

Lenovo Storage D1224 Drive Enclosure for SAP HANA Product Guide

Lenovo Storage D1224 Drive Enclosure models for SAP HANA provide additional required disk storage capacity for certain SAP HANA X6 systems with large memory configurations. They are designed specifically for SAP HANA certified appliance requirements and are supported on SAP HANA X6 systems.

The D1224 for SAP HANA is a 2U rack-mount enclosure that has 24 SFF hot-swap drive bays and is attached to SAP HANA X6 systems via the ServeRAID M5225 RAID adapter. All D1224 models for SAP HANA contain single Environmental Service Module (ESM) with 3x 12 Gbps SAS x4 ports for direct-attach host connectivity.

The D1224 for SAP HANA is shown in the following figure.



Figure 1. Lenovo Storage D1224 Disk Expansion Enclosure for SAP HANA

Did you know?

The D1224 expansion enclosures for SAP HANA offer flexible hybrid storage configurations with enterprise SAS hard disk drives (HDDs) and high performance SAS solid-state drives (SSDs).

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

Key features

Key features and benefits provided by the D1224 storage expansion enclosures for SAP HANA include:

- Single Environmental Service Module (ESM) configurations for direct attach storage connectivity to System x SAP HANA nodes via a supported RAID adapter
- Support for 24x 2.5-inch small form factor (SFF) drives
- 12 Gb SAS drive-side connectivity to maximize storage I/O performance
- Accelerated storage I/O performance of hybrid configurations with high performance SAS SSDs and performance-optimized enterprise SAS HDDs

The D1224 for SAP HANA is designed to support the SAP HANA data storage requirements with the following 2.5-inch SAS drives:

- High performance solid-state drives (3 DWD and 10 DWD): 400 GB, 800 GB, and 1.6 TB
- High performance self-encrypting solid-state drives (10 DWD): 800 GB
- Capacity optimized solid-state drives (1 DWD): 3.84 TB, 7.68 TB, and 15.36 TB
- Performance-optimized, enterprise class disk drives
 - 300 GB, 600 GB, and 900 GB 15K rpm
 - 600 GB, 900 GB, 1.2 TB, 1.8 TB, and 2.4 TB 10K rpm
- Performance-optimized, enterprise class self-encrypting disk drives: 1.2 TB 10K rpm
- High-capacity, archival-class nearline disk drives: 1 TB and 2 TB 7.2K rpm

The D1224 enclosures for SAP HANA are designed to offer high levels of system and data availability with redundant and hot-swappable hardware, including power and cooling modules (PCMs) and drives.

Components and connectors

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

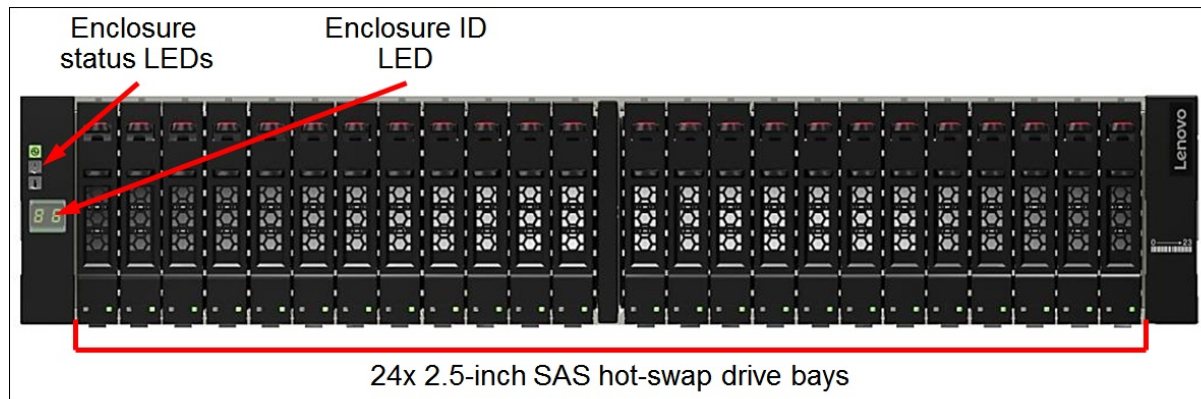


Figure 2. Front view of the D1224 drive enclosure for SAP HANA

The following figure shows the rear of the D1224 drive enclosure for SAP HANA.

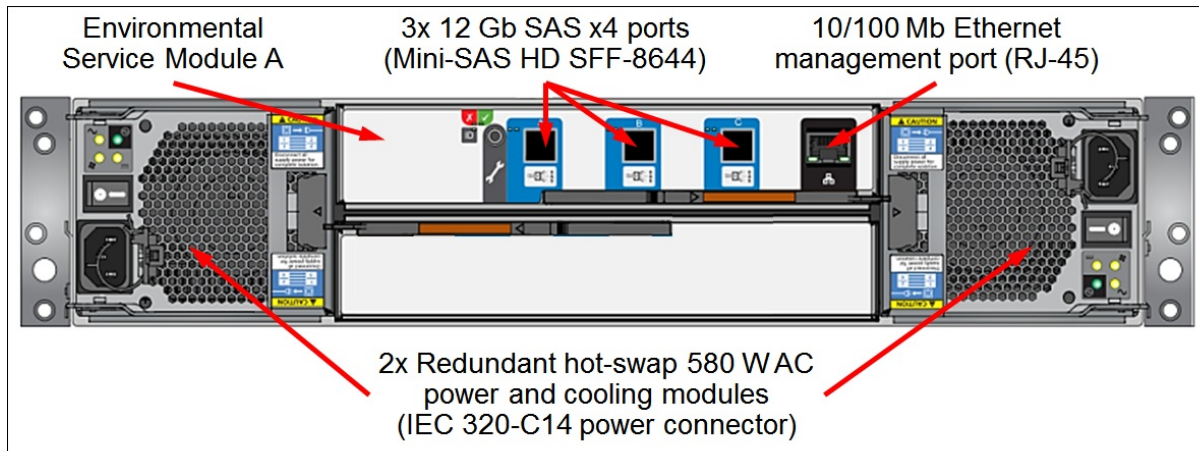


Figure 3. Rear view of the D1224 drive enclosure for SAP HANA

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

System specifications

The following table lists the D1224 for SAP HANA system specifications.

Table 1. System specifications

Attribute	Specification
Form factor	2U rack mount (Machine Type 4587)
Number of ESMs	1
Expansion ports	3x 12 Gb SAS x4 (Mini-SAS HD SFF-8644) ports (A, B, C)
Drive bays	24 SFF hot-swap drive bays.
Drive technologies	SAS HDDs and SSDs. Intermix of HDDs and SSDs is supported.
Drive connectivity	12 Gb SAS drive attachment infrastructure.
Drives	<ul style="list-style-type: none"> • 400 GB, 800 GB, and 1.6 TB SAS SSDs (3 DWD and 10 DWD) • 800 GB SAS SED SSDs (10 DWD) • 3.84 TB, 7.68 TB, and 15.36 TB SAS SSDs (1 DWD) • 300 GB, 600 GB, and 900 GB 15K rpm SAS HDDs • 600 GB, 900 GB, 1.2 TB, 1.8 TB, and 2.4 TB 10K rpm SAS HDDs • 1.2 TB 10K rpm SAS SED HDD • 1 TB and 2 TB 7.2K rpm NL SAS HDDs
Storage capacity	Up to 368 TB (24x 15.36 TB SFF SAS SSDs)
Host adapters	ServeRAID M5225 (2-port 12 Gb SAS; RAID 0, 1, 10, 5, 50; optional RAID 6, 60)
Host operating systems	Red Hat Enterprise Linux (RHEL) 6 for SAP HANA; SUSE Linux Enterprise Server (SLES) 11 and 12 for SAP Applications.
Cooling	Redundant cooling with two fans built into power and cooling modules (PCMs).
Power supply	Two redundant hot-swap 580 W AC power supplies built into PCMs.
Hot-swap parts	Drives, PCMs.
Management interfaces	SAS Enclosure Services, 10/100 Mb Ethernet for external management.

Attribute	Specification
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.
Dimensions	Height: 88 mm (3.5 in), width: 443 mm (17.4 in), depth: 630 mm (24.8 in)
Maximum weight	24 kg (52.9) lb

Models

The following table lists the models of the D1224 drive enclosure for SAP HANA.

Table 2. D1224 models for SAP HANA

Description	Part number
Lenovo Storage D1224 Single ESM Drive Enclosure for SAP HANA (US English documentation)	4587E41*
Lenovo Storage D1224 Single ESM Drive Enclosure for SAP HANA (Simplified Chinese documentation)	4587E4C^
Lenovo Storage D1224 Single ESM Drive Enclosure for SAP HANA (Japanese documentation)	4587E4J**

* Available worldwide (except China and Japan)

^ Available only in China

** Available only in Japan

The part numbers for the D1224 drive enclosures for SAP HANA include the following items:

- One SFF chassis with the following components:
 - One 3-port environmental service module
 - Two power and cooling modules
- Two 1.5m, 10A/100-250V, C13 to IEC 320-C14 rack power cables
- Lenovo Storage 12Gb SAN Rack Mount Kit - Rails 25"-36"
- Documentation package

Host connectivity

All D1224 models for SAP HANA contain one environmental service module (ESM) with three 12 Gb SAS x4 ports (Mini-SAS HD SFF-8644 connectors) for direct-attach host connectivity (daisy-chaining is not supported).

The following table lists the SAS cable options for direct-attach hot connectivity.

Table 3. SAS cable options

Description	Part number	Feature code	Quantity per one D1224
External MiniSAS HD 8644/MiniSAS HD 8644 2M Cable	00YL849	AU18	1

Drives

The following table lists drive options for the D1224 drive enclosure for SAP HANA.

Table 4. SFF drive options

Description	Part number	Feature code	Maximum quantity per one D1224
2.5-inch SAS hot-swap HDDs			
Lenovo Storage 300GB 15K 2.5" SAS HDD	01DC197	AU1J	24
Lenovo Storage 600GB 10K 2.5" SAS HDD	01DC427	AU1Q	24
Lenovo Storage 600GB 15K 2.5" SAS HDD	01DC192	AU1H	24
Lenovo Storage 900GB 10K 2.5" SAS HDD	01DC417	AU1N	24
Lenovo Storage 900GB 15K 2.5" SAS HDD	01KP040	AVP5	24
Lenovo Storage 1.2TB 10K 2.5" SAS HDD	01DC407	AU1L	24
Lenovo Storage 1.8TB 10K 2.5" SAS HDD	01DC402	AU1K	24
Lenovo Storage 2.4TB 10K 2.5" SAS HDD	4XB7A09101	B103	24
2.5-inch NL SAS hot-swap HDDs			
Lenovo Storage 1TB 7.2K 2.5" NL-SAS HDD	01DC442	AU1S	24
Lenovo Storage 2TB 7.2K 2.5" NL-SAS HDD	01DC437	AU1R	24
2.5-inch SAS hot-swap SED HDDs			
Lenovo Storage 1.2TB 10K 2.5" SAS HDD (SED)	01DC412	AU1M	24
2.5-inch SAS hot-swap SSDs (10 DWD)			
Lenovo Storage 400GB 10DWD 2.5" SAS SSD	01DC462	AUDK	24
Lenovo Storage 800GB 10DWD 2.5" SAS SSD	01DC452	AUDH	24
Lenovo Storage 1.6TB 10DWD 2.5" SAS SSD	01DC447	AUDG	24
2.5-inch SAS hot-swap SSDs (3 DWD)			
Lenovo Storage 400GB 3 DWD 2.5" SAS SSD	01DC482	AU1V	24
Lenovo Storage 800GB 3DWD 2.5" SAS SSD	01DC477	AU1U	24
Lenovo Storage 1.6TB 3DWD 2.5" SAS SSD	01DC472	AU1T	24
2.5-inch SAS hot-swap SSDs (1 DWD)			
Lenovo Storage 3.84TB 1DWD 2.5" SAS SSD (1200.2)	01CX632	AV2F	24
Lenovo Storage 3.84TB 1DWD 2.5" SAS SSD (PM1633a)	01KP065	AVPA	24
Lenovo Storage 7.68TB 1DWD 2.5" SAS SSD	01KP060	AVP9	24
Lenovo Storage 15.36TB 1DWD 2.5" SAS SSD	4XB7A08817	B104	24
2.5-inch SAS hot-swap SED SSDs (10 DWD)			
Lenovo Storage 800GB 10DWD 2.5" SAS SSD (SED)	01DC457	AUDJ	24

Power cables

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

Table 5. Power cable options

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

Physical specifications

The D1224 for SAP HANA has the following dimensions and weight (approximate):

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

Operating environment

The D1224 for SAP HANA is supported in the following environment:

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

Warranty

The D1224 for SAP HANA has 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 offers the service upgrades through warranty maintenance upgrades and post-warranty maintenance agreements with a well-defined scope of services, including service hours, response time, term of service, and service agreement terms and conditions.

Lenovo warranty service upgrade offerings are region-specific. Not all warranty service upgrades are available in every region. For more information about Lenovo warranty service upgrade offerings that are available in your region, go to the Lenovo Enterprise Solutions Configurator (LESC):

<http://lesc.lenovo.com>

The following table explains warranty service definitions for the D1224 drive enclosures for SAP HANA.

Table 6. Warranty service definitions

Term	Description
Parts Delivered	If a problem with your product cannot be resolved via telephone and a CRU part is required, Lenovo will send a replacement CRU to arrive at your location.
Technician Installed Parts	If a problem with your product cannot be resolved via telephone, a Service Technician will be dispatched to arrive at your location.
Hours of coverage	<ul style="list-style-type: none">• 9x5: 9 hours per day, 5 days per week, during normal business hours, excluding local public and national holidays• 24x7: 24 hours per day, 7 days per week, 365 days per year.
Response time target	2 hours, 4 hours or Next Business Day: The time period from when the telephone based troubleshooting is completed and logged, to the delivery of the CRU or arrival of a Service Technician and part at the Customer's location for repair.

Term	Description
Committed Repair	6 hours or 24 hours: The time period between the service request registration in Lenovo's call management system and the restoration of the product to conformance with its specification by a Service Technician.

The following Lenovo warranty service upgrades are available:

- Warranty and maintenance service upgrades:
 - Three, four, or five years of 9x5 or 24x7 service coverage
 - Parts delivered or technician installed parts from next business day to 4 or 2 hours
 - Committed repair service
 - Warranty extension of up to 5 years
 - Post warranty extensions
- Committed Repair Service
 Committed Repair Services enhances the level of Warranty Service Upgrade or Post Warranty/Maintenance Service offering associated with the selected systems. Offerings vary and are available in select regions.
 - Priority handling to meet defined time frames to restore the failing machine to good working condition
 - 24x7x6: Service performed 24 hours per day, 7 days per week, within 6 hours
 - 24x7x24: Service performed 24 hours per day, 7 days per week, within 24 hours
- YourDrive YourData
 Lenovo's YourDrive YourData service is a multi-drive retention offering that ensures your data is always under your control, regardless of the number of drives that are installed in your Lenovo system. In the unlikely event of a drive failure, you retain possession of your drive while Lenovo replaces the failed drive part. Your data stays safely on your premises, in your hands. The YourDrive YourData service can be purchased in convenient bundles with Lenovo warranty upgrades and extensions.

Regulatory compliance

The D1224 drive enclosures for SAP HANA conform to the following regulations:

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

RAID controllers

The D1224 expansion enclosures for SAP HANA are supported with the RAID controllers that are listed in the following table.

Table 7. RAID controllers

Description	Part number	Maximum quantity of enclosures per adapter
ServeRAID M5225-2GB SAS/SATA Controller	00AE938	1

Servers

The D1224 expansion enclosures for SAP HANA are supported with the following Lenovo servers:

- System x3850 X6 Type 6241 (E7 v3 and E7 v4)
- System x3950 X6 Type 6241 (E7 v3 and E7 v4)

Operating systems

The D1224 expansion enclosures for SAP HANA support the following operating systems:

- Red Hat Enterprise Linux 6 for SAP HANA
- SUSE Linux Enterprise Server 11 for SAP Applications
- SUSE Linux Enterprise Server 12 for SAP Applications

Rack cabinets

The following table lists the rack cabinets that are offered by Lenovo that can be used in D1224 storage expansion solutions for SAP HANA.

Table 8. Rack cabinets

Description	Part number
11U Rack Office Enablement Kit	201886X
25U S2 Standard Rack	93072RX
25U Static S2 Standard Rack	93072PX
42U S2 Standard Rack	93074RX
42U 1100mm Enterprise V2 Dynamic Rack	93634PX
42U 1100mm Enterprise V2 Dynamic Expansion Rack	93634EX
42U 1200mm Deep Dynamic Rack	93604PX
42U 1200mm Deep Static Rack	93614PX
42U Enterprise Rack	93084PX
42U Enterprise Expansion Rack	93084EX

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

<http://lenovopress.com/servers/options/racks>

Power distribution units

The following table lists the power distribution units (PDUs) that are offered by Lenovo that can be used in D1224 storage expansion solutions for SAP HANA.

Table 9. Power distribution units

Description	Part number
0U Basic PDUs	
0U 36 C13/6 C19 24A/200-240V 1 Phase PDU with NEMA L6-30P line cord	00YJ776
0U 36 C13/6 C19 32A/200-240V 1 Phase PDU with IEC60309 332P6 line cord	00YJ777
0U 21 C13/12 C19 32A/200-240V/346-415V 3 Phase PDU with IEC60309 532P6 line cord	00YJ778
0U 21 C13/12 C19 48A/200-240V 3 Phase PDU with IEC60309 460P9 line cord	00YJ779
Switched and Monitored PDUs	
0U 20 C13/4 C19 Switched and Monitored 24A/200-240V/1Ph PDU w/ NEMA L6-30P line cord	00YJ781
0U 20 C13/4 C19 Switched and Monitored 32A/200-240V/1Ph PDU w/ IEC60309 332P6 line cord	00YJ780
0U 18 C13/6 C19 Switched / Monitored 32A/200-240V/346-415V/3Ph PDU w/ IEC60309 532P6 cord	00YJ782
0U 12 C13/12 C19 Switched and Monitored 48A/200-240V/3Ph PDU w/ IEC60309 460P9 line cord	00YJ783
1U 9 C19/3 C13 Switched and Monitored DPI PDU (without line cord)	46M4002
1U 9 C19/3 C13 Switched and Monitored 60A 3Ph PDU with IEC 309 3P+Gnd cord	46M4003
1U 12 C13 Switched and Monitored DPI PDU (without line cord)	46M4004
1U 12 C13 Switched and Monitored 60A 3 Phase PDU with IEC 309 3P+Gnd line cord	46M4005
Ultra Density Enterprise PDUs (9x IEC 320 C13 + 3x IEC 320 C19 outlets)	
Ultra Density Enterprise C19/C13 PDU Module (without line cord)	71762NX
Ultra Density Enterprise C19/C13 PDU 60A/208V/3ph with IEC 309 3P+Gnd line cord	71763NU
C13 Enterprise PDUs (12x IEC 320 C13 outlets)	
DPI C13 Enterprise PDU+ (without line cord)	39M2816
DPI Single Phase C13 Enterprise PDU (without line cord)	39Y8941
C19 Enterprise PDUs (6x IEC 320 C19 outlets)	
DPI Single Phase C19 Enterprise PDU (without line cord)	39Y8948
DPI 60A 3 Phase C19 Enterprise PDU with IEC 309 3P+G (208 V) fixed line cord	39Y8923
Front-end PDUs (3x IEC 320 C19 outlets)	
DPI 30amp/125V Front-end PDU with NEMA L5-30P line cord	39Y8938
DPI 30amp/250V Front-end PDU with NEMA L6-30P line cord	39Y8939
DPI 32amp/250V Front-end PDU with IEC 309 2P+Gnd line cord	39Y8934
DPI 60amp/250V Front-end PDU with IEC 309 2P+Gnd line cord	39Y8940
DPI 63amp/250V Front-end PDU with IEC 309 2P+Gnd line cord	39Y8935
Universal PDUs (7x IEC 320 C13 outlets)	
DPI Universal 7 C13 PDU (with 2 m IEC 320-C19 to C20 rack power cord)	00YE443
NEMA PDUs (6x NEMA 5-15R outlets)	
DPI 100-127V PDU with fixed NEMA L5-15P line cord	39Y8905
Line cords for PDUs that ship without a line cord	
DPI 30a Line Cord (NEMA L6-30P)	40K9614
DPI 32a Line Cord (IEC 309 P+N+G)	40K9612

Description	Part number
DPI 32a Line Cord (IEC 309 3P+N+G)	40K9611
DPI 60a Cord (IEC 309 2P+G)	40K9615
DPI 63a Cord (IEC 309 P+N+G)	40K9613
DPI Australian/NZ 3112 Line Cord (32A)	40K9617
DPI Korean 8305 Line Cord (30A)	40K9618

For more information, see the list of Product Guides in the PDU category:
<http://lenovopress.com/servers/options/pdu>

Uninterruptible power supply units

The following table lists the uninterruptible power supply (UPS) units that are offered by Lenovo that can be used in D1224 storage expansion solutions for SAP HANA.

Table 10. Uninterruptible power supply units

Description	Part number
RT1.5kVA 2U Rack or Tower UPS (100-125VAC)	55941AX
RT1.5kVA 2U Rack or Tower UPS (200-240VAC)	55941KX
RT2.2kVA 2U Rack or Tower UPS (100-125VAC)	55942AX
RT2.2kVA 2U Rack or Tower UPS (200-240VAC)	55942KX
RT3kVA 2U Rack or Tower UPS (100-125VAC)	55943AX
RT3kVA 2U Rack or Tower UPS (200-240VAC)	55943KX
RT5kVA 3U Rack or Tower UPS (200-240VAC)	55945KX
RT6kVA 3U Rack or Tower UPS (200-240VAC)	55946KX
RT8kVA 6U Rack or Tower UPS (200-240VAC)	55948KX
RT11kVA 6U Rack or Tower UPS (200-240VAC)	55949KX
RT8kVA 6U 3:1 Phase Rack or Tower UPS (380-415VAC)	55948PX
RT11kVA 6U 3:1 Phase Rack or Tower UPS (380-415VAC)	55949PX

For more information, see the list of Product Guides in the Uninterruptible Power Supply Units category:
<http://lenovopress.com/servers/options/ups>

Lenovo Financial Services

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Related publications and links

For more information, see the following documents:

- Lenovo Storage product page
<http://www.lenovo.com/systems/storage>
- Lenovo Enterprise Solutions Configurator (LESC)
<http://lesc.lenovo.com>
- Lenovo Storage D1224 Support
<http://datacentersupport.lenovo.com/us/en/products/storage/lenovo-storage/d1224/4587>

Related product families

Product families related to this document are the following:

- [Direct-Attached Storage](#)

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