Lenovo ThinkSystem SD630 V2 Server
Product Guide

The Lenovo ThinkSystem SD630 V2 is a dense and economical two-socket server in a 0.5U rack form factor. Combining the efficiency and density of blades with the value and simplicity of rack-based servers, the SD630 V2 delivers a cost-efficient scale-out platform that is thermally designed to deliver maximum performance in the smallest footprint. The solution consists of a 2U ThinkSystem DA240 Enclosure containing up to four front-access SD630 V2 servers (nodes). Each node incorporates two third-generation Intel Xeon Scalable processors.

The SD630 V2 is well suited for workloads ranging from cloud, analytics to AI and high performance computing application like Computer Aided Engineering (CAE) or Electronic Design Automation (EDA).

The following figure shows four ThinkSystem SD630 V2 servers installed in a DA240 Enclosure.

Figure 1. Four ThinkSystem SD630 V2 servers installed in a DA240 Enclosure

Did you know?

The SD630 V2 combines the efficiency and density of blades with the value and simplicity of rack-based servers. With high-performance features such as high-core-count Xeon Platinum processors and high-performance 200Gb Ethernet, HDR InfiniBand and OPA fabrics, to power through your most demanding HPC, technical computing and AI workloads.

Key features

Lenovo ThinkSystem SD630 V2 is based on our fourth generation dense server platform leveraging two 3rd Gen Intel Xeon Scalable processors with NVIDIA HDR InfiniBand networking.

The SD630 V2 is designed to provide highest air-cooled CPU performance density adhering to industry-standards like the 19-inch rack footprint or standard 42U rack heights at 2 meters. To truly support every scale, it is available starting at a single node within a single Enclosure in the rack to thousands of clustered nodes in hundreds of racks in the datacenter.

The front-accessible design optimized for best-in-class thermal capabilities provides a dense, flexible solution with a low TCO. The half-wide, dual-socket server is designed for data centers that require high performance but are constrained by floor space. By taking up less physical space in the data center, the SD630 V2 enhances density and supports the Intel Xeon Scalable Family of processors, including up to an industry-leading 250W TDP.

The ThinkSystem DA240 Enclosure is an efficient, 2U rack mount enclosure with no built-in networking or switching capabilities; therefore, it requires no enclosure-level management. Sensibly designed to provide shared, high-efficiency power and cooling for housed servers, the DA240 enclosure is designed to scale with your business needs.

Scalability and performance

The SD630 V2 server offers numerous features to boost performance, improve scalability, and reduce costs:

- Each SD630 V2 server supports two third-generation Intel Xeon Scalable Family processors, 16 TruDDR4 DIMMs and a PCIe 4.0 x16 slot for high-speed I/O, and up to two drive bays, in a half-wide 1U form factor.

- Up to 4 SD630 V2 servers are installed in the DA240 enclosure, occupying only 2U of rack space. It is a highly dense, scalable, and price-optimized offering.

- Supports two third-generation Intel Xeon Processor Scalable processors
    - Up to 38 cores and 76 threads
    - Core speeds of up to 3.6 GHz
    - TDP ratings of up to 270W

- The next generation of Lenovo Neptune™ Thermal Transfer Module enables market leading TDP support within the dense form factor.

- Support for up to 16 TruDDR4 memory DIMMs operating at up to 3200 MHz means you have the fastest available memory subsystem.

- Each processor supports 8 DIMMs, each with its own memory channel.

- Using 128GB RDIMMs, the server supports up to 2TB of system memory.

- Each SD630 V2 server supports either two 7mm hot-swap SSDs or a single 2.5-inch hot-swap SSD. Drives can be either SATA or high-performance NVMe drives, to maximize I/O performance in terms of throughput, bandwidth, and latency.

- Supports two M.2 drives installed in an adapter for convenient operating system boot functions.

- The use of solid-state drives (SSDs) instead of 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 includes onboard Gigabit and 25 Gb Ethernet ports for cost effective networking. The server also includes a PCIe slot for additional high-speed networking.

- One PCIe 4.0 x16 is standard. For special bid orders, the drive bays can be converted to a second PCIe 4.0 x16 slot for added I/O flexibility.

- The server offers PCI Express 4.0 I/O expansion capabilities that doubles the theoretical maximum bandwidth of PCIe 3.0 (16GT/s in each direction for PCIe 4.0, compared to 8 GT/s with PCIe 3.0). A PCIe 4.0 x16 slot provides 64 GB/s bandwidth, enough to support a 200GbE network connection.

Manageability and security

Powerful systems management features simplify local and remote management of the SD630 V2:

- 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.

- Lenovo XClarity Provisioning Manager, based in UEFI and 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.

- Support for industry standard management protocols, IPMI 2.0, SNMP 3.0, Redfish REST API, serial console via IPMI

- Supports Lenovo Intelligent Computing Orchestration (LiCO), a powerful platform that manages cluster resources for HPC and AI applications. LiCO supports multiple AI frameworks, including TensorFlow, Caffe, Neon, and MXNet, allowing you to leverage a single cluster for diverse workload requirements.

- 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 SSDs and M.2 drives.

- 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 SD630 V2 servers and the enclosure.

- The SMM management module has two Ethernet ports which 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 SD630 V2 servers and enclosures.

Energy efficiency

The SD630 V2 and the DA240 enclosure offer the following energy efficiency features to save energy, reduce operational costs, increase energy availability, and contribute to a green environment:

- ASHRAE A2 compliance for certain configurations to enable operation in 35°C datacenters
- Energy-efficient planar components help lower operational costs.
- High-efficiency power supplies with 80 PLUS Platinum certifications.
- Next Generation Lenovo Neptune™ Thermal Transfer Module for efficient aircooling of the CPUs.
- Intel Intelligent Power Capability powers individual processor elements on and off as needed to reduce power draw.
- 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.
- Lenovo power/energy meter based on TI INA226 measures DC power both for the CPU as well as the GPU board at higher than 97% accuracy and 100 Hz sampling frequency to the XCC and can be leveraged both in-band and out-of-band using IPMI raw commands.
- Optional Energy Aware Runtime provides sophisticated power monitoring and energy optimization on a job-level during the application runtime without impacting performance negatively.

Availability and serviceability

The SD630 V2 server and the DA240 enclosure provide many features to simplify serviceability and increase system uptime:

- Designed to run 24 hours a day, 7 days a week
- The server offers Single Device Data Correction (SDDC, also known as Chipkill), Adaptive Double-Device Data Correction (ADDDC, also known as Redundant Bit Steering or RBS) and memory mirroring 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 DA240 Enclosure supports 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 or tablet and connected to the server through the service-enabled USB port, enables additional local systems management functions.
- 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 DA240 Enclosure. The front view shows the four SD630 V2 nodes.

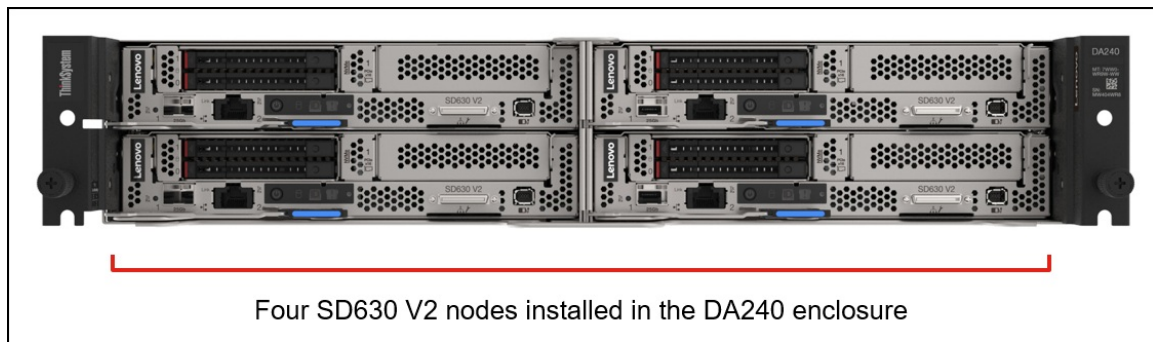Four SD630 V2 nodes installed in the DA240 enclosure

Figure 2. Front view of the ThinkSystem DA240 Enclosure

The following figure shows the rear of the DA240 Enclosure.
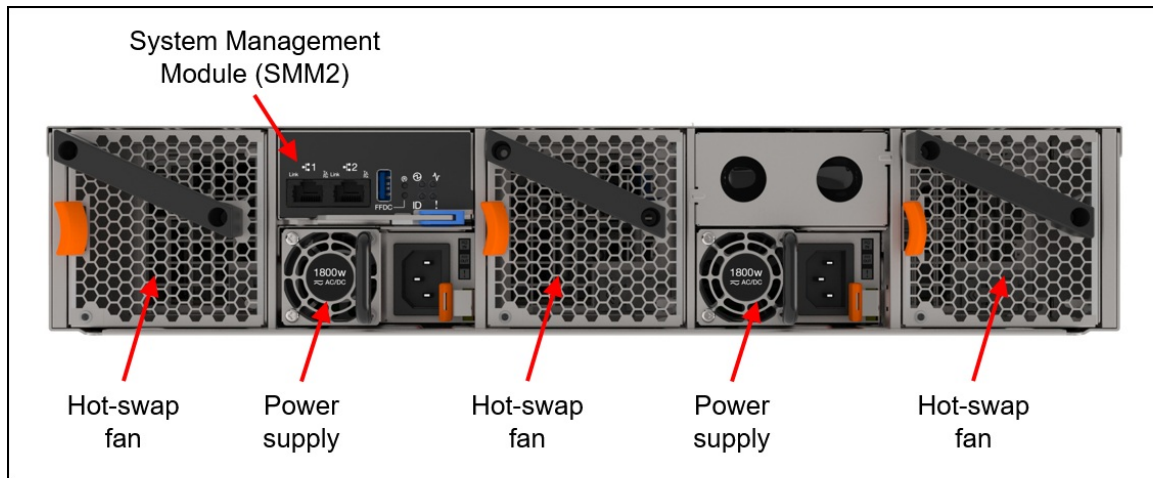

Figure 3. Rear view of the ThinkSystem DA240 Enclosure

The following figure shows the front of the SD630 V2 server.
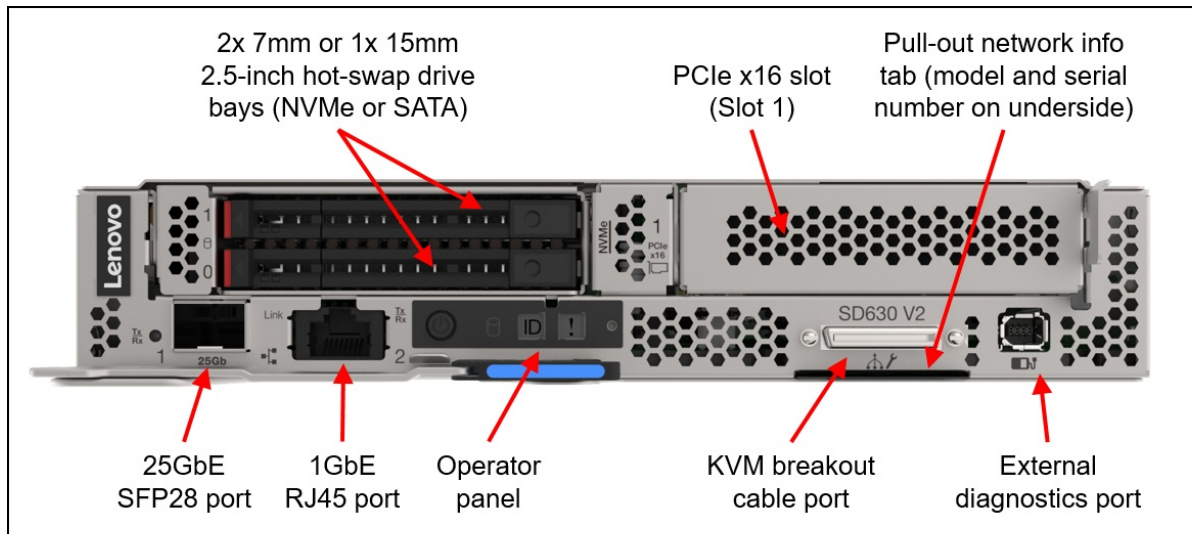

Figure 4. Front view of the SD630 V2 node

The following figure shows the internals of the SD630 V2 server identifying key components.
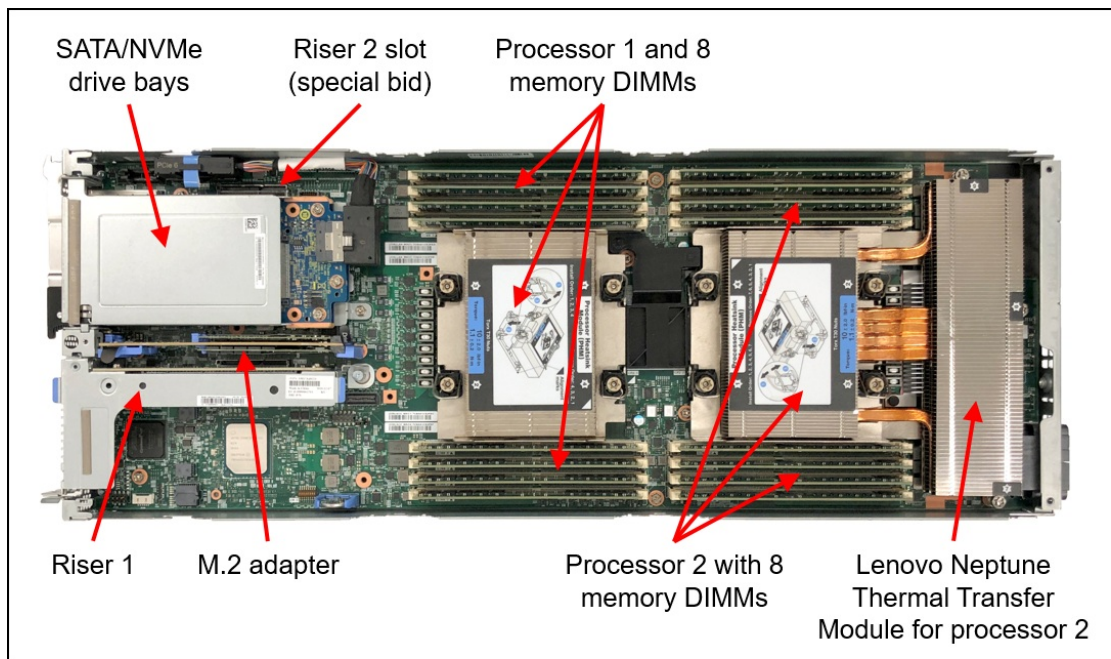

Figure 5. Internal view of the SD630 V2 compute node

System architecture

The following figure shows the architectural block diagram of the SD630 V2, showing the major components and their connections.
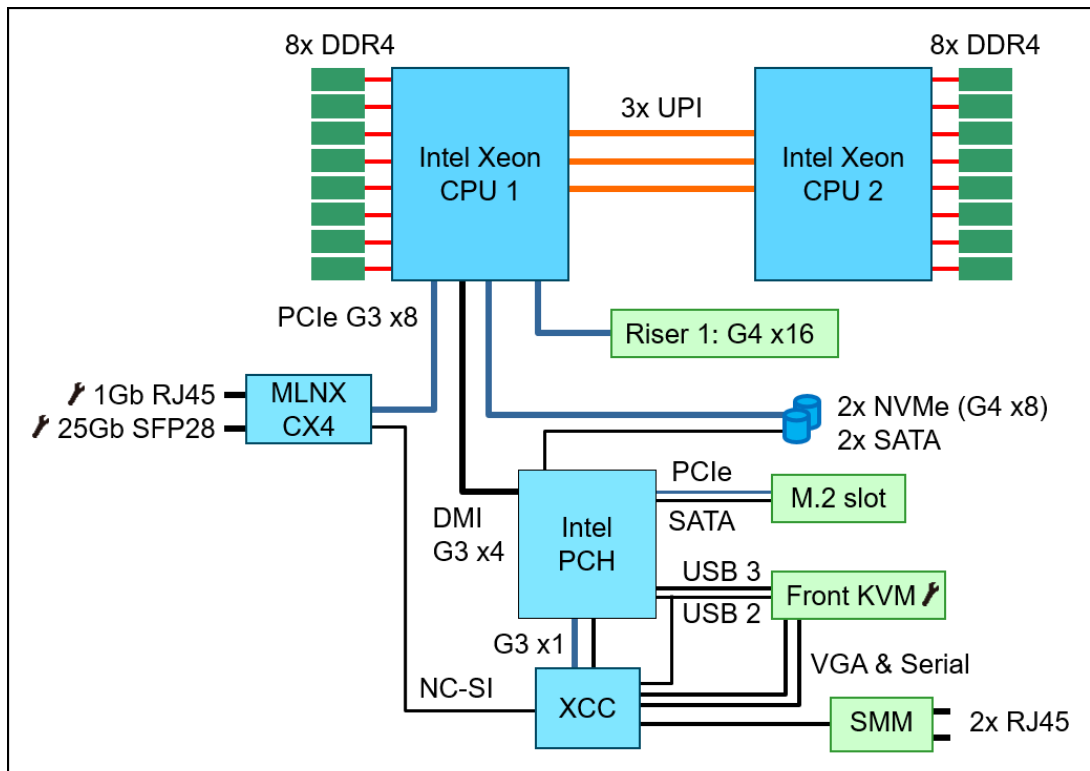

Figure 6. SD630 V2 system architectural block diagram

Standard specifications - SD630 V2 server

The following table lists the standard specifications of the SD630 V2.

Table 1. Standard specifications - ThinkSystem SD630 V2

Components	Specification
Machine type	7D1K - 3 year warranty
Form factor	Half-wide, 1U compute node.
Supported enclosure	ThinkSystem DA240 Enclosure, 2U high; up to 4 servers per enclosure.
Processor	Two third-generation Intel Xeon Scalable processor (formerly codenamed "Ice Lake"). Supports processors up to 36 cores, core speeds of up to 3.6 GHz, and TDP ratings of up to 250W.
Chipset	Intel C621A "Lewisburg" chipset, part of the platform codenamed "Whitley"
Memory	16 DIMM slots with two processors (8 DIMM slots per processor). Each processor has 8 memory channels, with 1 DIMM per channel (DPC). Lenovo TruDDR4 RDIMMs and 3DS RDIMMs are supported. DIMMs operate at up to 3200 MHz.
Persistent memory	Not supported
Memory maximums	Up to 2TB by using 16x 128GB 3DS RDIMMs

Components	Specification
Memory protection	ECC, SDDC (for x4-based memory DIMMs), ADDDC (for x4-based memory DIMMs, requires Intel Xeon Gold or Platinum processors) and memory mirroring.
Drive bays	The server supports one of the following: • 2x 7mm 2.5-inch drive bays supporting SATA or NVMe drives (configurations with 1x PCIe slot) • 1x 15mm 2.5-inch drive bay supporting an NVMe drive (configurations with 1x PCIe slot) Support for up to two M.2 SSDs on an M.2 adapter.

Maximum internal storage	• 7mm drives
	  ○ 960GB using 2x 480GB 7mm SATA SSDs
	  ○ 15.36TB using 2x 7.68TB 7mm SSDs
	• 15mm drives
	  ○ 15.36TB using 1x 15.36TB 2.5-inch NVMe SSDs

Storage controller	• 2x Onboard SATA ports (Intel VROC SATA RAID, formerly known as Intel RSTe RAID) • 2x Onboard NVMe ports (includes Intel VROC NVMe RAID for Intel SSDs; optional license for non-Intel SSDs)
Optical drive bays	No internal bays; use an external USB drive.
Tape drive bays	No internal bays. Use an external USB drive.
Network interfaces	Onboard 1 Gb Ethernet RJ45 and 25 Gb Ethernet SFP28 connectors, based on Mellanox ConnectX-4 controller. One of these ports can optionally be shared with the XClarity Controller (XCC) management processor for Wake-on-LAN (WoL) and NC-SI support.
PCIe slots	One PCIe 4.0 x16 slot with low profile form factor. For special bid configurations, the server supports an additional PCIe 4.0 x16 low-profile slot in lieu of the internal drive bays.
GPU support	No support.
Ports	Front: External diagnostics port, local console connector (for a breakout cable that provides one VGA port, one USB 3.1 G1 port and one DB9 serial port for local connectivity). Additional ports provided by the enclosure as described in the Enclosure specifications section.
Cooling	Supplied by the DA240 enclosure.
Power supply	Supplied by the DA240 enclosure.
Hot-swap parts	Drives
Systems management	Operator panel with status LEDs. Optional External Diagnostics Handset with LCD display. XClarity Controller (XCC) embedded management, XClarity Administrator centralized infrastructure delivery, XClarity Integrator plugins, and XClarity Energy Manager centralized server power management. Optional XClarity Controller Advanced and Enterprise to enable remote control functions. Lenovo power/energy meter based on TI INA226 for 100Hz power measurements with >97% accuracy. System Management Module (SMM2) in the DA240 Enclosure provides additional systems management functions.
Video	Matrox G200 graphics with 16 MB memory with 2D hardware accelerator, integrated into the XClarity Controller. Maximum resolution is 1920x1200 32bpp at 60Hz.

Components	Specification
Security	Power-on password, administrator's password, Trusted Platform Module (TPM), supporting TPM 2.0. In China only, optional Nationz TPM 2.0.
Operating systems supported	Microsoft Windows Server, Red Hat Enterprise Linux, SUSE Linux Enterprise Server, VMware ESXi. See the Operating system support section for specifics.
Limited warranty	Three-year 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.
Ambient temperature	Up to ASHRAE Class A2: 10°C - 35°C (50°F - 95°F)
Dimensions	Width: 215 mm (8.5 inches), height: 41 mm (1.6 inches), depth 608 mm (24 inches)
Weight	Minimum: 3.9 kg (8.6 lb), maximum: 6.4 kg (14.1 lb)

Standard specifications - DA240 enclosure

The SD630 V2 servers are supported in the ThinkSystem DA240 Enclosure. The following table lists the standard specifications of the enclosure.

Table 2. Standard specifications: DA240 Enclosure

Components	Specification
Machine type	7D1J - 3 year warranty
Form factor	2U rack-mounted enclosure.
Server support	Up to four SD630 V2 servers per enclosure.
Servers per 42U rack	Up to 84 servers in 21 enclosures per 42U rack Up to 96 servers in 24 enclosures per 48U rack
Midplane	Passive midplane provides connections to the servers in the front to the power supplies and fans at the rear. Provides signals to control fan speed, power consumption, and node throttling as needed.
System Management Module	The hot-swappable System Management Module (SMM2) 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. The SMM has two Ethernet ports which enables 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 SD630 V2 servers and enclosures.
Ports	Two RJ45 port on the rear of the enclosure for 10/100/1000 Ethernet connectivity to the SMM for power and cooling management.
I/O architecture	None integrated. Use top-of-rack networking and storage switches.
Power supplies	Two hot-swap power supplies, either 1800 W or 2400 W, functioning as a redundant pair. Power supplies must be identical. Power supplies require a 200-240 V ac, 50 or 60 Hz supply. Power supplies are installed at the rear of the enclosure. 80 PLUS Platinum certified. Built-in overload and surge protection.
Power cords	One AC power cord for each power supply, C13 or C19 depending on the power supplies selected

Components	Specification
Cooling	Up to three 80mm hot-swap fans, N+1 redundant
Enclosure LEDs	SMM has four LEDs: system error, identification, status, and system power. Each power supply has AC, DC and error LEDs. Servers have more LEDs.
Hot-swap parts	Power supplies, fans, System Management Module
Limited warranty	Three-year customer-replaceable unit and onsite limited warranty with 9x5/NBD coverage.
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.
Ambient temperature	10°C - 35°C (50°F - 95°F) (ASHRAE A2 compliant). See the Operating Environment section for more information.
Dimensions	Width: 448 mm (17.6 in.), height: 87 mm (3.4 in.), depth: 922 mm (36.3 in.). See Physical and electrical specifications for details.
Weight	Minimum (with one node): 24.3 kg (53.5 lb) Maximum (with four nodes): 44.2 kg (97.4 lb)

SD630 V2 models

ThinkSystem SD630 V2 models can be configured by using the Lenovo Data Center Solution Configurator (DCSC).

Configure-to-order (CTO) models are used to create models with factory-integrated server customizations. For CTO models, two types of base CTO models are available for the SD630 V2 as listed in the columns in the following table:

- General purpose base CTO models are for general business (non-HPC) and is selectable by choosing **General Purpose** mode in DCSC.
- AI and HPC base models are intended for Artificial Intelligence (AI) and High Performance Computing (HPC) configurations and solutions are enabled using the **AI & HPC Hardware - ThinkSystem Hardware** mode in DCSC. These configurations, along with Lenovo EveryScale Solutions, can also be built using System x and Cluster Solutions Configurator (x-config). **Tip**: Some HPC and AI models are not listed in DCSC and can only be configured in x-config.

Preconfigured server models may also be available for the SD630 V2, however these are region-specific; that is, each region may define their own server models, and not all server models are available in every region.

The following table lists the base CTO models of the ThinkSystem SD630 V2 server.

Table 3. Base CTO models

Machine Type/Model General purpose	Machine Type/Model for AI and HPC	Description
7D1KCTO1WW	7D1KCTOLWW	ThinkSystem SD630 V2 – 3-year warranty

The following table lists the base choices for CTO configurations of the SD630 V2.

Table 4. Base for CTO models

Feature code	Description
BAFQ	ThinkSystem SD630 V2 Base

Enclosure models

Up to four SD630 V2 servers are supported in a DA240 enclosure.

The following table lists the base CTO models of the ThinkSystem SD630 V2 server.

Table 5. Base CTO models for the DA240 enclosure

Description	Machine Type/Model General purpose	Machine Type/Model for HPC and AI
ThinkSystem DA240 Enclosure - 3 year Warranty	7D1JCTO1WW	7D1JCTOLWW

The following table lists the base choices for CTO configurations of the DA240 enclosure.

Table 4. Base for CTO models

Feature code	Description
BAF9	ThinkSystem DA240 Enclosure Base

Tip: If the DA240 enclosure is shipped from the Lenovo factory installed in a rack cabinet, then a shipping bracket (feature BAFK) is included in the order to ensure that the enclosure is secure during shipment.

Processors

The SD630 V2 supports processors in the third-generation Intel Xeon Scalable Processor family. The server supports two processors, however for certain processors, a configuration of a single processor is also supported.

Topics in this section:

- Processor options
- Processor features
- Thermal restrictions by processor
- UEFI operating modes

Processor options

The table below lists the processors that are supported.

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

- M: Media Processing optimized
- N: NFV optimized
- P: High frequency-optimized for IaaS virtualization customers
- Q: Optimized for liquid cooling
- S: Large (512GB) SGX Enclave size
- T: High Tcase
- U: Single socket
- V: High density/low power-optimized for SaaS virtualization customers
- Y: Speed Select

Memory tiers: All processors support up to 6TB of memory. There are no L or M suffix processors.

Tip: In the SD630 V2, processors are CTO only; there are no part numbers for field upgrades.

Table 6. Processor options

Part number	Feature code	Description	Quantity required
CTO only	BB3M	Intel Xeon Gold 5315Y 8C 140W 3.2GHz Processor	2
CTO only	BB30	Intel Xeon Gold 5317 12C 150W 3.0GHz Processor	2
CTO only	BB35	Intel Xeon Gold 5318Y 24C 165W 2.1GHz Processor	2
CTO only	BB2R	Intel Xeon Gold 5320 26C 185W 2.2GHz Processor	2
CTO only	BB4E	Intel Xeon Gold 6326 16C 185W 2.9GHz Processor	2
CTO only	BB3H	Intel Xeon Gold 6330 28C 205W 2.0GHz Processor	2
CTO only	BB3D	Intel Xeon Gold 6334 8C 165W 3.6GHz Processor	1 or 2
CTO only	BB3S	Intel Xeon Gold 6336Y 24C 185W 2.4GHz Processor	1 or 2
CTO only	BB3P	Intel Xeon Gold 6338 32C 205W 2.0GHz Processor	2
CTO only	BB3B	Intel Xeon Gold 6342 24C 230W 2.8GHz Processor	2
CTO only	BB2W	Intel Xeon Gold 6346 16C 205W 3.1GHz Processor	1 or 2
CTO only	BB2L	Intel Xeon Gold 6348 28C 235W 2.6GHz Processor	2
CTO only	BB2U	Intel Xeon Gold 6354 18C 205W 3.0GHz Processor	2
CTO only	BKDB	Intel Xeon Platinum 8352M 32C 185W 2.3GHz Processor	2
CTO only	BB2V	Intel Xeon Platinum 8352Y 32C 205W 2.2GHz Processor	2
CTO only	BB3R	Intel Xeon Platinum 8358 32C 250W 2.6GHz Processor	2
CTO only	BB3A	Intel Xeon Platinum 8358P 32C 240W 2.6GHz Processor	2
CTO only	BB2P	Intel Xeon Platinum 8360Y 36C 250W 2.4GHz Processor	2
CTO only	BB37	Intel Xeon Platinum 8368 38C 270W 2.4GHz Processor	2

Processor features

Supported processors have the following features:

- Third-generation Intel Xeon Scalable processors (formerly codenamed "Ice Lake")
- 10 nm process technology
- 8x DDR4 memory channels

- 64x PCIe 4.0 I/O lanes available for PCIe and NVMe devices
- 1.25 MB L2 cache per core
- 1.5 MB or more L3 cache per core
- Intel Deep Learning Boost, which provides built-in Artificial Intelligence (AI) acceleration with the Vector Neural Network Instruction set (VNNI). DL Boost and VNNI are designed to deliver significant, more efficient Deep Learning (Inference) acceleration for high-performance AI workloads.
- Intel Hyper-Threading Technology, which boosts performance for multithreaded applications by enabling simultaneous multithreading within each processor core, up to two threads per core.
- Intel Turbo Boost Technology 2.0, which allows processor cores to run at maximum speeds during peak workloads by temporarily going beyond processor TDP.
- Intel Virtualization Technology (includes VT-x and VT-d), which integrates hardware-level virtualization hooks that allow operating system vendors to better use the hardware for virtualization workloads.

- Intel Speed Select Technology, supported on some processor models, enables increased core Turbo Boost frequency on specific individual cores to maximize application performance.
- Intel Advanced Vector Extensions 512 (AVX-512), to enable acceleration of enterprise-class workloads, including databases and enterprise resource planning (ERP).
- Up to two Intel AVX-512 Fused-Multiply Add (FMA) units
- Intel SGX (Software Guard Extensions) and Intel TME (Total Memory Encryption) security features
- Two or three Intel Ultra Path Interconnect (UPI) links at up to 11.2 GT/s, to maximize inter-processor communication

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

Abbreviations used in the table:

- TB: Turbo Boost 2.0
- UPI: Ultra Path Interconnect
- TDP: Thermal Design Power
- SGX: Software Guard Extensions
- PMem: Persistent Memory support

Table 7. Processor features

CPU model	Cores/ threads	Core speed (Base / TB max)	L3 cache*	Max memory speed	UPI links & speed	TDP	SGX Enclave Size
5315Y	8 / 16	3.2 GHz / 3.6 GHz	12 MB	2933 MHz	3 / 11.2 GT/s	140W	64 GB
5317	12 / 24	3.0 GHz / 3.6 GHz	18 MB	2933 MHz	3 / 11.2 GT/s	150W	64 GB
5318Y	24 / 48	2.1 GHz / 3.4 GHz	36 MB	2933 MHz	3 / 11.2 GT/s	165W	64 GB
5320	26 / 52	2.2 GHz / 3.4 GHz	39 MB	2933 MHz	3 / 11.2 GT/s	185W	64 GB
6326	16 / 32	2.9 GHz / 3.5 GHz	24 MB	3200 MHz	3 / 11.2 GT/s	185W	64 GB
6330	28 / 56	2.0 GHz / 3.1 GHz	42 MB	2933 MHz	3 / 11.2 GT/s	205W	64 GB
6334	8 / 16	3.6 GHz / 3.7 GHz	18 MB*	3200 MHz	3 / 11.2 GT/s	165W	64 GB
6336Y	24 / 48	2.4 GHz / 3.6 GHz	36 MB	3200 MHz	3 / 11.2 GT/s	185W	64 GB
6338	32 / 64	2.0 GHz / 3.2 GHz	48 MB	3200 MHz	3 / 11.2 GT/s	205W	64 GB
6342	24 / 48	2.8 GHz / 3.5 GHz	36 MB	3200 MHz	3 / 11.2 GT/s	230W	64 GB
6346	16 / 32	3.1 GHz / 3.6 GHz	36 MB*	3200 MHz	3 / 11.2 GT/s	205W	64 GB
6348	28 / 56	2.6 GHz / 3.5 GHz	42 MB	3200 MHz	3 / 11.2 GT/s	235W	64 GB
6354	18 / 36	3.0 GHz / 3.6 GHz	39 MB*	3200 MHz	3 / 11.2 GT/s	205W	64 GB
8352M	32 / 64	2.3 GHz / 3.5 GHz	48 MB	3200 MHz	3 / 11.2 GT/s	185W	64 GB
8352Y	32 / 64	2.2 GHz / 3.4 GHz	48 MB	3200 MHz	3 / 11.2 GT/s	205W	64 GB
8358	32 / 64	2.6 GHz / 3.4 GHz	48 MB	3200 MHz	3 / 11.2 GT/s	250W	64 GB
8358P	32 / 64	2.6 GHz / 3.4 GHz	48 MB	3200 MHz	3 / 11.2 GT/s	240W	8 GB
8360Y	36 / 72	2.4 GHz / 3.5 GHz	54 MB	3200 MHz	3 / 11.2 GT/s	250W	64 GB
8368	38 / 76	2.4 GHz / 3.4 GHz	57 MB	3200 MHz	3 / 11.2 GT/s	270W	512 GB

* L3 cache is 1.5 MB per core or larger. Processors with a larger L3 cache per core are marked with an *

Thermal restrictions by processor

Processors used in the SD630 V2 have the following thermal restrictions:

- When operating above 30°C ambient temperature there may be performance impacts at high utilization for
    - Processors with TDP of 165 watts or lower
- When operating above 25°C ambient temperature there may be performance impacts at high utilization for
    - Processors with TDP of higher than 165 watts
    - Intel Xeon Gold 6334 8C 165W 3.5GHz Processor

UEFI operating modes

The SD630 V2 offers preset operating modes that affect energy consumption and performance. These modes are a collection of predefined low-level UEFI settings that simplify the task of tuning the server to suit your business and workload requirements.

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

Table 8. UEFI operating mode presets in DCSC

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

The preset modes for the SD630 V2 are as follows:

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

For details about these preset modes, and all other performance and power efficiency UEFI settings offered in the SD630 V2, see the paper "Tuning UEFI Settings for Performance and Energy Efficiency on Intel Xeon Scalable Processor-Based ThinkSystem Servers", available from https://lenovopress.lenovo.com/lp1477.

Memory options

The SD630 V2 uses Lenovo TruDDR4 memory and supports 8 DIMMs per processor or 16 DIMMs with two processors installed. Each processor has eight memory channels with one DIMM per channel. With 128 GB 3DS RDIMMs installed, the SD630 V2 supports a total of 2 TB of system memory.

Memory operates at up to 3200 MHz , depending on the memory DIMMs and processor model selected. If the processor selected has a lower memory bus speed, then all DIMMs will operate at that lower speed.

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

Lenovo TruDDR4 memory uses the highest quality components that are sourced from Tier 1 DRAM suppliers and only memory that meets the strict requirements of Lenovo is selected. It is compatibility tested and tuned to maximize performance and reliability. From a service and support standpoint, Lenovo TruDDR4 memory automatically assumes the system warranty, and Lenovo provides service and support worldwide.

Table 9. Memory options

Part number	Feature code	Description	Maximum supported
RDIMMs			
4X77A08632	B963	ThinkSystem 16GB TruDDR4 3200MHz (2Rx8 1.2V) RDIMM	16 (8 per processor)
4X77A08633	B964	ThinkSystem 32GB TruDDR4 3200MHz (2Rx4 1.2V) RDIMM	16 (8 per processor)
4X77A08634	B965	ThinkSystem 32GB TruDDR4 3200MHz (2Rx8 1.2V) RDIMM	16 (8 per processor)
4X77A08635	B966	ThinkSystem 64GB TruDDR4 3200MHz (2Rx4 1.2V) RDIMM	16 (8 per processor)
3DS RDIMMs			
4X77A08636	BA62	ThinkSystem 128GB TruDDR4 3200 MHz (2S2Rx4 1.2V) 3DS RDIMM	16 (8 per processor)

The following rules apply when selecting the memory configuration:

- In the SD630 V2, with 1 processor installed, the following DIMM quantities are supported: 1, 2, 4, 6, and 8. With 2 processors installed, the following quantities are supported: 4, 8, 12, 16. Other quantities are not supported.
- The server supports RDIMMs and 3DS RDIMMs; UDIMMs and LRDIMMs are not supported
- Mixing RDIMMs and 3DS RDIMMs is not supported
- Mixing x4 and x8 DIMMs is supported

For best performance, consider the following:

- Populate memory DIMMs in quantities of 8 per processor, so that all memory channels are used.
- Populate memory channels so they all have the same total memory capacity.
- Ensure all memory controllers on a processor socket have the same DIMM configuration.
- All processor sockets on the same physical server should have the same DIMM configuration.

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)
- Memory mirroring

Note: Memory sparing is not supported

If memory channel mirroring is used, then DIMMs must be installed in pairs or sets of three (minimum of one pair or set of three per processor), and all DIMMs in the pair or set of three must be identical in type and size. 50% of the installed capacity is available to the operating system. Memory rank sparing is not supported.

Internal storage

The SD630 V2 supports one or two hot-swap drive bays, accessible from the front of the server. The server supports either:

- 2x 7mm hot-swap SSDs, either SATA or NVMe
- 1x 2.5-inch hot-swap SSDs, NVMe

The following figure shows the drive bay choices.

2x 7mm 2.5-inch drive bays + 1x PCIe 4.0 x16 slot
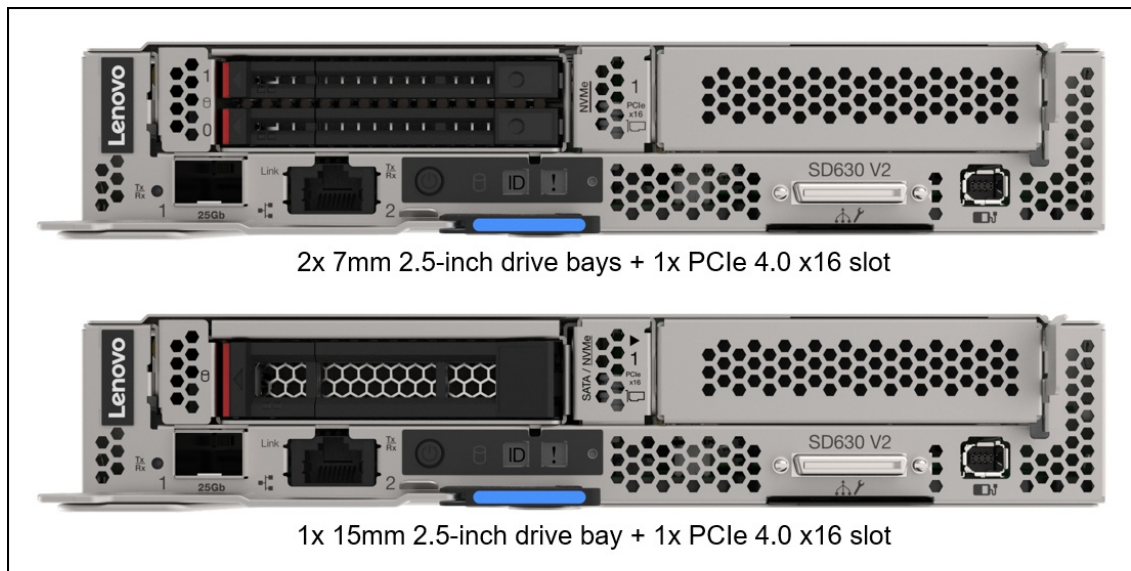
1x 15mm 2.5-inch drive bay + 1x PCIe 4.0 x16 slot

Figure 7. SD630 V2 drive bays

The following table lists the ordering information for the drive bays. Drive bays connect to the onboard SATA and onboard NVMe ports that are connected to the Intel PCH and Processor 1 respectively, as shown in the System architecture section.

Table 10. Drive bays for the SD630 V2

Part number	Feature code	Description
4M17A11749	BAEX	ThinkSystem SD630 V2 2x2.5" 7mm SATA/NVMe Storage Cage (Part number contains two-drive cage, Y-cable for SATA, Y-cable for NVMe)
4M17A11750	BCXG	ThinkSystem SD630 V2 1x2.5" NVMe Storage Cage (Part number contains one-drive cage, NVMe cable)

M.2 drives

The SD630 V2 supports one or two M.2 form-factor SATA or NVMe drives for use as an operating system boot solution. 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.

The ordering information of the M.2 adapter is listed in the following table. Supported drives are listed in the Internal drive options section.

Table 11. M.2 components

Part number	Feature code	Description	Maximum supported
4Y37A09740	B967	ThinkSystem M.2 2-Bay Enablement Kit for Dense Systems	1

The ThinkSystem M.2 SATA/NVMe 2-Bay Enablement Kit for Dense Systems has the following features:

- Supports one or two M.2 drives, either SATA or NVMe
- When two drives installed, they must be either both SATA or both NVMe
- Supports 42mm, 60mm, 80mm and 110mm drive form factors (2242, 2260, 2280 and 22110)
- Either 6Gbps SATA or PCIe 3.0 x1 interface to the drives depending on the drives installed
- Uses the onboard SATA and NVMe controllers of the server
- JBOD native support; no built-in RAID support (RAID can be enabled via Intel VROC)
- Supports monitoring and reporting of events and temperature through I2C
- Firmware update via Lenovo firmware update tools

Controllers for internal storage

The drives of the SD630 V2 are connected to controller on the system board:

- Onboard SATA ports with software RAID support (Intel VROC SATA RAID, formerly known as Intel RSTe)
- Onboard NVMe ports with software RAID support (Intel VROC NVMe RAID)

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

Table 12. Internal Storage adapter support

Part number	Feature code	Description
Onboard SATA - Intel VROC SATA RAID (Intel RSTe)		
None	AVV0	On Board SATA Software RAID Mode
Onboard NVMe - Intel VROC NVMe RAID		
4L47A39164	B96G	Intel VROC (VMD NVMe RAID) Premium (license upgrade - to enable RAID support for non-Intel NVMe SSDs)

The onboard SATA controller has the following features:

- Controller integrated into the Intel PCH
- 6 Gbps SATA host interface
- Supports RAID-0, and RAID-1 with two drives (Intel VROC SATA RAID, previously known as RSTe)
- Supports JBOD

The onboard NVMe support has the following features:

- Controller integrated into the Intel processor
- Each drive has PCIe 4.0 x4 host interface
- Supports JBOD - Intel and non-Intel NVMe SSDs - no license required
- Supports RAID-0 and RAID-1 (Intel VROC NVMe RAID) - Intel NVMe SSDs only

Internal drive options

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

2.5-inch hot-swap drives:

- 2.5-inch hot-swap PCIe 4.0 NVMe SSDs
- 2.5-inch hot-swap PCIe 3.0 NVMe SSDs

2.5-inch 7mm hot-swap drives:

- 7mm 2.5-inch hot-swap 6 Gb SATA SSDs
- 7mm 2.5-inch hot-swap PCIe 4.0 NVMe SSDs
- 7mm 2.5-inch hot-swap PCIe 3.0 NVMe SSDs

M.2 drives:

- M.2 SATA drives

M.2 drive support: The use of M.2 drives requires an additional adapter as described in the M.2 drives subsection.

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

Table 13. 2.5-inch hot-swap PCIe 4.0 NVMe SSDs

Part number	Feature code	Description	SED support	Max Qty
2.5-inch SSDs - U.2 PCIe 4.0 NVMe - Write Intensive/Performance (10+ DWPD)				
4XB7A17158	BKKY	ThinkSystem 2.5" U.2 P5800X 400GB Write Intensive NVMe PCIe 4.0 x4 HS SSD	No	1
4XB7A17159	BKKZ	ThinkSystem 2.5" U.2 P5800X 800GB Write Intensive NVMe PCIe 4.0 x4 HS SSD	No	1
4XB7A17160	BMM8	ThinkSystem 2.5" U.2 P5800X 1.6TB Write Intensive NVMe PCIe 4.0 x4 HS SSD	No	1
2.5-inch SSDs - U.2 PCIe 4.0 NVMe - Mixed Use/Mainstream (3-5 DWPD)				
4XB7A17129	BNEG	ThinkSystem 2.5" U.2 P5620 1.6TB Mixed Use NVMe PCIe 4.0 x4 HS SSD	Support	1
4XB7A17130	BNEH	ThinkSystem 2.5" U.2 P5620 3.2TB Mixed Use NVMe PCIe 4.0 x4 HS SSD	Support	1
4XB7A17133	BNEZ	ThinkSystem 2.5" U.2 P5620 6.4TB Mixed Use NVMe PCIe 4.0 x4 HS SSD	Support	1
4XB7A17136	BA4V	ThinkSystem 2.5" U.2 P5620 12.8TB Mixed Use NVMe PCIe 4.0 x4 HS SSD	Support	1
2.5-inch SSDs - U.3 PCIe 4.0 NVMe - Mixed Use/Mainstream (3-5 DWPD)				
4XB7A79639	BNF1	ThinkSystem 2.5" U.3 7450 MAX 800GB Mixed Use NVMe PCIe 4.0 x4 HS SSD	Support	1
4XB7A13967	BNEJ	ThinkSystem 2.5" U.3 7450 MAX 1.6TB Mixed Use NVMe PCIe 4.0 x4 HS SSD	Support	1
4XB7A13971	BNEL	ThinkSystem 2.5" U.3 7450 MAX 6.4TB Mixed Use NVMe PCIe 4.0 x4 HS SSD	Support	1

Part number	Feature code	Description	SED support	Max Qty
4XB7A84056	BRG0	ThinkSystem 2.5" U.3 7450 MAX 12.8TB Mixed Use NVMe PCIe 4.0 x4 HS SSD	Support	1
2.5-inch SSDs - U.2 PCIe 4.0 NVMe - Read Intensive/Entry (<3 DWPD)				
4XB7A90099	BXMB	ThinkSystem 2.5" U.2 PM9A3 960GB Read Intensive NVMe PCIe 4.0 x4 HS SSD	Support	1
4XB7A90100	BXMA	ThinkSystem 2.5" U.2 PM9A3 1.92TB Read Intensive NVMe PCIe 4.0 x4 HS SSD	Support	1
4XB7A90101	BXM9	ThinkSystem 2.5" U.2 PM9A3 3.84TB Read Intensive NVMe PCIe 4.0 x4 HS SSD	Support	1
4XB7A13941	BMGD	ThinkSystem 2.5" U.2 P5520 1.92TB Read Intensive NVMe PCIe 4.0 x4 HS SSD	Support	1
4XB7A13943	BNEF	ThinkSystem 2.5" U.2 P5520 7.68TB Read Intensive NVMe PCIe 4.0 x4 HS SSD	Support	1
4XB7A13631	BNEQ	ThinkSystem 2.5" U.2 P5520 15.36TB Read Intensive NVMe PCIe 4.0 x4 HS SSD	Support	1
4XB7A17145	BCFT	ThinkSystem 2.5" U.2 P5500 1.92TB Read Intensive NVMe PCIe 4.0 x4 HS SSD	No	1
2.5-inch SSDs - U.3 PCIe 4.0 NVMe - Read Intensive/Entry (<3 DWPD)				
4XB7A79646	BNF3	ThinkSystem 2.5" U.3 7450 PRO 960GB Read Intensive NVMe PCIe 4.0 x4 HS SSD	Support	1
4XB7A79647	BNF2	ThinkSystem 2.5" U.3 7450 PRO 1.92TB Read Intensive NVMe PCIe 4.0 x4 HS SSD	Support	1
4XB7A79648	BNF5	ThinkSystem 2.5" U.3 7450 PRO 3.84TB Read Intensive NVMe PCIe 4.0 x4 HS SSD	Support	1
4XB7A79649	BNF4	ThinkSystem 2.5" U.3 7450 PRO 7.68TB Read Intensive NVMe PCIe 4.0 x4 HS SSD	Support	1
4XB7A83097	BQAV	ThinkSystem 2.5" U.3 7450 PRO 15.36TB Read Intensive NVMe PCIe 4.0 x4 HS SSD	Support	1

Table 14. 2.5-inch hot-swap PCIe 3.0 NVMe SSDs

Part number	Feature code	Description	SED support	Max Qty
2.5-inch SSDs - U.2 PCIe 3.0 NVMe - Write Intensive/Performance (10+ DWPD)				
4XB7A17163	B96L	ThinkSystem 2.5" U.2 P4800X 1.5TB Write Intensive NVMe PCIe 3.0 x4 HS SSD 60DWPD	No	1

Table 15. 7mm 2.5-inch hot-swap 6 Gb SATA SSDs

Part number	Feature code	Description	SED support	Max Qty
7mm 2.5-inch hot-swap SSDs - 6 Gb SATA - Mixed Use/Mainstream (3-5 DWPD)				
4XB7A17131	BM8J	ThinkSystem 7mm S4620 480GB Mixed Use SATA 6Gb HS SSD	No	2
4XB7A78626	BM8F	ThinkSystem 7mm S4620 3.84TB Mixed Use SATA 6Gb HS SSD	No	2
4XB7A17094	BC6F	ThinkSystem 7mm 5300 480GB Mainstream SATA 6Gb Hot Swap SSD	No	2
7mm 2.5-inch hot-swap SSDs - 6 Gb SATA - Read Intensive/Entry (<3 DWPD)				
4XB7A82264	BQ1U	ThinkSystem 7mm 5400 PRO 240GB Read Intensive SATA 6Gb HS SSD	Support	2
4XB7A82265	BQ1V	ThinkSystem 7mm 5400 PRO 480GB Read Intensive SATA 6Gb HS SSD	Support	2
4XB7A82266	BQ1W	ThinkSystem 7mm 5400 PRO 960GB Read Intensive SATA 6Gb HS SSD	Support	2
4XB7A82267	BR13	ThinkSystem 7mm 5400 PRO 1.92TB Read Intensive SATA 6Gb HS SSD	Support	2
4XB7A82268	BR12	ThinkSystem 7mm 5400 PRO 3.84TB Read Intensive SATA 6Gb HS SSD	Support	2
4XB7A82269	BR11	ThinkSystem 7mm 5400 PRO 7.68TB Read Intensive SATA 6Gb HS SSD	Support	2
4XB7A17106	BK79	ThinkSystem 7mm S4520 240GB Read Intensive SATA 6Gb HS SSD	No	2
4XB7A17107	BK7A	ThinkSystem 7mm S4520 480GB Read Intensive SATA 6Gb HS SSD	No	2
4XB7A17108	BK7B	ThinkSystem 7mm S4520 960GB Read Intensive SATA 6Gb HS SSD	No	2
4XB7A78622	BM8E	ThinkSystem 7mm S4520 1.92TB Read Intensive SATA 6Gb HS SSD	No	2
4XB7A78624	BM8C	ThinkSystem 7mm S4520 7.68TB Read Intensive SATA 6Gb HS SSD	No	2
4XB7A38182	B8JT	ThinkSystem 7mm 5300 480GB Entry SATA 6Gb SSD	No	2

Table 16. 7mm 2.5-inch hot-swap PCIe 4.0 NVMe SSDs

Part number	Feature code	Description	SED support	Max Qty
7mm 2.5-inch hot-swap SSDs - PCIe 4.0 NVMe - Read Intensive/Entry (<3 DWPD)				
4XB7A90096	BXMN	ThinkSystem 7mm U.2 PM9A3 960GB Read Intensive NVMe PCIe 4.0 x4 HS SSD	Support	2
4XB7A90097	BXMM	ThinkSystem 7mm U.2 PM9A3 1.92TB Read Intensive NVMe PCIe 4.0 x4 HS SSD	Support	2
4XB7A90098	BXML	ThinkSystem 7mm U.2 PM9A3 3.84TB Read Intensive NVMe PCIe 4.0 x4 HS SSD	Support	2
4XB7A82853	BPZ4	ThinkSystem 7mm U.3 7450 PRO 960GB Read Intensive NVMe PCIe 4.0 x4 HS SSD	Support	2
4XB7A82855	BPZ5	ThinkSystem 7mm U.3 7450 PRO 1.92TB Read Intensive NVMe PCIe 4.0 x4 HS SSD	Support	2
4XB7A82856	BPZ6	ThinkSystem 7mm U.3 7450 PRO 3.84TB Read Intensive NVMe PCIe 4.0 x4 HS SSD	Support	2

Table 17. 7mm 2.5-inch hot-swap PCIe 3.0 NVMe SSDs

Part number	Feature code	Description	SED support	Max Qty
7mm 2.5-inch hot-swap SSDs - PCIe 3.0 NVMe - Read Intensive/Entry (<3 DWPD)				

Table 18. M.2 SATA drives

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

I/O expansion options

The SD630 V2 has one PCIe slot standard, implemented on a riser at the front of the server:

- Slot 1: PCIe 4.0 x16 low-profile slot

Ordering information is listed in the following table.

Table 19. PCIe slot riser

Part number	Feature code	Description
4M17A11751	B95W	ThinkSystem 1U PCIe Riser for Dense Systems

Special bid: Under special bid conditions, the SD630 V2 supports a second PCIe 4.0 x16 low-profile slot in the place of the internal drive bays. Contact your Lenovo representative for details.

Network ports

The SD630 V2 has two dedicated network ports connected to an onboard Mellanox ConnectX-4 Lx controller.

- 25GbE port, implemented with an SFP28 cage for optical or copper connections
- 1GbE port, implemented with an RJ45 port for copper cabling

Locations of these ports is shown in the Components and connectors section. Either onboard port supports NC-SI for remote management. For factory orders, to specify which ports should have NC-SI enabled, use the feature codes listed in the Remote Management section. If neither is chosen, both ports will have NC-SI disabled.

For the specifications of the controller, see the Mellanox ConnectX-4 product guide: https://lenovopress.com/lp0098-mellanox-connectx-4

The following table lists the supported transceivers.

Table 20. Transceivers

Part number	Feature code	Description
10Gb Transceivers		
46C3447	5053	SFP+ SR Transceiver
4TC7A78615	BNDR	ThinkSystem Accelink 10G SR SFP+ Ethernet transceiver
4TC7A90142	BWG5	SFP+ 10G LR Transceiver PRC only (for China only)
25Gb Transceivers		
4M27A67041	BFH2	Lenovo 25Gb SR SFP28 Ethernet Transceiver
7G17A03537	AV1B	Lenovo Dual Rate 10G/25G SR SFP28 Transceiver
4TC7A88638	BYBJ	ThinkSystem Finisar Dual Rate 10G/25G SR SFP28 Transceiver

The following table lists the fiber optic cables and Active Optical Cables that are supported in the 25GbE port.

Table 21. Optical cables

Part number	Feature code	Description
LC-LC OM3 Fiber Optic Cables (these cables require a 10 GbE SFP+ SR or 25 GbE SFP28 SR transceiver)		
00MN499	ASR5	Lenovo 0.5m LC-LC OM3 MMF Cable
00MN502	ASR6	Lenovo 1m LC-LC OM3 MMF Cable
00MN505	ASR7	Lenovo 3m LC-LC OM3 MMF Cable
00MN508	ASR8	Lenovo 5m LC-LC OM3 MMF Cable
00MN511	ASR9	Lenovo 10m LC-LC OM3 MMF Cable
00MN514	ASRA	Lenovo 15m LC-LC OM3 MMF Cable
00MN517	ASRB	Lenovo 25m LC-LC OM3 MMF Cable
00MN520	ASRC	Lenovo 30m LC-LC OM3 MMF Cable
MTP-4xLC OM3 MMF Breakout Cables (these cables require a transceiver)		
00FM412	A5UA	Lenovo 1m MPO-4xLC OM3 MMF Breakout Cable
00FM413	A5UB	Lenovo 3m MPO-4xLC OM3 MMF Breakout Cable
00FM414	A5UC	Lenovo 5m MPO-4xLC OM3 MMF Breakout Cable
SFP+ 10Gb Active Optical Cables		
00YL634	ATYX	Lenovo 1M SFP+ to SFP+ Active Optical Cable
00YL637	ATYY	Lenovo 3M SFP+ to SFP+ Active Optical Cable
00YL640	ATYZ	Lenovo 5M SFP+ to SFP+ Active Optical Cable
00YL643	ATZ0	Lenovo 7M SFP+ to SFP+ Active Optical Cable
00YL646	ATZ1	Lenovo 15M SFP+ to SFP+ Active Optical Cable

Part number	Feature code	Description
00YL649	ATZ2	Lenovo 20M SFP+ to SFP+ Active Optical Cable
SFP28 25Gb Active Optical Cables		
7Z57A03541	AV1F	Lenovo 3m 25G SFP28 Active Optical Cable
7Z57A03542	AV1G	Lenovo 5m 25G SFP28 Active Optical Cable
7Z57A03543	AV1H	Lenovo 10m 25G SFP28 Active Optical Cable
7Z57A03544	AV1J	Lenovo 15m 25G SFP28 Active Optical Cable
7Z57A03545	AV1K	Lenovo 20m 25G SFP28 Active Optical Cable
QSFP28 100Gb Breakout Active Optical Cables		
7Z57A03551	AV1R	Lenovo 3m 100G to 4x25G Breakout Active Optical Cable
7Z57A03552	AV1S	Lenovo 5m 100G to 4x25G Breakout Active Optical Cable
7Z57A03553	AV1T	Lenovo 10m 100G to 4x25G Breakout Active Optical Cable
7Z57A03554	AV1U	Lenovo 15m 100G to 4x25G Breakout Active Optical Cable
7Z57A03555	AV1V	Lenovo 20m 100G to 4x25G Breakout Active Optical Cable
OM4 LC to LC Cables (these cables require a transceiver)		
4Z57A10845	B2P9	Lenovo 0.5m LC-LC OM4 MMF Cable
4Z57A10846	B2PA	Lenovo 1m LC-LC OM4 MMF Cable
4Z57A10847	B2PB	Lenovo 3m LC-LC OM4 MMF Cable
4Z57A10848	B2PC	Lenovo 5m LC-LC OM4 MMF Cable
4Z57A10849	B2PD	Lenovo 10m LC-LC OM4 MMF Cable
4Z57A10850	B2PE	Lenovo 15m LC-LC OM4 MMF Cable
4Z57A10851	B2PF	Lenovo 25m LC-LC OM4 MMF Cable
4Z57A10852	B2PG	Lenovo 30m LC-LC OM4 MMF Cable

The following table lists the direct-attach copper (DAC) cables that are supported in the 25GbE port.

Table 22. Copper cables

Part number	Feature code	Description
SFP+ 10Gb Passive DAC Cables		
00D6288	A3RG	0.5m Passive DAC SFP+ Cable
90Y9427	A1PH	1m Passive DAC SFP+ Cable
00AY764	A51N	1.5m Passive DAC SFP+ Cable
00AY765	A51P	2m Passive DAC SFP+ Cable
90Y9430	A1PJ	3m Passive DAC SFP+ Cable
90Y9433	A1PK	5m Passive DAC SFP+ Cable
00D6151	A3RH	7m Passive DAC SFP+ Cable
SFP28 25Gb Passive DAC Cables		
7Z57A03557	AV1W	Lenovo 1m Passive 25G SFP28 DAC Cable
7Z57A03558	AV1X	Lenovo 3m Passive 25G SFP28 DAC Cable
7Z57A03559	AV1Y	Lenovo 5m Passive 25G SFP28 DAC Cable
QSFP28 100G-to-4x25G Breakout Cables		
7Z57A03564	AV22	Lenovo 1m 100G QSFP28 to 4x25G SFP28 Breakout DAC Cable
7Z57A03565	AV23	Lenovo 3m 100G QSFP28 to 4x25G SFP28 Breakout DAC Cable
7Z57A03566	AV24	Lenovo 5m 100G QSFP28 to 4x25G SFP28 Breakout DAC Cable

Network adapters

The server also supports a network adapter installed in the PCIe slot. The following table lists the supported adapters.

Table 23. PCIe network adapters

Part number	Feature code	Description	Maximum supported
10Gb Ethernet			
7ZT7A00496	AUKP	ThinkSystem Broadcom 57416 10GBASE-T 2-Port PCIe Ethernet Adapter	1
25Gb Ethernet			
4XC7A08249	B653	ThinkSystem Mellanox ConnectX-4 Lx 10/25GbE SFP28 2-port PCIe Ethernet Adapter	1
4XC7A08316	BD49	ThinkSystem Broadcom 57454 10/25GbE SFP28 4-port PCIe Ethernet Adapter V2	1*
100Gb Ethernet / InfiniBand HDR100			
4C57A14177	B4R9	ThinkSystem Mellanox ConnectX-6 HDR100/100GbE QSFP56 1-port PCIe VPI Adapter	1
200Gb Ethernet / InfiniBand HDR			
4C57A15326	B4RC	ThinkSystem Mellanox ConnectX-6 HDR/200GbE QSFP56 1-port PCIe 4 VPI Adapter	1
Omni-Path Architecture			
00WE027	AU0B	Intel OPA 100 Series Single-port PCIe 3.0 x16 HFA	1

* Only supported via Special Bid

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 and Fibre Channel adapters for external storage

The SD630 V2 does not support SAS or Fibre Channel host bus adapters for external storage.

GPU adapters

The SD630 V2 does not support GPUs.

Flash storage adapters

The SD630 V2 does not support Flash storage adapters.

Power supplies

The ThinkSystem DA240 enclosure supports two redundant hot-swap power supplies. The power supply choices are listed in the following table. All power supplies used in server must be identical.

Tip: When configuring a server in the DCSC configurator, power consumption is calculated precisely by interfacing with Lenovo Capacity Planner. You can therefore select the appropriate power supply for your configuration. However, do consider future upgrades that may require additional power needs.

Table 37. Power supply options

Part number	Feature	Description	Connector	Quantity supported	ERP lot 9	110V AC	220V AC	240V DC China only
4P57A26294	B8QB	ThinkSystem 1800W 230V Platinum Hot-Swap Gen2 Power Supply	C13	2	No	No	Yes	Yes
4P57A26295	B962	ThinkSystem 2400W 230V Platinum Hot-Swap Gen2 Power Supply	C19	2	No	No	Yes	Yes
4P57A72667	BKTJ	ThinkSystem 2600W 230V Titanium Hot-Swap Gen2 Power Supply	C19	2	Yes	No	Yes	Yes

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

Power cords (C13 connectors)

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

Table 24. Power cords

Part number	Feature code	Description
Rack cables		
00Y3043	A4VP	1.0m, 10A/100-250V, C13 to C14 Jumper Cord
4L67A08367	B0N5	1.0m, 13A/100-250V, C13 to C14 Jumper Cord
39Y7937	6201	1.5m, 10A/100-250V, C13 to C14 Jumper Cord
4L67A08368	B0N6	1.5m, 13A/100-250V, C13 to C14 Jumper Cord
4L67A08365	B0N4	2.0m, 10A/100-250V, C13 to IEC 320-C14 Rack Power Cable
4L67A08369	6570	2.0m, 13A/100-250V, C13 to C14 Jumper Cord
4L67A08366	6311	2.8m, 10A/100-250V, C13 to 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
Line cords		
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

Part number	Feature code	Description
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
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
81Y2390	6578	4.3m, 10A/250V, C13 to SEV 1011-S24507 (Swiss) Line Cord
81Y2375	6317	2.8m, 10A/250V, C13 to CNS 10917 (Taiwan) Line Cord
81Y2389	6531	4.3m, 10A/250V, 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
46M2592	A1RF	2.8m, 10A/250V, C13 to NEMA 6-15P (US) Line Cord
4L67A08361	6373	4.3m, 10A/250V, C13 to NEMA 6-15P (US) Line Cord

Power cords (C19 connectors)

Line cords and rack power cables with C19 connectors can be ordered as listed in the following table.

Table 25. Power cords (C19 connectors)

Part number	Feature code	Description
Rack cables		
4L67A86677	BPJ0	0.5m, 16A/100-250V, C19 to IEC 320-C20 Rack Power Cable
4L67A86678	B4L0	1.0m, 16A/100-250V, C19 to IEC 320-C20 Rack Power Cable
4L67A86679	B4L1	1.5m, 16A/100-250V, C19 to IEC 320-C20 Rack Power Cable
4L67A86680	B4L2	2.0m, 16A/100-250V, C19 to IEC 320-C20 Rack Power Cable
39Y7916	6252	2.5m, 16A/100-240V, C19 to IEC 320-C20 Rack Power Cable
4L67A86681	B4L3	4.3m, 16A/100-250V, C19 to IEC 320-C20 Rack Power Cable
Line cords		
40K9777	6276	4.3m, 220-240V, C19 to IRAM 2073 (Argentina) Line cord
40K9773	6284	4.3m, 220-240V, C19 to AS/NZS 3112 (Aus/NZ) Line cord
40K9775	6277	4.3m, 250V, C19 to NBR 14136 (Brazil) Line Cord
40K9774	6288	4.3m, 220-240V, C19 to GB2099.1 (China) Line cord
40K9769	6283	4.3m, 16A/230V, C19 to IEC 309-P+N+G (Den/Sws) Line Cord
40K9766	6279	4.3m, 220-240V, C19 to CEE7-VII (European) Line cord
40K9776	6285	4.3m, 220-240V, C19 to IS6538 (India) Line cord
40K9771	6282	4.3m, 220-240V, C19 to SI 32 (Israel) Line cord

Part number	Feature code	Description
40K9768	6281	4.3m, 220-240V, C19 to CEI 23-16 (Italy) Line cord
40K9770	6280	4.3m, 220-240V, C19 to SABS 164 (South Africa) Line cord
41Y9231	6289	4.3m, 15A/250V, C19 to KSC 8305 (S. Korea) Line Cord
81Y2391	6549	4.3m, 16A/230V, C19 to SEV 1011 (Sws) Line Cord
41Y9230	6287	4.3m, 16A/250V, C19 to CNS 10917-3 (Taiwan) Line Cord
40K9767	6278	4.3m, 220-240V, C19 to BS 1363/A w/13A fuse (UK) Line Cord
40K9772	6275	4.3m, 16A/208V, C19 to NEMA L6-20P (US) Line Cord
00D7197	A1NV	4.3m, 15A/250V, C19 to NEMA 6-15P (US) Line Cord

Cooling

The enclosure has 3 hot-swap 80mm dual-rotor N+1 redundant fans which are used to cool all components. The quantity required depends on the processors selected:

- Processors with TDP ≤ 165W: 2 fans
- Processors with TDP > 165W: 3 fans

In addition, each power supply has its own integrated fan. All fans are located at the rear of the enclosure as shown in in the Components and connectors section.

Ordering information for the enclosure fans is listed in the following table.

Table 26. Fan ordering information

Part number	Feature code	Description	Maximum supported
4F17A14498	BAFE	ThinkSystem DA240 8080 Fan	3

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.

Topics in this section

- Local management
- External Diagnostics Handset
- System status with XClarity Mobile
- Remote management
- Remote management using the SMM
- Lenovo XClarity Provisioning Manager
- Lenovo XClarity Essentials
- Lenovo XClarity Administrator
- Lenovo XClarity Energy Manager
- Lenovo Capacity Planner

Local management

The SD630 V2 server supports a local console with the use of a console breakout cable. The cable connects to the port on the front of the server as shown in the following figure.
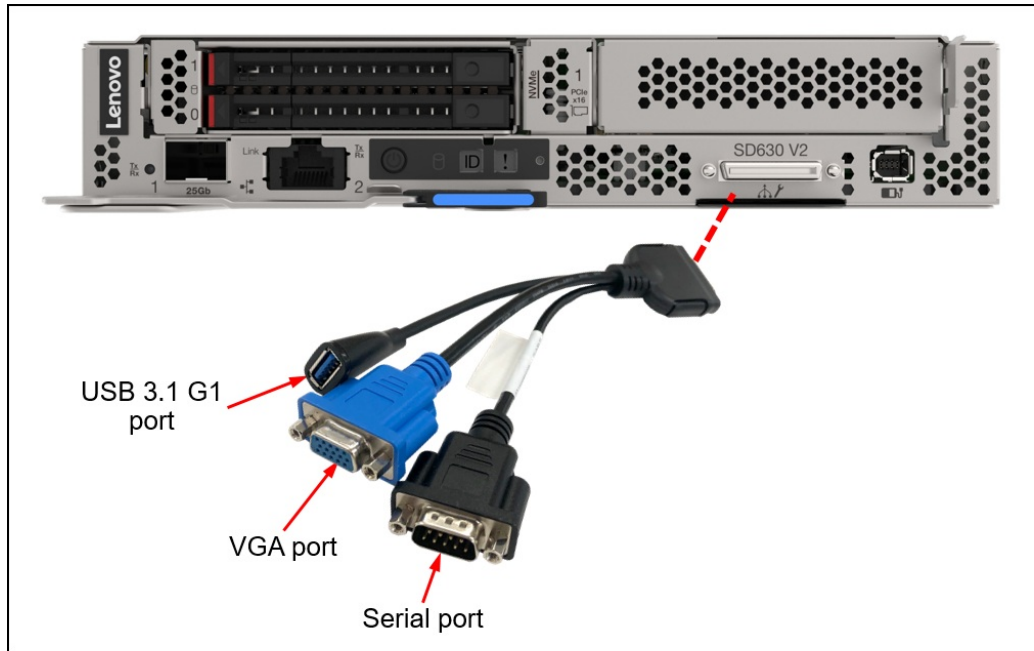
Figure 8. Console breakout cable

The cable has the following connectors:

- VGA port
- Serial port
- USB 3.1 Gen 1 (5 Gb/s) port

As well as local console functions, the USB port on the breakout cable also supports the use of the XClarity Mobile app as described in the next section.

Ordering information for the cable is listed in the following table.

Table 27. Console breakout cable ordering information

Part number	Feature code	Description
4X97A83213	7D1J BMJB	ThinkSystem USB 3.0 Console Breakout Cable for Dense Systems v2
4X97A12612	7D1J B953	ThinkSystem USB 3.0 Console Breakout Cable for Dense Systems

External Diagnostics Handset

The SD630 V2 has a port to connect an External Diagnostics Handset as shown in the following figure.

The External Diagnostics Handset allows quick access to system status, firmware, network, and health information. The LCD display on the panel and the function buttons give you access to the following information:

- Active alerts
- Status Dashboard
- System VPD: machine type & mode, serial number, UUID string
- System firmware levels: UEFI and XCC firmware
- XCC network information: hostname, MAC address, IP address, DNS addresses
- Environmental data: Ambient temperature, CPU temperature, AC input voltage, estimated power consumption
- Active XCC sessions
- System reset action

The handset has a magnet on the back of it to allow you to easily mount it on a convenient place on any rack cabinet.
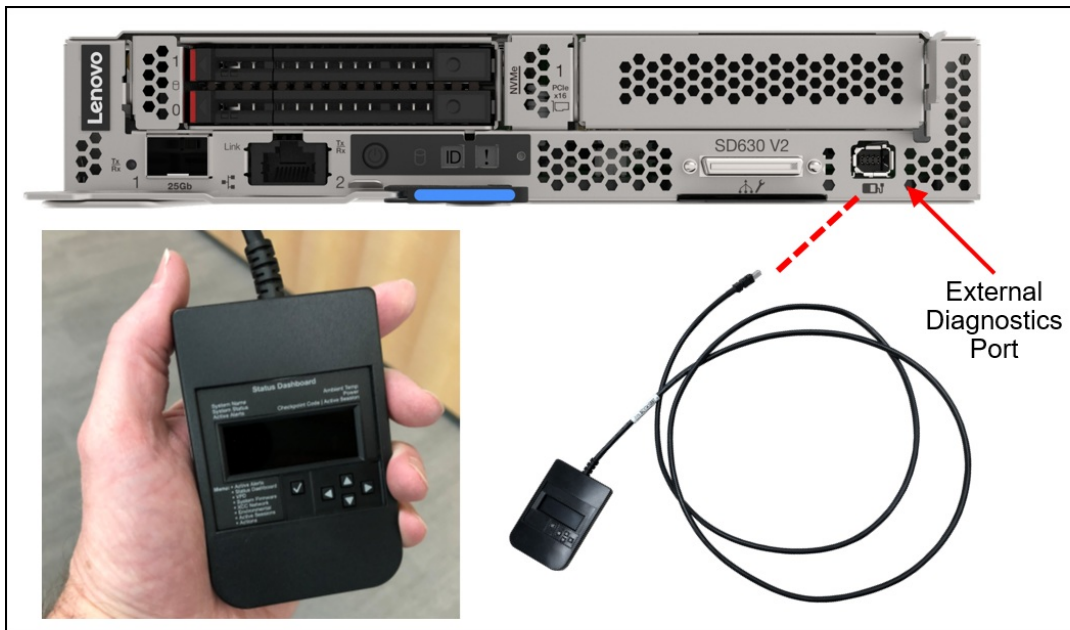

Figure 9. SD630 V2 External Diagnostics Handset

Ordering information for the External Diagnostics Handset with is listed in the following table.

Table 28. External Diagnostics Handset ordering information

Part number	Feature code	Description
4TA7A64874	BEUX	ThinkSystem External Diagnostics Handset

System status with XClarity Mobile

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

The steps to connect the mobile device are as follows:

1. Enable USB Management on the server, by holding down the ID button for 3 seconds (or pressing the dedicated USB management button if one is present)
2. Connect the mobile device via a USB cable to the server's USB port with the management symbol

3. In iOS or Android settings, enable Personal Hotspot or USB Tethering
4. Launch the Lenovo XClarity Mobile app

Once connected you can see the following information:

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

Remote management

Both the 1Gb and 25Gb embedded ports on the front of the SD630 V2 offer a connection to the XCC for remote management. This shared-NIC functionality allows the ports to be used both for operating system networking and for remote management.

Remote server management is provided through industry-standard interfaces:

- Intelligent Platform Management Interface (IPMI) Version 2.0
- Simple Network Management Protocol (SNMP) Version 3 (no SET commands; no SNMP v1)
- Common Information Model (CIM-XML)
- Representational State Transfer (REST) support
- Redfish support (DMTF compliant)
- Web browser - HTML 5-based browser interface (Java and ActiveX not required) using a responsive design (content optimized for device being used - laptop, tablet, phone) with NLS support

The 1Gb and 25Gb embedded ports support NC-SI. You can enable NC-SI in the factory using the feature codes listed in the following table.

Table 29. Enabling NC-SI on the embedded network ports

Feature code	Description
BEXY	ThinkSystem NC-SI enabled on SFP28 Port
BEXZ	ThinkSystem NC-SI enabled on RJ45 Port

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

Table 30. IPMI-over-LAN settings

Feature code	Description
B7XZ	Disable IPMI-over-LAN (default)
B7Y0	Enable IPMI-over-LAN

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

XCC Advanced Upgrade adds the following functions:

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

- Remotely accessing the server using the keyboard and mouse from a remote client
- International keyboard mapping support
- Syslog alerting
- Redirecting serial console via SSH
- Component replacement log (Maintenance History log)
- Access restriction (IP address blocking)
- Lenovo SED security key management
- Displaying graphics for real-time and historical power usage data and temperature

XCC Enterprise Upgrade enables the following additional features:

- Boot video capture and crash video capture
- Virtual console collaboration - Ability for up to 6 remote users to be log into the remote session simultaneously
- Remote console Java client
- Mapping the ISO and image files located on the local client as virtual drives for use by the server
- Mounting the remote ISO and image files via HTTPS, SFTP, CIFS, and NFS
- Power capping
- System utilization data and graphic view
- Single sign on with Lenovo XClarity Administrator
- Update firmware from a repository
- License for XClarity Energy Manager

For configure-to-order (CTO), you can enable the required XCC functionality by selecting the appropriate XCC feature codes 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 31. 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

For systems with XCC Standard or XCC Advanced installed, field upgrades are available as listed in the following table.

Table 32. XClarity Controller field upgrades

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

Remote management using the SMM

The DA240 includes a System Management Module 2 (SMM), installed in the rear of the enclosure. See Figure 3 for the location of the SMM. The SMM provides remote management of both the enclosure and the individual servers installed in the enclosure. The SMM can be accessed through a web browser interface and via Intelligent Platform Management Interface (IPMI) 2.0 commands.

The SMM provides the following functions:

- Remote connectivity to XCC controllers in each node in the enclosure

- Node-level reporting and control (for example, node virtual reseat/reset)
- Enclosure power management
- Enclosure thermal management
- Enclosure inventory

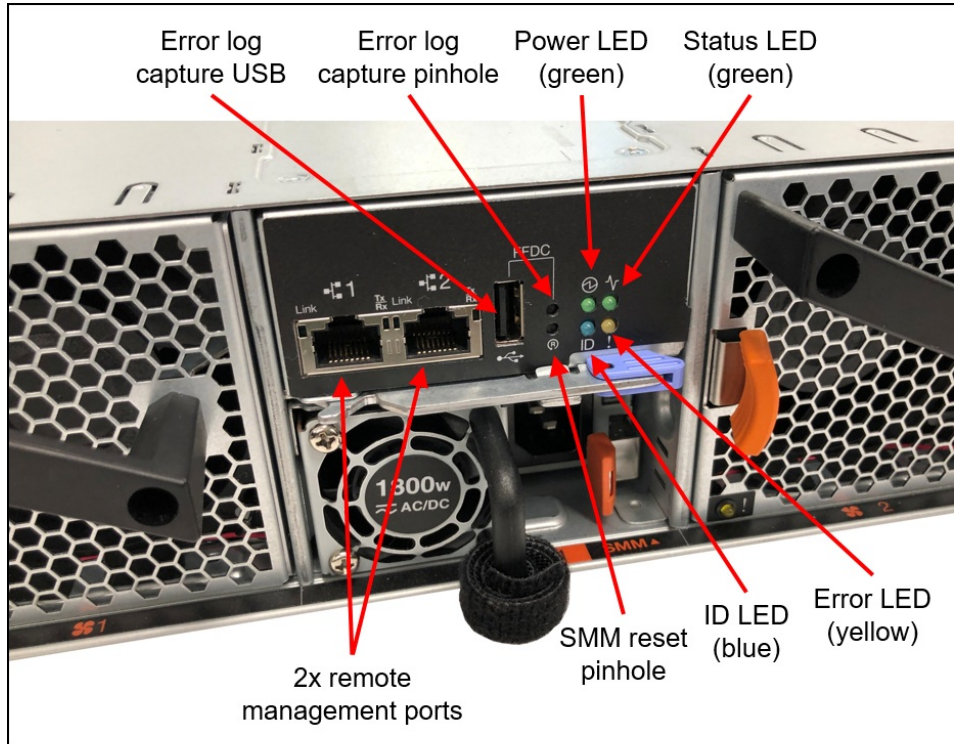The following figure shows the LEDs and connectors of the SMM.

Figure 10. System management module in the DA240 enclosure

The SMM has the following ports and LEDs:

- 2x Gigabit Ethernet RJ45 ports for remote management access
- USB port and activation button for service
- SMM reset button
- System error LED (yellow)
- Identification (ID) LED (blue)
- Status LED (green)
- System power LED (green)

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 First 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).

The use of two RJ45 Ethernet ports enables 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.

Lenovo XClarity Provisioning Manager

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

LXPM provides the following functions:

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

Lenovo XClarity Essentials

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

- Lenovo Essentials OneCLI

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

- Lenovo Essentials UpdateXpress

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

- Lenovo Essentials Bootable Media Creator

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

For more information and downloads, visit the Lenovo XClarity Essentials web page:
http://support.lenovo.com/us/en/documents/LNVO-center

Lenovo XClarity Administrator

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

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

Lenovo XClarity Administrator is an optional software component for the SD630 V2. The software can be downloaded and used at no charge to discover and monitor the SD630 V2 and to manage firmware upgrades.

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

The following table lists the Lenovo XClarity software license options.

Table 33. Lenovo XClarity Pro ordering information

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

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

- Auto-discovery and monitoring of Lenovo systems
- Firmware updates and compliance enforcement
- External alerts and notifications via SNMP traps, syslog remote logging, and e-mail
- Secure connections to managed endpoints
- NIST 800-131A or FIPS 140-2 compliant cryptographic standards between the management solution and managed endpoints
- Integration into existing higher-level management systems such as cloud automation and orchestration tools through REST APIs, providing extensive external visibility and control over hardware resources
- An intuitive, easy-to-use GUI
- Scripting with Windows PowerShell, providing command-line visibility and control over hardware resources

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

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

For more information, refer to the Lenovo XClarity Administrator Product Guide:
http://lenovopress.com/tips1200

Lenovo XClarity Integrators

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

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

Lenovo XClarity Integrators offer the following additional features:

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

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

Lenovo XClarity Energy Manager

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

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

Table 34. Lenovo XClarity Energy Manager

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

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

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

Lenovo Capacity Planner

Lenovo Capacity Planner is a power consumption evaluation tool that enhances data center planning by enabling IT administrators and pre-sales professionals to understand various power characteristics of racks, servers, and other devices. Capacity Planner can dynamically calculate the power consumption, current, British Thermal Unit (BTU), and volt-ampere (VA) rating at the rack level, improving the planning efficiency for large scale deployments.

For more information, refer to the Capacity Planner web page:
http://datacentersupport.lenovo.com/us/en/solutions/lnvo-lcp

Security

The server offers the following electronic security features:

- Administrator and power-on password
- Trusted Platform Module (TPM) supporting TPM 2.0 (no support for TPM 1.2)
- Optional Nationz TPM 2.0, available only in China (CTO only)

The server is NIST SP 800-147B compliant.

The following table lists the security options for the SD630 V2.

Table 35. Security features

Part number	Feature code	Description
CTO only*	B8LE	ThinkSystem Nationz Trusted Platform Module v2.0 (China customers only)

* Not available as a field upgrade. The component is CTO or on pre-configured models only.

Platform Firmware Resiliency - Lenovo ThinkShield

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

The ThinkSystem SD630 V2 includes Platform Firmware Resiliency (PFR) hardware Root of Trust (RoT) which enables the system to be NIST SP800-193 compliant. This offering further enhances key platform subsystem protections against unauthorized firmware updates and corruption, to restore firmware to an integral state, and to closely monitor firmware for possible compromise from cyber-attacks.

PFR operates upon the following server components:

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

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

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

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

The SD630 V2 includes support for Secure Boot, a UEFI firmware security feature developed by the UEFI Consortium that ensures only immutable and signed software are loaded during the boot time. The use of Secure Boot helps prevent malicious code from being loaded and helps prevent attacks, such as the installation of rootkits. Lenovo offers the capability to enable secure boot in the factory, to ensure end-to-end protection. Alternatively, Secure Boot can be left disabled in the factory, allowing the customer to enable it themselves at a later point, if desired.

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

Table 36. Secure Boot options

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

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

Intel Transparent Supply Chain

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

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

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

Table 37. Intel Transparent Supply Chain ordering information

Feature code	Description
BB0P	Intel Transparent Supply Chain

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

Security standards

The SD630 V2 supports the following security standards and capabilities:

- **Industry Standard Security Capabilities**
  - Intel CPU Enablement
    - AES-NI (Advanced Encryption Standard New Instructions)
    - CBnT (Converged Boot Guard and Trusted Execution Technology)
    - CET (Control flow Enforcement Technology)
    - Hardware-based side channel attack resilience enhancements
    - MKTME/TME (Multi-Key Total Memory Encryption)
    - SGX (Software Guard eXtensions)
    - SGX-TEM (Trusted Environment Mode)
    - TDX (Trust Domain Extensions)
    - TXT (Trusted eXecution Technology)
    - VT (Virtualization Technology)
    - XD (eXecute Disable)
  - Microsoft Windows Security Enablement
    - Credential Guard
    - Device Guard
    - Host Guardian Service
  - TCG (Trusted Computing Group) TPM (Trusted Platform Module) 2.0
  - UEFI (Unified Extensible Firmware Interface) Forum Secure Boot
- **Hardware Root of Trust and Security**
  - Independent security subsystem providing platform-wide NIST SP800-193 compliant Platform Firmware Resilience (PFR)
  - Management domain RoT supplemented by the Secure Boot features of XCC

- **Platform Security**

  - Boot and run-time firmware integrity monitoring with rollback to known-good firmware (e.g., "self-healing")
  - Non-volatile storage bus security monitoring and filtering
  - Resilient firmware implementation, such as to detect and defeat unauthorized flash writes or SMM (System Management Mode) memory incursions
  - Patented IPMI KCS channel privileged access authorization (USPTO Patent# 11,256,810)
  - Host and management domain authorization, including integration with CyberArk for enterprise password management
  - KMIP (Key Management Interoperability Protocol) compliant, including support for IBM SKLM and Thales KeySecure
  - Reduced "out of box" attack surface
  - Configurable network services

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

- **Standards Compliance and/or Support**

  - NIST SP800-131A rev 2 "Transitioning the Use of Cryptographic Algorithms and Key Lengths"
  - NIST SP800-147B "BIOS Protection Guidelines for Servers"
  - NIST SP800-193 "Platform Firmware Resiliency Guidelines"
  - ISO/IEC 11889 "Trusted Platform Module Library"
  - Common Criteria TCG Protection Profile for "PC Client Specific TPM 2.0"
  - European Union Commission Regulation 2019/424 ("ErP Lot 9") "Ecodesign Requirements for Servers and Data Storage Products" Secure Data Deletion
  - Optional FIPS 140-2 validated Self-Encrypting Disks (SEDs) with external KMIP-based key management

- **Product and Supply Chain Security**

  - Suppliers validated through Lenovo's Trusted Supplier Program
  - Developed in accordance with Lenovo's Secure Development Lifecycle (LSDL)
  - Continuous firmware security validation through automated testing, including static code analysis, dynamic network and web vulnerability testing, software composition analysis, and subsystem-specific testing, such as UEFI security configuration validation
  - Ongoing security reviews by US-based security experts, with attestation letters available from our third-party security partners
  - Digitally signed firmware, stored and built on US-based infrastructure and signed on US-based Hardware Security Modules (HSMs)
  - Manufacturing transparency via Intel Transparent Supply Chain (for details, see https://lenovopress.com/lp1434-introduction-to-intel-transparent-supply-chain-on-lenovo-thinksystem-servers)
  - TAA (Trade Agreements Act) compliant manufacturing, by default in Mexico for North American markets with additional US and EU manufacturing options
  - US 2019 NDAA (National Defense Authorization Act) Section 889 compliant

Operating system support

The server supports the following operating systems:

- Microsoft Windows Server 2016
- Microsoft Windows Server 2019
- Microsoft Windows Server 2022
- Red Hat Enterprise Linux 7.9
- Red Hat Enterprise Linux 8.2
- Red Hat Enterprise Linux 8.3
- Red Hat Enterprise Linux 8.4
- Red Hat Enterprise Linux 8.5
- Red Hat Enterprise Linux 8.6
- Red Hat Enterprise Linux 8.7
- Red Hat Enterprise Linux 8.8
- Red Hat Enterprise Linux 8.9
- Red Hat Enterprise Linux 9.0
- Red Hat Enterprise Linux 9.1
- Red Hat Enterprise Linux 9.2
- Red Hat Enterprise Linux 9.3
- SUSE Linux Enterprise Server 12 SP5
- SUSE Linux Enterprise Server 12 Xen SP5
- SUSE Linux Enterprise Server 15 SP2
- SUSE Linux Enterprise Server 15 SP3
- SUSE Linux Enterprise Server 15 SP5
- SUSE Linux Enterprise Server 15 Xen SP2
- SUSE Linux Enterprise Server 15 Xen SP3
- SUSE Linux Enterprise Server 15 Xen SP5
- Ubuntu 18.04 LTS 64-bit
- Ubuntu 22.04 LTS 64-bit
- VMware ESXi 6.7 U3
- VMware ESXi 7.0 U2
- VMware ESXi 7.0 U3
- VMware ESXi 8.0
- VMware ESXi 8.0 U1
- VMware ESXi 8.0 U2

For a complete list of supported, certified and tested operating systems, plus additional details and links to relevant web sites, see the Operating System Interoperability Guide:
https://lenovopress.com/osig#servers=sd630-v2-7d1k

Virtualization support: The onboard SATA drives 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 38. VMware ESXi preload

Part number	Feature code	Description
CTO only	B88T	VMware ESXi 6.7 U3 (factory installed)
CTO only	BHSR	VMware ESXi 7.0 U2 (Factory Installed)
CTO only	BMEY	VMware ESXi 7.0 U3 (Factory Installed)
CTO only	BMT5	VMware ESXi 8.0 (Factory Installed)
CTO only	BQ8S	VMware ESXi 8.0 U1 (Factory Installed)
CTO only	BYC7	VMware ESXi 8.0 U2 (Factory Installed)

Rack installation

The DA240 Enclosure can be installed in a 19-inch rack cabinet. Ordering information for the rail kit is listed in the following table.

Table 39. Rail installation kit

Part number	Feature code	Description
4M17A61253	BGWP	ThinkSystem DA240 Static Rail Kit

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

Table 40. Rail kit specifications

Feature	ThinkSystem DA240 Static Rail Kit
Part number	4M17A61253
Rail type	Static (fixed, no slide)
Toolless installation	Yes
Cable Management Arm (CMA) support	No support
In-rack server maintenance	No
1U PDU support	Yes
0U PDU support	Limited*
Rack type	Lenovo and IBM 4-post, IEC standard-compliant
Mounting holes	Square or round
Mounting flange thickness	2 mm - 3.3 mm (0.08 - 0.13 in.)
Supported rack range	559 mm - 914 mm (22 - 36 in.)
Rail length***	600 mm (23.6 in.)

 * For 0U PDU support, the rack must be at least 1100 mm (43.31 in.) deep.
*** Measured when mounted on the rack, from the front surface of the front mounting flange to the rearmost point of the rail.

Supported rack cabinets are listed in the Rack cabinets section.

Physical and electrical specifications

Up to four SD630 V2 are installed in the DA240 enclosure. Each SD630 V2 has the following dimensions:

- Width: 215 mm (8.5 inches)
- Height: 41 mm (1.6 inches)
- Depth: 608 mm (24 inches) (615 mm, including the internal connector at the rear of the server)

The DA240 enclosure has the following overall physical dimensions, excluding components that extend outside the standard chassis, such as EIA flanges, front security bezel (if any), and power supply handles:

- Width: 448 mm (17.6 inches)
- Height: 87 mm (3.4 inches)
- Depth: 922 mm (36.3 inches)

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

Table 41. Detailed dimensions

| Dimension	Description
488 mm	X_a = Width, to the outsides of the front EIA flanges
446 mm	X_b = Width, to the rack rail mating surfaces
448 mm	X_c = Width, to the outer most chassis body feature
87 mm	Y_a = Height, from the bottom of chassis to the top of the chassis
885 mm	Z_a = Depth, from the rack flange mating surface to the rearmost I/O port surface
884 mm	Z_b = Depth, from the rack flange mating surface to the rearmost feature of the chassis body
913 mm (1800W PSU) 939 mm (2400W PSU)	Z_c = Depth, from the rack flange mating surface to the rearmost feature such as power supply handle
38 mm	Z_d = Depth, from the forwardmost feature on front of EIA flange to the rack flange mating surface
38 mm	Z_e = Depth, from the front of security bezel (if applicable) or forwardmost feature to the rack flange mating surface
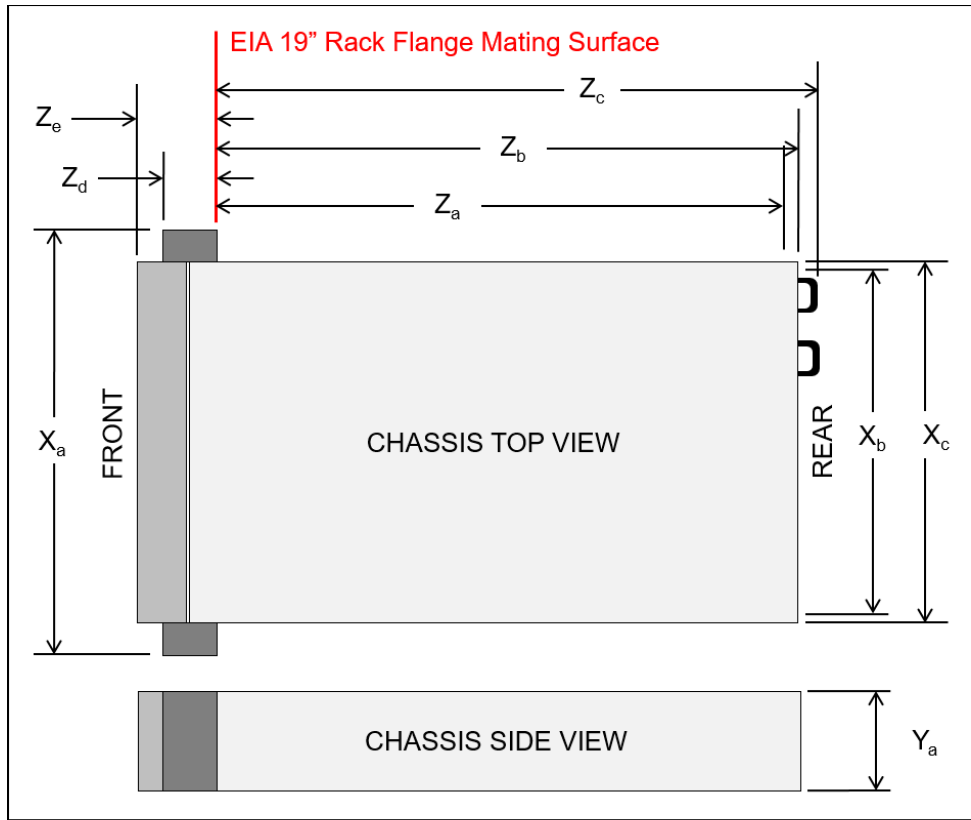
Figure 11. Server dimensions

The shipping dimensions (cardboard packaging) of the SD630 V2 are as follows:

- Width: 342 mm (13.5 inches)
- Height: 164 mm (6.5 inches)
- Depth: 760 mm (29.9 inches)

The shipping dimensions (cardboard packaging) of the DA240 are as follows:

- Width: 596 mm (23.5 inches)
- Height: 298 mm (11.7 inches)
- Depth: 1180 mm (46.5 inches)

The SD630 V2 has the following weight:

- Minimum: 3.9 kg (8.6 lbs)
- Maximum: 6.4 kg (14.1 lbs)

The DA240 enclosure has the following weight:

- Minimum (with one node): 24.3 kg (53.5 lbs)
- Maximum (with four nodes): 44.2 kg (97.4 lbs)

The enclosure has the following electrical specifications for AC input power supplies:

- Input voltage:
  - 200 to 240 (nominal) Vac, 50 Hz or 60 Hz
  - 180 to 300 Vdc (China only)
- Inlet current:
  - 1800W power supply: 10 A
  - 2400W power supply: 14 A

Operating environment

The SD630 V2 complies with ASHRAE class A2 specifications, however depending on the ambient temperature, processor performance may be reduced:

- When operating above 30°C there may be performance impacts at high utilization for:
    - Processors with TDP of 165 watts or lower

- When operating above 25°C there may be performance impacts at high utilization for:
    - Processors with TDP of higher than 165 watts
    - Intel Xeon Gold 6334 8C 165W 3.5GHz Processor

Environmental information:

The ThinkSystem SD630 V2 and the DA240 enclosure 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)
    - 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)
    - Shipment/storage: 8% to 90%

Acoustical noise emissions:

The solution has the following acoustic noise emissions declaration:

- Sound power level (LWAd):
    - Idling: Typical config: 6.1 Bel; Max config: 6.1 Bel
    - Operating: Typical config: 7.6 Bel; Max config: 8.9 Bel

- Sound pressure level (LpAm):
    - Idling: Typical config: 45 dBA; Max config: 61 dBA
    - Operating: Typical config: 61 dBA; Max config: 74 dBA

Notes:

- These sound levels were measured in controlled acoustical environments according to procedures specified by ISO7779 and are reported in accordance with ISO 9296.

- The declared acoustic sound levels are based on the following specified configurations, which may change slightly depending on configuration/conditions:
    - Typical configuration: 2x 205W processors, 16x 16GB DIMMs, 1x S4510 240GB SSD, 1x Mellanox HDR200 ConnectX-6 adapter, 25Gb SFP+ LOM, TPM 2.0, 2x 2400W power supply units
    - Max configuration: 2x 250W processors, 16x 64GB DIMMs, 1x S4510 240GB SSD, 1x Mellanox HDR200 ConnectX-6 adapter, 25Gb SFP+ LOM, TPM 2.0, 2x 2400W power supply units

- Government regulations (such as those prescribed by OSHA or European Community Directives) may govern noise level exposure in the workplace and may apply to you and your solution installation. The actual sound pressure levels in your installation depend upon a variety of factors, including the number of racks in the installation; the size, materials, and configuration of the room; the noise levels from other equipment; the room ambient temperature, and employee's location in relation to the equipment. Further, compliance with such government regulations depends on a variety of additional factors, including the duration of employees' exposure and whether employees wear hearing protection. Lenovo recommends that you consult with qualified experts in this field to determine whether you are in compliance with the applicable regulations.

Heat output:

Approximate heat output:

- Minimum configuration (with one minimal configuration node): 1799.22 BTU per hour (573 watts)

- Maximum configuration (with four maximal configuration nodes): 6672.5 BTU per hour (2125 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:
        - 4 kg - 11 kg: 50 G for 167 in./sec velocity change across 6 surfaces

Particulate contamination

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

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

- Reactive gases:
  - The copper reactivity level shall be less than 200 Angstroms per month (Å/month)
  - The silver reactivity level shall be less than 200 Å/month

- Airborne particulates:
  - The room air should be continuously filtered with MERV 8 filters.
  - Air entering a data center should be filtered with MERV 11 or preferably MERV 13 filters.
  - The deliquescent relative humidity of the particulate contamination should be more than 60% RH
  - Environment must be free of zinc whiskers

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

Warranty and Support

The SD630 V2 and DA240 enclosure have a 3 year warranty:

- SD630 V2 (7D1K) - 3 year warranty
- DA240 Enclosure (7D1J) - 3 year warranty

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

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

- **Premier Support**

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

  - Direct technician-to-technician access through a dedicated phone line

  - 24x7x365 remote support

  - Single point of contact service

  - End to end case management

  - Third-party collaborative software support

  - Online case tools and live chat support

  - On-demand remote system analysis

- **Warranty Upgrade (Preconfigured Support)**

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

  - 3, 4, or 5 years of service coverage

  - 1-year or 2-year post-warranty extensions

  - **Foundation Service**: 9x5 service coverage with next business day onsite response. YourDrive YourData is an optional extra (see below).

  - **Essential Service:** 24x7 service coverage with 4-hour onsite response or 24-hour committed repair (available only in select markets). Bundled with YourDrive YourData.

  - **Advanced Service:** 24x7 service coverage with 2-hour onsite response or 6-hour committed repair (available only in select markets). Bundled with YourDrive YourData.

- **Managed Services**

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

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

- **Technical Account Management (TAM)**

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

- **Enterprise Server Software Support**

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

- **YourDrive YourData**

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

- **Health Check**

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

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

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

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

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

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

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

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

Services

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

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

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

- **Asset Recovery Services**

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

- **Assessment Services**

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

- **Design Services**

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

- **Basic Hardware Installation**

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

- **Deployment Services**

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

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

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

Regulatory compliance

The SD630 V2 conforms to the following standards:

- ANSI/UL 62368-1
- IEC 62368-1 (CB Certificate and CB Test Report)
- FCC - Verified to comply with Part 15 of the FCC Rules, Class A
- Canada ICES-003, issue 7, Class A
- CSA C22.2 No. 62368-1
- CISPR 32, Class A, CISPR 35
- Japan VCCI, Class A
- Taiwan BSMI CNS13438, Class A; Section 5 of CNS15663
- CE, UKCA Mark (EN55032 Class A, EN62368-1, EN55024, EN55035, EN61000-3-2, EN61000-3-3, (EU) 2019/424, and EN50581-1 (RoHS))
- Korea KN32, Class A, KN35
- Russia, Belorussia and Kazakhstan, TP EAC 037/2016 (for RoHS)
- Australia/New Zealand AS/NZS CISPR 32, Class A; AS/NZS 62368.1
- UL Green Guard, UL2819
- EPEAT (NSF/ ANSI 426) Bronze
- China CELP certificate, HJ 2507-2011
- Japanese Energy-Saving Act
- India BIS 13252 (Part 1)

The DA240 conforms to the following standards:

- ANSI/UL 62368-1
- IEC 62368-1 (CB Certificate and CB Test Report)
- FCC - Verified to comply with Part 15 of the FCC Rules, Class A
- Canada ICES-003, issue 7, Class A
- CSA C22.2 No. 62368-1
- CISPR 32, Class A, CISPR 35
- Japan VCCI, Class A
- CE, UKCA Mark (EN55032 Class A, EN62368-1, EN55024, EN55035, EN61000-3-2, EN61000-3-3, (EU) 2019/424, and EN50581-1 (RoHS))
- Korea KN32, Class A, KN35
- Russia, Belorussia and Kazakhstan, TP EAC 037/2016 (for RoHS)
- Russia, Belorussia and Kazakhstan, EAC: TP TC 004/2011 (for Safety); TP TC 020/2011 (for EMC)
- Australia/New Zealand AS/NZS CISPR 32, Class A; AS/NZS 62368.1
- UL Green Guard, UL2819
- China CELP certificate, HJ 2507-2011
- Mexico NOM-019
- TUV-GS (EN62368-1, and EK1-ITB2000)
- India BIS 13252 (Part 1)
- Germany GS

Power distribution units

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

Table 42. Power distribution units

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

Part number	Feature code	Description	ANZ	ASEAN	Brazil	EET	MEA	RUCIS	WE	HTK	INDIA	JAPAN	LA	NA	PRC
0U Switched and Monitored PDUs															
00YJ783	AU04	0U 12 C13/12 C19 Switched and Monitored 48A 3 Phase PDU	N	N	Y	N	N	N	Y	N	N	Y	Y	Y	N
00YJ781	AU03	0U 20 C13/4 C19 Switched and Monitored 24A 1 Phase PDU	N	N	Y	N	Y	N	Y	N	N	Y	Y	Y	N
1U Switched and Monitored PDUs															
4PU7A81117	BNDV	1U 18 C19/C13 switched and monitored 48A 3P WYE PDU - ETL	N	N	N	N	N	N	N	N	N	N	N	Y	N
4PU7A77467	BLC4	1U 18 C19/C13 Switched and Monitored 80A 3P Delta PDU	N	N	N	N	N	N	N	N	N	Y	N	Y	N
4PU7A77469	BLC6	1U 12 C19/C13 switched and monitored 60A 3P Delta PDU	N	N	N	N	N	N	N	N	N	N	N	Y	N
4PU7A77468	BLC5	1U 12 C19/C13 switched and monitored 32A 3P WYE PDU	Y	Y	Y	Y	Y	Y	Y	Y	Y	N	Y	Y	Y
4PU7A81118	BNDW	1U 18 C19/C13 switched and monitored 48A 3P WYE PDU - CE	Y	Y	Y	Y	Y	Y	Y	Y	Y	N	Y	N	Y
1U Ultra Density Enterprise PDUs (9x IEC 320 C13 + 3x IEC 320 C19 outlets)															
71763NU	6051	Ultra Density Enterprise C19/C13 PDU 60A/208V/3PH	N	N	Y	N	N	N	N	N	N	Y	Y	Y	N
71762NX	6091	Ultra Density Enterprise C19/C13 PDU Module	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
1U C13 Enterprise PDUs (12x IEC 320 C13 outlets)															
39Y8941	6010	DPI C13 Enterprise PDU Module (WW)	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
1U Front-end PDUs (3x IEC 320 C19 outlets)															
39Y8939	6003	DPI Single-phase 30A/208V Front-end PDU (US)	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
39Y8934	6005	DPI Single-phase 32A/230V Front-end PDU (International)	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
39Y8940	6004	DPI Single-phase 60A/208V Front-end PDU (US)	Y	N	Y	Y	Y	Y	Y	N	N	Y	Y	Y	N
39Y8935	6006	DPI Single-phase 63A/230V Front-end PDU (International)	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Line cords for 1U PDUs that ship without a line cord															
40K9611	6504	4.3m, 32A/380-415V, EPDU/IEC 309 3P+N+G 3ph wye (non-US) Line Cord	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
40K9612	6502	4.3m, 32A/230V, EPDU to IEC 309 P+N+G (non-US) Line Cord	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
40K9613	6503	4.3m, 63A/230V, EPDU to IEC 309 P+N+G (non-US) Line Cord	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
40K9614	6500	4.3m, 30A/208V, EPDU to NEMA L6-30P (US) Line Cord	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
40K9615	6501	4.3m, 60A/208V, EPDU to IEC 309 2P+G (US) Line Cord	N	N	Y	N	N	N	Y	N	N	Y	Y	Y	N

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

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

Rack cabinets

The following table lists the supported rack cabinets.

Table 43. Rack cabinets

Part number	Description
93072RX	25U Standard Rack (1000mm)
93072PX	25U Static S2 Standard Rack (1000mm)
7D6DA007WW	ThinkSystem 42U Onyx Primary Heavy Duty Rack Cabinet (1200mm)
7D6DA008WW	ThinkSystem 42U Pearl Primary Heavy Duty Rack Cabinet (1200mm)
1410-O42	Lenovo EveryScale 42U Onyx Heavy Duty Rack Cabinet
1410-P42	Lenovo EveryScale 42U Pearl Heavy Duty Rack Cabinet
93604PX	42U 1200mm Deep Dynamic Rack
93614PX	42U 1200mm Deep Static Rack
93634PX	42U 1100mm Dynamic Rack
93634EX	42U 1100mm Dynamic Expansion Rack
93074RX	42U Standard Rack (1000mm)
7D6EA009WW	ThinkSystem 48U Onyx Primary Heavy Duty Rack Cabinet (1200mm)
7D6EA00AWW	ThinkSystem 48U Pearl Primary Heavy Duty Rack Cabinet (1200mm)
1410-O48	Lenovo EveryScale 48U Onyx Heavy Duty Rack Cabinet
1410-P48	Lenovo EveryScale 48U Pearl Heavy Duty Rack Cabinet

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

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

KVM switches and consoles

The following table lists the supported KVM consoles.

Table 44. KVM console

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

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

Table 46. KVM switches and options

Part number	Description
KVM Console switches	
1754D2X	Global 4x2x32 Console Manager (GCM32)
1754D1X	Global 2x2x16 Console Manager (GCM16)
1754A2X	Local 2x16 Console Manager (LCM16)
1754A1X	Local 1x8 Console Manager (LCM8)
Cables for GCM and LCM Console switches	
46M5383	Virtual Media Conversion Option Gen2 (VCO2)
46M5382	Serial Conversion Option (SCO)

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

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

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

Seller training courses

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

1. **Lenovo Data Center Product Portfolio**
   2024-04-22 | 20 minutes | Employees and Partners

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

   Published: 2024-04-22
   Length: 20 minutes
   Employee link: Grow@Lenovo
   Partner link: Lenovo Partner Learning
   Course code: SXXW1110r7

2. **Partner Technical Webinar - ISG Portfolio Update**
   2024-04-15 | 60 minutes | Employees and Partners

   In this 60-minute replay, Mark Bica, NA ISG Server Product Manager reviewed the Lenovo ISG portfolio. He covered new editions such as the SR680a \ SR685a, dense servers, and options that are strategic for any workload.

   Published: 2024-04-15
   Length: 60 minutes
   Employee link: Grow@Lenovo
   Partner link: Lenovo Partner Learning
   Course code: 041224

3. **Partner Technical Webinar – StorMagic**
   2024-03-19 | 60 minutes | Employees and Partners

   March 08, 2024 – In this 60-minute replay, Stuart Campbell and Wes Ganeko of StorMagic joined us and provided an overview of StorMagic on Lenovo. They also demonstrated the interface while sharing some interesting use cases.

   Published: 2024-03-19
   Length: 60 minutes
   Employee link: Grow@Lenovo
   Partner link: Lenovo Partner Learning
   Course code: 030824

4. **Intel Transparent Supply Chain on Lenovo Servers**
   2024-01-29 | 12 minutes | Employees and Partners

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

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

   Published: 2024-01-29
   Length: 12 minutes
   Employee link: Grow@Lenovo
   Partner link: Lenovo Partner Learning
   Course code: SXXW1230

5. **Family Portfolio: Storage Controller Options**
   2024-01-23 | 25 minutes | Employees and Partners

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

   After completing this course, you will be able to:
   • Describe the classes of storage controllers
   • Discuss where each controller class is used
   • Describe the available options in each controller class

   Published: 2024-01-23
   Length: 25 minutes
   Employee link: Grow@Lenovo
   Partner link: Lenovo Partner Learning
   Course code: SXXW1111

6. **Lenovo-Intel Sustainable Solutions QH**
   2024-01-22 | 10 minutes | Employees and Partners

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

   Published: 2024-01-22
   Length: 10 minutes
   Employee link: Grow@Lenovo
   Partner link: Lenovo Partner Learning
   Course code: SXXW2524a

7. **Family Portfolio Intel Multi-Node Servers**
   2024-01-12 | 15 minutes | Employees and Partners

   This course covers the Intel-based 2U4N server family, formerly part of the Dense server family. After completing this course about the Intel® multi-node server family, you will be able to identify products and features within the family, describe the customer benefits of this product family, and recognize when a specific product or products should be selected.

   Published: 2024-01-12
   Length: 15 minutes
   Employee link: Grow@Lenovo
   Partner link: Lenovo Partner Learning
   Course code: SXXW2518

8. **FY24Q3 Intel Servers Update**
   2023-12-11 | 15 minutes | Employees and Partners

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

   Published: 2023-12-11
   Length: 15 minutes
   Employee link: Grow@Lenovo
   Partner link: Lenovo Partner Learning
   Course code: SXXW2522a

9. **Lenovo Data Center Product Portfolio**
   2023-07-21 | 15 minutes | Employees and Partners

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

   Published: 2023-07-21
   Length: 15 minutes
   Employee link: Grow@Lenovo
   Partner link: Lenovo Partner Learning
   Course code: SXXW1110r6

10. **Partner Technical Webinar - Data Center Limits and ISG TAA Compliance**
    2023-05-16 | 60 minutes | Employees and Partners

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

    Published: 2023-05-16
    Length: 60 minutes
    Employee link: Grow@Lenovo
    Partner link: Lenovo Partner Learning
    Course code: 051223

11. **Family Portfolio: Intel Dense Servers**
    2023-01-05 | 10 minutes | Employees and Partners

    This course is designed to give Lenovo sales and partner representatives a foundation for the Intel Dense server family products.

    After completing this course, you will be able to identify products and features within the family, describe Lenovo innovations that this product family uses, and recognize when a specific product or products should be selected.

    Published: 2023-01-05
    Length: 10 minutes
    Employee link: Grow@Lenovo
    Partner link: Lenovo Partner Learning
    Course code: SXXW1211r8

12. **Family Portfolio Intel Dense Servers V3 Preview**
    2023-01-04 | 3 minutes | Employees and Partners

    This Quick Hit introduces three new servers, the SD630 V3, SD650 V3, and SD650-I V3 and a new enclosure, the DW612S, in the ThinkSystem Intel Dense server family, and introduces new features. Note: This course is presented as audio only. There are no slides or video.

    Published: 2023-01-04
    Length: 3 minutes
    Employee link: Grow@Lenovo
    Partner link: Lenovo Partner Learning
    Course code: SXXW1211r8a

13. **Lenovo Sustainable Computing**
    2022-09-16 | 4 minutes | Employees and Partners

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

    Published: 2022-09-16
    Length: 4 minutes
    Employee link: Grow@Lenovo
    Partner link: Lenovo Partner Learning
    Course code: SXXW2504a

Related publications and links

For more information, see these resources:

- ThinkSystem SD630 V2 product page
  https://www.lenovo.com/us/en/data-center/servers/high-density/ThinkSystem-SD630-V2/p/77XX7DSD632
- ThinkSystem SD630 V2 datasheet
  https://lenovopress.com/DS0130
- Interactive 3D Tour of the ThinkSystem SD630 V2:
  https://lenovopress.com/LP1426
- ThinkSystem SD630 V2 drivers and support
  http://datacentersupport.lenovo.com/products/servers/thinksystem/sd630v2/7d1k/downloads
- Lenovo ThinkSystem SD630 V2 product publications:
  http://thinksystem.lenovofiles.com/help/index.jsp
    - Quick Start
    - Rack Installation Guide
    - Setup Guide
    - Hardware Maintenance Manual
    - Messages and Codes Reference
    - Memory Population Reference
- ServerProven hardware compatibility:
  http://www.lenovo.com/us/en/serverproven

Related product families

Product families related to this document are the following:

- Multi-Node Servers
- ThinkSystem SD630 V2 Server

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