

Lenovo ThinkSystem ST550 Server (Xeon SP Gen 1 / Gen 2)

Product Guide

The Lenovo ThinkSystem ST550 2-socket 4U rack-mountable tower server provides outstanding performance and industry-leading reliability. It is ideal for small-to-medium businesses, distributed enterprises, retail, educational institutions, and remote/branch offices.

The ST550 server now supports second-generation Intel Xeon Processor Scalable Family processors with up to 768 GB of TruDDR4 system memory.

Suggested uses: business workloads such as e-mail, workgroup applications, file & print, system management, web serving, and point-of-sale applications



Figure 1. Lenovo ThinkSystem ST550

Did you know?

The ThinkSystem ST550 is an enterprise-grade server with support for hot-swap power supplies, fans, and drives. It also 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 ST550 easy to deploy, integrate, service, and manage.

Key features

The ThinkSystem ST550 is a high-performance dual-socket tower server based on the second-generation Intel Xeon Scalable processors, supporting a wide range of processors to suit a wide range of budgets and application requirements.

Scalability and performance

The ST550 offers the following features to boost performance, improve scalability, and reduce costs:

- Improves productivity by offering superior system performance with up to two processors, each with up to 22 cores, and core speeds up to 3.8 GHz.
- Hyper-Threading Technology to maximize the concurrent execution of multithreaded applications, available with most processors.
- Intelligent and adaptive system performance with energy-efficient Intel Turbo Boost Technology, available with most processors, allows CPU cores to run at maximum speeds during peak workloads by temporarily going beyond processor thermal design power (TDP).
- Intel Virtualization Technology integrates hardware-level virtualization hooks that allow operating system vendors to better use the hardware for virtualization workloads.
- Intel Speed Select Technology provides improvements in server utilization and guaranteed per-core performance service levels with more granular control over processor performance.
- Intel Deep Learning Boost (Vector Neural Network Instruction set or VNNI) is designed to deliver significant, more efficient Deep Learning (Inference) acceleration for high-performance Artificial Intelligence (AI) workloads.
- Intel Advanced Vector Extensions 512 (AVX-512) enable acceleration of enterprise-class workloads, including databases and enterprise resource planning (ERP).
- Each processor has six memory channels with memory speeds of up to 2933 MHz to help maximize system performance
- Up to 768 GB of memory capacity using 12x 64GB DIMMs
- The 12 Gbps SAS internal storage connectivity doubles the data transfer rate compared to 6 Gb SAS solutions to maximize performance of storage I/O-intensive applications.
- Flexible storage configurations support either 2.5-inch or 3.5-inch hot-swap drive bays or a combination of the two (hybrid configuration). Configurations with 3.5-inch simple-swap drive bays are also available.
 - Up to 16x 2.5-inch drive bays with two 5.25-inch media drive bays available
 - Up to 20x 2.5-inch drive bays with the media bays converted to 4x 2.5-inch drive bays
 - Up to 8x 3.5-inch drive bays with two 5.25-inch media drive bays available
 - Up to 8x 3.5-inch + 4x 2.5-inch drive bays with the media bay conversion
 - Up to 8x 3.5-inch simple-swap drive bays
- 3.5-inch drive bays support SAS and SATA HDDs and SSDs. 2.5-inch drive bays support SAS and SATA HDDs and SSDs, as well as NVMe drives.
- Support for up to four NVMe PCIe SSDs in a 2.5-inch form factor maximizes drive I/O performance, in terms of throughput, bandwidth, and latency.
- 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 Broadcom provide 12 Gb SAS connectivity to the drive backplanes. A variety of RAID adapters are available, with cache up to 4 GB and support for 20 drives on a single controller.
- Supports a new Lenovo patented-design M.2 adapter for convenient operating system boot functions. Available M.2 adapters support either one M.2 drive or two M.2 drives in a RAID 1 configuration for greater boot drive performance and reliability.

- The server has two integrated Gigabit Ethernet ports.
- The server offers PCI Express 3.0 I/O expansion capabilities that improve the theoretical maximum bandwidth by almost 100% (8 GT/ps per link using 128b/130b encoding) compared to the previous generation of PCI Express 2.0 (5 GT/s per link using 8b/10b encoding).
- The server offers up to six PCIe 3.0 I/O expansion slots plus one slot reserved for the M.2 adapter
- Support for up to two NVIDIA graphics processing units (GPUs) to maximize computing power.

Availability and serviceability

The ST550 provides the following features to simplify serviceability and increase system uptime:

- Designed to run 24 hours a day, 7 days a week
- The server offers Single Device Data Correction (SDDC, also known as Chipkill), Adaptive Double-Device Data Correction (ADDDC, also known as Redundant Bit Steering or RBS), memory mirroring, and memory rank sparing for redundancy in the event of a non-correctable memory failure.
- The server offers hot-swap (HS) SSDs and HDDs, and supports RAID redundancy for data protection and greater system uptime.
- Much like HS 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.
- The Dual M.2 Boot Adapter supports RAID-1 which enables two installed M.2 drives to be configured as a redundant pair.
- The server supports hot-swap power supplies; with two installed, they form a redundant pair to provide availability for business-critical applications. The server also offers an optional 4th fan which offers redundancy in most server configurations.
- Toolless cover removal provides easy access to upgrades and serviceable parts, such as CPU, memory, and adapter cards.
- Proactive Platform Alerts (including PFA and SMART alerts) for: processors, voltage regulators, memory, internal storage (SAS/SATA HDDs and SSDs), fans, power supplies, RAID controllers, and server ambient and sub-component temperatures. Alerts can be surfaced through the XClarity Controller management processor to managers such as Lenovo XClarity Administrator, VMware vCenter, and Microsoft System Center. These proactive alerts let you take appropriate actions in advance of possible failure, thereby increasing server uptime and application availability.
- SSDs, with no moving parts, offer significantly better reliability than mechanical HDDs, for greater uptime.
- The built-in XClarity Controller continuously monitors system parameters, triggers alerts, and performs recovery actions in case of failures to minimize downtime.
- 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.
- Auto restart in the event of a momentary loss of AC power (based on power policy setting in the XClarity Controller service processor)
- 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.
- Three-year or one-year customer-replaceable unit and onsite limited warranty, 9 x 5 next business day. Optional service upgrades are available.

Manageability and security

The following powerful systems management features simplify local and remote management of the ST550:

- 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.
- Supports Secure Boot to ensure that only a digitally signed operating system can be used. Supported with HDDs and SSDs as well as M.2 drives in the M.2 Adapter.
- 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 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.
- Physical security measures to prevent unauthorized access: Lockable side cover to prevent access to internal components, a slot at the rear of the server for a Kensington Cable. Optional additional physical security features are a lockable front security door and a chassis intrusion switch (included in some models).

Energy efficiency

The ST550 offers the following energy-efficiency features to save energy, reduce operational costs, increase energy availability, and contribute to the green environment:

- Energy-efficient planar components help lower operational costs.
- High-efficiency power supplies with 80 PLUS Platinum and Titanium certifications. Energy Star 3.0 certified.
- Intel Intelligent Power Capability powers individual processor elements on and off as needed to reduce power draw.
- Low-voltage 1.2 V DDR4 memory DIMMs use up to 20% less energy compared to 1.35 V DDR3 DIMMs.
- SSDs use as much as 80% less power than traditional spinning 2.5-inch HDDs.
- The server uses hexagonal ventilation holes, which can be grouped more densely than round holes, providing more efficient airflow through the system.
- Optional Lenovo XClarity Energy Manager provides advanced data center power notification, analysis, and policy-based management to help achieve lower heat output and reduced cooling needs.

Components and connectors

The following figure shows the front of the server.

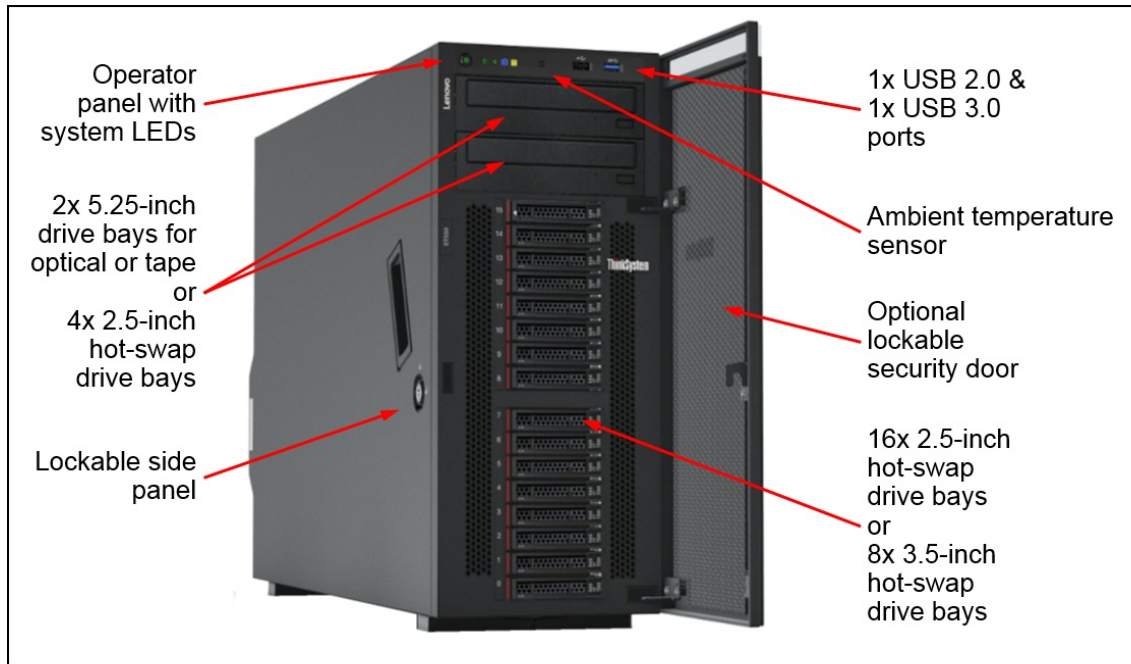


Figure 2. Front view of the ThinkSystem ST550 server

The following figure shows the rear of the server.

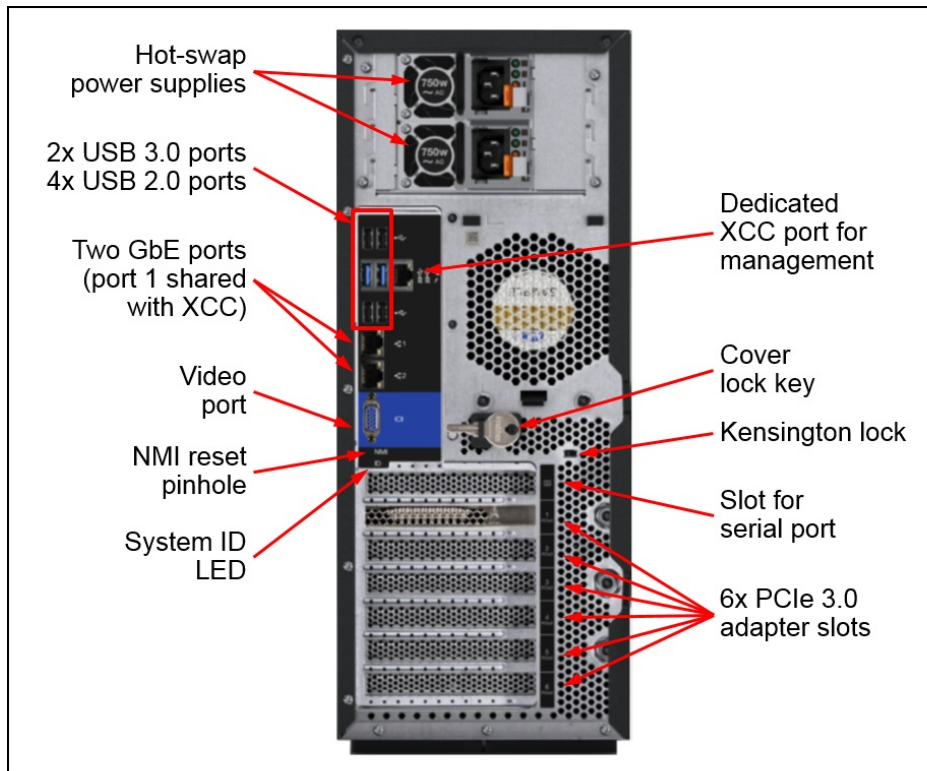


Figure 3. Rear view of the ThinkSystem ST550 server

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

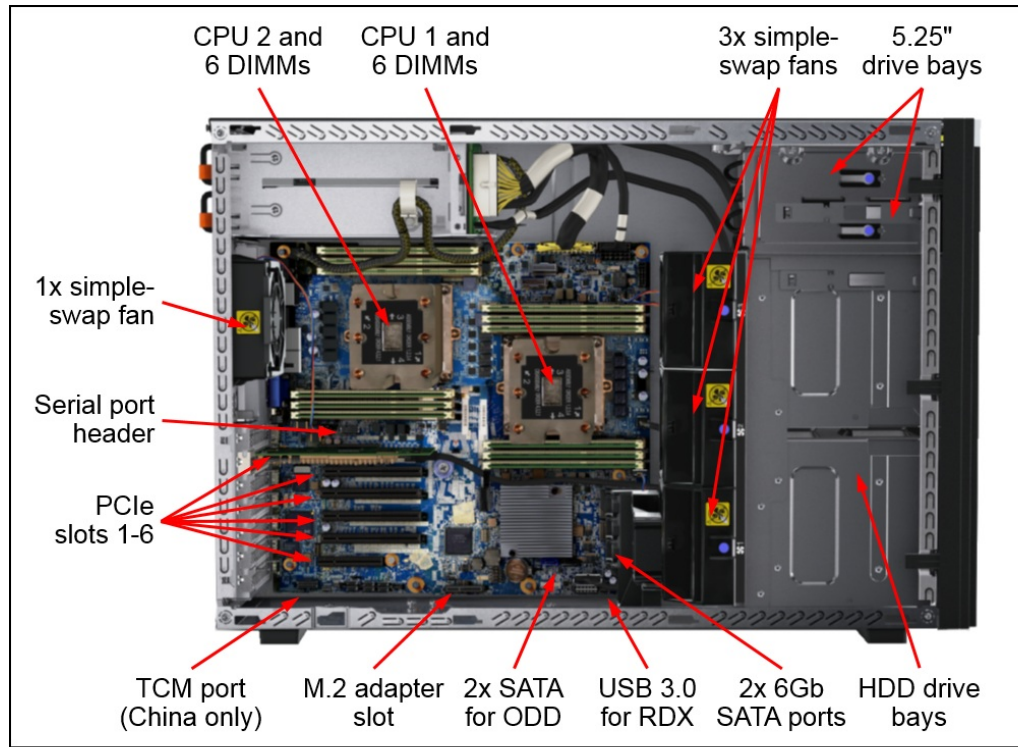


Figure 4. Internal view of the ThinkSystem ST550 server

System architecture

The following figure shows the architectural block diagram of the ST550, showing the major components and their connections.

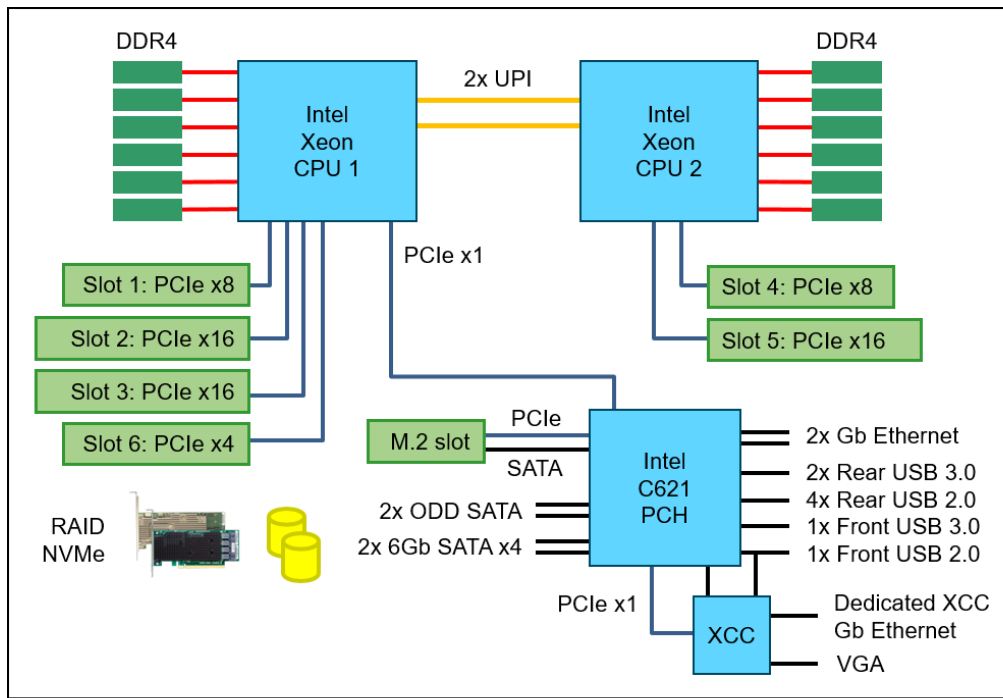


Figure 5. ST550 system architectural block diagram

Standard specifications

The following table lists the standard specifications.

Table 1. Standard specifications

| Components | Specification |
|-------------------|--|
| Machine type | 7X09 - 1 year warranty 7X10 - 3 year warranty |
| Form factor | Tower or 4U Rack. |
| Processor | One or two second-gen Intel Xeon Processor Scalable Family of processors, either Bronze, Silver, Gold or Platinum-level processors (formerly codename "Cascade Lake"). 1st Gen Intel Xeon processors are also supported. Supports processors up to 22 cores, core speeds up to 3.8 GHz, and TDP ratings up to 125W. Two Intel Ultra Path Interconnect (UPI) links at 10.4 GT/s each. |
| Chipset | Intel C621 "Lewisburg" chipset |
| Memory | Up to 12 DIMM sockets (6 DIMMs per processor) supporting Lenovo TruDDR4 DIMMs at up to 2933 MHz. RDIMMs and LRDIMMs (Load Reduced DIMMs) are supported, but memory types cannot be intermixed. |
| Memory maximums | Up to 768 GB with 12x 64 GB RDIMMs and two processors |
| Memory protection | ECC, SDDC (for x4-based memory DIMMs), ADDDC (for x4-based memory DIMMs, requires Intel Xeon Gold or Platinum processors), memory mirroring, and memory sparing. |

| Components | Specification |
|--------------------------|---|
| Disk drive bays | <p>Available configurations:</p> <ul style="list-style-type: none"> ● 8, 16, or 20x 2.5-inch SAS/SATA hot-swap (optional support for NVMe drives) ● 4 or 8x 3.5-inch SAS/SATA hot-swap ● Both 8x 3.5-inch + 4x 2.5-inch SAS/SATA hot-swap ● 4 or 8x 3.5-inch SATA simple-swap <p>Additional drive bays (except for 20-bay and hybrid configurations):</p> <ul style="list-style-type: none"> ● Two 5.25-inch drive bays for optical drives |
| Maximum internal storage | <ul style="list-style-type: none"> ● 2.5-inch drives: <ul style="list-style-type: none"> ○ 614.4TB using 20x 30.72TB 2.5-inch SAS/SATA SSDs ○ 30.72TB using 4x 7.68TB 2.5-inch NVMe SSDs ○ 48TB using 20x 2.4TB 2.5-inch HDDs ● 3.5-inch drives: <ul style="list-style-type: none"> ○ 160TB using 8x 20TB 3.5-inch HDDs ○ 122.88TB using 8x 15.36TB 3.5-inch SAS/SATA SSDs |
| Storage controller | <ul style="list-style-type: none"> ● 6 Gb Onboard SATA AHCI ● 6 Gb Onboard SATA RAID (Intel RSTe) ● 12 Gb SAS/SATA RAID adapters with up to 8GB flash-backed cache ● 12 Gb SAS/SATA HBA (non-RAID) |
| Optical drive bays | Two half-height 5.25-inch bays for optical or tape drives. Supports DVD-ROM or Multiburner. Hot-swap bays can be converted to 4x 2.5-inch hot-swap drive bays. (Not available with simple-swap drive configurations.) |
| Tape drive bays | Two half-height 5.25-inch bays for optical or tape drives. Support for one RDX drive or LTO tape drive. |
| Network interfaces | Two integrated Gigabit Ethernet 1000BASE-T ports (RJ-45) based on Intel X722 embedded controller (No 10/100 Mbps support) |
| PCI Expansion slots | <p>Up to 7 PCIe slots: 6 general purpose PCIe 3.0 slots plus one slot reserved for the M.2 adapter. General purpose slots are as follows:</p> <ul style="list-style-type: none"> ● Slot 1: PCIe 3.0 x8 (25W) FHHL ● Slot 2: PCIe 3.0 x16 (75W); FHHL ● Slot 3: PCIe 3.0 x16 (75W); FHFL ● Slot 4: PCIe 3.0 x16 (x8 wired) (25W); FHFL (requires second processor) ● Slot 5: PCIe 3.0 x16 (75W); FHFL (requires second processor) ● Slot 6: PCIe 3.0 x8 (x4 wired) (25W); FHFL <p>Slots 3 and 5 support double-wide GPUs</p> |
| Ports | <ul style="list-style-type: none"> ● Front: Two USB ports (one USB 3.0, one USB 2.0 port) ● Rear: Six USB ports (four USB 2.0, two USB 3.0), one VGA video, one RJ-45 systems management, two RJ-45 GbE network ports, optional serial port. ● Internal: One internal USB 3.0 port for RDX drive |
| Cooling | Supports ASHRAE A2 environments as well as A3/A4 with some limitations. Up to four simple-swap fans: two fans shipped standard on single processor models and three fans shipped on dual processor models or models where there are drive bays in lieu of the optical drive bays. The fourth rear-mounted fan is N+1 redundant, except for certain configurations. |
| Power supply | Up to two redundant hot-swap 550 W, 750 W or 1100 W High Efficiency Platinum AC power supplies, or 750 W High Efficiency Titanium AC power supplies. Also available is a 450 W fixed (non-hot-swap) power supply. In China only, all hot-swap power supplies also support 240V DC. |

| Components | Specification |
|-----------------------------|--|
| Hot-swap parts | Hard drives, power supplies, and fans |
| 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 (TPM), supporting TPM 1.2 or TPM 2.0. In China only, optional Trusted Cryptographic Module (TCM). Kensington cable slot. Lockable side cover. Optional lockable front security door and chassis intrusion switch (included with some models). |
| Video | G200 graphics with 16 MB memory with 2D hardware accelerator, integrated into the XClarity Controller. 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: 176 mm (6.9 in.), height: 438 mm (17.2 in.), depth: 660 mm (26 in.). See Physical and electrical specifications for details. |
| Weight | Fully configured: 36 kg (79.36 lb) |

Models

ThinkSystem ST550 models can be configured by using the [Lenovo Data Center Solution Configurator \(DCSC\)](#).

Preconfigured server models may also be available for the ST550, however these are region-specific; that is, each region may define their own server models, and not all server models are available in every region.

The following table lists the base CTO models of the ThinkSystem ST550 server.

Table 2. Base CTO models

| Machine Type/Model | Description |
|--------------------|----------------------------------|
| 7X10CTO1WW | ThinkSystem ST550 - 3yr Warranty |
| 7X09CTO1WW | ThinkSystem ST550 - 1yr Warranty |

The following tables list the available models, grouped by region.

- [Models for Australia and New Zealand](#)
- [Models for the South East Asian \(ASEAN\) market](#)
- [Models for EMEA](#)
- [Models for Hong Kong, Taiwan, Korea \(HTK\)](#)
- [Models for India](#)
- [Models for the Latin America market \(except Brazil\)](#)

Refer to the Specifications section for information about standard features of the server.

Common to all models:

- All models indicated as having the 750W power supply are using the Platinum power supply.

Models for Australia and New Zealand

Table 3. Models for Australia and New Zealand

| Model | Intel Xeon processors† | Memory | RAID | Drive bays Drives | Optical | Slots | Power supplies | Power cords | XCC Level | Physical security‡ |
|------------------|--------------------------------------|----------------------|--------|-------------------------------|---------|--------|----------------|-------------|-----------|--------------------|
| Standard models | | | | | | | | | | |
| 7X10A0AHAU | 1x Silver 4208 8C 85W 2.1G | 1x 16GB 2Rx8 2933 | 930-8i | 4x 3.5" HS / 8* Open bay | Open | 8 / 11 | 1x 750W HS | No | Std | No |
| 7X10A0AJAU | 1x Silver 4208 8C 85W 2.1G | 1x 16GB 2Rx8 2933 | 930-8i | 8x 2.5" HS / 20** Open bay | Open | 8 / 11 | 1x 750W HS | No | Std | No |
| 7X10A09WAU | 1x Silver 4209T 8C 70W 2.2G | 1x 16GB 2Rx8 2933 | 930-8i | 4x 3.5" HS / 8* Open bay | Open | 8 / 11 | 1x 750W HS | No | Std | No |
| 7X10A0A6AU | 1x Silver 4209T 8C 70W 2.2G | 1x 16GB 2Rx8 2933 | 930-8i | 8x 2.5" HS / 20** Open bay | Open | 8 / 11 | 1x 750W HS | No | Std | No |
| 7X10A09XAU | 1x Silver 4210 10C 85W 2.2G | 1x 16GB 2Rx8 2933 | 930-8i | 8x 2.5" HS / 20** Open bay | Open | 8 / 11 | 1x 750W HS | No | Std | No |
| 7X10A0AGAU | 1x Silver 4210 10C 85W 2.2G | 1x 16GB 2Rx8 2933 | 930-8i | 4x 3.5" HS / 8* Open bay | Open | 8 / 11 | 1x 750W HS | No | Std | No |
| 7X10A0ABAU | 1x Silver 4214 12C 85W 2.2G | 1x 16GB 2Rx8 2933 | 930-8i | 8x 2.5" HS / 20** Open bay | Open | 8 / 11 | 1x 750W HS | No | Std | No |
| 7X10A0AEAU | 1x Silver 4214 12C 85W 2.2G | 1x 16GB 2Rx8 2933 | 930-8i | 4x 3.5" HS / 8* Open bay | Open | 8 / 11 | 1x 750W HS | No | Std | No |
| 7X10A0ADAU | 1x Silver 4214Y 12/10/8C 85W 2.2G | 1x 16GB 2Rx8 2933 | 930-8i | 4x 3.5" HS / 8* Open bay | Open | 8 / 11 | 1x 750W HS | No | Std | No |
| 7X10A0FAU | 1x Silver 4214Y 12/10/8C 85W 2.2G | 1x 16GB 2Rx8 2933 | 930-8i | 8x 2.5" HS / 20** Open bay | Open | 8 / 11 | 1x 750W HS | No | Std | No |
| 7X10A0A1AU | 1x Silver 4215 8C 85W 2.5G | 1x 16GB 2Rx8 2933 | 930-8i | 4x 3.5" HS / 8* Open bay | Open | 8 / 11 | 1x 750W HS | No | Std | No |
| 7X10A0A4AU | 1x Silver 4215 8C 85W 2.5G | 1x 32GB 2933 | 930-8i | 8x 2.5" HS / 20** Open bay | Open | 8 / 11 | 1x 750W HS | No | Ent | No |
| 7X10A0ACAU | 1x Silver 4215 8C 85W 2.5G | 1x 16GB 2Rx8 2933 | 930-8i | 8x 2.5" HS / 20** Open bay | Open | 8 / 11 | 1x 750W HS | No | Std | No |
| 7X10A0AMAU | 1x Silver 4215 8C 85W 2.5G | 1x 16GB 2Rx8 2933 | 930-8i | 8x 2.5" HS / 20** Open bay | Open | 8 / 11 | 1x 750W HS | No | Ent | No |
| 7X10A0A3AU | 1x Silver 4216 16C 100W 2.1G | 1x 16GB 2Rx8 2933 | 930-8i | 4x 3.5" HS / 8* Open bay | Open | 8 / 11 | 1x 750W HS | No | Std | No |
| 7X10A0A8AU | 1x Silver 4216 16C 100W 2.1G | 1x 16GB 2Rx8 2933 | 930-8i | 8x 2.5" HS / 20** Open bay | Open | 8 / 11 | 1x 750W HS | No | Ent | No |
| 7X10A0ANAU | 1x Silver 4216 16C 100W 2.1G | 1x 16GB 2Rx8 2933 | 930-8i | 8x 2.5" HS / 20** Open bay | Open | 8 / 11 | 1x 750W HS | No | Std | No |
| 7X10A09ZAU | 1x Gold 5217 8C 115W 3.0G | 1x 32GB 2933 | 930-8i | 8x 2.5" HS / 20** Open bay | Open | 8 / 11 | 1x 750W HS | No | Ent | No |
| 7X10A0A0AU | 1x Gold 5218 16C 125W 2.3G | 1x 32GB 2933 | 930-8i | 8x 2.5" HS / 20** Open bay | Open | 8 / 11 | 1x 750W HS | No | Ent | No |
| TopSeller models | | | | | | | | | | |
| 7X10A09YAU | 1x Bronze 3204 6C 85W 1.9G | 1x 16GB 2Rx8 2933 | 530-8i | 8x 2.5" HS / 20** Open bay | Open | 8 / 11 | 1x 750W HS | No | Ent | No |

| Model | Intel Xeon processors† | Memory | RAID | Drive bays Drives | Optical | Slots | Power supplies | Power cords | XCC Level | Physical security‡ |
|------------|--------------------------------|----------------------|---------|-------------------------------|---------|--------|----------------|-------------|-----------|--------------------|
| 7X10A0A7AU | 1x Bronze 3204 6C 85W 1.9G | 1x 32GB 2933 | 930-8i | 8x 2.5" HS / 20** Open bay | Open | 8 / 11 | 1x 750W HS | No | Ent | No |
| 7X10A0A9AU | 1x Silver 4208 8C 85W 2.1G | 1x 16GB 2Rx8 2933 | 530-8i | 8x 2.5" HS / 20** Open bay | Open | 8 / 11 | 1x 750W HS | No | Ent | No |
| 7X10A0AAAU | 1x Silver 4208 8C 85W 2.1G | 1x 16GB 2Rx8 2933 | 930-8i | 8x 2.5" HS / 20** Open bay | Open | 8 / 11 | 1x 750W HS | No | Ent | No |
| 7X10A0E6AU | 1x Silver 4208 8C 85W 2.1G | 1x 16GB 2Rx8 2933 | 9350-8i | 8x 2.5" HS / 20** Open bay | Open | 8 / 11 | 1x 750W HS | Yes | Ent | No |
| 7X10A0E8AU | 1x Silver 4208 8C 85W 2.1G | 1x 32GB 2933 | 9350-8i | 8x 2.5" HS / 20** Open bay | Open | 8 / 11 | 1x 750W HS | Yes | Ent | No |
| 7X10A0EBAU | 1x Silver 4208 8C 85W 2.1G | 1x 16GB 2Rx8 2933 | 5350-8i | 8x 2.5" HS / 20** Open bay | Open | 8 / 11 | 1x 750W HS | Yes | Ent | No |
| 7X10A0A2AU | 1x Silver 4210 10C 85W 2.2G | 1x 16GB 2Rx8 2933 | 930-8i | 8x 2.5" HS / 20** Open bay | Open | 8 / 11 | 1x 750W HS | No | Ent | No |
| 7X10A0A5AU | 1x Silver 4210 10C 85W 2.2G | 1x 16GB 2Rx8 2933 | 530-8i | 8x 2.5" HS / 20** Open bay | Open | 8 / 11 | 1x 750W HS | No | Ent | No |
| 7X10A0AKAU | 1x Silver 4210 10C 85W 2.2G | 1x 32GB 2933 | 930-8i | 8x 2.5" HS / 20** Open bay | Open | 8 / 11 | 1x 750W HS | No | Ent | No |
| 7X10A0ALAU | 1x Silver 4210 10C 85W 2.2G | 1x 32GB 2933 | 530-8i | 8x 2.5" HS / 20** Open bay | Open | 8 / 11 | 1x 750W HS | No | Ent | No |
| 7X10A0E9AU | 1x Silver 4210 10C 85W 2.2G | 1x 32GB 2933 | 9350-8i | 8x 2.5" HS / 20** Open bay | Open | 8 / 11 | 1x 750W HS | Yes | Ent | No |
| 7X10A0EAAU | 1x Gold 5218 16C 125W 2.3G | 1x 32GB 2933 | 9350-8i | 8x 2.5" HS / 20** Open bay | Open | 8 / 11 | 1x 750W HS | Yes | Ent | No |

† Processor detail: Quantity, model, core count, TDP, core frequency

** 20 drive bays includes 4x 2.5" HS drive bays with media bay conversion

* Additionally supports 4x 2.5" HS drive bays with media bay conversion

‡ Physical security includes both security door & intrusion switch

Models for the South East Asia (ASEAN) market

Table 4. Models for the South East Asia (ASEAN) market

| Model | Intel Xeon processors† | Memory | RAID | Drive bays Drives | Optical | Slots | Power supplies | Power cords | XCC Level | Physical security‡ |
|-----------------|-----------------------------------|----------------------|--------|-------------------------------|---------|--------|------------------|-------------|-----------|--------------------|
| Standard models | | | | | | | | | | |
| 7X10A0E7SG | 1x Silver 4208 8C 85W 2.1G | 1x 8GB 2933 | 530-8i | 8x 2.5" HS / 20** Open bay | Open | 8 / 11 | 1x 450W Fixed | No | Std | No |
| 7X10A080SG | 1x Gold 5215 10C 85W 2.5G | 1x 16GB 2Rx8 2933 | 930-8i | 4x 3.5" HS / 8* Open bay | Open | 8 / 11 | 1x 750W HS | No | Std | No |
| 7X10A09MSG | 1x Gold 5215 10C 85W 2.5G | 1x 16GB 2Rx8 2933 | 930-8i | 8x 2.5" HS / 20** Open bay | Open | 8 / 11 | 1x 750W HS | No | Std | No |
| 7X10A08CSG | 1x Gold 5215L 10C 85W 2.5G | 1x 16GB 2Rx8 2933 | 930-8i | 8x 2.5" HS / 20** Open bay | Open | 8 / 11 | 1x 750W HS | No | Std | No |
| 7X10A09HSG | 1x Gold 5215L 10C 85W 2.5G | 1x 16GB 2Rx8 2933 | 930-8i | 4x 3.5" HS / 8* Open bay | Open | 8 / 11 | 1x 750W HS | No | Std | No |
| 7X10A07KSG | 1x Gold 5218 16C 125W 2.3G | 1x 16GB 2Rx8 2933 | 930-8i | 4x 3.5" HS / 8* Open bay | Open | 8 / 11 | 1x 750W HS | No | Std | No |
| 7X10A08KSG | 1x Gold 5218 16C 125W 2.3G | 1x 16GB 2Rx8 2933 | 930-8i | 8x 2.5" HS / 20** Open bay | Open | 8 / 11 | 1x 750W HS | No | Std | No |
| 7X10A07NSG | 1x Gold 5220 18C 125W 2.2G | 1x 16GB 2Rx8 2933 | 930-8i | 4x 3.5" HS / 8* Open bay | Open | 8 / 11 | 1x 750W HS | No | Std | No |
| 7X10A086SG | 1x Gold 5220 18C 125W 2.2G | 1x 16GB 2Rx8 2933 | 930-8i | 8x 2.5" HS / 20** Open bay | Open | 8 / 11 | 1x 750W HS | No | Std | No |
| 7X10A07QSG | 1x Gold 5222 4C 105W 3.8G | 1x 16GB 2Rx8 2933 | 930-8i | 8x 2.5" HS / 20** Open bay | Open | 8 / 11 | 1x 750W HS | No | Std | No |
| 7X10A082SG | 1x Gold 5222 4C 105W 3.8G | 1x 16GB 2Rx8 2933 | 930-8i | 4x 3.5" HS / 8* Open bay | Open | 8 / 11 | 1x 750W HS | No | Std | No |
| 7X10A07JSG | 1x Gold 6230 20C 125W 2.1G | 1x 16GB 2Rx8 2933 | 930-8i | 8x 2.5" HS / 20** Open bay | Open | 8 / 11 | 1x 750W HS | No | Std | No |
| 7X10A090SG | 1x Gold 6230 20C 125W 2.1G | 1x 16GB 2Rx8 2933 | 930-8i | 4x 3.5" HS / 8* Open bay | Open | 8 / 11 | 1x 750W HS | No | Std | No |
| 7X10A08HSG | 1x Gold 6238T 22C 125W 1.9G | 1x 16GB 2Rx8 2933 | 930-8i | 8x 2.5" HS / 20** Open bay | Open | 8 / 11 | 1x 750W HS | No | Std | No |
| 7X10A08LSG | 1x Gold 6238T 22C 125W 1.9G | 1x 16GB 2Rx8 2933 | 930-8i | 4x 3.5" HS / 8* Open bay | Open | 8 / 11 | 1x 750W HS | No | Std | No |
| 7X10A08DSG | 1x Platinum 8253 16C 125W 2.2G | 1x 16GB 2Rx8 2933 | 930-8i | 4x 3.5" HS / 8* Open bay | Open | 8 / 11 | 1x 750W HS | No | Std | No |
| 7X10A09RSG | 1x Platinum 8253 16C 125W 2.2G | 1x 16GB 2Rx8 2933 | 930-8i | 8x 2.5" HS / 20** Open bay | Open | 8 / 11 | 1x 750W HS | No | Std | No |
| 7X10A09LSG | 1x Platinum 8256 4C 105W 3.8G | 1x 16GB 2Rx8 2933 | 930-8i | 4x 3.5" HS / 8* Open bay | Open | 8 / 11 | 1x 750W HS | No | Std | No |
| 7X10A09TSG | 1x Platinum 8256 4C 105W 3.8G | 1x 16GB 2Rx8 2933 | 930-8i | 8x 2.5" HS / 20** Open bay | Open | 8 / 11 | 1x 750W HS | No | Std | No |

† Processor detail: Quantity, model, core count, TDP, core frequency

** 20 drive bays includes 4x 2.5" HS drive bays with media bay conversion

* Additionally supports 4x 2.5" HS drive bays with media bay conversion

‡ Physical security includes both security door & intrusion switch

Models for EMEA

Table 6. Models for EMEA

| Model | Intel Xeon processors† | Memory | RAID | Drive bays Drives | Optical | Slots | Power supplies | Power cords | XCC Level | Physical security‡ |
|-----------------|----------------------------------|----------------------|---------------|-------------------------------|---------|--------|---------------------|-------------|-----------|--------------------|
| Standard models | | | | | | | | | | |
| 7X10A0DZEA | 1x Silver 4208 8C 85W 2.1G | 1x 32GB 2933 | 940-8i 4GB | 8x 2.5" HS / 20** Open bay | Open | 8 / 11 | 1x 750W HS | Yes | Ent | No |
| 7X10A0E0EA | 1x Silver 4208 8C 85W 2.1G | 1x 32GB 2933 | 9350-8i | 8x 2.5" HS / 20** Open bay | Open | 8 / 11 | 1x 750W HS | Yes | Ent | No |
| 7X10A0E3EA | 1x Silver 4208 8C 85W 2.1G | 1x 16GB 2Rx8 2933 | 9350-8i | 8x 2.5" HS / 20** Open bay | Open | 8 / 11 | 1x 750W HS | Yes | Ent | No |
| 7X10A0EDEA | 1x Silver 4208 8C 85W 2.1G | 1x 16GB 2Rx8 2933 | 9350-8i | 8x 2.5" HS / 20** Open bay | Open | 8 / 11 | 1x 750W HS | Yes | Ent | No |
| 7X10A0EHEA | 1x Silver 4208 8C 85W 2.1G | 1x 16GB 2Rx8 2933 | 9350-8i | 8x 2.5" HS / 20** Open bay | Open | 8 / 11 | 1x 750W Titanium | Yes | Ent | No |
| 7X10A0ESEA | 1x Silver 4208 8C 85W 2.1G | 1x 64GB 2933 | 9350-8i | 8x 2.5" HS / 20** Open bay | Open | 8 / 11 | 1x 750W Titanium | Yes | Ent | No |
| 7X10A0EZEA | 1x Silver 4208 8C 85W 2.1G | 1x 32GB 2933 | 9350-8i | 8x 2.5" HS / 20** Open bay | Open | 8 / 11 | 1x 750W Titanium | Yes | Ent | No |
| 7X10A0F1EA | 1x Silver 4208 8C 85W 2.1G | 1x 32GB 2933 | 530-8i | 8x 2.5" HS / 20** Open bay | Open | 8 / 11 | 1x 750W Titanium | Yes | Ent | No |
| 7X10A0F4EA | 1x Silver 4208 8C 85W 2.1G | 1x 32GB 2933 | 930-8i | 8x 2.5" HS / 20** Open bay | Open | 8 / 11 | 1x 750W Titanium | Yes | Ent | No |
| 7X10A0F8EA | 1x Silver 4208 8C 85W 2.1G | 1x 32GB 2933 | 930-8i | 8x 2.5" HS / 20** Open bay | Open | 8 / 11 | 1x 750W Titanium | Yes | Ent | No |
| 7X10A0F5EA | 1x Silver 4210 10C 85W 2.2G | 1x 32GB 2933 | 930-8i | 8x 2.5" HS / 20** Open bay | Open | 8 / 11 | 1x 750W Titanium | Yes | Ent | No |
| 7X10A0F6EA | 1x Silver 4210 10C 85W 2.2G | 1x 32GB 2933 | 9350-8i | 8x 2.5" HS / 20** Open bay | Open | 8 / 11 | 1x 750W Titanium | Yes | Ent | No |
| 7X10A0F7EA | 1x Silver 4210 10C 85W 2.2G | 1x 32GB 2933 | 930-8i | 8x 2.5" HS / 20** Open bay | Open | 8 / 11 | 1x 750W Titanium | Yes | Ent | No |
| 7X10A0DWEA | 1x Silver 4210R 10C 100W 2.4G | 1x 32GB 2933 | 940-8i 4GB | 8x 2.5" HS / 20** Open bay | Open | 8 / 11 | 1x 750W HS | Yes | Ent | No |
| 7X10A0E1EA | 1x Silver 4210R 10C 100W 2.4G | 1x 32GB 2933 | 9350-8i | 8x 2.5" HS / 20** Open bay | Open | 8 / 11 | 1x 750W HS | Yes | Ent | No |
| 7X10A0E2EA | 1x Silver 4210R 10C 100W 2.4G | 1x 16GB 2Rx8 2933 | 9350-8i | 8x 2.5" HS / 20** Open bay | Open | 8 / 11 | 1x 750W HS | Yes | Ent | No |
| 7X10A0ECEA | 1x Silver 4210R 10C 100W 2.4G | 1x 16GB 2Rx8 2933 | 9350-8i | 8x 2.5" HS / 20** Open bay | Open | 8 / 11 | 1x 750W HS | Yes | Ent | No |
| 7X10A0EFEA | 1x Silver 4210R 10C 100W 2.4G | 1x 16GB 2Rx8 2933 | 9350-8i | 8x 2.5" HS / 20** Open bay | Open | 8 / 11 | 1x 750W Titanium | Yes | Ent | No |
| 7X10A0EKEA | 1x Silver 4210R 10C 100W 2.4G | 1x 32GB 2933 | 9350-8i | 8x 2.5" HS / 20** Open bay | Open | 8 / 11 | 1x 750W Titanium | Yes | Ent | No |
| 7X10A0EREA | 1x Silver 4210R 10C 100W 2.4G | 1x 64GB 2933 | 9350-8i | 8x 2.5" HS / 20** Open bay | Open | 8 / 11 | 1x 750W Titanium | Yes | Ent | No |
| 7X10A0F2EA | 1x Silver 4210R 10C 100W 2.4G | 1x 32GB 2933 | 530-8i | 8x 2.5" HS / 20** Open bay | Open | 8 / 11 | 1x 750W Titanium | Yes | Ent | No |
| 7X10A0F3EA | 1x Silver 4210R 10C 100W 2.4G | 1x 32GB 2933 | 930-8i | 8x 2.5" HS / 20** Open bay | Open | 8 / 11 | 1x 750W Titanium | Yes | Ent | No |
| 7X10A0F9EA | 1x Silver 4210R 10C 100W 2.4G | 1x 32GB 2933 | 930-8i | 8x 2.5" HS / 20** Open bay | Open | 8 / 11 | 1x 750W Titanium | Yes | Ent | No |
| 7X10A0ETEA | 1x Silver 4215 8C 85W 2.5G | 1x 64GB 2933 | 9350-8i | 8x 2.5" HS / 20** Open bay | Open | 8 / 11 | 1x 750W Titanium | Yes | Ent | No |

† Processor detail: Quantity, model, core count, TDP, core frequency
 ** 20 drive bays includes 4x 2.5" HS drive bays with media bay conversion
 * Additionally supports 4x 2.5" HS drive bays with media bay conversion
 ‡ Physical security includes both security door & intrusion switch

Models for Hong Kong, Taiwan, Korea (HTK)

Table 7. Models for Hong Kong, Taiwan, Korea (HTK)

| Model | Intel Xeon processor† | Memory | RAID | Drive bays Drives | Optical | Slots | Power supplies | Power cords | XCC Level | Physical security‡ |
|-----------------|--------------------------------|-------------------|--------|-----------------------------------|--------------|--------|----------------|-------------|-----------|--------------------|
| Standard models | | | | | | | | | | |
| 7X10100WCN | 1x Silver 4208 8C 85W 2.1G | 2x 16GB 2Rx8 2933 | 930-8i | 4x 3.5" HS / 8 4x 4TB SATA HDD | 1x Ext DVDRW | 8 / 11 | 2x 1100W HS | No | Std | No |
| 7X10100YCN | 1x Silver 4208 8C 85W 2.1G | 2x 16GB 2Rx8 2933 | 930-8i | 4x 3.5" HS / 8 4x 4TB SATA HDD | 1x Ext DVDRW | 8 / 11 | 2x 1100W HS | No | Std | No |
| 7X10A07ZCN | 1x Gold 5215 10C 85W 2.5G | 1x 16GB 2Rx8 2933 | 930-8i | 4x 3.5" HS / 8* Open bay | Open | 8 / 11 | 1x 750W HS | No | Std | No |
| 7X10A097CN | 1x Gold 5215 10C 85W 2.5G | 1x 16GB 2Rx8 2933 | 930-8i | 8x 2.5" HS / 20** Open bay | Open | 8 / 11 | 1x 750W HS | No | Std | No |
| 7X10A091CN | 1x Gold 5215L 10C 85W 2.5G | 1x 16GB 2Rx8 2933 | 930-8i | 8x 2.5" HS / 20** Open bay | Open | 8 / 11 | 1x 750W HS | No | Std | No |
| 7X10A09NCN | 1x Gold 5215L 10C 85W 2.5G | 1x 16GB 2Rx8 2933 | 930-8i | 4x 3.5" HS / 8* Open bay | Open | 8 / 11 | 1x 750W HS | No | Std | No |
| 7X10A08NCN | 1x Gold 5218 16C 125W 2.3G | 1x 16GB 2Rx8 2933 | 930-8i | 4x 3.5" HS / 8* Open bay | Open | 8 / 11 | 1x 750W HS | No | Std | No |
| 7X10A08XCN | 1x Gold 5218 16C 125W 2.3G | 1x 16GB 2Rx8 2933 | 930-8i | 8x 2.5" HS / 20** Open bay | Open | 8 / 11 | 1x 750W HS | No | Std | No |
| 7X10A078CN | 1x Gold 5220 18C 125W 2.2G | 1x 16GB 2Rx8 2933 | 930-8i | 4x 3.5" HS / 8* Open bay | Open | 8 / 11 | 1x 750W HS | No | Std | No |
| 7X10A07XCN | 1x Gold 5220 18C 125W 2.2G | 1x 16GB 2Rx8 2933 | 930-8i | 8x 2.5" HS / 20** Open bay | Open | 8 / 11 | 1x 750W HS | No | Std | No |
| 7X10A08WCN | 1x Gold 5222 4C 105W 3.8G | 1x 16GB 2Rx8 2933 | 930-8i | 8x 2.5" HS / 20** Open bay | Open | 8 / 11 | 1x 750W HS | No | Std | No |
| 7X10A094CN | 1x Gold 5222 4C 105W 3.8G | 1x 16GB 2Rx8 2933 | 930-8i | 4x 3.5" HS / 8* Open bay | Open | 8 / 11 | 1x 750W HS | No | Std | No |
| 7X10A07ECN | 1x Gold 6230 20C 125W 2.1G | 1x 16GB 2Rx8 2933 | 930-8i | 8x 2.5" HS / 20** Open bay | Open | 8 / 11 | 1x 750W HS | No | Std | No |
| 7X10A07WCN | 1x Gold 6230 20C 125W 2.1G | 1x 16GB 2Rx8 2933 | 930-8i | 4x 3.5" HS / 8* Open bay | Open | 8 / 11 | 1x 750W HS | No | Std | No |
| 7X10A079CN | 1x Gold 6238T 22C 125W 1.9G | 1x 16GB 2Rx8 2933 | 930-8i | 4x 3.5" HS / 8* Open bay | Open | 8 / 11 | 1x 750W HS | No | Std | No |
| 7X10A09CCN | 1x Gold 6238T 22C 125W 1.9G | 1x 16GB 2Rx8 2933 | 930-8i | 8x 2.5" HS / 20** Open bay | Open | 8 / 11 | 1x 750W HS | No | Std | No |
| 7X10A09ACN | 1x Platinum 8253 16C 125W 2.2G | 1x 16GB 2Rx8 2933 | 930-8i | 8x 2.5" HS / 20** Open bay | Open | 8 / 11 | 1x 750W HS | No | Std | No |
| 7X10A09KCN | 1x Platinum 8253 16C 125W 2.2G | 1x 16GB 2Rx8 2933 | 930-8i | 4x 3.5" HS / 8* Open bay | Open | 8 / 11 | 1x 750W HS | No | Std | No |
| 7X10A08MCN | 1x Platinum 8256 4C 105W 3.8G | 1x 16GB 2Rx8 2933 | 930-8i | 8x 2.5" HS / 20** Open bay | Open | 8 / 11 | 1x 750W HS | No | Std | No |
| 7X10A093CN | 1x Platinum 8256 4C 105W 3.8G | 1x 16GB 2Rx8 2933 | 930-8i | 4x 3.5" HS / 8* Open bay | Open | 8 / 11 | 1x 750W HS | No | Std | No |

| Model | Intel Xeon processors† | Memory | RAID | Drive bays Drives | Optical | Slots | Power supplies | Power cords | XCC Level | Physical security‡ |
|------------------|---------------------------------|----------------------|--------|-------------------------------|---------|--------|----------------|-------------|-----------|--------------------|
| TopSeller models | | | | | | | | | | |
| 7X10A0CACN | 1x Bronze 3204 6C 85W 1.9G | 1x 16GB 2Rx8 2933 | 930-8i | 4x 3.5" HS / 8* Open bay | Open | 8 / 11 | 1x 750W HS | No | Std | No |
| 7X10A0CGCN | 1x Bronze 3204 6C 85W 1.9G | 1x 16GB 2Rx8 2933 | 930-8i | 8x 2.5" HS / 20** Open bay | Open | 8 / 11 | 1x 750W HS | No | Std | No |
| 7X10A0CBCN | 1x Silver 4208 8C 85W 2.1G | 1x 16GB 2Rx8 2933 | 930-8i | 8x 2.5" HS / 20** Open bay | Open | 8 / 11 | 1x 750W HS | No | Std | No |
| 7X10A0CKCN | 1x Silver 4208 8C 85W 2.1G | 1x 16GB 2Rx8 2933 | 930-8i | 4x 3.5" HS / 8* Open bay | Open | 8 / 11 | 1x 750W HS | No | Std | No |
| 7X10A0CCCN | 1x Silver 4210 10C 85W 2.2G | 1x 16GB 2Rx8 2933 | 930-8i | 8x 2.5" HS / 20** Open bay | Open | 8 / 11 | 1x 750W HS | No | Std | No |
| 7X10A0CJCN | 1x Silver 4210 10C 85W 2.2G | 1x 16GB 2Rx8 2933 | 930-8i | 4x 3.5" HS / 8* Open bay | Open | 8 / 11 | 1x 750W HS | No | Std | No |
| 7X10A0CDCN | 1x Silver 4214 12C 85W 2.2G | 1x 16GB 2Rx8 2933 | 930-8i | 8x 2.5" HS / 20** Open bay | Open | 8 / 11 | 1x 750W HS | No | Std | No |
| 7X10A0CHCN | 1x Silver 4214 12C 85W 2.2G | 1x 16GB 2Rx8 2933 | 930-8i | 4x 3.5" HS / 8* Open bay | Open | 8 / 11 | 1x 750W HS | No | Std | No |
| 7X10A0CECN | 1x Silver 4216 16C 100W 2.1G | 1x 16GB 2Rx8 2933 | 930-8i | 8x 2.5" HS / 20** Open bay | Open | 8 / 11 | 1x 750W HS | No | Std | No |
| 7X10A0CFCN | 1x Silver 4216 16C 100W 2.1G | 1x 16GB 2Rx8 2933 | 930-8i | 4x 3.5" HS / 8* Open bay | Open | 8 / 11 | 1x 750W HS | No | Std | No |

† Processor detail: Quantity, model, core count, TDP, core frequency

** 20 drive bays includes 4x 2.5" HS drive bays with media bay conversion

* Additionally supports 4x 2.5" HS drive bays with media bay conversion

‡ Physical security includes both security door & intrusion switch

Models for India

Table 8. Models for India

| Model | Intel Xeon processor† | Memory | RAID | Drive bays Drives | Optical | Slots | Power supplies | Power cords | XCC Level | Physical security‡ |
|-----------------|-----------------------------------|----------------------|--------|-------------------------------|---------|--------|----------------|-------------|-----------|--------------------|
| Standard models | | | | | | | | | | |
| 7X10A085SG | 1x Gold 5215 10C 85W 2.5G | 1x 16GB 2Rx8 2933 | 930-8i | 8x 2.5" HS / 20** Open bay | Open | 8 / 11 | 1x 750W HS | No | Std | No |
| 7X10A09BSG | 1x Gold 5215 10C 85W 2.5G | 1x 16GB 2Rx8 2933 | 930-8i | 4x 3.5" HS / 8* Open bay | Open | 8 / 11 | 1x 750W HS | No | Std | No |
| 7X10A08PSG | 1x Gold 5215L 10C 85W 2.5G | 1x 16GB 2Rx8 2933 | 930-8i | 8x 2.5" HS / 20** Open bay | Open | 8 / 11 | 1x 750W HS | No | Std | No |
| 7X10A08ZSG | 1x Gold 5215L 10C 85W 2.5G | 1x 16GB 2Rx8 2933 | 930-8i | 4x 3.5" HS / 8* Open bay | Open | 8 / 11 | 1x 750W HS | No | Std | No |
| 7X10A08VSG | 1x Gold 5218 16C 125W 2.3G | 1x 16GB 2Rx8 2933 | 930-8i | 4x 3.5" HS / 8* Open bay | Open | 8 / 11 | 1x 750W HS | No | Std | No |
| 7X10A09GSG | 1x Gold 5218 16C 125W 2.3G | 1x 16GB 2Rx8 2933 | 930-8i | 8x 2.5" HS / 20** Open bay | Open | 8 / 11 | 1x 750W HS | No | Std | No |
| 7X10A08BSG | 1x Gold 5220 18C 125W 2.2G | 1x 16GB 2Rx8 2933 | 930-8i | 4x 3.5" HS / 8* Open bay | Open | 8 / 11 | 1x 750W HS | No | Std | No |
| 7X10A098SG | 1x Gold 5220 18C 125W 2.2G | 1x 16GB 2Rx8 2933 | 930-8i | 8x 2.5" HS / 20** Open bay | Open | 8 / 11 | 1x 750W HS | No | Std | No |
| 7X10A081SG | 1x Gold 5222 4C 105W 3.8G | 1x 16GB 2Rx8 2933 | 930-8i | 8x 2.5" HS / 20** Open bay | Open | 8 / 11 | 1x 750W HS | No | Std | No |
| 7X10A096SG | 1x Gold 5222 4C 105W 3.8G | 1x 16GB 2Rx8 2933 | 930-8i | 4x 3.5" HS / 8* Open bay | Open | 8 / 11 | 1x 750W HS | No | Std | No |
| 7X10A084SG | 1x Gold 6230 20C 125W 2.1G | 1x 16GB 2Rx8 2933 | 930-8i | 4x 3.5" HS / 8* Open bay | Open | 8 / 11 | 1x 750W HS | No | Std | No |
| 7X10A08ASG | 1x Gold 6230 20C 125W 2.1G | 1x 16GB 2Rx8 2933 | 930-8i | 8x 2.5" HS / 20** Open bay | Open | 8 / 11 | 1x 750W HS | No | Std | No |
| 7X10A07CSG | 1x Gold 6238T 22C 125W 1.9G | 1x 16GB 2Rx8 2933 | 930-8i | 8x 2.5" HS / 20** Open bay | Open | 8 / 11 | 1x 750W HS | No | Std | No |
| 7X10A08FSG | 1x Gold 6238T 22C 125W 1.9G | 1x 16GB 2Rx8 2933 | 930-8i | 4x 3.5" HS / 8* Open bay | Open | 8 / 11 | 1x 750W HS | No | Std | No |
| 7X10A08RSG | 1x Platinum 8253 16C 125W 2.2G | 1x 16GB 2Rx8 2933 | 930-8i | 4x 3.5" HS / 8* Open bay | Open | 8 / 11 | 1x 750W HS | No | Std | No |
| 7X10A099SG | 1x Platinum 8253 16C 125W 2.2G | 1x 16GB 2Rx8 2933 | 930-8i | 8x 2.5" HS / 20** Open bay | Open | 8 / 11 | 1x 750W HS | No | Std | No |
| 7X10A07YSG | 1x Platinum 8256 4C 105W 3.8G | 1x 16GB 2Rx8 2933 | 930-8i | 4x 3.5" HS / 8* Open bay | Open | 8 / 11 | 1x 750W HS | No | Std | No |
| 7X10A08YSG | 1x Platinum 8256 4C 105W 3.8G | 1x 16GB 2Rx8 2933 | 930-8i | 8x 2.5" HS / 20** Open bay | Open | 8 / 11 | 1x 750W HS | No | Std | No |

† Processor detail: Quantity, model, core count, TDP, core frequency

** 20 drive bays includes 4x 2.5" HS drive bays with media bay conversion

* Additionally supports 4x 2.5" HS drive bays with media bay conversion

‡ Physical security includes both security door & intrusion switch

Models for the Latin America market (except Brazil)

Table 10. Models for the Latin America market (except Brazil)

| Model | Intel Xeon processors† | Memory | RAID | Drive bays Drives | Optical | Slots | Power supplies | Power cords | XCC Level | Physical security‡ |
|------------------|----------------------------------|----------------------|---------------|-------------------------------|---------|--------|----------------|-------------|-----------|--------------------|
| TopSeller models | | | | | | | | | | |
| 7X10A0BGLA | 1x Bronze 3204 6C 85W 1.9G | 1x 16GB 1Rx4 2933 | 730-8i 1GB | 4x 3.5" HS / 8* Open bay | Open | 8 / 11 | 1x 750W HS | Yes | Std | No |
| 7X10A0D5LA | 1x Bronze 3204 6C 85W 1.9G | 1x 16GB 1Rx4 2933 | 530-8i | 4x 3.5" HS / 8* Open bay | Open | 8 / 11 | 1x 750W HS | Yes | Std | No |
| 7X10A0D6LA | 1x Bronze 3204 6C 85W 1.9G | 1x 16GB 1Rx4 2933 | 730-8i 1GB | 4x 3.5" HS / 8* Open bay | Open | 8 / 11 | 1x 750W HS | Yes | Std | No |
| 7X10A0BJLA | 1x Silver 4208 8C 85W 2.1G | 1x 16GB 1Rx4 2933 | 730-8i 1GB | 4x 3.5" HS / 8* Open bay | Open | 8 / 11 | 1x 750W HS | Yes | Std | No |
| 7X10A0D7LA | 1x Silver 4208 8C 85W 2.1G | 1x 16GB 1Rx4 2933 | 730-8i 1GB | 8x 2.5" HS / 20** Open bay | Open | 8 / 11 | 1x 750W HS | Yes | Std | No |
| 7X10A0D8LA | 1x Silver 4210 10C 85W 2.2G | 1x 16GB 1Rx4 2933 | 530-8i | 4x 3.5" HS / 8* Open bay | Open | 8 / 11 | 1x 750W HS | Yes | Std | No |
| 7X10A0D9LA | 1x Silver 4210 10C 85W 2.2G | 1x 16GB 1Rx4 2933 | 730-8i 1GB | 8x 2.5" HS / 20** Open bay | Open | 8 / 11 | 1x 750W HS | Yes | Std | No |
| 7X10100SLA | 1x Silver 4210R 10C 100W 2.4G | 1x 16GB 2Rx8 2933 | 530-8i | 8x 2.5" HS / 20** Open bay | Open | 8 / 11 | 1x 750W HS | Yes | Std | No |
| 7X10100TLA | 1x Silver 4210R 10C 100W 2.4G | 1x 16GB 1Rx4 2933 | 530-8i | 8x 2.5" HS / 20** Open bay | Open | 8 / 11 | 1x 750W HS | Yes | Std | No |
| 7X10100ULA | 1x Silver 4210R 10C 100W 2.4G | 1x 16GB 1Rx4 2933 | 530-8i | 8x 2.5" HS / 20** Open bay | Open | 8 / 11 | 1x 750W HS | Yes | Std | No |
| 7X10100VLA | 1x Silver 4210R 10C 100W 2.4G | 1x 16GB 1Rx4 2933 | 530-8i | 8x 2.5" HS / 20** Open bay | Open | 8 / 11 | 1x 750W HS | Yes | Std | No |

† Processor detail: Quantity, model, core count, TDP, core frequency

** 20 drive bays includes 4x 2.5" HS drive bays with media bay conversion

* Additionally supports 4x 2.5" HS drive bays with media bay conversion

‡ Physical security includes both security door & intrusion switch

Processors

The ST550 supports the Bronze, Silver, Gold, and Platinum level processors in the family of second-generation Intel Xeon Scalable processors. The server supports the processor options that are listed in the following table. The server supports up to two processors.

Topics in this section:

- [Processor options](#)
- [Continued support for 1st Gen Intel Xeon Scalable processors](#)
- [Memory capacity of processors](#)
- [Processor features](#)
- [UEFI operating modes](#)

Processor support: Both 1st Gen and 2nd Gen Intel Xeon SP processors are supported. For supported 1st Gen processors, see the [Continued support for 1st Gen Intel Xeon Scalable processors](#) section.

Processor options

The following table lists the supported processors. All processors listed have the following characteristics:

- Second-generation Intel Xeon Scalable processors (formerly codenamed "Cascade Lake")
- 14 nm process technology
- Six DDR4 memory channels
- 48 PCIe 3.0 I/O lanes
- 1 MB L2 cache
- 1.375 MB or more L3 cache per core
- Intel Hyper-Threading Technology (except Bronze processors)
- Intel Turbo Boost Technology 2.0 (except Bronze processors)
- Intel Advanced Vector Extensions 512 (AVX-512)
- Two Intel Ultra Path Interconnect (UPI) links at up to 10.4 GT/s

Some processors include a suffix letter in the processor model number:

- L: Large memory tier (supports total memory up to 4.5TB)
- M: Medium memory tier (supports total memory up to 2TB)
- N: NFV optimized
- S: Search optimized
- T: High Tcase
- U: Single socket
- V: VM Density optimized
- Y: Speed Select

Tip: B is not an official suffix, but instead used by Intel to distinguish between the Xeon Gold 5218 and the Xeon Gold 5218B processors. These two processor models have the same core counts, frequencies, and features, however they are based on different die configurations. You should not install 5218 and 5218B processors in the same server.

Tip: The option part numbers listed in the table below includes the processor heatsink and an additional system fan.

Table 12. Second-generation Intel Xeon Scalable processor selections

| Part number* | Feature code | Description | Maximum supported |
|--------------|--------------|--|-------------------|
| 4XG7A14813 | B4HU | Intel Xeon Bronze 3204 6C 85W 1.9GHz Processor | 2 |

| Part number* | Feature code | Description | Maximum supported |
|--------------|--------------|---|-------------------|
| 4XG7A37997 | B7N3 | Intel Xeon Bronze 3206R 8C 85W 1.9GHz Processor | 2 |
| 4XG7A14812 | B4HT | Intel Xeon Silver 4208 8C 85W 2.1GHz Processor | 2 |
| 4XG7A14881 | B4P4 | Intel Xeon Silver 4209T 8C 70W 2.2GHz Processor | 2 |
| 4XG7A14811 | B4HS | Intel Xeon Silver 4210 10C 85W 2.2GHz Processor | 2 |
| 4XG7A37995 | B7N5 | Intel Xeon Silver 4210R 10C 100W 2.4GHz Processor | 2 |
| 4XG7A14810 | B4HR | Intel Xeon Silver 4214 12C 85W 2.2GHz Processor | 2 |
| 4XG7A37994 | B7N6 | Intel Xeon Silver 4214R 12C 100W 2.4GHz Processor | 2 |
| 4XG7A14840 | B4NW | Intel Xeon Silver 4214Y 12/10/8C 85W 2.2GHz Processor | 2 |
| 4XG7A14809 | B4HQ | Intel Xeon Silver 4215 8C 85W 2.5GHz Processor | 2 |
| 4XG7A14808 | B4HP | Intel Xeon Silver 4216 16C 100W 2.1GHz Processor | 2 |
| 4XG7A14807 | B4HN | Intel Xeon Gold 5215 10C 85W 2.5GHz Processor | 2 |
| 4XG7A15698 | B4P9 | Intel Xeon Gold 5215L 10C 85W 2.5GHz Processor | 2 |
| 4XG7A14806 | B4HM | Intel Xeon Gold 5217 8C 115W 3.0GHz Processor | 2 |
| 4XG7A14805 | B4HL | Intel Xeon Gold 5218 16C 125W 2.3GHz Processor | 2 |
| 4XG7A15786 | B6BS | Intel Xeon Gold 5218B 16C 125W 2.3GHz Processor | 2 |
| 4XG7A63302 | BAZS | Intel Xeon Gold 5218R 20C 125W 2.1GHz Processor | 2 |
| 4XG7A37972 | B4P3 | Intel Xeon Gold 5218T 16C 105W 2.1GHz Processor | 2 |
| 4XG7A14804 | B4HK | Intel Xeon Gold 5220 18C 125W 2.2GHz Processor | 2 |
| 4XG7A15860 | B6CW | Intel Xeon Gold 5220S 18C 125W 2.7GHz Processor | 2 |
| 4XG7A15858 | B6CQ | Intel Xeon Gold 5220T 18C 105W 1.9GHz Processor | 2 |
| 4XG7A15754 | B5S1 | Intel Xeon Gold 5222 4C 105W 3.8GHz Processor | 2 |
| None** | B6CX | Intel Xeon Gold 6209U 20C 125W 2.1GHz Processor | 1** |
| 4XG7A15859 | B6CV | Intel Xeon Gold 6222V 20C 115W 1.8GHz Processor | 2 |
| 4XG7A15856 | B6CL | Intel Xeon Gold 6226 12C 125W 2.7GHz Processor | 2 |
| 4XG7A14803 | B4HJ | Intel Xeon Gold 6230 20C 125W 2.1GHz Processor | 2 |
| 4XG7A15857 | B6CP | Intel Xeon Gold 6230T 20C 125W 2.1GHz Processor | 2 |
| 4XG7A14867 | B4P2 | Intel Xeon Gold 6238T 22C 125W 1.9GHz Processor | 2 |
| 4XG7A15746 | B5RZ | Intel Xeon Platinum 8253 16C 125W 2.2GHz Processor | 2 |
| 4XG7A15739 | B5S2 | Intel Xeon Platinum 8256 4C 105W 3.8GHz Processor | 2 |

* Option part numbers include the processor heatsink and an additional system fan.

** The 6209U processor is only supported one processor per server; as a result, there is no option part number for a second processor.

Continued support for 1st Gen Intel Xeon Scalable processors

The ST550 also continues to support the 1st Gen Intel Xeon Scalable processors (formerly codenamed "Skylake") listed in the following table.

Table 13. Long-life 1st Gen Intel Xeon Scalable processors

| Part number | Feature code | Description |
|-------------|--------------|---|
| 4XG7A07216 | No CTO* | ThinkSystem ST550 Intel Xeon Silver 4109T 8C 70W 2.0GHz Processor Option Kit |
| 4XG7A09063 | No CTO* | ThinkSystem ST550 Intel Xeon Silver 4114T 10C 85W 2.2GHz Processor Option Kit |

| Part number | Feature code | Description |
|-------------|--------------|--|
| 7XG7A05784 | AWE5 | ThinkSystem ST550 Intel Xeon Gold 6126T 12C 125W 2.6GHz Processor Option Kit |

* Only available as a field upgrade for existing customers. Not available in CTO (configure to order) configurations.

For specifications of these processors, see the Intel Xeon Scalable Processor Reference for Lenovo ThinkSystem Servers:

<https://lenovopress.com/lp1262-intel-xeon-sp-processor-reference#term=SKL>

Memory capacity of processors

Second-generation Xeon Scalable processors are limited to the amount of memory they can address, as follows:

- Processors with an L suffix (eg 8280L): Up to 4.5 TB per processor
- Processors with an M suffix (eg 8280M): Up to 2 TB per processor
- All other processors: Up to 1 TB per processor

The calculation is based on each processor individually, not the total memory installed in the server. For example, a configuration using 12x 64GB DIMMs per server is 6x 64 GB per processor, which is 384 GB per processor. This means that neither an M nor an L processor is required

Tip: There are no memory configurations of the ST550 that require an L-suffix or an M-suffix processor.

Processor features

The following table compares the features of the supported second-generation Intel Xeon processors.

Abbreviations used in the table:

- UPI: Ultra Path Interconnect
- TDP: Thermal Design Power
- FMA: Number of Intel AVX-512 Fused-Multiply Add (FMA) units
- HT: Hyper-Threading
- TB: Turbo Boost 2.0
- VT: Virtualization Technology (includes VT-x and VT-d)
- SST-PP: Speed Select Technology - Performance Profile
- DCPMM: DC Persistent Memory Module support
- RAS: Reliability, Availability, and Serviceability: Std = Standard, Adv = Advanced

The processors that support SST-PP offer three distinct operating points that are defined by a core count with a base speed associated with that core count. The operating point is selected during the boot process and cannot be changed at runtime.

Table 14. Processor specifications

| CPU model | Cores / threads | Core speed (Base / TB max) | L3 cache* | Max memory speed | Max memory per CPU | UPI links & speed | FMA units | TDP | HT | TB | VT | SST-PP | DCPMM | RAS |
|--|-----------------|----------------------------|-----------|------------------|--------------------|-------------------|-----------|------|----|----|----|--------|-------|-----|
| Intel Xeon 3200 (Bronze) processors | | | | | | | | | | | | | | |
| 3204 | 6 / 6 | 1.9 / None | 8.25 MB | 2133 MHz | 1 TB | 2, 9.6 GT/s | 1 | 85 W | N | N | Y | N | N | Std |
| 3206R | 8 / 8 | 1.9 GHz / None | 11 MB | 2133 MHz | 1 TB | 2, 9.6 GT/s | 1 | 85 W | N | N | Y | N | N | Std |
| Intel Xeon 4200 (Silver) processors | | | | | | | | | | | | | | |
| 4208 | 8 / 16 | 2.1 / 3.2 GHz | 11 MB | 2400 MHz | 1 TB | 2, 9.6 GT/s | 1 | 85 W | Y | Y | Y | N | N | Std |

| CPU model | Cores / threads | Core speed (Base / TB max) | L3 cache* | Max memory speed | Max memory per CPU | UPI links & speed | FMA units | TDP | HT | TB | VT | SST-PP | DCPMM | RAS |
|--|-----------------|----------------------------|-----------|------------------|--------------------|-------------------|-----------|-------|----|----|----|--------|-------|-----|
| 4209T | 8 / 16 | 2.2 / 3.2 GHz | 11 MB | 2400 MHz | 1 TB | 2, 9.6 GT/s | 1 | 70 W | Y | Y | Y | N | N | Std |
| 4210 | 10 / 20 | 2.2 / 3.2 GHz | 13.75 MB | 2400 MHz | 1 TB | 2, 9.6 GT/s | 1 | 85 W | Y | Y | Y | N | N | Std |
| 4210R | 10 / 20 | 2.4 / 3.2 GHz | 13.75 MB | 2400 MHz | 1 TB | 2, 9.6 GT/s | 1 | 100 W | Y | Y | Y | N | N | Std |
| 4214 | 12 / 24 | 2.2 / 3.2 GHz | 16.5 MB | 2400 MHz | 1 TB | 2, 9.6 GT/s | 1 | 85 W | Y | Y | Y | N | N | Std |
| 4214R | 12 / 24 | 2.4 / 3.5 GHz | 16.5 MB | 2400 MHz | 1 TB | 2, 9.6 GT/s | 1 | 100 W | Y | Y | Y | N | N | Std |
| 4214Y | 12 / 24 | 2.2 / 3.2 GHz | 16.5 MB | 2400 MHz | 1 TB | 2, 9.6 GT/s | 1 | 85 W | Y | Y | Y | Y | N | Std |
| | 10 / 20 | 2.3 / 3.2 GHz | | | | | | | | | | | | |
| | 8 / 16 | 2.4 / 3.2 GHz | | | | | | | | | | | | |
| 4215 | 8 / 16 | 2.5 / 3.5 GHz | 11 MB | 2400 MHz | 1 TB | 2, 9.6 GT/s | 1 | 85 W | Y | Y | Y | N | Y | Std |
| 4216 | 16 / 32 | 2.1 / 3.2 GHz | 22 MB | 2400 MHz | 1 TB | 2, 9.6 GT/s | 1 | 100 W | Y | Y | Y | N | N | Std |
| Intel Xeon 5200 (Gold) processors | | | | | | | | | | | | | | |
| 5215 | 10 / 20 | 2.5 / 3.4 GHz | 13.75 MB | 2666 MHz | 1 TB | 2, 10.4 GT/s | 1 | 85 W | Y | Y | Y | N | Y | Adv |
| 5215L | 10 / 20 | 2.5 / 3.4 GHz | 13.75 MB | 2666 MHz | 4.5 TB | 2, 10.4 GT/s | 1 | 85 W | Y | Y | Y | N | Y | Adv |
| 5217 | 8 / 16 | 3.0 / 3.7 GHz | 11 MB | 2666 MHz | 1 TB | 2, 10.4 GT/s | 1 | 115 W | Y | Y | Y | N | Y | Adv |
| 5218** | 16 / 32 | 2.3 / 3.9 GHz | 22 MB | 2666 MHz | 1 TB | 2, 10.4 GT/s | 1 | 125 W | Y | Y | Y | N | Y | Adv |
| 5218B** | 16 / 32 | 2.3 / 3.9 GHz | 22 MB | 2666 MHz | 1 TB | 2, 10.4 GT/s | 1 | 125 W | Y | Y | Y | N | Y | Adv |
| 5218R | 20 / 40 | 2.1 / 4.0 GHz | 27.5 MB | 2666 MHz | 1 TB | 2, 10.4 GT/s | 1 | 125 W | Y | Y | Y | N | Y | Adv |
| 5218T | 16 / 32 | 2.1 / 3.9 GHz | 22 MB | 2666 MHz | 1 TB | 2, 10.4 GT/s | 1 | 105 W | Y | Y | Y | N | Y | Adv |
| 5220 | 18 / 36 | 2.2 / 3.9 GHz | 24.75 MB | 2666 MHz | 1 TB | 2, 10.4 GT/s | 1 | 125 W | Y | Y | Y | N | Y | Adv |
| 5220S | 18 / 36 | 2.7 / 3.9 GHz | 24.75 MB | 2666 MHz | 1 TB | 2, 10.4 GT/s | 1 | 125 W | Y | Y | Y | N | Y | Adv |
| 5220T | 18 / 36 | 1.9 / 3.9 GHz | 24.75 MB | 2666 MHz | 1 TB | 2, 10.4 GT/s | 1 | 105 W | Y | Y | Y | N | Y | Adv |
| 5222 | 4 / 8 | 3.8 / 3.9 GHz | 16.5 MB* | 2933 MHz | 1 TB | 2, 10.4 GT/s | 2 | 105 W | Y | Y | Y | N | Y | Adv |
| Intel Xeon 6200 (Gold) processors | | | | | | | | | | | | | | |
| 6209U | 20 / 40 | 2.1 / 3.9 GHz | 27.5 MB | 2933 MHz | 1 TB | None | 2 | 125 W | Y | Y | Y | N | Y | Adv |
| 6222V | 20 / 40 | 1.8 / 3.6 GHz | 27.5 MB | 2400 MHz | 1 TB | 3, 10.4 GT/s | 2 | 115 W | Y | Y | Y | N | Y | Adv |
| 6226 | 12 / 24 | 2.7 / 3.7 GHz | 19.25 MB* | 2933 MHz | 1 TB | 3, 10.4 GT/s | 2 | 125 W | Y | Y | Y | N | Y | Adv |
| 6230 | 20 / 40 | 2.1 / 3.9 GHz | 27.5 MB | 2933 MHz | 1 TB | 3, 10.4 GT/s | 2 | 125 W | Y | Y | Y | N | Y | Adv |
| 6230T | 20 / 40 | 2.1 / 3.9 GHz | 27.5 MB | 2933 MHz | 1 TB | 3, 10.4 GT/s | 2 | 125 W | Y | Y | Y | N | Y | Adv |
| 6238T | 22 / 44 | 1.9 / 3.7 GHz | 30.25 MB | 2933 MHz | 1 TB | 3, 10.4 GT/s | 2 | 125 W | Y | Y | Y | N | Y | Adv |
| Intel Xeon 8200 (Platinum) processors | | | | | | | | | | | | | | |
| 8253 | 16 / 32 | 2.2 / 3.0 GHz | 22 MB | 2933 MHz | 1 TB | 3, 10.4 GT/s | 2 | 125 W | Y | Y | Y | N | Y | Adv |
| 8256 | 4 / 8 | 3.8 / 3.9 GHz | 16.5 MB* | 2933 MHz | 1 TB | 3, 10.4 GT/s | 2 | 105 W | Y | Y | Y | N | Y | Adv |

* L3 cache is 1.375 MB per core or larger. Processors with a larger L3 cache per core are marked with an *

** The Intel Xeon Gold 5218 and 5218B processors have similar specifications; however, they use different silicon designs and cannot be mixed in the same system.

UEFI operating modes

The ST550 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.

Table 15. UEFI operating mode presets in DCSC

| Feature code | Description |
|--------------|--|
| BFYB | Operating mode selection for: "Maximum Performance Mode" |
| BFYC | Operating mode selection for: "Minimal Power Mode" |
| BFYD | Operating mode selection for: "Efficiency Favoring Power Savings Mode" |
| BFYE | Operating mode selection for: "Efficiency - Favoring Performance Mode" |

The preset modes for the ST550 are as follows:

- **Maximum Performance Mode** (feature BFYB): Achieves maximum performance but with higher power consumption and lower energy efficiency.
- **Minimal Power Mode** (feature BFYC): Minimize the absolute power consumption of the system.
- **Efficiency Favoring Power Savings Mode** (feature BFYD): Maximize the performance/watt efficiency with a bias towards power savings. This is the favored mode for SPECpower benchmark testing, for example.
- **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.

For details about these preset modes, and all other performance and power efficiency UEFI settings offered in the ST550, see the paper "Tuning UEFI Settings for Performance and Energy Efficiency on Intel Xeon Scalable Processor-Based ThinkSystem Servers", available from <https://lenovopress.lenovo.com/lp1477>.

Memory options

The ST550 server 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 ST550 supports up to 6 DIMMs per processor, for a total of 12 DIMMs when two processors are installed. Each processor has six memory channels, and supports one DIMM per channel.

With second-generation Intel Xeon Scalable processors, the ST550 supports 2666 MHz or 2933 MHz memory. It is supported to have a mix of 2933 MHz and 2666 MHz memory, however all memory will operate at the lower speed. In addition, if the processor selected has a lower memory bus speed (eg 2400 MHz or 2133 MHz - see the [Processor options](#) section), then all DIMMs will operate at that lower speed.

The following table lists the memory options that are available for the ST550 server. The table also indicates which processor generation is supported for each memory option.

Persistent Memory: Intel Optane DC Persistent Memory (DCPMM) is not supported in the ST550.

Table 16. Memory options

| Part number | Feature code | Description | Maximum supported | Gen 1 CPU | Gen 2 CPU |
|------------------------|--------------|---|----------------------|-----------|-----------|
| 2933 MHz RDIMMs | | | | | |
| 4ZC7A08706 | B4H1 | ThinkSystem 8GB TruDDR4 2933MHz (1Rx8 1.2V) RDIMM | 12 (6 per processor) | No | Yes |
| 4ZC7A08707 | B4LY | ThinkSystem 16GB TruDDR4 2933 MHz (1Rx4 1.2V) RDIMM | 12 (6 per processor) | No | Yes |
| 4ZC7A08708 | B4H2 | ThinkSystem 16GB TruDDR4 2933MHz (2Rx8 1.2V) RDIMM | 12 (6 per processor) | No | Yes |
| 4ZC7A08709 | B4H3 | ThinkSystem 32GB TruDDR4 2933MHz (2Rx4 1.2V) RDIMM | 12 (6 per processor) | No | Yes |
| 4ZC7A08710 | B4H4 | ThinkSystem 64GB TruDDR4 2933MHz (2Rx4 1.2V) RDIMM | 12 (6 per processor) | No | Yes |
| 2666 MHz RDIMMs | | | | | |
| 7X77A01301 | AUU1 | ThinkSystem 8GB TruDDR4 2666 MHz (1Rx8 1.2V) RDIMM | 12 (6 per processor) | Yes | No |
| 7X77A01303 | AUNC | ThinkSystem 16GB TruDDR4 2666 MHz (2Rx8 1.2V) RDIMM | 12 (6 per processor) | Yes | Yes |
| 7X77A01304 | AUND | ThinkSystem 32GB TruDDR4 2666 MHz (2Rx4 1.2V) RDIMM | 12 (6 per processor) | Yes | Yes |

The following rules apply when selecting the memory configuration:

- The server supports RDIMMs and LRDIMMs.
- Mixing RDIMMs and LRDIMMs is not supported. Use either RDIMMs or LDRIMMs but not both.
- Mixing 2666 MHz and 2933 MHz DIMMs is supported. All memory will operate at the lower speed.
- Mixing x4 and x8 DIMMs is supported.
- For best performance, populate memory DIMMs in quantities of 6 per processor, so that all memory channels are used.

The following memory protection technologies are supported:

- ECC
- SDDC (for x4-based memory DIMMs; look for "x4" in the DIMM description)
- ADDDC (for x4-based memory DIMMs; Gold and Platinum processors only)
- Memory channel mirroring
- Memory rank sparing

If memory channel mirroring is used, then DIMMs must be installed in pairs (minimum of one pair per processor), and both DIMMs in a pair must be identical in type and size. 50% of the installed capacity is available to the operating system.

If memory rank sparing is used, then a minimum of one quad-rank DIMM or two single-rank or dual-rank DIMMs must be installed per populated channel (the DIMMs do not need to be identical). In rank sparing mode, one rank of a DIMM in each populated channel is reserved as spare memory. The largest rank in the channel will be automatically selected as the spare rank. The amount of memory available to the operating system depends on the number, capacity and rank counts of the DIMMs installed.

Internal storage

The ST550 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:

- [Backplanes and drive bays](#)
- [Adapters and cabling](#)
- [Field upgrades](#)
- [M.2 drives](#)
- [SED encryption key management with ISKLM](#)

Drive bays and backplanes

The server supports up to 20 drive bays: It can support up to 16x 2.5-inch drives or 8x 3.5-inch drives, plus an additional 4x 2.5-inch drive bays installed in the space occupied by the two 5.25-inch media bays. Hot-swap (HS) drive configurations support SAS & SATA drives, and with an AnyBay backplane, can support up to four NVMe drives. Simple-swap (SS) drive configurations support SATA drives only. The server also supports one or two M.2 drives, installed in an M.2 adapter. The dual-M.2 adapter provides RAID 0 and 1 support.

The different drive bay configurations supported are shown in the following figure.

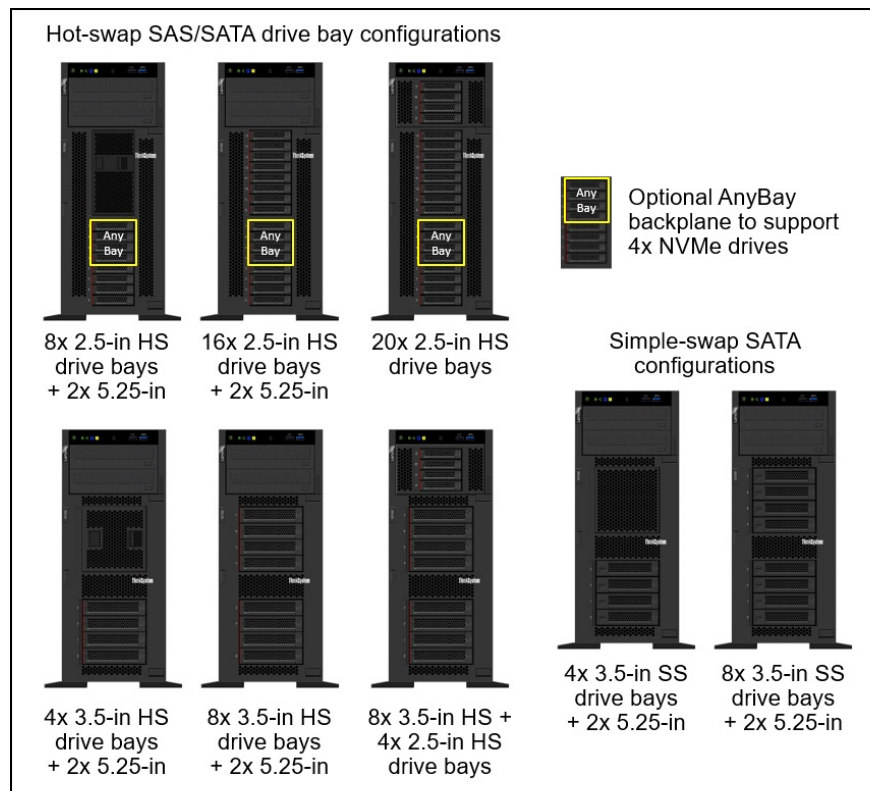


Figure 6. Internal drive bay configurations

The following table lists all available drive configurations.

Table 17. Drive configurations

| Configuration | Backplane | 5.25-inch media bays |
|---|---|-------------------------------------|
| 2.5-inch hot-swap drive bay configurations | | |
| 8x 2.5-inch SAS/SATA | One 8x2.5-inch SAS/SATA | Available |
| 8x 2.5-inch SAS/SATA, 4 bays supporting NVMe | One 8x2.5-inch AnyBay | Available |
| 16x 2.5-inch SAS/SATA | Two 8x2.5-inch SAS/SATA | Available |
| 16x 2.5-inch SAS/SATA, 4 bays supporting NVMe | One 8x2.5-inch SAS/SATA + One 8x2.5-inch AnyBay | Available |
| 20x 2.5-inch SAS/SATA | Two 8x2.5-inch SAS/SATA + 4x2.5-inch Media Bay conversion | Converted to 2.5-inch drive bays |
| 20x 2.5-inch SAS/SATA, 4 bays supporting NVMe | One 8x2.5-inch SAS/SATA + One 8x2.5-inch AnyBay + 4x2.5-inch Media Bay conversion | Converted to 2.5-inch drive bays |
| 3.5-inch and 3.5+2.5-inch hot-swap drive bay hybrid configurations | | |
| 4x 3.5-inch SAS/SATA | One 4x3.5-inch SAS/SATA | Available |
| 8x 3.5-inch SAS/SATA | One 8x3.5-inch SAS/SATA | Available |
| 8x 3.5-inch SAS/SATA + 4x 2.5-inch SAS/SATA | One 8x3.5-inch SAS/SATA + 4x2.5-inch Media Bay conversion | Converted to 2.5-inch drive bays |
| 3.5-inch simple-swap drive bay configurations | | |
| 4x 3.5-inch SATA | One Simple-swap bracket plate | Available |
| 8x 3.5-inch SATA | Two Simple-swap bracket plates | Available |

The drive backplanes used with these configurations are listed in the following table.

Table 18. Drive backplanes

| Part number | Feature | Description | Purpose |
|-------------|---------|---|----------------------|
| None* | AVRN | ThinkSystem ST550 2.5" SATA/SAS 8-Bay Backplane | 2.5-inch SAS/SATA |
| None* | AUR5 | ThinkSystem 2U/Twr 2.5" AnyBay 8-Bay Backplane | 2.5-inch AnyBay |
| None* | AVRQ | ThinkSystem ST550 4x3.5" Backplane | 3.5-inch SAS/SATA |
| None* | AVRM | ThinkSystem ST550 2.5" SATA/SAS 4-Bay Backplane | Media bay conversion |
| None* | AVRY | ThinkSystem ST550 3.5" SATA 4-Bay Simple Swap Backplate | Simple-swap drives |

* Backplanes are configure-to-order only, however upgrade kits are available that include backplanes, as described in the [Field upgrades](#) section below.

Adapters and cabling

This section describes the adapter and cabling requirements for each drive bay configuration.

Notes:

- For configurations with 16x 2.5-inch drive bays (i.e., two backplanes), you can select either one 16-port SAS/SATA adapter or two 8-port SAS/SATA adapters
- For configurations with 20x 2.5-inch drive bays, a single 24-port SAS/SATA adapter is used.
- For the use of AnyBay drive bays, a NVMe Switch adapter is used to provide the NVMe ports. The adapter is installed in slot 2 (which connects to processor 1).

The drive bay configurations are shown in the the subsections below. Where there are different adapter and cabling options, they are shown by the letters A, B, C, D. These configuration numbers are also referenced later in the [Field upgrades section](#).

1. 8x 2.5-inch hot-swap drive bays, all SAS/SATA
2. 8x 2.5-inch hot-swap drive bays, where 4 of the bays are AnyBay
3. 16x 2.5-inch hot-swap drive bays, all SAS/SATA
4. 16x 2.5-inch hot-swap drive bays, where 4 of the bays are AnyBay
5. 20x 2.5-inch hot-swap drive bays, all SAS/SATA (4 of the bays are in Media Bay)
6. 20x 2.5-inch hot-swap drive bays, where 4 of the bays are AnyBay (4 of the bays are in Media Bay)
7. 4x 3.5-inch drive bays, all SAS/SATA
8. 8x 3.5-inch hot-swap hot-swap drive bays, all SAS/SATA
9. 8x 3.5-inch + 4x 2.5-in hot-swap drive bays, all SAS/SATA
10. 4x 3.5-inch simple-swap drive bays, SATA only
11. 8x 3.5-inch simple-swap drive bays, SATA only

Tip: The adapters are described in detail in the [Controllers for internal storage](#) section.

1. 8x 2.5-inch hot-swap drive bays, all SAS/SATA

In this drive bay configuration, all eight 2.5-inch hot-swap drives are connected to one 8-port SAS/SATA RAID adapter or HBA using two backplane cables, as shown in the following figure.

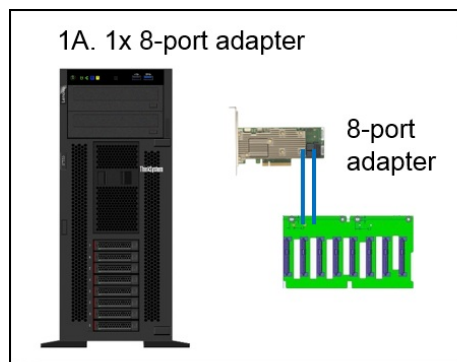


Figure 7. Adapter and cabling for 8x 2.5-inch drive bays, all SAS/SATA

2. 8x 2.5-inch hot-swap drive bays, where four of the bays are AnyBay

In 8x 2.5-inch drive-bay configurations where four of those bays are AnyBay drive bays, an 8-port SAS/SATA RAID adapter or HBA is needed plus an NVMe Switch Adapter to provide the four needed NVMe ports.

In this configuration you can have either up to eight SAS or SATA drives, or you can have up to four NVMe drives in the four AnyBay drive bays along with four SAS or SATA drives in the other bays.

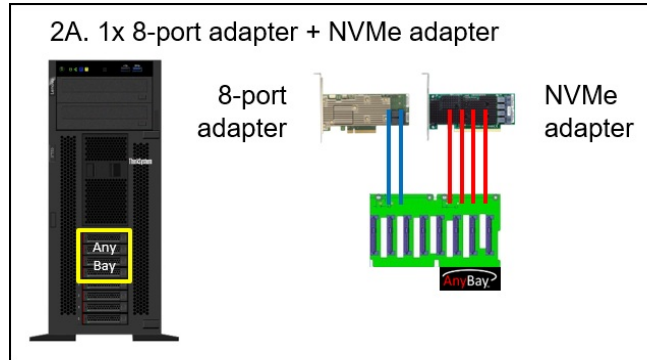


Figure 8. Adapter and cabling for 8x 2.5-inch drive bays, where 4 of the bays are AnyBay

3. 16x 2.5-inch hot-swap drive bays, all SAS/SATA

In 16-bay configurations where all 16 2.5-inch drive bays are SAS/SATA drives, you can use either two 8-port SAS/SATA RAID adapters or HBAs or one 16-port SAS/SATA RAID adapter or HBA. These choices are shown in the following figure.

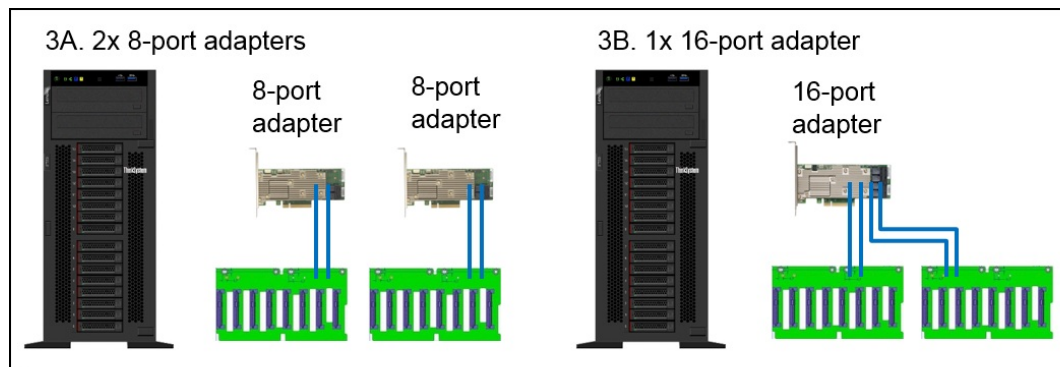


Figure 9. Adapter and cabling for 16 drive bays, all SAS/SATA

4. 16x 2.5-inch hot-swap drive bays, where four of the bays are AnyBay

In 16-drive configurations where four of the 2.5-inch bays are AnyBay drive bays, a 16-port SAS/SATA RAID adapter or HBA is needed plus an NVMe Switch Adapter to provide the four needed NVMe ports. The configurations are shown in the following figure.

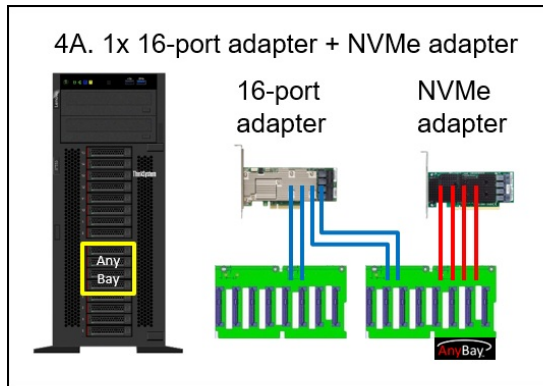


Figure 10. Adapter and cabling for 16 drive bays, where 4 of the bays are AnyBay

5. 20x 2.5-inch hot-swap drive bays, all SAS/SATA

In a 20-drive configuration, where all drives are SAS or SATA, all connectivity is provided by a single 24-port SAS/SATA RAID adapter. The top four drive bays are in place of the two 5.25" media bays. Connectivity is shown in the following figure.

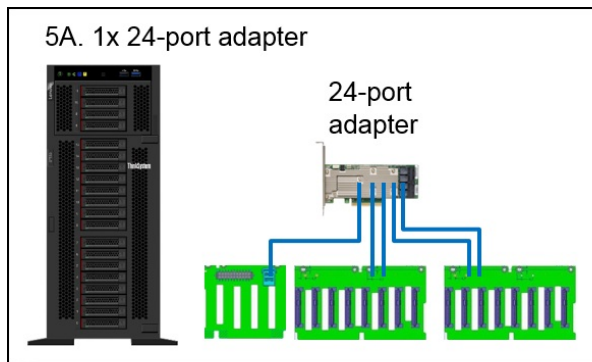


Figure 11. Adapter and cabling for 20 drive bays, all SAS/SATA

6. 20x 2.5-inch hot-swap drive bays, where four of the bays are AnyBay

In this 20-drive configuration, all drives can be SAS or SATA drives, or four can be NVMe drives. SAS/SATA connectivity is provided by a single 24-port SAS/SATA RAID adapter. NVMe connectivity is provided by the NVMe Switch Adapter. The top four drive bays are in place of the two 5.25" media bays. Connectivity is shown in the following figure.

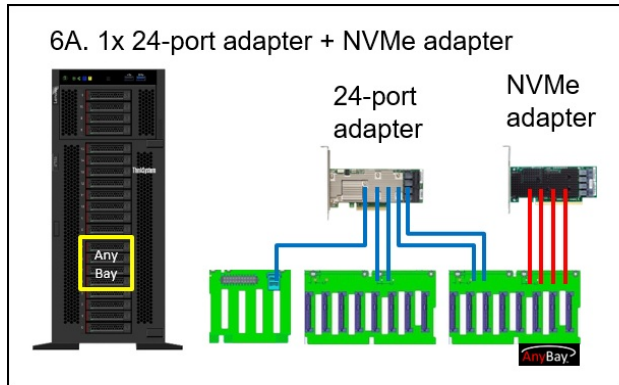


Figure 12. Adapter and cabling for 20 drive bays, where 4 of the bays are AnyBay

7. 4x 3.5-inch hot-swap drive bays, all SAS/SATA

In this drive bay configuration, four 3.5-inch hot-swap drives are connected to one 8-port SAS/SATA RAID adapter or HBA using a single backplane cable, as shown in the following figure.

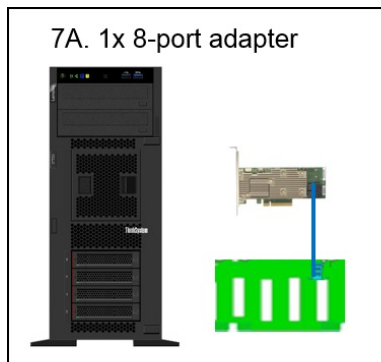


Figure 13. Adapter and cabling for 4x 3.5-inch drive bays, all SAS/SATA

8. 8x 3.5-inch hot-swap drive bays, all SAS/SATA

In this drive bay configuration, eight 3.5-inch hot-swap drives are connected to one 8-port SAS/SATA RAID adapter or HBA using two backplane cables, as shown in the following figure.

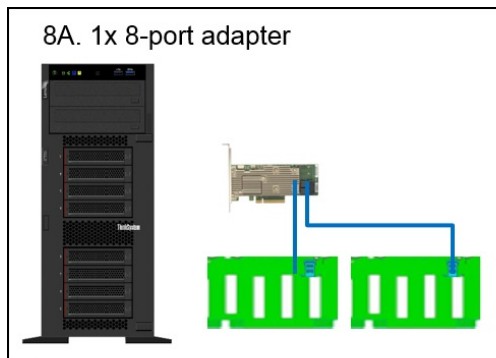


Figure 14. Adapter and cabling for 8x 3.5-inch drive bays, all SAS/SATA

9. 8x 3.5-inch + 4x 2.5-inch hot-swap drive bays, all SAS/SATA

In this combination drive configuration, eight 3.5-in drives and four 2.5-inch drives are supported. The top four drive bays are in place of the two 5.25" media bays. All connectivity can be provided by a single 16-port adapter or two 8-port adapters. Connectivity options are shown in the following figure.

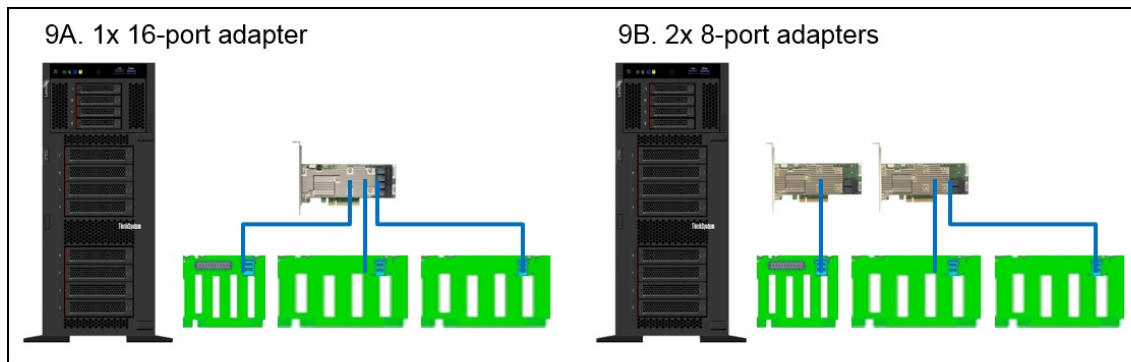


Figure 15. Adapter and cabling for 8x 3.5-inch + 4x 2.5-inch drive bays, all SAS/SATA

10. 4x 3.5-inch simple-swap drive bays, SATA only

In this configuration, the server supports four 3.5-inch simple-swap (SS) drive bays, which support only SATA HDDs and SSDs. The drives connect to a single simple-swap bracket plate, which in turn plugs into a mini-SAS HD connector on the system board.

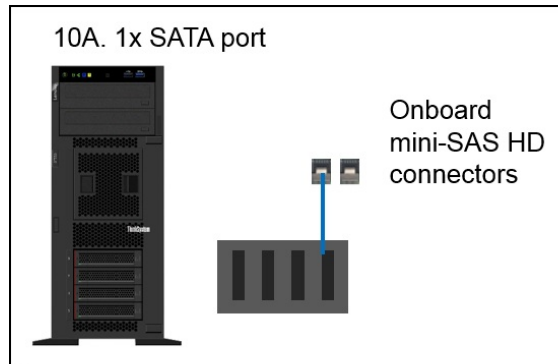


Figure 16. Adapter and cabling for 4x 3.5-inch simple-swap drive bays; SATA only

11. 8x 3.5-inch simple-swap drive bays, SATA only

In this configuration, the server supports eight 3.5-inch simple-swap drives bays, which support only SATA HDDs and SSDs. The drives connect to two simple-swap bracket plates, which in turn each plug into a mini-SAS HD connector on the system board.

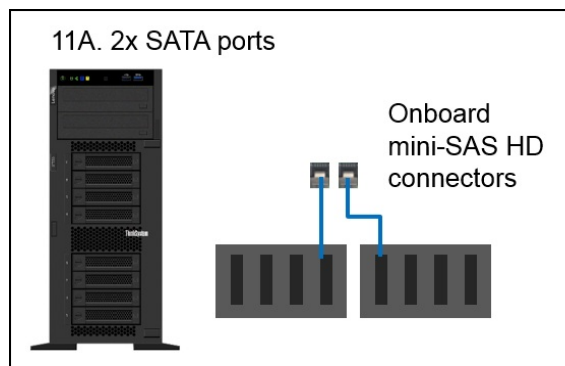


Figure 17. Adapter and cabling for 8x 3.5-inch simple-swap drive bays; SATA only

Field upgrades

The following table shows the backplane kits you can use after the initial purchase to upgrade the server to add additional drive bays.

Use with X40 adapters: These backplane kits in the table below include SAS/SATA cables for use with the onboard SATA controller or with RAID 930, 730, 530 adapters and 430 HBAs (collectively called X30 adapters). If you are adding or upgrading to RAID 940 adapters or 440 HBAs (collectively called X40 adapters), you will need to also order an X40 cable kit. See the [Cable kits for 440 HBAs and RAID 940 adapters](#) section for details.

Table 19. Drive backplane upgrades

| Part number | Description | Purpose | Quantity supported |
|-------------|--|--|--------------------|
| 7XH7A05906 | ThinkSystem ST550 2.5" SATA/SAS 8-Bay Backplane | Add 8x 2.5-inch SAS/SATA | 2 |
| 7XH7A05907 | ThinkSystem ST550 2.5" Anybay 8-Bay Backplane Kit | Add 8x 2.5-inch AnyBay | 1 |
| 7XH7A05908* | ThinkSystem ST550 2.5" SATA/SAS 4-Bay Backplane (media bay conversion kit) | Add 4x 2.5-inch to media bay (replace existing 5.25" bays) | 1 |
| 7XH7A05905 | ThinkSystem ST550 3.5" SATA/SAS 4-Bay Backplane | Add 4x 3.5-inch HS SAS/SATA | 2 |
| 7XH7A05904 | ThinkSystem ST550 3.5" SATA 4-Bay Simple Swap Backplate | Add 4x 3.5-inch simple-swap | 2 |

* The media bay conversion kit also requires an additional system fan if the server has only one processor. See the [Fans and cooling](#) section for details.

Each kit contains the backplane and the necessary cables for use with an X30 adapter. The AnyBay kit also including PCIe cables for NVMe drive connectivity. The 2.5" SATA/SAS 4-Bay Backplane Kit also includes the necessary 4x 2.5-inch drive-bay cage.

In addition to the backplane kits, you will need a RAID adapter or HBA, and if you are adding an AnyBay backplane, you'll also need an NVMe Switch adapter. The adapters are described in the [Controllers for internal storage](#) section.

Cable kits for 440 HBAs and RAID 940 adapters

The backplane kits listed in the preceding table include cables for use with the onboard SATA controller or with RAID 930, 730, 530 adapters and 430 HBAs (collectively called X30 adapters). If you wish to use the backplane kits with RAID 940 adapters or 440 HBAs (collectively called X40 adapters), then you will also need to order an additional X40 cable kit to use instead of the cables in the backplane kit, as listed in the following table.

Tip: When adding an X40 adapter, you will order both the backplane kit and the relevant X40 cable kit, however the SAS/SATA data cable(s) in the backplane kit will not be used.

Table 20. Cable kits for 440 HBAs and RAID 940 adapters

| Backplane kits with X30 cables | | X40 cable kits also needed (1 per server) | |
|--------------------------------|---|---|---|
| 7XH7A05906 | ThinkSystem ST550 2.5" SATA/SAS 8-Bay Backplane | 4XH7A61116 | ThinkSystem ST550 2.5" SAS/SATA/AnyBay 8-Bay X40 RAID Cable Kit (contains cables for two backplanes) |
| 7XH7A05907 | ThinkSystem ST550 2.5" AnyBay 8-Bay Backplane Kit | 4XH7A61116 | ThinkSystem ST550 2.5" SAS/SATA/AnyBay 8-Bay X40 RAID Cable Kit (contains cables for two backplanes) |
| 7XH7A05908 | ThinkSystem ST550 2.5" SATA/SAS 4-Bay Backplane (media bay conversion kit) | 4XH7A61118 | ThinkSystem ST550 2.5" SAS/SATA 4-Bay X40 RAID Cable Kit |
| 7XH7A05905 | ThinkSystem ST550 3.5" SATA/SAS 4-Bay Backplane | 4XH7A61119 | ThinkSystem ST550 3.5" SAS/SATA 4-Bay X40 RAID Cable Kit (contains cables for two backplanes) |
| 7XH7A05904 | ThinkSystem ST550 3.5" SATA 4-Bay Simple Swap Backplate | None | Not supported |

M.2 drives

The server supports one or two M.2 form-factor SATA drives for use as an operating system boot solution. With two M.2 drives configured, the drives are configured by default as a RAID-1 mirrored pair for redundancy.

The M.2 drives install into an M.2 adapter which in turn is installed in a dedicated slot on the system board. See the internal view of the server in the [Components and connectors](#) section for the location of the M.2 slot.

There are two M.2 adapters supported, as listed in the following table.

Table 21. M.2 components

| Part number | Feature code | Description | Maximum supported |
|-------------|--------------|---|-------------------|
| 7Y37A01092 | AUMU | ThinkSystem M.2 Enablement Kit (contains the Single M.2 Boot Adapter; supports 1 drive) | 1 |
| 7Y37A01093 | AUMV | ThinkSystem M.2 with Mirroring Enablement Kit (contains the Dual M.2 Boot Adapter, supports 1 or 2 drives) | 1 |

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

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 22. 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 23. IBM Security Key Lifecycle Manager licenses

| Part number | Description |
|-------------|--|
| 7S0A007FWW | IBM Security Key Lifecycle Manager Basic Edition Install License + SW Subscription & Support 12 Months |
| 7S0A007HWW | IBM Security Key Lifecycle Manager For Raw Decimal Terabyte Storage Resource Value Unit License + SW Subscription & Support 12 Months |
| 7S0A007KWW | IBM Security Key Lifecycle Manager For Raw Decimal Petabyte Storage Resource Value Unit License + SW Subscription & Support 12 Months |
| 7S0A007MWW | IBM Security Key Lifecycle Manager For Usable Decimal Terabyte Storage Resource Value Unit License + SW Subscription & Support 12 Months |
| 7S0A007PWW | IBM Security Key Lifecycle Manager For Usable Decimal Petabyte Storage Resource Value Unit License + SW Subscription & Support 12 Months |

Controllers for internal storage

The ST550 with hot-swap drives supports internal SAS and SATA drives with the addition of a RAID adapter or HBA. For NVMe support, the server supports the use of an NVMe Switch Adapter installed in a PCIe slot.

For simple-swap drive support, the ST550 uses two onboard 6Gb SATA ports to connect the four or eight simple-swap drives. These ports enable Intel RSTe for RAID functionality.

Virtualization support: The 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.

The following table lists the adapters used for the internal disk storage of the ST550 server.

Table 24. Controllers for internal storage - hot-swap drive support

| Part number | Feature code | Description | Maximum supported | Slots supported |
|----------------------|--------------|---|-------------------|-----------------|
| SAS/SATA HBA | | | | |
| 7Y37A01088 | AUNL | ThinkSystem 430-8i SAS/SATA 12Gb HBA | 2 | All slots |
| 4Y37A72480 | BJHH | ThinkSystem 4350-8i SAS/SATA 12Gb HBA | 2 | All slots |
| 4Y37A78601 | BM51 | ThinkSystem 440-8i SAS/SATA PCIe Gen4 12Gb HBA | 2 | All slots |
| 7Y37A01089 | AUNM | ThinkSystem 430-16i SAS/SATA 12Gb HBA | 1 | All slots |
| 4Y37A78602 | BM50 | ThinkSystem 440-16i SAS/SATA PCIe Gen4 12Gb HBA | 1 | All slots |
| RAID adapters | | | | |
| 7Y37A01082 | AUNG | ThinkSystem RAID 530-8i PCIe 12Gb Adapter | 2 | All slots |
| 4Y37A78834 | BMFT | ThinkSystem RAID 540-8i PCIe Gen4 12Gb Adapter | 2 | All slots |
| 4Y37A72482 | BJHK | ThinkSystem RAID 5350-8i PCIe 12Gb Adapter | 2 | All slots |
| 7Y37A01083* | AUNH* | ThinkSystem RAID 730-8i 1GB Cache PCIe 12Gb Adapter | 2 | All slots |
| 4Y37A09722 | B4RQ | ThinkSystem RAID 730-8i 2GB Flash PCIe 12Gb Adapter | 2 | All slots |
| 7Y37A01084 | AUNJ | ThinkSystem RAID 930-8i 2GB Flash PCIe 12Gb Adapter | 2 | All slots |
| 4Y37A72483 | BJHL | ThinkSystem RAID 9350-8i 2GB Flash PCIe 12Gb Adapter | 2 | All slots |
| 7Y37A01085 | AUNK | ThinkSystem RAID 930-16i 4GB Flash PCIe 12Gb Adapter | 1 | All slots |
| 4Y37A09721 | B31E | ThinkSystem RAID 930-16i 8GB Flash PCIe 12Gb Adapter | 1 | All slots |
| 7Y37A01086 | AUV1 | ThinkSystem RAID 930-24i 4GB Flash PCIe 12Gb Adapter | 1 | 1,2 |
| 4Y37A09728 | B8NY | ThinkSystem RAID 940-8i 4GB Flash PCIe Gen4 12Gb Adapter | 2 | All slots |
| 4Y37A78600 | BM35 | ThinkSystem RAID 940-16i 4GB Flash PCIe Gen4 12Gb Adapter | 1 | All slots |
| 4Y37A09730 | B8NZ | ThinkSystem RAID 940-16i 8GB Flash PCIe Gen4 12Gb Adapter | 1 | All slots |
| 4Y37A09733 | B8P8 | ThinkSystem RAID 940-32i 8GB Flash PCIe Gen4 12Gb Adapter | 1 | 1,2 |
| NVMe adapter | | | | |
| 7Y37A01081 | AUV2 | ThinkSystem 1610-4P NVMe Switch Adapter | 1 | 2 |

* Market availability: The RAID 730-8i 1GB Cache adapter is not available in USA and Canada.

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#st550-support=ST550>

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 HDDs](#)
- [2.5-inch hot-swap 24 Gb SAS SSDs](#)
- [2.5-inch hot-swap 12 Gb SAS SSDs](#)
- [2.5-inch hot-swap 6 Gb SATA SSDs](#)
- [2.5-inch hot-swap PCIe 4.0 NVMe SSDs](#)
- [2.5-inch hot-swap PCIe 3.0 NVMe 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 24 Gb SAS SSDs](#)
- [3.5-inch hot-swap 12 Gb SAS SSDs](#)
- [3.5-inch hot-swap 6 Gb SATA SSDs](#)

Simple-swap drives:

- [3.5-inch simple-swap 6 Gb SATA HDDs](#)

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.

PCIe 4.0 NVMe drive support: When installed in this server, PCIe 4.0 NVMe drives will operate at PCIe 3.0 speeds.

Table 25. 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 15K | | | | |
| 7XB7A00021 | AULV | ThinkSystem 2.5" 300GB 15K SAS 12Gb Hot Swap 512n HDD | No | 20 |
| 7XB7A00022 | AULW | ThinkSystem 2.5" 600GB 15K SAS 12Gb Hot Swap 512n HDD | No | 20 |
| 7XB7A00023 | AULX | ThinkSystem 2.5" 900GB 15K SAS 12Gb Hot Swap 512e HDD | No | 20 |
| 2.5-inch hot-swap HDDs - 12 Gb SAS 10K | | | | |
| 7XB7A00024 | AULY | ThinkSystem 2.5" 300GB 10K SAS 12Gb Hot Swap 512n HDD | No | 20 |
| 7XB7A00025 | AULZ | ThinkSystem 2.5" 600GB 10K SAS 12Gb Hot Swap 512n HDD | No | 20 |
| 7XB7A00026 | AUM0 | ThinkSystem 2.5" 900GB 10K SAS 12Gb Hot Swap 512n HDD | No | 20 |
| 7XB7A00027 | AUM1 | ThinkSystem 2.5" 1.2TB 10K SAS 12Gb Hot Swap 512n HDD | No | 20 |
| 7XB7A00028 | AUM2 | ThinkSystem 2.5" 1.8TB 10K SAS 12Gb Hot Swap 512e HDD | No | 20 |
| 7XB7A00069 | B0YS | ThinkSystem 2.5" 2.4TB 10K SAS 12Gb Hot Swap 512e HDD | No | 20 |
| 2.5-inch hot-swap HDDs - 12 Gb NL SAS | | | | |
| 7XB7A00034 | AUM6 | ThinkSystem 2.5" 1TB 7.2K SAS 12Gb Hot Swap 512n HDD | No | 20 |
| 7XB7A00035 | AUM7 | ThinkSystem 2.5" 2TB 7.2K SAS 12Gb Hot Swap 512n HDD | No | 20 |
| 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 | 20 |
| 7XB7A00033 | B0YX | ThinkSystem 2.5" 1.2TB 10K SAS 12Gb Hot Swap 512n HDD SED | Support | 20 |

Table 26. 2.5-inch hot-swap 6 Gb SATA HDDs

| Part number | Feature code | Description | SED support | Max Qty |
|--|--------------|--|-------------|---------|
| 2.5-inch hot-swap HDDs - 6 Gb NL SATA | | | | |
| 7XB7A00036 | AUUE | ThinkSystem 2.5" 1TB 7.2K SATA 6Gb Hot Swap 512n HDD | No | 20 |
| 7XB7A00037 | AUJJ | ThinkSystem 2.5" 2TB 7.2K SATA 6Gb Hot Swap 512e HDD | No | 20 |

Table 27. 2.5-inch hot-swap 24 Gb SAS SSDs

| Part number | Feature code | Description | SED support | Max Qty |
|--|--------------|--|-------------|---------|
| 2.5-inch hot-swap SSDs - 24 Gb SAS - Mixed Use/Mainstream (3-5 DWPD) | | | | |
| 4XB7A80340 | BNW8 | ThinkSystem 2.5" PM1655 800GB Mixed Use SAS 24Gb HS SSD | Support | 20 |
| 4XB7A80341 | BNW9 | ThinkSystem 2.5" PM1655 1.6TB Mixed Use SAS 24Gb HS SSD | Support | 20 |
| 4XB7A80342 | BNW6 | ThinkSystem 2.5" PM1655 3.2TB Mixed Use SAS 24Gb HS SSD | Support | 20 |
| 4XB7A80343 | BP3K | ThinkSystem 2.5" PM1655 6.4TB Mixed Use SAS 24Gb HS SSD | Support | 20 |
| 2.5-inch hot-swap SSDs - 24 Gb SAS - Read Intensive/Entry/Capacity (<3 DWPD) | | | | |
| 4XB7A80318 | BNWC | ThinkSystem 2.5" PM1653 960GB Read Intensive SAS 24Gb HS SSD | Support | 20 |
| 4XB7A80319 | BNWE | ThinkSystem 2.5" PM1653 1.92TB Read Intensive SAS 24Gb HS SSD | Support | 20 |
| 4XB7A80320 | BNWF | ThinkSystem 2.5" PM1653 3.84TB Read Intensive SAS 24Gb HS SSD | Support | 20 |
| 4XB7A80321 | BP3E | ThinkSystem 2.5" PM1653 7.68TB Read Intensive SAS 24Gb HS SSD | Support | 20 |
| 4XB7A80322 | BP3J | ThinkSystem 2.5" PM1653 15.36TB Read Intensive SAS 24Gb HS SSD | Support | 20 |
| 4XB7A80323 | BP3D | ThinkSystem 2.5" PM1653 30.72TB Read Intensive SAS 24Gb HS SSD | Support | 20 |

Table 28. 2.5-inch hot-swap 12 Gb SAS SSDs

| Part number | Feature code | Description | SED support | Max Qty |
|--|--------------|---|-------------|---------|
| 2.5-inch hot-swap SSDs - 12 Gb SAS - Mixed Use/Mainstream (3-5 DWPD) | | | | |
| 4XB7A17062 | B8HU | ThinkSystem 2.5" PM1645a 800GB Mainstream SAS 12Gb Hot Swap SSD | No | 20 |
| 4XB7A17063 | B8J4 | ThinkSystem 2.5" PM1645a 1.6TB Mainstream SAS 12Gb Hot Swap SSD | No | 20 |
| 4XB7A17064 | B8JD | ThinkSystem 2.5" PM1645a 3.2TB Mainstream SAS 12Gb Hot Swap SSD | No | 20 |
| 4XB7A17065 | B8JA | ThinkSystem 2.5" PM1645a 6.4TB Mainstream SAS 12Gb Hot Swap SSD | No | 20 |
| 2.5-inch hot-swap SSDs - 12 Gb SAS - Read Intensive/Entry/Capacity (<3 DWPD) | | | | |
| 4XB7A38175 | B91A | ThinkSystem 2.5" PM1643a 960GB Entry SAS 12Gb Hot Swap SSD | No | 20 |
| 4XB7A38176 | B91B | ThinkSystem 2.5" PM1643a 1.92TB Entry SAS 12Gb Hot Swap SSD | No | 20 |
| 4XB7A17054 | B91C | ThinkSystem 2.5" PM1643a 3.84TB Entry SAS 12Gb Hot Swap SSD | No | 20 |
| 4XB7A17055 | B91D | ThinkSystem 2.5" PM1643a 7.68TB Entry SAS 12Gb Hot Swap SSD | No | 20 |

Table 29. 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) | | | | |
| 4XB7A82289 | BQ21 | ThinkSystem 2.5" 5400 MAX 480GB Mixed Use SATA 6Gb HS SSD | Support | 20 |
| 4XB7A82290 | BQ24 | ThinkSystem 2.5" 5400 MAX 960GB Mixed Use SATA 6Gb HS SSD | Support | 20 |
| 4XB7A82291 | BQ22 | ThinkSystem 2.5" 5400 MAX 1.92TB Mixed Use SATA 6Gb HS SSD | Support | 20 |
| 4XB7A82292 | BQ23 | ThinkSystem 2.5" 5400 MAX 3.84TB Mixed Use SATA 6Gb HS SSD | Support | 20 |

| Part number | Feature code | Description | SED support | Max Qty |
|---|--------------|--|-------------|---------|
| 4XB7A17125 | BA7Q | ThinkSystem 2.5" S4620 480GB Mixed Use SATA 6Gb HS SSD | No | 20 |
| 4XB7A17126 | BA4T | ThinkSystem 2.5" S4620 960GB Mixed Use SATA 6Gb HS SSD | No | 20 |
| 4XB7A17127 | BA4U | ThinkSystem 2.5" S4620 1.92TB Mixed Use SATA 6Gb HS SSD | No | 20 |
| 4XB7A17128 | BK7L | ThinkSystem 2.5" S4620 3.84TB Mixed Use SATA 6Gb HS SSD | No | 20 |
| 4XB7A17087 | B8J1 | ThinkSystem 2.5" 5300 240GB Mainstream SATA 6Gb Hot Swap SSD | No | 20 |
| 4XB7A17088 | B8HY | ThinkSystem 2.5" 5300 480GB Mainstream SATA 6Gb Hot Swap SSD | No | 20 |
| 4XB7A17089 | B8J6 | ThinkSystem 2.5" 5300 960GB Mainstream SATA 6Gb Hot Swap SSD | No | 20 |
| 4XB7A17090 | B8JE | ThinkSystem 2.5" 5300 1.92TB Mainstream SATA 6Gb Hot Swap SSD | No | 20 |
| 4XB7A17091 | B8J7 | ThinkSystem 2.5" 5300 3.84TB Mainstream SATA 6Gb Hot Swap SSD | No | 20 |
| 4XB7A13633 | B49L | ThinkSystem 2.5" S4610 240GB Mixed Use SATA 6Gb HS SSD | No | 20 |
| 4XB7A13637 | B49Q | ThinkSystem 2.5" S4610 3.84TB Mixed Use SATA 6Gb HS SSD | No | 20 |
| 2.5-inch hot-swap SSDs - 6 Gb SATA - Read Intensive/Entry (<3 DWPD) | | | | |
| 4XB7A82258 | BQ1Q | ThinkSystem 2.5" 5400 PRO 240GB Read Intensive SATA 6Gb HS SSD | Support | 20 |
| 4XB7A82259 | BQ1P | ThinkSystem 2.5" 5400 PRO 480GB Read Intensive SATA 6Gb HS SSD | Support | 20 |
| 4XB7A82260 | BQ1R | ThinkSystem 2.5" 5400 PRO 960GB Read Intensive SATA 6Gb HS SSD | Support | 20 |
| 4XB7A82261 | BQ1X | ThinkSystem 2.5" 5400 PRO 1.92TB Read Intensive SATA 6Gb HS SSD | Support | 20 |
| 4XB7A82262 | BQ1S | ThinkSystem 2.5" 5400 PRO 3.84TB Read Intensive SATA 6Gb HS SSD | Support | 20 |
| 4XB7A82263 | BQ1T | ThinkSystem 2.5" 5400 PRO 7.68TB Read Intensive SATA 6Gb HS SSD | Support | 20 |
| 4XB7A72438 | BM8B | ThinkSystem 2.5" PM893 480GB Read Intensive SATA 6Gb HS SSD | No | 20 |
| 4XB7A72439 | BM8A | ThinkSystem 2.5" PM893 960GB Read Intensive SATA 6Gb HS SSD | No | 20 |
| 4XB7A72440 | BM89 | ThinkSystem 2.5" PM893 1.92TB Read Intensive SATA 6Gb HS SSD | No | 20 |
| 4XB7A72441 | BM88 | ThinkSystem 2.5" PM893 3.84TB Read Intensive SATA 6Gb HS SSD | No | 20 |
| 4XB7A72442 | BM87 | ThinkSystem 2.5" PM893 7.68TB Read Intensive SATA 6Gb HS SSD | No | 20 |
| 4XB7A17072 | B99D | ThinkSystem 2.5" S4520 240GB Read Intensive SATA 6Gb HS SSD | No | 20 |
| 4XB7A17101 | BA7G | ThinkSystem 2.5" S4520 480GB Read Intensive SATA 6Gb HS SSD | No | 20 |
| 4XB7A17102 | BA7H | ThinkSystem 2.5" S4520 960GB Read Intensive SATA 6Gb HS SSD | No | 20 |
| 4XB7A17103 | BA7J | ThinkSystem 2.5" S4520 1.92TB Read Intensive SATA 6Gb HS SSD | No | 20 |
| 4XB7A17104 | BK77 | ThinkSystem 2.5" S4520 3.84TB Read Intensive SATA 6Gb HS SSD | No | 20 |
| 4XB7A17105 | BK78 | ThinkSystem 2.5" S4520 7.68TB Read Intensive SATA 6Gb HS SSD | No | 20 |
| 4XB7A38271 | BCTC | ThinkSystem 2.5" Multi Vendor 240GB Entry SATA 6Gb Hot Swap SSD | No | 20 |
| 4XB7A38272 | BCTD | ThinkSystem 2.5" Multi Vendor 480GB Entry SATA 6Gb Hot Swap SSD | No | 20 |
| 4XB7A38273 | BCTE | ThinkSystem 2.5" Multi Vendor 960GB Entry SATA 6Gb Hot Swap SSD | No | 20 |
| 4XB7A38274 | BCTF | ThinkSystem 2.5" Multi Vendor 1.92TB Entry SATA 6Gb Hot Swap SSD | No | 20 |
| 4XB7A38275 | BCTG | ThinkSystem 2.5" Multi Vendor 3.84TB Entry SATA 6Gb Hot Swap SSD | No | 20 |
| 4XB7A17075 | B8HV | ThinkSystem 2.5" 5300 240GB Entry SATA 6Gb Hot Swap SSD | No | 20 |
| 4XB7A17076 | B8JM | ThinkSystem 2.5" 5300 480GB Entry SATA 6Gb Hot Swap SSD | No | 20 |

| Part number | Feature code | Description | SED support | Max Qty |
|-------------|--------------|--|-------------|---------|
| 4XB7A17077 | B8HP | ThinkSystem 2.5" 5300 960GB Entry SATA 6Gb Hot Swap SSD | No | 20 |
| 4XB7A17078 | B8J5 | ThinkSystem 2.5" 5300 1.92TB Entry SATA 6Gb Hot Swap SSD | No | 20 |
| 4XB7A17079 | B8JP | ThinkSystem 2.5" 5300 3.84TB Entry SATA 6Gb Hot Swap SSD | No | 20 |
| 4XB7A17080 | B8J2 | ThinkSystem 2.5" 5300 7.68TB Entry SATA 6Gb Hot Swap SSD | No | 20 |
| 4XB7A38185 | B9AC | ThinkSystem 2.5" 5210 960GB Entry SATA 6Gb Hot Swap QLC SSD | No | 20 |
| 4XB7A38144 | B7EW | ThinkSystem 2.5" 5210 1.92TB Entry SATA 6Gb Hot Swap QLC SSD | No | 20 |
| 4XB7A38145 | B7EX | ThinkSystem 2.5" 5210 3.84TB Entry SATA 6Gb Hot Swap QLC SSD | No | 20 |
| 4XB7A38146 | B7EY | ThinkSystem 2.5" 5210 7.68TB Entry SATA 6Gb Hot Swap QLC SSD | No | 20 |
| 4XB7A10197 | B34K | ThinkSystem 2.5" PM883 960GB Entry SATA 6Gb Hot Swap SSD | No | 20 |
| 4XB7A10198 | B34L | ThinkSystem 2.5" PM883 1.92TB Entry SATA 6Gb Hot Swap SSD | No | 20 |
| 4XB7A10200 | B4D2 | ThinkSystem 2.5" PM883 7.68TB Entry SATA 6Gb Hot Swap SSD | No | 20 |

Table 30. 2.5-inch hot-swap PCIe 4.0 NVMe SSDs

| Part number | Feature code | Description | SED support | Max Qty |
|--|--------------|--|-------------|---------|
| 2.5-inch SSDs - U.3 PCIe 4.0 NVMe - Read Intensive/Entry (<3 DWPD) | | | | |
| 4XB7A79646 | BNF3 | ThinkSystem 2.5" U.3 7450 PRO 960GB Read Intensive NVMe PCIe 4.0 x4 HS SSD | Support | 4 |
| 4XB7A79647 | BNF2 | ThinkSystem 2.5" U.3 7450 PRO 1.92TB Read Intensive NVMe PCIe 4.0 x4 HS SSD | Support | 4 |
| 4XB7A79648 | BNF5 | ThinkSystem 2.5" U.3 7450 PRO 3.84TB Read Intensive NVMe PCIe 4.0 x4 HS SSD | Support | 4 |
| 4XB7A79649 | BNF4 | ThinkSystem 2.5" U.3 7450 PRO 7.68TB Read Intensive NVMe PCIe 4.0 x4 HS SSD | Support | 4 |
| 4XB7A83097 | BQAV | ThinkSystem 2.5" U.3 7450 PRO 15.36TB Read Intensive NVMe PCIe 4.0 x4 HS SSD | Support | 4 |

Note: NVMe PCIe SSDs support surprise hot removal and hot insertion, provided the operating system supports PCIe SSD hot-swap.

Table 31. 2.5-inch hot-swap PCIe 3.0 NVMe SSDs

| Part number | Feature code | Description | SED support | Max Qty |
|--|--------------|--|-------------|---------|
| 2.5-inch SSDs - U.2 PCIe 3.0 NVMe - Read Intensive/Entry (<3 DWPD) | | | | |
| 4XB7A10202 | B58F | ThinkSystem U.2 Intel P4510 1.0TB Entry NVMe PCIe3.0 x4 Hot Swap SSD | No | 4 |
| 4XB7A10205 | B58H | ThinkSystem U.2 Intel P4510 4.0TB Entry NVMe PCIe3.0 x4 Hot Swap SSD | No | 4 |
| 4XB7A10175 | B34N | ThinkSystem U.2 PM983 1.92TB Entry NVMe PCIe 3.0 x4 Hot Swap SSD | No | 4 |
| 4XB7A10176 | B34P | ThinkSystem U.2 PM983 3.84TB Entry NVMe PCIe 3.0 x4 Hot Swap SSD | No | 4 |
| 4XB7A10177 | B4D3 | ThinkSystem U.2 PM983 7.68TB Entry NVMe PCIe3.0 x4 Hot Swap SSD | No | 4 |

Note: NVMe PCIe SSDs support surprise hot removal and hot insertion, provided the operating system supports PCIe SSD hot-swap.

Table 32. 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 SAS 15K | | | | |
| 7XB7A00038 | AUU2 | ThinkSystem 3.5" 300GB 15K SAS 12Gb Hot Swap 512n HDD | No | 8 |
| 7XB7A00039 | AUU3 | ThinkSystem 3.5" 600GB 15K SAS 12Gb Hot Swap 512n HDD | No | 8 |
| 3.5-inch hot-swap HDDs - 12 Gb NL SAS | | | | |
| 7XB7A00042 | AUU5 | ThinkSystem 3.5" 2TB 7.2K SAS 12Gb Hot Swap 512n HDD | No | 8 |
| 7XB7A00043 | AUU6 | ThinkSystem 3.5" 4TB 7.2K SAS 12Gb Hot Swap 512n HDD | No | 8 |
| 7XB7A00044 | AUU7 | ThinkSystem 3.5" 6TB 7.2K SAS 12Gb Hot Swap 512e HDD | No | 8 |
| 7XB7A00045 | B0YR | ThinkSystem 3.5" 8TB 7.2K SAS 12Gb Hot Swap 512e HDD | No | 8 |
| 7XB7A00046 | AUUG | ThinkSystem 3.5" 10TB 7.2K SAS 12Gb Hot Swap 512e HDD | No | 8 |
| 7XB7A00067 | B117 | ThinkSystem 3.5" 12TB 7.2K SAS 12Gb Hot Swap 512e HDD | No | 8 |
| 4XB7A13906 | B496 | ThinkSystem 3.5" 14TB 7.2K SAS 12Gb Hot Swap 512e HDD | No | 8 |
| 4XB7A13911 | B7EZ | ThinkSystem 3.5" 16TB 7.2K SAS 12Gb Hot Swap 512e HDD | No | 8 |
| 4XB7A38266 | BCFP | ThinkSystem 3.5" 18TB 7.2K SAS 12Gb Hot Swap 512e HDD | No | 8 |
| 4XB7A80353 | BPKU | ThinkSystem 3.5" 20TB 7.2K SAS 12Gb Hot Swap 512e HDD | No | 8 |

Table 33. 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 | | | | |
| 7XB7A00049 | AUUF | ThinkSystem 3.5" 1TB 7.2K SATA 6Gb Hot Swap 512n HDD | No | 8 |
| 7XB7A00050 | AUUD | ThinkSystem 3.5" 2TB 7.2K SATA 6Gb Hot Swap 512n HDD | No | 8 |
| 7XB7A00051 | AUU8 | ThinkSystem 3.5" 4TB 7.2K SATA 6Gb Hot Swap 512n HDD | No | 8 |
| 7XB7A00052 | AUUA | ThinkSystem 3.5" 6TB 7.2K SATA 6Gb Hot Swap 512e HDD | No | 8 |
| 7XB7A00053 | AUU9 | ThinkSystem 3.5" 8TB 7.2K SATA 6Gb Hot Swap 512e HDD | No | 8 |
| 7XB7A00054 | AUUB | ThinkSystem 3.5" 10TB 7.2K SATA 6Gb Hot Swap 512e HDD | No | 8 |
| 7XB7A00068 | B118 | ThinkSystem 3.5" 12TB 7.2K SATA 6Gb Hot Swap 512e HDD | No | 8 |
| 4XB7A13907 | B497 | ThinkSystem 3.5" 14TB 7.2K SATA 6Gb Hot Swap 512e HDD | No | 8 |
| 4XB7A13914 | B7F0 | ThinkSystem 3.5" 16TB 7.2K SATA 6Gb Hot Swap 512e HDD | No | 8 |
| 4XB7A38130 | BCFH | ThinkSystem 3.5" 18TB 7.2K SATA 6Gb Hot Swap 512e HDD | No | 8 |
| 4XB7A80354 | BPKV | ThinkSystem 3.5" 20TB 7.2K SATA 6Gb Hot Swap 512e HDD | No | 8 |

Table 34. 3.5-inch hot-swap 24 Gb SAS SSDs

| Part number | Feature code | Description | SED support | Max Qty |
|--|--------------|--|-------------|---------|
| 3.5-inch hot-swap SSDs - 24 Gb SAS - Mixed Use/Mainstream (3-5 DWPD) | | | | |
| 4XB7A80344 | BNW7 | ThinkSystem 3.5" PM1655 800GB Mixed Use SAS 24Gb HS SSD | Support | 8 |
| 4XB7A80345 | BNWA | ThinkSystem 3.5" PM1655 1.6TB Mixed Use SAS 24Gb HS SSD | Support | 8 |
| 4XB7A80346 | BNWB | ThinkSystem 3.5" PM1655 3.2TB Mixed Use SAS 24Gb HS SSD | Support | 8 |
| 4XB7A80347 | BP3G | ThinkSystem 3.5" PM1655 6.4TB Mixed Use SAS 24Gb HS SSD | Support | 8 |
| 3.5-inch hot-swap SSDs - 24 Gb SAS - Read Intensive/Entry/Capacity (<3 DWPD) | | | | |
| 4XB7A80324 | BNWD | ThinkSystem 3.5" PM1653 960GB Read Intensive SAS 24Gb HS SSD | Support | 8 |
| 4XB7A80325 | BNWG | ThinkSystem 3.5" PM1653 1.92TB Read Intensive SAS 24Gb HS SSD | Support | 8 |
| 4XB7A80326 | BNWH | ThinkSystem 3.5" PM1653 3.84TB Read Intensive SAS 24Gb HS SSD | Support | 8 |
| 4XB7A80327 | BP3F | ThinkSystem 3.5" PM1653 7.68TB Read Intensive SAS 24Gb HS SSD | Support | 8 |
| 4XB7A80328 | BP3H | ThinkSystem 3.5" PM1653 15.36TB Read Intensive SAS 24Gb HS SSD | Support | 8 |

Table 35. 3.5-inch hot-swap 12 Gb SAS SSDs

| Part number | Feature code | Description | SED support | Max Qty |
|--|--------------|---|-------------|---------|
| 3.5-inch hot-swap SSDs - 12 Gb SAS - Mixed Use/Mainstream (3-5 DWPD) | | | | |
| 4XB7A17066 | B8HT | ThinkSystem 3.5" PM1645a 800GB Mainstream SAS 12Gb Hot Swap SSD | No | 8 |
| 4XB7A17043 | B8JN | ThinkSystem 3.5" PM1645a 1.6TB Mainstream SAS 12Gb Hot Swap SSD | No | 8 |
| 4XB7A17067 | B8JK | ThinkSystem 3.5" PM1645a 3.2TB Mainstream SAS 12Gb Hot Swap SSD | No | 8 |
| 4XB7A17068 | B8JG | ThinkSystem 3.5" PM1645a 6.4TB Mainstream SAS 12Gb Hot Swap SSD | No | 8 |
| 3.5-inch hot-swap SSDs - 12 Gb SAS - Read Intensive/Entry/Capacity (<3 DWPD) | | | | |
| 4XB7A17058 | B91E | ThinkSystem 3.5" PM1643a 3.84TB Entry SAS 12Gb Hot Swap SSD | No | 8 |
| 4XB7A17059 | BEVK | ThinkSystem 3.5" PM1643a 7.68TB Entry SAS 12Gb Hot Swap SSD | No | 8 |

Table 36. 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) | | | | |
| 4XB7A17137 | BA4W | ThinkSystem 3.5" S4620 480GB Mixed Use SATA 6Gb HS SSD | No | 8 |
| 4XB7A17138 | BA4X | ThinkSystem 3.5" S4620 960GB Mixed Use SATA 6Gb HS SSD | No | 8 |
| 4XB7A17139 | BA4Y | ThinkSystem 3.5" S4620 1.92TB Mixed Use SATA 6Gb HS SSD | No | 8 |
| 4XB7A17140 | BK7P | ThinkSystem 3.5" S4620 3.84TB Mixed Use SATA 6Gb HS SSD | No | 8 |
| 4XB7A17096 | B8JL | ThinkSystem 3.5" 5300 240GB Mainstream SATA 6Gb Hot Swap SSD | No | 8 |
| 4XB7A17097 | B8JF | ThinkSystem 3.5" 5300 480GB Mainstream SATA 6Gb Hot Swap SSD | No | 8 |
| 4XB7A17098 | B8J0 | ThinkSystem 3.5" 5300 960GB Mainstream SATA 6Gb Hot Swap SSD | No | 8 |
| 4XB7A17099 | B8HR | ThinkSystem 3.5" 5300 1.92TB Mainstream SATA 6Gb Hot Swap SSD | No | 8 |
| 4XB7A17100 | B8HX | ThinkSystem 3.5" 5300 3.84TB Mainstream SATA 6Gb Hot Swap SSD | No | 8 |
| 4XB7A13639 | B49R | ThinkSystem 3.5" S4610 240GB Mixed Use SATA 6Gb HS SSD | No | 8 |
| 4XB7A13643 | B49V | ThinkSystem 3.5" S4610 3.84TB Mixed Use SATA 6Gb HS SSD | No | 8 |
| 3.5-inch hot-swap SSDs - 6 Gb SATA - Read Intensive/Entry (<3 DWPD) | | | | |
| 4XB7A17118 | BA7K | ThinkSystem 3.5" S4520 240GB Read Intensive SATA 6Gb HS SSD | No | 8 |
| 4XB7A17119 | BA7L | ThinkSystem 3.5" S4520 480GB Read Intensive SATA 6Gb HS SSD | No | 8 |
| 4XB7A17120 | BA7M | ThinkSystem 3.5" S4520 960GB Read Intensive SATA 6Gb HS SSD | No | 8 |
| 4XB7A17121 | BA7N | ThinkSystem 3.5" S4520 1.92TB Read Intensive SATA 6Gb HS SSD | No | 8 |
| 4XB7A17122 | BK7F | ThinkSystem 3.5" S4520 3.84TB Read Intensive SATA 6Gb HS SSD | No | 8 |
| 4XB7A17123 | BK7G | ThinkSystem 3.5" S4520 7.68TB Read Intensive SATA 6Gb HS SSD | No | 8 |
| 4XB7A38276 | BCTH | ThinkSystem 3.5" Multi Vendor 240GB Entry SATA 6Gb Hot Swap SSD | No | 8 |
| 4XB7A38277 | BCTJ | ThinkSystem 3.5" Multi Vendor 480GB Entry SATA 6Gb Hot Swap SSD | No | 8 |
| 4XB7A38278 | BCTK | ThinkSystem 3.5" Multi Vendor 960GB Entry SATA 6Gb Hot Swap SSD | No | 8 |
| 4XB7A38279 | BCTL | ThinkSystem 3.5" Multi Vendor 1.92TB Entry SATA 6Gb Hot Swap SSD | No | 8 |
| 4XB7A38281 | BCTM | ThinkSystem 3.5" Multi Vendor 3.84TB Entry SATA 6Gb Hot Swap SSD | No | 8 |
| 4XB7A17081 | B8JB | ThinkSystem 3.5" 5300 240GB Entry SATA 6Gb Hot Swap SSD | No | 8 |
| 4XB7A17082 | B8J9 | ThinkSystem 3.5" 5300 480GB Entry SATA 6Gb Hot Swap SSD | No | 8 |
| 4XB7A17083 | B8JC | ThinkSystem 3.5" 5300 960GB Entry SATA 6Gb Hot Swap SSD | No | 8 |
| 4XB7A17084 | B8HZ | ThinkSystem 3.5" 5300 1.92TB Entry SATA 6Gb Hot Swap SSD | No | 8 |
| 4XB7A17085 | B8HQ | ThinkSystem 3.5" 5300 3.84TB Entry SATA 6Gb Hot Swap SSD | No | 8 |
| 4XB7A17086 | B8J3 | ThinkSystem 3.5" 5300 7.68TB Entry SATA 6Gb Hot Swap SSD | No | 8 |
| 4XB7A17178 | B6TP | ThinkSystem 3.5" PM883 960GB Entry SATA 6Gb Hot Swap SSD | No | 8 |
| 4XB7A17179 | B6JY | ThinkSystem 3.5" PM883 1.92TB Entry SATA 6Gb Hot Swap SSD | No | 8 |

Table 37. 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 | 8 |
| 7XB7A00056 | AUZT | ThinkSystem 2TB 7.2K 6Gbps SATA 3.5" Simple Swap 512n HDD | No | 8 |
| 7XB7A00057 | AUZU | ThinkSystem 4TB 7.2K 6Gbps SATA 3.5" Simple Swap 512n HDD | No | 8 |
| 7XB7A00058 | AXC7 | ThinkSystem 6TB 7.2K 6Gbps SATA 3.5" Simple Swap 512e HDD | No | 8 |
| 7XB7A00059 | AXC6 | ThinkSystem 8TB 7.2K 6Gbps SATA 3.5" Simple Swap 512e HDD | No | 8 |
| 7XB7A00060 | AXC8 | ThinkSystem 3.5" 10TB 7.2K SATA 6Gb Simple Swap 512e HDD | No | 8 |

Table 38. M.2 SATA drives

| Part number | Feature code | Description | SED support | Max Qty |
|---|--------------|--|-------------|---------|
| M.2 SSDs - 6 Gb SATA - Read Intensive/Entry (<3 DWPD) | | | | |
| 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 |
| 7N47A00129 | AUUL | ThinkSystem M.2 32GB SATA 6Gbps Non-Hot Swap SSD | No | 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 |

Internal backup units

The server supports the internal backup unit options that are listed in the following table.

Table 39. Internal backup units

| Part number | Feature code | Description | Maximum supported |
|------------------|--------------|---|-------------------|
| Drives | | | |
| 4T27A80487 | B4BM | ThinkSystem Internal Half High LTO Gen8 SAS Tape Drive v2 | 1 |
| 4T27A10727 | B4BM | ThinkSystem Internal Half High LTO Gen8 SAS Tape Drive | 1 |
| 4T27A80486 | AVF5 | ThinkSystem Internal Half High LTO Gen7 SAS Tape Drive v2 | 1 |
| 7T27A01503 | AVF5 | ThinkSystem Internal Half High LTO Gen7 SAS Tape Drive | 1 |
| 4T27A80483 | B3YK | ThinkSystem Internal Half High LTO Gen6 SAS Tape Drive v2 | 1 |
| 4T27A10726 | B3YK | ThinkSystem Internal Half High LTO Gen6 SAS Tape Drive | 1 |
| 4T27A80485 | AVF6 | ThinkSystem Internal RDX USB 3.0 Dock v2 | 1 |
| 7T27A01501 | AVF6 | ThinkSystem Internal RDX USB 3.0 Dock | 1 |
| LTO Media | | | |
| 7TP7A01604 | AVF4 | ThinkSystem LTO Gen6 2.5TB Tape | Not applicable |
| 7TP7A01606 | AVF7 | ThinkSystem LTO Gen7 6TB Tape | Not applicable |
| 4TP7A09619 | B4BN | ThinkSystem LTO Gen8 12TB Tape | Not applicable |
| RDX Media | | | |
| 7TP7A01601 | AVF8 | ThinkSystem RDX 500GB Cartridge | Not applicable |
| 7TP7A01602 | AVF1 | ThinkSystem RDX 1TB Cartridge | Not applicable |
| 7TP7A01603 | AVF0 | ThinkSystem RDX 2TB Cartridge | Not applicable |
| 7TP7A04318 | AXD1 | ThinkSystem RDX 4TB Cartridge | Not applicable |

The RDX drive is attached via the USB 3.0 port on the system board.

The use of an LTO tape drive requires a SAS HBA, either the 430-8i or 430-16i SAS/SATA 12Gb HBA.

LTO tape drive in a rack conversion kit : The ST550 is supported installed on its side in a rack mount kit, however the use of an LTO tape drive in this configuration is supported but not recommended.

For more information about RDX drive and LTO tape drives, see the Backup Units page on the Lenovo Press site: <https://lenovopress.com/servers/options/backup>

Optical drives

The ST550 supports the internal optical drive options listed in the following table.

Table 40. Optical drives

| Part number | Feature code | Description | Maximum supported |
|-------------------------|--------------|--|-------------------|
| Internal optical drives | | | |
| 4XA7A80482 | BN5H | ThinkSystem Half High SATA DVD-ROM Optical Disk Drive v2 | 2 |
| 7XA7A01204 | AVEZ | ThinkSystem Half High SATA DVD-ROM Optical Disk Drive | 2 |
| 4XA7A80481 | BN5J | ThinkSystem Half High SATA DVD-RW Optical Disk Drive v2 | 2 |
| 7XA7A01202 | AVEY | ThinkSystem Half High SATA DVD-RW Optical Disk Drive | 2 |

The internal optical drives in the table can be installed in any open 5.25-inch drive bay.

The Half High SATA DVD-ROM drive supports the following media and speeds for reading:

- CD-ROM 48X
- CD-DA (DAE) 48X
- CD-R 48X
- CD-RW 40X
- DVD-ROM (single layer) 16X
- DVD-ROM (dual layer) 12X
- DVD-R (4.7 GB) 16X
- DVD-R DL 8X
- DVD+R 16X
- DVD+R DL 8X
- DVD-RW (4.7 GB) 8X
- DVD+RW 8X

The Half High SATA DVD-RW drive supports the same media and speeds for reading as HH DVD-ROM. In addition, this drive supports the following media and speeds for writing:

- CD-R 24X
- CD-RW 4X
- High Speed CD-RW 10X
- Ultra Speed CD-RW 16X
- DVD-R 8X
- DVD-R DL 8X
- DVD+R 8X
- DVD+R DL 8X
- DVD-RW 6X
- DVD+RW 8X

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

Table 41. 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 options

The ST550 server supports up to six PCIe 3.0 slots: Four slots (1, 2, 3 and 6) are supported when only one CPU is installed. Slots 4 and 5 require the second processor. The slot lane widths, available power, and supported adapter height and length are as follows:

- Slot 1: PCIe 3.0 x8 (25W); full-height, half-length
- Slot 2: PCIe 3.0 x16 (75W); full-height, half-length
- Slot 3: PCIe 3.0 x16 (75W); full-height, full-length
- Slot 4: PCIe 3.0 x16 (x8 wired) (25W); full-height, full-length (requires second processor)
- Slot 5: PCIe 3.0 x16 (75W); full-height, full-length (requires second processor)
- Slot 6: PCIe 3.0 x8 (x4 wired) (25W); full-height, full-length

Slots 3 and 5 support double-wide GPUs. When double-wide adapters are used slots 4 and 6 cannot be used.

The following figure shows the locations of the PCIe slots.

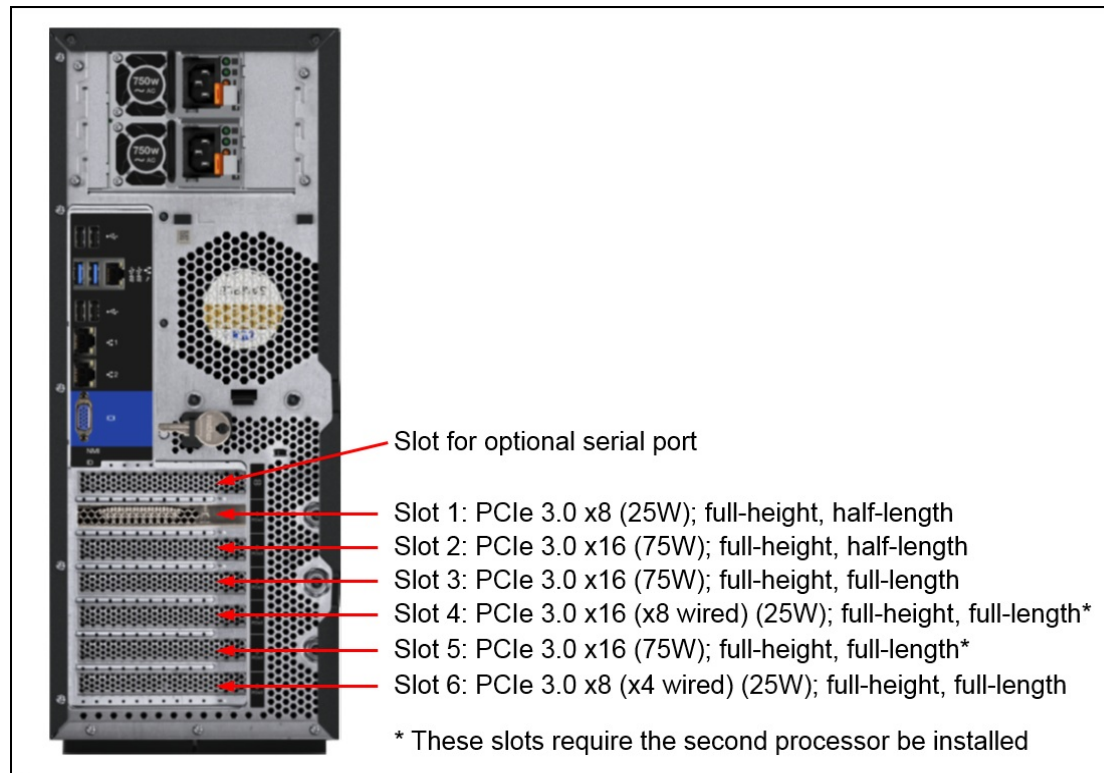


Figure 18. ThinkSystem ST550 PCIe slots

Above the PCIe slots is a space for a serial port bracket which is used for making an external serial port available at the rear of the server. The following table lists the ordering information.

Table 42. ThinkSystem COM Port Upgrade Kit ordering information

| Part number | Feature code | Description | Maximum Supported |
|-------------|--------------|-------------------------------------|-------------------|
| 4Z17A80446 | BN5B | ThinkSystem COM Port Upgrade Kit v2 | 1 |
| 7Z17A02577 | AUSL | ThinkSystem COM Port Upgrade Kit | 1 |

Network adapters

The ST550 has two onboard Gigabit Ethernet ports, connected to the integrated Intel Ethernet Connection X722 controller.

Note: The onboard Gigabit ports do not support 10 Mbps or 100 Mbps Ethernet connections.

The following table lists other supported network adapters. The maximum supported column indicates which slots each adapter is supported in. For slot locations see the [I/O expansion options](#) section.

Table 43. Network adapters

| Part number | Feature code | Description | Slots supported | Maximum supported |
|-----------------------------------|--------------|--|-----------------|-------------------|
| Gigabit Ethernet | | | | |
| 7ZT7A00482 | AUXZ | ThinkSystem Broadcom 5720 1GbE RJ45 2-Port PCIe Ethernet Adapter | All slots | 6 |
| 7ZT7A00484 | AUZV | ThinkSystem Broadcom 5719 1GbE RJ45 4-Port PCIe Ethernet Adapter | All slots | 6 |
| 7ZT7A00534 | AUZY | ThinkSystem I350-T2 PCIe 1Gb 2-Port RJ45 Ethernet Adapter By Intel | All slots | 6 |
| 7ZT7A00535 | AUZW | ThinkSystem I350-T4 PCIe 1Gb 4-Port RJ45 Ethernet Adapter By Intel | All slots | 6 |
| 10 Gb Ethernet - 10GBASE-T | | | | |
| 00MM850 | ATRY | Intel X550-T1 Single Port 10GBase-T Adapter | All slots | 6 |
| 00MM860 | ATPX | Intel X550-T2 Dual Port 10GBase-T Adapter | All slots | 6 |
| 4XC7A79699 | BMXB | ThinkSystem Intel X710-T4L 10GBase-T 4-Port PCIe Ethernet Adapter | All slots | 6 |
| 7ZT7A00496 | AUKP | ThinkSystem Broadcom 57416 10GBASE-T 2-Port PCIe Ethernet Adapter | All slots | 6 |
| 4XC7A08225 | B31G | ThinkSystem QLogic QL41134 PCIe 10Gb 4-Port Base-T Ethernet Adapter | All slots | 6 |
| 10 Gb Ethernet - SFP+ | | | | |
| 7ZT7A00537 | AUKX | ThinkSystem X710-DA2 PCIe 10Gb 2-Port SFP+ Ethernet Adapter | All slots | 6* |
| 00AG580 | AT7T | Emulex VFA5.2 2x10 GbE SFP+ Adapter and FCoE/iSCSI SW | All slots | 6* |
| 00AG570 | AT7S | Emulex VFA5.2 2x10 GbE SFP+ PCIe Adapter | All slots | 6* |
| 7ZT7A00493 | AUKN | ThinkSystem Emulex OCe14104B-NX PCIe 10Gb 4-Port SFP+ Ethernet Adapter | All slots | 6* |
| 25 Gb Ethernet | | | | |
| 01GR250 | AUAJ | Mellanox ConnectX-4 Lx 10/25GbE SFP28 2-port PCIe Ethernet Adapter | All slots | 6* |
| 4XC7A08238 | B5T0 | ThinkSystem Broadcom 57414 10/25GbE SFP28 2-port PCIe Ethernet Adapter | All slots | 6* |
| 7XC7A05523 | B0WY | ThinkSystem Intel XXV710-DA2 10/25GbE SFP28 2-Port PCIe Ethernet Adapter | All slots | 6* |

* Requires SFP+ transceivers or DAC cables that must be purchased separately.

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:

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

SAS adapters for external storage

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

Table 44. Supported SAS HBAs and RAID adapters

| Part number | Feature code | Description | Slots supported | Maximum supported |
|---------------------------|--------------|--|-----------------|-------------------|
| 12 Gb SAS HBA | | | | |
| 7Y37A01090 | AUNR | ThinkSystem 430-8e SAS/SATA 12Gb HBA | All slots | 6 |
| 4Y37A78837 | BNWK | ThinkSystem 440-8e SAS/SATA PCIe Gen4 12Gb HBA | All slots | 6 |
| 12 Gb RAID Adapter | | | | |
| 7Y37A01087 | AUNQ | ThinkSystem RAID 930-8e 4GB Flash PCIe 12Gb Adapter | All slots | 4* |
| 4Y37A78836 | BNWJ | ThinkSystem RAID 940-8e 4GB Flash PCIe Gen4 12Gb Adapter | All slots | 4* |

* Limited by the number of supercap mounts in the server

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)

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
- X40 external adapters with X350 internal adapters

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

<https://lenovopress.lenovo.com/lp1288#st550-support=ST550&internal-or-external-ports=External>

Fibre Channel host bus adapters

The following table lists the Fibre Channel HBAs supported by the server.

Table 45. Fibre Channel adapters

| Part number | Feature code | Description | Slots supported | Maximum supported |
|----------------------------|--------------|--|-----------------|-------------------|
| 16 Gb Fibre Channel | | | | |
| 01CV840 | ATZV | Emulex 16Gb Gen6 FC Dual-port HBA | All slots | 6 |
| 01CV830 | ATZU | Emulex 16Gb Gen6 FC Single-port HBA | All slots | 6 |
| 01CV760 | ATZC | QLogic 16Gb Enhanced Gen5 FC Dual-port HBA | All slots | 6 |
| 01CV750 | ATZB | QLogic 16Gb Enhanced Gen5 FC Single-port HBA | All slots | 6 |

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

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

Flash Storage adapters

The server currently does not support Flash Storage adapters.

GPU adapters

Withdrawn: All GPUs supported by the ST550 are now withdrawn from marketing

Fans and cooling

The server can operate in environments up to ASHRAE A4 (45°C and 90% humidity). Details and restrictions are described in the [Physical and electrical specifications](#) section.

The server supports up to four simple-swap fans, three in the front of the server, just behind the drive bays and one installed at the rear of the server. See the Inside view in the [Components and connectors](#) section for locations.

Use of these fans is as follows:

- Single processor systems require 2 fans, installed in the area behind drive bays
- The third fan installed behind the drive bays is required in the following situations:
 - The server has two processors. If the second processor is a field upgrade, then the fan is included with the second processor and does not need to be ordered separately.
 - The server has four 2.5-inch hot-swap drives bays installed in place of the two 5.25-inch media bays converted. If the media bay conversion is a field upgrade (part number 7XH7A05908) and the server only has one processor installed, then order the fan using part number 7XH7A06781.
- Fan 4 (the fan at the rear of the server) can be installed as an N+1 redundant fan if desired. The part number is 7XH7A05900.
- If a GPU is installed, Fan 4 is required and is non-redundant in most configurations. The following table indicates the cooling restrictions that apply when supported GPUs are installed:
 - Whether or not Fan 4 is redundant
 - Limits to ambient temperatures

Table 46. Cooling restrictions with GPUs installed

| GPU configuration | NVIDIA P600 selected | NVIDIA P2000 selected | NVIDIA P6000 selected |
|--------------------|---|---|---|
| One GPU installed | Fan 4 is redundant System is limited to ASHRAE A2 (35°C) | Fan 4 is redundant System is limited to ASHRAE A2 (35°C) | Fan 4 is non-redundant System is limited to ASHRAE A2 (35°C) |
| Two GPUs installed | Fan 4 is redundant System is limited to ASHRAE A2 (35°C) | Fan 4 is non-redundant System is limited to ASHRAE A2 (35°C) | Fan 4 is non-redundant System is limited to 30°C ambient |

The table below lists the fan upgrades.

Table 47. Fan upgrades

| Part number | Feature code | Description |
|-------------|--------------|--|
| 7XH7A06781 | AVS3 | ThinkSystem ST550 Front Mid Fan Module for 4x2.5" ODD conversion |
| 7XH7A05900 | AVS4 | ThinkSystem ST550 Rear Fan Module |

Power supplies

The server supports either a single fixed power supply or one or two hot-swap power supplies. When two hot-swap power supplies are installed, they form a redundant pair. The following table lists the supported power supplies.

Table 48. Power supply options

| Part number | Feature code | Description | Maximum supported | 110V AC | 220V AC | 240V DC China only |
|-------------|--------------|---|-------------------|---------|---------|--------------------|
| None* | AVS1 | 450W (230V/115V) Gold AC Fixed (Cabled) Power Supply | 1 | Yes | Yes | No |
| 7N67A00882 | AWFT | 550W (230V/115V) Platinum Hot-Swap Power Supply | 2 | Yes | Yes | Yes |
| 7N67A00883 | AWFS | 750W (230/115V) Platinum Hot-Swap Power Supply | 2 | Yes | Yes | Yes |
| 7N67A00884 | AWFR | 750W (230V) Titanium Hot-Swap Power Supply | 2 | No | Yes | Yes |
| 4P57A82020 | BR1Y | ThinkSystem V1 750W (230Vac) Titanium Hot Swap Power Supply | 2 | No | Yes | Yes |
| 7N67A00885 | AWFQ | 1100W (230V/115V) Platinum Hot-Swap Power Supply | 2 | Yes | Yes | Yes |

* Configure-to-order only

550W, 750W and 1100W Platinum power supplies are auto-sensing and support both 110V AC (100-127V 50/60 Hz) and 220V AC (200-240V 50/60 Hz) power. The 750W Titanium power supply only supports 220V AC power. In China only, all four hot-swap power supplies also support 240V DC.

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.

Power supply configuration rules

The following table shows the power supplies supported with and without GPUs and with the various supported drive bay configurations.

For further power configuration of the server, use the Lenovo Capacity Planner, available at: <https://datacentersupport.lenovo.com/us/en/products/solutions-and-software/software/lenovo-capacity-planner/solutions/ht504651>

Additional rules:

- 550W, 750W, 1100W power supplies can be used all processors supported by the server
- 450W power supply can only be used with processors that have a TDP of 85W or lower
- 1100W power supply supports GPUs, however limitations on cooling fan redundancy exist for some configurations as described in the [Fans and cooling](#) section

Table 49. Power supply support for drive and GPU configurations

| Power supply | 4x 3.5 SS | 8x 3.5 HS | 8x 2.5 HS | 16x 2.5 HS | 8x 2.5 HS AnyBay | 8x 3.5 + 4x 2.5 HS | 16x 2.5 HS AnyBay | 20x 2.5 HS AnyBay | 20x 2.5 HS |
|---------------------------|-----------|-----------|-----------|------------|------------------|--------------------|-------------------|-------------------|------------|
| Without any GPUs | | | | | | | | | |
| 450W | Y* | Y* | Y* | N | N | N | N | N | N |
| 550W | Y | Y | Y | N | N | N | N | N | N |
| 750W | Y | Y | Y | Y | Y | Y | Y | Y | Y |
| 1100W | Y | Y | Y | Y | Y | Y | Y | Y | Y |
| With 1 or 2 GPUs** | | | | | | | | | |
| 450W | N | N | N | N | N | N | N | N | N |
| 550W | N | N | N | N | N | N | N | N | N |
| 750W | N | N | N | N | N | N | N | N | N |
| 1100W | Y | Y | Y | Y | Y | Y | Y | Y | Y |

* Only with processors that have a TDP of 85W or lower

** See the [Fans and cooling](#) section for cooling restrictions with GPUs

Power cords

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

110V customers: If you plan to use the 1100W power supply with a 110V power source, select a power cable that is rated above 10A. Power cables that are rated at 10A or below are not supported with 110V power.

Table 50. 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 IEC 320-C14 Rack Power Cable |
| 4L67A08367 | B0N5 | 1.0m, 13A/100-250V, C13 to C14 Jumper Cord |
| 39Y7937 | 6201 | 1.5m, 10A/100-250V, C13 to IEC 320-C14 Rack Power Cable |
| 4L67A08368 | B0N6 | 1.5m, 13A/100-250V, C13 to C14 Jumper Cord |
| 4L67A08365 | B0N4 | 2.0m, 10A/100-250V, C13 to IEC 320-C14 Rack Power Cable |
| 4L67A08369 | 6570 | 2.0m, 13A/100-250V, C13 to C14 Jumper Cord |
| 4L67A08366 | 6311 | 2.8m, 10A/100-250V, C13 to IEC 320-C14 Rack Power Cable |
| 4L67A08370 | 6400 | 2.8m, 13A/100-250V, C13 to C14 Jumper Cord |
| 39Y7932 | 6263 | 4.3m, 10A/100-250V, C13 to IEC 320-C14 Rack Power Cable |
| 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 |

| Part number | Feature code | Description |
|------------------------------------|--------------|--|
| 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, 220-240V, 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 |
| 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 |

| Part number | Feature code | Description |
|-------------|--------------|--|
| 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 |

The ST550 also supports the following two-up cables.

Table 51. Power cables for ST550

| Part number | Feature code | Description |
|-------------|--------------|---|
| 47C2491 | A3SW | 1.2m, 10A/100-250V, (2X) C13 to C20 Jumper Cord |
| 47C2492 | A3SX | 2.5m, 10A/100-250V, (2X) C13 to C20 Jumper Cord |
| 47C2493 | A3SY | 2.8m, 10A/100-250V, (2X) C13 to C20 Jumper Cord |
| 47C2494 | A3SZ | 4.1m, 10A/100-250V, (2X) C13 to C20 Jumper Cord |

Integrated virtualization

The server supports booting from an operating system or hypervisor installed on an M.2 solid-state drive. See the [M.2 drives section](#) for details and the list of available options.

You can download supported VMware vSphere hypervisor images from the following web page and load it on the M.2 drive using the instructions provided:

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

Systems management

The server 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.

Local management

The ST550 offers a front operator panel showing key LED status indicators, as shown in the following figure.

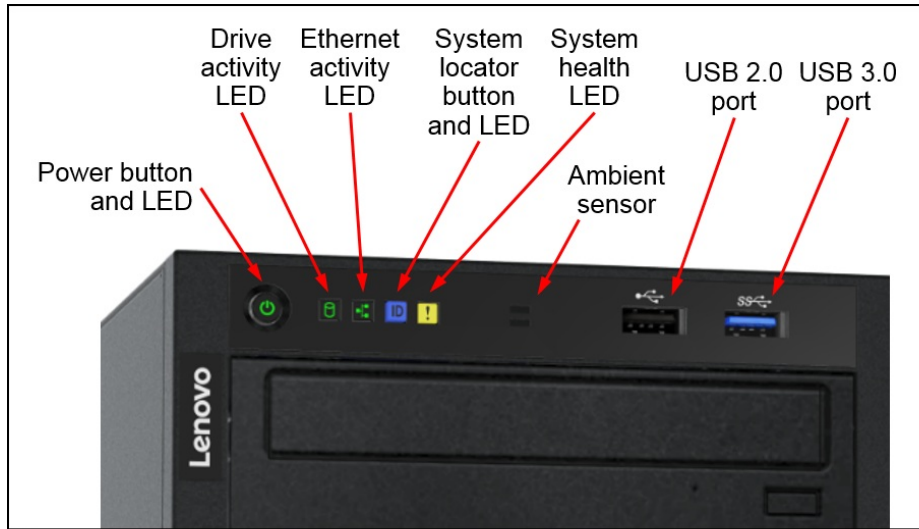



Figure 19. Front operator panel

When you press the ID button on the front panel, the blue system ID LEDs on both the front and rear of the server are lit to help you locate the server among other servers. You also can turn on the system ID LEDs using a remote management program for server presence detection.

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 52. 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 53. 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 54. 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, in addition to ThinkServer, System x, and Flex System 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 ST550. The software can be downloaded and used at no charge to discover and monitor the ST550 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 55. 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 140-2 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 56. 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/Invo-lxem>
- **Lenovo Information Center:**
https://sysmgt.lenovofiles.com/help/topic/LXEM/lxem_overview.html?cp=4

Security

The server offers the following security features:

- **Electronic security measures:**
 - Administrator and power-on passwords
 - Trusted Platform Module (TPM) supporting both TPM 1.2 and TPM 2.0
 - Optional Trusted Cryptographic Module (TCM), available only in China
 - Self-encrypting drives with support for IBM Security Key Lifecycle Manager

- Mechanical security measures
 - Lockable side cover to help prevent access to internal components
 - Slot at the rear of the server for a Kensington Cable Lock
 - Optional chassis intrusion switch
 - Optional lockable front security door

The server is NIST SP 800-147B compliant.

The TCM module and Nationz TPM module are available only for China customers and are installed in a dedicated socket on the system board, as shown in [Figure 4](#).

The optional lockable front door includes a key that enables you to secure access to the drive bays and system controls, thereby reducing the possibility of unauthorized or accidental access to the server.

The following table lists the security options for the server.

Table 57. Security features

| Part number | Feature code | Description |
|-------------|--------------|---|
| 7XH7A05903 | AVRR | ThinkSystem ST550 Security Door |
| None* | AVKE | ThinkSystem Trusted Cryptographic Module (China customers only) |
| None* | B22N | ThinkSystem Nationz Trusted Platform Module v2.0 (China customers only) |
| None* | AVSD | ThinkSystem ST550 Intrusion Switch and Cable |

* Available via configure-to-order or in preconfigured models only

For SED drives and IBM Security Key Lifecycle Manager support see the [SED encryption key management with ISKLM](#) section.

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 58. 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>.

Keyboards and Mice

The following table lists the supported full-sized USB keyboards and mice available for Lenovo ThinkSystem servers.

The keyboards have the following features:

- Full-sized 104-key keyboard with 3 special Windows keys
- 3 LEDs for caps lock, scroll lock and num lock
- Wired USB connection with 1.8m cable
- Adjustable feet at the rear of the keyboard

Tip: For keyboards that fit in the rack-mounted console kit, see the [KVM console options](#) section, or the [ThinkSystem 18.5-inch LCD Console](#) product guide

Table 59. Lenovo Preferred Pro USB Full-sized keyboards - ThinkSystem

| Part number | Feature code | Description |
|-------------|--------------|--|
| Mice | | |
| 7M57A04698 | B0LN | ThinkSystem Optical Wheel Mouse - USB |
| Keyboards | | |
| 7ZB7A05521 | AXTM | ThinkSystem Pref. Pro II USB Keyboard - Arabic |
| 7ZB7A05520 | AXTN | ThinkSystem Pref. Pro II USB Keyboard - Arabic/French |
| 7ZB7A05519 | AXTP | ThinkSystem Pref. Pro II USB Keyboard - Belgium/French |
| 7ZB7A05518 | AXTQ | ThinkSystem Pref. Pro II USB Keyboard - Belgium/UK |
| 7ZB7A05517 | AXTR | ThinkSystem Pref. Pro II USB Keyboard - Brazil/Portuguese |
| 7ZB7A05515 | AXTS | ThinkSystem Pref. Pro II USB Keyboard - Bulgarian |
| 7ZB7A05511 | AXTU | ThinkSystem Pref. Pro II USB Keyboard - Czech |
| 7ZB7A05509 | AXTV | ThinkSystem Pref. Pro II USB Keyboard - Danish |
| 7ZB7A05508 | AXTW | ThinkSystem Pref. Pro II USB Keyboard - Dutch |
| 7ZB7A05506 | AXTX | ThinkSystem Pref. Pro II USB Keyboard - French |
| 7ZB7A05496 | AXTZ | ThinkSystem Pref. Pro II USB Keyboard - French Canadian French |
| 7ZB7A05504 | AXTY | ThinkSystem Pref. Pro II USB Keyboard - French Canadian Multilingual |
| 7ZB7A05495 | AXU0 | ThinkSystem Pref. Pro II USB Keyboard - German |
| 7ZB7A05494 | AXU1 | ThinkSystem Pref. Pro II USB Keyboard - Greek |
| 7ZB7A05493 | AXU2 | ThinkSystem Pref. Pro II USB Keyboard - Hebrew |
| 7ZB7A05492 | AXU3 | ThinkSystem Pref. Pro II USB Keyboard - Hungarian |
| 7ZB7A05491 | AXU4 | ThinkSystem Pref. Pro II USB Keyboard - Iceland |
| 7ZB7A05490 | AXU5 | ThinkSystem Pref. Pro II USB Keyboard - Italy |
| 7ZB7A05489 | AXU6 | ThinkSystem Pref. Pro II USB Keyboard -Japanese |
| 7ZB7A05488 | AXU7 | ThinkSystem Pref. Pro II USB Keyboard - Korean |
| 7ZB7A05487 | AXU8 | ThinkSystem Pref. Pro II USB Keyboard - LA Spanish |
| 7ZB7A05486 | AXU9 | ThinkSystem Pref. Pro II USB Keyboard - Norwegian |
| 7ZB7A05485 | AXUA | ThinkSystem Pref. Pro II USB Keyboard - Polish |
| 7ZB7A05484 | AXUB | ThinkSystem Pref. Pro II USB Keyboard- Portugese |
| 7ZB7A05483 | AXUC | ThinkSystem Pref. Pro II USB Keyboard - Romanian |
| 7ZB7A05482 | AXUD | ThinkSystem Pref. Pro II USB Keyboard - Russian/Cy |

| Part number | Feature code | Description |
|-------------|--------------|---|
| 7ZB7A05481 | AXUE | ThinkSystem Pref. Pro II USB Keyboard - Serbian/Cyrilic |
| 7ZB7A05480 | AXUF | ThinkSystem Pref. Pro II USB Keyboard - Slovak |
| 7ZB7A05471 | AXUQ | ThinkSystem Pref. Pro II USB Keyboard - Slovenian |
| 7ZB7A05479 | AXUG | ThinkSystem Pref. Pro II USB Keyboard - Spanish |
| 7ZB7A05478 | AXUH | ThinkSystem Pref. Pro II USB Keyboard- Swedish/Finn |
| 7ZB7A05477 | AXUJ | ThinkSystem Pref. Pro II USB Keyboard - Swiss, F/G |
| 7ZB7A05476 | AXUK | ThinkSystem Pref. Pro II USB Keyboard - Thailand |
| 7ZB7A05513 | AXTT | ThinkSystem Pref. Pro II USB Keyboard - Trad Chinese/US |
| 7ZB7A05474 | AXUM | ThinkSystem Pref. Pro II USB Keyboard - Turkish 179 |
| 7ZB7A05475 | AXUL | ThinkSystem Pref. Pro II USB Keyboard - Turkish 440 |
| 7ZB7A05473 | AXUN | ThinkSystem Pref. Pro II USB Keyboard - UK English |
| 7ZB7A05522 | AXTL | ThinkSystem Pref. Pro II USB Keyboard - US English |
| 7ZB7A05472 | AXUP | ThinkSystem Pref. Pro II USB Keyboard - US Euro |

Rack installation

The server can be installed in the rack with the Tower to Rack Conversion Kit. The resulting server is a 4U rack-mountable server, as shown in the following figure.



Figure 20. ThinkSystem ST550 with Rack Conversion Kit installed

The part numbers are summarized in the following table.

Table 60. Rack installation options

| Part number | Feature code | Description and contents |
|-------------|--------------|---|
| 7XH7A05901 | AVRV | Tower to Rack Conversion Kit <ul style="list-style-type: none"> • Rack conversion kit • Slide rail |
| 7XH7A05902 | B1BK | 4U CMA for Tower to Rack Kit <ul style="list-style-type: none"> • Cable management arm only (requires 7XH7A05901) |
| CTO only | AVRX | Tower to Rack Conversion Kit Bundle CMA Kit <ul style="list-style-type: none"> • Rack conversion kit • Slide rail • Cable management arm |

The rail kit has the specifications listed in the following table.

Table 61. Rail kit specifications

| Feature | ThinkSystem ST550 4U Tower to Rack Conversion Kit |
|--|--|
| Part number | 7XH7A05901 |
| Rail type | Full-out slide rail (ball bearing) |
| Toolless installation | Yes |
| Cable Management Arm (CMA) support | Optional (7XH7A05902) or included in feature code AVRX |
| In-rack server maintenance | Yes |
| 1U PDU support | Yes |
| 0U PDU support | Limited* |
| Rack type | Lenovo and IBM 4-post, IEC standard-compliant |
| Mounting holes | Square or round |
| Mounting flange thickness | 2 mm - 3.3 mm (0.08 - 0.13 in.) |
| Distance between front and rear mounting flanges | 537 mm - 810 mm (21.1 - 31.9 in.) |
| Rail length*** | 792 mm (31.2 in.) |

* For 0U PDU support, the rack must be at least 1100 mm (43.31 in.) deep without a CMA, or at least 1200 mm (47.24 in.) deep if a CMA is used.

*** Measured when mounted on the rack, from the front surface of the front mounting flange to the rearmost point of the rail.

Supported rack cabinets are listed in the [Rack cabinets](#) section.

Operating system support

The ST550 with second-generation Intel Xeon Scalable processors supports the following operating systems:

- Microsoft Windows Server 2016
- Microsoft Windows Server 2019
- Microsoft Windows Server 2022
- Red Hat Enterprise Linux 7.6
- Red Hat Enterprise Linux 7.7
- Red Hat Enterprise Linux 7.8

- Red Hat Enterprise Linux 7.9
- Red Hat Enterprise Linux 8.0
- Red Hat Enterprise Linux 8.1
- Red Hat Enterprise Linux 8.2
- Red Hat Enterprise Linux 8.3
- 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 9.0
- Red Hat Enterprise Linux 9.1
- Red Hat Enterprise Linux 9.2
- Red Hat Enterprise Linux 9.3
- SUSE Linux Enterprise Server 12 SP4
- SUSE Linux Enterprise Server 12 SP5
- SUSE Linux Enterprise Server 12 Xen SP4
- SUSE Linux Enterprise Server 12 Xen SP5
- SUSE Linux Enterprise Server 15
- SUSE Linux Enterprise Server 15 SP1
- SUSE Linux Enterprise Server 15 SP2
- SUSE Linux Enterprise Server 15 SP3
- SUSE Linux Enterprise Server 15 SP4
- SUSE Linux Enterprise Server 15 SP5
- SUSE Linux Enterprise Server 15 Xen
- SUSE Linux Enterprise Server 15 Xen SP1
- SUSE Linux Enterprise Server 15 Xen SP2
- 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
- VMware ESXi 6.5 U2
- VMware ESXi 6.5 U3
- VMware ESXi 6.7 U1
- VMware ESXi 6.7 U2
- VMware ESXi 6.7 U3
- VMware ESXi 7.0
- VMware ESXi 7.0 U1
- VMware ESXi 7.0 U2
- VMware ESXi 7.0 U3
- VMware ESXi 8.0
- VMware ESXi 8.0 U1
- VMware ESXi 8.0 U2

The ST550 server with 1st Gen Intel Xeon SP processors supports the following operating systems:

- Microsoft Windows Server 2012 R2
- Microsoft Windows Server 2016
- Microsoft Windows Server 2019
- Microsoft Windows Server 2022
- Microsoft Windows Server, version 1709
- Red Hat Enterprise Linux 6.10 x64
- Red Hat Enterprise Linux 6.9 x64
- Red Hat Enterprise Linux 7.3
- Red Hat Enterprise Linux 7.4
- Red Hat Enterprise Linux 7.5

- Red Hat Enterprise Linux 7.6
- Red Hat Enterprise Linux 7.7
- Red Hat Enterprise Linux 7.8
- Red Hat Enterprise Linux 7.9
- Red Hat Enterprise Linux 8.0
- Red Hat Enterprise Linux 8.1
- Red Hat Enterprise Linux 8.2
- Red Hat Enterprise Linux 8.3
- 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 9.0
- Red Hat Enterprise Linux 9.1
- Red Hat Enterprise Linux 9.2
- SUSE Linux Enterprise Server 11 Xen x64 SP4
- SUSE Linux Enterprise Server 11 x64 SP4
- SUSE Linux Enterprise Server 12 SP2
- SUSE Linux Enterprise Server 12 SP3
- SUSE Linux Enterprise Server 12 SP4
- SUSE Linux Enterprise Server 12 SP5
- SUSE Linux Enterprise Server 12 Xen SP2
- SUSE Linux Enterprise Server 12 Xen SP3
- SUSE Linux Enterprise Server 12 Xen SP4
- SUSE Linux Enterprise Server 12 Xen SP5
- SUSE Linux Enterprise Server 15
- SUSE Linux Enterprise Server 15 SP1
- SUSE Linux Enterprise Server 15 SP2
- SUSE Linux Enterprise Server 15 SP3
- SUSE Linux Enterprise Server 15 SP4
- SUSE Linux Enterprise Server 15 SP5
- SUSE Linux Enterprise Server 15 Xen
- SUSE Linux Enterprise Server 15 Xen SP1
- SUSE Linux Enterprise Server 15 Xen SP2
- 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
- VMware ESXi 6.0 U3
- VMware ESXi 6.5
- VMware ESXi 6.5 U1
- VMware ESXi 6.5 U2
- VMware ESXi 6.5 U3
- VMware ESXi 6.7
- VMware ESXi 6.7 U1
- VMware ESXi 6.7 U2
- VMware ESXi 6.7 U3
- VMware ESXi 7.0
- VMware ESXi 7.0 U1
- VMware ESXi 7.0 U2
- VMware ESXi 7.0 U3
- VMware ESXi 8.0
- VMware ESXi 8.0 U1
- VMware ESXi 8.0 U2

For a complete list of supported, certified and tested operating systems, plus additional details and links to relevant web sites, see the Operating System Interoperability Guide:
<https://lenovopress.com/osig#servers=st550-7x09-7x10-sp-gen-2>

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 server can be preloaded with VMware ESXi installed on M.2 cards. Ordering information is listed in the following table.

Table 62. VMware ESXi preload

| Part number | Feature code | Description |
|-------------|--------------|--|
| CTO only | B3VW | VMware ESXi 6.5 U2 (Factory Installed) |
| CTO only | B6U0 | VMware ESXi 6.5 U3 (factory installed) |
| CTO only | B4XA | VMware ESXi 6.7 U1 (Factory Installed) |
| CTO only | B6U1 | VMware ESXi 6.7 U2 (factory installed) |
| CTO only | B88T | VMware ESXi 6.7 U3 (factory installed) |
| CTO only | BBZG | VMware ESXi 7.0 (Factory Installed) |
| CTO only | BE5E | VMware ESXi 7.0 U1 (Factory Installed) |
| CTO only | BHSR | VMware ESXi 7.0 U2 (Factory Installed) |
| 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) |

Physical and electrical specifications

The ST550 has the following overall physical dimensions, including tower feet, excluding components that extend outside the standard chassis, such as power supply handles:

- Width: 176 mm (6.9 inches)
- Height: 438 mm (17.2 inches)
- Depth: 660 mm (26 inches)

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

Table 63. Detailed dimensions

| Dimension | Description |
|-----------|---|
| 176 mm | X_a = Width, using widest features (not including feet) |
| 272 mm | X_b = Width, with chassis feet extended |
| 438 mm | Y_a = Height, from bottom of feet to top of chassis body |
| 425 mm | Y_b = Height, from bottom of chassis body to top of chassis body |
| 623 mm | Z_a = Depth, from front door to most rearward I/O port surface |
| 660 mm | Z_b = Depth, from front door to deepest feature of the chassis body feature |
| 667 mm | Z_c = Depth, from front door to deepest feature such as power supply handle |
| 17 mm | Z_e = Depth, front door to front plate of chassis body |

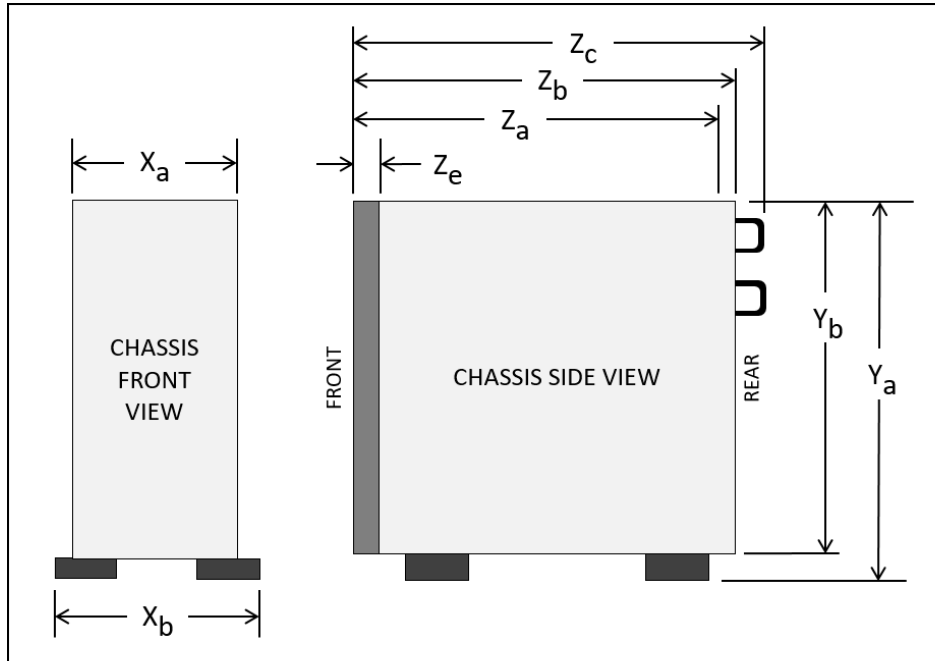


Figure 21. Server dimension

A note about the stabilizer feet: The ST550 includes stabilizer foot stands that are used when the server is in the tower configuration. The stabilizer feet can be installed in a retracted position or in an open position. For safety reasons, it is recommended the feet be used in the open position to help prevent the server from tipping over, however if needed, the feet can be positioned so that they do not extend beyond the width of the server enclosure. When the ST550 is converted to a rack configuration, the feet are removed.

The shipping dimensions (cardboard packaging) of the ST550 are as follows:

- Width: 574 mm (22.6 inches)
- Height: 372 mm (14.6 inches)
- Depth: 982 mm (38.7 inches)

Weight:

- Fully configured: 36 kg (79.36 lb)

Electrical requirements are as follows:

- Models with 550 W AC power supplies:
 - 100-127 (nominal) V ac; 50 Hz or 60 Hz; 6.2 A
 - 200 - 240 (nominal) V ac; 50 Hz or 60 Hz; 3.0 A
 - Input kilovolt-amperes (kVA) (approximately):
 - Minimum configuration: 0.16 kVA
 - Maximum configuration: 0.722 kVA
- Models with 750 W Platinum AC power supplies:
 - 100 - 127 (nominal) V ac; 50 Hz or 60 Hz; 8.4 A
 - 200 - 240 (nominal) V ac; 50 Hz or 60 Hz; 4.1 A
 - Input kilovolt-amperes (kVA) (approximately):
 - Minimum configuration: 0.15 kVA
 - Maximum configuration: 0.954 kVA

- Models with 750 W Titanium AC power supplies:
 - 200 - 240 (nominal) V ac; 50 Hz or 60 Hz; 4.1 A
 - Input kilovolt-amperes (kVA) (approximately):
 - Minimum configuration: 0.15 kVA
 - Maximum configuration: 0.906 kVA
- Models with 1100 W Platinum AC power supplies:
 - 100 - 127 (nominal) V ac; 50 Hz or 60 Hz; 12.0 A
 - 200 - 240 (nominal) V ac; 50 Hz or 60 Hz; 6.0 A
 - Input kilovolt-amperes (kVA) (approximately):
 - Minimum configuration: 0.12 kVA
 - Maximum configuration: 1.406 kVA

For China customers using 240V DC input power:

- Models with 550 W 240V DC power supplies:
 - 200 - 240 (nominal) V dc; 2.5 A
 - Input kilovolt-amperes (kVA) (approximately):
 - Minimum configuration: 0.16 kVA
 - Maximum configuration: 0.70 kVA
- Models with 750 W Platinum 240V DC power supplies:
 - 200 - 240 (nominal) V dc; 3.5 A
 - Input kilovolt-amperes (kVA) (approximately):
 - Minimum configuration: 0.15 kVA
 - Maximum configuration: 0.958 kVA
- Models with 750 W Titanium 240V DC power supplies:
 - 200 - 240 (nominal) V dc; 3.5 A
 - Input kilovolt-amperes (kVA) (approximately):
 - Minimum configuration: 0.15 kVA
 - Maximum configuration: 0.948 kVA
- Models with 1100 W Platinum 240V DC power supplies:
 - 200 - 240 (nominal) V dc; 5.1 A
 - Input kilovolt-amperes (kVA) (approximately):
 - Minimum configuration: 0.12 kVA
 - Maximum configuration: 1.408 kVA

Operating environment

The ThinkSystem ST550 server complies with ASHRAE Class A2 specifications, and depending on the hardware configuration, also complies with ASHRAE Class A3 and Class A4 specifications. System performance may be impacted when operating temperature is outside ASHRAE A2 specification.

The following restrictions apply with ASHRAE A4 and A3 support:

- No support for processors with TDP rating of 125 W or higher
- Two power supplies must be installed; fixed (cabled) power supply not supported
- The rear fan must be installed
- No support for NVMe drives
- No support for GPUs
- If the media bay conversion kit is installed (adding 4x 2.5-inch drive bays), those drive bays cannot support SAS drives (HDD or SSD) that are 2TB or larger. SATA drives are fully supported.

In addition, CPU core speed may be reduced depending on the processor selected.

Temperature and humidity

The server is supported operating in the following environments:

- 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 125 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:

- Maximum configuration: 4074 Btu/hr (1194 watts)

Acoustical noise emissions

The server has the following acoustic noise emissions declaration:

- Sound power levels (bels):
 - Base configuration: 4.0 bels (idle), 4.1 bels (operating)
 - Maximum configuration: 5.3 bels (idle), 5.3 bels (operating)
- Sound pressure levels (dBA):
 - Base configuration: 33 dBA (idle), 33 dBA (operating)
 - Maximum configuration: 43 dBA (idle), 43 dBA (operating)

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:
 - 12 kg - 22 kg: 50 G for 152 in./sec velocity change across 6 surfaces
 - 23 kg - 31 kg: 35 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 and Support

The ST550 has a 1-year or 3-year warranty, based on the machine type of the system:

- 7X09: 1 year warranty
- 7X10: 3 year warranty

The standard warranty terms are customer-replaceable unit (CRU) and onsite (for field-replaceable units FRUs only) with standard call center support during normal business hours and 9x5 Next Business Day Parts Delivered.

Lenovo's additional support services provide a sophisticated, unified support structure for your data center, with an experience consistently ranked number one in customer satisfaction worldwide. Available offerings include:

- **Premier Support**

Premier Support provides a Lenovo-owned customer experience and delivers direct access to technicians skilled in hardware, software, and advanced troubleshooting, in addition to the following:

- Direct technician-to-technician access through a dedicated phone line
- 24x7x365 remote support
- Single point of contact service
- End to end case management
- Third-party collaborative software support
- Online case tools and live chat support
- On-demand remote system analysis

- **Warranty Upgrade (Preconfigured Support)**

Services are available to meet the on-site response time targets that match the criticality of your systems.

- 3, 4, or 5 years of service coverage
- 1-year or 2-year post-warranty extensions
- **Foundation Service:** 9x5 service coverage with next business day onsite response. YourDrive YourData is an optional extra (see below).
- **Essential Service:** 24x7 service coverage with 4-hour onsite response or 24-hour committed repair (available only in select markets). Bundled with YourDrive YourData.
- **Advanced Service:** 24x7 service coverage with 2-hour onsite response or 6-hour committed repair (available only in select markets). Bundled with YourDrive YourData.

- **Managed Services**

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 you systems are providing business value through optimized performance.

- **Technical Account Management (TAM)**

A Lenovo Technical Account Manager helps you optimize the operation of your data center based on a deep understanding of your business. You gain direct access to your Lenovo TAM, who serves as your single point of contact to expedite service requests, provide status updates, and furnish reports to track incidents over time. In addition, your TAM will help proactively make service recommendations and manage your service relationship with Lenovo to make certain your needs are met.

- **Enterprise Server Software Support**

Enterprise Software Support is an additional support service providing customers with software support on Microsoft, Red Hat, SUSE, and VMware applications and systems. Around the clock availability for critical problems plus unlimited calls and incidents helps customers address challenges fast, without incremental costs. Support staff can answer troubleshooting and diagnostic questions, address product comparability and interoperability issues, isolate causes of problems, report defects to software vendors, and more.

- **YourDrive YourData**

Lenovo's YourDrive YourData is a multi-drive retention offering that ensures your data is always under your control, regardless of the number of drives that are installed in your Lenovo server. In the unlikely event of a drive failure, you retain possession of your drive while Lenovo replaces the failed drive part. Your data stays safely on your premises, in your hands. The YourDrive YourData service can be purchased in convenient bundles and is optional with Foundation Service. It is bundled with Essential Service and Advanced Service.

- **Health Check**

Having a trusted partner who can perform regular and detailed health checks is central to maintaining efficiency and ensuring that your systems and business are always running at their best. Health Check supports Lenovo-branded server, storage, and networking devices, as well as select Lenovo-supported products from other vendors that are sold by Lenovo or a Lenovo-Authorized Reseller.

Examples of region-specific warranty terms are second or longer business day parts delivery or parts-only base warranty.

If warranty terms and conditions include onsite labor for repair or replacement of parts, Lenovo will dispatch a service technician to the customer site to perform the replacement. Onsite labor under base warranty is limited to labor for replacement of parts that have been determined to be field-replaceable units (FRUs). Parts that are determined to be customer-replaceable units (CRUs) do not include onsite labor under base warranty.

If warranty terms include parts-only base warranty, Lenovo is responsible for delivering only replacement parts that are under base warranty (including FRUs) that will be sent to a requested location for self-service. Parts-only service does not include a service technician being dispatched onsite. Parts must be changed at customer's own cost and labor and defective parts must be returned following the instructions supplied with the spare parts.

Lenovo Service offerings are region-specific. Not all preconfigured support and upgrade options are available in every region. For information about Lenovo service upgrade offerings that are available in your region, refer to the following resources:

- Service part numbers in Lenovo Data Center Solution Configurator (DCSC):
<http://dcsc.lenovo.com/#/services>
- Lenovo Services Availability Locator
<http://lenovolocator.com/>

For service definitions, region-specific details, and service limitations, please refer to the following documents:

- Lenovo Statement of Limited Warranty for Infrastructure Solutions Group (ISG) Servers and System Storage
<http://pcsupport.lenovo.com/us/en/solutions/ht503310>
- Lenovo Data Center Services Agreement
<http://support.lenovo.com/us/en/solutions/ht116628>

Services

Lenovo Services is a dedicated partner to your success. Our goal is to reduce your capital outlays, mitigate your IT risks, and accelerate your time to productivity.

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

Here's a more in-depth look at what we can do for you:

- **Asset Recovery Services**

Asset Recovery Services (ARS) helps customers recover the maximum value from their end-of-life equipment in a cost-effective and secure way. On top of simplifying the transition from old to new equipment, ARS mitigates environmental and data security risks associated with data center equipment disposal. Lenovo ARS is a cash-back solution for equipment based on its remaining market value, yielding maximum value from aging assets and lowering total cost of ownership for your customers. For more information, see the ARS page, <https://lenovopress.com/lp1266-reduce-e-waste-and-grow-your-bottom-line-with-lenovo-ars>.

- **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.

- **Basic Hardware Installation**

Lenovo experts can seamlessly manage the physical installation of your server, storage, or networking hardware. Working at a time convenient for you (business hours or off shift), the technician will unpack and inspect the systems on your site, install options, mount in a rack cabinet, connect to power and network, check and update firmware to the latest levels, verify operation, and dispose of the packaging, allowing your team to focus on other priorities.

- **Deployment Services**

When investing in new IT infrastructures, you need to ensure your business will see quick time to value with little to no disruption. Lenovo deployments are designed by development and engineering teams who know our Products & Solutions better than anyone else, and our technicians own the process from delivery to completion. Lenovo will conduct remote preparation and planning, configure & integrate systems, validate systems, verify and update appliance firmware, train on administrative tasks, and provide post-deployment documentation. Customer's IT teams leverage our skills to enable IT staff to transform with higher level roles and tasks.

- **Integration, Migration, and Expansion Services**

Move existing physical & virtual workloads easily, or determine technical requirements to support increased workloads while maximizing performance. Includes tuning, validation, and documenting ongoing run processes. Leverage migration assessment planning documents to perform necessary migrations.

Regulatory compliance

The ST550 server conforms to the following standards:

- Energy Star 3.0
- FCC - Verified to comply with Part 15 of the FCC Rules, Class A
- Canada ICES-003, issue 6, Class A
- UL/IEC 60950-1
- CSA C22.2 No. 60950-1
- IEC 62368-1:2014 (CB Certificate and CB Test Report)
- NOM-019
- Argentina IEC60950-1
- Japan VCCI, Class A
- Australia/New Zealand AS/NZS CISPR 32, Class A; AS/NZS 60950.1
- China CCC GB4943.1, GB9254 Class A, GB17625.1
- Taiwan BSMI CNS13438, Class A; CNS14336-1; CNS15663
- Korea KN32, Class A; KN35
- Russia, Belorussia and Kazakhstan, TR CU 020/2011 (for EMC) and TR CU 004/2011 (for safety)
- IEC 60950-1 (CB Certificate and CB Test Report)
- CE Mark (EN55032 Class A, EN60950-1, EN55024, EN61000-3-2, EN61000-3-3)
- CISPR 32, Class A
- TUV-GS (EN60950-1 /IEC60950-1,EK1-ITB2000)
- RoHS Directive
- ErP lot3
- JESL

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

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

External backup units

The following table lists the 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 65. External SAS backup options

| Part number | Description |
|---|--|
| External SAS tape backup drives | |
| 6160S7E | IBM TS2270 Tape Drive Model H7S |
| 6160S8E | IBM TS2280 Tape Drive Model H8S |
| 6160S9E | IBM TS2290 Tape Drive Model H9S |
| External SAS tape backup autoloaders | |
| 6171S7R | IBM TS2900 Tape Autoloader w/LTO7 HH SAS |
| 6171S8R | IBM TS2900 Tape Autoloader w/LTO8 HH SAS |
| 6171S9R | IBM TS2900 Tape Autoloader w/LTO9 HH SAS |
| External tape backup libraries | |
| 6741A1F | IBM TS4300 3U Tape Library-Base Unit |
| SAS backup drives for TS4300 Tape Library | |
| 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>

Fibre Channel SAN switches

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

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

Uninterruptible power supply units

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

Table 66. Uninterruptible power supply units

| Part number | Description |
|--|--|
| Tower UPS units | |
| 55951AX | T1kVA Tower UPS (100-125VAC) |
| 55951KX | T1kVA Tower UPS (200-240VAC) |
| 55952AX | T1.5kVA Tower UPS (100-125VAC) |
| 55952KX | T1.5kVA Tower UPS (200-240VAC) |
| Rack-mounted or tower UPS units | |
| 55941AX | RT1.5kVA 2U Rack or Tower UPS (100-125VAC) |
| 55941KX | RT1.5kVA 2U Rack or Tower UPS (200-240VAC) |
| 55942AX | RT2.2kVA 2U Rack or Tower UPS (100-125VAC) |
| 55942KX | RT2.2kVA 2U Rack or Tower UPS (200-240VAC) |
| 55943AX | RT3kVA 2U Rack or Tower UPS (100-125VAC) |
| 55943KX | RT3kVA 2U Rack or Tower UPS (200-240VAC) |
| 55945KX | RT5kVA 3U Rack or Tower UPS (200-240VAC) |
| 55946KX | RT6kVA 3U Rack or Tower UPS (200-240VAC) |
| 55948KX | RT8kVA 6U Rack or Tower UPS (200-240VAC) |
| 55949KX | RT11kVA 6U Rack or Tower UPS (200-240VAC) |
| 55948PX | RT8kVA 6U 3:1 Phase Rack or Tower UPS (380-415VAC) |
| 55949PX | RT11kVA 6U 3:1 Phase Rack or Tower UPS (380-415VAC) |
| Rack-mounted UPS units | |
| 55943KT† | ThinkSystem RT3kVA 2U Standard UPS (200-230VAC) (2x C13 10A, 2x GB 10A, 1x C19 16A outlets) |
| 55943LT† | ThinkSystem RT3kVA 2U Long Backup UPS (200-230VAC) (2x C13 10A, 2x GB 10A, 1x C19 16A outlets) |
| 55946KT† | ThinkSystem RT6kVA 5U UPS (200-230VAC) (2x C13 10A outlets, 1x Terminal Block output) |
| 5594XKT† | ThinkSystem RT10kVA 5U UPS (200-230VAC) (2x C13 10A outlets, 1x Terminal Block output) |

† Only available in China and the Asia Pacific market.

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

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

Power distribution units

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

Table 67. Power distribution units

| Part number | Feature code | Description | ANZ | ASEAN | Brazil | EET | MEA | RUCIS | WE | HTK | INDIA | JAPAN | LA | NA | PRC |
|----------------------|--------------|---------------------------------|-----|-------|--------|-----|-----|-------|----|-----|-------|-------|----|----|-----|
| 0U Basic PDUs | | | | | | | | | | | | | | | |
| 00YJ776 | ATZY | 0U 36 C13/6 C19 24A 1 Phase PDU | N | Y | Y | N | N | N | N | N | N | Y | Y | Y | N |

| Part number | Feature code | Description | ANZ | ASEAN | Brazil | EET | MEA | RUCIS | WE | HTK | INDIA | JAPAN | LA | NA | PRC |
|---|--------------|--|-----|-------|--------|-----|-----|-------|----|-----|-------|-------|----|----|-----|
| 0U Switched and Monitored PDUs | | | | | | | | | | | | | | | |
| 00YJ783 | AU04 | 0U 12 C13/12 C19 Switched and Monitored 48A 3 Phase PDU | N | N | Y | N | N | N | Y | N | N | Y | Y | Y | N |
| 00YJ781 | AU03 | 0U 20 C13/4 C19 Switched and Monitored 24A 1 Phase PDU | N | N | Y | N | Y | N | Y | N | N | Y | Y | Y | N |
| 1U Switched and Monitored PDUs | | | | | | | | | | | | | | | |
| 4PU7A81117 | BNDV | 1U 18 C19/C13 switched and monitored 48A 3P WYE PDU - ETL | N | N | N | N | N | N | N | N | N | N | N | Y | N |
| 4PU7A77467 | BLC4 | 1U 18 C19/C13 Switched and Monitored 80A 3P Delta PDU | N | N | N | N | N | N | N | N | N | Y | N | Y | N |
| 4PU7A77469 | BLC6 | 1U 12 C19/C13 switched and monitored 60A 3P Delta PDU | N | N | N | N | N | N | N | N | N | N | N | Y | N |
| 4PU7A77468 | BLC5 | 1U 12 C19/C13 switched and monitored 32A 3P WYE PDU | Y | Y | Y | Y | Y | Y | Y | Y | Y | N | Y | Y | Y |
| 4PU7A81118 | BNDW | 1U 18 C19/C13 switched and monitored 48A 3P WYE PDU - CE | Y | Y | Y | Y | Y | Y | Y | Y | Y | N | Y | N | Y |
| 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) | | | | | | | | | | | | | | | |
| 39Y8941 | 6010 | DPI C13 Enterprise PDU Module (WW) | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y |
| 1U Front-end PDUs (3x IEC 320 C19 outlets) | | | | | | | | | | | | | | | |
| 39Y8938 | 6002 | DPI Single-phase 30A/120V Front-end PDU (US) | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y |
| 39Y8939 | 6003 | DPI Single-phase 30A/208V Front-end PDU (US) | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y |
| 39Y8934 | 6005 | DPI Single-phase 32A/230V Front-end PDU (International) | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y |
| 39Y8940 | 6004 | DPI Single-phase 60A/208V Front-end PDU (US) | Y | N | Y | Y | Y | Y | Y | N | N | Y | Y | Y | N |
| 39Y8935 | 6006 | DPI Single-phase 63A/230V Front-end PDU (International) | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y |
| 1U NEMA PDUs (6x NEMA 5-15R outlets) | | | | | | | | | | | | | | | |
| 39Y8905 | 5900 | DPI 100-127V NEMA PDU | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y |
| Line cords for 1U PDUs that ship without a line cord | | | | | | | | | | | | | | | |
| 40K9611 | 6504 | 4.3m, 32A/380-415V, EPDU/IEC 309 3P+N+G 3ph wye (non-US) Line Cord | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y |
| 40K9612 | 6502 | 4.3m, 32A/230V, EPDU to IEC 309 P+N+G (non-US) Line Cord | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y |
| 40K9613 | 6503 | 4.3m, 63A/230V, EPDU to IEC 309 P+N+G (non-US) Line Cord | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y |

| Part number | Feature code | Description | ANZ | ASEAN | Brazil | EET | MEA | RUCIS | WE | HTK | INDIA | JAPAN | LA | NA | PRC |
|-------------|--------------|---|-----|-------|--------|-----|-----|-------|----|-----|-------|-------|----|----|-----|
| 40K9614 | 6500 | 4.3m, 30A/208V, EPDU to NEMA L6-30P (US) Line Cord | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y |
| 40K9615 | 6501 | 4.3m, 60A/208V, EPDU to IEC 309 2P+G (US) Line Cord | N | N | Y | N | N | N | Y | N | N | Y | Y | Y | N |
| 40K9617 | 6505 | 4.3m, 32A/230V, Souriau UTG Female to AS/NZ 3112 (Aus/NZ) Line Cord | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y |
| 40K9618 | 6506 | 4.3m, 32A/250V, Souriau UTG Female to KSC 8305 (S. Korea) Line Cord | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y |

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

Rack cabinets

Rack installation kits are described in the [Rack installation](#) section.

The following table lists the supported rack cabinets.

Table 68. Rack cabinets

| Part number | Description |
|-------------------------|--|
| 7D2B0001WW / 7D2N0001WW | 12U 1200mm Deep Micro Datacenter Rack |
| 7D2C0001WW / 7D2P0001WW | 18U 1200mm Deep Micro Datacenter Rack |
| 93072RX | 25U Standard Rack (1000mm) |
| 93072PX | 25U Static S2 Standard Rack (1000mm) |
| 7D6DA007WW | ThinkSystem 42U Onyx Primary Heavy Duty Rack Cabinet (1200mm) |
| 7D6DA008WW | ThinkSystem 42U Pearl Primary Heavy Duty Rack Cabinet (1200mm) |
| 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) |
| 7D6EA009WW | ThinkSystem 48U Onyx Primary Heavy Duty Rack Cabinet (1200mm) |
| 7D6EA00AWW | ThinkSystem 48U Pearl Primary Heavy Duty Rack Cabinet (1200mm) |

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 console options

The following table lists the supported KVM consoles.

Table 69. KVM console

| Part number | Description |
|-------------|--|
| 4XF7A84188 | ThinkSystem 18.5" LCD Console (with US English keyboard) |

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

Table 71. KVM switches and options

| Part number | Description |
|---|---|
| KVM Console switches | |
| 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 GCM and LCM Console switches | |
| 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>

Lenovo Financial Services

Lenovo Financial Services reinforces Lenovo's commitment to deliver pioneering products and services that are recognized for their quality, excellence, and trustworthiness. Lenovo Financial Services offers financing solutions and services that complement your technology solution anywhere in the world.

We are dedicated to delivering a positive finance experience for customers like you who want to maximize your purchase power by obtaining the technology you need today, protect against technology obsolescence, and preserve your capital for other uses.

We work with businesses, non-profit organizations, governments and educational institutions to finance their entire technology solution. We focus on making it easy to do business with us. Our highly experienced team of finance professionals operates in a work culture that emphasizes the importance of providing outstanding customer service. Our systems, processes and flexible policies support our goal of providing customers with a positive experience.

We finance your entire solution. Unlike others, we allow you to bundle everything you need from hardware and software to service contracts, installation costs, training fees, and sales tax. If you decide weeks or months later to add to your solution, we can consolidate everything into a single invoice.

Our Premier Client services provide large accounts with special handling services to ensure these complex transactions are serviced properly. As a premier client, you have a dedicated finance specialist who manages your account through its life, from first invoice through asset return or purchase. This specialist develops an in-depth understanding of your invoice and payment requirements. For you, this dedication provides a high-quality, easy, and positive financing experience.

For your region-specific offers, please ask your Lenovo sales representative or your technology provider about the use of Lenovo Financial Services. For more information, see the following Lenovo website:

<https://www.lenovo.com/us/en/landingpage/lenovo-financial-services/>

Seller training courses

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

1. Intel Transparent Supply Chain on Lenovo Servers

2024-01-29 | 12 minutes | Employees and Partners

This course introduces the Intel Transparent Supply Chain (TSC) program, explains how the program works, and discusses the benefits of the Intel TSC program to customers. Adding the Intel TSC feature to an order is explained.

Course objectives:

- Describe the Intel® Transparent Supply Chain program
- Explain how the Intel® Transparent Supply Chain program works
- Discuss the benefits of the Intel® Transparent Supply Chain program to Lenovo customers
- Explain how to add Intel® Transparent Supply Chain program feature to an order

Published: 2024-01-29

Length: 12 minutes

Employee link: [Grow@Lenovo](#)

Partner link: [Lenovo Partner Learning](#)

Course code: SXXW1230

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

2024-01-23 | 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

Published: 2024-01-23

Length: 25 minutes

Employee link: [Grow@Lenovo](#)

Partner link: [Lenovo Partner Learning](#)

Course code: SXXW1111

3. **Lenovo-Intel Sustainable Solutions QH**

2024-01-22 | 10 minutes | Employees and Partners

This Quick Hit explains how Lenovo and Intel are committed to sustainability, and introduces the Lenovo-Intel joint sustainability campaign. You will learn how to use this campaign to show customers what that level of commitment entails, how to use the campaign's unsolicited proposal approach, and how to use the campaign as a conversation starter which may lead to increased sales.

Published: 2024-01-22

Length: 10 minutes

Employee link: [Grow@Lenovo](#)

Partner link: [Lenovo Partner Learning](#)

Course code: SXXW2524a

4. **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

Published: 2024-01-19

Length: 11 minutes

Employee link: [Grow@Lenovo](#)

Partner link: [Lenovo Partner Learning](#)

Course code: SXXW1100r3

5. **FY24Q3 Intel Servers Update**

2023-12-11 | 15 minutes | Employees and Partners

This update is designed to help you discuss the features and customer benefits of Lenovo servers that use the 5th Gen Intel® Xeon® processors. Lenovo has also introduced a new server, the ThinkSystem SD650-N V3, which expands the supercomputer server family. Reasons to call your customer and talk about refreshing their infrastructure are also included as a guideline.

Published: 2023-12-11

Length: 15 minutes

Employee link: [Grow@Lenovo](#)

Partner link: [Lenovo Partner Learning](#)

Course code: SXXW2522a

6. **Family Portfolio: Intel Rack and Tower Servers**

2023-12-11 | 15 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 and features within the ThinkSystem Intel rack and tower server family, describe unique innovations that this product family uses and recognize when a specific product should be selected.

Published: 2023-12-11

Length: 15 minutes

Employee link: [Grow@Lenovo](#)

Partner link: [Lenovo Partner Learning](#)

Course code: SXXW1204r11

7. **Lenovo Data Center Product Portfolio**

2023-07-21 | 15 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.

Published: 2023-07-21

Length: 15 minutes

Employee link: [Grow@Lenovo](#)

Partner link: [Lenovo Partner Learning](#)

Course code: SXXW1110r6

8. **Partner Technical Webinar - Data Center Limits and ISG TAA Compliance**

2023-05-16 | 60 minutes | Employees and Partners

In this 60-minute replay, we had two topics. First Vinod Kamath, Lenovo Distinguished Engineer for Data Center Cooling presented on the Systems Configuration and Data Center Ambient Limits. Second, Shama Patari, Lenovo Trade Council, and Glenn Johnson, Lenovo Principal Engineer for Supply Chain presented on ISG TAA Compliance.

Published: 2023-05-16

Length: 60 minutes

Employee link: [Grow@Lenovo](#)

Partner link: [Lenovo Partner Learning](#)

Course code: 051223

9. Lenovo Sustainable Computing

2022-09-16 | 4 minutes | Employees and Partners

This Quick Hit describes the Lenovo sustainable computing program, and the many ways in which Lenovo strives to respect and protect the environment.

Published: 2022-09-16

Length: 4 minutes

Employee link: [Grow@Lenovo](#)

Partner link: [Lenovo Partner Learning](#)

Course code: SXXW2504a

Related publications and links

For more information, see these resources:

- Lenovo ThinkSystem ST550 product page:
<https://www.lenovo.com/us/en/data-center/servers/towers/ThinkSystem-ST550/p/77XX7TRST50>
- Interactive 3D Tour of the ThinkSystem ST550:
<https://lenovopress.com/LP0675>
- ThinkSystem ST550 drivers and support
<http://datacentersupport.lenovo.com/products/servers/thinksystem/st550/7x09/downloads>
- Lenovo Hardware Installation & Removal Videos on the ST550:
 - YouTube: <https://www.youtube.com/playlist?list=PLYV5R7hVcs-Acsjj4tU79GzKnWG316BYn>
 - Youku: https://list.youku.com/albumlist/show/id_50483452
- Lenovo ThinkSystem ST550 product publications:
<http://thinksystem.lenovofiles.com/help/index.jsp>
 - Quick Start
 - Rack Installation Guide
 - Setup Guide
 - Hardware Maintenance Manual
 - Messages and Codes Reference
 - Memory Population Reference
- ServerProven hardware compatibility:
<http://www.lenovo.com/us/en/serverproven>

Related product families

Product families related to this document are the following:

- [2-Socket Tower Servers](#)
- [ThinkSystem ST550 Server](#)

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