



Lenovo System x3550 M5 Product Guide

Designed in a compact, versatile 1U two-socket rack server, the Lenovo System x3550 M5 rack server fuels almost any workload from infrastructure to high-performance computing (HPC) to cloud or big data with leadership security, efficiency, and reliability. Integrated with up to two Intel Xeon processors of the E5-2600 v3 product family with faster, energy-efficient TruDDR4 Memory, the x3550 M5 delivers exceptional performance. Storage can include up to 12 drives in an impressive selection of sizes and types.

Suggested use: Database, virtualization and cloud computing, infrastructure security, systems management, enterprise applications, collaboration/email, streaming media, web, and HPC.

The following figure shows the System x3550 M5.



Figure 1. Lenovo System x3550 M5

Did you know?

The x3550 M5 incorporates energy smart features for minimized costs and efficient performance. Dual fan zones support operation in up to 40°C environments. 80 PLUS Titanium power supply units (PSUs) can deliver 96% efficiency at 50% load.

The x3550 M5 has outstanding memory performance that is achieved by supporting two-RDIMM-per-channel configurations at speeds up to 12% faster than the Intel specification, while still maintaining world-class reliability.

System x® servers achieved the highest reliability of any x86 servers (ITIC 2014-2015 Global Server Hardware, Server OS Reliability Survey:

<http://public.dhe.ibm.com/common/ssi/ecm/en/xsl03126usen/XSL03126USEN.PDF>

The x3550 M5 integrates leadership security and reliability. System x Trusted Platform Assurance, an exclusive set of System x features and practices, establishes a foolproof security foundation for your workloads. Enterprise-class data protection is provided with optional self-encrypting drives and simple, centralized key management through IBM Security Key Lifecycle Management. Diagnostic tools facilitate reduced downtime and costs.

Key features

The System x3550 M5 is a cost- and density-balanced 1U, 2-socket business-critical server, offering improved performance and pay-as-you grow flexibility along with new features that improve server management capability. New, innovative, energy-smart design with powerful high-performance processors, a large capacity of high-performing DDR4 memory, and an improved feature set are ideal for business-critical applications and cloud deployments.

Combining balanced performance and flexibility, the x3550 M5 is a great choice for small and medium businesses and up to the large enterprise. It can provide outstanding uptime to keep business-critical applications and cloud deployments running safely. Ease-of-use and comprehensive systems management tools make it easy to deploy. Outstanding reliability, availability, and serviceability (RAS) and high-efficiency design improve your business environment and help save operational costs.

Scalability and performance

The x3550 M5 offers numerous features to boost performance, improve scalability, and reduce costs:

- Improves productivity by offering superior system performance with up to 18-core processors, up to 45 MB of L3 cache, and up to 9.6 GT/s QPI interconnect links.
- Supports up to two processors, 36 cores, and 72 threads to maximize the concurrent execution of multithreaded applications.
- Intelligent and adaptive system performance with energy efficient Intel Turbo Boost Technology allows CPU 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 utilize the hardware for virtualization workloads.
- Intel Advanced Vector Extensions 2.0 (AVX 2.0) enable acceleration of enterprise-class workloads, such as databases, enterprise resource planning, and others.
- Up to 2133 MHz memory speeds with two DIMMs per channel running at 2133 MHz to help maximize system performance.
- Up to 1.5 TB of memory capacity with 64 GB Load Reduced DIMMS (LRDIMMs)
- 12 Gbps serial-attached SCSI (SAS) internal storage connectivity doubles the data transfer rate compared to 6 Gb SAS solutions to maximize performance of storage I/O-intensive applications.
- Flexible and scalable internal storage configurations for up to 24 TB of storage capacity in a dense 1U rack form factor.
- The use of solid-state drives (SSDs) instead of or along with traditional spinning hard disk drives (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.
- The server has four integrated Gigabit Ethernet ports and optional 10 Gb Ethernet ports with mezzanine LOM (ML2) adapters.
- The server offers up to four PCI Express (PCIe) 3.0 I/O expansion slots in a dense 1U rack form factor.
- With Intel Integrated I/O Technology, the PCI Express 3.0 controller is integrated into the Intel Xeon processor E5 family. This helps to dramatically reduce I/O latency and increase overall system performance.

Availability and serviceability

The x3550 M5 provides many features to simplify serviceability and increase system uptime:

- Tool-less cover removal provides easy access to upgrades and serviceable parts, such as processors, memory DIMMs, and adapter cards.
- The server offers hot-swap drives supporting RAID redundancy for data protection and greater system uptime.
- The server offers redundant hot-swap power supplies and hot-swap redundant fans to provide availability for business-critical applications.
- The new next-gen light path diagnostics LCD display panel simplifies servicing, speeds up problem resolution, and helps improve system availability.
- Predictive Failure Analysis (PFA) detects when system components (processors, VRMs, memory, disks, fans, and power supplies) operate outside standard thresholds and generates proactive alerts in advance of possible failure, therefore increasing uptime.
- SSDs offer significantly better reliability than traditional mechanical HDDs for greater 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 to reduce service time.
- Three-year customer replaceable unit and onsite limited warranty, next business day 9x5. Optional service upgrades available.

Manageability and security

Powerful systems management features simplify local and remote management of the x3550 M5 and deliver enterprise-class data protection:

- 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.
- XClarity Administrator offers comprehensive hardware management tools that help to increase uptime, reduce costs and improve productivity through advanced server management capabilities.
- Two integrated Trusted Platform Modules (TPMs) support the enablement of advanced cryptographic functionality, such as digital signatures and remote attestation.
- System x Trusted Platform Assurance, an exclusive set of System x security features and practices, establishes a foolproof security foundation for workloads by delivering firmware that is securely built, tested, digitally signed, and verified prior to execution.
- The server offers enterprise-class data protection with optional self-encrypting drives and simple, centralized key management through IBM Security Key Lifecycle Management.
- There is industry-standard AES NI support for faster, 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 x3550 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.
- High-efficiency power supplies with 80 PLUS Platinum and Titanium certifications.
- 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 1.2 V DDR4 memory DIMMs offer energy efficiency compared to 1.35 V and 1.5 V DDR3 DIMMs.
- The server uses hexagonal ventilation holes, a part of Calibrated Vectors Cooling™ technology. Hexagonal holes can be grouped more densely than round holes, providing more efficient airflow through the system.
- Intel Node Manager provide advanced data center power notification and management to help achieve lower heat output and reduced cooling needs.

Components and connectors

The following figure shows the front of the server.



Figure 2. Front view of the System x3550 M5

The following figure shows the rear of the x3550 M5 server with three PCIe low profile slots.

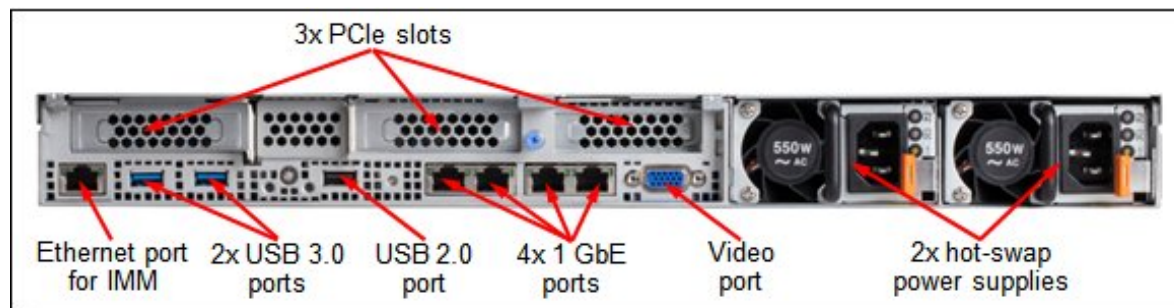


Figure 3. Rear view of the System x3550 M5

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

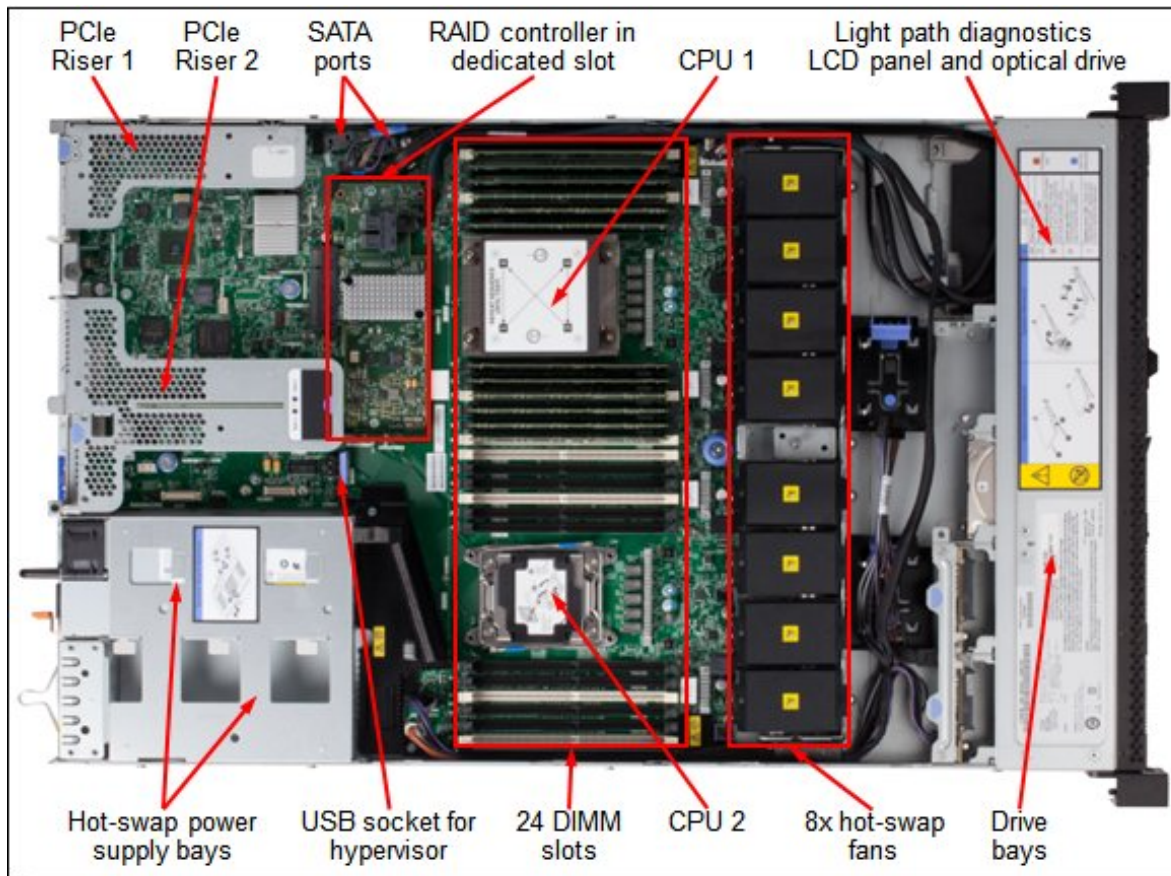


Figure 4. Inside view of the System x3550 M5

System specifications

The following table lists the system specifications.

Table 1. System specifications

Components	Specification
Machine type	5463
Form factor	1U Rack-mount
Processor	Up to two Intel Xeon processor E5-2600 v3 product family CPUs with 18 or 16 cores (2.3 GHz core speeds); or 14, 12, or 10 cores (up to 2.6 GHz core speeds); or 8 cores (up to 3.2 GHz core speeds); or 6 cores (up to 3.4 GHz core speeds); or 4 cores (up to 3.5 GHz core speeds). Two QPI links up to 9.6 GT/s each. Up to 2133 MHz memory speed. Up to 45 MB L3 cache.
Chipset	Intel C612.
Memory	Up to 24 DIMM sockets (12 DIMMs per processor). RDIMMs and LRDIMMs (Load Reduced DIMMs) are supported. Memory types cannot be intermixed. Memory speed up to 2133 MHz.
Memory maximums	<ul style="list-style-type: none"> • With RDIMMs: Up to 768 GB with 24x 32 GB RDIMMs and two processors • With LRDIMMs: Up to 1.5 TB with 24x 64 GB LRDIMMs and two processors
Memory protection	Error correction code (ECC), Chipkill (for x4-based memory DIMMs).

Components	Specification
Disk drive bays	Up to 12x 2.5" hot-swap SAS/SATA HDDs, or up to 8x 2.5" Simple Swap SATA HDDs, or up to 4x 3.5" hot-swap SAS/SATA HDDs, or up to 4x 3.5" Simple Swap SATA HDDs.
Maximum internal storage	Up to 38.4 TB with 3.84 TB 2.5" SAS SSDs, or up to 24 TB with 6 TB 3.5" NL SAS/SATA HDDs, or up to 21.6 TB with 1.8 TB 2.5" SAS HDDs, or up to 12 TB with 1 TB 2.5" NL SAS/SATA HDDs. Intermix of SAS/SATA is supported.
Storage controller	<ul style="list-style-type: none"> Onboard 6 Gb SATA: no RAID support 12 Gb SAS/SATA RAID: RAID 0, 1, 10 with M1215 or M5210. Optional upgrade to RAID 5, 50 is available for M1215. Optional upgrade to RAID 5, 50 is available for M5210 (zero-cache; 1 GB non-backed cache; 1 GB, 2 GB, or 4 GB flash-backed cache). Optional upgrade to RAID 6, 60 is available for M5210 with memory cache upgrades. Optional SSD Caching and Performance Accelerator upgrades are available. 12 Gb SAS/SATA non-RAID: N2215 HBA
Optical drive bays	One, optional, for models with 4 or 8 drive bays (models with 10 drive bays do not support an internal optical drive). Support for DVD-ROM or Multiburner.
Tape drive bays	None.
Network interfaces	Four integrated RJ-45 Gigabit Ethernet 1000BASE-T ports (BCM5719); optional Mezzanine LOM (ML2) slot for dual-port 10 GbE cards with SFP+ or RJ-45 connectors or quad-port GbE cards with RJ-45 connectors.
PCI Expansion slots	Up to four slots, depending on the riser cards installed. The slots are as follows: <ul style="list-style-type: none"> Slot 1: PCIe 3.0 x16 or ML2; low profile, half-length (not present if the HDD Rear Kit is installed) Slot 2: PCIe 3.0 x16 or PCIe 3.0 x8; low profile or full-height, half-length (PCIe 3.0 x16 slot requires the second processor to be installed) (not present if the HDD Rear Kit is installed) Slot 3: PCIe 3.0 x16 or PCIe 3.0 x8; low profile, half-length Slot 4: PCIe 3.0 x8 (dedicated for an internal RAID controller)
Ports	<ul style="list-style-type: none"> Front: 1x USB 2.0 (8x 2.5" drive bay models) or 2x USB 2.0 (4x 3.5" and 10x 2.5" drive bay models), 1x USB 3.0, and 1x DB-15 video. Rear: 2x USB 3.0, 1x USB 2.0, 1x DB-15 video, 1x RJ-45 systems management, 4x RJ-45 GbE network ports. Optional 1x DB-9 serial port. Internal: 1x USB 3.0 port (for embedded hypervisor). Internal: 1x SD Media Adapter slot (for embedded hypervisor)
Cooling	Calibrated Vectored Cooling with up to eight redundant hot-swap fans (six standard, additional two with the second processor or with the x3550 M5 Thermal Solution Kit); dual fan zones with N+1 fan redundancy; each fan has two motors.
Power supply	Up to two redundant hot-swap 550 W, 750 W, or 900 W (100-240V), or 1500 W (200-240V) High Efficiency Platinum AC power supplies, or 750 W High Efficiency Titanium AC power supplies, or 900 W High Efficiency -48 V DC power supplies.
Hot-swap parts	Hard drives, power supplies, and fans.
Systems management	Unified Extensible Firmware Interface (UEFI), Integrated Management Module II (IMM2.1) based on Renesas SH7758, Predictive Failure Analysis, light path diagnostics, Automatic Server Restart, ToolsCenter, XClarity Administrator, and Intel Node Manager. Optional Advanced Management Module Advanced Upgrade for remote presence (graphics, keyboard and mouse, virtual media).
Security features	Power-on password, administrator's password, two Trusted Platform Modules (TPMs): on the IMM2 (TPM 1.2) and on the host (TPM 1.2/2.0). Optional lockable front bezel.

Components	Specification
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 2012 R2, 2012, and 2008 R2, Red Hat Enterprise Linux 6 and 7, SUSE Linux Enterprise Server 11 and 12, VMware vSphere (ESXi) 5.1, 5.5, and 6.0.
Limited warranty	Three-year customer-replaceable unit and onsite limited warranty with 9x5/Next Business Day (NBD).
Service and support	Optional service upgrades are available through the Lenovo Services: 4-hour or 2-hour response time, 8 hours fix time, one-year or two-year warranty extension, remote technical support for System x hardware and selected System x and third-party (Microsoft, Linux, VMware) software.
Dimensions	Height: 43 mm (1.7 in), width: 429 mm (16.9 in), depth: 734 mm (28.9 in)
Weight	Minimum configuration: 13.8 kg (30.5 lb), maximum: 19.3 kg (42.7 lb)

The x3550 M5 servers that are listed in Table 2 and Table 3 are shipped with the following items:

- Statement of Limited Warranty
- Important Notices
- Rack Installation Instructions
- Documentation CD containing *Installation and User's Guide*
- System x3550 M5 Slide Kit G4
- 2.8 m C13-C14 power cord (one for models with one power supply and two for models with two power supplies)

Note: Cable Management Arm (CMA) is not included. See the "Rack installation" section for ordering information.

Standard models

The following table lists the standard models of the x3550 M5.

Table 2. Standard models

Model number*	Intel Xeon processor† (2 maximum)	Memory (RDIMMs)	RAID	Drive bays	Drives	NIC	I/O slots (std / max)	Optical drive	Power supply (std / max)
Models announced May 2015									
5463P2x	1x E5-2660 v3 10C 2.6GHz 25MB 2133MHz 105W	1x 16GB 2133MHz	M5210 2GB Flash	4x 2.5" HS / 8	Open bay	4x GbE	2 / 4	Optional	1x 750 W HS / 2
5463Q2x	1x E5-2667 v3 8C 3.2GHz 20MB 2133MHz 135W	1x 16GB 2133MHz	M5210 2GB Flash	4x 2.5" HS / 8	Open bay	4x GbE	2 / 4	Optional	1x 750 W HS / 2
5463N2x	1x E5-2697 v3 14C 2.6GHz 35MB 2133MHz 145W	1x 16GB 2133MHz	M5210 2GB Flash	4x 2.5" HS / 8	Open bay	4x GbE	2 / 4	Optional	1x 750 W HS / 2
Models announced September 2014									
5463A2x	1x E5-2603 v3 6C 1.6GHz 15MB 1600MHz 85W	1x 8GB 2133MHz§	M1215	4x 2.5" SS / 8	Open bay	4x GbE	2 / 4	Optional	1x 550 W HS / 2
5463B2x	1x E5-2609 v3 6C 1.9GHz 15MB 1600MHz 85W	1x 8GB 2133MHz§	M1215	4x 3.5" SS / 4	Open bay	4x GbE	2 / 4	Optional	1x 550 W HS / 2
5463C2x	1x E5-2620 v3 6C 2.4GHz 15MB 1866MHz 85W	1x 16GB 2133MHz§	M1215	4x 2.5" HS / 8	Open bay	4x GbE	2 / 4	Optional	1x 550 W HS / 2
5463C4x	1x E5-2620 v3 6C 2.4GHz 15MB 1866MHz 85W	1x 16GB 2133MHz§	M1215	4x 3.5" HS / 4	Open bay	4x GbE	2 / 4	Optional	1x 550 W HS / 2

Model number*	Intel Xeon processor† (2 maximum)	Memory (RDIMMs)	RAID	Drive bays	Drives	NIC	I/O slots (std / max)	Optical drive	Power supply (std / max)
5463D2x	1x E5-2630 v3 8C 2.4GHz 20MB 1866MHz 85W	1x 16GB 2133MHz§	M5210 1GB Flash	4x 2.5" HS / 8	Open bay	4x GbE	2 / 4	Optional	1x 550 W HS / 2
5463H2x	1x E5-2630L v3 8C 1.8GHz 20MB 1866MHz 55W	1x 16GB 2133MHz§	M5210 1GB Flash	4x 2.5" HS / 8	Open bay	4x GbE	2 / 4	Optional	1x 550 W HS / 2
5463F2x	1x E5-2640 v3 8C 2.6GHz 20MB 1866MHz 90W	1x 16GB 2133MHz§	M5210 1GB Flash	4x 2.5" HS / 8	Open bay	4x GbE	2 / 4	Optional	1x 550 W HS / 2
5463G2x	1x E5-2650 v3 10C 2.3GHz 25MB 2133MHz 105W	1x 16GB 2133MHz	M5210 1GB Flash	10x 2.5" HS / 12	Open bay	4x GbE	2 / 4	None	1x 550 W HS / 2
546362x	1x E5-2670 v3 12C 2.3GHz 30MB 2133MHz 120W	1x 16GB 2133MHz	M5210 2GB Flash	4x 2.5" HS / 8	Open bay	4x GbE	2 / 4	Optional	1x 750 W HS / 2
5463J2x	1x E5-2680 v3 12C 2.5GHz 30MB 2133MHz 120W	1x 16GB 2133MHz	M5210 2GB Flash	4x 2.5" HS / 8	Open bay	4x GbE	2 / 4	Optional	1x 750 W HS / 2
5463L2x	1x E5-2690 v3 12C 2.6GHz 30MB 2133MHz 135W	1x 16GB 2133MHz	M5210	4x 2.5" HS / 8	Open bay	4x GbE	2 / 4	Optional	1x 750 W HS / 2**
5463M2x	1x E5-2699 v3 18C 2.3GHz 45MB 2133MHz 145W	1x 16GB 2133MHz	M5210	4x 2.5" HS / 8	Open bay	4x GbE	2 / 4	Optional	1x 900 W HS / 2

* x in the Model number represents a country-specific letter (for example, the EMEA model number is 5463A2G, and the US Model number is 5463A2U). Ask a Lenovo representative for specifics.

** Titanium power supply; supports 200-240 V AC only.

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

§ For these models, the standard DIMM is rated at 2133 MHz, but operates at a lower speed to match the processor memory speed. Actual memory speed maximums depend on several factors, as described in "Memory options".

Express and TopSeller models

The following table lists the Express and TopSeller models of the x3550 M5.

Table 3. Express and TopSeller models

Model number	Intel Xeon processor† (2 maximum)	Memory (RDIMMs)	RAID	Drive bays (std / max)	Drives	NIC	I/O slots (std / max)	Optical drive	Power supply (std / max)
TopSeller - United States, Canada									
5463NAU	1x E5-2603 v3 6C 1.6GHz 15MB 1600MHz 85W	1x 8GB 2133MHz§	M1215	4x 2.5" HS / 8	Open bay	4x GbE	2 / 4	Optional	1x 550 W HS / 2
5463NBU	1x E5-2609 v3 6C 1.9GHz 15MB 1600MHz 85W	1x 8GB 2133MHz§	M1215	4x 3.5" HS / 4	Open bay	4x GbE	2 / 4	Optional	1x 550 W HS / 2
5463NQU	1x E5-2609 v3 6C 1.9GHz 15MB 1600MHz 85W	1x 16GB 2133MHz	M5210	4x 2.5" HS / 8	Open bay	4x GbE	2 / 4	Optional	1x 750 W HS / 2
5463EZU	1x E5-2620 v3 6C 2.4GHz 15MB 1866MHz 85W	1x 8GB 2133MHz§	M1215	4x 2.5" HS / 8	1x 300GB 10K	4x GbE	2 / 4	Multi burner	1x 550 W HS / 2
5463NCU	1x E5-2620 v3 6C 2.4GHz 15MB 1866MHz 85W	1x 16GB 2133MHz§	M1215	4x 3.5" HS / 4	Open bay	4x GbE	2 / 4	Optional	1x 550 W HS / 2
5463NRU	1x E5-2620 v3 6C 2.4GHz 15MB 1866MHz 85W	1x 16GB 2133MHz	M5210	4x 2.5" HS / 8	Open bay	4x GbE	2 / 4	Optional	1x 750 W HS / 2
5463NDU	1x E5-2630 v3 8C 2.4GHz 20MB 1866MHz 85W	1x 16GB 2133MHz§	M5210	4x 2.5" HS / 8	Open bay	4x GbE	2 / 4	Optional	1x 550 W HS / 2
5463NSU	1x E5-2640 v3 8C 2.6GHz 20MB 1866MHz 90W	1x 16GB 2133MHz	M5210	4x 2.5" HS / 8	Open bay	4x GbE	2 / 4	Optional	1x 750 W HS / 2
5463NMU	2x E5-2640 v3 8C 2.6GHz 20MB 1866MHz 90W	2x 16GB 2133MHz§	M5210	4x 2.5" HS / 8	Open bay	4x GbE	2 / 4	Optional	2x 750 W HS / 2

Model number	Intel Xeon processor† (2 maximum)	Memory (RDIMMs)	RAID	Drive bays (std / max)	Drives	NIC	I/O slots (std / max)	Optical drive	Power supply (std / max)
5463NJU	1x E5-2643 v3 6C 3.4GHz 20MB 2133MHz 135W	1x 16GB 2133MHz	M5210	4x 2.5" HS / 8	Open bay	4x GbE	2 / 4	Optional	1x 900 W HS / 2
5463NEU	1x E5-2670 v3 12C 2.3GHz 30MB 2133MHz 120W	1x 16GB 2133MHz	M5210	4x 2.5" HS / 8	Open bay	4x GbE	2 / 4	Optional	1x 750 W HS / 2
5463NNU	2x E5-2670 v3 12C 2.3GHz 30MB 2133MHz 120W	4x 16GB 2133MHz	M5210	4x 2.5" HS / 8	Open bay	4x GbE	2 / 4	Optional	2x 900 W HS / 2
5463NFU	1x E5-2680 v3 12C 2.5GHz 30MB 2133MHz 120W	1x 16GB 2133MHz	M5210	4x 2.5" HS / 8	Open bay	4x GbE	2 / 4	Optional	1x 900 W HS / 2
5463NHU	1x E5-2690 v3 12C 2.6GHz 30MB 2133MHz 135W	1x 16GB 2133MHz	M5210	4x 2.5" HS / 8	Open bay	4x GbE	2 / 4	Optional	1x 900 W HS / 2
5463NPU	2x E5-2690 v3 12C 2.6GHz 30MB 2133MHz 135W	4x 16GB 2133MHz	M5210	4x 2.5" HS / 8	Open bay	4x GbE	2 / 4	Optional	2x 900 W HS / 2
5463NKU	1x E5-2697 v3 14C 2.6GHz 35MB 2133MHz 145W	1x 16GB 2133MHz	M5210	4x 2.5" HS / 8	Open bay	4x GbE	2 / 4	Optional	1x 900 W HS / 2
TopSeller - Europe, Middle East and Africa									
5463NDG	1x E5-2630 v3 8C 2.4GHz 20MB 1866MHz 85W	1x 16GB 2133MHz§	M5210	4x 2.5" HS / 8	Open bay	4x GbE	2 / 4	Optional	1x 550 W HS / 2
5463NEG	1x E5-2670 v3 12C 2.3GHz 30MB 2133MHz 120W	1x 16GB 2133MHz	M5210	4x 2.5" HS / 8	Open bay	4x GbE	2 / 4	Optional	1x 750 W HS / 2
5463NKG	1x E5-2697 v3 14C 2.6GHz 35MB 2133MHz 145W	1x 16GB 2133MHz	M5210	4x 2.5" HS / 8	Open bay	4x GbE	2 / 4	Optional	1x 900 W HS / 2
5463K3G	1x E5-2620 v3 6C 2.4GHz 15MB 1866MHz 85W	1x 16GB 2133MHz	M5210	4x 2.5" HS / 8	Open bay	4x GbE	2 / 4	Optional	1x 550 W HS / 2
5463K4G	1x E5-2620 v3 6C 2.4GHz 15MB 1866MHz 85W	1x 16GB 2133MHz	M5210	4x 2.5" HS / 8	Open bay	4x GbE	2 / 4	Optional	1x 750 W HS / 2
5463K5G	1x E5-2630 v3 8C 2.4GHz 20MB 1866MHz 85W	1x 16GB 2133MHz	M5210	4x 2.5" HS / 8	Open bay	4x GbE	2 / 4	Optional	1x 750 W HS / 2
5463K6G	1x E5-2640 v3 8C 2.6GHz 20MB 1866MHz 90W	1x 16GB 2133MHz	M5210	4x 2.5" HS / 8	Open bay	4x GbE	2 / 4	Optional	1x 750 W HS / 2
5463K7G	1x E5-2650 v3 10C 2.3GHz 25MB 2133MHz 105W	1x 16GB 2133MHz	M5210	4x 2.5" HS / 8	Open bay	4x GbE	2 / 4	Optional	1x 750 W HS / 2
TopSeller - Latin America (Brazil only)									
5463ETU	1x E5-2620 v3 6C 2.4GHz 15MB 1866MHz 85W	1x 16GB 2133MHz§	M1215	4x 2.5" HS / 8	2x 300GB 10K	4x GbE	2 / 4	Optional	2x 550 W HS / 2
5463E8U	1x E5-2620 v3 6C 2.4GHz 15MB 1866MHz 85W	1x 16GB 2133MHz§	M1215	4x 2.5" HS / 8	2x 300GB 10K	4x GbE	4 / 4	Optional	2x 750 W HS / 2
5463EVU	1x E5-2620 v3 6C 2.4GHz 15MB 1866MHz 85W	1x 16GB 2133MHz§	M1215	4x 3.5" HS / 4	2x 2TB 7.2K	4x GbE	2 / 4	Optional	2x 550 W HS / 2
5463EUU	1x E5-2640 v3 8C 2.6GHz 20MB 1866MHz 90W	1x 16GB 2133MHz§	M1215	4x 2.5" HS / 8	2x 300GB 10K	4x GbE	2 / 4	Optional	2x 550 W HS / 2
5463E9U	1x E5-2640 v3 8C 2.6GHz 20MB 1866MHz 90W	1x 16GB 2133MHz§	M5210 1GB Flash	4x 2.5" HS / 8	2x 300GB 10K	4x GbE	4 / 4	Optional	2x 750 W HS / 2
5463EWU	1x E5-2640 v3 8C 2.6GHz 20MB 1866MHz 90W	1x 16GB 2133MHz§	M1215	4x 3.5" HS / 4	2x 2TB 7.2K	4x GbE	2 / 4	Optional	2x 550 W HS / 2
Express - United States, Canada									
5463EAU	1x E5-2609 v3 6C 1.9GHz 15MB 1600MHz 85W	1x 8GB 2133MHz§	M1215	4x 2.5" HS / 8	Open bay	4x GbE	2 / 4	Multi burner	1x 550 W HS / 2

Model number	Intel Xeon processor† (2 maximum)	Memory (RDIMMs)	RAID	Drive bays (std / max)	Drives	NIC	I/O slots (std / max)	Optical drive	Power supply (std / max)
5463EBU	1x E5-2620 v3 6C 2.4GHz 15MB 1866MHz 85W	1x 16GB 2133MHz§	M5210	4x 2.5" HS / 8	Open bay	4x GbE	2 / 4	Multi burner	1x 550 W HS / 2
5463EEU	2x E5-2620 v3 6C 2.4GHz 15MB 1866MHz 85W	2x 16GB 2133MHz§	M5210 2GB Flash	4x 2.5" HS / 8	Open bay	4x GbE	2 / 4	Multi burner	2x 550 W HS / 2
5463ECU	1x E5-2640 v3 8C 2.6GHz 20MB 1866MHz 90W	1x 16GB 2133MHz§	M5210	4x 2.5" HS / 8	Open bay	4x GbE	2 / 4	Multi burner	1x 550 W HS / 2
5463EDU	1x E5-2650 v3 10C 2.3GHz 25MB 2133MHz 105W	1x 16GB 2133MHz	M5210	4x 2.5" HS / 8	Open bay	4x GbE	2 / 4	Multi burner	1x 750 W HS / 2
5463EFU	2x E5-2650 v3 10C 2.3GHz 25MB 2133MHz 105W	4x 16GB 2133MHz	M5210 4GB Flash	8x 2.5" HS / 8	Open bay	4x GbE	2 / 4	Multi burner	2x 550 W HS / 2
Express - Latin America									
5463EMU	1x E5-2609 v3 6C 1.9GHz 15MB 1600MHz 85W	1x 8GB 2133MHz§	M1215	4x 3.5" SS / 4	Open bay	4x GbE	4 / 4	Multi burner	1x 550 W HS / 2
5463ENU	1x E5-2609 v3 6C 1.9GHz 15MB 1600MHz 85W	1x 8GB 2133MHz§	M5210 1GB Flash	4x 2.5" HS / 8	2x 300GB 10K	4x GbE	4 / 4	Multi burner	2x 550 W HS / 2
5463ERU	1x E5-2609 v3 6C 1.9GHz 15MB 1600MHz 85W	1x 8GB 2133MHz§	M1215	4x 2.5" SS / 8	Open bay	4x GbE	4 / 4	Multi burner	1x 550 W HS / 2
5463ESU	1x E5-2620 v3 6C 2.4GHz 15MB 1866MHz 85W	1x 8GB 2133MHz§	M5210 1GB Flash	4x 2.5" SS / 8	Open bay	4x GbE	4 / 4	Multi burner	2x 550 W HS / 2
5463EOU	1x E5-2620 v3 6C 2.4GHz 15MB 1866MHz 85W	1x 8GB 2133MHz§	M5210 1GB Flash	4x 3.5" SS / 4	Open bay	4x GbE	4 / 4	Multi burner	2x 550 W HS / 2
5463EPU	1x E5-2640 v3 8C 2.6GHz 20MB 1866MHz 90W	2x 16GB 2133MHz§	M5210 1GB Flash	4x 2.5" HS / 8	Open bay	4x GbE	4 / 4	Multi burner	2x 550 W HS / 2
5463EQU	2x E5-2680 v3 12C 2.5GHz 30MB 2133MHz 120W	2x 16GB 2133MHz	M5210 2GB Flash	8x 2.5" HS / 8	Open bay	4x GbE	4 / 4	Multi burner	2x 750 W HS / 2
Express - Asia Pacific (Australia and New Zealand only)									
5463EGM	1x E5-2609 v3 6C 1.9GHz 15MB 1600MHz 85W	1x 8GB 2133MHz§	M1215	4x 3.5" SS / 4	Open bay	4x GbE	4 / 4	Multi burner	1x 550 W HS / 2
5463EHM	1x E5-2609 v3 6C 1.9GHz 15MB 1600MHz 85W	1x 8GB 2133MHz§	M5210 1GB Flash	4x 2.5" HS / 8	2x 300GB 10K	4x GbE	4 / 4	Multi burner	1x 550 W HS / 2
5463EIM	1x E5-2620 v3 6C 2.4GHz 15MB 1866MHz 85W	2x 8GB 2133MHz§	M1215	4x 3.5" SS / 4	Open bay	4x GbE	4 / 4	Multi burner	1x 550 W HS / 2
5463EJM	1x E5-2620 v3 6C 2.4GHz 15MB 1866MHz 85W	2x 8GB 2133MHz§	M5210 1GB Flash	4x 2.5" HS / 8	2x 300GB 10K	4x GbE	4 / 4	Multi burner	1x 750 W HS / 2
5463EKM	1x E5-2630 v3 8C 2.4GHz 20MB 1866MHz 85W	2x 8GB 2133MHz§	M5210 1GB Flash	4x 2.5" HS / 8	Open bay	4x GbE	4 / 4	Multi burner	1x 750 W HS / 2
5463ELM	2x E5-2650 v3 10C 2.3GHz 25MB 2133MHz 105W	2x 16GB 2133MHz	M5210	8x 2.5" HS / 8	Open bay	4x GbE	4 / 4	Multi burner	2x 750 W HS / 2
Express - Japan									
5463E5J	1x E5-2603 v3 6C 1.6GHz 15MB 1600MHz 85W	1x 8GB 2133MHz§	M5210 1GB Flash	4x 2.5" HS / 8	Open bay	4x GbE	4 / 4	Optional	1x 550 W HS / 2
5463E6J	1x E5-2609 v3 6C 1.9GHz 15MB 1600MHz 85W	1x 8GB 2133MHz§	M5210 1GB Flash	4x 2.5" HS / 8	Open bay	4x GbE	4 / 4	Optional	1x 550 W HS / 2
5463E7J	1x E5-2620 v3 6C 2.4GHz 15MB 1866MHz 85W	1x 8GB 2133MHz§	M5210 1GB Flash	4x 2.5" HS / 8	Open bay	4x GbE	4 / 4	Optional	1x 550 W HS / 2
Express - Europe, Middle East and Africa									
5463E1G	1x E5-2603 v3 6C 1.6GHz 15MB 1600MHz 85W	1x 8GB 2133MHz§	M1215	4x 2.5" HS / 8	Open bay	4x GbE	2 / 4	Multi burner	1x 550 W HS / 2

Model number	Intel Xeon processor† (2 maximum)	Memory (RDIMMs)	RAID	Drive bays (std / max)	Drives	NIC	I/O slots (std / max)	Optical drive	Power supply (std / max)
5463E2G	1x E5-2620 v3 6C 2.4GHz 15MB 1866MHz 85W	1x 8GB 2133MHz§	M5210 1GB Flash	8x 2.5" HS / 8	Open bay	4x GbE	2 / 4	Multi burner	1x 550 W HS / 2
5463E3G	1x E5-2630 v3 8C 2.4GHz 20MB 1866MHz 85W	1x 8GB 2133MHz§	M5210 1GB Flash	4x 2.5" HS / 8	2x 300GB 10K	4x GbE	2 / 4	Multi burner	2x 550 W HS / 2
5463E4G	1x E5-2640 v3 8C 2.6GHz 20MB 1866MHz 90W	1x 16GB 2133MHz§	M5210 1GB Flash	8x 2.5" HS / 8	Open bay	4x GbE	2 / 4	Multi burner	1x 550 W HS / 2

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

§ For these models, the standard DIMM is rated at 2133 MHz, but operates at a lower speed to match the processor memory speed. Actual memory speed maximums depend on several factors, as described in "Memory options".

Processors

The x3550 M5 supports the processor options listed in the following table. The server supports up to two processors. This table shows which server models have each processor standard. If there is no corresponding *where used* model for a particular processor, this processor is only available through Configure-to-order (CTO). The processor part numbers include a CPU, a heatsink, and two system fans.

Table 4. Processor options

Part number	Feature codes*	Description	Standard models where used
00KA070	A5BF / A5BV	Intel Xeon Processor E5-2603 v3 6C 1.6GHz 15MB 1600MHz 85W	A2x
00MU566	ASL6 / ASLF	Intel Xeon Processor E5-2608L v3 6C 2.0GHz 15MB 1866MHz 52W	-
00KA071	A5BG / A5BW	Intel Xeon Processor E5-2609 v3 6C 1.9GHz 15MB 1600MHz 85W	B2x
00MU567	ASL7 / ASLG	Intel Xeon Processor E5-2618L v3 8C 2.3GHz 20MB 1866MHz 75W	-
00KA067	A5BC / A5BS	Intel Xeon Processor E5-2620 v3 6C 2.4GHz 15MB 1866MHz 85W	C2x, C4x
00MU407	ASCT / ASD4	Intel Xeon Processor E5-2623 v3 4C 3.0GHz 10MB 1866MHz 105W	-
00MU568	ASL8 / ASLH	Intel Xeon Processor E5-2628L v3 10C 2.0GHz 25MB 1866MHz 75W	-
00KA068	A5BD / A5BT	Intel Xeon Processor E5-2630 v3 8C 2.4GHz 20MB 1866MHz 85W	D2x
00KA077	A5BN / A5C2	Intel Xeon Processor E5-2630L v3 8C 1.8GHz 20MB 1866MHz 55W	H2x
00MU408	ASCU / ASD5	Intel Xeon Processor E5-2637 v3 4C 3.5GHz 15MB 2133MHz 135W	-
00KA069	A5BE / A5BU	Intel Xeon Processor E5-2640 v3 8C 2.6GHz 20MB 1866MHz 90W	F2x
00MU409	ASCV / ASD6	Intel Xeon Processor E5-2643 v3 6C 3.4GHz 20MB 2133MHz 135W	-
00MU569	ASL9 / ASLJ	Intel Xeon Processor E5-2648L v3 12C 1.8GHz 30MB 2133MHz 75W	-
00KA072	A5BH / A5BX	Intel Xeon Processor E5-2650 v3 10C 2.3GHz 25MB 2133MHz 105W	G2x
00MU406	ASCS / ASD3	Intel Xeon Processor E5-2650L v3 12C 1.8GHz 30MB 2133MHz 65W	-
00MU570	ASLA / ASLK	Intel Xeon Processor E5-2658 v3 12C 2.2GHz 30MB 2133MHz 105W	-
00MU400	ASCL / ASCX	Intel Xeon Processor E5-2660 v3 10C 2.6GHz 25MB 2133MHz 105W	P2x
00MU410	ASCW / ASD7	Intel Xeon Processor E5-2667 v3 8C 3.2GHz 20MB 2133MHz 135W	Q2x
00KA074	A5BK / A5BZ	Intel Xeon Processor E5-2670 v3 12C 2.3GHz 30MB 2133MHz 120W	62x
00KA075	A5BL / A5C0	Intel Xeon Processor E5-2680 v3 12C 2.5GHz 30MB 2133MHz 120W	J2x
00MU401	ASCM / ASCY	Intel Xeon Processor E5-2683 v3 14C 2.0GHz 35MB 2133MHz 120W	-

Part number	Feature codes*	Description	Standard models where used
00MU402	ASCN / ASCZ	Intel Xeon Processor E5-2685 v3 12C 2.6GHz 30MB 2133MHz 120W	-
00KA076	A5BM / A5C1	Intel Xeon Processor E5-2690 v3 12C 2.6GHz 30MB 2133MHz 135W	L2x
00MU403	ASCP / ASD0	Intel Xeon Processor E5-2695 v3 14C 2.3GHz 35MB 2133MHz 120W	-
00MU404	ASCQ / ASD1	Intel Xeon Processor E5-2697 v3 14C 2.6GHz 35MB 2133MHz 145W	N2x
00MU405	ASCR / ASD2	Intel Xeon Processor E5-2698 v3 16C 2.3GHz 40MB 2133MHz 135W	-
00KF584	ARZ8 / ARZ9	Intel Xeon Processor E5-2699 v3 18C 2.3GHz 45MB 2133MHz 145W	M2x

* The first feature code is for the first processor; the second feature code is for the second processor.

Memory

System x3550 M5 supports TruDDR4 Memory. TruDDR Memory uses the highest-quality components sourced from Tier 1 DRAM suppliers and only memory that meets our strict requirements is selected. It is compatibility tested and tuned on every System x server to maximize performance and reliability. TruDDR4 Memory will have a unique signature programmed into the DIMM, which will enable System x servers to verify whether the memory installed is qualified/supported. Because TruDDR4 Memory is authenticated, certain extended memory performance features can be enabled to extend performance over industry standards. From a service and support standpoint, System x memory automatically assumes the system's warranty, and service and support provided worldwide.

The server supports up to 12 DIMMs when one processor is installed and up to 24 DIMMs when two processors are installed. Each processor has four memory channels, and there are three DIMMs per channel.

The following rules apply when selecting the memory configuration:

- The server supports RDIMMs and LRDIMMs.
- Mixing different types of memory (RDIMMs and LRDIMMs) is not supported.
- The maximum quantity of DIMMs that can be installed in the server depends on the number of processors.
- All DIMMs in the server operate at the same speed, which is determined as the lowest value of the following speeds:
 - Memory speed that is supported by the specific processor.
 - Lowest of maximum operating speeds for selected memory configuration that depends on quantity of DIMMs per channel, as shown under "Maximum operating speed" in Table 5.

The following memory protection technologies are supported:

- ECC
- Chipkill (for x4-based memory DIMMs)

Chipkill works only in independent channel mode (the default operational mode) and supports only x4-based memory DIMMs.

The following table shows the characteristics of the supported DIMMs. Table cells highlighted with a gray background indicate when the number of DIMMs per channel still allows the DIMMs to operate at a rated speed.

Table 5. Maximum memory speeds and capacities

DIMM specification	RDIMM			LRDIMM
	Single rank	Dual rank		Quad rank
Part numbers	46W0784 (4 GB) 46W0788 (8 GB)	46W0792 (8 GB)	46W0796 (16 GB) 95Y4808 (32 GB)	46W0800 (32 GB) 95Y4812 (64 GB)
Rated speed	2133 MHz	2133 MHz	2133 MHz	2133 MHz
Rated voltage	1.2 V	1.2 V	1.2 V	1.2 V
Maximum quantity supported**	24	24	24	24
Maximum DIMM capacity	8 GB	8 GB	32 GB	64 GB
Maximum memory capacity	192 GB	192 GB	768 GB	1.5 TB
Maximum memory at rated speed	128 GB	128 GB	512 GB	1 TB
Maximum operating speed				
1 DIMM per channel	2133 MHz	2133 MHz	2133 MHz	2133 MHz
2 DIMMs per channel	2133 MHz	2133 MHz	2133 MHz	2133 MHz
3 DIMMs per channel	1600 MHz	1600 MHz	1866 MHz	1866 MHz

** The maximum quantity that is supported is shown for two processors installed.

The following table lists memory options available for the x3550 M5 server.

Table 6. Memory options

Part number	Feature code	Description	Maximum supported	Standard models where used
RDIMMs - 2133 MHz				
46W0784	A5B6	4GB TruDDR4 Memory (1Rx8, 1.2V) PC4-17000 CL15 2133MHz LP RDIMM	24 (12 per CPU)	-
46W0788	A5B5	8GB TruDDR4 Memory (1Rx4, 1.2V) PC4-17000 CL15 2133MHz LP RDIMM	24 (12 per CPU)	-
46W0792	A5B8	8GB TruDDR4 Memory (2Rx8, 1.2V) PC4-17000 CL15 2133MHz LP RDIMM	24 (12 per CPU)	A2x, B2x
46W0796	A5B7	16GB TruDDR4 Memory (2Rx4, 1.2V) PC4-17000 CL15 2133MHz LP RDIMM	24 (12 per CPU)	62x, C2x, C4x, D2x, F2x, G2x, H2x, J2x, L2x, M2x, N2x, P2x, Q2x
95Y4808	A5UJ	32GB TruDDR4 Memory (2Rx4, 1.2V) PC4-17000 CL15 2133MHz LP RDIMM	24 (12 per CPU)	-
LRDIMMs - 2133 MHz				
46W0800	A5B9	32GB TruDDR4 Memory (4Rx4, 1.2V) PC417000 CL15 2133MHz LP LRDIMM	24 (12 per CPU)	-
95Y4812	A5UK	64GB TruDDR4 Memory (4Rx4,1.2V) PC4-17000 CL15 2133MHz LP LRDIMM	24 (12 per CPU)	-

Internal storage

The System x3550 M5 server supports the following internal drive bay configurations:

1. 4x 2.5-inch SAS/SATA hot-swap drive bay server models that can be upgraded to 8x 2.5-inch SAS/SATA hot-swap drive bays
2. 10x 2.5-inch SAS/SATA hot-swap drive bay server models that can be upgraded to 12x 2.5-inch SAS/SATA hot-swap drive bays (10x front drive bays and 2x rear drive bays)
3. 4x 2.5-inch SATA Simple Swap drive bay server models that can be upgraded to 8x 2.5-inch SATA Simple Swap drive bays
4. 4x 3.5-inch SAS/SATA hot-swap drive bay server models
5. 4x 3.5-inch SATA Simple Swap drive bay server models

The following figure shows some of these configurations.



Figure 5. Internal drive configurations

Note: Four- and eight-drive bay models of the x3550 M5 support an optional internal optical drive.

The following table shows the internal storage options available for the x3550 M5 server.

Table 7. Internal storage options

Part number	Feature code	Description	Maximum supported	Standard models where used
Base drive kits				
None*	A59W	System x3550 M5 4x 2.5" HS HDD Kit	1	62x, C2x, D2x, F2x, H2x, J2x, L2x, M2x, N2x, P2x, Q2x
None*	A5A4	System x3550 M5 4x 3.5" HS HDD Kit	1	C4x
None*	A5A0	System x3550 M5 10x 2.5" HS HDD Kit	1	G2x
None*	A59Y	System x3550 M5 4x 2.5" SS HDD Kit, Non-Raid	1	-
None*	A5A5	System x3550 M5 4x 3.5" SS HDD Kit, Non-Raid	1	-
None*	A5A6	System x3550 M5 4x 2.5" SS HDD Kit, HW RAID	1	A2x
None*	A5A8	System x3550 M5 4x 3.5" SS HDD Kit, HW RAID	1	B2x
Upgrade drive kits (require the base drive kit)				
00KA058	A5A2	System x3550 M5 2x 2.5" HS HDD Rear Kit	1	-
00KA055	A59X	System x3550 M5 4x 2.5" HS HDD Kit PLUS	1	-
00KA056	A59Z	System x3550 M5 4x 2.5" SS HDD Kit PLUS, Non-Raid	1	-
00KA060	A5A7	System x3550 M5 4x 2.5" SS HDD Kit PLUS, HW RAID	1	-

* Available in standard or CTO models, or both.

Base drive kits are always factory installed in either standard or custom (CTO) models. Upgrade drive kits can be factory installed or can be installed as a field upgrade for supported standard or custom models.

HDD Rear Kit: The HDD Rear Kit (00KA058) is installed in place of the PCIe slots 1 and 2 (see the "I/O expansion options" section), and it includes a special riser that provides PCIe 3.0 x16 slot 3. No other riser cards can be used when the HDD Rear Kit is installed. 145 W processors cannot be used when the HDD Rear Kit is installed. The HDD Rear Kit is connected to the SAS expander on the 10-drive backplane.

The following table lists possible internal storage configurations.

Table 8. Internal storage configurations (FC=Feature Code, PN=Part Number, qty=quantity)

Drive bay type	Drive bay qty	Storage controller	Drive kits required
2.5-inch SAS/SATA hot-swap	4	<ul style="list-style-type: none"> • 1x M1215; or • 1x M5210; or • 1x N2215 	Factory installed: <ul style="list-style-type: none"> • 1x System x3550 M5 4x 2.5" HS HDD Kit (FC A59W)
	8	<ul style="list-style-type: none"> • 1x M1215; or • 1x M5210; or • 1x N2215 	Factory installed: <ul style="list-style-type: none"> • 1x System x3550 M5 4x 2.5" HS HDD Kit (FC A59W); and • 1x System x3550 M5 4x 2.5" HS HDD Kit PLUS (FC A59X) Field upgrade for the 4-drive bay model: <ul style="list-style-type: none"> • 1x System x3550 M5 4x 2.5" HS HDD Kit PLUS (PN 00KA055)
	10	<ul style="list-style-type: none"> • 1x M1215; or • 1x M5210; or • 1x N2215 	Factory installed: <ul style="list-style-type: none"> • 1x System x3550 M5 10x 2.5" HS HDD Kit (FC A5A0)
	12	<ul style="list-style-type: none"> • 1x M1215; or • 1x M5210; or • 1x N2215 	Factory installed: <ul style="list-style-type: none"> • 1x System x3550 M5 10x 2.5" HS HDD Kit (FC A5A0); and • 1x System x3550 M5 2x 2.5" HS HDD Rear Kit (FC A5A2) Field upgrade for the 10-drive bay model: <ul style="list-style-type: none"> • 1x System x3550 M5 2x 2.5" HS HDD Rear Kit (PN 00KA058)
2.5-inch SATA Simple Swap	4	<ul style="list-style-type: none"> • Integrated 8-port 6 Gbps SATA (no RAID support) 	Factory installed: <ul style="list-style-type: none"> • 1x System x3550 M5 4x 2.5" SS HDD Kit, Non-Raid (FC A59Y)
		<ul style="list-style-type: none"> • 1x M1215; or • 1x M5210; or • 1x N2215 	Factory installed: <ul style="list-style-type: none"> • 1x System x3550 M5 4x 2.5" SS HDD Kit, HW RAID (FC A5A6)
	8	<ul style="list-style-type: none"> • Integrated 8-port 6 Gbps SATA (no RAID support) 	Factory installed: <ul style="list-style-type: none"> • 1x x3550 M5 4x 2.5" SS HDD Kit, Non-Raid (FC A59Y); and • 1x x3550 M5 4x 2.5" SS HDD Kit PLUS, Non-Raid (FC A59Z) Field upgrade for the 4-drive bay model: <ul style="list-style-type: none"> • 1x x3550 M5 4x 2.5" SS HDD Kit PLUS, Non-Raid (PN 00KA056)
		<ul style="list-style-type: none"> • 1x M1215; or • 1x M5210; or • 1x N2215 	Factory installed: <ul style="list-style-type: none"> • 1x x3550 M5 4x 2.5" SS HDD Kit, HW RAID (FC A5A6); and • 1x x3550 M5 4x 2.5" SS HDD Kit PLUS, HW RAID (FC A5A7) Field upgrade for the 4-drive bay model: <ul style="list-style-type: none"> • 1x x3550 M5 4x 2.5" SS HDD Kit PLUS, HW RAID (PN 00KA060)
3.5-inch SAS/SATA hot-swap	4	<ul style="list-style-type: none"> • 1x M1215; or • 1x M5210; or • 1x N2215 	Factory installed: <ul style="list-style-type: none"> • 1x System x3550 M5 4x 3.5" HS HDD Kit (FC A5A4)

Drive bay type	Drive bay qty	Storage controller	Drive kits required
3.5-inch SATA Simple Swap	4	<ul style="list-style-type: none"> Integrated 8-port 6 Gbps SATA (no RAID support) 	Factory installed: <ul style="list-style-type: none"> 1x System x3550 M5 4x 3.5" SS HDD Kit, Non-Raid (FC A5A5)
		<ul style="list-style-type: none"> 1x M1215; or 1x M5210; or 1x N2215 	Factory installed: <ul style="list-style-type: none"> 1x System x3550 M5 4x 3.5" SS HDD Kit, HW RAID (FC A5A8)

Controllers for internal storage

The following table lists the RAID controllers and the additional options used for the internal storage of the x3550 M5 server. The controllers are installed into a dedicated PCIe slot.

Table 9. RAID controllers and HBAs for internal storage

Part number	Feature code	Description	Maximum supported	Standard models where used
12 Gb SAS/SATA controllers				
46C9110	A3YZ	ServeRAID M5210 SAS/SATA Controller	1	62x, D2x, F2x, G2x, H2x, J2x, L2x, M2x, N2x, P2x, Q2x
46C9114	A45W	ServeRAID M1215 SAS/SATA Controller	1	A2x, B2x, C2x, C4x
47C8675	A3YY	N2215 SAS/SATA HBA	1	-
Hardware upgrades for the M5210 (per one controller)				
47C8656	A3Z0	ServeRAID M5200 Series 1GB Cache/RAID 5 Upgrade	1	-
47C8660	A3Z1	ServeRAID M5200 Series 1GB Flash/RAID 5 Upgrade	1	D2x, F2x, G2x, H2x
47C8664	A3Z2	ServeRAID M5200 Series 2GB Flash/RAID 5 Upgrade	1	62x, J2x, N2x, P2x, Q2x
47C8668	A3Z3	ServeRAID M5200 Series 4GB Flash/RAID 5 Upgrade	1	-
Features on Demand upgrades for the M5210 (per one server)**				
47C8708	A3Z6	ServeRAID M5200 Series Zero Cache/RAID 5 Upgrade	1	-
47C8706	A3Z5	ServeRAID M5200 Series RAID 6 Upgrade	1*	-
47C8710	A3Z7	ServeRAID M5200 Series Performance Accelerator	1*	-
47C8712	A3Z8	ServeRAID M5200 Series SSD Caching Enabler	1*	-
Features on Demand upgrades for the M1215 (per one server)**				
00AE930	A5H5	ServeRAID M1200 Zero Cache/RAID 5 Upgrade	1	-

* Requires cache memory upgrade (47C8656, 47C8660, 47C8664, or 47C8668).

** ServeRAID Feature on Demand upgrades are system-wide. One FoD upgrade part number will enable the feature on all ServeRAID M5200 Series adapters (M5210, M5210e, M5225) installed in the server.

The following table summarizes features of supported drive controllers.

Table 10. Drive controller features and specifications summary

Feature	Integrated 6 Gb SATA non-RAID)	M1215	M5210	N2215
Part number	None	46C9114	46C9110	47C8675
Form factor	Onboard	PCIe low profile	PCIe low profile	PCIe low profile
Controller chip	Not applicable	LSI SAS3008	LSI SAS3108	LSI SAS3008
Host interface	Not applicable	PCIe 3.0 x8	PCIe 3.0 x8	PCIe 3.0 x8
Port interface	6 Gbps SATA	12 Gbps SAS	12 Gbps SAS	12 Gbps SAS
Number of ports	8	8	8	8
Port connectors	2x SATA x4	2x Mini-SAS HD x4 (SFF-8643)	2x Mini-SAS HD x4 (SFF-8643)	2x Mini-SAS HD x4 (SFF-8643)
Drive interface	SATA	SAS, SATA	SAS, SATA	SAS, SATA
Drive type	HDD	HDD, SSD, SED	HDD, SSD, SED	HDD, SSD
Drive form factor	SFF, LFF	SFF, LFF	SFF, LFF	SFF, LFF
Hot-swap drives	No	Yes	Yes	Yes
Max devices	8	32 (RAID); 64 (JBOD)	240	1024
RAID levels	None	0/1/10; Optional 5/50 (00AE930)	0/1/10; Optional 5/50 (RAID 5 FoD, 47C8708, or cache upgrades); Optional 6/60 (47C8706)	None
JBOD mode	Yes	Yes	Yes (without cache)	Yes
Cache	None	None	1 GB no backup (47C8656) 1 GB flash (47C8660) 2 GB flash (47C8664) 4 GB flash (47C8668)	None
SafeStore	No	Yes (with RAID 5 upgrades)	Yes (with RAID 5 upgrades)	No
FastPath	No	No	Optional (47C8710)	No
CacheCade	No	No	Optional (47C8712)	No

For more information, see the list of Product Guides in the RAID adapters category:
<https://lenovopress.com/servers/options/raid>

The following table lists drive types and internal bays supported by the drive controllers.

Table 11. Controllers, drive types, and internal drive bays

Drive controller	Drive type	Drive bays			
		Up to 12x 2.5-inch hot-swap	Up to 8x 2.5-inch Simple Swap	4x 3.5-inch hot-swap	4x 3.5-inch Simple Swap
Integrated SATA	SAS/NL SAS HDD	No	No	No	No
	NL SATA HDD	No	Yes	No	Yes
	SAS SED	No	No	No	No
	SAS SSD	No	No	No	No
	SATA SSD	No	No	No	No
M1215 M5210	SAS/NL SAS HDD	Yes	No	Yes	No
	NL SATA HDD	Yes	Yes	Yes	Yes
	SAS SED	Optional*	No	No	No
	SAS SSD	Yes	No	No	No
	SATA SSD	Yes	No	Yes	No
N2215	SAS/NL SAS HDD	Yes	No	Yes	No
	NL SATA HDD	Yes	Yes	Yes	Yes
	SAS SED	No	No	No	No
	SAS SSD	Yes	No	No	No
	SATA SSD	Yes	No	Yes	No

* SEDs are supported with RAID 5 FoD upgrades or cache upgrades.

Drives for internal storage

The following table lists hard drive options for internal disk storage of the x3550 M5 server.

Table 12. Internal drive options (Part 1: 2.5-inch hot-swap drives)

Part number	Feature code	Description	Maximum supported
2.5-inch hot-swap HDDs - 12 Gbps SAS			
00WG685	AT89	300GB 10K 12Gbps SAS 2.5" G3HS HDD	12
00WG660	AT84	300GB 15K 12Gbps SAS 2.5" G3HS HDD	12
00NA221	ASBB	300GB 15K 12Gbps SAS 2.5" G3HS 512e HDD	12
00WG690	AT8A	600GB 10K 12Gbps SAS 2.5" G3HS HDD	12
00NA241	ASBF	600GB 10K 12Gbps SAS 2.5" G3HS 512e HDD	12
00WG665	AT85	600GB 15K 12Gbps SAS 2.5" G3HS HDD	12
00NA231	ASBD	600GB 15K 12Gbps SAS 2.5" G3HS 512e HDD	12
00WG695	AT8B	900GB 10K 12Gbps SAS 2.5" G3HS HDD	12
00NA251	ASBH	900GB 10K 12Gbps SAS 2.5" G3HS 512e HDD	12
00WG700	AT8C	1.2TB 10K 12Gbps SAS 2.5" G3HS HDD	12
00NA261	ASBK	1.2TB 10K 12Gbps SAS 2.5" G3HS 512e HDD	12
00NA271	ASBM	1.8TB 10K 12Gbps SAS 2.5" G3HS 512e HDD	12

Part number	Feature code	Description	Maximum supported
2.5-inch hot-swap HDDs - 6 Gbps SAS			
00AJ096	A4TL	300GB 10K 6Gbps SAS 2.5" G3HS HDD	12
00AJ081	A4TR	300GB 15K 6Gbps SAS 2.5" G3HS HDD	12
00AJ091	A4TM	600GB 10K 6Gbps SAS 2.5" G3HS HDD	12
00AJ126	A4TS	600GB 15K 6Gbps SAS 2.5" G3HS HDD	12
00AJ071	A4TN	900GB 10K 6Gbps SAS 2.5" G3HS HDD	12
00AJ146	A4TP	1.2TB 10K 6Gbps SAS 2.5" G3HS HDD	12
2.5-inch hot-swap HDDs - 12 Gbps NL SAS			
00NA491	AT7Z	1TB 7.2K 12Gbps NL SAS 2.5" G3HS HDD	12
00NA496	AT80	2TB 7.2K 12Gbps NL SAS 2.5" G3HS HDD	12
2.5-inch hot-swap HDDs - 6 Gbps NL SAS			
00AJ121	A4TT	500GB 7.2K 6Gbps NL SAS 2.5" G3HS HDD	12
00AJ086	A4TU	1TB 7.2K 6Gbps NL SAS 2.5" G3HS HDD	12
2.5-inch hot-swap HDDs - 6 Gbps NL SATA			
00AJ136	A4TW	500GB 7.2K 6Gbps NL SATA 2.5" G3HS HDD	12
00AJ141	A4TX	1TB 7.2K 6Gbps NL SATA 2.5" G3HS HDD	12
00NA526	AT81	2TB 7.2K 6Gbps NL SATA 2.5" G3HS 512e HDD	12
2.5-inch hot-swap SEDs - 12 Gbps SAS			
00WG705	AT8D	300GB 10K 12Gbps SAS 2.5" G3HS SED	12
00WG710	AT8E	600GB 10K 12Gbps SAS 2.5" G3HS SED	12
00NA291	ASBR	600GB 10K 12Gbps SAS 2.5" G3HS 512e SED	12
00WG715	AT8F	900GB 10K 12Gbps SAS 2.5" G3HS SED	12
00WG720	AT8G	1.2TB 10K 12Gbps SAS 2.5" G3HS SED	12
00NA301	ASBT	1.2TB 10K 12Gbps SAS 2.5" G3HS 512e SED	12
2.5-inch hot-swap SSDs - Enterprise 12 Gbps SAS			
00FN379	AS7C	200GB 12G SAS 2.5" MLC G3HS Enterprise SSD	12
00FN389	AS7E	400GB 12G SAS 2.5" MLC G3HS Enterprise SSD	12
00FN399	AS7G	800GB 12G SAS 2.5" MLC G3HS Enterprise SSD	12
00FN409	AS7J	1.6TB 12G SAS 2.5" MLC G3HS Enterprise SSD	12
2.5-inch hot-swap SSDs - Enterprise 6 Gbps SAS			
00AJ207	A4UA	200GB SAS 2.5" MLC G3HS Enterprise SSD	12
00AJ212	A4UB	400GB SAS 2.5" MLC G3HS Enterprise SSD	12
00AJ217	A4UC	800GB SAS 2.5" MLC G3HS Enterprise SSD	12
2.5-inch hot-swap SSDs - Enterprise Performance 6 Gbps SATA			
00YC320	AT9C	S3710 200GB Enterprise Performance SATA G3HS 2.5" SSD	12
00YC325	AT9D	S3710 400GB Enterprise Performance SATA G3HS 2.5" SSD	12
00YC330	AT9E	S3710 800GB Enterprise Performance SATA G3HS 2.5" SSD	12
2.5-inch hot-swap SSDs - Enterprise 6 Gbps SATA			
00AJ156	A4U3	S3700 200GB SATA 2.5" MLC G3HS Enterprise SSD	12
00AJ161	A4U4	S3700 400GB SATA 2.5" MLC G3HS Enterprise SSD	12
00AJ166	A4U5	S3700 800GB SATA 2.5" MLC G3HS Enterprise SSD	12

Part number	Feature code	Description	Maximum supported
2.5-inch hot-swap SSDs - Enterprise Entry 6 Gbps SATA			
00YC385	AT8R	120GB Enterprise Entry SATA G3HS 2.5" SSD	12
00YC390	AT8S	240GB Enterprise Entry SATA G3HS 2.5" SSD	12
00YC395	AT8T	480GB Enterprise Entry SATA G3HS 2.5" SSD	12
00YC400	AT8U	960GB Enterprise Entry SATA G3HS 2.5" SSD	12
00WG620	AT93	S3510 120GB Enterprise Entry SATA G3HS 2.5" SSD	12
00WG625	AT94	S3510 240GB Enterprise Entry SATA G3HS 2.5" SSD	12
00WG630	AT95	S3510 480GB Enterprise Entry SATA G3HS 2.5" SSD	12
00WG635	AT96	S3510 800GB Enterprise Entry SATA G3HS 2.5" SSD	12
2.5-inch hot-swap SSDs - Enterprise Value 6 Gbps SATA			
00AJ395	A577	120GB SATA 2.5" MLC G3HS Enterprise Value SSD	12
00AJ400	A578	240GB SATA 2.5" MLC G3HS Enterprise Value SSD	12
00AJ405	A579	480GB SATA 2.5" MLC G3HS Enterprise Value SSD	12
00AJ410	A57A	800GB SATA 2.5" MLC G3HS Enterprise Value SSD	12
00AJ171	A4U6	S3500 120GB Enterprise Value SATA G3HS 2.5" SSD	12
00AJ176	A4U7	S3500 240GB Enterprise Value SATA G3HS 2.5" SSD	12
00AJ181	A4U8	S3500 480GB Enterprise Value SATA G3HS 2.5" SSD	12
00AJ186	A4U9	S3500 800GB Enterprise Value SATA G3HS 2.5" SSD	12
2.5-inch hot-swap SSDs - Enterprise Capacity 6 Gbps SAS			
00NA671	ASW6	3.84TB 6Gb SAS Enterprise Capacity G3HS MLC SSD	10

Table 12. Internal drive options (Part 2: 2.5-inch simple-swap drives)

Part number	Feature code	Description	Maximum supported
2.5-inch simple-swap HDDs - 6 Gbps NL SATA			
00NA597	ASLC	500GB 7.2K 6Gbps NL SATA 2.5" G3SS HDD	8
00NA622	ASLD	1TB 7.2K 6Gbps NL SATA 2.5" G3SS HDD	8
00NA536	AT82	2TB 7.2K 6Gbps NL SATA 2.5" G3SS 512e HDD	8

Table 12. Internal drive options (Part 3: 3.5-inch hot-swap drives)

Part number	Feature code	Description	Maximum supported
3.5-inch hot-swap HDDs - 12Gbps SAS			
00WG675	AT87	300GB 15K 12Gbps SAS 3.5" G2HS HDD	4
00WG680	AT88	600GB 15K 12Gbps SAS 3.5" G2HS HDD	4
3.5-inch hot-swap HDDs - 12 Gbps NL SAS			
00FN188	A5VP	2TB 7.2K 12Gbps NL SAS 3.5" G2HS 512e HDD	4
00FN208	A5VQ	4TB 7.2K 12Gbps NL SAS 3.5" G2HS 512e HDD	4
00FN228	A5VR	6TB 7.2K 12Gbps NL SAS 3.5" G2HS 512e HDD	4
3.5-inch hot-swap HDDs - 6 Gbps NL SAS			
90Y8567	A26M	1TB 7.2K 6Gbps NL SAS 3.5" G2HS HDD	4

Part number	Feature code	Description	Maximum supported
90Y8572	A2U0	2TB 7.2K 6Gbps NL SAS 3.5" G2HS HDD	4
90Y8577	A2R2	3TB 7.2K 6Gbps NL SAS 3.5" G2HS HDD	4
3.5-inch hot-swap HDDs - 6 Gbps 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
00FN113	A5VD	2TB 7.2K 6Gbps NL SATA 3.5" G2HS 512e HDD	4
81Y9798	A22S	3TB 7.2K 6Gbps NL SATA 3.5" G2HS HDD	4
49Y6002	A3W9	4TB 7.2K 6Gbps NL SATA 3.5" G2HS HDD	4
00FN143	A5VH	4TB 7.2K 6Gbps NL SATA 3.5" G2HS 512e HDD	4
00FN173	A5VM	6TB 7.2K 6Gbps NL SATA 3.5" G2HS 512e HDD	4
3.5-inch hot-swap SSDs - Enterprise Performance 6 Gbps SATA			
00YC340	AT9G	S3710 400GB Enterprise Performance SATA HS 3.5" SSD	4
00YC345	AT9H	S3710 800GB Enterprise Performance SATA HS 3.5" SSD	4
3.5-inch hot-swap SSDs - Enterprise 6 Gbps SATA			
00AJ485	A56H	S3700 400GB SATA 3.5" MLC HS Enterprise SSD	4
00AJ490	A56J	S3700 800GB SATA 3.5" MLC HS Enterprise SSD	4
3.5-inch hot-swap SSDs - Enterprise Value 6 Gbps SATA			
00AJ435	A57F	120GB SATA 3.5" MLC HS Enterprise Value SSD	4
00AJ445	A57H	480GB SATA 3.5" MLC HS Enterprise Value SSD	4
3.5-inch hot-swap SSDs - Enterprise Entry 6 Gbps SATA			
00YC420	AT8Y	960GB Enterprise Entry SATA HS 3.5" SSD	4
00WG770	AT97	S3510 120GB Enterprise Entry SATA HS 3.5" SSD	4
00WG775	AT98	S3510 240GB Enterprise Entry SATA HS 3.5" SSD	4
00WG780	AT99	S3510 480GB Enterprise Entry SATA HS 3.5" SSD	4

Table 12. Internal drive options (Part 4: 3.5-inch simple-swap drives)

Part number	Feature code	Description	Maximum supported
3.5-inch simple-swap HDDs - 6 Gbps 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

Internal backup units

The x3550 M5 server does not support internal tape drive options or other internal backup units. However, it can be attached to the external tape drives using SAS or Fibre Channel connectivity (see Table 34).

Optical drives

The x3550 M5 server supports the optical drive options listed in the following table. Server models with ten 2.5-inch drive bays on the front do not support an internal optical drive; a supported external optical drive can be used instead.

Table 13. Optical drives

Part number	Feature code	Description	Maximum supported	Standard models where used
00AM066	A5KG	Ultraslim 9.5mm SATA DVD-ROM	1	-
00AM067	A5KH	Ultraslim 9.5mm SATA Multi Burner	1	-

Ultraslim 9.5mm SATA DVD-ROM (part number 00AM066) supports the following media and speeds for reading:

- CD-ROM 24X
- CD-DA (DAE) 24X
- CD-R 24X
- CD-RW 24X
- DVD-ROM 8X
- DVD-R 8X
- DVD+R 8X
- DVD-R DL 6X
- DVD+R DL 8X
- DVD-RW 8X
- DVD+RW 8X
- DVD-RAM (4.7 GB) 5X

Ultraslim 9.5mm SATA Multi Burner (part number 00AM067) supports the same media and speeds for reading as DVD-ROM (part number 00AM066). This drive also supports the following media and speeds for writing:

- CD-R 24X
- CD-RW 4X
- High-Speed CD-RW 10X
- Ultra Speed CD-RW 24X
- DVD-R 8X
- DVD+R 8X
- DVD-R DL 6X
- DVD+R DL 6X
- DVD-RW 6X
- DVD+RW 8X
- DVD-RAM 5X

I/O expansion

The x3550 M5 server supports up to four PCIe slots: one on the system planar that is dedicated for an internal RAID controller and up to three with different riser cards installed into two riser sockets on the system planar (one riser socket supports the installation of one riser card). The slot form factors are listed:

- Slot 1: PCIe 3.0 x16 or ML2; low profile, half-length (not present if the HDD Rear Kit is installed)
- Slot 2: PCIe 3.0 x16 or PCIe 3.0 x8; low profile or full-height, half-length (PCIe 3.0 x16 slot requires the second processor to be installed) (not present if the HDD Rear Kit is installed)
- Slot 3: PCIe 3.0 x16 or PCIe 3.0 x8; low profile, half-length
- Slot 4: PCIe 3.0 x8 (dedicated for an internal RAID controller)

The locations of the PCIe slots are shown in the following figure.

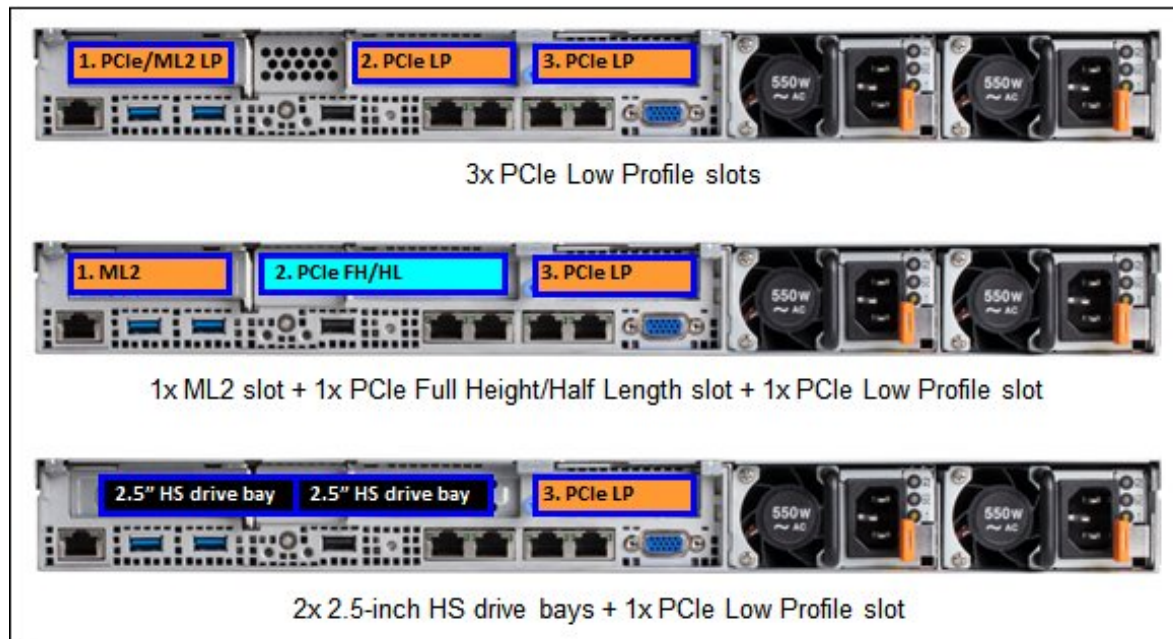


Figure 6. PCIe slot locations

Riser 1 supplies slot 1, and riser 2 supplies slots 2 and 3. All standard models have one riser card (Riser 1) installed, which provides one low profile PCIe x16 Gen 3 slot (riser option part number 00KA061). You can replace the first riser card or add a second riser card with the riser card options that are listed in the following table (or configure these riser cards to be factory-integrated using special bid or CTO).

Table 14. PCI riser card options

Part number	Feature code	Description	Maximum supported	Standard models where used
Riser 1 (supplies slots 1)				
00KA061	A5AG	System x3550 M5 PCIe Riser 1 (1x LP x16 CPU0)	1	62x, J2x, A2x, B2x, C2x, C4x, D2x, F2x, G2x, H2x, L2x, M2x
00KA063	A5AH	System x3550 M5 PCIe Riser 1 (1x ML2 x16 CPU0)	1	-
Riser 2 (supplies slots 2 and 3)				
00KA062	A5AC	System x3550 M5 PCIe Riser 2, 1 CPU (2xLP, LP x8 CPU0 + LP x8 CPU0)	1	-
None*	A5AD	System x3550 M5 PCIe Riser 2, 1-2 CPU (FHHL x16 CPU1 + LP x16 CPU0)	1	-
None*	A5AE	System x3550 M5 PCIe Riser 2, 1 CPU (FHHL x8 CPU0 +LP x8 CPU0)	1	-
00KA066	A5AF	System x3550 M5 PCIe Riser 2, 1-2 CPU (LP x16 CPU1 + LP x16 CPU0)	1	-

* Only available via CTO or special bid.

Note: The HDD Rear Kit (00KA058; see the "Internal storage" section) is installed in place of the PCIe slots 1 and 2, and it includes a special riser that provides PCIe 3.0 x16 slot 3. No other riser cards can be used when the HDD Rear Kit is installed.

The x3550 M5 Thermal Kit, part number 00KA059, contains two fans. It provides the seventh and eighth system fans needed for the following options when only one processor is installed:

- Intel X540 ML2 Dual Port 10GbaseT Adapter
- QLogic 8200 Dual Port 10GbE SFP+ VFA
- io3 Enterprise Flash Adapters
- io3 Enterprise Value Flash Adapters
- io3 Enterprise Mainstream Flash Adapters
- P3700 NVMe Enterprise Performance Flash Adapters

The x3550 M5 Thermal Kit is not needed if two processors are installed, because the second processor includes these fans.

The COM Port Bracket, part number 00KA161, is used for mounting the external serial port on the rear of the x3550 M5. This option includes the bracket and the cable. The COM Port option is mounted in place of the PCIe slot 3, and only PCIe slots 1 and 2 remain available.

The following table lists the x3550 M5 Thermal Kit and COM Port Bracket part numbers.

Table 15. Miscellaneous options

Part number	Feature code	Description	Maximum supported
00KA059	A5AJ	System x3550 M5 Thermal Kit	1
00KA161	A5AN	COM Port Bracket	1

Network adapters

The x3550 M5 supports four integrated Gigabit Ethernet ports.

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

- A Broadcom BCM5719 chip
- Four Gigabit Ethernet ports
- 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

Optionally, the x3550 M5 server supports ML2 adapters that are installed in the custom ML2 slot provided by the PCIe ML2 riser card (part number 00KA063). This slot supports adapters with either two 10 Gb ports or four Gigabit ports and supports direct connectivity to the IMM2 service processor for out-of-band systems management.

The following table lists additional supported network adapters.

Table 16. Network adapters

Part number	Feature code	Description	Maximum supported
40 Gb Ethernet - ML2			
00FP650	A5RK	Mellanox ConnectX-3 Pro ML2 2x40GbE/FDR VPI Adapter*	1
10 Gb Ethernet - ML2			
00D2026	A40S	Broadcom NetXtreme II ML2 Dual Port 10GbaseT	1
00D2028	A40T	Broadcom NetXtreme II ML2 Dual Port 10GbE SFP+*	1
00D1996	A40Q	Emulex VFA5 ML2 Dual Port 10GbE SFP+ Adapter*	1
00AG560	AT7U	Emulex VFA5.2 ML2 Dual Port 10GbE SFP+ Adapter*	1
00D8544	A4NZ	Emulex VFA5 ML2 FCoE/iSCSI License (FoD) (FoD upgrade for 00D1996 and 00AG560 - one for each adapter)	1
00D1994	A40P	Intel X540 ML2 Dual Port 10GbaseT Adapter	1
94Y5200	AS74	Intel X710 ML2 4x10GbE SFP+ Adapter*	1
1 Gb Ethernet - ML2			
00D1998	A40R	Intel I350-T4 ML2 Quad Port GbE Adapter	1
40 Gb Ethernet / FDR InfiniBand - PCIe			
00D9550	A3PN	Mellanox ConnectX-3 40GbE / FDR IB VPI Adapter*	3
10 Gb Ethernet - PCIe			
44T1370	A5GZ	Broadcom NetXtreme 2x10GbE BaseT Adapter	3
94Y5180	A4Z6	Broadcom NetXtreme Dual Port 10GbE SFP+ Adapter*	3
00JY820	A5UT	Emulex VFA5 2x10 GbE SFP+ PCIe Adapter*	3
00AG570	AT7S	Emulex VFA5.2 2x10 GbE SFP+ PCIe Adapter*	3
00JY824	A5UV	Emulex VFA5 FCoE/iSCSI SW for PCIe Adapter (FoD) (FoD upgrade for 00JY820 and 00AG570 - one for each adapter)	3
00JY830	A5UU	Emulex VFA5 2x10 GbE SFP+ Adapter and FCoE/iSCSI SW*	3
00AG580	AT7T	Emulex VFA5.2 2x10 GbE SFP+ Adapter and FCoE/iSCSI SW*	3
49Y7960	A2EC	Intel X520 Dual Port 10GbE SFP+ Adapter*	3
49Y7970	A2ED	Intel X540-T2 Dual Port 10GBaseT Adapter	3
81Y3520	AS73	Intel X710 2x10GbE SFP+ Adapter*	1
00D9690	A3PM	Mellanox ConnectX-3 10 GbE Adapter*	3
90Y4600	A3MR	Qlogic 8200 Dual Port 10GbE SFP+ VFA*	3
00Y5624	A3MT	Qlogic 8200 VFA FCoE/iSCSI License (FoD) (FoD upgrade for 90Y4600 - one for each adapter)	3
47C9952	A47H	Solarflare SFN5162F 2x10GbE SFP+ Performant Adapter*	3
1 Gb Ethernet - PCIe			
42C1780	2995	Broadcom NetXtreme 2xGbE BaseT Adapter	3
90Y9370	A2V4	Broadcom NetXtreme I Dual Port GbE Adapter	3

Part number	Feature code	Description	Maximum supported
90Y9352	A2V3	Broadcom NetXtreme I Quad Port GbE Adapter	3
00AG500	A56K	Intel I350-F1 1xGbE Fiber Adapter	3
00AG510	A56L	Intel I350-T2 2xGbE BaseT Adapter	3
00AG520	A56M	Intel I350-T4 4xGbE BaseT Adapter	3

* SFP+ and QSFP+ based adapters require supported transceivers or DAC cables that must be purchased separately.

For more information, see the list of Product Guides in the Ethernet adapters category:

<https://lenovopress.com/servers/options/ethernet>

Storage host bus adapters

The following table lists storage HBAs supported by the x3550 M5 server.

Table 17. Storage adapters

Part number	Feature code	Description	Maximum supported
Fibre Channel - 16 Gb			
81Y1662	A2W6	Emulex 16Gb FC Dual-port HBA	2
81Y1655	A2W5	Emulex 16Gb FC Single-port HBA	2
00Y3337	A3KW	QLogic 16Gb FC Single-port HBA	2
00Y3341	A3KX	QLogic 16Gb FC Dual-port HBA	2
Fibre Channel - 8 Gb			
42D0494	3581	Emulex 8Gb FC Dual-port HBA	3
42D0485	3580	Emulex 8Gb FC Single-port HBA	3
42D0510	3579	QLogic 8Gb FC Dual-port HBA	3
42D0501	3578	QLogic 8Gb FC Single-port HBA	3
SAS			
00AE912	A5M0	N2225 SAS/SATA HBA	3
00AE916	A5M1	N2226 SAS/SATA HBA	1

For more information, see the list of Product Guides in the Host bus adapters category:

<https://lenovopress.com/servers/options/hba>

PCIe SSD adapters

The x3550 M5 server supports the High IOPS PCIe SSD adapters listed in the following table.

Notes:

- If only one processor is installed in the server, then the x3550 M5 Thermal Kit, part number 00KA059, is required for the installation of the PCIe SSD adapters listed in Table 18.
- The io3 Flash Adapters listed in Table 18 cannot be factory installed; they are supported as field-installable options only. The server cannot be shipped with these adapters installed.

Table 18. High IOPS PCIe SSD adapters

Part number	Feature code	Description	Maximum supported
Enterprise Performance			
00YA812	AT7L	P3700 1.6TB NVMe Enterprise Performance Flash Adapter	3
00YA815	AT7M	P3700 2.0TB NVMe Enterprise Performance Flash Adapter	3
Enterprise Mainstream			
00YA800	AT7N	io3 1.25TB Enterprise Mainstream Flash Adapter	3
00YA803	AT7P	io3 1.6TB Enterprise Mainstream Flash Adapter	3
00YA806	AT7Q	io3 3.2TB Enterprise Mainstream Flash Adapter	3
00YA809	AT7R	io3 6.4TB Enterprise Mainstream Flash Adapter	1
Enterprise			
00AE995	ARYP	1000GB Enterprise io3 Flash Adapter	3
00AE998	ARYQ	1300GB Enterprise io3 Flash Adapter	3
00JY001	ARYR	2600GB Enterprise io3 Flash Adapter	3
00JY004	ARYS	5200GB Enterprise io3 Flash Adapter	1
Enterprise Value			
00AE983	ARYK	1250GB Enterprise Value io3 Flash Adapter	3
00AE986	ARYL	1600GB Enterprise Value io3 Flash Adapter	3
00AE989	ARYM	3200GB Enterprise Value io3 Flash Adapter	3
00AE992	ARYN	6400GB Enterprise Value io3 Flash Adapter	1

For more information, see the list of Product Guides in the PCIe SSD Adapters category:

<http://lenovopress.com/servers/options/ssdadapter>

GPU adapters

The x3550 M5 server supports a graphics processing units (GPUs) listed in the following table. If the NVIDIA Quadro adapter is installed, the maximum memory that can be installed is 1 TB.

Table 19. GPU adapters

Part number	Feature code	Description	Maximum supported
None*	ASPN	NVIDIA Quadro K420	1
None*	A3WH	NVIDIA Quadro K600	1
None*	ASPP	NVIDIA Quadro K620	1

* These GPU adapters are available only through Special Bid or CTO.

Power supplies

The x3550 M5 server supports up to two redundant power supplies, and is capable of N+N redundancy depending on the configuration. Standard models come with one power supply. The following table lists the power supplies.

Table 20. Power supplies

Part number	Feature code	Description	Maximum supported	Standard models where used
00KA094	A5AX	System x 550W High Efficiency Platinum AC Power Supply	2	A2x, B2x, C2x, C4x, D2x, F2x, G2x, H2x
00KA096	A5AY	System x 750W High Efficiency Platinum AC Power Supply	2	62x, J2x, N2x. P2x, Q2x
00KA097	A5AZ	System x 750W High Efficiency Titanium AC Power Supply (200-240V)	2	L2x
00KA098	A5B0	System x 900W High Efficiency Platinum AC Power Supply	2	M2x
00MV212	ASPR	System x 900W High Efficiency -48 V DC Power Supply	2	-
00MV211	ASPQ	System x 1500W High Efficiency Platinum AC Power Supply (200-240V)	2	-

General power supply rules are as follows:

- Minimum of one and maximum of two power supplies per system
- If two are installed, power supplies must be identical

Important: The Standalone Solution Configuration Tool (SSCT) and Lenovo Hardware Configurator power supply selection rules allow a subset of possible configurations due to power restrictions. Configurations that cannot be built in SSCT or Hardware Configurator due to power restrictions may still be supported. To verify support and ensure that the right power supply is chosen for optimal performance, you should always validate your server configuration using the latest version of the System x Power Configurator:

<https://www.ibm.com/support/entry/portal/docdisplay?Indocid=LNVO-PWRCONF>

A hot-swap power supply option ships standard with one 2.8m, 10A/100-250V, IEC 320-C13 to IEC 320-C14 rack power cable. Other country-specific and rack cables can be ordered if needed (see the following table).

Table 21. Power cables

Part number	Feature code	Description
Rack power cables		
39Y7932	6263	4.3m, 10A/100-250V, C13 to IEC 320-C14 Rack Power Cable
39Y7937	6201	1.5m, 10A/100-250V, C13 to IEC 320-C14 Rack Power Cable
39Y7938	6204	IEC309 C20 to C13 rack jumper cable
Country-specific power cords		
39Y7917	6212	European 10A line C13 to CEE 7/7 (2.8M)
39Y7918	6213	Denmark 10A line C13 to DK2-5A (2.8M)
39Y7919	6216	Switzerland 10A line C13 to SEV 1011 (2.8M)
39Y7920	6218	Israel 10A line C13 to SI 32 (2.8M)

Part number	Feature code	Description
39Y7921	6217	Italy 10A line C13 to CEE 7/7 (2.8M)
39Y7922	6214	South Africa 10A line C13 to SABS 164/1 (2.8M)
39Y7923	6215	United Kingdom 10A line C13 to BS 1363 (2.8M)
39Y7924	6211	Australia/NZ 10A line C13 to SAA-AS C112 (2.8M)
39Y7925	6219	Korea 7A line C13 to KETI 15A/250V (2.8M)
39Y7927	6269	India 6A line C13 to Fig 68 (2.8M)
39Y7928	6210	China 6A line C13 to GB 2099.1 (2.8M)
39Y7929	6223	Brazil 10A line C13 to NBR 6147 (2.8M)
39Y7930	6222	Argentina 10A line C13 to IRAM 2063 (2.8M)
39Y7931	6207	Power Cable - C13 / NEMA 5-15P 14ft
00CG265	A53E	Power Cord Taiwan AC plug 10A/250V, 2.8M; OPT
00CG267	A53F	Power Cord Taiwan AC plug 15A/125V; 2.8M; OPT
46M2592	A1RF	10A/250V C13 to NEMA 6-15P 2.8m line cord
46M2593	A1RE	Japan 10A/100V C13 to JIS C-8303 2.8m line cord

Integrated virtualization

The server supports VMware ESXi installed on a USB memory key or one or two SD cards in the SD Media Adapter for System x. The USB memory key is installed in a USB socket inside the server. The SD Media Adapter is installed in a dedicated slot inside the server.

When only one SD card is installed in the SD Media Adapter, you can create up to 16 volumes, each of which is presented to UEFI as a bootable device. When two SD Media cards are inserted, volumes can be mirrored (RAID 1) across both cards, up to a total of eight mirrored volumes. The use of mirrored volumes improves system availability because the server remains operational, even if one SD card fails. The RAID functionality is handled internally by the SD Media Adapter.

The following table lists the virtualization option.

Table 22. Virtualization option

Part number	Feature code	Description	Maximum supported
USB memory key			
00ML233	ASN6	USB Memory Key for VMware ESXi 5.1 Update 2	1
00ML235	ASN7	USB Memory Key for VMware ESXi 5.5 Update 2	1
41Y8298	A2G0	Blank USB Memory Key for VMware ESXi Downloads	1
SD Media Adapter and SD cards			
00ML706*	A5TJ	SD Media Adapter (Option 00ML706 includes 2 blank 32GB SD cards)	1
00ML700	AS2V	Blank SD Media	2
None**	AS4B	RAID Adapter for SD Media w/ VMware ESXi 5.1 U2 (2 SD Media, RAIDed)	1
None**	AS4C	RAID Adapter for SD Media w/ VMware ESXi 5.5 U2 (2 SD Media, RAIDed)	1
None**	ASCG	RAID Adapter for SD Media w/ VMware ESXi 5.1 U2 (1 SD Media)	1
None**	ASCH	RAID Adapter for SD Media w/ VMware ESXi 5.5 U2 (1 SD Media)	1

* Option 00ML706 includes two 32GB SD cards; however, for CTO orders, feature code A5TJ does not include SD media and the 32 GB cards and VMware vSphere preload must be selected separately.

** CTO only.

Systems management

The server contains Integrated Management Module II (IMM2.1), 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 IMM lights LEDs to help you diagnose the problem, records the error in the event log, and alerts you to the problem. Optionally, the IMM also provides a virtual presence capability for remote server management capabilities.

The IMM 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 23. Remote management option

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

All models come standard with basic light path diagnostics, which include the system LEDs on the front of the server (See Figure 2) and the LEDs near the monitored components (for example, the DIMM error LED on the system board).

Models with 4x or 8x 2.5-inch drive bays support a next-gen light path LCD display panel. The LCD display enables you to have quick access to system status, firmware, network, and health information.

Models with 4x 3.5-inch or 10x 2.5-inch front drive bays do not support an LCD display panel.

The following table shows the LCD display panel ordering information.

Table 24. Light path diagnostics options

Part number	Feature code	Description	Maximum supported	Standard models where used
00KA054	A5AB	System x Advanced LCD Light path Kit	1	N2x, P2x, Q2x

Notes:

- The following x3550 M5 Express models come standard with the Advanced LCD Light path Kit: E1G, E2G, E3G, E4G, E5J, E6J, E7J, EAU, EBU, ECU, EDU, EEU, EFU, EHM, EJM, EKM, ELM, ENU, EPU, EQU, ERU, and ESU.
- The following x3550 M5 TopSeller models come standard with the Advanced LCD Light path Kit: NAU, NDU, NDG, NMU, NJU, NEU, NEG, NNU, NFU, NHU, NPU, NKU, NKG, NQU, NRU, NSU, E8U, E9U, ETU, and EEU.
- The following x3550 M5 TopSeller models come standard without the Advanced LCD Light path Kit (it is available as an option for these models): EZU, K3G, K4G, K5G, K6G, and K7G.

IBM Security Key Lifecycle Manager for System x SEDs - FoD (SKLM - FoD) is an optional feature available in System x environments that centralizes, simplifies, and automates the data encryption key management process to help minimize risk and reduce operational costs. SKLM - FoD offers a simple and robust solution for key storage, key serving, and key lifecycle management for self-encrypting drives (SEDs) in local and distributed System x environments. With the x3550 M5, the feature on demand (FoD) upgrade can be configured with the ServeRAID M5210 and M1215 RAID controllers paired with SEDs. The following table lists SKLM-FoD part numbers.

Table 25. Security Key Lifecycle Manager part numbers

Part number	Feature code	Description	Maximum supported
United States, Canada, Asia Pacific and Japan			
00D9998	A5U1	IBM SKLM for System x w/SEDs - FoD per Install w/1Yr S&S	1
00D9999	AS6C	IBM SKLM for System x w/SEDs - FoD per Install w/3Yr S&S	1
Latin America, Europe, Middle East and Africa			
00FP648	A5U1	IBM SKLM for System x w/SEDs - FoD per Install w/1Yr S&S	1
00FP649	AS6C	IBM SKLM for System x w/SEDs - FoD per Install w/3Yr S&S	1

Rack installation

The following table lists the rack installation options that are available for the x3550 M5 server.

Table 26. Rack installation options

Part number	Feature code	Description	Maximum supported
00KA606	A5AK	System x3550 M5 Slide Kit G4	1
00KA607	A5AL	System x Enterprise 1U Cable Management Arm (CMA)	1
00KA500	A5FW	System x Gen-II Universal Slides Kit	1
00KA162	A5AP	Lockable Front Bezel	1

Note: The System x3550 M5 Slide Kit G4, part number 00KA606, is included with the standard models that are listed in Table 2 and Express and TopSeller models that are listed in Table 3.

Operating systems

The server supports the following operating systems:

- Microsoft:
 - Microsoft Windows Server 2012 R2
 - Microsoft Windows Server 2012
 - Microsoft Windows Server 2008 R2
- Red Hat:
 - Red Hat Enterprise Linux 7
 - Red Hat Enterprise Linux 6 Server x64 Edition (Update 5)
- SUSE:
 - SUSE Linux Enterprise Server 12
 - SUSE Linux Enterprise Server 12 with Xen
 - SUSE Linux Enterprise Server 11 for AMD64/EM64T (SP3)
 - SUSE Linux Enterprise Server 11 with Xen for AMD64/EM64T (SP3)
- VMware:
 - VMware vSphere 6.0 (ESXi)
 - VMware vSphere 5.5 (ESXi) (Update 2)
 - VMware vSphere 5.1 (ESXi) (Update 2)

See the ServerProven® website for the latest information about the specific versions and service levels supported and any other prerequisites:

<http://www.lenovo.com/us/en/serverproven/>

Physical specifications

The x3550 M5 server has the following dimensions and weight (approximate):

- Height: 43 mm (1.7 in)
- Width: 429 mm (16.9 in)
- Depth: 734 mm (28.9 in)
- Weight:
 - Minimum configuration: 13.8 kg (30.5 lb)
 - Maximum configuration: 19.3 kg (42.7 lb)

Operating environment

The x3550 M5 server is supported in the following environment:

- Air temperature:
 - Server on: 5 °C to 40 °C (41 °F to 104 °F); altitude: 0 to 950 m (3,117 ft); decrease the maximum system temperature by 1 °C for every 175-m increase in altitude above 950 m.
 - Server off: 5 °C to 45 °C (41 °F to 113 °F)
 - Maximum altitude: 3,050 m (10,000 ft), 5 °C to 28 °C (41 °F to 82 °F)
 - Shipment: -40 °C to +60 °C (-40 °F to 140 °F) at up to 10,700 m (35,105 ft)
- Humidity:
 - Server on: 8% to 85%, maximum dew point 24 °C, maximum rate of change 5 °C/hr
 - Server off: 8% to 85%, maximum dew point 27 °C
- Design to ASHRAE Class A3, ambient of 40 °C (104 °F), with relaxed support:
 - Supports cloud-like workload with no performance degradation acceptable (Turbo-Off).
 - Under no circumstance can any combination of worst case workload and configuration result in system shutdown or design exposure at 40 °C.

- Electrical:
 - Models with 1500 W AC Platinum power supplies:
 - 200 - 240 (nominal) V ac; 50 Hz or 60 Hz; 8.35 A
 - Input kilovolt-amperes (kVA) (approximately):
 - Minimum configuration: 0.14 kVA
 - Maximum configuration: 1.967 kVA
 - Models with 900 W AC Platinum power supplies:
 - 100 to 127 (nominal) V ac; 50 Hz or 60 Hz; 10.3 A
 - 200 to 240 (nominal) V ac; 50 Hz or 60 Hz; 5.0 A
 - Input kilovolt-amperes (kVA) (approximately):
 - Minimum configuration: 0.14 kVA
 - Maximum configuration: 1.194 kVA
 - Models with 750 W Platinum AC power supplies:
 - 100 to 127 (nominal) V ac; 50 Hz or 60 Hz; 8.6 A
 - 200 to 240 (nominal) V ac; 50 Hz or 60 Hz; 4.2 A
 - Input kilovolt-amperes (kVA) (approximately):
 - Minimum configuration: 0.14 kVA
 - Maximum configuration: 1.015 kVA
 - Models with 750 W Titanium AC power supplies:
 - 200 to 240 (nominal) V ac; 50 Hz or 60 Hz; 4.2 A
 - Input kilovolt-amperes (kVA) (approximately):
 - Minimum configuration: 0.14 kVA
 - Maximum configuration: 0.965 kVA
 - Models with 550 W AC power supplies:
 - 100 to 127 (nominal) V ac; 50 Hz or 60 Hz; 6.5 A
 - 200 to 240 (nominal) V ac; 50 Hz or 60 Hz; 3.3 A
 - Input kilovolt-amperes (kVA) (approximately):
 - Minimum configuration: 0.14 kVA
 - Maximum configuration: 0.732 kVA
 - Models with -48Vdc 900 W power supplies:
 - -48 - -60 (nominal) V dc; 25.8 A
 - Input kilovolt-amperes (kVA) (approximately):
 - Minimum configuration: 0.14 kVA
 - Maximum configuration: 1.237 kVA
- BTU output:
 - Minimum configuration: 461 Btu/hr (135 watts)
 - Maximum configuration: 6667 Btu/hr (1954 watts)
- Noise level:
 - 6.6 bels (operating)
 - 6.4 bels (idle)

Warranty

The System x3550 M5 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 country-specific. Not all warranty service upgrades are available in every country. For more information about Lenovo warranty service upgrade offerings that are available in your country, visit the Lenovo Services website:

<https://www-304.ibm.com/sales/gss/download/spst/servicepac>

The following table explains warranty service definitions in more detail.

Table 27. 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 Drive Retention

Lenovo's Hard Drive Retention 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 country 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 regulations:

- FCC - Verified to comply with Part 15 of the FCC Rules, Class A
- Canada ICES-003, issue 5, Class A
- UL/IEC 60950-1
- CSA C22.2 No. 60950-1
- NOM-019
- Argentina IEC60950-1
- Japan VCCI, Class A
- Australia/New Zealand AS/NZS CISPR 22, Class A; AS/NZS 60950.1
- China CCC GB4943.1, GB9254 Class A, GB17625.1
- Taiwan BSMI CNS13438, Class A; CNS14336-1
- Korea KN22, Class A; KN24
- Russia, Belorussia and Kazakhstan, TR CU 020/2011 (for EMC) and TR CU 004/2011 (for safety)
- IEC 60950-1 (CB Certificate and CB Test Report)
- 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)
- RoHS Directive

External storage expansion

The x3550 M5 server supports attachment to external storage expansion enclosures, such as the Lenovo Storage E1000 series, by using the ServeRAID M5225 SAS/SATA Controller. The server can also be attached to supported external storage systems, such as the Lenovo Storage S2200 and S3200, using the supported HBAs.

The following table shows the RAID controllers and options.

Table 28. RAID controllers and options for external disk storage expansion

Part number	Feature code	Description	Maximum supported	Standard models where used
12 Gb RAID controllers				
00AE938	A5ND	ServeRAID M5225-2GB SAS/SATA Controller	3	-
Feature on Demand (FoD) upgrades for the M5225 (one per server)*				
47C8706	A3Z5	ServeRAID M5200 Series RAID 6 Upgrade	1*	-
47C8710	A3Z7	ServeRAID M5200 Series Performance Accelerator	1*	-
47C8712	A3Z8	ServeRAID M5200 Series SSD Caching Enabler	1*	-

* One FoD upgrade for the M5225 activates the feature on all M5200 series controllers installed in a server.

The ServeRAID M5225 SAS/SATA Controller has the following specifications:

- Eight external 12 Gbps SAS/SATA ports
- Supports 12, 6, and 3 Gbps SAS and 6 and 3 Gbps SATA data transfer rates
- Two external x4 mini-SAS HD connectors (SFF-8644)
- Supports 2 GB flash-backed cache (standard)
- Supports RAID levels 0, 1, 5, 10, and 50 (standard)
- Supports RAID 6 and 60 with the optional M5200 Series RAID 6 Upgrade
- Supports optional M5200 Series Performance Accelerator and SSD Caching upgrades
- PCIe x8 Gen 3 host interface
- Based on the LSI SAS3108 12 Gbps ROC controller
- Supports connectivity to the external storage expansion enclosures

For more information about the ServeRAID M5225, see the Lenovo Press Product Guide at <http://lenovopress.com/tips1258>

The ServeRAID M5225 SAS/SATA Controller supports connectivity to the external expansion enclosures listed in the following table. Up to nine expansion enclosures can be daisy-chained per one M5225 external port. For better performance, distribute expansion enclosures evenly across both M5225 ports.

Table 29. External expansion enclosures

Part number	Description	Max qty supported per one M5225
64111B1*	Lenovo Storage E1012 LFF Disk Expansion Single SAS IO Module, Rail Kit, 9x5 NBD	8
64111B2	Lenovo Storage E1012 LFF Disk Expansion Dual SAS IO Module, Rail Kit, 9x5 NBD	8
64111B3*	Lenovo Storage E1024 SFF Disk Expansion Single SAS IO Module, Rail Kit, 9x5 NBD	8
64111B4	Lenovo Storage E1024 SFF Disk Expansion Dual SAS IO Module, Rail Kit, 9x5 NBD	8
70F0 / 70F1**	Lenovo ThinkServer SA120	8
610012X	EXP2512 Storage Enclosure	17
610024X	EXP2524 Storage Enclosure	9

* Not available for ordering in North America (United States and Canada).

** Machine Type; see the Lenovo ThinkServer SA120 Product Guide (<http://lenovopress.com/tips1234>) for available models.

Lenovo Storage E1012 and E1024

For details about supported drives and cables for the Lenovo Storage E1012 and E1024, see the Lenovo Press Product Guide:

<http://lenovopress.com/lp0043>

Lenovo ThinkServer SA120

For details about supported drives and cables for the Lenovo ThinkServer SA120, see the Lenovo Press Product Guide:

<http://lenovopress.com/tips1234>

EXP2512 and EXP2524

The external SAS cables listed in the following table support connectivity between external expansion enclosures and the ServeRAID M5225 SAS/SATA Controller.

Table 30. External SAS cables for external storage expansion enclosures

Part number	Description	Maximum quantity supported per one enclosure
Server to Expansion enclosure connectivity (Mini-SAS HD x4 to Mini-SAS x4)		
00MJ162	0.6m SAS Cable (mSAS HD to mSAS)	1
00MJ163	1.5m SAS Cable (mSAS HD to mSAS)	1
00MJ166	3m SAS Cable (mSAS HD to mSAS)	1
Expansion enclosure to Expansion enclosure connectivity (Mini-SAS x4 to Mini-SAS x4)		
00WC017	1 m SAS Cable	1
00WC018	3 m SAS Cable	1

The following tables list the drives supported by EXP2512 and EXP2524 external expansion enclosures.

Table 31. Drive options for EXP2512 external expansion enclosures

Part number	Description	Maximum quantity supported per one enclosure
3.5" NL SAS HS HDDs		
00NC555	2TB 7,200 rpm 6Gb SAS NL 3.5" HDD	12
00NC557	3TB 7,200 rpm 6Gb SAS NL 3.5" HDD	12
00NC559	4TB 7,200 rpm 6Gb SAS NL 3.5" HDD	12

Table 32. Drive options for EXP2524 external expansion enclosures

Part number	Description	Maximum quantity supported per one enclosure
2.5" NL SAS HS HDDs		
00NC571	1TB 7,200 rpm 6Gb SAS NL 2.5" HDD	24
2.5" SAS HS HDDs		
00NC561	146GB 15,000 rpm 6Gb SAS 2.5" HDD	24
00NC563	300GB 15,000 rpm 6Gb SAS 2.5" HDD	24
00NC565	600GB 10,000 rpm 6Gb SAS 2.5" HDD	24
00NC567	900GB 10,000 rpm 6Gb SAS 2.5" HDD	24
00NC569	1.2TB 10,000 rpm 6Gb SAS 2.5" HDD	24
2.5" SAS HS SSDs		
00NC573	200GB 6Gb SAS 2.5" SSD	24
00NC575	400GB 6Gb SAS 2.5" SSD	24

External disk storage systems

The following table lists the external storage systems that are offered by Lenovo that can be used in x3550 M5 solutions.

Table 33. External disk storage systems

Part number	Description
Lenovo Storage S2200	
64112B1	Lenovo Storage S2200 LFF Chassis SAS Single Controller, Rack Kit, 9x5NBD
64112B2	Lenovo Storage S2200 LFF Chassis SAS Dual Controller, Rack Kit, 9x5NBD
64114B1	Lenovo Storage S2200 LFF Chassis FC/iSCSI Single Controller, Rack Kit, 9x5NBD
64114B2	Lenovo Storage S2200 LFF Chassis FC/iSCSI Dual Controller, Rack Kit, 9x5NBD
64112B3	Lenovo Storage S2200 SFF Chassis SAS Single Controller, Rack Kit, 9x5NBD
64112B4	Lenovo Storage S2200 SFF Chassis SAS Dual Controller, Rack Kit, 9x5NBD
64114B3	Lenovo Storage S2200 SFF Chassis FC/iSCSI Single Controller, Rack Kit, 9x5NBD
64114B4	Lenovo Storage S2200 SFF Chassis FC/iSCSI Dual Controller, Rack Kit, 9x5NBD
Lenovo Storage S3200	
64113B1	Lenovo Storage S3200 LFF Chassis SAS Single Controller, Rack Kit, 9x5NBD
64113B2	Lenovo Storage S3200 LFF Chassis SAS Dual Controller, Rack Kit, 9x5NBD
64116B1	Lenovo Storage S3200 LFF Chassis FC/iSCSI Single Controller, Rack Kit, 9x5NBD
64116B2	Lenovo Storage S3200 LFF Chassis FC/iSCSI Dual Controller, Rack Kit, 9x5NBD
64113B3	Lenovo Storage S3200 SFF Chassis SAS Single Controller, Rack Kit, 9x5NBD
64113B4	Lenovo Storage S3200 SFF Chassis SAS Dual Controller, Rack Kit, 9x5NBD
64116B3	Lenovo Storage S3200 SFF Chassis FC/iSCSI Single Controller, Rack Kit, 9x5NBD
64116B4	Lenovo Storage S3200 SFF Chassis FC/iSCSI Dual Controller, Rack Kit, 9x5NBD
IBM Storwize	
6096CU2	IBM Storwize V3500 3.5-inch Dual Control Storage Controller Unit
6096CU3	IBM Storwize V3500 2.5-inch Dual Control Storage Controller Unit
6099L2C	IBM Storwize V3700 3.5-inch Storage Controller Unit
6099S2C	IBM Storwize V3700 2.5-inch Storage Controller Unit
6099T2C	IBM Storwize V3700 2.5-inch DC Storage Controller Unit
6194L2C	IBM Storwize V5000 LFF Control Enclosure
6194S2C	IBM Storwize V5000 SFF Control Enclosure
6195SC5	IBM Storwize V7000 2.5-inch Storage Controller Unit

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

- **Lenovo Storage**
<https://lenovopress.com/storage/san/lenovo>
- **IBM Storage**
<https://lenovopress.com/storage/san/ibm>

External backup units

The following table lists the external backup options that are offered by Lenovo that can be used in x3550 M5 solutions.

Table 34. External backup options

Part number	Description
External tape enclosures	
61901UX	IBM Multimedia Backup Enclosure
Backup drives for IBM Multimedia Backup Enclosure	
00NV402	6190 HH LTO5 SAS Tape Drive
00NV404	6190 HH LTO6 SAS Tape Drive
00NV406	6190 RDX 3.0 Dock/320GB Cartridge Bundle
00NV407	6190 RDX 3.0 Dock/500GB Cartridge Bundle
00NV408	6190 RDX 3.0 Dock/1.0TB Cartridge Bundle
00NV455	6190 RDX 3.0 Dock/2.0TB Cartridge Bundle
External RDX USB drives	
362532Y	RDX External USB 3.0 Dock with 320GB Cartridge
362550Y	RDX External USB 3.0 Dock with 500GB Cartridge
36251TY	RDX External USB 3.0 Dock with 1TB Cartridge
External SAS tape backup drives	
6160S5E	IBM TS2250 Tape Drive Model H5S
6160S6E	IBM TS2260 Tape Drive Model H6S
6160S6X	IBM TS2360 Tape Drive Model S63
6160S7E	IBM TS2270 Tape Drive Model H7S
External SAS tape backup autoloaders	
6171S4R	IBM TS2900 Tape Autoloader w/LTO4 HH SAS
6171S5R	IBM TS2900 Tape Autoloader w/LTO5 HH SAS
6171S6R	IBM TS2900 Tape Autoloader w/LTO6 HH SAS
6171S7R	IBM TS2900 Tape Autoloader w/LTO7 HH SAS
External tape backup libraries	
61732UL	IBM TS3100 Tape Library Model L2U
61734UL	IBM TS3200 Tape Library Model L4U
Fibre Channel backup drives for TS3100 and TS3200 Tape Libraries	
00NA101	6173 LTO Ultrium 4 Fibre Channel Drive Sled
00NA103	6173 LTO Ultrium 4 Half High Fibre Drive Sled
00NA107	6173 LTO Ultrium 5 Fibre Channel Drive
00NA113	6173 LTO Ultrium 5 Half High Fibre Drive Sled
00NA115	6173 LTO Ultrium 6 Fibre Channel Drive
00NA119	6173 LTO Ultrium 6 Half High Fibre Drive Sled
00WF765	6173 LTO Ultrium 7 Fibre Channel Drive
00WF769	6173 LTO Ultrium 7 Half High Fibre Drive Sled
SAS backup drives for TS3100 and TS3200 Tape Libraries	
00NA121	6173 LTO Ultrium 4 SAS Drive Sled

00NA105	6173 LTO Ultrium 4 Half High SAS DriveV2 Sled
00NA109	6173 LTO Ultrium 5 SAS Drive Sled
00NA111	6173 LTO Ultrium 5 Half High SAS Drive Sled
00NA117	6173 LTO Ultrium 6 Half High SAS Drive Sled
00WF767	6173 LTO Ultrium 7 Half High SAS Drive Sled

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 top-of-rack Ethernet switches that are offered by Lenovo that can be used in x3550 M5 solutions.

Table 35. Top-of-rack switches

Part number	Description
1 Gb Ethernet top-of-rack switches	
7159BAX	Lenovo RackSwitch G7028 (Rear to Front)
7159CAX	Lenovo RackSwitch G7052 (Rear to Front)
7159G52	Lenovo RackSwitch G8052 (Rear to Front)
10 Gb Ethernet top-of-rack switches	
7159BR6	Lenovo RackSwitch G8124E (Rear to Front)
7159G64	Lenovo RackSwitch G8264 (Rear to Front)
7159DRX	Lenovo RackSwitch G8264CS (Rear to Front)
7159CRW	Lenovo RackSwitch G8272 (Rear to Front)
7159GR6	Lenovo RackSwitch G8296 (Rear to Front)
40 Gb Ethernet top-of-rack switches	
7159BRX	Lenovo RackSwitch G8332 (Rear to Front)

For more information, see the list of Product Guides in the Top-of-rack switches category:
<http://lenovopress.com/servers/options/switches>

Fibre Channel SAN switches

The following table lists the Fibre Channel SAN switches that are offered by Lenovo that can be used in x3550 M5 solutions.

Table 36. Fibre Channel SAN switches

Description	Part number
16 Gb Fibre Channel	
Brocade 6505 FC SAN Switch	3873AR2
Brocade 6510 FC SAN Switch	3873BR1
8 Gb Fibre Channel	
Brocade 300 FC SAN Switch	3873AR1

Uninterruptible power supply units

The following table lists the uninterruptible power supply (UPS) units that are offered by Lenovo that can be used in x3550 M5 solutions.

Table 37. 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)

For more information, see the list of Product Guides in the Power infrastructure category:

<https://lenovopress.com/servers/options/ups>

Power distribution units

The following table lists the power distribution units (PDUs) that are offered by Lenovo that can be used in x3550 M5 solutions.

Table 38. Power distribution units

Part number	Description
0U Basic PDUs	
46M4122	0U 24 C13 16A 3 Phase PDU with IEC 309 P+N+Gnd line cord
46M4125	0U 24 C13 30A 3 Phase PDU with NEMA L21-30P line cord
46M4128	0U 24 C13 30A PDU with NEMA L6-30P line cord
46M4131	0U 24 C13 32A PDU with IEC 309 P+N+Gnd line cord
46M4143	0U 12 C19/12 C13 32A 3 Phase PDU with IEC 309 3P+N+Gnd line cord
46M4140	0U 12 C19/12 C13 60A 3 Phase PDU with CS8365L 3P+Gnd line cord
Switched and Monitored PDUs	
46M4002	1U 9 C19/3 C13 Switched and Monitored DPI PDU (without line cord)
46M4003	1U 9 C19/3 C13 Switched and Monitored 60A 3 Phase PDU with IEC 309 3P+Gnd line cord
46M4004	1U 12 C13 Switched and Monitored DPI PDU (without line cord)
46M4005	1U 12 C13 Switched and Monitored 60A 3 Phase PDU with IEC 309 3P+Gnd line cord
46M4167	1U 9 C19/3 C13 Switched and Monitored 30A 3 Phase PDU with NEMA L21-30P line cord
46M4116	0U 24 C13 Switched and Monitored 30A PDU with NEMA L6-30P line cord
46M4119	0U 24 C13 Switched and Monitored 32A PDU with IEC 309 P+N+Gnd line cord
46M4137	0U 12 C19/12 C13 Switched and Monitored 32A 3 Phase PDU with IEC 309 3P+N+Gnd cord
46M4134	0U 12 C19/12 C13 Switched and Monitored 50A 3 Phase PDU with CS8365L 3P+Gnd cord
Ultra Density Enterprise PDUs (9x IEC 320 C13 + 3x IEC 320 C19 outlets)	
71762NX	Ultra Density Enterprise C19/C13 PDU Module (without line cord)
71762MX	Ultra Density Enterprise C19/C13 PDU+ Module (without line cord)
71763NU	Ultra Density Enterprise C19/C13 PDU 60A/208V/3ph with IEC 309 3P+Gnd line cord
71763MU	Ultra Density Enterprise C19/C13 PDU+ 60A/208V/3ph with IEC 309 3P+Gnd line cord
C13 Enterprise PDUs (12x IEC 320 C13 outlets)	
39M2816	DPI C13 Enterprise PDU+ (without line cord)
39Y8941	DPI Single Phase C13 Enterprise PDU (without line cord)
C19 Enterprise PDUs (6x IEC 320 C19 outlets)	
39Y8948	DPI Single Phase C19 Enterprise PDU (without line cord)
39Y8923	DPI 60A 3 Phase C19 Enterprise PDU with IEC 309 3P+G (208 V) fixed line cord
Front-end PDUs (3x IEC 320 C19 outlets)	
39Y8938	DPI 30amp/125V Front-end PDU with NEMA L5-30P line cord
39Y8939	DPI 30amp/250V Front-end PDU with NEMA L6-30P line cord
39Y8934	DPI 32amp/250V Front-end PDU with IEC 309 2P+Gnd line cord
39Y8940	DPI 60amp/250V Front-end PDU with IEC 309 2P+Gnd line cord
39Y8935	DPI 63amp/250V Front-end PDU with IEC 309 2P+Gnd line cord
Universal PDUs (7x IEC 320 C13 outlets)	
39Y8951	DPI Universal Rack PDU with US LV and HV line cords
39Y8952	DPI Universal Rack PDU with CEE7-VII Europe line cord

Part number	Description
39Y8953	DPI Universal Rack PDU with Denmark line cord
39Y8954	DPI Universal Rack PDU with Israel line cord
39Y8955	DPI Universal Rack PDU with Italy line cord
39Y8956	DPI Universal Rack PDU with South Africa line cord
39Y8957	DPI Universal Rack PDU with UK line cord
39Y8958	DPI Universal Rack PDU with AS/NZ line cord
39Y8959	DPI Universal Rack PDU with China line cord
39Y8962	DPI Universal Rack PDU (Argentina)
39Y8960	DPI Universal Rack PDU (Brazil)
39Y8961	DPI Universal Rack PDU (India)
NEMA PDUs (6x NEMA 5-15R outlets)	
39Y8905	DPI 100-127V PDU with Fixed NEMA L5-15P line cord
Line cords for PDUs that ship without a line cord	
40K9611	DPI 32a Line Cord (IEC 309 3P+N+G)
40K9612	DPI 32a Line Cord (IEC 309 P+N+G)
40K9613	DPI 63a Cord (IEC 309 P+N+G)
40K9614	DPI 30a Line Cord (NEMA L6-30P)
40K9615	DPI 60a Cord (IEC 309 2P+G)
40K9617	DPI Australian/NZ 3112 Line Cord
40K9618	DPI Korean 8305 Line Cord

For more information, see the list of Product Guides in the Power infrastructure category:
<https://lenovopress.com/servers/options/pdu>

Rack cabinets

The following table lists the rack cabinets that are offered by Lenovo that can be used in x3550 M5 solutions.

Table 39. 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 Product Guides in the Rack cabinets category:
<https://lenovopress.com/servers/options/racks>

KVM switches and consoles

The server supports the rack options listed in the following table.

Table 40. KVM switch and console options

Part number	Feature code	Description
Monitor kits and keyboard trays		
17238BX	1723HC1 fc A3EK	1U 18.5" Standard Console
17238EX	1723HC1 fc A3EL	1U 18.5" Enhanced Media Console
Console switches		
1754D2X	1754HC2 fc 6695	Global 4x2x32 Console Manager (GCM32)
1754D1X	1754HC1 fc 6694	Global 2x2x16 Console Manager (GCM16)
1754A2X	1754HC4 fc 0726	Local 2x16 Console Manager (LCM16)
1754A1X	1754HC3 fc 0725	Local 1x8 Console Manager (LCM8)
Console cables		
43V6147	3757	Single Cable USB Conversion Option (UCO)
39M2895	3756	USB Conversion Option (4 Pack UCO)
46M5383	5341	Virtual Media Conversion Option Gen2 (VCO2)
46M5382	5340	Serial Conversion Option (SCO)

For more information, see the list of Product Guides in the KVM Switches & Consoles category:
<https://lenovopress.com/servers/options/kvm>

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Related publications and links

For more information, see these resources:

- Lenovo servers product page
<http://www.lenovo.com/systems/servers>
- System x3550 M5 Type 5463 documentation
http://publib.boulder.ibm.com/infocenter/systemx/documentation/topic/com.lenovo.sysx.5463.doc/c_product_page.html
- US Announcement Letter - May 5, 2015
<http://ibm.com/common/ssi/cgi-bin/ssialias?infotype=dd&subtype=ca&&htmlfid=897/ENUS115-066>
- US Announcement Letter - September 9, 2014
<http://ibm.com/common/ssi/cgi-bin/ssialias?infotype=dd&subtype=ca&&htmlfid=897/ENUS114-141>
- ServerProven hardware compatibility page for the x3550 M5
<http://www.lenovo.com/us/en/serverproven/xseries/5463.shtml>
- Configuration and Option Guide
<http://www.ibm.com/systems/xbc/cog/>
- xRef - System x Reference Sheets
<http://lenovopress.com/xref>
- Support Portal - System x3550 M5
http://www.ibm.com/support/entry/portal/product/lenovo_x86_servers/lenovo_system_x3550_m5
- System Storage Interoperation Center
<http://www.ibm.com/systems/support/storage/ssic>

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