Lenovo ThinkSystem DB730S FC SAN Switch
Product Guide

The Lenovo ThinkSystem DB730S Fibre Channel Switch is a Gen 7 high-density building block that enables dense rack-mount environments to connect more devices and build larger fabrics. Its 128 line-rate 64G FC ports in a 2U design allow organizations to create high-scale fabrics in less space.

The DB730S utilizes 96x 64G SFP+ ports and 16x 2x64G double-density optical transceiver (SFP-DD) ports. Each of the 16 SFP-DD transceivers provides 2 ports, making 32 ports available for device or ISL connectivity. The addition of SFP-DD ports allows the DB730S to connect more servers, storage, and switches in a very dense footprint.

With a 50% latency reduction compared to the previous generation and no oversubscription, the DB730S enables the maximum performance of NVMe storage and high-transaction workloads.

The following figure shows the ThinkSystem DB730S FC SAN Switch.



Figure 1. ThinkSystem DB730S FC SAN Switch

Did you know?

The DB730S Switch with enhanced security and autonomous SAN technology takes the guesswork out of protecting and managing a network. The DB730S enables a cyber-resilient network that protects against security threats, enables nonstop operations, and maximizes management automation.

With integrated security technology, the DB730S protects mission-critical operations by validating the integrity of Gen 7 hardware and software. In addition, it reduces the vulnerabilities from malware and hijacking attacks by hardening Fabric OS® (FOS) and strengthening hardware.

Key features

To simplify and automate management, the DB730S Switch harnesses powerful analytics and advanced automation. Leveraging these capabilities enables organizations to realize a self-learning, self-optimizing, and self-healing SAN that maximizes performance and availability.

The DB730S with Gen 7 technology transforms billions of telemetry data points in real time into automated actions that ensure the reliability and performance of critical applications, virtual infrastructure, and NVMe storage. By understanding and analyzing network telemetry data in real time, the SAN can automatically make intelligent decisions on traffic prioritization and congestion mitigation to ensure nonstop operations.

With automated congestion detection and resolution, Brocade Gen 7 instantly mitigates impacts to applications and resolves issues much faster, freeing up valuable admin time.

The DB730S provides exceptional price/performance value by including enterprise class software as standard features including Fabric Vision®, ISL Trunking, Integrated Routing, and Extended Fabrics.

The ThinkSystem DB730S FC SAN Switch offers the following features and benefits:

- Provides high scalability in an ultra-dense 2U switch with up to 128 ports to support high-density server virtualization, cloud architectures, and flash-based storage environments.
- Increases scalability by using SFP-DD transceivers that provide dual SN connections that allow organizations to connect more servers, storage, or switches in a small footprint. Each SFP-DD transceiver supports two independent connections of 64G Fibre Channel via a two-lane electrical interface.
- Accelerates critical workloads with 64G Fibre Channel links
- Increases fabric bandwidth and resiliency while avoiding congestion and maximizing performance with Interswitch Link (ISL) Trunking that can load balance up to eight (8) 64G links for a total bandwidth of up to 512Gb/s.
- Maximizes performance of flash and NVMe storage with 50% lower switching latency than Gen 6
- Enables pay-as-you-grow scalability from 48 to 128 ports—for on-demand flexibility
- Safeguards mission-critical workloads from vulnerabilities with Gen 7 integrated security.
- Provides cyber-resiliency with integrated security technology that protects mission-critical operations by validating the integrity of Gen 7 hardware and software.
- Guarantees critical application performance by automatically prioritizing traffic and avoiding congestion with Brocade Traffic optimizer.
- Simplifies troubleshooting by identifying and isolating issues
- Transforms telemetry data into actionable insights to optimize performance and ensure reliability
- Visualizes the telemetry data to easily understand the health and performance of the SAN
- Automates repetitive tasks to save time and eliminate human error
- Protects existing device investments with auto-sensing 8, 16 and 32G capabilities and native operation with any Brocade SAN fabrics.
- Leverages Fabric Vision technology’s powerful monitoring, management, and diagnostic tools to simplify administration, increase uptime, and reduce costs.
- Supplies a rich set of standard features at no extra cost, including fabric services, advanced zoning, adaptive networking, full fabric and access gateway operations, integrated 10G FC, and diagnostic tools.
- Expands fabric capabilities with optional licensed functions, including trunking, advanced monitoring and alerting, long-distance fabrics, and FC-FC routing.
- Compresses in-flight data on up to four ports for more efficient link utilization.
- Maximizes resiliency with redundant hot-swap power supplies.

- Accelerates troubleshooting with built-in advanced diagnostics tools featuring ClearLink Diagnostics with D_Ports (Diagnostic Ports) and select adapters from QLogic and Emulex, which helps ensure optical and signal integrity for 32G and 64G Fibre Channel optics and cables.

Brocade Fabric Vision

To further simplify operations and increase visibility, the DB730S includes Brocade Fabric Vision® technology to monitor and analyze the SAN. This technology provides visibility and insight to quickly identify problems and achieve critical service-level agreements (SLAs).

The DB730S Switch with Fabric Vision technology provides a robust analytics architecture that delivers autonomous SAN technology through self-learning, self-optimizing, and self-healing capabilities. Fabric Vision technology is a suite of features that leverage comprehensive data collection capabilities with powerful analytics to quickly understand the health and performance of the environment and identify any potential impacts or trending problems. The combination of SAN analytics and automation technologies unlocks the capabilities to deliver a self-learning, self-optimizing, and self-healing autonomous SAN.

Features of Fabric Vision include:

- Self-Learning
  - Gather and transform billions of data points into network intelligence
  - Visualize application and device-based performance and health metrics
  - Detect abnormal traffic behaviors and degraded performance
  - Eliminate operational steps by automatically learning application flows
- Self-Optimizing
  - Optimize critical application performance by automatically prioritizing traffic
  - Guarantee application performance by proactively monitoring and actively shaping traffic
  - Eliminate human errors and performance impacts through open DevOps automation technology
  - Optimize administrative resources with cloud-like SAN orchestration
- Self-Healing
  - Instantly notify end devices of congestion for automatic resolution
  - Ensure data delivery with automatic failover from physical or congestion issues
  - Detect and automatically reconfigure out-of-compliance fabrics
  - Eliminate performance impacts by automatically taking corrective action on misbehaving devices

Brocade SANnav™ Management Portal

To streamline management workflows, organizations can leverage the optional subscription based Brocade SANnav Management Portal software to accelerate the deployment of new applications, switches, servers, and storage. Furthermore, a modernized graphical user interface (GUI) improves operational efficiencies with visual dashboards for instant visibility and faster troubleshooting. For more information, see the Management software section.

EZSwitchSetup

With EZSwitchSetup, organizations can reduce the number of steps to deploy and configure a switch. In addition, the simplified user interface of Brocade Web Tools makes the SAN easier to manage. For more information, see the EZSwitchSetup User Guide, available from https://docs.broadcom.com/doc/FOS-90x-EZSwitch-UG.

Perfect for high-performance, latency-sensitive workloads

Enterprises are quickly moving their high-performance, latency-sensitive workloads to NVMe flash-based storage. The DB730S Switch supports NVMe over Fibre Channel, enabling organizations to integrate Gen 7 Fibre Channel networks with next-generation flash storage, without a disruptive rip-and-replace. This enables enterprises to achieve faster application response times and harness the performance innovation inherent in NVMe storage. NVMe, combined with the high performance and low latency of Gen 7 Fibre Channel, delivers the performance, application response time, and scalability needed for next-generation data centers.

Components and connectors

The following figure shows the port-side view of the DB730S.

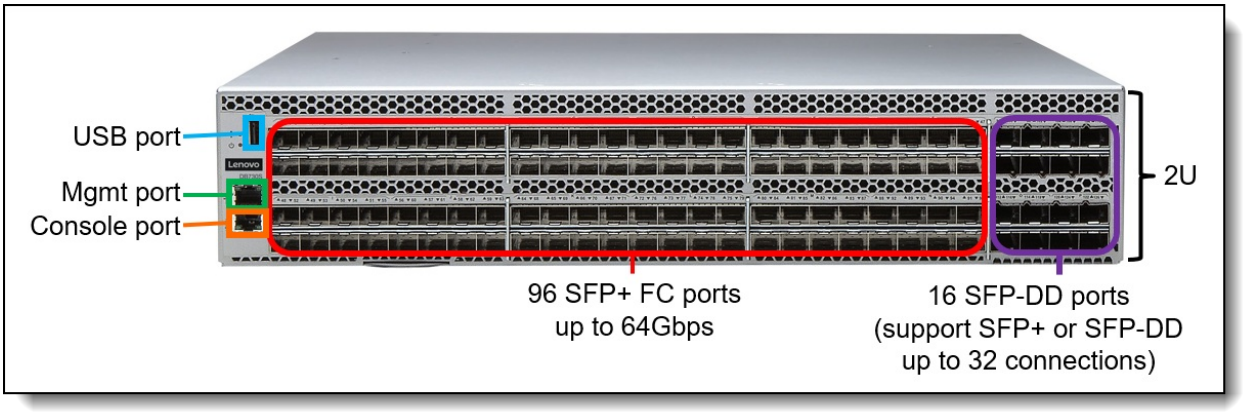


Figure 2. DB730S port-side view

The port-side panel of the DB730S includes the following components:

- 96x SFP+ ports to attach SFP+ transceivers for 4/8/10/16/32 Gb FC connections
- 16x SFP-DD ports that each to attach a single SFP+ transceiver or two SFP-DD transceivers
- One RJ-45 10/100/1000 Mb Ethernet port for out-of-band management
- One RJ-45 RS-232 console port for configuring the switch
- One USB port for mass storage devices

The following figure shows the non-port side view of the DB730S:

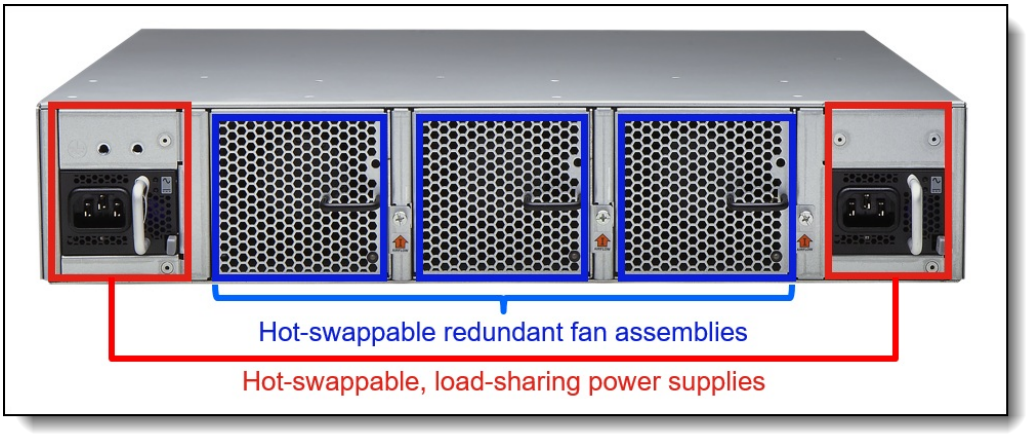


Figure 3. DB730S non-port-side view

The non-port-side panel of the DB730S includes the following components:

- Two redundant hot-swap power supplies, each with a C14 power connector
- Three N+1 redundant hot-swap system fan assembly units, each with two fans

System specifications

The following table lists the ThinkSystem DB630S system specifications.

Table 1. System specifications

Component	Specification
Machine type	7D9J
System Architecture	
Fibre Channel Ports	128 ports (96 64G SFP+ ports, plus 16 2x64G SFP-DD ports), each supporting E_Ports, F_Ports, M_Ports, D_Ports, and EX_Ports. 48-port base configuration; additional ports are enabled with two 24-port SFP+ PODs (Ports on Demand), plus a 32-port SFP-DD POD (16 2x64G SFP-DD transceivers), scaling the switch from 48 ports to 128 ports. The SFP+ ports are capable of auto-negotiating to 8, 16, 32, or 64G speeds depending on the SFP+ model and the minimum supported speed of the optical transceiver at the other end of the link.
Scalability	Full-fabric architecture with a maximum of 239 switches
Certified maximum	4K active nodes; 56 switches, 19 hops in Brocade Fabric OS® fabrics
Performance	Non-blocking architecture with wire-speed forwarding of traffic: ● 8GFC: 8.5 Gb/s line speed, full duplex ● 10GFC: 10.53 Gb/s line speed, full duplex; 10Gb/s optionally programmable to fixed port speed. ● 16GFC: 14.025 Gb/s line speed, full duplex ● 32GFC: 28.05 Gb/s line speed, full duplex ● 64GFC: 57.8 Gb/s line speed, full duplex
Traffic load balancing	Frame-based trunking with up to eight SFP+ ports per ISL trunk; up to 512Gb/s per ISL trunk. Exchange based load balancing across ISLs with Dynamic Path Selection (DPS) included in Brocade Fabric OS
Aggregate bandwidth	8.192Tb/s
Maximum fabric latency	Latency for locally switched ports is 460 ns (including FEC).
Maximum frame size	2112-byte payload
Frame buffers	2K per switching ASIC
Classes of service	Class 2, Class 3, Class F (inter-switch frames)
Port types	● D_Port (ClearLink® Diagnostic Port), E_Port, EX_Port, F_Port, M_Port ● Optional port-type control
Data traffic types	Fabric switches supporting unicast

Component	Specification
Media types	• 64G: Brocade Secure hot-pluggable SFP-DD, SN connector; 64 Gb/s SWL. • 64G: Brocade Secure hot-pluggable SFP+, LC connector; 64 Gb/s SWL, LWL 10 km. • 32G: Brocade Secure hot-pluggable SFP+, LC connector; 32 Gb/s SWL, LWL 10 km, ELWL 25 km. • 10G: Brocade Secure hot-pluggable SFP+, LC connector; 10 Gb/s SWL, LWL 10 km. Fibre Channel distance is subject to fiber-optic cable and port speed.
USB port	One standard USB port for firmware download, SupportSave, and configuration upload or download.
Fabric services	BB Credit Recovery; Brocade Advanced Zoning (Default Zoning, Port/WWN Zoning, Peer Zoning); Congestion Signaling; Dynamic Fabric Provisioning (DFP); Dynamic Path Selection (DPS); Extended Fabrics; Fabric Performance Impact Notification (FPIN); Fabric Vision; FDMI; Flow Vision; F_Port Trunking; FSPF; Integrated Routing; ISL Trunking; Management Server; Name Server; NPIV; NTP v3; Port Decommission/Fencing; QoS; Registered State Change Notification (RSCN); Slow Drain Device Quarantine (SDDQ); Target-Driven Zoning; Traffic Optimizer; Virtual Fabrics (Logical Switch, Logical Fabric); VMID+ and AppServer.
Extension	Integrated optional 10G Fibre Channel for DWDM MAN connectivity
Power supplies	Dual, hot-swappable, redundant power supplies with integral cooling fans and status LEDs. 80 Plus Gold.
Management	
Management	Brocade Advanced Web Tools; Brocade SANnav Management Portal and SANnav Global View; Command Line Interface (CLI); EZSwitchSetup; HTTP/HTTPS; RESTful API; SNMP v1/v3 (FE MIB, FC Management MIB); SSH.
Security	DH-CHAP (between switches and end devices); FCAP switch authentication; HTTPS; IP filtering; LDAP with IPv6; OpenLDAP; Port Binding; RADIUS; TACACS+; user-defined Role-Based Access Control (RBAC); Secure Boot; Secure Copy (SCP); Secure Syslog; SFTP; SSH v2; SSL; Switch Binding; Trusted Switch; Trusted FOS Certificates (TruFOS); root access removed.
Management access	10/100/1000Mb/s Ethernet (RJ-45) port, serial console port, and USB port.
Diagnostics	Active Support Connectivity (ASC) and Brocade Support Link (BSL); built-in flow generator; ClearLink optics and cable diagnostics, including electrical/optical loopback, link traffic/latency/distance; Fabric Performance Impact Monitoring (FPI); flow mirroring; Forward Error Correction (FEC); frame viewer; Global Quiet Time (GQT); IO Insight for SCSI and NVMe monitoring; Monitoring and Alerting Policy Suite (MAPS); nondisruptive daemon restart; optics health monitoring; POST and embedded online/ offline diagnostics, including environmental monitoring, FCping, and Pathinfo (FC traceroute); power monitoring; RAStrace logging; Rolling Reboot Detection (RRD); Syslog/Audit Log; VM Insight.
Mechanical	
Enclosure	• Front-to-back airflow; non-port-side exhaust; power from back, 2U • Back-to-front airflow; non-port-side intake; power from back, 2U
Support	
Warranty	Three-year customer-replaceable unit limited warranty with 9x5 next business day parts delivered. Three-year software/firmware entitlement.
Service and support	Optional service upgrades are available through Lenovo Services: 9x5 next business day onsite response, 24x7 2-hour or 4-hour onsite response, 24x7 6-hour or 24-hour committed service repair, up to 5 years of warranty coverage, 1-year or 2-year post-warranty extensions, and Basic Hardware Installation Services.

Models

The following table lists the ThinkSystem DB730S FC SAN Switch models.

Table 2. Models

Part number	Machine Type/Model	Feature	Description
Port side exhaust airflow			
7D9JA000WW	7D9JCTO1WW	BQQ9	Lenovo ThinkSystem DB730S, 48 ports active with 64G SWL SFPs, 2 power supplies (port side exhaust), rail kit, Software: Fabric Vision, Trunking, Integrated Routing, Extended Fabric (model requires FOS 9.1.0b or later)
Port side intake airflow (for Telco)			
7D9JA001WW	7D9JCTO2WW	BQQA	Lenovo ThinkSystem DB730S, 48 ports active with 64G SWL SFPs, 2 power supplies (port side intake like Telco), rail kit, Software: Fabric Vision, Trunking, Integrated Routing, Extended Fabric (model requires FOS 9.1.0b or later)

The models include the following items:

- One DB730S FC SAN Switch
  - 48 ports activated
  - 48x 64G FC SWL SFP+ transceivers
- Serial cable (Mini-USB console cable to DB-9/RJ-45)
- Rubber feet for setting up the switch as a standalone unit
- Universal rack mount kit, 4-post & installation guide
- Web pointer document (downloading FOS, EZSwitch, SANnav and Docs)
- Firmware Download Instructions Flyer (instructions for downloading publicly-available Brocade documents, documents behind the Customer Support Portal, CSP, and access to open source code.)

Note: The switch does not include power cords; two power cables must be purchased together with the switch. See the Power supplies and cables section for details.

Port activation licenses

The DB730S includes 48 licensed ports and 48x 64G FC SWL SFP+ Transceivers depending on the model. The remaining unlicensed ports can be activated by purchasing and installing the Ports on Demand (POD) licenses.

The following table lists additional POD options for the DB730S. The part numbers also include transceivers as noted.

Table 3. POD options

Part number	Feature	Description	Maximum quantity
4M27A65429	BQQB	DB730S 24-Port SW License with 24x 64G SWL SFP+ transceivers	2
4M27A65430	BQQC	DB730S 32-Port SW License with 16x 64G SWL SFP-DD transceivers	1

Transceivers and cables

With the flexibility of the DB730S FC SAN Switch, customers can choose the following connectivity technologies:

- SFP-DD ports
  - For 64G FC links, customers can use 64G FC SFP-DD SWL optical transceivers for distances up to 100 meters on OM4 or up to 70 meters on OM3 50 µ MMF cables. These transceivers can operate at 64G, 32G, or 16G speeds.
- SFP+ ports
  - For 64G FC links, customers can use 64G FC SFP+ SWL optical transceivers for distances up to 100 meters on OM4 or up to 70 meters on OM3 50 µ MMF cables. For longer distances, the 64G FC LWL SFP+ optical transceivers can support up to 10 km on SMF cables. These transceivers can operate at 64G, 32G, or 16G speeds.
  - For 32G FC links, customers can use 32G FC SFP+ SWL optical transceivers for distances up to 100 meters on OM4 or up to 70 meters on OM3 50 µ MMF cables. For longer distances, the 32G FC LWL SFP+ optical transceivers can support up to 10 km on SMF cables. These transceivers can operate at 32G, 16G, or 8G speeds.
  - For 10G FC links, customers can use 10G FC SFP+ SWL transceivers for distances up to 125 meters on OM4 or up to 100 meters on OM3 50 µ MMF cables, or 10G FC SFP+ LWL transceivers for distances up to 10 km on SMF cables. 10G FC operations allow metro connectivity by directly utilizing a fiber optic cable between sites or by creating multiple channels on an optical cable between sites, utilizing Wave Division Multiplexing (WDM) technology (the Extended Fabric feature is NOT required for long distance 10G FC connectivity).
- 1 GbE RJ-45 management port: Customers can use UTP cables for distances up to 100 meters.

The DB730S FC SAN Switch comes with 48 x 64G FC SWL SFP+ transceivers. Additional SWL, LWL, and ELWL SFP+ transceivers can be ordered for the switch, if needed.

The following table lists the supported transceiver and cable options (POD kits and switches come with SWL optics included).

Table 4. Transceivers and cables

Part number	Feature code	Description	Maximum quantity
64G FC SFP+ Double Density transceivers (require FOS 9.1.0b or later)			
4M27A65427	BPJ5	Brocade Secure 64G SWL SFP-DD Transceiver	16
4M27A65428	BPJ6	Brocade Secure 64G SWL SFP-DD Transceiver 8-pack	2
64G FC SFP+ transceivers (require FOS 9.1.0b or later)			
4M27A65425	BF6J	Brocade Secure 64G SWL SFP+ Transceiver	96-112
4M27A65426	BF6K	Brocade Secure 64G SWL SFP+ Transceiver 8-pack	12-14
4M27A65433	BQQG	Brocade Secure 64G LWL SFP+ Transceiver (10 km)	96-112
4M27A65434	BQQH	Brocade Secure 64G LWL SFP+ Transceiver (10 km) 8-pack	12-14
4M27A65432	BQQF	Brocade Secure 64G ELWL SFP+ Transceiver (25 km)	96-112
32G FC SFP+ transceivers			
4M27A65416	BF69	Brocade Secure 32G SWL SFP+ Transceiver	96-112
4M27A65417	BF6A	Brocade Secure 32G SWL SFP+ Transceiver 8-pack	12-14
4M27A65418	BF6B	Brocade Secure 32G LWL SFP+ Transceiver (10 km)	96-112
4M27A65419	BF6C	Brocade Secure 32G LWL SFP+ Transceiver (10 km) 8-pack	12-14
4M27A65431	BQQE	Brocade Secure 32G ELWL SFP+ Transceiver (25 km)	96-112

Part number	Feature code	Description	Maximum quantity
4M27A65424	BF6D	Brocade Secure 32G ELWL SFP+ Transceiver (25 km)	96-112
10G FC SFP+ transceivers			
4M27A65420	BF6E	Brocade Secure 10G FC SWL SFP+ Transceiver	96-112
4M27A65421	BF6F	Brocade Secure 10G FC LWL SFP+ Transceiver	96-112
OM3 optical cables for 32G and 64G FC SW SFP+ transceivers			
00MN499	ASR5	Lenovo 0.5m LC-LC OM3 MMF Cable	96-112
00MN502	ASR6	Lenovo 1m LC-LC OM3 MMF Cable	96-112
00MN505	ASR7	Lenovo 3m LC-LC OM3 MMF Cable	96-112
00MN508	ASR8	Lenovo 5m LC-LC OM3 MMF Cable	96-112
00MN511	ASR9	Lenovo 10m LC-LC OM3 MMF Cable	96-112
00MN514	ASRA	Lenovo 15m LC-LC OM3 MMF Cable	96-112
00MN517	ASRB	Lenovo 25m LC-LC OM3 MMF Cable	96-112
00MN520	ASRC	Lenovo 30m LC-LC OM3 MMF Cable	96-112
OM4 optical cables for 32G and 64G FC SW SFP+ transceivers			
4Z57A10845	B2P9	Lenovo 0.5m LC-LC OM4 MMF Cable	96-112
4Z57A10846	B2PA	Lenovo 1m LC-LC OM4 MMF Cable	96-112
4Z57A10847	B2PB	Lenovo 3m LC-LC OM4 MMF Cable	96-112
4Z57A10848	B2PC	Lenovo 5m LC-LC OM4 MMF Cable	96-112
4Z57A10849	B2PD	Lenovo 10m LC-LC OM4 MMF Cable	96-112
4Z57A10850	B2PE	Lenovo 15m LC-LC OM4 MMF Cable	96-112
4Z57A10851	B2PF	Lenovo 25m LC-LC OM4 MMF Cable	96-112
4Z57A10852	B2PG	Lenovo 30m LC-LC OM4 MMF Cable	96-112
OM4 SN to LC (SFP-DD to SFP) optical cables for 64G FC SW SFP-DD transceivers			
4X97A81905	BPAF	12U-8020m-MG1M Fiber Cable, SN to LC, OM4 1.6mm Round Duplex Jacket, Magenta, OFNR, 1M	32
4X97A81907	BPAG	12U-8020m-MG3M Fiber Cable, SN to LC, OM4 1.6mm Round Duplex Jacket, Magenta, OFNR, 3M	32
4X97A81908	BPAH	12U-8020m-MG5M Fiber Cable, SN to LC, OM4 1.6mm Round Duplex Jacket, Magenta, OFNR, 5M	32
4X97A81910	BPAJ	12U-8020m-MG10M Fiber Cable, SN to LC, OM4 1.6mm Round Duplex Jacket, Magenta, OFNR, 10M	32
4X97A81911	BPAK	12U-8020m-MG15M Fiber Cable, SN to LC, OM4 1.6mm Round Duplex Jacket, Magenta, OFNR, 15M	32
4X97A81913	BPAL	12U-8020m-MG25M Fiber Cable, SN to LC, OM4 1.6mm Round Duplex Jacket, Magenta, OFNR, 25M	32
4X97A81914	BPAM	12U-8020m-MG30M Fiber Cable, SN to LC, OM4 1.6mm Round Duplex Jacket, Magenta, OFNR, 30M	32
OM4 SN to SN (SFP-DD to SFP-DD) optical cables for 64G FC SW SFP-DD transceivers			
4X97A81893	BPA8	11U-8020m-MG1M Fiber Cable, SN to SN, OM4 1.6mm Round Duplex Jacket, Magenta, OFNR, 1M	32
4X97A81895	BPA9	11U-8020m-MG3M Fiber Cable, SN to SN, OM4 1.6mm Round Duplex Jacket, Magenta, OFNR, 3M	32

Part number	Feature code	Description	Maximum quantity
4X97A81896	BPAA	11U-8020m-MG5M Fiber Cable, SN to SN, OM4 1.6mm Round Duplex Jacket, Magenta, OFNR, 5M	32
4X97A81898	BPAB	11U-8020m-MG10M Fiber Cable, SN to SN, OM4 1.6mm Round Duplex Jacket, Magenta, OFNR, 10M	32
4X97A81899	BPAC	11U-8020m-MG15M Fiber Cable, SN to SN, OM4 1.6mm Round Duplex Jacket, Magenta, OFNR, 15M	32
4X97A81901	BPAD	11U-8020m-MG25M Fiber Cable, SN to SN, OM4 1.6mm Round Duplex Jacket, Magenta, OFNR, 25M	32
4X97A81902	BPAE	11U-8020m-MG30M Fiber Cable, SN to SN, OM4 1.6mm Round Duplex Jacket, Magenta, OFNR, 30M	32
UTP Category 6 cables (Green) for the 1 GbE RJ-45 management port			
00WE123	AVFW	0.75m CAT6 Green Cable	1
00WE127	AVFX	1.0m CAT6 Green Cable	1
00WE131	AVFY	1.25m CAT6 Green Cable	1
00WE135	AVFZ	1.5m CAT6 Green Cable	1
00WE139	AVG0	3m CAT6 Green Cable	1
90Y3718	A1MT	10m CAT6 Green Cable	1
90Y3727	A1MW	25m CAT6 Green Cable	1
UTP Category 5e cables (Blue) for the 1 GbE RJ-45 management port			
40K5679	3801	0.6m Blue Cat5e Cable	1
40K8785	3802	1.5m Blue Cat5e Cable	1
40K5581	3803	3m Blue Cat5e Cable	1
40K8927	3804	10m Blue Cat5e Cable	1
40K8930	3805	25m Blue Cat5e Cable	1

The following table lists the cabling requirements for the switch.

Table 5. Cabling requirements

Transceiver	Standard	Cable	Connector
64G Fibre Channel			
64G FC SWL SFP+ (4M27A65425, 4M27A65426)	FC-PI-6	Up to 30 m with LC-LC MMF cables supplied by Lenovo (see Table 4). 850 nm 50 µ MMF cable: 64GFC: Up to 100 m (OM4) or up to 70 m (OM3). 32GFC: Up to 100 m (OM4) or up to 70 m (OM3). 16GFC: Up to 125 m (OM4) or up to 100 m (OM3).	LC
64G FC LWL SFP+ (4M27A65433, 4M27A65434)	FC-PI-6	1310 nm 9 µ SMF cable: 64GFC, 32GFC, 16GFC: Up to 10 km.	LC
64G FC ELWL SFP+ (4M27A65432)	FC-PI-6	1310 nm 9 µ SMF cable: 64GFC, 32GFC, 16GFC: Up to 25 km.	LC
32G Fibre Channel			

Transceiver	Standard	Cable	Connector
32G FC SWL SFP+ (4M27A65416, 4M27A65417)	FC-PI-6	Up to 30 m with LC-LC MMF cables supplied by Lenovo (see Table 4). 850 nm 50 µ MMF cable: 32GFC: Up to 100 m (OM4) or up to 70 m (OM3). 16GFC: Up to 125 m (OM4) or up to 100 m (OM3). 8GFC: Up to 125 m (OM4) or up to 100 m (OM3).	LC
32G FC LWL SFP+ (4M27A65418, 4M27A65419)	FC-PI-6	1310 nm 9 µ SMF cable: 32GFC, 16GFC, 8GFC: Up to 10 km.	LC
32G FC ELWL SFP+ (4M27A65424)	FC-PI-6	1310 nm 9 µ SMF cable: 32GFC, 16GFC, 8GFC: Up to 25 km.	LC
10G Fibre Channel			
10G FC SWL SFP+ (4M27A65420)	FC-10GFC	850 nm 50 µ MMF cable: 10GFC: Up to 550 m (OM4) or up to 300 m (OM3).	LC
10G FC LWL SFP+ (4M27A65421)	FC-10GFC	1310 nm 9 µ SMF cable: 10GFC: Up to 10 km.	LC

Firmware

For details on the latest features supported with the switch see the Administration Guide for the latest available Fabric OS version 9.1.0b and above, available from:
https://www.broadcom.com/products/fibre-channel-networking/software/fabric-operating-system

The following features are included with the DB730S FC SAN Switch:

- Enterprise Bundle
  - ISL Trunking (TRK): Allows frame-based consolidation of up to 8 inter-switch links (ISLs) into fault-tolerant and load-balanced trunks with bandwidth of up to 512Gb/s.
  - Fabric Vision (FV)
    - Monitoring and Alerting Policy Suite (MAPS): Provides a policy-based, fabric-wide threshold monitoring and alerting tool.
    - Flow Vision: Identifies, monitors, and analyzes specific application flows.
    - VM Insight: Seamlessly monitors health and performance of individual Virtual Machines (VMs) to quickly identify abnormal VM behavior and enable administrators to proactively facilitate troubleshooting and fault isolation, helping to ensure performance and operational stability.
    - IO Insight: Proactively monitors I/O performance and behavior to gain deep insight into issues and ensure service levels by non-disruptively and non-intrusively gathering I/O statistics for storage traffic and applying this information within a policy-based monitoring and alerting suite to configure thresholds and alarms.
    - Fabric Performance Impact (FPI) Monitoring: Leverages predefined MAPS policies to automatically identify and isolate devices that cause network performance issues by detecting different latency severity levels, and to alert administrators.
  - Extended Fabric (EF): Extends Fibre Channel SANs beyond 10 km distance limitations for replication and backup at full bandwidth.
- Integrated Routing: The FC-FC routing service provides Fibre Channel routing between two or more fabrics without merging those fabrics.

Management software

Lenovo offers optional Brocade SANnav™ Management Portal and SANnav Global View software license subscriptions that provide comprehensive visibility into the SAN environment, allow administrators to quickly identify, isolate, and correct problems, and accelerate administrative tasks by simplifying and automating workflows.

SANnav Management Portal is a next-generation SAN management application with a simple browser-based user interface (UI) and with a focus on streamlining common workflows, such as configuration, zoning, deployment, monitoring, troubleshooting, reporting, and analytics.

Lenovo offers the following SANnav Management Portal subscriptions:

- SANnav Management Portal Base: Designed for mid-sized SANs to manage up to 600 SAN switch ports only (SAN director ports can only be managed with the Enterprise edition).
- SANnav Management Portal Enterprise: Designed for enterprise-class SANs to manage up to 15 000 SAN switch and director ports.

SANnav Management Portal supports all Brocade SAN switches and platforms that run the Fabric OS® version 7.4 or above, including Lenovo B300, B6505, B6510, DB610S, DB620S, DB400D, DB720S, DB800D, Brocade Directors, and FC5022.

With SANnav Global View, administrators can quickly visualize the health, performance, and inventory of multiple SANnav Management Portal instances using a simple, intelligent dashboard and can easily navigate from a global view down to local environments to investigate points of interest. SANnav Global View is designed to manage up to 20 SANnav Management Portal instances.

For more information, refer to the SANnav Management Portal documentation: http://www.broadcom.com/products/fibre-channel-networking/software/sannav-management-portal#documentation

The following table lists ordering information for the optional SANnav Management Portal and SANnav Global View management tools. After a client has an active SANnav license, Lenovo offers a “license extension/renewal”. This offering provides our clients the flexible to extend their subscription down to a specific end date. This allows clients the ability to align to your company’s budget or align with warranty of your FC SAN switches/directors. Please engage directly with your Lenovo sales representative for more details.

Table 6. SANnav Management Portal and SANnav Global View subscription licenses

Part number	Feature code	Description
SANnav Management Portal electronic authorization licenses		
7S0C0010WW	S1K6	Brocade SANnav Mgmt Portal Base Edition - 1YR License 600 ports
7S0C0013WW	S1K8	Brocade SANnav Mgmt Portal Base Edition - 3YR License 600 ports
7S0C001KWW	S4MB	Brocade SANnav Mgmt Portal Base Edition - 5YR License 600 ports
7S0C0011WW	S1K7	Brocade SANnav Mgmt Portal Enterprise Edition - 1YR License 15K ports
7S0C0014WW	S1K9	Brocade SANnav Mgmt Portal Enterprise Edition - 3YR License 15K ports
7S0C001LWW	S4MC	Brocade SANnav Mgmt Portal Enterprise Edition - 5YR License 15K ports
SANnav Global View electronic authorization licenses		
7S0C0012WW	S1D8	Brocade SANnav Global View - 1YR License
7S0C0015WW	S1D9	Brocade SANnav Global View - 3YR License
7S0C001JWW	S4MA	Brocade SANnav Global View - 5YR License

The SANnav licenses are subscription-based with 1-year, 3-year, or 5-year software entitlement and support.

Fibre Channel standards

The DB730S supports the standards listed at the following web page:

https://www.broadcom.com/support/fibre-channel-networking/san-standards/standards-compliance

Power supplies and cables

The DB730S ships with two redundant hot-swap 1100 W AC power supplies. Each power supply has an IEC 309-C14 connector.

The switch does not include power cords. Supported power cables and line cords are listed in the following table.

Table 7. Power cord options

Part number	Feature	Description
Rack power cables		
39Y7937	6201	1.5m, 10A/100-250V, C13 to IEC 320-C14 Rack Power Cable
None*	6568	1.8m, 10A/100-250V, 2xC13PM to IEC 320-C14 Rack Power Cable
4L67A08366	6311	2.8m, 10A/100-250V, C13 to IEC 320-C14 Rack Power Cable
39Y7938	6204	2.8m, 10A/100-250V, C13 to IEC 320-C20 Rack Power Cable
39Y7932	6263	4.3m, 10A/100-250V, C13 to IEC 320-C14 Rack Power Cable
Line cords		
39Y7931	6207	10A/125V C13 to NEMA 5-15P 4.3m line cord
46M2592	A1RF	10A/250V C13 to NEMA 6-15P 2.8m line cord
39Y7930	6222	Argentina 10A/250V C13 to IRAM 2073 2.8m line cord
39Y7924	6211	Australia/NZ 10A/250V C13 to AS/NZ 3112 2.8m line cord
39Y7929	6223	Brazil 10A/125V C13 to NBR 6147 2.8m line cord
39Y7928	6210	China 10A/250V C13 to GB 2099.1 2.8m line cord
39Y7918	6213	Denmark 10A/250V C13 to DK2-5a 2.8m line cord
39Y7917	6212	European 10A/230V C13 to CEE7-VII 2.8m line cord
39Y7927	6269	India 10A/250V C13 to IS 6538 2.8m line cord
39Y7920	6218	Israel 10A/250V C13 to SI 32 2.8m line cord
39Y7921	6217	Italy 10A/250V C13 to CEI 23-16 2.8m line cord
46M2593	A1RE	Japan 12A/125V C13 to JIS C-8303 2.8m line cord
39Y7925	6219	Korea 12A/250V C13 to KETI 2.8m line cord
39Y7922	6214	South Africa 10A/250V C13 to SABS 164 2.8m line cord
39Y7919	6216	Switzerland 10A/250V C13 to SEV 1011-S24507 2.8m line cord
00CG265	A53E	Taiwan 10A/250V C13 to CNS 10917-3 2.8m line cord
00CG267	A53F	Taiwan 15A/125V C13 to CNS 10917-3 2.8m line cord
39Y7923	6215	United Kingdom 10A/250V C13 to BS 1363/A 2.8m line cord

* Available for factory-built custom configurations and solutions only.

Rack installation

The DB730S comes standard with the fixed rack mount kit that can be used for 4-post rack installations. If needed, the switch can be mounted in a 2-post rack cabinet by using the optional mid-mount rack kit that is listed in the following table.

Table 8. Rack-mount options

Part number	Feature	Description
01KN770	AVG7	Lenovo Mid-mount Rack Kit

The optional mid-mount rack kit is shown in the following figure.

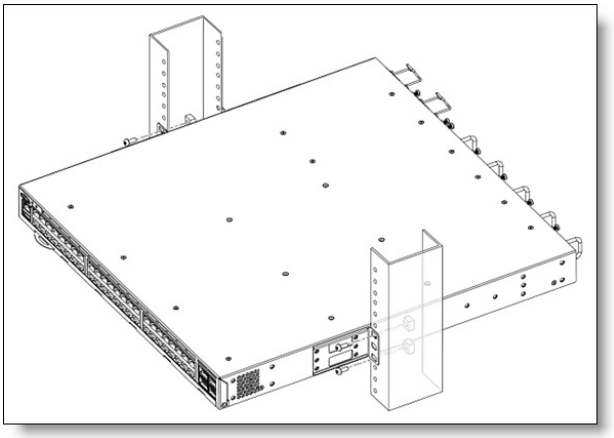


Figure 4. Lenovo Mid-mount Rack Kit

Physical specifications

The DB730S FC SAN Switch has the following dimensions and weight (approximate):

- Height: 86.7 mm (3.41 in.)
- Width: 440 mm (17.32 in.)
- Depth: 609.6 mm (24.0 in.)
- Weight: 18.92 kg (41.71 lbs) with two power supply FRUs and three fan FRUs, without transceivers

Operating environment

The DB730S FC SAN Switch is supported in the following environment:

- Air temperature:
  - Operating: 0°C to 40°C (32°F to 104°F)
  - Non-operating: -25°C to +70°C (-13°F to 158°F)
- Maximum altitude:
  - Operating: 3,000 m (9,842 ft)
  - Non-operating: 12,000 m (39,370 ft)
- Humidity:
  - Operating: 10% to 85% non-condensing
  - Non-operating: 10% to 90% non-condensing
- Electrical power:
  - AC Voltage range: 100 to 240 VAC nominal, 90 to 264 VAC range, maximum input current 12A @ 100V or 5A @ 240V
  - AC Frequency: 50 Hz to 60 Hz nominal, 47 Hz to 63 Hz range
  - Power consumption (differs based on VAC input @100 or @200):
    - 364W for an empty chassis with no transceivers
    - 969W with all 128 ports operating at 64G (96 ports populated with 64G SWL transceivers, 16 ports populated SFP-DD SWL transceivers, each providing two ports of 64G connectivity).
- Heat dissipation (differs based on VAC input @100 or @200): 128 ports at 3195 Btu/hr
- Acoustical noise emission:
  - Normal: 70.1 dB(A) with intake airflow
  - Normal: 65.8 dB(A) with exhaust airflow

Warranty and support

The DB730S FC SAN Switch, machine type 7D9J, has a three-year warranty.

The standard warranty terms are customer-replaceable unit (CRU) and onsite (for field-replaceable units FRUs only) 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 your data center, with an experience consistently ranked number one in customer satisfaction worldwide. Available offerings include:

- **Premier Support**

  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:

  - Direct technician-to-technician access through a dedicated phone line
  - 24x7x365 remote support
  - Single point of contact service
  - End to end case management
  - Third-party collaborative software support
  - Online case tools and live chat support
  - On-demand remote system analysis

- **Warranty Upgrade (Preconfigured Support)**

  Services 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
  - **Essential Service:** 24x7 service coverage with 4-hour onsite response or 24-hour committed repair (available only in select markets)
  - **Advanced Service:** 24x7 service coverage with 2-hour onsite response or 6-hour committed repair (available only in select markets)

- **Managed Services**

  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.

- **Technical Account Management (TAM)**

  A Lenovo Technical Account Manager helps you optimize the operation of your data center based on a deep understanding of your business. You gain direct access to your Lenovo TAM, who serves as your single point of contact to expedite service requests, provide status updates, and furnish reports to track incidents over time. In addition, your TAM will help proactively make service recommendations and manage your service relationship with Lenovo to make certain your needs are met.

- **Enterprise Server Software Support**

  Enterprise Software Support is an additional support service providing customers with software support on Microsoft, Red Hat, SUSE, and VMware applications and systems. Around the clock availability for critical problems plus unlimited calls and incidents helps customers address challenges fast, without incremental costs. Support staff can answer troubleshooting and diagnostic questions, address product comparability and interoperability issues, isolate causes of problems, report defects to software vendors, and more.

- **Health Check**

  Having a trusted partner who can perform regular and detailed health checks is central to maintaining efficiency and ensuring that your 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.

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 Service offerings are region-specific. Not all preconfigured support and upgrade options are available in every region. For information about Lenovo service upgrade offerings that are available in your region, refer to the following resources:

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

For service definitions, region-specific details, and service limitations, please 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 Services is a dedicated partner to your success. Our goal is to reduce your capital outlays, mitigate your IT risks, and accelerate your time to productivity.

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

Here's a more in-depth look at what we can do for you:

- **Asset Recovery Services**

  Asset Recovery Services (ARS) helps customers recover the maximum value from their end-of-life equipment in a cost-effective and secure way. On top of simplifying the transition from old to new equipment, ARS mitigates environmental and data security risks associated with data center equipment disposal. Lenovo ARS is a cash-back solution for equipment based on its remaining market value, yielding maximum value from aging assets and lowering total cost of ownership for your customers. For more information, see the ARS page, https://lenovopress.com/lp1266-reduce-e-waste-and-grow-your-bottom-line-with-lenovo-ars.

- **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.

- **Basic Hardware Installation**

  Lenovo experts can seamlessly manage the physical installation of your server, storage, or networking hardware. Working at a time convenient for you (business hours or off shift), the technician will unpack and inspect the systems on your site, install options, mount in a rack cabinet, connect to power and network, check and update firmware to the latest levels, verify operation, and dispose of the packaging, allowing your team to focus on other priorities.

- **Deployment Services**

  When investing in new IT infrastructures, you need to ensure your business will see quick time to value with little to no disruption. Lenovo deployments are designed by development and engineering teams who know our Products & Solutions better than anyone else, and our technicians own the process from delivery to completion. Lenovo will conduct remote preparation and planning, configure & integrate systems, validate systems, verify and update appliance firmware, train on administrative tasks, and provide post-deployment documentation. Customer's IT teams leverage our skills to enable IT staff to transform with higher level roles and tasks.

- **Integration, Migration, and Expansion Services**

  Move existing physical & virtual workloads easily, or determine technical requirements to support increased workloads while maximizing performance. Includes tuning, validation, and documenting ongoing run processes. Leverage migration assessment planning documents to perform necessary migrations.

Regulatory compliance

The DB730S FC SAN Switch conforms to the following regulations which can be found in the Hardware Installation Guide, available from the following web page:

https://www.broadcom.com/products/fibre-channel-networking/switches/g730-switch

Interoperability

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.

External storage systems

Lenovo offers the ThinkSystem DE Series and ThinkSystem DM Series external storage systems for high-performance storage. See the DE Series and DM Series product guides for specific controller models, expansion enclosures and configuration options:

- ThinkSystem DE Series Storage
  https://lenovopress.com/storage/thinksystem/de-series#rt=product-guide
- ThinkSystem DM Series Storage
  https://lenovopress.com/storage/thinksystem/dm-series#rt=product-guide
- ThinkSystem DG Series Storage
  https://lenovopress.com/storage/thinksystem/dg-series#rt=product-guide

External backup units

The following table lists the external backup options that are offered by Lenovo that can be used in Lenovo FC SAN solutions.

Note: Information provided in this section is for ordering reference purposes only. End-to-end LTO Ultrium configuration support for a particular tape backup unit *must* be verified through the System Storage Interoperation Center (SSIC):
http://www.ibm.com/systems/support/storage/ssic

Table 9. External Fibre Channel backup options

Part number	Description
External tape backup libraries	
6741A1F	IBM TS4300 3U Tape Library-Base Unit
Fibre Channel backup drives for TS4300 Tape Library - Full Height	
01KP938	LTO 7 FH Fibre Channel Drive
01KP954	LTO 8 FH Fibre Channel Drive
02JH837	LTO 9 FH Fibre Channel Drive
Fibre Channel backup drives for TS4300 Tape Library - Full Height	
01KP936	LTO 7 HH Fibre Channel Drive
01KP952	LTO 8 HH Fibre Channel Drive
02JH835	LTO 9 HH Fibre Channel Drive

For more information, see the list of Product Guides in the Tape Autoloaders and Libraries category:
https://lenovopress.com/storage/tape/library

Rack cabinets

The following table lists the supported rack cabinets.

Table 10. Rack cabinets

Part number	Description
93072RX	25U Standard Rack (1000mm)
93072PX	25U Static S2 Standard Rack (1000mm)
7D6DA007WW	ThinkSystem 42U Onyx Primary Heavy Duty Rack Cabinet (1200mm)
7D6DA008WW	ThinkSystem 42U Pearl Primary Heavy Duty Rack Cabinet (1200mm)
1410-O42	Lenovo EveryScale 42U Onyx Heavy Duty Rack Cabinet
1410-P42	Lenovo EveryScale 42U Pearl Heavy Duty Rack Cabinet
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)
7D6EA009WW	ThinkSystem 48U Onyx Primary Heavy Duty Rack Cabinet (1200mm)
7D6EA00AWW	ThinkSystem 48U Pearl Primary Heavy Duty Rack Cabinet (1200mm)
1410-O48	Lenovo EveryScale 48U Onyx Heavy Duty Rack Cabinet
1410-P48	Lenovo EveryScale 48U Pearl Heavy Duty Rack Cabinet

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 11. Power distribution units

Part number	Feature code	Description	ANZ	ASEAN	Brazil	EET	MEA	RUCIS	WE	HTK	INDIA	JAPAN	LA	NA	PRC
0U Basic PDUs															
00YJ776	ATZY	0U 36 C13/6 C19 24A 1 Phase PDU	N	Y	Y	N	N	N	N	N	N	Y	Y	Y	N
0U Switched and Monitored PDUs															
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
1U Switched and Monitored PDUs															
4PU7A81117	BNDV	1U 18 C19/C13 switched and monitored 48A 3P WYE PDU - ETL	N	N	N	N	N	N	N	N	N	N	N	Y	N

Part number	Feature code	Description	ANZ	ASEAN	Brazil	EET	MEA	RUCIS	WE	HTK	INDIA	JAPAN	LA	NA	PRC
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
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
4PU7A77468	BLC5	1U 12 C19/C13 switched and monitored 32A 3P WYE PDU	Y	Y	Y	Y	Y	Y	Y	Y	Y	N	Y	Y	Y
4PU7A81118	BNDW	1U 18 C19/C13 switched and monitored 48A 3P WYE PDU - CE	Y	Y	Y	Y	Y	Y	Y	Y	Y	N	Y	N	Y
1U Ultra Density Enterprise PDUs (9x IEC 320 C13 + 3x IEC 320 C19 outlets)															
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
1U C13 Enterprise PDUs (12x IEC 320 C13 outlets)															
39Y8941	6010	DPI C13 Enterprise PDU Module (WW)	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
1U Front-end PDUs (3x IEC 320 C19 outlets)															
39Y8938	6002	DPI Single-phase 30A/120V Front-end PDU (US)	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
39Y8939	6003	DPI Single-phase 30A/208V Front-end PDU (US)	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
39Y8934	6005	DPI Single-phase 32A/230V Front-end PDU (International)	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
39Y8940	6004	DPI Single-phase 60A/208V Front-end PDU (US)	Y	N	Y	Y	Y	Y	Y	N	N	Y	Y	Y	N
39Y8935	6006	DPI Single-phase 63A/230V Front-end PDU (International)	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 NEMA PDU	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 Female to AS/NZ 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 12. Uninterruptible power supply units

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

† 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

Seller training courses

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

1. **The Inherent Security of Fibre Channel SAN**
   2024-03-08 | 20 minutes | Employees and Partners

   In this course, you will learn the security benefits of dedicated FC Storage Area Networks.
   Course objectives:
   1. Be able to articulate some of the high level benefits of Fibre Channel SAN
   2. Understand the difference between Fibre Channel vs. IP Networks
   3. Learn about some of the security benefits in the Lenovo DB series hardware and software SAN offerings

   Published: 2024-03-08
   Length: 20 minutes
   Employee link: Grow@Lenovo
   Partner link: Lenovo Partner Learning
   Course code: DDBS209
2. **Simplify Selling Fibre Channel Storage Solutions**
   2024-01-31 | 10 minutes | Employees and Partners

   In this session we look at the benefits of Fibre Channel and the benefits to you and your customers of bundling FC networking with your storage arrays.
   Plus, we will take a closer look at some of the changes Lenovo has made to the Data Center Solutions Configurator to help you and the clients build bundled FC solutions.

   Published: 2024-01-31
   Length: 10 minutes
   Employee link: Grow@Lenovo
   Partner link: Lenovo Partner Learning
   Course code: DNFP101
3. **Family Portfolio: Storage Networking**
   2023-10-27 | 15 minutes | Employees and Partners

   This course will provide you an overview of the Storage Networking family. After completing this course, you should be able to identify the products in the Storage Networking portfolio and their features, describe product family benefits, and recognize when a specific product should be used.

   Published: 2023-10-27
   Length: 15 minutes
   Employee link: Grow@Lenovo
   Partner link: Lenovo Partner Learning
   Course code: SXXW1113r7
4. **Lenovo Data Center Product Portfolio**
   2023-07-21 | 15 minutes | Employees and Partners

   This course introduces the Lenovo data center portfolio, and covers servers, storage, storage networking, and software-defined infrastructure products. After completing this course about Lenovo data center products, you will be able to identify product types within each data center family, describe Lenovo innovations that this product family or category uses, and recognize when a specific product should be selected.

   Published: 2023-07-21
   Length: 15 minutes
   Employee link: Grow@Lenovo
   Partner link: Lenovo Partner Learning
   Course code: SXXW1110r6

5. **The DB730S Gen 7 Enterprise Switch**
   2022-06-24 | 20 minutes | Employees and Partners

   This course introduces you the DB730S Gen 7 Enterprise Switch. The objectives of this course are to ensure that sellers like you have a good understanding of how and where to position the DB730S, can communicate its benefits to your clients, are able to successfully build a configuration to meet your client's requirements, and can position the benefits of Lenovo Gen 7 SAN offerings in your clients' environments.

   Published: 2022-06-24
   Length: 20 minutes
   Employee link: Grow@Lenovo
   Partner link: Lenovo Partner Learning
   Course code: DDBS211

6. **Why Gen 7 with 64G Fibre Channel**
   2022-03-17 | 20 minutes | Employees and Partners

   In this course we will be discussing what is happening in the data center and the pressures surrounding the network. We will look at why the network will need to evolve to keep pace with the next wave of innovation; which creates an imbalance in performance. We will review how Gen 7 Fibre Channel enables an autonomous SAN that will harness the full value of next-gen data centers. Last, we will review the Gen 7 hardware. Let's start with the what businesses require from their infrastructures.
   Course objectives:
   1. Understand the benefits of clients investing in 64G Gen 7 switches today
   2. Help customers have a clear understanding if 64G Gen 7 is a better fit than a Gen 6 switch for their requirements
   3. Articulate to your clients that Gen 7 is more that just 64G speeds
   4. Explain how Lenovo is well positioned for clients looking for the best investment protection of their infrastructure with multiple Gen 7 Fibre Channel offerings

   Published: 2022-03-17
   Length: 20 minutes
   Employee link: Grow@Lenovo
   Partner link: Lenovo Partner Learning
   Course code: DDBS210

7. **Selling Storage Networks**
   2020-05-07 | 32 minutes | Employees and Partners

   In this course we will start off discussing why selling Fibre Channel SANs matter. In other words, what's in it for you and your customers. Then, we will cover SAN essentials including what a SAN is, why SAN is important from a customer value proposition, where SAN best fits versus other alternatives, when to propose directors versus switches and when to propose extension products.

   Published: 2020-05-07
   Length: 32 minutes
   Employee link: Grow@Lenovo
   Partner link: Lenovo Partner Learning
   Course code: DDBS202

8. **Storage Network Matters for NVMe**
   2020-05-07 | 17 minutes | Employees and Partners

   In this course we will start off discussing the trends driving Flash and NVMe arrays, then we will cover the key reasons why the SAN is critical for these environments. From a high level view, we will look at how Gen 6 Fibre Channel enhances and optimizes Flash and NVMe storage solutions.

   Published: 2020-05-07
   Length: 17 minutes
   Employee link: Grow@Lenovo
   Partner link: Lenovo Partner Learning
   Course code: DDBS203

Related publications and links

For more information, see the following resources:

- Datasheet of the DB730S:
  https://lenovopress.com/datasheet/DS0141
- Analyst report "64 Gb Fibre Channel Performance with Lenovo ThinkSystem Emulex LPe36002 Gen 7 FC HBA"
  https://www.lenovo.com/us/en/resources/data-center-solutions/analyst-reports/64-gb-fibre-channel-performance-with-lenovo-thinksystem-emulex-lpe36002-gen-7-test-report/
- Lenovo ThinkSystem DB730S FC SAN Switch product publications - see the Brocade G730 documentation:
  https://www.broadcom.com/products/fibre-channel-networking/switches/g730-switch

  Tip: Some of the Fabric OS documents can be accessed via the support portal by validating your serial number for software entitlement

  - *Hardware Installation Guide*
  - *Fabric OS Access Gateway Administration Guide*
  - *Fabric OS Administration Guide*
  - *Fabric OS Extension Configuration Guide*
  - *Fabric OS Troubleshooting and Diagnostics Guide*
  - *Fabric OS Command Reference*
  - *Fabric OS Message Reference*
  - *Fabric OS MIB Reference*
  - *Web Tools Administration Guide*
  - *Flow Vision Configuration Guide*
  - *Monitoring and Alerting Policy Suite Configuration Guide*
- Brocade 64G SWL SFP-DD Product Brief:
  https://docs.broadcom.com/docs/SFP-DD-64G-SWL-PB
- EZSwitchSetup User Guide:
  https://docs.broadcom.com/doc/FOS-90x-EZSwitch-UG
- Lenovo Data Center Support for the ThinkSystem DB730S FC SAN Switch:
  https://datacentersupport.lenovo.com/us/en/products/storage/fibre-channel-switches/db730s-fc-switch/7d9j

Related product families

Product families related to this document are the following:

- DB Series SAN Switches
- Rack SAN Switches

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 2024. All rights reserved.

This document, LP1563, was created or updated on October 11, 2022.

Send us your comments in one of the following ways:

- Use the online Contact us review form found at:
  https://lenovopress.lenovo.com/LP1563
- Send your comments in an e-mail to:
  comments@lenovopress.com

This document is available online at https://lenovopress.lenovo.com/LP1563.

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®
Lenovo Services
ThinkSystem®

The following terms are trademarks of other companies:

Microsoft® and Excel® 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.