



## Lenovo ThinkSystem SD530 Server Product Guide

The Lenovo ThinkSystem SD530 is an ultradense and economical two-socket server in a 0.5U rack form factor. With four SD530 servers installed in either the ThinkSystem D2 Enclosure or ThinkSystem Modular Enclosure, you have an ideal high-density 2U four-node (2U4N) platform for enterprise and cloud workloads.

2U4N systems have gained popularity in a variety of data centers, from large enterprises to service providers, because their small footprint and inherent density make them ideal for building solution-based appliances at a low cost. The combination of the Lenovo ThinkSystem SD530 and D2 Enclosure is engineered to deliver these types of solutions.

*Suggested use:* Cloud, MSP, CSP, HPC, hyperconverged solutions, branch office or remote office needs

The following figure shows four ThinkSystem SD530 servers installed in a D2 Enclosure.



Figure 1. Four ThinkSystem SD530 servers installed in a D2 Enclosure

### Did you know?

The SD530 combines the efficiency and density of blades with the value and simplicity of rack-based servers. It is designed to run the highest-core-count Xeon Platinum processors, to power through your most demanding HPC/technical computing/AI workloads.

The SD530 also supports two high-performance GPUs with the addition of the GPU Tray. The server supports a wide variety of NVIDIA GPUs.

## Key features

The ThinkSystem SD530 dense offering fits four hot-pluggable SD530 servers into a ThinkSystem D2 Enclosure or ThinkSystem Modular Enclosure. The enclosures each take up only 2U (0.5U per server) and include room for plenty of internal storage. The overall design makes the solution extremely affordable, with a low total cost of ownership (TCO).

## Scalability and performance

The SD530 server and the enclosures offer numerous features to boost performance, improve scalability, and reduce costs:

- Up to four nodes in a single 2U enclosure, each with two processors from the Intel Xeon processor Scalable family, up to 16 DIMMs, 6 drive bays, and two PCIe slots. It is a highly dense, scalable, and price-optimized offering.
- Supports a wide selection of processors from the Intel Xeon processor Scalable family - designed to operate with the cost-effective Bronze processors up to the highest-core-count Xeon Platinum processors.
- Supports processors with up to 28 cores, core speeds up to 3.6 GHz, and TDP ratings up to 165W.
- Two processors in each server, up to 56 cores total, and 112 threads maximize the concurrent execution of multithreaded applications. With four nodes in the enclosure, a total of 224 cores are available in only 2U of rack space.
- Intelligent and adaptive system performance with Intel Turbo Boost Technology 2.0 allows CPU cores to run at maximum speeds during peak workloads by temporarily going beyond processor thermal design power (TDP).
- Intel Hyper-Threading Technology boosts performance for multithreaded applications by enabling simultaneous multithreading within each processor core, up to two threads per core.
- Intel Virtualization Technology integrates hardware-level virtualization hooks that allow operating system vendors to better use the hardware for virtualization workloads.
- Intel Advanced Vector Extensions 512 (AVX-512) enable acceleration of enterprise-class workloads, including databases, and enterprise resource planning.
- Each processor has six memory channels with memory speeds of up to 2666 MHz to maximize system performance.
- Supports up to 16 DIMMs to maximize memory capacity, supporting 1 TB using 16x 64 GB LRDIMMs or 1.5 TB using 12x 128 GB 3DS RDIMMs.
- Supports up to two GPUs with the addition of a 1U GPU Tray, providing increased processing power.
- The 12 Gbps SAS internal storage connectivity doubles the data transfer rate of 6 Gb SAS solutions, to maximize performance of storage-intensive applications.
- Each SD530 server supports up to six 2.5-inch hot-swap drives. Two drive bays can be configured to support NVMe drives to maximize I/O performance in terms of throughput, bandwidth, and latency.
- With 7.68 TB 2.5-inch SAS hot-swap SSDs, each SD530 supports up to 46 TB of internal storage.
- 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 boot drive performance and reliability.
- The use of solid-state drives (SSDs) instead of, or along with, traditional hard disk drives (HDDs) can improve I/O performance. An SSD can support up to 100 times more I/O read operations per second (IOPS) than a typical HDD.
- The server has two optional 10 Gb Ethernet ports, either 10GBASE-T or SFP+, routed from the embedded X722 controller to the optional 8-port EIOM module at the rear of the enclosure.

- One PCIe 3.0 x16 or two PCIe 3.0 x8 slots for added I/O flexibility.
- PCI Express 3.0 I/O expansion capabilities improve the theoretical maximum bandwidth by 60% compared with the previous generation of PCI Express 2.0.

## **Manageability and security**

Powerful systems management features simplify local and remote management of the SD530:

- 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 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.
- With the SMM management module installed in the enclosure, only one Ethernet connection is needed to provide remote systems management functions for all four SD530 servers and the enclosure.
- The enclosure also supports the Dual Ethernet Port SMM management module with allows a single Ethernet connection to be daisy chained across 7 enclosures and 28 servers, thereby significantly reducing the number of Ethernet switch ports needed to manage an entire rack of SD530 servers and enclosures.

## **Energy efficiency**

The SD530 and the enclosures offer the following energy efficiency features to save energy, reduce operational costs, increase energy availability, and contribute to a green environment:

- ASHRAE A4 compliance for certain configurations to enable operation in 45°C datacenters
- Energy-efficient planar components help lower operational costs.
- High-efficiency power supplies with 80 PLUS Platinum certifications. Energy Star 2.1 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 than 1.35 V DDR3 DIMMs.
- SSDs use as much as 80% less power than 2.5-inch HDDs.

- Optional Lenovo XClarity Energy Manager provide advanced data center power notification, analysis, and policy-based management to help achieve lower heat output and reduced cooling needs.
- The server uses hexagonal ventilation holes, which can be grouped more densely than round holes, providing more efficient airflow through the system.

### **Availability and serviceability**

The SD530 server and the enclosures provide many features to simplify serviceability and increase system uptime:

- 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 drives, supporting RAID redundancy for data protection and greater system uptime.
- The Dual M.2 Boot Adapter supports RAID-1 which enables two installed M.2 drives to be configured as a redundant pair.
- The D2 Enclosure and Modular Enclosure both support two hot-swap power supplies, which form a redundant pair to provide availability for business-critical applications.
- Toolless access to upgrades and serviceable parts, such as fans, adapters, CPUs, and memory.
- Proactive Platform Alerts (including PFA and SMART alerts): 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 (XCC) 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 offer significantly better reliability than traditional 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 (requires the optional KVM Breakout Module).
- Three-year customer-replaceable unit and onsite limited warranty, 9 x 5 next business day. Optional service upgrades are available.

## Components and connectors

The following figure shows the front of the D2 Enclosure. The front view shows the four SD530 nodes, each with 6 drive bays.

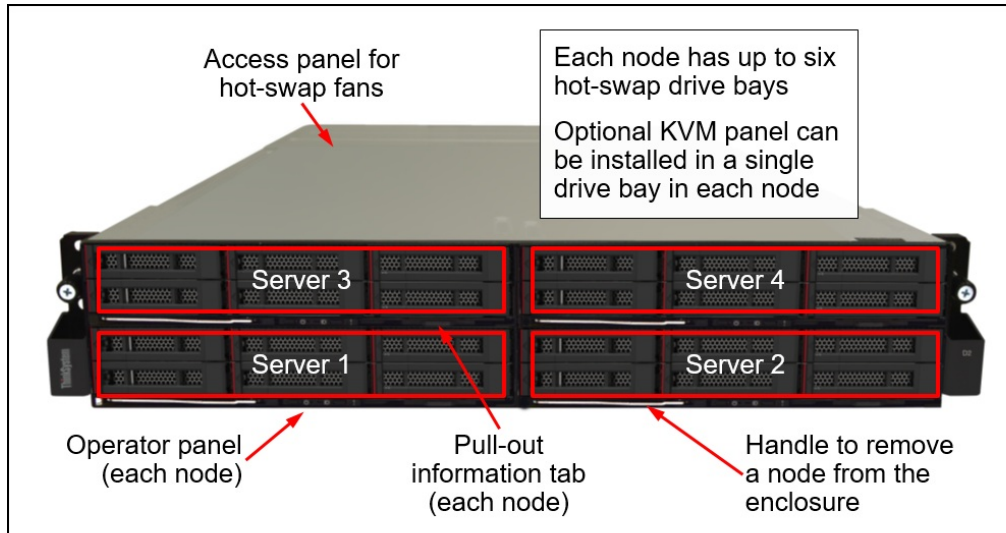


Figure 2. Front view of the ThinkSystem D2 Enclosure

The following figure shows the rear of the D2 Enclosure.

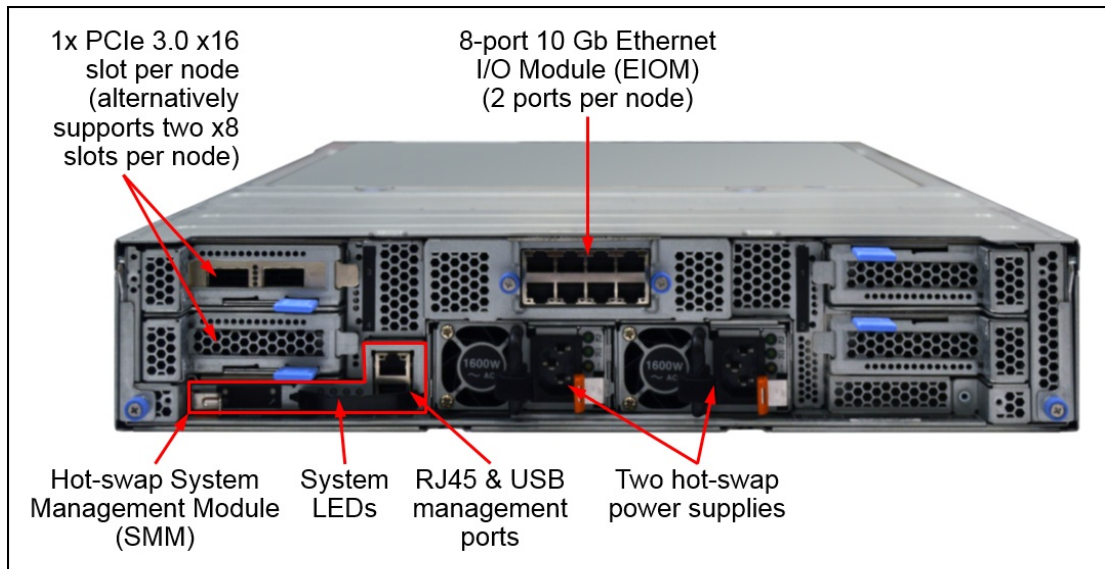


Figure 3. Rear view of the ThinkSystem D2 Enclosure

The following figure shows the I/O shuttle removed from the rear of the D2 Enclosure. The fans are hot-swap and are accessible from a removable cover on the top of the enclosure.

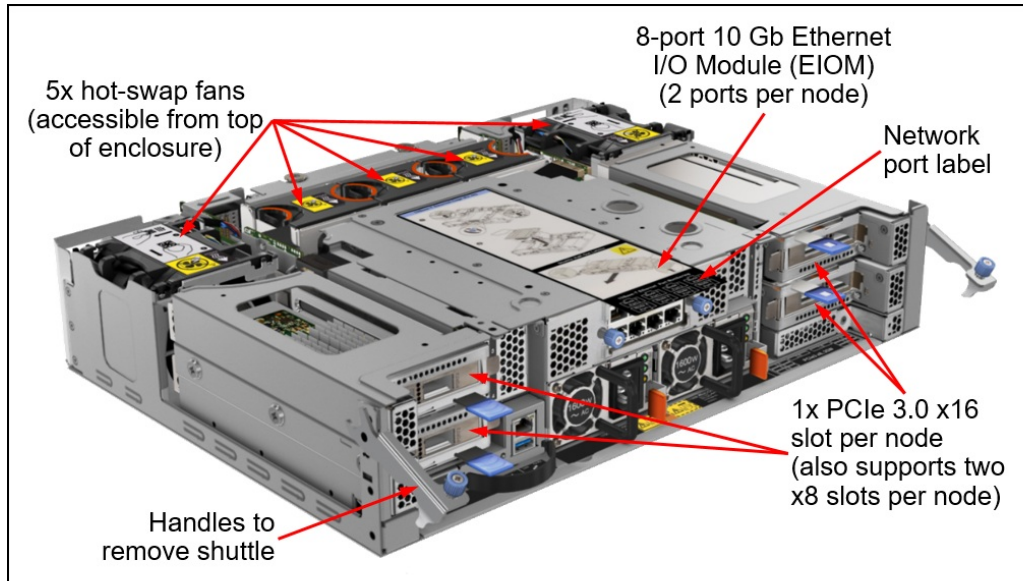


Figure 4. I/O Shuttle in the ThinkSystem D2 Enclosure

The following figure shows the front of the SD530 server.

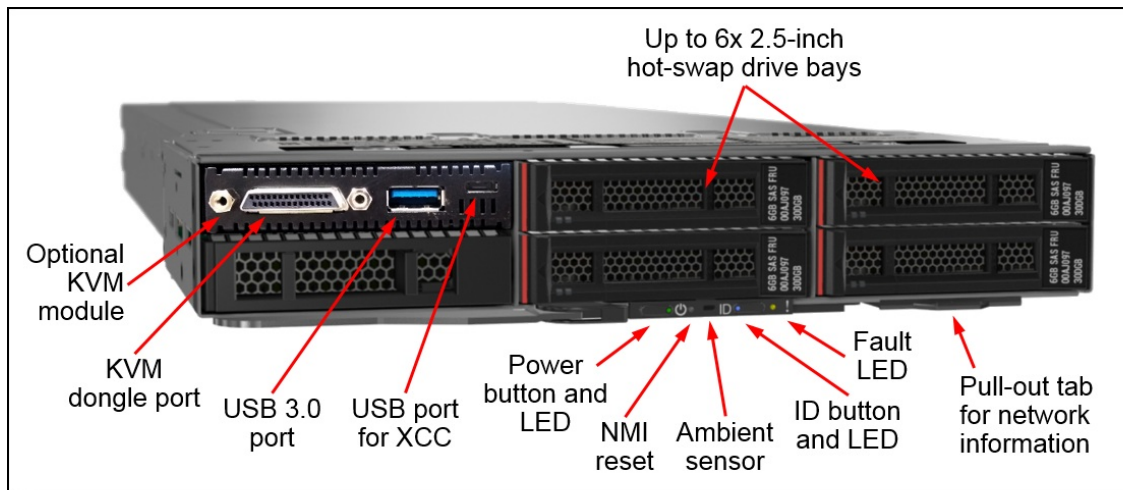


Figure 5. Front view of the SD530 compute node

The following figure shows the internals of the SD530 server identifying key components.

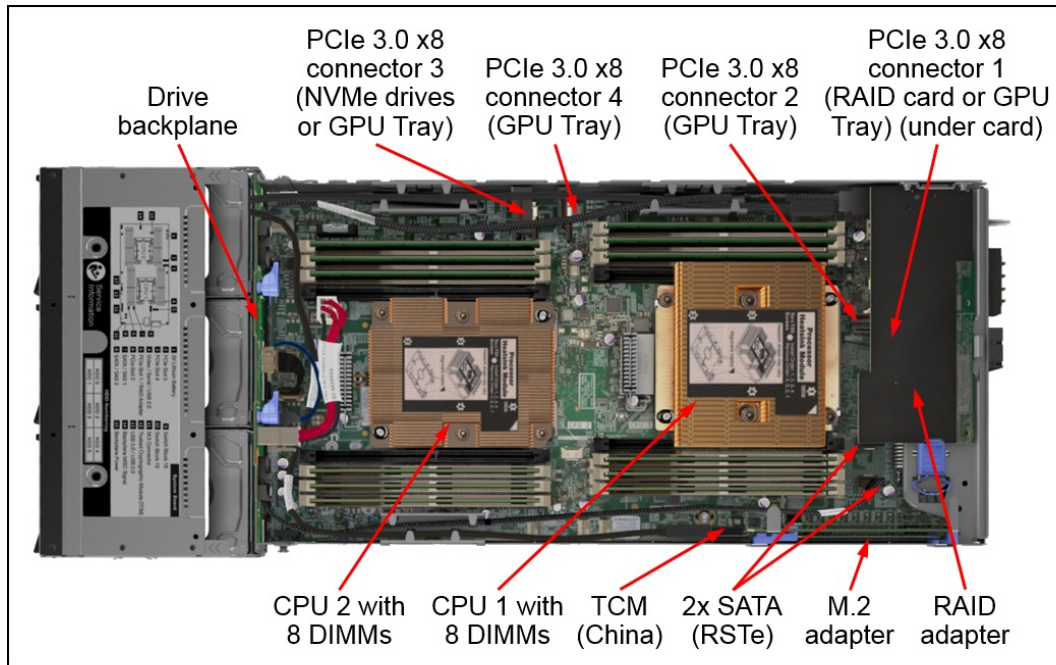


Figure 6. Internal view of the SD530 compute node

The SD530 also supports the addition of a GPU Tray which adds support for two double-wide GPUs, as shown in the following figure.

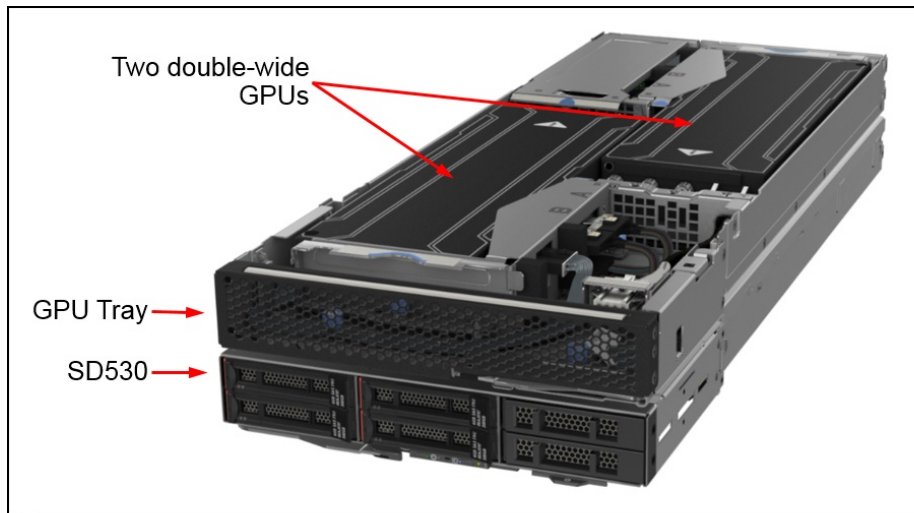


Figure 7. SD530 with attached GPU Tray

## Standard specifications - SD530 server

The following table lists the standard specifications of the ThinkSystem SD530.

Table 1. Standard specifications - ThinkSystem SD530

Components	Specification
Machine type	7X21
Form factor	Half-wide, 1U compute node. Optional GPU Tray adds 1U.
Supported chassis	ThinkSystem D2 Enclosure, 2U high; up to 4 servers per chassis. ThinkSystem Modular Enclosure, 2U high; up to 4 servers per chassis.
Processor	One or two Intel Xeon Processor Scalable Family processors, either Bronze, Silver, Gold or Platinum level processors (formerly codename "Skylake"). Supports processors with core counts up to 28 cores, core speeds up to 3.6 GHz, and TDP ratings up to 205W. Two Intel Ultra Path Interconnect (UPI) links at up to 10.4 GTps each.
Chipset	Intel C624 "Lewisburg" chipset
Memory	Configurations with some processors: Up to 16 DIMM sockets (8 DIMMs per processor) Other configurations: Up to 12 DIMM sockets (6 DIMMs per processor)  Support Lenovo TruDDR4 DIMMs at up to 2666 MHz. RDIMMs, LRDIMMs and 3DS RDIMMs are supported, but memory types cannot be mixed.
Memory maximums	With 16 DIMMs: <ul style="list-style-type: none"> <li>• RDIMMs: Up to 512 GB with 16x 32 GB RDIMMs and two processors</li> <li>• LRDIMMs: Up to 1024 GB with 16x 64 GB LRDIMMs and two processors</li> </ul> 12 DIMMs: <ul style="list-style-type: none"> <li>• RDIMMs: Up to 384 GB with 12x 32 GB RDIMMs and two processors</li> <li>• LRDIMMs: Up to 768 GB with 12x 64 GB LRDIMMs and two processors</li> <li>• 3DS RDIMMs: Up to 1.5 TB with 12x 128 GB 3DS RDIMMs and two processors</li> </ul>
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.
Storage bays	Up to six 2.5-inch hot-swap SAS/SATA drive bays per node. Optionally, two of those bays can be configured as AnyBay drive bays, supporting NVMe drives as well as SAS and SATA drives. Also supports one or two M.2 drives installed internally to each node. Other configurations exist including the substitution of a KVM Module in one drive bay for keyboard, video and mouse support. See the <a href="#">Internal storage</a> section for details.
Maximum internal storage	<ul style="list-style-type: none"> <li>• 92.16 TB with 6x 15.36 TB 2.5-inch SAS hot-swap SSDs</li> <li>• 12 TB with 6x 2 TB 2.5-inch SATA hot-swap HDDs</li> <li>• Intermix of SAS and SATA is supported.</li> </ul>
Storage controller	Onboard 6 Gb SATA using embedded Intel RSTe software RAID, supporting RAID 0, 1, 10, 5, 50. Optional 12 Gb SAS/SATA RAID using SAS3408-based cacheless RAID controller, supporting RAID 0, 1, 10, 5. Optional 12 Gb SAS/SATA HBA.
Optical drive bays	No internal bays; use an external USB drive.
Tape drive bays	No internal bays. Use an external USB drive.
Network interfaces	Two 10 Gb interfaces, either 10GBASE-T ports (RJ-45) or SFP+ ports, routed through the Ethernet I/O Module at the rear of the enclosure. Networking ports are based on the Intel Ethernet Connection X722 in the chipset of the SD530 node.



Components	Specification
PCI Expansion slots	<p>One or two PCIe 3.0 slots:</p> <ul style="list-style-type: none"> <li>• One PCIe 3.0 x16 low-profile slot, or</li> <li>• Two PCIe 3.0 x8 low-profile slots</li> </ul> <p>Additional slots with the optional GPU Tray:</p> <ul style="list-style-type: none"> <li>• Two PCIe 3.0 x16 full-length double-width slots</li> </ul>
Ports	<p>Front: Optional KVM Breakout Module providing one USB 3.0 port, one micro USB port for XClarity Controller connectivity, and a KVM connector port for a breakout cable that provides one VGA port, two USB 2.0 ports and one DB9 serial port for local connectivity.</p> <p>Additional ports provided by the enclosure as described in the <a href="#">Enclosure specifications</a> section.</p>
Cooling	Supplied by the D2 Enclosure.
Power supply	Supplied by the D2 Enclosure.
Hot-swap parts	HDDs and SSDs
Systems management	<p>Operator panel with system error LED and ID and power controls. 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.</p> <p>System Management Module (SMM) in the D2 Enclosure provides additional systems management functions.</p>
Video	G200 graphics with 16 MB memory with 2D hardware accelerator, integrated into the XClarity Controller. Maximum resolution is 1920x1200 32bpp at 60Hz.
Security	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).
Operating systems supported	Microsoft Windows Server, Red Hat Enterprise Linux, SUSE Linux Enterprise Server, VMware ESXi. See the <a href="#">Operating system support</a> section for specifics.
Limited warranty	Three-year customer-replaceable unit and onsite limited warranty with 9x5 next business day (NBD).
Service and support	Optional service upgrades are available through 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.
Temperature	Up to ASHRAE Class A4: 5°C to 45°C (41°F to 113°F)
Dimensions	Height: 41 mm (1.7 inches), depth: 562 mm (22.2 inches), width: 222 mm (8.8 inches)
Weight	Minimum weight: 3.5 kg (7.8 lb), maximum weight: 7.5 kg (16.6 lb)

## Standard specifications - Enclosure

The SD530 servers are supported in both the ThinkSystem D2 Enclosure and ThinkSystem Modular Enclosure. The following table lists the standard specifications of the enclosures.

**Tip:** The only difference between the D2 Enclosure and the Modular Enclosure is that the D2 Enclosure has a single-port SMM management module and the Modular Enclosure has a dual-port SMM management module.

Table 2. Standard specifications: D2 Enclosure and Modular Enclosure

<b>Components</b>	<b>Specification</b>
Machine type	7X20: D2 Enclosure (ships with single port SMM) 7X22: Modular Enclosure (ships with dual port SMM)
Form factor	2U rack-mounted chassis.
Server support	Up to 4 servers per chassis.
Servers per 42U rack	Up to 84 servers in 21 enclosures
System Management Module	<p><i>D2 Enclosure:</i> Single port SMM is standard, supports Dual Port SMM as a field upgrade <i>Modular Enclosure:</i> Dual Port SMM is standard</p> <p>The hot-swappable System Management Module (SMM) is the management device for the enclosure. Provides integrated systems management functions and controls the power and cooling features of the enclosure. Provides remote browser and CLI-based user interfaces for remote access via the dedicated Gigabit Ethernet port. Remote access is to both the management functions of the enclosure as well as the XClarity Controller (XCC) in each server.</p> <p>Supports the SMM with one Ethernet port (D2 Enclosure) or the Dual Port SMM with two Ethernet ports (Modular Enclosure, or the D2 Enclosure with the Dual Port SMM installed). The Dual Port SMM allows a single incoming Ethernet connection to be daisy chained across 7 enclosures and 28 servers, thereby significantly reducing the number of Ethernet switch ports needed to manage an entire rack of SD530 servers and enclosures.</p>
Ethernet I/O Module	8-port Ethernet I/O Module (EIOM) routes two 10 GbE connections to each of the four servers.
Controls and LEDs	SMM has four LEDs: system error, identification, status, and system power. Each power supply has AC, DC and error LEDs
Power supplies	Two hot-swap power supplies either 1100 W, 1600 W, or 2000 W functioning as a redundant pair. Power supplies must be identical. Power supplies require a 200-240 V ac, 50 or 60 Hz supply, although the 1100 W also supports 100-127V ac 50 or 60 Hz. Power supplies are installed at the rear of the chassis. 80 PLUS Platinum certified. Built-in overload and surge protection.
Cooling	Five hot-swap system fans, accessible via removable panel in the top cover of the enclosure.
Hot-swap parts	Power supplies, fans, System Management Module
Power consumption	Input kilovolt-amperes (kVA): minimum: 0.153 kVA, maximum: 2.61 kVA
Limited warranty	Three-year customer-replaceable unit and onsite limited warranty with 9x5/NBD coverage.
Dimensions	2U chassis. Height: 87 mm (3.5 inches), depth: 892 mm (35.1 inches), width: 488 mm (19.3 inches)
Weight	Minimum configuration (with one minimally configured node): 22.4 kg (49.4 lbs) Maximum configuration (with four fully configured nodes): 55.0 kg (121.2 lbs)

## SD530 models

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

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

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

### Server models for Australia and New Zealand

Table 3. Server models for Australia and New Zealand

Model	Intel Xeon processors†	Memory	RAID	Drive bays (Avail/Max)	Drives	KVM Breakout	M.2 drives	XCC Level
Standard models								
7X21A01VAU	1x Bronze 3104 6C 85W 1.7GHz	1x 16GB 2Rx8	RSTe RAID	6x SAS/SATA*	Open	Optional	Open	Standard
7X21A025AU	1x Silver 4108 8C 85W 1.8GHz	1x 16GB 2Rx8	RSTe RAID	6x SAS/SATA*	Open	Optional	Open	Standard
7X21A02DAU	2x Silver 4108 8C 85W 1.8GHz	2x 16GB 2Rx8	RAID 530-8i	6x SAS/SATA	Open	Optional	Open	Standard
7X21A02LAU	2x Silver 4110 8C 85W 2.1GHz	2x 16GB 2Rx8	RAID 530-8i	6x SAS/SATA	Open	Optional	Open	Standard
7X21A02PAU	2x Silver 4110 8C 85W 2.1GHz	2x 16GB 2Rx8	RSTe RAID	6x SAS/SATA*	Open	Optional	Open	Standard
7X21A02JAU	2x Silver 4112 4C 85W 2.6GHz	2x 16GB 2Rx8	RSTe RAID	6x SAS/SATA* (2 AnyBay)	Open	Optional	Open	Standard
7X21A020AU	2x Silver 4114 10C 85W 2.2GHz	2x 16GB 2Rx8	RAID 530-8i	6x SAS/SATA (2 AnyBay)	Open	Optional	Open	Standard
7X21A02NAU	2x Silver 4114 10C 85W 2.2GHz	2x 16GB 2Rx8	RSTe RAID	6x SAS/SATA* (2 AnyBay)	Open	Optional	Open	Standard
7X21A024AU	2x Silver 4116 12C 85W 2.1GHz	2x 16GB 2Rx8	RSTe RAID	4x SAS/SATA*	Open	Optional	Open	Standard
7X21A022AU	2x Silver 4116 12C 85W 2.1GHz	2x 32GB	RAID 530-8i	6x SAS/SATA (2 AnyBay)	Open	Optional	Open	Standard
7X21A02FAU	2x Gold 5118 12C 105W 2.3GHz	2x 16GB 2Rx8	RSTe RAID	4x SAS/SATA*	Open	Optional	Open	Standard
7X21A02KAU	2x Gold 5118 12C 105W 2.3GHz	2x 32GB	RAID 530-8i	6x SAS/SATA (2 AnyBay)	Open	Optional	Open	Standard
7X21A02HAU	2x Gold 6126 12C 125W 2.6GHz	2x 16GB 2Rx8	RSTe RAID	4x SAS/SATA*	Open	Optional	Open	Standard
7X21A026AU	2x Gold 6126 12C 125W 2.6GHz	2x 32GB	RAID 530-8i	6x SAS/SATA (2 AnyBay)	Open	Optional	Open	Standard
7X21A01ZAU	2x Gold 6130 16C 125W 2.1GHz	2x 32GB	RSTe RAID	4x SAS/SATA*	Open	Optional	Open	Standard
7X21A02BAU	2x Gold 6134 8C 130W 3.2GHz	2x 32GB	RSTe RAID	4x SAS/SATA*	Open	Optional	Open	Standard

Model	Intel Xeon processors†	Memory	RAID	Drive bays (Avail/Max)	Drives	KVM Breakout	M.2 drives	XCC Level
7X21A023AU	2x Gold 6138 20C 125W 2.0GHz	2x 32GB	RSTe RAID	4x SAS/SATA*	Open	Optional	Open	Standard
7X21A02AAU	2x Gold 6140 18C 140W 2.3GHz	2x 32GB	RSTe RAID	4x SAS/SATA*	Open	Optional	Open	Standard
7X21A021AU	2x Gold 6148 20C 150W 2.4GHz	2x 32GB	RSTe RAID	4x SAS/SATA*	Open	Optional	Open	Standard

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

\* The backplane supports SAS drives, however since the included RAID controller is RSTe, SAS drives are not supported by this model

### Server models for South East Asian countries (ASEAN)

Table 4. Server models for South East Asian countries (ASEAN)

Model	Intel Xeon processors†	Memory	RAID	Drive bays (Avail/Max)	Drives	KVM Breakout	M.2 drives	XCC Level
Standard models								
7X21A00HSG	1x Bronze 3104 6C 85W 1.7GHz	1x 8GB	RAID 530-8i	4x SAS/SATA	Open	Optional	Open	Standard
7X21A004SG	1x Bronze 3106 8C 85W 1.7GHz	1x 8GB	RAID 530-8i	4x SAS/SATA	Open	Optional	Open	Standard
7X21A016SG	1x Silver 4110 8C 85W 2.1GHz	1x 8GB	RAID 530-8i	4x SAS/SATA	Open	Optional	Open	Standard
7X21A011SG	1x Silver 4114 10C 85W 2.2GHz	1x 8GB	RAID 530-8i	4x SAS/SATA	Open	Optional	Open	Standard
7X21A008SG	1x Silver 4116 12C 85W 2.1GHz	1x 8GB	RAID 530-8i	4x SAS/SATA	Open	Optional	Open	Standard
7X21A006SG	1x Gold 5120 14C 105W 2.2GHz	1x 8GB	RAID 530-8i	4x SAS/SATA	Open	Optional	Open	Standard
7X21A00DSG	1x Gold 6130 16C 125W 2.1GHz	1x 8GB	RAID 530-8i	4x SAS/SATA	Open	Optional	Open	Standard
7X21A00NSG	1x Gold 6138 20C 125W 2.0GHz	1x 8GB	RAID 530-8i	4x SAS/SATA	Open	Optional	Open	Standard

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

\* The backplane supports SAS drives, however since the included RAID controller is RSTe, SAS drives are not supported by this model

## Server models for Brazil

Table 5. Server models for Brazil

Model	Intel Xeon processors†	Memory	RAID	Drive bays (Avail/Max)	Drives	KVM Breakout	M.2 drives	XCC Level
Standard models								
7X21A02TBR	1x Bronze 3104 6C 85W 1.7GHz	1x 16GB 2Rx8	RSTe RAID	6x SAS/SATA*	Open	Optional	Open	Standard
7X21A02UBR	1x Bronze 3104 6C 85W 1.7GHz	1x 16GB 2Rx8	RSTe RAID	6x SAS/SATA*	Open	Optional	Open	Standard
7X21A02QBR	1x Silver 4108 8C 85W 1.8GHz	1x 16GB 2Rx8	RSTe RAID	6x SAS/SATA*	Open	Optional	Open	Standard
7X21A033BR	1x Silver 4108 8C 85W 1.8GHz	1x 16GB 2Rx8	RSTe RAID	6x SAS/SATA*	Open	Optional	Open	Standard
7X21A02VBR	2x Silver 4108 8C 85W 1.8GHz	2x 16GB 2Rx8	RAID 530-8i	6x SAS/SATA	Open	Optional	Open	Standard
7X21A02XBR	2x Silver 4108 8C 85W 1.8GHz	2x 16GB 2Rx8	RAID 530-8i	6x SAS/SATA	Open	Optional	Open	Standard
7X21A02YBR	2x Silver 4110 8C 85W 2.1GHz	2x 16GB 2Rx8	RSTe RAID	6x SAS/SATA*	Open	Optional	Open	Standard
7X21A030BR	2x Silver 4110 8C 85W 2.1GHz	2x 16GB 2Rx8	RSTe RAID	6x SAS/SATA*	Open	Optional	Open	Standard
7X21A031BR	2x Silver 4110 8C 85W 2.1GHz	2x 16GB 2Rx8	RAID 530-8i	6x SAS/SATA	Open	Optional	Open	Standard
7X21A032BR	2x Silver 4110 8C 85W 2.1GHz	2x 16GB 2Rx8	RAID 530-8i	6x SAS/SATA	Open	Optional	Open	Standard
7X21A02RBR	2x Silver 4112 4C 85W 2.6GHz	2x 16GB 2Rx8	RSTe RAID	6x SAS/SATA* (2 AnyBay)	Open	Optional	Open	Standard
7X21A02SBR	2x Silver 4112 4C 85W 2.6GHz	2x 16GB 2Rx8	RSTe RAID	6x SAS/SATA* (2 AnyBay)	Open	Optional	Open	Standard
7X21A02WBR	2x Silver 4114 10C 85W 2.2GHz	2x 16GB 2Rx8	RSTe RAID	6x SAS/SATA* (2 AnyBay)	Open	Optional	Open	Standard
7X21A02ZBR	2x Silver 4114 10C 85W 2.2GHz	2x 16GB 2Rx8	RAID 530-8i	6x SAS/SATA (2 AnyBay)	Open	Optional	Open	Standard
7X21A034BR	2x Silver 4114 10C 85W 2.2GHz	2x 16GB 2Rx8	RSTe RAID	6x SAS/SATA* (2 AnyBay)	Open	Optional	Open	Standard
7X21A035BR	2x Silver 4114 10C 85W 2.2GHz	2x 16GB 2Rx8	RAID 530-8i	6x SAS/SATA (2 AnyBay)	Open	Optional	Open	Standard

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

\* The backplane supports SAS drives, however since the included RAID controller is RSTe, SAS drives are not supported by this model

## Server models for EMEA countries

Table 6. Server models for EMEA countries

Model	Intel Xeon processors†	Memory	RAID	Drive bays (Avail/Max)	Drives	KVM Breakout	M.2 drives	XCC Level
Standard models								
7X21A003EA	1x Bronze 3104 6C 85W 1.7GHz	1x 16GB 2Rx8	RSTe RAID	6x SAS/SATA*	Open	Optional	Open	Standard
7X21A007EA	1x Silver 4108 8C 85W 1.8GHz	1x 16GB 2Rx8	RSTe RAID	6x SAS/SATA*	Open	Optional	Open	Standard
7X21A018EA	2x Silver 4110 8C 85W 2.1GHz	2x 16GB 2Rx8	RAID 530-8i	6x SAS/SATA	Open	Optional	Open	Standard
7X21A00GEA	2x Silver 4114 10C 85W 2.2GHz	2x 16GB 2Rx8	RSTe RAID	6x SAS/SATA* (2 AnyBay)	Open	Optional	Open	Standard
7X21A01EEA	2x Silver 4116 12C 85W 2.1GHz	2x 16GB 2Rx8	RSTe RAID	4x SAS/SATA*	Open	Optional	Open	Standard
7X21A00REA	2x Gold 5118 12C 105W 2.3GHz	2x 16GB 2Rx8	RSTe RAID	4x SAS/SATA*	Open	Optional	Open	Standard
7X21A01DEA	2x Gold 5118 12C 105W 2.3GHz	2x 32GB	RAID 530-8i	6x SAS/SATA (2 AnyBay)	Open	Optional	Open	Standard
7X21A005EA	2x Gold 6140 18C 140W 2.3GHz	2x 32GB	RSTe RAID	4x SAS/SATA*	Open	Optional	Open	Standard
TopSeller models								
7X21A039EA	1x Gold 5120 14C 105W 2.2GHz	1x 16GB 2Rx8	RAID 530-8i	4x SAS/SATA	Open	Optional	Open	Enterprise
7X21A03AEA	1x Gold 6126 12C 125W 2.6GHz	1x 16GB 2Rx8	RAID 530-8i	4x SAS/SATA	Open	Optional	Open	Enterprise
7X21A03BEA	1x Gold 6130 16C 125W 2.1GHz	1x 16GB 2Rx8	RAID 530-8i	4x SAS/SATA	Open	Optional	Open	Enterprise
7X21A03CEA	1x Gold 6134 8C 130W 3.2GHz	1x 16GB 2Rx8	RAID 530-8i	4x SAS/SATA	Open	Optional	Open	Enterprise
7X21A03DEA	1x Gold 6136 12C 150W 3.0GHz	1x 16GB 2Rx8	RAID 530-8i	4x SAS/SATA	Open	Optional	Open	Enterprise
7X21A03EEA	1x Gold 6142 16C 150W 2.6GHz	1x 16GB 2Rx8	RAID 530-8i	4x SAS/SATA	Open	Optional	Open	Enterprise
7X21A03FEA	1x Gold 6150 18C 165W 2.7GHz	1x 16GB 2Rx8	RAID 530-8i	4x SAS/SATA	Open	Optional	Open	Enterprise

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

\* The backplane supports SAS drives, however since the included RAID controller is RSTe, SAS drives are not supported by this model

## Server models for Hong Kong, Taiwan, Korea (HTK)

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

Model	Intel Xeon processors†	Memory	RAID	Drive bays (Avail/Max)	Drives	KVM Breakout	M.2 drives	XCC Level
Standard models								
7X21A01HCN	1x Gold 5118 12C 105W 2.3GHz	1x 16GB 2Rx8	RSTe RAID	6x SAS/SATA*	Open	Optional	Open	Standard
7X21A01SCN	1x Gold 5120 14C 105W 2.2GHz	1x 16GB 2Rx8	RSTe RAID	6x SAS/SATA*	Open	Optional	Open	Standard
7X21A01QCN	1x Gold 5122 4C 105W 3.6GHz	1x 16GB 2Rx8	RSTe RAID	4x SAS/SATA*	Open	Optional	Open	Standard
7X21A01PCN	1x Gold 6126 12C 125W 2.6GHz	1x 16GB 2Rx8	RSTe RAID	6x SAS/SATA*	Open	Optional	Open	Standard
7X21A01LCN	1x Gold 6130 16C 125W 2.1GHz	1x 16GB 2Rx8	RSTe RAID	6x SAS/SATA*	Open	Optional	Open	Standard
7X21A01RCN	1x Gold 6134 8C 130W 3.2GHz	1x 16GB 2Rx8	RSTe RAID	4x SAS/SATA*	Open	Optional	Open	Standard
7X21A01TCN	1x Gold 6136 12C 150W 3.0GHz	1x 16GB 2Rx8	RSTe RAID	4x SAS/SATA*	Open	Optional	Open	Standard
7X21A01FCN	1x Gold 6138 20C 125W 2.0GHz	1x 16GB 2Rx8	RSTe RAID	6x SAS/SATA*	Open	Optional	Open	Standard
7X21A01JCN	1x Gold 6140 18C 140W 2.3GHz	1x 16GB 2Rx8	RSTe RAID	6x SAS/SATA*	Open	Optional	Open	Standard
7X21A01NCN	1x Gold 6142 16C 150W 2.6GHz	1x 16GB 2Rx8	RSTe RAID	4x SAS/SATA*	Open	Optional	Open	Standard
7X21A01GCN	1x Gold 6148 20C 150W 2.4GHz	1x 16GB 2Rx8	RSTe RAID	4x SAS/SATA*	Open	Optional	Open	Standard
7X21A01KCN	1x Gold 6150 18C 165W 2.7GHz	1x 16GB 2Rx8	RSTe RAID	4x SAS/SATA*	Open	Optional	Open	Standard
7X21A01MCN	1x Gold 6152 22C 140W 2.1GHz	1x 16GB 2Rx8	RSTe RAID	6x SAS/SATA*	Open	Optional	Open	Standard

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

\* The backplane supports SAS drives, however since the included RAID controller is RSTe, SAS drives are not supported by this model

## Server models for India

Table 8. Server models for India

Model	Intel Xeon processors†	Memory	RAID	Drive bays (Avail/Max)	Drives	KVM Breakout	M.2 drives	XCC Level
Standard models								
7X21A00PSG	1x Bronze 3104 6C 85W 1.7GHz	1x 16GB 1Rx4	RAID 530-8i	6x SAS/SATA	Open	Optional	Open	Standard
7X21A01ASG	1x Silver 4108 8C 85W 1.8GHz	1x 16GB 1Rx4	RAID 530-8i	6x SAS/SATA	Open	Optional	Open	Standard
7X21A009SG	1x Silver 4110 8C 85W 2.1GHz	1x 16GB 1Rx4	RAID 530-8i	6x SAS/SATA	Open	Optional	Open	Standard
7X21A00QSG	1x Silver 4114 10C 85W 2.2GHz	1x 16GB 1Rx4	RAID 530-8i	6x SAS/SATA	Open	Optional	Open	Standard
7X21A015SG	1x Gold 5118 12C 105W 2.3GHz	1x 16GB 1Rx4	RAID 530-8i	6x SAS/SATA	Open	Optional	Open	Standard
7X21A00MSG	1x Gold 5120 14C 105W 2.2GHz	1x 16GB 1Rx4	RAID 530-8i	6x SAS/SATA	Open	Optional	Open	Standard
7X21A00LSG	1x Gold 6138 20C 125W 2.0GHz	1x 16GB 1Rx4	RAID 530-8i	6x SAS/SATA	Open	Optional	Open	Standard
7X21A00KSG	1x Gold 6152 22C 140W 2.1GHz	1x 16GB 1Rx4	RAID 530-8i	6x SAS/SATA	Open	Optional	Open	Standard

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

\* The backplane supports SAS drives, however since the included RAID controller is RSTe, SAS drives are not supported by this model

## Server models for Japan

Table 9. Server models for Japan

Model	Intel Xeon processors†	Memory	RAID	Drive bays (Avail/Max)	Drives	KVM Breakout	M.2 drives	XCC Level
Standard models								
7X21A00AJP	1x Bronze 3104 6C 85W 1.7GHz	1x 16GB 1Rx4	RAID 530-8i	6x SAS/SATA	Open	Optional	Open	Standard
7X21A00UJP	1x Bronze 3104 6C 85W 1.7GHz	1x 16GB 1Rx4	RSTe RAID	6x SAS/SATA*	Open	Included + cable	Open	Standard
7X21A036JP	1x Bronze 3104 6C 85W 1.7GHz	1x 16GB 1Rx4	RSTe RAID	4x SAS/SATA*	Open	Included + cable	Open	Standard
7X21A00CJP	1x Silver 4110 8C 85W 2.1GHz	1x 16GB 1Rx4	RAID 530-8i	6x SAS/SATA	Open	Optional	Open	Standard

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

\* The backplane supports SAS drives, however since the included RAID controller is RSTe, SAS drives are not supported by this model



## Server models for Latin American (except Brazil)

Table 10. Server models for Latin American (except Brazil)

Model	Intel Xeon processors†	Memory	RAID	Drive bays (Avail/Max)	Drives	KVM Breakout	M.2 drives	XCC Level
Standard models								
7X211003LA	1x Bronze 3104 6C 85W 1.7GHz	1x 16GB 1Rx4	RAID 530-8i	6x SAS/SATA	Open	Optional	Open	Standard
7X211008LA	1x Bronze 3104 6C 85W 1.7GHz	1x 16GB 1Rx4	RAID 530-8i	4x SAS/SATA	Open	Included + cable	Open	Standard
7X21100DLA	1x Bronze 3104 6C 85W 1.7GHz	1x 16GB 1Rx4	RAID 530-8i	6x SAS/SATA	Open	Optional	Open	Standard
7X21100JLA	1x Bronze 3104 6C 85W 1.7GHz	1x 16GB 1Rx4	RAID 530-8i	4x SAS/SATA	Open	Included + cable	Open	Standard
7X21A038LA	1x Bronze 3104 6C 85W 1.7GHz	1x 8GB	RSTe RAID	4x SAS/SATA*	Open	Included + cable	Open	Standard
7X211004LA	1x Bronze 3106 8C 85W 1.7GHz	1x 16GB 1Rx4	RAID 530-8i	6x SAS/SATA	Open	Optional	Open	Standard
7X211009LA	1x Bronze 3106 8C 85W 1.7GHz	1x 16GB 1Rx4	RAID 530-8i	4x SAS/SATA	Open	Included + cable	Open	Standard
7X21100ELA	1x Bronze 3106 8C 85W 1.7GHz	1x 16GB 1Rx4	RAID 530-8i	6x SAS/SATA	Open	Optional	Open	Standard
7X21100KLA	1x Bronze 3106 8C 85W 1.7GHz	1x 16GB 1Rx4	RAID 530-8i	4x SAS/SATA	Open	Included + cable	Open	Standard
7X211005LA	1x Silver 4116 12C 85W 2.1GHz	1x 16GB 1Rx4	RAID 530-8i	6x SAS/SATA	Open	Optional	Open	Standard
7X21100ALA	1x Silver 4116 12C 85W 2.1GHz	1x 16GB 1Rx4	RAID 530-8i	4x SAS/SATA	Open	Included + cable	Open	Standard
7X21100FLA	1x Silver 4116 12C 85W 2.1GHz	1x 16GB 1Rx4	RAID 530-8i	6x SAS/SATA	Open	Optional	Open	Standard
7X21100LLA	1x Silver 4116 12C 85W 2.1GHz	1x 16GB 1Rx4	RAID 530-8i	4x SAS/SATA	Open	Included + cable	Open	Standard
7X211006LA	1x Gold 5120 14C 105W 2.2GHz	1x 16GB 1Rx4	RAID 530-8i	6x SAS/SATA	Open	Optional	Open	Standard
7X21100BLA	1x Gold 5120 14C 105W 2.2GHz	1x 16GB 1Rx4	RAID 530-8i	4x SAS/SATA	Open	Included + cable	Open	Standard
7X21100GLA	1x Gold 5120 14C 105W 2.2GHz	1x 16GB 1Rx4	RAID 530-8i	6x SAS/SATA	Open	Optional	Open	Standard
7X21100MLA	1x Gold 5120 14C 105W 2.2GHz	1x 16GB 1Rx4	RAID 530-8i	4x SAS/SATA	Open	Included + cable	Open	Standard
7X211007LA	1x Gold 6140 18C 140W 2.3GHz	1x 16GB 1Rx4	RAID 530-8i	6x SAS/SATA	Open	Optional	Open	Standard
7X21100CLA	1x Gold 6140 18C 140W 2.3GHz	1x 16GB 1Rx4	RAID 530-8i	4x SAS/SATA	Open	Included + cable	Open	Standard
7X21100HLA	1x Gold 6140 18C 140W 2.3GHz	1x 16GB 1Rx4	RAID 530-8i	6x SAS/SATA	Open	Optional	Open	Standard
7X21100NLA	1x Gold 6140 18C 140W 2.3GHz	1x 16GB 1Rx4	RAID 530-8i	4x SAS/SATA	Open	Included + cable	Open	Standard

## Server models for USA and Canada

Table 11. Server models for USA and Canada

Model	Intel Xeon processors†	Memory	RAID	Drive bays (Avail/Max)	Drives	KVM Breakout	M.2 drives	XCC Level
Standard models								
7X21A00VNA	1x Silver 4110 8C 85W 2.1GHz	1x 16GB 2Rx8	RSTe RAID	6x SAS/SATA* (2 AnyBay)	Open	Optional	Open	Standard
7X21A00ZNA	1x Silver 4114 10C 85W 2.2GHz	1x 16GB 2Rx8	RSTe RAID	6x SAS/SATA* (2 AnyBay)	Open	Optional	Open	Standard
7X21A00XNA	1x Gold 5118 12C 105W 2.3GHz	1x 16GB 2Rx8	RSTe RAID	6x SAS/SATA* (2 AnyBay)	Open	Optional	Open	Standard
7X21A017NA	1x Gold 6130 16C 125W 2.1GHz	1x 16GB 2Rx8	RSTe RAID	6x SAS/SATA* (2 AnyBay)	Open	Optional	Open	Standard
7X21A012NA	1x Gold 6140 18C 140W 2.3GHz	1x 16GB 2Rx8	RSTe RAID	6x SAS/SATA* (2 AnyBay)	Open	Optional	Open	Standard

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

\* The backplane supports SAS drives, however since the included RAID controller is RSTe, SAS drives are not supported by this model

## Enclosure models

Up to four SD530 servers are supported in an enclosure. The D2 Enclosure models and Modular Enclosure models are listed in the following table.

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

- [Models for Australia and New Zealand](#)
- [Models for South East Asian countries \(ASEAN\)](#)
- [Models for EMEA countries](#)
- [Models for Hong Kong, Taiwan, Korea \(HTK\)](#)
- [Models for India](#)
- [Models for Japan](#)
- [Models for USA and Canada](#)

Refer to the [Enclosure specifications](#) section for information about standard features of the enclosure.

## Enclosure models for Australia and New Zealand

Table 12. Enclosure models for Australia and New Zealand

Model	I/O Shuttle	External IO Module	Power supplies	Power cords	Rail kit	CMA
D2 Enclosure models (Includes the single-port SMM)						
7X20A00VAU	4-slot x16 shuttle	Open	2x 1600W	2x 2.8m C13-C14	D2 Slide Rail	Included
7X20A011AU	4-slot x16 shuttle	Open	2x 1100W	2x 2.8m C13-C14	D2 Slide Rail	Included
7X20A013AU	4-slot x16 shuttle	Open	2x 2000W	2x 2.8m C13-C14	D2 Slide Rail	Included
7X20A00XAU	8-slot x8 shuttle	Open	2x 2000W	2x 2.8m C13-C14	D2 Slide Rail	Included
7X20A00WAU	8-slot x8 shuttle	Open	2x 1100W	2x 2.8m C13-C14	D2 Slide Rail	Included
7X20A00YAU	8-slot x8 shuttle	Open	2x 1600W	2x 2.8m C13-C14	D2 Slide Rail	Included
Modular Enclosure models (Includes the dual-port SMM)						
7X221000AU	4-slot x16 shuttle	10Gb RJ45 EIOM	2x 2000W	2x 1.5m C13-C14	D2 Slide Rail	Optional
7X221003AU	4-slot x16 shuttle	10Gb SFP+ EIOM	2x 2000W	2x 1.5m C13-C14	D2 Slide Rail	Optional
7X221001AU	8-slot x8 shuttle	10Gb RJ45 EIOM	2x 2000W	2x 1.5m C13-C14	D2 Slide Rail	Optional
7X221002AU	8-slot x8 shuttle	10Gb SFP+ EIOM	2x 2000W	2x 1.5m C13-C14	D2 Slide Rail	Optional

## Enclosure models for South East Asian countries (ASEAN)

Table 13. Enclosure models for South East Asian countries (ASEAN)

Model	I/O Shuttle	External IO Module	Power supplies	Power cords	Rail kit	CMA
D2 Enclosure models (Includes the single-port SMM)						
7X20A00GSG	4-slot x16 shuttle	Open	2x 2000W	2x 2.8m C13-C14	D2 Slide Rail	Optional
7X20A00FSG	8-slot x8 shuttle	Open	2x 2000W	2x 2.8m C13-C14	D2 Slide Rail	Optional

## Enclosure models for EMEA countries

Table 14. Enclosure models for EMEA countries

Model	I/O Shuttle	External IO Module	Power supplies	Power cords	Rail kit	CMA
D2 Enclosure models (Includes the single-port SMM)						
7X20A00EEA	8-slot x8 shuttle	Open	2x 1600W	2x 2.0m C13-C14	D2 Slide Rail	Included
Modular Enclosure models (Includes the dual-port SMM)						
7X22A008EA	4-slot x16 shuttle	Open	2x 2000W	2x 2.8m C13-C14	D2 Slide Rail	Included
7X22A006EA	8-slot x8 shuttle	Open	2x 2000W	2x 2.8m C13-C14	D2 Slide Rail	Included

## Enclosure models for Hong Kong, Taiwan, Korea (HTK)

Table 15. Enclosure models for Hong Kong, Taiwan, Korea (HTK)

Model	I/O Shuttle	External IO Module	Power supplies	Power cords	Rail kit	CMA
D2 Enclosure models (Includes the single-port SMM)						
7X20A00BCN	8-slot x8 shuttle	10Gb SFP+ EIOM	2x 1600W	2x 2.8m C13-C14	D2 Slide Rail	Optional

## Enclosure models for India

Table 16. Enclosure models for India

Model	I/O Shuttle	External IO Module	Power supplies	Power cords	Rail kit	CMA
D2 Enclosure models (Includes the single-port SMM)						
7X20A00KSG	4-slot x16 shuttle	Open	2x 1100W	2x 2.8m C13-C14 2x 2.8m IS 6538	D2 Slide Rail	Included
7X20A00QSG	4-slot x16 shuttle	Open	2x 1600W	2x 2.8m C13-C14 2x 2.8m IS 6538	D2 Slide Rail	Included
7X20A00PSG	4-slot x16 shuttle	Open	2x 2000W	2x 2.8m C13-C14 2x 2.8m IS 6538	D2 Slide Rail	Included
7X20A00NSG	8-slot x8 shuttle	Open	2x 1100W	2x 2.8m C13-C14 2x 2.8m IS 6538	D2 Slide Rail	Included
7X20A00LSG	8-slot x8 shuttle	Open	2x 2000W	2x 2.8m C13-C14 2x 2.8m IS 6538	D2 Slide Rail	Included
7X20A00MSG	8-slot x8 shuttle	Open	2x 1600W	2x 2.8m C13-C14 2x 2.8m IS 6538	D2 Slide Rail	Included

## Enclosure models for Japan

Table 17. Enclosure models for Japan

Model	I/O Shuttle	External IO Module	Power supplies	Power cords	Rail kit	CMA
D2 Enclosure models (Includes the single-port SMM)						
7X20A00DJP	4-slot x16 shuttle	10Gb RJ45 EIOM	2x 2000W	2x 1.0m C13-C14	D2 Slide Rail	Included
7X20A009JP	4-slot x16 shuttle	10Gb SFP+ EIOM	2x 2000W	2x 1.0m C13-C14	D2 Slide Rail	Included
7X20A007JP	8-slot x8 shuttle	10Gb RJ45 EIOM	2x 2000W	2x 1.0m C13-C14	D2 Slide Rail	Included
7X20A008JP	8-slot x8 shuttle	10Gb SFP+ EIOM	2x 2000W	2x 1.0m C13-C14	D2 Slide Rail	Included
Modular Enclosure models (Includes the dual-port SMM)						
7X22A002JP	4-slot x16 shuttle	10Gb RJ45 EIOM	2x 2000W	2x 1.0m C13-C14	D2 Slide Rail	Included
7X22A004JP	4-slot x16 shuttle	10Gb SFP+ EIOM	2x 2000W	2x 1.0m C13-C14	D2 Slide Rail	Included
7X22A001JP	8-slot x8 shuttle	10Gb SFP+ EIOM	2x 2000W	2x 1.0m C13-C14	D2 Slide Rail	Included
7X22A007JP	8-slot x8 shuttle	10Gb RJ45 EIOM	2x 2000W	2x 1.0m C13-C14	D2 Slide Rail	Included

## Enclosure models for USA and Canada

Table 18. Enclosure models for USA and Canada

Model	I/O Shuttle	External IO Module	Power supplies	Power cords	Rail kit	CMA
D2 Enclosure models (Includes the single-port SMM)						
7X20A00JNA	4-slot x16 shuttle	10Gb RJ45 EIOM	2x 2000W	2x 1.0m C13-C14	D2 Slide Rail	Optional
7X20A003NA	4-slot x16 shuttle	10Gb SFP+ EIOM	2x 2000W	2x 1.0m C13-C14	D2 Slide Rail	Optional
7X20A00RNA	4-slot x16 shuttle	10Gb SFP+ EIOM	2x 2000W	2x 2.0m C13-C14	D2 Slide Rail	Optional
7X20A002NA	8-slot x8 shuttle	10Gb RJ45 EIOM	2x 2000W	2x 1.0m C13-C14	D2 Slide Rail	Optional
Modular Enclosure models (Includes the dual-port SMM)						
7X22A003NA	4-slot x16 shuttle	Open	2x 2000W	2x 1.0m C13-C14	D2 Slide Rail	Optional
7X22A005NA	8-slot x8 shuttle	Open	2x 2000W	2x 1.0m C13-C14	D2 Slide Rail	Optional

## Enclosure support

The SD530 is supported in all models of the D2 Enclosure or Modular Enclosure. The number of servers that are supported in each chassis depends on the TDP value of the processors that are used in the servers, the number and capacity of power supplies installed (1100W, 1600W or 2000W), and the AC input voltage (100 - 127V or 200 - 240V).

The enclosure supports oversubscription and power supply redundancy options to ensure efficient use of the available system power. By using oversubscription, users can make the most of the extra power from the redundant power supplies when the power supplies are in healthy condition.

Use Lenovo Capacity Planner to determine the exact power needs of the configuration:

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

System power consumption is highly dependent on configuration, workload, and ambient temperature. Lenovo recommends that customers use Lenovo Capacity Planner to select the power supplies best suited for their deployment requirements.

## Processor options

The SD530 supports the processor options listed in the following table.

Processors with the T suffix have more robust thermal characteristics (higher T-case). Processors with the M suffix support support greater than 768 GB per processor.

Table 19. Processor options

Part number	Feature code	Description
4XG7A07683	AXQX	Intel Xeon Bronze 3104 6C 85W 1.7GHz Processor
4XG7A07682	AXQW	Intel Xeon Bronze 3106 8C 85W 1.7GHz Processor
4XG7A07678	AXP0	Intel Xeon Gold 5115 10C 85W 2.4GHz Processor
4XG7A09549	B24M	Intel Xeon Gold 5117 14C 105W 2.0GHz Processor
7XG7A06248	AX7D	Intel Xeon Gold 5118 12C 105W 2.3GHz Processor
7XG7A06250	B25J	Intel Xeon Gold 5119T 14C 85W 1.9GHz Processor
7XG7A06247	AX7C	Intel Xeon Gold 5120 14C 105W 2.2GHz Processor
7XG7A06249	AX7E	Intel Xeon Gold 5120T 14C 105W 2.2GHz Processor
7XG7A06237	AX70	Intel Xeon Gold 5122 4C 105W 3.6GHz Processor
7XG7A06234	AWEX	Intel Xeon Gold 6126 12C 125W 2.6GHz Processor
4XG7A11375	B328	Intel Xeon Gold 6126T 12C 125W 2.6GHz Processor
7XG7A06236	B25B	Intel Xeon Gold 6128 6C 115W 3.4GHz Processor
7XG7A06229	AX6D	Intel Xeon Gold 6130 16C 125W 2.1GHz Processor
7XG7A06239	AX72	Intel Xeon Gold 6130T 16C 125W 2.1GHz Processor
7XG7A06232	B25A	Intel Xeon Gold 6132 14C 140W 2.6GHz Processor
7XG7A06235	AX6Y	Intel Xeon Gold 6134 8C 130W 3.2GHz Processor
7XG7A06245	B25H	Intel Xeon Gold 6134M 8C 130W 3.2GHz Processor
7XG7A06233	AX6W	Intel Xeon Gold 6136 12C 150W 3.0GHz Processor
7XG7A06227	AX6Q	Intel Xeon Gold 6138 20C 125W 2.0GHz Processor
7XG7A06238	AX71	Intel Xeon Gold 6138T 20C 125W 2.0GHz Processor
7XG7A06228	AX6R	Intel Xeon Gold 6140 18C 140W 2.3GHz Processor
7XG7A06244	B25G	Intel Xeon Gold 6140M 18C 140W 2.3GHz Processor

Part number	Feature code	Description
7XG7A06231	AX6E	Intel Xeon Gold 6142 16C 150W 2.6GHz Processor
7XG7A06243	B25F	Intel Xeon Gold 6142M 16C 150W 2.6GHz Processor
4XG7A11376	B325	Intel Xeon Gold 6144 8C 150W 3.5GHz Processor
4XG7A11377	B326	Intel Xeon Gold 6146 12C 165W 3.2GHz Processor
7XG7A06226	AWEW	Intel Xeon Gold 6148 20C 150W 2.4GHz Processor
7XG7A06230	AX6T	Intel Xeon Gold 6150 18C 165W 2.7GHz Processor
7XG7A06225	AX6P	Intel Xeon Gold 6152 22C 140W 2.1GHz Processor
4XG7A11378	B327	Intel Xeon Gold 6154 18C 200W 3.0GHz Processor
7XG7A06223	AX6L	Intel Xeon Platinum 8153 16C 125W 2.0GHz Processor
7XG7A06224	AWEV	Intel Xeon Platinum 8156 4C 105W 3.6GHz Processor
7XG7A06246	AX7B	Intel Xeon Platinum 8158 12C 150W 3.0GHz Processor
7XG7A06222	AWGJ	Intel Xeon Platinum 8160 24C 150W 2.1GHz Processor
7XG7A06242	B25E	Intel Xeon Platinum 8160M 24C 150W 2.1GHz Processor
4XG7A11379	B32C	Intel Xeon Platinum 8160T 24C 150W 2.1GHz Processor
7XG7A06221	AX6K	Intel Xeon Platinum 8164 26C 150W 2.0GHz Processor
4XG7A11380	B329	Intel Xeon Platinum 8168 24C 205W 2.7GHz Processor
7XG7A06220	AX6J	Intel Xeon Platinum 8170 26C 165W 2.1GHz Processor
7XG7A06241	B25D	Intel Xeon Platinum 8170M 26C 165W 2.1GHz Processor
7XG7A06219	AX6H	Intel Xeon Platinum 8176 28C 165W 2.1GHz Processor
7XG7A06240	B25C	Intel Xeon Platinum 8176M 28C 165W 2.1GHz Processor
4XG7A11381	B32B	Intel Xeon Platinum 8180 28C 205W 2.5GHz Processor
4XG7A11382	B32A	Intel Xeon Platinum 8180M 28C 205W 2.5GHz Processor
4XG7A08337	AXQZ	Intel Xeon Silver 4108 8C 85W 1.8GHz Processor
4XG7A07681	AXQV	Intel Xeon Silver 4109T 8C 70W 2.0GHz Processor
4XG7A07685	AXQY	Intel Xeon Silver 4110 8C 85W 2.1GHz Processor
4XG7A07680	AXQU	Intel Xeon Silver 4112 4C 85W 2.6GHz Processor
4XG7A07679	AXQT	Intel Xeon Silver 4114 10C 85W 2.2GHz Processor
4XG7A08338	B247	Intel Xeon Silver 4114T 10C 85W 2.2GHz Processor
4XG7A07677	AXNZ	Intel Xeon Silver 4116 12C 85W 2.1GHz Processor
4XG7A07684	B246	Intel Xeon Silver 4116T 12C 85W 2.1GHz Processor

The supported processors have the specifications listed in the following table.

**16 DIMM support:** The use of 16 DIMMs requires that smaller heatsinks be used. As a result, only a subset of processors support 16 DIMMs (8 DIMMs per processor), as noted in the table below. All others are limited to 12 DIMMs (6 DIMMs processors).

**Drive bay support:** Only a subset of processors support 6 drive bays. See the [Drive bays and backplanes](#) section for details.

Table 20. Processor specifications

Intel Xeon Processor	Memory speed	Supports 16 DIMMs†	Supports >768 GB per CPU	L3 cache	UPI speed	AVX-512 FMA units	HT	TB
Bronze 3104 6C 85W 1.7GHz	2133 MHz	Yes	No	8.25 MB	9.6 GT/s	1	No	No
Bronze 3106 8C 85W 1.7GHz	2133 MHz	Yes	No	11 MB	9.6 GT/s	1	No	No
Silver 4108 8C 85W 1.8GHz	2400 MHz	Yes	No	11 MB	9.6 GT/s	1	Yes	Yes
Silver 4109T 8C 70W 2.0GHz	2400 MHz	No	No	11 MB	9.6 GT/s	1	Yes	Yes
Silver 4110 8C 85W 2.1GHz	2400 MHz	Yes	No	11 MB	9.6 GT/s	1	Yes	Yes
Silver 4112 4C 85W 2.6GHz	2400 MHz	Yes	No	8.5 MB**	9.6 GT/s	1	Yes	Yes
Silver 4114 10C 85W 2.2GHz	2400 MHz	Yes	No	13.75 MB	9.6 GT/s	1	Yes	Yes
Silver 4114T 10C 85W 2.2GHz	2400 MHz	No	No	13.75 MB	9.6 GT/s	1	Yes	Yes
Silver 4116 12C 85W 2.1GHz	2400 MHz	Yes	No	16.5 MB	9.6 GT/s	1	Yes	Yes
Silver 4116T 12C 85W 2.1GHz	2400 MHz	No	No	16.5 MB	9.6 GT/s	1	Yes	Yes
Gold 5115 10C 85W 2.4GHz	2400 MHz	Yes	No	13.75 MB	10.4 GT/s	1	Yes	Yes
Gold 5117 14C 105W 2.0GHz	2400 MHz	No	No	19.25 MB	10.4 GT/s	1	Yes	Yes
Gold 5118 12C 105W 2.3GHz	2400 MHz	Yes	No	16.5 MB	10.4 GT/s	1	Yes	Yes
Gold 5119T 14C 85W 1.9GHz	2400 MHz	No	No	19.25 MB	10.4 GT/s	1	Yes	Yes
Gold 5120 14C 105W 2.2GHz	2400 MHz	Yes	No	19.25 MB	10.4 GT/s	1	Yes	Yes
Gold 5120T 14C 105W 2.2GHz	2400 MHz	No	No	19.25 MB	10.4 GT/s	1	Yes	Yes
Gold 5122 4C 105W 3.6GHz	2666 MHz*	No	No	16.5 MB**	10.4 GT/s	2*	Yes	Yes
Gold 6126 12C 125W 2.6GHz	2666 MHz	No	No	19.25 MB**	10.4 GT/s	2	Yes	Yes
6126T 12C 125W 2.6GHz	2666 MHz	No	No	19.25 MB**	10.4 GT/s	2	Yes	Yes
Gold 6128 6C 115W 3.4GHz	2666 MHz	No	No	19.25 MB**	10.4 GT/s	2	Yes	Yes
Gold 6130 16C 125W 2.1GHz	2666 MHz	Yes	No	22 MB	10.4 GT/s	2	Yes	Yes
Gold 6130T 16C 125W 2.1GHz	2666 MHz	No	No	22 MB	10.4 GT/s	2	Yes	Yes
Gold 6132 14C 140W 2.6GHz	2666 MHz	No	No	19.25 MB	10.4 GT/s	2	Yes	Yes
Gold 6134 8C 130W 3.2GHz	2666 MHz	No	No	24.75 MB**	10.4 GT/s	2	Yes	Yes
Gold 6134M 8C 130W 3.2GHz	2666 MHz	No	Yes	24.75 MB**	10.4 GT/s	2	Yes	Yes
Gold 6136 12C 150W 3.0GHz	2666 MHz	No	No	24.75 MB**	10.4 GT/s	2	Yes	Yes
Gold 6138 20C 125W 2.0GHz	2666 MHz	No	No	27.5 MB	10.4 GT/s	2	Yes	Yes
Gold 6138T 20C 125W 2.0GHz	2666 MHz	No	No	27.5 MB	10.4 GT/s	2	Yes	Yes
Gold 6140 18C 140W 2.3GHz	2666 MHz	No	No	24.75 MB	10.4 GT/s	2	Yes	Yes
Gold 6140M 18C 140W 2.3GHz	2666 MHz	No	Yes	24.75 MB	10.4 GT/s	2	Yes	Yes
Gold 6142 16C 150W 2.6GHz	2666 MHz	No	No	22 MB	10.4 GT/s	2	Yes	Yes
Gold 6142M 16C 150W 2.6GHz	2666 MHz	No	Yes	22 MB	10.4 GT/s	2	Yes	Yes
Gold 6144 8C 150W 3.5GHz	2666 MHz	No	No	24.75 MB**	10.4 GT/s	2	Yes	Yes
Gold 6146 12C 165W 3.2GHz	2666 MHz	No	No	24.75 MB**	10.4 GT/s	2	Yes	Yes
Gold 6148 20C 150W 2.4GHz	2666 MHz	No	No	27.5 MB	10.4 GT/s	2	Yes	Yes
Gold 6150 18C 165W 2.7GHz	2666 MHz	No	No	24.75 MB	10.4 GT/s	2	Yes	Yes
Gold 6152 22C 140W 2.1GHz	2666 MHz	No	No	30.25 MB	10.4 GT/s	2	Yes	Yes
Gold 6154 18C 200W 3.0GHz	2666 MHz	No	No	24.75 MB	10.4 GT/s	2	Yes	Yes
Platinum 8153 16C 125W 2.0GHz	2666 MHz	Yes	No	22 MB	10.4 GT/s	2	Yes	Yes
Platinum 8156 4C 105W 3.6GHz	2666 MHz	No	No	16.5 MB**	10.4 GT/s	2	Yes	Yes
Platinum 8158 12C 150W 3.0GHz	2666 MHz	No	No	24.75 MB**	10.4 GT/s	2	Yes	Yes
Platinum 8160 24C 150W 2.1GHz	2666 MHz	No	No	33 MB	10.4 GT/s	2	Yes	Yes
Platinum 8160M 24C 150W 2.1GHz	2666 MHz	No	Yes	33 MB	10.4 GT/s	2	Yes	Yes

Intel Xeon Processor	Memory speed	Supports 16 DIMMs†	Supports >768 GB per CPU	L3 cache	UPI speed	AVX-512 FMA units	HT	TB
Platinum 8160T 24C 150W 2.1GHz	2666 MHz	No	No	33 MB	10.4 GT/s	2	Yes	Yes
Platinum 8164 26C 150W 2.0GHz	2666 MHz	No	No	35.75 MB	10.4 GT/s	2	Yes	Yes
Platinum 8168 24C 205W 2.7GHz	2666 MHz	No	No	33 MB	10.4 GT/s	2	Yes	Yes
Platinum 8170 26C 165W 2.1GHz	2666 MHz	No	No	35.75 MB	10.4 GT/s	2	Yes	Yes
Platinum 8170M 26C 165W 2.1GHz	2666 MHz	No	Yes	35.75 MB	10.4 GT/s	2	Yes	Yes
Platinum 8176 28C 165W 2.1GHz	2666 MHz	No	No	38.5 MB	10.4 GT/s	2	Yes	Yes
Platinum 8176M 28C 165W 2.1GHz	2666 MHz	No	Yes	38.5 MB	10.4 GT/s	2	Yes	Yes
Platinum 8180 28C 205W 2.5GHz	2666 MHz	No	No	38.5 MB	10.4 GT/s	2	Yes	Yes
Platinum 8180M 28C 205W 2.5GHz	2666 MHz	No	Yes	38.5 MB	10.4 GT/s	2	Yes	Yes

† 16 DIMM support limited to 4x 2.5-inch SAS/SATA drives (no NVMe support)

\* All Gold 5000-level processors, except the 5122, support 2400 MHz memory speeds and have one AVX-512 512-bit FMA units. The 5122 processor supports 2666 MHz and has two FMA units

\*\* L3 cache is 1.375 MB per core except with the processor indicated with \*\*

## Memory options

The SD530 server supports 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.

Each processor has six memory channels. All DIMMs operate at a speed of 2666 MHz. However, if the processor selected has a lower memory bus speed (eg 2400 MHz or 2133 MHz - see the [Processor options](#) table), then all DIMMs will operate at that lower speed.

The SD530 supports up to 6 or 8 DIMMs per processor, for a total of 12 or 16 DIMMs when two processors are installed. The total DIMMs supported depends on the processor selected, as described in the [Processor options](#) section.

The following table lists the memory options that are available for the SD530 server.

Table 21. Memory options

Part number	Feature code	Description	Maximum supported*
<b>RDIMMs</b>			
7X77A01301	AUU1	ThinkSystem 8GB TruDDR4 2666 MHz (1Rx8 1.2V) RDIMM	16 (8 per processor)
7X77A01302	AUNB	ThinkSystem 16GB TruDDR4 2666 MHz (1Rx4 1.2V) RDIMM	16 (8 per processor)
7X77A01303	AUNC	ThinkSystem 16GB TruDDR4 2666 MHz (2Rx8 1.2V) RDIMM	16 (8 per processor)
7X77A01304	AUND	ThinkSystem 32GB TruDDR4 2666 MHz (2Rx4 1.2V) RDIMM	16 (8 per processor)
<b>LRDIMMs</b>			
7X77A01305	AUNE	ThinkSystem 64GB TruDDR4 2666 MHz (4Rx4 1.2V) LRDIMM	16 (8 per processor)
<b>3DS RDIMMs</b>			
7X77A01307	AUNF	ThinkSystem 128GB TruDDR4 2666 MHz (8Rx4 1.2V) 3DS RDIMM	12 (6 per processor)†



\* Some SD530 configurations only support 6 DIMMs per processor (12 total) depending on the processor selected, as described in the [Processor options](#) section.

† 12 is the effective maximum number of 128 GB DIMMs that the SD530 supports, since using any more than 12x 128 GB DIMMs requires an M-suffix processor, and the heatsink required for all M-suffix processors prevents more than 12 DIMM slots.

The following rules apply when selecting the memory configuration:

- The server supports RDIMMs and LRDIMMs.
- Mixing RDIMMs and LRDIMMs is not supported.
- Mixing 3DS RDIMMs with either RDIMMs or LRDIMMs is not supported.
- It is supported to mix x4 and x8 DIMMs.
- The following rules apply to support 16 DIMMs:
  - Only a subset of the supported processors can be used, as indicated in the [Processor specifications table](#) in the Processor section.
  - Smaller processor heatsinks will be automatically selected by the configurator so that the four additional DIMM slots are accessible.
  - Only the 2x2 SAS/SATA backplane can be selected as described in the [Drive bays and backplanes](#) section. The 2x3 backplanes are not supported and no NVMe drives are supported.
- Each processor has 6 memory channels. As a result, for best performance, populate memory DIMMs in quantities of 6 or 12 per processor, so that all memory channels are used, however, to maximize capacity, select a processor that in the SD530 supports 8 DIMMs per processor and install 16 DIMMs.

**Tip:** To learn more about the performance implications of using 16 DIMMs in the SD530, read the Lenovo Press paper *Lenovo ThinkSystem SD530 Performance Considerations with 12 DIMMs and 16 DIMMs* available from: <http://lenovopress.com/LP0659>

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 being 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 SD530 supports up to six 2.5-inch hot-swap drive bays, all of which are accessible from the front of the server.

In this section:

- [Drive bays and backplanes](#)
- [Adapters and cabling](#)
- [M.2 drives](#)

### Drive bays and backplanes

The server supports three different drive bay configurations, all comprised of 2.5-inch hot-swap drive bays:

- Six drive bays, four bays supporting SAS or SATA drives and two Lenovo AnyBay bays, supporting NVMe, SAS or SATA drives
- Five drive bays, three of which are SAS/SATA and two are AnyBay bays. This configuration also includes a KVM breakout module to provide front-accessible VGA, Serial and USB ports.
- Four drive bays, all of which are SAS/SATA drive bays or all of which are NVMe. These configurations also support an optional KVM breakout module.

The three configurations are shown in the following figure. When the AnyBay backplane is selected the rightmost two drives are the AnyBay drive bays.

**Tip:** AnyBay is the term for a bay with a U.2 connector that has both SAS/SATA and NVMe connections. It is designed to support either a SAS, SATA or NVMe drive.

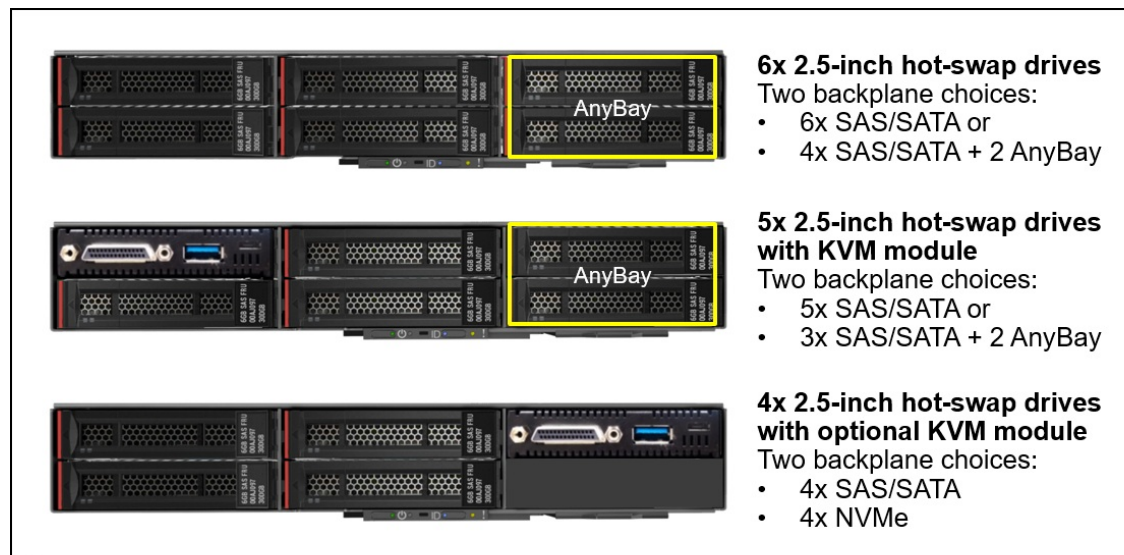


Figure 8. Drive bay configurations of the SD530

The drive bay configurations are made available through the use of either a 2x3 SAS/SATA backplane, 2x3 AnyBay backplane, a 2x2 SAS/SATA backplane or a 2x2 NVMe backplane. Ordering details are listed in the following table.

**Processor 2 needed for AnyBay:** The use of AnyBay or NVMe requires that processor 2 be installed. Processor 2 provides the necessary PCIe connectivity.

Table 22. Backplane ordering information

Part number	Feature code	Description	Drive bay configuration
None*	AUYG	ThinkSystem SD530 3x2 SAS/SATA BP	6x SAS/SATA 5x SAS/SATA
None*	AUYH	ThinkSystem SD530 3x2 SAS/SATA/NVMe BP	4x SAS/SATA + 2 AnyBay 3x SAS/SATA + 2 AnyBay
None*	AUYJ	ThinkSystem SD530 2x2 SAS/SATA BP	4x SAS/SATA
None*	B324	ThinkSystem SD530 2.5" NVMe 4-Bay Backplane Kit	4x NVMe

\* Available in predefined models or configure-to-order only

Not all processor selections support the 3x2 backplanes, and some only support 3x2 backplanes when 12 DIMMs are installed. The following table shows the supported combinations.

**Tip:** Support is based on the cooling needs of the processor, not the TDP or core frequency.

Table 23. Backplane support by processor

Intel Xeon processor	12 DIMMs		16 DIMMs	
	2x2 backplane	2x3 backplane	2x2 backplane	2x3 backplane
Bronze 3104 6C 85W 1.7GHz	Yes	Yes	Yes	No
Bronze 3106 8C 85W 1.7GHz	Yes	Yes	Yes	No
Silver 4108 8C 85W 1.8GHz	Yes	Yes	Yes	No
Silver 4109T 8C 70W 2.0GHz	Yes	No	No	No
Silver 4110 8C 85W 2.1GHz	Yes	Yes	Yes	No
Silver 4112 4C 85W 2.6GHz	Yes	Yes	Yes	No
Silver 4114 10C 85W 2.2GHz	Yes	Yes	Yes	No
Silver 4114T 10C 85W 2.2GHz	Yes	No	No	No
Silver 4116 12C 85W 2.1GHz	Yes	Yes	Yes	No
Silver 4116T 12C 85W 2.1GHz	Yes	No	No	No
Gold 5115 10C 85W 2.4GHz	Yes	Yes	Yes	No
Gold 5117 14C 105W 2.0GHz	Yes	Yes	No	No
Gold 5118 12C 105W 2.3GHz	Yes	Yes	Yes	No
Gold 5119T 14C 85W 1.8GHz	Yes	No	No	No
Gold 5120 14C 105W 2.2GHz	Yes	Yes	Yes	No
Gold 5120T 14C 105W 2.2GHz	Yes	No	No	No
Gold 5122 4C 105W 3.6GHz	Yes	No	No	No
Gold 6126 12C 125W 2.6GHz	Yes	Yes	No	No
Gold 6126T 12C 125W 2.6GHz	Yes	No	No	No
Gold 6128 6C 115W 3.4GHz	Yes	No	No	No
Gold 6130 16C 125W 2.1GHz	Yes	Yes	Yes	No
Gold 6130T 16C 125W 2.1GHz	Yes	No	No	No
Gold 6132 14C 140W 2.6GHz	Yes	No	No	No
Gold 6134 8C 130W 3.2GHz	Yes	No	No	No
Gold 6134M 8C 130W 3.2GHz	Yes	No	No	No

Intel Xeon processor	12 DIMMs		16 DIMMs	
	2x2 backplane	2x3 backplane	2x2 backplane	2x3 backplane
Gold 6136 12C 150W 3.0GHz	Yes	No	No	No
Gold 6138 20C 125W 2.0GHz	Yes	Yes	No	No
Gold 6138T 20C 125W 2.0GHz	Yes	No	No	No
Gold 6140 18C 140W 2.3GHz	Yes	Yes	No	No
Gold 6140M 18C 140W 2.3GHz	Yes	Yes	No	No
Gold 6142 16C 150W 2.6GHz	Yes	No	No	No
Gold 6142M 16C 150W 2.6GHz	Yes	No	No	No
Gold 6144 8C 150W 3.5GHz	Yes	No	No	No
Gold 6146 12C 165W 3.2GHz	Yes	No	No	No
Gold 6148 20C 150W 2.4GHz	Yes	No	No	No
Gold 6150 18C 165W 2.7GHz	Yes	No	No	No
Gold 6152 22C 140W 2.1GHz	Yes	Yes	No	No
Gold 6154 18C 200W 3.0GHz	Yes	No	No	No
Platinum 8153 16C 125W 2.0GHz	Yes	Yes	Yes	No
Platinum 8156 4C 105W 3.6GHz	Yes	No	No	No
Platinum 8158 12C 150W 3.0GHz	Yes	No	No	No
Platinum 8160 24C 150W 2.1GHz	Yes	No	No	No
Platinum 8160M 24C 150W 2.1GHz	Yes	No	No	No
Platinum 8160T 24C 150W 2.1GHz	Yes	No	No	No
Platinum 8164 26C 150W 2.0GHz	Yes	No	No	No
Platinum 8168 24C 205W 2.7GHz	Yes	No	No	No
Platinum 8170 26C 165W 2.1GHz	Yes	No	No	No
Platinum 8170M 26C 165W 2.1GHz	Yes	No	No	No
Platinum 8176 28C 165W 2.1GHz	Yes	No	No	No
Platinum 8176M 28C 165W 2.1GHz	Yes	No	No	No
Platinum 8180 28C 205W 2.5GHz	Yes	No	No	No
Platinum 8180M 28C 205W 2.5GHz	Yes	No	No	No

## Adapters and cabling

The SD530 supports the following backplane connectivity:

- Hardware RAID adapter installed in a dedicated slot at the back of the server - supporting SAS or SATA drives
- Software RAID from the embedded Intel RSTe controller - supporting only SATA drives
- PCIe NVMe connectivity for the AnyBay backplane from the PCIe connector #3 on the system board which is routed from Processor 2.
- PCIe NVMe connectivity for the 2x2 NVMe backplane from the PCIe connectors #3 and #4 on the system board which is routed from Processor 2.

These connectors are shown in the Internal view of the server in the [Components and connectors](#) section.

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

## 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 24. 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>

## Controllers for internal storage

The SD530 supports the following RAID controllers for internal storage:

- 12 Gb SAS/SATA RAID adapter installed in a dedicated slot
- 12 Gb SAS/SATA HBA installed in a dedicated slot
- Intel RSTe 6 Gb SATA software RAID controller integrated in the the Intel chipset

**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 ordering information.

Table 25. RAID controllers

Part number	Feature code	Description
None	AUYL	ThinkSystem SD530 SW RAID Kit
None*	AUYK	ThinkSystem SD530 HW RAID Kit
None*	B0SS	ThinkSystem 430-8i SAS/SATA 12Gb Dense HBA

\* Available only in preconfigured models or configure-to-order; not available as a field upgrade

Table 26. Controller specifications

Feature	Intel RSTe	430-8i Dense	SD530 RAID
Adapter type	Software RAID	HBA	RAID controller
Part number	None	Feature B0SS	Feature AUYK
Form factor	Onboard	Custom	Custom
Controller chip	Intel PCH (RSTe)	LSI SAS3408	LSI SAS3408
Host interface	Not applicable	PCIe 3.0 x8	PCIe 3.0 x8
Port interface	6 Gb SATA	12 Gb SAS	12 Gb SAS
Number of ports	6	6	6
Port connectors	2x onboard SATA	2x SlimSAS x4	2x SlimSAS x4
Drive interface	SATA	SAS, SATA	SAS, SATA
Drive type	HDD, SSD	HDD, SSD, SED**	HDD, SSD, SED
Hot-swap drives	No	Yes	Yes
Max devices	Varies	8	6
RAID levels	0, 1, 10, 5	No RAID	0, 1, 10, 5, 50
JBOD mode	Yes	Yes	Yes
Cache	None	No	None
CacheVault cache protection	No	No	No
Performance Accelerator (FastPath)	No	No	Yes
SSD Caching (CacheCade Pro 2.0)	No	No	No
SED support	No	Yes**	Yes (SafeStore)

\*\* The SAS/SATA HBA supports SEDs (self-encrypting drives) by using software on the server and simply passing SED commands through the HBA to the drives.

## Internal drive options

The following tables list the hard disk drive and solid-state drive options for the internal disk storage of the server.

- Table 31: [2.5-inch hot-swap 12 Gb SAS HDDs](#)
- Table 32: [2.5-inch hot-swap 6 Gb SAS/SATA HDDs](#)
- Table 33: [2.5-inch hot-swap 12 Gb SAS SSDs](#)
- Table 34: [2.5-inch hot-swap 6 Gb SAS/SATA SSDs](#)
- Table 35: [2.5-inch U.2 NVMe SSDs](#)
- Table 36: [M.2 drives](#)

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

Table 27. 2.5-inch hot-swap 12 Gb SAS HDDs

Part number	Feature	Description	Maximum supported
2.5-inch hot-swap HDDs - 12 Gb SAS 10K			
7XB7A00024	AULY	ThinkSystem 2.5" 300GB 10K SAS 12Gb Hot Swap 512n HDD	6
7XB7A00025	AULZ	ThinkSystem 2.5" 600GB 10K SAS 12Gb Hot Swap 512n HDD	6
7XB7A00026	AUM0	ThinkSystem 2.5" 900GB 10K SAS 12Gb Hot Swap 512n HDD	6
7XB7A00027	AUM1	ThinkSystem 2.5" 1.2TB 10K SAS 12Gb Hot Swap 512n HDD	6
7XB7A00028	AUM2	ThinkSystem 2.5" 1.8TB 10K SAS 12Gb Hot Swap 512e HDD	6
7XB7A00069	B0YS	ThinkSystem 2.5" 2.4TB 10K SAS 12Gb Hot Swap 512e HDD	6
2.5-inch hot-swap HDDs - 12 Gb SAS 15K			
7XB7A00021	AULV	ThinkSystem 2.5" 300GB 15K SAS 12Gb Hot Swap 512n HDD	6
7XB7A00022	AULW	ThinkSystem 2.5" 600GB 15K SAS 12Gb Hot Swap 512n HDD	6
7XB7A00023	AULX	ThinkSystem 2.5" 900GB 15K SAS 12Gb Hot Swap 512e HDD	6
2.5-inch hot-swap HDDs - 12 Gb NL SAS			
7XB7A00034	AUM6	ThinkSystem 2.5" 1TB 7.2K SAS 12Gb Hot Swap 512n HDD	6
7XB7A00035	AUM7	ThinkSystem 2.5" 2TB 7.2K SAS 12Gb Hot Swap 512n HDD	6
2.5-inch hot-swap SED HDDs - 12 Gb SAS 10K			
7XB7A00070	B0YV	ThinkSystem 2.5" 2.4TB 10K SAS 12Gb Hot Swap 512e HDD FIPS	6
2.5-inch hot-swap SED HDDs - 12 Gb NL SAS			
7XB7A00064	B0YM	ThinkSystem 2.5" 2TB 7.2K SAS 12Gb Hot Swap 512e HDD FIPS	6

Table 28. 2.5-inch hot-swap 6 Gb SAS/SATA HDDs

Part number	Feature	Description	Maximum supported
2.5-inch hot-swap HDDs - 6 Gb NL SATA			
7XB7A00036	AUUE	ThinkSystem 2.5" 1TB 7.2K SATA 6Gb Hot Swap 512n HDD	6
7XB7A00037	AUJJ	ThinkSystem 2.5" 2TB 7.2K SATA 6Gb Hot Swap 512e HDD	6

Table 29. 2.5-inch hot-swap 12 Gb SAS SSDs

Part number	Feature	Description	Maximum supported
<b>2.5-inch hot-swap SSDs - 12 Gb SAS - Enterprise Capacity</b>			
7N47A00121	AUMK	ThinkSystem 2.5" PM1633a 3.84TB Capacity SAS 12Gb Hot Swap SSD	6
7N47A00122	AUML	ThinkSystem 2.5" PM1633a 7.68TB Capacity SAS 12Gb Hot Swap SSD	6
7N47A00123	B116	ThinkSystem 2.5" PM1633a 15.36TB Capacity SAS 12Gb Hot Swap SSD	6
<b>2.5-inch hot-swap SSDs - 12 Gb SAS - Enterprise Performance (10+ DWPD)</b>			
7N47A00124	AUMG	ThinkSystem 2.5" HUSMM32 400GB Performance SAS 12Gb Hot Swap SSD	6
7N47A00125	AUMH	ThinkSystem 2.5" HUSMM32 800GB Performance SAS 12Gb Hot Swap SSD	6
7N47A00126	AVRB	ThinkSystem 2.5" HUSMM32 1.6TB Performance SAS 12Gb Hot Swap SSD	6
<b>2.5-inch hot-swap SSDs - 12 Gb SAS - Enterprise Mainstream (3-5 DWPD)</b>			
7N47A00117	AUMC	ThinkSystem 2.5" PM1635a 400GB Mainstream SAS 12Gb Hot Swap SSD	6
7N47A00118	AUMD	ThinkSystem 2.5" PM1635a 800GB Mainstream SAS 12Gb Hot Swap SSD	6
7N47A00119	AVRG	ThinkSystem 2.5" PM1635a 1.6TB Mainstream SAS 12Gb Hot Swap SSD	6
7N47A00120	AVRJ	ThinkSystem 2.5" PM1635a 3.2TB Mainstream SAS 12Gb Hot Swap SSD	6
<b>2.5-inch hot-swap SED SSDs - 12 Gb SAS - Enterprise Performance (10+ DWPD)</b>			
7SD7A05754	B11P	ThinkSystem 2.5" HUSMM32 400GB Performance SAS 12Gb Hot Swap SSD FIPS	6
7SD7A05753	B11Q	ThinkSystem 2.5" HUSMM32 800GB Performance SAS 12Gb Hot Swap SSD FIPS	6
7SD7A05752	B11R	ThinkSystem 2.5" HUSMM32 1.6TB Performance SAS 12Gb Hot Swap SSD FIPS	6



Table 30. 2.5-inch hot-swap 6 Gb SAS/SATA SSDs

Part number	Feature	Description	Maximum supported
<b>2.5-inch hot-swap SSDs - 6 Gb SATA - Enterprise Mainstream (3-5 DWPD)</b>			
7SD7A05765	B10W	ThinkSystem 2.5" 5100 240GB Mainstream SATA 6Gb Hot Swap SSD	6
7SD7A05764	B10X	ThinkSystem 2.5" 5100 480GB Mainstream SATA 6Gb Hot Swap SSD	6
7SD7A05763	B10Y	ThinkSystem 2.5" 5100 960GB Mainstream SATA 6Gb Hot Swap SSD	6
7SD7A05762	B10Z	ThinkSystem 2.5" 5100 1.92TB Mainstream SATA 6Gb Hot Swap SSD	6
7SD7A05761	B110	ThinkSystem 2.5" 5100 3.84TB Mainstream SATA 6Gb Hot Swap SSD	6
7SD7A05723	B0ZP	ThinkSystem 2.5" Intel S4600 240GB Mainstream SATA 6Gb Hot Swap SSD	6
7SD7A05722	B0ZQ	ThinkSystem 2.5" Intel S4600 480GB Mainstream SATA 6Gb Hot Swap SSD	6
7SD7A05721	B0ZR	ThinkSystem 2.5" Intel S4600 960GB Mainstream SATA 6Gb Hot Swap SSD	6
7SD7A05720	B0ZS	ThinkSystem 2.5" Intel S4600 1.92TB Mainstream SATA 6Gb Hot Swap SSD	6
<b>2.5-inch hot-swap SSDs - 6 Gb SATA - Enterprise Entry (&lt;3 DWPD)</b>			
4XB7A10195	B34H	ThinkSystem 2.5" PM883 240GB Entry SATA 6Gb Hot Swap SSD	6
4XB7A10196	B34J	ThinkSystem 2.5" PM883 480GB Entry SATA 6Gb Hot Swap SSD	6
4XB7A10197	B34K	ThinkSystem 2.5" PM883 960GB Entry SATA 6Gb Hot Swap SSD	6
4XB7A10198	B34L	ThinkSystem 2.5" PM883 1.92TB Entry SATA 6Gb Hot Swap SSD	6
4XB7A10199	B34M	ThinkSystem 2.5" PM883 3.84TB Entry SATA 6Gb Hot Swap SSD	6
4XB7A10153	B2X2	ThinkSystem 2.5" 5200 480GB Entry SATA 6Gb Hot Swap SSD	6
4XB7A10154	B2X3	ThinkSystem 2.5" 5200 960GB Entry SATA 6Gb Hot Swap SSD	6
4XB7A10155	B2X4	ThinkSystem 2.5" 5200 1.92TB Entry SATA 6Gb Hot Swap SSD	6
4XB7A10156	B2X5	ThinkSystem 2.5" 5200 3.84TB Entry SATA 6Gb Hot Swap SSD	6
4XB7A10157	B2X6	ThinkSystem 2.5" 5200 7.68TB Entry SATA 6Gb Hot Swap SSD	6
7N47A00111	AUUQ	ThinkSystem 2.5" PM863a 240GB Entry SATA 6Gb Hot Swap SSD	6
7N47A00112	AUM9	ThinkSystem 2.5" PM863a 480GB Entry SATA 6Gb Hot Swap SSD	6
7N47A00113	AVCZ	ThinkSystem 2.5" PM863a 960GB Entry SATA 6Gb Hot Swap SSD	6
7N47A00114	AVRC	ThinkSystem 2.5" PM863a 1.92TB Entry SATA 6Gb Hot Swap SSD	6
7SD7A05742	B0YY	ThinkSystem 2.5" Intel S4500 240GB Entry SATA 6Gb Hot Swap SSD	6
7SD7A05741	B0YZ	ThinkSystem 2.5" Intel S4500 480GB Entry SATA 6Gb Hot Swap SSD	6
7SD7A05740	B0Z0	ThinkSystem 2.5" Intel S4500 960GB Entry SATA 6Gb Hot Swap SSD	6
7SD7A05739	B0Z1	ThinkSystem 2.5" Intel S4500 1.92TB Entry SATA 6Gb Hot Swap SSD	6
7SD7A05738	B0Z2	ThinkSystem 2.5" Intel S4500 3.84TB Entry SATA 6Gb Hot Swap SSD	6
4XB7A08503	B10P	ThinkSystem 2.5" 5100 960GB Entry SATA 6Gb Hot Swap SSD	6
4XB7A08502	B10N	ThinkSystem 2.5" 5100 480GB Entry SATA 6Gb Hot Swap SSD	6
4XB7A08504	B10Q	ThinkSystem 2.5" 5100 1.92TB Entry SATA 6Gb Hot Swap SSD	6
4XB7A08505	B10R	ThinkSystem 2.5" 5100 3.84TB Entry SATA 6Gb Hot Swap SSD	6

Table 31. 2.5-inch U.2 NVMe SSDs

Part number	Feature	Description	Maximum supported
2.5-inch SSDs - NVMe - Enterprise Performance (10+ DWPD)			
7N47A00081	AUMJ	ThinkSystem U.2 Intel P4800X 375GB Performance NVMe PCIe 3.0 x4 Hot Swap SSD	2
7N47A00083	B2ZJ	ThinkSystem U.2 Intel P4800X 750GB Performance NVMe PCIe 3.0 x4 Hot Swap SSD	2
7XB7A05923	AWG6	ThinkSystem U.2 PX04PMB 800GB Performance NVMe PCIe 3.0 x4 Hot Swap SSD	2
7XB7A05922	AWG7	ThinkSystem U.2 PX04PMB 1.6TB Performance NVMe PCIe 3.0 x4 Hot Swap SSD	2
2.5-inch SSDs - NVMe - Enterprise Mainstream (3-5 DWPD)			
7N47A00095	AUUY	ThinkSystem U.2 PX04PMB 960GB Mainstream NVMe PCIe 3.0 x4 Hot Swap SSD	2
7N47A00096	AUMF	ThinkSystem U.2 PX04PMB 1.92TB Mainstream NVMe PCIe 3.0 x4 Hot Swap SSD	2
7SD7A05772	B11J	ThinkSystem U.2 Intel P4600 1.6TB Mainstream NVMe PCIe3.0 x4 Hot Swap SSD	2
7SD7A05771	B11K	ThinkSystem U.2 Intel P4600 3.2TB Mainstream NVMe PCIe3.0 x4 Hot Swap SSD	2
2.5-inch SSDs - NVMe - Enterprise Entry (<3 DWPD)			
4XB7A10175	B34N	ThinkSystem U.2 PM983 1.92TB Entry NVMe PCIe 3.0 x4 Hot Swap SSD	2
4XB7A10176	B34P	ThinkSystem U.2 PM983 3.84TB Entry NVMe PCIe 3.0 x4 Hot Swap SSD	2
7SD7A05779	B11C	ThinkSystem U.2 Intel P4500 1.0TB Entry NVMe PCIe3.0 x4 Hot Swap SSD	2
7SD7A05778	B11D	ThinkSystem U.2 Intel P4500 2.0TB Entry NVMe PCIe3.0 x4 Hot Swap SSD	2
7SD7A05777	B11E	ThinkSystem U.2 Intel P4500 4.0TB Entry NVMe PCIe3.0 x4 Hot Swap SSD	2

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

Table 32. M.2 drives

Part number	Feature	Description	Maximum supported
M.2 SSDs - 6 Gb SATA - Enterprise Entry (<3 DWPD)			
7N47A00129	AUUL	ThinkSystem M.2 CV1 32GB SATA 6Gbps Non-Hot-Swap SSD	2
7N47A00130	AUUV	ThinkSystem M.2 CV3 128GB SATA 6Gbps Non-Hot-Swap SSD	2
7SD7A05703	B11V	ThinkSystem M.2 5100 480GB SATA 6Gbps Non-Hot Swap SSD	2

## Internal tape drive

The server does not support internal tape drive options.

## Optical drive

The server does not support an internal optical drive.

An external USB optical drive is available, listed in the following table.

Table 33. External optical drive

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

## I/O expansion options

The I/O slots for the SD530 nodes are housed in the I/O shuttle in the rear of the enclosure. See the [Components and connectors](#) section for the location.

Each SD530 supports internally either:

- One PCIe 3.0 x16 low-profile adapter slot, or
- Two PCIe 3.0 x8 low-profile adapter slots

Ordering information is as follows:

Table 34. I/O shuttle ordering information

Part number	Feature code	Description
CTO only	AUY7	ThinkSystem D2 8-slot x8 Shuttle ASM
CTO only	AUY8	ThinkSystem D2 4-slot x16 Shuttle

The following figure shows the locations of the slots.

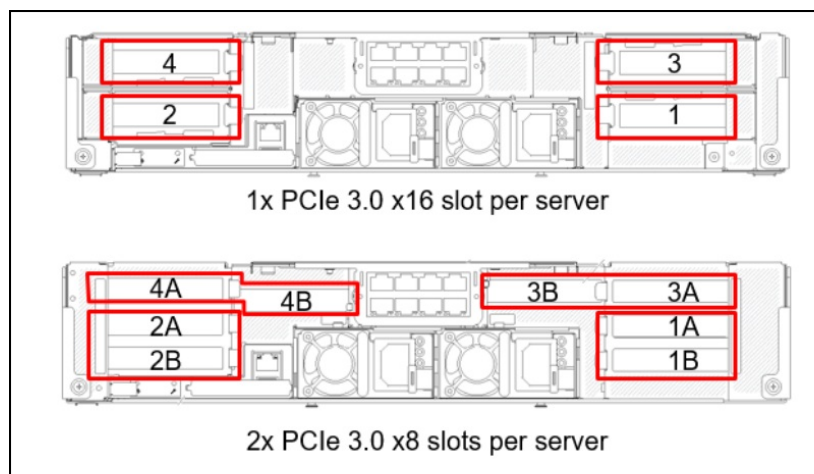


Figure 9. Location of the PCIe slots at the rear of the Enclosure

A key difference between the two choices, other than the difference in PCIe lane width is which servers must be powered off to perform service on the I/O adapter slots:

- Adding or replacing an adapter in the x16 slot only requires the one SD530 node to be powered off. The other three servers can remain fully operational.
- Adding or replacing an adapter in any x8 slot requires that *all four* SD530 nodes be powered off.

The SD530 also supports the addition of a GPU Tray with two full-length full-height slots. Details about the GPU Tray are in the [GPU Tray and GPU adapters](#) section.

## Network adapters

Each SD530 has two dedicated 10Gb ports routed to the 8-port Ethernet I/O Module (EIOM) at the rear of the enclosure as shown in below. The ports are connected to the integrated Intel Ethernet Connection X722 controller.

**Note:** The EIOM is optional and can be deselected in the configurator. If the EIOM is not used, then the two 10 GbE ports are not accessible. The EIOM can be added later as a field upgrade.

The ports are assigned as shown in the following figure.

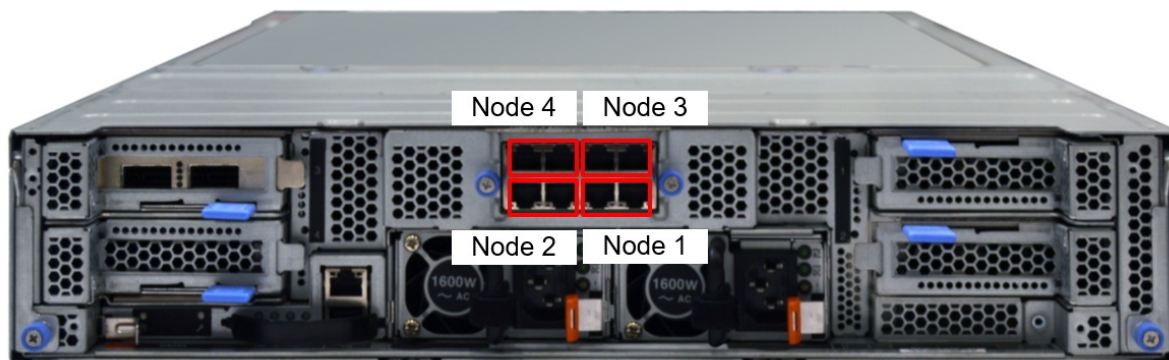


Figure 10. Network port numbering

The X722 has the following features:

- Integrated into the Intel PCH chipset
- Offers VXLAN/NVGRE Hardware Offloads
- Supports VMDq and SR-IOV for advanced virtualization
- Supports iWarp RDMA

**Note:** No support for 10 Mbps or 100 MBps Ethernet connections.

For more information about the X722 controller, see the Lenovo Press product guide:

<http://lenovopress.com/lp0654-intel-x722-integrated-controller>

**Tip:** This port numbering is also located on a label affixed to the enclosure. See [Figure 4](#) for the location.

The 10Gb ports have either RJ45 connections or SFP+ cages depending on the EIOM selected. Ordering information is in the following table.

Table 35. EIOM ordering information

<b>Part number</b>	<b>Feature code</b>	<b>Description</b>
7M17A04001	AUYA	ThinkSystem D2 10Gb 8 port EIOM Base T RJ45
7M17A04000	AUY9	ThinkSystem D2 10Gb 8 port EIOM SFP+

The following table lists other supported network adapters. PCIe x16 adapters require the x16 slot so only 1 adapter is supported per node.

Table 36. Network adapters

Part number	Feature code	Description	Slots supported	Maximum supported
<b>Gigabit Ethernet</b>				
7ZT7A00535	AUZW	ThinkSystem I350-T4 PCIe 1Gb 4-Port RJ45 Ethernet Adapter	Both slots	2
<b>10 Gb Ethernet RJ45</b>				
00MM860	ATPX	Intel X550-T2 Dual Port 10GBase-T Adapter	Both slots	2
7ZT7A00496	AUKP	ThinkSystem Broadcom NX-E PCIe 10Gb 2-Port Base-T Ethernet Adapter	Both slots	2
4XC7A08225	B31G	ThinkSystem QLogic QL41134 PCIe 10Gb 4-Port Base-T Ethernet Adapter	Both slots	2
<b>10 Gb Ethernet SFP+</b>				
00AG580	AT7T	Emulex VFA5.2 2x10 GbE SFP+ Adapter and FCoE/iSCSI SW	Both slots	2
00AG570	AT7S	Emulex VFA5.2 2x10 GbE SFP+ PCIe Adapter	Both slots	2
7ZT7A00537	AUKX	ThinkSystem X710-DA2 PCIe 10Gb 2-Port SFP+ Ethernet Adapter	Both slots	2
<b>25 Gb Ethernet</b>				
4XC7A08228	B21R	ThinkSystem QLogic QL41262 PCIe 25Gb 2-Port SFP28 Ethernet Adapter	Both slots	2
7XC7A05523	B0WY	ThinkSystem Intel XXV710-DA2 PCIe 25Gb 2-Port SFP28 Ethernet Adapter	Both slots	2
01GR250	AUAJ	Mellanox ConnectX-4 Lx 2x25GbE SFP28 Adapter	Both slots	2
7ZT7A00505	AUKS	ThinkSystem Broadcom NX-E PCIe 25Gb 1-Port SFP28 Ethernet Adapter	Both slots	2
4XC7A08229	B31C	ThinkSystem Mellanox ConnectX-5 Ex 25/40GbE 2-port Low-Latency Adapter	PCIe x16 slot	1
<b>40 Gb Ethernet</b>				
00MM950	ATRN	Mellanox ConnectX-4 Lx 1x40GbE QSFP+ Adapter	Both slots	2
4XC7A08229	B31C	ThinkSystem Mellanox ConnectX-5 Ex 25/40GbE 2-port Low-Latency Adapter	PCIe x16 slot	1
<b>100 Gb Ethernet</b>				
00MM960	ATRP	Mellanox ConnectX-4 2x100GbE/EDR IB QSFP28 VPI Adapter	PCIe x16 slot	1
<b>InfiniBand</b>				
00KH924	ASWQ	Mellanox ConnectX-4 1x100GbE/EDR IB QSFP28 VPI Adapter	PCIe x16 slot	1
7XC7A05524	B0WX	ThinkSystem Mellanox ConnectX-4 PCIe FDR 1-Port QSFP VPI Adapter	Both slots	2
7ZT7A00500	AUVG	ThinkSystem Mellanox ConnectX-4 PCIe FDR 2-Port QSFP VPI Adapter	Both slots	2
<b>Omni-Path Architecture (OPA)</b>				
00WE027	AU0B	Intel OPA 100 Series Single-port PCIe 3.0 x16 HFA	PCIe x16 slot	1
00WE023	AU0A	Intel OPA 100 Series Single-port PCIe 3.0 x8 HFA	Both slots	2

For more information, including the transceivers and cables that each adapter supports, see the list of Lenovo Press Product Guides in the Networking adapters category:

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

## SAS adapters for external storage

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

Table 37. External SAS HBAs

Part number	Feature code	Description	Slots supported	Maximum supported
7Y37A01090	AUNR	ThinkSystem 430-8e SAS/SATA 12Gb HBA	Both slots	2
7Y37A01091	AUNN	ThinkSystem 430-16e SAS/SATA 12Gb HBA	Both slots	2

The following table summarizes features of supported adapters.

Table 38. SAS HBA specifications

Feature	430-8e	430-16e
Adapter type	HBA	HBA
Part number	7Y37A01090	7Y37A01091
Controller chip	LSI SAS3408	LSI SAS3416
Host interface	PCIe 3.0x8	PCIe 3.0x8
Port interface	12 Gb SAS	12 Gb SAS
Number of ports	8	16
Port connectors	2x Mini-SAS HD SFF8644	4x Mini-SAS HD SFF8644
Drive interface	SAS/SATA	SAS/SATA
Drive type	HDD/SSD/SED*	HDD/SSD/SED*
Hot-swap drives	Yes	Yes
Maximum devices	512 (planned: 1024)	512 (planned: 1024)
RAID levels	None	None
JBOD mode	Yes	Yes
Cache	None	None
CacheVault cache protection	None	None
Performance Accelerator (FastPath)	No	No
SSD Caching (CacheCade Pro 2.0)	No	No
SED support	Yes*	Yes*

\* SED support of the SAS HBAs is by using software on the server (SED commands are passed through the HBA to the drives).

## Fibre Channel host bus adapters

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

Table 39. Fibre Channel HBAs

Part number	Feature code	Description	Slots supported	Maximum supported
<b>32 Gb Fibre Channel</b>				
7ZT7A00517	AUNT	ThinkSystem Emulex LPe32000-M2-L PCIe 32Gb 1-Port SFP+ Fibre Channel Adapter	Both slots	2
7ZT7A00519	AUNV	ThinkSystem Emulex LPe32002-M2-L PCIe 32Gb 2-Port SFP+ Fibre Channel Adapter	Both slots	2
7ZT7A00516	AUNS	ThinkSystem QLogic QLE2740 PCIe 32Gb 1-Port SFP+ Fibre Channel Adapter	Both slots	2
7ZT7A00518	AUNU	ThinkSystem QLogic QLE2742 PCIe 32Gb 2-Port SFP+ Fibre Channel Adapter	Both slots	2
<b>16 Gb Fibre Channel</b>				
01CV750	ATZB	QLogic 16Gb Enhanced Gen5 FC Single-port HBA	Both slots	2
01CV830	ATZU	Emulex 16Gb Gen6 FC Single-port HBA	Both slots	2
01CV760	ATZC	QLogic 16Gb Enhanced Gen5 FC Dual-port HBA	Both slots	2
01CV840	ATZV	Emulex 16Gb Gen6 FC Dual-port HBA	Both slots	2
<b>8 Gb Fibre Channel</b>				
4XC7A08220*	B0WZ	ThinkSystem Emulex LPe12000-M8-L PCIe 8Gb 1-Port SFP+ Fibre Channel Adapter	Both slots	2
4XC7A08221*	B0X0	ThinkSystem Emulex LPe12002-M8-L PCIe 8Gb 2-Port SFP+ Fibre Channel Adapter	Both slots	2

\* Available in China, Japan, and AP countries only



## Flash storage adapters

The following table lists the Flash Storage Adapters supported by the server.

Table 40. Flash Storage Adapters

Part number	Feature code	Description	Slots supported	Maximum supported
Entry NVMe PCIe Adapters - Optimized for read-intensive workloads with an endurance of less than 3 DWPD.				
7SD7A05776	B11Z	ThinkSystem HHHH Intel P4500 4.0TB Entry NVMe PCIe 3.0 x4 Flash Adapter	Both slots	2
7SD7A05775	B120	ThinkSystem HHHH Intel P4500 8.0TB Entry NVMe PCIe3.0 x4 Flash Adapter	Both slots	2
Mainstream NVMe PCIe Adapters - Optimized for mixed-intensive application workloads with an endurance of 3-5 DWPD.				
7SD7A05769	B11X	ThinkSystem HHHH Intel P4600 2.0TB Mainstream NVMe PCIe3.0 x4 Flash Adapter	Both slots	2
7SD7A05768	B11Y	ThinkSystem HHHH Intel P4600 4.0TB Mainstream NVMe PCIe3.0 x4 Flash Adapter	Both slots	2
7N47A00097	AUUP	ThinkSystem HHHH PX04PMC 1.92TB Mainstream NVMe PCIe 3.0 x4 Flash Adapter	Both slots	2
7N47A00098	AUVY	ThinkSystem HHHH PX04PMC 3.84TB Mainstream NVMe PCIe 3.0 x4 Flash Adapter	Both slots	2
Performance NVMe PCIe Adapters - Optimized for write-intensive application workloads with an endurance of 10+ DWPD.				
7XB7A05924	AWG9	ThinkSystem HHHH PX04PMC 3.2TB Performance NVMe PCIe 3.0 x4 Flash Adapter	Both slots	2
7XB7A05925	AWG8	ThinkSystem HHHH PX04PMC 1.6TB Performance NVMe PCIe 3.0 x4 Flash Adapter	Both slots	2

## GPU Tray and GPU adapters

The SD530 supports GPU adapters with the addition of SD530 GPU tray. The GPU tray supports one or two double-wide GPUs. The SD530 server and attached GPU tray are shown in the following figure. Two of these combined systems can be installed in the enclosure for a total of 4 processors and 4 GPUs in 2U of rack space.



Figure 11. SD530 with GPU Tray attached

Ordering information for the GPU tray is as follows.

Table 41. GPU tray

Part number	Feature code	Description
4M17A09509	B0MU	ThinkSystem SD530 GPU Tray

The GPU Tray option includes the necessary PCIe cables to connect the two installed GPUs to the system. The GPU options, listed in the table below, include the necessary auxiliary power cables.

The GPU Tray supports 2 GPUs, once connected to each processor in the SD530. Each GPU is connected via a PCIe 3.0 x16 connect routed from two PCIe 3.0 x8 connectors on the SD530 system board. See [Figure 6](#) for locations of the PCIe connectors.

Table 42. GPU options

Part number	Feature code	Description	Maximum supported
7C57A02888	B0LZ	ThinkSystem SD530 NVIDIA Tesla P40	2
7X67A00068	B0M1	ThinkSystem SD530 NVIDIA Tesla P100	2
4C57A09498	B1JY	ThinkSystem NVIDIA Tesla V100 16GB PCIe Passive GPU	2
4X67A12088	B34S	ThinkSystem NVIDIA Tesla V100 32GB PCIe Passive GPU	2
7C57A02891	B0RK	ThinkSystem SD530 NVIDIA Tesla M10	2
00KG655	B0M0	ThinkSystem SD530 NVIDIA Tesla M60	2
7C57A02897	B228	ThinkSystem AMD Radeon Instinct MI25 16GB PCIe Passive GPU	2

For information about these adapters, see the ThinkSystem GPU Summary:  
<https://lenovopress.com/lp0768-thinksystem-gpu-summary>

If the GPU tray is selected then the following configuration rules apply:

- Two processors are required
- At most 12 DIMMs can be installed
- When the Tesla M10 or M60 GPUs are installed, the server system memory must be less than 1 TB
- Only SATA HDDs and SSDs are supported
- Only software RAID is supported; the RAID adapter (Feature AUWK) is not supported
- Only the 4-drive SAS/SATA drive backplane is supported. The 6-drive backplanes (including AnyBay) are not supported.
- The optional KVM module is supported.
- OS preload cannot be selected
- The GPUs installed in the GPU Tray must be identical
- The enclosure must have 2000W power supplies installed
- The following enclosure configurations are supported:
  - 2 servers and 2 GPU Trays
  - 1 server and 1 GPU Tray (the other two bays must have 2 fillers installed)
- The following enclosure configurations are **not** supported:
  - 2 servers and 1 GPU Tray is not supported
  - 3 servers and 1 GPU Tray is not supported

## Power supplies

The D2 Enclosure and Modular Enclosure come standard with two hot-plug power supplies and the power supplies act as a redundant pair ensuring that the enclosure remains powered even if one power supply fails or is disconnected. These AC power supplies are 80 PLUS Platinum certified for energy efficiency.

The following table lists the supported power supply options.

Table 43. Power supply options for the D2 and Modular Enclosures

Part number	Feature code	Description	110V AC	220V AC	240V DC China only
None*	AUZ0	ThinkSystem D2 1100W Platinum PSU	Yes	Yes	Yes
None*	AUZ1	ThinkSystem D2 1600W Platinum PSU	No	Yes	Yes
None*	AUZ2	ThinkSystem D2 2000W Platinum PSU	No	Yes	Yes

\* CTO only

Two power supplies are standard and maximum. You cannot mix power supplies.

The 1100W power supply is auto-sensing and supports both 110V AC (100-127V 50/60 Hz) and 220V AC (200-240V 50/60 Hz) power. The 1600 W and 2000 W power supplies only supports 220V AC power. In China only, all power supplies also support 240V DC.

Power supply options do not include a power cord. For models of the D2 Enclosure and Modular Enclosure, the inclusion of a power cords is model dependent. Configure-to-order models can be configured without a power cord if desired.

Use the Lenovo Capacity Planner to determine exactly what power your server needs:  
<https://datacentersupport.lenovo.com/us/en/products/solutions-and-software/software/lenovo-capacity-planner/solutions/ht504651>

## Power cords

Country-specific line cords and rack power cables can be ordered as listed in the following table.

**110V customers:** If you plan to use the ThinkSystem 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 44. Power cords

Part number	Feature code	Description
<b>Rack cables</b>		
00Y3043	A4VP	1.0m, 10A/100-250V, C13 to C14 Jumper Cord
39Y7937	6201	1.5m, 10A/100-250V, C13 to C14 Jumper Cord
4L67A08369	6570	2.0m, 13A/100-250V, C13 to C14 Jumper Cord
4L67A08366	6311	2.8m, 10A/100-250V, C13 to C14 Jumper Cord
4L67A08370	6400	2.8m, 13A/100-250V, C13 to C14 Jumper Cord
39Y7932	6263	4.3m, 10A/100-250V, C13 to C14 Jumper Cord
4L67A08371	6583	4.3m, 13A/100-250V, C13 to C14 Jumper Cord
<b>Country-specific cables</b>		
39Y7930	6222	2.8m, 10A/250V, C13 to IRAM 2073 (Argentina) Line Cord
81Y2384	6492	4.3m, 10A/250V, C13 to IRAM 2073 (Argentina) Line Cord
39Y7924	6211	2.8m, 10A/250V, C13 to AS/NZS 3112 (Australia/NZ) Line Cord
81Y2383	6574	4.3m, 10A/250V, C13 to AS/NZS 3112 (Australia/NZ) Line Cord
69Y1988	6532	2.8m, 10A/250V, C13 to NBR 14136 (Brazil) Line Cord
81Y2387	6404	4.3m, 10A/250V, C13 to NBR 14136 (Brazil) Line Cord
39Y7928	6210	2.8m, 10A/220V, C13 to GB 2099.1 (China) Line Cord
81Y2378	6580	4.3m, 10A/250V, 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/250V, C13 to DK2-5a (Denmark) Line Cord
39Y7917	6212	2.8m, 10A/250V, C13 to CEE 7/7 (Europe) Line Cord
81Y2376	6572	4.3m, 10A/250V, C13 to CEE 7/7 (Europe) Line Cord
39Y7927	6269	2.8m, 10A/250V, C13 to IS 6538 (India) Line Cord
81Y2386	6567	4.3m, 10A/250V, 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/250V, C13 to SI 32 (Israel) Line Cord
39Y7921	6217	2.8m, 10A/250V, C13 to CEI 23-16 (Italy) Line Cord
81Y2380	6493	4.3m, 10A/250V, C13 to CEI 23-16 (Italy) Line Cord
4L67A08362	6495	4.3m, 12A/200V, C13 to JIS C-8303 (Japan) Line Cord
39Y7922	6214	2.8m, 10A/250V, C13 to SABS 164-1 (South Africa) Line Cord
81Y2379	6576	4.3m, 10A/250V, C13 to SANS 164-1 (South Africa) Line Cord
39Y7926	6335	4.3m, 12A/100V, C13 to JIS C-8303 (Japan) Line Cord
39Y7925	6219	2.8m, 12A/220V, C13 to KSC 8305 (S. Korea) Line Cord
81Y2385	6494	4.3m, 12A/250V, C13 to KSC 8305 (S. Korea) Line Cord
39Y7919	6216	2.8m, 10A/250V, C13 to SEV 1011-S24507 (Swiss) Line Cord

<b>Part number</b>	<b>Feature code</b>	<b>Description</b>
81Y2390	6578	4.3m, 10A/250V, C13 to SEV 1011-S24507 (Swiss) Line Cord
23R7158	6386	2.8m, 10A/125V, C13 to CNS 10917 (Taiwan) Line Cord
81Y2375	6317	2.8m, 10A/250V, C13 to CNS 10917 (Taiwan) Line Cord
81Y2374	6402	2.8m, 13A/125V, C13 to CNS 10917 (Taiwan) Line Cord
4L67A08363	AX8B	4.3m, 10A/125V, C13 to CNS 10917 (Taiwan) Line Cord
81Y2389	6531	4.3m, 10A/250V, C13 to CNS 10917 (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/250V, C13 to BS 1363/A (UK) Line Cord
90Y3016	6313	2.8M, 10A/125V, C13 to NEMA 5-15P (US) Line Cord
46M2592	A1RF	2.8m, 10A/250V, C13 to NEMA 6-15P (US) Line Cord
00WH545	6401	2.8M, 13A/125V, 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/125V, C13 to NEMA 5-15P (US) Line Cord

## Cooling

The enclosures have 5 hot-swap fans which are used to cool all components. In addition, each power supply has its own integrated fan.

The five system fans have the following specifications:

- Three 60mm hot-swap fans
- Two 80mm hot-swap fans

The fans are accessible by simply removing the panel on the top of the enclosure.

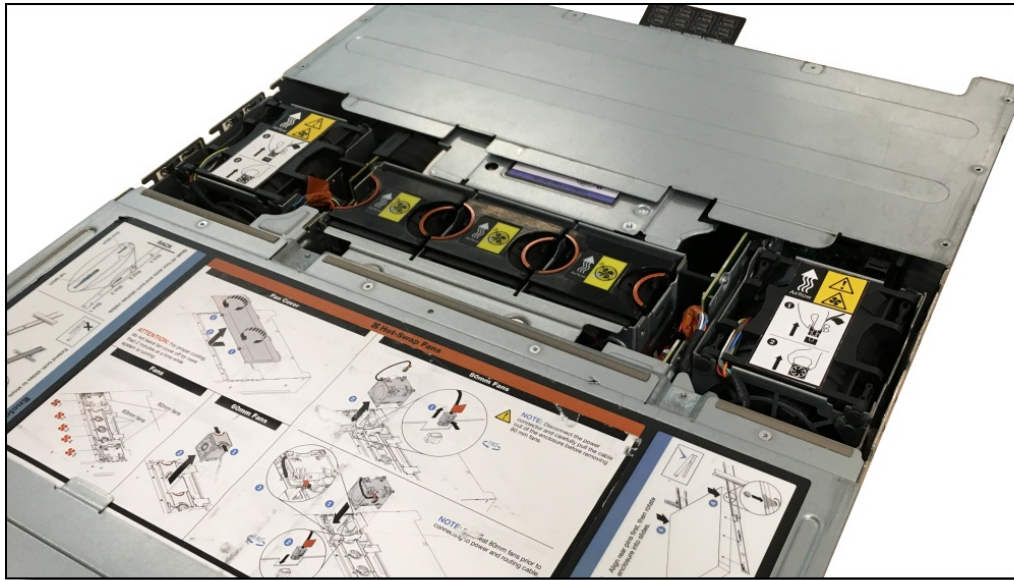


Figure 12. Location of hot-swap fans

**Tip:** The 80mm fans are hot-swap but you must first disconnect the cable before removing the fan.

## 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/](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 SD530 server optionally supports local console support with the addition of the KVM breakout module. The KVM module is installed in one of the drive bays at the front of the server.

The KVM module is shown in the following figure.

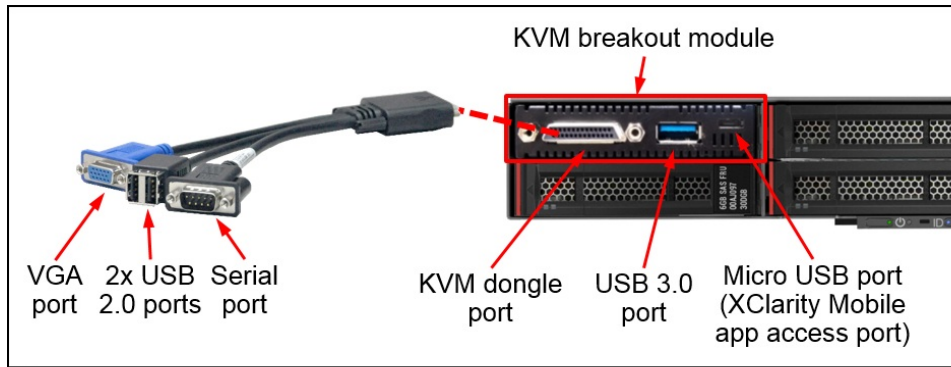


Figure 13. KVM breakout module and console breakout cable

The KVM module provides the following:

- KVM dongle port for optional console breakout cable, which provides VGA port, DB9 serial port, and two USB 2.0 ports
- USB 3.0 port
- Micro USB port for connectivity to the XClarity Controller

The Micro USB port is for local tethered connectivity to a mobile device running the XClarity Mobile app. This connection allows the app to connect to the XClarity Controller and provides additional status information about the server. See the [XClarity Mobile](#) section below for information.

Ordering information for module and cable are as follows.

Table 45. KVM breakout module and cable ordering information

Part number	Feature code	Description
7M17A04002	AUYM	ThinkSystem SD530 Front VGA/USB KVM Breakout Module
81Y5286	A1NF	Console Breakout Cable


The KVM module can be installed in the field:

- For servers with the 2x2 SAS/SATA backplane, the KVM module is installed in the upper-right drive bay
- For servers with either 2x3 backplane, the KVM module is installed in the upper-left drive bay

### System status with XClarity Mobile

The XClarity Mobile app now 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 D2 Enclosure (machine type 7X20) includes a System Management Module (SMM), installed in the rear of the enclosure. See [Figure 3](#) for the location of the SMM. The SMM provides remote management via a Gigabit Ethernet port of both the enclosure and the individual servers.

The following figure shows the LEDs and connectors of the SMM.

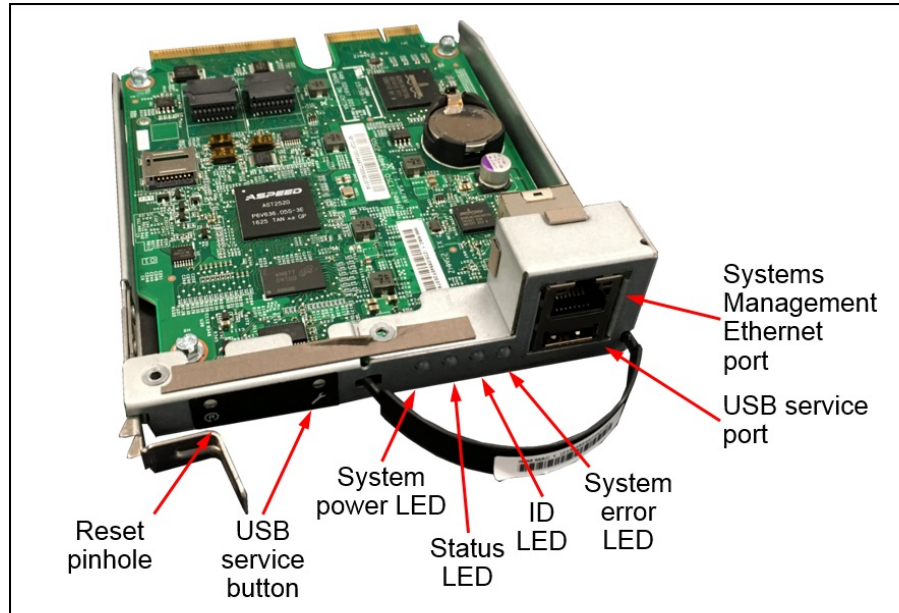


Figure 14. System management module

The SMM has the following ports and LEDs:

- RJ45 for remote management access
- USB port for service
- System error LED (yellow)
- Identification LED (blue)
- Status LED (green)
- System power LED (green)

The Modular Enclosure (machine type 7X22) has a dual-port SMM standard instead of the single-port SMM. The dual-port SMM is identical to the single-port SMM except that the dual-port SMM contains two RJ45 Ethernet ports instead of one port and supports daisy-chaining. The D2 Enclosure can be upgraded to the dual-port SMM in the field using the option part number listed in the following table.

Table 46. Part number information for the dual-port SMM (for D2 Enclosure only)

Part number	Feature code	Description
4M17A09510	AXKS	ThinkSystem Dual Ethernet Port SMM



The following figure shows the dual-port SMM on the left and the standard (single-port) SMM on the right.



Figure 15. Dual-port SMM and standard (single-port) SMM

The dual-port SMM provides the ability to daisy-chain the Ethernet management connections thereby reducing the number of ports you need in your management switches and reducing the overall cable density needed for systems management. With this feature you can connect the first SMM to your management network and the SMM in a second enclosure connects to the first SMM. The SMM in the third enclosure can then connect to the SMM in the second enclosure.

Up to 7 enclosures can be connected in a daisy-chain configuration, which means that with 4 servers in each node, a total of 28 servers can be managed remotely via one single Ethernet connection.

Notes:

- If you are using IEEE 802.1D spanning tree protocol (STP) then at most 6 enclosures can be connected together
- Do not form a loop with the network cabling. The dual-port SMM at the end of the chain should not be connected back to the switch that is connected to the top of the SMM chain.

For more information, see the Internal cable routing section of the SD530 Setup Guide at: [http://thinksystem.lenovofiles.com/help/topic/7X21/cable\\_routing\\_6U\\_enclosure.html?cp=2\\_0\\_5\\_6\\_5](http://thinksystem.lenovofiles.com/help/topic/7X21/cable_routing_6U_enclosure.html?cp=2_0_5_6_5)

### SMM functions

The SMM provides the following functions:

- IPMI and Web interface for remote management of the enclosure
- Remote connectivity to XCC controllers in each node in the enclosure
- Node-level reporting and control (for example, node virtual reseal/reset)
- Enclosure power management
- Enclosure thermal management
- Enclosure inventory

The USB service button and USB service port are used to gather service data in the event of an error. Pressing the service button copies Fast Failure Data Collection (FFDC) data to a USB key installed in the USB service port.

The reset button is used to perform an SMM reset (short press) or to restore the SMM back to factory defaults (press for 4+ seconds).

### Supported interfaces

The SMM (both single-port and dual-port versions) can be accessed through a web browser interface and via Intelligent Platform Management Interface (IPMI) 2.0 commands.

The XClarity Controller (XCC) in each node also supports remote management, provided through the following interfaces:

- Intelligent Platform Management Interface (IPMI) Version 2.0

- Simple Network Management Protocol (SNMP) Version 3 (no SET commands; no SMNP 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

### XClarity Controller upgrades

In addition, a virtual presence (remote control & remote media) capability is also optionally available by upgrading each node's XClarity Controller. The available upgrades are XClarity Controller Advanced Upgrade and XClarity Controller Enterprise Upgrade.

Lenovo XClarity Controller Advanced Upgrade 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
- Optionally, with the XCC Enterprise license upgrade, mapping ISO and diskette IMG image files as virtual drives that are available for use by the server

Lenovo XClarity Controller Enterprise Upgrade enables the following additional features:

- Boot Capture
- Remote mounting of ISO and IMG files
- 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 [SD530 models](#) section for details. The following table shows the field upgrades available for preconfigured models.

Table 47. 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 48. 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 is a UEFI-based application embedded in ThinkSystem servers and accessible via the F1 key during system boot.

Lenovo XClarity Provisioning Manager 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 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 setting, 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 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.

Lenovo XClarity Administrator 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 provides full management function to ThinkSystem servers, including the following:

- Discovery
- Inventory
- Monitoring and alerting
- Call home
- Centralized user management
- Cryptography modes, server certificates, and encapsulation
- Configuration patterns
- Operating system deployment
- Firmware updates

For more information about Lenovo XClarity Administrator, including ordering part numbers, see the Lenovo XClarity Administrator Product Guide:

<https://lenovopress.com/tips1200-lenovo-xclarity-administrator>

## Lenovo XClarity Energy Manager

Lenovo XClarity Energy Manager is an agent-free, web-based console that provides power management for ThinkSystem servers as well as System x and ThinkServer systems. It enables server density and data center capacity to be increased through the use of power capping.

Lenovo XClarity Energy Manager is a licensed product. A single-node XClarity Energy Manager license is included with the XClarity Controller Enterprise (XCC 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 49. Lenovo XClarity Energy Manager

Description	Part number	Maximum supported
4L40E51621	Lenovo XClarity Energy Manager Node License	1 node
4L40E51622	Lenovo XClarity Energy Manager Node License Pack	5 nodes
4L40E51623	Lenovo XClarity Energy Manager Node License Pack	50 nodes

## Security

The server offers the following security features:

- Administrator and power-on password
- Trusted Platform Module (TPM) supporting both TPM 1.2 and TPM 2.0
- Optional plugin Trusted Cryptographic Module (TCM) or Nationz TPM, available only in China

The plugin modules, available only for China customers, are installed in a dedicated socket on the system board, as shown in [Figure 6](#). Ordering information is shown in the following table.

Table 50. Security features

Part number	Feature code	Description
None*	AVKE	ThinkSystem Trusted Cryptographic Module (China customers only)
None*	B22N	ThinkSystem Nationz Trusted Platform Module v2.0 (China customers only)

\* Available configure-to-order or pre-configured models only; Not available as a field upgrade.

## Operating system support

The server supports the following operating systems:

- Microsoft Windows Server 2012 R2
- Microsoft Windows Server 2016
- 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
- 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 Xen SP2
- SUSE Linux Enterprise Server 12 Xen SP3
- VMware ESXi 6.0 U3
- VMware ESXi 6.5
- VMware ESXi 6.5 U1
- VMware ESXi 6.5 U2
- VMware ESXi 6.7

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=sd530-7x21>

**Virtualization support:** The onboard SATA ports in 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 51. VMware ESXi preload

Part number	Feature code	Description
CTO only	AXFT	VMware ESXi 6.5 (factory installed)
CTO only	AXFS	VMware ESXi 6.0 U3 (factory installed)

## Rack installation

The D2 Enclosure and Modular Enclosure can be installed in a 19-inch rack cabinet. A rail kit is included in all models and can be included in configure-to-order models. Also available to order as an option is a cable management arm. Ordering information is in the following table.

Table 52. Rail installation components

Part number	Feature code	Description
CTO only	AUYC	ThinkSystem D2 Slide Rail
7XF7A03997	AUYD	ThinkSystem D2 CMA (Cable Management Arm)

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

## Physical and electrical specifications

The SD530 server and the enclosures have the following physical specifications.

### D2 Enclosure and Modular Enclosure dimensions and weight:

- Height: 2U enclosure - 87 mm (3.5 inches)
- Depth: 892 mm (35.1 inches)
- Width: 488 mm (19.3 inches)
- Weight:
  - Minimum configuration (with one minimally configured node): 22.4 kg (49.4 lbs)
  - Maximum configuration (with four fully configured nodes): 55.0 kg (121.2 lbs)

### SD530 dimensions and weight:

- Height: 41 mm (1.7 inches)
- Depth: 562 mm (22.2 inches)
- Width: 222 mm (8.8 inches)
- Weight:
  - Minimum weight: 3.5 kg (7.8 lb)
  - Maximum weight: 7.5 kg (16.6 lb)

### Electrical input for the D2 Enclosure and Modular Enclosure:

- Models with 2000 W AC power supplies:
  - 200 - 240 (nominal) V AC; 50 Hz or 60 Hz; 9.9 A
  - Input kilovolt-amperes (kVA) (approximately):
    - Minimum configuration: 0.17 kVA
    - Maximum configuration: 2.1 kVA
- Models with 1600 W AC power supplies:
  - 200 - 240 (nominal) V AC; 50 Hz or 60 Hz; 7.8 A
  - Input kilovolt-amperes (kVA) (approximately):
    - Minimum configuration: 0.16 kVA
    - Maximum configuration: 1.7 kVA
- Models with 1100 W AC power supplies:
  - 100 - 127 (nominal) V AC; 50 Hz or 60 Hz; 11.9 A
  - 200 - 240 (nominal) V AC; 50 Hz or 60 Hz; 5.4 A
  - Input kilovolt-amperes (kVA) (approximately):
    - Minimum configuration: 0.12 kVA
    - Maximum configuration: 1.2 kVA

240V DC support for China customers only:

- Models with 2000 W 240V DC power supplies:
  - 200 - 240 (nominal) V dc; 9.1 A
  - Input kilovolt-amperes (kVA) (approximately):
    - Minimum configuration: 0.16 kVA
    - Maximum configuration: 2.2 kVA
- Models with 1600 W 240V DC power supplies:
  - 200 - 240 (nominal) V dc; 8.6 A
  - Input kilovolt-amperes (kVA) (approximately):
    - Minimum configuration: 0.15 kVA
    - Maximum configuration: 1.7 kVA

- Models with 1100 W 240V DC power supplies:
  - 200 - 240 (nominal) V dc; 4.9 A
  - Input kilovolt-amperes (kVA) (approximately):
    - Minimum configuration: 0.15 kVA
    - Maximum configuration: 1.1 kVA

## Operating environment

The SD530 complies with ASHRAE class A2 specifications, and depending on the hardware configuration, the SD530 also supports ASHRAE Class A3 or Class A4 specifications.

To comply with ASHRAE Class A3 and Class A4 specifications, the SD530 needs to meet the following hardware configuration requirements:

- Processor: See the table below for ASHRAE support by processor
- PCIe adapters: The following PCIe adapters are not supported with ASHRAE A3 and A4 specifications:
  - Mellanox Ethernet adapters with active optical cables
  - Flash Storage Adapters
  - GPU adapters
- Power supplies: Two power supplies, either 1600W or 2000W. 1100W power supplies are not supported with ASHRAE A3 and A4

### Environmental information:

The ThinkSystem SD530 and the enclosures are supported in the following environment:

- Air temperature:
  - Power on:
    - ASHRAE Class A2: 10°C to 35°C (50°F to 95°F);  
Above 900 m (2,953 ft), de-rated maximum air temperature 1°C / 300m (984 ft)
    - ASHRAE Class A3: 5°C to 40°C (41°F to 104°F)  
Above 900 m (2,953 ft), de-rated maximum air temperature 1°C / 175m (574 ft)
    - ASHRAE Class A4: 5°C to 45°C (41°F to 113°F)  
Above 900 m (2,953 ft), de-rated maximum air temperature 1°C / 125m (410 ft)
  - Power off (removed from shipping container): 5°C to 45°C (41°F to 113°F)
- Maximum altitude: 3,050 m (10,000 ft)
- Relative Humidity (non-condensing):
  - Power on:
    - ASHRAE Class A2: 8% to 80%, maximum dew point 21°C (70°F)
    - ASHRAE Class A3: 8% to 85%, maximum dew point 24°C (75°F)
    - ASHRAE Class A4: 8% to 90%, maximum dew point 24°C (75°F)
  - Shipment/storage: 8% to 90%

Table 53. Processor support of ASHRAE standards

Description	Supports ASHRAE A2	Supports ASHRAE A3 and A4
Intel Xeon Bronze 3104 6C 85W 1.7GHz Processor	Yes	Yes
Intel Xeon Bronze 3106 8C 85W 1.7GHz Processor	Yes	Yes
Intel Xeon Silver 4108 8C 85W 1.8GHz Processor	Yes	Yes
Intel Xeon Silver 4109T 8C 70W 2.0GHz Processor	Yes	No
Intel Xeon Silver 4110 8C 85W 2.1GHz Processor	Yes	Yes
Intel Xeon Silver 4112 4C 85W 2.6GHz Processor	Yes	Yes



<b>Description</b>	<b>Supports ASHRAE A2</b>	<b>Supports ASHRAE A3 and A4</b>
Intel Xeon Silver 4114 10C 85W 2.2GHz Processor	Yes	Yes
Intel Xeon Silver 4114T 10C 85W 2.2GHz Processor	Yes	No
Intel Xeon Silver 4116 12C 85W 2.1GHz Processor	Yes	Yes
Intel Xeon Silver 4116T 12C 85W 2.1GHz Processor	Yes	No
Intel Xeon Gold 5115 10C 85W 2.4GHz Processor	Yes	Yes
Intel Xeon Gold 5117 14C 105W 2.0GHz Processor	Yes	No
Intel Xeon Gold 5118 12C 105W 2.3GHz Processor	Yes	Yes
Intel Xeon Gold 5119T 14C 85W 1.9GHz Processor	Yes	No
Intel Xeon Gold 5120 14C 105W 2.2GHz Processor	Yes	Yes
Intel Xeon Gold 5120T 14C 105W 2.2GHz Processor	Yes	No
Intel Xeon Gold 5122 4C 105W 3.6GHz Processor	Yes	No
Intel Xeon Gold 6126 12C 125W 2.6GHz Processor	Yes	No
Intel Xeon Gold 6126T 12C 125W 2.6GHz Processor	Yes	No
Intel Xeon Gold 6128 6C 115W 3.4GHz Processor	Yes	No
Intel Xeon Gold 6130 16C 125W 2.1GHz Processor	Yes	No
Intel Xeon Gold 6130T 16C 125W 2.1GHz Processor	Yes	No
Intel Xeon Gold 6132 14C 140W 2.6GHz Processor	Yes	No
Intel Xeon Gold 6134 8C 130W 3.2GHz Processor	Yes	No
Intel Xeon Gold 6134M 8C 130W 3.2GHz Processor	Yes	No
Intel Xeon Gold 6136 12C 150W 3.0GHz Processor	Yes	No
Intel Xeon Gold 6138 20C 125W 2.0GHz Processor	Yes	No
Intel Xeon Gold 6138T 20C 125W 2.0GHz Processor	Yes	No
Intel Xeon Gold 6140 18C 140W 2.3GHz Processor	Yes	No
Intel Xeon Gold 6140M 18C 140W 2.3GHz Processor	Yes	No
Intel Xeon Gold 6142 16C 150W 2.6GHz Processor	Yes	No
Intel Xeon Gold 6142M 16C 150W 2.6GHz Processor	Yes	No
Intel Xeon Gold 6144 8C 150W 3.5GHz Processor	Yes	No
Intel Xeon Gold 6146 12C 165W 3.2GHz Processor	Yes	No
Intel Xeon Gold 6148 20C 150W 2.4GHz Processor	Yes	No
Intel Xeon Gold 6150 18C 165W 2.7GHz Processor	Yes	No
Intel Xeon Gold 6152 22C 140W 2.1GHz Processor	Yes	No
Intel Xeon Gold 6154 18C 200W 3.0GHz Processor	Yes	No
Intel Xeon Platinum 8153 16C 125W 2.0GHz Processor	Yes	No
Intel Xeon Platinum 8156 4C 105W 3.6GHz Processor	Yes	No
Intel Xeon Platinum 8158 12C 150W 3.0GHz Processor	Yes	No
Intel Xeon Platinum 8160 24C 150W 2.1GHz Processor	Yes	No
Intel Xeon Platinum 8160M 24C 150W 2.1GHz Processor	Yes	No
Intel Xeon Platinum 8160T 24C 150W 2.1GHz Processor	Yes	No
Intel Xeon Platinum 8164 26C 150W 2.0GHz Processor	Yes	No
Intel Xeon Platinum 8168 24C 205W 2.7GHz Processor	Yes	No
Intel Xeon Platinum 8170 26C 165W 2.1GHz Processor	Yes	No

Description	Supports ASHRAE A2	Supports ASHRAE A3 and A4
Intel Xeon Platinum 8170M 26C 165W 2.1GHz Processor	Yes	No
Intel Xeon Platinum 8176 28C 165W 2.1GHz Processor	Yes	No
Intel Xeon Platinum 8176M 28C 165W 2.1GHz Processor	Yes	No
Intel Xeon Platinum 8180 28C 205W 2.5GHz Processor	Yes	No
Intel Xeon Platinum 8180M 28C 205W 2.5GHz Processor	Yes	No

### Acoustical noise emissions:

With the maximum configuration of four nodes with two processors installed, full memory installed, full hard disk drives installed, and two 2000W power supplies installed:

- Operation: 6.8 bels
- Idle: 6.2 bels

### Heat output:

Approximate, based on two 2000W power supplies:

- Minimum configuration (with one minimally configured node): 604.1 BTU per hour (177 watts)
- Maximum configuration (with four fully configured nodes): 7564.4 BTU per hour (2610 watts)

### 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

### Warranty options

The SD530, D2 Enclosure and Modular Enclosure all have a 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.

Also available are Lenovo Services warranty maintenance upgrades and post-warranty maintenance agreements, with a predefined scope of services, including service hours, response time, term of service, and service agreement terms and conditions.

Lenovo warranty service upgrade offerings are country-specific. Not all warranty service upgrades are available in every country. For more information about Lenovo warranty service upgrade offerings that are available in your country, go to the Data Center Advisor and Configurator (formerly known as LESC) website <http://lesc.lenovo.com>, then do the following:

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

The following table explains warranty service definitions in more detail.

Table 54. Warranty service definitions

Term	Description
Onsite Service	If a problem with your product cannot be resolved via telephone, a Service Technician will be dispatched to arrive at your location.
Parts Delivered	If a problem with your product cannot be resolved via telephone and a CRU part is required, Lenovo will send a replacement CRU to arrive at your location. If a problem with your product cannot be resolved via telephone and a FRU part is required, a Service Technician will be dispatched to arrive at your location.
Technician Installed Parts	If a problem with your product cannot be resolved via telephone, a Service Technician will be dispatched to arrive at your location.
Hours of coverage	<ul style="list-style-type: none"> <li>• 9x5: 9 hours/day, 5 days/week, during normal business hours, excluding local public &amp; national holidays</li> <li>• 24x7: 24 hours per day, 7 days per week, 365 days per year.</li> </ul>
Response time target	2 hours, 4 hours, or Next Business Day: The time period from when the telephone based troubleshooting is completed and logged, to the delivery of the CRU or arrival of a Service Technician and part at the Customer's location for repair.
Committed Repair	6 hours: The time period between the service request registration in Lenovo's call management system and the restoration of the product to conformance with its specification by a Service Technician.

The following Lenovo warranty service upgrades are available:

- Warranty and maintenance service upgrades:
  - Three, four, or five years of 9x5 or 24x7 service coverage
  - Parts delivered or technician installed parts from next business day to 4 or 2 hours
  - Committed repair service
  - Warranty extension of up to 5 years
  - Post warranty extensions
- Committed Repair Service
 

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

  - Priority handling to meet defined time frames to restore the failing machine to good working condition
  - 24x7x6 committed repair: Service performed 24 hours per day, 7 days per week, within 6 hours

- **YourDrive YourData**

Lenovo's YourDrive YourData service 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 with Lenovo warranty upgrades and extensions.

- **Microcode Support**

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

- **Enterprise Software Support**

Lenovo Enterprise Server Software Support can help you troubleshoot your entire server software stack. Choose support for server operating systems from Microsoft, Red Hat, SUSE, and VMware; Microsoft server applications; or both operating systems and applications. Support staff can help answer troubleshooting and diagnostic questions, address product compatibility and interoperability issues, isolate causes of problems, report defects to software vendors, and more.

In addition, you can access hardware "how to" support for ThinkSystem servers. Staff can help resolve hardware problems not covered under warranty, refer you to the right documentation and publications, provide corrective service information for known defects, and transfer you to a hardware support call center if needed.

- **Hardware Installation Services**

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. Your new systems will be configured and ready for your software installation.

## **Regulatory compliance**

The ThinkSystem SD530 server conforms or there are plans for the server to conform to the following international standards:

- UL/IEC 60950-1
- IEC 60950-1 (CB Certificate and CB Test Report)
- FCC - Verified to comply with Part 15 of the FCC Rules, Class A
- Canada ICES-003, issue 6, Class A
- CSA C22.2 No. 60950-1
- CISPR 22, Class A
- Japan VCCI, Class A
- Taiwan BSMI CNS13438, Class A; CNS14336-1
- CE Mark (EN55022 Class A, EN60950-1, EN55024, and EN61000-3-2, EN61000-3-3)
- Korea KN32, Class A, KN35
- Australia/New Zealand AS/NZS CISPR 32, Class A; AS/NZS 60950.1
- China CELP certificate, HJ 2507-2011
- UL Green Guard, UL2819
- Energy Star 2.1

The D2 Enclosure and Modular Enclosure conform or there are plans for the enclosures to conform to the following international standards:

- UL/IEC 60950-1
- Canada ICES-003, issue 6, Class A
- CSA C22.2 No. 60950-1
- FCC - Verified to comply with Part 15 of the FCC Rules, Class A
- Argentina IEC60950-1
- Japan VCCI, Class A
- IEC 60950-1 (CB Certificate and CB Test Report)
- China CCC GB4943.1, GB9254, Class A, and GB17625.1
- Australia/New Zealand AS/NZS CISPR 32, Class A; AS/NZS 60950.1
- Korea KN32, Class A, KN35
- Russia, Belorussia and Kazakhstan, EAC: TP TC 004/2011(for Safety); TP TC 020/2011(for EMC).
- Mexico NOM-019
- CE Mark (EN55022 Class A, EN60950-1, EN55024, and EN61000-3-2, EN61000-3-3)
- CISPR 22, Class A
- TUV-GS (EN60950-1/IEC 60950-1, and EK1-ITB2000)
- UL Green Guard, UL2819
- China CELP certificate, HJ 2507-2011

## External drive enclosures

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

The following table lists the standard models of the D1212 and D1224 12 Gbps SAS external drive enclosures offered by Lenovo that can be used with the server for storage expansion.

Table 55. D1212 and D1224 standard models

Part number	Description
LFF models	
4587A11*	D1212 LFF Chassis, Dual 3-port ESMs (US English documentation)
4587A1C^	D1212 LFF Chassis, Dual 3-port ESMs (Simplified Chinese documentation)
4587A1J**	D1212 LFF Chassis, Dual 3-port ESMs (Japanese documentation)
SFF models	
4587A31*	D1224 SFF Chassis, Dual 3-port ESMs (US English documentation)
4587A3C^	D1224 SFF Chassis, Dual 3-port ESMs (Simplified Chinese documentation)
4587A3J**	D1224 SFF Chassis, Dual 3-port ESMs (Japanese documentation)

\* Available worldwide (except China and Japan)

^ Available only in China

\*\* Available only in Japan

The following table lists the TopSeller models of the D1212 and D1224 12 Gbps SAS external drive enclosures offered by Lenovo that can be used with the server for storage expansion.

Table 56. D1212 and D1224 TopSeller models

Part number	Description
Brazil and Latin America - LFF models	
4587EAU	D1212 LFF Chassis, Dual 3-port ESMs, 4x 2TB 3.5" HDDs, 4x 0.5m SAS cables
4587EBU	D1212 LFF Chassis, Dual 3-port ESMs, 4x 4TB 3.5" HDDs, 4x 0.5m SAS cables
4587ECU	D1212 LFF Chassis, Dual 3-port ESMs, 4x 6TB 3.5" HDDs, 4x 0.5m SAS cables
4587EDU	D1212 LFF Chassis, Dual 3-port ESMs, 4x 8TB 3.5" HDDs, 4x 0.5m SAS cables
4587EEU	D1212 LFF Chassis, Dual 3-port ESMs, 8x 2TB 3.5" HDDs, 4x 0.5m SAS cables
4587EFU	D1212 LFF Chassis, Dual 3-port ESMs, 8x 4TB 3.5" HDDs, 4x 0.5m SAS cables
4587EGU	D1212 LFF Chassis, Dual 3-port ESMs, 8x 6TB 3.5" HDDs, 4x 0.5m SAS cables
4587EHU	D1212 LFF Chassis, Dual 3-port ESMs, 8x 8TB 3.5" HDDs, 4x 0.5m SAS cables
4587EIU	D1212 LFF Chassis, Dual 3-port ESMs, 12x 2TB 3.5" HDDs, 4x 0.5m SAS cables
4587EJU	D1212 LFF Chassis, Dual 3-port ESMs, 12x 4TB 3.5" HDDs, 4x 0.5m SAS cables
4587EKU	D1212 LFF Chassis, Dual 3-port ESMs, 12x 6TB 3.5" HDDs, 4x 0.5m SAS cables
4587ELU	D1212 LFF Chassis, Dual 3-port ESMs, 12x 8TB 3.5" HDDs, 4x 0.5m SAS cables
Brazil and Latin America - SFF models	
4587E6U	D1224 SFF Chassis, Dual 3-port ESMs, 9x 1.2TB 10K HDDs, 4x 0.5m SAS cables
4587E2U	D1224 SFF Chassis, Dual 3-port ESMs, 9x 1.2TB 10K HDDs, 2x 400GB SSDs, 4x 0.5m SAS cables
4587E4U	D1224 SFF Chassis, Dual 3-port ESMs, 9x 1.2TB 10K HDDs, 4x 400GB SSDs, 4x 0.5m SAS cables
4587E5U	D1224 SFF Chassis, Dual 3-port ESMs, 18x 1.2TB 10K HDDs, 1x 0.5m SAS cable
4587E1U	D1224 SFF Chassis, Dual 3-port ESMs, 18x 1.2TB 10K HDDs, 2x 400GB SSDs, 4x 0.5m SAS cables
4587E3U	D1224 SFF Chassis, Dual 3-port ESMs, 18x 1.2TB 10K HDDs, 4x 400GB SSDs, 4x 0.5m SAS cables

For details about supported drives and cables for the Lenovo Storage D1212 and D1224, see the Lenovo Press Product Guide:

<http://lenovopress.com/lp0512>

The following table lists the standard models of the D3284 12 Gbps SAS external high density drive enclosures offered by Lenovo.

Table 57. D3284 standard models

Description	Part number
Lenovo Storage D3284 4TB x 84 HD Expansion Enclosure	641311F
Lenovo Storage D3284 6TB x 84 HD Expansion Enclosure	641312F
Lenovo Storage D3284 8TB x 84 HD Expansion Enclosure	641313F
Lenovo Storage D3284 10TB x 84 HD Expansion Enclosure	641314F

The following table lists the TopSeller models of the D3284 12 Gbps SAS external high density drive enclosures offered by Lenovo.

Table 58. D3284 TopSeller models

Description	Part number
Lenovo Storage D3284 High Density Expansion Enclosure	6413E5F
Lenovo Storage D3284 4TB x 42 HD Expansion Enclosure	6413E1H
Lenovo Storage D3284 4TB x 84 HD Expansion Enclosure	6413E1F
Lenovo Storage D3284 6TB x 42 HD Expansion Enclosure	6413E2H
Lenovo Storage D3284 6TB x 84 HD Expansion Enclosure	6413E2F
Lenovo Storage D3284 8TB x 42 HD Expansion Enclosure	6413E3H
Lenovo Storage D3284 8TB x 84 HD Expansion Enclosure	6413E3F
Lenovo Storage D3284 10TB x 42 HD Expansion Enclosure	6413E4H
Lenovo Storage D3284 10TB x 84 HD Expansion Enclosure	6413E4F

For details about supported drives, adapters, and cables for the Lenovo Storage D3284, see the Lenovo Press Product Guide:

<http://lenovopress.com/lp0513>

## External storage systems

The following table lists the external storage systems that are currently offered by Lenovo.

**Note:** Information provided in this section is for ordering reference purposes only. End-to-end storage configuration support *must* be verified through the interoperability matrix for a particular storage system that can be found on the Lenovo Data Center Support web site:

<http://datacentersupport.lenovo.com>

Table 59. External storage systems

Description	Part number
Lenovo ThinkSystem DS Series Storage (SAS connectivity)	
Lenovo ThinkSystem DS2200 LFF SAS Dual Controller Unit (US English documentation)	4599A41*
Lenovo ThinkSystem DS2200 LFF SAS Dual Controller Unit (Simplified Chinese documentation)	4599A4C^
Lenovo ThinkSystem DS2200 LFF SAS Dual Controller Unit (Japanese documentation)	4599A4J**
Lenovo ThinkSystem DS2200 SFF SAS Dual Controller Unit (US English documentation)	4599A21*
Lenovo ThinkSystem DS2200 SFF SAS Dual Controller Unit (Simplified Chinese documentation)	4599A2C^
Lenovo ThinkSystem DS2200 SFF SAS Dual Controller Unit (Japanese documentation)	4599A2J**
Lenovo ThinkSystem DS4200 LFF SAS Dual Controller Unit (US English documentation)	4617A41*
Lenovo ThinkSystem DS4200 LFF SAS Dual Controller Unit (Simplified Chinese documentation)	4617A4C^
Lenovo ThinkSystem DS4200 LFF SAS Dual Controller Unit (Japanese documentation)	4617A4J**
Lenovo ThinkSystem DS4200 SFF SAS Dual Controller Unit (US English documentation)	4617A21*
Lenovo ThinkSystem DS4200 SFF SAS Dual Controller Unit (Simplified Chinese documentation)	4617A2C^
Lenovo ThinkSystem DS4200 SFF SAS Dual Controller Unit (Japanese documentation)	4617A2J**
Lenovo ThinkSystem DS6200 SFF SAS Dual Controller Unit (US English documentation)	4619A21*
Lenovo ThinkSystem DS6200 SFF SAS Dual Controller Unit (Simplified Chinese documentation)	4619A2C^
Lenovo ThinkSystem DS6200 SFF SAS Dual Controller Unit (Japanese documentation)	4619A2J**
Lenovo ThinkSystem DS Series Storage (iSCSI or FC connectivity)	

<b>Description</b>	<b>Part number</b>
Lenovo ThinkSystem DS2200 LFF FC/iSCSI Dual Controller Unit (US English documentation)	4599A31*
Lenovo ThinkSystem DS2200 LFF FC/iSCSI Dual Controller Unit (Simplified Chinese documentation)	4599A3C^
Lenovo ThinkSystem DS2200 LFF FC/iSCSI Dual Controller Unit (Japanese documentation)	4599A3J**
Lenovo ThinkSystem DS2200 SFF FC/iSCSI Dual Controller Unit (US English documentation)	4599A11*
Lenovo ThinkSystem DS2200 SFF FC/iSCSI Dual Controller Unit (Simplified Chinese documentation)	4599A1C^
Lenovo ThinkSystem DS2200 SFF FC/iSCSI Dual Controller Unit (Japanese documentation)	4599A1J**
Lenovo ThinkSystem DS4200 LFF FC/iSCSI Dual Controller Unit (US English documentation)	4617A31*
Lenovo ThinkSystem DS4200 LFF FC/iSCSI Dual Controller Unit (Simplified Chinese documentation)	4617A3C^
Lenovo ThinkSystem DS4200 LFF FC/iSCSI Dual Controller Unit (Japanese documentation)	4617A3J**
Lenovo ThinkSystem DS4200 SFF FC/iSCSI Dual Controller Unit (US English documentation)	4617A11*
Lenovo ThinkSystem DS4200 SFF FC/iSCSI Dual Controller Unit (Simplified Chinese documentation)	4617A1C^
Lenovo ThinkSystem DS4200 SFF FC/iSCSI Dual Controller Unit (Japanese documentation)	4617A1J**
Lenovo ThinkSystem DS6200 SFF FC/iSCSI Dual Controller Unit (US English documentation)	4619A11*
Lenovo ThinkSystem DS6200 SFF FC/iSCSI Dual Controller Unit (Simplified Chinese documentation)	4619A1C^
<b>Lenovo Storage V Series (SAS [except V7000/V7000F], iSCSI, or FC connectivity)</b>	
Lenovo Storage V3700 V2 LFF Control Enclosure	6535C1D
Lenovo Storage V3700 V2 LFF Control Enclosure (TopSeller)	6535EC1
Lenovo Storage V3700 V2 SFF Control Enclosure	6535C2D
Lenovo Storage V3700 V2 SFF Control Enclosure (TopSeller)	6535EC2
Lenovo Storage V3700 V2 XP LFF Control Enclosure	6535C3D
Lenovo Storage V3700 V2 XP LFF Control Enclosure (TopSeller)	6535EC3
Lenovo Storage V3700 V2 XP SFF Control Enclosure	6535C4D
Lenovo Storage V3700 V2 XP SFF Control Enclosure (TopSeller)	6535EC4
Lenovo Storage V5030 LFF Control Enclosure 3Yr S&S	6536C12
Lenovo Storage V5030 LFF Control Enclosure 5Yr S&S	6536C32
Lenovo Storage V5030 SFF Control Enclosure 3Yr S&S	6536C22
Lenovo Storage V5030 SFF Control Enclosure 5Yr S&S	6536C42
Lenovo Storage V5030F SFF Control Enclosure 3Yr S&S	6536B1F
Lenovo Storage V5030F SFF Control Enclosure 5Yr S&S	6536B2F
Lenovo Storage V7000 SFF Control Enclosure 3Yr S&S PRC	6538R11^
Lenovo Storage V7000 SFF Control Enclosure 5Yr S&S PRC	6538R21^
Lenovo Storage V7000F SFF Control Enclosure 3Yr S&S PRC	6538R1G^
Lenovo Storage V7000F SFF Control Enclosure 5Yr S&S PRC	6538R2G^
<b>IBM Storwize for Lenovo (SAS [except V7000], iSCSI, or FC connectivity)</b>	
IBM Storwize V3500 3.5-inch Dual Control Storage Controller Unit	6096CU2^
IBM Storwize V3500 2.5-inch Dual Control Storage Controller Unit	6096CU3^
IBM Storwize V7000 SFF Control Enclosure, 3YR SWMA	6195C32†
IBM Storwize V7000 SFF Control Enclosure, 3YR SWMA, LA	6195C3L‡
IBM Storwize V7000 SFF Control Enclosure, 5YR SWMA	6195C52†
IBM Storwize V7000 SFF Control Enclosure, 5YR SWMA, LA	6195C5L‡



\* Available worldwide (except China and Japan).

^ Available only in China.

\*\* Available only in Japan.

† Available worldwide except Latin America.

‡ Available only in Latin America.

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

- Lenovo DS Series and V Series storage:  
<http://lenovopress.com/storage/san/lenovo#rt=product-guide>
- IBM Storwize for Lenovo storage:  
<http://lenovopress.com/storage/san/ibm#rt=product-guide>

## External backup units

The following table lists the supported 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 60. External SAS backup options

Part number	Description
External SAS tape backup drives	
6160S5E	IBM TS2250 Tape Drive Model H5S
6160S6E	IBM TS2260 Tape Drive Model H6S
6160S7E	IBM TS2270 Tape Drive Model H7S
External SAS tape backup autoloaders	
6171S5R	IBM TS2900 Tape Autoloader w/LTO5 HH SAS
6171S6R	IBM TS2900 Tape Autoloader w/LTO6 HH SAS
6171S7R	IBM TS2900 Tape Autoloader w/LTO7 HH SAS
External tape backup libraries	
61732UL	IBM TS3100 Tape Library Model L2U
61734UL	IBM TS3200 Tape Library Model L4U
SAS backup drives for TS3100 and TS3200 Tape Libraries	
00NA109	6173 LTO Ultrium 5 SAS Drive Sled
00NA111	6173 LTO Ultrium 5 Half High SAS Drive Sled
00NA117	6173 LTO Ultrium 6 Half High SAS Drive Sled
00WF767	6173 LTO Ultrium 7 Half High SAS Drive Sled

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

## Top-of-rack Ethernet switches

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

Table 61. Ethernet LAN switches

Part number	Description
1 Gb Ethernet switches	
7165H1X	Juniper EX2300-C PoE Switch
7165H2X	Juniper EX2300-24p PoE Switch
7159BAX	Lenovo RackSwitch G7028 (Rear to Front)
7159CAX	Lenovo RackSwitch G7052 (Rear to Front)
7159G52	Lenovo RackSwitch G8052 (Rear to Front)
10 Gb Ethernet switches	
7159A1X	Lenovo ThinkSystem NE1032 RackSwitch (Rear to Front)
7159B1X	Lenovo ThinkSystem NE1032T RackSwitch (Rear to Front)
7159C1X	Lenovo ThinkSystem NE1072T RackSwitch (Rear to Front)
7159BR6	Lenovo RackSwitch G8124E (Rear to Front)
7159G64	Lenovo RackSwitch G8264 (Rear to Front)
7159DRX	Lenovo RackSwitch G8264CS (Rear to Front)
7159CRW	Lenovo RackSwitch G8272 (Rear to Front)
7159GR6	Lenovo RackSwitch G8296 (Rear to Front)
25 Gb Ethernet switches	
7159E1X	Lenovo ThinkSystem NE2572 RackSwitch (Rear to Front)
40 Gb Ethernet switches	
7159BRX	Lenovo RackSwitch G8332 (Rear to Front)
100 Gb Ethernet switches	
7159D1X	Lenovo ThinkSystem NE10032 RackSwitch (Rear to Front)

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

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

## Fibre Channel SAN switches

The following table lists the Fibre Channel SAN switches that are offered by Lenovo and can be used with this system.

Table 62. Fibre Channel SAN switches

Part number	Description
8 Gb FC	
3873AR3	Lenovo B300, 8 ports activated, 8x 8Gb SWL SFPs, 1 PS, Rail Kit
3873AR4	Lenovo B6505, 12 ports activated, 12x 8Gb SWL SFPs, 1 PS, Rail Kit
3873BR2	Lenovo B6510, 24 ports activated, 24x 8Gb SWL SFPs, 2 PS, Rail Kit
16 Gb FC	
6559D2Y	Lenovo ThinkSystem DB610S, 8 ports activated, 8x 16Gb SWL SFPs, 1 PS, Rail Kit
6559D1Y	Lenovo ThinkSystem DB610S, 24 ports activated, 24x 16Gb SWL SFP, Enterprise SW, 1 PS, Rail Kit
3873AR5	Lenovo B6505, 12 ports activated w/ 16Gb SWL SFPs, 1 PS, Rail Kit
3873BR3	Lenovo B6510, 24 ports activated w/ 16Gb SWL SFPs, 2 PS, Rail Kit
32 Gb FC	
6559D3Y	Lenovo ThinkSystem DB610S, 8 ports activated, 1 PS, Rail Kit
6415G3A	Lenovo ThinkSystem DB620S, 24 ports activated, No SFPs, 2 PS, Rail Kit
6415G11	Lenovo ThinkSystem DB620S, 24 Ports Activated, 24x 32Gb SWL SFPs, 2 PS, Rail Kit
6415G2A	Lenovo ThinkSystem DB620S, 48 Ports Activated, 48x 32Gb SWL SFPs, 2 PS, Rail Kit
6684B2A	Lenovo ThinkSystem DB400D 32Gb FC Director, up to 192 ports, 8U, Enterprise SW
6682B1A	Lenovo ThinkSystem DB800D 32Gb FC Director, up to 384 ports, 14U, Enterprise SW

For more information, see the list of Product Guides in the Rack SAN Switches category:  
<http://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 63. Uninterruptible power supply units

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

† Only available in China and countries in the Asia Pacific region.

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 64. Power distribution units

Part number	Description
0U Basic PDUs	
00YJ776	0U 36 C13/6 C19 24A/200-240V 1 Phase PDU with NEMA L6-30P line cord
00YJ777	0U 36 C13/6 C19 32A/200-240V 1 Phase PDU with IEC60309 332P6 line cord
00YJ778	0U 21 C13/12 C19 32A/200-240V/346-415V 3 Phase PDU with IEC60309 532P6 line cord
00YJ779	0U 21 C13/12 C19 48A/200-240V 3 Phase PDU with IEC60309 460P9 line cord
Switched and Monitored PDUs	
00YJ780	0U 20 C13/4 C19 Switched and Monitored 32A/200-240V/1Ph PDU w/ IEC60309 332P6 line cord
00YJ781	0U 20 C13/4 C19 Switched and Monitored 24A/200-240V/1Ph PDU w/ NEMA L6-30P line cord
00YJ782	0U 18 C13/6 C19 Switched / Monitored 32A/200-240V/346-415V/3Ph PDU w/ IEC60309 532P6 cord

Part number	Description
00YJ783	0U 12 C13/12 C19 Switched and Monitored 48A/200-240V/3Ph PDU w/ IEC60309 460P9 line cord
46M4002	1U 9 C19/3 C13 Switched and Monitored DPI PDU (without line cord)
46M4003	1U 9 C19/3 C13 Switched and Monitored 60A 3 Phase PDU with IEC 309 3P+Gnd line cord
46M4004	1U 12 C13 Switched and Monitored DPI PDU (without line cord)
46M4005	1U 12 C13 Switched and Monitored 60A 3 Phase PDU with IEC 309 3P+Gnd line cord
Ultra Density Enterprise PDUs (9x IEC 320 C13 + 3x IEC 320 C19 outlets)	
71762NX	Ultra Density Enterprise C19/C13 PDU Module (without line cord)
71763NU	Ultra Density Enterprise C19/C13 PDU 60A/208V/3ph with IEC 309 3P+Gnd line cord
C13 Enterprise PDUs (12x IEC 320 C13 outlets)	
39M2816	DPI C13 Enterprise PDU+ (without line cord)
39Y8941	DPI Single Phase C13 Enterprise PDU (without line cord)
C19 Enterprise PDUs (6x IEC 320 C19 outlets)	
39Y8948	DPI Single Phase C19 Enterprise PDU (without line cord)
39Y8923	DPI 60A 3 Phase C19 Enterprise PDU with IEC 309 3P+G (208 V) fixed line cord
Front-end PDUs (3x IEC 320 C19 outlets)	
39Y8938	DPI 30amp/125V Front-end PDU with NEMA L5-30P line cord
39Y8939	DPI 30amp/250V Front-end PDU with NEMA L6-30P line cord
39Y8934	DPI 32amp/250V Front-end PDU with IEC 309 2P+Gnd line cord
39Y8940	DPI 60amp/250V Front-end PDU with IEC 309 2P+Gnd line cord
39Y8935	DPI 63amp/250V Front-end PDU with IEC 309 2P+Gnd line cord
NEMA PDUs (6x NEMA 5-15R outlets)	
39Y8905	DPI 100-127V PDU with Fixed NEMA L5-15P line cord
Line cords for PDUs that ship without a line cord	
40K9611	DPI 32a Line Cord (IEC 309 3P+N+G)
40K9612	DPI 32a Line Cord (IEC 309 P+N+G)
40K9613	DPI 63a Cord (IEC 309 P+N+G)
40K9614	DPI 30a Line Cord (NEMA L6-30P)
40K9615	DPI 60a Cord (IEC 309 2P+G)
40K9617	DPI Australian/NZ 3112 Line Cord
40K9618	DPI Korean 8305 Line Cord

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

## Rack cabinets

The following table lists the supported rack cabinets.

Table 65. Supported rack cabinets

Part number	Description	Supports enclosure	Maximum supported	Supports D2 CMA	Supports 0U PDUs
93072PX	25U Static S2 Standard Rack	Yes	11	No	No
93072RX	25U Standard Rack	Yes	11	No	No
93074RX	42U Standard Rack	Yes	20	No	No
93084EX	42U Enterprise Expansion Rack	Yes	17	No	Yes
93084PX	42U Enterprise Rack	Yes	17	No	Yes
93604PX	42U 1200mm Deep Dynamic Rack	Yes	17	Yes	No
93614PX	42U 1200mm Deep Static Rack	Yes	17	Yes	No
93634EX	42U 1100mm Dynamic Expansion Rack	Yes	18	Yes	Yes
93634PX	42U 1100mm Dynamic Rack	Yes	18	Yes	Yes
<b>Withdrawn rack cabinets</b>					
201886X*	11U Office Enablement Kit	No	-	-	-
93074XX*	42U Standard Rack Extension	Yes	20	No	No
93604EX*	42U 1200mm Deep Dynamic Expansion Rack	Yes	17	Yes	No
93614EX*	42U 1200mm Deep Static Expansion Rack	Yes	17	Yes	No
93624EX*	47U 1200mm Deep Static Expansion Rack	No	-	-	-
93624PX*	47U 1200mm Deep Static Rack	No	-	-	-
93634AX*	PureFlex System 42U Rack	No	-	-	-
93634BX*	PureFlex System 42U Expansion Rack	No	-	-	-
93634CX*	PureFlex System 42U Rack	No	-	-	-

\* Withdrawn from marketing

For specifications about these racks, see the Lenovo Rack Cabinet Reference, available from: <https://lenovopress.com/lp0658-lenovo-rack-cabinet-reference>

For more information, see the list of Product Guides in the Rack cabinets category: <https://lenovopress.com/servers/options/racks>

## KVM switches and consoles

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

Table 66. Console keyboards

Part number	Description
<b>Consoles</b>	
17238BX	1U 18.5" Standard Console (without keyboard)
<b>Console keyboards</b>	
7ZB7A05469	ThinkSystem Keyboard w/ Int. Pointing Device USB - Arabic 253 RoHS v2
7ZB7A05468	ThinkSystem Keyboard w/ Int. Pointing Device USB - Belg/UK 120 RoHS v2
7ZB7A05206	ThinkSystem Keyboard w/ Int. Pointing Device USB - Czech 489 RoHS v2

<b>Part number</b>	<b>Description</b>
7ZB7A05207	ThinkSystem Keyboard w/ Int. Pointing Device USB - Danish 159 RoHS v2
7ZB7A05208	ThinkSystem Keyboard w/ Int. Pointing Device USB - Dutch 143 RoHS v2
7ZB7A05210	ThinkSystem Keyboard w/ Int. Pointing Device USB - Fr/Canada 445 RoHS v2
7ZB7A05209	ThinkSystem Keyboard w/ Int. Pointing Device USB - French 189 RoHS v2
7ZB7A05211	ThinkSystem Keyboard w/ Int. Pointing Device USB - German 129 RoHS v2
7ZB7A05212	ThinkSystem Keyboard w/ Int. Pointing Device USB - Greek 219 RoHS v2
7ZB7A05213	ThinkSystem Keyboard w/ Int. Pointing Device USB - Hebrew 212 RoHS v2
7ZB7A05214	ThinkSystem Keyboard w/ Int. Pointing Device USB - Hungarian 208 RoHS v2
7ZB7A05215	ThinkSystem Keyboard w/ Int. Pointing Device USB - Italian 141 RoHS v2
7ZB7A05216	ThinkSystem Keyboard w/ Int. Pointing Device USB - Japanese 194 RoHS v2
7ZB7A05217	ThinkSystem Keyboard w/ Int. Pointing Device USB - Korean 413 RoHS v2
7ZB7A05218	ThinkSystem Keyboard w/ Int. Pointing Device USB - LA Span 171 RoHS v2
7ZB7A05219	ThinkSystem Keyboard w/ Int. Pointing Device USB - Norwegian 155 RoHS v2
7ZB7A05220	ThinkSystem Keyboard w/ Int. Pointing Device USB - Polish 214 RoHS v2
7ZB7A05221	ThinkSystem Keyboard w/ Int. Pointing Device USB - Portugese 163 RoHS v2
7ZB7A05222	ThinkSystem Keyboard w/ Int. Pointing Device USB - Russian 441 RoHS v2
7ZB7A05223	ThinkSystem Keyboard w/ Int. Pointing Device USB - Slovak 245 RoHS v2
7ZB7A05231	ThinkSystem Keyboard w/ Int. Pointing Device USB - Slovenian 234 RoHS v2
7ZB7A05224	ThinkSystem Keyboard w/ Int. Pointing Device USB - Spanish 172 RoHS v2
7ZB7A05225	ThinkSystem Keyboard w/ Int. Pointing Device USB - Swed/Finn 153 RoHS v2
7ZB7A05226	ThinkSystem Keyboard w/ Int. Pointing Device USB - Swiss F/G 150 RoHS v2
7ZB7A05227	ThinkSystem Keyboard w/ Int. Pointing Device USB - Thai 191 RoHS v2
7ZB7A05467	ThinkSystem Keyboard w/ Int. Pointing Device USB - Trad Chinese/US 467 RoHS v2
7ZB7A05228	ThinkSystem Keyboard w/ Int. Pointing Device USB - Turkish 179 RoHS v2
7ZB7A05229	ThinkSystem Keyboard w/ Int. Pointing Device USB - UK Eng 166 RoHS v2
7ZB7A05470	ThinkSystem Keyboard w/ Int. Pointing Device USB - US Eng 103P RoHS v2
7ZB7A05230	ThinkSystem Keyboard w/ Int. Pointing Device USB - US Euro 103P RoHS v2
<b>ThinkSystem Digital and Analog KVM Console switches and cables</b>	
1754D1T	ThinkSystem Digital 2x1x16 KVM Switch (DVI video output port)
1754A1T	ThinkSystem Analog 1x8 KVM Switch (DVI video output port)
4X97A11108	ThinkSystem VGA to DVI Conversion Cable
4X97A11109	ThinkSystem Single-USB Conversion Cable for Digital KVM
4X97A11107	ThinkSystem Dual-USB Conversion Cable for Digital KVM
4X97A11106	ThinkSystem USB Conversion Cable for Analog KVM
<b>GCM and LCM Console switches and cables</b>	
1754D2X	Global 4x2x32 Console Manager (GCM32)
1754D1X	Global 2x2x16 Console Manager (GCM16)
1754A2X	Local 2x16 Console Manager (LCM16)
1754A1X	Local 1x8 Console Manager (LCM8)
43V6147	Single Cable USB Conversion Option (UCO)
39M2895	USB Conversion Option (4 Pack UCO)

Part number	Description
46M5383	Virtual Media Conversion Option Gen2 (VCO2)
46M5382	Serial Conversion Option (SCO)

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

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## Related publications and links

For more information, see these resources:

- ThinkSystem SD530 product page  
<http://www3.lenovo.com/us/en/p/77XX7DSSD53>
- Interactive 3D Tour of the ThinkSystem SD530:  
<http://lenovopress.com/LP0667>
- Lenovo Press walk-through video of the ThinkSystem SD530:  
<http://lenovopress.com/LP0704>
- ThinkSystem SD530 drivers and support  
<http://datacentersupport.lenovo.com/products/servers/thinksystem/sd530/7x21/downloads>
- Lenovo ThinkSystem SD530 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>
- Lenovo Press paper, *Lenovo ThinkSystem SD530 Performance Considerations with 12 DIMMs and 16 DIMMs*  
<http://lenovopress.com/LP0659>

## Related product families

Product families related to this document are the following:

- [High Density Servers](#)
- [ThinkSystem SD530 Server](#)

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