

Lenovo ThinkSystem SR250 V2 Server

Product Guide (withdrawn product)

The Lenovo ThinkSystem SR250 V2 is a high-value single-socket 1U rack server for growing businesses that need optimized performance and flexibility for future growth, along with enterprise-class reliability, management, and security. The server supports one Intel Xeon E-2300 Series processor (formerly codenamed "Rocket Lake") or Intel Pentium ("Comet Lake Refresh") and up to 128 GB of 3200 MHz TruDDR4 ECC memory.

Flexible and scalable internal storage configurations include up to ten 2.5-inch or four 3.5-inch drives with affordable software RAID or advanced hardware RAID protection and a wide selection of drive sizes and types, including NVMe PCIe SSDs, SAS/SATA SSDs, and SAS/SATA HDDs. Also, it features integrated dual-port 1 Gb Ethernet NIC and additional PCIe expansion slots for hardware RAID protection, network scalability, and external storage connectivity.

The next-generation Lenovo XClarity Controller, which is built into the SR250 V2 server, provides advanced service processor control, monitoring, and alerting functions.

The following figure shows the Lenovo ThinkSystem SR250 V2 with ten 2.5-inch hot-swap drives.



Figure 1 Lenovo ThinkSystem SR250 V2

Did you know?

The ThinkSystem SR250 V2 is an entry-level server with enterprise-grade management features and support for hot-swap power supplies and drives. It offers full support of Lenovo XClarity Administrator for comprehensive systems management and includes the next generation UEFI-based Lenovo XClarity Provisioning Manager for system setup and diagnosis, and the Lenovo XClarity Controller management processor for ongoing systems management and alerting. These tools make the SR250 V2 easy to deploy, integrate, service, and manage.

Key features

The SR250 V2 server is a compact, cost-effective, single-processor [1U rack server](#) that has been optimized to provide enterprise-class features to small-to-medium-sized businesses, retail stores, or distributed enterprises.

Scalability and performance

The SR250 V2 offers the following features to boost performance, improve scalability, and reduce costs:

- Improved single-socket processor performance:
 - Intel Xeon E-2300 Series processors ("Rocket Lake-E") up to 8 cores and core speeds up to 3.7 GHz
 - Intel Pentium G6405, G6505 and G6605 processors ("Comet Lake Refresh") with 2 cores and core speeds up to 4.3 GHz
- Up to four 3200 MHz DDR4 ECC UDIMMs provide speed and capacity of up to 128 GB
- Offers flexible and scalable internal storage in a 1U rack form factor with up to 10x 2.5-inch drives for performance-optimized configurations or up to 4x 3.5-inch drives for capacity-optimized configurations
- Up to three PCIe slots for I/O expansion, one of which has the new PCIe Gen4 interface to maximize I/O performance
- The use of solid-state drives (SSDs) instead of, or along with, traditional 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.
- New high-speed RAID controllers from Lenovo and Broadcom provide 12 Gb SAS connectivity to the drive backplanes
- Supports two M.2 drives for OS boot support with VROC RAID redundancy
- The server has two integrated Gigabit Ethernet ports
- Support for a NVIDIA GPU for enhanced workload performance

Availability and serviceability

The SR250 V2 server provides many features to simplify serviceability and increase system uptime:

- Designed to run 24 hours a day, 7 days a week
- The SR250 V2 supports UDIMM memory with ECC protection which provides error correction not available in PC-class "servers" that use parity memory. Avoiding system crashes (and data loss) due to soft memory errors means greater system uptime.
- Provides easy access to upgrades and serviceable parts (such as memory DIMMs and adapter cards) with tool-less cover removal.
- Much like hot-swap drives, simple-swap drives are mounted on an easy-to-remove tray and work with the same RAID options. Simple-swap require a system power-down before adding or replacing, however simple-swap drives are less expensive than hot-swap drives.
- Offers data protection and greater system uptime with a choice of affordable onboard SATA RAID or advanced hardware RAID redundancy, along with hot-swap drives (select models).
- The server supports hot-swap power supplies; with two installed, they form a redundant pair to provide availability for business-critical applications.
- The built-in XClarity Controller continuously monitors system parameters, triggers alerts, and performs recovery actions in case of failures to minimize downtime.
- Allows preventive actions in advance of possible failure, thereby increasing server uptime and application availability with Proactive Platform Alerts (including PFA and SMART alerts) for memory, internal storage (SAS/SATA HDDs and SSDs, NVMe SSDs, M.2 SSDs), RAID controllers, and server ambient and sub-component temperatures.

- Provides quick access to system status, firmware, network, health, and alerts information via Virtual Operator Panel from the XClarity Mobile App running on the Android or iOS mobile device that is connected to the front USB port with XClarity Controller access.
- Built-in diagnostics in UEFI, using Lenovo XClarity Provisioning Manager, speed up troubleshooting tasks to reduce service time.
- Lenovo XClarity Provisioning Manager supports diagnostics and can save service data to a USB key drive or remote CIFS share folder for troubleshooting and reduce service time.
- Support for the XClarity Administrator Mobile app running on a supported smartphone and connected to the server through the service-enabled USB port, enables additional local systems management functions.
- Auto restart in the event of a momentary loss of AC power (based on power policy setting in the XClarity Controller service processor) (hot-swap power supplies only)
- One-year or three-year customer-replaceable unit (CRU) and onsite limited warranty with next business day response. Optional service upgrades are available.

Manageability and security

Powerful systems management features simplify local and remote management of the SR250 V2 server and deliver enterprise-class data protection:

- The server includes an XClarity Controller (XCC) to monitor server availability. Optional upgrade to XCC Advanced to provide remote control (keyboard video mouse) functions. Optional upgrade to XCC Enterprise enables the additional support for the mounting of remote media files (ISO and IMG image files), boot capture, and power capping.
- Lenovo XClarity Administrator offers comprehensive hardware management tools that help to increase uptime, reduce costs and improve productivity through advanced server management capabilities.
- New UEFI-based Lenovo XClarity Provisioning Manager, accessible from F1 during boot, provides system inventory information, graphical UEFI Setup, platform update function, RAID Setup wizard, operating system installation function, and diagnostic functions.
- Support for Lenovo XClarity Energy Manager which captures real-time power and temperature data from the server and provides automated controls to lower energy costs.
- Integrated Trusted Platform Module (TPM) 2.0 support enables advanced cryptographic functionality, such as digital signatures and remote attestation.
- Industry-standard Advanced Encryption Standard (AES) NI support for faster, stronger encryption.
- Intel Execute Disable Bit functionality can prevent certain classes of malicious buffer overflow attacks when combined with a supported operating system.
- Intel Trusted Execution Technology (Intel Xeon E processors only) 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.
- Helps prevent unauthorized software from running on the server by protecting against boot block-level malicious software with Intel Boot Guard technology.
- Protects application code and data from disclosure or modification with Intel Software Guard Extensions (SGX), enabling high-assurance security use cases, such as blockchain, identity and records privacy, secure browsing, and digital rights management (DRM).
- Optional lockable front security bezel for additional physical security

Energy efficiency

The SR250 V2 server offers the following energy saving features to save energy, reduce operational costs, increase energy availability, and contribute to the green environment:

- Delivers optimized compute power per watt, featuring 80 PLUS Gold (fixed) and Platinum (hot-swap) AC power supplies.
- Reduces power drawn with Intel Intelligent Power Capability that powers individual processor elements on and off as needed.
- Helps reduce power consumption with variable speed fans.
- Helps achieve lower heat output and reduced cooling needs with Lenovo XClarity Energy Manager that provides advanced data center power notification, analysis, and policy-based management.

Comparing the SR250 V2 to the SR250

The ThinkSystem SR250 V2 improves on the previous generation SR250, as summarized in the following table.

Table 1. Comparing the SR250 V2 to the SR250

Feature	SR250	SR250 V2	Benefits
Form Factor	<ul style="list-style-type: none">• 1-Socket (1S) Rack• Short-depth form factor, 509mm (20 inches) EIA rack depth	<ul style="list-style-type: none">• 1-Socket (1S) Rack• Short-depth form factor, 509mm (20 inches) EIA rack depth	<ul style="list-style-type: none">• Compact 1U rack server• Installs in a 4-post or 2-post rack
Processor	<ul style="list-style-type: none">• Supports single Xeon E2200 Series "Coffee Lake-S" processor up to 6C / 95W• Also supports Pentium, Core i3 and Celeron processors• Uses Intel C246 "Cannon Lake" Platform Controller Hub (PCH)	<ul style="list-style-type: none">• Support single Xeon E2300 Series "Rocket Lake" processor up to 8C / 95W• Also supports Pentium processors• Intel C256 "Tiger Lake" Platform Controller Hub (PCH)	<ul style="list-style-type: none">• Supports the latest generation Intel Xeon E processors
GPU	<ul style="list-style-type: none">• NVIDIA Quadro P620 2GB PCIe Active GPU	<ul style="list-style-type: none">• NVIDIA Quadro T1000 PCIe Active GPU	<ul style="list-style-type: none">• GPU for advanced graphics processing
Memory	<ul style="list-style-type: none">• 4x UDIMM slots, up to 128GB, 2666MHz• TruDDR4 ECC memory (in China, also support for non-ECC memory)	<ul style="list-style-type: none">• 4x UDIMM slots, up to 128GB, 3200MHz with Xeon E-2300 processors• 4x UDIMM slots, up to 128GB, 2666MHz with Pentium processors• TruDDR4 ECC memory	<ul style="list-style-type: none">• Enterprise-grade memory sufficient for most SMB and retail applications• Faster memory with Xeon processors• Larger memory capacity means greater performance with larger applications

Feature	SR250	SR250 V2	Benefits
Storage	<ul style="list-style-type: none"> Up to 4x 3.5-inch hot-swap SAS/SATA drive bays or Up to 10x 2.5-inch hot-swap SAS/SATA drive bays, or Up to 4x 3.5-inch simple-swap SATA drive bays 1x M.2 SATA SSD, installs on the system board 	<ul style="list-style-type: none"> Up to 4x 3.5-inch hot-swap SAS/SATA drive bays or Up to 10x 2.5-inch hot-swap SAS/SATA drive bays, or Up to 4x 3.5-inch simple-swap SATA drive bays, or Up to 3x 3.5-inch simple-swap SATA drive bays + 1x NVMe drive bay 2x M.2 SATA SSD supporting RAID 0 and RAID 1 using VROC, installs in an adapter in a PCIe slot 	<ul style="list-style-type: none"> Support for both HDDs for capacity and SSDs for performance Simple-swap configurations support an NVMe drive for tiered storage Optical drive support for ease of software installation M.2 drive support to separate the OS from the applications and data RAID support for M.2 to maximize uptime
RAID	<ul style="list-style-type: none"> Supports a SAS HBA or RAID adapter for hardware RAID functionality 12Gb SAS/SATA/RAID support PCIe 3.0 adapters Intel RSTe SW RAID 	<ul style="list-style-type: none"> Supports a SAS HBA or RAID adapter for hardware RAID functionality 12Gb SAS/SATA/RAID support PCIe 3.0 and PCIe 4.0 adapters Intel VROC 6.x SW RAID 	<ul style="list-style-type: none"> Featuring industry's latest PCIe Gen4 based RAID adapters RAID capability maximizes reliability and uptime
Cooling	<ul style="list-style-type: none"> 4 non-hot-swap system fans 	<ul style="list-style-type: none"> 4 non-hot-swap system fans 	<ul style="list-style-type: none"> Ensures all components are sufficiently cooled
Networking	<ul style="list-style-type: none"> 2x 1GbE Onboard Ethernet ports (Broadcom BCM5720) Port 1 allows remote connectivity to the XCC management controller 	<ul style="list-style-type: none"> 2x 1GbE Onboard Ethernet ports (Broadcom BCM5720) Port 1 allows remote connectivity to the XCC management controller 	<ul style="list-style-type: none"> Easy built-in networking
PCIe Slots	<ul style="list-style-type: none"> Supports 3 slots (x8, x8, x4) or 2 slots (x16, x4) Optional PCIe x16 slot for a GPU 	<ul style="list-style-type: none"> Supports 3 slots (x8, x8, x4) or 2 slots (x16, x4) Optional PCIe x16 slot for a GPU Some slots operate at PCIe Gen 4 (requires Xeon E-2300 processor) 	<ul style="list-style-type: none"> Support the latest PCIe Gen4 slot technology Support for a high-performance PCIe x16 adapter

Feature	SR250	SR250 V2	Benefits
Front I/O	<ul style="list-style-type: none"> Power button & LED Thermal sensor One USB 3.2 G1 (5 Gb/s) port One USB 2.0 port (also supports XClarity Mobile connectivity for local systems management) 	<ul style="list-style-type: none"> Power button & LED Thermal sensor One USB 3.2 G1 (5 Gb/s) port One USB 2.0 port (also supports XClarity Mobile connectivity for local systems management) 	<ul style="list-style-type: none"> Expansive USB support Thermal sensor ensures the server does not overheat if the ambient temperature rises
Rear I/O	<ul style="list-style-type: none"> 2x USB 3.2 G2 (10 Gb/s) ports 1x VGA video 1x RJ-45 systems management 2x RJ-45 GbE network ports 1x serial port 	<ul style="list-style-type: none"> 2x USB 3.2 G2 (10 Gb/s) ports 1x VGA video 1x RJ-45 systems management 2x RJ-45 GbE network ports 1x serial port 	<ul style="list-style-type: none"> Expansive USB support Integrated Gigabit networking Serial port for applications that require it
Management and Security	<ul style="list-style-type: none"> XClarity Controller with upgrades Full XClarity software suite including XClarity Administrator Dedicated Ethernet port for remote management Optional lockable front bezel 	<ul style="list-style-type: none"> XClarity Controller with upgrades Full XClarity software suite including XClarity Administrator Dedicated Ethernet port for remote management Optional lockable front bezel Platform Firmware Resiliency (PFR) hardware Root of Trust 	<ul style="list-style-type: none"> Common management tools with prior generation The server offers electronic and physical security features Platform Firmware Resiliency is an advanced security solution with a silicon-based to guard against corruption and unauthorized firmware updates
Power Supply	<ul style="list-style-type: none"> Choice of a single fixed power supply or redundant hot-swap power supplies 300W fixed power supply or 450W hot-swap power supplies 450W power supply is 80 PLUS Platinum certified 	<ul style="list-style-type: none"> Choice of a single fixed power supply or redundant hot-swap power supplies 300W fixed power supply or 450W hot-swap power supplies 450W power supply option is 80 PLUS Platinum certified 	<ul style="list-style-type: none"> Select the power supply that best suits the configuration to maximize efficiency Enterprise-grade power efficiency

Components and connectors

There are four different base drive configurations available for the SR250 V2, as shown in the following figure:

- 10x 2.5-inch hot-swap drive bays, SAS/SATA
- 8x 2.5-inch hot-swap drive bays, either SAS only or SAS/SATA
- 4x 3.5-inch hot-swap drives, either SAS only or SAS/SATA
- 4x 3.5-inch simple-swap drives, either SATA only or 3x SATA + 1x NVMe

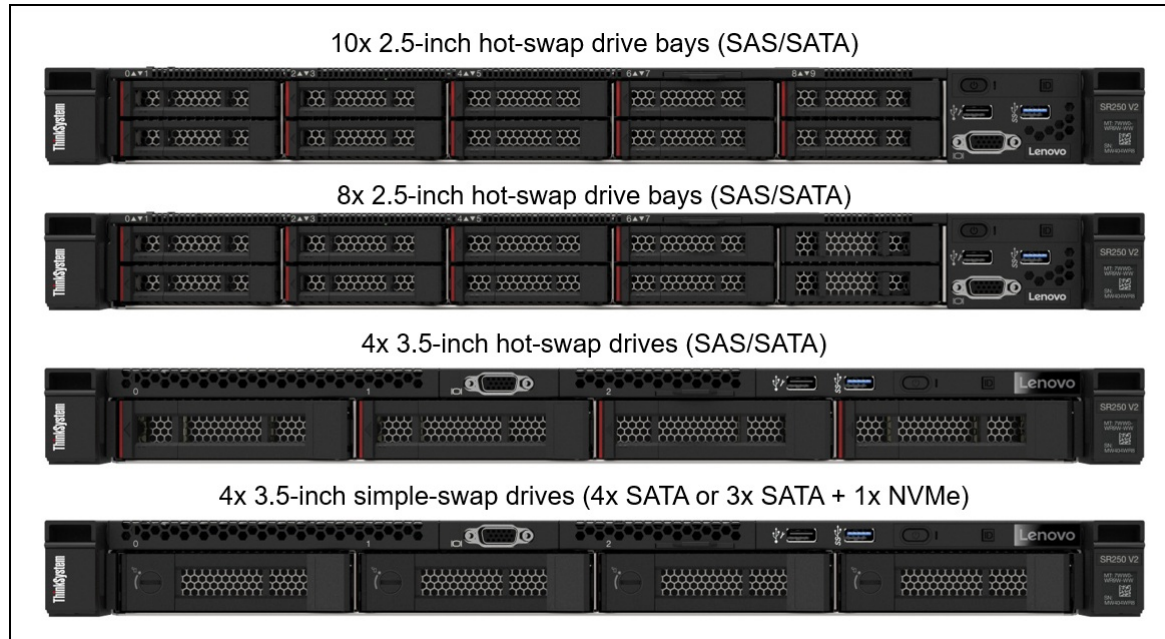


Figure 2. Front configurations of the ThinkSystem SR250 V2

The following figure shows the components on the front of the SR250 V2 server.

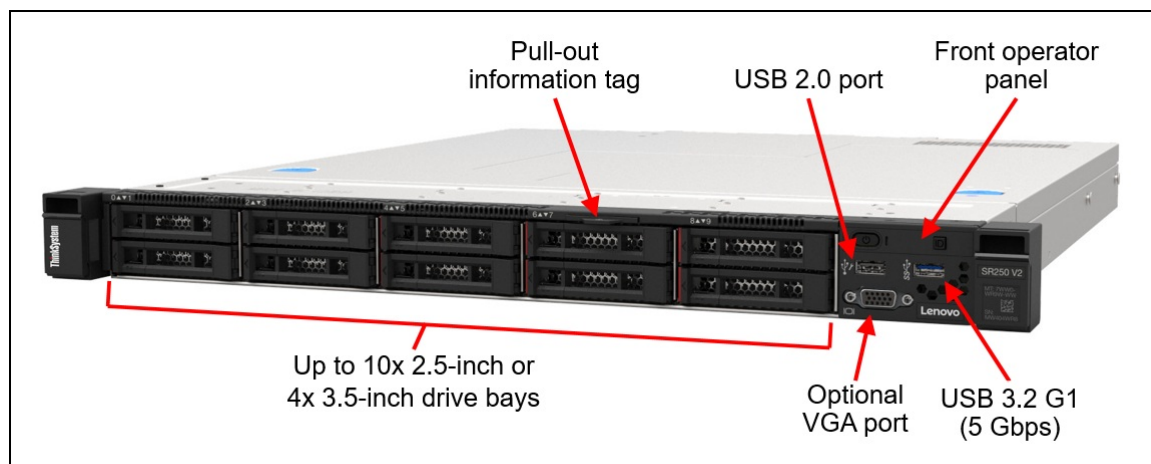


Figure 3. Front view of the SR250 V2 with 10x 2.5-inch drive bays

The following figure shows the rear of the SR250 V2 server.

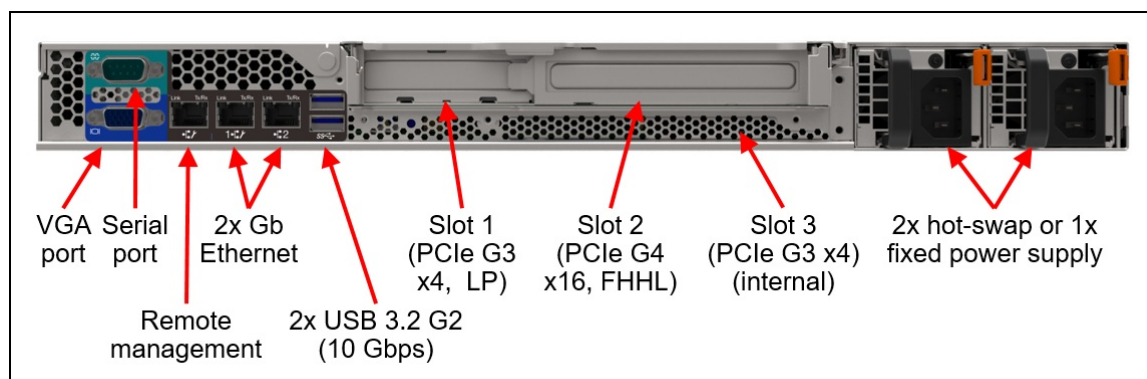


Figure 4. Rear view of the SR250 V2

The following figure shows the locations of key components inside the SR250 V2 server.

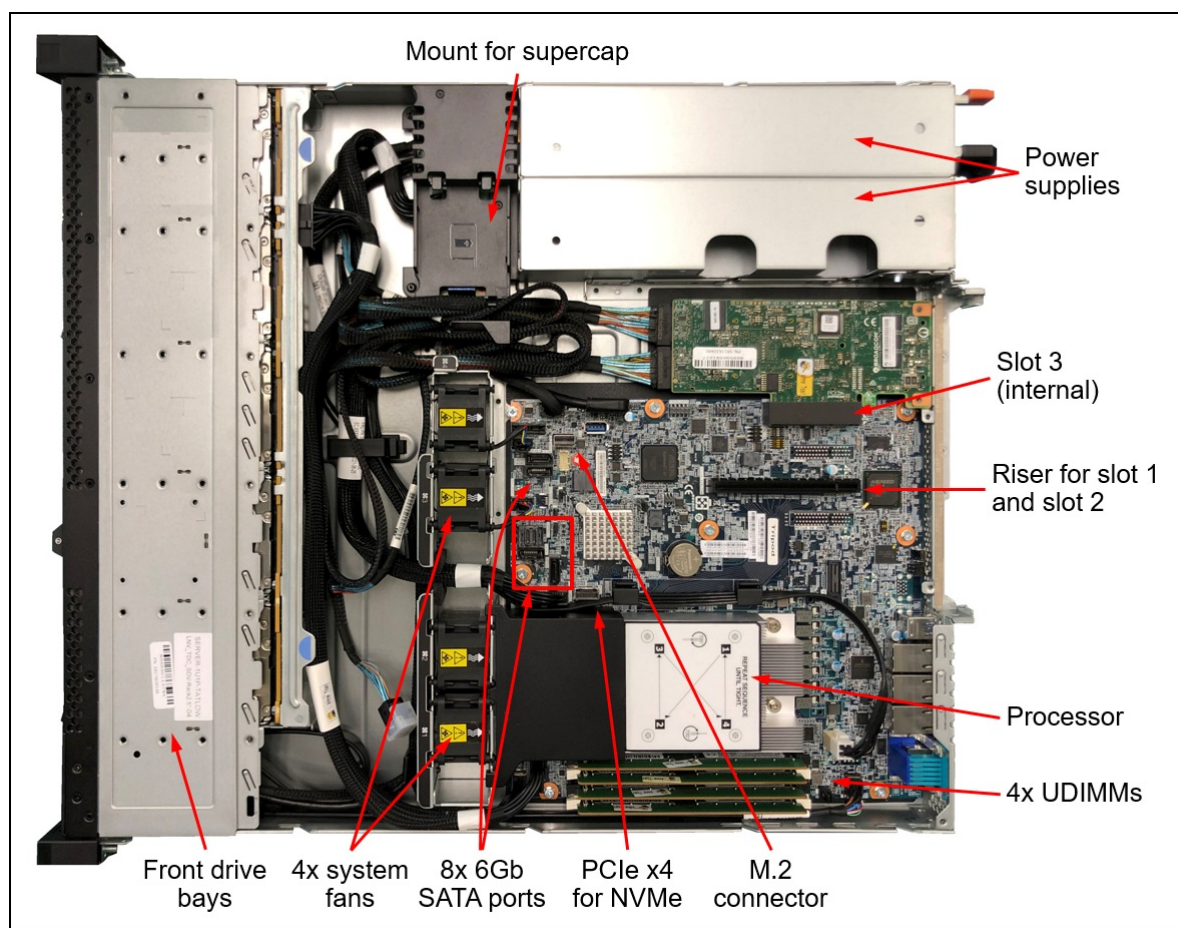


Figure 5. Internal view of the SR250 V2

System architecture

The following figure shows the architectural block diagram of the SR250 V2, showing the major components and their connections.

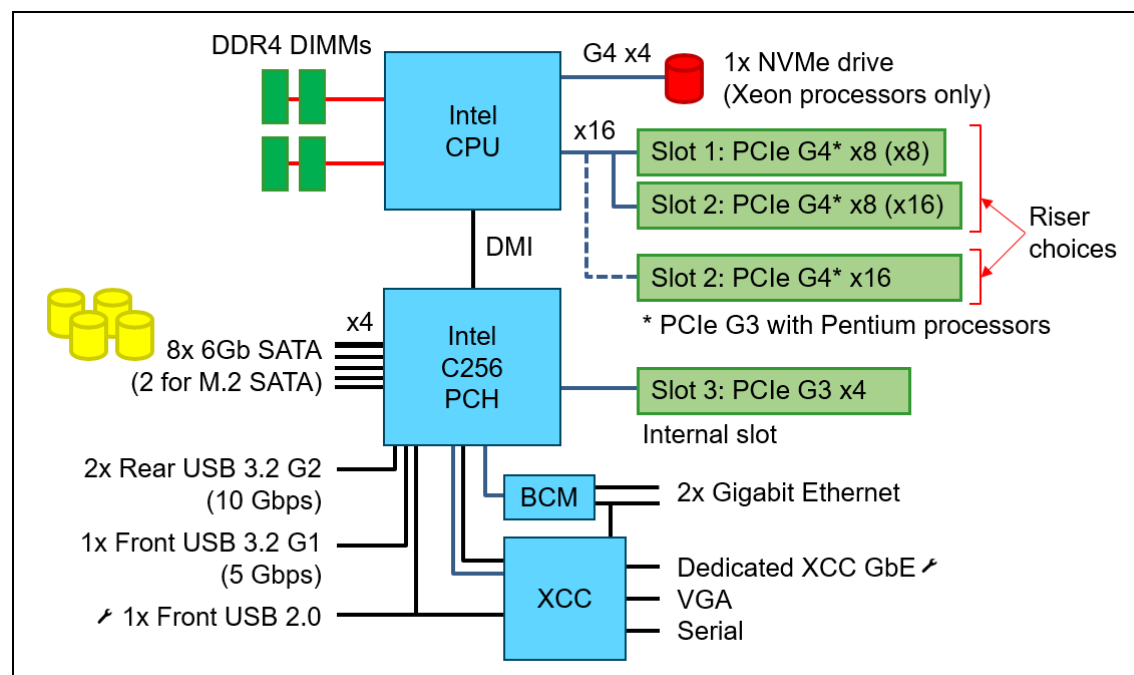


Figure 6. SR250 V2 system architectural block diagram

Standard specifications

The following table lists the standard specifications.

Table 2. Standard specifications

Components	Specification
Machine type	7D7R - 1 year warranty 7D7Q - 3 year warranty
Form factor	1U rack-mount
Processor	One Intel processor. Choose from: <ul style="list-style-type: none"> Intel Xeon E-2300 Series processors ("Rocket Lake-E") up to to 8 cores, with core speeds up to 3.7 GHz Intel Pentium G6405, G6505 and G6605 processors ("Comet Lake Refresh") with 2 cores, with core speeds up to 4.3 GHz
Chipset	Intel C256 chipset ("Tiger Lake") part of the "Tatlow" platform
Memory	Four DIMM sockets supporting Lenovo TruDDR4 DIMMs at 3200 MHz (Xeon processors) or 2666 MHz (Pentium processors). Support ECC UDIMMs.
Memory maximum	Up to 128 GB using 4x 32 GB UDIMMs.
Memory protection	Error-correcting code (ECC)

Components	Specification
Disk drive bays	<p>Available configurations:</p> <ul style="list-style-type: none"> • 10x 2.5-inch hot-swap SAS/SATA drive bays • 8x 2.5-inch hot-swap SATA only, or SAS/SATA drive bays • 4x 3.5-inch hot-swap SATA only, or SAS/SATA drive bays • 4x 3.5-inch simple-swap drive bays, all SATA • 4x 3.5-inch simple-swap drive bays, 3x SATA and 1x NVMe <p>In addition, the SR250 V2 supports two M.2 drives installed in an M.2 adapter which is installed in PCIe slot.</p>
Maximum internal storage	<ul style="list-style-type: none"> • 2.5-inch drives: <ul style="list-style-type: none"> ◦ 9.6TB using 10x 960GB 2.5-inch SAS/SATA SSDs ◦ 18TB using 10x 1.8TB 2.5-inch HDDs • 3.5-inch drives: <ul style="list-style-type: none"> ◦ 88TB using 4x 22TB 3.5-inch HDDs ◦ 3.84TB using 4x 960GB 3.5-inch SAS/SATA SSDs • Intermix of SAS and SATA is supported.
Storage controller	<ul style="list-style-type: none"> • Onboard 6 Gb SATA for drive configurations of up to 8x drives, using embedded Intel RSTe software RAID. Supports RAID 0, 1, 10, 5, 50 • 12 Gb SAS/SATA RAID adapters • 12 Gb SAS/SATA host bus adapters
Optical drive bays	No support. Use an external optical drive.
Tape drive bays	No support
Network interfaces	Two integrated Gigabit Ethernet 1000BASE-T ports (RJ-45) based on Broadcom BCM5720 embedded controller, one can be shared with XCC for systems management. Third dedicated Gigabit Ethernet port for XCC systems management.
PCI Expansion slots	<p>Two or three PCIe slots depending on the riser selected:</p> <ul style="list-style-type: none"> • Riser with two x8 slots: <ul style="list-style-type: none"> ◦ Slot 1: PCIe G4 x8 (x8 slot, open-ended) 25W low-profile ◦ Slot 2: PCIe G4 x8 (x16 slot, closed-ended) 25W full-height half-length ◦ Slot 3 (internal slot): PCIe G3 x4 (x8 slot, closed-ended) 25W low-profile • Riser with one x16 slot: <ul style="list-style-type: none"> ◦ Slot 1: Not connected ◦ Slot 2: PCIe G4 x16 (x16 slot, closed-ended) 75W full-height half-length ◦ Slot 3 (internal slot): PCIe G3 x4 (x8 slot, closed-ended) 25W low-profile <p>Note: Slots 1 and 2 are PCIe Gen 4 with a Xeon processor, and PCIe Gen 3 with a Pentium processor</p>

Components	Specification
Ports	<ul style="list-style-type: none"> • Front: <ul style="list-style-type: none"> ◦ One USB 3.2 G1 (5 Gb/s) port ◦ One USB 2.0 port (also for XClarity Mobile connectivity for local systems management) ◦ Optional VGA port • Rear: <ul style="list-style-type: none"> ◦ Two USB 3.2 G2 (10Gb/s) ports ◦ One VGA video ◦ One RJ-45 systems management network port ◦ Two RJ-45 GbE network ports ◦ One serial port
Cooling	Four non-hot-swap system fans
Power supply	Model dependent choices: <ul style="list-style-type: none"> • One fixed 300W power supply, 80 PLUS Gold certified • Two hot-swap 450W redundant power supplies, 80 PLUS Platinum certified, Energy Star and ErP Lot 9 compliant (Energy Star and ErP Lot 9 only with Intel Xeon processors)
Hot-swap parts	Hard drives and hot-swap power supplies
Systems management	Operator panel with status LEDs. XClarity Controller embedded management, XClarity Administrator centralized infrastructure delivery, XClarity Integrator plugins, and XClarity Energy Manager centralized server power management. Optional XClarity Controller Advanced to enable remote control functions.
Security features	Power-on password, administrator's password, Trusted Platform Module, supporting TPM 2.0. Optional lockable front bezel for physical security.
Video	G200 graphics with 16 MB memory, integrated into the XClarity Controller. For use with local Administrator functions (not designed for workstation use). Maximum resolution is 1920x1200 32bpp at 60Hz.
Operating systems supported	Microsoft Windows Server, Red Hat Enterprise Linux, SUSE Linux Enterprise Server, VMware ESXi. See the Operating system support section for specifics.
Limited warranty	Three-year or one-year (model dependent) customer-replaceable unit and onsite limited warranty with 9x5 next business day (NBD).
Service and support	Optional service upgrades are available through Lenovo Services: 4-hour or 2-hour response time, 6-hour fix time, 1-year or 2-year warranty extension, software support for Lenovo hardware and some third-party applications.
Dimensions	Width: 435 mm (17.1 in.), height: 43 mm (1.7 in.), depth: 545 mm (21.5 in.). See Physical and electrical specifications for details.
Weight	Maximum configuration: 12.3 kg (27.1 lb)

The SR250 V2 server is shipped with the following items:

- Documentation flyer
- Power cords (model and region dependent)

Processors

The SR250 V2 supports one processor from the following Intel product families:

- Intel Xeon E-2300 Series processors ("Rocket Lake-E")
- Intel Pentium G6405, G6505 and G6605 processors ("Comet Lake Refresh")

All supported processors have the following characteristics:

- LGA 1200 socket (Socket H5)
- 14 nm semiconductor process technology
- Direct Media Interface (DMI) 3.0 connection to PCH
 - Xeon E-2300: DMI 3.0 x8 connection
 - Pentium: DMI 3.0 x4 connection
- Two DDR4 memory channels
- Support for ECC memory
 - Xeon E-2300: Up to 3200 MHz memory speed
 - Pentium: Up to 2666 MHz memory speed
- PCIe lanes:
 - Xeon E-2300: 20x PCIe 4.0 I/O lanes
 - Pentium: 16x PCIe 3.0 I/O lanes

The following table lists the supported processors.

Integrated graphics and management: Xeon processors with a G suffix include integrated graphics, however, this functionality is not used in the SR250 V2. Instead, graphics support is provided by XClarity Controller (XCC), or by an GPU add-in card. Similarly system management of the SR250 V2 is handled by XCC and as a result, the AMT management processor is disabled.

Table 3. Supported processors

Feature code	Intel model	TDP	Cores / threads	HT	Core speed / Max TB	Cache	Max memory speed	VT	Intel SGX / Enclave†
Intel Pentium processors									
BMDN	G6405	58W	2 / 4	Yes	4.1 GHz / No TB	4 MB	2666 MHz	Yes	No
BMDQ	G6405T	35W	2 / 4	Yes	3.5 GHz / No TB	4 MB	2666 MHz	Yes	No
BMDM	G6505	58W	2 / 4	Yes	4.2 GHz / No TB	4 MB	2666 MHz	Yes	No
BMDP	G6505T	35W	2 / 4	Yes	3.6 GHz / No TB	4 MB	2666 MHz	Yes	No
BMDL	G6605	58W	2 / 4	Yes	4.3 GHz / No TB	4 MB	2666 MHz	Yes	No
Intel Xeon E processors									
BMDD	E-2314	65W	4 / 4	No	2.8 GHz / 4.5 GHz	8 MB	3200 MHz	Yes	Yes / 512 MB
BMDK	E-2324G	65W	4 / 4	No	3.1 GHz / 4.6 GHz	8 MB	3200 MHz	Yes	Yes / 512 MB
BMDC	E-2334	65W	4 / 8	Yes	3.4 GHz / 4.8 GHz	8 MB	3200 MHz	Yes	Yes / 512 MB
BMDB	E-2336	65W	6 / 12	Yes	2.9 GHz / 4.8 GHz	12 MB	3200 MHz	Yes	Yes / 512 MB
BMDH	E-2356G	80W	6 / 12	Yes	3.2 GHz / 5.0 GHz	12 MB	3200 MHz	Yes	Yes / 512 MB
BMDJ	E-2374G	80W	4 / 8	Yes	3.7 GHz / 5.0 GHz	8 MB	3200 MHz	Yes	Yes / 512 MB
BMDA	E-2378	65W	8 / 16	Yes	2.6 GHz / 4.8 GHz	16 MB	3200 MHz	Yes	Yes / 512 MB
BMDF	E-2378G	80W	8 / 16	Yes	2.8 GHz / 5.1 GHz	16 MB	3200 MHz	Yes	Yes / 512 MB
BMDG	E-2386G	95W	6 / 12	Yes	3.5 GHz / 5.1 GHz	12 MB	3200 MHz	Yes	Yes / 512 MB
BMDE	E-2388G	95W	8 / 16	Yes	3.2 GHz / 5.1 GHz	16 MB	3200 MHz	Yes	Yes / 512 MB

† Intel SGX with Intel SPS / Intel SGX Enclave Page Cache size.

Configuration notes:

- For customers in the UK and in EU countries, Intel Pentium processors are not offered due to ERP Lot 9 requirements
- Energy Star certification only applies to Intel Xeon E processors. Intel Pentium processors are not Energy Star compliant

UEFI operating modes

The SR250 V2 offers preset operating modes that affect energy consumption and performance. These modes are a collection of predefined low-level UEFI settings that simplify the task of tuning the server to suit your business and workload requirements.

The following table lists the feature codes that allow you to specify the mode you wish to preset in the factory for CTO orders.

UK and EU customers : For compliance with the ERP Lot9 regulation, you should select feature BFYE. For some systems, you may not be able to make a selection, in which case, it will be automatically derived by the configurator.

Table 4. UEFI operating mode presets in DCSC

Feature code	Description
BFYB	Operating mode selection for: "Maximum Performance Mode"
BFYE	Operating mode selection for: "Efficiency - Favoring Performance Mode"

The preset modes for the SR250 V2 are as follows:

- **Maximum Performance Mode** (feature BFYB): Achieves maximum performance but with higher power consumption and lower energy efficiency.
- **Efficiency Favoring Performance Mode** (feature BFYE): Maximize the performance/watt efficiency with a bias towards performance. This is the favored mode for Energy Star certification, for example.

Memory options

The SR250 V2 supports Lenovo TruDDR4 memory. TruDDR4 memory uses the highest-quality components sourced from Tier 1 DRAM suppliers and only memory that meets strict requirements is selected. It is compatibility-tested and tuned to maximize performance and reliability.

TruDDR4 memory has a unique signature programmed into the DIMM, which enables ThinkSystem servers to verify whether the memory installed is qualified and supported. From a service and support standpoint, TruDDR4 memory automatically assumes the system's warranty, and service and support provided worldwide.

The processors have 2 memory channels and support 2 DIMMs per channel. The SR250 V2 supports 1, 2 or 4 DIMMs. 3 installed DIMMs is not supported. All DIMMs installed must be identical.

DIMMs installed in the SR250 V2 operate at a speed based on the processor installed, the number of DIMMs installed, and whether the DIMMs are single-rank or dual-rank:

- When connected to a Xeon processor:
 - 1 or 2 DIMMs: 3200 MHz
 - 4 single-rank (1R) DIMMs: 3200 MHz
 - 4 dual-rank (2R) DIMMs: 2933 MHz
- When connected to a Pentium processor:
 - 1 or 2 DIMMs (1 DPC): 2666 MHz
 - 4 single-rank (1R) DIMMs: 2666 MHz
 - 4 dual-rank (2R) DIMMs: 2400 MHz

The following table lists the memory options that are available for the SR250 V2 server.

Table 5. Tallow memory section

Part number	Feature code	Description	Maximum supported
4X77A77494	BMDV	ThinkSystem 8GB TruDDR4 3200 MHz (1Rx8, 1.2V) ECC UDIMM	4
4X77A77495	BMDW	ThinkSystem 16GB TruDDR4 3200 MHz (2Rx8, 1.2V) ECC UDIMM	4
4X77A77496	BMT4	ThinkSystem 32GB TruDDR4 3200MHz (2Rx8, 1.2V) ECC UDIMM	4

The following rules apply when selecting the memory configuration:

- The server only supports UDIMMs
- Quantities of 1, 2 or 4 DIMMs are supported. 3 DIMMs is not supported.
- All DIMMs must be identical (same part number)
- When installing two DIMMs, install one in each memory channel (DIMM slots 1 and 3)
- Memory mirroring and memory rank sparing are not supported

Internal storage

The SR250 V2 supports 2.5-inch hot-swap, 3.5-inch hot-swap, and 3.5-inch simple-swap drives in a variety of drive bay configurations.

In this section:

- [Drive bays and backplanes](#)
- [Storage configurations](#)
- [Field upgrades](#)
- [RAID flash power module \(supercap\) support](#)
- [M.2 drives](#)
- [SED encryption key management with SKLM](#)

Drive bays and backplanes

The server supports 3.5-inch or 2.5-inch drive bays in the following configurations:

- 3.5-inch drive bays:
 - 4x 3.5-inch hot-swap bays supporting 4x SATA drives (no SAS support)
 - 4x 3.5-inch hot-swap bays supporting 4x SAS or SATA drives
 - 4x 3.5-inch simple-swap bays supporting 4x SATA drives (no SAS support)
 - 4x 3.5-inch simple-swap bays supporting 3x SATA drives and 1x NVMe drive (no SAS support)
- 2.5-inch drive bays
 - 8x 2.5-inch hot-swap bays supporting 8x SATA drives (no SAS support)
 - 8x 2.5-inch hot-swap bays supporting 8x SAS or SATA drives
 - 10x 2.5-inch hot-swap bays supporting 10x SAS or SATA drives

Drive bays required: It is not supported to configure the SR250 V2 server without drive bays.

There are four different base drive configurations available for the SR250 V2, as shown in the following figure.

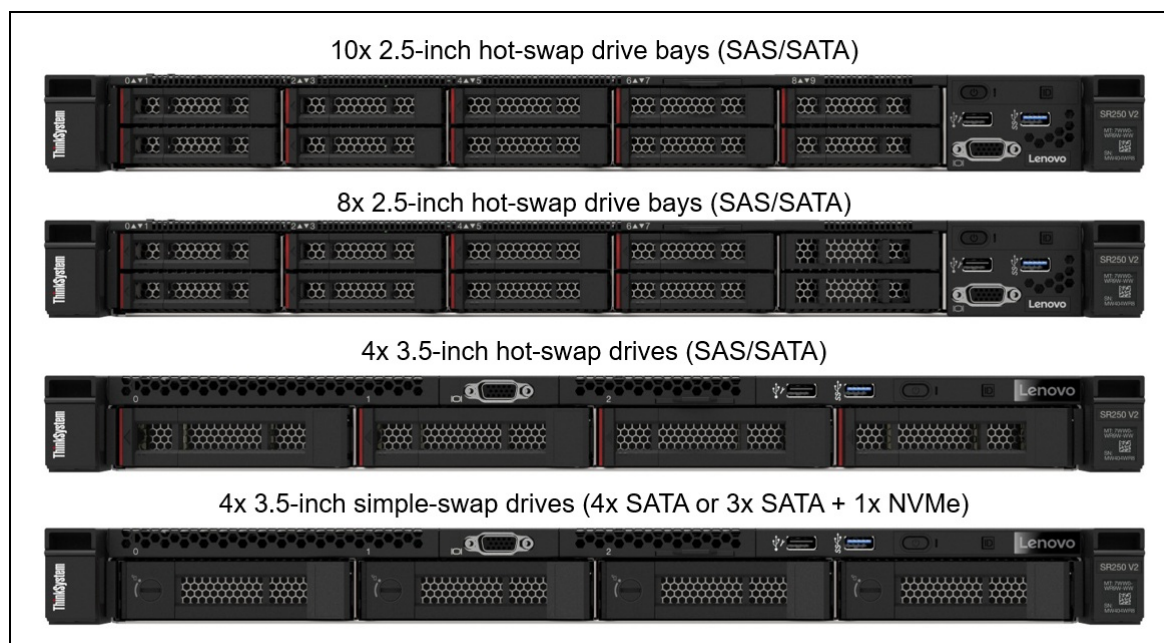


Figure 7. Storage configurations of the ThinkSystem SR250 V2

The following table lists the available hot-swap backplanes and simple-swap backplates for configure-to-order builds. See the [Field upgrades](#) section for option part numbers.

Table 6. Backplanes for CTO orders

Feature code	Description	Maximum supported	Purpose
BMWR	ThinkSystem SR250 V2 3x3.5" Simple Swap SATA + 1x3.5" Simple Swap NVMe Backplane Kit	1	3.5-inch 4-bay simple-swap backplane (3x SATA, 1x NVMe) connected to onboard SATA and NVMe
BMWS	ThinkSystem SR250 Series 4x3.5" Simple Swap Backplane Kit	1	3.5-inch 4-bay simple-swap backplane (4x SATA) connected to onboard SATA
BM7L	ThinkSystem SR250 Series 4x3.5" Simple Swap Backplane Kit for X40 RAID/HBA	1	3.5-inch 4-bay simple-swap backplane (4x SATA) connected to X40 RAID/HBA
BN11	ThinkSystem SR250 Series 4x3.5" Simple Swap Backplane Kit for X350/X40 RAID/HBA	1	3.5-inch 4-bay simple-swap backplane (4x SATA) connected to X350 RAID/HBA
BMPX	ThinkSystem SR250 Series 4x3.5" Hot Swap SAS/SATA Backplane Kit for X350/X40 RAID/HBA	1	3.5-inch 4-bay hot-swap backplane
BPRM	ThinkSystem SR250 Series 10x2.5" Hot Swap SAS/SATA Backplane Kit for X350/X40 RAID/HBA	1	2.5-inch 10-bay hot-swap backplane
BMPU	ThinkSystem SR250 Series 8x2.5" Hot Swap SAS/SATA Backplane Kit for X350/X40 RAID/HBA v2	1	2.5-inch 8-bay hot-swap backplane

Storage configurations

The following table lists the supported combinations of drives, drive backplanes and storage controllers.

M.2 support: Config 6 does not support the use of the M.2 adapter, because the M.2 adapter uses 2 of the onboard SATA ports.

Table 7. Storage configurations

Cfg	Description	Base	Drive tray	Drive support	Backplane (feature)	Controller	Extra cables (derived feature or option kit)
1	4x 3.5" SS SATA to OB SATA	3.5-inch	Simple-swap	SATA	4x SATA SS to Onboard (BMWS)	Onboard SATA	None
2-1	4x 3.5" SS SAS/SATA to HW RAID X350	3.5-inch	Simple-swap	SAS, SATA	4x SAS SS to X350 RAID/HBA (BN11)	Onboard SATA	None
2-2	4x 3.5" SS SAS/SATA to HW RAID X40	3.5-inch	Simple-swap	SAS, SATA	4x SAS SS to X40 RAID (BM7L)	Onboard SATA	None
3	4x 3.5" SS SATA+NVMe to OB SATA+NVMe	3.5-inch	Simple-swap	SATA+NVMe	3x SATA + 1x NVMe SS to OB (BMWR)	Onboard SATA+NVMe	None
4	4x 3.5" HS to OB SATA	3.5-inch	Hot-swap	SATA	4x 3.5-inch SAS/SATA HS (BMPX)	Onboard SATA	Onboard SATA to BP (B405)
5-1	4x 3.5" HS to HW RAID X350	3.5-inch	Hot-swap	SAS, SATA	4x 3.5-inch SAS/SATA HS (BMPX)	RAID/HBA X350-8i	Gen3 RAID to BP (B415)
5-2	4x 3.5" HS to HW RAID X40	3.5-inch	Hot-swap	SAS, SATA	4x 3.5-inch SAS/SATA HS (BMPX)	RAID/HBA X40-8i	Gen4 RAID to BP (BM7M)
6	8x 2.5" HS to OB SATA	2.5-inch	Hot-swap	SATA	8x 2.5-inch SAS/SATA HS (BMPU)	Onboard SATA	Onboard SATA multi to BP (BMX4)
7-1	8x 2.5" HS to HW RAID X350	2.5-inch	Hot-swap	SAS, SATA	8x 2.5-inch SAS/SATA HS (BMPU)	RAID/HBA X350-8i	2x Gen3 RAID to BP (B415)
7-2	8x 2.5" HS to HW RAID X40	2.5-inch	Hot-swap	SAS, SATA	8x 2.5-inch SAS/SATA HS (BMPU)	RAID/HBA X40-8i	Gen4 RAID to BP dual (BMX3)
8-1	10x 2.5" HS to HW RAID X350-16i	2.5-inch	Hot-swap	SAS, SATA	10x 2.5-inch SAS/SATA HS (BPRM)	RAID/HBA X350-16i	3x Gen3 RAID to BP (B415)
8-2	10x 2.5" HS to HW RAID X350-8i	2.5-inch	Hot-swap	SAS, SATA	10x 2.5-inch SAS/SATA HS (BPRM)	2x RAID/HBA X350-8i	3x Gen3 RAID to BP (B415)

* For config 8-2, the use of 2x 9350-8i or 2x 940-8i is not supported as the server only supports 1x supercap

Field upgrades

The following table lists the supported field upgrades. The table refers to configurations which are described in the [Storage configurations](#) section.

Note: If upgrading to a configuration with a RAID adapter or HBA, you will need to order the adapter in addition to the backplanes and cables listed.

Table 8. Field upgrades

Starting configuration	Target configuration	Options needed (Backplanes and cables)
------------------------	----------------------	--

Starting configuration		Target configuration		Options needed (Backplanes and cables)
1	4x 3.5" SS SATA to OB SATA	2-1	4x 3.5" SS SAS/SATA to HW RAID X350	<ul style="list-style-type: none"> 4X97A81452, ThinkSystem SR250 Series 4x 3.5" Simple Swap Backplane Kit
1	4x 3.5" SS SATA to OB SATA	2-2	4x 3.5" SS SAS/SATA to HW RAID X40	<ul style="list-style-type: none"> 4M17A80601, ThinkSystem SR250 Series 4x3.5" Simple Swap Backplane Kit for X40 RAID/HBA
1	4x 3.5" SS SATA to OB SATA	3	4x 3.5" SS SATA+NVMe to OB SATA+NVMe	<ul style="list-style-type: none"> 4X97A81453, ThinkSystem SR250 V2 3x3.5" Simple Swap SATA + 1x3.5" Simple Swap NVMe Backplane Kit
1	4x 3.5" SS SATA to OB SATA	4	4x 3.5" HS to OB SATA	<ul style="list-style-type: none"> 4C57A81454, ThinkSystem SR250 Series 4x3.5" Hot Swap SAS/SATA Backplane Kit
1	4x 3.5" SS SATA to OB SATA	5-1	4x 3.5" HS to HW RAID X350	<ul style="list-style-type: none"> 4C57A81454, ThinkSystem SR250 Series 4x3.5" Hot Swap SAS/SATA Backplane Kit
1	4x 3.5" SS SATA to OB SATA	5-2	4x 3.5" HS to HW RAID X40	<ul style="list-style-type: none"> 4C57A81454, ThinkSystem SR250 Series 4x3.5" Hot Swap SAS/SATA Backplane Kit
2	4x 3.5" SS SAS/SATA to HW RAID X350	3	4x 3.5" SS SATA+NVMe to OB SATA+NVMe	<ul style="list-style-type: none"> 4X97A81453, ThinkSystem SR250 V2 3x3.5" Simple Swap SATA + 1x3.5" Simple Swap NVMe Backplane Kit
2	4x 3.5" SS SAS/SATA to HW RAID X350	4	4x 3.5" HS to OB SATA	<ul style="list-style-type: none"> 4C57A81454, ThinkSystem SR250 Series 4x3.5" Hot Swap SAS/SATA Backplane Kit
2	4x 3.5" SS SAS/SATA to HW RAID X350	5-1	4x 3.5" HS to HW RAID X350	<ul style="list-style-type: none"> 4C57A81454, ThinkSystem SR250 Series 4x3.5" Hot Swap SAS/SATA Backplane Kit
2	4x 3.5" SS SAS/SATA to HW RAID X350	5-2	4x 3.5" HS to HW RAID X40	<ul style="list-style-type: none"> 4C57A81454, ThinkSystem SR250 Series 4x3.5" Hot Swap SAS/SATA Backplane Kit
3	4x 3.5" SS SATA+NVMe to OB SATA+NVMe	4	4x 3.5" HS to OB SATA	<ul style="list-style-type: none"> 4C57A81454, ThinkSystem SR250 Series 4x3.5" Hot Swap SAS/SATA Backplane Kit
3	4x 3.5" SS SATA+NVMe to OB SATA+NVMe	5-1	4x 3.5" HS to HW RAID X350	<ul style="list-style-type: none"> 4C57A81454, ThinkSystem SR250 Series 4x3.5" Hot Swap SAS/SATA Backplane Kit
3	4x 3.5" SS SATA+NVMe to OB SATA+NVMe	5-2	4x 3.5" HS to HW RAID X40	<ul style="list-style-type: none"> 4C57A81454, ThinkSystem SR250 Series 4x3.5" Hot Swap SAS/SATA Backplane Kit
4	4x 3.5" HS to OB SATA	5-1	4x 3.5" HS to HW RAID X350	<ul style="list-style-type: none"> 4X97A81455, ThinkSystem SR250 Series 3.5"/2.5" RAID Cable Kit
4	4x 3.5" HS to OB SATA	5-2	4x 3.5" HS to HW RAID X40	<ul style="list-style-type: none"> 4X97A81455, ThinkSystem SR250 Series 3.5"/2.5" RAID Cable Kit
6	8x 2.5" HS to OB SATA	7-1	8x 2.5" HS to HW RAID X350	<ul style="list-style-type: none"> 4X97A81455, ThinkSystem SR250 Series 3.5"/2.5" RAID Cable Kit
6	8x 2.5" HS to OB SATA	7-2	8x 2.5" HS to HW RAID X40	<ul style="list-style-type: none"> 4X97A81455, ThinkSystem SR250 Series 3.5"/2.5" RAID Cable Kit
6	8x 2.5" HS to OB SATA	8	10x 2.5" HS to HW RAID X350-16i or 2x X350-8i	<ul style="list-style-type: none"> 4C57A81456, ThinkSystem SR250 Series 10x2.5" Hot Swap SAS/SATA Backplane Kit 4X97A81455, ThinkSystem SR250 Series 3.5"/2.5" RAID Cable Kit
7	8x 2.5" HS to HW RAID X350	8	10x 2.5" HS to HW RAID X350-16i or 2x X350-8i	<ul style="list-style-type: none"> 4C57A81456, ThinkSystem SR250 Series 10x2.5" Hot Swap SAS/SATA Backplane Kit 4X97A81455, ThinkSystem SR250 Series 3.5"/2.5" RAID Cable Kit

The following table lists the contents of the option part numbers for field upgrades.

Table 9. Upgrade options table

Part number	Description
Backplane kits	
4X97A81452	ThinkSystem SR250 Series 4x 3.5" Simple Swap Backplane Kit <ul style="list-style-type: none"> 4-drive simple-swap backplane for 4x SATA drives for use with onboard SATA connector 4-drive simple-swap backplane for 4x SATA drives for use with RAID adapter or HBA Cables attached to the backplanes

Part number	Description
4M17A80601	ThinkSystem SR250 Series 4x3.5" Simple Swap Backplane Kit for X40 RAID/HBA <ul style="list-style-type: none"> 4-drive simple-swap backplane for 4x SATA drives for use with RAID adapter or HBA
4X97A81453	ThinkSystem SR250 V2 3x3.5" Simple Swap SATA + 1x3.5" Simple Swap NVMe Backplane Kit <ul style="list-style-type: none"> 4-drive simple-swap backplane for 3x SATA + 1x NVMe drives for use with onboard SATA/NVMe connectors Cables attached to the backplane
4C57A81454	ThinkSystem SR250 Series 4x3.5" Hot Swap SAS/SATA Backplane Kit <ul style="list-style-type: none"> 4-drive 3.5-inch hot-swap SAS/SATA backplane 1x SATA cable, Onboard SATA to BP (SBB7A10055, feature B405) 1x SAS cable, X350 RAID to BP (SBB7A10039, feature B415) 1x SAS cable, X40 RAID to BP (SBB7A50176, feature BM7M) 4x 3.5" drive bay fillers
4C57A81456	ThinkSystem SR250 Series 10x2.5" Hot Swap SAS/SATA Backplane Kit <ul style="list-style-type: none"> 10-drive 2.5-inch hot-swap SAS/SATA backplane Power cable for backplane 10x 2.5" drive bay fillers
Cable kits	
4X97A81455	ThinkSystem SR250 Series 3.5"/2.5" RAID Cable Kit <ul style="list-style-type: none"> 3x SAS cables, X350 RAID to Backplane (SBB7A10039, feature B415) 1x SAS cables, X40 RAID to Backplane (SBB7A50176, feature BM7M) 1x SAS cables, X40 RAID to Backplane, Y-cable (SBB7A46060, feature BMX3)

2.5-inch drive bay fillers

Backplane option kits include the necessary drive bay fillers, however if needed, additional blanks can be ordered as listed in the following table.

Table 10. Drive bay fillers for 2.5-inch bays

Part number	Description
4XH7A99569	ThinkSystem 2.5" 1x1 HDD Filler by 8 units (contains 8x single drive-bay fillers)

RAID flash power module (supercap) support

Some high-performance RAID adapters include a RAID flash power module (supercap). The adapters that include a supercap are listed in the table in the [Controllers for internal storage](#) section.

The supercap is installed in the supercap holder than is located inside the server as shown in [Components and connectors](#) section.

The supercap holder is integrated into components of the chassis. No additional components are required.

M.2 drives

The SR250 V2 server supports two M.2 form-factor SATA drives installed in an M.2 adapter attached to a dummy PCIe adapter. The PCIe adapter is in turn installed in a PCIe slot. The M.2 adapter is connected via cables to the system board; the edge connector of the PCIe adapter only provides physical support and does not provide PCIe signals or power.

The following figure shows the M.2 adapter for the SR250 V2.

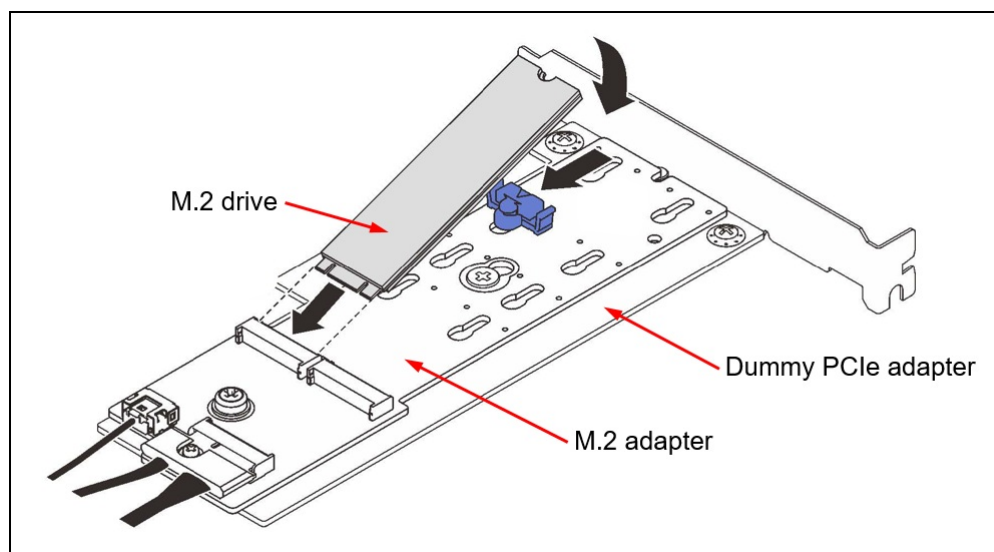


Figure 8. M.2 adapter with an M.2 drive

The following table lists the ordering information.

Supported drives are listed in the [Internal drive options](#) section.

Table 11. M.2 adapter for SR250 V2

Part number	Feature code	Description	Maximum supported	Slots supported
4C57A85377	B5XJ + BMTU	ThinkSystem M.2 SATA/NVMe 2-Bay Enablement Adapter <ul style="list-style-type: none"> ThinkSystem M.2 SATA/NVMe 2-Bay Enablement Kit, B5XJ ThinkSystem ST250 V2 Dummy PCIe Card, BMTU 	1	2, 3
4X97A82303	BMTD	ThinkSystem SR250/ST250 Series M.2 Signal & Power Cable Kit	1	Not applicable

Configuration rules:

- The SR250 V2 does not support NVMe M.2 drives
- M.2 is not supported with the server is configured with 8x 2.5-inch SATA drives using the onboard SATA controller (config 6 in [Storage configurations](#)). This is because the M.2 adapter uses the same SATA ports.

The M.2 SATA/NVMe 2-Bay Enablement Kit has the following features when installed in the SR250 V2:

- Supports one or two M.2 SATA drives
- Support 42mm, 60mm, 80mm and 110mm drive form factors (2242, 2260, 2280 and 22110)
- JBOD native support; no built-in RAID support (RAID can be enabled via Intel VROC)
- Supports monitoring and reporting of events and temperature through I2C
- Firmware update via Lenovo firmware update tools

For details about M.2 components, see the *ThinkSystem M.2 Drives and M.2 Adapters* product guide:

<https://lenovopress.com/lp0769-thinksystem-m2-drives-adapters>

SED encryption key management with SKLM

The server supports self-encrypting drives (SEDs) as listed in the [Internal drive options](#) section. To effectively manage a large deployment of these drives in Lenovo servers, IBM Security Key Lifecycle Manager (SKLM) offers a centralized key management solution.

A Lenovo Feature on Demand (FoD) upgrade is used to enable this SKLM support in the management processor of the server. The following table lists the part numbers and feature codes for the upgrades.

Table 12. FoD upgrades for SKLM support

Part number	Feature code	Description
Security Key Lifecycle Manager - FoD (United States, Canada, Asia Pacific, and Japan)		
00D9998	A5U1	SKLM for System x/ThinkSystem w/SEDs - FoD per Install with 1 year S&S
00D9999	AS6C	SKLM for System x/ThinkSystem w/SEDs - FoD per Install with 3 year S&S
Security Key Lifecycle Manager - FoD (Latin America, Europe, Middle East, and Africa)		
00FP648	A5U1	SKLM for System x/ThinkSystem w/SEDs - FoD per Install with 1 year S&S
00FP649	AS6C	SKLM for System x/ThinkSystem w/SEDs - FoD per Install with 3 year S&S

The IBM Security Key Lifecycle Manager software is available from Lenovo using the ordering information listed in the following table.

Table 13. IBM Security Key Lifecycle Manager licenses

Part number	Feature	Description
SKLM Basic Edition		
7S0A007FWW	S874	IBM Security Key Lifecycle Manager Basic Edition Install License + SW Subscription & Support 12 Months
7S0A008VWW	SDJR	IBM Security Key Lifecycle Manager Basic Edition Install License + SW Subscription & 3 Years Of Support
7S0A008WWW	SDJS	IBM Security Key Lifecycle Manager Basic Edition Install License + SW Subscription & 4 Years Of Support
7S0A008XWW	SDJT	IBM Security Key Lifecycle Manager Basic Edition Install License + SW Subscription & 5 Years Of Support
SKLM For Raw Decimal Terabyte Storage		
7S0A007HWW	S876	IBM Security Key Lifecycle Manager For Raw Decimal Terabyte Storage Resource Value Unit License + SW Subscription & Support 12 Months
7S0A008YWW	SDJU	IBM Security Key Lifecycle Manager For Raw Decimal Terabyte Storage Resource Value Unit License + SW Subscription & 3 Years Of Support
7S0A008ZWW	SDJV	IBM Security Key Lifecycle Manager For Raw Decimal Terabyte Storage Resource Value Unit License + SW Subscription & 4 Years Of Support
7S0A0090WW	SDJW	IBM Security Key Lifecycle Manager For Raw Decimal Terabyte Storage Resource Value Unit License + SW Subscription & 5 Years Of Support
SKLM For Raw Decimal Petabyte Storage		
7S0A007KWW	S878	IBM Security Key Lifecycle Manager For Raw Decimal Petabyte Storage Resource Value Unit License + SW Subscription & Support 12 Months
7S0A0091WW	SDJX	IBM Security Key Lifecycle Manager For Raw Decimal Petabyte Storage Resource Value Unit License + SW Subscription & 3 Years Of Support
7S0A0092WW	SDJY	IBM Security Key Lifecycle Manager For Raw Decimal Petabyte Storage Resource Value Unit License + SW Subscription & 4 Years Of Support

Part number	Feature	Description
7S0A0093WW	SDJZ	IBM Security Key Lifecycle Manager For Raw Decimal Petabyte Storage Resource Value Unit License + SW Subscription & 5 Years Of Support
SKLM For Usable Decimal Terabyte Storage		
7S0A007MWW	S87A	IBM Security Key Lifecycle Manager For Usable Decimal Terabyte Storage Resource Value Unit License + SW Subscription & Support 12 Months
7S0A0094WW	SDK0	IBM Security Key Lifecycle Manager For Usable Decimal Terabyte Storage Resource Value Unit License + SW Subscription & 3 Years In Support
7S0A0095WW	SDK1	IBM Security Key Lifecycle Manager For Usable Decimal Terabyte Storage Resource Value Unit License + SW Subscription & 4 Years In Support
7S0A0096WW	SDK2	IBM Security Key Lifecycle Manager For Usable Decimal Terabyte Storage Resource Value Unit License + SW Subscription & 5 Years In Support
SKLM For Usable Decimal Petabyte Storage		
7S0A007PWW	S87C	IBM Security Key Lifecycle Manager For Usable Decimal Petabyte Storage Resource Value Unit License + SW Subscription & Support 12 Months
7S0A0097WW	SDK3	IBM Security Key Lifecycle Manager For Usable Decimal Petabyte Storage Resource Value Unit License + SW Subscription & 3 Years Of Support
7S0A0098WW	SDK4	IBM Security Key Lifecycle Manager For Usable Decimal Petabyte Storage Resource Value Unit License + SW Subscription & 4 Years Of Support
7S0A0099WW	SDK5	IBM Security Key Lifecycle Manager For Usable Decimal Petabyte Storage Resource Value Unit License + SW Subscription & 5 Years Of Support

Controllers for internal storage

The SR250 V2 supports the use of the onboard 6Gb SATA ports to connect SATA drives. Hot-swap and simple-swap SATA drives are supported. These onboard SATA ports support RSTe mode for RAID functionality or AHCI mode for JBOD support.

In addition to the onboard SATA controller, the SR250 V2 with hot-swap drives supports the use of an internal RAID adapter or HBA. The following table lists the supported adapters.

Table 14. RAID controllers and HBAs for internal storage

Part number	Feature code	Description	Slots supported	Maximum quantity	Supercap included
12 Gb SAS/SATA RAID controllers					
4Y37A72482	BJHK	ThinkSystem RAID 5350-8i PCIe 12Gb Adapter	2, 3	2	No
4Y37A72483	BJHL	ThinkSystem RAID 9350-8i 2GB Flash PCIe 12Gb Adapter	2, 3	1	Yes
4Y37A72485	BJHN	ThinkSystem RAID 9350-16i 4GB Flash PCIe 12Gb Adapter	2, 3	1	Yes
4Y37A09728	B8NY	ThinkSystem RAID 940-8i 4GB Flash PCIe Gen4 12Gb Adapter	2, 3	2	Yes
12 Gb SAS/SATA HBAs (non-RAID)					
4Y37A72480	BJHH	ThinkSystem 4350-8i SAS/SATA 12Gb HBA	2, 3	2	No

For a comparison of the functions of the supported storage adapters, see the ThinkSystem RAID Adapter and HBA Reference:

<https://lenovopress.com/lp1288-thinksystem-raid-adapter-and-hba-reference#sr250-v2-support=SR250%20V2>

Configuration notes:

- **Virtualization support:** The onboard SATA ports can be used with virtualization hypervisors, including VMware ESXi, Linux KVM, Xen, and Microsoft Hyper-V, however support is limited to AHCI (non-RAID) mode. RSTe mode is not supported with virtualization hypervisors.
- **Windows support:** Windows only supports a RSTe-based RAID array of no more than 6 drives.
- **E810 Ethernet and X350 RAID/HBAs:** The use of both an Intel E810 network adapter and an X350 HBA/RAID adapter (9350, 5350 and 4350) is supported, however E810 firmware CVL4.3 or later is required. For details, see [Support Tip HT513226](#).

Internal drive options

The following tables list the drive options for internal storage of the server.

2.5-inch hot-swap drives:

- [2.5-inch hot-swap 12 Gb SAS HDDs](#)
- [2.5-inch hot-swap 6 Gb SATA SSDs](#)

3.5-inch hot-swap drives:

- [3.5-inch hot-swap 12 Gb SAS HDDs](#)
- [3.5-inch hot-swap 6 Gb SATA HDDs](#)
- [3.5-inch hot-swap 6 Gb SATA SSDs](#)

Simple-swap drives:

- [3.5-inch simple-swap 6 Gb SATA HDDs](#)
- [3.5-inch simple-swap 6 Gb SATA SSDs](#)
- [3.5-inch simple-swap PCIe 4.0 NVMe SSDs](#)

M.2 drives:

- [M.2 SATA drives](#)

M.2 drive support: The use of M.2 drives requires an additional adapter as described in the [M.2 drives](#) subsection.

SED support: The tables include a column to indicate which drives support SED encryption. The encryption functionality can be disabled if needed. Note: Not all SED-enabled drives have "SED" in the description.

Table 15. 2.5-inch hot-swap 12 Gb SAS HDDs

Part number	Feature code	Description	SED support	Max Qty
2.5-inch hot-swap HDDs - 12 Gb SAS 10K				
7XB7A00025	AULZ	ThinkSystem 2.5" 600GB 10K SAS 12Gb Hot Swap 512n HDD	No	10
7XB7A00027	AUM1	ThinkSystem 2.5" 1.2TB 10K SAS 12Gb Hot Swap 512n HDD	No	10
7XB7A00028	AUM2	ThinkSystem 2.5" 1.8TB 10K SAS 12Gb Hot Swap 512e HDD	No	10
4XB7A83970	BRG7	ThinkSystem 2.5" 2.4TB 10K SAS 12Gb Hot Swap 512e HDD v2	No	10
2.5-inch hot-swap SED HDDs - 12 Gb SAS 10K				
7XB7A00031	AUM5	ThinkSystem 2.5" 600GB 10K SAS 12Gb Hot Swap 512n HDD SED	Support	10

Table 16. 2.5-inch hot-swap 6 Gb SATA SSDs

Part number	Feature code	Description	SED support	Max Qty
2.5-inch hot-swap SSDs - 6 Gb SATA - Mixed Use/Mainstream (3-5 DWPD)				
4XB7A90884	BYM2	ThinkSystem 2.5" VA 480GB Mixed Use SATA 6Gb HS SSD v2	No	10
4XB7A90885	BYM4	ThinkSystem 2.5" VA 960GB Mixed Use SATA 6Gb HS SSD v2	No	10
4XB7A90886	BYM5	ThinkSystem 2.5" VA 1.92TB Mixed Use SATA 6Gb HS SSD v2	No	10
4XB7A90887	BYM6	ThinkSystem 2.5" VA 3.84TB Mixed Use SATA 6Gb HS SSD v2	No	10
4XB7A82289	BQ21	ThinkSystem 2.5" 5400 MAX 480GB Mixed Use SATA 6Gb HS SSD	Support	10
4XB7A82290	BQ24	ThinkSystem 2.5" 5400 MAX 960GB Mixed Use SATA 6Gb HS SSD	Support	10
4XB7A82291	BQ22	ThinkSystem 2.5" 5400 MAX 1.92TB Mixed Use SATA 6Gb HS SSD	Support	10
4XB7A82292	BQ23	ThinkSystem 2.5" 5400 MAX 3.84TB Mixed Use SATA 6Gb HS SSD	Support	10
4XB7A17125	BA7Q	ThinkSystem 2.5" S4620 480GB Mixed Use SATA 6Gb HS SSD	No	10
4XB7A17126	BA4T	ThinkSystem 2.5" S4620 960GB Mixed Use SATA 6Gb HS SSD	No	10
4XB7A17087	B8J1	ThinkSystem 2.5" 5300 240GB Mainstream SATA 6Gb Hot Swap SSD	No	10
4XB7A17089	B8J6	ThinkSystem 2.5" 5300 960GB Mainstream SATA 6Gb Hot Swap SSD	No	10
2.5-inch hot-swap SSDs - 6 Gb SATA - Read Intensive/Entry (<3 DWPD)				
4XB7A90872	BYLQ	ThinkSystem 2.5" VA 240GB Read Intensive SATA 6Gb HS SSD v2	No	10
4XB7A90873	BYLR	ThinkSystem 2.5" VA 480GB Read Intensive SATA 6Gb HS SSD v2	No	10
4XB7A90874	BYLS	ThinkSystem 2.5" VA 960GB Read Intensive SATA 6Gb HS SSD v2	No	10
4XB7A90875	BYLT	ThinkSystem 2.5" VA 1.92TB Read Intensive SATA 6Gb HS SSD v2	No	10
4XB7A90876	BYLU	ThinkSystem 2.5" VA 3.84TB Read Intensive SATA 6Gb HS SSD v2	No	10
4XB7A90877	BYLV	ThinkSystem 2.5" VA 7.68TB Read Intensive SATA 6Gb HS SSD v2	No	10
4XB7A89423	BXDY	ThinkSystem 2.5" CM893a 1.92TB Read Intensive SATA 6Gb HS SSD	Support	10
4XB7A82258	BQ1Q	ThinkSystem 2.5" 5400 PRO 240GB Read Intensive SATA 6Gb HS SSD	Support	10
4XB7A82259	BQ1P	ThinkSystem 2.5" 5400 PRO 480GB Read Intensive SATA 6Gb HS SSD	Support	10
4XB7A82260	BQ1R	ThinkSystem 2.5" 5400 PRO 960GB Read Intensive SATA 6Gb HS SSD	Support	10
4XB7A82261	BQ1X	ThinkSystem 2.5" 5400 PRO 1.92TB Read Intensive SATA 6Gb HS SSD	Support	10
4XB7A82262	BQ1S	ThinkSystem 2.5" 5400 PRO 3.84TB Read Intensive SATA 6Gb HS SSD	Support	10
4XB7A82263	BQ1T	ThinkSystem 2.5" 5400 PRO 7.68TB Read Intensive SATA 6Gb HS SSD	Support	10
4XB7A17072	B99D	ThinkSystem 2.5" S4520 240GB Read Intensive SATA 6Gb HS SSD	No	10
4XB7A17101	BA7G	ThinkSystem 2.5" S4520 480GB Read Intensive SATA 6Gb HS SSD	No	10
4XB7A17102	BA7H	ThinkSystem 2.5" S4520 960GB Read Intensive SATA 6Gb HS SSD	No	10
4XB7A38271	BCTC	ThinkSystem 2.5" Multi Vendor 240GB Entry SATA 6Gb Hot Swap SSD	No	10
4XB7A38272	BCTD	ThinkSystem 2.5" Multi Vendor 480GB Entry SATA 6Gb Hot Swap SSD	No	10
4XB7A38273	BCTE	ThinkSystem 2.5" Multi Vendor 960GB Entry SATA 6Gb Hot Swap SSD	No	10
4XB7A17075	B8HV	ThinkSystem 2.5" 5300 240GB Entry SATA 6Gb Hot Swap SSD	No	10
4XB7A17076	B8JM	ThinkSystem 2.5" 5300 480GB Entry SATA 6Gb Hot Swap SSD	No	10
4XB7A17077	B8HP	ThinkSystem 2.5" 5300 960GB Entry SATA 6Gb Hot Swap SSD	No	10
4XB7A38185	B9AC	ThinkSystem 2.5" 5210 960GB Entry SATA 6Gb Hot Swap QLC SSD	No	10

Table 17. 3.5-inch hot-swap 12 Gb SAS HDDs

Part number	Feature code	Description	SED support	Max Qty
3.5-inch hot-swap HDDs - 12 Gb NL SAS				
4XB7B01233	C5WY	ThinkSystem 3.5" 2TB 7.2K SAS 12Gb Hot Swap 512e HDD v2	Support	4
7XB7A00042	AUU5	ThinkSystem 3.5" 2TB 7.2K SAS 12Gb Hot Swap 512n HDD	No	4
4XB7B01235	C5X9	ThinkSystem 3.5" 4TB 7.2K SAS 12Gb Hot Swap 512e HDD v2	Support	4
7XB7A00043	AUU6	ThinkSystem 3.5" 4TB 7.2K SAS 12Gb Hot Swap 512n HDD	No	4
4XB7B01237	C5XB	ThinkSystem 3.5" 6TB 7.2K SAS 12Gb Hot Swap 512e HDD v2	Support	4
7XB7A00044	AUU7	ThinkSystem 3.5" 6TB 7.2K SAS 12Gb Hot Swap 512e HDD	No	4
4XB7B01239	C5XD	ThinkSystem 3.5" 8TB 7.2K SAS 12Gb Hot Swap 512e HDD v2	Support	4
7XB7A00045	B0YR	ThinkSystem 3.5" 8TB 7.2K SAS 12Gb Hot Swap 512e HDD	No	4
4XB7B01241	C5XF	ThinkSystem 3.5" 10TB 7.2K SAS 12Gb Hot Swap 512e HDD v2	Support	4
7XB7A00046	AUUG	ThinkSystem 3.5" 10TB 7.2K SAS 12Gb Hot Swap 512e HDD	No	4
7XB7A00067	B117	ThinkSystem 3.5" 12TB 7.2K SAS 12Gb Hot Swap 512e HDD	No	4
4XB7A93788	C4DA	ThinkSystem 3.5" 12TB 7.2K SAS 12Gb Hot Swap 512e HDD v2	Support	4
4XB7A13906	B496	ThinkSystem 3.5" 14TB 7.2K SAS 12Gb Hot Swap 512e HDD	No	4
4XB7A13911	B7EZ	ThinkSystem 3.5" 16TB 7.2K SAS 12Gb Hot Swap 512e HDD	No	4
4XB7A93786	C4D8	ThinkSystem 3.5" 16TB 7.2K SAS 12Gb Hot Swap 512e HDD v2	Support	4
4XB7A38266	BCFP	ThinkSystem 3.5" 18TB 7.2K SAS 12Gb Hot Swap 512e HDD	No	4
4XB7A80353	BPKU	ThinkSystem 3.5" 20TB 7.2K SAS 12Gb Hot Swap 512e HDD	No	4
4XB7A93784	C4D6	ThinkSystem 3.5" 20TB 7.2K SAS 12Gb Hot Swap 512e HDD v2	Support	4
4XB7A83766	BTR7	ThinkSystem 3.5" 22TB 7.2K SAS 12Gb Hot Swap 512e HDD	Support	4

Table 18. 3.5-inch hot-swap 6 Gb SATA HDDs

Part number	Feature code	Description	SED support	Max Qty
3.5-inch hot-swap HDDs - 6 Gb NL SATA				
4XB7A97045	C5X6	ThinkSystem 3.5" 1TB 7.2K SATA 6Gb Hot Swap 512n HDD v2	Support	4
7XB7A00049	AUUF	ThinkSystem 3.5" 1TB 7.2K SATA 6Gb Hot Swap 512n HDD	No	4
4XB7B01234	C5X8	ThinkSystem 3.5" 2TB 7.2K SATA 6Gb Hot Swap 512e HDD v2	Support	4
7XB7A00050	AUUD	ThinkSystem 3.5" 2TB 7.2K SATA 6Gb Hot Swap 512n HDD	No	4
4XB7B01236	C5XA	ThinkSystem 3.5" 4TB 7.2K SATA 6Gb Hot Swap 512e HDD v2	Support	4
7XB7A00051	AUU8	ThinkSystem 3.5" 4TB 7.2K SATA 6Gb Hot Swap 512n HDD	No	4
4XB7B01238	C5XC	ThinkSystem 3.5" 6TB 7.2K SATA 6Gb Hot Swap 512e HDD v2	Support	4
7XB7A00052	AUUA	ThinkSystem 3.5" 6TB 7.2K SATA 6Gb Hot Swap 512e HDD	No	4
4XB7B01240	C5XE	ThinkSystem 3.5" 8TB 7.2K SATA 6Gb Hot Swap 512e HDD v2	Support	4
7XB7A00053	AUU9	ThinkSystem 3.5" 8TB 7.2K SATA 6Gb Hot Swap 512e HDD	No	4
4XB7B01242	C5X7	ThinkSystem 3.5" 10TB 7.2K SATA 6Gb Hot Swap 512e HDD v2	Support	4
7XB7A00054	AUUB	ThinkSystem 3.5" 10TB 7.2K SATA 6Gb Hot Swap 512e HDD	No	4
7XB7A00068	B118	ThinkSystem 3.5" 12TB 7.2K SATA 6Gb Hot Swap 512e HDD	No	4
4XB7A93787	C4D9	ThinkSystem 3.5" 12TB 7.2K SATA 6Gb Hot Swap 512e HDD v2	Support	4
4XB7A13907	B497	ThinkSystem 3.5" 14TB 7.2K SATA 6Gb Hot Swap 512e HDD	No	4
4XB7A13914	B7F0	ThinkSystem 3.5" 16TB 7.2K SATA 6Gb Hot Swap 512e HDD	No	4
4XB7A93785	C4D7	ThinkSystem 3.5" 16TB 7.2K SATA 6Gb Hot Swap 512e HDD v2	Support	4
4XB7A38130	BCFH	ThinkSystem 3.5" 18TB 7.2K SATA 6Gb Hot Swap 512e HDD	No	4
4XB7A80354	BPKV	ThinkSystem 3.5" 20TB 7.2K SATA 6Gb Hot Swap 512e HDD	No	4
4XB7A93783	C4D5	ThinkSystem 3.5" 20TB 7.2K SATA 6Gb Hot Swap 512e HDD v2	Support	4
4XB7A83765	BTR8	ThinkSystem 3.5" 22TB 7.2K SATA 6Gb Hot Swap 512e HDD	Support	4

Table 19. 3.5-inch hot-swap 6 Gb SATA SSDs

Part number	Feature code	Description	SED support	Max Qty
3.5-inch hot-swap SSDs - 6 Gb SATA - Mixed Use/Mainstream (3-5 DWPD)				
4XB7A90888	BYM3	ThinkSystem 3.5" VA 480GB Mixed Use SATA 6Gb HS SSD v2	No	4
4XB7A90889	BYM7	ThinkSystem 3.5" VA 960GB Mixed Use SATA 6Gb HS SSD v2	No	4
4XB7A90890	BYM8	ThinkSystem 3.5" VA 1.92TB Mixed Use SATA 6Gb HS SSD v2	No	4
4XB7A90891	BYLX	ThinkSystem 3.5" VA 3.84TB Mixed Use SATA 6Gb HS SSD v2	No	4
4XB7A87202	BURK	ThinkSystem 3.5" 5400 MAX 1.92TB Mixed Use SATA 6Gb HS SSD	Support	4
4XB7A17137	BA4W	ThinkSystem 3.5" S4620 480GB Mixed Use SATA 6Gb HS SSD	No	4
4XB7A17138	BA4X	ThinkSystem 3.5" S4620 960GB Mixed Use SATA 6Gb HS SSD	No	4
3.5-inch hot-swap SSDs - 6 Gb SATA - Read Intensive/Entry (<3 DWPD)				
4XB7A90878	BYLW	ThinkSystem 3.5" VA 240GB Read Intensive SATA 6Gb HS SSD v2	No	4
4XB7A90879	BYLJ	ThinkSystem 3.5" VA 480GB Read Intensive SATA 6Gb HS SSD v2	No	4
4XB7A90880	BYLY	ThinkSystem 3.5" VA 960GB Read Intensive SATA 6Gb HS SSD v2	No	4
4XB7A90881	BYLZ	ThinkSystem 3.5" VA 1.92TB Read Intensive SATA 6Gb HS SSD v2	No	4
4XB7A90882	BYM0	ThinkSystem 3.5" VA 3.84TB Read Intensive SATA 6Gb HS SSD v2	No	4
4XB7A90883	BYM1	ThinkSystem 3.5" VA 7.68TB Read Intensive SATA 6Gb HS SSD v2	No	4
4XB7A17118	BA7K	ThinkSystem 3.5" S4520 240GB Read Intensive SATA 6Gb HS SSD	No	4
4XB7A17119	BA7L	ThinkSystem 3.5" S4520 480GB Read Intensive SATA 6Gb HS SSD	No	4
4XB7A17120	BA7M	ThinkSystem 3.5" S4520 960GB Read Intensive SATA 6Gb HS SSD	No	4
4XB7A38276	BCTH	ThinkSystem 3.5" Multi Vendor 240GB Entry SATA 6Gb Hot Swap SSD	No	4
4XB7A38277	BCTJ	ThinkSystem 3.5" Multi Vendor 480GB Entry SATA 6Gb Hot Swap SSD	No	4
4XB7A38278	BCTK	ThinkSystem 3.5" Multi Vendor 960GB Entry SATA 6Gb Hot Swap SSD	No	4
4XB7A17081	B8JB	ThinkSystem 3.5" 5300 240GB Entry SATA 6Gb Hot Swap SSD	No	4
4XB7A17082	B8J9	ThinkSystem 3.5" 5300 480GB Entry SATA 6Gb Hot Swap SSD	No	4
4XB7A17083	B8JC	ThinkSystem 3.5" 5300 960GB Entry SATA 6Gb Hot Swap SSD	No	4

Table 20. 3.5-inch simple-swap 6 Gb SATA HDDs

Part number	Feature code	Description	SED support	Max Qty
3.5-inch simple-swap HDDs - 6 Gb NL SATA				
7XB7A00055	AUZS	ThinkSystem 1TB 7.2K 6Gbps SATA 3.5" Simple Swap 512n HDD	No	4
7XB7A00056	AUZT	ThinkSystem 2TB 7.2K 6Gbps SATA 3.5" Simple Swap 512n HDD	No	4

Table 21. 3.5-inch simple-swap 6 Gb SATA SSDs

Part number	Feature code	Description	SED support	Max Qty
3.5-inch simple-swap SSDs - 6 Gb SATA - Mixed Use/Mainstream (3-5 DWPD)				
4XB7A17134	BK7M	ThinkSystem 3.5" S4620 480GB Mixed Use SATA 6Gb SS SSD	No	4
4XB7A17135	BK7N	ThinkSystem 3.5" S4620 960GB Mixed Use SATA 6Gb SS SSD	No	4
3.5-inch simple-swap SSDs - 6 Gb SATA - Read Intensive/Entry (<3 DWPD)				
4XB7A17109	BK7C	ThinkSystem 3.5" S4520 240GB Read Intensive SATA 6Gb SS SSD	No	4
4XB7A17110	BK7D	ThinkSystem 3.5" S4520 480GB Read Intensive SATA 6Gb SS SSD	No	4
4XB7A17111	BK7E	ThinkSystem 3.5" S4520 960GB Read Intensive SATA 6Gb SS SSD	No	4

Table 22. 3.5-inch simple-swap PCIe 4.0 NVMe SSDs

Part number	Feature code	Description	SED support	Max Qty
3.5-inch SSDs - U.2 PCIe 4.0 NVMe - Read Intensive/Entry (<3 DWPD)				
4XB7A79664	BNHZ	ThinkSystem 3.5" U.2 P5520 1.92TB Read Intensive NVMe PCIe 4.0 x4 SS SSD	Support	1
4XB7A82993	BQ1G	ThinkSystem 3.5" U.2 P5500 1.92TB Read Intensive NVMe PCIe 4.0 x4 SS SSD	No	1

Table 23. M.2 SATA drives

Part number	Feature code	Description	SED support	Max Qty
M.2 SSDs - 6 Gb SATA - Read Intensive/Entry (<3 DWPD)				
4XB7A89422	BYF7	ThinkSystem M.2 ER3 240GB Read Intensive SATA 6Gb NHS SSD	Support	2
4XB7A90049	BYF8	ThinkSystem M.2 ER3 480GB Read Intensive SATA 6Gb NHS SSD	Support	2
4XB7A90230	BYF9	ThinkSystem M.2 ER3 960GB Read Intensive SATA 6Gb NHS SSD	Support	2
4XB7A90105	BXMK	ThinkSystem M.2 ER2 240GB Read Intensive SATA 6Gb NHS SSD	Support	2
4XB7A90106	BXMJ	ThinkSystem M.2 ER2 480GB Read Intensive SATA 6Gb NHS SSD	Support	2
4XB7A82286	BQ1Z	ThinkSystem M.2 5400 PRO 240GB Read Intensive SATA 6Gb NHS SSD	Support	2
4XB7A82287	BQ1Y	ThinkSystem M.2 5400 PRO 480GB Read Intensive SATA 6Gb NHS SSD	Support	2
4XB7A82288	BQ20	ThinkSystem M.2 5400 PRO 960GB Read Intensive SATA 6Gb NHS SSD	Support	2
7N47A00130	AUUV	ThinkSystem M.2 128GB SATA 6Gbps Non-Hot Swap SSD	No	2
4XB7A17071	B8HS	ThinkSystem M.2 5300 240GB SATA 6Gbps Non-Hot Swap SSD	No	2
4XB7A17073	B919	ThinkSystem M.2 5300 480GB SATA 6Gbps Non-Hot Swap SSD	No	2
4XB7A17074	B8JJ	ThinkSystem M.2 5300 960GB SATA 6Gbps Non-Hot Swap SSD	No	2

USB flash drive

For general portable storage needs, the server also supports the USB flash drive option that is listed in the following table.

Table 24. USB memory key

Part number	Feature	Description
4X77A08621	B8NV	ThinkSystem 32GB USB Flash Drive

Optical drives

The server supports the external USB optical drive listed in the following table.

Table 25. External optical drive

Part number	Feature code	Description
7XA7A05926	AVV8	ThinkSystem External USB DVD RW Optical Disk Drive

The drive is based on the Lenovo Slim DVD Burner DB65 drive and supports the following formats: DVD-RAM, DVD-RW, DVD+RW, DVD+R, DVD-R, DVD-ROM, DVD-R DL, CD-RW, CD-R, CD-ROM.

I/O expansion

The SR250 V2 server supports up to three PCIe slots: one slot on the system planar that supports an internal storage controller and up to two PCIe slots on a riser card.

Slot numbering is as follows:

- Using a riser with two x8 slots (feature BMWQ):
 - Slot 1: PCIe G4 x8 (x8 slot, open-ended) 25W low-profile
 - Slot 2: PCIe G4 x8 (x16 slot, closed-ended) 25W full-height half-length
 - Slot 3 (internal slot): PCIe G3 x4 (x8 slot, closed-ended) 25W low-profile
- Using a riser with one x16 slot (feature BMWU):
 - Slot 1: Not connected
 - Slot 2: PCIe G4 x16 (x16 slot, closed-ended) 75W full-height half-length
 - Slot 3 (internal slot): PCIe G3 x4 (x8 slot, closed-ended) 25W low-profile

PCIe 4.0 support: Slots 1 and 2 are PCIe Gen 4 with a Xeon processor, and PCIe Gen 3 with a Pentium processor

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

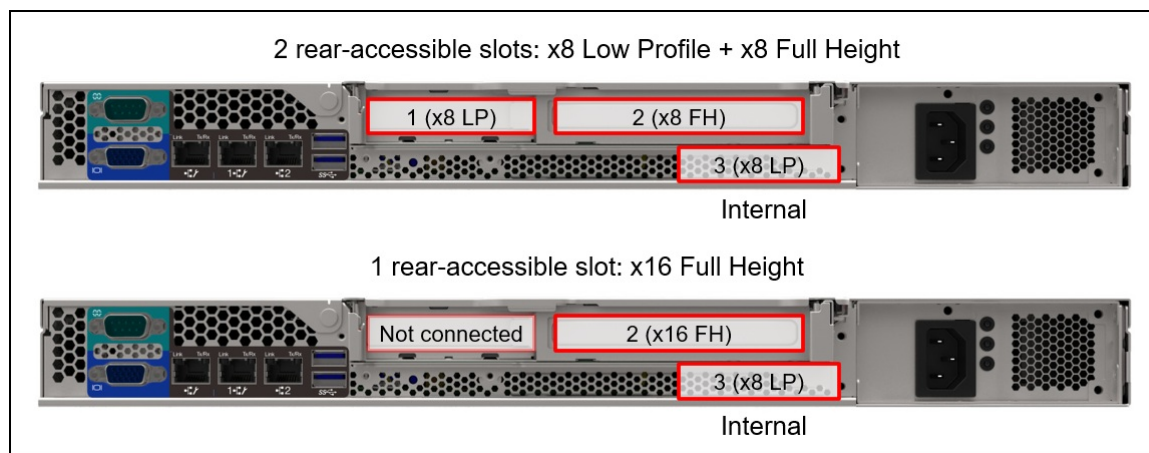


Figure 9. Slot locations

The following table lists available PCIe riser card options.

Table 26. Riser cards

Part number	Feature code	Description
4C57A81451	BMWQ	ThinkSystem SR250 Series X8/X8 PCIe Gen4 Riser Card
4C57A81450	BMWU	ThinkSystem SR250 V2 x16 PCIe Gen4 Riser

Network adapters

The SR250 V2 server supports two onboard Gigabit Ethernet network ports that are based on the Broadcom BCM5720 network interface controller (NIC) chip.

The BCM5720 embedded controller has the following features:

- Two 10/100/1000 Mb Ethernet RJ-45 ports
- NIC Teaming (load balancing and failover)
- IEEE 802.3ad Link Aggregation
- I/O Virtualization (IOV) for VMWare NetQueue and Microsoft VMQ
- IEEE 802.1Q Virtual Local Area Networks (VLANs)
- IEEE 802.3x flow control
- TCP, IP, and UDP checksum offload
- Large Send Offload (LSO) and TCP Segmentation Offload (TSO)
- Receive Side Scaling (RSS) and Transmit Side Scaling (TSS)
- Jumbo frames up to 9600 bytes
- IEEE 802.3az-2010 Energy Efficient Ethernet (EEE) compliant
- Hardware assist for IEEE 1588 and IEEE 802.1AS time synchronization implementations
- Preboot eXecution Environment (PXE) remote boot
- Wake on LAN (WOL) support

The following table lists the network adapters that are supported with the SR250 V2 server.

Table 27. Network adapters

Part number	Feature code	Description	Maximum quantity	Slots supported
Gigabit Ethernet				
7ZT7A00484	AUZV	ThinkSystem Broadcom 5719 1GbE RJ45 4-Port PCIe Ethernet Adapter	1	2
7ZT7A00482	AUZX	ThinkSystem Broadcom 5720 1GbE RJ45 2-Port PCIe Ethernet Adapter	2	1, 2
7ZT7A00534	AUZY	ThinkSystem I350-T2 PCIe 1Gb 2-Port RJ45 Ethernet Adapter	2	1, 2
7ZT7A00535	AUZW	ThinkSystem I350-T4 PCIe 1Gb 4-Port RJ45 Ethernet Adapter	1	2
10 GbE 10GBASE-T Ethernet				
7ZT7A00496	AUKP	ThinkSystem Broadcom 57416 10GBASE-T 2-Port PCIe Ethernet Adapter	2	1, 2
00MM860	ATPX	Intel X550-T2 Dual Port 10GBase-T Adapter	2	1, 2
4XC7A79699	BMXB	ThinkSystem Intel X710-T4L 10GBase-T 4-Port PCIe Ethernet Adapter	1	2
10 GbE SFP+				
7XC7A05525	B0YL	Intel X710-DA4 4x10Gb SFP+ Adapter	1	2
25 Gb Ethernet				
4XC7A08238	BK1H	ThinkSystem Broadcom 57414 10/25GbE SFP28 2-port PCIe Ethernet Adapter	2	1, 2
4XC7A08295	BCD6	ThinkSystem Intel E810-DA2 10/25GbE SFP28 2-Port PCIe Ethernet Adapter	2	1, 2

Configuration notes:

- For more information, including the transceivers and cables that each adapter supports, see the list of Lenovo Press Product Guides in the Ethernet adapters category:
<http://lenovopress.com/servers/options/ethernet#rt=product-guide>
- E810 Ethernet and X350 RAID/HBAs:** The use of both an Intel E810 network adapter and an X350 HBA/RAID adapter (9350, 5350 and 4350) is supported, however E810 firmware CVL4.3 or later is required. For details, see [Support Tip HT513226](#).

SAS adapters for external storage

The following table lists the adapters suitable for connectivity to external SAS storage.

Table 28. Supported external storage adapters

Part number	Feature code	Description	Slots supported	Maximum quantity
7Y37A01090	AUNR	ThinkSystem 430-8e SAS/SATA 12Gb HBA	1, 2	1
4Y37A78837	BNWK	ThinkSystem 440-8e SAS/SATA PCIe Gen4 12Gb HBA	1, 2	2

For a comparison of the functions of the supported external storage adapters, see the ThinkSystem RAID Adapter and HBA Reference:

<https://lenovopress.com/lp1288#sr250-v2-support=SR250%20V2&internal-or-external-ports=External>

Mixing storage adapter families: The following HBA/RAID adapter combinations are supported:

- X30 external adapters with other X30 adapters (internal or external)
- X40 external adapters with other X40 adapters (internal or external)
- X40 external adapters with X350 internal adapters

The following HBA/RAID adapter combinations are *not* supported:

- X30 adapters (internal or external) with X40 adapters (internal or external)
- X30 adapters (internal or external) with X350 internal adapters

Fibre Channel host bus adapters

The SR250 V2 does not currently support Fibre Channel host bus adapters.

Flash Storage adapters

The SR250 V2 does not currently support Flash Storage adapters.

GPU adapters

The SR250 V2 server supports the graphics processing units (GPUs) listed in the following table.

Table 29. GPU adapters

Part number	Feature code	Description	Slots supported	Maximum quantity
4X67A79777	BMXD	ThinkSystem NVIDIA T1000 8GB PCIe Active GPU	2	1
4X67A79778	BMXE	ThinkSystem NVIDIA T400 4GB PCIe Active GPU	2	1

The following rules applies:

- The use of a GPU requires 450W hot-swap power supplies
- A GPU is supported in slot 2, supplied by either the x8/x8 or x16 riser card. Note, however, performance will be degraded when the GPU is installed in a x8 slot.

For information about GPUs, see the ThinkSystem GPU Summary:

<https://lenovopress.com/lp0768-thinksystem-gpu-summary>

Cooling

The SR250 V2 server has four non-hot-swap variable-speed system fans. The fans have a single rotor and are not redundant.

Configurator tip: In the DCSC configurator, 3.5-inch drive configurations will show a single SR250 Fan Module (feature B40F) in the list of unselectable features, whereas the 2.5-inch drive configurations do not show this feature. Regardless, all configurations include four fans.

Note: The server performance might be impacted in case of a system fan failure.

Power supplies

The SR250 V2 server supports one fixed power supply or up to two redundant hot-swap power supplies. With two power supplies, the server is capable of N+N redundancy depending on the configuration. A second power supply can be added to the models that come with one hot-swap power supply.

Table 30. Power supplies

Part number	Feature code	Description	Maximum quantity	80 PLUS certification	ErP Lot 9 compliant	110V AC	220V AC	240V DC China only
CTO only	B40Q	ThinkSystem SR250/SR150 Fixed 300W PSU	1	Gold	No	Yes	Yes	No
4P57A12649	B40R	ThinkSystem 450W 230V/115V Platinum Hot-Swap Power Supply	2	Platinum	No	Yes	Yes	No
4P57A78356	BMXC	ThinkSystem 450W 230V Titanium Hot-Swap Power Supply	2	Titanium	Yes	No	Yes	No

Power supply options do not include a line cord.

For server configurations, the inclusion of a power supply is model dependent. Configure-to-order models can be configured without a power cord if desired.

The following table lists the maximum configuration for the 300W power supply.

Table 31. Maximum configuration for the 300W power supply

Subsystem	300W fixed power supply
Processor	Up to 80W TDP (6 cores)
Memory	No restriction
Drives	<ul style="list-style-type: none">Up to 4x 3.5-inch drives or 8x 2.5-inch drives (HDD or SSD)10x 2.5-inch SAS/SATA drives not supported
M.2	No restriction
Adapters (except GPU)	1 or 2 adapters up to PCIe x8
GPU	Not supported

To ensure that the properly sized power supply is chosen for optimal performance, it is highly recommended to validate system configuration for specific power requirements by using the latest version of the Lenovo Capacity Planner:

<https://datacentersupport.lenovo.com/us/en/products/solutions-and-software/software/lenovo-capacity-planner/solutions/ht504651>

Power cords

Line cords and rack power cables with C13 connectors can be ordered as listed in the following table.

Table 32. Power cords

Part number	Feature code	Description
Rack cables - C13 to C14		
SL67B08593	BPHZ	0.5m, 10A/100-250V, C13 to C14 Jumper Cord
00Y3043	A4VP	1.0m, 10A/100-250V, C13 to C14 Jumper Cord
4L67A08367	B0N5	1.0m, 13A/100-250V, C13 to C14 Jumper Cord
39Y7937	6201	1.5m, 10A/100-250V, C13 to C14 Jumper Cord
4L67A08368	B0N6	1.5m, 13A/100-250V, C13 to C14 Jumper Cord
4L67A08365	B0N4	2.0m, 10A/100-250V, C13 to C14 Jumper Cord
4L67A08369	6570	2.0m, 13A/100-250V, C13 to C14 Jumper Cord
4L67A08366	6311	2.8m, 10A/100-250V, C13 to C14 Jumper Cord
4L67A08370	6400	2.8m, 13A/100-250V, C13 to C14 Jumper Cord
39Y7932	6263	4.3m, 10A/100-250V, C13 to C14 Jumper Cord
4L67A08371	6583	4.3m, 13A/100-250V, C13 to C14 Rack Power Cable
Rack cables - C13 to C14 (Y-cable)		
00Y3046	A4VQ	1.345m, 2X C13 to C14 Jumper Cord, Rack Power Cable
00Y3047	A4VR	2.054m, 2X C13 to C14 Jumper Cord, Rack Power Cable
Rack cables - C13 to C20		
39Y7938	6204	2.8m, 10A/100-250V, C13 to IEC 320-C20 Rack Power Cable
Rack cables - C13 to C20 (Y-cable)		
47C2491	A3SW	1.2m, 16A/100-250V, 2 Short C13s to Short C20 Rack Power Cable
47C2492	A3SX	2.5m, 16A/100-250V, 2 Long C13s to Short C20 Rack Power Cable
47C2493	A3SY	2.8m, 16A/100-250V, 2 Short C13s to Long C20 Rack Power Cable
47C2494	A3SZ	4.1m, 16A/100-250V, 2 Long C13s to Long C20 Rack Power Cable
Line cords		
39Y7930	6222	2.8m, 10A/250V, C13 to IRAM 2073 (Argentina) Line Cord
81Y2384	6492	4.3m 10A/220V, C13 to IRAM 2073 (Argentina) Line Cord
39Y7924	6211	2.8m, 10A/250V, C13 to AS/NZ 3112 (Australia/NZ) Line Cord
81Y2383	6574	4.3m, 10A/230V, C13 to AS/NZS 3112 (Aus/NZ) Line Cord
69Y1988	6532	2.8m, 10A/250V, C13 to NBR 14136 (Brazil) Line Cord
81Y2387	6404	4.3m, 10A/250V, C13 - 2P+Gnd (Brazil) Line Cord
39Y7928	6210	2.8m, 10A/220V, C13 to GB 2099.1 (China) Line Cord
81Y2378	6580	4.3m, 10A/220V, C13 to GB 2099.1 (China) Line Cord
39Y7918	6213	2.8m, 10A/250V, C13 to DK2-5a (Denmark) Line Cord
81Y2382	6575	4.3m, 10A/230V, C13 to DK2-5a (Denmark) Line Cord

Part number	Feature code	Description
39Y7917	6212	2.8m, 10A/230V, C13 to CEE7-VII (Europe) Line Cord
81Y2376	6572	4.3m, 10A/230V, C13 to CEE7-VII (Europe) Line Cord
39Y7927	6269	2.8m, 10A/250V, C13(2P+Gnd) (India) Line Cord
81Y2386	6567	4.3m, 10A/240V, C13 to IS 6538 (India) Line Cord
39Y7920	6218	2.8m, 10A/250V, C13 to SI 32 (Israel) Line Cord
81Y2381	6579	4.3m, 10A/230V, C13 to SI 32 (Israel) Line Cord
39Y7921	6217	2.8m, 220-240V, C13 to CEI 23-16 (Italy/Chile) Line Cord
81Y2380	6493	4.3m, 10A/230V, C13 to CEI 23-16 (Italy/Chile) Line Cord
46M2593	A1RE	2.8m, 12A/125V, C13 to JIS C-8303 (Japan) Line Cord
4L67A08362	6495	4.3m, 12A/200V, C13 to JIS C-8303 (Japan) Line Cord
39Y7926	6335	4.3m, 12A/100V, C13 to JIS C-8303 (Japan) Line Cord
39Y7922	6214	2.8m, 10A/250V, C13 to SABS 164 (S Africa) Line Cord
81Y2379	6576	4.3m, 10A/230V, C13 to SABS 164 (South Africa) Line Cord
39Y7925	6219	2.8m, 220-240V, C13 to KETI (S Korea) Line Cord
81Y2385	6494	4.3m, 12A/220V, C13 to KSC 8305 (S. Korea) Line Cord
39Y7919	6216	2.8m, 10A/250V, C13 to SEV 1011-S24507 (Swiss) Line Cord
81Y2390	6578	4.3m, 10A/230V, C13 to SEV 1011-S24507 (Sws) Line Cord
23R7158	6386	2.8m, 10A/125V, C13 to CNS 10917-3 (Taiwan) Line Cord
81Y2375	6317	2.8m, 10A/240V, C13 to CNS 10917-3 (Taiwan) Line Cord
81Y2374	6402	2.8m, 13A/125V, C13 to CNS 60799 (Taiwan) Line Cord
4L67A08363	AX8B	4.3m, 10A 125V, C13 to CNS 10917 (Taiwan) Line Cord
81Y2389	6531	4.3m, 10A/250V, C13 to 76 CNS 10917-3 (Taiwan) Line Cord
81Y2388	6530	4.3m, 13A/125V, C13 to CNS 10917 (Taiwan) Line Cord
39Y7923	6215	2.8m, 10A/250V, C13 to BS 1363/A (UK) Line Cord
81Y2377	6577	4.3m, 10A/230V, C13 to BS 1363/A (UK) Line Cord
90Y3016	6313	2.8m, 10A/120V, C13 to NEMA 5-15P (US) Line Cord
46M2592	A1RF	2.8m, 10A/250V, C13 to NEMA 6-15P Line Cord
00WH545	6401	2.8m, 13A/120V, C13 to NEMA 5-15P (US) Line Cord
4L67A08359	6370	4.3m, 10A/125V, C13 to NEMA 5-15P (US) Line Cord
4L67A08361	6373	4.3m, 10A/250V, C13 to NEMA 6-15P (US) Line Cord
4L67A08360	AX8A	4.3m, 13A/120V, C13 to NEMA 5-15P (US) Line Cord

Systems management

The SR250 V2 contains an integrated service processor, XClarity Controller (XCC), which provides advanced service-processor control, monitoring, and alerting functions. The XCC is based on the Pilot4 XE401 baseboard management controller (BMC) using a dual-core ARM Cortex A9 service processor.

- [Front operator panel](#)
- [System status with XClarity Mobile](#)
- [Remote management](#)
- [Lenovo XClarity Provisioning Manager](#)
- [Lenovo XClarity Administrator](#)
- [Lenovo XClarity Integrators](#)
- [Lenovo XClarity Essentials](#)
- [Lenovo XClarity Energy Manager](#)

Front operator panel

The SR250 V2 offers a front operator panel showing key LED status indicators, as shown in the following figure.

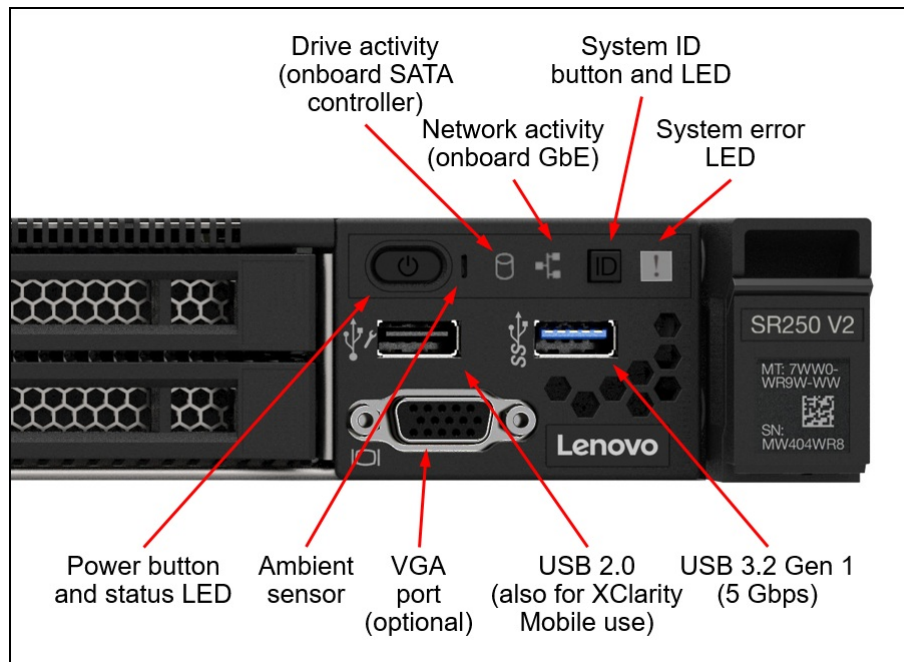



Figure 10. Front operator panel

System status with XClarity Mobile

The XClarity Mobile app includes a tethering function where you can connect your Android or iOS device to the server via USB to see the status of the server.

The steps to connect the mobile device are as follows:

1. Enable USB Management on the server, by holding down the ID button for 3 seconds (or pressing the dedicated USB management button if one is present)
2. Connect the mobile device via a USB cable to the server's USB port with the management symbol 
3. In iOS or Android settings, enable Personal Hotspot or USB Tethering
4. Launch the Lenovo XClarity Mobile app

Once connected you can see the following information:

- Server status including error logs (read only, no login required)
- Server management functions (XClarity login credentials required)

Remote management

The server offers a dedicated RJ45 port at the rear of the server for remote management via the XClarity Controller management processor. The port supports 10/100/1000 Mbps speeds.

Remote server management is provided through industry-standard interfaces:

- Intelligent Platform Management Interface (IPMI) Version 2.0
- Simple Network Management Protocol (SNMP) Version 3 (no SET commands; no SNMP v1)

- Common Information Model (CIM-XML)
- Representational State Transfer (REST) support
- Redfish support (DMTF compliant)
- Web browser - HTML 5-based browser interface (Java and ActiveX not required) using a responsive design (content optimized for device being used - laptop, tablet, phone) with NLS support

IPMI via the Ethernet port (IPMI over LAN) is supported, however it is disabled by default. For CTO orders you can specify whether you want the feature enabled or disabled in the factory, using the feature codes listed in the following table.

Table 33. IPMI-over-LAN settings

Part number	Feature code	Description
CTO only	B7XZ	Disable IPMI-over-LAN (default)
CTO only	B7Y0	Enable IPMI-over-LAN

There are two XClarity Controller upgrades available for the server, Advanced and Enterprise.

Lenovo XClarity Controller Advanced adds the following remote control 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
- Capturing blue-screen errors
- International keyboard mapping support
- LDAP-based authentication

Lenovo XClarity Controller Enterprise enables the following additional features:

- Boot Capture
- Remote mounting of CD-ROM (ISO) and diskette (IMG) files as virtual drives
- Virtual console collaboration - Ability for up to 6 remote users to be log into the remote session simultaneously
- Power capping
- License for XClarity Energy Manager

Preconfigured models come with either XClarity Controller Standard, Advanced or Enterprise, depending on the model. See the [Models](#) section for details. The following table shows the field upgrades available for preconfigured models.

Table 34. XClarity Controller field upgrades

Part number	Feature code	Description
4L47A09132	AVUT	ThinkSystem XClarity Controller Standard to Advanced Upgrade (for servers that have XCC Standard)
4L47A09133	AVUU	ThinkSystem XClarity Controller Advanced to Enterprise Upgrade (for servers that have XCC Advanced)

For configure-to-order (CTO) models, you can elect to have one of the following XCC functionality by selecting the appropriate XCC feature codes as listed in the following table:

- XCC Standard - select neither feature listed in the table
- XCC Advanced - select feature AVUT

- XCC Enterprise - select feature AUPW

Table 35. XClarity Controller Upgrades for configure-to-order

Feature code	Description
AVUT	ThinkSystem XClarity Controller Standard to Advanced Upgrade
AUPW	ThinkSystem XClarity Controller Standard to Enterprise Upgrade

Lenovo XClarity Provisioning Manager

Lenovo XClarity Provisioning Manager (LXPM) is a UEFI-based application embedded in ThinkSystem servers and accessible via the F1 key during system boot.

LXPM provides the following functions:

- Graphical UEFI Setup
- System inventory information and VPD update
- System firmware updates (UEFI and XCC)
- RAID setup wizard
- OS installation wizard (including unattended OS installation)
- Diagnostics functions

Lenovo XClarity Administrator

Lenovo XClarity Administrator is a centralized resource management solution designed to reduce complexity, speed response, and enhance the availability of Lenovo systems and solutions. It provides agent-free hardware management for ThinkSystem servers. The administration dashboard is based on HTML 5 and allows fast location of resources so tasks can be run quickly.

Because Lenovo XClarity Administrator does not require any agent software to be installed on the managed endpoints, there are no CPU cycles spent on agent execution, and no memory is used, which means that up to 1GB of RAM and 1 - 2% CPU usage is saved, compared to a typical managed system where an agent is required.

Lenovo XClarity Administrator is an optional software component for the SR250 V2. The software can be downloaded and used at no charge to discover and monitor the SR250 V2 and to manage firmware upgrades.

If software support is required for Lenovo XClarity Administrator, or premium features such as configuration management and operating system deployment are required, Lenovo XClarity Pro software subscription should be ordered. Lenovo XClarity Pro is licensed on a per managed system basis, that is, each managed Lenovo system requires a license.

The following table lists the Lenovo XClarity software license options.

Table 36. Lenovo XClarity Pro ordering information

Part number	Feature code	Description
00MT201	1339	Lenovo XClarity Pro, per Managed Endpoint w/1 Yr SW S&S
00MT202	1340	Lenovo XClarity Pro, per Managed Endpoint w/3 Yr SW S&S
00MT203	1341	Lenovo XClarity Pro, per Managed Endpoint w/5 Yr SW S&S
7S0X000HWW	SAYV	Lenovo XClarity Pro, per Managed Endpoint w/6 Yr SW S&S
7S0X000JWW	SAYW	Lenovo XClarity Pro, per Managed Endpoint w/7 Yr SW S&S

Lenovo XClarity Administrator offers the following standard features that are available at no charge:

- Auto-discovery and monitoring of Lenovo systems
- Firmware updates and compliance enforcement
- External alerts and notifications via SNMP traps, syslog remote logging, and e-mail
- Secure connections to managed endpoints
- NIST 800-131A or FIPS 140-3 compliant cryptographic standards between the management solution and managed endpoints
- Integration into existing higher-level management systems such as cloud automation and orchestration tools through REST APIs, providing extensive external visibility and control over hardware resources
- An intuitive, easy-to-use GUI
- Scripting with Windows PowerShell, providing command-line visibility and control over hardware resources

Lenovo XClarity Administrator offers the following premium features that require an optional Pro license:

- Pattern-based configuration management that allows to define configurations once and apply repeatedly without errors when deploying new servers or redeploying existing servers without disrupting the fabric
- Bare-metal deployment of operating systems and hypervisors to streamline infrastructure provisioning

For more information, refer to the Lenovo XClarity Administrator Product Guide:

<http://lenovopress.com/tips1200>

Lenovo XClarity Integrators

Lenovo also offers software plug-in modules, Lenovo XClarity Integrators, to manage physical infrastructure from leading external virtualization management software tools including those from Microsoft and VMware.

These integrators are offered at no charge, however if software support is required, a Lenovo XClarity Pro software subscription license should be ordered.

Lenovo XClarity Integrators offer the following additional features:

- Ability to discover, manage, and monitor Lenovo server hardware from VMware vCenter or Microsoft System Center
- Deployment of firmware updates and configuration patterns to Lenovo x86 [rack servers](#) and Flex System from the virtualization management tool
- Non-disruptive server maintenance in clustered environments that reduces workload downtime by dynamically migrating workloads from affected hosts during rolling server updates or reboots
- Greater service level uptime and assurance in clustered environments during unplanned hardware events by dynamically triggering workload migration from impacted hosts when impending hardware failures are predicted

For more information about all the available Lenovo XClarity Integrators, see the Lenovo XClarity Administrator Product Guide: <https://lenovopress.com/tips1200-lenovo-xclarity-administrator>

Lenovo XClarity Essentials

Lenovo offers the following XClarity Essentials software tools that can help you set up, use, and maintain the server at no additional cost:

- **Lenovo Essentials OneCLI**

OneCLI is a collection of server management tools that uses a command line interface program to manage firmware, hardware, and operating systems. It provides functions to collect full system health information (including health status), configure system settings, and update system firmware and drivers.

- **Lenovo Essentials UpdateXpress**

The UpdateXpress tool is a standalone GUI application for firmware and device driver updates that enables you to maintain your server firmware and device drivers up-to-date and help you avoid unnecessary server outages. The tool acquires and deploys individual updates and UpdateXpress System Packs (UXSPs) which are integration-tested bundles.

- **Lenovo Essentials Bootable Media Creator**

The Bootable Media Creator (BOMC) tool is used to create bootable media for offline firmware update.

For more information and downloads, visit the Lenovo XClarity Essentials web page:

<http://support.lenovo.com/us/en/documents/LNVO-center>

Lenovo XClarity Energy Manager

Lenovo XClarity Energy Manager (LXEM) is a power and temperature management solution for data centers. It is an agent-free, web-based console that enables you to monitor and manage power consumption and temperature in your data center through the management console. It enables server density and data center capacity to be increased through the use of power capping.

LXEM is a licensed product. A single-node LXEM license is included with the XClarity Controller Enterprise upgrade as described in the [Remote Management](#) section. If your server does not have the XCC Enterprise upgrade, Energy Manager licenses can be ordered as shown in the following table.

Table 37. Lenovo XClarity Energy Manager

Part number	Description
4L40E51621	Lenovo XClarity Energy Manager Node License (1 license needed per server)

For more information about XClarity Energy Manager, see the following resources:

- **Lenovo Support page:**
<https://datacentersupport.lenovo.com/us/en/solutions/lxem>
- **User Guide for XClarity Energy Manager:**
<https://pubs.lenovo.com/lxem/>

Security

Topics in this section:

- [Security features](#)
- [Platform Firmware Resiliency - Lenovo ThinkShield](#)
- [Intel Transparent Supply Chain](#)
- [Security standards](#)

Security features

The SR250 V2 offers the following security features:

- Electronic security measures:
 - Administrator and power-on passwords
 - Secure firmware updates
 - Trusted Platform Module (TPM) supporting TPM 2.0
 - For China customers, the Nationz TPM plug-in module
 - Self-encrypting drives with support for IBM Security Key Lifecycle Manager
- Mechanical security measures
 - Optional lockable front bezel

The server is NIST SP 800-147B compliant.

The following table lists the security options that are available for the SR250 V2 server.

Table 38. Security options

Part number	Feature code	Description
Lockable front bezel		
7Z17A02581	BMWP	SR250 V2 Security Bezel
Trusted Platform Module (PRC only)		
CTO only	B22N	ThinkSystem Nationz Trusted Platform Module v2.0

Platform Firmware Resiliency - Lenovo ThinkShield

Lenovo's ThinkShield Security is a transparent and comprehensive approach to security that extends to all dimensions of our data center products: from development, to supply chain, and through the entire product lifecycle.

The ThinkSystem SR250 V2 includes Platform Firmware Resiliency (PFR) hardware Root of Trust (RoT) which enables the system to be NIST SP800-193 compliant. This offering further enhances key platform subsystem protections against unauthorized firmware updates and corruption, to restore firmware to an integral state, and to closely monitor firmware for possible compromise from cyber-attacks.

PFR operates upon the following server components:

- UEFI image – the low-level server firmware that connects the operating system to the server hardware
- XCC image – the management “engine” software that controls and reports on the server status separate from the server operating system
- FPGA image – the code that runs the server’s lowest level hardware controller on the motherboard

The Lenovo Platform Root of Trust Hardware performs the following three main functions:

- Detection – Measures the firmware and updates for authenticity
- Recovery – Recovers a corrupted image to a known-safe image
- Protection – Monitors the system to ensure the known-good firmware is not maliciously written

These enhanced protection capabilities are implemented using a dedicated, discrete security processor whose implementation has been rigorously validated by leading third-party security firms. Security evaluation results and design details are available for customer review – providing unprecedented transparency and assurance.

The SR250 V2 includes support for Secure Boot, a UEFI firmware security feature developed by the UEFI Consortium that ensures only immutable and signed software are loaded during the boot time. The use of Secure Boot helps prevent malicious code from being loaded and helps prevent attacks, such as the installation of rootkits. Lenovo offers the capability to enable secure boot in the factory, to ensure end-to-end protection. Alternatively, Secure Boot can be left disabled in the factory, allowing the customer to enable it themselves at a later point, if desired.

The following table lists the relevant feature code(s).

Table 39. Secure Boot options

Part number	Feature code	Description	Purpose
CTO only	AUK7	TPM 2.0 and Secure Boot	Configure the system in the factory with Secure Boot enabled.
CTO only	B0MK	Enable TPM 2.0	Configure the system without Secure Boot enabled. Customers can enable Secure Boot later if desired.
CTO only	C1GD	ST45 V3 TPM 2.0 for WW	

Tip: If Secure Boot is not enabled in the factory, it can be enabled later by the customer. However once Secure Boot is enabled, it cannot be disabled.

Intel Transparent Supply Chain

Add a layer of protection in your data center and have peace of mind that the server hardware you bring into it is safe authentic and with documented, testable, and provable origin.

Lenovo has one of the world's best supply chains, as ranked by Gartner Group, backed by extensive and mature supply chain security programs that exceed industry norms and US Government standards. Now we are the first Tier 1 manufacturer to offer Intel® Transparent Supply Chain in partnership with Intel, offering you an unprecedented degree of supply chain transparency and assurance.

To enable Intel Transparent Supply Chain for the Intel-based servers in your order, add the following feature code in the [DCSC configurator](#), under the Security tab.

Table 40. Intel Transparent Supply Chain ordering information

Feature code	Description
BB0P	Intel Transparent Supply Chain

For more information on this offering, see the paper *Introduction to Intel Transparent Supply Chain on Lenovo ThinkSystem Servers*, available from <https://lenovopress.com/lp1434-introduction-to-intel-transparent-supply-chain-on-thinksystem-servers>.

Security standards

The SR250 V2 supports the following security standards and capabilities:

- **Industry Standard Security Capabilities**
 - Intel CPU Enablement
 - AES-NI (Advanced Encryption Standard New Instructions)
 - Secure Key
 - SGX (Software Guard eXtensions)
 - OS Guard
 - TXT (Trusted eXecution Technology)
 - XD (eXecute Disable)
 - Boot Guard
 - VT (Virtualization Technology)
 - Maximum Enclave Page Cache (EPC) Size for Intel SGX
 - Microsoft Windows Security Enablement
 - Credential Guard
 - Device Guard

- Host Guardian Service
 - TCG (Trusted Computing Group) TPM (Trusted Platform Module) 2.0
 - UEFI (Unified Extensible Firmware Interface) Forum Secure Boot
- **Hardware Root of Trust and Security**
 - Independent security subsystem providing platform-wide NIST SP800-193 compliant Platform Firmware Resilience (PFR)
 - Management domain RoT supplemented by the Secure Boot features of XCC
- **Platform Security**
 - Boot and run-time firmware integrity monitoring with rollback to known-good firmware (e.g., “self-healing”)
 - Non-volatile storage bus security monitoring and filtering
 - Resilient firmware implementation, such as to detect and defeat unauthorized flash writes or SMM (System Management Mode) memory incursions
 - Patented IPMI KCS channel privileged access authorization (USPTO Patent# 11,256,810)
 - Host and management domain authorization, including integration with CyberArk for enterprise password management
 - KMIP (Key Management Interoperability Protocol) compliant, including support for IBM SKLM and Thales KeySecure
 - Reduced “out of box” attack surface
 - Configurable network services

For more information on platform security, see the paper “How to Harden the Security of your ThinkSystem Server and Management Applications” available from <https://lenovopress.com/lp1260-how-to-harden-the-security-of-your-thinksystem-server>.

- **Standards Compliance and/or Support**
 - NIST SP800-131A rev 2 “Transitioning the Use of Cryptographic Algorithms and Key Lengths”
 - NIST SP800-147B “BIOS Protection Guidelines for Servers”
 - NIST SP800-193 “Platform Firmware Resiliency Guidelines”
 - ISO/IEC 11889 “Trusted Platform Module Library”
 - Common Criteria TCG Protection Profile for “PC Client Specific TPM 2.0”
 - European Union Commission Regulation 2019/424 (“ErP Lot 9”) “Ecodesign Requirements for Servers and Data Storage Products” Secure Data Deletion
 - Optional FIPS 140-2 validated Self-Encrypting Disks (SEDs) with external KMIP-based key management
- **Product and Supply Chain Security**
 - Suppliers validated through Lenovo’s Trusted Supplier Program
 - Developed in accordance with Lenovo’s Secure Development Lifecycle (LSDL)
 - Continuous firmware security validation through automated testing, including static code analysis, dynamic network and web vulnerability testing, software composition analysis, and subsystem-specific testing, such as UEFI security configuration validation
 - Ongoing security reviews by US-based security experts, with attestation letters available from our third-party security partners
 - Digitally signed firmware, stored and built on US-based infrastructure and signed on US-based Hardware Security Modules (HSMs)
 - Manufacturing transparency via Intel Transparent Supply Chain (for details, see <https://lenovopress.com/lp1434-introduction-to-intel-transparent-supply-chain-on-lenovo-thinksystem-servers>)

- TAA (Trade Agreements Act) compliant manufacturing, by default in Mexico for North American markets with additional US and EU manufacturing options
- US 2019 NDAA (National Defense Authorization Act) Section 889 compliant

Rack installation

The following table lists the rack installation options that are available for the SR250 V2 server.

The VGA Connector Kit allows you to upgrade your server by adding a VGA video port to the front of the server (if the server does not already come with a front VGA port). When the front VGA is in use, the rear VGA port is automatically disabled.

Table 41. Rack installation options

Part number	Feature code	Description
Front VGA port		
4Z57A80508	BMQ0	ThinkSystem SR250 Series/SR150 Front VGA Connector Kit
4-post rail kits		
4M17A13564	BK7W	ThinkSystem Toolless Friction Rail v2
4M17A37605	B7L3	ThinkSystem Short Rack Rail Kit
2-post rail kits		
4M17A37105	B6H2	ThinkSystem Friction 2-Post Screw-in Rail Kit

The following table summarizes the rail kit features and specifications.

Table 42. Rail kit features and specifications summary

Feature	4-Post Tool-less Rail Kit	4-Post Short Rail Kit	2-Post Screw-in Rail Kit
Part number	4M17A13564	4M17A37605	4M17A37105
CMA	None	None	None
Rail length	751.2 mm (29.6 in.)	484.0 mm (19.1 in.)	486.2 mm (19.2 in.)
Rail type	Half-out slide (friction)	Half-out slide (friction)	Half-out slide (friction)
Tool-less installation	Yes	Yes	No
In-rack server maintenance	No	No	No
1U PDU support	Yes	Yes	Yes
0U PDU support	Limited*	Yes	Not applicable
Rack type	IBM or Lenovo 4-post, EIA standard-compliant	4-post, EIA standard-compliant	2-post, EIA standard-compliant
Mounting holes	Square or round	Square or round	Square, round, or threaded
Mounting flange thickness	2 mm (0.08 in.) – 3.3 mm (0.13 in.)	2 mm (0.08 in.) – 3.3 mm (0.13 in.)	2 mm (0.08 in.) – 3.3 mm (0.13 in.)
Distance between front and rear mounting flanges^	609.6 mm (24 in.) – 863.6 mm (34 in.)	355.6 mm (14 in.) – 609.6 mm (24 in.)	Not applicable

* If a 0U PDU used, the rack cabinet must be at least 1000 mm (39.37 in.) deep.

^ Measured when mounted on the rack cabinet, from the front surface of the front mounting flange to the rear most point of the rail.

Operating system support

The server supports the following operating systems:

- Microsoft Windows Server 2019

- Microsoft Windows Server 2022
- Red Hat Enterprise Linux 8.4
- Red Hat Enterprise Linux 8.5
- Red Hat Enterprise Linux 8.6
- Red Hat Enterprise Linux 8.7
- Red Hat Enterprise Linux 8.8
- Red Hat Enterprise Linux 8.9
- Red Hat Enterprise Linux 8.10
- Red Hat Enterprise Linux 9.0
- Red Hat Enterprise Linux 9.1
- Red Hat Enterprise Linux 9.2
- Red Hat Enterprise Linux 9.3
- Red Hat Enterprise Linux 9.4
- Red Hat Enterprise Linux 9.5
- Red Hat Enterprise Linux 9.6
- Red Hat Enterprise Linux 10.0
- SUSE Linux Enterprise Server 15 SP3
- SUSE Linux Enterprise Server 15 SP4
- SUSE Linux Enterprise Server 15 SP5
- SUSE Linux Enterprise Server 15 Xen SP3
- SUSE Linux Enterprise Server 15 Xen SP4
- SUSE Linux Enterprise Server 15 Xen SP5
- Ubuntu 22.04 LTS 64-bit
- Ubuntu 24.04 LTS 64-bit
- VMware ESXi 7.0 U3
- VMware ESXi 8.0
- VMware ESXi 8.0 U1
- VMware ESXi 8.0 U2
- VMware ESXi 8.0 U3
- VMware ESXi 9.0

For a complete list of supported, certified and tested operating systems, plus additional details and links to relevant web sites, see the Operating System Interoperability Guide: <https://lenovopress.com/osig>

Virtualization support: The onboard SATA ports of the server can be used with virtualization hypervisors, including VMware ESXi, Linux KVM, Xen, and Microsoft Hyper-V, however support is limited to AHCI (non-RAID) mode. RSTe mode is not supported with virtualization hypervisors.

For configure-to-order configurations, the SR250 V2 can be preloaded with VMware ESXi. Ordering information is listed in the following table.

Table 43. VMware ESXi preload

Part number	Feature code	Description
CTO only	BMEY	VMware ESXi 7.0 U3 (Factory Installed)
CTO only	BMT5	VMware ESXi 8.0 (Factory Installed)
CTO only	BQ8S	VMware ESXi 8.0 U1 (Factory Installed)
CTO only	BYC7	VMware ESXi 8.0 U2 (Factory Installed)
CTO only	BZ97	VMware ESXi 8.0 U3 (Factory Installed)

Configuration rule:

- An ESXi preload cannot be selected if the configuration includes an NVIDIA GPU (ESXi preload cannot include the NVIDIA driver)

You can download supported VMware vSphere hypervisor images from the following web page and install it using the instructions provided:

https://vmware.lenovo.com/content/custom_iso/

Physical specifications

The SR250 V2 has the following overall physical dimensions, excluding components that extend outside the standard chassis, such as EIA flanges, front security bezel (if any), and power supply handles:

- Width: 435 mm (17.1 inches)
- Height: 43 mm (1.7 inches)
- Depth: 545 mm (21.5 inches)

The following table lists the detailed dimensions. See the figure below for the definition of each dimension.

Table 44. Detailed dimensions

Dimension	Description
482 mm	X_a = Width, to the outsides of the front EIA flanges
435 mm	X_b = Width, to the rack rail mating surfaces
435 mm	X_c = Width, to the outer most chassis body feature
43 mm	Y_a = Height, from the bottom of chassis to the top of the chassis
501 mm	Z_a = Depth, from the rack flange mating surface to the rearmost I/O port surface
509 mm	Z_b = Depth, from the rack flange mating surface to the rearmost feature of the chassis body
523 mm	Z_c = Depth, from the rack flange mating surface to the rearmost feature such as power supply handle
36 mm	Z_d = Depth, from the forwardmost feature on front of EIA flange to the rack flange mating surface
47 mm	Z_e = Depth, from the front of security bezel (if applicable) or forwardmost feature to the rack flange mating surface

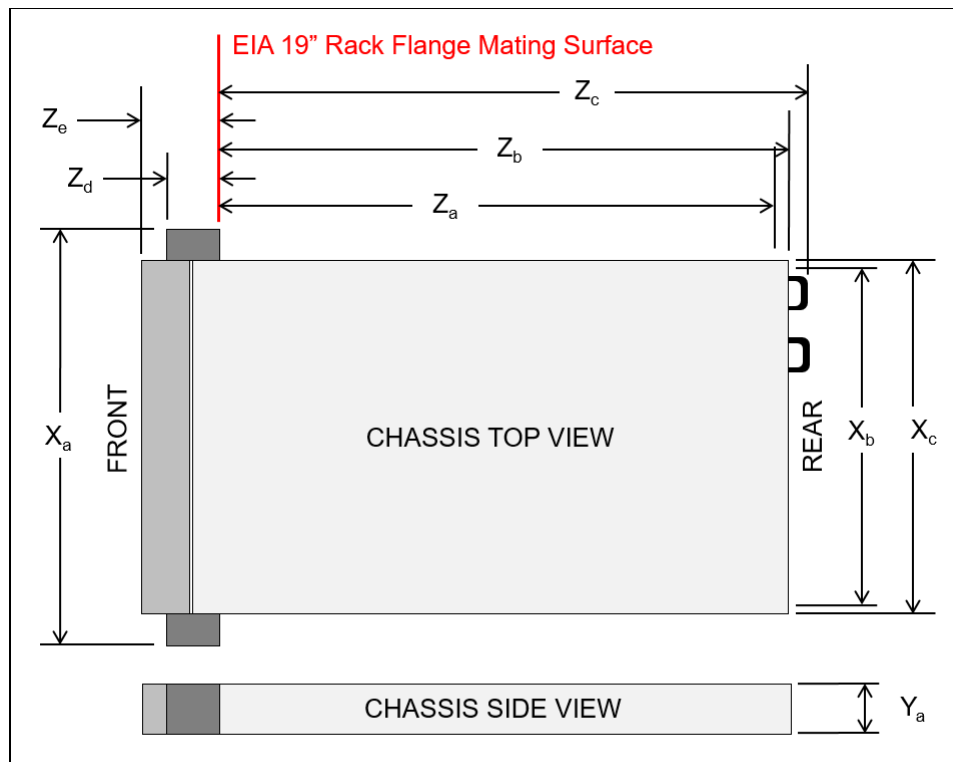


Figure 11. Server dimensions

The shipping (cardboard packaging) dimensions of the SR250 V2 are as follows:

- Width: 610 mm (24.0 inches)
- Height: 196 mm (7.7 inches)
- Depth: 860 mm (33.9 inches)

The SR250 V2 server has the following weight:

- Base configuration: 9.1 kg (20.1 lb)
- Maximum configuration: 12.3 kg (27.1 lb)

Electrical requirements are as follows:

- Models with a 300 W AC fixed power supply:
 - 100-127 (nominal) V ac; 50 Hz or 60 Hz, 3.37 A
 - 200-240 (nominal) V ac; 50 Hz or 60 Hz, 1.49 A
- Models with 450 W AC hot-swap power supplies:
 - 100-127 (nominal) V ac; 50 Hz or 60 Hz; 5.09 A
 - 200-240 (nominal) V ac; 50 Hz or 60 Hz; 2.20 A

Note for customers in China : 240V DC is not supported.

Operating environment

The server is designed to operate in ASHRAE A2 environments (10-35°C). With certain configurations, the server can also operate within ASHRAE Class A3 and A4 specifications. System performance may be impacted when operating temperature is outside ASHRAE A2 specification.

The server can be configured to operate in ASHRAE A3 environments (5-40°C) or ASHRAE A4 environments (5-45°C), provided the following restrictions are met:

- Processor with a maximum TDP as follows:

- ASHRAE A3: 80W TDP maximum
- ASHRAE A4: 70W TDP maximum
- No support for GPUs
- No support for M.2 drives
- No support for NVMe drives
- No support for 25Gb Ethernet adapters

Temperature and humidity

The SR250 V2 server is supported in the following environment:

- ASHRAE A2:
 - Temperature: 10°C to 35°C
 - Humidity: 8% to 80%
 - Altitude 0-3000 m (10,000 ft), derated 1°C per 300 m above 950 m
- ASHRAE A3:
 - Temperature: 5°C to 40°C
 - Humidity: 8% to 85%
 - Altitude 0-3000 m (10,000 ft), derated 1°C per 175 m above 950 m
- ASHRAE A4:
 - Temperature: 5°C to 45°C
 - Humidity: 8% to 90%
 - Altitude 0-3000 m (10,000 ft), derated 1°C per 175 m above 950 m

Non-operating environment support:

- Without packaging:
 - Temperature: -10 °C to 60 °C
 - Humidity: 8 to 90%
- Storage with packaging:
 - Temperature: -40 °C to 70 °C
 - Humidity: 8 to 90%

Thermal/Heat output

The server generates the following heat:

- Minimum configuration: 379.1 BTU per hour (111 watts)
- Maximum configuration : 802.5 BTU per hour (235 watts)

Acoustical noise emissions

The server has the following acoustic noise emissions declaration:

- Sound power level (L_{WA}):
 - Idling: 4.7 Bel (Typical), 5.7 Bel (Max)
 - Operating: 6.6 Bel (Typical), 6.8 Bel (Max)
- Sound pressure level (L_{pA}):
 - Idling: 33.1 dBA (Typical), 43.3 dBA (Max)
 - Operating: 52.6 dBA (Typical), 53.6 dBA (Max)

Notes:

- These sound levels were measured in controlled acoustical environments according to procedures specified by ISO7779 and are reported in accordance with ISO 9296, SPL is measured by bystander position (1m).
- The declared acoustic sound levels are based on the following configurations, which may change depending on the configuration or conditions, for example M.2 drive, Broadcom 57414 25Gb NIC, Broadcom 57416 10Gb NIC, T1000
 - Typical: 1x 80W CPU, 4x 32GB DIMM, 2x HDD or SSD, RAID 5350-8i, 1x 300W PSU

- Max: 1x 95W CPU, 4x 32GB DIMM, 2x HDD or SSD, 2x 450W PSU

Shock and vibration

The server has the following vibration and shock limits:

- Vibration:
 - Operating: 0.21 G rms at 5 Hz to 500 Hz for 15 minutes across 3 axes
 - Non-operating: 1.04 G rms at 2 Hz to 200 Hz for 15 minutes across 6 surfaces
- Shock:
 - Operating: 15 G for 3 milliseconds in each direction (positive and negative X, Y, and Z axes)
 - Non-operating:
 - 4 kg - 11 kg: 50 G for 167 in./sec velocity change across 6 surfaces
 - 12 kg - 22 kg: 50 G for 152 in./sec velocity change across 6 surfaces

Particulate contamination

Airborne particulates (including metal flakes or particles) and reactive gases acting alone or in combination with other environmental factors such as humidity or temperature might damage the system that might cause the system to malfunction or stop working altogether.

The following specifications indicate the limits of particulates that the system can tolerate:

- Reactive gases:
 - The copper reactivity level shall be less than 200 Angstroms per month (Å/month)
 - The silver reactivity level shall be less than 200 Å/month
- Airborne particulates:
 - The room air should be continuously filtered with MERV 8 filters.
 - Air entering a data center should be filtered with MERV 11 or preferably MERV 13 filters.
 - The deliquescent relative humidity of the particulate contamination should be more than 60% RH
 - Environment must be free of zinc whiskers

For additional information, see the Specifications section of the documentation for the server, available from the Lenovo Documents site, <https://pubs.lenovo.com/>

Warranty upgrades and post-warranty support

The SR250 V2 has a 1-year or 3-year warranty, based on the machine type of the system:

- 7D7R - 1 year warranty
- 7D7Q - 3 year warranty

Our global network of regional support centers offers consistent, local-language support enabling you to vary response times and level of service to match the criticality of your support needs:

- **Standard Next Business Day** – Best choice for non-essential systems requiring simple maintenance.
- **Premier Next Business Day** – Best choice for essential systems requiring technical expertise from senior-level Lenovo engineers.
- **Premier 24x7 4-Hour Response** – Best choice for systems where maximum uptime is critical.
- **Premier Enhanced Storage Support 24x7 4-Hour Response** – Best choice for storage systems where maximum uptime is critical.

For more information, consult the brochure [Lenovo Operational Support Services for Data Centers Services](#).

Services

Lenovo Data Center Services empower you at every stage of your IT lifecycle. From expert advisory and strategic planning to seamless deployment and ongoing support, we ensure your infrastructure is built for success. Our comprehensive services accelerate time to value, minimize downtime, and free your IT staff to focus on driving innovation and business growth.

Note: Some service options may not be available in all markets or regions. For more information, go to <https://lenovocator.com/>. For information about Lenovo service upgrade offerings that are available in your region, contact your local Lenovo sales representative or business partner.

In this section:

- [Lenovo Advisory Services](#)
- [Lenovo Plan & Design Services](#)
- [Lenovo Deployment, Migration, and Configuration Services](#)
- [Lenovo Support Services](#)
- [Lenovo Managed Services](#)
- [Lenovo Sustainability Services](#)

Lenovo Advisory Services

Lenovo Advisory Services simplify the planning process, enabling customers to build future-proofed strategies in as little as six weeks. Consultants provide guidance on projects including VM migration, storage, backup and recovery, and cost management to accelerate time to value, improve cost efficiency, and build a flexibly scalable foundation.

- **Assessment Services**

An Assessment helps solve your IT challenges through an onsite, multi-day session with a Lenovo technology expert. We perform a tools-based assessment which provides a comprehensive and thorough review of a company's environment and technology systems. In addition to the technology based functional requirements, the consultant also discusses and records the non-functional business requirements, challenges, and constraints. Assessments help organizations like yours, no matter how large or small, get a better return on your IT investment and overcome challenges in the ever-changing technology landscape.

- **Design Services**

Professional Services consultants perform infrastructure design and implementation planning to support your strategy. The high-level architectures provided by the assessment service are turned into low level designs and wiring diagrams, which are reviewed and approved prior to implementation. The implementation plan will demonstrate an outcome-based proposal to provide business capabilities through infrastructure with a risk-mitigated project plan.

Lenovo Plan & Design Services

Unlock faster time to market with our tailored, strategic design workshops to align solution approaches with your business goals and technical requirements. Leverage our deep solution expertise and end-to-end delivery partnership to meet your goals efficiently and effectively.

Lenovo Deployment, Migration, and Configuration Services

Optimize your IT operations by shifting labor-intensive functions to Lenovo's skilled technicians for seamless on-site or remote deployment, configuration, and migration. Enjoy peace of mind, faster time to value, and comprehensive knowledge sharing with your IT staff, backed by our best-practice methodology.

- **Deployment Services for Storage and ThinkAgile**

A comprehensive range of remote and onsite options tailored specifically for your business needs to ensure your storage and ThinkAgile hardware are fully operational from the start.

- **Hardware Installation Services**

A full-range, comprehensive setup for your hardware, including unpacking, inspecting, and positioning components to ensure your equipment is operational and error-free for the most seamless and efficient installation experience, so you can quickly benefit from your investments.

- **DM/DG File Migration Services**

Take the burden of file migration from your IT's shoulders. Our experts will align your requirements and business objectives to the migration plans while coordinating with your team to plan and safely execute the data migration to your storage platforms.

- **DM/DG/DE Health Check Services**

Our experts perform proactive checks of your Firmware and system health to ensure your machines are operating at peak and optimal efficiency to maximize up-time, avoid system failures, ensure the security of IT solutions and simplify maintenance.

- **Factory Integrated Services**

A suite of value-added offerings provided during the manufacturing phase of a server or storage system that reduces time to value. These services aim at improving your hardware deployment experience and enhance the quality of a standard configuration before it arrives at your facility.

Lenovo Support Services

In addition to response time options for hardware parts, repairs, and labor, Lenovo offers a wide array of additional support services to ensure your business is positioned for success and longevity. Our goal is to reduce your capital outlays, mitigate your IT risks, and accelerate your time to productivity.

- **Premier Support for Data Centers**

Your direct line to the solution that promises the best, most comprehensive level of support to help you fully unlock the potential of your data center.

- **Premier Enhanced Storage Support (PESS)**

Gain all the benefits of Premier Support for Data Centers, adding dedicated storage specialists and resources to elevate your storage support experience to the next level.

- **Committed Service Repair (CSR)**

Our commitment to ensuring the fastest, most seamless resolution times for mission-critical systems that require immediate attention to ensure minimal downtime and risk for your business. This service is only available for machines under the Premier 4-Hour Response SLA.

- **Multivendor Support Services (MVS)**

Your single point of accountability for resolution support across vast range of leading Server, Storage, and Networking OEMs, allowing you to manage all your supported infrastructure devices seamlessly from a single source.

- **Keep Your Drive (KYD)**

Protect sensitive data and maintain compliance with corporate retention and disposal policies to ensure your data is always under your control, regardless of the number of drives that are installed in your Lenovo server.

- **Technical Account Manager (TAM)**

Your single point of contact to expedite service requests, provide status updates, and furnish reports to track incidents over time, ensuring smooth operations and optimized performance as your business grows.

- **Enterprise Software Support (ESS)**

Gain comprehensive, single-source, and global support for a wide range of server operating systems and Microsoft server applications.

For more information, consult the brochure [Lenovo Operational Support Services for Data Centers](#).

Lenovo Managed Services

Achieve peak efficiency, high security, and minimal disruption with Lenovo's always-on Managed Services. Our real-time monitoring, 24x7 incident response, and problem resolution ensure your infrastructure operates seamlessly. With quarterly health checks for ongoing optimization and innovation, Lenovo's remote active monitoring boosts end-user experience and productivity by keeping your data center's hardware performing at its best.

Lenovo Managed Services provides continuous 24x7 remote monitoring (plus 24x7 call center availability) and proactive management of your data center using state-of-the-art tools, systems, and practices by a team of highly skilled and experienced Lenovo services professionals.

Quarterly reviews check error logs, verify firmware & OS device driver levels, and software as needed. We'll also maintain records of latest patches, critical updates, and firmware levels, to ensure your systems are providing business value through optimized performance.

Lenovo Sustainability Services

- **Asset Recovery Services**

Lenovo Asset Recovery Services (ARS) provides a secure, seamless solution for managing end-of-life IT assets, ensuring data is safely sanitized while contributing to a more circular IT lifecycle. By maximizing the reuse or responsible recycling of devices, ARS helps businesses meet sustainability goals while recovering potential value from their retired equipment. For more information, see the [Asset Recovery Services offering page](#).

- **CO2 Offset Services**

Lenovo's CO2 Offset Services offer a simple and transparent way for businesses to take tangible action on their IT footprint. By integrating CO2 offsets directly into device purchases, customers can easily support verified climate projects and track their contributions, making meaningful progress toward their sustainability goals without added complexity.

- **Lenovo Certified Refurbished**

Lenovo Certified Refurbished offers a cost-effective way to support IT circularity without compromising on quality and performance. Each device undergoes rigorous testing and certification, ensuring reliable performance and extending its lifecycle. With Lenovo's trusted certification, you gain peace of mind while making a more sustainable IT choice.

Lenovo TruScale

Lenovo TruScale XaaS is your set of flexible IT services that makes everything easier. Streamline IT procurement, simplify infrastructure and device management, and pay only for what you use – so your business is free to grow and go anywhere.

Lenovo TruScale is the unified solution that gives you simplified access to:

- The industry's broadest portfolio – from pocket to cloud – all delivered as a service
- A single-contract framework for full visibility and accountability
- The global scale to rapidly and securely build teams from anywhere
- Flexible fixed and metered pay-as-you-go models with minimal upfront cost
- The growth-driving combination of hardware, software, infrastructure, and solutions – all from one single provider with one point of accountability.

For information about Lenovo TruScale offerings that are available in your region, contact your local Lenovo sales representative or business partner.

Regulatory compliance

The SR250 V2 conforms to the following standards:

- ANSI/UL 62368-1
- IEC 62368-1 (CB Certificate and CB Test Report)
- FCC - Verified to comply with Part 15 of the FCC Rules, Class A
- Canada ICES-003, issue 7, Class A
- CSA C22.2 No. 62368-1
- CISPR 32, Class A, CISPR 35
- Argentina IEC 60950-1
- Japan VCCI, Class A
- Taiwan BSMI CNS13438, Class A; CNS14336-1; Section 5 of CNS15663
- CE, UKCA Mark (EN55032 Class A, EN62368-1, EN55024, EN55035, EN61000-3-2, EN61000-3-3, (EU) 2019/424, and EN50581-1 (RoHS))
- Korea KN32, Class A, KN35
- Russia, Belorussia and Kazakhstan, TP EAC 037/2016 (for RoHS)
- Russia, Belorussia and Kazakhstan, EAC: TP TC 004/2011 (for Safety); TP TC 020/2011 (for EMC)
- Australia/New Zealand AS/NZS CISPR 32, Class A; AS/NZS 62368.1
- UL Green Guard, UL2819
- EPEAT (NSF/ ANSI 426) Bronze
- China CCC certificate, GB17625.1; GB4943.1; GB/T9254
- China CECP certificate, CQC3135
- China CELP certificate, HJ 2507-2011
- Japanese Energy-Saving Act
- Mexico NOM-019
- TUV-GS (EN62368-1, and EK1-ITB2000)
- India BIS 13252 (Part 1)
- Germany GS
- Brazil INMETRO
- South Africa NRCS LOA
- Ukraine UkrCEPRO
- Morocco CMIM Certification (CM)
- EU2019/424 Energy Related Product (ErP Lot9)

External drive enclosures

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

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

<http://datacentersupport.lenovo.com>

Table 45. External drive enclosures

Model	Description
4587HC1	Lenovo Storage D1212 Disk Expansion Enclosure (2U enclosure with 12x LFF drive bays)
4587HC2	Lenovo Storage D1224 Disk Expansion Enclosure (2U enclosure with 24x SFF drive bays)
6413HC1	Lenovo Storage D3284 High Density Expansion Enclosure (5U enclosure with 84x LFF drive bays)
7DAHCTO1WW	Lenovo ThinkSystem D4390 Direct Attached Storage (4U enclosure with 90x LFF drive bays)

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

- Lenovo Storage D1212 and D1224
<http://lenovopress.lenovo.com/lp0512>
- Lenovo Storage D3284
<http://lenovopress.lenovo.com/lp0513>
- Lenovo ThinkSystem D4390
<https://lenovopress.lenovo.com/lp1681>

External storage systems

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

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

External backup units

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

Table 46. External USB backup options

Part number	Description
External RDX USB dock	
4T27A10725	ThinkSystem RDX External USB 3.0 Dock
External RDX cartridges	
7TP7A01601	ThinkSystem RDX 500GB Cartridge
7TP7A01602	ThinkSystem RDX 1TB Cartridge

Part number	Description
7TP7A01603	ThinkSystem RDX 2TB Cartridge
7TP7A04318	ThinkSystem RDX 4TB Cartridge

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

The following table lists the available external SAS tape backup options.

Tip: Verify the end-to-end support of an IBM tape backup solution through the IBM System Storage Interoperation Center (SSIC): <http://www.ibm.com/systems/support/storage/ssic>

Table 47. External SAS backup options

Part number	Description
External SAS tape backup drives	
6160S6E	IBM TS2260 Tape Drive Model H6S
6160S7E	IBM TS2270 Tape Drive Model H7S
6160S8E	IBM TS2280 Tape Drive Model H8S
6160S9E	IBM TS2290 Tape Drive Model H9S
External SAS tape backup autoloaders	
6171S6R	IBM TS2900 Tape Autoloader w/LTO6 HH SAS
6171S7R	IBM TS2900 Tape Autoloader w/LTO7 HH SAS
6171S8R	IBM TS2900 Tape Autoloader w/LTO8 HH SAS
6171S9R	IBM TS2900 Tape Autoloader w/LTO9 HH SAS
External tape backup libraries	
6741A1F	IBM TS4300 3U Tape Library Base Unit
6741B1F	IBM TS4300 3U Tape Library Base Unit - Max 48U
6741A3F	TS4300 Tape Library Expansion Unit
6741B3F	IBM TS4300 3U Tape Library Expansion Unit - Max 48U
SAS backup drives for TS4300 Tape Library	
01KP934	LTO 6 HH SAS Drive
01KP937	LTO 7 HH SAS Drive
01KP953	LTO 8 HH SAS Drive
02JH836	LTO 9 HH SAS Drive

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

Rack cabinets

The following table lists the supported rack cabinets.

Table 48. Rack cabinets

Model	Description
7D3GCTO1WW	6U 800mm Deep Micro Datacenter Rack
7D3JCTO1WW	6U 1200mm Deep Micro Datacenter Rack
7D2MCTO1WW	6U Acoustic 1200mm Deep Micro Datacenter Rack
7D2NCTO1WW	12U 1200mm Deep Micro Datacenter Rack
7D2PCTO1WW	18U 1200mm Deep Micro Datacenter Rack
93072RX	25U Standard Rack (1000mm)
93072PX	25U Static S2 Standard Rack (1000mm)
93604PX	42U 1200mm Deep Dynamic Rack
93614PX	42U 1200mm Deep Static Rack
93634PX	42U 1100mm Dynamic Rack
93634EX	42U 1100mm Dynamic Expansion Rack
93074RX	42U Standard Rack (1000mm)
93084PX	42U Enterprise Rack
93084EX	42U Enterprise Expansion Rack

For specifications about these racks, see the Lenovo Rack Cabinet Reference, available from:
<https://lenovopress.com/lp1287-lenovo-rack-cabinet-reference>

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 following table lists the supported KVM consoles.

Table 49. KVM console

Part number	Description
Consoles	
4XF7A84188	ThinkSystem 18.5" LCD console (with US English keyboard)
4XF7A73009	ThinkSystem 18.5" LCD console (with US English keyboard)
17238BX	1U 18.5" Standard Console (without keyboard - see the next table)

The following table lists the keyboards supported with the 1U 18.5" Standard Console (now withdrawn).

Note: These keyboards are not supported with the ThinkSystem 18.5" LCD Console.

Table 50. Keyboards for 1U 18.5" Standard Console

Part number	Description
7ZB7A05469	ThinkSystem Keyboard w/ Int. Pointing Device USB - Arabic 253 RoHS v2
7ZB7A05468	ThinkSystem Keyboard w/ Int. Pointing Device USB - Belg/UK 120 RoHS v2
7ZB7A05206	ThinkSystem Keyboard w/ Int. Pointing Device USB - Czech 489 RoHS v2
7ZB7A05207	ThinkSystem Keyboard w/ Int. Pointing Device USB - Danish 159 RoHS v2
7ZB7A05208	ThinkSystem Keyboard w/ Int. Pointing Device USB - Dutch 143 RoHS v2
7ZB7A05210	ThinkSystem Keyboard w/ Int. Pointing Device USB - Fr/Canada 445 RoHS v2
7ZB7A05209	ThinkSystem Keyboard w/ Int. Pointing Device USB - French 189 RoHS v2
7ZB7A05211	ThinkSystem Keyboard w/ Int. Pointing Device USB - German 129 RoHS v2
7ZB7A05212	ThinkSystem Keyboard w/ Int. Pointing Device USB - Greek 219 RoHS v2
7ZB7A05213	ThinkSystem Keyboard w/ Int. Pointing Device USB - Hebrew 212 RoHS v2
7ZB7A05214	ThinkSystem Keyboard w/ Int. Pointing Device USB - Hungarian 208 RoHS v2
7ZB7A05215	ThinkSystem Keyboard w/ Int. Pointing Device USB - Italian 141 RoHS v2
7ZB7A05216	ThinkSystem Keyboard w/ Int. Pointing Device USB - Japanese 194 RoHS v2
7ZB7A05217	ThinkSystem Keyboard w/ Int. Pointing Device USB - Korean 413 RoHS v2
7ZB7A05218	ThinkSystem Keyboard w/ Int. Pointing Device USB - LA Span 171 RoHS v2
7ZB7A05219	ThinkSystem Keyboard w/ Int. Pointing Device USB - Norwegian 155 RoHS v2
7ZB7A05220	ThinkSystem Keyboard w/ Int. Pointing Device USB - Polish 214 RoHS v2
7ZB7A05221	ThinkSystem Keyboard w/ Int. Pointing Device USB - Portugese 163 RoHS v2
7ZB7A05222	ThinkSystem Keyboard w/ Int. Pointing Device USB - Russian 441 RoHS v2
7ZB7A05223	ThinkSystem Keyboard w/ Int. Pointing Device USB - Slovak 245 RoHS v2
7ZB7A05231	ThinkSystem Keyboard w/ Int. Pointing Device USB - Slovenian 234 RoHS v2
7ZB7A05224	ThinkSystem Keyboard w/ Int. Pointing Device USB - Spanish 172 RoHS v2
7ZB7A05225	ThinkSystem Keyboard w/ Int. Pointing Device USB - Swed/Finn 153 RoHS v2
7ZB7A05226	ThinkSystem Keyboard w/ Int. Pointing Device USB - Swiss F/G 150 RoHS v2
7ZB7A05227	ThinkSystem Keyboard w/ Int. Pointing Device USB - Thai 191 RoHS v2
7ZB7A05467	ThinkSystem Keyboard with Int. Pointing Device USB - Trad Chinese/US 467 RoHS v2
7ZB7A05228	ThinkSystem Keyboard w/ Int. Pointing Device USB - Turkish 179 RoHS v2
7ZB7A05229	ThinkSystem Keyboard w/ Int. Pointing Device USB - UK Eng 166 RoHS v2
7ZB7A05470	ThinkSystem Keyboard w/ Int. Pointing Device USB - US Eng 103P RoHS v2
7ZB7A05230	ThinkSystem Keyboard w/ Int. Pointing Device USB - US Euro 103P RoHS v2

The following table lists the available KVM switches and the options that are supported with them.

Table 51. KVM switches and options

Part number	Description
KVM Console switches	
1754D1T	ThinkSystem Digital 2x1x16 KVM Switch (DVI video output port)
1754A1T	ThinkSystem Analog 1x8 KVM Switch (DVI video output port)
1754D2X	Global 4x2x32 Console Manager (GCM32)
1754D1X	Global 2x2x16 Console Manager (GCM16)
1754A2X	Local 2x16 Console Manager (LCM16)
1754A1X	Local 1x8 Console Manager (LCM8)
Cables for ThinkSystem Digital and Analog KVM Console switches	
4X97A11108	ThinkSystem VGA to DVI Conversion Cable
4X97A11109	ThinkSystem Single-USB Conversion Cable for Digital KVM
4X97A11107	ThinkSystem Dual-USB Conversion Cable for Digital KVM
4X97A11106	ThinkSystem USB Conversion Cable for Analog KVM
Cables for GCM and LCM Console switches	
43V6147	Single Cable USB Conversion Option (UCO)
39M2895	USB Conversion Option Pack
46M5383	Virtual Media Conversion Option Gen2 (VCO2)
46M5382	Serial Conversion Option (SCO)

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

Power distribution units

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

Table 52. Power distribution units

Part number	Feature code	Description	ANZ	ASEAN	Brazil	EET	MEA	RUCIS	WE	HTK	INDIA	JAPAN	LA	NA	PRC
0U Basic PDUs															
4PU7A93176	C0QH	0U 36 C13 and 6 C19 Basic 32A 1 Phase PDU v2	Y	Y	Y	Y	Y	Y	Y	Y	Y	N	Y	Y	Y
4PU7A93169	C0DA	0U 36 C13 and 6 C19 Basic 32A 1 Phase PDU	Y	Y	Y	Y	Y	Y	Y	Y	Y	N	Y	Y	Y
4PU7A93177	C0QJ	0U 24 C13/C15 and 24 C13/C15/C19 Basic 32A 3 Phase WYE PDU v2	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
4PU7A93170	C0D9	0U 24 C13/C15 and 24 C13/C15/C19 Basic 32A 3 Phase WYE PDU	Y	Y	Y	Y	Y	Y	Y	Y	Y	N	Y	Y	Y
00YJ776	ATZY	0U 36 C13/6 C19 24A 1 Phase PDU	N	Y	Y	N	N	N	N	N	N	Y	Y	Y	N
00YJ779	ATZX	0U 21 C13/12 C19 48A 3 Phase PDU	N	N	Y	N	N	N	Y	N	N	Y	Y	Y	N
00YJ777	ATZZ	0U 36 C13/6 C19 32A 1 Phase PDU	Y	Y	Y	Y	Y	Y	Y	Y	Y	N	N	Y	Y
00YJ778	AU00	0U 21 C13/12 C19 32A 3 Phase PDU	Y	Y	N	Y	Y	Y	Y	Y	Y	N	N	Y	Y
0U Switched and Monitored PDUs															

Part number	Feature code	Description	ANZ	ASEAN	Brazil	EET	MEA	RUCIS	WE	HTK	INDIA	JAPAN	LA	NA	PRC
4PU7A93181	C0QN	0U 21 C13/C15 and 21 C13/C15/C19 Switched and Monitored 48A 3 Phase Delta PDU v2 (60A derated)	N	Y	N	N	N	N	N	Y	N	Y	N	Y	N
4PU7A93174	C0D5	0U 21 C13/C15 and 21 C13/C15/C19 Switched and Monitored 48A 3 Phase Delta PDU (60A derated)	N	Y	N	N	N	N	N	Y	N	N	N	Y	N
4PU7A93178	C0QK	0U 20 C13 and 4 C19 Switched and Monitored 32A 1 Phase PDU v2	Y	Y	Y	Y	Y	Y	Y	Y	Y	N	Y	Y	Y
4PU7A93171	C0D8	0U 20 C13 and 4 C19 Switched and Monitored 32A 1 Phase PDU	Y	Y	Y	Y	Y	Y	Y	Y	Y	N	Y	Y	Y
4PU7A93182	C0QP	0U 18 C13/C15 and 18 C13/C15/C19 Switched and Monitored 63A 3 Phase WYE PDU v2	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
4PU7A93175	C0CS	0U 18 C13/C15 and 18 C13/C15/C19 Switched and Monitored 63A 3 Phase WYE PDU	Y	Y	Y	Y	Y	Y	Y	Y	Y	N	Y	Y	Y
4PU7A93180	C0QM	0U 18 C13/C15 and 18 C13/C15/C19 Switched and Monitored 32A 3 Phase WYE PDU v2	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
4PU7A93173	C0D6	0U 18 C13/C15 and 18 C13/C15/C19 Switched and Monitored 32A 3 Phase WYE PDU	Y	Y	Y	Y	Y	Y	Y	Y	Y	N	Y	Y	Y
4PU7A93179	C0QL	0U 16 C13/C15 and 16 C13/C15/C19 Switched and Monitored 24A 1 Phase PDU v2 (30A derated)	N	Y	N	N	N	N	N	Y	N	Y	N	Y	N
4PU7A93172	C0D7	0U 16 C13/C15 and 16 C13/C15/C19 Switched and Monitored 24A 1 Phase PDU(30A derated)	N	Y	N	N	N	N	N	Y	N	N	N	Y	N
00YJ783	AU04	0U 12 C13/12 C19 Switched and Monitored 48A 3 Phase PDU	N	N	Y	N	N	N	Y	N	N	Y	Y	Y	N
00YJ781	AU03	0U 20 C13/4 C19 Switched and Monitored 24A 1 Phase PDU	N	N	Y	N	Y	N	Y	N	N	Y	Y	Y	N
00YJ782	AU02	0U 18 C13/6 C19 Switched and Monitored 32A 3 Phase PDU	Y	Y	Y	Y	Y	Y	Y	Y	Y	N	Y	N	Y
00YJ780	AU01	0U 20 C13/4 C19 Switched and Monitored 32A 1 Phase PDU	Y	Y	Y	Y	Y	Y	Y	Y	Y	N	Y	N	Y
1U Switched and Monitored PDUs															
4PU7A90808	C0D4	1U 18 C19/C13 Switched and monitored 48A 3P WYE PDU V2 ETL	N	N	N	N	N	N	N	Y	N	Y	Y	Y	N
4PU7A81117	BNDV	1U 18 C19/C13 switched and monitored 48A 3P WYE PDU - ETL	N	N	N	N	N	N	N	N	N	N	N	Y	N
4PU7A90809	C0DE	1U 18 C19/C13 Switched and monitored 48A 3P WYE PDU V2 CE	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	N	Y
4PU7A81118	BNDW	1U 18 C19/C13 switched and monitored 48A 3P WYE PDU – CE	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	N	Y
4PU7A90810	C0DD	1U 18 C19/C13 Switched and monitored 80A 3P Delta PDU V2	N	N	N	N	N	N	N	Y	N	Y	Y	Y	N
4PU7A77467	BLC4	1U 18 C19/C13 Switched and Monitored 80A 3P Delta PDU	N	N	N	N	N	N	N	N	N	Y	N	Y	N
4PU7A90811	C0DC	1U 12 C19/C13 Switched and monitored 32A 3P WYE PDU V2	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y

Part number	Feature code	Description	ANZ	ASEAN	Brazil	EET	MEA	RUCIS	WE	HTK	INDIA	JAPAN	LA	NA	PRC
4PU7A77468	BLC5	1U 12 C19/C13 switched and monitored 32A 3P WYE PDU	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
4PU7A90812	C0DB	1U 12 C19/C13 Switched and monitored 60A 3P Delta PDU V2	N	N	N	N	N	N	N	Y	N	Y	Y	Y	N
4PU7A77469	BLC6	1U 12 C19/C13 switched and monitored 60A 3P Delta PDU	N	N	N	N	N	N	N	N	N	N	N	Y	N
46M4002	5896	1U 9 C19/3 C13 Switched and Monitored DPI PDU	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
46M4004	5894	1U 12 C13 Switched and Monitored DPI PDU	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
46M4003	5897	1U 9 C19/3 C13 Switched and Monitored 60A 3 Phase PDU	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
46M4005	5895	1U 12 C13 Switched and Monitored 60A 3 Phase PDU	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
1U Ultra Density Enterprise PDUs (9x IEC 320 C13 + 3x IEC 320 C19 outlets)															
71763NU	6051	Ultra Density Enterprise C19/C13 PDU 60A/208V/3PH	N	N	Y	N	N	N	N	N	N	Y	Y	Y	N
71762NX	6091	Ultra Density Enterprise C19/C13 PDU Module	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
1U C13 Enterprise PDUs (12x IEC 320 C13 outlets)															
39M2816	6030	DPI C13 PDU+	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
39Y8941	6010	Enterprise C13 PDU	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
1U C19 Enterprise PDUs (6x IEC 320 C19 outlets)															
39Y8948	6060	Enterprise C19 PDU	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
39Y8923	6061	Enterprise C19 3 phase PDU (60a)	N	N	Y	N	N	N	Y	N	N	N	Y	Y	N
1U Front-end PDUs (3x IEC 320 C19 outlets)															
39Y8938	6002	DPI 30amp/125V Front-end PDU with NEMA L5-30P	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
39Y8939	6003	DPI 30amp/250V Front-end PDU with NEMA L6-30P	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
39Y8934	6005	DPI 32amp/250V Front-end PDU with IEC 309 2P+Gnd	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
39Y8940	6004	DPI 60amp/250V Front-end PDU with IEC 309 2P+Gnd connector	Y	N	Y	Y	Y	Y	Y	N	N	Y	Y	Y	N
39Y8935	6006	DPI 63amp/250V Front-end PDU with IEC 309 2P+Gnd connector	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
1U NEMA PDUs (6x NEMA 5-15R outlets)															
39Y8905	5900	DPI 100-127v PDU with Fixed Nema L5-15P line cord	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Line cords for 1U PDUs that ship without a line cord															
40K9611	6504	DPI 32a Cord (IEC 309 3P+N+G)	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
40K9612	6502	DPI 32a Cord (IEC 309 P+N+G)	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
40K9613	6503	DPI 63a Cord (IEC 309 P+N+G)	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
40K9614	6500	DPI 30a Cord (NEMA L6-30P)	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
40K9615	6501	DPI 60a Cord (IEC 309 2P+G)	N	N	Y	N	N	N	Y	N	N	Y	Y	Y	N

Part number	Feature code	Description	ANZ	ASEAN	Brazil	EET	MEA	RUCIS	WE	HTK	INDIA	JAPAN	LA	NA	PRC
40K9617	6505	4.3m, 32A/230V, Souriau UTG to AS/NZS 3112 (Aus/NZ) Line Cord	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
40K9618	6506	4.3m, 32A/250V, Souriau UTG Female to KSC 8305 (S. Korea) Line Cord	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y

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

Uninterruptible power supply units

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

Table 53. Uninterruptible power supply units

Part number	Description
Rack-mounted or tower UPS units - 100-125VAC	
7DD5A001WW	RT1.5kVA 2U Rack or Tower UPS-G2 (100-125VAC)
55941AX	RT1.5kVA 2U Rack or Tower UPS (100-125VAC)
55942AX	RT2.2kVA 2U Rack or Tower UPS (100-125VAC)
7DD5A003WW	RT3kVA 2U Rack or Tower UPS-G2 (100-125VAC)
55943AX	RT3kVA 2U Rack or Tower UPS (100-125VAC)
Rack-mounted or tower UPS units - 200-240VAC	
7DD5A002WW	RT1.5kVA 2U Rack or Tower UPS-G2 (200-240VAC)
55941KX	RT1.5kVA 2U Rack or Tower UPS (200-240VAC)
55942KX	RT2.2kVA 2U Rack or Tower UPS (200-240VAC)
7DD5A005WW	RT3kVA 2U Rack or Tower UPS-G2 (200-240VAC)
55943KX	RT3kVA 2U Rack or Tower UPS (200-240VAC)
7DD5A007WW	RT5kVA 3U Rack or Tower UPS-G2 (200-240VAC)
55945KX	RT5kVA 3U Rack or Tower UPS (200-240VAC)
7DD5A008WW	RT6kVA 3U Rack or Tower UPS-G2 (200-240VAC)
55946KX	RT6kVA 3U Rack or Tower UPS (200-240VAC)
55948KX	RT8kVA 6U Rack or Tower UPS (200-240VAC)
7DD5A00AWW	RT11kVA 6U Rack or Tower UPS-G2 (200-240VAC)
55949KX	RT11kVA 6U Rack or Tower UPS (200-240VAC)
55943KT†	ThinkSystem RT3kVA 2U Standard UPS (200-230VAC) (2x C13 10A, 2x GB 10A, 1x C19 16A outlets)
55943LT†	ThinkSystem RT3kVA 2U Long Backup UPS (200-230VAC) (2x C13 10A, 2x GB 10A, 1x C19 16A outlets)
55946KT†	ThinkSystem RT6kVA 5U UPS (200-230VAC) (2x C13 10A outlets, 1x Terminal Block output)
5594XKT†	ThinkSystem RT10kVA 5U UPS (200-230VAC) (2x C13 10A outlets, 1x Terminal Block output)
Rack-mounted or tower UPS units - 380-415VAC	
55948PX	RT8kVA 6U 3:1 Phase Rack or Tower UPS (380-415VAC)
55949PX	RT11kVA 6U 3:1 Phase Rack or Tower UPS (380-415VAC)

† Only available in China and the Asia Pacific market.

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

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

Lenovo Financial Services

Why wait to obtain the technology you need now? No payments for 90 days and predictable, low monthly payments make it easy to budget for your Lenovo solution.

- **Flexible**

Our in-depth knowledge of the products, services and various market segments allows us to offer greater flexibility in structures, documentation and end of lease options.

- **100% Solution Financing**

Financing your entire solution including hardware, software, and services, ensures more predictability in your project planning with fixed, manageable payments and low monthly payments.

- **Device as a Service (DaaS)**

Leverage latest technology to advance your business. Customized solutions aligned to your needs. Flexibility to add equipment to support growth. Protect your technology with Lenovo's Premier Support service.

- **24/7 Asset management**

Manage your financed solutions with electronic access to your lease documents, payment histories, invoices and asset information.

- **Fair Market Value (FMV) and \$1 Purchase Option Leases**

Maximize your purchasing power with our lowest cost option. An FMV lease offers lower monthly payments than loans or lease-to-own financing. Think of an FMV lease as a rental. You have the flexibility at the end of the lease term to return the equipment, continue leasing it, or purchase it for the fair market value. In a \$1 Out Purchase Option lease, you own the equipment. It is a good option when you are confident you will use the equipment for an extended period beyond the finance term. Both lease types have merits depending on your needs. We can help you determine which option will best meet your technological and budgetary goals.

Ask your Lenovo Financial Services representative about this promotion and how to submit a credit application. For the majority of credit applicants, we have enough information to deliver an instant decision and send a notification within minutes.

Seller training courses

The following sales training courses are offered for employees and partners (login required). Courses are listed in date order.

1. **Family Portfolio: ThinkSystem Rack and Tower Servers Powered by Intel**

2025-06-23 | 25 minutes | Employees and Partners

This course is designed to give Lenovo sales and partner representatives a foundation of the ThinkSystem Intel Rack and Tower server family.

After completing this course, you will be able to:

- Identify products within this ThinkSystem server family
- Describe features of this family
- Recognize when a specific product should be selected

Tags: Server, ThinkSystem

Published: 2025-06-23

Length: 25 minutes

Start the training:

Employee link: Grow@Lenovo

Partner link: [Lenovo 360 Learning Center](#)

Course code: SXXW1204r14

2. **ThinkSystem Rack and Tower Introduction for ISO Client Managers**

2025-06-16 | 20 minutes | Employees Only

In this course, you will learn about Lenovo's Data Center Portfolio, its ThinkSystem Family and the key features of the Rack and Tower servers. It will equip you with foundational knowledge which you can then expand upon by participating in the facilitated session of the curriculum.

Tags: Server, ThinkSystem

Published: 2025-06-16

Length: 20 minutes

Start the training:

Employee link: Grow@Lenovo

Course code: DSRT0101r2_JP

3. **VTT HPC: AI and the Impact on the Environment**

2025-06-11 | 58 minutes | Employees Only

Please join us as Matthew Ziegler, Director of Lenovo Neptune and Sustainability speaks with us about AI and the Impact on the Environment.

Topics will include:

- Why is ESG essential for your customer?
- How to find and read an eco declaration
- What is a product carbon footprint?
- Demo of the Lenovo Capacity Planner

Tags: Advanced DataCenter, Artificial Intelligence (AI), Environmental Social Governance (ESG), High-Performance Computing (HPC), Server

Published: 2025-06-11

Length: 58 minutes

Start the training:

Employee link: [Grow@Lenovo](#)

Course code: DVHPC223

4. **Lenovo Data Center Product Portfolio**

2025-06-11 | 20 minutes | Employees and Partners

This course introduces the Lenovo data center portfolio, and covers servers, storage, storage networking, and software-defined infrastructure products. After completing this course about Lenovo data center products, you will be able to identify product types within each data center family, describe Lenovo innovations that this product family or category uses, and recognize when a specific product should be selected.

Course objectives:

1. Identify product types within each data center family
2. Describe the features of the product family or category
3. Recognize when a specific product should be selected

Tags: Advanced DataCenter, DataCenter Products, Server, ThinkAgile, ThinkEdge, ThinkSystem

Published: 2025-06-11

Length: 20 minutes

Start the training:

Employee link: [Grow@Lenovo](#)

Partner link: [Lenovo 360 Learning Center](#)

Course code: SXXW1110r8

5. **Partner Technical Webinar - RTX Pro 6000**

2025-05-22 | 60 minutes | Employees and Partners

In this 60-minute replay, Allen Bourgoyne, Product Marketing for NVIDIA, presented the newly announced RTX Pro 6000 Blackwell Server Edition GPU.

Tags: Artificial Intelligence (AI)

Published: 2025-05-22

Length: 60 minutes

Start the training:

Employee link: Grow@Lenovo

Partner link: [Lenovo 360 Learning Center](#)

Course code: MAY1525

6. **Partner Technical Webinar - DCSC Improvements - MAY0225**

2025-05-05 | 60 minutes | Employees and Partners

In this 60-minute replay, new improvements to DCSC were reviewed. Joe Allen, Lenovo NA LETS, presented the new PCI wizard and discussed RAID adapters. Ryan Tuttle, Lenovo NA LETS presented Spreadsheet import, Autocorrect and Expanded selections on by default. Joe Murphy, Lenovo NA LETS closed out with review of Error Message improvements and location of ThinkAgile MX and VX in the DCSC menus.

Tags: Technical Sales

Published: 2025-05-05

Length: 60 minutes

Start the training:

Employee link: Grow@Lenovo

Partner link: [Lenovo 360 Learning Center](#)

Course code: MAY0225

7. **Family Portfolio: Storage Controller Options**

2025-03-03 | 25 minutes | Employees and Partners

This course covers the storage controller options available for use in Lenovo servers. The classes of storage controller are discussed, along with a discussion of where they are used, and which to choose.

After completing this course, you will be able to:

- Describe the classes of storage controllers
- Discuss where each controller class is used
- Describe the available options in each controller class

Tags: Sales, Storage

Published: 2025-03-03

Length: 25 minutes

Start the training:

Employee link: Grow@Lenovo

Partner link: [Lenovo 360 Learning Center](#)

Course code: SXXW1111r2

8. **ThinkSystem Rack and Tower Introduction for ISO Client Managers**

2024-12-10 | 20 minutes | Employees Only

In this course, you will learn about Lenovo's Data Center Portfolio, its ThinkSystem Family and the key features of the Rack and Tower servers. It will equip you with foundational knowledge which you can then expand upon by participating in the facilitated session of the curriculum.

Course Objectives:

- By the end of this course, you should be able to:
- Identify Lenovo's main data center brands.
- Describe the key components of the ThinkSystem Family servers.
- Differentiate between the Rack and Tower servers of the ThinkSystem Family.
- Understand the value Rack and Tower servers can provide to customers.

Tags: Server, ThinkSystem

Published: 2024-12-10

Length: 20 minutes

Start the training:

Employee link: Grow@Lenovo

Course code: DSRT0101r2

9. **Partner Technical Webinar - Server Update with Mark Bica**

2024-11-26 | 60 minutes | Employees and Partners

In this 60-minute replay, Mark Bica, Lenovo Product Manager gave an update on the server portfolio. Mark presented on the new V4 Intel servers with Xeon 6 CPUs. He reviewed where the new AMD 5th Gen EPYC CPUs will be used in our servers. He followed with a review of the GPU dense servers including SR680, SR680a, SR575 and SR780a. Mark concluded with a review of the SC777 and SC750 that were introduced at TechWorld.

Tags: Server

Published: 2024-11-26

Length: 60 minutes

Start the training:

Employee link: Grow@Lenovo

Partner link: [Lenovo 360 Learning Center](#)

Course code: 112224

10. **Partner Technical Webinar - LenovoPress updates and LPH Demo**
2024-11-13 | 60 minutes | Employees and Partners

In this 60-minute replay, we had 3 topics. First, David Watts, Lenovo Sr Manager LenovoPress, gave an update on LenovoPress and improvements to finding Seller Training Courses (both partner and Lenovo). Next, Ryan Tuttle, Lenovo LETS Solution Architect, gave a demo of Lenovo Partner Hub (LPH) including how to find replays of Partner Webinars in LPL. Finally, Joe Murphy, Lenovo Sr Manager of LETS NA, gave a quick update on the new Stackable Warranty Options in DCSC.

Tags: Technical Sales

Published: 2024-11-13

Length: 60 minutes

Start the training:

Employee link: Grow@Lenovo

Partner link: [Lenovo 360 Learning Center](#)

Course code: 110824

11. **Virtual Facilitated Session - ThinkSystem Rack and Tower Primer for ISO Client Managers**
2024-10-31 | 90 minutes | Employees Only

In this Virtual Instructor-Led Training Session, ISO Client Managers will be able to build on the knowledge gained in Module 1 (eLearning) of the ThinkSystem Rack and Tower Server Primer for ISO Client Managers curriculum.

IMPORTANT! Module 1 (eLearning) must be completed to be eligible to participate in this session. Please note that places are subject to availability. If you are selected, you will receive the invite to this session via email.

Tags: Sales, Server, ThinkSystem

Published: 2024-10-31

Length: 90 minutes

Start the training:

Employee link: Grow@Lenovo

Course code: DSRT0102

12. **Partner Technical Webinar - OneIQ**
2024-07-15 | 60 minutes | Employees and Partners

In this 60-minute replay, Peter Grant, Field CTO for OneIQ, reviewed and demo'd the capabilities of OneIQ including collecting data and analyzing. Additionally, Peter and the team discussed how specific partners (those with NA Channel SA coverage) will get direct access to OneIQ and other partners can get access to OneIQ via Distribution or the NA LETS team.

Tags: Technical Sales

Published: 2024-07-15

Length: 60 minutes

Start the training:

Employee link: Grow@Lenovo

Partner link: [Lenovo 360 Learning Center](#)

Course code: 071224

13. **SAP Webinar for Lenovo Sellers: Lenovo Portfolio Update for SAP Landscapes**
2024-06-04 | 60 minutes | Employees Only

Join Mark Kelly, Advisory IT Architect with the Lenovo Global SAP Center of Competence as he discusses:

- Challenges in the SAP environment
- Lenovo On-premise Solutions for SAP
- Lenovo support resources for SAP solutions

Tags: SAP, ThinkAgile, ThinkEdge, ThinkSystem

Published: 2024-06-04

Length: 60 minutes

Start the training:

Employee link: [Grow@Lenovo](#)

Course code: DSAPF101

14. **VTT Cloud Architecture: NVIDIA Using Cloud for GPUs and AI**
2024-05-22 | 60 minutes | Employees Only

Join JD Dupont, NVIDIA Head of Americas Sales, Lenovo partnership and Veer Mehta, NVIDIA Solution Architect on an interactive discussion about cloud to edge, designing cloud Solutions with NVIDIA GPUs and minimizing private\hybrid cloud OPEX with GPUs. Discover how you can use what is done at big public cloud providers for your customers. We will also walk through use cases and see a demo you can use to help your customers.

Tags: Artificial Intelligence (AI), Cloud, Nvidia, Software Defined Infrastructure (SDI), Technical Sales

Published: 2024-05-22

Length: 60 minutes

Start the training:

Employee link: [Grow@Lenovo](#)

Course code: DVCLD212

15. Family Introduction: Rack and Tower

2024-01-19 | 11 minutes | Employees and Partners

This course is designed to give Lenovo sales and partner representatives a foundation on the characteristics of the rack and tower server family. As an introduction to the family, this course also includes positioning, when to use a product, and keywords a client may use when discussing a rack product.

Course Objectives:

- Family Characteristics
- Priority Positioning
- Product Usage
- Keywords and Phrases

Tags: Server

Published: 2024-01-19

Length: 11 minutes

Start the training:

Employee link: Grow@Lenovo

Partner link: [Lenovo 360 Learning Center](#)

Course code: SXXW1100r3

Related publications and links

For more information, see these resources:

- ThinkSystem SR250 V2 product page
<https://www.lenovo.com/us/en/p/data-center/servers/racks/thinksystem-sr250-v2/len21ts0003>
- ThinkSystem SR250 V2 interactive 3D tour
<https://lenovopress.com/lp1570-3d-tour-thinksystem-sr250-v2>
- ThinkSystem SR250 V2 drivers and support
<http://datacentersupport.lenovo.com/products/servers/thinksystem/sr250v2/7d7q/downloads>
- ThinkSystem SR250 V2 product publications:
<http://thinksystem.lenovofiles.com/help/index.jsp>
 - Quick Start
 - Tower-to-Rack Conversion Kit Installation Instructions
 - Setup Guide
 - Maintenance Manual
 - Lenovo XClarity Provisioning Manager User Guide
- ServerProven hardware compatibility:
<http://www.lenovo.com/us/en/serverproven>

Related product families

Product families related to this document are the following:

- [1-Socket Rack Servers](#)
- [ThinkSystem SR250 V2 Server](#)

Notices

Lenovo may not offer the products, services, or features discussed in this document in all countries. Consult your local Lenovo representative for information on the products and services currently available in your area. Any reference to a Lenovo product, program, or service is not intended to state or imply that only that Lenovo product, program, or service may be used. Any functionally equivalent product, program, or service that does not infringe any Lenovo intellectual property right may be used instead. However, it is the user's responsibility to evaluate and verify the operation of any other product, program, or service. Lenovo may have patents or pending patent applications covering subject matter described in this document. The furnishing of this document does not give you any license to these patents. You can send license inquiries, in writing, to:

Lenovo (United States), Inc.
8001 Development Drive
Morrisville, NC 27560
U.S.A.
Attention: Lenovo Director of Licensing

LENOVO PROVIDES THIS PUBLICATION "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESS OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF NON-INFRINGEMENT, MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. Some jurisdictions do not allow disclaimer of express or implied warranties in certain transactions, therefore, this statement may not apply to you.

This information could include technical inaccuracies or typographical errors. Changes are periodically made to the information herein; these changes will be incorporated in new editions of the publication. Lenovo may make improvements and/or changes in the product(s) and/or the program(s) described in this publication at any time without notice.

The products described in this document are not intended for use in implantation or other life support applications where malfunction may result in injury or death to persons. The information contained in this document does not affect or change Lenovo product specifications or warranties. Nothing in this document shall operate as an express or implied license or indemnity under the intellectual property rights of Lenovo or third parties. All information contained in this document was obtained in specific environments and is presented as an illustration. The result obtained in other operating environments may vary. Lenovo may use or distribute any of the information you supply in any way it believes appropriate without incurring any obligation to you.

Any references in this publication to non-Lenovo Web sites are provided for convenience only and do not in any manner serve as an endorsement of those Web sites. The materials at those Web sites are not part of the materials for this Lenovo product, and use of those Web sites is at your own risk. Any performance data contained herein was determined in a controlled environment. Therefore, the result obtained in other operating environments may vary significantly. Some measurements may have been made on development-level systems and there is no guarantee that these measurements will be the same on generally available systems. Furthermore, some measurements may have been estimated through extrapolation. Actual results may vary. Users of this document should verify the applicable data for their specific environment.

© Copyright Lenovo 2025. All rights reserved.

This document, LP1549, was created or updated on April 15, 2025.

Send us your comments in one of the following ways:

- Use the online Contact us review form found at:
<https://lenovopress.lenovo.com/LP1549>
- Send your comments in an e-mail to:
comments@lenovopress.com

This document is available online at <https://lenovopress.lenovo.com/LP1549>.

Trademarks

Lenovo and the Lenovo logo are trademarks or registered trademarks of Lenovo in the United States, other countries, or both. A current list of Lenovo trademarks is available on the Web at <https://www.lenovo.com/us/en/legal/copytrade/>.

The following terms are trademarks of Lenovo in the United States, other countries, or both:

Lenovo®
ServerProven®
System x®
ThinkAgile®
ThinkShield®
ThinkSystem®
XClarity®

The following terms are trademarks of other companies:

AMD is a trademark of Advanced Micro Devices, Inc.

Intel®, Celeron®, Pentium®, and Xeon® are trademarks of Intel Corporation or its subsidiaries.

Linux® is the trademark of Linus Torvalds in the U.S. and other countries.

Microsoft®, ActiveX®, Hyper-V®, PowerShell, Windows PowerShell®, Windows Server®, and Windows® are trademarks of Microsoft Corporation in the United States, other countries, or both.

SPECpower® is a trademark of the Standard Performance Evaluation Corporation (SPEC).

IBM®, IBM Security®, and ibm.com® are trademarks of IBM in the United States, other countries, or both.

Other company, product, or service names may be trademarks or service marks of others.