

Brocade VDX 6730 Converged Switch for IBM Product Guide (withdrawn product)

The Brocade VDX 6730 Converged Switch for IBM® is a 10 GbE fixed port switch with LAN and native Fibre Channel ports. It supports multiple connectivity options, including classic Top-of-Rack (ToR) server deployments, Ethernet storage connectivity for FCoE, and bridging Fibre Channel SANs and Ethernet LANs.

The Brocade VDX 6730 is available in two models: the 2U Brocade VDX 6730-76 with sixty 10 GbE LAN ports and sixteen 8 Gbps native FC ports, and the 1U Brocade VDX 6730-32 with twenty four 10 GbE LAN ports and eight 8 Gbps native FC ports. IBM models ship with 8 Gbps FC SWL transceivers standard, allowing for connections up to 150 m. Both VDX models come with dual power supplies and customers have a choice of front-to-back or back-to-front airflow models.

Figure 1 shows the Brocade VDX 6730-32 Converged Switch.



Figure 1. Brocade VDX 6730-32 Converged Switch

Did you know?

The Brocade VDX 6730 is a truly converged FCoE solution with native Fibre Channel and Ethernet ports built into a single switch. The converged switch provides up-front reduction in SAN/LAN cost and complexity. It requires fewer adapters, switch modules, and cabling, which means an up-front reduction in your network investment.

Through rigorous testing by IBM, you can maintain a high degree of confidence that your FCoE solution from IBM is compatible end-to-end and functions reliably when using these Brocade VDX 6730 switches in a converged environment. For an extra measure of confidence, Brocade VDX 6730 is covered under IBM warranty.

Part number information

Table 1 lists the part numbers to order these modules and additional options for them.

Table 1. IBM part numbers and feature codes for ordering

Description	Part number	Feature code
Brocade VDX 6730-32 Converged Switch (non-port exhaust)	8553AR5	None
Brocade VDX 6730-32 Converged Switch (port exhaust)	8553AF6	None
Brocade VDX 6730-76 Converged Switch (non-port exhaust)	8553BR7	None
Brocade VDX 6730-76 Converged Switch (port exhaust)	8553BF8	None
Brocade Rack Mount Kit for IBM iDataPlex®	95Y0533	A3A9
Brocade Rack Mount Kit	95Y0537	A3AA
Brocade VDX 6730-76 Firmware Upgrade 1 Year (76 port)	95Y0535	A3AH
Brocade VDX 6730-32 Firmware Upgrade 1 Year (32 port)	95Y0558	A3AG

The part number for the Brocade VDX 6730 includes the following items:

- One Brocade VDX 6730
- One RS-232 console cable (RJ-45 to DB-9)
- A 2 GB USB memory key
- Eight (6730-32) or 16 (6730-76) 8 Gb FC short-wave SFP+ transceivers
- Brocade VDX 6730 QuickStart Guide
- IBM Environmental Notices CD
- Four rubber feet (for stand-alone placement)
- Brocade Network Advisor 11.2.1 Pro

Important: A rack mount kit is not included and must be purchased separately if required (see Table 1). Power cables are not included and must be purchased separately (the switch has C14 connectors on the power supplies at the non-port side).

Figure 2 shows the Brocade VDX 6730-76 Converged Switch.



Figure 2. Brocade VDX 6730-76 Converged Switch

The switch ships standard with 8 (6730-32) or 16 (6730-76) short-wave length (SWL) 8 Gb FC small form-factor pluggable plus (SFP+) modules. SFP+ transceivers for 10 Gb ports are not included and must be purchased separately. Table 2 lists the transceivers and direct-attach copper (DAC) cables that are supported.

Table 2. Supported SFP+ transceivers and DAC cables

Description	Part number	Feature code
10 GbE SFP+ transceivers		
Brocade VDX SFP+ LR, Transceiver	95Y0540	A3AB
SFP+ Transceiver 10GbE SR 300m MMF	69Y0389	6416
1 GbE SFP transceivers		
Brocade VDX SFP RJ45 Transceiver	95Y0549	A3AD
Brocade VDX 1000BASE-SX SFP Transceiver	95Y0552	A3AE
Brocade VDX 1000BASE-LX SFP Transceiver	95Y0555	A3AF
10 GbE DAC cables		
1m 10GE Twinax Act Copper SFP+	81Y8295	A18M
3m 10GE Twinax Act Copper SFP+	81Y8296	A18N
5m 10GE Twinax Act Copper SFP+	81Y8297	A18P
8 Gb FC SFP+ transceivers		
Brocade 8Gb SFP+ SW Optical Transceiver	44X1962	5084
Brocade SFP+ LWL 10KM, 8G FC Transceiver	95Y0546	A3AC
Fiber optic cables		
1m LC-LC Fiber Cable (networking)	88Y6851	A1DS
5m LC-LC Fiber Cable (networking)	88Y6854	A1DT
25m LC-LC Fiber Cable (networking)	88Y6857	A1DU

Benefits

The Brocade VDX 6730 with a supported converged network adapter (CNA) provides these benefits:

- Provides outstanding performance with up to 16 Fibre Channel (FC) ports concurrently active at 8 Gbps and 24 or 60 Converged Enhanced Ethernet (CEE) ports concurrently active at 10 Gbps link speeds.
- Protects existing investments by bridging FC storage area networks (SANs) and Ethernet fabrics.
- Provides enterprise-class availability features, such as hot-swappable, redundant, and integrated fan and power supply assemblies.
- Provides FC ports for connectivity to Brocade FC SAN fabrics.
- Streamlines management by using Brocade Network Advisor.
- IBM solutions provide end-to-end FCoE testing that delivers interoperability throughout network.
- All FCoE, VCS Fabric and ISL Trunking licenses come standard.

Features and specifications

Table 3 compares specifications for the Brocade VDX 6730-32 and 6730-76 Converged Switches.

Table 3. Technical specifications

Specification	6730-32	6730-76
Form-factor	1U	2U
Number of 10 GbE ports	24	60
Number of 8 Gb FC ports	8	16
10 GbE throughput (data rate, full duplex)	480 Gbps	1,200 Gbps
8 Gb FC throughput (data rate, full duplex)	128 Gbps	256 Gbps
Port-to-port latency	600 ns (within 8-port group) 1.8 ?s (across port groups)	600 ns (within 10-port group) 1.8 ?s (across port groups)
Power supplies	2x 250 W	2x 500 W hot-swap, redundant
Cooling fans	6 (3 built in each power supply)	3, hot-swap, N+1 redundant

The converged switches have the following features:

- Twenty four (6730-32) or 60 (6730-76) 10 Gb Converged Enhanced Ethernet SFP+ ports supporting 1 Gbps or 10 Gbps speeds (SFPs are optional)
- Eight (6730-32) or 16 (6730-76) auto-negotiated Fibre Channel ports that support 2 Gbps, 4 Gbps, or 8 Gbps (SWL 8 Gb FC SFPs come standard with the switch: eight SFPs with 6730-32 and 16 SFPs with 6730-76)
- One RJ-45 100 Mbit Ethernet out-of-band management port
- One RJ-45 10/100/1000 Ethernet Remote Lights Out (RLO) management port
- One RS-232 console port with an RJ-45 interface for serial console management
- One USB port for firmware upgrades
- Performance features
 - Port-to-port latency: 600 ns within 10-port group and 1.8 ?s across port groups
 - 10 GbE switching throughput (full-duplex): 480 Gbps (6730-32), 1,200 Gbps (6730-60)
 - 8 Gb FC switching throughput (full-duplex): 128 Gbps (6730-32), 256 Gbps (6730-60)
- CEE features
 - Priority-based Flow Control (PFC): IEEE 802.1Qbb
 - Enhanced Transmission Selection (ETS): IEEE 802.1Qaz
 - Data Center Bridging eXchange (DCBX)
- FCoE features
 - FC-BB5 compliant Fibre Channel Forwarder (FCF)
 - Native FCoE forwarding
 - End-to-end FCoE (initiator to target)
 - FCoE Initialization Protocol (FIP) v1 support for FCoE devices login and initialization
 - Fibre Channel over Ethernet (FCoE)
 - Name Server-based zoning
- Layer 2 features
 - Layer 2 Virtual Local Area Networks (VLANs): 4096 VLANs
 - VLAN encapsulation 802.1Q
 - Spanning Tree Protocol (STP) IEEE 802.1D
 - Rapid Spanning Tree Protocol (RSTP)
 - Multiple Spanning Tree MSTP (802.1s): 32 instances
 - Per-VLAN Spanning Tree (PVST+ / PVRST+)
 - STP PortFast and PortFast BDPU Guard
 - STP Root Guard
 - Link Aggregation Control Protocol (LACP) IEEE 802.3ad
 - IGMP v1/v2 snooping
 - Pause frames (802.3x)
- Layer 2 security
 - Ingress Layer 2 MAC Access Control Lists (ACLs)

- Standard and extended ACLs
- VLAN-based ACLs (VACLs)
- Port-based ACLs (PACLs)
- ACL statistics
- Port-based Network Access Control: IEEE 802.1x
- Layer 2 Quality of Service (QoS)
 - Eight priority levels for QoS
 - IEEE 802.1p Class of Service (CoS)
 - Per-port QoS configuration
 - Eight queues per port
 - CoS trust: IEEE 802.1p
 - Scheduling: Strict Priority (SP), Shaped Deficit Weighted Round-Robin (SDWRR)
- Fibre Channel
 - External Fibre Channel ports that can operate as E_ports (expansion ports)
 - Name Server-based zoning
 - FC authentication
 - Bridging to Fibre Channel SANs
 - Registered State Change Notification (RSCN)
 - ISL Trunking
 - Fabric Watch
- Management security
 - RADIUS
 - TACACS+
 - Secure Shell (SSHv2)
 - Management access ACLs

The following software feature comes with the switch modules:

- Brocade Web Tools

The switch supports the following fabric management:

- Web interface through Web Tools
- Command-line interface (CLI) through Telnet or SSHv2
- A terminal emulation program connection to the RJ-45 serial port interface
- Brocade Network Advisor
- Switch's SNMP agent

Supported standards

The switch supports the following Ethernet standards:

- IEEE 802.1D Spanning Tree Protocol (STP)
- IEEE 802.1s Multiple STP (MSTP)
- IEEE 802.1w Rapid STP (RSTP)
- IEEE 802.1p Class of Service (CoS) prioritization
- IEEE 802.1Q Tagged VLAN (frame tagging on all ports when VLANs are enabled)
- IEEE 802.1v VLAN classification by protocol and port
- IEEE 802.1x port-based authentication
- IEEE 802.2 Logical Link Control
- IEEE 802.3u 100BASE-TX Fast Ethernet
- IEEE 802.3ab 1000BASE-T copper twisted pair Gigabit Ethernet
- IEEE 802.3z 1000BASE-SX short range fiber optics Gigabit Ethernet
- IEEE 802.3z 1000BASE-LX long range fiber optics Gigabit Ethernet
- IEEE 802.3ad Link Aggregation Control Protocol
- IEEE 802.3x Full-duplex Flow Control
- IEEE 802.3ae 10GBASE-SR short range fiber optics 10 Gb Ethernet
- IEEE 802.3ae 10GBASE-LR long range fiber optics 10 Gb Ethernet
- 10GSFP+Cu SFP+ Direct Attach copper

The switch also supports the following CEE and FCoE draft standards:

- IEEE 802.1Qbb Priority-based Flow Control
- IEEE 802.1Qaz Enhanced Transmission Selection
- IEEE 802.1 DCB Capability Exchange Protocol (Proposed under the DCB Task Group of IEEE 802.1 Working Group)
- FC-BB-5 FCoE (Rev 2.0)

Connectors and LEDs

Figure 3 shows the front panel of the Brocade VDX 6730-32 Converged Switch and Figure 4 shows the front panel of the Brocade VDX 6730-76 Converged Switch.

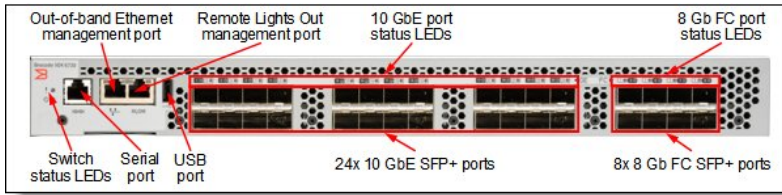


Figure 3. Front panel of the Brocade VDX 6730-32 Converged Switch

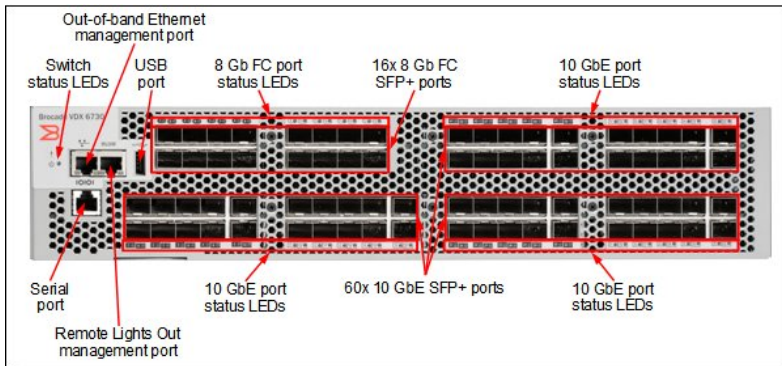


Figure 4. Front panel of the Brocade VDX 6730-76 Converged Switch

The front panel of both switch models contains the following components:

- LEDs that display the status of the switch:
 - The System Status LED is the bicolor LED, indicating that the switch module booted and is operational (green) or a failure has occurred (amber).
 - The System Power LED indicates the switch's power status.
- One RJ-45 RS-232 console port that provides a means to initially configure the switch. (The serial cable comes standard with the switch.)
- One RJ-45 100 Mbit Ethernet port for out-of-band management.
- One RJ-45 10/100/1000 Mbit Remote Lights Out (RLO) management port .
- Twenty four (6730-32) or sixty (6730-76) external SFP+ ports with bicolor LEDs (one per port) for 1 Gb or 10 Gb connections to external Ethernet devices.
- Eight (6730-32) or sixteen (6730-76) external SFP+ ports with bicolor LEDs (one per port) for 8 Gb connections to external Fibre Channel devices.
- An Ethernet link OK LED and a Tx/Rx LED for each management port (out-of-band and RLO).

Network cabling requirements

The following network cables are supported for the Brocade VDX 6730:

10 Gb Ethernet ports:

- 10GBASE-SR: 850 nm wavelength using multimode fiber cable (50 μ or 62.5 μ) up to 300 m, LC duplex connector (supported with the optional 10 GbE SW SFP+ transceivers listed in Table 2)
- 10GBASE-LR: 1310 nm wavelength using single-mode fiber cable up to 10 km, LC duplex connector (supported with the optional 10 GbE LW SFP+ transceivers listed in Table 2)
- 1000BASE-SX: 850 nm wavelength using multimode fiber cable (50 μ or 62.5 μ) up to 550 m, LC duplex connector (supported with the optional 1 GbE SW SFP transceivers listed in Table 2)
- 1000BASE-LX: 1310 nm wavelength using single-mode fiber cable up to 10 km, LC duplex connector (supported with the optional 1 GbE LW SFP transceivers listed in Table 2)
- 1000BASE-T: UTP Category 5, 5E, and 6 up to 100 meters (supported with the optional 1 GbE RJ-45 SFP transceivers listed in Table 2)
- 10GSFP+Cu: Up to 5 m SFP+ direct attach copper cables (supported with the optional SFP+ DAC cables listed in Table 2)

8 Gb Fibre Channel ports:

- 8 Gb FC ports using short-wave SFP+ transceivers (come standard with the switch) when operating at 8 Gbps speed: 850 nm wavelength, multimode fiber, 50 μ (150 meters maximum) or 62.5 μ (21 meters maximum), LC duplex connector
- 8 Gb FC ports using long-wave SFP+ transceivers (optional, see Table 2 for ordering details) when operating at 8 Gbps speed: 1310 nm wavelength, single-mode fiber, 9 μ (10 km maximum), LC duplex connector

Out-of-band management, console, and firmware upgrade ports:

- RS-232 serial port (RJ-45 connector): RJ-45-to-RS-232 console cable that comes standard with the switch
- 100BASE-TX out-of-band Ethernet management port (RJ-45 connector) and 1000BASE-T Remote Lights Out management port (RJ-45 connector): UTP Category 5, 5E, and 6, up to 100 meters
- USB port for firmware upgrades: Brocade-branded USB memory key (comes standard with the switch)

Physical specifications

The Brocade VDX 6730-32 Converged Switch (1U) has the following physical specifications:

Dimensions and weight (approximate):

- Height: 44 mm (1.7 in.)
- Width: 428 mm (16.9 in.)
- Depth: 384 mm (15.1 in.)
- Weight: 7.3 kg (16.3 lb)

Shipping dimensions and weight (approximate):

- Height: 566 mm (22.3 in.)
- Width: 549 mm (21.6 in.)
- Depth: 221 mm (8.7 in.)
- Weight: 10.8 kg (21.5 lb)

The Brocade VDX 6730-76 Converged Switch (2U) has the following physical specifications:

Dimensions and weight (approximate):

- Height: 87 mm (3.5 in.)
- Width: 430 mm (17.0 in.)
- Depth: 432 mm (17.0 in.)
- Weight: 15.3 kg (33.9 lb)

Shipping dimensions and weight (approximate):

- Height: 617 mm (24.3 in.)
- Width: 549 mm (21.6 in.)
- Depth: 221 mm (8.7 in.)
- Weight: 18.0 kg (39.7 lb)

Operating environment

The switches have the following physical specifications:

- Air temperature
 - Operating: 0 - 40 °C (32 - 104 °F) at 0 - 3,000 m (0 - 9,842 ft)
 - Non-operating: -25 - 70 °C (-13 - 158 °F) at 0 - 12,000 m (0 - 39,370 ft)
- Humidity
 - 10% - 85% (non-condensing) at 40 °C (104 °F) operating
 - 10% - 90% (non-condensing) at 70 °C (158 °F) non-operating
- Electrical
 - 100 - 240 (nominal) V AC; 50 - 60 Hz (nominal)
- Input AC power (approximately)
 - Brocade VDX 6730-32
 - Idle: 106 W
 - Maximum: 140 W
 - Brocade VDX 6730-76
 - Idle: 270 W
 - Maximum: 350 W
- BTU output
 - Brocade VDX 6730-32: 478 BTU/hr
 - Brocade VDX 6730-76: 1194 BTU/hr

Regulatory compliance

The switches have the following agency approvals:

- EN55022
- EN55024
- EN60950 / CE
- EN 61000-3-2
- EN 61000-3-3
- ICES A
- IEC 950 CB Scheme
- FCC Part 15 Class A
- UL 1950
- CSA C22.2 950-95
- VCCI-A
- NZ AS3548 / C-tick
- RRL for MIC (KCC)
- GOST
- BSMI
- UL 94-IV

IBM FCoE solutions

IBM is working closely with Brocade, an industry-leading SAN Switch provider, to deliver converged data center solutions. Converging FC storage and regular Ethernet traffic on one platform allows administrators to reduce the number of adapters, simplify management, and protect storage investments by using the existing SAN infrastructure. IBM delivers interoperability by providing end-to-end FCoE testing with the latest IBM System x® servers, Brocade VDX 6730 switches, IBM System Storage® SAN B-type and Brocade SAN switches, and IBM System Storage systems. Brocade VDX 6730 switch can be implemented as a Top-of-Rack (ToR) switch or as an aggregation switch, as described in the following sections.

Brocade VDX 6730 Converged Switch for IBM as a Top-of-Rack switch

Converged Network Adapters (CNAs) for IBM System x, IBM BladeCenter®, and IBM Flex System™ encapsulate Fibre Channel (FC) frames. IBM servers can be connected directly (System x) or through pass-thru modules (BladeCenter and Flex System) to Brocade VDX 6730 switches to pass FCoE packets.

In this scenario, as shown in Figure 5, Brocade VDX 6730 switches serve as Top-of-Rack (ToR) switches.

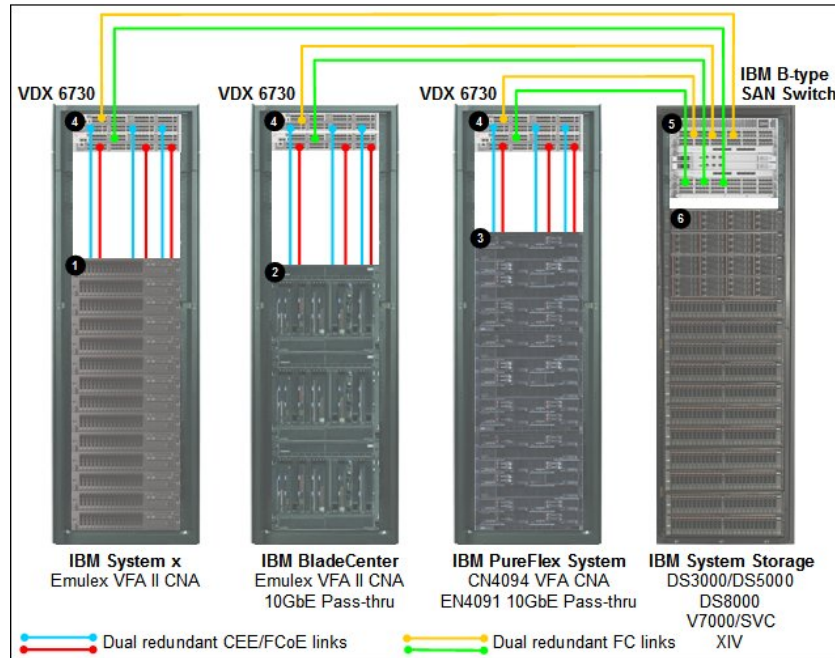


Figure 5. Using Brocade VDX 6730 as a ToR switch

Brocade VDX 6730 breaks out FCoE packet passing Ethernet to LAN Network and Storage to SAN Network. Customers can use existing Brocade SAN switches and IBM System Storage Controllers, including IBM System Storage DS3000®, IBM Systems Storage DS5000®, IBM System Storage DS8000®, IBM SAN Volume Controller, IBM V7000, and IBM XIV®.

Note: Brocade VDX FC ports must be connected to IBM B-type or Brocade FC SAN switch running Fabric OS 7.0.1 or higher using FC routing.

IBM provides extensive FCoE testing to deliver network interoperability. For a full listing of IBM supported FCoE and iSCSI configurations, see the System Storage Interoperation Center (SSIC) website at: <http://ibm.com/systems/support/storage/ssic>

The solution components used in the scenario described in Figure 5 are listed in Table 4.

Table 4. Components used in an FCoE solution with the Brocade VDX 6730 as a ToR switch (Figure 5)

Diagram reference	Description	Part number	Feature code (x-config)
1	IBM System x FCoE solution		
	Emulex 10GbE Virtual Fabric Adapter II*	49Y7950	A18Z
	Emulex Dual Port VFA II Adapter & FCoE/iSCSI License*	95Y3751	A348
	Emulex Dual Port 10GbE SFP+ VFA III*	95Y3762	A2U1
	Emulex Dual Port 10GbE SFP+ Embedded VFA III*	90Y6456	A22J
	Emulex VFA II FCoE/iSCSI License (for 49Y7950)	49Y4274	5715
	Emulex VFA III FCoE/iSCSI License (for 95Y3762)	95Y3760	A2U2
Emulex Embedded VFA III FCoE/iSCSI License (for 90Y6456)	90Y5178	A2TE	
2	IBM BladeCenter FCoE solution		
	Emulex 10GbE Virtual Fabric Adapter II*	90Y3550	A1XG
	Emulex 10GbE Virtual Fabric Adapter II Advanced*	90Y3566	AIXH
	Emulex 10GbE VFA II for IBM BladeCenter HS23*	81Y3120	A287
	Emulex 10GbE VFA Advanced II for IBM BladeCenter HS23*	90Y9332	A2ZN
	Emulex 10GbE Virtual Fabric Advanced Upgrade (for 90Y3550)	49Y4265	2436
	Virtual Fabric Advanced FOD Upgrade (for 81Y3120)	90Y9350	A2ZP
10Gb Ethernet Pass-Thru Module	46M6181	1641	
3	IBM Flex System FCoE solution		
	IBM Flex System CN4054 10Gb Virtual Fabric Adapter*	90Y3554	A1R1
	IBM Flex System CN4054 Virtual Fabric Adapter Upgrade (for 90Y3554)	90Y3558	A1R0
	IBM Flex System EN4091 10Gb Ethernet Pass-thru Module	88Y6043	A1QV
4	Brocade VDX 6730 Converged Switch for IBM	See Table 1	None
5	IBM B-type or Brocade SAN fabric		
6	IBM System Storage FC disk controllers		
	IBM System Storage DS3000 / DS5000		
	IBM System Storage DS8000		
	IBM Storwize® V7000 / SAN Volume Controller		
	IBM XIV		

* With Brocade VDX 6730 as a ToR switch, Emulex VFA adapters support pNIC and vNIC2 modes of operation.

Brocade VDX 6730 Converged Switch for IBM as an aggregation switch

IBM System Networking offers a full line of solutions that be used as FCoE transit switches. IBM System Networking RackSwitch G8124E, IBM BladeCenter Virtual Fabric 10Gb Switch Module, and IBM Flex System Fabric EN4093 10Gb Scalable Switch are Data Center Bridging (DCB) switches that can transport FCoE frames by using FCoE Initialization Protocol (FIP) snooping. IBM System Networking switches provide an inexpensive solution for transporting encapsulated FCoE packet to Brocade VDX 6730 (which is now functioning as both an aggregation switch and an FCoE gateway, as shown in Figure 6). These solutions are planned to be available in 4Q/2012.

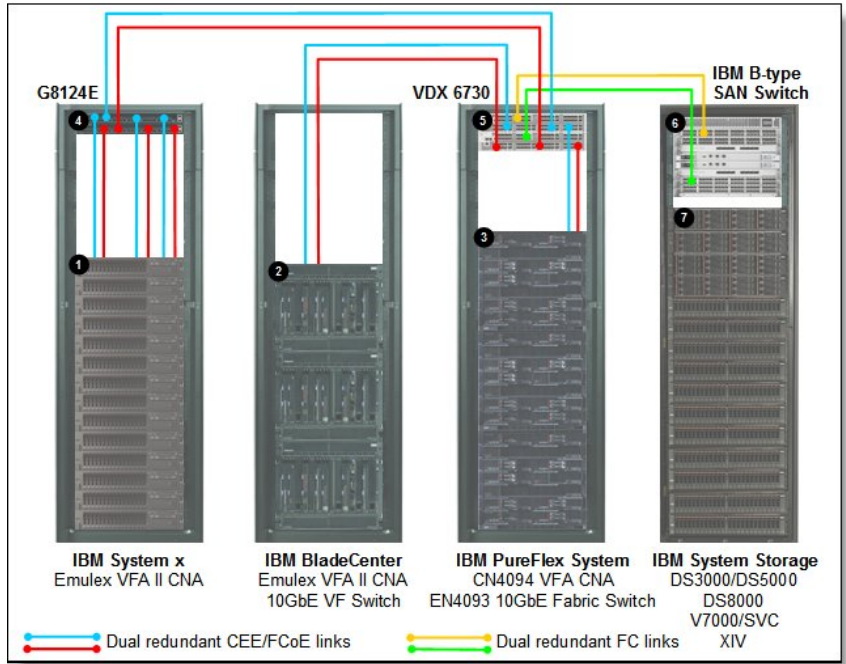


Figure 6. The use of the Brocade VDX 6730 as an aggregation switch

Notes:

- Brocade VDX FC ports must be connected to IBM B-type or Brocade FC SAN switch running Fabric OS 7.0.1 or higher using FC routing.
- Only one uplink can carry FCoE traffic between the IBM transit switch and Brocade VDX.

IBM provides extensive FCoE testing to deliver network interoperability. For a full listing of IBM supported FCoE and iSCSI configurations, see the System Storage Interoperation Center (SSIC) website at:
<http://ibm.com/systems/support/storage/ssic>

The solution components used in the scenario described in Figure 6 are listed in Table 5.

Table 5. Components used in an FCoE solution with the Brocade VDX 6730 as an aggregation switch (Figure 6)

Diagram reference	Description	Part number	Feature code (x-config)
1	IBM System x FCoE solution (planned for 2Q/2013)		
	Emulex 10GbE Virtual Fabric Adapter II*	49Y7950	A18Z
	Emulex Dual Port VFA II Adapter & FCoE/iSCSI License*	95Y3751	A348
	Emulex Dual Port 10GbE SFP+ VFA III*	95Y3762	A2U1
	Emulex Dual Port 10GbE SFP+ Embedded VFA III*	90Y6456	A22J
	Emulex VFA II FCoE/iSCSI License (for 49Y7950)	49Y4274	5715
	Emulex VFA III FCoE/iSCSI License (for 95Y3762)	95Y3760	A2U2
Emulex Embedded VFA III FCoE/iSCSI License (for 90Y6456)	90Y5178	A2TE	
2	IBM BladeCenter FCoE solution		
	Emulex 10GbE Virtual Fabric Adapter II*	90Y3550	A1XG
	Emulex 10GbE Virtual Fabric Adapter II Advanced*	90Y3566	A1XH
	Emulex 10GbE VFA II for IBM BladeCenter HS23*	81Y3120	A287
	Emulex 10GbE VFA Advanced II for IBM BladeCenter HS23*	90Y9332	A2ZN
	Emulex 10GbE Virtual Fabric Advanced Upgrade (for 90Y3550)	49Y4265	2436
	Virtual Fabric Advanced FOD Upgrade (for 81Y3120)	90Y9350	A2ZP
IBM BladeCenter Virtual Fabric 10Gb Switch Module	46C7191	1639	
3	IBM Flex System FCoE solution		
	IBM Flex System CN4054 10Gb Virtual Fabric Adapter*	90Y3554	A1R1
	IBM Flex System CN4054 Virtual Fabric Adapter Upgrade (for 90Y3554)	90Y3558	A1R0
	IBM Flex System Fabric EN4093R 10Gb Scalable Switch	95Y3309	A3J6
4	IBM RackSwitch G8124E (part of System x FCoE solution)		
5	Brocade VDX 6730 Converged Switch for IBM	See Table 1	None
6	IBM B-type or Brocade SAN fabric		
7	IBM System Storage FC disk controllers		
	IBM System Storage DS3000 / DS5000		
	IBM System Storage DS8000		
	IBM Storwize V7000 / SAN Volume Controller		
	IBM XIV		

* With Brocade VDX 6730 as an aggregation switch, Emulex VFA adapters support pNIC and vNIC1 modes of operation.

Related publications

For more information, see the following product documentation for the Brocade VDX 6730, available at:

http://ibm.com/support/entry/portal/documentation/hardware/system_networking/data_center_ethernet/ethernet_switches/brocade_vdx_6730_converged_switch_for_ibm

- *Brocade VDX 6730 Hardware Reference Manual*
- *Brocade VDX 6730 QuickStart Guide*
- *Fixed Rack Mount Kit (24"-32") Installation Procedure*
- *Fixed Rack Mount Kit Installation Procedure*
- *Flush Mount Rack Kit Installation Procedure*
- *Network OS Administrator's Guide, 2.1.1*
- *Network OS Command Reference, 2.1.1*
- *Network OS Documentation Updates, 2.1.x*
- *Network OS Message Reference, 2.1.1*
- *Network OS MIB Reference, 2.1.1*

Here are other useful references:

- IBM US Announcement Letter 112-053 for the Brocade VDX 6730:
<http://ibm.com/common/ssi/cgi-bin/ssialias?infotype=dd&subtype=ca&htmlfid=897/ENUS112-100>
- IBM System Storage Interoperation Center:
<http://ibm.com/systems/support/storage/ssic>
- IBM Redbooks Product Guides for IBM System x:
<http://www.redbooks.ibm.com/portals/systemx?Open&page=pgbycat>

Related product families

Product families related to this document are the following:

- [Top-of-Rack Switches](#)

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