BROCADE

Brocade DCX Backbone Technical Specifications

Contents

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This document highlights the features and specifications for the Brocade DCX Backbone.

System specifications

System component	Description
Enclosure	14U, rack-mountable chassis in a standard 19-inch EIA cabinet
Power inlet	C20
Power supplies	Two 2000 W AC power supply modules (100-240 VAC auto-sensing), 2N redundancy
Fans	Three blower assembly modules (two required for operation)
Cooling	Rear panel-to-door airflow
System architecture	8 Gbps Fibre Channel modular network switching platforms
System processors	FreeScale 8548, 1.2 GHz

Fibre Channel

System component	Description
Fibre Channel ports	Up to 512 ports, universal (E_Port, F_Port, FL_Port, Ex_Port, and M_Port)
ANSI Fibre Channel protocol	FC-PH (Fibre Channel Physical and Signalling Interface standard)
Modes of operation	Fibre Channel Class 2, Class 3, and Class F
Fabric initialization	Complies with FC-SW 5.0
FCIP (IP over Fibre Channel)	Complies with FC-IP 2.3 of the FCA profile

LEDs

System component	Description
Status	Indicates the blade activity and status.
Power	Indicates whether the device is powered on correctly.
Port	Indicates the port speed and activity.
Link	Indicates whether the inter-chassis link (ICL) cable is correctly installed.
ATTN	Indicates whether the blade requires attention.

Other

System component	Description
Serial cable	RS-232 serial cable
RJ-45 to DB9 adapter	RS-232 cable has an adapter at one end that can be removed to provide an RJ-45 style connector
RJ-45 connector	Serial port 10/100/1000 Ethernet (RJ-45) per control processor

Weight and physical dimensions

Fully loaded: Brocade DCX Backbone 512-port configuration with eight FC8-64 port blades.

Model	Height	Width	Depth	Weight (empty)	Weight (fully loaded)
Brocade DCX	61.24 cm 24.11 in	43.74 cm 17.22 in	Without door: 61.19 cm, 24.09 in With door: 73.20 cm, 28.82 in	39.55 kg 87.20 lb	159.20 kg 351 lb

Environmental requirements

Condition	Operational	Non-operational
Ambient temperature	0°C to 40°C (32°F to 104°F)	–25°C to 70°C (–13°F to 158°F)
Relative humidity (non-condensing)	20% to 85% at 40°C (104°F)	10% to 93% at 70°C (158°F)
Altitude (above sea level)	0-3000 meters (10,000 feet)	0 to 12,000 meters (40,000 feet)
Shock	20 G, 6 ms, half-sine wave	33 G, 11 ms, half-sine wave
Vibration	0.5 G p-p, 5 to 500 Hz	2.0 G p-p, 5 to 500 Hz
Airflow	595 cmh (350 cfm)	N/A
Heat dissipation	Minimum 16-port configuration of 825.3 W, 2814 BTU/hr Maximum 512-port configuration of 1930.1 W, 6582 BTU/hr (200 V)	N/A

Power supply specifications (per PSU)

Power supply model	Maximum output power rating (DC)	Input voltage	Input line frequency	Maximum input current	Input line protection	Maximum inrush current
XBR-DCX-0104	1000/2000 W	1000 W Output 100 - 120 V (nominal) 85 - 132 V (range) 2000 W Output 200 - 240 V (nominal) 180 - 264 V (range)	50/60 Hz (nominal) 47 - 63 Hz (range)	15 A	Line & Neutral Fused	20 A maximum, peak

Power consumption (maximum configuration)

The power specifications in the following table are calculated for fully loaded systems with four power supplies, eight FC8-48 port blades, two CP8 blades, two CR8 blades, and three blower assemblies.

Model name	@100 VAC input	@200 VAC input	@-48 VDC input	Minimum number of power supplies	Notes
XBR-DCX-0104	20 A 1999 W 6817 BTU/hr	5.5 A 1100.7 W 3753 BTU/hr	N/A	2	With an AC input of 100-120 V, four power supplies are required for redundancy. With an AC input of 200-240 V input, two power supplies are

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Model name	@100 VAC input	@200 VAC input	@-48 VDC input	Minimum number of power supplies	Notes
					required for redundancy.

Data port specifications (Fibre Channel)

Name	Number	Description
Brocade DCX	512	Up to eight hot-swappable port blade assemblies that can be configured in a single chassis, delivering up to 512 Fibre Channel ports.

Fibre Channel data transmission ranges

Port speed (Gbps)	Cable size (microns)	Short wavelength (SWL)	Long wavelength (LWL)	Extended long wavelength (ELWL)
1	50	500 m (1,640 ft) (OM2) 860 m (2,821 ft) (OM3)	N/A	N/A
	62.5	300 m (984 ft)	N/A	N/A
	9	N/A	N/A	N/A
2	50	300 m (984 ft) (OM2) 500 m (1,640 ft) (OM3)	N/A	N/A
	62.5	150 m (492 ft)	N/A	N/A
	9	N/A	30 km (18.6 miles)	N/A
4	50	150 m (492 ft) (OM2) 380 m (1,246 ft) (OM3)	N/A	N/A
	62.5	70 m (230 ft)	N/A	N/A
	9	N/A	30 km (18.6 miles)	N/A
8	50	50 m (164 ft) (OM2) 150 m (492 ft) (OM3)	N/A	N/A
	62.5	21 m (69 ft)	N/A	N/A
	9	N/A	N/A	N/A
10	50	300 m (984 ft) (OM3)	N/A	N/A
	62.5	N/A	N/A	N/A
	9	N/A	10 km (6.2 miles)	40 km (24.8 miles)

Serial port specifications (DB9)

Pin	Signal	Description
1	Reserved	Reserved
2	TXD (output)	Transmit data
3	RXD (input)	Receive data
4	Reserved	Reserved
5	GND	Logic ground
6	Reserved	Reserved

Pin	Signal	Description
7	Reserved	Reserved
8	Reserved	Reserved
9	Reserved	Reserved

Serial port specifications (pinout mini-USB)

Pin	Signal	Description
1	+5V	Not used
2	UART0_TX	Debug port
3	UART0_RX	Console port
4	IN	Not used
5	GND	Ground

Serial port specifications (pinout RJ-45)

Pin	Signal	Description
1	Not supported	N/A
2	Not supported	N/A
3	UART1_RXD	Receive data
4	GND	Logic ground
5	GND	Logic ground
6	UART1_TXD	Transmit data
7	Not supported	N/A
8	Not supported	N/A

Serial port specifications (protocol)

Parameter	Value
Baud	9600
Data bits	8
Parity	None
Stop bits	1
Flow control	None

Regulatory compliance (EMC)

- FCC Part 15, Subpart B (Class A)
- EN 55022 (CE mark) (Class A)
- EN 55024 (CE mark) (Immunity) for Information Technology Equipment
- ICES-003 (Canada) (Class A)
- AS/NZ 55022 (Australia) (Class A)
- VCCI (Japan) (Class A)
- EN 61000-3-2

- EN 61000-3-3
- EN 61000-6-1

Regulatory compliance (safety)

- CAN/CSA-C22.2 No. 60950/UL 60950
- EN 60825 Safety of Laser Products
- EN 60950/IEC 60950 Safety of Information Technology Equipment

Regulatory compliance (environmental)

- 2014/35/EU and 2014/30/EU
- 2011/65/EU – Restriction of the use of certain hazardous substance in electrical and electronic equipment (EU RoHS).
- 2012/19/EU – Waste electrical and electronic equipment (EU WEEE).
- 94/62/EC – packaging and packaging waste (EU).
- 2006/66/EC – batteries and accumulators and waste batteries and accumulators (EU battery directive).
- 1907/2006 of the European Parliament and of the Council of 18 December 2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (EU REACH).
- Section 1502 of the Dodd-Frank Wall Street Reform and Consumer Protection Act of 2010 – U.S. Conflict Minerals.
- 30/2011/TT-BCT – Vietnam circular.
- SJ/T 11363-2006 Requirements for Concentration Limits for Certain Hazardous Substances in EIPs (China).
- SJ/T 11364-2006 Marking for the Control of Pollution Caused by EIPs (China).