

400G Data Center Switch

- Spine/Fabric open network switch
- Xsight Labs X2 chip
- Fully programmable by XISA
- SONiC-ready
- Ubuntu-ready
- NPB apps with InfiniCore



The Aurora X2-81 has a fully programmable 12.8T Xsight Labs X2 chip at its heart. It delivers ultra-low-power, low-latency connectivity to scale AI, storage, and compute clusters, custom packet-broker/network-orchestration, and forensic infrastructure with zero trade-offs.

With 32x400G QSFP112 ports, the Aurora X2-81 supports 2x200G and 4x100G breakout configuration for leaf or ToR cloud deployments. 2x SFP56 X2 management ports and 2x 10G SFP+ control plane ports give flexibility.

Featuring Xsight Instruction Set Architecture (ISA), the Aurora X2-81 enables tailored packet processing, routing protocols, and dynamic network policies. Such flexibility enables advanced features without performance penalties, paving the way for Ultra Ethernet Transport (UET) protocol support to scale out massive AI training clusters and High-Performance Computing (HPC) networks over standard Ethernet.

The Aurora X2-81 supports a timing option with 1 PPS and 10MHz inputs for Synchronized, Deterministic Networking.

Key Features & Benefits

- Spine/Fabric/Data center interconnect with 400G or 100G links.
- 32x400GbE QSFP112 ports, each supports breakout to 2x200GbE or 4x100GbE ports.
- Switching silicon: 12.8Tbps Xsight Labl X2 XLX2B128A.
- Scale AI, compute, and storage at will. Stay efficient at scale. Extend capabilities without replacing hardware.
- Precise Control over Packets with XSDK and open XISA.
- Intel Xeon D-1713NT quad-core processor for application deployment.
- Redundant hot-swappable 1+1 AC or DC power. Redundant hot-swappable 1+1 cooling.
- Pre-installed Open Network Install Environment (ONIE) automates the loading of compatible NOS as part of data center provisioning in the fashion that servers are provisioned.
- BMC-enabled, ipmi 2.0 and redfish support

Network OS (NOS) options

- Ubuntu Linux with XSDK for application development. No vendor lock-in.
- SONiC Distribution by Netberg is a hardened, open-source distribution of SONiC (Software for Open Networking in the Cloud) that runs on Netberg Aurora switches. It meets the needs of AI backend fabrics, cloud, enterprise, and campus network environments.
- InfiniCore Network Visibility Studio transforms the Aurora X2-81 into a visibility powerhouse, leveraging the programmability of the Xsight Labs X2 chipset.

Ports

- Switch Ports:
32 x 400G QSFP112 ports
2 x 10/25/50G SFP56 X2 management ports
- Management Ports:
1 x mini-USB serial console
1 x RJ45 100/1000BASE-T management port
2 x 10G SFP+ out-of-band management ports
1 x USB 3.0 Type A storage port
- Timing
1x 1PPS SMA, 1x 10MHz SMA

Performance

- Switching silicon: 12.8Tbps Xsight Labs X2 XLX2B128A
- Forwarding rate: 5.8Bpps
- Latency: under 700 ns first-bit-in-first-bit-out latency.
- Packet Buffer: 64MB
- Intel® Xeon™ Processor D-1713NT
- 32GB DDR4 ECC
- 128GB SSD

LED

- Power, ID, and System status LEDs per unit
- Link and Activity LEDs per port
- FAN Status LED per FAN
- PSU Status LED per PSU

Highlights

- X-PND: Elastic resource allocation of control tables maximizing adaptation to application needs.
- X-IQ: UEC-ready programmable congestion measurement and signalling to facilitate dynamic load balancing and fast failure detection and recovery.
- X-LB: UEC-ready weighted congestion-aware dynamic load balancing for reducing tail latency.
- X-FC: Incast tolerance mechanism with HoL Blocking prevention.
- X-VIEW: Telemetry suite for network trouble-shooting and optimization.
- X-MON: In-field device health monitor for improved reliability.

Ordering Information

Base model: Netberg Aurora X2-81 32x400G QSFP112, Intel D-1713NT, 32GB DDR4/128GB SSD, rack kit

Part Number	PSU	Airflow	Timing
NBAX2-81-AC-F	2x AC 1600W	Front-to-Back	No
NBAX2-81-AC-F-T	2x AC 1600W	Front-to-Back	Yes
NBAX2-81-DC-F	2x DC 1300W	Front-to-Back	No
NBAX2-81-DC-F-T	2x DC 1300W	Front-to-Back	Yes

Accessories

Compatible Transceivers

- 400GE QSFP112, 200G QSFP56, 100G QSFP28, 50G SFP56, 25G SFP28, 10G SFP+

Fan Modules

- FAN-NBA-X2-F, FtB airflow

About us

Netberg provides innovative hardware solutions for data centers and enterprises worldwide. With vast expertise in hardware and software, we provide versatile, flexible, and scalable Ethernet switches, telecom solutions, and custom HW/SW products. More information about Netberg is available at www.netbergtw.com

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Physical and Environmental

- Dimensions (DxWxH): 515 x 440 x 44mm (20.3 x 17.32 x 1.72 in)
- Weight: 11kg (24.3 lbs)
- Operating Temperature: 0°C to 45°C (32°F to 113°F)
- Storage Temperature: -40°C to 70°C (-40°F to 158°F)
- Operating Humidity: 5% to 95% non-condensing

Power Specs

- 1+1 1600W redundant, load sharing, hot-swappable PSU modules
- AC/HVDC input: 100-240V~, 15-7.5A/190-310V==, 7.5A
- DC input: -36 to -72V, 38A
- Typical power: 200 Watts (without optics)

Cooling

- 6 N+1 redundant, hot-swappable fans

Regulatory Compliance

- Safety
IEC 62368-1
- EMC
FCC Part 15, Subpart B, Class A
EN 61000-3-2:2014, Class A
EN 61000-3-3:2013
EN 55032:2015+AC:2016, Class A
EN 55024:2010+A1:2015
IEC 61000-4-2/3/4/5/6/8/11
EN 55035:2017

- Environment
Electrical and Electronic Equipment (WEEE Directive 2012/19/EU)
RoHS-3.0 Compliant

Software

- Pre-installed Open Network Install Environment (ONIE)
- Compatible with: SONiC, Ubuntu Linux 20.04, InfiniCORE Network Visibility Studio

Power Supplies

- PSU-NBAX2-81-ACF, 1600W AC, FtB airflow
- PSU-NBAX2-81-DCF, 1300W DC, FtB airflow