

Lenovo Storage D1212 and D1224 Drive Enclosures

Product Guide

The Lenovo Storage D1212 and D1224 Disk Expansion Enclosures offer 12 Gbps SAS direct-attached storage expansion capabilities that are designed to provide simplicity, speed, scalability, security, and high availability for small to large businesses. The D1212 and D1224 deliver enterprise-class storage technology in a cost-effective solution with flexible drive configurations and RAID or JBOD (non-RAID) host connectivity.

The D1212 and D1224 expansion units are designed for a wide range of workloads, including big data and analytics, video surveillance, media streaming, private clouds, file and print serving, e-mail and collaboration, and databases. They also well-suited for software defined storage (SDS) and Windows Server solutions with Storage Spaces.



Figure 1. Lenovo Storage D1212 and D1224 Disk Expansion Enclosures

Did you know?

The D1212 and D1224 expansion enclosures offer flexible drive configurations with the choice of 2.5-inch and 3.5-inch drive form factors, 10K or 15K rpm SAS and 7.2K rpm NL SAS hard disk drives (HDDs) and self-encrypting drives (SEDs), and SAS solid-state drives (SSDs).

With support for daisy chaining, the D1212 can be scaled up to 1.72 PB for capacity-optimized configurations with HDDs, and the D1224 can be scaled up to 192 drives for performance-optimized configurations.

The D1212 and D1224 expansion units support 12 Gbps SAS connectivity, which doubles the data transfer rate compared to 6 Gb SAS solutions to maximize performance of storage I/O-intensive applications.

Key features

Key features and benefits provided by the D1212 and D1224 storage expansion enclosures include:

- Versatile, scalable storage expansion with dual Environmental service Module (ESM) configurations for high availability and performance
- Flexible host connectivity to match diverse client needs for direct attach storage with support for 12 Gb SAS RAID adapters for advanced data protection or 12 Gb SAS Host Bus Adapter (HBA) for maximum JBOD performance
- 12 Gb SAS drive-side connectivity with support for 12x 3.5-inch large form factor (LFF) drives in the D1212 enclosure or 24x 2.5-inch small form factor (SFF) drives in the D1224 enclosure
- Scalability of up to 96 LFF or 192 SFF drives per RAID adapter or HBA with the attachment of up to eight D1212 or D1224 daisy-chained expansion enclosures, or a combination of both, to satisfy growing needs for storage capacity and performance
- Flexibility in storing data on high performance SAS SSDs, performance-optimized enterprise SAS HDDs, or capacity-optimized enterprise NL SAS HDDs; mixing and matching drive types and form factors on a single RAID adapter or HBA to perfectly meet performance and capacity requirements for various workloads
- Self-encrypting drives with a supported RAID adapter allow clients to secure their sensitive data and to comply with various security regulations when required
- Support multiple host attachments and SAS zoning for storage partitioning

The D1212 and D1224 are designed to support the complete range of data storage requirements, from highly utilized applications to high-capacity, low usage applications.

The following 3.5-inch SAS drives are supported by the D1212:

- High performance SSDs (10 drive writes per day [DWD]): 400 GB
- Mainstream SSDs (3 DWD): 800 GB
- High-capacity, archival-class nearline HDDs: 2 TB, 4 TB, 6 TB, 8 TB, 10 TB, 12 TB, 14 TB, and 16 TB 7.2K rpm
- High-capacity, archival-class nearline self-encrypting HDDs: 4 TB 7.2K rpm

The following 2.5-inch SAS drives are supported by the D1224:

- Capacity optimized SSDs (1 DWD): 3.84 TB and 7.68 TB
- Mainstream SSDs (3 DWD): 800 GB and 1.6 TB
- High performance SSDs (10 DWD): 400 GB, 800 GB, and 1.6 TB
- Performance-optimized, enterprise class HDDs
 - 300 GB, 600 GB, and 900 GB 15K rpm
 - 600 GB, 1.2 TB, 1.8 TB, and 2.4 TB 10K rpm
- Performance-optimized, enterprise class self-encrypting HDDs: 1.2 TB 10K rpm
- High-capacity, archival-class nearline HDDs: 1 TB and 2 TB 7.2K rpm

Additional drives and expansion units are designed to be dynamically added with virtually no downtime (operating system dependent), helping to quickly and seamlessly respond to growing capacity demands.

The D1212 and D1224 expansion enclosures are designed to offer high levels of system and data availability with the following technologies:

- Dual ESMs provide redundant paths from a supported RAID controller to the drives in the enclosures for I/O load balancing and failover
- Dual-port drives (both HDDs and SSDs) with automatic drive failure detection and RAID rebuild with global hot spares with a supported RAID adapter
- Redundant hardware, including host ports, ESMs, and power and cooling modules (PCMs)
- Hot-swappable and customer replaceable components, including ESMs, PCMs, and drives

Components and connectors

The following figure shows the front of the D1212 drive expansion enclosure.

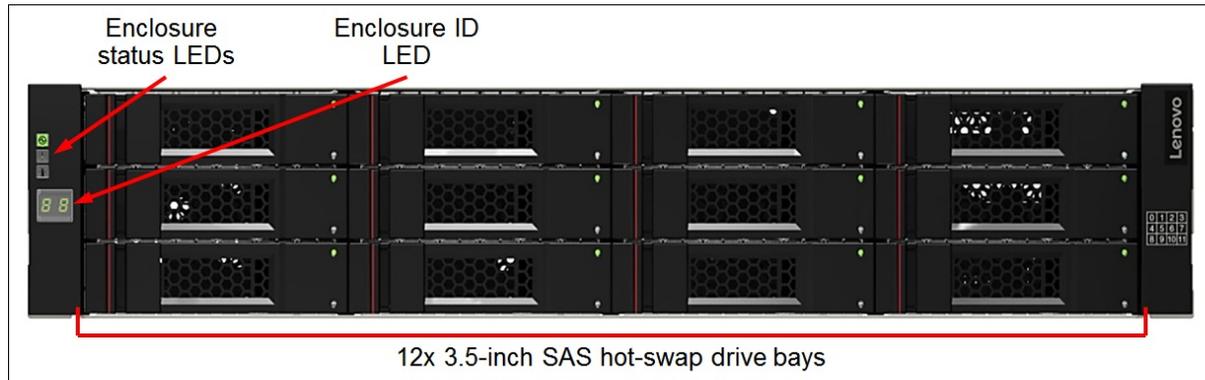


Figure 2. Front view of the D1212 drive enclosure

The following figure shows the front of the D1224 drive expansion enclosure.

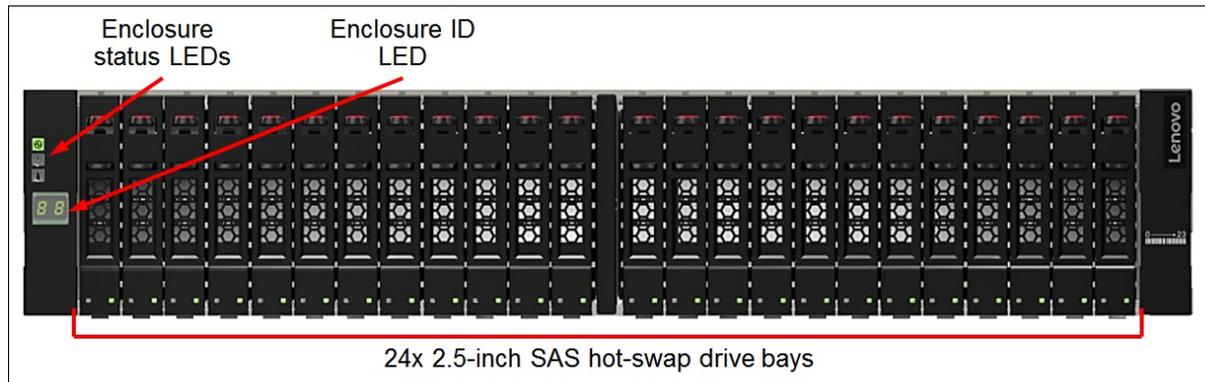


Figure 3. Front view of the D1224 drive enclosure

The following figure shows the rear of the D1212 and D1224 drive enclosures.

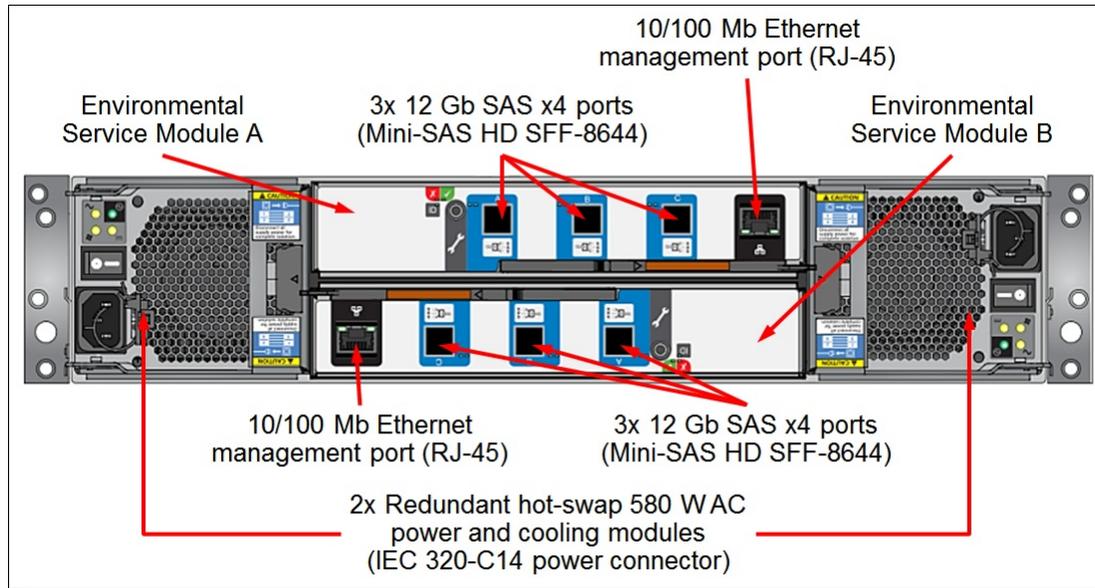


Figure 4. Rear view of the D1212 and D1224 drive enclosures

Note: The ESMs (shown in Figure 4) have additional service ports with a specialized connector, and these ports are reserved for use by a Lenovo service technician.

System specifications

The following table lists the D1212 and D1224 system specifications.

Table 1. System specifications

Attribute	Specification
Form factor	2U rack mount
Number of ESMs	2
Expansion ports	3x 12 Gb SAS x4 (Mini-SAS HD SFF-8644) ports (A, B, C) per ESM
Drive bays	<ul style="list-style-type: none"> D1212: 12 LFF hot-swap drive bays; up to 8x D1212 enclosures can be daisy chained on a supported RAID adapter or HBA for a total of up to 96 LFF drives. D1224: 24 SFF hot-swap drive bays; up to 8x D1224 enclosures can be daisy chained on a supported RAID adapter or HBA for a total of up to 192 SFF drives. <p>Intermix of SFF and LFF enclosures is supported.</p>
Drive technologies	SAS and NL SAS HDDs and SEDs; SAS SSDs. Intermix of HDDs, SEDs, and SSDs is supported within an enclosure, but not within a RAID array.
Drive connectivity	Dual-ported 12 Gb SAS drive attachment infrastructure.

Attribute	Specification
Drives	<p>SFF drives:</p> <ul style="list-style-type: none"> ● 3.84 TB and 7.68 TB SAS SSDs (1 DWD) ● 800 GB and 1.6 TB SAS SSDs (3 DWD) ● 400 GB, 800 GB, and 1.6 TB SAS SSDs (10 DWD) ● 300 GB, 600 GB, and 900 GB 15K rpm SAS HDDs ● 600 GB, 1.2 TB, 1.8 TB, and 2.4 TB 10K rpm SAS HDDs ● 1.2 TB 10K rpm SAS SED HDD ● 1 TB and 2 TB 7.2K rpm NL SAS HDDs <p>LFF drives:</p> <ul style="list-style-type: none"> ● 400 GB SAS SSDs (10 DWD) (hybrid tray - 2.5 in. drive in a 3.5-in. tray) ● 800 GB SAS SSDs (3 DWD) (hybrid tray - 2.5 in. drive in a 3.5-in. tray) ● 2 TB, 4 TB, 6 TB, 8 TB, 10 TB, 12 TB, 14 TB, 16 TB, 18 TB, and 20 Tb 7.2K rpm NL SAS HDDs ● 4 TB 7.2K rpm NL SAS SED HDD ● 24TB 7.2K rpm NL SAS SED HDD
Storage capacity	<ul style="list-style-type: none"> ● D1212: Up to 1.92 PB (96x 20 TB LFF NL SAS HDDs) ● D1224: Up to 1.47 PB (192x 7.68 TB SFF SAS SSDs)
Host adapters	<p>RAID adapters:</p> <ul style="list-style-type: none"> ● ThinkSystem RAID 930-8e (8-port 12 Gb SAS, 2x SFF-8644 connectors) ● ThinkSystem RAID 940-8e 4GB Flash PCIe Gen4 12Gb (8-port 12 Gb SAS, 2x SFF-8644 connectors) ● ServeRAID M5225 (8-port 12 Gbps SAS, 2x SFF-8644 connectors) <p>Host bus adapters (non-RAID):</p> <ul style="list-style-type: none"> ● ThinkSystem 430-8e HBA (8-port 12 Gb SAS, 2x SFF-8644 connectors) ● ThinkSystem 430-16e HBA (16-port 12 Gb SAS, 4x SFF-8644 connectors) ● N2225 (8-port 12 Gbps SAS, 2x SFF-8644 connectors) ● N2226 (16-port 12 Gbps SAS, 4x SFF-8644 connectors) ● ThinkServer 8885e (8-port 12 Gbps SAS, 2x SFF-8644 connectors)
Host operating systems	Microsoft Windows Server 2012 R2, 2016, and 2019; Red Hat Enterprise Linux (RHEL) 6 and 7; SUSE Linux Enterprise Server (SLES) 11, 12, and 15; VMware vSphere 6.0, 6.5, 6.7, and 7.0.
Cooling	Redundant cooling with two fans built into power and cooling modules (PCMs).
Power supply	Two redundant hot-swap 580 W AC power supplies built into PCMs.
Hot-swap parts	ESMs, drives, PCMs.
Management interfaces	SAS Enclosure Services, 10/100 Mb Ethernet for external management.
Security features	SAS zoning, self-encrypting drives (SEDs).
Warranty	Three-year customer-replaceable unit, parts delivered limited warranty with 9x5 next business day response.
Service and support	Optional warranty service upgrades are available through Lenovo: Technician installed parts, 24x7 coverage, 2-hour or 4-hour response time, 6-hour or 24-hour committed repair, 1-year or 2-year warranty extensions, YourDrive YourData, remote technical support, hardware installation.
Dimensions	Height: 88 mm (3.5 in), width: 443 mm (17.4 in), depth: 630 mm (24.8 in)
Maximum weight	<ul style="list-style-type: none"> ● D1212: 26 kg (57.3 lb) ● D1224: 24 kg (52.9 lb)

Models

The following table lists the relationship models of the D1212 and D1224 drive enclosures.

Table 2. D1212 and D1224 relationship models

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

* Available worldwide (except China and Japan)

^ Available only in China

** Available only in Japan

The following table lists the TopSeller models of the D1212 and D1224 drive enclosures.

Table 3. D1212 and D1224 TopSeller models

Description	Part number
LFF models - North America (NA) and Europe, Middle East, and Africa (EMEA)	
Lenovo Storage D1212 LFF Dual ESM Disk Expansion Enclosure (US English documentation)	4587E11
LFF models - Brazil and Latin America	
Lenovo Storage D1212 LFF Chassis, Dual ESM, 4x 2TB 3.5" HDDs, 4x 0.5m SAS cables	4587EAU
Lenovo Storage D1212 LFF Chassis, Dual ESM, 4x 4TB 3.5" HDDs, 4x 0.5m SAS cables	4587EBU
Lenovo Storage D1212 LFF Chassis, Dual ESM, 4x 6TB 3.5" HDDs, 4x 0.5m SAS cables	4587ECU
Lenovo Storage D1212 LFF Chassis, Dual ESM, 4x 8TB 3.5" HDDs, 4x 0.5m SAS cables	4587EDU
Lenovo Storage D1212 LFF Chassis, Dual ESM, 8x 2TB 3.5" HDDs, 4x 0.5m SAS cables	4587EEU
Lenovo Storage D1212 LFF Chassis, Dual ESM, 8x 4TB 3.5" HDDs, 4x 0.5m SAS cables	4587EFU
Lenovo Storage D1212 LFF Chassis, Dual ESM, 8x 6TB 3.5" HDDs, 4x 0.5m SAS cables	4587EGU
Lenovo Storage D1212 LFF Chassis, Dual ESM, 8x 8TB 3.5" HDDs, 4x 0.5m SAS cables	4587EHU
Lenovo Storage D1212 LFF Chassis, Dual ESM, 12x 2TB 3.5" HDDs, 4x 0.5m SAS cables	4587EIU
Lenovo Storage D1212 LFF Chassis, Dual ESM, 12x 4TB 3.5" HDDs, 4x 0.5m SAS cables	4587EJU
Lenovo Storage D1212 LFF Chassis, Dual ESM, 12x 6TB 3.5" HDDs, 4x 0.5m SAS cables	4587EKU
Lenovo Storage D1212 LFF Chassis, Dual ESM, 12x 8TB 3.5" HDDs, 4x 0.5m SAS cables	4587ELU
SFF models - North America (NA) and Europe, Middle East, and Africa (EMEA)	
Lenovo Storage D1224 SFF Dual ESM Disk Expansion Enclosure (US English documentation)	4587E31
SFF models - Brazil and Latin America	
Lenovo Storage D1224 SFF Chassis, Dual ESM, 9x 1.2TB 10K HDDs, 4x 0.5m SAS cables	4587E6U
Lenovo Storage D1224 SFF Chassis, Dual ESM, 18x 1.2TB 10K HDDs, 1x 0.5m SAS cable	4587E5U

The following table lists the CTO base models of the D1212 and D1224 drive enclosures.

Table 4. D1212 and D1224 CTO base models

Description	Machine Type-Model	Feature code
Lenovo Storage D1224 Disk Expansion Enclosure	4587-HC2	AU15
Lenovo Storage D1212 Disk Expansion Enclosure	4587-HC1	AU14

The D1212 and D1224 drive enclosures include the following items:

- One LFF or SFF chassis with the following components:
 - Dual 3-port environmental service modules
 - Two power and cooling modules
 - Drives (select models; see Table 2 and Table 3 for details)
- Two 1.5m, 10A/100-250V, C13 to IEC 320-C14 rack power cables (models listed in Table 2 and Table 3), or two customer-configured power cables (CTO models)
- External 0.5m 12Gb SAS cables (select models; see Table 2 and Table 3 for details)
- Lenovo Storage 12Gb SAN Rack Mount Kit - Rails 25"-36"
- Documentation package

Host connectivity

The D1212 and D1224 drive enclosures support dual environmental service module (ESM) configurations. Each ESM has three 12 Gb SAS x4 ports (Mini-SAS HD SFF-8644 connectors) labeled A, B, and C. These ports are used for connections to a supported RAID adapter or HBA installed in a server and for daisy chaining the D1212 and D1224 enclosures between each other.

Port A on each ESM is used for connecting the external SAS ports on the RAID controller or HBA to the enclosure, or for connecting Port C on each ESM in the adjacent enclosure for daisy chaining.

Port B on each ESM is used for connecting the external SAS ports on the RAID controller or HBA to the enclosure. Daisy-chaining does not use Port B for connections between adjacent enclosures.

Port C on each ESM is used for connecting the external SAS ports on the RAID controller or HBA to the enclosure, or for connecting Port A on each ESM in the adjacent enclosure for daisy chaining.

The expansion enclosures support single I/O path and dual I/O path connectivity topology. For single I/O path configurations, each port on the adapter can be connected to a separate chain of expansion enclosures by using the ESM A in each connected enclosure. For dual I/O path configurations, each port on the 2-port RAID adapter or HBA is connected to a different ESM chain within the same chain of enclosures. For specific configuration limits, refer to [SAS RAID controllers and HBAs](#).

For SAS RAID controllers, the controller's firmware manages multiple I/O paths from the controller to SAS drives. For SAS HBAs, the host operating system runs multi-pathing software to manage multiple I/O paths.

Up to eight D1212 or D1224 drive enclosures, or a combination of both, can be daisy-chained with support for up to four hosts attached to the chain. Without daisy-chaining, a standalone D1224 drive enclosure can support up to six directly attached hosts. In addition, up to two D1212 and up to two D3284 drive enclosures, or one D1224 and up to two D3284 drive enclosures can be daisy-chained with support for up to two hosts attached to the chain.

The following figures illustrate different host connectivity topologies.

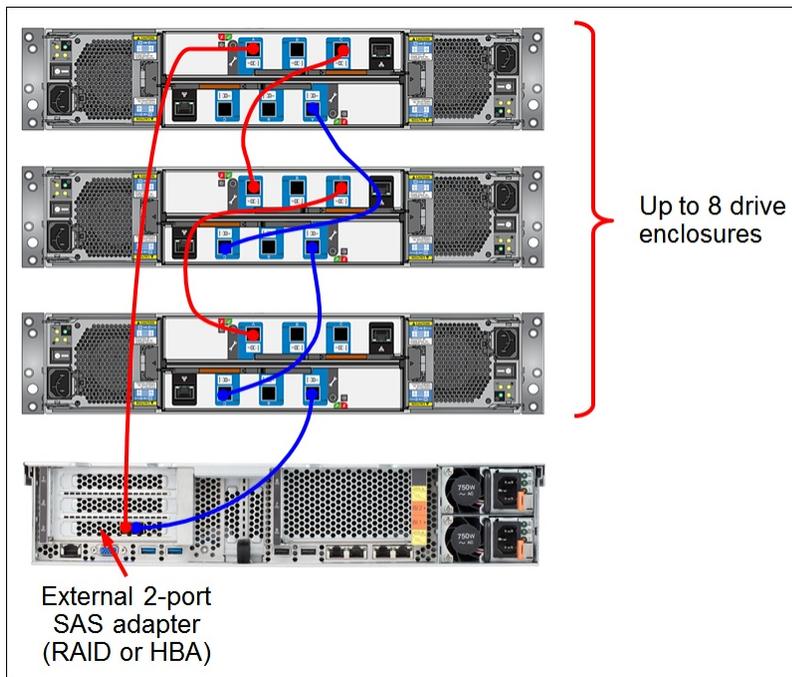


Figure 5. Connectivity topology with one host

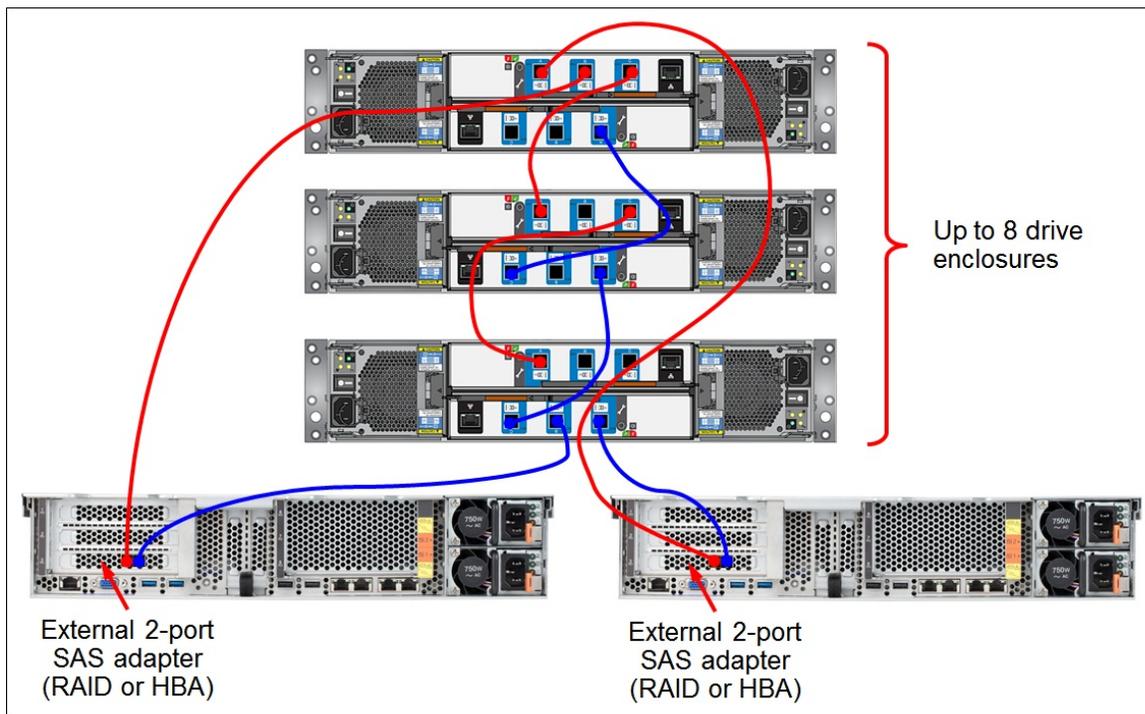


Figure 6. Connectivity topology with two hosts

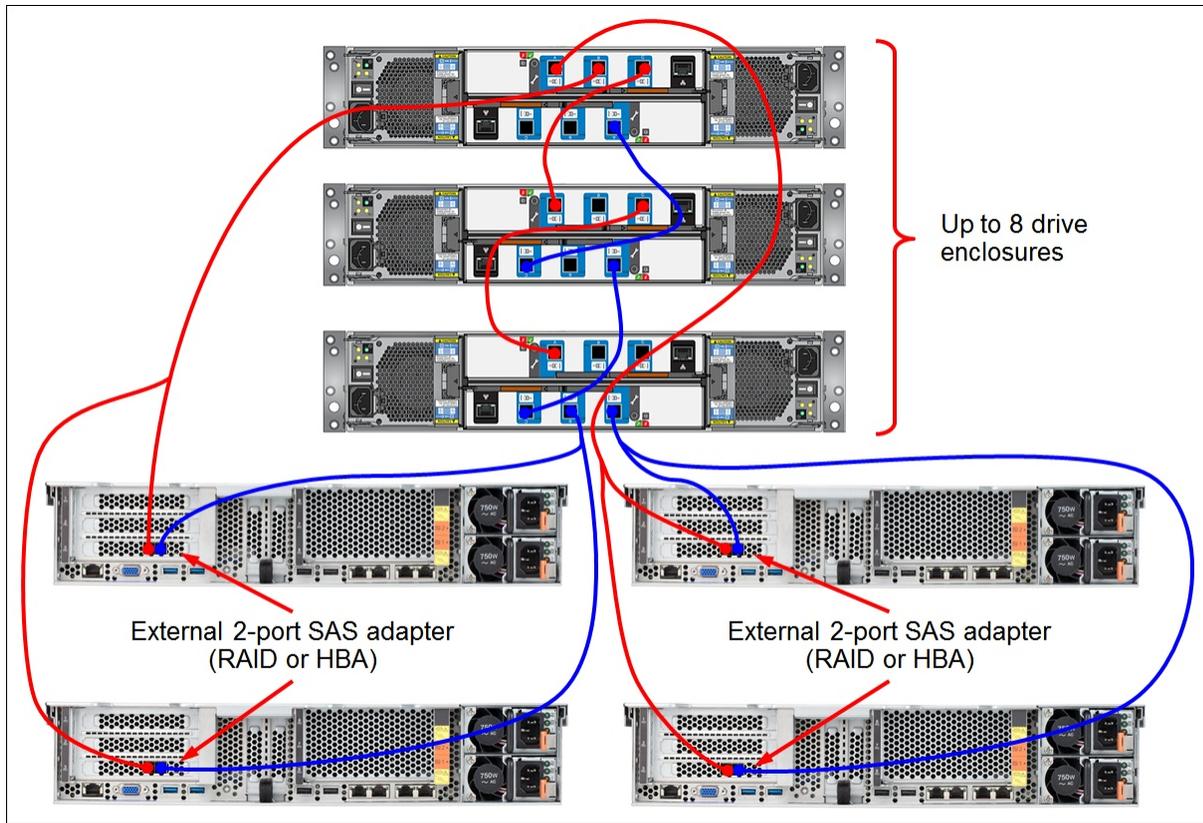


Figure 7. Connectivity topology with four hosts

For topologies with four or more hosts, SAS Y-cables are required to connect the hosts to the drive enclosure. The SAS Y-cable allows two hosts be connected to one SAS port on the ESM. The Y-cables and standard cables are mutually exclusive, that is, either Y-cables or standard cables can be used to connect the hosts to the same drive enclosure, but not both types.

The SAS *zoning* feature of the D1212 and D1224 specifies how multiple hosts access drives in the enclosures. If SAS zoning is disabled, all attached hosts can access all drives in the enclosures, which is typically used in standalone single-host or clustered multi-host environments, where all cluster nodes need access to all drives. If SAS zoning is enabled, each connected host has exclusive access to a predefined set of drives in the same enclosure, and multiple hosts are isolated from each other.

Configuration notes:

- Attachment of more than one host to the same enclosure without SAS zoning is supported with HBAs only (RAID controllers are not supported). While all attached hosts are capable of accessing all drives in the enclosures, the clustering software running on the hosts controls which cluster nodes have access to the drives at any given time.
- With SAS zoning enabled, only standalone enclosures without daisy-chaining can be partitioned for multiple host access.
- Expansion ports are not supported when zoning is enabled

The supported zone configurations are shown in the following table.

Note: Mode 0 means that zoning is disabled.

Table 5. D1212 and D1224 zoning configurations

Zoning mode	Number of zones	Maximum number of hosts	Zone number	Host ports	Expansion ports	Drive bays	
						D1212	D1224
Zoning with SAS standard cables							
Mode 0	1	2	1	A, B	C	0-11	0-23
Mode 1	2	2	1	A	None	0-1, 4-5, 8-9	0-11
			2	B		2-3, 6-7, 10-11	12-23
Mode 2	3	3	1	A	None	0-3	0-7
			2	B		4-7	8-15
			3	C		8-11	16-23
Zoning with SAS Y-cables							
Mode 3	3	3	1	A.1	None	0-3	0-7
			2	A.2		4-7	8-15
			3	B.1		8-11	16-23
Mode 4	4	4	1	A.1	None	0, 4, 8	0-5
			2	A.2		1, 5, 9	6-11
			3	B.1		2, 6, 10	12-17
			4	B.2		3, 7, 11	18-23
Mode 5	6	6	1	A.1	None	N/A	0-3
			2	A.2			4-7
			3	B.1			8-11
			4	B.2			12-15
			5	C.1			16-19
			6	C.2			20-23

The following table lists ordering information for the SAS cables.

Table 6. SAS cable options

Description	Part number	Feature code	Maximum quantity per one D1212 or D1224
Connectivity cables - Mini-SAS HD Host Adapter to Expansion			
External MiniSAS HD 8644/MiniSAS HD 8644 0.5M Cable	00YL847	AU16	6
External MiniSAS HD 8644/MiniSAS HD 8644 1M Cable	00YL848	AU17	6
External MiniSAS HD 8644/MiniSAS HD 8644 2M Cable	00YL849	AU18	6
External MiniSAS HD 8644/MiniSAS HD 8644 3M Cable	00YL850	AU19	6
External MiniSAS HD 8644/MiniSAS HD 8644 6M Cable	00KH452	AUJY	6
Connectivity cables - Expansion to Expansion			
External MiniSAS HD 8644/MiniSAS HD 8644 0.5M Cable	00YL847	AU16	2
External MiniSAS HD 8644/MiniSAS HD 8644 1M Cable	00YL848	AU17	2
External MiniSAS HD 8644/MiniSAS HD 8644 2M Cable	00YL849	AU18	2
External MiniSAS HD 8644/MiniSAS HD 8644 3M Cable	00YL850	AU19	2
External MiniSAS HD 8644/MiniSAS HD 8644 6M Cable	00KH452	AUJY	2

Drives

The D1212 drive enclosure supports up to 12 LFF hot-swap drives, and the D1224 drive enclosure supports up to 24 SFF hot-swap drives. The following tables list drive options for the D1212 and D1224 drive enclosures.

Table 7. LFF drive options (D1212)

Part number	Feature code	Description	Maximum quantity per one D1212
3.5-inch NL SAS hot-swap HDDs			
00YH993	AU1F	Lenovo Storage 2TB 7.2K 3.5" NL-SAS HDD	12
01DC487	AU1D	Lenovo Storage 4TB 7.2K 3.5" NL-SAS HDD	12
00YG668	AU1C	Lenovo Storage 6TB 7.2K 3.5" NL-SAS HDD	12
00YG663	AU1B	Lenovo Storage 8TB 7.2K 3.5" NL-SAS HDD	12
01DC626	AU3S	Lenovo Storage 10TB 7.2K 3.5" NL-SAS HDD	12
4XB7A09100	B102	Lenovo Storage 12TB 7.2K 3.5" NL-SAS HDD	12
4XB7A12038	B4T8	Lenovo Storage 14TB 7.2K 3.5" NL-SAS HDD	12
4XB7A62771	BAVL	Lenovo Storage 16TB 7.2K 3.5" NL-SAS HDD	12
4XB7A77021	BKCW	Lenovo Storage 18TB 7.2K 3.5" NL-SAS HDD	12
4XB7A83368	BQUS	Lenovo Storage 20TB 7.2K 3.5" LFF SAS HDD	12
3.5-inch NL SAS hot-swap SEDs			
00YG673	AU1E	Lenovo Storage 4TB 7.2K 3.5" NL-SAS SED HDD	12
4XB7A95708	C340	Lenovo Storage D1212 24TB SED 7.2K 3.5" NL-SAS HDD	12
3.5-inch SAS hot-swap SSDs (1 DWD)			
4XB7A87780	BVPK	Lenovo Storage 2.5" 15.36TB 1DWD SAS SSD (2.5" in 3.5" Hybrid Tray PM1653) for D1212	12
3.5-inch SAS hot-swap SSDs (3 DWD)			
4XB7A60799	BAVJ	Lenovo Storage 800GB 3DWD SAS SSD (2.5" in 3.5" Hybrid Tray)	12

Table 8. SFF drive options (D1224)

Part number	Feature code	Description	Maximum quantity per one D1224
2.5-inch SAS hot-swap HDDs			
01DC197	AU1J	Lenovo Storage 300GB 15K 2.5" SAS HDD	24
01DC427	AU1Q	Lenovo Storage 600GB 10K 2.5" SAS HDD	24
01DC192	AU1H	Lenovo Storage 600GB 15K 2.5" SAS HDD	24
01KP040	AVP5	Lenovo Storage 900GB 15K 2.5" SAS HDD	24
01DC407	AU1L	Lenovo Storage 1.2TB 10K 2.5" SAS HDD	24
01DC402	AU1K	Lenovo Storage 1.8TB 10K 2.5" SAS HDD	24
4XB7A09101	B103	Lenovo Storage 2.4TB 10K 2.5" SAS HDD	24
2.5-inch SAS hot-swap SED HDDs			
01DC412	AU1M	Lenovo Storage 1.2TB 10K 2.5" SAS SED HDD	24
2.5-inch NL SAS hot-swap HDDs			
01DC442	AU1S	Lenovo Storage 1TB 7.2K 2.5" NL-SAS HDD	24
01DC437	AU1R	Lenovo Storage 2TB 7.2K 2.5" NL-SAS HDD	24
2.5-inch SAS hot-swap SSDs (1 DWD)			
01KP065	AVPA	Lenovo Storage 3.84TB 1DWD 2.5" SAS SSD	24
01KP060	AVP9	Lenovo Storage 7.68TB 1DWD 2.5" SAS SSD	24
4XB7A87548	BV2T	Lenovo Storage 2.5" 15.36TB 1DWD SAS SSD for D1224	24
2.5-inch SAS hot-swap SSDs (3 DWD)			
01DC477	AU1U	Lenovo Storage 800GB 3DWD 2.5" SAS SSD	24
01DC472	AU1T	Lenovo Storage 1.6TB 3DWD 2.5" SAS SSD	24
2.5-inch SAS hot-swap SSDs (10 DWD)			
01DC447	AUDG	Lenovo Storage 1.6TB 10DWD 2.5" SAS SSD	24

Power supplies and cables

The Lenovo Storage D1212 and D1224 Disk Expansion Enclosures support up to two redundant hot-swap power supplies. In the Lenovo configurators power supplies are automatically derived and not individually configurable.

- The D1212 and D1224 power supply supports AutoSensing of the input power: 110v (low-voltage) or 230v (high-voltage)
- The power supply unit (PSU) version within our D1212 / D1224 Disk Expansion Enclosures come with "80PLUS Platinum (230V/115V) Hot-Swap Power Supply"

The D1212 and D1224 ship standard with two 1.5m, 10A/100-250V, C13 to IEC 320-C14 rack power cables. Other power cable options are also available, and the part numbers and feature codes to order the power cables are listed in the following table (two power cables are required per each D1212 and D1224).

Table 9. Power cable options

Part number	Feature code	Description
Rack power cables		
47C2487	A3SS	1.2m, 10A/100-250V, 2 Short C13s to Short C14 Rack Power Cable
47C2491	A3SW	1.2m, 16A/100-250V, 2 Short C13s to Short C20 Rack Power Cable
39Y7937	6201	1.5m, 10A/100-250V, C13 to IEC 320-C14 Rack Power Cable
47C2488	A3ST	2.5m, 10A/100-250V, 2 Long C13s to Short C14 Rack Power Cable
47C2492	A3SX	2.5m, 16A/100-250V, 2 Long C13s to Short C20 Rack Power Cable
47C2489	A3SU	2.8m, 10A/100-250V, 2 Short C13s to Long C14 Rack Power Cable
None*	6311	2.8m, 10A/100-250V, C13 to IEC 320-C14 Rack Power Cable
39Y7938	6204	2.8m, 10A/100-250V, C13 to IEC 320-C20 Rack Power Cable
47C2493	A3SY	2.8m, 16A/100-250V, 2 Short C13s to Long C20 Rack Power Cable
47C2490	A3SV	4.1m, 10A/100-250V, 2 Long C13s to Long C14 Rack Power Cable
47C2494	A3SZ	4.1m, 16A/100-250V, 2 Long C13s to Long C20 Rack Power Cable
39Y7932	6263	4.3m, 10A/100-250V, C13 to IEC 320-C14 Rack Power Cable
Line cords		
39Y7931	6207	10A/125V C13 to NEMA 5-15P 4.3m line cord
46M2592	A1RF	10A/250V C13 to NEMA 6-15P 2.8m line cord
39Y7930	6222	Argentina 10A/250V C13 to IRAM 2073 2.8m line cord
39Y7924	6211	Australia/NZ 10A/250V C13 to AS/NZ 3112 2.8m line cord
69Y1988	6532	Brazil 10A/250V C13 to NBR 14136 2.8m line cord
39Y7928	6210	China 10A/250V C13 to GB 2099.1 2.8m line cord
39Y7918	6213	Denmark 10A/250V C13 to DK2-5a 2.8m line cord
39Y7917	6212	European 10A/230V C13 to CEE7-VII 2.8m line cord
39Y7927	6269	India 10A/250V C13 to IS 6538 2.8m line cord
39Y7920	6218	Israel 10A/250V C13 to SI 32 2.8m line cord
39Y7921	6217	Italy 10A/250V C13 to CEI 23-16 2.8m line cord
46M2593	A1RE	Japan 12A/125V C13 to JIS C-8303 2.8m line cord
39Y7925	6219	Korea 12A/250V C13 to KETI 2.8m line cord
39Y7922	6214	South Africa 10A/250V C13 to SABS 164 2.8m line cord
39Y7919	6216	Switzerland 10A/250V C13 to SEV 1011-S24507 2.8m line cord
00CG267	6402	Taiwan 15A/125V C13/CNS 10917 2.8m line cord
39Y7923	6215	United Kingdom 10A/250V C13 to BS 1363/A 2.8m line cord

Physical specifications

The D1212 and D1224 have the following dimensions and weight (approximate):

- Height: 88 mm (3.5 in.)
- Width: 443 mm (17.4 in.)
- Depth: 630 mm (24.8 in.)
- Maximum weight
 - D1212: 26 kg (57.3 lb)
 - D1224: 24 kg (52.9 lb)

Operating environment

The D1212 and D1224 are supported in the following environment:

- Air temperature:
 - Operating: 5 °C to 40 °C (41 °F to 104 °F)
 - Storage: -40 °C to +60 °C (-40 °F to 140 °F)
 - Maximum altitude: 3,045 m (10,000 ft)
- Humidity:
 - Operating: 20% to 80% (non-condensing)
 - Storage: 5% to 100% (no precipitation)
- Electrical:
 - 100 to 127 (nominal) V AC; 50 Hz to 60 Hz; 6.11 A
 - 200 to 240 (nominal) V AC; 50 Hz to 60 Hz; 3.05 A
- BTU output: 1979 BTU/hr (580 W)
- Noise level: 6.5 bels

Warranty and support

The D1212 and D1224 have a three-year customer-replaceable unit (CRU) warranty with standard call center support during normal business hours and 9x5 Next Business Day Parts Delivered.

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

The following additional Lenovo support services are available:

- **Premier Support** provides a Lenovo-owned customer experience and delivers direct access to technicians skilled in hardware, software, and advanced troubleshooting, in addition to the following capabilities:
 - Direct technician-to-technician access through a dedicated phone line.
 - 24x7x365 remote support.
 - Single point of contact service.
 - End to end case management.
 - 3rd Party collaborative software support.
 - Online case tools and live chat support.
 - On-demand remote system analysis.
- **Warranty Upgrades (Preconfigured Support)** are available to meet the on-site response time targets that match the criticality of your systems:
 - 3, 4, or 5 years of service coverage.
 - 1-year or 2-year post-warranty extensions.
 - **Foundation Service:** 9x5 service coverage with next business day onsite response, with optional YourDrive YourData.
 - **Essential Service:** 24x7 service coverage with 4-hour onsite response or 24-hour committed repair (available only in select regions), with optional YourDrive YourData.
 - **Advanced Service:** 24x7 service coverage with 2-hour onsite response or 6-hour committed repair (available only in select regions), with optional YourDrive YourData.

- **Managed Services**

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

Quarterly reviews check error logs, verify firmware and operating system device driver levels, and software as needed. Lenovo will also maintain records of latest patches, critical updates, and firmware levels, to ensure customer's systems are providing business value through optimized performance.

- **Technical Account Management (TAM)**

A Lenovo Technical Account Manager helps customers optimize operations of their data centers based on a deep understanding of customer's business. Customers gain direct access to a Lenovo TAM, who serves as their single point of contact to expedite service requests, provide status updates, and furnish reports to track incidents over time. Also, a TAM helps proactively make service recommendations and manage service relationship with Lenovo to make certain that customer's needs are met.

- **YourDrive YourData**

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

- **Health Check**

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

Some regions might have different warranty terms and conditions than the standard warranty. This is due to local business practices or laws in the specific region. Local service teams can assist in explaining region-specific terms when needed. Examples of region-specific warranty terms are second or longer business day parts delivery or parts-only base warranty.

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

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

Lenovo support services are region-specific. Not all support services are available in every region. For information about Lenovo support services that are available in a specific region, refer to the following resources:

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

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

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

Services

Lenovo Data Center Services empower you at every stage of your IT lifecycle. From expert advisory and strategic planning to seamless deployment and ongoing support, we ensure your infrastructure is built for success. Our comprehensive services accelerate time to value, minimize downtime, and free your IT staff to focus on driving innovation and business growth.

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

In this section:

- [Lenovo Advisory Services](#)
- [Lenovo Plan & Design Services](#)
- [Lenovo Deployment, Migration, and Configuration Services](#)
- [Lenovo Support Services](#)
- [Lenovo Managed Services](#)
- [Lenovo Sustainability Services](#)

Lenovo Advisory Services

Lenovo Advisory Services simplify the planning process, enabling customers to build future-proofed strategies in as little as six weeks. Consultants provide guidance on projects including VM migration, storage, backup and recovery, and cost management to accelerate time to value, improve cost efficiency, and build a flexibly scalable foundation.

- **Assessment Services**

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

- **Design Services**

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

Lenovo Plan & Design Services

Unlock faster time to market with our tailored, strategic design workshops to align solution approaches with your business goals and technical requirements. Leverage our deep solution expertise and end-to-end delivery partnership to meet your goals efficiently and effectively.

Lenovo Deployment, Migration, and Configuration Services

Optimize your IT operations by shifting labor-intensive functions to Lenovo's skilled technicians for seamless on-site or remote deployment, configuration, and migration. Enjoy peace of mind, faster time to value, and comprehensive knowledge sharing with your IT staff, backed by our best-practice methodology.

- **Deployment Services for Storage and ThinkAgile**

A comprehensive range of remote and onsite options tailored specifically for your business needs to ensure your storage and ThinkAgile hardware are fully operational from the start.

- **Hardware Installation Services**

A full-range, comprehensive setup for your hardware, including unpacking, inspecting, and positioning components to ensure your equipment is operational and error-free for the most seamless and efficient installation experience, so you can quickly benefit from your investments.

- **DM/DG File Migration Services**

Take the burden of file migration from your IT's shoulders. Our experts will align your requirements and business objectives to the migration plans while coordinating with your team to plan and safely execute the data migration to your storage platforms.

- **DM/DG/DE Health Check Services**

Our experts perform proactive checks of your Firmware and system health to ensure your machines are operating at peak and optimal efficiency to maximize up-time, avoid system failures, ensure the security of IT solutions and simplify maintenance.

- **Factory Integrated Services**

A suite of value-added offerings provided during the manufacturing phase of a server or storage system that reduces time to value. These services aim at improving your hardware deployment experience and enhance the quality of a standard configuration before it arrives at your facility.

Lenovo Support Services

In addition to response time options for hardware parts, repairs, and labor, Lenovo offers a wide array of additional support services to ensure your business is positioned for success and longevity. Our goal is to reduce your capital outlays, mitigate your IT risks, and accelerate your time to productivity.

- **Premier Support for Data Centers**

Your direct line to the solution that promises the best, most comprehensive level of support to help you fully unlock the potential of your data center.

- **Premier Enhanced Storage Support (PESS)**

Gain all the benefits of Premier Support for Data Centers, adding dedicated storage specialists and resources to elevate your storage support experience to the next level.

- **Committed Service Repair (CSR)**

Our commitment to ensuring the fastest, most seamless resolution times for mission-critical systems that require immediate attention to ensure minimal downtime and risk for your business. This service is only available for machines under the Premier 4-Hour Response SLA.

- **Multivendor Support Services (MVS)**

Your single point of accountability for resolution support across vast range of leading Server, Storage, and Networking OEMs, allowing you to manage all your supported infrastructure devices seamlessly from a single source.

- **Keep Your Drive (KYD)**

Protect sensitive data and maintain compliance with corporate retention and disposal policies to ensure your data is always under your control, regardless of the number of drives that are installed in your Lenovo server.

- **Technical Account Manager (TAM)**

Your single point of contact to expedite service requests, provide status updates, and furnish reports to track incidents over time, ensuring smooth operations and optimized performance as your business grows.

- **Enterprise Software Support (ESS)**

Gain comprehensive, single-source, and global support for a wide range of server operating systems and Microsoft server applications.

For more information, consult the brochure [Lenovo Operational Support Services for Data Centers](#).

Lenovo Managed Services

Achieve peak efficiency, high security, and minimal disruption with Lenovo's always-on Managed Services. Our real-time monitoring, 24x7 incident response, and problem resolution ensure your infrastructure operates seamlessly. With quarterly health checks for ongoing optimization and innovation, Lenovo's remote active monitoring boosts end-user experience and productivity by keeping your data center's hardware performing at its best.

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

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

Lenovo Sustainability Services

- **Asset Recovery Services**

Lenovo Asset Recovery Services (ARS) provides a secure, seamless solution for managing end-of-life IT assets, ensuring data is safely sanitized while contributing to a more circular IT lifecycle. By maximizing the reuse or responsible recycling of devices, ARS helps businesses meet sustainability goals while recovering potential value from their retired equipment. For more information, see the [Asset Recovery Services offering page](#).

- **CO2 Offset Services**

Lenovo's CO2 Offset Services offer a simple and transparent way for businesses to take tangible action on their IT footprint. By integrating CO2 offsets directly into device purchases, customers can easily support verified climate projects and track their contributions, making meaningful progress toward their sustainability goals without added complexity.

- **Lenovo Certified Refurbished**

Lenovo Certified Refurbished offers a cost-effective way to support IT circularity without compromising on quality and performance. Each device undergoes rigorous testing and certification, ensuring reliable performance and extending its lifecycle. With Lenovo's trusted certification, you gain peace of mind while making a more sustainable IT choice.

Regulatory compliance

The D1212 and D1224 drive enclosures conform to the following regulations:

- BSMI CNS 13438, Class A; CNS 14336 (Taiwan)
- CCC GB 4943.1, GB 17625.1, GB 9254 Class A (China)
- CE Mark (European Union)
- CISPR 22, Class A
- EAC (Russia)
- EN55022, Class A
- EN55024
- FCC Part 15, Class A (United States)
- ICES-003/NMB-03, Class A (Canada)
- IEC/EN60950-1
- KC Mark (Korea)
- NOM-019 (Mexico)
- Reduction of Hazardous Substances (ROHS)
- UL/CSA IEC 60950-1
- VCCI, Class A (Japan)
- BIS (India)

Interoperability

Lenovo provides end-to-end storage compatibility testing to deliver interoperability throughout the network. The Lenovo Storage D1212 and D1224 support attachment to hosts that support the RAID controllers and HBAs listed in the [SAS RAID controllers and HBAs](#) section.

Important: Information that is provided in these sections is for order reference purposes only.

For end-to-end storage configuration support, refer to the Lenovo Storage Interoperation Center (LSIC): <https://datacentersupport.lenovo.com/us/en/lxic>

Use the LSIC to select the known components of your configuration and then get a list all other supported combinations, with details about supported hardware, firmware, operating systems, and drivers, plus any additional configuration notes. View results on screen or export them to Excel.

SAS RAID controllers and HBAs

The D1212 and D1224 enclosures support the RAID adapters and HBAs listed in the following table.

Table 10. RAID controllers and HBAs

Part number	Description	Maximum quantity of enclosures per adapter	
		Dual I/O path	Single I/O path
ThinkSystem adapters			
4Y37A78836	ThinkSystem RAID 940-8e 4GB Flash PCIe Gen4 12Gb	8/4*	8
7Y37A01090	ThinkSystem 430-8e SAS/SATA 12Gb HBA	8**	8
7Y37A01091	ThinkSystem 430-16e SAS/SATA 12Gb HBA	8**	8
4Y37A09724	ThinkSystem 440-16e SAS/SATA PCIe Gen4 12Gb HBA	8**	8
System x adapters			
00AE938	ServeRAID M5225-2GB SAS/SATA Controller	8/4*	8
00AE912	N2225 SAS/SATA HBA	8**	8
00AE916	N2226 SAS/SATA HBA	8**	8
ThinkServer adapters			
4XB0F28703	ThinkServer 9300-8e PCIe 12Gb 8-port External SAS Adapter by LSI	8	8
4XB0G88727	ThinkServer 8885e PCIe 12Gb 8-port External SAS Adapter by PMC	1	1

*The maximum quantity of D1212/D1224 enclosures

** The maximum enclosure quantity is based on the dual HBA environment

Rack cabinets

The following table lists the supported rack cabinets.

Table 11. Rack cabinets (D)

Model	Description
7D6DA007WW	ThinkSystem 42U Onyx Primary Heavy Duty Rack Cabinet (1200mm)
7D6DA008WW	ThinkSystem 42U Pearl Primary Heavy Duty Rack Cabinet (1200mm)
7D6EA009WW	ThinkSystem 48U Onyx Primary Heavy Duty Rack Cabinet (1200mm)
7D6EA00AWW	ThinkSystem 48U Pearl Primary Heavy Duty Rack Cabinet (1200mm)
93604PX	42U 1200mm Deep Dynamic Rack
93614PX	42U 1200mm Deep Static Rack
93634PX	42U 1100mm Dynamic Rack
93634EX	42U 1100mm Dynamic Expansion Rack
93074RX	42U Standard Rack (1000mm)

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

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

Power distribution units

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

Table 12. Power distribution units

Part number	Feature code	Description	ANZ	ASEAN	Brazil	EET	MEA	RUCIS	WE	HTK	INDIA	JAPAN	LA	NA	PRC
0U Basic PDUs															
4PU7A93176	C0QH	0U 36 C13 and 6 C19 Basic 32A 1 Phase PDU v2	Y	Y	Y	Y	Y	Y	Y	Y	Y	N	Y	Y	Y
4PU7A93169	C0DA	0U 36 C13 and 6 C19 Basic 32A 1 Phase PDU	Y	Y	Y	Y	Y	Y	Y	Y	Y	N	Y	Y	Y
4PU7A93177	C0QJ	0U 24 C13/C15 and 24 C13/C15/C19 Basic 32A 3 Phase WYE PDU v2	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
4PU7A93170	C0D9	0U 24 C13/C15 and 24 C13/C15/C19 Basic 32A 3 Phase WYE PDU	Y	Y	Y	Y	Y	Y	Y	Y	Y	N	Y	Y	Y
0U Switched and Monitored PDUs															
4PU7A93181	C0QN	0U 21 C13/C15 and 21 C13/C15/C19 Switched and Monitored 48A 3 Phase Delta PDU v2 (60A derated)	N	Y	N	N	N	N	N	Y	N	Y	N	Y	N
4PU7A93174	C0D5	0U 21 C13/C15 and 21 C13/C15/C19 Switched and Monitored 48A 3 Phase Delta PDU (60A derated)	N	Y	N	N	N	N	N	Y	N	N	N	Y	N
4PU7A93178	C0QK	0U 20 C13 and 4 C19 Switched and Monitored 32A 1 Phase PDU v2	Y	Y	Y	Y	Y	Y	Y	Y	Y	N	Y	Y	Y
4PU7A93171	C0D8	0U 20 C13 and 4 C19 Switched and Monitored 32A 1 Phase PDU	Y	Y	Y	Y	Y	Y	Y	Y	Y	N	Y	Y	Y
4PU7A93182	C0QP	0U 18 C13/C15 and 18 C13/C15/C19 Switched and Monitored 63A 3 Phase WYE PDU v2	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
4PU7A93175	C0CS	0U 18 C13/C15 and 18 C13/C15/C19 Switched and Monitored 63A 3 Phase WYE PDU	Y	Y	Y	Y	Y	Y	Y	Y	Y	N	Y	Y	Y
4PU7A93180	C0QM	0U 18 C13/C15 and 18 C13/C15/C19 Switched and Monitored 32A 3 Phase WYE PDU v2	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
4PU7A93173	C0D6	0U 18 C13/C15 and 18 C13/C15/C19 Switched and Monitored 32A 3 Phase WYE PDU	Y	Y	Y	Y	Y	Y	Y	Y	Y	N	Y	Y	Y
4PU7A93179	C0QL	0U 16 C13/C15 and 16 C13/C15/C19 Switched and Monitored 24A 1 Phase PDU v2 (30A derated)	N	Y	N	N	N	N	N	Y	N	Y	N	Y	N
4PU7A93172	C0D7	0U 16 C13/C15 and 16 C13/C15/C19 Switched and Monitored 24A 1 Phase PDU(30A derated)	N	Y	N	N	N	N	N	Y	N	N	N	Y	N
1U Switched and Monitored PDUs															
4PU7A90808	C0D4	1U 18 C19/C13 Switched and monitored 48A 3P WYE PDU V2 ETL	N	N	N	N	N	N	N	Y	N	Y	Y	Y	N
4PU7A81117	BNDV	1U 18 C19/C13 switched and monitored 48A 3P WYE PDU - ETL	N	N	N	N	N	N	N	N	N	N	N	Y	N

Part number	Feature code	Description	ANZ	ASEAN	Brazil	EET	MEA	RUCIS	WE	HTK	INDIA	JAPAN	LA	NA	PRC
4PU7A90809	C0DE	1U 18 C19/C13 Switched and monitored 48A 3P WYE PDU V2 CE	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	N	Y
4PU7A81118	BNDW	1U 18 C19/C13 switched and monitored 48A 3P WYE PDU – CE	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	N	Y
4PU7A90810	C0DD	1U 18 C19/C13 Switched and monitored 80A 3P Delta PDU V2	N	N	N	N	N	N	N	Y	N	Y	Y	Y	N
4PU7A77467	BLC4	1U 18 C19/C13 Switched and Monitored 80A 3P Delta PDU	N	N	N	N	N	N	N	N	N	Y	N	Y	N
4PU7A90811	C0DC	1U 12 C19/C13 Switched and monitored 32A 3P WYE PDU V2	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
4PU7A90812	C0DB	1U 12 C19/C13 Switched and monitored 60A 3P Delta PDU V2	N	N	N	N	N	N	N	Y	N	Y	Y	Y	N
4PU7A77469	BLC6	1U 12 C19/C13 switched and monitored 60A 3P Delta PDU	N	N	N	N	N	N	N	N	N	N	N	Y	N
71763NU	6051	Ultra Density Enterprise C19/C13 PDU 60A/208V/3PH	N	N	Y	N	N	N	N	N	N	Y	Y	Y	N
71762NX	6091	Ultra Density Enterprise C19/C13 PDU Module	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Line cords for 1U PDUs that ship without a line cord															
40K9611	6504	DPI 32a Cord (IEC 309 3P+N+G)	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
40K9612	6502	DPI 32a Cord (IEC 309 P+N+G)	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
40K9613	6503	DPI 63a Cord (IEC 309 P+N+G)	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
40K9614	6500	DPI 30a Cord (NEMA L6-30P)	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
40K9615	6501	DPI 60a Cord (IEC 309 2P+G)	N	N	Y	N	N	N	Y	N	N	Y	Y	Y	N

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

Uninterruptible power supply units

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

Table 13. Uninterruptible power supply units

Part number	Description
Rack-mounted or tower UPS units - 100-125VAC	
7DD5A001WW	RT1.5kVA 2U Rack or Tower UPS-G2 (100-125VAC)
7DD5A003WW	RT3kVA 2U Rack or Tower UPS-G2 (100-125VAC)
Rack-mounted or tower UPS units - 200-240VAC	
7DD5A002WW	RT1.5kVA 2U Rack or Tower UPS-G2 (200-240VAC)
7DD5A005WW	RT3kVA 2U Rack or Tower UPS-G2 (200-240VAC)
7DD5A007WW	RT5kVA 3U Rack or Tower UPS-G2 (200-240VAC)
7DD5A008WW	RT6kVA 3U Rack or Tower UPS-G2 (200-240VAC)
7DD5A00AWW	RT11kVA 6U Rack or Tower UPS-G2 (200-240VAC)

† Only available in China and the Asia Pacific market.

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

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

Lenovo Financial Services

Why wait to obtain the technology you need now? No payments for 90 days and predictable, low monthly payments make it easy to budget for your Lenovo solution.

- **Flexible**

Our in-depth knowledge of the products, services and various market segments allows us to offer greater flexibility in structures, documentation and end of lease options.

- **100% Solution Financing**

Financing your entire solution including hardware, software, and services, ensures more predictability in your project planning with fixed, manageable payments and low monthly payments.

- **Device as a Service (DaaS)**

Leverage latest technology to advance your business. Customized solutions aligned to your needs. Flexibility to add equipment to support growth. Protect your technology with Lenovo's Premier Support service.

- **24/7 Asset management**

Manage your financed solutions with electronic access to your lease documents, payment histories, invoices and asset information.

- **Fair Market Value (FMV) and \$1 Purchase Option Leases**

Maximize your purchasing power with our lowest cost option. An FMV lease offers lower monthly payments than loans or lease-to-own financing. Think of an FMV lease as a rental. You have the flexibility at the end of the lease term to return the equipment, continue leasing it, or purchase it for the fair market value. In a \$1 Out Purchase Option lease, you own the equipment. It is a good option when you are confident you will use the equipment for an extended period beyond the finance term. Both lease types have merits depending on your needs. We can help you determine which option will best meet your technological and budgetary goals.

Ask your Lenovo Financial Services representative about this promotion and how to submit a credit application. For the majority of credit applicants, we have enough information to deliver an instant decision and send a notification within minutes.

Related publications and links

For more information, see the following documents:

- Lenovo Storage product page
<https://www.lenovo.com/us/en/data-center/storage/>
- Lenovo Data Center Solution Configurator
<http://dcsc.lenovo.com>
- Lenovo Storage support
<http://support.lenovo.com/us/en/products/servers/lenovo-storage>
- Lenovo Storage D1224 Drive Enclosure for SAP HANA Product Guide
<http://lenovopress.com/lp0590>

Related product families

Product families related to this document are the following:

- [Direct-Attached Storage](#)

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