Data Sheet
FUJITSU Server PRIMERGY BX Ethernet Fabric Switch 10Gbit/s 18/6+6 (BROCADE VDX 2730)

Revolutionary way to build your data center network

FUJITSU Server PRIMERGY systems provide the most powerful and flexible data center solutions for companies of all sizes, across all industries and for any type of workload. This includes expandable PRIMERGY tower servers for remote and branch offices, versatile rack-mount servers, compact and scalable blade systems, as well as density-optimized scale-out servers. They convince by business proven quality with a wide range of innovations, highest efficiency cutting operational cost and complexity, and provide more agility in daily operations in order to turn IT faster into a business advantage.

FUJITSU Server PRIMERGY BX blade systems are the perfect platform to build a converged infrastructure designed to reduce IT costs, time and efforts. PRIMERGY Blade Servers utilizes a modular architecture and contain in addition to the compute power, all required infrastructure and network components, storage capacity as well as management modules that helps companies to simplify their infrastructure, achieve significant cost reductions and increase flexibility.

PRIMERGY BX Ethernet Fabric Switch 10Gbit/s 18/6+6 (BROCADE VDX 2730)

The PRIMERGY BX Ethernet Fabric Switch 10Gbit/s 18/6+6 is a Connection Blade for Fujitsu's PRIMERGY Blade Servers and is part of Fujitsu's DynamicFabric. DynamicFabric is Fujitsu's approach to create an optimized network infrastructure. It is an open architecture with a set of three innovative, freely combinable network technologies. The modular concept provides customers with the freedom of choice in selecting only those innovations that best fit to their infrastructure to save time, effort and money.
This Connection Blade, also known as Brocade VDX 2730, utilizes the latest emerging industry standards, including Fibre Channel over Ethernet (FCoE), and Data Center Bridging (DCB). The DCB standard enables Ethernet to deliver a "lossless" transport technology with congestion management and flow control features needed in storage environments. It is a 10Gbit/s Ethernet DCB embedded switch module that provides six external native 8Gbit/s or 4Gbit/s Fibre Channel (FC) ports and six external 10Gbit/s Ethernet ports, allowing you to combine storage and network traffic on a single network. It also provides 18 internal 10GBASE-KR ports with DCB support that connect to the Fujitsu PRIMERGY BX Blade Servers through the high-speed midplane of the chassis. A key feature of this Connection Blade is the Brocade VCS™ technology, which enables organizations to build data center Ethernet fabrics - revolutionizing the design of Layer 2 networks and providing an intelligent foundation for cloud-optimized data centers.

Features & Benefits

Main Features	Benefits
Highly integrated switch module	
■ PRIMERGY BX Ethernet Fabric Switch 10Gbit/s 18/6+6 offers one of the industry's best integrated I/O solutions. The compact design incorporates Ethernet and Fibre Channel switching and provides a total of 30 ports. ■ Six external Data Center Bridging (DCB) ports provide device or additional switch connections at 10 Gbit/s. ■ Six external FC ports can be used for switch connections at 4 Gbit/s or 8 Gbit/s using SFP (4 Gbit/s) or SFP+ (8 Gbit/s) fiber-optic transceivers. ■ Eighteen internal 10GBASE-KR ports are provided that support DCB.	■ With the integration of the Connection Blade, all LAN and storage I/O needs can be achieved with a single module. ■ In combination with new server blades (BX920 S3 and BX924 S3), no additional mezzanine card is required, since all I/O traffic can be handled via the onboard dual-channel 10 Gbit/s CNA.
Low total cost of ownership	
■ Combines two switches in one, Ethernet and Fibre Channel, which reduces the cost of acquisition and provides a starting point for flexible convergence networks.	■ Flexibility to meet your application needs with multiprotocol support: 10 GbE (iSCSI, NFS, CIFS, FCoE), and 8,4,2,1 Gbit/s FC. ■ Designed for seamless integration into existing LAN and storage environments. You will benefit from fewer hardware components which leads to higher reliability as well as lower operational expenses due to a common management of LAN and SAN environments. ■ Fast and efficient deployment of new solutions due to self-forming and self-aggregating fabrics.
Flexible license structure	
■ This feature gives you the ability to enable only 10 Gbit/s Ethernet ports for networking needs, or the combination of Ethernet and Fibre Channel ports for storage connectivity and a fully converged network solution.	■ Balanced server and I/O port assignment to accommodate the workloads of applications and satisfy business needs.
Connectivity	
■ PRIMERGY BX400 can be equipped with up to four Brocade VDX 2730 Connection Blades, while the PRIMERGY BX900 Blade Server holds a maximum of six modules.	■ Flexible way of using the 10Gbit/s onboard controller of the server blade, and 10Gbit/s CNA mezzanine cards.
Brocade VCS Fabric Technology	
■ Simplified configuration and diagnostics: automatic formation of ISLs (InterSwitch Links) to make configuration faster. ■ VCS fabric is managed as a single logical entity – making network management simpler. ■ No requirement for STP (Spanning Tree Protocol) in network configuration. ■ Masterless control plane, distributed services – all switches are aware of each other and share information, however, still act independent.	■ Real-time scaling fabrics which are self-forming and self-aggregating – quick and simplified deployment speeding the responsiveness of networks to dynamic demands. ■ Increasing VM density means increasing I/O at the access point. ■ By eliminating STP within the access layer Brocade VCS immediately doubles the available links and bandwidth to the servers. ■ Allows IT organizations to create efficient data center networks that "just work" .

Technical details

PRIMERGY BX Ethernet Fabric Switch 10Gbit/s 18/6+6 (BROCADE VDX 2730)	
Connection type	Ethernet Connection Blade Layer 2+, 10 Gbit/s Ethernet Data Center Bridging Switch with native Fibre Channel ports
Supported system units	PRIMERGY BX400 S1, PRIMERGY BX900 S1, PRIMERGY BX900 S2
Max. number per BX unit	4 in PRIMERGY BX400 S1, 6 in PRIMERGY BX900 S1/S2
Supported Server Blades	PRIMERGY BX960 S1, BX920 S2, BX922 S2, BX924 S2, BX920 S3, BX924 S3, BX920 S4, BX924 S4 and BX25xx Server Blades
Supported Server Blade I/O Solutions	PRIMERGY BX9xx S3 Server Blades w. 10 Gbit/s CNA on Board PRIMERGY BX9xx S4 Server Blades w. 10 Gbit/s CNA on Board PRIMERGY BX25xx M1 Server Blades w. 10Gbit/s CNA on Board PRIMERGY BX CNA Mezz Card 10 Gbit/s 2 port (MC-CNA102E) PRIMERGY BX CNA Mezz Card 10 Gbit/s 2 port (MC-CNA112E)
Upgrade options	S26361-F4554-L1: Storage license to enable the six Fibre Channel ports and the Fibre Channel Forwarder for the FCoE functionality. S26361-F4554-L2: VCS license, required to build a VCS fabric with more than two switches.
Connection Blade notes	Both above mentioned licenses are included in the Enterprise version of the switch.

Interfaces	
Down-link ports	18 x 10 Gbit/s Eth
Up-link ports	6 x 10 Gbit/s Eth (SFP+) 6 x 4/8 Gbit/s Fibre Channel (SFP/SFP+)

Supported Interface Modules / Cables Order code	Application	Type / mode	Connector / cable Length
S26361-F3873-E109	Fibre Channel 8 Gbit/s	SFP+ / MMF (SWL)	LC-style / max. 190 m
S26361-F3873-E208	Fibre Channel 8 Gbit/s	SFP+ / SMF (LWL)	LC-style / max. 10 km
S26361-F3873-E401	Ethernet 1 Gbit/s	SFP / 1000BASE-T	RJ45 / up to 100 m
S26361-F3873-E310	Ethernet 10 Gbit/s	SFP+ / MMF (SWL)	LC-style / max. 300 m
S26361-F3873-E500	Ethernet 10 Gbit/s	SFP+ Twinax Cable / active	SFP+ / 3m or 5m
S26361-F3873-L501	Ethernet 10 Gbit/s	SFP+ Twinax Cable / active	SFP+ / 1m
S26361-F3873-L503	Ethernet 10 Gbit/s	SFP+ Twinax Cable / active	SFP+ / 3m
S26361-F3873-L505	Ethernet 10 Gbit/s	SFP+ Twinax Cable / active	SFP+ / 5m
Interface Module notes	Only certified modules and cables are supported		

Technical specifications	
Layer 2 feature	MAC Learning and Aging (max 30000 MAC addresses) Static MAC Configuration Jumbo frames up to 9208 bytes Link Aggregation Control Protocol (LACP) IEEE 802.3ad/802.1AX Virtual Local Area Networks (VLANs), up to 2000 VLANs VLAN Encapsulation IEEE 802.1Q IGMP v1/v2 Snooping Pause Frames IEEE 802.3x
Quality of service	Eight priority levels for QoS Class of Service (CoS) IEEE 802.1p Per-port QoS configuration Scheduling: Strict Priority (SP), Deficit Weighted Round Robin (DWRR)
Link aggregation	Support of: - IEEE 802.3ad Link Aggregation (LACP and static mode) - up to 16 members in a standard LAG - up to 512 LAGs in a VCS - up to 32 member in a vLAG - vLAG can span across 4 switches

Technical specifications

Spanning tree	Rapid Spanning Tree Protocol (RSTP) IEEE 802.1w Multiple Spanning Tree Protocol (MSTP) IEEE 802.1s STP IEEE 802.1D Per-VLAN Spanning Tree (PVST+/PVRST+) STP PortFast and PortFast BDPU Guard STP Root Guard
DCB features	IEEE 802.1Qbb: Priority-based Flow Control (PFC) IEEE 802.1Qaz: Enhanced Transmission Selection (ETS) Data Center Bridging eXchange (DCBX) DCBX Application Type-Length-Value (TLV) for FCoE and iSCSI 8 DCB Priority Flow Control (PFC) classes
Fibre Channel features	Name Server-based zoning FC authentication Bridging to Brocade based Fibre Channel SANs
Fibre Channel notes	The Fibre Channel ports provide an E_port to Brocade based FC Fabric.
FCoE features	Multihop Fibre Channel over Ethernet (FCoE); requires Brocade VCS Fabric technology 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 Build in FCoE and FCoE Bridge Name Server-based zoning
Ethernet Fabric	is provided by Brocade VCS Fabric technology with following features: Automatic Fabric Formation Distributed Fabric Services Transparent LAN Services Virtual Link Aggregation Group (vLAG) spanning multiple physical switches Switch Beaconing Distributed Configuration Management Transparent Interconnection of Lots of Links (TRILL) Equal Cost Multi-Path (ECMP), max. 8 ECMP paths in a VCS fabric
Performance	Non blocking wire speed of L2 switching performance; 480 Gbit/s for Ethernet ports Low latency less than 600ns for Ethernet ports
Interoperability	The following list provides interoperability information between VDX 2730 and FOS fabrics: Brocade DCX/DCX-4S/DCX8510-8/DCX8510-4/6510/5300/5100/VA-40FC/7800
Management	IPv4/IPv6 management Remote lights out management Link Layer Discovery Protocol (LLDP) IEEE 802.1AB MIB II RFC 1213 MIB Switch Beaconing Switched Port Analyzer (SPAN) Telnet SNMP v1/v2C,v3 sFlow RFC 3176 RMON-1, RMON-2 NTP Role-Based Access Control (RBAC) Automatic Migration of Port Profiles (AMPP) VM-aware network automation
Security	Port-based Network Access Control; IEEE 802.1X Layer 2 Access Control Lists (ACLs) Management Access Control Lists (ACLs) RADIUS TACACS+ Secure Shell (SSHv2) BPDU Guard BPDU Drop
User interface	Command Line Interface (CLI) via console, SSH or telnet remote login Brocade Network Advisor

Dimensions / Weight

Dimensions (W x D x H)	192.6 x 267.9 x 27.9 mm

Dimensions / Weight	
Weight	1.3 K g
Environmental compliance	
Temperature note	see corresponding PRIMERGY BX System Unit
Maximum altitude	see corresponding PRIMERGY BX System Unit
Operating environment	FTS 04230 – Guideline for Data Center (installation specification)
Operating environment link	http://docs.ts.fujitsu.com/dl.aspx?id=e4813edf-4a27-461a-8184-983092c12dbe
Electrical values	
Active power (max. configuration)	68 W
Heat emission	244.8 kJ/h (232.0 BTU/h)
Compliance	
Germany	GS
Europe	CE Class A *
USA/Canada	ULc/us FCC Class A
Global	CB RoHS WEEE
Japan	VCCI:V3 Class A + JIS 61000-3-2
Australia/New Zealand	C-Tick
Taiwan	BSMI
Compliance notes	In combination with corresponding PRIMERGY BX system unit
Compliance link	http://globalsp.ts.fujitsu.com/sites/certificates

More information

Fujitsu OPTIMIZATION Services

In addition to Fujitsu PRIMERGY BX Ethernet Fabric Switch 10Gbit/s 18/6+6 (BROCADE VDX 2730) , Fujitsu provides a range of platform solutions. They combine reliable Fujitsu products with the best in services, know-how and worldwide partnerships.

Fujitsu Portfolio
Build on industry standards, Fujitsu offers a full portfolio of IT hardware and software products, services, solutions and cloud offering, ranging from clients to datacenter solutions and includes the broad stack of Business Solutions, as well as the full stack of Cloud offering. This allows customers to leverage from alternative sourcing and delivery models to increase their business agility and to improve their IT operation's reliability.

Computing Products
www.fujitsu.com/global/products/computing/

Software
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More information

Learn more about Fujitsu PRIMERGY BX Ethernet Fabric Switch 10Gbit/s 18/6+6 (BROCADE VDX 2730) , please contact your Fujitsu sales representative or Fujitsu Business partner, or visit our website.
www.fujitsu.com/fts

Fujitsu green policy innovation

Fujitsu Green Policy Innovation is our worldwide project for reducing burdens on the environment.
Using our global know-how, we aim to contribute to the creation of a sustainable environment for future generations through IT.
Please find further information at http://www.fujitsu.com/global/about/environment

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