Lenovo Storage D3284 External High Density Drive Expansion Enclosure

Product Guide (withdrawn product)

The Lenovo Storage D3284 High Density Expansion Enclosure offers 12 Gbps SAS direct-attached storage expansion capabilities that are designed to provide density, speed, scalability, security, and high availability for medium to large businesses. The D3284 delivers enterprise-class storage technology in a cost-effective dense solution with flexible drive configurations of up to 84 drives in 5U rack space and RAID or JBOD (non-RAID) host connectivity or Lenovo ThinkSystem DS Series storage area network (SAN) array expansion (EBOD connectivity).

The D3284 expansion unit is designed for a wide range of workloads, including big data and analytics, video surveillance, private and hybrid clouds, file and print serving, and backup and archiving. The D3284 is also well-suited for software defined storage (SDS) and Windows Storage Spaces.

Figure 1. Lenovo Storage D3284 HD Expansion Enclosure

Did you know?

The D3284 expansion enclosures 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.

With support for daisy chaining, the D3284 expansion enclosures can be scaled up to 2.58 PB for capacity-optimized configurations.

The D3284 expansion enclosures allow daisy chaining with D1212 and D1224 expansion enclosures: Up to two D3284 and two D1212 or one D1224 drive enclosures is supported in a single chain.

The D3284 expansion enclosures are universal enclosures that can be used with Lenovo servers as direct attach storage (DAS) or as expansion for the Lenovo ThinkSystem DS4200 and DS6200 storage systems.

Key features

Key features and benefits provided by the D3284 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 6 Gb or 12 Gb SAS RAID adapters for advanced data protection or 6 Gb or 12 Gb SAS Host Bus Adapters (HBAs) for maximum JBOD performance
- Provide expansion capabilities for the ThinkSystem DS4200 and DS6200 storage arrays
- 12 Gb SAS drive-side connectivity and storage density with support for 84x 3.5-inch large form factor (LFF) drives in a 5U rack space
- Scalability of up to 336 drives per HBA with the attachment of up to four D3284 daisy-chained expansion enclosures to satisfy growing needs for storage capacity and performance
- Flexibility in daisy chaining of up to two D3284 and two D1212 or one D1224 drive enclosures
- Flexibility in storing data on high performance SAS SSDs or capacity-optimized enterprise NL SAS HDDs; mixing and matching drive types on a single HBA to perfectly meet performance and capacity requirements for various workloads
- Support multiple host attachments (application-specific)

The D3284 drive enclosures are designed to support a wide range of data storage requirements, from highly utilized applications to high-capacity, low usage applications.

The following SAS drives are supported by the D3284:

- High-capacity, archival-class nearline HDDs, up to 20 TB 7.2K rpm
- High performance SSDs (10 drive writes per day [DWD]): 400 GB
- Mainstream SSDs (3 DWD): 400 GB and 800 GB
- Capacity-optimized SSDs (1 DWD): 3.84 TB, and 7.68 TB, and 15.36 TB

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 D3284 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 HBA 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
- Redundant hardware, including host ports, ESMs, power supplies, and cooling fans
- Hot-swappable and customer replaceable components, including ESMs, power supplies, cooling fans, and drives

Components and connectors

The following figures show the front of the D3284 drive expansion enclosure.

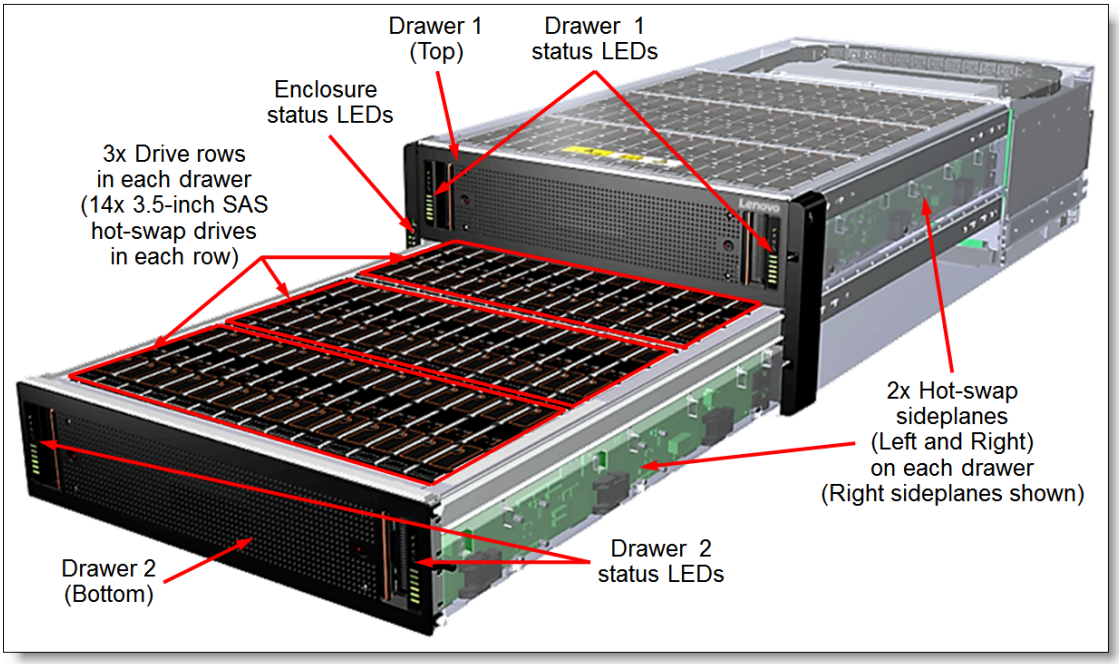

Figure 2. Front view of the D3284 drive enclosure

The following figures show the rear of the D3284 drive expansion enclosure.

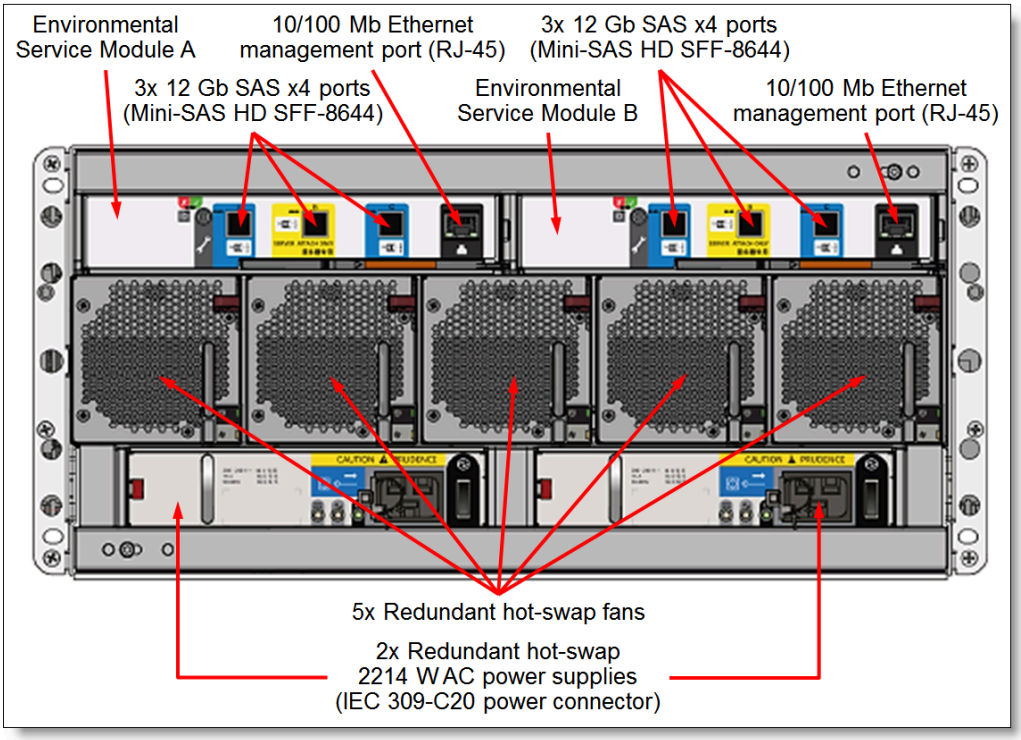

Figure 3. Rear view of the D3284 drive enclosure

Notes:

- The ESMs (shown in the previous figure) have additional service ports with a specialized connector, and these ports are reserved for use by a Lenovo service technician.
- The Ethernet management port on the ESMs is not used in the EBOD mode.

System specifications

The following table lists the D3284 system specifications.

Table 1. System specifications

Attribute	Specification
Form factor	5U 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	84 LFF hot-swap drive bays in two drawers. Each drawer has three drive rows, and each row has 14 drives. Up to 4x D3284 enclosures can be daisy chained on a supported adapter for a total of up to 336 LFF drives.
Drive technologies	NL SAS HDDs and SAS SSDs. Intermix of HDDs and SSDs is supported within an enclosure/drawer, but not within a row.
Drive connectivity	Dual-ported 12 Gb SAS drive attachment infrastructure.
Drives	• 4 TB, 6 TB, 8 TB, 10 TB, 12 TB, 14 TB, 16 TB, 18 TB, and 20TB 7.2K rpm 12 Gb NL SAS HDDs • 400 GB 12 Gb SAS SSDs (10 DWD) • 400 GB and 800 GB 12 Gb SAS SSDs (3 DWD) • 3.84 TB and 7.68 TB, and 15.36 TB 12 Gb SAS SSDs (1 DWD)
Host adapters	RAID controllers: • 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) Host bus adapters (non-RAID): • ThinkSystem 440-16e HBA (16-port 12 Gb SAS, 4x SFF-8644 connectors) • 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)
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 ESXi 6.0, 6.5, and 6.7.
Cooling	N+1 redundant cooling with five hot-swap fans.
Power supply	Two redundant hot-swap 2214 W AC power supplies.
Hot-swap parts	ESMs, drives, sideplanes, power supplies, and fans.
Management interfaces	SAS Enclosure Services, 10/100 Mb Ethernet for external management (the Ethernet port is not used in the EBOD mode).
Partitioning	SAS zoning.
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, hardware installation.
Dimensions	Height: 221 mm (8.7 in), width: 447 mm (17.6 in), depth: 933 mm (36.7 in)
Maximum weight	131 kg (288.8 lb)

Models

The following table lists the relationship models of the D3284 drive enclosures.

Table 2. D3284 relationship models

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

The following table lists the TopSeller models of the D3284 drive enclosures.

Table 3. D3284 TopSeller models

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

The following table lists the CTO base model of the D3284 drive enclosures.

Table 4. D3284 CTO base model

Description	Machine Type-Model	Feature code
Lenovo Storage D3284 High Density Expansion Enclosure	6413-HC1	AUDV

The D3284 expansion enclosures include the following items:

- One chassis with the following components:
  - Dual 3-port environmental service modules
  - Two drawers
  - Two power supplies
  - Five cooling fans
  - Drives (select models; see Table 2 and Table 3 for details)
- Two 2m, 16A/100-250V, C19 to IEC 320-C20 rack power cables (models listed in Table 2 and Table 3), or two customer-configured power cables (CTO models)
- Lenovo Storage 12Gb High Density Rack Mount Kit - Rails 25"-33"
- Documentation package

Host connectivity

The D3284 drive enclosures support dual environmental service module (ESM) configurations. Each ESM has three universal 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 SAS RAID controller or SAS HBA installed in a server and for daisy

chaining the D3284 enclosures between each other or with the D1212 or D1224 enclosures.

Port A on each ESM is used for connecting the host's external SAS ports 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 host's external SAS ports to the enclosure (daisy-chaining does not use Port B). Port C on each ESM is used for connecting the host's external SAS ports 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 to SAS drives. For SAS HBAs, the host operating system runs multi-pathing software to manage multiple I/O paths.

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

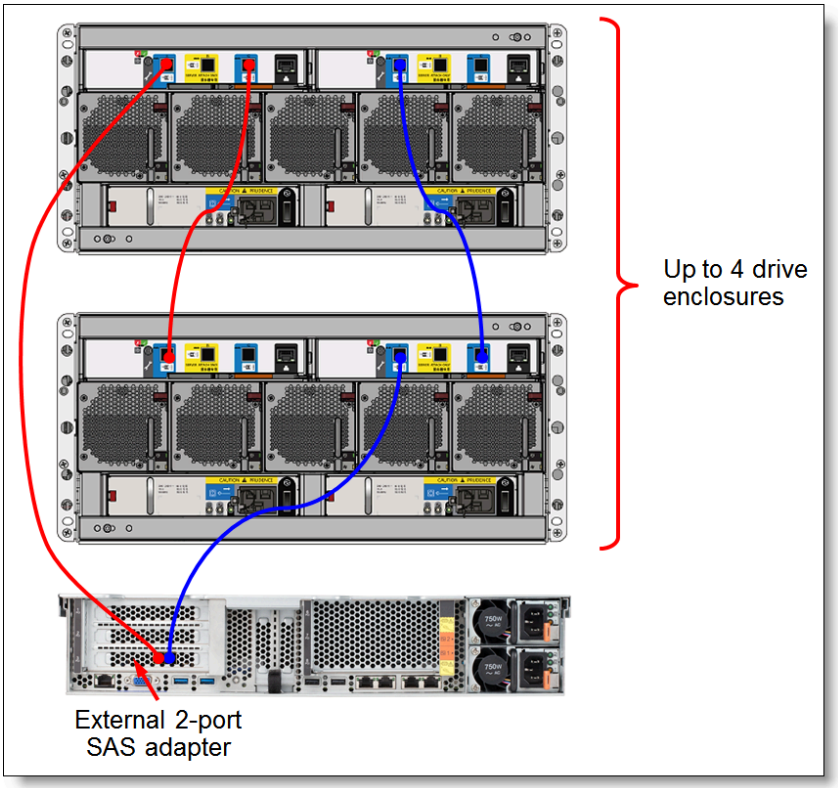

Figure 4. Connectivity topology with one host

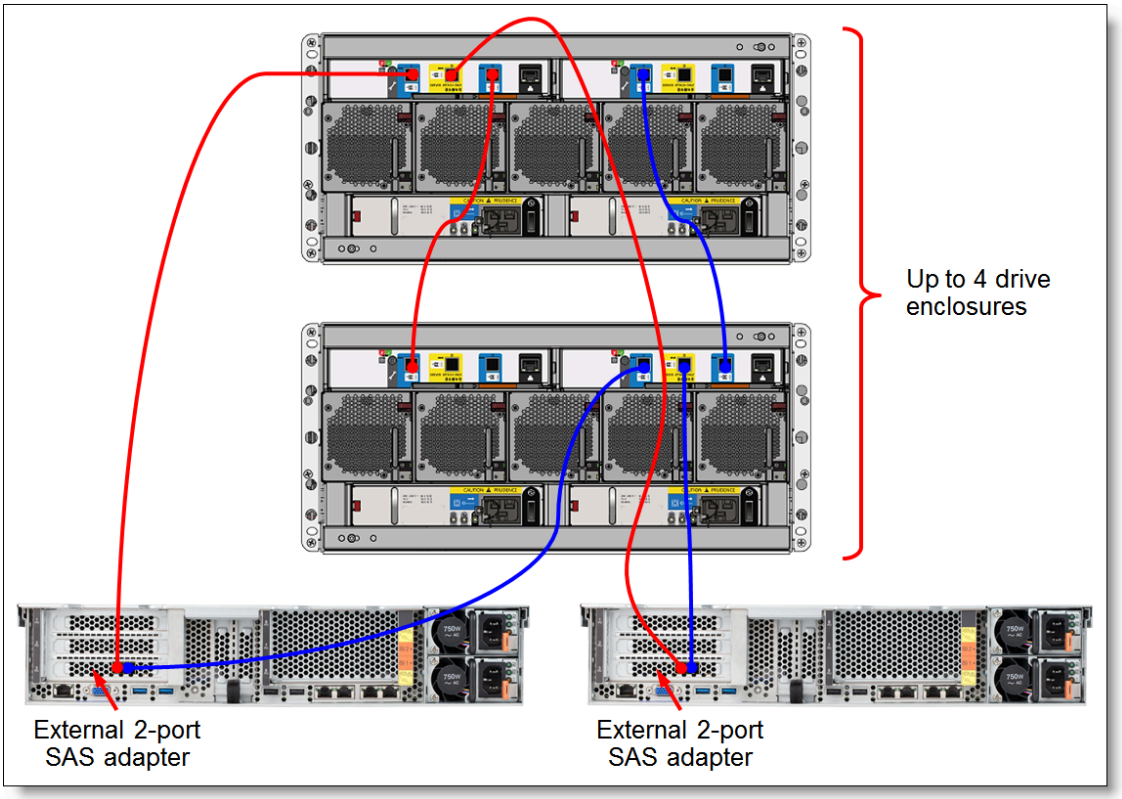

Figure 5. Connectivity topology with two hosts

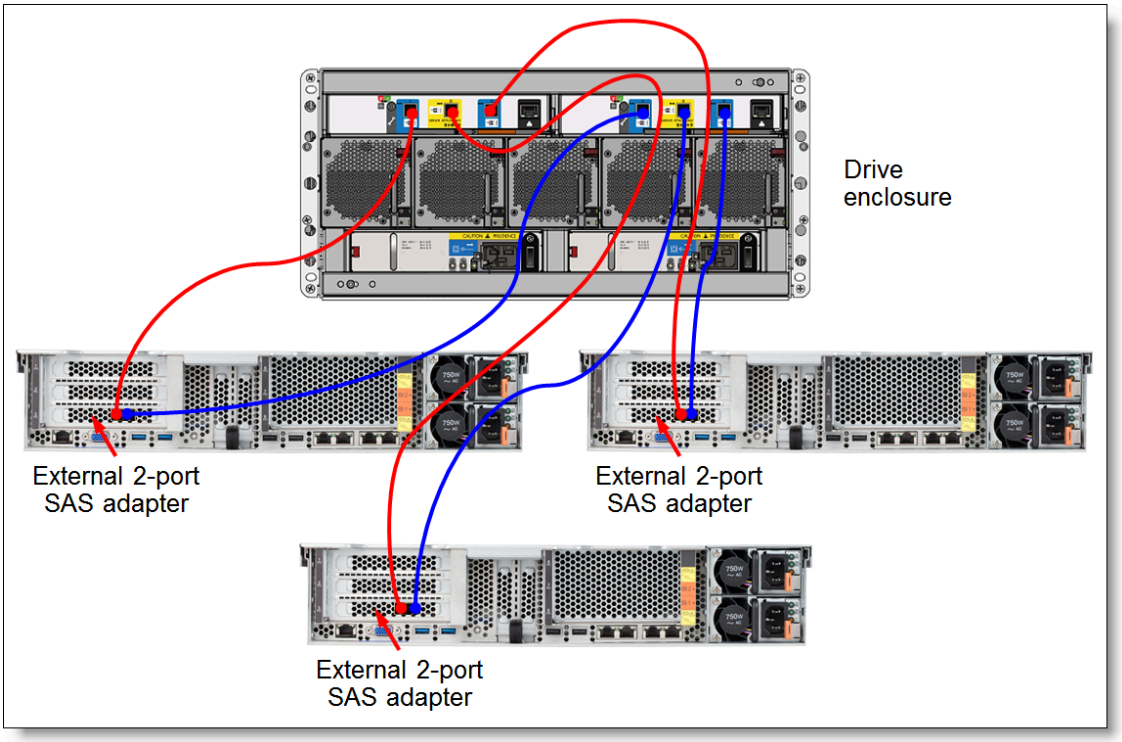

Figure 6. Connectivity topology with three hosts

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 to be connected to one SAS port on the ESM.

The *SAS zoning* feature of the D3284 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 enabled 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. D3284 zoning configurations

Zoning mode	Number of zones	Maximum number of hosts	Number of drive bays in one zone	Zone number	Host ports	Exp. ports	Drive bays
Zoning with SAS standard cables							
Mode 0	1	2	84	1	A, B	C	0-83
Mode 1	2	2	42	1	A	None	0-6, 14-20, 28-34, 42-48, 56-62, 70-76
				2	B		7-13, 21-27, 35-41, 49-55, 63-69, 77-83
Mode 2	3	3	28	1	A	None	0-4, 14-18, 28-31, 42-46, 56-60, 70-73
				2	B		5-9, 19-22, 32-36, 47-51, 61-64, 74-78
				3	C		10-13, 23-27, 37-41, 52-55, 65-69, 79-83
Zoning with SAS Y-cables							
Mode 3	3	3	28	1	A.1	None	0-4, 14-18, 28-31, 42-46, 56-60, 70-73
				2	A.2		5-9, 19-22, 32-36, 47-51, 61-64, 74-78
				3	B.1		10-13, 23-27, 37-41, 52-55, 65-69, 79-83
Mode 4	4	4	21	1	A.1	None	0-3, 14-17, 28-30, 42-45, 56-58, 70-72
				2	A.2		4-6, 18-20, 31-34, 46-48, 59-62, 73-76
				3	B.1		7-10, 21-24, 35-37, 49-52, 63-65, 77-79
				4	B.2		11-13, 25-27, 38-41, 53-55, 66-69, 80-83
Mode 5	6	6	14	1	A.1	None	0-2, 14-15, 28-29, 42-44, 56-57, 70-71
				2	A.2		3-4, 16-18, 30-31, 45-46, 58-60, 72-73
				3	B.1		5-6, 19-20, 32-34, 47-48, 61-62, 74-76
				4	B.2		7-9, 21-22, 35-36, 49-51, 63-64, 77-78
				5	C.1		10-11, 23-25, 37-38, 52-53, 65-67, 79-80
				6	C.2		12-13, 26-27, 39-41, 54-55, 68-69, 81-83

The following table lists ordering information for the SAS cables that are supported with the D3284.

Table 6. SAS cable options

Part number	Feature code	Description	Maximum quantity per one D3284
Connectivity cables - Mini-SAS HD Host Adapter to Expansion			
00YL847	AU16	External MiniSAS HD 8644/MiniSAS HD 8644 0.5M Cable	6
00YL848	AU17	External MiniSAS HD 8644/MiniSAS HD 8644 1M Cable	6
00YL849	AU18	External MiniSAS HD 8644/MiniSAS HD 8644 2M Cable	6
00YL850	AU19	External MiniSAS HD 8644/MiniSAS HD 8644 3M Cable	6
00KH452	AUJY	External MiniSAS HD 8644/MiniSAS HD 8644 6M Cable	6
01DC164	AU1A	External MiniSAS HD 8644/2xMiniSAS HD 8644 2M Y-Cable	6
Connectivity cables - Mini-SAS Host Adapter to Expansion			
00YE313	ATC1	1m (SFF-8644 to SFF-8088) 6Gbps External mini-SAS cable	6
00YE314	ATC2	2m (SFF-8644 to SFF-8088) 6Gbps External mini-SAS cable	6
00YE316	ATC4	6m (SFF-8644 to SFF-8088) 6Gbps External mini-SAS cable	6
01CX831	AUF7	External MiniSAS HD 8644/2xMiniSAS 8088 2M Y-Cable	6
Connectivity cables - Expansion to Expansion			
00YL847	AU16	External MiniSAS HD 8644/MiniSAS HD 8644 0.5M Cable	2
00YL848	AU17	External MiniSAS HD 8644/MiniSAS HD 8644 1M Cable	2
00YL849	AU18	External MiniSAS HD 8644/MiniSAS HD 8644 2M Cable	2
00YL850	AU19	External MiniSAS HD 8644/MiniSAS HD 8644 3M Cable	2
00KH452	AUJY	External MiniSAS HD 8644/MiniSAS HD 8644 6M Cable	2

Configuration notes:

- 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.
- Each Y-cable must be attached to two hosts.

Storage system connectivity

For storage system expansion (EBOD) connectivity, Port A and Port C on the expansion modules in the D3284 enclosures are used for connections to the ThinkSystem DS4200 or DS6200 storage arrays and for daisy chaining the expansion enclosures between each other.

Note: The D3284 expansion enclosures shipped prior to March 2, 2018 support only JBOD connectivity; EBOD connectivity to the DS Series storage systems is not supported. The D3284 expansion enclosures shipped on or after March 2, 2018 support JBOD and EBOD connectivity.

The expansion port on the first DS4200 or DS6200 controller module is connected to the Port A on the first expansion module in the D3284 enclosure, and the Port C on the first expansion module in the D3284 enclosure is connected to the Port A on the first expansion module in the adjacent D3284 enclosure, and so on.

The expansion port on the second DS4200 or DS6200 controller module is connected to the Port C on the second expansion module in the D3284 enclosure, and the Port A on the second expansion module in the D3284 enclosure is connected to the Port C on the second expansion module in the adjacent D3284 enclosure, and so on.

Up to three D3284 enclosures can be connected to the DS4200 or DS6200 storage system. Intermix of DS Series and D3284 enclosures is not supported.

Note: The Port B on the expansion module is not used.

The EBOD connectivity topology for the D3284 expansion units is shown in the following figure.

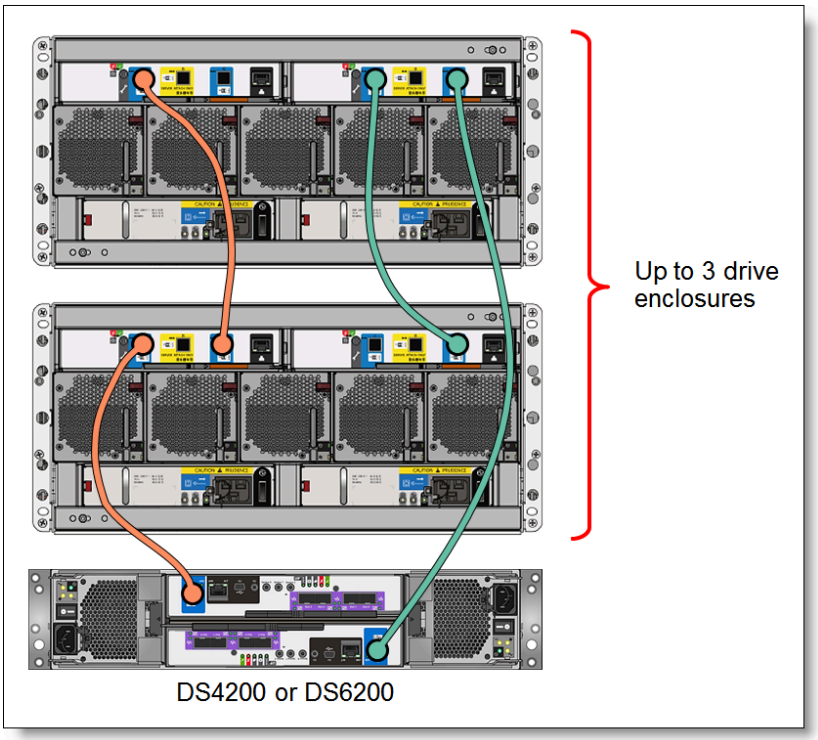

Figure 7. D3284 EBOD connectivity topology

The following table lists ordering information for the supported EBOD connectivity cable options.

Table 7. Cables for EBOD connectivity

Part number	Feature code	Description	Quantity per one expansion unit
00YL847	AU16	External MiniSAS HD 8644/MiniSAS HD 8644 0.5M Cable	2*
00YL848	AU17	External MiniSAS HD 8644/MiniSAS HD 8644 1M Cable	2*
00YL849	AU18	External MiniSAS HD 8644/MiniSAS HD 8644 2M Cable	2*
00YL850	AU19	External MiniSAS HD 8644/MiniSAS HD 8644 3M Cable	2*

* One cable per expansion module; two cables are required per each expansion enclosure.

For more information on the ThinkSystem DS4200 and DS6200 storage arrays, refer to the following Lenovo Press Product Guides:

- Lenovo ThinkSystem DS4200 Storage Array
  http://lenovopress.com/lp0510
- Lenovo ThinkSystem DS6200 Storage Array
  http://lenovopress.com/lp0511

Drives

The D3284 drive enclosure supports up to 84x 3.5-inch hot-swap drives. The supported drive types are NL SAS HDDs and SAS SSDs.

The following rules apply when selecting the drive configuration:

- The drives must be installed in rows. Each row contains 14 drive bays, and there are six rows in the enclosure (three rows per drawer).
- The drives must be installed in a quantity of 14 per row (all drive bays in the row should be populated).
- Intermixing HDDs and SSDs is supported within the drawer/enclosure and within the first row in the top drawer, but not within other rows.
- If SSDs and HDDs are intermixed in the first row in the top drawer, up to four SSDs can be installed, and the remaining slots must be populated with HDDs; the total quantity of the SSDs and HDDs must be equal to 14:
  - 1x SSD + 13x HDDs
  - 2x SSD + 12x HDDs
  - 3x SSD + 11x HDDs
  - 4x SSD + 10x HDDs
- Intermixing HDDs of various sizes within a row is supported.

The following tables list drive options for the D3284 drive enclosures.

Table 8. Drive options

Part number	Feature code	Description	Maximum quantity per D3284
12 Gbps NL SAS hot-swap HDDs (14-pack)			
01CX814	AUDS	Lenovo Storage 4TB 7.2K 3.5" NL-SAS HDD (14 pack)	6
01CX816	AUDT	Lenovo Storage 6TB 7.2K 3.5" NL-SAS HDD (14 pack)	6
01CX820	AUDU	Lenovo Storage 8TB 7.2K 3.5" NL-SAS HDD (14 pack)	6
01CX778	AUE4	Lenovo Storage 10TB 7.2K 3.5" NL-SAS HDD (14 pack)	6
4XB7A09919	B106	Lenovo Storage 12TB 7.2K 3.5" NL-SAS HDD (14 pack)	6
4XB7A12036	B4T6	Lenovo Storage 14TB 7.2K 3.5" NL-SAS HDD (14 pack)	6
4XB7A62769	BAVM	Lenovo Storage 16TB 7.2K 3.5" NL-SAS HDD (14 pack)	6
4XB7A77019	BKCX	Lenovo Storage 18TB 7.2K 3.5" NL-SAS HDD (14 pack)	6
4XB7A83351	BQUQ	Lenovo Storage 20TB 7.2K 3.5" DDIC SAS (14 pack)	6
12 Gbps NL SAS hot-swap HDDs (1-pack)			
01GT910	AUK2	Lenovo Storage 4TB 7.2K 3.5" NL-SAS HDD	84
01GT911	AUK1	Lenovo Storage 6TB 7.2K 3.5" NL-SAS HDD	84
01GT912	AUK0	Lenovo Storage 8TB 7.2K 3.5" NL-SAS HDD	84
01GT913	AUJZ	Lenovo Storage 10TB 7.2K 3.5" NL-SAS HDD	84
4XB7A09920	B107	Lenovo Storage 12TB 7.2K 3.5" NL-SAS HDD	84
4XB7A12037	B4T7	Lenovo Storage 14TB 7.2K 3.5" NL-SAS HDD	84
4XB7A62770	BAVN	Lenovo Storage 16TB 7.2K 3.5" NL-SAS HDD	84
4XB7A77020	BKCY	Lenovo Storage 18TB 7.2K 3.5" NL-SAS HDD	84
4XB7A83352	BQUR	Lenovo Storage 20TB 7.2K 3.5" DDIC SAS HDD	84
12 Gbps SAS hot-swap SSDs (10 Drive Writes per Day) (1-pack)			

Part number	Feature code	Description	Maximum quantity per D3284
4XB7A09921	AXDY	Lenovo Storage 400GB 10DWD SAS SSD (2.5" in 3.5" Hybrid Tray)	84
12 Gbps SAS hot-swap SSDs (3 Drive Writes per Day) (1-pack)			
01CX780	AUE3	Lenovo Storage 400GB 3DWD SAS SSD (2.5" in 3.5" Hybrid Tray)	84
4XB7A09922	B105	Lenovo Storage 400GB 3DWD SAS SSD (2.5" in 3.5" Hybrid Tray)	84
4XB7A60800	BAVK	Lenovo Storage 800GB 3DWD SAS SSD (2.5" in 3.5" Hybrid Tray)	84
12 Gbps SAS hot-swap SSDs (1 Drive Write per Day) (1-pack)			
4XB7A09526	B14A	Lenovo Storage 3.84TB 1DWD SAS SSD (2.5" in 3.5" Hybrid Tray)	84
4XB7A09525	B14B	Lenovo Storage 3.84TB 1DWD SAS SSD (2.5" in 3.5" Hybrid Tray)	84
4XB7A09524	B149	Lenovo Storage 7.68TB 1DWD SAS SSD (2.5" in 3.5" Hybrid Tray)	84
4XB7A87781	BVPL	Lenovo Storage 2.5" 15.36TB 1DWD SAS SSD (2.5" in 3.5" Hybrid Tray PM1653)	84
4XB7A08981	B108	Lenovo Storage 15.36TB 1DWD SAS SSD (2.5" in 3.5" Hybrid Tray)	84

Power supplies and cables

The D3284 expansion enclosures have two redundant 2214 W (200-240 V AC) hot-swap power supplies. Each power supply has an IEC 320-C19 connector.

The models of the D3284 expansion enclosures that are listed in the Models section ship standard with two 2m, 16A/100-250V, C19 to IEC 320-C20 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 D3284).

Table 9. Power cable options

Part number	Feature code	Description
Rack power cables		
None*	6292	2m, 16A/100-250V, C19 to IEC 320-C20 Rack Power Cable
39Y7916	6252	2.5m, 16A/100-240V, C19 to IEC 320-C20 Rack Power Cable
Line cords		
40K9772	6275	4.3m, 16A/208V, C19 to NEMA L6-20P (US) Line Cord
00D7192	A2Y3	4.3m, US/CAN, NEMA L15-30P - (3P+Gnd) to 3X IEC 320 C19 Line Cord
00D7193	A2Y4	4.3m, EMEA/AP, IEC 309 32A (3P+N+Gnd) to 3X IEC 320 C19 Line Cord
00D7194	A2Y5	4.3m, A/NZ, (PDL/Clipsal) 32A (3P+N+Gnd) to 3X IEC 320 C19 Line Cord

* Two cables are included with the D3284 models listed in the Models section or can be configured for CTO models.

Physical specifications

The D3284 expansion enclosures have the following dimensions and weight (approximate):

- Height: 221 mm (8.7 in.)
- Width: 447 mm (17.6 in.)
- Depth: 933 mm (36.7 in.)
- Weight (Maximum): 131 kg (288.8 lb)

Operating environment

The D3284 expansion enclosures are supported in the following environment:

- Air temperature:
  - Operating: 5 °C to 35 °C (41 °F to 95 °F); maximum temperature decreased by 5 °C above 2134 m (7000 ft)
  - Non-operating: -40 °C to 70 °C (-40 °F to 158 °F)
- Humidity:
  - Operating: 20% to 80% (non-condensing)
  - Non-operating: 5% to 100% (no precipitation)
- Maximum altitude:
  - Operating: 3048 m (10,000 ft)
  - Non-operating: 12192 m (40,000 ft)
- Electrical: 200 to 240 V AC (nominal); 50 Hz to 60 Hz; 7.5 A
- Maximum power load: 2214 W
- Heat output: 7554 BTU/hour
- Noise level: 8.0 bels

Warranty and support

The D3284 expansion enclosures 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 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://lenovolocator.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://lenovolocator.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 Support Plus (PSP) for Servers 24x7 4-Hour Response**

  Helping customers reduce unplanned downtime by moving from reactive support to proactive and preventative care

- **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 D3284 expansion 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
- MSIP (Korea)
- NOM-019 (Mexico)
- RCM (Australia)
- Reduction of Hazardous Substances (ROHS)
- UL/CSA IEC 60950-1
- VCCI, Class B (Japan)

Interoperability

Lenovo provides end-to-end storage compatibility testing to deliver interoperability throughout the network. The Lenovo Storage D3284 supports 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/lsic

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 D3284 expansion enclosures are supported with the RAID adapters and HBAs that are listed in the following table.

Table 10. RAID controllers and HBAs

Part number	Description	Maximum quantity of D3284 per adapter	
		Dual I/O path	Single I/O path
ThinkSystem RAID controllers			
7Y37A01087	ThinkSystem RAID 930-8e 4GB Flash PCIe 12Gb Adapter*	1	2
4Y37A78836	ThinkSystem RAID 940-8e 4GB Flash PCIe Gen4 12Gb*	1	2
ThinkSystem HBAs			
7Y37A01090	ThinkSystem 430-8e SAS/SATA 12Gb HBA**	3, 4***	3, 4***

Part number	Description	Maximum quantity of D3284 per adapter	
		Dual I/O path	Single I/O path
7Y37A01091	ThinkSystem 430-16e SAS/SATA 12Gb HBA**	3, 4***	3, 4***
4Y37A09724	ThinkSystem 440-16e SAS/SATA PCIe Gen4 12Gb HBA**	3, 4***	3, 4***
System x RAID controllers			
81Y4478	ServeRAID M5120 SAS/SATA Controller (6 Gbps SAS)*	1	2
00AE938	ServeRAID M5225-2GB SAS/SATA Controller (12 Gbps SAS)*	1	2
System x HBAs			
46C9010	N2125 SAS/SATA HBA (6 Gbps SAS)**	4	4
00AE912	N2225 SAS/SATA HBA (12 Gbps SAS)**	4	4
00AE916	N2226 SAS/SATA HBA (12 Gbps SAS)**	4	4
ThinkServer RAID controllers			
4XB0F28699	ThinkServer 9286CV-8e PCIe 6Gb 8 Port External SAS RAID Adapter by LSI*	1	2
4XC0G88845	ThinkServer 9380-8e PCIe 12Gb 8 port External SAS RAID Adapter by LSI*	1	2
ThinkServer HBAs			
4XB0F28703	ThinkServer 9300-8e PCIe 12Gb 8-port External SAS Adapter by LSI	4**	4

* RAID adapters have devices and expander count limitation, whichever comes first. Each path has 5 expanders. Some adapters have up to 240 device limitation and up to 16 expanders.
** This maximum enclosure quantity applies in a dual HBA environment.
*** With newer firmware package on 430 HBA 18.02.00.00 or higher and 440 HBA 18.125.03.00 or higher, then up to 20 expanders are supported. Allowing up to 4.

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)
93074RX	42U Standard Rack (1000mm)
93604PX	42U 1200mm Deep Dynamic Rack
93604EX	42U 1200mm Deep Dynamic Expansion Rack
93614PX	42U 1200mm Deep Static Rack
93614EX	42U 1200mm Deep Static Expansion Rack
93634PX	42U 1100mm Dynamic Rack
93634EX	42U 1100mm Dynamic Expansion Rack
93084PX	42U Enterprise Rack
93084EX	42U Enterprise Expansion Rack

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	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	C0D9	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
00YJ776	ATZY	0U 36 C13/6 C19 24A 1 Phase PDU	N	Y	Y	N	N	N	N	N	N	Y	Y	Y	N
00YJ779	ATZX	0U 21 C13/12 C19 48A 3 Phase PDU	N	N	Y	N	N	N	Y	N	N	Y	Y	Y	N
00YJ777	ATZZ	0U 36 C13/6 C19 32A 1 Phase PDU	Y	Y	Y	Y	Y	Y	Y	Y	Y	N	N	Y	Y
00YJ778	AU00	0U 21 C13/12 C19 32A 3 Phase PDU	Y	Y	N	Y	Y	Y	Y	Y	Y	N	N	Y	Y
0U Switched and Monitored PDUs															
4PU7B08148	CD15	0U 3 C13 and 18 C19 Monitored 48A 3 Phase WYE PDU	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
4PU7B08149	CD16	0U 3 C13 and 18 C19 Monitored 63A 3 Phase WYE PDU	N	N	N	Y	N	N	Y	Y	N	N	N	N	N
4PU7A93181	C0D5	0U 21 C13/C15 and 21 C13/C15/C19 Switched and Monitored 60A 3 Phase Delta PDU v2	N	Y	N	N	Y	N	N	Y	N	Y	N	Y	N
4PU7A93178	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	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	Y	Y	Y	Y
4PU7A93180	C0D6	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
4PU7A93179	C0D7	0U 16 C13/C15 and 16 C13/C15/C19 Switched and Monitored 30A 1 Phase PDU v2	N	Y	N	N	N	N	N	Y	N	Y	Y	Y	N
00YJ783	AU04	0U 12 C13/12 C19 Switched and Monitored 48A 3 Phase PDU	N	N	Y	N	N	N	Y	N	N	Y	Y	Y	N
00YJ781	AU03	0U 20 C13/4 C19 Switched and Monitored 24A 1 Phase PDU	N	N	Y	N	Y	N	Y	N	N	Y	Y	Y	N
00YJ782	AU02	0U 18 C13/6 C19 Switched and Monitored 32A 3 Phase PDU	Y	Y	Y	Y	Y	Y	Y	Y	Y	N	Y	N	Y
00YJ780	AU01	0U 20 C13/4 C19 Switched and Monitored 32A 1 Phase PDU	Y	Y	Y	Y	Y	Y	Y	Y	Y	N	Y	N	Y
1U Basic PDUs															
4PU7B12339	CE6L	1U Basic 16A 1 Phase PDU	Y	Y	Y	Y	Y	Y	Y	Y	Y	N	Y	Y	Y
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
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
4PU7A77468	BLC5	1U 12 C19/C13 switched and monitored 32A 3P WYE PDU	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	Y	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
46M4002	5896	1U 9 C19/3 C13 Switched and Monitored DPI PDU	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
46M4004	5894	1U 12 C13 Switched and Monitored DPI PDU	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
46M4003	5897	1U 9 C19/3 C13 Switched and Monitored 60A 3 Phase PDU	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y

Part number	Feature code	Description	ANZ	ASEAN	Brazil	EET	MEA	RUCIS	WE	HTK	INDIA	JAPAN	LA	NA	PRC
46M4005	5895	1U 12 C13 Switched and Monitored 60A 3 Phase PDU	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
1U C13 Enterprise PDUs (12x IEC 320 C13 outlets)															
39M2816	6030	DPI C13 PDU+	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
39Y8941	6010	Enterprise C13 PDU	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
1U C19 Enterprise PDUs (6x IEC 320 C19 outlets)															
39Y8948	6060	Enterprise C19 PDU	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
39Y8923	6061	Enterprise C19 3 phase PDU (60a)	N	N	Y	N	N	N	Y	N	N	N	Y	Y	N
1U Front-end PDUs (3x IEC 320 C19 outlets)															
39Y8938	6002	DPI 30amp/125V Front-end PDU with NEMA L5-30P	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
39Y8939	6003	DPI 30amp/250V Front-end PDU with NEMA L6-30P	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
39Y8934	6005	DPI 32amp/250V Front-end PDU with IEC 309 2P+Gnd	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
39Y8940	6004	DPI 60amp/250V Front-end PDU with IEC 309 2P+Gnd connector	Y	N	Y	Y	Y	Y	Y	N	N	Y	Y	Y	N
39Y8935	6006	DPI 63amp/250V Front-end PDU with IEC 309 2P+Gnd connector	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
1U NEMA PDUs (6x NEMA 5-15R outlets)															
39Y8905	5900	DPI 100-127v PDU with Fixed Nema L5-15P line cord	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Line cords for 1U PDUs that ship without a line cord															
40K9611	6504	4.3m, 32A/380-415V, EPDU/IEC 309 3P+N+G 3ph wye (non-US) Line Cord	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
40K9612	6502	4.3m, 32A/230V, EPDU to IEC 309 P+N+G (non-US) Line Cord	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
40K9613	6503	4.3m, 63A/230V, EPDU to IEC 309 P+N+G (non-US) Line Cord	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
40K9614	6500	4.3m, 30A/208V, EPDU to NEMA L6-30P (US) Line Cord	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
40K9615	6501	4.3m, 60A/208V, EPDU to IEC 309 2P+G (US) Line Cord	N	N	Y	N	N	N	Y	N	N	Y	Y	Y	N
40K9617	6505	4.3m, 32A/230V, Souriau UTG to AS/NZS 3112 (Aus/NZ) Line Cord	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
40K9618	6506	4.3m, 32A/250V, Souriau UTG Female to KSC 8305 (S. Korea) Line Cord	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y

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

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)
55941AX	RT1.5kVA 2U Rack or Tower UPS (100-125VAC)
55942AX	RT2.2kVA 2U Rack or Tower UPS (100-125VAC)
7DD5A003WW	RT3kVA 2U Rack or Tower UPS-G2 (100-125VAC)
55943AX	RT3kVA 2U Rack or Tower UPS (100-125VAC)
Rack-mounted or tower UPS units - 200-240VAC	
7DD5A002WW	RT1.5kVA 2U Rack or Tower UPS-G2 (200-240VAC)
55941KX	RT1.5kVA 2U Rack or Tower UPS (200-240VAC)
55942KX	RT2.2kVA 2U Rack or Tower UPS (200-240VAC)
7DD5A005WW	RT3kVA 2U Rack or Tower UPS-G2 (200-240VAC)
55943KX	RT3kVA 2U Rack or Tower UPS (200-240VAC)
7DD5A007WW	RT5kVA 3U Rack or Tower UPS-G2 (200-240VAC)
55945KX	RT5kVA 3U Rack or Tower UPS (200-240VAC)
7DD5A008WW	RT6kVA 3U Rack or Tower UPS-G2 (200-240VAC)
55946KX	RT6kVA 3U Rack or Tower UPS (200-240VAC)
55948KX	RT8kVA 6U Rack or Tower UPS (200-240VAC)
7DD5A00AWW	RT11kVA 6U Rack or Tower UPS-G2 (200-240VAC)
55949KX	RT11kVA 6U Rack or Tower UPS (200-240VAC)
55943KT†	ThinkSystem RT3kVA 2U Standard UPS (200-230VAC) (2x C13 10A, 2x GB 10A, 1x C19 16A outlets)
55943LT†	ThinkSystem RT3kVA 2U Long Backup UPS (200-230VAC) (2x C13 10A, 2x GB 10A, 1x C19 16A outlets)
55946KT†	ThinkSystem RT6kVA 5U UPS (200-230VAC) (2x C13 10A outlets, 1x Terminal Block output)
5594XKT†	ThinkSystem RT10kVA 5U UPS (200-230VAC) (2x C13 10A outlets, 1x Terminal Block output)
Rack-mounted or tower UPS units - 380-415VAC	
55948PX	RT8kVA 6U 3:1 Phase Rack or Tower UPS (380-415VAC)
55949PX	RT11kVA 6U 3:1 Phase Rack or Tower UPS (380-415VAC)

† 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

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Seller training courses

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

1. **Storage Terminology Overview**
   2025-07-23 | 23 minutes | Employees and Partners

   This course gives an overview of the different storage technologies that are used within enterprise data storage. Topics about how files are stored and storage performance are discussed. Also, data protection, high availability, and storage space efficiency is reviewed.

   Course Objectives:
   •Identify different storage technologies that are used within enterprise data storage
   •Understand how files are written, how storage performance can be increased and how data is protected.
   •Describe how a customer can retain high availability of their data and reduce data storage needs

   Tags: Technical Sales

   Published: 2025-07-23
   Length: 23 minutes

   Start the training:
   Employee link: Grow@Lenovo
   Partner link: Lenovo 360 Learning Center

   Course code: SXSW2259r2
2. **VTT Data Management How to sell storage - April 2024**
   2024-04-10 | 60 minutes | Employees and Partners

   In this course, you will know:

   - Why do we sell storage?
   - What are the basics you need to get an opportunity rolling?
   - Why Lenovo for Storage?
   - What is happening in the market today?
   - How to determine traction?

   Tags: Data Management, Storage

   Published: 2024-04-10
   Length: 60 minutes

   Start the training:
   Employee link: Grow@Lenovo
   Partner link: Lenovo 360 Learning Center

   Course code: DVDAT209

3. **Positioning Lenovo Direct Attached Storage**
   2023-02-01 | 20 minutes | Employees and Partners

   Course Description: This course provides an overview of Lenovo's DAS storage products and the unique value proposition. Completing this course will allow you to help your customer understand how these products address their business needs, communicate the unique value proposition of these products, and identify the elements of an effective elevator pitch for Lenovo DAS products. Last Update: 2/1/2023

   Tags: Sales, Storage

   Published: 2023-02-01
   Length: 20 minutes

   Start the training:
   Employee link: Grow@Lenovo
   Partner link: Lenovo 360 Learning Center

   Course code: DDASP100r2

Related publications and links

For more information, see the following documents:

- Lenovo Storage product page
  https://www.lenovo.com/us/en/data-center/storage/
- 3D Tour for the Lenovo Storage D3284
  https://lenovopress.com/lp0588-lenovo-storage-d3284-3d-tour
- Lenovo Data Center Solution Configurator
  http://dcsc.lenovo.com
- Lenovo Storage D3284 Support
  http://datacentersupport.lenovo.com/us/en/products/storage/lenovo-storage/d3284/6413

Related product families

Product families related to this document are the following:

- Direct-Attached Storage

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