

Barco BS2-10G series for Nexxis

High-performance open networking top-of-rack switches with multirate Gigabit Ethernet and unified ports



The Barco BS2-10G 12P, BS2-10G 28P and BS2-10G 48P switches are included in Barco's latest releases for the Nexxis OR solution. All switch variants provide state-of-the-art 100GbE uplinks and non-blocking 10G fiber connectivity. They also support flexible configuration options to allow all Nexxis high-end features e.g. sharing a switch amongst multiple ORs by separation into VLANs, Inter-OR capabilities amongst many switches and 100G switch interconnections.

Maximum performance and functionality

The Barco BS2-10G Nexxis switch series are high-performance, multifunction, 1/10/25/40/50/100 GbE top-of-rack (ToR) switches custom-built for optimal performance in digital Nexxis operating rooms. Architectural features include optimized expandability, flexibility and redundant, hot-swappable power supplies and fans.

Key features

- 1RU high-density 10/40/100 GbE switches with up to 48 ports of 10 GbE (SFP+) or up to 48 ports of 10GBaseT ports, or up to 28 ports of 8/16 fibre channel, two ports of 40 GbE (QSFP+), and up to four ports of 100GbE (QSFP28) or four ports of 8/16/32G fibre channel
- The BS2-10G 12P is a 1RU, half-rack width 10/100GbE ToR switch with up to 12 ports of 10GbE (SFP+) or up to 12 ports of 10GBaseT ports, and up to three ports of 100GbE (QSFP28)
- Multi-rate 100GbE ports support 10/25/40/50 GbE. 40GbE ports support 10GbE. 10GbE ports support 1GbE. Up to four different simultaneous speeds are possible in each profile.
- 1.76Tbps (full-duplex) non-blocking, cut-through switching fabric delivers line-rate performance under full load on BS2-10G 48P
- 960Gbps (full-duplex) non-blocking, cut-through switching fabric delivers line-rate performance under full load on BS2-10G 28P
- 840Gbps (full-duplex) non-blocking, cut-through switching fabric delivers line-rate performance under full load on BS2-10G 12P
- Redundant, hot-swappable power supplies and fans (BS2-10G 12P has fixed power supplies and fans)
- IEEE 1588v2 supported (hardware only) on 48 port model

Table Header	BS2-10G 12P	BS2-10G 28P	BS2-10G 48P
Ports	12xSFP+ 3xQSFP28	28xSFP+ 2xQSFP28	48xSFP+ 2xQSFP+ 4xQSFP28
Max 10GbE density	24	36	72
Max 25GbE density	12	8	16
Max 40GbE density	3	2	6
Max 50GbE density	6	4	8
Max 100GbE density	3	2	4
Switching capacity	840Gbps	960Gbps	1.76Tbps
Throughput	630Mpps	720Mpps	1320Mpps
Max power consumption	180W	260W	370W
Typical operating power	90W	160W	200W
Number of fan trays	Fixed	4	4
Fans per fan tray	3	1	1
Airflow	I/O Panel to PSU Airflow	I/O Panel to PSU Airflow	I/O Panel to PSU Airflow
Net weight	8.30lbs	19.66 lbs (8.92 kg)	20.15 lbs (9.14 kg)
Max thermal output	614 BTU/h	886 BTU/h	1261 BTU/h
Dimensions (WxHxD)	20.9 x 4.125 x 45 cm	1 RU / 43.1 x 4.4 x 45.7 cm	1 RU / 43.1 x 4.4 x 45.7 cm
Operating temperature	5° to 40° C / 41° to 104° F	5° to 40° C / 41° to 104° F	5° to 40° C / 41° to 104° F
Operating humidity	5 to 85% (RH), non-condensing	5 to 85% (RH), non-condensing	5 to 85% (RH), non-condensing
Storage temperature	-40° C to 65° C / -40° to 149°F	-40° C to 65° C / -40° to 149°F	-40° C to 65° C / -40° to 149°F
Storage humidity	5 to 95% (RH), non-condensing	5 to 95% (RH), non-condensing	5 to 95% (RH), non-condensing

Physical

1 RJ45 console/management port with RS232 signalling
 1 RJ45 micro-USB-B console port
 1 RJ45 10/100/1000Base-T management Ethernet port
 Size: 1 RU, 1.75"(h) x 17"(w) x 18"(d) (4.4cm (h) x 43.1cm (w) x 45.7cm (d))
 BS2-10G 12P: 1.7"(h) x 8.28"(w) x 18"(d) (4.125cm(h) x 20.9cm (w) x 45cm (d))

Environmental

Power supply: 100–240 VAC 50/60 Hz Power supply (DC), applicable to BS2-10G 12P: rated -40 to -72 VDC
 Max. current draw per system: 6A/5A at 100/120V AC; 3A/2.5A at 200/240V AC
 BS2-10G 12P: 2A/1.7A at 100/120V AC; 1A/0.8A at 200/240V AC
 BS2-10G 12P (DC): -40V/5A, -48V/4.2A, -72V/2.8A
 Max. operating specifications: Operating temperature: 41° to 104° F (5° to 40° C)
 Operating humidity: 5 to 85% (RH), non-condensing
 Max. non-operating specifications: Storage temperature: -40° to 149°F (-40° C to 65° C)
 Storage humidity: 5 to 95% (RH), non-condensing

Redundancy

Hot swappable redundant power (not applicable to BS2-10G 12P)
 Hot swappable redundant fans (not applicable to BS2-10G 12P)
 Fixed, redundant power supply and fan for BS2-10G 12P

Performance

Packet buffer memory: 12MB
 CPU memory: 4GB
 MAC addresses: 272K (in Scaled L2 mode)
 PVST: 128 instances
 ARP table 200K (in Scaled L3 host mode)
 IPv4 routes: 200K (in Scaled L3 routes mode)
 IPv6 hosts: 64K
 IPv6 routes: 130K (in Scaled L3 routes mode)
 Multicast hosts: 8K
 Link aggregation: 32 links per group, 128 groups
 Layer 2 VLANs: 4K
 Layer3 VLANs: 500
 MSTP: 32 instances
 LAG load balancing: Based on layer 2, IPv4 or IPv6 headers
 L2 Ingress ACL: 6K
 L2 Egress ACL: 1K
 IPv4 Ingress ACL: 6K
 IPv4 Egress ACL: 1K
 IPv6 Ingress ACL: 3K
 IPv6 Egress ACL: 500
 Storage performance parameters
 iSCSI Sessions: 255
 iSCSI Target: 16
 F-Port: Max F-Port Sessions: 526
 F-Port: Max members in a zone: 526

IEEE Compliance

802.1AB LLDP
 TIA-1057 LLDP-MED
 802.1D Bridging, STP

802.1p L2 Prioritization
 802.1Q VLAN Tagging, GVRP
 802.1Qbb PFC
 802.1Qaz ETS
 802.1s MSTP
 802.1w RSTP
 PVST+
 802.1X Network Access Control
 802.3ab Gigabit Ethernet (1000BASE-T) or breakout
 802.3ac Frame Extensions for VLAN Tagging
 802.3ad Link Aggregation with LACP
 802.3ae 10 Gigabit Ethernet (10GBase-X)
 802.3ba 40 Gigabit Ethernet (40GBase-SR4, 40GBase-CR4, 40GBase-LR4, 100GBase-SR10, 100GBase-LR4, 100GBase-ER4) on optical ports
 802.3bj 100 Gigabit Ethernet
 802.3i Ethernet (10Base-T)
 802.3u Fast Ethernet (100Base-TX)
 802.3x Flow Control
 802.3z Gigabit Ethernet (1000Base-X) with QSA
 ANSI/TIA-1057 LLDP-MED
 Jumbo MTU support 9,416 bytes

Layer2 Protocols

802.1D Compatible
 802.1p L2 Prioritization
 802.1Q VLAN Tagging
 802.1s MSTP
 802.1w RSTP
 802.1t RPVST+
 802.3ad Link Aggregation with LACP
 VLT (Virtual Link Trunking)
 VLT Enhancements
 Minloss Upgrades
 VLT Proxy Gateway
 RVPST over VLT
 DCB, FSB, iSCSI over VLT
 RSPAN over VLT

RFC Compliance

768 UDP
 793 TCP
 854 Telnet
 959 FTP
 1321 MD5
 1350 TFTP
 2474 Differentiated Services
 2698 Two Rate Three Color Marker
 3164 Syslog
 4254 SSHv2

General IPv4 Protocols

791 IPv4
 792 ICMP
 826 ARP
 1027 Proxy ARP
 1035 DNS (client)
 1042 Ethernet Transmission
 1191 Path MTU Discovery
 1305 NTPv4

1519	CIDR
1812	Routers
1858	IP Fragment Filtering
2131	DHCP (server and relay)
5798	VRRP
3021	31-bit Prefixes
3046	DHCP Option 82 (Relay)
1812	Requirements for IPv4 Routers
1918	Address Allocation for Private Internets
2474	Diffserv Field in IPv4 and Ipv6 Headers
2597	Assured Forwarding PHB Group
3195	Reliable Delivery for Syslog
3246	Expedited Forwarding PHB
4364	VRF-lite (IPv4 VRF with OSPF and BGP)
COPP: Control Plane Policing	
Policy Based Routing	
General IPv6 Protocols	
1981	Path MTU Discovery
2460	IPv6
2461	Neighbor Discovery
2462	Stateless Address AutoConfig
2463	ICMPv6
2464	Ethernet Transmission
2675	Jumbo grams
3587	Global Unicast Address Format
4291	IPv6 Addressing
2464	Transmission of IPv6 Packets over Ethernet Networks
2711	IPv6 Router Alert Option
4007	IPv6 Scoped Address Architecture
4213	Basic Transition Mechanisms for IPv6 Hosts and Routers
4291	IPv6 Addressing Architecture
5095	Deprecation of Type 0 Routing Headers in IPv6
IPv6 Management support (telnet, FTP, TACACS, RADIUS, SSH, NTP)	
OSPF	
1587	NSSA
1745	OSPF/BGP interaction
1765	OSPF Database overflow
2154	MD5
2328	OSPFv2
2370	Opaque LSA
3101	OSPF NSSA
3623	OSPF Graceful Restart (Helper mode)
Security	
2865	RADIUS
3162	Radius and IPv6
4250, 4251, 4252, 4253, 4254	SSHv2
4301	Security Architecture for IPsec
4302	IPsec Authentication Header
4303	ESP Protocol

Regulatory compliance**Safety**

UL/CSA 60950-1, Second Edition

EN 60950-1, Second Edition

IEC 60950-1, Second Edition Including All National Deviations and Group Differences

BGP

1997	Communities
2385	MD5
2439	Route Flap Damping
2796	Route Reflection
2842	Capabilities
2918	Route Refresh
3065	Confederations
4271	BGP-4
4360	Extended Communities
4893	4-byte ASN
5396	4-byte ASN Representation
5492	Capabilities Advertisement

Linux Distribution

Debian Linux version 8.4

Linux Kernel 3.16

Network Management

SNMPv1/2
SSHv2
FTP, TFTP, SCP
Syslog
Port Mirroring
RADIUS
802.1X
Support Assist (Phone Home)
Netconf APIs
XML Schema
CLI Commit (Scratchpad)
sFlow

Automation

Control Plane Services APIs
Linux Utilities and Scripting Tools

Quality of Service

Access Control Lists
Prefix List
Route-Map
Rate Shaping (Egress)
Rate Policing (Ingress)
Scheduling Algorithms
Round Robin
Weighted Round Robin
Deficit Round Robin
Strict Priority
Weighted Random Early Detect

Data center bridging

802.1Qbb Priority-Based Flow Control
802.1Qaz Enhanced Transmission Selection (ETS)
Data Center Bridging eXchange (DCBx)
DCBx Application TLV (iSCSI, FCoE)
FCF F-Port
FC Zoning

EN 60825-1 Safety of Laser Products Part 1: Equipment Classification Requirements and User's Guide
EN 60825-2 Safety of Laser Products Part 2: Safety of Optical Fibre Communication Systems
FDA Regulation 21 CFR 1040.10 and 1040.11

Emissions

Australia/New Zealand: AS/NZS CISPR 32: Class A
Canada: ICES-003, Issue-4, Class A
Europe: EN 55032: 2015+A1:2007 (CISPR 32), Class A
Japan: VCCI V3/2009 Class A
USA: FCC CFR 47 Part 15, Subpart B:2009, Class A

Immunity

EN 300 386 V1.4.1:2008 EMC for Network Equipment
EN 55024: 1998 + A1: 2001 + A2: 2003
EN 61000-3-2: Harmonic Current Emissions
EN 61000-3-3: Voltage Fluctuations and Flicker
EN 61000-4-2: ESD
EN 61000-4-3: Radiated Immunity
EN 61000-4-4: EFT
EN 61000-4-5: Surge
EN 61000-4-6: Low Frequency Conducted Immunity

RoHS

All S-Series components are EU RoHS compliant.

Certifications

Japan: VCCI V3/2009 Class A
USA: FCC CFR 47 Part 15, Subpart B:2009, Class A

Warranty

1 year return to Depot

Accessories

- Transceiver 40G - QSFP+
- Transceiver 100G - QSFP28
- Cable 100GbE QSFP28 to QSFP28, length 3m
- Crossover cable OM4, length 3m
- Crossover cable OM4, length 10m
- Cable 40GbE, QSFP+ to 4x10GbE LC, length 3m
- Depending on your location, you'll find 2 EU power cables and 2 US power cables or 2 China power cables.

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Technical specifications are subject to change without prior notice. Please check www.barco.com for the latest information.