# CONNECTRIX B-SERIES DS-7730B & DS-7720B

64Gb/s Fibre Channel Data Center Switches

## Overview

The Connectrix B-Series 64Gb/s DS-7700B family of Fibre Channel SAN switches support data growth, demanding workloads and data-center consolidation. The Connectrix DS-7730B and DS-7720B platforms are built for maximum flexibility, scalability and ease of use.

DS-7730B The Connectrix DS-7730B 64G switch is a high-density building block that enables dense rackmount environments to connect more devices and build larger fabrics. With 128 64G ports in a 2U design, organizations can create high-scale fabrics in less space. The DS-7730B utilizes 96 64G SFP+ ports and 16 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 DS-7730B to connect more servers, storage, and switches in a small footprint. Built to support maximum flexibility and dense Fibre Channel fabrics, the DS-7730B offers cost-effective, pay-as-you-grow scalability, expanding from 48 ports to 128 ports with Ports on Demand (PoD). The DS-7730B base configuration comes with 48 ports enabled. To scale from 48 ports to 128 ports, additional 24-port SFP+ PODs and a 32-port SFP-DD POD can be installed in any order and combination. In addition, with a 50% latency reduction compared to the previous generation and no oversubscription, the DS-7730B enables maximum performance of NVMe storage and high-transaction workloads.  The DS-7730B includes optional features such as Fabric Vision, Extended Fabric, ISL Trunking and Integrated Routing at no additional charge.

DS-7720B The Connectrix DS-7720B Switch is a 64-port, ultra-dense 1U switch designed to build high-performance fabrics that maximize flash and NVMe storage to meet demanding workloads. Delivering unmatched 64G performance and 50% lower latency compared to the previous generation, this switch delivers a fixed-port building block designed to maximize the performance of flash and NVMe environments to meet demanding workloads. This enterprise-class switch offers pay-as-you-grow scalability with Ports on Demand (PoD). Organizations can quickly, easily, and cost-effectively scale from 24 to 64 ports. The DS-7720B provides up to 56 64G SFP+ ports and 8 2x64G double-density SFP-DD ports, all in an efficient 1U package. Each SFP-DD transceiver provides 2 ports, making 16 ports available for device or ISL connectivity. The Connectrix DS-7720B base configuration comes with 24 ports enabled and can scale to 56 ports with SFP+ transceivers only or 64 ports by installing SFP+ and SFP-DD POD licenses in any order and any combination. Each SFP-DD port can accommodate SFP+ or SFP-DD transceivers, providing the flexibility to use either type of transceiver in those ports when needed. The DS-7720B switch is fully licensed, meaning software features such as Fabric Vision, Extended Fabric, ISL Trunking, Integrated Routing and FICON CUP are included at no additional charge.  The DS-7720B is certified for mainframe environments.

The DS-7700B family of switches simplifies deployment, configuration and management of SAN resources with a collection of easy-to-use tools. With EZSwitchSetup, organizations can reduce the number of steps to deploy and configure a switch. In addition, the simplified user interface of Web Tools makes the SAN easier to manage. To further simplify operations and increase visibility, the switches include 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). 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 Connectrix B-Series 64G switches utilize built-in analytics to optimize performance and eliminate disruptions. In addition, these switches collect comprehensive telemetry data across the fabric to enable advanced analytics. To visualize the data, SANnav Management Portal enables organizations to easily understand the health and performance of the SAN. Organizations can leverage SANnav Management Portal to streamline management workflows, thereby accelerating the deployment of new applications, switches, servers, and storage. Furthermore, SANnav's modernized graphical user interface (GUI) improves operational efficiencies with visual dashboards for instant visibility and faster troubleshooting. By leveraging automation, SAN admins gain the ability to automate repetitive tasks to save time and mitigate disruptions with limited expertise.

With self-optimizing capabilities, Connectrix B-Series technology utilizes actionable intelligence to maximize performance. Real-time monitoring of health and performance characteristics enables the network to make smarter decisions on traffic prioritization, congestion management and notification to ensure optimal network performance for applications and storage. The DS-7700B switches also deliver a traffic optimizer that guarantees critical application performance by automatically prioritizing traffic. This advanced capability classifies and separates traffic with similar characteristics.

The combination of SAN analytics and automation technologies unlocks the capabilities to deliver a self-learning, self-optimizing and self-healing SAN. Click here for video on Connectrix B-Series Autonomous SAN.

## DS-7700B

| System Architecture | Technical Specification |
|---|---|
| Fibre Channel ports | DS-7730B: Switch mode (default): Minimum of 48 ports and maximum of 128 ports. Ports are enabled in increments of 24 ports up to 128 ports via Ports on Demand (PoD) licenses; E_Ports, F_Ports, D_Ports, EX_Ports.<br><br>Switch mode (default): Minimum of 24 ports and maximum of 64 ports. Ports are enabled in increments of 8 ports up to 56 ports using SFP+ PODs, and up to 64 ports using and a combination of SFP+ and SFP-DD PODs; E_Ports, F_Ports, D_Ports, EX_Ports.  Access Gateway default port mapping: 56 F_Ports, 8 N_Ports<br><br>DS-7720B:  64 ports (48 64G SFP+ ports, plus 8 2x64G SFP-DD ports), each supporting E_Ports, F_Ports, M_Ports, D_Ports, and EX_Ports.<br><br>24-port base configuration; additional ports are enabled with three 8-port SFP+ PODs (Ports on Demand), plus a 16-port SFP-DD POD (8 2x64G SFP-DD transceivers), scaling the switch from 24 ports to 64 ports.<br><br>Access Gateway default port mapping: 48 F_Ports, 8 N_Ports. |
| Scalability | Full-fabric architecture with a maximum of 239 switches |
| Certified maximum | 4K active nodes; 56 switches, 19 hops in Fabric OS (FOS) fabrics |
| Performance | Fibre Channel: 8.5Gb/s line speed, full duplex; 10.53Gb/s line speed, full duplex; 14.025Gb/s line speed, full duplex; 28.05Gb/s line speed, full duplex; 57.8Gb/s line speed, full duplex; auto-sensing of 8, 10, 16, 32, and 64G port speeds. 10G optionally programmable to fixed-port speed. |
| ISL Trunking | 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 FOS |
| Aggregate bandwidth | DS-7730B:  8.192 Tb/s<br>DS-7720B:  4.096Tb/s |
| Maximum fabric latency | Latency for locally switched ports is 460 ns (including FEC) |
| Maximum frame size | 2112-byte payload |
| Frame buffers | 24K per switching ASIC |
| Classes of service | Class 2, Class 3, Class F (inter-switch frames) |
| Port types | DS-7730B:  D_Port (ClearLink® Diagnostic Port), E_Port, EX_Port, F_Port, M_Port; optional port-type control<br><br>DS-7720B:  D_Port (ClearLink® Diagnostic Port), E_Port, EX_Port, F_Port, M_Port; optional port-type control Access Gateway mode: F_Port and NPIV-enabled N_Port |
| Data traffic types | Fabric switches supporting unicast |
| Media types | DS-7730B:<br>64G FC SFP+ LC connector: SWL<br>32G FC SFP+ LC connector: SWL, LWL, ELWL 10G FC SFP+ LC connector: SWL, LWL 2x64G FC SFP-DD SN connector: SWL<br><br>DS-7720B<br>64Gb/s: hot-pluggable SFP+, LC connector; 64Gb/s SWL<br>32Gb/s: hot-pluggable SFP+, LC connector; 32Gb/s SWL, LWL 10 km, ELWL 25 km<br>10Gb/s: hot-pluggable SFP+, LC connector; 10Gb/s SWL, LWL 10 km<br>2x64G FC SFP-DD SN connectors: SWL<br><br>Note: Fibre Channel distance is subject to fiber-optic cable and port speed |
| USB | One standard USB port for firmware download, SupportSave, and configuration upload or download |
| Fabric services<br><br>Note: Some fabric services do not apply or are unavailable in Access Gateway mode | BB Credit Recovery; Advanced Zoning (Default Zoning, Port/WWN Zoning, Peer Zoning); Congestion Signaling; Dynamic Path Selection (DPS); Extended Fabrics; Fabric Performance Impact Notification (FPIN); Fabric Vision; FDMI; FICON CUP; 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 |
| SAN Extension | DS-7730B:  Integrated optional 10G Fibre Channel for DWDM MAN connectivity.  **Note**:  Fibre Channel in-flight compression and encryption are not supported on this switch; Supported distances are limited and dependent on FC speed. See Fabric OS Admin Guide for more details; Integrated optional 10G Fibre Channel for DWDM MAN connectivity is supported.<br><br>DS-7720B: Fibre Channel, in-flight compression (Brocade LZO) and encryption (AES-GCM-256 encryption on FC ISLs [E_Port]); Integrated optional 10G Fibre Channel for DWDM MAN connectivity |

Connectrix B-Series 64Gb/s Switch Specification Sheet

## DS-7700B

| Management | Technical Specification |
|---|---|
| Supported management software | 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 | DS-7730B:  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.<br><br>DS-7720B:  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 |
| Management access | DS-7730B: 10/100/1000Mb/s Ethernet (RJ-45) port, serial console port, and USB port<br>DS-7720B: 10/100/1000Mb/s Ethernet (RJ-45), port and serial console port (mini-USB) |
| Diagnostics | DS-7730B: 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.<br><br>DS-7720B:  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; 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 |

## DS-7700B

| Mechanical | Technical Specification |
|---|---|
| Enclosure | Front-to-rear airflow; non-port-side exhaust; power from back<br>Rear-to-front airflow; non-port-side intake; power from back |
| Size | DS-7730B<br>Width: 440.00 mm (17.32 in.)<br>Height: 86.70 mm (3.41 in.)<br>Depth: 609.60 mm (24.00 in.)<br><br>DS-7720B<br>Width: 440.00 mm (17.32 in.)<br>Height: 43.90 mm (1.73 in.)<br>Depth: 355.60 mm (14.00 in.) |
| System weight | DS-7730B:  18.92 kg (41.71 lbs) with two power supply FRUs and three fan FRUs, without transceivers<br>DS-7720B:  7.17 kg (15.8 lb) with two power supply FRUs, without transceivers |

## DS-7700B

| Environment | Technical Specification |
|---|---|
| Operating environment | Temperature: 0°C to 40°C (32°F to 104°F)<br>Humidity: 8% to 90% (non-condensing) |
| Non-operating environment | Temperature: –25°C to 70°C (–13°F to 158°F)<br>Humidity: 8% to 90% (non-condensing) |
| Operating altitude | Up to 3000 m (9842 ft) |
| Storage altitude | Up to 12 km (39,370 ft) |
| Shock | Operating: Up to 20G, 6 ms half-sine<br>Non-operating: Half-sine, 33G, 11 ms, 3/G axis |
| Vibration | DS-7730B:  Operating: 0.5 Grms sine, 0.4 Grms random, 5 Hz to 500 Hz Nonoperating: 2.0 Grms sine, 1.1 Grms random, 5 Hz to 500 Hz<br><br>DS-7720B:  Operating: 0.25 Grms sine, 0.40 Grms random, 5 Hz to 500 Hz<br>Non-operating: 5 Hz at 0.5 Grms; 10–500 Hz at 1.0 Grms (sine vibration); 3–500 Hz at 1.12 Grms (random vibration) |
| Heat dissipation | DS-7730B:  128 ports at 3195 Btu/hr<br>DS-7720B:  64 ports at 1192 Btu/hr |
| Carbon Footprint Reports | DS-7720B and DS-7730B (These documents are created and maintained by Broadcom.) |


## DS-7700B

| Power | Technical Specification |
|---|---|
| Power supply | DS-7730B:  Dual, hot-swappable, redundant power supplies with integral cooling fans and status LEDs. 80 Plus Gold.<br><br>DS-7720B:  Dual, hot-swappable redundant power supplies with integrated system cooling fans.  80 Plus Gold. |
| AC input | DS-7730B:  100 to 240 VAC nominal, 90 to 264 VAC range, maximum input current 12A @ 100V or 5A @ 240V<br><br>DS-7720B:  90V to 264V, 4.5A |
| AC input line frequency | 50 Hz to 60 Hz nominal, 47 Hz to 63 Hz range |
| AC power consumption | DS-7730B:  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).<br>364W for an empty chassis with no transceivers.<br><br>DS-7720B:  349W with all 64 ports operating at 64G (48 ports populated with 64G SWL transceivers and 8 ports populated with 2x64G SFP-DD SWL transceivers). 57W for an empty chassis with no transceivers. |

Dell Ordering SKUs

| DS-7720B SKUs: | DS-7730B SKUs: |
|---|---|
| 210-AZLV (FTR airflow), populated with twenty-four 64G SFPs, with rackmount kit | 210-BELU (FTR airflow), populated with forty-eight 64G SFPs, includes rack mount kit |
| 210-AZLW (RTF airflow), populated with twenty-four 64G SFPs, with rackmount kit | 210-BELT (RTF airflow), populated with forty-eight 64G SFPs, includes rack mount kit |
| 210-AZLT (FTR airflow), populated with twenty-four 32G SFPs, with rackmount kit | |
| 210-AZLU (RTF airflow), populated with twenty-four 32G SFPs, with rackmount kit | |

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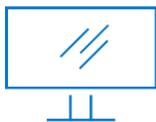
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