










Storage Area Networks (SAN) Embedded, Routing, SAN Extension, FCoE, and Encryption



	Brocade 8Gb SAN Switch for HP BladeSystem c-Class	SAN EXTENSION HP Multi Protocol Extension Blade	FCoE HP 10/24 FCoE Blade	ENCRYPTION HP SAN Director Encryption Blade
				
BROCADE MODEL	Brocade 5480	Brocade FX8-24 Extension Blade	Brocade FCOE10-24	Brocade FS8-18
PART NUMBERS	8/24c Power Pack+ (AJ822B) 8/24c (AJ821B) 8/12c - 12 port (AJ820B)	Multi Protocol Extension Blade - AP865B (12 8Gb FC, 10 1GbE ports enabled, 2 optional 10GbE ports)	DCB/FCoE 10-24 DCX Blade (AP866B)	Encryption DCX Blade (AR945B)
SFP'S	4Gb SW SFP (AJ115A) 8Gb SW SFP (AJ116A) 4Gb LW-10km SFP (AK870A) 4Gb LW-30km SFP (AN211A) 8Gb LW-10km SFP (AJ117A) 8Gb LWL 25KM (AW538A)	8Gb FC Media: 8Gb SW SFP (AJ116A) 8Gb LW-10km SFP (AJ117A) 8Gb LWL 25KM (AW538A) 4Gb FC Media (Compatible with 1GbE ports) 4Gb SW SFP (AJ115A) 4Gb LW-10km SFP (AK870A) 4Gb LW-30km SFP (AN211A) 10GbE Media 10GbE SFP+ (SR and LR optical) 1GbE Copper (AW537A)	Hot pluggable, Brocade 10 GbE SFP + supports any combination of Short-Reach (SR) and Long-Reach (LR) optical transceivers. HP 10GbE SR B-Series + 1 Pack (AP823A), HP 10GbE LR b-series CEE SFP+ 1 Pack (AP824A) 10GbE SR (AP823A) 10GbE LR (AP824A)	4Gb SW SFP (AJ115A) 8Gb SW SFP (AJ116A) 4Gb LW-10km SFP (AK870A) 4Gb LW-30km SFP (AN211A) 8Gb LW-10km SFP (AJ117A) 8Gb LWL 25KM (AW538A) Note: Requires B-series optical SFPs
PORTS	Up to 8 external ports, supports up to 16 servers internally	Base Multi Protocol Blade configuration: 12 8Gb FC and 10 1GbE Optional GbE configurations: 10 1GbE and 1 10GbE; 2 10GbE	24 DCB ports w/ 10 GbE	16 (FC); 2 (GbE)
PORT SPEED	1/2/4/8 Gbps external and internal ports	1/2/4/8 Gbps FC; 1/10 Gbps Ethernet	10 Gbps line speed; FC accessible via backpane	1/2/4/8 Gbps FC; 1 Gbps Ethernet
EXPANDABILITY	Ports-on-Demand upgrade licenses, 12 port increment (T5517A)	Optional software license to activate the two optional 10GbE ports	up to 40 Gbps* with trunking	Up to 4 blades per HP StorageWorks DC SAN Backbone Director and DC04 SAN Director
HARDWARE FEATURES	Embedded in the HP BladeSystem c-Class	SAN and Storage bandwidth up to 96 Gbps FCIP bandwidth up to 20 Gbps (requires optional 10GbE port upgrade) Advanced Hardware Compression Supports up to 4 blades per HP StorageWorks DC SAN Backbone Director or DC04 SAN Director Switch	Complete T11 FCoE entity and FCoE bridging, FC switch, DCB Bridge with IEEE DCB Bridging	Max 96 Gbps HW processing for disk; Max 48 Gbps HW processing for tape with 2:1 compression; Up to 256 target devices; 1024 host ports/encryption engine
STANDARD BUNDLED SOFTWARE	Brocade FOS (includes Web Tools and Advanced Zoning) Access Gateway, Enhanced Group Management	FCIP Fast Write, Open Systems Tape Pipelining, Storage-Optimized TCP, Enhanced Group Management	SNS, RSCN, NTR, RADIUS, LDAP, RCS, DPS, EGM	
OPTIONAL SOFTWARE UPGRADES (BASE MODELS)	Power Pack+ (T5521A) Fabric Watch (324504-B21) Adv. Perf. Mon. (324507-B21) ISL Trunking (T5527A) Extended Fabrics (324505-B21) Adaptive Networking (T5524A) SAO (TA756A)	10GbE Port Upgrade (TA751A) Advanced Extension: FCIP Trunking and Adaptive Rate Limiting (TA752A) Optional FOS features: ISL Trunking, Adaptive Networking; Advanced Performance Monitoring; Fabric Watch, Extended Fabrics, Integrated Routing, Server Application Optimization, FICON CUP		HP SW Encryption Blade Perf Upgrade (TA665A)
LICENSES IN POWER PACK MODEL (ALSO INCLUDES FULL FABRIC MODEL LICENSES)	Fabric Watch ISL Trunking Advanced Performance Monitoring Extended Fabrics Adaptive Networking Server Application Optimization			
MANAGEMENT	Your DCFM license allows you to migrate to SAN Network Advisor at no charge HP B-Series SAN Network Advisor Professional Software (free) HP B-Series SAN Network Advisor Professional Plus Software (TC353A) HP B-series SAN Network Advisor Enterprise Software (TC352A) HP B-Series SAN Network Advisor Professional Plus Upgrade Software (TC254A)			

Brocade FC HBAs

	HBA				
	HP 41B PCIe 4Gb FC Single Port HBA	HP 42B PCIe 4Gb FC Dual Port HBA	HP 81B PCIe 8Gb FC Single Port HBA	HP 82B PCIe 8Gb FC Dual Port HBA	Brocade 804 8Gb FC HBA for HP BladeSystem c-Class
					
PART NUMBERS	AP767B (Brocade 415)	AP768B (Brocade 425)	AP769B (Brocade 815)	AP770B (Brocade 825)	590647-B21 (Brocade 804)
PORT SPEED	1, 2, 4 Gbps	1, 2, 4 Gbps	1, 2, 4, 8 Gbps	1, 2, 4, 8 Gbps	1, 2, 4, 8 Gbps
PORTS	1	2	1	2	2
IOPS	Up to 500k per port (Max.)				
BUS TYPE	PCIe 2.0				
SUPPORTED OPERATING SYSTEMS	Windows, RHEL, SLES, VMwareESX/ESXi				

see also: Brocade's HP FC HBA Interoperability Matrix

MORE INTEROPERABILITY OPTIONS

<p>HP Virtual Connect 8Gb24-Port FC Module (466482-001)</p>  <ul style="list-style-type: none"> - 2-16 servers per external port - Total throughput 64Gb - 255 VMs per port - 2040 VMs per VC Module - 127 average VM per Server <p>Brocade is a Manufacturing and Marketing Partner for the 24-Port FC VC Module</p>	<p>HP P2000 G3 FC MSA FC Dual Controller Virtualization SAN Starter Kit (AP848B)</p>  <p>Note: Disk Drives are not included as part of this bundle. Part numbers of compatible disk drive options include: 507125-B21, 507127-B21, 512545-B21, 512547-B21, 507610-B21, and 507750-B21</p>
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For More Information












For more information, contact the HP Sales Engagement Office at Brocade: HP-Sales@brocade.com, the HP SE Team at Brocade: HP-SE@brocade.com or the nearest contact listed below.

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QUICK REFERENCE GUIDE FOR BROCADE-HP PRODUCTS



HP B-Series Product Portfolio

	8 Gbps SWITCHES			GEN 5 FC/16 Gbps SWITCHES			SAN EXTENSION	ENCRYPTION	FCoE	DCX DIRECTOR - (8Gb)	GEN 5 FC/16Gbps DCX DIRECTOR	
	HP SAN Switch 8/8, 8/24	HP SAN Switch 8/40	HP SAN Switch 8/80	HP SN3000B 16Gb FC Switch	HP SN6000B 16Gb FC Switch	HP SN6500B 16Gb FC Switch	HP 1606 Extension SAN Switch	HP Encryption SAN Switch Encryption For Data at Rest	HP 2408 FCoE Converged Network Switch	HP DC04 Switch & DC SAN Backbone Director Power Pack	HP SN8000B 8 and 4 Slot SAN Director	
												
BROCADE MODEL	Brocade 300	Brocade 5100	Brocade 5300	Brocade 6505	Brocade 6510	Brocade 6520	Brocade 7800 4/2 and 16/6 Extension Switch	Brocade Encryption Switch	Brocade 8000	Brocade DCX-4S and Brocade DCX Backbone	DCX 8510	
PART NUMBERS	8/8: Base "0 e-port" 8-port (AM866B) 8/8: Full Fabric 8-port (AM867B) 8/24: Full Fabric 16-port (AM868B)	8/40: Full Fabric 24-port (AM869B) 8/40: Power Pack+ 24-port (AM870B)	8/80: Full Fabric 48-port (AM871B) 8/80: Power Pack+ 48-port (AM872B)	16 Gb 12 Port FC Switch (QW937A) (one power supply) 16 Gb 24/24 Port FC Switch (QW938A) (one power supply)	16Gb 48-port/24-port Active FC Switch (QK753B) 16Gb 48-port/24 port Active Power Pk+ FC Switch (QK754B) 16Gb 48-port/48-port Active FC Switch (QR480B) 16Gb 48-port/48-port Active Power Pk+ (QR481B) 16Gb 48-port/24-port Active FC Switch Bundled with 24 16Gb Optics (C8R08A)	16 Gb 96-port/48-port Active FC switch (C8R45A) 16 Gb 96-port/48 port Active PowerPk FC switch (C8R44A) 16 Gb 96-port/96-port Active FC switch (C8R43A) 16 Gb 96-port/96-port Active PowerPk FC switch (C8R42A)	Base Switch - AP862B (4 8Gb FC, 2 1GbE ports enabled) Full Switch - AP863B (16 8Gb FC, 6 1GbE ports enabled) Power Pack + Full Switch - AP864B (16 8Gb FC, 6 1GbE ports enabled)	HP SW Encryption SAN Switch (AR944B) HP DC Switch Encryption 10 pk SmartCard (AR950B) (Master Key Recovery Cards) HP B-Series SAN Switch Power Pack LTU (T5523B)	2408 Base Switch - AP801B (FCoE enabled) 2408 Base Switch with Power Pack - AP802B (FCoE enabled)	DCX-4S Base Chassis (AR478B) DCX-4S Power Pack Chassis (AR479B) DCX Chassis (AK857C) 16-port 8Gb Blade (AK858C) 32-port 8Gb Blade (AK859C) 48-port 8Gb Blade (AK860C) 64-port 8Gb Blade (BK798B) 16-Port 8Gb Encryption Blade (AR945B) MultiProtocol Extension Blade (AP865B) 32-port 8Gb Blade (QW940A) 48-port 8Gb Blade (QW941A)	Chassis 8 Slot (PP+ inc.) (QK710B) Chassis 4 Slot (PP+) (QK711B) Chassis 4 Slot (Base) (QK712B) 32-port 16Gb Blade (QK713A) 48-port 16Gb Blade (QK714A) 64-port 8Gb Blade (BK798B) 16-Port 8Gb Encryption Blade (AR945B) MultiProtocol Extension Blade (AP865B) 32-port 8Gb Blade (QW940A) 48-port 8Gb Blade (QW941A)	
B-SERIES SFP'S	4Gb SW SFP (AJ715A) 8Gb SW SFP (AJ716A) 4Gb LW-10km SFP (AK870A) 4Gb LW-30km SFP (AN211A) 8Gb LW-10km SFP (AJ717A) 8Gb LWL 25KM (AW538A)	4Gb SW SFP (AJ715A) 8Gb SW SFP (AJ716A) 4Gb LW-10km SFP (AK870A) 4Gb LW-30km SFP (AN211A) 8Gb LW-10km SFP (AJ717A) 8Gb LWL 25KM (AW538A)	4Gb SW SFP (AJ715A) 8Gb SW SFP (AJ716A) 4Gb LW-10km SFP (AK870A) 4Gb LW-30km SFP (AN211A) 8Gb LW-10km SFP (AJ717A) 8Gb LWL 25KM (AW538A)	16Gb SW SFP+ 1Pk (QK724A) 10Gb SFP + SW (QK726A) 10Gb SFP + LW (QK727A) 8Gb SW SFP+ 1Pk (AJ716A/AJ716B)* 8Gb LW 10km SFP + 1Pk (AJ717A) 8Gb LW 25km SFP + 1Pk (AW538A)	16Gb SW SFP+ 1Pk (QK724A) 10Gb SFP + SW (QK726A) 10Gb SFP + LW (QK727A) 8Gb SW SFP+ 1Pk (AJ716A/AJ716B)* 8Gb LW 10km SFP + 1Pk (AJ717A) 8Gb LW 25km SFP + 1Pk (AW538A)	16Gb SW SFP+ 1Pk (QK724A) 10Gb SFP + SW (QK726A) 10Gb SFP + LW (QK727A) 8Gb SW SFP+ 1Pk (AJ716A/AJ716B)* 8Gb LW 10km SFP + 1Pk (AJ717A) 8Gb LW 25km SFP + 1Pk (AW538A)	8Gb FC Media 8Gb SW SFP (AJ716A) 8Gb LW-10km SFP (AJ717A) 8Gb LWL 25KM (AW538A) 4Gb FC Media (Compatible with 1GbE ports) 4Gb SW SFP (AJ715A) 4Gb LW-10km SFP (AK870A) 4Gb LW-30km SFP (AN211A) 1GbE Copper (AW537A)	4Gb SW SFP (AJ715A) 8Gb SW SFP (AJ716A) 4Gb LW-10km SFP (AK870A) 4Gb LW-30km SFP (AN211A) 4Gb LW-10km SFP (AJ717A) 8Gb LWL 25KM (AW538A)	FC Media: 4Gb SW SFP (AJ715A) 8Gb SW SFP (AJ716A) 8Gb SW mSFP (BK789A) 4Gb LW-10km SFP (AK870A) 4Gb LW-30km SFP (AN211A) 8Gb LW-10km SFP (AJ717A) 8Gb LWL 25KM (AW538A) DCB Media: b-series 10 Gbit Ethernet SFP+ (any SR and LR optical; b-series copper twinax cables of 1, 3, and 5 meters (AP818A, AP819A, AP820A) 10GbE SR (AP823A) 10GbE LR (AP824A)	4Gb SW SFP (AJ715A) 8Gb SW SFP (AJ716A)* 8Gb SW mSFP (BK789A) 4Gb LW-10km SFP (AK870A) 4Gb LW-30km SFP (AN211A) 8Gb LW-10km SFP (AJ717A) 8Gb LW-25KM FC SFP+ 1 Pack (AW538A)	SFPs 16Gb SW SFP+ 1Pk (QK724A) 10Gb SFP + SW (QK726A) 10Gb SFP + LW (QK727A) 4x16Gb SW QSFP 16Pk(QK728A) 8Gb SW SFP+ 1Pk (AJ716A/AJ716B)* 8Gb LW 10km SFP + 1Pk (AJ717A) 8Gb LW 25km SFP + 1Pk (AW538A)	
PORTS	8, 16, 24	24, 32, 40	48, 64, 80	12, 24	24, 36, 48	48, 72, 96	4 8Gb FC and 2 1GbE; 16 8Gb FC and 6 1GbE	32	24 DCB ports w/ 10 GbE	Up to 256 (DC04) & 512 (DC SAN Backbone) 8Gb FC ports; Inter-Chassis Link (ICL) option provides additional 256 or 512Gb of bandwidth between up to 3 DC04 or DC SAN Backbone chassis's	8-Slot SAN Director: 384 ports operating simultaneously at full 16Gb speed 4-Slot SAN Director: 192 ports operating simultaneously at full 16Gb speed	
PORT SPEED	1/2/4/8 Gbps FC	1/2/4/8 Gbps FC	1/2/4/8 Gbps FC	2/4/8/10/16 Gbps FC	2/4/8/10/16 Gbps FC	2/4/8/10/16 Gbps FC	1/2/4/8 Gbps FC; 1 Gbps Ethernet	1/2/4/8 Gbps FC	FC: 1/2/4/8 Gbps DCB: 10 Gbps Ethernet	1/2/4/8/10 Gbps FC	2/4/8/10/16 Gbps FC	
EXPANDABILITY	Ports-on-Demand upgrade license, 8 port increments (T5518B)	Ports-on-Demand upgrade license, 8 port increments (T5519B)	Ports-on-Demand upgrade license, 16 port increments (T5520B)	Ports-on-Demand upgrade license, 12 port increments (TC391B)	Ports-on-Demand upgrade license, 12 port increments (TC356B)	Ports-on-Demand upgrade license, 24 port increments (TC440A)	Optional software license for 1606 Base Extension SAN Switch to activate additional 12 8Gb Fibre Channel and 4 1GbE ports and enable Open Systems Tape Pipelining, 1606 Base to Full Upgrade (TA746B)	48 Gbps encryption processing expandability (AR950C) Power Pack+ (T5523C), Encryption Performance Upgrade (TA666C)	N/A	16, 32, 48, 64 port modular blades	32 and 48 port modular blades 8 x 64 port blades	
HARDWARE FEATURES	Rack Mount Kit Single Switch FRU	Rack Mount Kit Hot swappable power supplies and fan	Rack Mount Kit Hot swappable power supplies and fan	Rack Mount Kit Hot swappable power supplies and fan Optional second power supply (QW939B)	Rack Mount Kit Hot swappable power supplies and fan	Rack Mount Kit Hot swappable power supplies and fan	SAN and Storage bandwidth up to 128 Gbps FCIP bandwidth up to 6 Gbps Advanced Hardware Compression Rack mount kit Dual hot swappable (redundant) power supplies with integrated fans	Max 96 Gbps HW processing for disk; Max 48 Gbps HW processing for tape with 2:1 compression; Up to 256 target devices; 1024 host ports/ encryption engine	Complete T11 FCoE entity and FCoE bridging, FC switch, DCB Bridge with IEEE DCB Bridging	Rack Mount Kit Hot swappable blades (CP, core switching & port), power supplies and blowers	Rack Mount Kit Hot swappable power supplies and fan Hot swappable blade (CP, core switching & port)	
STANDARD BUNDLED SOFTWARE	Brocade FOS (includes Web Tools and Advanced Zoning) Enhanced Group Management Access Gateway (all 24 ports must be activated)	Brocade FOS (includes Web Tools and Advanced Zoning) Enhanced Group Management Access Gateway (all 40 ports must be activated)	Brocade FOS (includes Web Tools and Advanced Zoning) Enhanced Group Management	Brocade FOS 7.0 (includes Web Tools and Advanced Zoning) Enhanced Group Management Access Gateway (all ports must be activated)	-Integrated SAN extension over native FC (metro up to 100 km). -Native FC connections incl. in-flight compression and encryption. Optional: 10 Gb FC over DWDM & dark fiber. -Brocade FOS 7.0 (includes Web Tools and Advanced Zoning) Enhanced Group Management Access Gateway (all 48 ports must be activated)	-Integrated SAN extension over native FC (metro up to 100 km). -Native FC connections incl. in-flight compression and encryption. Optional: 10 Gb FC over DWDM & dark fiber. -Brocade FOS 7.0 (includes Web Tools and Advanced Zoning) Enhanced Group Management	Brocade FOS (includes Web Tools and Advanced Zoning) FCIP Fast Write, Storage-Optimized TCP, Advance Software Compression, Enhanced Group Management	SNS, RSCN, NTP V3, RCS, DPS, AZ, N-Port ID, NPV, FDMI, FSPF, EGM, IPFC, more	SNS, RSCN, NTP RADIUS, LDAP, RCS, DPS, EGM	Both Directors include FOS (includes Web Tools and Advanced Zoning) and Enhanced Group Management. Power Pack+ is included with DC SAN Backbone and optional with DC04	Brocade FOS (includes Web Tools and Advanced Zoning) Enhanced Group Management Note: SN8000B-8 includes PP+	
OPTIONAL SOFTWARE UPGRADES (BASE MODELS)	Power Pack+ (T5521A) Full Fabric (T4261A) Fabric Watch (324504-B21) Adv. Perf. Monitoring (324507-B21) ISL Trunking (T5527A) Extended Fabrics (324505-B21) Adaptive Networking (T5524A) SAO (TA756A)	Power Pack+ (T5522A) Fabric Watch (313454-B21) Adv. Perf. Monitoring (313450-B21) ISL Trunking (313452-B21) Extended Fabrics (313458-B21) Integrated Routing (T5528A) FICON CUP LTU (TA748A)	Power Pack+ (T5523A) Fabric Watch (313454-B21) Adv. Perf. Monitoring (313450-B21) ISL Trunking (313452-B21) Extended Fabrics (313458-B21) Integrated Routing (T5529A) FICON-CUP (TC320A)	Power Pack+ (T5521A) ISL Trunking (T5527A) Adaptive Networking T5524A) Server Application Optimization (TA756A)	Power Pack+ (T5522A) Fabric Watch (313454-B21) Adv Prf Mntr (313450-B21) ISL Trunking (313452-B21) Extended Fabrics (313458-B21) Integrated Routing (T5528A) 10Gbps FC Extension (TC358A)	Power Pack+ (TC441A) Fabric Watch (313454-B21) Adv Prf Mntr (313450-B21) ISL Trunking (313452-B21) Extended Fabrics (313458-B21) Integrated Routing (T5529A)	Advanced Extension: FCIP Trunking and Adaptive Rate Limiting (TA747A) Optional FOS features: ISL Trunking (313452-B21) Adv. Perf. Monitoring (313450-B21) Fabric Watch (313454-B21) Integrated Routing (TA750A) Advanced FICON Accelerator (TA748A, TA749A)	Extended Fabric (313458-B21) Fabric Watch (313454-B21) Adv Perf Monitor (313450-B21) ISL Trunking (313452-B21) Integrated Routing (T5529A)	Fabric Watch (313454-B21) Adv. Perf. Monitoring (313450-B21) ISL Trunking (313452-B21)	Power Pack+ for DC04 (TA640A) Integrated Routing for DC04 (TA643A) Integrated Routing for DC SAN Backbone (T5530A) ICL License for DC04 (TA642A) ICL License for DC SAN Backbone (TA641A) Encryption Perf Upgrd for blade (TA665A) MP Extension Blade Adv Upgrd (TA752A) Advanced FICON Accelerator (TA753A) FCIP LTU for MP Router Blade (T4427A) FICON/CUP (T4401A)	Integrated Routing (T5530A / TA643A) - 8slot/4slot ICL License (TC351A) 8-Slot Director Enterprise ICL License (TC389A) 4-Slot Director Enterprise ICL License (TC390A) ISL Trunking - 4Slot (325887-B21) Encryption Perf Upgrade for blade (TA665A) MP Extension Blade Adv Upgrd (TA752A) 10Gb FC for 16Gb FC blades (TA751A) MP Blade Performance Extension (T4427A)	
COMMENTS	Power Pack+ model contents include: Fabric Watch, ISL Trunking, Advanced Performance Monitoring, Extended Fabrics, Adaptive Networking, Server Application Optimization			HP B-Series Data Center Fabric Manager Professional (free) HP B-Series Data Center Fabric Manager Professional Plus (TA754A) HP B-Series Data Center Fabric Manager Enterprise (T5542A) HP B-series DCFM Professional Plus Upgrade LTU Not supported with 16Gb B-series Directors, Switches, and HBAs (TA755A)			Your DCFM license allows you to migrate to SAN Network Advisor at no charge: HP B-series SAN Network Advisor Enterprise Software (TC352A) HP B-series SAN Network Advisor Professional Plus Software (TC353A) HP B-series SAN Network Advisor Professional Plus Upgrade Software (TC354A)			* 8Gb SW SFP+ 1 Pack(AJ716A) NOT qualified or supported on 16Gb Fibre Channel blades (QK713A and QK714A). 8Gb SW SFP+ 1 Pack (AJ716B) ONLY qualified and supported on 16Gb Fibre Channel blades (QK713A and QK714A).		

SFPs sold separately except where specified. Please see individual HP switch QuickSpecs for supported SFPs and part numbers. 8 Gb platforms require the new B-Series SFPs. Refer to the B-Series product documentation at <http://h18006.www1.hp.com/storage/networking/index.html>

Services: HP recommends 3 Year Support Plus24 on all SKUs.