Lenovo ThinkSystem DB400D/DB800D FC Directors

Network innovation for the virtualized, all-flash data center

Purpose-Built for Enterprise Deployments

Designed to meet relentless growth and mission-critical application demands, Lenovo ThinkSystem Fibre Channel (FC) Directors are the right platform for large enterprise environments that require increased capacity, greater throughput and higher levels of resiliency. The Lenovo ThinkSystem FC Director is available in two modular form factors: 14U Lenovo ThinkSystem DB800D with eight vertical blade slots for large enterprise networks and the 8U Lenovo ThinkSystem DB400D with four horizontal blade slots for midsize networks. This modular chassis design increases business agility with seamless storage connectivity and flexible deployment offerings. Each blade slot can be populated with a choice of optional blades. For device connectivity, the Generation 6 FC 32-48-port blade provides 48 32Gbps FC ports. To support disaster recovery and data-protection storage solutions over long distances, the SX6 FC-IP SAN Extension Blade

Maximize Performance

ThinkSystem FC Directors feature industry-leading Generation 6 FC that increases performance for demanding workloads across 32Gbps line-speed links and up to 16.2Tbps of chassis bandwidth to address next-generation I/O- and bandwidth-intensive applications. Generation 6 FC technology provides up to 566 million frames switched per second per ASIC, unlocking the full capability of flash storage. This breakthrough performance speeds up data-intensive application response times, allows more transactions in less time, and enables improved service level agreements (SLAs).

Simplified, Scale-out Network Design

UltraScale chassis connectivity leverages optical Inter-Chassis Links (ICLs), which provide 128Gbps bandwidth through a QSFP link. These links can provide support up to 2km and connect up to 12 Directors, enabling flatter, faster and simpler fabrics that increase consolidation while reducing network complexity and costs. These high-density chassis topologies reduce inter-switch cabling by 75 percent and free up to 25 percent of ports for servers and storage. This maximizes overall port density within the smallest amount of rack space while freeing up front-facing device ports for server and storage connectivity.

Adapting to Next-Generation Storage

To realize the full benefits of flash, organizations will need to transition their high-performance, latency-sensitive workloads to flash-based storage with NVMe. The simplicity and efficiency of NVMe over FC enable significant performance gains for flash storage. For investment protection, Lenovo FC Directors offer three generations of backward-compatibility support for connectivity to 4, 8 and 16Gbps FC products. And, the Directors support future FC generations as a Generation 7-ready storage networking platform. The ThinkSystem FC Director also allows for current Generation 6 and future generation switch blade modules to be added within the chassis.

DB400D/DB800D Specifications

Base Models	DB400D (6684-HC1/B2A) and DB800D (6682-HC1/B1A) include: 2 core routing blades, 2 control processor modules and enterprise software bundle (Fabric Vision, Trunking, Extended Fabrics and CUP)
Chassis	The DB400D has 4 open blade slots, while the DB800D has 8 open blade slots.
Fibre Channel Blades	FC32-48-port blade provides 48 ports of 32Gbps Generation 6 FC <900 ns (including FEC); any-port-to any-port local switching and 2.7 µs blade to blade at 32Gbps, cut-through routing • Part # 01KN845 includes 48-port license, no optics • Part # 01KN848 includes 48-port license and 48 x 32Gbps SWL SFPs
Extension blades	SX6 external blade provides FC extension (16×32Gbps FC ports) and IP extension over IP networks (16×1/10GbE and 2×40GbE ports). <900ns (including FEC) and 2.7 µs, cut-through routing • Part # 01KN850 includes 16 x 32Gb SWL FC SFPs standard and no 1/10/40GbE SFPs • Part # 01KN854 includes 16 x 32Gb LWL FC SFPs standard and no 1/10/40GbE SFPs
Performance	4/8/10/16/32Gbps line speed, full duplex. Autosensing of 4/8/16/32Gbps port speeds depending on SFPs used, support for speed matching. 10Gbps port speeds with dedicated SFPs.
Multi-chassis with UltraScale ICL ports	Up to 4,608 nonblocking 32Gbps FC ports; UltraScale ICL ports (32 for 8-slot or 16 per 4-slot chassis, optical QSFP). Up to 9 chassis in a full-mesh topology or 12 chassis in a core-edge topology
Chassis bandwidth	DB800D: 12.2Tbps per chassis data rate + 4.096Tbps UltraScale ICL bandwidth (32×128Gbps) DB400D: 6.1Tbps per chassis data rate + 2.048Tbps UltraScale ICL bandwidth (16×128Gbps)
Chassis power	DB800D: Minimum: requires 3 PSUs for 2+1 redundancy. Maximum 4 PSUs for 2+2 redundancy. DB400D: Minimum: requires 2 PSUs for 1+1 redundancy.
Cooling	DB800D: Requires 3 fan tray assemblies; DB400D: Requires 2 fan tray assemblies. A fan assembly can be hot-swapped and should be replaced immediately in the event of a failure.
Airflow	Non-port-side intake to port-side exhaust
Solution availability	Designed to provide 99.999% uptime capabilities; hot-pluggable redundant power supplies, fans, WWN cards, processors, core switching, port blades, and optics; online diagnostics; nondisruptive firmware download and activation
Dimensions/Weight	DB400D: Height: 34.45cm (13.56 in.); Width: 43.74cm (17.23 in.); Depth: 61.05cm (24.04 in.)/Weight: 68.95kg (152 lbs) fully loaded; DB800D: Height: 61.23cm (24.11 in.); Width: 43.74cm (17.23 in.); Depth: 61.05cm (24.04 in.)/Weight: 145.83kg (321.5 lbs) fully loaded
Warranty	1-year hardware and 3-year firmware/Fibre Operating System (upgrades available)
For more indepth technical details, refer to the Lenovo ThinkSystem FC Director Product Guide	

Why Lenovo

Lenovo is the leading provider of x86 systems for the data center. The portfolio includes rack, tower, blade, dense and converged systems, and supports enterprise class performance, reliability and security. Lenovo also offers a full range of networking, storage, software and solutions, and comprehensive services supporting business needs throughout the IT lifecycle.

For More Information

To learn more about the Lenovo ThinkSystem DB400D and DB800D Fibre Channel Directors, contact your Lenovo representative or Business Partner or visit: lenovo.com/systems/servers/ then select Storage, Storage Area Network and then Fibre Channel Switches.