Lenovo ThinkServer RQ750
Product Guide

ThinkServer RQ750 is a four-socket 2U rack server that features Intel Xeon E5-4600 v3 processors and supports 1TB of DDR4 memory. The RQ750 offers high performance and faster I/O for business applications, a highly efficient design to reduce power consumption and cost, a scalable design to grow with your business and keep costs low, and remote management capabilities for increased reliability and uptime.

Note: The ThinkServer RQ750 is available only in China.

Suggested use: Ideal for government and medium-sized enterprise IT core applications, including medium-to-large database servers, virtualization, financial management, and business-critical systems, such as ERP and CRM.
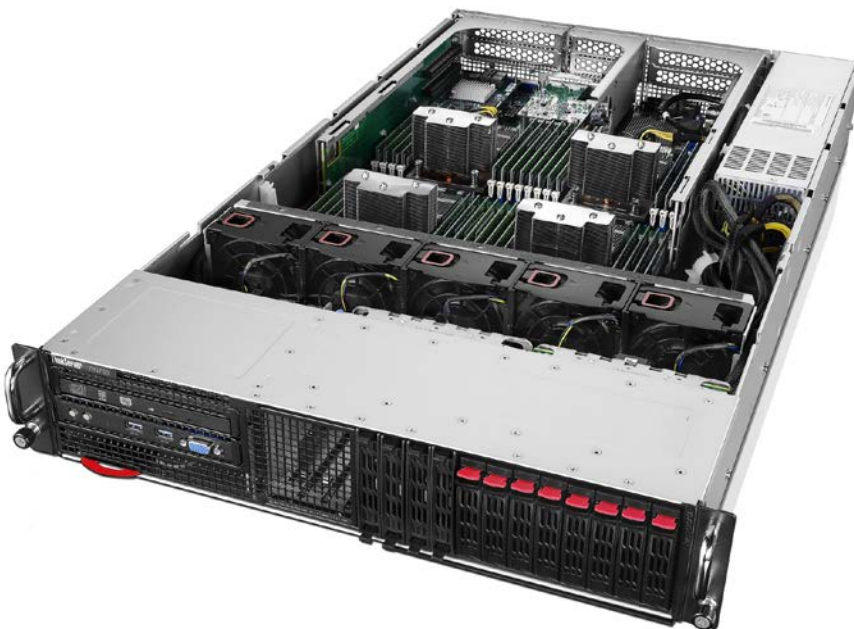

Figure 1. Lenovo ThinkServer RQ750

Did you know?

With Intel Xeon E5-4600 v3 series processors, the ThinkServer RQ750 gives you extreme performance at a cost-effective price point. The ThinkServer RQ750 supports up to four high-performance PCIe NVMe solid-state drives, in addition to eight SAS or SATA drives. NVMe drives offer the ultimate in storage performance, because they are connected directly to the PCIe bus of the processors and use the latest solid-state drive technology.

Key features

The ThinkServer RQ750 offers four-socket performance in a space-saving 2U design. With an energy-smart design, powerful processors, a large capacity of DDR4 memory, and flexible storage and networking configurations, the RQ750 is ideal for business-critical applications and virtualized deployments.

Scalability and performance

The RQ750 offers numerous features to boost performance, improve scalability, and reduce costs:

- Improves productivity by offering superior system performance with the Intel Xeon processor E5-4600 v3 product family (up to 18-core processors, up to 45 MB of L3 cache, and up to 9.6 GT/s QPI interconnect links).
    - Support for up to four processors, 72 cores, and 144 threads allows the RQ750 to maximize the concurrent execution of multithreaded applications.
    - Intelligent and adaptive system performance with energy-efficient Intel Turbo Boost Technology 2.0 allows CPU cores to run at maximum speeds during peak workloads by temporarily going beyond processor thermal design power (TDP).
    - Intel Hyper-Threading Technology boosts performance for multithreaded applications by enabling simultaneous multithreading within each processor core; up to two threads per core.
    - Intel Virtualization Technology integrates hardware-level virtualization hooks that allow operating system vendors to better utilize the hardware for virtualization workloads.
- Up to 1 TB of memory capacity using 32 GB DDR4 RDIMMs
    - Up to 32 DIMM sockets supporting DDR4 memory operating at speeds up to 2133 MHz
    - 8 DIMM sockets per processor – 4 memory channels and 2 DIMMs per channel
- 12 Gbps serial-attached SCSI (SAS) internal storage connectivity doubles the data transfer rate compared to 6 Gb SAS solutions to maximize performance of storage I/O-intensive applications.
- Supports PCIe NVMe 2.5-inch solid-state drives (SSDs) in addition to SAS or SATA drives, to provide maximum storage performance and flexibility.
- The use of SSDs instead of, or along with, traditional spinning HDDs can significantly improve I/O performance. An SSD can support a significantly higher number of I/O operations per second (IOPS) than a typical HDD.
- The server offers up to six PCI Express (PCIe) 3.0 I/O expansion slots in addition to two dedicated mezzanine slots (one for a NIC and one for a SAS HBA).
- With Intel Integrated I/O Technology, the PCI Express 3.0 controller is integrated into the Intel Xeon processor E5-4600 v3 product family. This helps to dramatically reduce I/O latency and increase overall system performance.

Availability and serviceability

The ThinkServer RQ750 provides many features to simplify serviceability and increase system uptime:

- The server offers memory mirroring and memory rank sparing for redundancy in the event of a non-correctable memory failure.
- The server offers hot-swap SAS and SATA drives supporting RAID redundancy for data protection and greater system uptime.

- The server offers hot-swap/redundant power supplies and fans to provide availability for business-critical applications.

- SSDs offer significantly better reliability than mechanical HDDs, for greater uptime.

- Built-in ThinkServer System Manager (TSM) continuously monitors system parameters, triggers alerts, and performs recovery actions in case of failure, to minimize downtime.

- Embedded Lenovo Diagnostics software speeds up troubleshooting to reduce service time.

Manageability and security

Powerful systems management features simplify local and remote management of the ThinkServer RQ750 and deliver enterprise-class data protection:

- The server includes ThinkServer System Manager to monitor server availability and perform remote management.

- An integrated industry-standard Unified Extensible Firmware Interface (UEFI) enables improved setup, configuration, and updates, and simplifies error handling.

- An optional Trusted Cryptographic Module (TCM) supports the enablement of advanced cryptographic functionality, such as digital signatures and Windows BitLocker encryption.

- Embedded ThinkServer Deployment Manager (TDM) provides a complete set of provisioning capabilities from a single interface, which automates many of the tasks that are associated with server provisioning.

Energy efficiency

The ThinkServer RQ750 offers the following energy-efficiency features to save energy, reduce operational costs, increase energy availability, and contribute to a green environment:

- Energy-efficient planar components help lower operational costs.

- High-efficiency power supplies with 80 PLUS Platinum certifications.

- Intel Intelligent Power Capability powers individual processor elements on and off as needed, to reduce power draw.

- Low-voltage 1.2 V DDR4 memory DIMMs offer energy savings compared to 1.35 V and 1.5 V DDR3 DIMMs.

- System power profiles can be configured in UEFI to optimize usage for maximum performance or energy efficiency.

- Lenovo XClarity Energy Manager provides advanced data center power notification, analysis, and policy-based management to help lower heat output and reduce cooling needs.

Locations of key components and connectors

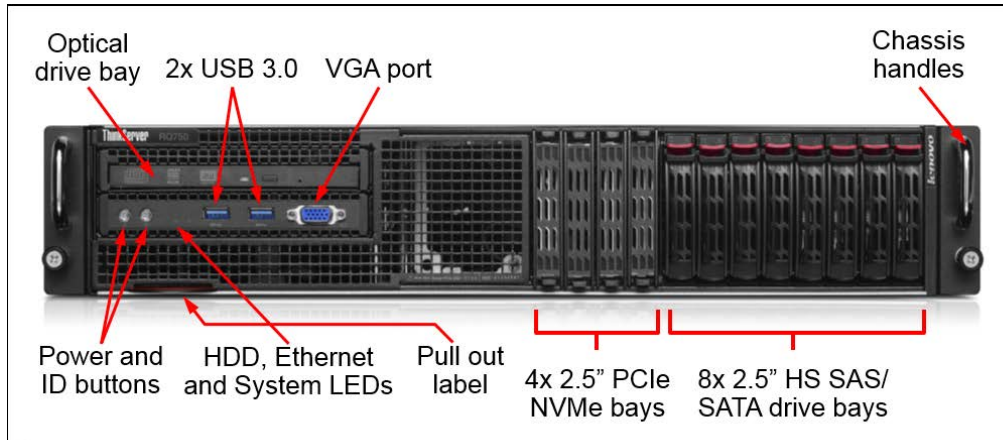The following figure shows the front of the RQ750 server.

Figure 2. Front view of the Lenovo ThinkServer RQ750

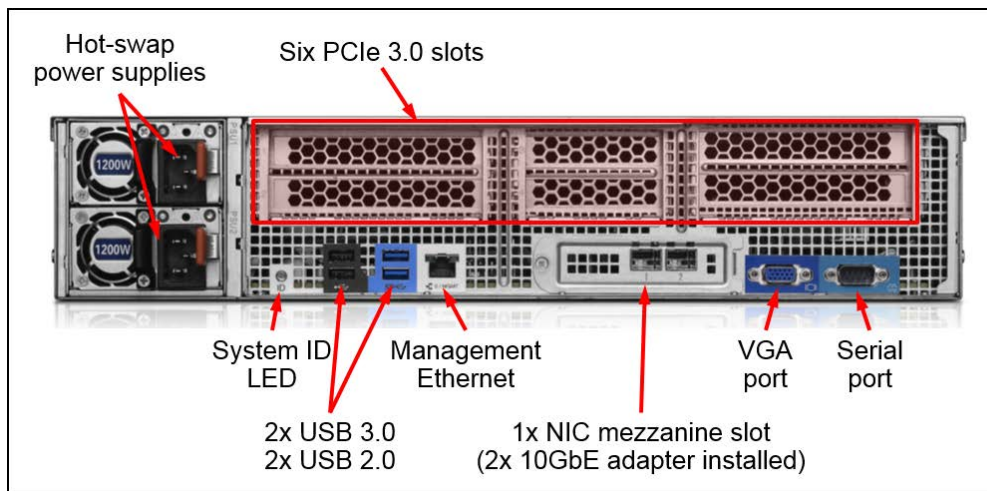The following figure shows the rear of the RQ750 server.

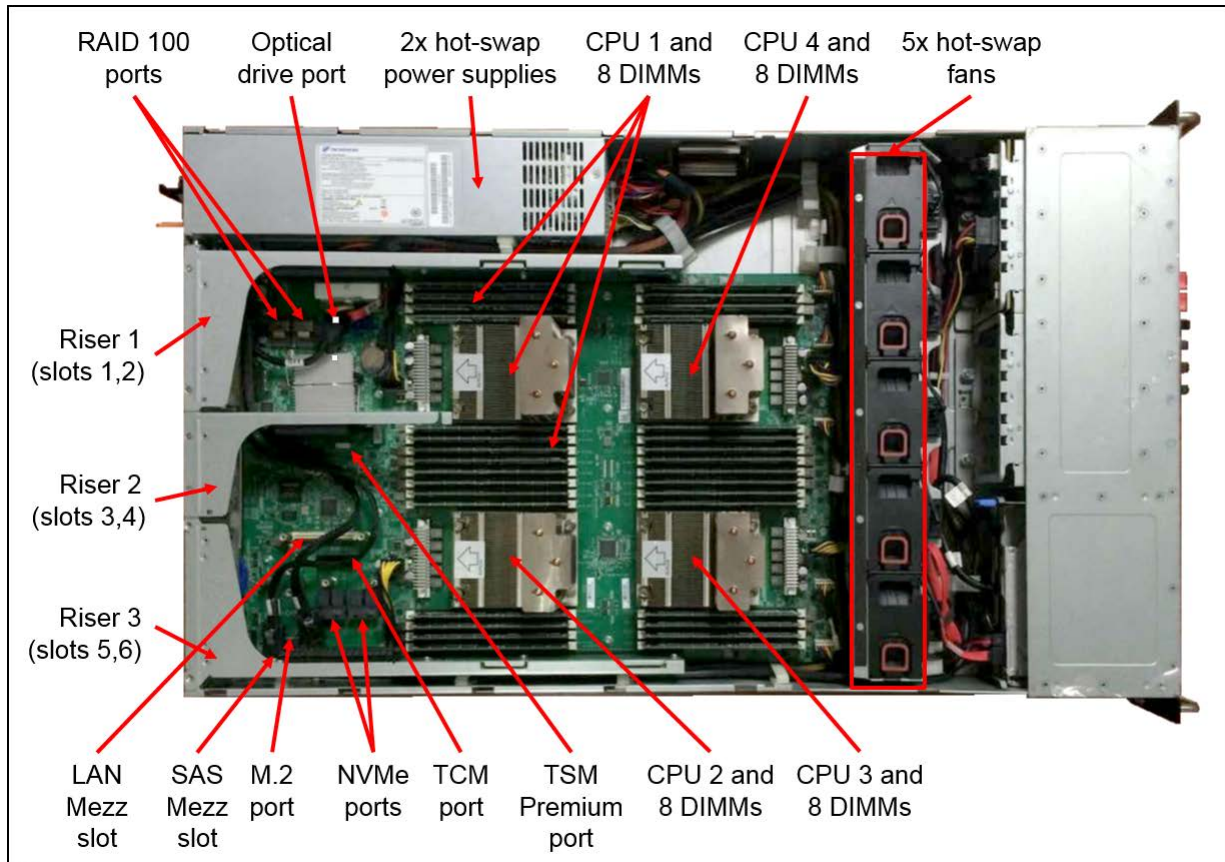Figure 3. Rear view of the Lenovo ThinkServer RQ750

Figure 4. Internal view of the Lenovo ThinkServer RQ750

Standard specifications

The following table lists the standard specifications.

Table 1. Standard specifications

Components	Specification
Machine type	70FV
Form factor	2U rack
Processor	One, two or four processors of the Intel Xeon processor E5-4600 v3 product family: • Up to 18 cores (2.1 GHz core speeds) • Up to 2.6 GHz core speeds (10 cores) • Two QPI links up to 9.6 GT/s each • Up to 45 MB cache • Up to 2133 MHz memory speed • Up to 135 W TDP
Chipset	Intel C610 chipset
Memory	Up to 32 DDR4 DIMM sockets (8 DIMMs per processor, 4 memory channels, 2 DIMMs per channel). RDIMMs are supported. UDIMMs and LR-DIMMs are not supported. Memory speed up to 2133 MHz

Components	Specification
Memory maximums	Up to 1024 TB of memory with 32x 32 GB RDIMMs and 4 processors
Memory protection	ECC, Patrol Scrubbing, Demand Scrubbing, Sparing, Mirroring, Lockstep Mode, x4/x8 SDDC.
Disk drive bays	8x 2.5-inch hot-swap SATA/SAS drive bays, plus 4x 2.5-inch PCIe NVMe SSD drive bays (requires 2 processors) Optional M.2 module with support for two SSDs
Maximum internal storage	7.2 TB using 8x 900GB 10K Enterprise SAS 6Gbps HDDs
Drive controller support	SAS/SATA drives can be connected in one of the following ways: • Onboard SATA RAID controller (RAID 100) • SAS HBA installed in the dedicated SAS mezzanine slot (requires 2 processors) • RAID adapter (RAID 500 or RAID 720i) installed in one of the low profile PCIe slots
RAID support	RAID 100 embedded controller: 6 Gb RAID 0, 1, 10, and 5. SATA only. RAID 500 adapter: 6 Gb RAID 0, 1, and 10; optional RAID 5 upgrade RAID 710: 6 Gb RAID 0, 1, 10, 5, 50, 6, 60 RAID 720i adapter: 12 Gb RAID 0/1/5/6/10/50/60 with optional 1 GB read-only cache; optional 1 GB, 2 GB or 4 GB R/W cache includes CacheVault/CacheCade/FastPath
Optical and tape bays	Standard 9.5mm DVD Multiburner drive. No tape support.
Network interfaces	Dedicated 1 GbE port for systems management. Available mezzanine slot for 2-port 10Gb or 4-port 1Gb Ethernet adapter.
PCI Expansion slots	Six PCIe slots plus dedicated mezzanine slot for Ethernet adapter and dedicated slot for SAS adapter. The PCIe slots are implemented on 3 riser cards (2 slots per riser). All riser cards are standard. Slots are as follows: • Slot 1: PCIe 3.0 x16, full height, half length (requires 4 processors) • Slot 2: PCIe 3.0 x16, full height, half length • Slot 3: PCIe 3.0 x8, low profile • Slot 4: PCIe 3.0 x8, low profile • Slot 5: PCIe 3.0 x16, full height, half length (requires 4 processors) • Slot 6: PCIe 3.0 x16, full height, half length (requires 2 processors)
Ports	Front: Two USB 3.0, and one DB-15 video port. Rear: Two USB 3.0, two USB 2.0, one DB-15 VGA video, one DB-9 serial, and one 1 GbE RJ-45 systems management. Internal: M.2 module connector for OS boot.
Cooling	Five redundant hot-swap fan packs with N+1 fan redundancy.
Power supply	Two redundant hot-swap 1200 W AC power supplies (80 PLUS Platinum certified).
Hot-swap parts	SAS/SATA drives, power supplies, fans.
Video	16 MB DDR3 video memory, integrated into the service processor in the ASPEED AST2400 ASIC. Maximum resolution is up to 1920x1200 at 60 Hz and 1600x1200 at 60 Hz.
Security features	Power-on password, admin password, and Trusted Cryptographic Modules (TCM).
Systems management	AMI UEFI-based firmware. Dedicated systems management Ethernet port (RJ45) with IPMI 2.0 support, integrated baseboard management controller (BMC) in ASPEED AST2400 ASIC. Automatic Server Restart support. Optional remote presence (remote KVM & media) support with Lenovo ThinkServer System Manager Premium, 4XF0G45867. Optional Trusted Cryptographic Module (TCM).
Operating systems	Microsoft Windows Server 2012 R2, 2012, and 2008 R2, RHEL 6 and 7, SLES 11 and 12, and VMware vSphere ESXi. See "Supported operating systems" section for details.

Components	Specification
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, 8-hour fix time, 1-year or 2-year warranty extension, remote technical support for hardware and some Lenovo and OEM software.
Dimensions	Height: 86 mm, width: 436 mm, depth: 812 mm
Weight	Minimum configuration: 21.9 kg, maximum: 37.3 kg

The server is shipped with the following items:

- 1.8 m C13-C14 power cord (one for each power supply)
- Documentation CD and safety/warranty/installation information

Rails and cable management arm for installation in a rack cabinet are optional.

Processor options

The RQ750 supports one, two, or four Intel Xeon E5-4600 v3 series processors. The following table lists the supported processor options. When two or four processors are installed, they must be identical.

Table 2. Processor options

Part number	Description	QPI speed	Memory speed	L3 cache	TB	VT	HT
4XG0G89029	RQ750 Intel Xeon E5-4610 v3 (10C, 105W, 1.7GHz)	6.4 GHz	1600 MHz	25 MB	N	Y	Y
4XG0G89030	RQ750 Intel Xeon E5-4620 v3 (10C, 105W, 2.0GHz)	8.0 GHz	1866 MHz	25 MB	Y	Y	Y
4XG0G89114	RQ750 Intel Xeon E5-4627 v3 (10C, 135W, 2.6GHz)	8.0 GHz	2133 MHz	25 MB	Y	Y	N
4XG0G89031	RQ750 Intel Xeon E5-4640 v3 (12C, 105W, 1.9GHz)	8.0 GHz	1866 MHz	30 MB	Y	Y	Y
4XG0G89032	RQ750 Intel Xeon E5-4650 v3 (12C, 105W, 2.1GHz)	9.6 GHz	2133 MHz	30 MB	Y	Y	Y
4XG0G89033	RQ750 Intel Xeon E5-4660 v3 (14C, 120W, 2.1GHz)	9.6 GHz	2133 MHz	35 MB	Y	Y	Y
None*	RQ750 Intel Xeon E5-4669 v3 (18C, 135W, 2.1GHz)	9.6 GHz	2133 MHz	45 MB	Y	Y	Y

* CTO only

Memory options

The ThinkServer RQ750 supports DDR4 memory operating at speeds up to 2133 MHz. DDR4 memory offers many benefits over older generation DDR3 memory. DDR4 operates at a lower voltage than DDR3L (1.2V vs. 1.5V) and as a result, offers significant power savings.

The following table lists the DDR4 memory options and ordering information.

Note: The server supports DIMMs that are rated up to 2400 MHz, however the server will only operate them at speeds up to 2133 MHz, depending on the processor selected.

Table 3. Memory options

Part number	Description	Maximum supported
4X70F28588	Lenovo ThinkServer 4GB DDR4-2133MHz (1Rx8) RDIMM	32
4X70F28589	Lenovo ThinkServer 8GB DDR4-2133MHz (1Rx4) RDIMM	32
4X70G88323	Lenovo ThinkServer 8GB DDR4-2400MHz (1Rx4) RDIMM	32
4X70F28590	Lenovo ThinkServer 16GB DDR4-2133MHz (2Rx4) RDIMM	32
4X70G88324	Lenovo ThinkServer 16GB DDR4-2400MHz (2Rx4) RDIMM	32
4X70G88311	Lenovo ThinkServer 32GB DDR4-2133MHz (2Rx4) RDIMM	32
4X70G88322	Lenovo ThinkServer 32GB DDR4-2400MHz (2Rx4) RDIMM	32

The server supports RDIMMs. LRDIMMs and UDIMMs are not supported. It is supported to have both 2133 MHz-rated DIMMs and 2400 MHz-rated DIMMs installed in the same server.

The server supports 8 DIMMs when one processor is installed, 16 DIMMs when two processors are installed, and 32 DIMMs when four processors are installed. Each processor has four memory channels, and there are two DIMMs supported per channel.

The RQ750 supports up to 1024 GB of memory, at speeds up to 2133 MHz, when fully populated. The actual memory speed in the system is determined by the lower of the memory speed supported by the specific CPU or the maximum operating speed for the memory configuration that is based on the number of DIMMs per channel.

The following memory protection technologies are supported:

- ECC
- Patrol Scrubbing
- Demand Scrubbing
- x4/x8 SDDC

The following RAS modes are supported:

- Rank Sparing Mode
- Mirroring Mode
- Lockstep Mode
- Independent mode (no RAS)

When you are using lockstep, sparing, or mirroring, the following memory population rules apply:

- If memory mirroring or lockstep is used, DIMMs must be installed in pairs (minimum of one pair per each CPU), and both DIMMs in a pair must be identical in type, size, and rank.

- If memory sparing is used, one rank of a DIMM in each populated channel is reserved as spare memory; therefore, Single Rank (1R) DIMMs cannot be used. DIMMs in a pair must be identical in type, size, and rank.

Internal storage

The RQ750 supports the following drive bays:

- Standard 8x 2.5-inch hot-swap drive bays supporting SAS/SATA HDDs or SSDs
- Optional 4x 2.5-inch easy-swap drive bays supporting PCIe NVMe SSDs
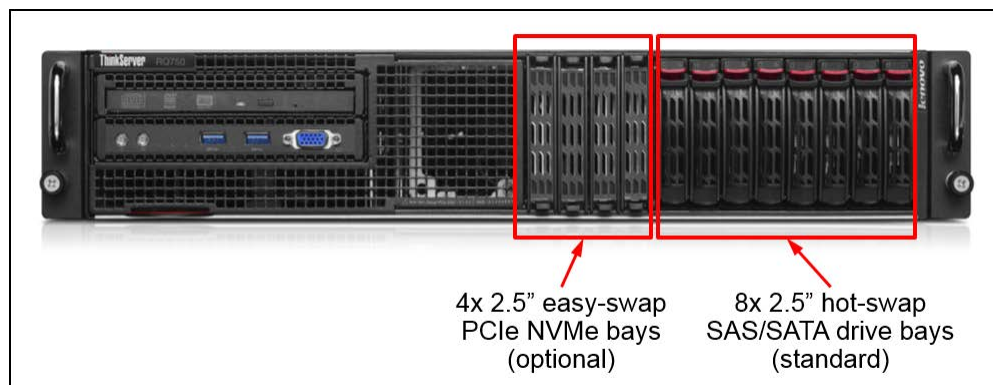
The following figure shows the drive bays.

Figure 5. Drive bays of the ThinkServer RQ750

The RQ750 also supports an optional M.2 storage module as described in the M.2 storage options section.

The backplanes used in the RQ750 are as follows:

- One standard 8-drive SAS/SATA backplane, routed to SATA connector, SAS mezzanine card or RAID adapter

- One optional 4-drive PCIe NVMe backplane, routed to the dedicated connectors on the system board. Ordering information for the PCIe backplane is listed in the following table.

Table 4. Backplane ordering information

Part number	Description	Maximum supported
4XF0G88930	Lenovo ThinkServer RQ750 2.5" 4-PCIe Drive Backplane Kit	1

Controllers for internal storage

The following table lists the RAID controllers, HBAs, and additional hardware and feature upgrades that are used for internal storage.

Table 5. RAID controllers and HBAs for internal storage

Part number	Description	Maximum supported
Embedded	Lenovo ThinkServer RAID 100 controller (SATA connectors on system board)	1
SBB0G52913 (CTO only)	12 Gb SAS Mezz card (installs in dedicated mezzanine slot)	1
4XC0G88834	Lenovo ThinkServer RAID 500 adapter	1
4XC0G88836	Lenovo ThinkServer RAID 710 adapter	1
4XC0G88831	Lenovo ThinkServer RAID 720i adapter	1
Upgrades for the RAID 500 adapter		
4XC0G88835	Lenovo ThinkServer RAID 500 RAID 5 Upgrade	1

Part number	Description	Maximum supported
Upgrades for the ThinkServer RAID 710 adapter		
4XB0F28701	Lenovo ThinkServer RAID FastPath Key	1
4XB0F28702	Lenovo ThinkServer RAID CacheCade Pro 2.0 Key	1
4XB0G45761	Lenovo ThinkServer CacheVault Data Protection Upgrade II (SuperCap-based backup unit)	1
Upgrades for the RAID 720i adapter		
4XB0F28695	Lenovo ThinkServer RAID 720i 1GB Modular DRAM Upgrade	1
4XB0F28696	Lenovo ThinkServer RAID 720i 1GB Modular Flash and Supercapacitor Upgrade	1
4XB0F28697	Lenovo ThinkServer RAID 720i 2GB Modular Flash and Supercapacitor Upgrade	1
4XB0F28698	Lenovo ThinkServer RAID 720i 4GB Modular Flash and Supercapacitor Upgrade	1

Configuration rules for internal storage controllers:

- The use of the SAS Mezzanine HBA requires that at least two processors be installed

- If a PCIe RAID adapter (RAID 500, RAID 710 RAID 720i) is used, then the adapter is installed in slot 3. Slot 4 must be left empty.

The following table compares the features of the supported controllers.

Table 6. Internal drive controllers - Feature comparison

Feature	RAID 100	RQ750 SAS HBA	RAID 500	RAID 710	RAID 720i
Part number	None	SBB0G52913	0A89464	4XC0G88836	4XC0G88849
Form factor	Embedded	Mezzanine	PCIe Low profile	PCIe Low profile	PCIe Low profile
Controller chip	Not applicable	LSI SAS3008	LSI SAS2008	LSI SAS2208	LSI SAS3108
Host interface	Not applicable	PCIe 3.0 x8	PCIe 2.0 x8	PCIe 3.0 x8	PCIe 3.0 x8
Port interface	6 Gbps SATA	12 Gbps SAS	6 Gbps SAS	6 Gbps SAS	12 Gbps SAS
Drive interface	SATA	SAS, SATA	SAS, SATA	SAS, SATA	SAS, SATA
Includes SAS expander	No	No	No	No	No
Drive type	HDD, SSD	HDD, SSD	HDD, SSD	HDD, SSD	HDD, SSD
Number of drives	8*	8	8	8	8
RAID levels	0/1/10/5	None	0/1/10, Optional 5 (0A89407)	RAID 0, 1, 10, 5, 50, 6, 60	0/1/10/5/50, Optional 6/60 with cache upgrade
JBOD mode	Yes	No	No	No	Yes (without cache)

Feature	RAID 100	RQ750 SAS HBA	RAID 500	RAID 710	RAID 720i
Cache (some with CacheVault flash backed cache)	None	None	None	1 GB standard Optional CacheVault 4XB0G45761	Optional: 1 GB flash-backed 2 GB flash-backed 4 GB flash-backed 1 GB (no backup)
FastPath	No	No	No	Optional 4XB0F28701	Yes (with flash-backed cache)
CacheCade 2.0	No	No	No	Optional 4XB0F28702	Yes (with flash-backed cache)

* Up to 6 drives can be configured in a RAID array, and the remaining two drives operate in JBOD mode.

Internal drive options

The following tables list the drive options for internal storage.

- Table 7: 2.5-inch HDDs
- Table 8: 2.5-inch SSDs
- Table 9: 2.5-inch NVMe SSDs

Table 7. HDDs for internal storage

Part number	Description	Maximum supported
6 Gb NL SATA HDDs		
4XB0G88784	RQ750 2.5'' 500GB 7.2K Enterprise SATA 6Gbps Hot Swap Hard Drive	8
6 Gb 10K and 15K SAS HDDs		
4XB0G88785	RQ750 2.5" 900GB 10K Enterprise SAS 6Gbps Hot Swap Hard Drive	8
4XB0G88786	RQ750 2.5" 300GB 15K Enterprise SAS 6Gbps Hot Swap Hard Drive	8
4XB0G88787	RQ750 2.5" 600GB 15K Enterprise SAS 6Gbps Hot Swap Hard Drive	8
12 Gb 10K SAS HDDs		
4XB0G88788	RQ750 2.5" 300GB 10K Enterprise SAS 12Gbps Hot Swap Hard Drive	8
4XB0G88789	RQ750 2.5" 600GB 10K Enterprise SAS 12Gbps Hot Swap Hard Drive	8

Table 8. SSDs for internal storage

Part number	Description	Maximum supported
6 Gb SATA SSDs - Enterprise Entry (<3 DWPD)		
4XB0G88790	RQ750 2.5" 120GB Value Read-Optimized SATA 6Gbps Hot Swap SSD	8
4XB0G88791	RQ750 2.5" 240GB Value Read-Optimized SATA 6Gbps Hot Swap SSD	8
4XB0G88792	RQ750 2.5" 480GB Value Read-Optimized SATA 6Gbps Hot Swap SSD	8
12 Gb SAS SSDs - Enterprise (10+ DWPD)		
4XB0G88793	RQ750 2.5" 800GB Enterprise Performance SAS 12Gbps Hot Swap SSD	8

Part number	Description	Maximum supported
4XB0G88794	RQ750 2.5" 400GB Enterprise Performance SAS 12Gbps Hot Swap SSD	8

Table 9. NVMe SSDs for internal storage

Part number	Description	Maximum supported
00YA818	Intel P3700 400GB NVMe 2.5" G3HS Enterprise Performance PCIe SSD	4

M.2 storage options

The RQ750 also supports M.2 SSDs as an alternative to SD Cards for booting an operating system. M.2 is an enterprise-class SSD form factor and is more robust than SD card options.

M.2 offers better performance than SD cards and protects data better, with features such as capacitor-based power loss protection and support of Advanced Encryption Standard (AES).

The following table shows the ordering information for the M.2 option.

Table 10. M.2 options

Part number	Description	Maximum supported
4XB0F28656	Lenovo ThinkServer M.2 120GB Value Read-Optimized SATA 6Gbps Solid State Drive	1

Internal backup units

The server does not support internal tape drive options.

Optical drives

The RQ750 server includes a 9.5mm multiburner optical drive. Specifications are as follows:

Readable Formats:

- CD: VCD, CD-ROM, CD-R, CD-RW
- DVD: DVD-ROM, DVD-R, DVD-R DL, DVD-RAM, DVD-RW,DVD+R, DVD+R DL,DVD+RW

Read Speeds:

- DVD-ROM: Max 8X CAV
- CD-ROM: Max 24X CAV

Write Speeds:

- CD-R: Max 24X CAV
- CD-RW: 4X CLV
- High Speed CD-RW: 10X CLV
- Ultra Speed CD-RW: Max 16X CLV
- DVD-R: Max 8X CAV

- DVD-R DL: Max 6X Zone CLV
- DVD-RW: Max 6X Zone CLV
- DVD+R: Max 8X CAV
- DVD+R DL: Max 6X Zone CLV
- DVD+RW: Max 8X Zone CLV
- DVD-RAM: 3X-5X PCAV (4.7 GB)

I/O expansion options

The RQ750 supports up to 6 PCIe slots plus two dedicated mezzanine slots. The PCIe slots are implemented on 3 riser cards (2 slots per riser). All riser cards are included standard.

The following figure shows the locations of the PCIe slots and mezzanine slots.
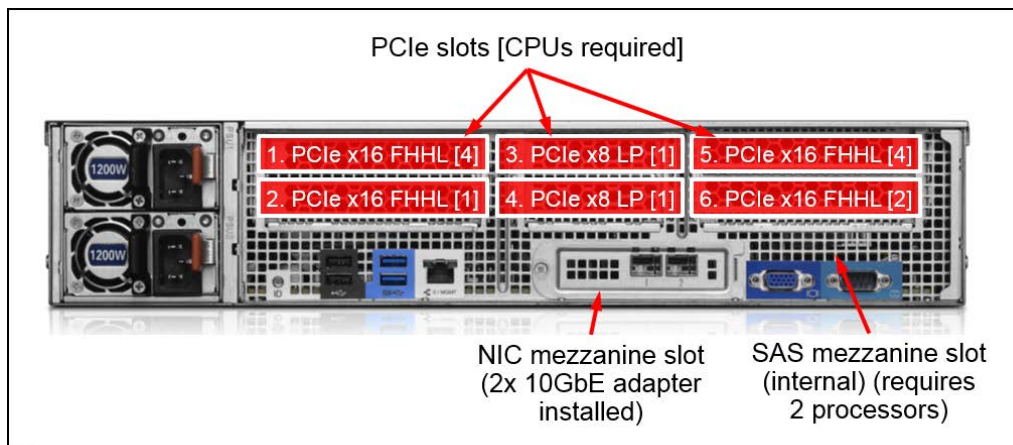

Figure 6. I/O slots of the ThinkServer RQ750

Note: Some slots require 2 or 4 processors be installed, as indicated.

Slot specifications are as follows:

- Slot 1: PCIe 3.0 x16, full height, half length (requires 4 processors)
- Slot 2: PCIe 3.0 x16, full height, half length
- Slot 3: PCIe 3.0 x8, low profile
- Slot 4: PCIe 3.0 x8, low profile
- Slot 5: PCIe 3.0 x16, full height, half length (requires 4 processors)
- Slot 6: PCIe 3.0 x16, full height, half length (requires 2 processors)

The mezzanine slots are as follows:

- NIC mezzanine slot: PCIe 3.0 x8
- SAS mezzanine slot: PCIe 3.0 x8 (requires 2 processors)

Network adapters

The server supports mezzanine adapters that are installed in the custom mezz slot. This slot supports an adapter with either two 10 Gb ports or four 1 Gigabit ports and supports direct connectivity to the service processor for out-of-band systems management (NC-SI support). The server also supports standard PCIe network adapters

Supported adapters are listed in the following table. The maximum quantity listed is for configurations with all processors installed.

Table 11. Network adapters

Part number	Description	Maximum supported
Mezzanine adapters		
4XC0G88832	ThinkServer BCM57810 10Gb 2 Port SFP+ Ethernet Mezz card by Broadcom	1
4XC0G88833	ThinkServer I350-T4 1Gb 4 Port Base-T Ethernet Mezz card by Intel	1
PCIe adapters		
4XC0F28732	ThinkServer X540-T2 PCIe 10Gb 2 Port Base-T Ethernet Adapter by Intel	3
4XC0G88852	ThinkServer X710-DA2 PCIe 10Gb 2 port Ethernet Adapter by Intel	3
4XC0F28735	ThinkServer 10Gb Optical Module by Intel (Transceiver for 4XC0G88852)	One for each adapter port
4XC0G88856	ThinkServer X550-T2 PCIe 10Gb 2 Port Base-T Ethernet Adapter by Intel	3

Adapters with SFP+ support require the use of a supported transceiver or DAC cable. The following table lists the transceivers that are supported.

Table 12. SFP+ transceivers

Part number	Description	Maximum supported
Mezzanine adapters		
4XC0F28735	Lenovo ThinkServer 10Gb Optical Module by Intel (For use with the X710-DA2 adapter, 4XC0G88852 and BCM57810 mezzanine card, 4XC0G88832)	2 per adapter

Fibre Channel host bus adapters

The following table lists the Fibre Channel HBAs supported by the RQ750 for external connectivity. The maximum quantity listed is for configurations with all processors installed.

Table 13. Storage adapters

Part number	Description	Maximum supported
16 Gb Fibre Channel		
4XC0F28745	ThinkServer QLE2672 PCIe 16Gb 2 Port Fibre Channel Adapter by QLogic	2
4XB0F28705	ThinkServer LPe16002B-M6-L PCIe 16Gb 2 Port Fibre Channel Adapter by Emulex	2
8 Gb Fibre Channel		
4XB0F28704	ThinkServer LPe16002B-M8-L PCIe 8Gb 2 Port Fibre Channel Adapter by Emulex	2

SAS adapters for external storage

The following table lists the RAID adapter and options that are supported by the RQ750. The maximum quantity listed is for configurations with all processors installed.

Table 14. External storage adapters

Part number	Description	Maximum supported
External RAID controller		
4XB0F28699	ThinkServer 9286CV-8e PCIe 6Gb 8 Port External SAS RAID Adapter by LSI	2
Upgrades for the 9286CV-8e adapter		
4XB0F28702	Lenovo ThinkServer RAID CacheCade Pro 2.0 Key	2
4XB0G45761	Lenovo ThinkServer CacheVault Data Protection Upgrade II	2

The following table lists the specifications of the supported adapter.

Table 15. Specifications

Feature	ThinkServer 9286CV-8e
Adapter type	RAID controller
Part number	4XB0F28699
Form factor	Low profile
Controller chip	LSI SAS2208
Host interface	PCIe 3.0 x8
Port interface	6 Gbps SAS
Number of external ports	8
External port connectors	2x Mini-SAS (SFF-8088)
Drive interface	SAS, SATA
Drive type	HDD, SSD
Maximum number of devices	240
Maximum number of expansion units	8
RAID levels	0/1/10/5/50/6/60
JBOD mode	No
Cache	1 GB
CacheVault cache protection	Optional (4XB0G45761)
FastPath	Included
CacheCade Pro 2.0	Optional (4XB0F28702)

PCIe Flash Storage adapters

The server supports the Flash Storage adapters listed in the following table. The maximum quantity listed is for configurations with all processors installed.

Note: The use of PCIe Flash Storage adapters requires 2 or 4 processors.

Table 16. Flash Storage adapters

Part number	Description	Maximum supported
4XB0F28661	ThinkServer 1.6TB ioMemory SX300 Performance PCIe 2.0 SSD by FusionIO	2
4XB0F28662	ThinkServer 3.2TB ioMemory SX300 Performance PCIe 2.0 SSD by FusionIO	2

Security

The RQ750 server offers an optional hardware security module, Trusted Cryptographic Module (TCM). Similar to the Trusted Platform Module (TPM), the TCM works as a hardware security solution that enables advanced cryptographic functionality such as digital signatures and Windows BitLocker encryption. The TCM functions are enabled in UEFI. Ordering information is listed in the following table.

Table 17. GPU adapters

Part number	Description	Maximum supported
SBB0G52616 (CTO only)	Lenovo ThinkServer Gen 5 Trusted Cryptographic Module (China only)	1

Graphics adapter

The RQ750 has an onboard video controller with the following specifications.

- 16 MB DDR3 video memory
- Maximum resolution is up to 1920x1200 at 60 Hz and 1600x1200 at 60 Hz.

In addition, the server supports the NVIDIA adapter listed in the following table.

Table 18. GPU adapters

Part number	Description	Maximum supported
4X60G88210	ThinkServer 1GB NVS 315 PCIe x16 Graphic Adapter by NVIDIA (includes DMS59-to-2xDVI and DMS59-to-2xVGA splitter cables)	1

Slot usage is as follows:

- When the server has one processor, the adapter is installed in slot 2.
- When the server has two processors, the adapter can be installed in slot 2 or slot 6
- When the server has four processors, the adapter can be installed in slots 1, 2, 5, or 6.

Power supplies

The RQ750 server has two hot-swap 1200 W power supplies, both are included standard. With two power supplies installed, they are fully (N+N) redundant. The power supplies have the following specifications:

- 1200 W power supply
- 200-240V input, 50-60 Hz
- 80 PLUS Platinum efficiency rating
- Efficiencies 90% at 20% load, 94% at 50% load, 91% at 100% load

Each power supply ships with a 1.8m, 10A/220V, C13 to GB 2099.1 power cord.

Systems management

The RQ750 server supports the following systems management tools:

- Lenovo ThinkServer System Manager
- Lenovo Software Tools
- Lenovo XClarity Energy Manager

Lenovo ThinkServer System Manager

The RQ750 server contains ThinkServer System Manager (TSM), which provides advanced service-processor control, monitoring, and an alerting function through the onboard ThinkServer Management Module (TMM). If an environmental condition exceeds a threshold or if a system component fails, TSM lights LEDs to help you diagnose the problem, records the error in the event log, and alerts you to the problem. Optionally, TSM also provides a virtual presence capability for remote server management capabilities.

TSM provides remote storage server management through the following industry-standard interfaces:

- Intelligent Platform Management Interface (IPMI) Version 2.0
- Simple Network Management Protocol (SNMP) Version 3
- Data Center Management Interface (DCMI) Version 1.0
- Web browser interface to the ThinkServer Management Module

The optional TSM Premium is required for enabling remote presence and energy monitoring and management. The TSM Premium feature provides the following functions:

- Remotely viewing video with graphics resolutions up to 1920x1200 at 60 Hz with up to 24 bits per pixel colors

- Remotely accessing the system by using the keyboard and mouse from a remote client

- Mapping the CD or DVD drive, diskette drive, and USB flash drive on a remote client, and mapping ISO and diskette image files as virtual drives that are available for use by the system

- Enabling support for Lenovo XClarity Energy Manager for power monitoring and management

The following table lists the Premium management option.

Table 19. Premium management option

Description	Part number	Maximum supported
Lenovo ThinkServer System Manager Premium	4XF0G45867	1

Lenovo Software Tools

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

- ThinkServer Deployment Manager

  The ThinkServer Deployment Manager tool, a part of the server firmware, simplifies the process of updating firmware, configuring UEFI system settings, configuring RAID, and installing supported Microsoft Windows or Linux operating systems or VMware hypervisors and associated device drivers on a ThinkServer system.

- ThinkServer Operating System-based Platform Update Tool

  The ThinkServer Operating System-based Platform Update Tool firmware update tool runs in the server operating system and enables customers to maintain server firmware up-to-date to help avoid unnecessary server outages.

- ThinkServer Diagnostics

  The ThinkServer Diagnostics software speeds up troubleshooting tasks to reduce service time by diagnosing server problems, performing diagnostic tests, and collecting system information and logs. The diagnostics software resides in the server firmware (Embedded edition), on a bootable USB drive (Standalone edition), or in the operating system (Windows or Linux editions).

- ThinkServer Partner Pack for vSphere vCenter Server

  The ThinkServer Partner Pack for vSphere vCenter Server provides detailed system information about the ThinkServer systems in the VMware virtualized environment and enables users to receive and view alerts, deploy server firmware updates, and perform tasks such as launching a remote console and accessing the web-based ThinkServer System Manager.

- ThinkServer Partner Packs for Microsoft System Center

  The ThinkServer Partner Pack for Microsoft System Center Operations Manager (SCOM) discovers ThinkServer systems and provides detailed system information about the managed servers. The software also enables users to perform management tasks, such as restarting the server or turning the server on or off, accessing the Remote Desktop Console through Remote Desktop Protocol (RDP), accessing web-based ThinkServer System Manager, and capturing the latest crash screen if the remote presence feature is enabled. The ThinkServer Partner Pack for Microsoft System Center Configuration Manager (SCCM) provides centralized firmware management of ThinkServer systems.

Lenovo XClarity Energy Manager

Lenovo XClarity Energy Manager (formerly ThinkServer Energy Manager) provides a stand-alone, web-based agentless power management console that provides real time data and enables you to observe, plan and manage power and cooling for Lenovo System x and ThinkServer x86 servers. Using built-in intelligence, it identifies server power consumption trends and ideal power settings and performs cooling analysis so that you can define and optimize power-saving policies.

Lenovo XClarity Energy Manager offers the following capabilities:

- Reports vital server information, such as power, temperature and resource utilization
- Monitors inlet temperature to locate hot spots, reducing the risk of data or device damage
- Provides finely-grained controls to limit platform power in compliance with IT policy
- Generates alerts when a user-defined threshold is reached

Lenovo XClarity Energy Manager is an optional software component for the ThinkServer RQ750; the Energy Manager software license is included in the TSM Premium management option (part number 4XF0G45867).

Rack installation

The RQ750 installs in a standard 19-inch rack. Rails and a cable management arm are optional. Ordering information for the rail kit and cable management arm are listed in the following table.

Table 20. Rack installation components

Part number	Description
4XF0G88931	Lenovo ThinkServer RQ750 Slide Rail Kit
4XF0G88932	Lenovo ThinkServer RQ750 Slide Rail and CMA Kit (includes both rail kit and cable management arm)

Operating system support

The RQ750 supports the following operating systems:

- Microsoft Windows Server 2012 R2
- Red Hat Enterprise Linux 6.5 (x64)
- Red Hat Enterprise Linux 7.2 (x64)
- SUSE LINUX Enterprise Server 11 x64 SP3
- SUSE LINUX Enterprise Server 12 x64 SP1
- VMware vSphere 5.5 (ESXi) U2
- NingSi Linux V6.0

For the latest information about the specific versions and service levels that are supported and any other prerequisites, see the Operating System Interoperability Guide, http://lenovopress.com/osig

Physical and environmental specifications

Dimensions and weight:

- Height: 86 mm
- Width: 436 mm
- Depth: 812 mm
- Weight:

    ▪ Minimum configuration: 21.9 kg
    ▪ Maximum configuration: 37.3 kg

Supported environment:

- Air temperature:

    ▪ ASHRAE A2 compliant
    ▪ Server on: 10 °C to 35 °C; altitude: 0 – 3,000 m
    ▪ Above 900 m, maximum temperature drops 1°C each 300 m
    ▪ Transport & storage (in shipping box): -40 °C to 70 °C

- Humidity:

- ▪ Server on: 8% - 80%, non-condensing; maximum dew point 24 °C
- ▪ Transport & storage: 8 to 90% in shipping box, 8 to 80% without box (noncondensing)

- Noise level (acoustics):

  - ▪ Operating: 5.0 bels typical, 6.5 bels maximum
  - ▪ Idle: 4.5 bels typical, 6 bels maximum

Warranty options

The RQ750 server has a three-year warranty with 24x7 standard call center support and 9x5 next business day onsite coverage. Lenovo offers services warranty maintenance upgrades and post-warranty maintenance agreements with a well-defined scope of services, including service hours, response time, and length of service coverage.

The Lenovo QuickPick tool helps locate compatible accessories and services and warranty information. Services offered may vary by geographic location. Access the tool via the following URL: http://lenovoquickpick.com

The following table explains warranty service definitions in more detail.

Table 21. Warranty service definitions

Term	Description
On-site service	A service technician will go to the client's location for equipment service.
24x7x4 hour	A service technician is scheduled to arrive at the client's location within four hours after remote problem determination is completed. Lenovo provides service around the clock, every day, including Lenovo holidays.
24x7x8 hour	A service technician is scheduled to arrive at the client's location within eight hours after remote problem determination is completed. Lenovo provides service around the clock, every day, including Lenovo holidays.
9x5x4 hour	A service technician is scheduled to arrive at the client's location within four business hours after remote problem determination is completed. Lenovo provides service 8:00 am - 5:00 pm in the client's local time zone, Monday-Friday, excluding Lenovo holidays. For example, if a customer reports an incident at 3:00 pm on Friday, the technician will arrive by 10:00 am the following Monday.
9x5 next business day	A service technician is scheduled to arrive at the client's location on the business day after remote problem determination is completed. Lenovo provides service 8:00 am - 5:00 pm in the client's local time zone, Monday - Friday, excluding Lenovo holidays. Calls received after 4:00 pm local time require an extra business day for service dispatch.

The following Lenovo warranty service upgrades are available:

- Warranty and maintenance service upgrades:

  - ▪ Three, four, or five years of 9x5 or 24x7 service coverage
  - ▪ Onsite response time from next business day to 4 hour same-day
  - ▪ Warranty extension of up to 5 years
  - ▪ Post warranty extensions offered in 1-year increments

- Priority Technical Support

  Lenovo's Priority Support Offering enhances our award-winning call center support to provide top priority queue assignment to specialized Lenovo technicians. Priority support accelerates call center troubleshooting to get your problems resolved quickly, and includes other value-added support for

Lenovo provided software tools. Priority support can be purchased stand alone to match the base warranty of your system or in convenient bundles with our same-day response services.

- Keep Your Drive Multi-Drive

  Lenovo's Keep Your Drive Multi-Drive service is a multi-drive hard drive retention offering that ensures your data is always under your control, regardless of the number of hard drives that are installed in your Lenovo server. In the unlikely event of a hard drive failure, you retain possession of your hard drive while Lenovo replaces the failed drive part. Your data stays safely on your premises, in your hands. Keep Your Drive Multi-Drive covers multiple drives and multiple failures with one service offering at one value price. This service can be purchased stand-alone to match the base warranty of your system or in convenient bundles with our same-day response services.

Regulatory compliance

The server conforms to the following regulations:

- FCC - Verified to comply with Part 15 of the FCC Rules, Class A

- Canada ICES-003, issue 4, Class A

- IEC 60950-1(CB Certificate and CB Test Report)

- China CCC (GB4943), GB9254 Class A, GB17625.1

- CE Mark (EN55022 Class A, EN60950-1, EN55024, EN61000-3-2, and EN61000-3-3)

- CISPR 22, Class A

- CELP

External drive enclosures

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

The following table lists the external drive enclosures that can be used for direct-attach SAS storage. Lenovo Storage expansion units can also be used to expand the Lenovo Storage Systems listed in the External storage systems section.

Table 22. External expansion enclosures

Part number	Description
64111B1*	Lenovo Storage E1012 LFF Disk Expansion Single SAS IO Module, Rail Kit, 9x5 NBD
64111B2	Lenovo Storage E1012 LFF Disk Expansion Dual SAS IO Module, Rail Kit, 9x5 NBD
64111B3*	Lenovo Storage E1024 SFF Disk Expansion Single SAS IO Module, Rail Kit, 9x5 NBD
64111B4	Lenovo Storage E1024 SFF Disk Expansion Dual SAS IO Module, Rail Kit, 9x5 NBD
70F0 / 70F1**	Lenovo ThinkServer SA120

* Not available for ordering in North America (United States and Canada).
** Machine Type; see the Lenovo ThinkServer SA120 Product Guide (http://lenovopress.com/tips1234)
for available models.

For details about supported adapters, drives and cables for the Lenovo Storage E1012 and E1024, see
the Lenovo Press Product Guide:
http://lenovopress.com/lp0043

For details about supported adapters, drives and cables for the Lenovo ThinkServer SA120, see the
Lenovo Press Product Guide:
http://lenovopress.com/tips1234

External storage systems

The following table lists the NAS and SAN external storage systems that are offered by Lenovo.

Table 23. External disk storage systems

Part number	Description
Lenovo Network-Attached Storage (NAS connectivity)	
70FX / 70FY*	Lenovo Storage N3310
70G0 / 70G1*	Lenovo Storage N4610
Lenovo Storage S2200 (SAS, iSCSI, or FC host connectivity)	
64112B1	Lenovo Storage S2200 LFF Chassis SAS Single Controller, Rack Kit, 9x5NBD
64112B2	Lenovo Storage S2200 LFF Chassis SAS Dual Controller, Rack Kit, 9x5NBD
64114B1	Lenovo Storage S2200 LFF Chassis FC/iSCSI Single Controller, Rack Kit, 9x5NBD
64114B2	Lenovo Storage S2200 LFF Chassis FC/iSCSI Dual Controller, Rack Kit, 9x5NBD
64112B3	Lenovo Storage S2200 SFF Chassis SAS Single Controller, Rack Kit, 9x5NBD
64112B4	Lenovo Storage S2200 SFF Chassis SAS Dual Controller, Rack Kit, 9x5NBD
64114B3	Lenovo Storage S2200 SFF Chassis FC/iSCSI Single Controller, Rack Kit, 9x5NBD
64114B4	Lenovo Storage S2200 SFF Chassis FC/iSCSI Dual Controller, Rack Kit, 9x5NBD
Lenovo Storage S3200 (SAS, iSCSI, or FC host connectivity)	
64113B1	Lenovo Storage S3200 LFF Chassis SAS Single Controller, Rack Kit, 9x5NBD
64113B2	Lenovo Storage S3200 LFF Chassis SAS Dual Controller, Rack Kit, 9x5NBD
64116B1	Lenovo Storage S3200 LFF Chassis FC/iSCSI Single Controller, Rack Kit, 9x5NBD
64116B2	Lenovo Storage S3200 LFF Chassis FC/iSCSI Dual Controller, Rack Kit, 9x5NBD
64113B3	Lenovo Storage S3200 SFF Chassis SAS Single Controller, Rack Kit, 9x5NBD
64113B4	Lenovo Storage S3200 SFF Chassis SAS Dual Controller, Rack Kit, 9x5NBD
64116B3	Lenovo Storage S3200 SFF Chassis FC/iSCSI Single Controller, Rack Kit, 9x5NBD
64116B4	Lenovo Storage S3200 SFF Chassis FC/iSCSI Dual Controller, Rack Kit, 9x5NBD
Lenovo Storage V Series (SAS, iSCSI, FC, or FCoE host connectivity)	
6535C1D	Lenovo Storage V3700 V2 LFF Control Enclosure

Part number	Description
6535EC1	Lenovo Storage V3700 V2 LFF Control Enclosure (Top Seller)
6535C2D	Lenovo Storage V3700 V2 SFF Control Enclosure
6535EC2	Lenovo Storage V3700 V2 SFF Control Enclosure (Top Seller)
6535C3D	Lenovo Storage V3700 V2 XP LFF Control Enclosure
6535EC3	Lenovo Storage V3700 V2 XP LFF Control Enclosure (Top Seller)
6535C4D	Lenovo Storage V3700 V2 XP SFF Control Enclosure
6535EC4	Lenovo Storage V3700 V2 XP SFF Control Enclosure (Top Seller)
6536C12	Lenovo Storage V5030 LFF Control Enclosure 3Yr S&S
6536C32	Lenovo Storage V5030 LFF Control Enclosure 5Yr S&S
6536C22	Lenovo Storage V5030 SFF Control Enclosure 3Yr S&S
6536C42	Lenovo Storage V5030 SFF Control Enclosure 5Yr S&S
IBM Storwize for Lenovo (SAS [except V7000], iSCSI, FC, or FCoE host connectivity)	
6096CU2**	IBM Storwize V3500 3.5-inch Dual Control Storage Controller Unit
6096CU3**	IBM Storwize V3500 2.5-inch Dual Control Storage Controller Unit
6099L2C	IBM Storwize V3700 3.5-inch Storage Controller Unit
6099S2C	IBM Storwize V3700 2.5-inch Storage Controller Unit
6099T2C	IBM Storwize V3700 2.5-inch DC Storage Controller Unit
6194L2C†	IBM Storwize V5000 LFF Control Enclosure, w/3 Yr S&S
61941A1†	IBM Storwize V5000 LFF Control Enclosure, w/5 Yr S&S
6194S2C†	IBM Storwize V5000 SFF Control Enclosure, w/3 Yr S&S
61941C1†	IBM Storwize V5000 SFF Control Enclosure, w/5 Yr S&S
6195SC5†	IBM Storwize V7000 2.5-inch Storage Controller Unit, w/3 Yr S&S
61951F1†	IBM Storwize V7000 2.5-inch Storage Controller Unit, w/5 Yr S&S

* Machine Type; see the respective Product Guide in the NAS Storage category for models:
http://lenovopress.com/storage/nas
** Available only in China.
† Available worldwide except Latin America.

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

- Lenovo Network-Attached Storage: http://lenovopress.com/storage/nas
- Lenovo SAN Storage: https://lenovopress.com/storage/san/lenovo
- IBM Storwize: https://lenovopress.com/storage/san/ibm

External backup units

The server supports the external backup attachment options that are listed in the following table.

Table 24. External backup options

Part number	Description
External RDX USB drives (System x, Flex System, NeXtScale)	
362532Y	RDX External USB 3.0 Dock with 320GB Cartridge
362550Y	RDX External USB 3.0 Dock with 500GB Cartridge
36251TY	RDX External USB 3.0 Dock with 1TB Cartridge
External RDX USB drives (ThinkServer)	
4XF0G88929	Lenovo ThinkServer External RDX Tape Drive
External SAS tape backup drives	
6160S5E	IBM TS2250 Tape Drive Model H5S
6160S6E	IBM TS2260 Tape Drive Model H6S
6160S7E	IBM TS2270 Tape Drive Model H7S
External SAS tape backup autoloaders	
6171S5R	IBM TS2900 Tape Autoloader w/LTO5 HH SAS
6171S6R	IBM TS2900 Tape Autoloader w/LTO6 HH SAS
6171S7R	IBM TS2900 Tape Autoloader w/LTO7 HH SAS
External tape backup libraries	
61732UL	IBM TS3100 Tape Library Model L2U
61734UL	IBM TS3200 Tape Library Model L4U
Fibre Channel backup drives for TS3100 and TS3200 Tape Libraries	
00NA107	6173 LTO Ultrium 5 Fibre Channel Drive
00NA113	6173 LTO Ultrium 5 Half High Fibre Drive Sled
00NA115	6173 LTO Ultrium 6 Fibre Channel Drive
00NA119	6173 LTO Ultrium 6 Half High Fibre Drive Sled
00WF765	6173 LTO Ultrium 7 Fibre Channel Drive
00WF769	6173 LTO Ultrium 7 Half High Fibre Drive Sled
SAS backup drives for TS3100 and TS3200 Tape Libraries	
00NA109	6173 LTO Ultrium 5 SAS Drive Sled
00NA111	6173 LTO Ultrium 5 Half High SAS Drive Sled
00NA117	6173 LTO Ultrium 6 Half High SAS Drive Sled
00WF767	6173 LTO Ultrium 7 Half High SAS Drive Sled

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

Top-of-rack Ethernet switches

The server supports the top-of-rack Ethernet switches listed in the following table.

Table 25. Top-of-rack switches

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

For more information, see the list of Product Guides in the Top-of-rack switches categories:

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

Fibre Channel SAN switches

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

Table 26. Fibre Channel SAN switches

Part number	Description
8 Gb Fibre Channel	
3873AR3	Lenovo B300, 8 ports activated w/ 8Gb SWL SFPs, 1 PS, Rail Kit
3873AR4	Lenovo B6505, 12 ports activated w/ 8Gb SWL SFPs, 1 PS, Rail Kit
3873BR2	Lenovo B6510, 24 ports activated w/ 8Gb SWL SFPs, 2 PS, Rail Kit
16 Gb Fibre Channel	
3873AR5	Lenovo B6505, 12 ports activated w/ 16Gb SWL SFPs, 1 PS, Rail Kit
3873BR3	Lenovo B6510, 24 ports activated w/ 16Gb SWL SFPs, 2 PS, Rail Kit

For more information, see the list of Product Guides in the Rack SAN Switches category:
http://lenovopress.com/storage/switches/rack

Uninterruptible power supply units

The server supports attachments to the uninterruptible power supply (UPS) units listed in the following table.

Table 27. Uninterruptible power supply units

Part number	Description
Rack-mounted or tower UPS units	
55941KX	RT1.5kVA 2U Rack or Tower UPS (200-240VAC)
55942KX	RT2.2kVA 2U Rack or Tower UPS (200-240VAC)
55943KX	RT3kVA 2U Rack or Tower UPS (200-240VAC)
55945KX	RT5kVA 3U Rack or Tower UPS (200-240VAC)
55946KX	RT6kVA 3U Rack or Tower UPS (200-240VAC)
55948KX	RT8kVA 6U Rack or Tower UPS (200-240VAC)
55949KX	RT11kVA 6U Rack or Tower UPS (200-240VAC)
55948PX	RT8kVA 6U 3:1 Phase Rack or Tower UPS (380-415VAC)
55949PX	RT11kVA 6U 3:1 Phase Rack or Tower UPS (380-415VAC)

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

Power distribution units

The server supports attachments to the power distribution units (PDUs) listed in the following table.

Table 28. Power distribution units

Part number	Description
0U Basic PDUs	
00YJ776	0U 36 C13/6 C19 24A/200-240V 1 Phase PDU with NEMA L6-30P line cord
00YJ777	0U 36 C13/6 C19 32A/200-240V 1 Phase PDU with IEC60309 332P6 line cord
00YJ778	0U 21 C13/12 C19 32A/200-240V/346-415V 3 Phase PDU with IEC60309 532P6 line cord
00YJ779	0U 21 C13/12 C19 48A/200-240V 3 Phase PDU with IEC60309 460P9 line cord
46M4143	0U 12 C19/12 C13 32A 3 Phase PDU with IEC 309 3P+N+Gnd line cord
Switched and Monitored PDUs	
00YJ781	0U 20 C13/4 C19 Switched and Monitored 24A/200-240V/1Ph PDU w/ NEMA L6-30P line cord
00YJ780	0U 20 C13/4 C19 Switched and Monitored 32A/200-240V/1Ph PDU w/ IEC60309 332P6 line cord
00YJ782	0U 18 C13/6 C19 Switched / Monitored 32A/200-240V/346-415V/3Ph PDU w/ IEC60309 532P6 cord
00YJ783	0U 12 C13/12 C19 Switched and Monitored 48A/200-240V/3Ph PDU w/ IEC60309 460P9 line cord
46M4116	0U 24 C13 Switched and Monitored 30A PDU with NEMA L6-30P line cord
46M4137	0U 12 C19/12 C13 Switched and Monitored 32A 3 Phase PDU with IEC 309 3P+N+Gnd cord

Part number	Description
46M4134	0U 12 C19/12 C13 Switched and Monitored 50A 3 Phase PDU with CS8365L 3P+Gnd cord
46M4002	1U 9 C19/3 C13 Switched and Monitored DPI PDU (without line cord)
46M4003	1U 9 C19/3 C13 Switched and Monitored 60A 3 Phase PDU with IEC 309 3P+Gnd line cord
46M4004	1U 12 C13 Switched and Monitored DPI PDU (without line cord)
46M4005	1U 12 C13 Switched and Monitored 60A 3 Phase PDU with IEC 309 3P+Gnd line cord
Ultra Density Enterprise PDUs (9x IEC 320 C13 + 3x IEC 320 C19 outlets)	
71762NX	Ultra Density Enterprise C19/C13 PDU Module (without line cord)
71763NU	Ultra Density Enterprise C19/C13 PDU 60A/208V/3ph with IEC 309 3P+Gnd line cord
C13 Enterprise PDUs (12x IEC 320 C13 outlets)	
39M2816	DPI C13 Enterprise PDU+ (without line cord)
39Y8941	DPI Single Phase C13 Enterprise PDU (without line cord)
C19 Enterprise PDUs (6x IEC 320 C19 outlets)	
39Y8948	DPI Single Phase C19 Enterprise PDU (without line cord)
39Y8923	DPI 60A 3 Phase C19 Enterprise PDU with IEC 309 3P+G (208 V) fixed line cord
Front-end PDUs (3x IEC 320 C19 outlets)	
39Y8938	DPI 30amp/125V Front-end PDU with NEMA L5-30P line cord
39Y8939	DPI 30amp/250V Front-end PDU with NEMA L6-30P line cord
39Y8934	DPI 32amp/250V Front-end PDU with IEC 309 2P+Gnd line cord
39Y8940	DPI 60amp/250V Front-end PDU with IEC 309 2P+Gnd line cord
39Y8935	DPI 63amp/250V Front-end PDU with IEC 309 2P+Gnd line cord
Universal PDUs (7x IEC 320 C13 outlets)	
39Y8951	DPI Universal Rack PDU with US LV and HV line cords
39Y8952	DPI Universal Rack PDU with CEE7-VII Europe line cord
39Y8953	DPI Universal Rack PDU with Denmark line cord
39Y8954	DPI Universal Rack PDU with Israel line cord
39Y8955	DPI Universal Rack PDU with Italy line cord
39Y8956	DPI Universal Rack PDU with South Africa line cord
39Y8957	DPI Universal Rack PDU with UK line cord
39Y8958	DPI Universal Rack PDU with AS/NZ line cord
39Y8959	DPI Universal Rack PDU with China line cord
39Y8962	DPI Universal Rack PDU (Argentina)
39Y8960	DPI Universal Rack PDU (Brazil)
39Y8961	DPI Universal Rack PDU (India)

Part number	Description
NEMA PDUs (6x NEMA 5-15R outlets)	
39Y8905	DPI 100-127V PDU with Fixed NEMA L5-15P line cord
Line cords for PDUs that ship without a line cord	
40K9611	DPI 32a Line Cord (IEC 309 3P+N+G)
40K9612	DPI 32a Line Cord (IEC 309 P+N+G)
40K9613	DPI 63a Cord (IEC 309 P+N+G)
40K9614	DPI 30a Line Cord (NEMA L6-30P)
40K9615	DPI 60a Cord (IEC 309 2P+G)
40K9617	DPI Australian/NZ 3112 Line Cord

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

Rack cabinets

The racks supported by the server are listed in the following table.

Table 29. Rack cabinets

Part number	Description
2018-86X	11U Office Enablement Kit
9307-2PX	25U Static S2 Standard Rack
9307-2RX	25U Standard Rack
9307-4RX	42U Standard Rack
9307-4XX	42U Standard Rack Extension
9308-4EX	42U Enterprise Expansion Rack
9308-4PX	42U Enterprise Rack
9360-4PX	42U 1200mm Deep Dynamic Rack
9360-4EX	42U 1200mm Deep Dynamic Expansion Rack
9361-4PX	42U 1200mm Deep Static Rack
9361-4EX	42U 1200mm Deep Static Expansion Rack
9362-4PX	47U 1200mm Deep Static Rack
9362-4EX	47U 1200mm Deep Static Expansion Rack
9363-4CX	PureFlex System 42U Rack
9363-4DX	PureFlex System 42U Expansion Rack
9363-4PX	42U 1100mm Dynamic Rack
9363-4EX	42U 1100mm Dynamic Expansion Rack

Part number	Description
1410-2RX	Intelligent Cluster 25U Rack Family
1410-4RX	Intelligent Cluster 42U Rack Family
1410-PRA	Intelligent Cluster 42U 1200mm Deep Rack Family
1410-PRB	Intelligent Cluster 42U 1100mm Enterprise V2 Rack Family
7200-4PX	Smart Analytics 42U Rack Family

For more information, see the list of Lenovo Press Product Guides in the Rack cabinets and options category found at http://lenovopress.com/systemx/rack.

KVM console options

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

Table 30. Console keyboards

Part number	Description
Consoles	
17238BX	1U 18.5" Standard Console (without keyboard)
Console keyboards	
00MW310	Lenovo UltraNav Keyboard USB - US Eng
46W6713	Keyboard w/ Int. Pointing Device USB - Arabic 253 RoHS v2
46W6714	Keyboard w/ Int. Pointing Device USB - Belg/UK 120 RoHS v2
46W6715	Keyboard w/ Int. Pointing Device USB - Chinese/US 467 RoHS v2
46W6716	Keyboard w/ Int. Pointing Device USB - Czech 489 RoHS v2
46W6717	Keyboard w/ Int. Pointing Device USB - Danish 159 RoHS v2
46W6718	Keyboard w/ Int. Pointing Device USB - Dutch 143 RoHS v2
46W6719	Keyboard w/ Int. Pointing Device USB - French 189 RoHS v2
46W6720	Keyboard w/ Int. Pointing Device USB - Fr/Canada 445 RoHS v2
46W6721	Keyboard w/ Int. Pointing Device USB - German 129 RoHS v2
46W6722	Keyboard w/ Int. Pointing Device USB - Greek 219 RoHS v2
46W6723	Keyboard w/ Int. Pointing Device USB - Hebrew 212 RoHS v2
46W6724	Keyboard w/ Int. Pointing Device USB - Hungarian 208 RoHS v2
46W6725	Keyboard w/ Int. Pointing Device USB - Italian 141 RoHS v2
46W6726	Keyboard w/ Int. Pointing Device USB - Japanese 194 RoHS v2
46W6727	Keyboard w/ Int. Pointing Device USB - Korean 413 RoHS v2
46W6728	Keyboard w/ Int. Pointing Device USB - LA Span 171 RoHS v2
46W6729	Keyboard w/ Int. Pointing Device USB - Norwegian 155 RoHS v2

Part number	Description
46W6730	Keyboard w/ Int. Pointing Device USB - Polish 214 RoHS v2
46W6731	Keyboard w/ Int. Pointing Device USB - Portuguese 163 RoHS v2
46W6732	Keyboard w/ Int. Pointing Device USB - Russian 441 RoHS v2
46W6733	Keyboard w/ Int. Pointing Device USB - Slovak 245 RoHS v2
46W6734	Keyboard w/ Int. Pointing Device USB - Spanish 172 RoHS v2
46W6735	Keyboard w/ Int. Pointing Device USB - Swed/Finn 153 RoHS v2
46W6736	Keyboard w/ Int. Pointing Device USB - Swiss F/G 150 RoHS v2
46W6737	Keyboard w/ Int. Pointing Device USB - Thai 191 RoHS v2
46W6738	Keyboard w/ Int. Pointing Device USB - Turkish 179 RoHS v2
46W6739	Keyboard w/ Int. Pointing Device USB - UK Eng 166 RoHS v2
46W6740	Keyboard w/ Int. Pointing Device USB - US Euro 103P RoHS v2
46W6741	Keyboard w/ Int. Pointing Device USB - Slovenian 234 RoHS v2
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)
Console switch cables	
43V6147	Single Cable USB Conversion Option (UCO)
39M2895	USB Conversion Option (4 Pack UCO)
46M5383	Virtual Media Conversion Option Gen2 (VCO2)
46M5382	Serial Conversion Option (SCO)

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

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Related publications and links

For more information, see these resources:

- Lenovo ThinkServer RQ750 product page
  http://appserver.lenovo.com.cn/Lenovo_Product_Detail.aspx?CategoryCode=A05B04&gdsid=A05000 23948

- Lenovo ThinkServer RQ750 User's Guide
  http://support1.lenovo.com.cn/lenovo/wsi/Modules/DriverDetailServer.aspx?ID=70820

- Lenovo ThinkServer Support page (China)
  http://support1.lenovo.com.cn/lenovo/wsi/Modules/DriverDownLoadServer.aspx

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