

DATA CENTER SWITCH

EXP400-32X



The Edgecore EXP400-32X is a high performance, low power, low latency, fully programmable SDN data center switch designed for data center, cloud, and AI networks.

The EXP400-32X is a 32 x 400G QSFP112 port switch in a 1RU form factor. Each of the 400G QSFP112 ports can breakout to 2 x 200G, or 4 x 100G, optimizing compute racks by enabling 100Gbps-per-lane server links. The device is an ideal leaf or ToR switch for cloud data center operators that are driving the rapid adoption of compute server NICs to 400Gbps speeds.

The EXP400-32X also supports Xsight Instruction Set Architecture (ISA) for users to define flexible packet processing rules, routing protocols, and network policies. The programmability is also an important underlying capability for many of the advanced features, including queue management, congestion control, and telemetry. The programmability will handle newly-defined notification mechanisms, such as the Ultra Ethernet Transport (UET) protocol, packet trimming, and PFC. In addition, programmability allows flexible, precise, and real time telemetry, supporting INT, IOAM, IFA, ERSPAN, sFlow, NetFlow, and Netstream, all using hardware acceleration.

Optimized for interconnecting AI/ML, storage, and compute clusters in data centers, the EXP400-32X supports congestion-aware routing, which comprises measuring and signaling congestion as well as load balancing across the network fabric. For a given fabric link, the EXP400-32X can measure flow rate, latency, and queue level. When congestion is detected, it can signal using Explicit Congestion Notification (ECN), Congestion Signaling (CSIG), or other customer-defined mechanisms. The EXP400-32X can handle flowlet-based load balancing and packet spraying across fabric links, as well as traditional flow-based approaches like ECMP.

Key Features and Benefits

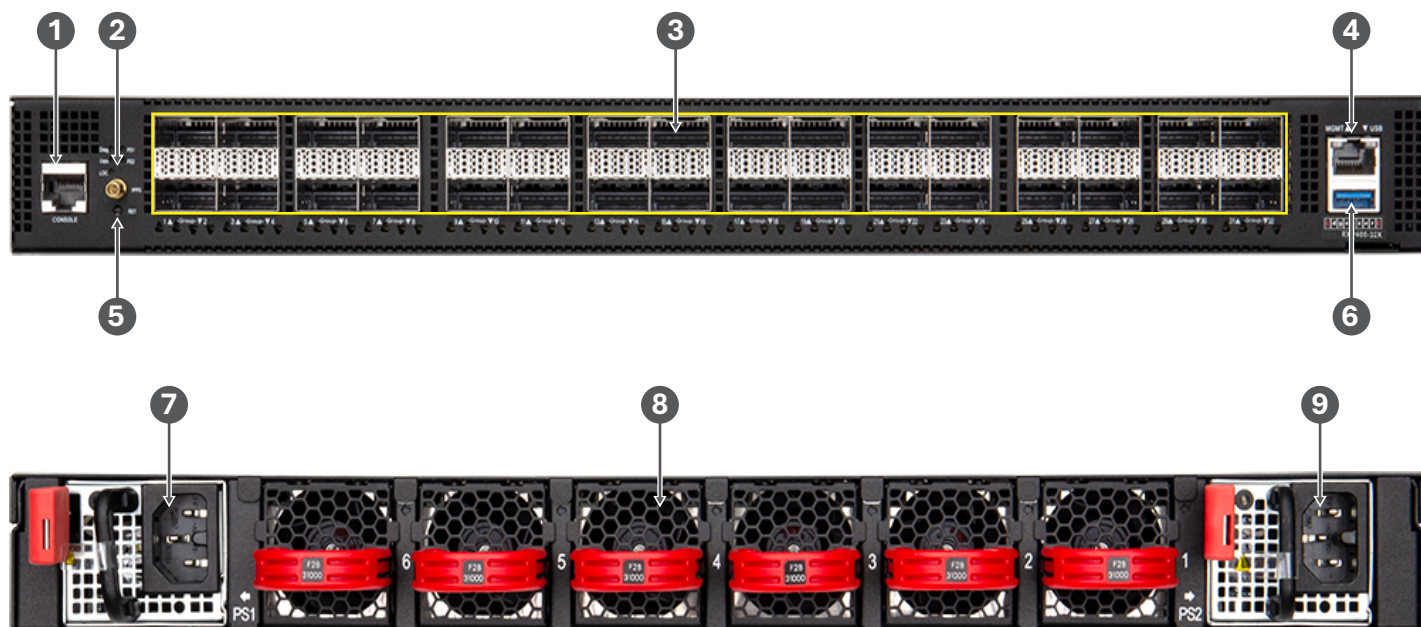
- Supports 12.8Tbps full-duplex throughput
- Supports 100 Gbps PAM4 LR SerDes with a retimer-less design
- The 32 x 400G QSFP112 ports can breakout to 2 x 200G, or 4 x 100G
- Fully programmable software-defined pipeline and elastic control tables enable application-specific optimization and in-field updates
- Supports UEC-compatible features such as congestion-aware dynamic load balancing, CSIG, packet trimming, PFC, and UET header parsing
- Supports fast link-failure recovery, rich telemetry, advanced data-plane failure prediction, and lossless operation with PFC required for deployment in AI/ML clusters
- Supports front-to-back airflow direction
- All ports on front; PSUs and fans accessible from rear
- Hot-swappable, load-sharing, redundant AC power.
- 5+1 redundant, hot-swappable fan modules
- Switch pre-loaded Open Networking Install Environment (ONIE) for the automated loading of community SONiC, Xsight OS, or commercial NOS



Free Software Included



Interfaces



Description

- | | |
|----------------------------|---------------------------------------|
| 1. Console port | 6. USB 3.0 storage port |
| 2. 1PPS SMA connector | 7. PSU 1 |
| 3. 32 x 400G QSFP112 ports | 8. Hot-swappable 5 + 1 redundant fans |
| 4. Management port | 9. PSU 2 |
| 5. Reset button | |

Ports

- Switch Ports:
 - 32 x 400G QSFP112 switch ports, each supports 2 x 200GbE, and 4 x 100GbE via breakout cables
- Management Ports on Port Side:
 - 1 x RJ-45 serial console
 - 1 x RJ-45 1G BASE-T management
 - 1 x USB Type A storage
- Supported Transceivers and Cables:
 - 400G DAC cable
 - 400G AOC cable
 - 400G QSFP112 SR4
 - 200G QSFP56-SR4
 - 100G DAC
 - 100G AOC
 - 100G SR4
 - 100G LR4
 - 100G DR1
 - 100G FR1
 - 100G LR1

Note: More optics and detailed cabling information can be found at www.edge-core.com.

Key Components

- Switch Silicon: Xsight Labs X2
- CPU Modules:
 - Intel® Xeon® D-1713NTE 4-Core 2.2GHz
 - 32GB DDR4 SO-DIMM with ECC
 - 1TB m.2 2280 NVMe SSD

Performance

- Switching Capacity: 12.8 Tbps (full duplex)
- Jumbo frames support up to 9216 Bytes
- Packet Buffer Size: 64 MB integrated packet buffer

Physical and Environmental

- Dimensions (WxDxH): 442 x 509 x 44 mm (17.40 x 20.04 x 1.73 inch)
- Weight: 10.005 kg (20.05 lb)
- Fans: 5+1 hot-swappable redundant fans
- Operating Temperature: 0°C – 40°C (32°F – 104°F)
- Storage Temperature: -40°C – 70°C (-40°F – 158°F)
- Operating Humidity: 0% – 95% non-condensing
- Operating Altitude: 0 – 10,000 feet

Software

- Switch is loaded with Open Network Install Environment (ONIE) software installer
- Compatible with the following NOS options: open source options, plus commercial NOS offerings

LEDs

- QSFP112 Port LEDs: Link Status, Activity, Rate
- Ethernet Management Port LED: Link Status, Activity
- System LEDs: Diagnostic, Locator, PSU and Fan Status

Power

- PSUs: 2 redundant, load-sharing, hot-swappable AC PSUs
- AC Input Voltage: 90 to 240 VAC at 50-60 Hz

Regulatory Compliance

- EMI
 - FCC
 - FCC 47 CFR Part 15 Subpart B Class A
 - CE
 - EN55022 Class A
 - EN55035
 - EN300 286
 - EN 61000-3-2
 - EN 61000-3-3
 - UKCA
 - BS EN 62368-1: 2014 + A11: 2017
 - VCCI
 - VCCI-32
- Safety
 - UL/ CUL
 - UL, CSA
 - CB
 - IEC: EN-60950-1 & IEC 62368
- RoHS
 - Restriction of Hazardous Substances (RoHS) 6/6
 - China Restriction of Hazardous Substances (RoHS)
- Environmental:
 - Low-Temperature Exposure and Thermal Shock (packaged): NEBS GR63-CORE ISSUE 5, Section 4.1.1.1
 - High Relative Humidity Exposure (Packaged): NEBS GR63-CORE ISSUE 5, Section 4.1.1.2
 - High-Temperature Exposure and Thermal Shock (Packaged): NEBS GR63-CORE ISSUE 4, Section 4.1.1.3
 - Operating Temperature and Relative Humidity: NEBS GR63-CORE ISSUE 5, Section 4.1.2
 - Altitude : NEBS GR63-CORE ISSUE 4, Section 4.1.3
 - Handling Drop Tests -Packaged Equipment: NEBS GR63-CORE ISSUE 5,Section 4.3.1.1
 - Unpackaged Equipment -Drop Tests (All Equipment): NEBS GR63-CORE ISSUE 5, Section 4.3.2
 - Earthquake (10U Rack): NEBS GR63-CORE ISSUE 4, Section 4.4.1 (Zone4)
 - Office Vibration Test Procedure;90 minutes/axis (Stand & 42U Rack): NEBS GR63-CORE ISSUE 5,section 4.4.4
 - Transportation Vibration-Packaged Equipment: NEBS GR63-CORE ISSUE 5, section 4.4.5
 - Acoustic noise: NEBS GR63-CORE ISSUE 5, section 4.6
 - Bump: IEC60068-2-29- packaged
 - Shock: ETSI EN 300 019-2-3 -Operational Tests, Class T3.2 op

Warranty

Please check www.edge-core.com for the warranty terms in your country.

For More Information

To find out more about Edgecore Networks Corporation products and solutions, visit www.edge-core.com.

About Edgecore Networks Corporation

Edgecore Networks Corporation is in the business of providing innovative network solutions. In the service provider network, in the data center or in the cloud, Edgecore Networks Corporation delivers the software and systems that transform the way the world connects. Edgecore Networks Corporation serves customers and partners worldwide. Additional information can be found at www.edge-core.com.

Edgecore Networks Corporation is a subsidiary of Accton Technology Corporation, the leading network ODM company. The Edgecore data center switches are developed and manufactured by Accton.

To purchase Edgecore Networks solutions, please contact your Edgecore Networks Corporation representatives at +886 3 563 8888 (HQ) or +1 (949)-336-6801 or authorized resellers.

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