

Lenovo Storage N3310 Product Guide (withdrawn product)

With the introduction of the Lenovo® Storage N3310 offering, clients can now get an optimized unified storage solution that precisely matches their specific needs. Built on the proven Lenovo ThinkServer® platform and preinstalled with Microsoft® Windows® Storage Server 2012 R2, the N3310 delivers enterprise-class storage management technology in an affordable and reliable all-in-one, 1U rack-mount solution. It is a great choice for your business regardless of whether you are a first-time user of network-attached storage (NAS) or you are deploying advanced storage solutions.

The following figure shows the Lenovo Storage N3310.



Figure 1. Lenovo Storage N3310

Did you know?

The N3310, a unified storage platform that is based on ThinkServer and Windows Storage Server 2012 R2 innovations, offers the flexible choice of storage protocols (iSCSI, SMB, CIFS, and NFS) and can provide required performance levels for the most demanding server applications while significantly lowering deployment and support costs.

The N3310 features up to 16 TB of internal storage capacity (raw) in a compact 1U rack form-factor, with the flexible choice of network connectivity options (2-port and 4-port 1 Gb Ethernet with RJ-45 connectors, 2-port 10 Gb Ethernet with SFP+, or RJ-45 connectors).

The N3310 can be scaled up to 316.8 TB of storage with the optional Lenovo ThinkServer SA120 Storage Enclosure units (up to four units supported).

Unlike Windows Server 2012 R2, Windows Storage Server 2012 R2 does not require client access licenses and provides a virtually unlimited number of supported clients for storage sharing purposes.

Windows Storage Server 2012 R2 provides flexible support for Microsoft and ISV anti-virus and backup applications.

Key features

The N3310 offers storage-rich capabilities with internal storage and external scale-up storage expansion. It can perform file serving tasks hosting SMB and NFS file shares for Windows, Linux, and Mac based clients, SMB file shares for server applications (SQL over SMB and Hyper-V over SMB), and iSCSI storage targets for the server applications requiring block I/O. Client and server applications can use cost-efficient Ethernet LAN infrastructure (Gigabit Ethernet or 10 GbE or mixed).

Data Deduplication service can be enabled on the N3310 to allow the most efficient use of the storage space (especially for software distribution packages, image repositories, and archives because they are typically characterized by high data redundancy and infrequent changes). Optionally, if the storage server is at the central office and is a part of the distributed environment, more services (such as DFS replication) can be enabled to synchronize the content between the central and remote locations for the purpose of centralized backup operations (from the remote to the central location) and software delivery (from the central to the remote location).

The following figure shows an N3310 unified storage server solution.

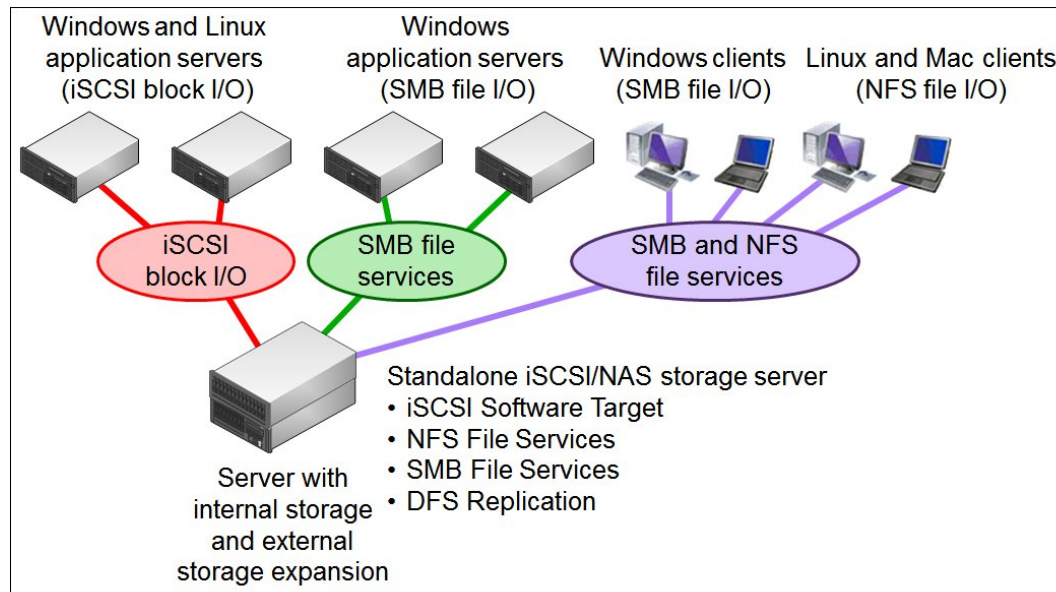


Figure 2. N3310 unified storage server solution

With enhanced storage manageability features, the N3310 reduces the time spent on IT administration, helping your business to perform the following tasks:

- Consolidate file-sharing resources on Windows Storage Server even in mixed, heterogeneous computing environments
- Speed access to data across your entire network infrastructure while improving control of files and compliance via a single management interface
- Make the most of simplicity, ease of use, and low-cost scalability to use your organization's current IT skills to efficiently support a growing user base

The N3310 that is running Windows Storage Server 2012 R2 includes the following key features and benefits:

- An affordable and reliable unified network-attached and block-level storage solution:
 - Reliable storage servers that are built on the proven Lenovo ThinkServer hardware platform.
 - Drive trays that are common with ThinkServer servers.
 - A common set of ThinkServer memory, storage and network connectivity options.
 - Low-cost software RAID or advanced hardware-based RAID configurations for protecting critical data.
- A dedicated and optimized file and print server. Windows Storage Server 2012 R2 has all functions unrelated to file serving removed (while keeping essential infrastructure services for easier deployments), which helps increase reliability and lower the overhead on the server's processor.
- Flexible installation and deployment:
 - Flexible configuration options enable clients to finely tune their storage server hardware to meet cost and performance needs.
 - The storage servers can be configured remotely via Windows Storage Manager, which makes them ideal for branch office, department, and store deployments.
- Easy integration into your existing IT infrastructures:
 - Integrates easily into Active Directory environments.
 - You can use your existing backup tools and antivirus software on Windows Storage Server to protect your investments.
 - Files can be shared across heterogeneous file system environments and different operating system platforms through the integration of SMB and NFS protocols.
 - Compatible with existing Ethernet infrastructure.
- Easy to use and manage:
 - Factory-integrated, pre-configured, and delivered to the clients with Microsoft Windows Storage Server 2012 R2 preinstalled.
 - All storage tools are integrated into a single interface of Windows Server Manager.
 - Centralized administration and unified user experience in managing stand-alone storage servers.
- Lower total cost of ownership (TCO):
 - Lenovo storage servers are a cost-effective storage consolidation solution in a network environment, which enables centralization of storage and storage management.
 - No extra licenses are required for users, which can help to significantly reduce Client Access License costs.
- Fast data recovery:
 - Built-in data "Snapshot" technology. Volume Shadow Copy Services (VSS) provides enhanced data protection through high-fidelity backups, rapid data restores, and data transport.
 - By using the VSS for SMB File Shares feature, deleted or corrupted files can be restored within minutes, instead of hours.

The N3310 uses Windows Storage Server 2012 R2 operating system, which is based on Windows Server 2012 R2 core technologies and is optimized for providing both block- and file-level storage services to the users and server applications. The following components and capabilities are included in Windows Storage Server 2012 R2:

- Storage protocols:
 - iSCSI Software Target offers low-cost shared storage for applications that require block-level access to it.

- Server Message Block (SMB) File Services provide network shares for the Windows-based user and server application environments:
 - Microsoft SQL Server supports placement of log and data files onto an SMB network share (SQL over SMB).
 - Microsoft Hyper-V supports placement of virtual machine files onto an SMB network share (Hyper-V over SMB).
- Network File System (NFS) File Services provide network shares for the Linux or Mac based user or Linux-based server application environments. VMware vSphere virtual machine files can be placed onto an NFS network share.
- Availability and performance:
 - Microsoft iSCSI Software Target supports Multipath I/O (MPIO), which allows iSCSI clients to use multiple network paths to a storage server for high availability, fault tolerance, and load balancing purposes.
 - SMB Multichannel allows the use of multiple redundant network paths between application server SMB clients and SMB file shares that are hosted on Windows Storage Servers for better throughput while maintaining network availability.
 - Vendor-independent network teaming allows combining of multiple network interfaces into a single fault-tolerant or load-balancing group for better performance and availability.
 - NTFS in Windows Server 2012 R2 improves availability by performing online corruption scanning, the use of self-healing techniques, and reducing file system repair times.
- Data management:
 - Data Deduplication can help to significantly improve the efficiency of storage space usage.
 - VSS for SMB file shares allows performing of backup operations by using the snapshots of remote file shares that are supporting SMB-based server applications (for example, SQL over SMB).
 - DFS Replication provides synchronization capabilities across limited bandwidth network connections in the distributed environments.
 - Microsoft BranchCache® optimizes the usage of WAN links by caching the remote data locally based on predefined policies.

Locations of key components and connectors

The following figure shows the front of the N3310 storage server.

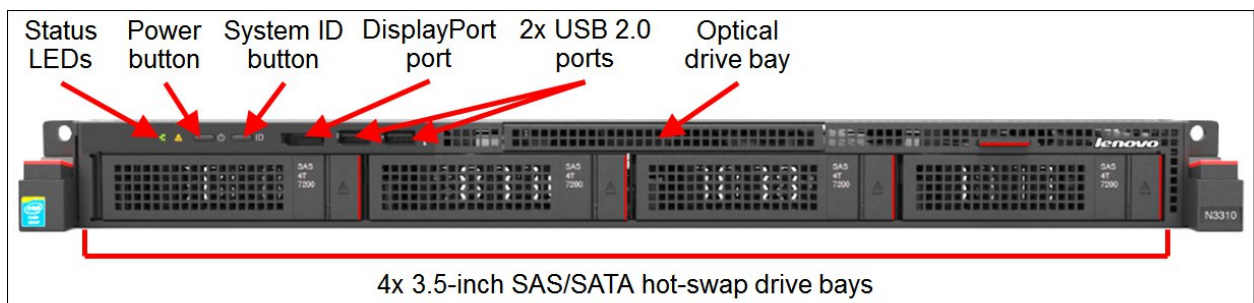


Figure 3. Front view of the N3310

The following figure shows the rear of the N3310 storage server.

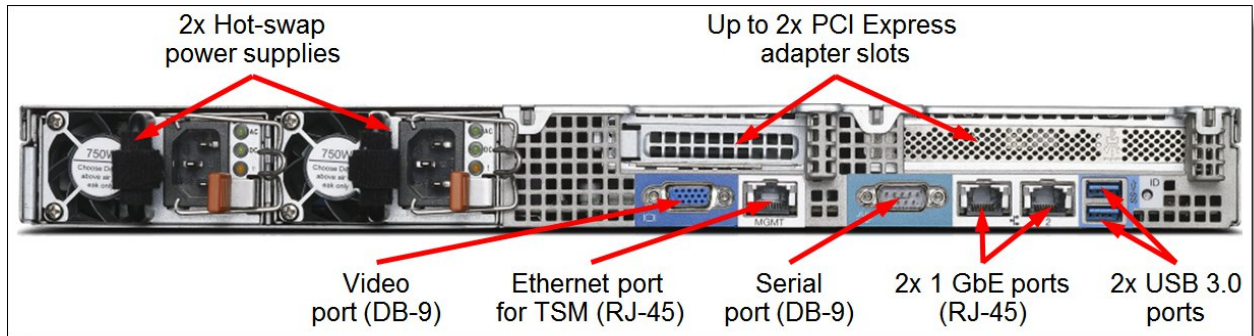


Figure 4. Rear view of the N3310

The following figure shows the locations of key components inside the N3310 storage server.

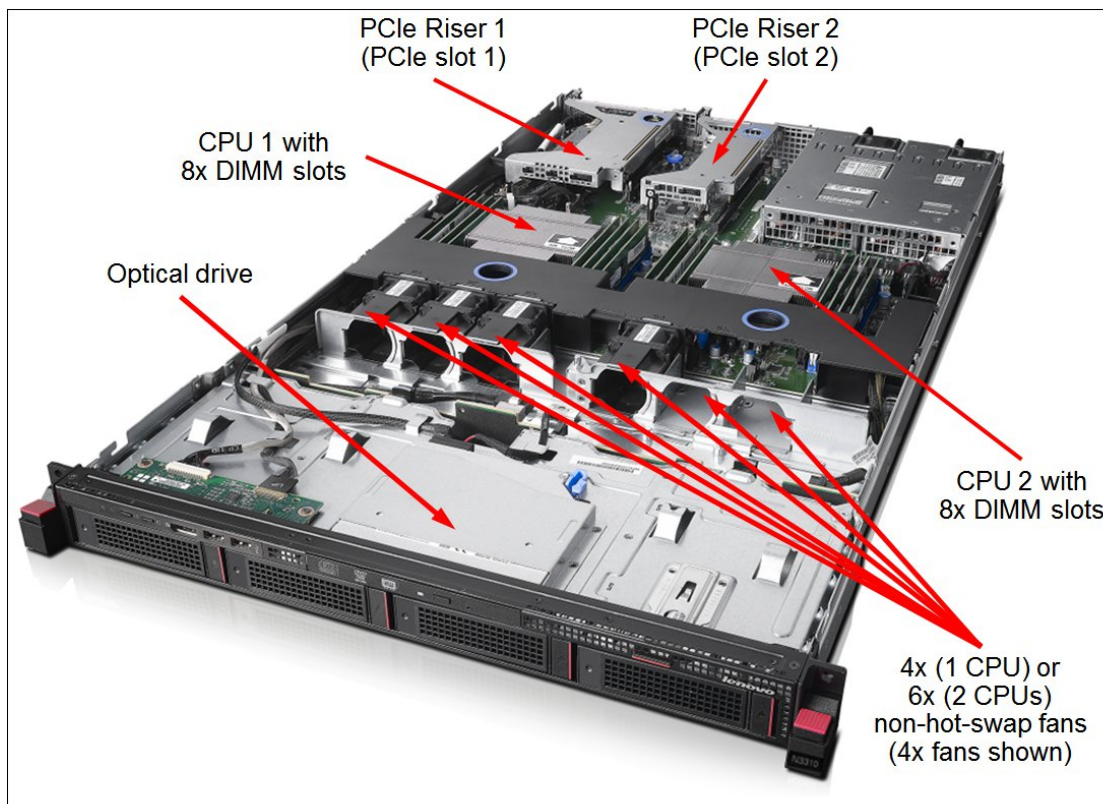


Figure 5. Inside view of the N3310

Standard specifications

The following table lists the N3310 standard specifications.

Table 1. Standard specifications

Components	Specification
Form factor	1U Rack.
Processor	Intel Xeon processor E5-2603 v3 (6 cores, 1.6 GHz core speed, 15 MB last level cache, 1600 MHz memory speed, 85 W thermal design power, 2x 6.4 GT/s QPI links). Up to two processors.
Chipset	Intel C610 Series.
Memory	Up to 16 DIMM sockets (8 DIMMs per processor). Only RDIMMs are supported.
Memory maximums	Up to 128 GB with 16x 8 GB RDIMMs and two processors.
Memory protection	ECC, Lockstep, memory mirroring, patrol scrubbing, and demand scrubbing.
Drive bays	4x 3.5-inch SAS/SATA hot-swap drive bays.
Maximum internal storage	Up to 16 TB with 4x 4 TB 3.5-inch SAS/SATA HDDs. Intermix of SAS/SATA is supported.
Storage controller	<ul style="list-style-type: none"> • 6 Gb SATA: RAID 0, 1, and 10 with integrated RAID 110i; optional upgrade to RAID 5 is available for RAID 110i. • 6 Gb SAS/SATA: RAID 0, 1, 10, 5, 50, 6, and 60 with RAID 710 adapter with 1 GB non-backed read-only cache. Optional flash-backed read/write cache upgrade is available for RAID 710.
Optical drive bays	One. Support for a DVD-ROM or DVD-RW drive.
Tape drive bays	None.
Network interfaces	2x 1 Gb Ethernet ports with RJ-45 connectors.
Expansion slots	Up to two PCIe slots supplied by the riser cards installed (one riser card supplies one slot). The following slots are available: <ul style="list-style-type: none"> • Slot 1: PCIe 3.0 x16; full-height, half-length • Slot 2: PCIe 3.0 x16; low profile (requires the second processor to be installed)
Ports	<ul style="list-style-type: none"> • Front: 2x USB 2.0 ports, 1x DisplayPort video port. • Rear: 2x USB 3.0 ports, 1x DB-9 video port, 1x RJ-45 systems management port, 1x DB-9 serial port; 2x RJ-45 1 GbE ports.
Cooling	Four (with one CPU) or six (with two CPUs) N+1 redundant non-hot-swap fans.
Power supply	Up to two redundant hot-swap 450 W Gold AC power supplies, 550 W or 750 W Platinum AC power supplies, or 750 W Titanium AC power supplies.

Video	ASPEED AST2400 with 16 MB memory integrated into the ThinkServer System Manager, which is also known as Baseboard Management Controller (BMC). Maximum resolution is 1920x1200 at 60 Hz.
Hot-swap parts	Hard drives and power supplies.
Systems management	UEFI, ThinkServer System Manager (TSM), status and diagnostic LED indicators. Optional TSM Premium upgrade (standard on some models; for more information, see Table 2 and Table 3) for remote presence (keyboard, video, mouse, and remote drive) and ThinkServer Energy Manager support.
Security features	Administrator's password. Optional intrusion switch (standard on some models; for more information, see Table 2 and Table 3).
Operating system	Microsoft Windows Storage Server 2012 R2
Limited warranty	Three-year customer-replaceable unit, onsite limited warranty with 9x5 next business day (NBD).
Service and support	Optional warranty service upgrades are available through Lenovo: 4-hour or 8-hour response time, 1-year or 2-year warranty extensions, priority technical support, Keep Your Drive.
Dimensions	<ul style="list-style-type: none"> ● Height: 43 mm (1.7 in) ● Width: 482 mm (19.0 in) ● Depth: 803 mm (31.6 in)
Weight	<ul style="list-style-type: none"> ● Minimum configuration: 13.6 kg (30.0 lb) ● Maximum: 18 kg (39.7 lb)

The N3310 ships with the following items:

- United States and Latin America:
 - Getting Started Guide
 - Rack Installation Instructions
 - Documentation CD
 - Slide Rail Kit
 - Two 1.8 m IEC 320-C13 to C14 rack power cords (except United States)
 - Two 1.8 m IEC 320-C13 to NEMA 5-15P power cords (United States only)
- China:
 - Lenovo Help Manual
 - Warranty Flyer
 - Infrastructure Management Flyer
 - Documentation CD
 - Slide Rail Kit
 - Two 1.8 m IEC 320-C13 to C14 rack power cords

Note: Cable Management Arm (CMA) is not included. For more information about ordering, see the section "Rack-mount options".

Relationship models

The following table lists the relationship models of the N3310. For information about standard features of the storage server, see the section "Specifications".

Table 2. Relationship models

Part number	Intel Xeon processor (2 maximum)	RAM	RAID	Drive bays	Drives	NIC	I/O slots (std / max)	Optical drive	Power supply
United States relationship models									
70FY0000US	1x E5-2603 v3	1x 8GB	RAID 710 1GB Cache	4x 3.5" HS	4x 1TB 6Gb SATA†	2x GbE (RJ-45)	1 / 2	DVD-RW	1x 550W HS
70FY0002US	1x E5-2603 v3	1x 8GB	RAID 710 1GB Cache	4x 3.5" HS	4x 4TB 6Gb SAS†	2x GbE (RJ-45)	1 / 2	DVD-RW	1x 550W HS
70FY0001US	1x E5-2603 v3	1x 8GB	RAID 710 1GB Cache	4x 3.5" HS	4x 4TB 6Gb SATA†	2x GbE (RJ-45)	1 / 2	DVD-RW	1x 550W HS
China relationship models									
70FY0008CN*	1x E5-2603 v3	1x 8GB	RAID 110i RAID 5	4x 3.5" HS	4x 4TB 6Gb SATA†	2x GbE (RJ-45)	0 / 2	Optional	2x 450W HS
70FY0005CN	1x E5-2603 v3	1x 8GB	RAID 710 1GB Cache	4x 3.5" HS	4x 2TB 6Gb SATA†	2x GbE (RJ-45)	1 / 2	Optional	2x 450W HS
70FY0004CN	1x E5-2603 v3	1x 8GB	RAID 710 1GB Cache	4x 3.5" HS	4x 3TB 6Gb SATA†	2x GbE (RJ-45)	1 / 2	Optional	2x 450W HS
70FY0003CN	1x E5-2603 v3	1x 8GB	RAID 710 1GB Cache	4x 3.5" HS	4x 4TB 6Gb SATA†	2x GbE (RJ-45)	1 / 2	Optional	2x 450W HS
70FY0006CN	2x E5-2603 v3	2x 8GB	RAID 710 1GB Cache	4x 3.5" HS	4x 4TB 6Gb SATA†	6x GbE (RJ-45)**	2 / 2	Optional	2x 450W HS
70FY0007CN	2x E5-2603 v3	2x 8GB	RAID 710 1GB Cache	4x 3.5" HS	4x 4TB 6Gb SATA†	2x GbE (RJ-45) 2x 10GbE SR#	2 / 2	Optional	2x 450W HS

* Does not include Slide Rail Kit

† Factory-configured in a RAID 5 array that contains operating system preload.

** Includes I350-T4 4-port 1 GbE PCIe Adapter.

Includes X520-SR2 2-port 10 GbE PCIe Adapter.

TopSeller models

The following table (Part 1: United States and China and Part 2: Latin America) lists the TopSeller™ models of the N3310. See the Specifications section for information about standard features of the storage server.

Note: The following region availability restrictions apply:

- Model 70FX000Hxx is available in Mexico only.
- Model 70FX000Jxx is not available in Argentina.
- Model 70FX001Bxx is available in Argentina only.

Table 3. TopSeller models (Part 1: United States and China)

Part number	Intel Xeon processor (2 maximum)	RAM	RAID	Drive bays	Drives	NIC	I/O slots (std / max)	Optical drive	Power supply
United States TopSeller models									
70FX0004US	1x E5-2603 v3	1x 4GB	RAID 110i RAID 5	4x 3.5" HS	4x 1TB 6Gb SATA†	2x GbE (RJ-45)	1 / 2	DVD-RW	1x 550W HS
70FX0005US	1x E5-2603 v3	1x 8GB	RAID 710 1GB Cache	4x 3.5" HS	4x 1TB 6Gb SAS†	2x GbE (RJ-45)	1 / 2	DVD-RW	1x 550W HS
70FX0000US	1x E5-2603 v3	1x 8GB	RAID 710 1GB Cache	4x 3.5" HS	4x 1TB 6Gb SATA†	2x GbE (RJ-45)	1 / 2	DVD-RW	1x 550W HS
70FX0006US	1x E5-2603 v3	1x 8GB	RAID 710 1GB Cache	4x 3.5" HS	4x 2TB 6Gb SAS†	2x GbE (RJ-45)	1 / 2	DVD-RW	1x 550W HS
70FX0001US	1x E5-2603 v3	1x 8GB	RAID 710 1GB Cache	4x 3.5" HS	4x 2TB 6Gb SATA†	2x GbE (RJ-45)	1 / 2	DVD-RW	1x 550W HS
70FX0007US	1x E5-2603 v3	1x 8GB	RAID 710 1GB Cache	4x 3.5" HS	4x 3TB 6Gb SAS†	2x GbE (RJ-45)	1 / 2	DVD-RW	1x 550W HS
70FX0002US	1x E5-2603 v3	1x 8GB	RAID 710 1GB Cache	4x 3.5" HS	4x 3TB 6Gb SATA†	2x GbE (RJ-45)	1 / 2	DVD-RW	1x 550W HS
70FX0008US	1x E5-2603 v3	1x 8GB	RAID 710 1GB Cache	4x 3.5" HS	4x 4TB 6Gb SAS†	2x GbE (RJ-45)	1 / 2	DVD-RW	1x 550W HS
70FX0003US	1x E5-2603 v3	1x 8GB	RAID 710 1GB Cache	4x 3.5" HS	4x 4TB 6Gb SATA†	2x GbE (RJ-45)	1 / 2	DVD-RW	1x 550W HS
China TopSeller models									
70FX000FCN	1x E5-2603 v3	1x 8GB	RAID 110i RAID 5	4x 3.5" HS	4x 4TB 6Gb SATA†	2x GbE (RJ-45)	0 / 2	Optional	2x 450W HS
70FX000GCN	1x E5-2603 v3	1x 8GB	RAID 110i RAID 5	4x 3.5" HS	4x 4TB 6Gb SATA†	6x GbE (RJ-45)**	1 / 2	Optional	2x 450W HS

70FX000BCN	1x E5-2603 v3	1x 8GB	RAID 710 1GB Cache	4x 3.5" HS	4x 2TB 6Gb SATA†	2x GbE (RJ-45)	1 / 2	Optional	2x 450W HS
70FX000ACN	1x E5-2603 v3	1x 8GB	RAID 710 1GB Cache	4x 3.5" HS	4x 3TB 6Gb SATA†	2x GbE (RJ-45)	1 / 2	Optional	2x 450W HS
70FX0009CN	1x E5-2603 v3	1x 8GB	RAID 710 1GB Cache	4x 3.5" HS	4x 4TB 6Gb SATA‡	2x GbE (RJ-45)	1 / 2	Optional	2x 450W HS
70FX000CCN	2x E5-2603 v3	2x 8GB	RAID 710 1GB Cache	4x 3.5" HS	4x 4TB 6Gb SATA†	6x GbE (RJ-45)**	2 / 2	Optional	2x 450W HS
70FX000DCN	2x E5-2603 v3	2x 8GB	RAID 710 1GB Cache	4x 3.5" HS	4x 4TB 6Gb SATA†	2x GbE (RJ-45) 2x 10GbE SR#	2 / 2	Optional	2x 450W HS
70FX000ECN	2x E5-2603 v3	2x 8GB	RAID 710 1GB Cache 9286CV-8e 1GB Cache	4x 3.5" HS	4x 4TB 6Gb SATA†	2x GbE (RJ-45)	2 / 2	Optional	2x 450W HS

† Factory-configured in a RAID 5 array that contains operating system preload.

‡ Factory-configured in a RAID 5 array with Hot Spare which contains operating system preload.

** Includes I350-T4 4-port 1 GbE PCIe Adapter.

Includes X520-SR2 2-port 10 GbE PCIe Adapter.

Table 3. TopSeller models (Part 2: Latin America)

Part number	Intel Xeon processor (2 maximum)	RAM	RAID	Drive bays	Drives	NIC	I/O slots (std / max)	Optical drive	Power supply
Latin America: Argentina (xx = AR), Chile (xx = CL), Mexico (xx = LD) TopSeller models									
70FX001Bxx*	1x E5-2603 v3	1x 8GB	RAID 110i	4x 3.5" HS	4x 1TB 6Gb SATA‡	6x GbE (RJ-45)**	1 / 2	DVD-RW	2x 750W HS#
70FX001Mxx*	1x E5-2603 v3	1x 8GB	RAID 110i 9286CV-8e 1GB Flash FastPath	4x 3.5" HS	4x 1TB 6Gb SATA‡	2x GbE (RJ-45)	1 / 2	DVD-RW	2x 750W HS#
70FX001Cxx*	1x E5-2603 v3	1x 8GB	RAID 110i 9286CV-8e 1GB Flash FastPath	4x 3.5" HS	4x 2TB 6Gb SATA‡	2x GbE (RJ-45)	1 / 2	DVD-RW	2x 750W HS#
70FX001Dxx*	1x E5-2603 v3	1x 8GB	RAID 110i 9286CV-8e 1GB Flash FastPath	4x 3.5" HS	4x 3TB 6Gb SATA‡	2x GbE (RJ-45)	1 / 2	DVD-RW	2x 750W HS#

70FX001Exx*	1x E5-2603 v3	1x 8GB	RAID 110i 9286CV-8e 1GB Flash FastPath	4x 3.5" HS	4x 4TB 6Gb SATA‡	2x GbE (RJ-45)	1 / 2	DVD-RW	2x 750W HS#
70FX000Kxx*	1x E5-2603 v3	1x 8GB	RAID 110i RAID 5	4x 3.5" HS	4x 1TB 6Gb SATA‡	2x GbE (RJ-45)	1 / 2	DVD-RW	2x 550W HS
70FX000Jxx*	1x E5-2603 v3	1x 8GB	RAID 110i RAID 5	4x 3.5" HS	4x 1TB 6Gb SATA‡	2x GbE (RJ-45)	1 / 2	DVD-RW	2x 750W HS#
70FX001Gxx*	1x E5-2603 v3	1x 8GB	RAID 110i RAID 5	4x 3.5" HS	4x 1TB 6Gb SATA‡	2x GbE (RJ-45) 2x 10GbE RJ-45§	1 / 2	DVD-RW	2x 750W HS#
70FX0011xx*	1x E5-2603 v3	1x 8GB	RAID 110i RAID 5	4x 3.5" HS	4x 1TB 6Gb SATA‡	6x GbE (RJ-45)**	1 / 2	DVD-RW	2x 550W HS
70FX0016xx*	1x E5-2603 v3	1x 8GB	RAID 110i RAID 5	4x 3.5" HS	4x 1TB 6Gb SATA‡	6x GbE (RJ-45)**	1 / 2	DVD-RW	2x 750W HS#
70FX000Lxx*	1x E5-2603 v3	1x 8GB	RAID 110i RAID 5	4x 3.5" HS	4x 2TB 6Gb SATA‡	2x GbE (RJ-45)	1 / 2	DVD-RW	2x 550W HS
70FX001Nxx*	1x E5-2603 v3	1x 8GB	RAID 110i RAID 5	4x 3.5" HS	4x 2TB 6Gb SATA‡	2x GbE (RJ-45)	1 / 2	DVD-RW	2x 750W HS#
70FX001Hxx*	1x E5-2603 v3	1x 8GB	RAID 110i RAID 5	4x 3.5" HS	4x 2TB 6Gb SATA‡	2x GbE (RJ-45) 2x 10GbE RJ-45§	1 / 2	DVD-RW	2x 750W HS#
70FX0012xx*	1x E5-2603 v3	1x 8GB	RAID 110i RAID 5	4x 3.5" HS	4x 2TB 6Gb SATA‡	6x GbE (RJ-45)**	1 / 2	DVD-RW	2x 550W HS
70FX0017xx*	1x E5-2603 v3	1x 8GB	RAID 110i RAID 5	4x 3.5" HS	4x 2TB 6Gb SATA‡	6x GbE (RJ-45)**	1 / 2	DVD-RW	2x 750W HS#
70FX000Mxx*	1x E5-2603 v3	1x 8GB	RAID 110i RAID 5	4x 3.5" HS	4x 3TB 6Gb SATA‡	2x GbE (RJ-45)	1 / 2	DVD-RW	2x 550W HS
70FX001Pxx*	1x E5-2603 v3	1x 8GB	RAID 110i RAID 5	4x 3.5" HS	4x 3TB 6Gb SATA‡	2x GbE (RJ-45)	1 / 2	DVD-RW	2x 750W HS#
70FX001Jxx*	1x E5-2603 v3	1x 8GB	RAID 110i RAID 5	4x 3.5" HS	4x 3TB 6Gb SATA‡	2x GbE (RJ-45) 2x 10GbE RJ-45§	1 / 2	DVD-RW	2x 750W HS#
70FX0013xx*	1x E5-2603 v3	1x 8GB	RAID 110i RAID 5	4x 3.5" HS	4x 3TB 6Gb SATA‡	6x GbE (RJ-45)**	1 / 2	DVD-RW	2x 550W HS

70FX0018xx*	1x E5-2603 v3	1x 8GB	RAID 110i RAID 5	4x 3.5" HS	4x 3TB 6Gb SATA‡	6x GbE (RJ-45)**	1 / 2	DVD-RW	2x 750W HS#
70FX000Nxx*	1x E5-2603 v3	1x 8GB	RAID 110i RAID 5	4x 3.5" HS	4x 4TB 6Gb SATA‡	2x GbE (RJ-45)	1 / 2	DVD-RW	2x 550W HS
70FX001Qxx*	1x E5-2603 v3	1x 8GB	RAID 110i RAID 5	4x 3.5" HS	4x 4TB 6Gb SATA‡	2x GbE (RJ-45)	1 / 2	DVD-RW	2x 750W HS#

70FX001Kxx*	1x E5-2603 v3	1x 8GB	RAID 110i RAID 5	4x 3.5" HS	4x 4TB 6Gb SATA‡	2x GbE (RJ-45) 2x 10GbE RJ-45§	1 / 2	DVD-RW	2x 750W HS#
70FX0014xx*	1x E5-2603 v3	1x 8GB	RAID 110i RAID 5	4x 3.5" HS	4x 4TB 6Gb SATA‡	6x GbE (RJ-45)**	1 / 2	DVD-RW	2x 550W HS
70FX0019xx*	1x E5-2603 v3	1x 8GB	RAID 110i RAID 5	4x 3.5" HS	4x 4TB 6Gb SATA‡	6x GbE (RJ-45)**	1 / 2	DVD-RW	2x 750W HS#
70FX000Vxx*	1x E5-2603 v3	1x 8GB	RAID 110i RAID 5 9286CV-8e 1GB Flash FastPath	4x 3.5" HS	4x 1TB 6Gb SATA‡	2x GbE (RJ-45)	1 / 2	DVD-RW	2x 750W HS#
70FX000Wxx*	1x E5-2603 v3	1x 8GB	RAID 110i RAID 5 9286CV-8e 1GB Flash FastPath	4x 3.5" HS	4x 2TB 6Gb SATA‡	2x GbE (RJ-45)	1 / 2	DVD-RW	2x 750W HS#
70FX000Xxx*	1x E5-2603 v3	1x 8GB	RAID 110i RAID 5 9286CV-8e 1GB Flash FastPath	4x 3.5" HS	4x 3TB 6Gb SATA‡	2x GbE (RJ-45)	1 / 2	DVD-RW	2x 750W HS#
70FX000Yxx*	1x E5-2603 v3	1x 8GB	RAID 110i RAID 5 9286CV-8e 1GB Flash FastPath	4x 3.5" HS	4x 4TB 6Gb SATA‡	2x GbE (RJ-45)	1 / 2	DVD-RW	2x 750W HS#
70FX0010xx*	1x E5-2603 v3	1x 8GB	RAID 710 1GB Cache	4x 3.5" HS	4x 4TB 6Gb SAS‡	2x GbE (RJ-45)	1 / 2	DVD-RW	2x 750W HS#
70FX0015xx*	1x E5-2603 v3	1x 8GB	RAID 710 1GB Cache	4x 3.5" HS	4x 4TB 6Gb SAS‡	2x GbE (RJ-45)	1 / 2	DVD-RW	2x 550W HS
70FX001Axx*	2x E5-2603 v3	2x 8GB	RAID 710 1GB Cache	4x 3.5" HS	4x 4TB 6Gb SAS‡	2x GbE (RJ-45)	2 / 2	DVD-RW	2x 750W HS#
70FX001Lxx*	2x E5-2603 v3	2x 8GB	RAID 710 1GB Cache	4x 3.5" HS	4x 4TB 6Gb SAS‡	2x GbE (RJ-45) 2x 10GbE RJ-45§	2 / 2	DVD-RW	2x 750W HS#

70FX000Qxx*	1x E5-2603 v3	1x 8GB	RAID 710 1GB Flash	4x 3.5" HS	4x 1TB 6Gb SATA‡	2x GbE (RJ-45)	1 / 2	DVD-RW	2x 750W HS#
70FX000Rxx*	1x E5-2603 v3	1x 8GB	RAID 710 1GB Flash	4x 3.5" HS	4x 2TB 6Gb SATA‡	2x GbE (RJ-45)	1 / 2	DVD-RW	2x 750W HS#
70FX000Sxx*	1x E5-2603 v3	1x 8GB	RAID 710 1GB Flash	4x 3.5" HS	4x 3TB 6Gb SATA‡	2x GbE (RJ-45)	1 / 2	DVD-RW	2x 750W HS#
70FX000Txx*	1x E5-2603 v3	1x 8GB	RAID 710 1GB Flash	4x 3.5" HS	4x 4TB 6Gb SATA‡	2x GbE (RJ-45)	1 / 2	DVD-RW	2x 750W HS#
70FX000Pxx*	1x E5-2603 v3	1x 8GB	RAID 710 1GB Flash	4x 3.5" HS	4x 4TB 6Gb SAS‡	2x GbE (RJ-45)	1 / 2	DVD-RW	2x 550W HS
70FX000Uxx*	1x E5-2603 v3	1x 8GB	RAID 710 1GB Flash	4x 3.5" HS	4x 4TB 6Gb SAS‡	2x GbE (RJ-45)	1 / 2	DVD-RW	2x 750W HS#
70FX001Fxx*	2x E5-2603 v3	2x 8GB	RAID 710 1GB Flash	4x 3.5" HS	4x 4TB 6Gb SAS‡	2x GbE (RJ-45)	2 / 2	DVD-RW	2x 750W HS#
70FX000Hxx*	2x E5-2603 v3	2x 8GB	RAID 710 1GB Flash	4x 3.5" HS	4x 4TB 6Gb SAS‡	2x GbE (RJ-45) 2x 10GbE RJ-45§	2 / 2	DVD-RW	2x 750W HS#
70FX001Rxx*	2x E5-2603 v3	2x 8GB	RAID 710 1GB Flash	4x 3.5" HS	4x 4TB 6Gb SAS‡	6x GbE (RJ-45)**	2 / 2	DVD-RW	2x 750W HS#

* Ships standard with the intrusion switch and ThinkServer System Manager Premium feature.

‡ Factory-configured in a RAID 0 array that contains operating system preload.

** Includes I350-T4 4-port 1 GbE PCIe Adapter.

Titanium power supplies.

§ Includes X540-T2 2-port 10 GbE PCIe Adapter.

Processor options

The N3310 supports up to two processors. Relationship and TopSeller models ship with one or two Intel® Xeon® processor E5-2603 v3. The second processor can be ordered if required (see the following table). The second processor option includes two extra cooling fans.

Table 4. Processor options

Part number	Description
4XG0F28848	Lenovo ThinkServer RD350 Intel Xeon E5-2603 v3 (6C, 85W, 1.6GHz) Processor

Memory options

The N3310 supports up to 128 GB of DDR4 memory. The storage server supports up to 8 DIMMs when one processor is installed and up to 16 DIMMs when two processors are installed. Each processor has four memory channels, and there are two DIMMs per channel.

The following rules apply when the memory configuration is selected:

- The storage server supports RDIMMs only.
- The maximum quantity of RDIMMs that can be installed in the storage server depends on the number of processors.
- All RDIMMs in the storage server operate at the same 1600 MHz speed, which is the maximum memory speed that is supported by the Intel Xeon E5-2603 v3 processor.

The following memory protection technologies are supported:

- ECC
- Lockstep
- Memory mirroring
- Patrol scrubbing
- Demand scrubbing

If lockstep or memory mirroring is used, RDIMMs must be installed in pairs (a minimum of one pair per each processor), and both RDIMMs in a pair must be identical in type and size. Lockstep and memory mirroring modes are mutually exclusive. Only one operational memory mode can be enabled on a storage server, and it is a system-wide setting.

The following table lists the available memory options for the N3310.

Table 5. Memory options

Part number	Description	Maximum supported
4X70F28588	Lenovo ThinkServer 4GB DDR4-2133MHz (1Rx8) RDIMM	16 (8 per CPU)
4X70F28589	Lenovo ThinkServer 8GB DDR4-2133MHz (1Rx4) RDIMM	16 (8 per CPU)

Internal storage

The N3310 storage server supports up to 4x 3.5-inch SAS or SATA hot-swap drives (HDDs or SSDs). The internal drives must be factory-configured (JBOD mode or RAID array), and they contain Windows Storage Server 2012 R2 preload. For Relationship and TopSeller models, the internal drives are configured in a RAID 0 or RAID 5 array (depending on the model; for more information, see Table 2 and Table 3).

The internal drives can be connected to the onboard Lenovo ThinkServer RAID 110i controller or Lenovo ThinkServer RD350, RD450 RAID 710 PCIe Adapter.

The RAID 110i controller has the following specifications:

- Six internal 6 Gbps SATA ports
- Up to 6 Gbps throughput per port
- Supports connections to 4x 3.5-inch SATA HDDs and SSDs
- Supports RAID 0, 1, and 10
- Optional support for RAID 5 with the RAID 5 upgrade
- Onboard LSI software RAID controller embedded into the C610 Series chipset

The RAID 710 adapter has the following specifications:

- Eight internal 6 Gbps SAS/SATA ports
- Up to 6 Gbps throughput per port
- Supports connections to 4x 3.5-inch SAS and SATA HDDs and SSDs
- Two internal x4 mini-SAS connectors (SFF-8087)
- Onboard 1 GB DDR3 cache
- Supports RAID levels 0, 1, 5, 10, 50, 6, and 60
- Supports FastPath feature for solid-state drives
- Supports optional CacheVault data protection (flash-backed cache)
- PCIe 3.0 x8 host interface
- Based on the LSI SAS2208 6 Gbps ROC controller

The following table lists the controllers for internal storage and their upgrade options.

Table 6. RAID controllers and upgrade options

Part number	Description	Maximum supported
RAID 110i		
Onboard	Lenovo ThinkServer RAID 110i	1
4XB0F28690	Lenovo ThinkServer RAID 110i RAID 5 Upgrade	1
RAID 710		
4XB0G45760	Lenovo ThinkServer RD350,RD450 RAID 710 PCIe Adapter	1
4XB0G45761	Lenovo ThinkServer CacheVault Data Protection Upgrade II	1

The following table lists the available internal drive options for the N3310.

Table 7. Internal drive options

Part number	Description	Maximum supported
3.5-inch hot-swap SAS HDDs		
4XB0G45716	Lenovo ThinkServer Gen 5 3.5" 1TB 7.2K Enterprise SAS 6Gbps HS HDD	4
4XB0G45717	Lenovo ThinkServer Gen 5 3.5" 2TB 7.2K Enterprise SAS 6Gbps HS HDD	4
4XB0G45718	Lenovo ThinkServer Gen 5 3.5" 3TB 7.2K Enterprise SAS 6Gbps HS HDD	4
4XB0G45719	Lenovo ThinkServer Gen 5 3.5" 4TB 7.2K Enterprise SAS 6Gbps HS HDD	4
3.5-inch hot-swap SATA HDDs		
4XB0F28712	Lenovo ThinkServer Gen 5 3.5" 1TB 7.2K Enterprise SATA 6Gbps HS HDD	4
4XB0F28713	Lenovo ThinkServer Gen 5 3.5" 2TB 7.2K Enterprise SATA 6Gbps HS HDD	4
4XB0F28714	Lenovo ThinkServer Gen 5 3.5" 3TB 7.2K Enterprise SATA 6Gbps HS HDD	4
4XB0G45715	Lenovo ThinkServer Gen 5 3.5" 4TB 7.2K Enterprise SATA 6Gbps HS HDD	4
3.5-inch hot-swap SAS Enterprise SSDs		
4XB0G45733	Lenovo ThinkServer Gen 5 3.5" 200GB Enterprise Performance SAS 12Gbps HS SSD	4
4XB0G45734	Lenovo ThinkServer Gen 5 3.5" 400GB Enterprise Performance SAS 12Gbps HS SSD	4
4XB0G45735	Lenovo ThinkServer Gen 5 3.5" 800GB Enterprise Performance SAS 12Gbps HS SSD	4
3.5-inch hot-swap SATA Value SSDs		
4XB0G45742	Lenovo ThinkServer Gen 5 3.5" 120GB Value Read-Optimized SATA 6Gbps HS SSD	4
4XB0G45743	Lenovo ThinkServer Gen 5 3.5" 240GB Value Read-Optimized SATA 6Gbps HS SSD	4
4XB0G45744	Lenovo ThinkServer Gen 5 3.5" 300GB Value Read-Optimized SATA 6Gbps HS SSD	4
4XB0G45745	Lenovo ThinkServer Gen 5 3.5" 480GB Value Read-Optimized SATA 6Gbps HS SSD	4
4XB0G45746	Lenovo ThinkServer Gen 5 3.5" 600GB Value Read-Optimized SATA 6Gbps HS SSD	4
4XB0G45747	Lenovo ThinkServer Gen 5 3.5" 800GB Value Read-Optimized SATA 6Gbps HS SSD	4

Optical drives

The N3310 storage server supports internal and external optical drives that are listed in the following table. Some Relationship and TopSeller models include an optical drive (for more information, see Table 2 and Table 3).

Table 8. Optical drive options

Part number	Description	Maximum supported
Internal optical drives		
4XA0F28607	Lenovo ThinkServer Slim SATA DVD-RW Optical Disk Drive	1
4XA0F28608	Lenovo ThinkServer Slim SATA DVD-ROM Optical Disk Drive	1
External USB optical drives		
4XA0E97775	ThinkPad UltraSlim USB DVD Burner	1

I/O expansion options

The N3310 supports up to two PCIe slots with riser cards that are installed into two riser sockets on the system planar (one riser socket supports installation of one riser card). The following slot form factors are used:

- Slot 1: PCIe 3.0 x16; Full-height, half-length
- Slot 2: PCIe 3.0 x16; Low profile (requires the second processor to be installed)

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

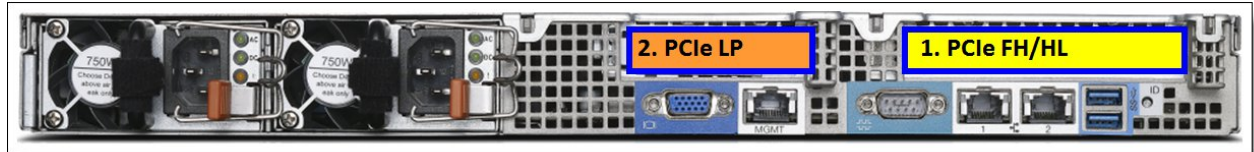


Figure 6. Slot locations

Riser 1 supplies slots 1 and Riser 2 supplies slot 2. Some relationship and TopSeller models include one or two PCIe 3.0 x16 riser card installed in the riser slot 1 (for more information, see Table 2 and Table 3). The following table lists available PCIe riser card options.

Table 9. Riser card options

Part number	Description	Maximum supported
4XF0G45896	Lenovo ThinkServer RD350 x16 PCIe Riser 1 Kit	2

Network adapters

The N3310 supports two integrated Gigabit Ethernet ports. More PCIe network adapters can be installed, if required. Some Relationship and TopSeller models come standard with a PCIe network adapter (for more information, see Table 2 and Table 3). The following table lists more supported network adapters.

Table 10. Network adapter options

Part number	Description	Maximum supported
4XC0F28730	Lenovo ThinkServer I350-T2 PCIe 1Gb 2 Port Base-T Ethernet Adapter by Intel	2
4XC0F28731	Lenovo ThinkServer I350-T4 PCIe 1Gb 4 Port Base-T Ethernet Adapter by Intel	2
4XC0F28732	Lenovo ThinkServer X540-T2 PCIe 10Gb 2 Port Base-T Ethernet Adapter by Intel	2
4XC0F28733	Lenovo ThinkServer X520-SR2 PCIe 10Gb 2 Port SFP+ Ethernet Adapter by Intel	2
4XC0F28734	Lenovo ThinkServer X520-DA2 PCIe 10Gb 2 Port SFP+ Ethernet Adapter by Intel*	2

* Requires a supported SFP+ Direct Attach Copper (DAC) cable or Lenovo ThinkServer 10Gb Optical Module by Intel (part number 4XC0F28735). Up to two DAC cables or modules supported per adapter.

Note: Maximum quantity is achieved with two processors that are installed. With one processor, the maximum quantity is limited to one.

Power supplies

The N3310 storage server supports up to two redundant power supplies. Relationship and TopSeller models feature one or two 450 W Gold, 550 W Platinum, or 750 W Titanium AC power supplies (model dependent; for more information, see Table 2 and Table 3). The following table lists the power supplies.

Table 11. Power supplies

Part number	Description	Maximum supported
4X20G87845	Lenovo ThinkServer Gen 5 450W Gold Hot Swap Power Supply	2
4X20F28579	Lenovo ThinkServer Gen 5 550W Platinum Hot Swap Power Supply	2
4X20F28575	Lenovo ThinkServer Gen 5 750W Platinum Hot Swap Power Supply	2
4X20F28576	Lenovo ThinkServer Gen 5 750W Titanium Hot Swap Power Supply	2

The following general power supply rules apply:

- Minimum of one and maximum of two power supplies per system.
- If two are installed, power supplies must be identical.

Important: It is highly recommended to validate system configuration for specific power requirements by using the latest version of the ThinkServer Power Planner, which is available at this website: <http://support.lenovo.com/us/en/downloads/ds101155>

The use of this tool ensures that the right power supply is chosen for optimal performance.

Systems management

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

The 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

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

Note: The TSM Premium feature comes standard with some Relationship and TopSeller models (for more information, see Table 2 and Table 3).

The following table lists the Premium management option.

Table 12. Premium management option

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

Rack-mount options

Relationship and TopSeller models of the N3310 that are listed in this product guide ship without cable management arms. Also, some models ship without a rack-mount kit (for more information, see Table 2 and Table 3). The following table lists the rack-mount options that are available for the N3310.

Table 13. Rack-mount options

Part number	Description	Maximum supported
4XF0G45871	Lenovo ThinkServer Gen 5 1U 4-Post Slide Rail Kit	1
4XF0G45873	Lenovo ThinkServer Gen 5 4-Post Static Rail Kit	1
4XF0G45874	Lenovo ThinkServer Gen 5 1U Cable Management Arm	1
4XF0G45876	Lenovo ThinkServer Gen 5 Cable Management Bar	1

Physical and electrical specifications

Dimensions and weight (approximate):

- Height: 43 mm (1.7 in.)
- Width: 482 mm (19.0 in.)
- Depth: 803 mm (31.6 in.)
- Weight:
 - Minimum configuration: 13.6 kg (30.0 lb)
 - Maximum configuration: 18 kg (39.6 lb)

Supported environment:

- Air temperature:
 - Operating: 10 °C - 35 °C (50 °F - 95 °F)
 - Altitude: 0 - 950 m (3,117 ft): Decrease the maximum system temperature by 1 °C for every 300-m (984-ft) increase in altitude above 900 m.
 - Maximum altitude: 3,048 m (10,000 ft)
 - Storage: -40 °C - +70 °C (-40 °F - 158 °F)
- Humidity:
 - Operating: 20% - 80% (non-condensing)
 - Storage: 8% - 90% (non-condensing)
- Electrical:
 - 100 to 127 (nominal) V AC; 50 Hz - 60 Hz
 - 200 to 240 (nominal) V AC; 50 Hz - 60 Hz
- Noise level:
 - 5.6 bels (operating)
 - 5.5 bels (idle)

Warranty options

The N3310 has a three-year onsite warranty with 9x5/next business day (NBD) terms. Lenovo offers the service upgrades through warranty maintenance upgrades and post-warranty maintenance agreements with a well-defined scope of services, including service hours, response time, term of service, and service agreement terms and conditions.

Lenovo warranty service upgrade offerings are country-specific; that is, each country might have its own service types, service levels, response times, and terms and conditions. Not all covered types of warranty service upgrades might be available in a particular country or area. For more information about Lenovo warranty service upgrade offerings that are available in your country, visit the following Lenovo Quick Pick website:

<http://www.lenovoquickpick.com/>

The following table lists the warranty service definitions.

Table 14. Warranty service definitions

Term	Description
Onsite repair	A service technician comes to the server's location for equipment repair.
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 a.m. - 5:00 p.m. in the client's local time zone, Monday - Friday, excluding Lenovo holidays.
9x5 next business day	A service technician is scheduled to arrive at the client's location on the business day after Lenovo receives your call, following remote problem determination. Lenovo provides service 8:00 a.m. - 5:00 p.m. in the client's local time zone, Monday - Friday, excluding Lenovo holidays. Calls received after 4:00pm local time require an extra business day for service dispatch. Next business day service is not guaranteed.

The following types of Lenovo warranty service upgrades are available:

- Warranty and maintenance service upgrades:
 - Three, four, or five years of 9x5 or 24x7 service coverage
 - Onsite repair from next business day to 8 or 4 hours
 - One or two years of warranty extension
- 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 ThinkServer 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 ThinkServer system. 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 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 N3310 storage server conforms to the following regulations:

- Energy Star V2.0
- FCC class A: USA FCC 47 CFR Part 15-Subpart B; ANSI C63.4
- ICES class A: Canada ICES-003 Issue 5
- CB
- UL/cTUVus
- Germany GS
- Russia EAC
- Argentina AR-S
- Mexico NOM
- EU CE: EN55022; EN55024; EN61000-3-2;EN61000-3-3;
- International: CISPR22; CISPR 24
- China CCC: GB 9254
- CECP
- CELP

External storage expansion

The N3310 supports attachment to up to four Lenovo ThinkServer SA120 Storage Array storage expansion enclosures by using the Lenovo ThinkServer 9286CV-8e PCIe 6Gb 8 Port External SAS RAID Adapter. The following table lists the ordering information for the 9286CV-8e controller.

Note: Some Relationship and TopSeller models come standard with the 9286CV-8e adapter (for more information, see Table 2 and Table 3).

Table 15. RAID controllers and options for external storage expansion

Part number	Description	Maximum supported
4XB0F28699	Lenovo ThinkServer 9286CV-8e PCIe 6Gb 8 Port External SAS RAID Adapter by LSI	1
4XB0G45761	Lenovo ThinkServer CacheVault Data Protection Upgrade II	1
4XB0F28701	Lenovo ThinkServer RAID FastPath Key	1

The ThinkServer 9286CV-8e PCIe 6Gb 8 Port External SAS RAID Adapter features the following specifications:

- Eight external 6 Gbps SAS/SATA ports
- Up to 6 Gbps data transfer rates
- Two external x4 mini-SAS connectors (SFF-8088)
- Onboard 1 GB DDR3 cache
- Supports RAID levels 0, 1, 5, 10, 50, 6, and 60
- Supports optional CacheVault data protection (flash-backed cache)
- Supports optional FastPath feature for solid-state drives
- PCIe 3.0 x8 host interface
- Based on the LSI SAS2208 6 Gbps ROC controller
- Supports connectivity to the SA120 storage expansion enclosures

For more information about the ThinkServer SA120, see the Product Guide *Lenovo ThinkServer SA120 Storage Enclosure*, which is available at this webpage: <http://lenovopress.com/tips1234>

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Ask your Lenovo sales representative or your technology provider about the use of Lenovo Financial Services. For more information, see this website:

http://www.lenovo.com/services_warranty/us/en/financial_services.html

Related publications and links

For more information, see the following resources:

- Lenovo Storage N3310 product page:
<http://shop.lenovo.com/us/en/servers/network-storage/lenovoemc/n3310/>
- Lenovo Storage N3310 Quick Pick:
<http://www.lenovoquickpick.com/usa/system/lenovoemc/n-series-racks/n3310>
- Lenovo Storage N3310 support:
<http://support.lenovo.com>

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