

Lenovo Storage D3284 External High Density Drive Expansion Enclosure

Product Guide

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): 800 GB
- Capacity-optimized SSDs (1 DWD): 3.84 TB, and 7.68 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.

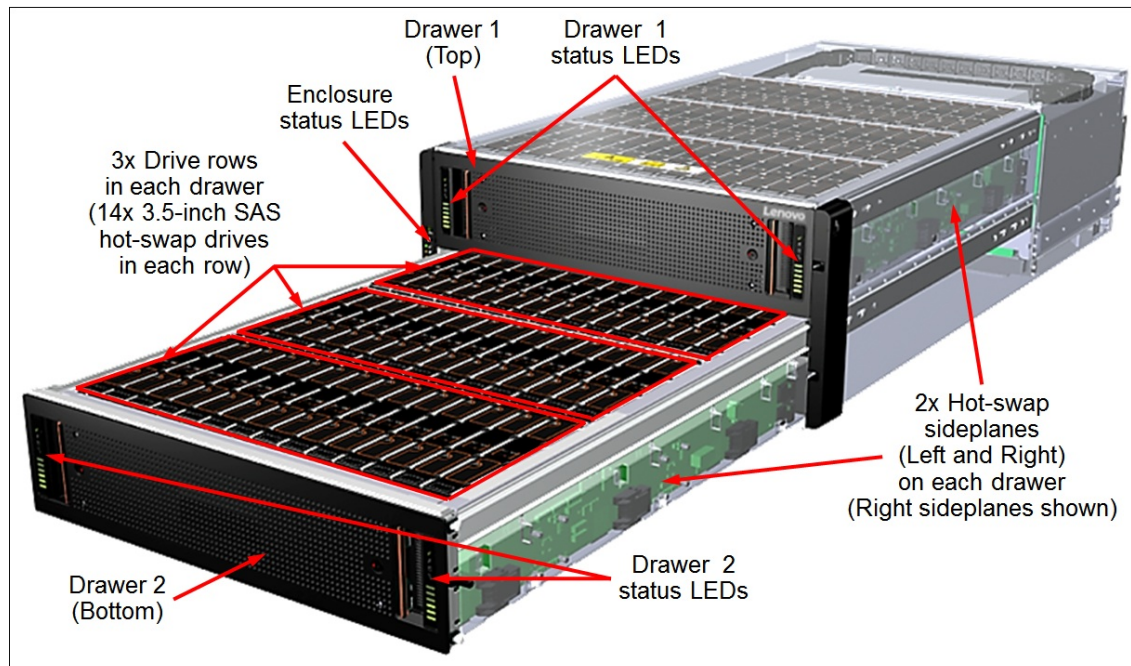


Figure 2. Front view of the D3284 drive enclosure

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

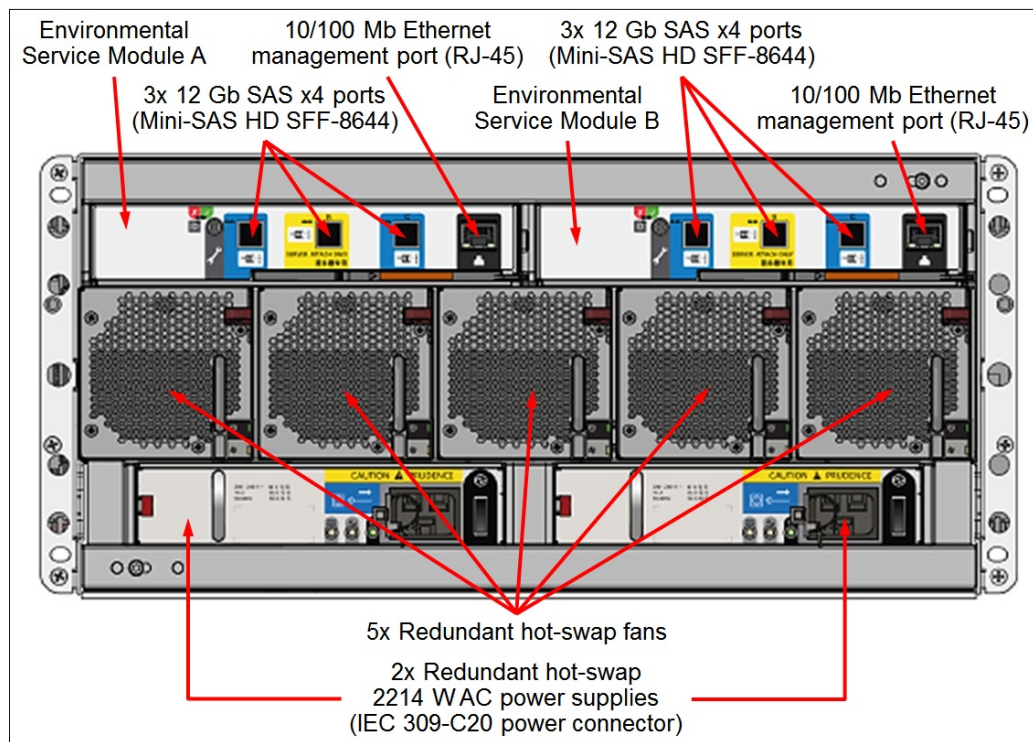


Figure 3. Rear view of the D3284 drive enclosure

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 | <ul style="list-style-type: none"> • 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) • 800 GB 12 Gb SAS SSDs (3 DWD) • 3.84 TB and 7.68 TB 12 Gb SAS SSDs (1 DWD) |
| Host adapters | RAID controllers: <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) Host bus adapters (non-RAID): <ul style="list-style-type: none"> • 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.

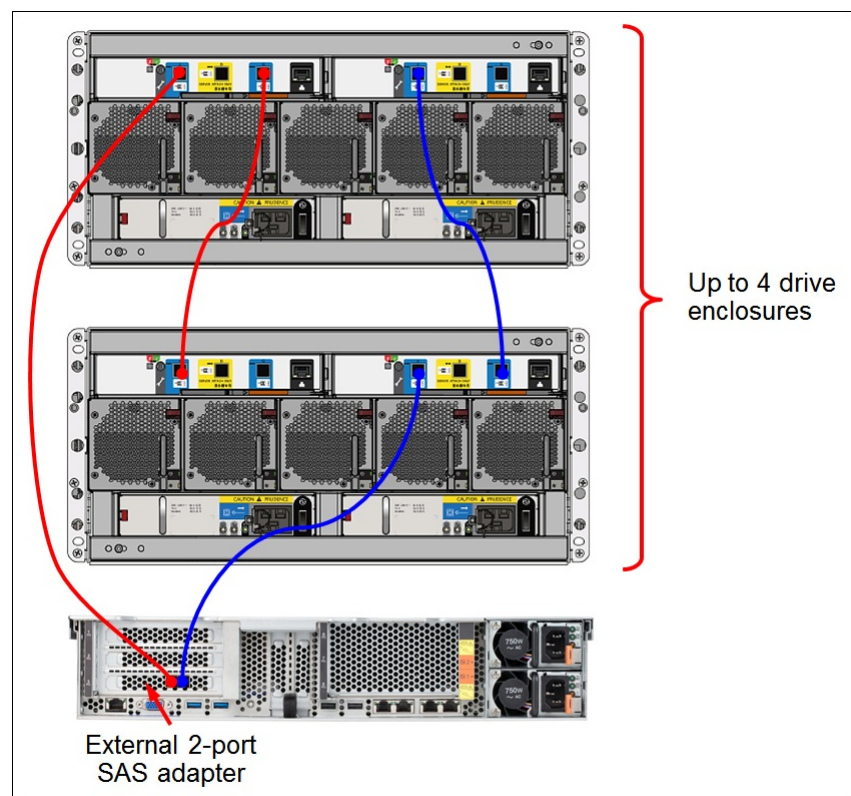


Figure 4. Connectivity topology with one host

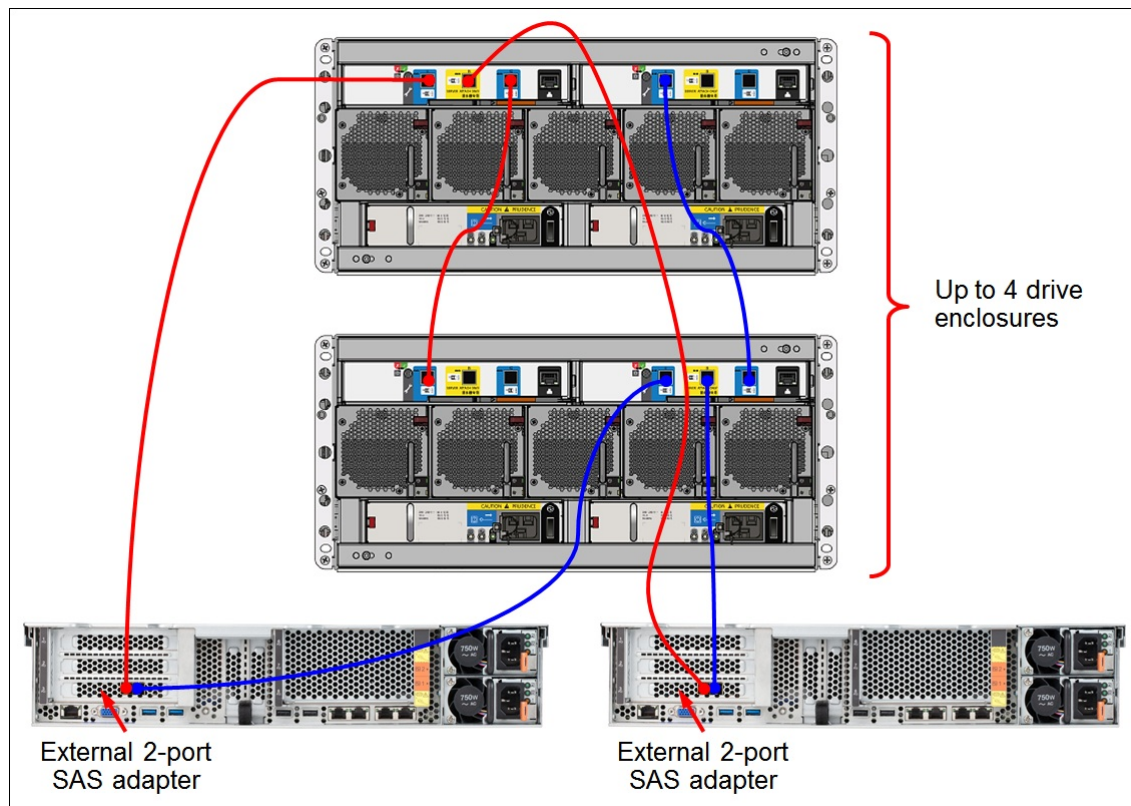


Figure 5. Connectivity topology with two hosts

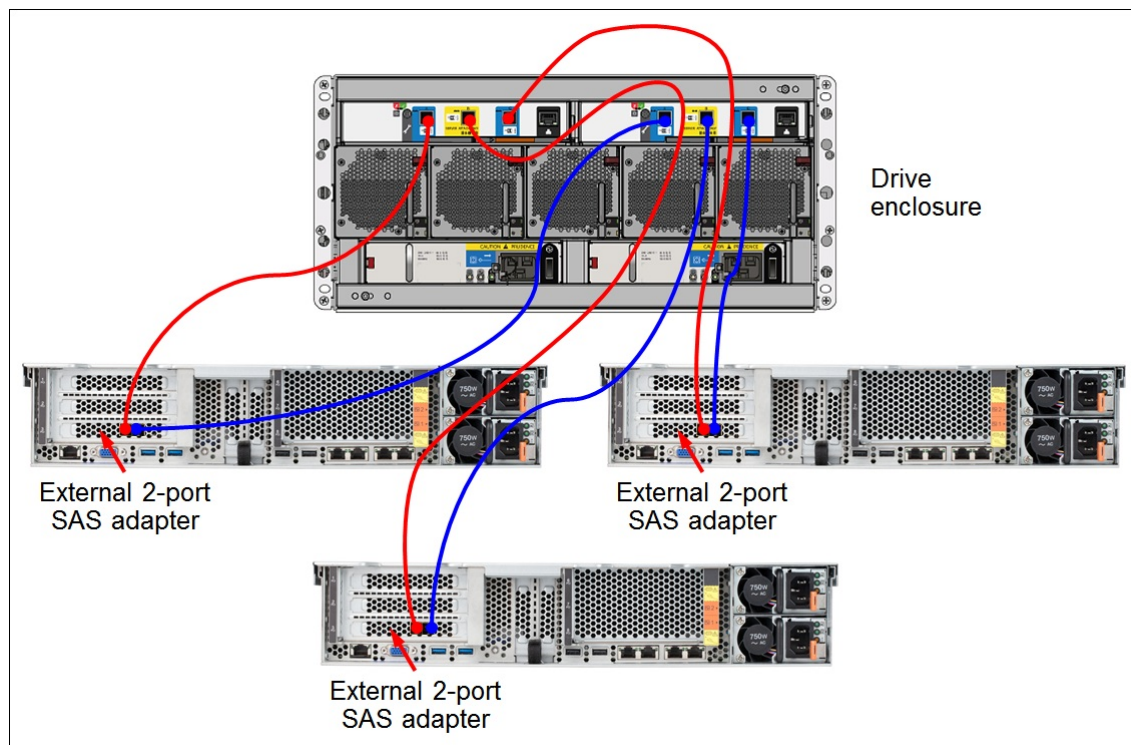


Figure 6. Connectivity topology with three hosts

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 |
| 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.

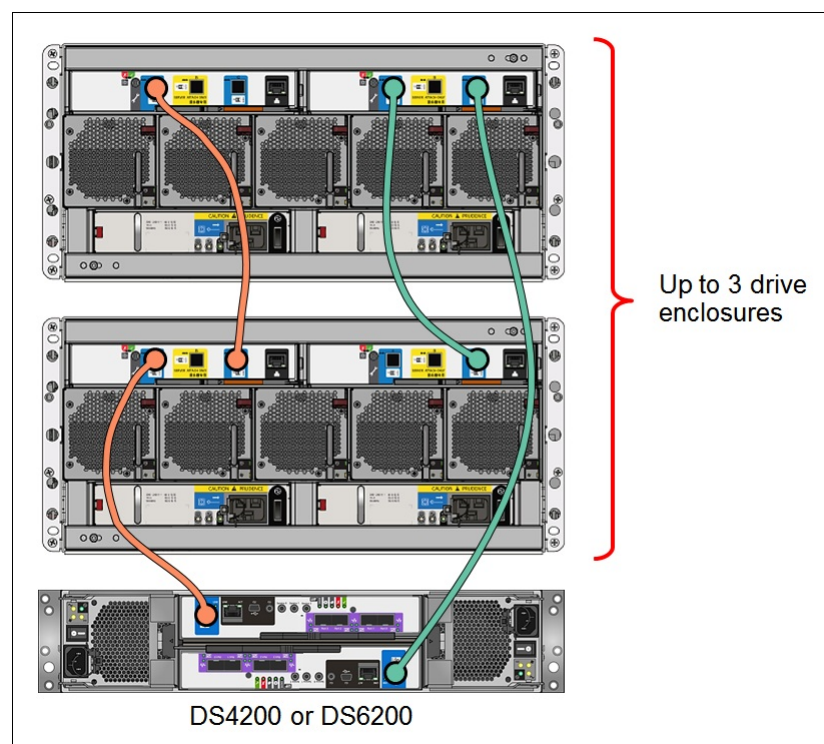


Figure 7. D3284 EBOD connectivity topology

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 (3 Drive Writes per Day) (1-pack) | | | |
| 4XB7A60800 | BAVK | Lenovo Storage 800GB 3DWD SAS SSD (2.5" in 3.5" Hybrid Tray) | 84 |

| Part number | Feature code | Description | Maximum quantity per D3284 |
|--|--------------|--|----------------------------|
| 12 Gbps SAS hot-swap SSDs (1 Drive Write per Day) (1-pack) | | | |
| 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 |

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 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 your 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/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 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*** |
| 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) |
| 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 |

| Part number | Feature code | Description | ANZ | ASEAN | Brazil | EET | MEA | RUCIS | WE | HTK | INDIA | JAPAN | LA | NA | PRC |
|---|--------------|--|-----|-------|--------|-----|-----|-------|----|-----|-------|-------|----|----|-----|
| 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 |
| 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.

Seller training courses

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

1. VTT Data Management How to sell storage - April 2024

2024-04-10 | 60 minutes | Employees Only

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?

Published: 2024-04-10

Length: 60 minutes

Start the training:

Employee link: [Grow@Lenovo](#)

Course code: DVDAT209

2. Family Portfolio: Storage

2024-02-02 | 15 minutes | Employees and Partners

This course covers products in the Lenovo storage portfolio, from storage servers to direct-access storage through storage systems.

After completing this course about the Storage family, the learner will be able to identify products within the family, describe the features of this product family, and recognize when a specific product should be selected.

Published: 2024-02-02

Length: 15 minutes

Start the training:

Employee link: [Grow@Lenovo](#)

Partner link: [Lenovo Partner Learning](#)

Course code: SXSW1201r16

3. Services for Lenovo Storage

2024-02-01 | 5 minutes | Employees and Partners

This document will provide you with quick tips on connecting services with storage products.

Published: 2024-02-01

Length: 5 minutes

Start the training:

Employee link: [Grow@Lenovo](#)

Partner link: [Lenovo Partner Learning](#)

Course code: DSTO032

4. **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

Published: 2023-02-01
Length: 20 minutes

Start the training:
Employee link: [Grow@Lenovo](#)
Partner link: [Lenovo Partner Learning](#)

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](#)

Notices

Lenovo may not offer the products, services, or features discussed in this document in all countries. Consult your local Lenovo representative for information on the products and services currently available in your area. Any reference to a Lenovo product, program, or service is not intended to state or imply that only that Lenovo product, program, or service may be used. Any functionally equivalent product, program, or service that does not infringe any Lenovo intellectual property right may be used instead. However, it is the user's responsibility to evaluate and verify the operation of any other product, program, or service. Lenovo may have patents or pending patent applications covering subject matter described in this document. The furnishing of this document does not give you any license to these patents. You can send license inquiries, in writing, to:

Lenovo (United States), Inc.
8001 Development Drive
Morrisville, NC 27560
U.S.A.
Attention: Lenovo Director of Licensing

LENOVO PROVIDES THIS PUBLICATION "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESS OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF NON-INFRINGEMENT, MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. Some jurisdictions do not allow disclaimer of express or implied warranties in certain transactions, therefore, this statement may not apply to you.

This information could include technical inaccuracies or typographical errors. Changes are periodically made to the information herein; these changes will be incorporated in new editions of the publication. Lenovo may make improvements and/or changes in the product(s) and/or the program(s) described in this publication at any time without notice.

The products described in this document are not intended for use in implantation or other life support applications where malfunction may result in injury or death to persons. The information contained in this document does not affect or change Lenovo product specifications or warranties. Nothing in this document shall operate as an express or implied license or indemnity under the intellectual property rights of Lenovo or third parties. All information contained in this document was obtained in specific environments and is presented as an illustration. The result obtained in other operating environments may vary. Lenovo may use or distribute any of the information you supply in any way it believes appropriate without incurring any obligation to you.

Any references in this publication to non-Lenovo Web sites are provided for convenience only and do not in any manner serve as an endorsement of those Web sites. The materials at those Web sites are not part of the materials for this Lenovo product, and use of those Web sites is at your own risk. Any performance data contained herein was determined in a controlled environment. Therefore, the result obtained in other operating environments may vary significantly. Some measurements may have been made on development-level systems and there is no guarantee that these measurements will be the same on generally available systems. Furthermore, some measurements may have been estimated through extrapolation. Actual results may vary. Users of this document should verify the applicable data for their specific environment.

© Copyright Lenovo 2025. All rights reserved.

This document, LP0513, was created or updated on March 4, 2025.

Send us your comments in one of the following ways:

- Use the online Contact us review form found at:
<https://lenovopress.lenovo.com/LP0513>
- Send your comments in an e-mail to:
comments@lenovopress.com

This document is available online at <https://lenovopress.lenovo.com/LP0513>.

Trademarks

Lenovo and the Lenovo logo are trademarks or registered trademarks of Lenovo in the United States, other countries, or both. A current list of Lenovo trademarks is available on the Web at <https://www.lenovo.com/us/en/legal/copytrade/>.

The following terms are trademarks of Lenovo in the United States, other countries, or both:

Lenovo®

System x®

ThinkAgile®

ThinkServer®

ThinkSystem®

The following terms are trademarks of other companies:

Linux® is the trademark of Linus Torvalds in the U.S. and other countries.

Microsoft®, Excel®, Windows Server®, and Windows® are trademarks of Microsoft Corporation in the United States, other countries, or both.

Other company, product, or service names may be trademarks or service marks of others.