional integrated Gigabit Ethernet ports with an optional software feature for an on-demand upgrade without a need to buy additional hardware. Comprehensive systems management tools with the next-generation Integrated Management Module II (IMM2) make it easy to deploy, integrate, service, and manage.

The x3250 M5 includes features not typically seen in this class of system, such as standard RAID-0, 1, and 10 with the ServeRAID C100 for simple-swap SATA models, remote control capabilities even when the machine is powered off, and basic light path diagnostics on processor, memory, and hard drives. This flexible 1U rack-mountable server is also highly upgradable and expandable, scaling from low-cost, fixed-function models to feature-rich, highly available models.

Key features

The System x3250 M5 server is a compact, cost-effective, single-processor 1U rack server that has been optimized to provide outstanding availability, manageability, and performance features to small-to-medium-sized businesses, retail stores, or distributed enterprises.

Scalability and performance

The x3250 M5 offers numerous features to boost performance, improve scalability, and reduce costs:

- The Intel Xeon processor E3-1200 v3 product family improves productivity by offering affordable single-socket system performance with four-core processors with up to 3.6 GHz core speeds, up to 8 MB of L3 cache.
- Choice of processors with up to four cores to enable the effective use of multithreaded applications.
- Intelligent and adaptive system performance with Intel Turbo Boost Technology 2.0 allows processor cores to run at maximum speeds during peak workloads by temporarily going beyond processor thermal design power (TDP).
- Intel Hyper-Threading Technology boosts performance for multithreaded applications by enabling simultaneous multithreading within each processor core, up to two threads per core.
- Intel Virtualization Technology integrates hardware-level virtualization hooks that allow operating system vendors to better use the hardware for virtualization workloads.
- Intel Advanced Vector Extensions (AVX) significantly improve floating point performance for compute-intensive technical and scientific applications.
- The four 1600 MHz DDR3 ECC memory UDIMMs provide speed, high availability, and a memory capacity of up to 32 GB.
- The server offers up to four integrated Gigabit Ethernet ports with a convenient Lenovo Features on Demand (FoD) upgrade process that does not require the purchase of additional hardware.
- The server offers PCI Express 3.0 I/O expansion capabilities that improve the theoretical maximum bandwidth by almost 100% (8 GTps per link using 128b/130b encoding) compared to the PCI Express 2.0 (5 GTps per link using 8b/10b encoding).
- With Intel Integrated I/O Technology, the PCI Express 3.0 controller is integrated into the Intel Xeon processor E3-1200 v3 product family. Such integration reduces I/O latency and increases overall system performance.
- Up to eight 2.5-inch hot-swap or simple-swap drive bays or four 3.5-inch hot-swap or simple-swap drive bays provide maximum internal storage capacity in a compact 1U form factor.
- The use of solid-state drives (SSDs) instead of, or along with, traditional spinning drives (hard disk drives or HDDs) can significantly improve I/O performance. An SSD can support up to 100 times more I/O operations per second (IOPS) than a typical HDD.

Availability and serviceability

The x3250 M5 provides many features to simplify serviceability and increase system uptime:

- ECC memory provides error correction not available in PC-class "servers" that use parity memory. Avoiding system crashes (and data loss) due to soft memory errors can mean greater system uptime.
- Tool-less cover removal provides easy access to upgrades and serviceable parts, such as processor, memory, and adapter cards.
- The server offers simple-swap or hot-swap drives with support for an affordable ServeRAID or advanced hardware RAID redundancy for data protection and greater system uptime.
- Solid-state drives (SSDs) offer significantly better reliability than traditional HDDs for greater uptime.
- The server offers two redundant hot-swap power supplies and five redundant non-hot-swap fans to provide cost-efficient availability for applications.

- Basic light path diagnostics detects when system components (processors, memory, and hard disk drives) operate outside of standard thresholds and generates proactive alerts in advance of possible failures, therefore increasing uptime.
- Built-in Integrated Management Module II (IMM2) continuously monitors system parameters, triggers alerts, and performs recovery actions in case of failure, to minimize downtime.
- Built-in diagnostics using Dynamic Systems Analysis (DSA) Preboot speed up troubleshooting tasks to reduce service time.
- Three-year customer replaceable unit and onsite limited warranty, next business day 9x5. Optional service upgrades are available.

Manageability and security

Powerful systems management features simplify local and remote management of the x3250 M5:

- The server includes an Integrated Management Module II (IMM2) to monitor server availability and perform remote management.
- An integrated industry-standard Unified Extensible Firmware Interface (UEFI) enables improved setup, configuration, and updates, and simplifies error handling.
- Predictive Failure Analysis (PFA) alerts on memory, SAS/SATA hard disk drives, fans, power supplies, and temperature
- Integrated Trusted Platform Module (TPM) support enables advanced cryptographic functionality, such as digital signatures and remote attestation.
- Industry-standard Advanced Encryption Standard (AES) New Instructions (AES-NI) support provides faster and stronger encryption.
- Intel Execute Disable Bit functionality can help prevent certain classes of malicious buffer overflow attacks when combined with a supporting operating system.
- Intel Trusted Execution Technology provides enhanced security through hardware-based resistance to malicious software attacks, allowing an application to run in its own isolated space protected from all other software running on a system.

Energy efficiency

The x3250 M5 offers the following energy-efficiency features to save energy, reduce operational costs, increase energy availability, and contribute to a green environment:

- Energy-efficient planar components help lower operational costs.
- Energy Star 2.0 compliant.
- 80 PLUS certified power supplies enable greater energy savings while providing flexibility to meet your business needs.
- The optional thermal enhancement option kit allows the use of x3250 M5 servers in environments with temperature limits extended to 40 degrees C. It also helps lower fan speeds depending on the environment's temperature to lower acoustic noise and energy use.
- The Intel Xeon processor E3-1200 v3 product family offers better performance over the previous generation, while fitting into the same TDP limits.
- Intel Intelligent Power Capability powers individual processor elements on and off as needed, to reduce power draw.
- Low-voltage Intel Xeon processors draw less energy to satisfy the demands of power and thermally constrained data centers and telecommunication environments.
- Low-voltage 1.35 V DDR3 memory UDIMMs consume up to 19% less energy compared to 1.5 V DDR3 UDIMMs.
- Solid-state drives may consume as much as 80% less power than traditional spinning 2.5-inch HDDs.
- The server uses hexagonal ventilation holes, a part of Calibrated Vectored Cooling™ technology.

Hexagonal holes can be grouped more densely than round holes, providing more efficient airflow through the system.

Components and connectors

The following figure shows the front of the server with eight 2.5-inch hot-swap drive bays (models with 2.5-inch simple-swap or 3.5-inch simple-swap or hot-swap drive bays are also available).

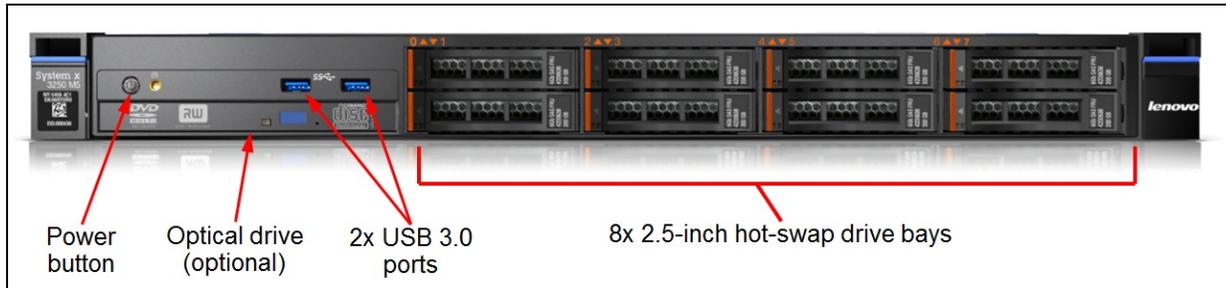Figure 2. Front view of the System x3250 M5 with eight 2.5-inch hot-swap drive bays

The following figure shows the rear of the server with redundant hot-swap power supplies (models with fixed power supply are also available).
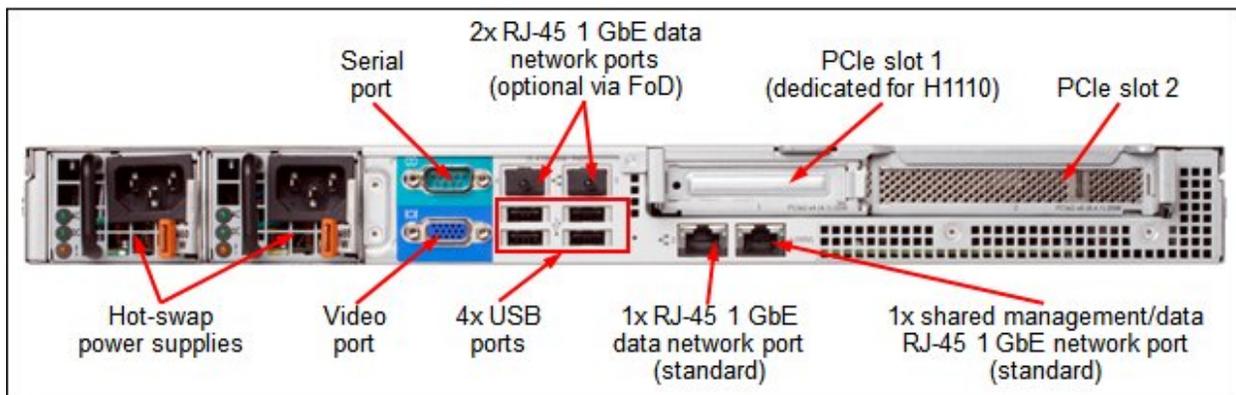

Figure 3. Rear view of the System x3250 M5 with hot-swap power supplies

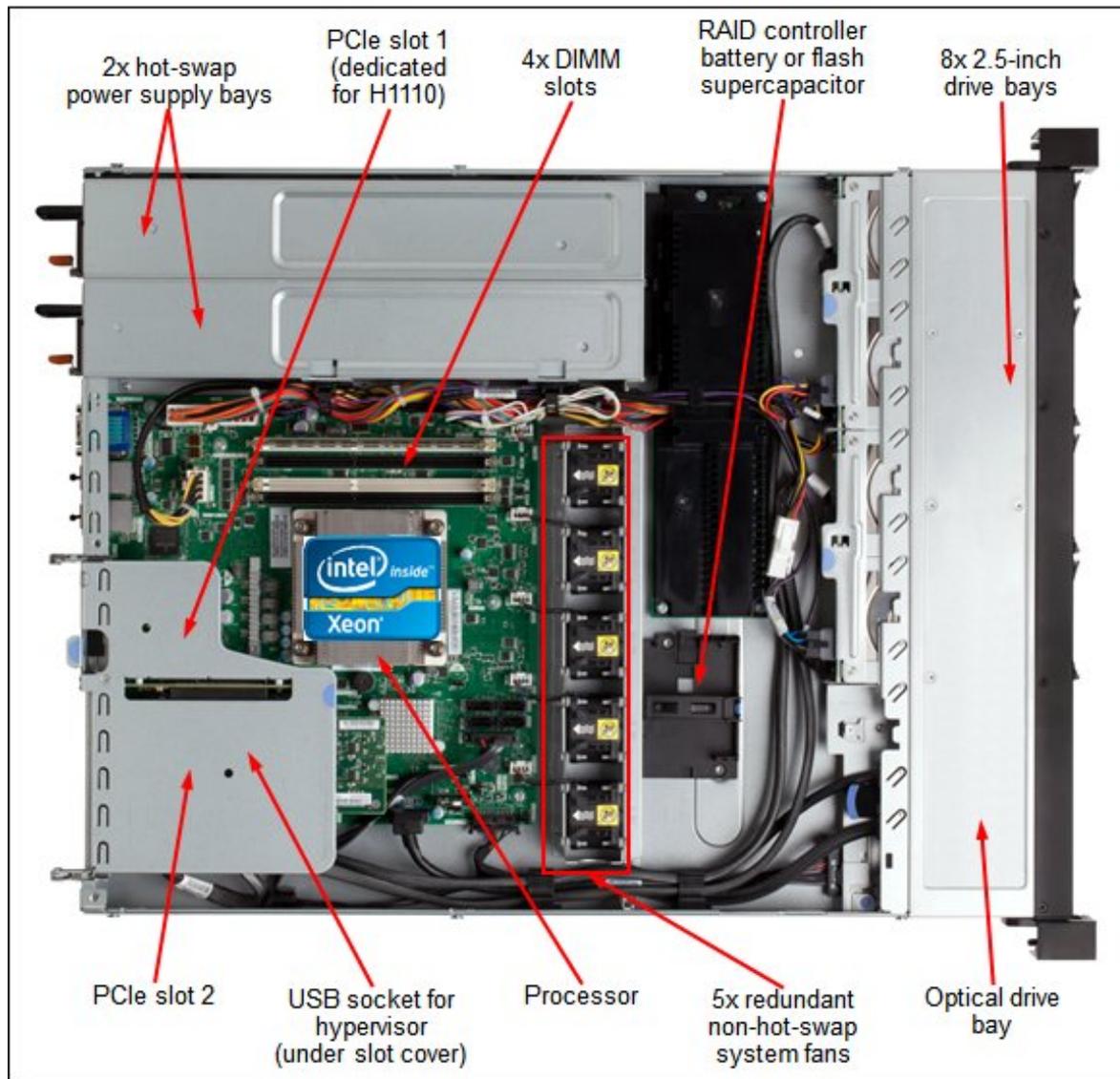The following figure shows the locations of key components inside the server.

Figure 4. Inside view of the System x3250 M5

Standard specifications

The following table lists the standard specifications.

Table 1. Standard specifications

Components	Specification
Machine type	5458
Form factor	1U rack-mount
Processor	One Intel Xeon processor E3-1200 v3 product family with four cores up to 3.7 GHz, up to 1600 MHz memory speed, 8 MB L3 cache; or one Intel Core-i3 processor 4100/4300 product families with two cores up to 3.7 GHz, up to 4 MB L3 cache, and 1600 MHz memory speed (CTO only); or one Intel Pentium processor G3200/G3400 product families with two cores up to 3.4 GHz, 3 MB L3 cache, and up to 1600 MHz memory speed.
Chipset	Intel C226.
Memory	Four dual inline memory module (DIMM) sockets. Support for UDIMMs. DIMM speeds up to 1600 MHz.
Memory maximums	Up to 32 GB with 4x 8 GB UDIMMs.
Memory protection	ECC
Disk drive bays	Up to eight 2.5-inch hot-swap SAS/SATA drive bays, up to eight 2.5-inch simple-swap drive bays, up to four 3.5-inch hot-swap SAS/SATA drive bays, or up to four 3.5-inch SATA simple-swap drive bays.
Maximum internal storage	Up to 7.2 TB with 900 GB 2.5-inch SAS HDDs, up to 8 TB with 1 TB 2.5-inch NL SAS/SATA HDDs, up to 12.8 TB with 1.6 TB 2.5-inch SATA SSDs, or up to 24 TB with 6 TB 3.5-inch NL SAS/SATA HDDs. Intermix of SAS/SATA is supported.
RAID support	RAID 0, 1, and 10 with the C100. RAID 0, 1, and 10 with the H1110, M1115, or optional M5110. Optional upgrade to RAID 5 is available for the C100. Optional upgrade to RAID 5 and 50 is available for the M1115.
Optical drive bays	One, for models with 2.5" drives. Support for optional DVD-ROM or Multiburner.
Tape drive bays	None.
Network interfaces	Up to four integrated Gigabit Ethernet 1000BASE-T RJ-45 ports with the onboard BCM5719 controller (two ports are enabled, and additional two ports require the optional software FoD upgrade to enable them).
I/O expansion slots	Up to two slots, depending on the riser cards installed. The slots are specified: ● Slot 1: PCIe 3.0 x4 (x4-wired); dedicated slot for H1110 ● Slot 2: PCIe 3.0 x8 (x8-wired); full-height, half-length
Ports	Two USB 3.0 ports on the front. Four USB 2.0 ports, one DB-15 video port, one DB-9 serial port, and four RJ-45 GbE network ports on the rear. One internal USB port (for embedded hypervisor).
Cooling	Calibrated Vectored Cooling with five redundant non-hot-swap system fans.
Power supply	Up to two redundant hot-swap 460 W AC power supplies (80 PLUS certification), or one fixed 300 W AC power supply (80 PLUS certification).
Hot-swap parts	Hard drives (model dependent) and power supplies (model dependent).

Components	Specification
Systems management	UEFI, Integrated Management Module II (IMM2), Light path diagnostics with LEDs for DIMMs, processor, slots, fans, and power supplies. Automatic Server Restart, Lenovo XClarity Administrator, and ServerGuide. Optional IMM Advanced FoD Upgrade for remote presence (graphics, keyboard and mouse, virtual media).
Security features	Power-on password, administrator's password, and TPM.
Video	Matrox G200eR2 with 16 MB memory integrated into the IMM2. Maximum resolution is 1600x1200 at 75 Hz with 16 M colors.
Operating systems	Microsoft Windows Server, Red Hat Enterprise Linux, SUSE Linux Enterprise Server, VMware ESXi. See the Operating system support section for specifics.
Limited warranty	Three-year customer-replaceable unit (CRU) and on-site limited warranty with 9x5 next business day (NBD).
Service and support	Optional service upgrades are available through Lenovo Services: 4-hour or 2-hour response time, 8-hour fix time, 1-year or 2-year warranty extension, remote technical support for hardware and some Lenovo and OEM software.
Dimensions	Height: 43 mm (1.7 in.), width: 435 mm (17.1 in.), depth: 576 mm (22.7 in.)
Weight	Minimum configuration: 8.6 kg (19.0 lb), maximum: 12.3 kg (27.1 lb)

The x3250 M5 servers are shipped with the following items:

- Statement of Limited Warranty
- Important Notices
- Rack Installation Instructions
- Documentation flyer
- Rack mount kit (static rails, non-sliding; no cable management arm included)
- One 2.8m, 10A/100-250V, C13 to IEC 320-C14 rack power cable

Standard models

The following table lists the standard models.

Withdrawn from marketing: The x3250 M5 now withdrawn from marketing. The replacement system is the x3250 M6 which is described in https://lenovopress.com/LP0096.

Table 2. Standard models

Model number*	Intel processor† (1 maximum)	Memory	RAID	Drive bays (std/max)	Drives	Onboard NIC (std/max)	I/O slots (std/max)	Optical drive	Power supply (std/max)
Models announced July 2014									
5458A3x	1x Pentium G3440 3.3GHz 3MB 1600MHz 2C (53W)	1x 4GB 1600MHz	C100	4x 3.5" SS / 4	Open bay	2x GbE / 4	2 / 2	None	1x 300 W Fixed / 1
5458C3x	1x Xeon E3-1231 v3 3.4GHz 8MB 1600MHz 4C (80W)	1x 4GB 1600MHz	H1110	4x 3.5" HS / 4	Open bay	2x GbE / 4	2 / 2	None	1x 300 W Fixed / 1
5458C5x	1x Xeon E3-1231 v3 3.4GHz 8MB 1600MHz 4C (80W)	1x 4GB 1600MHz	C100	4x 2.5" SS / 4	Open bay	2x GbE / 4	2 / 2	Optional	1x 300 W Fixed / 1
5458F3x	1x Xeon E3-1241 v3 3.5GHz 8MB 1600MHz 4C (80W)	1x 8GB 1600MHz	H1110	4x 2.5" HS / 4	Open bay	2x GbE / 4	2 / 2	Optional	1x 300 W Fixed / 1
5458F5x	1x Xeon E3-1241 v3 3.5GHz 8MB 1600MHz 4C (80W)	1x 8GB 1600MHz	H1110	4x 2.5" HS / 4	Open bay	2x GbE / 4	2 / 2	Optional	1x 460 W HS / 2
5458G3x	1x Xeon E3-1271 v3 3.6GHz 8MB 1600MHz 4C (80W)	1x 8GB 1600MHz	M1115	8x 2.5" HS / 8	Open bay	2x GbE / 4	2 / 2	Optional	1x 460 W HS / 2
Models announced October 2013									
5458A2x	1x Pentium G3420 3.2GHz 3MB 1600MHz 2C (65W)	1x 4GB 1600MHz	C100	4x 3.5" SS / 4	Open bay	2x GbE / 4	2 / 2	None	1x 300 W Fixed / 1
5458B2x	1x Xeon E3-1220 v3 3.1GHz 8MB 1600MHz 4C (80W)	1x 4GB 1600MHz	C100	4x 3.5" SS / 4	Open bay	2x GbE / 4	2 / 2	None	1x 300 W Fixed / 1
5458C2x	1x Xeon E3-1230 v3 3.3GHz 8MB 1600MHz 4C (80W)	1x 4GB 1600MHz	H1110	4x 3.5" HS / 4	Open bay	2x GbE / 4	2 / 2	None	1x 300 W Fixed / 1
5458C4x	1x Xeon E3-1230 v3 3.3GHz 8MB 1600MHz 4C (80W)	1x 8GB 1600MHz	H1110	4x 2.5" HS / 4	Open bay	2x GbE / 4	2 / 2	Optional	1x 300 W Fixed / 1
5458F2x	1x Xeon E3-1240 v3 3.4GHz 8MB 1600MHz 4C (80W)	1x 8GB 1600MHz	H1110	4x 2.5" HS / 4	Open bay	2x GbE / 4	2 / 2	Optional	1x 460 W HS / 2
5458G2x	1x Xeon E3-1270 v3 3.5GHz 8MB 1600MHz 4C (80W)	1x 8GB 1600MHz	M1115	8x 2.5" HS / 8	Open bay	2x GbE / 4	2 / 2	Optional	1x 460 W HS / 2

* x in the Model number represents a region-specific letter (for example, the EMEA Model number is 5458A2G, and the US Model number is 5458A2U). Ask a Lenovo or business partner representative for specifics.
† Processor detail: Processor quantity and model, core speed, L3 cache, memory speed, number of cores, TDP.

Express models

The following table lists the Express models.

Table 3. Express models (Part 1: Models announced July 2014)

Model number	Intel processor† (1 maximum)	Memory	RAID	Drive bays (std/max)	Drives	Onboard NIC (std/max)	I/O slots (std/max	Optical drive	Power supply (std/max)
United States									
5458EEU	1x Xeon E3-1231 v3 3.4GHz 8MB 1600MHz 4C (80W)	1x 8GB 1600MHz	H1110	4x 3.5" HS / 4	Open bay	2x GbE / 4	2 / 2	None	1x 300 W Fixed / 1
5458ELU	1x Xeon E3-1271 v3 3.6GHz 8MB 1600MHz 4C (80W)	1x 8GB 1600MHz	M1115	8x 2.5" HS / 8	Open bay	2x GbE / 4	2 / 2	Multiburner	1x 460 W HS / 2
Canada									
5458ENU	1x Xeon E3-1231 v3 3.4GHz 8MB 1600MHz 4C (80W)	2x 8GB 1600MHz	H1110	4x 2.5" HS / 4	Open bay	2x GbE / 4	2 / 2	Multiburner	2x 460 W HS / 2
Latin America									
5458EEU	1x Xeon E3-1231 v3 3.4GHz 8MB 1600MHz 4C (80W)	1x 8GB 1600MHz	H1110	4x 3.5" HS / 4	Open bay	2x GbE / 4	2 / 2	None	1x 300 W Fixed / 1
Asia Pacific (Australia only)									
5458EHM	1x Xeon E3-1231 v3 3.4GHz 8MB 1600MHz 4C (80W)	1x 8GB 1600MHz	C100	4x 3.5" SS / 4	2x 1TB 7.2K	2x GbE / 4	2 / 2	None	1x 300 W Fixed / 1
Asia Pacific (Japan only)									
5458EPJ	1x Core i3 4150 3.5GHz 3MB 1600MHz 2C (54W)	1x 4GB 1600MHz	C100	4x 3.5" SS / 4	Open bay	2x GbE / 4	2 / 2	None	1x 300 W Fixed / 1
5458EQJ	1x Xeon E3-1231 v3 3.4GHz 8MB 1600MHz 4C (80W)	1x 4GB 1600MHz	H1110	4x 2.5" HS / 4	Open bay	2x GbE / 4	2 / 2	Optional	1x 460 W HS / 2
Europe									
5458EJG	1x Xeon E3-1241 v3 3.5GHz 8MB 1600MHz 4C (80W)	1x 4GB 1600MHz	H1110	4x 3.5" HS / 4	Open bay	2x GbE / 4	2 / 2	None	1x 300 W Fixed / 1
5458EKG	1x Xeon E3-1241 v3 3.5GHz 8MB 1600MHz 4C (80W)	1x 4GB 1600MHz	H1110	4x 2.5" HS / 4	Open bay	2x GbE / 4	2 / 2	Multiburner	1x 460 W HS / 2
5458ELG	1x Xeon E3-1271 v3 3.6GHz 8MB 1600MHz 4C (80W)	1x 8GB 1600MHz	M1115	8x 2.5" HS / 8	Open bay	2x GbE / 4	2 / 2	Multiburner	1x 460 W HS / 2
Central and Eastern Europe (CEE) and Middle East and Africa (MEA)									
5458EKG	1x Xeon E3-1241 v3 3.5GHz 8MB 1600MHz 4C (80W)	1x 4GB 1600MHz	H1110	4x 2.5" HS / 4	Open bay	2x GbE / 4	2 / 2	Multiburner	1x 460 W HS / 2
5458ELG	1x Xeon E3-1271 v3 3.6GHz 8MB 1600MHz 4C (80W)	1x 8GB 1600MHz	M1115	8x 2.5" HS / 8	Open bay	2x GbE / 4	2 / 2	Multiburner	1x 460 W HS / 2
Russia/Commonwealth of Independent States (CIS)									
5458EJG	1x Xeon E3-1241 v3 3.5GHz 8MB 1600MHz 4C (80W)	1x 4GB 1600MHz	H1110	4x 3.5" HS / 4	Open bay	2x GbE / 4	2 / 2	None	1x 300 W Fixed / 1

Model number	Intel processor† (1 maximum)	Memory	RAID	Drive bays (std/ max)	Drives	Onboard NIC (std/max)	I/O slots (std/ max	Optical drive	Power supply (std/max)
5458EKG	1x Xeon E3-1241 v3 3.5GHz 8MB 1600MHz 4C (80W)	1x 4GB 1600MHz	H1110	4x 2.5" HS / 4	Open bay	2x GbE / 4	2 / 2	Multiburner	1x 460 W HS / 2
5458ELG	1x Xeon E3-1271 v3 3.6GHz 8MB 1600MHz 4C (80W)	1x 8GB 1600MHz	M1115	8x 2.5" HS / 8	Open bay	2x GbE / 4	2 / 2	Multiburner	1x 460 W HS / 2

† Processor detail: Processor quantity and model, number of cores, core speed, L3 cache, memory speed, TDP.

Table 4. Express models (Part 2: Models announced October 2013)

Model number	Intel processor† (1 maximum)	Memory	RAID	Drive bays (std/ max)	Drives	Onboard NIC (std/max)	I/O slots (std/ max	Optical drive	Power supply (std/max)
United States									
5458EAU	1x Xeon E3-1220 v3 3.1GHz 8MB 1600MHz 4C (80W)	1x 8GB 1600MHz	C100	4x 3.5" SS / 4	Open bay	2x GbE / 4	2 / 2	None	1x 300 W Fixed / 1
5458EBU	1x Xeon E3-1230 v3 3.3GHz 8MB 1600MHz 4C (80W)	1x 8GB 1600MHz	H1110	4x 2.5" HS / 4	Open bay	2x GbE / 4	2 / 2	Multiburner	1x 300 W Fixed / 1
5458ECU	1x Xeon E3-1240 v3 3.4GHz 8MB 1600MHz 4C (80W)	1x 8GB 1600MHz	H1110	4x 2.5" HS / 4	Open bay	2x GbE / 4	2 / 2	Multiburner	1x 460 W HS / 2
Canada									
5458EDU	1x Xeon E3-1230 v3 3.3GHz 8MB 1600MHz 4C (80W)	2x 8GB 1600MHz	H1110	4x 2.5" HS / 4	Open bay	2x GbE / 4	2 / 2	Multiburner	2x 460 W HS / 2
Asia Pacific (China only)									
5458ERC	1x Pentium G3430 3.3GHz 3MB 1600MHz 2C (65W)	1x 4GB 1600MHz	C100	4x 2.5" SS / 4	Open bay	2x GbE / 4	2 / 2	Optional	1x 300 W Fixed / 1
5458ESC	1x Core-i3 4340 3.6GHz 4MB 1600MHz 2C (65W)	1x 4GB 1600MHz	C100	4x 2.5" SS / 4	Open bay	2x GbE / 4	2 / 2	Optional	1x 300 W Fixed / 1
5458ETC	1x Xeon E3-1220 v3 3.1GHz 8MB 1600MHz 4C (80W)	1x 4GB 1600MHz	C100	4x 2.5" SS / 4	Open bay	2x GbE / 4	2 / 2	Optional	1x 300 W Fixed / 1
5458EUC	1x Xeon E3-1240 v3 3.4GHz 8MB 1600MHz 4C (80W)	1x 4GB 1600MHz	H1110	4x 2.5" HS / 4	Open bay	2x GbE / 4	2 / 2	Optional	1x 300 W Fixed / 1
5458EVC	1x Pentium G3430 3.3GHz 3MB 1600MHz 2C (65W)	1x 4GB 1600MHz	C100	4x 3.5" SS / 4	Open bay	2x GbE / 4	2 / 2	None	1x 300 W Fixed / 1
5458EWC	1x Xeon E3-1220 v3 3.1GHz 8MB 1600MHz 4C (80W)	1x 4GB 1600MHz	H1110	4x 3.5" HS / 4	Open bay	2x GbE / 4	2 / 2	None	1x 300 W Fixed / 1
5458EZC	1x Xeon E3-1240 v3 3.4GHz 8MB 1600MHz 4C (80W)	1x 4GB 1600MHz	H1110	4x 3.5" HS / 4	Open bay	2x GbE / 4	2 / 2	None	1x 300 W Fixed / 1
Asia Pacific (Japan only)									
5458EFJ	1x Core-i3 4340 3.6GHz 4MB 1600MHz 2C (65W)	1x 4GB 1600MHz	C100	4x 3.5" SS / 4	Open bay	2x GbE / 4	2 / 2	None	1x 300 W Fixed / 1

Model number	Intel processor† (1 maximum)	Memory	RAID	Drive bays (std/ max)	Drives	Onboard NIC (std/max)	I/O slots (std/ max	Optical drive	Power supply (std/max)
5458EGJ	1x Xeon E3-1220 v3 3.1GHz 8MB 1600MHz 4C (80W)	1x 4GB 1600MHz	H1110	4x 2.5" HS / 4	Open bay	2x GbE / 4	2 / 2	Optional	1x 460 W HS / 2
Europe									
5458E1G	1x Xeon E3-1220 v3 3.1GHz 8MB 1600MHz 4C (80W)	1x 4GB 1600MHz	C100	4x 3.5" SS / 4	Open bay	2x GbE / 4	2 / 2	None	1x 300 W Fixed / 1
5458E4G	1x Xeon E3-1220 v3 3.1GHz 8MB 1600MHz 4C (80W)	1x 4GB 1600MHz	H1110	4x 2.5" HS / 4	Open bay	2x GbE / 4	2 / 2	Multiburner	1x 300 W Fixed / 1
5458E5G	1x Xeon E3-1240 v3 3.4GHz 8MB 1600MHz 4C (80W)	1x 4GB 1600MHz	H1110	4x 2.5" HS / 4	Open bay	2x GbE / 4	2 / 2	Multiburner	1x 460 W HS / 2
5458E8G	1x Xeon E3-1240 v3 3.4GHz 8MB 1600MHz 4C (80W)	1x 4GB 1600MHz	H1110	4x 3.5" HS / 4	Open bay	2x GbE / 4	2 / 2	None	1x 300 W Fixed / 1
Central and Eastern Europe (CEE) and Middle East and Africa (MEA)									
5458E2G	1x Xeon E3-1220 v3 3.1GHz 8MB 1600MHz 4C (80W)	1x 4GB 1600MHz	H1110	4x 3.5" SS / 4	2x 2TB SATA	2x GbE / 4	2 / 2	None	1x 300 W Fixed / 1
5458E4G	1x Xeon E3-1220 v3 3.1GHz 8MB 1600MHz 4C (80W)	1x 4GB 1600MHz	H1110	4x 2.5" HS / 4	Open bay	2x GbE / 4	2 / 2	Multiburner	1x 300 W Fixed / 1
5458E5G	1x Xeon E3-1240 v3 3.4GHz 8MB 1600MHz 4C (80W)	1x 4GB 1600MHz	H1110	4x 2.5" HS / 4	Open bay	2x GbE / 4	2 / 2	Multiburner	1x 460 W HS / 2
5458E6G	1x Xeon E3-1270 v3 3.5GHz 8MB 1600MHz 4C (80W)	1x 8GB 1600MHz	M1115	8x 2.5" HS / 8	Open bay	2x GbE / 4	2 / 2	Multiburner	1x 460 W HS / 2
Russia/Commonwealth of Independent States (CIS)									
5458E1G	1x Xeon E3-1220 v3 3.1GHz 8MB 1600MHz 4C (80W)	1x 4GB 1600MHz	C100	4x 3.5" SS / 4	Open bay	2x GbE / 4	2 / 2	None	1x 300 W Fixed / 1
5458E3G	1x Xeon E3-1240 v3 3.4GHz 8MB 1600MHz 4C (80W)	1x 4GB 1600MHz	C100	4x 3.5" SS / 4	Open bay	2x GbE / 4	2 / 2	None	1x 300 W Fixed / 1
5458E4G	1x Xeon E3-1220 v3 3.1GHz 8MB 1600MHz 4C (80W)	1x 4GB 1600MHz	H1110	4x 2.5" HS / 4	Open bay	2x GbE / 4	2 / 2	Multiburner	1x 300 W Fixed / 1
5458E5G	1x Xeon E3-1240 v3 3.4GHz 8MB 1600MHz 4C (80W)	1x 4GB 1600MHz	H1110	4x 2.5" HS / 4	Open bay	2x GbE / 4	2 / 2	Multiburner	1x 460 W HS / 2
5458E6G	1x Xeon E3-1270 v3 3.5GHz 8MB 1600MHz 4C (80W)	1x 8GB 1600MHz	M1115	8x 2.5" HS / 8	Open bay	2x GbE / 4	2 / 2	Multiburner	1x 460 W HS / 2
5458E7G	1x Xeon E3-1270 v3 3.5GHz 8MB 1600MHz 4C (80W)	1x 8GB 1600MHz	H1110	4x 2.5" HS / 4	Open bay	2x GbE / 4	2 / 2	Multiburner	1x 460 W HS / 2
5458E8G	1x Xeon E3-1240 v3 3.4GHz 8MB 1600MHz 4C (80W)	1x 4GB 1600MHz	H1110	4x 3.5" HS / 4	Open bay	2x GbE / 4	2 / 2	None	1x 300 W Fixed / 1

† Processor detail: Processor quantity and model, number of cores, core speed, L3 cache, memory speed, TDP.

Processor options

The x3250 M5 server supports only one processor, which is already installed in all models. The following table lists all processors available in standard models of x3250 M5 or via CTO. If there is no corresponding *where-used* model for a particular processor, that processor is only available through the configure-to-order (CTO) process.

Table 5. Processor options

Feature code	Description	Standard models where used
Processors announced July 2014		
A5H4	Intel Celeron Processor G1840 2.8GHz 2MB 1333MHz 2C (53W)	
A5UP	Intel Celeron Processor G1840T 2.5GHz 2MB 1333MHz 2C (35W)	-
A5H3	Intel Celeron Processor G1850 2.9GHz 2MB 1333MHz 2C (53W)	-
A5DY	Intel Core i3 Processor 4150 3.5GHz 3MB 1600MHz 2C (54W)	-
A5E4	Intel Core i3 Processor 4150T 3.0GHz 3MB 1600MHz 2C (35W)	-
A5DW	Intel Core i3 Processor 4350 3.6GHz 4MB 1600MHz 2C (54W)	-
A5E3	Intel Core i3 Processor 4350T 3.1GHz 4MB 1600MHz 2C (35W)	-
A5DV	Intel Core i3 Processor 4360 3.7GHz 4MB 1600MHz 2C (54W)	-
A5E1	Intel Pentium Processor G3240 3.1GHz 3MB 1333MHz 2C (53W)	-
A5E5	Intel Pentium Processor G3240T 2.7GHz 3MB 1333MHz 2C (35W)	-
A5E0	Intel Pentium Processor G3440 3.3GHz 3MB 1600MHz 2C (53W)	A3x
A5UN	Intel Pentium Processor G3440T 2.8GHz 3MB 1600MHz 2C (35W)	-
A5DZ	Intel Pentium Processor G3450 3.4GHz 3MB 1600MHz 2C (53W)	-
A5DQ	Intel Xeon Processor E3-1231 v3 3.4GHz 8MB cache 1600MHz 4C (80W)	C3x, C5x
A5DS	Intel Xeon Processor E3-1240L v3 2.0GHz 8MB cache 1600MHz 4C (25W)	-
A5DP	Intel Xeon Processor E3-1241 v3 3.5GHz 8MB cache 1600MHz 4C (80W)	F3x, F5x
A5DN	Intel Xeon Processor E3-1271 v3 3.6GHz 8MB cache 1600MHz 4C (80W)	G3x
A5DR	Intel Xeon Processor E3-1275L v3 2.7GHz 8MB cache 1600MHz 4C (45W)	-
A5DM	Intel Xeon Processor E3-1281 v3 3.7GHz 8MB cache 1600MHz 4C (82W)	-
A5DT	Intel Xeon Processor E3-1286 v3 3.7GHz 8MB cache 1600MHz 4C (84W)	-
A5DU	Intel Xeon Processor E3-1286L v3 3.2GHz 8MB cache 1600MHz 4C (65W)	-
Processors announced October 2013		
A4QU*	Intel Core i3 Processor 4130 3.4GHz 3MB 1600MHz 2C (54W)	-
A4QW*	Intel Core i3 Processor 4130T 2.9GHz 3MB 1600MH 2C (35W)	-
A4QT	Intel Core i3 Processor 4330 3.5GHz 4MB 1600MHz 2C (54W)	-
A4QV*	Intel Core i3 Processor 4330T 3.0GHz 4MB 1600MHz 2C (35W)	-
A4QS*	Intel Core i3 Processor 4340 3.6GHz 4MB 1600MHz 2C (54W)	-
A4QP*	Intel Pentium Processor G3220 3.0 GHz 3MB 1333MHz 2C (54W)	-
A4QR*	Intel Pentium Processor G3220T 2.6GHz 3MB 1333MHz 2C (35W)	-
A4K7	Intel Pentium Processor G3420 3.2GHz 3MB 1600MHz 2C (54W)	A2x
A4QQ*	Intel Pentium Processor G3420T 2.7GHz 3MB 1600MHz 2C (35W)	-
A4QN*	Intel Pentium Processor G3430 3.3 GHz 3MB 1600MHz 2C (54W)	-
A3UB	Intel Xeon Processor E3-1220 v3 3.1GHz 8MB cache 1600MHz 4C (80W)	B2x

Feature code	Description	Standard models where used
A4K6	Intel Xeon Processor E3-1220L v3 1.1GHz 4MB cache 1600MHz 2C (13W)	-
A3UA*	Intel Xeon Processor E3-1230 v3 3.3 GHz 8MB cache 1600MHz 4C (80W)	C2x, C4x
A4GL	Intel Xeon Processor E3-1230L v3 1.8GHz 8MB cache 1600MHz 4C (25W)	-
A3U9*	Intel Xeon Processor E3-1240 v3 3.4GHz 8MB cache 1600MHz 4C (80W)	F2x
A4GK	Intel Xeon Processor E3-1265L v3 2.5GHz 8MB cache 1600MHz 4C (45W)	-
A3U8	Intel Xeon Processor E3-1270 v3 3.5GHz 8MB cache 1600MHz 4C (80W)	G2x
A3U7*	Intel Xeon Processor E3-1280 v3 3.6GHz 8MB cache 1600MHz 4C (82W)	-
A3UC*	Intel Xeon Processor E3-1285 v3 3.6GHz 8MB cache 1600MHz 4C (84W)	-
A3UD*	Intel Xeon Processor E3-1285L v3 3.1GHz 8MB cache 1600MHz 4C (65W)	-

* Withdrawn from marketing

Memory options

Lenovo DDR3 memory is compatibility tested and tuned for optimal System x® performance and throughput. Lenovo memory specifications are integrated into the light path diagnostics panel for immediate system performance feedback and optimum system uptime. From a service and support standpoint, Lenovo memory automatically assumes the system warranty, and Lenovo provides service and support worldwide.

The x3250 M5 server has four DIMM slots, and only DDR3 ECC UDIMMs are supported. The processor has two memory channels, and there are two DIMMs per channel.

The following rules apply when selecting the memory configuration:

- If more than one DIMM is planned to be installed, DIMMs must be installed in a pair, and both DIMMs in a pair must be identical in type and size.
- Intel Xeon processor E3-1200 v3 product family supports up to 1600 MHz memory speeds for one DIMM per channel and two DIMMs per channel configurations provided that the processors support this memory speed.

The x3250 M5 server supports ECC memory protection.

The following table lists the memory options that are available for the x3250 M5 server.

Table 6. Memory options

Part number	Feature code	Description	Maximum supported	Standard models where used
UDIMMs				
00D5012	A3QB	4GB (1x4GB, 2Rx8, 1.35V) PC3L-12800 CL11 ECC DDR3 1600MHz LP UDIMM	4	A2x, A3x, B2x, C2x, C3x, C5x
00D5016	A3QC	8GB (1x8GB, 2Rx8, 1.35V) PC3L-12800 CL11 ECC DDR3 1600MHz LP UDIMM	4	C4x, F2x, F3x, F5x, G2x, G3x

Internal storage

The x3250 M5 server supports the following internal storage configurations:

- Four 2.5-inch small form factor (SFF) SAS/SATA hot-swap drive bays
- Eight 2.5-inch SFF SAS/SATA hot-swap drive bays
- Four 2.5-inch SFF SAS/SATA simple-swap drive bays
- Eight 2.5-inch SFF SAS/SATA simple-swap drive bays
- Four 3.5-inch large form factor (LFF) SAS/SATA hot-swap drive bays
- Four 3.5-inch LFF SATA simple-swap drive bays

Standard models ship with four 2.5-inch SFF SAS/SATA hot-swap, eight 2.5-inch SFF SAS/SATA hot-swap, four 3.5-inch SAS/SATA hot-swap, or four 3.5-inch SATA simple-swap drive bays. The following table shows the internal storage upgrade and expansion options available for the x3250 M5 server.

Table 7. Internal storage expansion options

Part number	Feature code	Description	Maximum supported
46W6577*	A4GV	2.5" Simple Swap HDD Hardware RAID upgrade kit	1
46W6576*	A4GW	3.5" Simple Swap HDD Hardware RAID upgrade kit	1
00KC525*	AS71	System x3250 M5 Hot Swap HDD RAID 5 Upgrade Kit	1
00AL348*	A4VN	x3250 M5 HS 2.5" HDD 4 to 8 Upgrade Kit	1

* Withdrawn from marketing

Option 46W6577 upgrades models with four 2.5-inch SFF simple-swap drive bays and ServeRAID C100 to hardware RAID models with four or eight SFF simple-swap drive bays. In addition, a supported hardware RAID controller (H1110 for four drive bay models; M1115 or M5110 for four or eight drive bay models) or host bus adapter (HBA) (N2115) is required (not included in the upgrade, it must be purchased separately).

Option 46W6576 upgrades models with four 3.5-inch LFF simple-swap drive bays and ServeRAID C100 to hardware RAID models. In addition, a supported hardware RAID controller (H1110, M1115, or M5110) or HBA (N2115) is required (not included in the upgrade, it must be purchased separately).

Option 00KC525 upgrades models with four 2.5-inch hot-swap drive bays and H1110 controller to models with M1115 or M5110 RAID controller or N2115 HBA. M1115, M5110, or N2215 is not included in the upgrade, it must be purchased separately.

Option 00AL348 upgrades models with four 2.5-inch SFF hot-swap drive bays and hardware RAID controller (M1115 or M5110) or HBA (N2115) to eight 2.5-inch SFF hot-swap drive bays.

Eight drive bays support: Models with 300 W fixed power supply can only support up to four drive bays.

3.5-inch drive bay support: Models with 460 W redundant hot-swap power supplies do not support 3.5-inch drive bays.

An optical drive can be installed internally in models with 2.5-inch hot-swap or simple-swap drive bays (no optical drive support in models with 3.5-inch drive bays).

Controllers for internal storage

The following table lists the internal RAID controllers, HBAs, and the additional options that are used for the internal disk storage of the x3250 M5 server. For PCIe adapters, the table also indicates which slot the adapter is installed in.

Table 8. RAID controllers for internal storage

Part number	Feature code	Description	Maximum supported	Standard models where used
Adapters				
None#	A17T	ServeRAID C100	1	A2x, B2x
81Y4406	A17U	ServeRAID C100 Series RAID 5 Upgrade-FoD	1	-
81Y4492	A1XL	ServeRAID H1110 SAS/SATA Controller	1 (slot 1)	C2x, C4x, F2x
81Y4448	A1MZ	ServeRAID M1115 SAS/SATA Controller	1 (slot 2)	G2x
46C8988	A3MW	N2115 SAS/SATA HBA	1 (slot 2)	-
ServeRAID M1100 upgrades				
81Y4542	A1X1	ServeRAID M1100 Series Zero Cache/RAID 5 Upgrade	1	-
ServeRAID M5110 upgrades				
81Y4481	A347	ServeRAID M5110 SAS/SATA Controller	1 (slot 2)	-
81Y4544	A1X2	ServeRAID M5100 Series Zero Cache/RAID 5 Upgrade	1	-
81Y4484	A1J3	ServeRAID M5100 Series 512MB Cache/RAID 5 Upgrade	1	-
81Y4487	A1J4	ServeRAID M5100 Series 512MB Flash/RAID 5 Upgrade	1	-
81Y4559	A1WY	ServeRAID M5100 Series 1GB Flash/RAID 5 Upgrade	1	-
81Y4508	A22E	ServeRAID M5100 Series Battery Kit	1*	-
81Y4546	A1X3	ServeRAID M5100 Series RAID 6 Upgrade	1†	-
90Y4273	A2MC	ServeRAID M5100 Series Performance Accelerator	1	-
90Y4318	A2MD	ServeRAID M5100 Series SSD Caching Enabler	1	-

The C100 is an onboard ServeRAID controller.
* The ServeRAID M5100 Series Battery Kit (81Y4508) is supported only with ServeRAID M5100 Series 512MB Cache/RAID 5 Upgrade (81Y4484).
† The ServeRAID M5100 Series RAID 6 Upgrade (81Y4546) requires RAID 5 Upgrade with caches (81Y4484, 81Y4487, or 81Y4559).

The C100 is an onboard ServeRAID, and it does not consume a PCIe slot. The H1110 RAID adapter is supported in a dedicated PCIe slot (slot 1). All other hardware RAID adapters and HBAs are supported only in PCIe slot 2.

The following table (Parts 1 and 2) lists drive types and internal drive bay configurations that are supported by the internal RAID controllers and HBAs (SAS HDDs include both SAS and near-line (NL) SAS HDDs, and SATA HDDs include both SATA and NL SATA HDDs).

Table 9. RAID controllers, drive types, and internal drive bays (Part 1: Fixed power supply unit (PSU) models)

RAID controller (Models with fixed power supply)	Drive type	4x 2.5-in. hot-swap	8x 2.5-in. hot-swap	4x 2.5-in. simple-swap	8x 2.5-in. simple-swap	4x 3.5-in. hot-swap	4x 3.5-in. simple-swap
ServeRAID C100	SAS HDD	No support	No support	No support	No support	No support	No support
	SATA HDD	No support	No support	Yes	No support	No support	Yes
	SATA SSD	No support	No support	No support	No support	No support	No support
ServeRAID H1110	SAS HDD	Yes	No support	Yes	No support	Yes	Yes
	SATA HDD	Yes	No support	Yes	No support	Yes	Yes
	SATA SSD	Yes	No support	Yes	No support	No support	No support
ServeRAID M1115	SAS HDD	Yes	No support	Yes	No support	Yes	Yes
	SATA HDD	Yes	No support	Yes	No support	Yes	Yes
	SATA SSD	Yes	No support	Yes	No support	No support	No support
ServeRAID M5110	SAS HDD	Yes	No support	Yes	No support	Yes	Yes
	SATA HDD	Yes	No support	Yes	No support	Yes	Yes
	SATA SSD	Yes	No support	Yes	No support	No support	No support
N2115 HBA	SAS HDD	Yes	No support	Yes	No support	Yes	Yes
	SATA HDD	Yes	No support	Yes	No support	Yes	Yes
	SATA SSD	Yes	No support	Yes	No support	No support	No support

Table 10. RAID controllers, drive types, and internal drive bays (Part 2: Redundant PSU models)

RAID controller (Models with hot-swap power supplies)	Drive type	4x 2.5-in. hot-swap	8x 2.5-in. hot-swap	4x 2.5-in. simple-swap	8x 2.5-in. simple-swap	4x 3.5-in. hot-swap	4x 3.5-in. simple-swap
ServeRAID C100	SAS HDD	No support	No support	No support	No support	No support	No support
	SATA HDD	No support	No support	Yes	No support	No support	No support
	SATA SSD	No support	No support	No support	No support	No support	No support
ServeRAID H1110	SAS HDD	Yes	No support	Yes	No support	No support	No support
	SATA HDD	Yes	No support	Yes	No support	No support	No support
	SATA SSD	Yes	No support	Yes	No support	No support	No support
ServeRAID M1115	SAS HDD	Yes	Yes	Yes	Yes	No support	No support
	SATA HDD	Yes	Yes	Yes	Yes	No support	No support
	SATA SSD	Yes	Yes	Yes	Yes	No support	No support
ServeRAID M5110	SAS HDD	Yes	Yes	Yes	Yes	No support	No support
	SATA HDD	Yes	Yes	Yes	Yes	No support	No support
	SATA SSD	Yes	Yes	Yes	Yes	No support	No support
N2115 HBA	SAS HDD	Yes	Yes	Yes	Yes	No support	No support
	SATA HDD	Yes	Yes	Yes	Yes	No support	No support
	SATA SSD	Yes	Yes	Yes	Yes	No support	No support

The ServeRAID C100 onboard controller has the following specifications:

- Onboard SATA controller with ServeRAID capabilities
- Four internal SATA ports with up to 6 Gbps throughput per port for HDD connectivity
- One internal 3 Gbps SATA port for SATA CD/DVD-ROM connectivity
- Five internal 7-pin L-shape SATA connectors
- Support for RAID levels 0, 1, and 10
- Support for SATA simple-swap hard drives (Solid-state drives and hot-swap drives are not supported.)
- Connection to up to four internal drives
- Support for up to 8 virtual drives
- Support for virtual drive sizes greater than 2 TB
- Fixed stripe unit size of 64 KB
- Support for MegaRAID Storage Manager management software

The ServeRAID H1110 adapter has the following specifications:

- Four internal 6 Gbps SAS/SATA ports
- One x4 mini-SAS internal connector (SFF-8087)
- Up to 6 Gbps throughput per port
- Based on the LSI SAS2004 6 Gbps RAID on Chip (ROC) controller
- PCIe 2.0 x4 host interface
- Supports RAID 0, 1, 1E, and 10
- Connects to up to four SAS or SATA drives (SAS expanders are not supported.)

The ServeRAID M1115 SAS/SATA Controller has the following specifications:

- Eight internal 6 Gbps SAS/SATA ports
- Two x4 mini-SAS internal connectors (SFF-8087)

- Supports connections to SAS/SATA drives and SAS Expanders
- Supports RAID levels 0, 1, and 10
- Supports RAID levels 5 and 50 with optional M1100 Series RAID 5 upgrades
- Up to 6 Gbps throughput per port
- PCIe 2.0 x8 host interface
- Based on the LSI SAS2008 6 Gbps ROC controller

The ServeRAID M5110 SAS/SATA Controller has the following specifications:

- Eight internal 6 Gbps SAS/SATA ports
- Two x4 mini-SAS internal connectors (SFF-8087)
- Supports connections to SAS/SATA drives and SAS Expanders
- Supports RAID levels 0, 1, and 10
- Supports RAID levels 5 and 50 with optional M5100 Series RAID 5 upgrades
- Supports RAID levels 6 and 60 with the optional M5100 Series RAID 6 Upgrade
- Supports 512 MB battery-backed cache or 512 MB or 1 GB flash-backed cache
- Support for SSD performance optimization with the optional M5100 Series Performance Accelerator
- Support for SSD caching with the optional M5100 Series SSD Caching Enabler
- Up to 6 Gbps throughput per port
- PCIe 3.0 x8 host interface
- Based on the LSI SAS2208 6 Gbps ROC controller

The N2115 SAS/SATA HBA has the following specifications:

- Eight internal 6 Gbps SAS/SATA ports
- Two x4 mini-SAS internal connectors (SFF-8087)
- Supports connections to SAS/SATA HDDs and SATA SSDs
- Optimized for SSD performance
- No RAID support
- Up to 6 Gbps throughput per port
- PCIe 3.0 x8 host interface
- Based on the LSI SAS2308 6 Gbps controller

For more information, see the list of Lenovo Press product guides in the RAID adapters category:
http://lenovopress.com/systemx/raid

Internal drive options

The following table lists drive options for the internal storage of the x3250 M5 server.

- Table 11: 2.5-inch hot-swap 6 Gb SAS/SATA HDDs
- Table 12: 2.5-inch hot-swap 6 Gb SAS/SATA SSDs
- Table 13: 3.5-inch hot-swap 6 Gb SAS/SATA HDDs
- Table 14: 3.5-inch hot-swap 6 Gb SAS/SATA SSDs
- Table 15: 3.5-inch simple-swap 6 Gb SAS/SATA HDDs

Table 11. 2.5-inch hot-swap 6 Gb SAS/SATA HDDs

Part number	Feature	Description	Maximum supported
2.5-inch hot-swap HDDs - 6 Gb SAS 10K			
90Y8877	A2XC	300GB 10K 6Gbps SAS 2.5" SFF G2HS HDD	8
90Y8872	A2XD	600GB 10K 6Gbps SAS 2.5" SFF G2HS HDD	8
81Y9650	A282	900GB 10K 6Gbps SAS 2.5" SFF HS HDD	8
00NA441	ASCD	1.8TB 10K 6Gbps SAS 2.5" G2HS 512e HDD	8
2.5-inch hot-swap HDDs - 6 Gb SAS 15K			
81Y9670	A283	300GB 15K 6Gbps SAS 2.5" G2HS HDD	8
00AJ300	A4VB	600GB 15K 6Gbps SAS 2.5" G2HS HDD	8
2.5-inch hot-swap HDDs - 6 Gb NL SAS			
81Y9690	A1P3	1TB 7.2K 6Gbps NL SAS 2.5" SFF HS HDD	8
2.5-inch hot-swap HDDs - 6 Gb NL SATA			
81Y9726	A1NZ	500GB 7.2K 6Gbps NL SATA 2.5" SFF HS HDD	8
81Y9730	A1AV	1TB 7.2K 6Gbps NL SATA 2.5" SFF HS HDD	8
2.5-inch hot-swap SED HDDs - 6 Gb SAS 10K			
90Y8908	A3EF	600GB 10K 6Gbps SAS 2.5" SFF G2HS SED	8

Table 12. 2.5-inch hot-swap 6 Gb SAS/SATA SSDs

Part number	Feature	Description	Maximum supported
2.5-inch hot-swap SSDs - 6 Gb SATA - Enterprise Mainstream (3-5 DWPD)			
00AJ355	A56Z	120GB SATA 2.5" MLC HS Enterprise Value SSD	8
00AJ360	A570	240GB SATA 2.5" MLC HS Enterprise Value SSD	8
00AJ365	A571	480GB SATA 2.5" MLC HS Enterprise Value SSD	8
00AJ370	A572	800GB SATA 2.5" MLC HS Enterprise Value SSD	8
2.5-inch hot-swap SSDs - 6 Gb SATA - Enterprise Entry (<3 DWPD)			
00FN268	A5U4	S3500 1.6TB SATA 2.5" MLC HS Enterprise Value SSD	8
00YC365	AT8M	120GB Enterprise Entry SATA HS 2.5" SSD	8
00YC370	AT8N	240GB Enterprise Entry SATA HS 2.5" SSD	8
00YC375	AT8P	480GB Enterprise Entry SATA HS 2.5" SSD	8
00YC380	AT8Q	960GB Enterprise Entry SATA HS 2.5" SSD	8

Table 13. 3.5-inch hot-swap 6 Gb SAS/SATA HDDs

Part number	Feature	Description	Maximum supported
3.5-inch hot-swap HDDs - 6 Gb NL SAS			
00ML213	AS78	6TB 7.2K 6Gbps NL SAS 3.5" G2HS 512e HDD	4
3.5-inch hot-swap HDDs - 6 Gb NL SATA			
81Y9786	A22Y	500GB 7.2K 6Gbps NL SATA 3.5" G2HS HDD	4
81Y9790	A22P	1TB 7.2K 6Gbps NL SATA 3.5" G2HS HDD	4
81Y9794	A22T	2TB 7.2K 6Gbps NL SATA 3.5" G2HS HDD	4
00FN173	A5VM	6TB 7.2K 6Gbps NL SATA 3.5" G2HS 512e HDD	4

Table 14. 3.5-inch hot-swap 6 Gb SAS/SATA SSDs

Part number	Feature	Description	Maximum supported
3.5-inch hot-swap SSDs - 6 Gb SATA - Enterprise Performance (10+ DWPD)			
00YC340	AT9G	Intel S3710 400GB Enterprise Performance SATA HS 3.5" SSD	4
00YC345	AT9H	Intel S3710 800GB Enterprise Performance SATA HS 3.5" SSD	4
3.5-inch hot-swap SSDs - 6 Gb SATA - Enterprise Entry (<3 DWPD)			
00YC420	AT8Y	960GB Enterprise Entry SATA HS 3.5" SSD	4

Table 15. 3.5-inch simple-swap 6 Gb SAS/SATA HDDs

Part number	Feature	Description	Maximum supported
3.5-inch simple-swap HDDs - 6 Gb NL SATA			
81Y9802	A22U	500GB 7.2K 6Gbps NL SATA 3.5" G2SS HDD	4
81Y9806	A22X	1TB 7.2K 6Gbps NL SATA 3.5" G2SS HDD	4
81Y9810	A22W	2TB 7.2K 6Gbps NL SATA 3.5" G2SS HDD	4
00FN118	A5VE	2TB 7.2K 6Gbps NL SATA 3.5" G2SS 512e HDD	4
00FN148	A5VJ	4TB 7.2K 6Gbps NL SATA 3.5" G2SS 512e HDD	4

Internal backup units

The x3250 M5 server does not support internal tape drive options or other internal backup units. However, it can be attached to the external tape drives by using USB, SAS, or Fibre Channel connectivity (see Table 24).

Optical drives

The x3250 M5 server supports the optical drive options listed in the following table. Server models with 3.5-inch HDDs do not support an internal optical drive.

Table 16. Optical drives

Part number	Feature code	Description	Maximum supported	Standard models where used
46M0901*	4161	UltraSlim Enhanced SATA DVD-ROM	1	-
46M0902*	4163	UltraSlim Enhanced SATA Multi-Burner	1	-
00MV945	ATTZ	12.7mm Ultra-Slim Enhanced SATA Multi-Burner	1	-
00MV944	ATU0	12.7mm Ultra-Slim Enhanced SATA DVD-ROM	1	-

* Withdrawn from marketing

UltraSlim Enhanced SATA DVD-ROM (part number 00MV944) supports the following media and speeds for reading:

- CD-ROM 24X
- CD-R 24X
- CD-RW 24X
- DVD-ROM (4.7 GB) 8X
- DVD-ROM (dual layer, 8.5 GB) 8X
- DVD-R (4.7 GB) 8X
- DVD-R (dual layer, 8.5 GB) 8X
- DVD+R (4.7 GB) 8X
- DVD+R (dual layer, 8.5 GB) 8X
- DVD-RW (4.7 GB) 8X
- DVD+RW (4.7 GB) 8X
- DVD-RAM (4.7 GB) 5X

UltraSlim Enhanced SATA Multi-Burner (00MV945) supports the same media and speeds for reading as DVD-ROM (00MV944). This drive also supports the following media and speeds for writing:

- CD-R 24X
- CD-RW 24X
- DVD-R (4.7 GB) 8X
- DVD-R (dual layer, 8.5 GB) 6X
- DVD+R (4.7 GB) 8X
- DVD+R (dual layer, 8.5 GB) 6X
- DVD-RW (4.7 GB) 6X
- DVD+RW (4.7 GB) 8X
- DVD-RAM (4.7 GB) 5X

I/O expansion options

The x3250 M5 server supports two PCIe slots that come standard with all models. The slot form factors are specified:

- Slot 1: PCIe 3.0 x4 (x4-wired); dedicated slot for the H1110 adapter
- Slot 2: PCIe 3.0 x8 (x8-wired), full-height, half-length

Network adapters

The x3250 M5 supports up to four integrated Gigabit Ethernet 1000BASE-T RJ-45 ports (two enabled standard, and two enabled optionally with the FoD upgrade). One port (Ethernet port 1) is shared between the IMM2 and the operating system.

The integrated network interface controller (NIC) has the following features:

- A Broadcom BCM5719 chip

- Up to four Gigabit Ethernet ports (two enabled standard, and two enabled optionally with the 00AM013 FoD upgrade)

- NIC Teaming (load balancing and failover)

- Ethernet features:
    - Compliant with 1 Gb Ethernet IEEE 802.3, 802.3u, and 802.3ab PHY specifications
    - Integrated PHY for 10/100/1000 Mbps for multispeed, full, and half-duplex auto-negotiation
    - Automatic MDI crossover
    - IEEE 802.3x-compliant flow control support
    - IEEE 1588 protocol and 802.1AS time synchronization implementation
    - IEEE802.3az - Energy Efficient Ethernet (EEE)

- I/O Virtualization features:
    - I/O Virtualization support for VMware NetQueue and Microsoft virtual machine queue (VMQ)
    - Function Level Reset (FLR)
    - IEEE 802.1q Virtual Local Area Network (VLAN) tagging support

- Stateless offload and performance features:
    - TCP, IP, and User Datagram Protocol (UDP) checksum offload
    - TCP segmentation offload (TCO)
    - Large Send Offload (LSO)
    - Receive Side Scaling (RSS) and Transmit Side Scaling (TSS)
    - Message Signal Interrupt (MSI) and Message Signal Interrupt Extension (MSI-X) support
    - Support for jumbo frames up to 9600 bytes

The following table lists additional network adapters.

Table 17. Network adapters

Part number	Feature code	Description	Maximum supported
10 Gb Ethernet			
44T1370	A5GZ	Broadcom NetXtreme 2x10GbE BaseT Adapter	1 (slot 2)
00JY820	A5UT	Emulex VFA5 2x10 GbE SFP+ PCIe Adapter	1* (slot 2)
00JY830	A5UU	Emulex VFA5 2x10 GbE SFP+ Adapter and FCoE/iSCSI SW	1* (slot 2)
None**	AS3M	Emulex VFA5 2x10 GbE SFP+ Integrated Adapter	1* (slot 2)
49Y7960	A2EC	Intel X520-DA2 Dual Port 10GbE SFP+ Adapter	1* (slot 2)
49Y7970	A2ED	Intel X540-T2 Dual Port 10GBaseT Adapter	1 (slot 2)
01DA900	AU2Y	Intel X710-DA2 2x10GbE SFP+ Adapter	1* (slot 2)
00D9690	A3PM	Mellanox ConnectX-3 10GbE Adapter	1* (slot 2)
90Y4600	A3MR	QLogic 8200 Dual Port 10GbE SFP+ Virtual Fabric Adapter (VFA)	1* (slot 2)
Integrated NIC Features on Demand (FoD) upgrades			
00AM013	A4K5	Broadcom Ethernet Adapter 5719 - 4 port upgrade	1
Gigabit Ethernet			
90Y9370	A2V4	Broadcom NetXtreme I Dual Port GbE Adapter	1 (slot 2)
00AG500	A56K	Intel I350-F1 1xGbE Fiber Adapter	1 (slot 2)
00AG510	A56L	Intel I350-T2 2xGbE BaseT Adapter	1 (slot 2)
00AG520	A56M	Intel I350-T4 4xGbE BaseT Adapter	1 (slot 2)
49Y4230	5767	Intel Ethernet Dual Port Server Adapter I340-T2	1 (slot 2)
49Y4240	5768	Intel Ethernet Quad Port Server Adapter I340-T4	1 (slot 2)

* These adapters require SFP+ optical transceivers or DAC cables that must be purchased separately. See the following table.
** Configure to order (CTO) only; not available as an option part number

For more information, see the list of Lenovo Press product guides in the Ethernet and IB adapters category: http://lenovopress.com/systemx/networkadapters

The following table lists the supported 10 Gb Ethernet SFP+ optical transceivers and DAC cables. For multi-port adapters, all adapter ports must have the same type of transceiver or DAC cable selected.

Table 18. Supported optical transceivers and DAC cables - 10 Gb Ethernet

Part number	Feature code	Description
10 GbE SFP+ LR transceivers (for SFP+ adapters)		
00FE331	B0RJ	Lenovo 10GBASE-LR SFP+ Transceiver
90Y9412	A1PM	Lenovo 10Gb/s LR SFP+ XCVR
10 GbE SFP+ SR transceivers (for SFP+ adapters)		
46C3447	5053	Lenovo 10GBASE-SR SFP+ Transceiver
49Y4216	0069	Brocade 10Gb SFP+ SR Optical Transceiver
49Y4218	0064	QLogic 10Gb SFP+ SR Optical Transceiver
10 GbE SFP+ DAC cables (for SFP+ adapters)		
00D6288	A3RG	Lenovo 0.5m Passive SFP+ DAC Cable
90Y9427	A1PH	Lenovo 1m Passive SFP+ DAC Cable
00AY764	A51N	Lenovo 1.5m Passive SFP+ DAC Cable
00AY765	A51P	Lenovo 2m Passive SFP+ DAC Cable
90Y9430	A1PJ	Lenovo 3m Passive SFP+ DAC Cable
90Y9433	A1PK	Lenovo 5m Passive SFP+ DAC Cable
00D6151	A3RH	Lenovo 7m Passive SFP+ DAC Cable

SAS adapters for external storage

The following table lists SAS HBAs and RAID adapters supported by x3250 M5 server for use with external storage.

Table 19. SAS HBAs and RAID adapters

Part number	Feature code	Description	Maximum supported
SAS HBAs			
46C9010	A3MV	N2125 SAS/SATA HBA	1 (slot 2)
00AE912	A5M0	N2225 SAS/SATA HBA	1 (slot 2)
External RAID controllers			
81Y4478	A1WX	ServeRAID M5120 SAS/SATA Controller	1 (slot 2)
00AE938	A5ND	ServeRAID M5225 SAS/SATA Controller	1 (slot 2)
ServeRAID M5120 upgrades			
81Y4484	A1J3	ServeRAID M5100 Series 512MB Cache/RAID 5 Upgrade	1
81Y4487	A1J4	ServeRAID M5100 Series 512MB Flash/RAID 5 Upgrade	1
81Y4559	A1WY	ServeRAID M5100 Series 1GB Flash/RAID 5 Upgrade	1
81Y4508	A22E	ServeRAID M5100 Series Battery Kit	1
81Y4546	A1X3	ServeRAID M5100 Series RAID 6 Upgrade	1*
90Y4273	A2MC	ServeRAID M5100 Series SSD Performance Accelerator	1*
90Y4318	A2MD	ServeRAID M5100 Series SSD Caching Enabler	1*

* One M5100 Series FoD software license is required per server.

For more information, see the list of Lenovo Press product guides in the Host bus adapters category: http://lenovopress.com/systemx/hba

The following table compares the specifications of the external SAS HBAs and RAID adapters.

Table 20. External storage adapter specifications

Feature	N2125	N2225	M5120	M5225-2GB
Adapter type	SAS HBA	SAS HBA	RAID adapter	RAID adapter
Part number	46C9010	00AE912	81Y4478	00AE938
Form factor	Low profile	Low profile	Low profile	Low profile
Controller chip	LSI SAS2308	LSI SAS3008	LSI SAS2208	LSI SAS3108
Host interface	PCIe 3.0 x8	PCIe 3.0 x8	PCIe 3.0 x8	PCIe 3.0 x8
Port interface	6 Gbps SAS	12 Gbps SAS	6 Gbps SAS	12 Gbps SAS
Number of external ports	8	8	8	8
External port connectors	2x Mini-SAS (SFF-8088)	2x Mini-SAS HD (SFF-8644)	2x Mini-SAS (SFF-8088)	2x Mini-SAS HD (SFF-8644)
Drive interface	SAS, SATA	SAS, SATA	SAS, SATA	SAS, SATA
Drive type	HDD, SSD	HDD, SSD	HDD, SED, SSD	HDD, SED, SSD
Maximum number of devices	1024	1024	240	240
RAID levels	None	None	0/1/10; Optional 5/50 and 6/60	0/1/10/5/50
JBOD mode	Yes	Yes	No	No
Cache	None	None	512MB Cache/RAID 5 (81Y4484) 512MB Flash/RAID 5 (81Y4487) 1GB Flash/RAID 5 (81Y4559)	2 GB (included)
CacheVault cache protection	None	None	Flash (with cache upgrades)	Flash (included)
FastPath	None	None	Optional (90Y4273)	Not supported with x3250 M5
CacheCade Pro 2.0	None	None	Optional (90Y4318)	Not supported with x3250 M5

Cache upgrade required: The ServeRAID M5120 SAS/SATA Controller ships standard without a cache. One of the available cache upgrades (81Y4487, 81Y4559, or 47C8670) is required for the M5120 adapter operations, and it must be purchased together with the controller.

For more information about the adapters, see these Lenovo Press Product Guides:

- N2125: http://lenovopress.com/tips1062
- N2225: https://lenovopress.com/tips1175
- ServeRAID M5120: http://lenovopress.com/tips0858
- ServeRAID M5225: http://lenovopress.com/tips1258

Fibre Channel host bus adapters

The following table lists the Fibre Channel HBAs that are supported by the x3250 M5 server.

Table 21. Fibre Channel HBAs

Part number	Feature code	Description	Maximum supported
Fibre Channel - 16 Gb			
81Y1662	A2W6	Emulex 16Gb FC Dual-port HBA	1 (slot 2)
81Y1655	A2W5	Emulex 16Gb FC Single-port HBA	1 (slot 2)
Fibre Channel - 8 Gb			
42D0494	3581	Emulex 8Gb FC Dual-port HBA	1 (slot 2)
42D0485	3580	Emulex 8Gb FC Single-port HBA	1 (slot 2)
42D0510	3579	QLogic 8Gb FC Dual-port HBA	1 (slot 2)
42D0501	3578	QLogic 8Gb FC Single-port HBA	1 (slot 2)

For more information, see the list of Lenovo Press product guides in the Host bus adapters category:
http://lenovopress.com/systemx/hba

PCIe SSD adapters

The x3250 M5 server does not support High IOPS SSD adapters.

GPU adapters

The x3250 M5 server does not support graphics processing units (GPUs).

Power supplies

The x3250 M5 server supports one 300 W AC fixed power supply or up to two redundant 460 W hot-swap power supplies. These power supplies are 80 PLUS certified. Standard models come either with one fixed or one hot-swap power supply (model dependent). The following table lists the power supplies. An AC hot-swap power supply option ships standard with one 2.8m, 10A/100-250V, C13 to IEC 320-C14 rack power cable.

Table 22. Power supplies

Part number	Feature code	Description	Maximum supported	Standard models where used
None**	None*	300W Fixed Power Supply Unit	1	A2x, B2x, C2x, C4x
94Y6236*	A2E8	460W Redundant Power Supply Unit with 80+ certified	2	F2x, G2x

* Withdrawn from marketing
** Fixed power supply comes either with standard or custom (special bid or CTO) models.

Eight drive bays support: Models with 300 W fixed power supply can only support up to four drive bays.

3.5-inch drive bay support: Models with 460 W redundant hot-swap power supplies do not support 3.5-inch drive bays.

Integrated virtualization

The x3250 M5 server supports VMware ESXi installed on a USB memory key. The key is installed in a USB socket inside the server. The following table lists the virtualization options.

Table 23. Virtualization options

Part number	Feature code	Description	Maximum supported
00WH140	ATRM	Blank USB Memory Key 4G SLC for VMware ESXi Downloads	1
41Y8298	A2G0	Blank USB Memory Key for VMware ESXi Downloads	1
41Y8382	A4WZ	USB Memory Key for VMware ESXi 5.1 Update 1	1
41Y8385*	A584	USB Memory Key for VMware ESXi 5.5	1
00WH138	ATRL	USB Memory Key 4G for VMware ESXi 6.0 Update 1A	1

* Withdrawn from marketing

Systems management

The server contains Integrated Management Module II (IMM2), which provides advanced service-processor control, monitoring, and an alerting function. If an environmental condition exceeds a threshold or if a system component fails, the IMM2 lights LEDs to help you diagnose the problem, records the error in the event log, and alerts you to the problem. Optionally, the IMM2 also provides a virtual presence capability for remote server management capabilities.

The server offers the following light path diagnostics LEDs to indicate where a hardware fault has been detected:

- Processor
- Each DIMM
- Each PCIe slot
- Each system fan
- Each power supply
- System battery
- IMM2 heartbeat

The IMM2 provides remote server management through industry-standard interfaces:

- Intelligent Platform Management Interface (IPMI) Version 2.0
- Simple Network Management Protocol (SNMP) Version 3
- Common Information Model (CIM)
- Web browser

The optional Integrated Management Module Advanced Upgrade is required to enable the remote presence and blue-screen capture features. The remote presence feature provides the following functions:

- Remotely viewing video with graphics resolutions up to 1600x1200 at 75 Hz with up to 23 bits per pixel, regardless of the system state

- Remotely accessing the server using the keyboard and mouse from a remote client

- Mapping the CD or DVD drive, diskette drive, and USB flash drive on a remote client, and mapping ISO and diskette image files as virtual drives that are available for use by the server

- Uploading a diskette image to the IMM memory and mapping it to the server as a virtual drive

The blue-screen capture feature captures the video display contents before the IMM restarts the server when the IMM detects an operating system hang condition. A system administrator can use the blue-screen capture to assist in determining the cause of the hang condition. The following table lists the remote management option.

Table 24. Remote management option

Part number	Feature code	Description	Maximum supported
90Y3901	A1ML	Integrated Management Module Advanced Upgrade	1

For remote management, IMM2 uses Ethernet port 1. Ethernet port 1 is shared between the IMM2 and the operating system.

Thermal option kit

The thermal option kit allows clients to use x3250 M5 servers in environments with the temperature limits extended to 40 degrees C. It also helps lower fan speeds depending on the environment's temperature to lower acoustic noise and energy use. The following table shows ordering information for the thermal kit.

Note: The kit is now withdrawn from marketing

Table 25. Thermal option kit

Part number	Feature code	Description	Maximum supported
00J6351*	A3SD	Operating Temperature Enhancement Kit	1

* Withdrawn from marketing

Rack installation

Models of the x3250 M5 server include a static rail kit. No cable management arm is included nor available.

The kit comprises of:

- Two friction rails
- Mounting screws

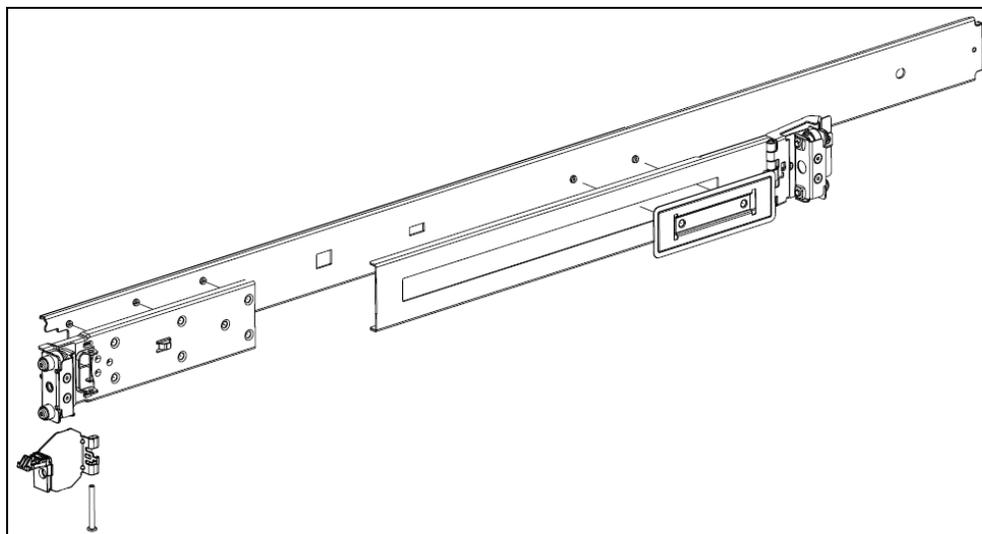The following figure shows one of the friction rails.

Figure 5. Friction rail

Operating system support

The server supports the following operating systems:

- Microsoft Windows Server 2008 R2 SP1
- Microsoft Windows Server 2012
- Microsoft Windows Server 2012 R2
- Microsoft Windows Server 2016
- Red Hat Enterprise Linux 5.10 32-bit
- Red Hat Enterprise Linux 5.10 Xen x64
- Red Hat Enterprise Linux 5.10 x64
- Red Hat Enterprise Linux 5.9 32-bit
- Red Hat Enterprise Linux 5.9 x64

- Red Hat Enterprise Linux 6.10 x64
- Red Hat Enterprise Linux 6.5 32-bit
- Red Hat Enterprise Linux 6.5 x64
- Red Hat Enterprise Linux 6.6 32-bit
- Red Hat Enterprise Linux 6.6 x64
- Red Hat Enterprise Linux 6.7 32-bit
- Red Hat Enterprise Linux 6.7 x64
- Red Hat Enterprise Linux 6.8 32-bit
- Red Hat Enterprise Linux 6.8 x64
- Red Hat Enterprise Linux 7.0
- Red Hat Enterprise Linux 7.1
- Red Hat Enterprise Linux 7.2
- Red Hat Enterprise Linux 7.3
- Red Hat Enterprise Linux 7.4
- Red Hat Enterprise Linux 7.5
- Red Hat Enterprise Linux 7.6
- Red Hat Enterprise Linux 7.7
- SUSE Linux Enterprise Server 11 Xen x64 SP3
- SUSE Linux Enterprise Server 11 Xen x64 SP4
- SUSE Linux Enterprise Server 11 x64 SP2
- SUSE Linux Enterprise Server 11 x64 SP3
- SUSE Linux Enterprise Server 11 x64 SP4
- SUSE Linux Enterprise Server 11 x86 SP2
- SUSE Linux Enterprise Server 11 x86 SP3
- SUSE Linux Enterprise Server 11 x86 SP4
- SUSE Linux Enterprise Server 12
- SUSE Linux Enterprise Server 12 SP1
- SUSE Linux Enterprise Server 12 SP2
- SUSE Linux Enterprise Server 12 SP3
- SUSE Linux Enterprise Server 12 SP4
- SUSE Linux Enterprise Server 12 Xen
- SUSE Linux Enterprise Server 12 Xen SP1
- SUSE Linux Enterprise Server 12 Xen SP2
- SUSE Linux Enterprise Server 12 Xen SP3
- SUSE Linux Enterprise Server 12 Xen SP4
- Toshiba 4690 OS V6
- VMware ESXi 5.1 U1
- VMware ESXi 5.1 U2
- VMware ESXi 5.1 U3
- VMware ESXi 5.5
- VMware ESXi 5.5 U1
- VMware ESXi 5.5 U2
- VMware ESXi 5.5 U3
- VMware ESXi 6.0
- VMware ESXi 6.0 U1
- VMware ESXi 6.0 U2
- VMware ESXi 6.5
- VMware ESXi 6.5 U1
- VMware ESXi 6.5 U2
- VMware ESXi 6.5 U3

For a complete list of supported, certified and tested operating systems, plus additional details and links to relevant web sites, see the Operating System Interoperability Guide:
https://lenovopress.com/osig#servers=x3250-m5-5458

Physical and electrical specifications

Dimensions and weight (approximate):

- Height: 43 mm (1.7 in.)
- Width: 435 mm (17.1 in.)
- Depth: 576 mm (22.7 in.)
- Maximum weight: 12.3 kg (27.1 lb).

Shipping dimensions and weight (approximate):

- Height: 230 mm (9.1 in.)
- Width: 590 mm (23.2 in.)
- Depth: 1000 mm (39.4 in.)
- Weight (single pack): 12.9 kg (28.4 lb).

Supported environment:

- Air temperature:
  - Server on: 10 °C - 35 °C (50 °F - 95 °F); altitude: 0 - 914 m (3,000 ft).
  - Server on: 10 °C - 32 °C (50 °F - 89.6 °F); altitude: 914 - 2,134 m (7,000 ft).
  - Server off: 10 °C - 43 °C (50 °F - 109.4 °F).
  - Shipment: -40 °C - 60 °C (-40 °F - 140 °F).

- Humidity: 8% - 80%

- Electrical:
  - Models with 460 W redundant hot-swap power supplies:
    - 100 - 127 (nominal) V AC; 50 Hz or 60 Hz; 5.3 A
    - 200 - 240 (nominal) V AC; 50 Hz or 60 Hz; 2.6 A
  - Models with 300 W hot-swap power supplies:
    - 100 - 127 (nominal) V AC; 50 Hz or 60 Hz; 6.0 A
    - 200 - 240 (nominal) V AC; 50 Hz or 60 Hz; 3.0 A
  - Input kilovolt-amperes (kVA) (approximately):
    - Minimum configuration: 0.04 kVA
    - Maximum configuration: 0.50 kVA

- BTU output:
  - Ship configuration: 130 Btu/hr (38 watts)
  - Full configuration: 1720 Btu/hr (504 watts)

- Noise level:
  - 6.5 bels (operating)
  - 6.5 bels (idle)

Warranty options

The system has a three-year warranty with 24x7 standard call center support and 9x5 Next Business Day onsite coverage. Also available are Lenovo Services warranty maintenance upgrades and post-warranty maintenance agreements, with a well-defined scope of services, including service hours, response time, term of service, and service agreement terms and conditions.

Lenovo warranty service upgrade offerings are region-specific. Not all warranty service upgrades are available in every region. For more information about Lenovo warranty service upgrade offerings that are available in your region, go to the Data Center Advisor and Configurator website http://dcsc.lenovo.com, then do the following:

1. In the Customize a Model box in the middle of the page, select the **Services** option in the Customization Option dropdown menu
2. Enter in the machine type & model of the system
3. From the search results, you can click either **Deployment Services** or **Support Services** to view the offerings

The following table explains warranty service definitions in more detail.

Table 26. Warranty service definitions

Term	Description
On-site service	A service technician will arrive at the client's location for equipment service.
24x7x2 hour	A service technician is scheduled to arrive at the client's location within two hours after remote problem determination is completed. Lenovo provides service around the clock, every day, including Lenovo holidays.
24x7x4 hour	A service technician is scheduled to arrive at the client's location within four hours after remote problem determination is completed. Lenovo provides service around the clock, every day, including Lenovo holidays.
9x5x4 hour	A service technician is scheduled to arrive at the client's location within four business hours after remote problem determination is completed. Lenovo provides service 8:00 am - 5:00 pm in the client's local time zone, Monday-Friday, excluding Lenovo holidays. For example, if a customer reports an incident at 3:00 pm on Friday, the technician will arrive by 10:00 am the following Monday.
9x5 next business day	A service technician is scheduled to arrive at the client's location on the business day after remote problem determination is completed. Lenovo provides service 8:00 am - 5:00 pm in the client's local time zone, Monday - Friday, excluding Lenovo holidays. Calls received after 4:00 pm local time require an extra business day for service dispatch. Next business day service is not guaranteed.
Committed Repair	Problems receive priority handling so that repairs are completed within the committed time of 6, 8, or 24 hours. Lenovo provides service 24 hours/day, every day, including Lenovo holidays.

The following Lenovo warranty service upgrades are available:

- Warranty and maintenance service upgrades:
    - Three, four, or five years of 9x5 or 24x7 service coverage
    - Onsite response from next business day to 2 or 4 hours
    - Committed repair service
    - Warranty extension of up to 5 years
    - Post warranty extensions

- Committed Repair Service
  Committed Repair Services enhances the level of Warranty Service Upgrade or Post Warranty/Maintenance Service offering associated with the selected systems. Offerings vary and are available in select countries.

    - Priority handling to meet defined time frames to restore the failing machine to good working condition
    - Committed repair service levels are measured within the following coverage hours:
        - 24x7x6: Service performed 24 hours per day, 7 days per week, within 6 hours
        - 24x7x8: Service performed 24 hours per day, 7 days per week, within 8 hours
        - 24x7x24: Service performed 24 hours per day, 7 days per week, within 24 hours

- Hard Disk Drive Retention
  Lenovo's Hard Disk Drive Retention (HDDR) service is a multi-drive hard drive retention offering that ensures your data is always under your control, regardless of the number of hard drives that are installed in your Lenovo server. In the unlikely event of a hard drive failure, you retain possession of your hard drive while Lenovo replaces the failed drive part. Your data stays safely on your premises, in your hands. The Hard Drive Retention service can be purchased in convenient bundles with our warranty upgrades and extensions.

- Microcode Support
  Keeping microcode current helps prevent hardware failures and security exposure. There are two levels of service: analysis of the installed base and analysis and update where required. Offerings vary by region and can be bundled with other warranty upgrades and extensions.

- Remote Technical Support Services (RTS)
  RTS provides comprehensive technical call center support for covered servers, storage, operating systems, and applications. Providing a single source for support of hardware and software issues, RTS can reduce problem resolution time, decreasing the cost to address technical problems and increasing uptime. Offerings are available for Windows, Linux, IBM Systems Director, VMware, Microsoft business applications, and Lenovo System x storage devices, and IBM OEM storage devices.

Regulatory compliance

The server conforms to the following standards:

- Energy Star 2.0
- FCC - Verified to comply with Part 15 of the FCC Rules, Class A
- Canada ICES-003, issue 4, Class A
- UL/IEC 60950-1
- CSA C22.2 No. 60950-1
- NOM-019
- Japan VCCI, Class A
- Australia/New Zealand AS/NZS CISPR 22:2006, Class A
- IEC-60950-1 (CB Certificate and CB Test Report)
- Taiwan BSMI CNS 13438, Class A); CNS 14336
- China CCC (China GB 4943-2001, GB 9254-2008 Class A, GB 17625.1:2003)
- Korea KN22, Class A; KN24
- Russia/GOST ME01, IEC-60950-1, GOST R 51318.22-99, GOST R 51318.24-99, GOST R 51317.3.2-2006, GOST R 51317.3.3-99
- CE Mark (EN55022 Class A, EN60950-1, EN55024, EN61000-3-2, EN61000-3-3)
- CISPR 22, Class A
- TUV-GS (EN60950-1/IEC60950-1,EK1-ITB2000)

External drive enclosures

The server supports attachment to external drive enclosures using a RAID controller with external ports or a SAS host bus adapter. Adapters supported by the server are listed in the SAS adapters for external storage section.

The following table lists the 6 Gbps SAS external drive enclosures that are offered by Lenovo that can be used with the server for storage expansion.

Table 27. E1012 and E1024 external drive enclosure models

Part number	Description
64111B1	Lenovo Storage E1012 LFF Disk Expansion Single SAS IO Module, Rail Kit, 9x5 NBD
64111B2	Lenovo Storage E1012 LFF Disk Expansion Dual SAS IO Module, Rail Kit, 9x5 NBD
64111B3	Lenovo Storage E1024 SFF Disk Expansion Single SAS IO Module, Rail Kit, 9x5 NBD
64111B4	Lenovo Storage E1024 SFF Disk Expansion Dual SAS IO Module, Rail Kit, 9x5 NBD

For details about supported drives and cables for the Lenovo Storage E1012 and E1024, see the Lenovo Press Product Guide:
http://lenovopress.com/lp0043

The following table lists the 12 Gbps SAS external drive enclosures offered by Lenovo that can be used with the server for storage expansion.

Note: Information provided in this section is for ordering reference purposes only. For the operating system and adapter support details, refer to the interoperability matrix for a particular storage enclosure that can be found on the Lenovo Data Center Support web site:
http://datacentersupport.lenovo.com

Table 28. External drive enclosures

Description	Part number		
	Worldwide	Japan	PRC
Lenovo Storage D1212 LFF Disk Expansion with Dual SAS IO Modules	4587A11	4587A1J	4587A1C
Lenovo Storage D1224 SFF Disk Expansion with Dual SAS IO Modules	4587A31	4587A3J	4587A3C
Lenovo Storage D3284 4TB x 84 HD Expansion Enclosure	641311F		
Lenovo Storage D3284 6TB x 84 HD Expansion Enclosure	641312F		
Lenovo Storage D3284 8TB x 84 HD Expansion Enclosure	641313F		
Lenovo Storage D3284 10TB x 84 HD Expansion Enclosure	641314F		

For details about supported drives, adapters, and cables, see the following Lenovo Press Product Guides:

- Lenovo Storage D1212 and D1224
  http://lenovopress.com/lp0512
- Lenovo Storage D3284
  http://lenovopress.com/lp0513

External storage systems

Lenovo offers the ThinkSystem DE Series and ThinkSystem DM Series external storage systems for high-performance storage. See the DE Series and DM Series product guides for specific controller models, expansion enclosures and configuration options:

- ThinkSystem DE Series Storage
  https://lenovopress.com/storage/thinksystem/de-series#rt=product-guide
- ThinkSystem DM Series Storage
  https://lenovopress.com/storage/thinksystem/dm-series#rt=product-guide
- ThinkSystem DG Series Storage
  https://lenovopress.com/storage/thinksystem/dg-series#rt=product-guide

External backup units

The following table lists the external backup options that are offered by Lenovo.

Table 29. External backup options

Part number	Description
External RDX USB drives	
4T27A10725	ThinkSystem RDX External USB 3.0 Dock
External SAS tape backup drives	
6160S7E	IBM TS2270 Tape Drive Model H7S
6160S8E	IBM TS2280 Tape Drive Model H8S
6160S9E	IBM TS2290 Tape Drive Model H9S
External SAS tape backup autoloaders	
6171S7R	IBM TS2900 Tape Autoloader w/LTO7 HH SAS
6171S8R	IBM TS2900 Tape Autoloader w/LTO8 HH SAS
6171S9R	IBM TS2900 Tape Autoloader w/LTO9 HH SAS
External tape backup libraries	
6741A1F	IBM TS4300 3U Tape Library-Base Unit
6741A3F	IBM TS4300 3U Tape Library-Expansion Unit
Full High 8 Gb Fibre Channel for TS4300	
01KP938	LTO 7 FH Fibre Channel Drive
01KP954	LTO 8 FH Fibre Channel Drive
02JH837	LTO 9 FH Fibre Channel Drive
Half High 8 Gb Fibre Channel for TS4300	
01KP936	LTO 7 HH Fibre Channel Drive
01KP952	LTO 8 HH Fibre Channel Drive
02JH835	LTO 9 HH Fibre Channel Drive
Half High 6 Gb SAS for TS4300	
01KP937	LTO 7 HH SAS Drive
01KP953	LTO 8 HH SAS Drive
02JH836	LTO 9 HH SAS Drive

For more information, see the list of Product Guides in the Backup units category:
https://lenovopress.com/servers/options/backup

Top-of-rack Ethernet switches

The following table lists the Ethernet LAN switches that are offered by Lenovo.

Table 30. Ethernet LAN switches

Part number	Description
1 Gb Ethernet Rack switches	
7Y810011WW	Lenovo ThinkSystem NE0152T RackSwitch (Rear to Front)
7Z320O11WW	Lenovo ThinkSystem NE0152TO RackSwitch (Rear to Front, ONIE)
7159BAX	Lenovo RackSwitch G7028 (Rear to Front)
7159CAX	Lenovo RackSwitch G7052 (Rear to Front)
7159G52	Lenovo RackSwitch G8052 (Rear to Front)
7165H1X	Juniper EX2300-C PoE Switch
7165H2X	Juniper EX2300-24p PoE Switch
1 Gb Ethernet Campus switches	
7Z340011WW	Lenovo CE0128TB Switch (3-Year Warranty)
7Z360011WW	Lenovo CE0128TB Switch (Limited Lifetime Warranty)
7Z340012WW	Lenovo CE0128PB Switch (3-Year Warranty)
7Z360012WW	Lenovo CE0128PB Switch (Limited Lifetime Warranty)
7Z350021WW	Lenovo CE0152TB Switch (3-Year Warranty)
7Z370021WW	Lenovo CE0152TB Switch (Limited Lifetime Warranty)
7Z350022WW	Lenovo CE0152PB Switch (3-Year Warranty)
7Z370022WW	Lenovo CE0152PB Switch (Limited Lifetime Warranty)
10 Gb Ethernet switches	
7159A1X	Lenovo ThinkSystem NE1032 RackSwitch (Rear to Front)
7159B1X	Lenovo ThinkSystem NE1032T RackSwitch (Rear to Front)
7Z330O11WW	Lenovo ThinkSystem NE1064TO RackSwitch (Rear to Front, ONIE)
7159C1X	Lenovo ThinkSystem NE1072T RackSwitch (Rear to Front)
7159CRW	Lenovo RackSwitch G8272 (Rear to Front)
7159GR6	Lenovo RackSwitch G8296 (Rear to Front)
7159BR6	Lenovo RackSwitch G8124E (Rear to Front)
25 Gb Ethernet switches	
7159E1X	Lenovo ThinkSystem NE2572 RackSwitch (Rear to Front)
7Z210O21WW	Lenovo ThinkSystem NE2572O RackSwitch (Rear to Front, ONIE)
7Z330O21WW	Lenovo ThinkSystem NE2580O RackSwitch (Rear to Front, ONIE)
100 Gb Ethernet switches	
7159D1X	Lenovo ThinkSystem NE10032 RackSwitch (Rear to Front)
7Z210O11WW	Lenovo ThinkSystem NE10032O RackSwitch (Rear to Front, ONIE)

For more information, see the list of Product Guides in the following switch categories:

- 1 Gb Ethernet switches: http://lenovopress.com/networking/tor/1gb?rt=product-guide
- 10 Gb Ethernet switches: http://lenovopress.com/networking/tor/10gb?rt=product-guide
- 25 Gb Ethernet switches: http://lenovopress.com/networking/tor/25gb?rt=product-guide
- 40 Gb Ethernet switches: http://lenovopress.com/networking/tor/40gb?rt=product-guide
- 100 Gb Ethernet switches: https://lenovopress.com/networking/tor/100Gb?rt=product-guide

Fibre Channel SAN switches

Lenovo offers the ThinkSystem DB Series of Fibre Channel SAN switches for high-performance storage expansion. See the DB Series product guides for models and configuration options:

- ThinkSystem DB Series SAN Switches:
  https://lenovopress.com/storage/switches/rack#rt=product-guide

Uninterruptible power supply units

The following table lists the uninterruptible power supply (UPS) units that are offered by Lenovo.

Table 31. Uninterruptible power supply units

Part number	Description
55941AX	RT1.5kVA 2U Rack or Tower UPS (100-125VAC)
55941KX	RT1.5kVA 2U Rack or Tower UPS (200-240VAC)
55942AX	RT2.2kVA 2U Rack or Tower UPS (100-125VAC)
55942KX	RT2.2kVA 2U Rack or Tower UPS (200-240VAC)
55943AX	RT3kVA 2U Rack or Tower UPS (100-125VAC)
55943KX	RT3kVA 2U Rack or Tower UPS (200-240VAC)
55945KX	RT5kVA 3U Rack or Tower UPS (200-240VAC)
55946KX	RT6kVA 3U Rack or Tower UPS (200-240VAC)
55948KX	RT8kVA 6U Rack or Tower UPS (200-240VAC)
55949KX	RT11kVA 6U Rack or Tower UPS (200-240VAC)
55948PX	RT8kVA 6U 3:1 Phase Rack or Tower UPS (380-415VAC)
55949PX	RT11kVA 6U 3:1 Phase Rack or Tower UPS (380-415VAC)
55943KT†	ThinkSystem RT3kVA 2U Standard UPS (200-230VAC) (2x C13 10A, 2x GB 10A, 1x C19 16A outlets)
55943LT†	ThinkSystem RT3kVA 2U Long Backup UPS (200-230VAC) (2x C13 10A, 2x GB 10A, 1x C19 16A outlets)
55946KT†	ThinkSystem RT6kVA 5U UPS (200-230VAC) (2x C13 10A outlets, 1x Terminal Block output)
5594XKT†	ThinkSystem RT10kVA 5U UPS (200-230VAC) (2x C13 10A outlets, 1x Terminal Block output)

† Only available in China and the Asia Pacific market.

For more information, see the list of Product Guides in the UPS category:
https://lenovopress.com/servers/options/ups

Power distribution units

The following table lists the power distribution units (PDUs) that are offered by Lenovo.

Table 32. Power distribution units

Part number	Feature code	Description	ANZ	ASEAN	Brazil	EET	MEA	RUCIS	WE	HTK	INDIA	JAPAN	LA	NA	PRC
0U Basic PDUs															
00YJ776	ATZY	0U 36 C13/6 C19 24A 1 Phase PDU	N	Y	Y	N	N	N	N	N	N	Y	Y	Y	N
00YJ779	ATZX	0U 21 C13/12 C19 48A 3 Phase PDU	N	N	Y	N	N	N	Y	N	N	Y	Y	Y	N
00YJ777	ATZZ	0U 36 C13/6 C19 32A 1 Phase PDU	Y	Y	N	Y	Y	Y	Y	Y	Y	N	N	Y	Y
00YJ778	AU00	0U 21 C13/12 C19 32A 3 Phase PDU	Y	Y	N	Y	Y	Y	Y	Y	Y	N	N	Y	Y
0U Switched and Monitored PDUs															
00YJ783	AU04	0U 12 C13/12 C19 Switched and Monitored 48A 3 Phase PDU	N	N	Y	N	N	N	Y	N	N	Y	Y	Y	N
00YJ781	AU03	0U 20 C13/4 C19 Switched and Monitored 24A 1 Phase PDU	N	N	Y	N	Y	N	Y	N	N	Y	Y	Y	N
00YJ782	AU02	0U 18 C13/6 C19 Switched and Monitored 32A 3 Phase PDU	Y	Y	Y	Y	Y	Y	Y	Y	Y	N	Y	N	Y
00YJ780	AU01	0U 20 C13/4 C19 Switched and Monitored 32A 1 Phase PDU	Y	Y	Y	Y	Y	Y	Y	Y	Y	N	Y	N	Y
1U Switched and Monitored PDUs															
4PU7A81117	BNDV	1U 18 C19/C13 switched and monitored 48A 3P WYE PDU - ETL	N	N	N	N	N	N	N	N	N	N	N	Y	N
4PU7A77467	BLC4	1U 18 C19/C13 Switched and Monitored 80A 3P Delta PDU	N	N	N	N	N	N	N	N	N	Y	N	Y	N
4PU7A77469	BLC6	1U 12 C19/C13 switched and monitored 60A 3P Delta PDU	N	N	N	N	N	N	N	N	N	N	N	Y	N
4PU7A77468	BLC5	1U 12 C19/C13 switched and monitored 32A 3P WYE PDU	Y	Y	Y	Y	Y	Y	Y	Y	Y	N	Y	Y	Y
4PU7A81118	BNDW	1U 18 C19/C13 switched and monitored 48A 3P WYE PDU - CE	Y	Y	Y	Y	Y	Y	Y	Y	Y	N	Y	N	Y
46M4002	5896	1U 9 C19/3 C13 Switched and Monitored DPI PDU	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
46M4004	5894	1U 12 C13 Switched and Monitored DPI PDU	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
46M4003	5897	1U 9 C19/3 C13 Switched and Monitored 60A 3 Phase PDU	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
46M4005	5895	1U 12 C13 Switched and Monitored 60A 3 Phase PDU	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
1U Ultra Density Enterprise PDUs (9x IEC 320 C13 + 3x IEC 320 C19 outlets)															
71763NU	6051	Ultra Density Enterprise C19/C13 PDU 60A/208V/3PH	N	N	Y	N	N	N	N	N	N	Y	Y	Y	N
71762NX	6091	Ultra Density Enterprise C19/C13 PDU Module	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
1U C13 Enterprise PDUs (12x IEC 320 C13 outlets)															
39M2816	6030	DPI C13 Enterprise PDU Plus Module (WW)	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y

Part number	Feature code	Description	ANZ	ASEAN	Brazil	EET	MEA	RUCIS	WE	HTK	INDIA	JAPAN	LA	NA	PRC
39Y8941	6010	DPI C13 Enterprise PDU Module (WW)	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
1U C19 Enterprise PDUs (6x IEC 320 C19 outlets)															
39Y8948	6060	DPI C19 Enterprise PDU Module (WW)	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
39Y8923	6061	DPI Three-phase 60A/208V C19 Enterprise PDU (US)	N	N	Y	N	N	N	Y	N	N	N	Y	Y	N
1U Front-end PDUs (3x IEC 320 C19 outlets)															
39Y8938	6002	DPI Single-phase 30A/120V Front-end PDU (US)	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
39Y8939	6003	DPI Single-phase 30A/208V Front-end PDU (US)	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
39Y8934	6005	DPI Single-phase 32A/230V Front-end PDU (International)	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
39Y8940	6004	DPI Single-phase 60A/208V Front-end PDU (US)	Y	N	Y	Y	Y	Y	Y	N	N	Y	Y	Y	N
39Y8935	6006	DPI Single-phase 63A/230V Front-end PDU (International)	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
1U NEMA PDUs (6x NEMA 5-15R outlets)															
39Y8905	5900	DPI 100-127V NEMA PDU	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Line cords for 1U PDUs that ship without a line cord															
40K9611	6504	4.3m, 32A/380-415V, EPDU/IEC 309 3P+N+G 3ph wye (non-US) Line Cord	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
40K9612	6502	4.3m, 32A/230V, EPDU to IEC 309 P+N+G (non-US) Line Cord	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
40K9613	6503	4.3m, 63A/230V, EPDU to IEC 309 P+N+G (non-US) Line Cord	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
40K9614	6500	4.3m, 30A/208V, EPDU to NEMA L6-30P (US) Line Cord	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
40K9615	6501	4.3m, 60A/208V, EPDU to IEC 309 2P+G (US) Line Cord	N	N	Y	N	N	N	Y	N	N	Y	Y	Y	N
40K9617	6505	4.3m, 32A/230V, Souriau UTG Female to AS/NZ 3112 (Aus/NZ) Line Cord	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
40K9618	6506	4.3m, 32A/250V, Souriau UTG Female to KSC 8305 (S. Korea) Line Cord	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y

For more information, see the Lenovo Press documents in the PDU category:
https://lenovopress.com/servers/options/pdu

Rack cabinets

The x3250 M5 server can be installed in the rack cabinets that are listed in the following table.

Table 33. Rack cabinets

Part number	Description
201886X	11U Rack Office Enablement Kit
93072RX	25U S2 Standard Rack
93072PX	25U Static S2 Standard Rack
93074RX	42U S2 Standard Rack
93634PX	42U 1100mm Enterprise V2 Dynamic Rack
93634EX	42U 1100mm Enterprise V2 Dynamic Expansion Rack
93604PX	42U 1200mm Deep Dynamic Rack
93614PX	42U 1200mm Deep Static Rack
93084PX	42U Enterprise Rack
93084EX	42U Enterprise Expansion Rack

For more information, see the list of Lenovo Press product guides in the Rack cabinets and options category:
http://lenovopress.com/systemx/rack

KVM console options

The following table lists the supported KVM consoles, keyboards, and KVM switches.

Table 34. Console keyboards

Part number	Description
Consoles	
17238BX	1U 18.5" Standard Console (without keyboard)
Console keyboards	
00MW310	Lenovo UltraNav Keyboard USB - US Eng
46W6713	Keyboard w/ Int. Pointing Device USB - Arabic 253 RoHS v2
46W6714	Keyboard w/ Int. Pointing Device USB - Belg/UK 120 RoHS v2
46W6715	Keyboard w/ Int. Pointing Device USB - Chinese/US 467 RoHS v2
46W6716	Keyboard w/ Int. Pointing Device USB - Czech 489 RoHS v2
46W6717	Keyboard w/ Int. Pointing Device USB - Danish 159 RoHS v2
46W6718	Keyboard w/ Int. Pointing Device USB - Dutch 143 RoHS v2
46W6719	Keyboard w/ Int. Pointing Device USB - French 189 RoHS v2
46W6720	Keyboard w/ Int. Pointing Device USB - Fr/Canada 445 RoHS v2
46W6721	Keyboard w/ Int. Pointing Device USB - German 129 RoHS v2
46W6722	Keyboard w/ Int. Pointing Device USB - Greek 219 RoHS v2
46W6723	Keyboard w/ Int. Pointing Device USB - Hebrew 212 RoHS v2
46W6724	Keyboard w/ Int. Pointing Device USB - Hungarian 208 RoHS v2
46W6725	Keyboard w/ Int. Pointing Device USB - Italian 141 RoHS v2
46W6726	Keyboard w/ Int. Pointing Device USB - Japanese 194 RoHS v2
46W6727	Keyboard w/ Int. Pointing Device USB - Korean 413 RoHS v2
46W6728	Keyboard w/ Int. Pointing Device USB - LA Span 171 RoHS v2
46W6729	Keyboard w/ Int. Pointing Device USB - Norwegian 155 RoHS v2
46W6730	Keyboard w/ Int. Pointing Device USB - Polish 214 RoHS v2
46W6731	Keyboard w/ Int. Pointing Device USB - Portuguese 163 RoHS v2
46W6732	Keyboard w/ Int. Pointing Device USB - Russian 441 RoHS v2
46W6733	Keyboard w/ Int. Pointing Device USB - Slovak 245 RoHS v2
46W6734	Keyboard w/ Int. Pointing Device USB - Spanish 172 RoHS v2
46W6735	Keyboard w/ Int. Pointing Device USB - Swed/Finn 153 RoHS v2
46W6736	Keyboard w/ Int. Pointing Device USB - Swiss F/G 150 RoHS v2
46W6737	Keyboard w/ Int. Pointing Device USB - Thai 191 RoHS v2
46W6738	Keyboard w/ Int. Pointing Device USB - Turkish 179 RoHS v2
46W6739	Keyboard w/ Int. Pointing Device USB - UK Eng 166 RoHS v2
46W6740	Keyboard w/ Int. Pointing Device USB - US Euro 103P RoHS v2
46W6741	Keyboard w/ Int. Pointing Device USB - Slovenian 234 RoHS v2
Console switches	
1754D2X	Global 4x2x32 Console Manager (GCM32)
1754D1X	Global 2x2x16 Console Manager (GCM16)
1754A2X	Local 2x16 Console Manager (LCM16)

Part number	Description
1754A1X	Local 1x8 Console Manager (LCM8)
Console switch cables	
43V6147	Single Cable USB Conversion Option (UCO)
39M2895	USB Conversion Option (4 Pack UCO)
46M5383	Virtual Media Conversion Option Gen2 (VCO2)
46M5382	Serial Conversion Option (SCO)

For more information, see the list of Product Guides in the KVM Switches and Consoles category:
http://lenovopress.com/servers/options/kvm

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Related publications and links

For more information, see these resources:

- Lenovo System x3250 M5 product page
  http://shop.lenovo.com/us/en/systems/servers/racks/systemx/x3250-m5/
- System x3250 M5 Type 5458 documentation
  http://systemx.lenovofiles.com/help/index.jsp?
  topic=%2Fcom.lenovo.sysx.5458.doc%2Fproduct_page.html
- ServerProven hardware compatibility page for the x3250 M5
  http://www.lenovo.com/us/en/serverproven/xseries/5458.shtml
- Lenovo Support Portal - System x3250 M5
  http://support.lenovo.com/products/servers/lenovo-x86-servers/lenovo-system-x3250-m5
- xREF: System x Reference
  http://lenovopress.com/xref

Related product families

Product families related to this document are the following:

- 1-Socket Rack Servers

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