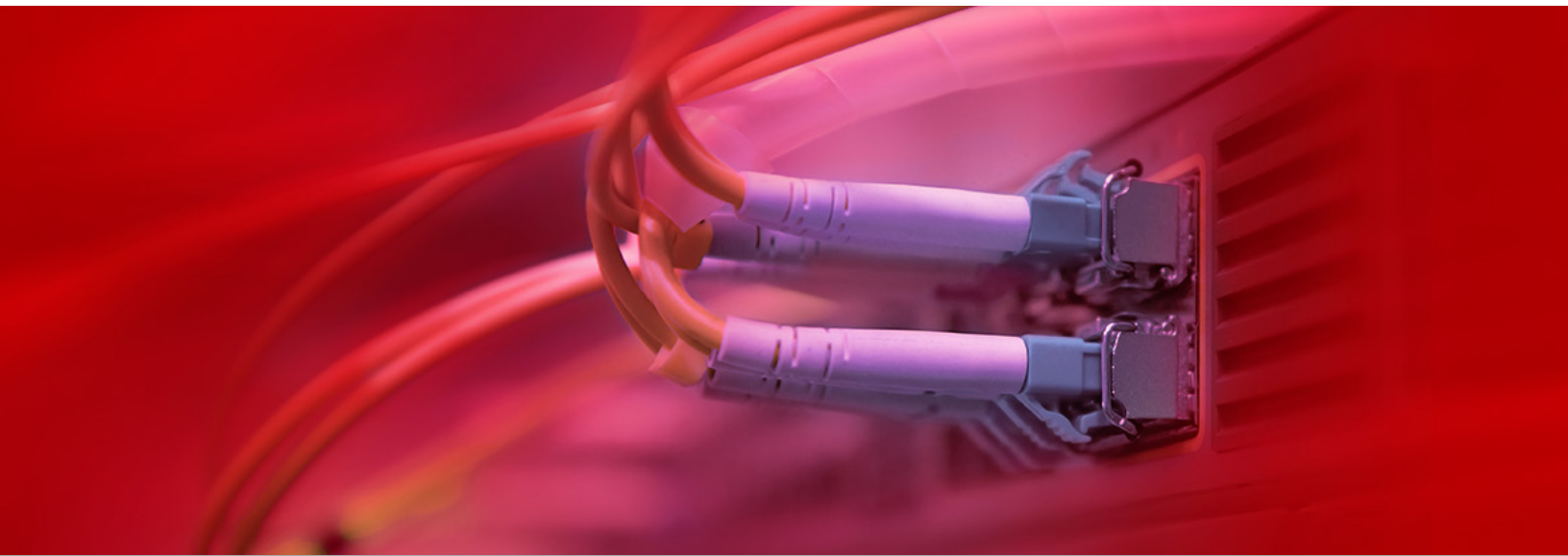




REFERENCE GUIDE

Storage Area Networks

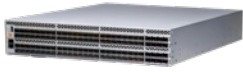

Brocade[®] Fibre Channel Products





Storage Area Networks Enterprise Directors

Model	Brocade Gen 7 (64Gb) Directors			
	X7-8		X7-4	
				
Ports	Up to 384 device ports with a 64G data rate plus 32 4xGen7 ICLs Up to 512 device ports with a 32G data rate plus 32 4xGen7 ICLs		Up to 192 device ports with a 64G data rate plus 16 4xGen7 ICLs Up to 256 device ports with a 32G data rate plus 16 4xGen7 ICLs	
Part Numbers	X-X78-0002 (Brocade X7-8 64G Ent 0Fan 0PSU): Airflow agnostic chassis, Power cord, PSU and fans must be ordered separately		X-X74-0002 (Brocade X7-4 64G Ent 0Fan 0PSU): Airflow agnostic chassis, Power cord, PSU and fans must be ordered separately	
Speed & Protocol	4, 8, 10, 16, 32, 64 Gbps FC ports		4, 8, 10, 16, 32, 64 Gbps FC ports	
Expandability	X-X7-64G-2148 X-X7-64G-1148 X-X7-64G-3148 X-X7-32G-2148 X-X7-32G-5148 X-X6-0148 X-X6-2148 X-X6-2164 X-SX6-0001 X-SX6-0002	FC64-48 FC Port Blade with 48 64Gb SWL SFP+ Secure Optics installed FC64-48 FC Port Blade with 48 32Gb SWL SFP+ Secure Optics installed FC64-48 FC Port Blade with 48 32Gb LWL SFP+ Secure Optics installed FC32-X7-48 FC Port Blade with 48 32Gb SWL SFP+ Secure Optics installed FC32-X7-48 FC Port Blade with 48 32Gb LWL SFP+ Secure Optics installed FC32-48 FC Port Blade with 0 Optics installed FC32-48 FC Port Blade with 48 32Gb SWL SFP+ Optics installed FC32-64 FC Ports Blade with 8 4x32Gb SWL QSFPs installed SX6 Extension blade with 16 32Gb SWL SFPs Optics and 0 Ethernet Optics installed SX6 Extension blade with 16 32Gb LWL SFPs Optics and 0 Ethernet Optics installed		
FAN Kits	X-X6-FANNPI-0122 X-X6-FANNPE-0122	Non-port side Intake (NPI) or Port side exhaust Non-port side Exhaust (NPE) or Port side Intake	X-X6-FANNPI-0122 X-X6-FANNPE-0122	Non-port side Intake (NPI) or Port side exhaust Non-port side Exhaust (NPE) or Port side Intake
Power Supplies	X-X6-RACNPIPSU-0104 X-X6-RACNPEPSU-0104	Non-port side Intake (NPI) or Port side exhaust Non-port side Exhaust (NPE) or Port side Intake	X-X6-RACNPIPSU-0104 X-X6-RACNPEPSU-0104	Non-port side Intake (NPI) or Port side exhaust Non-port side Exhaust (NPE) or Port side Intake
Height	14 RU		8 RU	
Standard Bundle Software	Fabric Operating System (FOS) WebTools, Advanced Zoning, Full Fabric, Enhanced Group Management, Forward Error Correction, and Virtual Fabrics Enterprise License Bundle (Fabric Vision®, ISL Trunking, Extended Fabrics, FICON CUP and Integrated Routing)			
Inter Chassis Link (ICL) POD Kit	ICL POD Kit: Each ICL kit enables eight QSFP ICL ports on the Core Routing Blades and includes eight QSFPs. X-X7ICLKIT-100M-01 For ICL connectivity to an X7 director. Includes eight 100m Gen7 QSFPs X-X7GEN6ICLKIT-100M-1 For ICL connectivity to a Gen 6 director. Includes eight 100m 4x32Gb QSFPs X-X7ICLKIT-2KM-01 Kit, X7 ICL POD, 8 x Gen7 2km QSFP SEC Note: X7-8 Chassis requires a minimum of 2 x 8-port POD Licenses			
Rail Kit	8 Slot Chassis X1884-R5 4-POST RACK MOUNT KIT (Included) X1878-R5 2-POST RACK MOUNT KIT (Optional)		4 Slot Chassis X-DCX4S-120 4-POST RACK MOUNT KIT (Optional) X-DCX4S-0121-R5 4-POST RACK PORT-SIDE EXHAUST MOUNT KIT (Included) X-X64-126 2-POST RACK MOUNT KIT (Optional)	
Fabric OS® Supported	Fabric OS v9.0.0a or higher		Fabric OS v9.0.0a or higher	
Management Software Solutions	SANnav Local Base <600 Ports (1, 3 & 5 Year Options) Switch Only SW-SUB-SANNAV-PRT-BASE-1Y SW-SUB-SANNAV-PRT-BASE-3Y SW-SUB-SANNAV-PRT-BASE-5Y SANnav Local Enterprise <15000 Ports (1, 3 & 5 Year Options) Switch and Director SW-SUB-SANNAV-PRT-ENT-1Y SW-SUB-SANNAV-PRT-ENT-3Y SW-SUB-SANNAV-PRT-ENT-5Y SANnav Global (1, 3 & 5 Year Options) SW-SUB-SANNAV-GBL-VIEW-1Y SW-SUB-SANNAV-GBL-VIEW-3Y SW-SUB-SANNAV-GBL-VIEW-5Y		SANnav Local Base <600 Ports (1, 3 & 5 Year Options) Switch Only SW-SUB-SANNAV-PRT-BASE-1Y SW-SUB-SANNAV-PRT-BASE-3Y SW-SUB-SANNAV-PRT-BASE-5Y SANnav Local Enterprise <15000 Ports (1, 3 & 5 Year Options) Switch and Director SW-SUB-SANNAV-PRT-ENT-1Y SW-SUB-SANNAV-PRT-ENT-3Y SW-SUB-SANNAV-PRT-ENT-5Y SANnav Global (1, 3 & 5 Year Options) SW-SUB-SANNAV-GBL-VIEW-1Y SW-SUB-SANNAV-GBL-VIEW-3Y SW-SUB-SANNAV-GBL-VIEW-5Y	



Storage Area Network (64G) Switches

Model	Brocade Gen 7 (64GB) G730 Switch	Brocade Gen 7 (64GB) G720 Switch
		
Ports	48 – 128 ports	24 – 56 ports
Part Numbers	X-G730-48-64G-PI: Switch, BRCD G730 48Pt 64G SW SFP PSIN (Port side intake) X-G730-48-64G-PE: Switch, BRCD G730 48Pt 64G SW SFP PTSX (Port side exhaust) Qualified for NetApp MetroCluster	X-G720-24-32G-PI: Switch, Brocade G720 24Pt 32G SW SFP PSIN (Port side intake) X-G720-24-32G-PE: Switch, Brocade G720 24Pt 32G SW SFP PTSX (Port side exhaust) X-G720-24-64G-PI: Switch, Brocade G720 24Pt 64G SW SFP PSIN (Port side intake) X-G720-24-64G-PE: Switch, Brocade G720 24Pt 64G SW SFP PTSX (Port side exhaust) Qualified for NetApp MetroCluster
Speed & Protocol	8, 10, 16, 32, 64 Gbps FC ports	8, 10, 16, 32, 64 Gbps FC ports
Expandability	POD, Brocade G730 24-pt w/24 64G SW SFP (X-MENT24PTPOD-64G) POD, Brocade G730 32-pt w/16 64G SW DDSFP (X-MENT32PTDDPOD-64G)	POD, Brocade G720 8-pt w/8 32G SW SFP SEC (X-MIDR8PTPOD-32G) POD, Brocade G720 8-pt w/8 64G SW SFP SEC (X-MIDR8PTPOD-64G) POD, Brocade Gen7 16-pt w/8 64G SWL SFP-DD (X-MIDR16DDG7POD-64G)
FICON/CUP Supported	No	Yes
Height	2U	1U
Standard Bundled Software	Enterprise Bundle (Fabric Vision, Trunking, Extended Fabric, FICON CUP)	Enterprise Bundle (Fabric Vision, Trunking, Extended Fabric, FICON CUP)
Software Licenses Upgrades	POD on Demand	POD on Demand
Rail Kits	X-R000296: Fixed Rack Mount Kit for 4 post racks (optional) X-R000294-R6: Mid-Mount Kit for 2 post racks (optional)	X-R000296: Fixed Rack Mount Kit for 4 post racks (optional) X-R000294-R6: Mid-Mount Kit for 2 post racks (optional)
Fabric OS* Supported	Fabric OS v9.1.0b or higher	Fabric OS v9.0.0 or higher
Management Software Solutions	SANnav Local Base <600 Ports (1, 3 & 5 Year Options) Switch Only SW-SUB-SANNAV-PRT-BASE-1Y SW-SUB-SANNAV-PRT-BASE-3Y SW-SUB-SANNAV-PRT-BASE-5Y SANnav Local Enterprise <15000 Ports (1, 3 & 5 Year Options) Switch and Director SW-SUB-SANNAV-PRT-ENT-1Y SW-SUB-SANNAV-PRT-ENT-3Y SW-SUB-SANNAV-PRT-ENT-5Y SANnav Global (1, 3 & 5 Year Options) SW-SUB-SANNAV-GBL-VIEW-1Y SW-SUB-SANNAV-GBL-VIEW-3Y SW-SUB-SANNAV-GBL-VIEW-5Y	SANnav Local Base <600 Ports (1, 3 & 5 Year Options) Switch Only SW-SUB-SANNAV-PRT-BASE-1Y SW-SUB-SANNAV-PRT-BASE-3Y SW-SUB-SANNAV-PRT-BASE-5Y SANnav Local Enterprise <15000 Ports (1, 3 & 5 Year Options) Switch and Director SW-SUB-SANNAV-PRT-ENT-1Y SW-SUB-SANNAV-PRT-ENT-3Y SW-SUB-SANNAV-PRT-ENT-5Y SANnav Global (1, 3 & 5 Year Options) SW-SUB-SANNAV-GBL-VIEW-1Y SW-SUB-SANNAV-GBL-VIEW-3Y SW-SUB-SANNAV-GBL-VIEW-5Y

Storage Area Network (32G) Switches

Model	Brocade Gen 6 (32GB) G630 Switch	Brocade Gen 6 (32GB) G610 Switch
		
Ports	48 – 128 ports	8, 16, 24 ports
Part Numbers	<p>X-G630-48-32G-PE: Switch,BRCD G630v2 48Pt 32G SW SEC SFP PTSX(Port side exhaust) X-G630-48-32G-PI: Switch,BRCD G630v2 48Pt 32G SW SEC SFP PSIN (Port side intake)</p> <p>Qualified for NetApp MetroCluster</p>	<p>16G Product: X-G610-8-16G-O-L (Switch,BRCD G610 8Pt 16G SWL SFP)</p> <p>32G Product: X-G610-8-32G-O-M (8-ports activated, 8x 32Gb SWL SFPs, AC, Port side exhaust air flow)</p> <p>Qualified for NetApp MetroCluster</p>
Speed & Protocol	4, 8, 10, 16, 32 Gbps FC ports	4, 8, 10, 16, 32 Gbps FC ports
Expandability	<p>Ports on demand: X-MENT24PTPOD-32G POD license, 24-port, 24 x 32G SWL SFP+ X-MENT32QFLEX-32G POD license, 32-port, 8 x 32G SWL QSFP</p>	<p>Ports on demand: X-SMED8PTPOD-16G (ships with 8x 16G SWL Optics) X-SMED8PTPOD-32G (ships with 8x 32G SWL Optics)</p>
FICON/CUP Supported	No	No
Height	2U	1U
Standard Bundled Software	Fabric Operating System (FOS), WebTools, Advanced Zoning, Enhanced Group Management, Forward Error Correction, Virtual Fabrics	Brocade Fabric OS, including Brocade advanced zoning, dynamic fabric provisioning, dynamic path selection, FSPF, NPIV
Software Licenses Upgrades	<p>Integrated Routing: G630 (SW-BSW-MENT128IRPOD-01-QS) Enterprise Bundle: Trunking Fabric Vision, Extended Fabric (SW-BSW-MENTEB5-01-QS)</p>	Enterprise Bundle: Brocade Fabric Vision technology (Clear Link diagnostics, Monitoring and Alerting Policy Suite (MAPS), Flow Vision, bottleneck detection, enhanced BB credit recovery, FEC, and critical diagnostic and monitoring capabilities), Extended Fabric and Trunking. (SW-BSW-SMEDEB4-01C)
Rail Kits	<p>X-R000296: Fixed Rack Mount Kit for 4 post racks (optional) X-R000294-R6: Mid-Mount Kit for 2 post racks (optional)</p>	<p>X-000072-R6 Non-Port Side Fixed-Mount Rack Kit (15"-20") for Four-Post Racks (Optional) X-R000162-R6 Fixed-Mount Rack Kit for Four-Post Racks (Optional) X1697-R5 Slide Rack Mount Kit (Optional) X-000165-R6 Mid-Mount Kit for Two-Post Racks (Optional)</p>
Fabric OS* Supported	Fabric OS v8.1.0a or higher	Fabric OS v8.1.0a or higher
Management Software Solutions	<p>SANnav Local Base <600 Ports (1, 3 & 5 Year Options) Switch Only SW-SUB-SANNAV-PRT-BASE-1Y SW-SUB-SANNAV-PRT-BASE-3Y SW-SUB-SANNAV-PRT-BASE-5Y SANnav Local Enterprise <15000 Ports (1, 3 & 5 Year Options) Switch and Director SW-SUB-SANNAV-PRT-ENT-1Y SW-SUB-SANNAV-PRT-ENT-3Y SW-SUB-SANNAV-PRT-ENT-5Y SANnav Global (1, 3 & 5 Year Options) SW-SUB-SANNAV-GBL-VIEW-1Y SW-SUB-SANNAV-GBL-VIEW-3Y SW-SUB-SANNAV-GBL-VIEW-5Y</p>	<p>SANnav Local Base <600 Ports (1, 3 & 5 Year Options) Switch Only SW-SUB-SANNAV-PRT-BASE-1Y SW-SUB-SANNAV-PRT-BASE-3Y SW-SUB-SANNAV-PRT-BASE-5Y SANnav Local Enterprise <15000 Ports (1, 3 & 5 Year Options) Switch and Director SW-SUB-SANNAV-PRT-ENT-1Y SW-SUB-SANNAV-PRT-ENT-3Y SW-SUB-SANNAV-PRT-ENT-5Y SANnav Global (1, 3 & 5 Year Options) SW-SUB-SANNAV-GBL-VIEW-1Y SW-SUB-SANNAV-GBL-VIEW-3Y SW-SUB-SANNAV-GBL-VIEW-5Y</p>

Extension Switches

Model	Brocade Gen 6 7810 switch	Brocade Gen 5 7840 Switch
		
Ports	12 x 32 Gbps 6 x 1 GbE/ 10GbE 2 x GbE copper RJ-45	24 x 16 Gbps 16 x 1 GbE/10 GbE 2 x 40 GbE
Part Numbers	X-7810-04X6 (7810,4x6P,16GB SWL SFP) X-7810-12X6 (7810,12x6P,16GB SWL SFP) X-7810-UG (UPGRADE, 8 PORT-ON-DEMAND w/8X16G SWL SFPs)	X-7840-24-16G-B-R-M (42 port activated, 24x16 SWL, 0 1/10/40 SFP w/Enterprise Bundle) Qualified for NetApp MetroCluster
Speed & Protocol	8, 16, 32 Gbps 1/10 GE	2, 4, 8, 16 Gbps FC ports 1/10 and 40 Gbps Ethernet
Expandability	Increasing WAN traffic rate limit to 2.5 Gbps Enable 10GE on Ethernet ports Enable 8 additional FC ports	Increasing WAN traffic rate limit to 10 Gbps Increase WAN traffic rate limit above 10 Gbps to system limit
FICON/CUP Supported	No	Yes
Height	1U	2U
Standard Bundled Software	Advanced Compression Ipsec ARL	Enterprise Bundle (EXF, TRK and FV) and Advanced Extension (AEX). Also includes Adaptive Rate Limiting, FCIP Trunking, FCIP Quality of Service (QoS), Compression, FCIP Fast Write, Open Systems Tape Pipelining, Storage-Optimized TCP, IPSEC encryption
Software Licenses Upgrades	Upgrade License: Enables 10GE on Ethernet ports, 8 FC ports, Increase WAN Capability to 2.5Gbps, Extended Fabric, Trunking, Fabric Vision, Integrated Routing (X-7810-UG)	WAN Rate Upgrade 1 (SW-BSW-LEXTSUG1-01) WAN Rate Upgrade 2 (SW-BSW-LEXTSUG2-01) FICON CUP (216-00074) Integrated Routing (216-00072)
Rail Kits	X-R000296: Fixed Rack Mount Kit for 4 post racks (optional) X-R000294-R6: Mid-Mount Kit for 2 post racks (optional)	X-R000296: Fixed Rack Mount Kit for 4 post racks (optional) X-R000294-R6: Mid-Mount Kit for 2 post racks (optional)
Fabric OS Supported	Fabric OS v8.2.1 or higher	Fabric OS v7.4.0 or higher
Management Software Solutions	SANnav Local Base <600 Ports (1, 3 & 5 Year Options) Switch Only SW-SUB-SANNAV-PRT-BASE-1Y SW-SUB-SANNAV-PRT-BASE-3Y SW-SUB-SANNAV-PRT-BASE-5Y SANnav Local Enterprise <15000 Ports (1, 3 & 5 Year Options) Switch and Director SW-SUB-SANNAV-PRT-ENT-1Y SW-SUB-SANNAV-PRT-ENT-3Y SW-SUB-SANNAV-PRT-ENT-5Y SANnav Global (1, 3 & 5 Year Options) SW-SUB-SANNAV-GBL-VIEW-1Y SW-SUB-SANNAV-GBL-VIEW-3Y SW-SUB-SANNAV-GBL-VIEW-5Y	SANnav Local Base <600 Ports (1, 3 & 5 Year Options) Switch Only SW-SUB-SANNAV-PRT-BASE-1Y SW-SUB-SANNAV-PRT-BASE-3Y SW-SUB-SANNAV-PRT-BASE-5Y SANnav Local Enterprise <15000 Ports (1, 3 & 5 Year Options) Switch and Director SW-SUB-SANNAV-PRT-ENT-1Y SW-SUB-SANNAV-PRT-ENT-3Y SW-SUB-SANNAV-PRT-ENT-5Y SANnav Global (1, 3 & 5 Year Options) SW-SUB-SANNAV-GBL-VIEW-1Y SW-SUB-SANNAV-GBL-VIEW-3Y SW-SUB-SANNAV-GBL-VIEW-5Y

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For more information

For more information, visit <https://www.broadcom.com/company/oem-partners/fibre-channel-networking/netapp> or contact the NetApp OEM Team at Brocade. General Sales/Pre-Sales Technical Support: NetApp-Sales.pdf@Broadcom.com

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