



# DELL EMC CONNECTRIX ED-DCX6 ENTERPRISE DIRECTORS

The Dell EMC Connectrix ED-DCX6 Director series supports up to 32 Gigabit per second (Gb/s) Fibre Channel performance to meet the demands of mission-critical storage environments. The ED-DCX6 directors provide the increased capacity, greater throughput, and higher levels of resiliency required by today's virtualized and all-flash data centers. The ED-DCX6 director models are NVMe-ready.

## Dell EMC Connectrix ED-DCX6 Directors deliver high performance, scalability, high availability, and a rich feature set to your storage area network

Connectrix ED-DCX6 Directors enhance operational stability, maximize performance, and increase business agility. The ED-DCX6 directors are delivered with the Enterprise software package which includes Fabric Vision, ISL Trunking, for port aggregation, Extended Fabric, for distance extension, and FICON Control Unit Port (CUP) for mainframe environments.

Fabric Vision provides monitoring, management, and diagnostic capabilities which enable administrators to avoid problems before they impact operations. It also provides diagnostic tools and Flow Vision, which enables administrators to monitor and analyze specific application flows. Other Fabric Vision capabilities include:

- **IO Insight:** Proactively monitors storage device IO performance
- **Flow Vision:** Enables administrators to identify, monitor, and analyze specific application flows in order to simplify troubleshooting, maximize performance, avoid congestion, and optimize resources
- **Monitoring and Alerting Policy Suite (MAPS):** Leverages pre-built, policy-based templates to simplify fabric-wide threshold configuration, monitoring, and alerting
- **Fabric Performance Impact (FPI) Monitoring:** Leverages predefined MAPS policies to automatically detect and alert administrators to different latency severity levels to identify slow drain devices that could impact network performance

## Connectrix Manager Converged Network Edition

Connectrix Manager Converged Network Edition (CMCNE), an optional add-on, simplifies management and helps organizations proactively diagnose and resolve issues to maximize uptime. The wizard-driven interface dramatically reduces deployment and configuration times by allowing fabrics, switches, and ports to be managed as groups. Customizable dashboards display performance graphs, health indicators, and all data captured by Fabric Vision.

## Connectrix ED-DCX6 Chassis Models

There are two Connectrix MDS ED-DCX6 models to address all of your storage networking requirements. To accommodate the requirements of today's data centers, the ED-DCX6 director models provide two airflow options for each chassis. Having two airflow options extends the flexibility for hot/cold aisle network designs. Non-port-side intake to port-side exhaust or port-side intake to non-port-side exhaust options are available.

- **ED-DCX6-8B:** The 14U chassis supports eight vertical switching blades that accommodate the 48-port Fibre Channel blade and an FCiP switching blade for distance extension. In addition, the director supports up to 32 128 Gb/s Inter-chassis Link (ICL) ports for high-speed connections to other DCX6 Directors.
- **ED-DCX6-4B:** The 8U chassis supports four horizontal switching blades that accommodate the 48-port Fibre Channel blade and the FCiP switching blade for distance extension. In addition, the director supports up to 16 additional 128 Gb/s Inter-chassis Link (ICL) ports for high-speed connections to other DCX6 Directors.

## System Architecture

Feature	ED-DCX6-8B	ED-DCX6-4B
Chassis	Includes redundant active/standby control processor modules, a non-blocking shared memory passive backplane, redundant active/active core switching blades, redundant WWN cards, and support for eight vertical switching blades. The chassis supports up to four power supplies and three fan tray assemblies. Each fan assembly contains two fans for a total of six fans. There are two airflow options available: non-port-side intake to port-side exhaust or port-side intake to non-port-side exhaust.	Includes redundant active/standby control processor modules, a non-blocking shared memory passive backplane, redundant active/active core switching blades, redundant WWN cards, and support for four horizontal switching blades. The chassis supports up to two power supplies and two fan tray assemblies. Each fan assembly contains two fans for a total of four fans. There are two airflow options available: non-port-side intake to port-side exhaust or port-side intake to non-port-side exhaust.
Fibre Channel ports	Choice of 48-port Fibre Channel switching blades and/or FCiP switching blades. FCiP blade has sixteen 32 Gb/s Fibre Channel ports and 16 1/10GigE and two 40GiE ports.	Choice of 48-port Fibre Channel switching blades and/or FCiP switching blades. FCiP blade has sixteen 32 Gb/s Fibre Channel ports and 16 1/10GigE and two 40GiE ports.
Performance	Autosensing 4/8/16/32 ports speeds (depending on SFPs used). 10 Gb/s port speeds with dedicated SFPs. Full duplex.	Autosensing 4/8/16/32 ports speeds (depending on SFPs used). 10 Gb/s port speeds with dedicated SFPs. Full duplex.
Switching capacity	Aggregate switching capacity of 13.5 billion frames per second for Class 2, 3, and F frames for a 384-port capacity chassis	Aggregate switching capacity of 6.75 billion frames per second for Class 2, 3, and F frames for a 192-port capacity chassis
Chassis bandwidth	16 Tb/s of aggregate bandwidth including four Tb/s of ICL bandwidth	8 Tb/s of aggregate bandwidth including two Tb/s of ICL bandwidth
Slot bandwidth	1,536 Gb/s (line rate)	1,536 Gb/s (line rate)
Aggregate ICL bandwidth	4 Tb/s of ICL bandwidth, 32x128 Gb/s	2 Tb/s of ICL bandwidth, 16x128 Gb/s
Fabric latency	Local switching: 900 ns Blade to blade: 2.7 $\mu$ s	Local switching: 900 ns Blade to blade: 2.7 $\mu$ s
Maximum frame size	2112-byte payload	2112-byte payload
Frame buffers	15,000 per switching ASIC	15,000 per switching ASIC
Classes of service	Class 2, Class 3, Class F (Inter-switch frames)	Class 2, Class 3, Class F (Inter-switch frames)
Security	DH_CHAP (between switches and end devices), FCAP switch authentication, FIPS 140-2 L2-compliant, HTTPS, IPsec, IP filtering, LDAP with IPv6, OpenLDAP, Port Binding, RADIUS, user-defined Role-Based Access Control (RBAC), Service Copy (SCP), Secure RPC, SFTP, SSH v2, SSL, Switch Binding, TACACS+, Trusted Switch.	DH_CHAP (between switches and end devices), FCAP switch authentication, FIPS 140-2 L2-compliant, HTTPS, IPsec, IP filtering, LDAP with IPv6, OpenLDAP, Port Binding, RADIUS, user-defined Role-Based Access Control (RBAC), Service Copy (SCP), Secure RPC, SFTP, SSH v2, SSL, Switch Binding, TACACS+, Trusted Switch.
Port types	48-port switching blade: F_PORT, E_PORT, EX_PORT, M_PORT SIM, D_PORT FCiP Extension blade: F_PORT, E_PORT, EX_PORT on FC ports and VE_PORT on GbE ports	48-port switching blade: F_PORT, E_PORT, EX_PORT, M_PORT SIM, D_PORT FCiP Extension blade: F_PORT, E_PORT, EX_PORT on FC ports and VE_PORT on GbE ports
Media types	48-port switching blade: Hot-pluggable Fibre Channel SFP28 at 32Gb/s shortwave length (SWL) and long wave length (LWL); at 16Gb/s SWL, LWL, Extra LWL; at 10Gb/s SWL/LWL SFP FCiP Extension blade: Hot-pluggable Fibre Channel SFP28 at 32Gb/s shortwave length (SWL) and long wave length (LWL); at 16Gb/s SWL, LWL, Extra LWL; at 10Gb/s SWL/LWL SFP. For Ethernet at 1GbE copper 1GbE 1000BASE-SX/LX/CWDM; at 10GigE SR/LR SFP+; QSFP at 40GbE SR4/LR4/ER4.	48-port switching blade: Hot-pluggable Fibre Channel SFP28 at 32Gb/s shortwave length (SWL) and long wave length (LWL); at 16Gb/s SWL, LWL, Extra LWL; at 10Gb/s SWL/LWL SFP FCiP Extension blade: Hot-pluggable Fibre Channel SFP28 at 32Gb/s shortwave length (SWL) and long wave length (LWL); at 16Gb/s SWL, LWL, Extra LWL; at 10Gb/s SWL/LWL SFP. For Ethernet at 1GbE copper 1GbE 1000BASE-SX/LX/CWDM; at 10GigE SR/LR SFP+; QSFP at 40GbE SR4/LR4/ER4.
USB	One USB per control processor for firmware downloads, support save, and configuration upload or download.	One USB per control processor for firmware downloads, support save, and configuration upload or download.

## System Architecture (cont.)

Feature	ED-DCX6-8B	ED-DCX6-4B
Fabric services	Adaptive Networking (Traffic Isolation, QoS) BB credit recovery; Advanced Zoning (default zoning, port/WWN zoning, peer zoning, target-driven zoning, broadcast zoning); Dynamic Path Selection (DPS); Extended Fabrics; FDMI; Flow Vision; Frame Redirection; FSPF; IPFC; ISL Trunking; Management Server; Monitoring and Alert Policy Suite (MAPS); N_Port Trunking; NPIV; NTP v3; Port Fencing; Registered State Change Notification (RSCN); Reliable Commit Service (RCS); Simple Name Server.	Adaptive Networking (Traffic Isolation, QoS) BB credit recovery; Advanced Zoning (default zoning, port/WWN zoning, peer zoning, target-driven zoning, broadcast zoning); Dynamic Path Selection (DPS); Extended Fabrics; FDMI; Flow Vision; Frame Redirection; FSPF; IPFC; ISL Trunking; Management Server; Monitoring and Alert Policy Suite (MAPS); N_Port Trunking; NPIV; NTP v3; Port Fencing; Registered State Change Notification (RSCN); Reliable Commit Service (RCS); Simple Name Server.
Optional license	The Integrated Routing license is an optional feature. This license allows you to enable Fibre Channel routing between connected switches.	The Integrated Routing license is an optional feature. This license allows you to enable Fibre Channel routing between connected switches.
Distance extension	Supports DWDM, CWDM, and FC-SONET devices; Fibre Channel in-flight compression (LZO) and encryption (AES-GCM-256); BB credit recovery; FCiP, IP Extension, Adaptive RateLimiting (ARL), data compression, Fast Write, read/write Tape Pipelining, QoS.	Supports DWDM, CWDM, and FC-SONET devices; Fibre Channel in-flight compression (LZO) and encryption (AES-GCM-256); BB credit recovery; FCiP, IP Extension, Adaptive RateLimiting (ARL), data compression, Fast Write, read/write Tape Pipelining, QoS.
Hot swappable components	Power supplies, fans, WWN cards, processors, core switching, port blades, and optics	Power supplies, fans, WWN cards, processors, core switching, port blades, and optics
Installation options	Customer-supplied EIA compliant 19" rack	Customer-supplied EIA compliant 19" rack

## Connectivity Management

Feature	ED-DCX6-8B	ED-DCX6-4B
Interface	Connectrix Manager Converged Network Edition version 14.x+, Web Tools, Command Line Interface (CLI)	Connectrix Manager Converged Network Edition version 14.x+, Web Tools, Command Line Interface (CLI)
Management access	10/100/1000 Ether (RJ-45) per control processor, in-band over Fibre Channel serial port (RJ-45) and one USB per control processor module; DCCP/DHCPv6; call home integration enabled through Connectrix Manager Converged Network Edition; also supports ESRS v3	10/100/1000 Ether (RJ-45) per control processor, in-band over Fibre Channel serial port (RJ-45) and one USB per control processor module; DCCP/DHCPv6; call home integration enabled through Connectrix Manager Converged Network Edition; also supports ESRS v3
Firmware upgrades	Non-disruptive firmware downloads and activation	Non-disruptive firmware downloads and activation
Compatibility	SMI-S compliant; RESTful API; trial license for add-on capabilities	SMI-S compliant; RESTful API; trial license for add-on capabilities
Diagnostics	IO Insight for IO Monitoring; ClearLink optics and cable diagnostics, including electrical/optical loopback, link traffic/latency/distance; built-in flow generator; POST and embedded online/offline diagnostics, including environmental monitoring, FC ping and Pathinfo (FC traceroute), flow monitoring, frame viewer, non-disruptive daemon restart, optics health monitoring, power monitoring, RAStace logging, and rolling reboot detection (RRD)	IO Insight for IO Monitoring; ClearLink optics and cable diagnostics, including electrical/optical loopback, link traffic/latency/distance; built-in flow generator; POST and embedded online/offline diagnostics, including environmental monitoring, FC ping and Pathinfo (FC traceroute), flow monitoring, frame viewer, non-disruptive daemon restart, optics health monitoring, power monitoring, RAStace logging, and rolling reboot detection (RRD)

## Physical Specifications

Enclosure	ED-DCX6-8B	ED-DCX6-4B
Height	61.23 cm (24.11 inches), 14U rack-mountable chassis	34.45 cm (13.56 inches), 8U rack-mountable chassis
Width	43.74 cm (17.23 inches)	43.74 cm (17.23 inches)
Depth	61.04 cm (24.04 inches)	61.04 cm (24.04 inches)
Weight	35.61 kg (78.5 pounds) for chassis only; 145.8 kg (321.5 pounds) for 384-port configuration, fully populated	24.5 kg (54 pounds) for chassis only; 68.95 kg (152 pounds) for 192-port configuration, fully populated

## Environment

Feature	ED-DCX6-8B	ED-DCX6-4B
Temperature	Operating: 0°C to 40°C (32°F to 104°F) Non-operating: -25°C to 70°C (-13°F to 158°F)	Operating: 0°C to 40°C (32°F to 104°F) Non-operating: -25°C to 70°C (-13°F to 158°F)
Humidity	Operating: 5% to 93% RH non-condensing at 40°C (104°F) with a maximum gradient of 10% per hour Non-operating: 10% to 93% RH non-condensing at 70°C (158°F)	Operating: 5% to 93% RH non-condensing at 40°C (104°F) with a maximum gradient of 10% per hour Non-operating: 10% to 93% RH non-condensing at 70°C (158°F)
Altitude	Up to 3000 meters (9,842 feet)	Up to 3000 meters (9,842 feet)
Shock	Operating: 10 g, 11ms, half sine wave Non-operating: 20g, 11ms, half sine wave	Operating: 10 g, 11ms, half sine wave Non-operating: 20g, 11ms, half sine wave
Vibration	Operating: 5 Hz to 10 Hz @ +5 db/Oct; 10 Hz to 200 Hz @ 0.0005 Grms; 200 Hz to 500 Hz @ -5 db/Oct, scale 0.05 Grms	Operating: 5 Hz to 10 Hz @ +5 db/Oct; 10 Hz to 200 Hz @ 0.0005 Grms; 200 Hz to 500 Hz @ -5 db/Oct, scale 0.05 Grms
Heat dissipation	384-port configuration: Typical: 8,836 BTU/hr; Max: 14,485 BTU/hr Power consumed: Typical: 2,589 W; Max: 4,244 W  Note: Input power is at 200 VAC with full PSU redundancy.	192-port configuration: Typical: 4,696 BTU/hr; Max: 8,139 BTU/hr Power consumed: Typical: 1,376 W; Max: 2,385 W  Note: Input power is at 200 VAC with full PSU redundancy.

## Power Requirements

Feature	ED-DCX6-8B	ED-DCX6-4B
Supported power range	Input Voltage: Standard AC Input, Range 180 VAC to 264 VAC Auto-volt, Nominal: 200 VAC to 240 VAC Power: 180 to 264 VAC 2,870 W Output per power supply. Four power supplies are supported in the ED-DCX6-8B.	Input Voltage: Standard AC Input, Range 180 VAC to 264 VAC Auto-volt, Nominal: 200 VAC to 240 VAC Power: 180 to 264 VAC 2,870 W Output per power supply. There are two power supplies in the ED-DCX6-4B model.
In-rush current	35 AMPS maximum peak	35 AMPS maximum peak
Frequency	50 Hz to 60 Hz (Nominal 50 Hz to 60 Hz)	50 Hz to 60 Hz (Nominal 50 Hz to 60 Hz)

## Regulatory Requirements

Both ED-DCX6-8B and ED-DCX6-4B support the following or newer government/agency ratings and certifications

Country	Safety	EMI/EMC
United States	Bi-Nat UL/CSA 60950-1	FCC Part 15, Subpart B
Canada	Bi-Nat UL/CSA 60950-1	ICES-3 (A) / NMB-3(A)
Japan		CISPR22 and JEIDA (Harmonics)
European Union	EN60950-1 or latest	EN55022 and EN55024
Australia/New Zealand	EN 60950-1 or IEC 60950-1	EN55022 or CISPR22 or AS/NZS CISPR22
Russian Federation	IEC60950-1 or latest	KN22 and KN24
Korea		
China	Not required on blade system	Not required on blade system
Taiwan	IEC60950-1 or latest	EN55022 Class A

## Agency Certifications and Markings

(for both ED-DCX6-8B and ED-DCX6-4B)

United States	cCSAus	FCC Class A and Statement
Canada	cCSAus	ICES-3/ NMB-3
Japan		VCCI-A
European Union	TUV-GS, CE	CE marking
Australia/New Zealand		RCM
Argentina	"S" mark	
Russia	EAC Mark	EAC Mark
Korea		KCC Mark Class A
China (PS only)	Not required on blade system	Not required on blade system
Taiwan (PS only)	BSMI mark	BSMI mark
Ukraine	UKSEPRO	UKSEPRO
Serbia	Kvalitet	Kvalitet
Mexico	NYCE NOM	
Vietnam		ICTQC



[Learn more](#) about Dell EMC Connectrix solutions



[Contact](#) a Dell EMC Expert



[View more](#) resources



Join the conversation with #GetModern