

ThinkSystem DB400D and 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 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 FC Director is available in two modular form factors: 14U Lenovo DB800D with eight vertical blade slots for large enterprise networks and the 8U Lenovo 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, there are two Generation 6 offerings; the FC32-48-port blade provides 48 32Gbps FC ports, while the FC32-64-port blade provides 16 QSFP+ ports that can support up to 64 32Gbps FC or 10/24/40/100Gb FCoE connections.

To support disaster recovery and data-protection storage solutions over long distances, the SX6 FC-IP SAN Extension Blade provides 16 32Gbps FC ports, 16 1/10 Gigabit Ethernet (GbE) ports, and two 40GbE ports for FC and IP replication traffic.

Maximize Performance

Lenovo FC Directors feature industry-leading Generation 6 FC that increases performance for demanding workloads across 32Gbps line-speed links and up to 20.4Tbps 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% and free up to 25% 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.

Lenovo™

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 Lenovo FC Director also allows for current Generation 6 and future generation switch blade modules to be added within the chassis.

Specifications

Base Models	DB400D and DB800D 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	<p>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</p> <ul style="list-style-type: none"> • One option includes 48-port license, no optics • Another option includes 48-port license and 48 x 32Gbps SWL SFPs <p>FC32-64-port blade provides 16 QSFP+ ports of up to 128Gbps Generation 6 FC</p> <ul style="list-style-type: none"> • Includes 16-port license and 8x 128Gb (4.32Gbps) SWL Transceivers
Extension Blades	<p>SX6 external blade provides FC extension (16x32Gbps FC ports) and IP extension over IP networks (16x1/10GbE and 2x40GbE ports). <900ns (including FEC) and 2.7 μs, cut-through routing</p> <ul style="list-style-type: none"> • Includes 16x 32Gb SWL FC SFPs standard and no 1/10/40GbE SFPs • Includes 16x 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. FCoE: 10GbE, 25GbE, or 40GbE FCoE speeds with FC32-64 port blade
Multi-chassis with UltraScale ICL Ports	Up to 6,144 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	<p>DB800D: 16.3Tbps port bandwidth data rate + 4.096Tbps UltraScale ICL bandwidth (32x128Gbps)</p> <p>DB400D: 8.1Tbps port bandwidth data rate + 2.048Tbps UltraScale ICL bandwidth (16x128Gbps)</p>
Chassis Power	<p>DB800D: Minimum: requires 3 PSUs for 2+1 redundancy Recommend maximum 4 PSUs for 2+2 redundancy</p> <p>DB400D: Minimum: requires 2 PSUs for 1+1 redundancy</p>
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
Enclosure	DB800D: 14U rack-mountable chassis; DB400D: 8U rack-mountable chassis

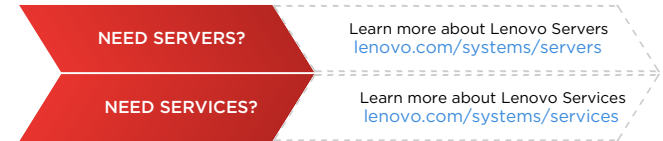
For more details, refer to the [Lenovo FC Director Product Guide](#)

About Lenovo

Lenovo (HKSE: 992) (ADR: LNVGY) is a US\$45 billion Fortune 500 company and a global technology leader in driving Intelligent Transformation. Lenovo's data center solutions (ThinkSystem, ThinkAgile) are creating the capacity and computing power that are changing business and society.

For More Information

To learn more about the Lenovo 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.



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