

# Pluribus Freedom 9460-X Switch

High-Performance Open Network Switch with Advanced Network Services for Leaf and Top of Rack Deployments with 48x 10 Gigabit Ethernet SFP+ Interfaces and 6x 100 Gigabit Ethernet QSFP28 Interfaces

## Highlights

- Compact 1RU standards-based open network switch with ONIE software installer
- Optimized to support Netvisor OS advanced services
- Deployment-proven Broadcom Trident 3 switching ASIC
- Wire-speed, sustained performance and throughput for all configurations
- Highly scalable VXLAN routing, bridging and gateway capabilities supported in hardware
- Redundant power and fans to support high-availability operations
- Reversible airflow supports hot-aisle and cold-aisle placement



## Product Overview

The Pluribus Freedom™ 9460-X switch is a best-in-class, programmable open network switch that provides standards-based networking to meet the stringent requirements of high-performance enterprise and cloud data centers. Built on the deployment-proven Broadcom StrataXGS® Trident 3 switching ASIC, the Pluribus Freedom 9460-X switch is optimized to deliver the advanced networking and service capabilities of the Pluribus Netvisor® ONE Operating System (OS). The Pluribus Freedom 9460-X switch is built with the Open Network Install Environment (ONIE) to support any compatible network operating system for maximum flexibility and adaptability to meet future networking requirements.

The Pluribus Freedom 9460-X switch delivers wire-speed Layer 2 and Layer 3 switching and routing with sustained packet forwarding performance of 2.16 terabit per second (Tbps) and 1 billion packets per second (Bpps) throughput with all network services enabled. The switch provides high-density and low-latency 10G ports, with 100G uplinks making it an ideal leaf/top of rack (ToR) switch. The Pluribus Freedom 9460-X switch provides 48 SFP+ server-facing ports that each support either 10G or 1G connections and 6 QSFP28 interfaces. 2 out of the 6 QSFP28 ports can be configured as 4x 10G or 4x25G connections, the remaining 4 QSFP28 ports operate at either 1x100G or 1x40G.

The platform is built for high availability environments with redundant and hot-swappable power and fan units. The switch is highly power efficient and offers airflow flexibility to support hot- or cold-aisle deployments. The compact design of the Pluribus Freedom 9460-X switch minimizes its deployment footprint, requires less power and lowers cooling requirements, which reduce the cost of network operations.

## System Highlights

- Wire-speed full-duplex across all ports, Layer 2 and Layer 3 forwarding up to 2.16 Tbps and 1 Bpps
- 48 SFP+ ports, each able to support either 1x10G or 1x1G
- 6 QSFP28 ports for 6x100G/40G, out of which 2 ports are configurable to support 4x25G or 4x10G ports
- Broadcom Trident 3 switching ASIC
- VXLAN services supported in hardware at wire speed
- 32 MB shared packet buffer with Dynamic Buffer Allocation
- All ports on front; PSUs and fans accessible from rear
- Dual redundant, load-sharing, hot-swappable PSUs
- 4+1 redundant, hot-swappable fan modules
- Configurable hot-/cold-aisle with port-to-power and power-to-port airflow
- 1RU compact form factor mountable in either a standard 19" or 21" rack

## Adaptive Cloud Fabric

The Pluribus Adaptive Cloud Fabric (ACF) empowers organizations to speed up their transition to a completely automated network that supports software defined data center and cloud automation principles with a simpler non disruptive and more transparent architecture that makes it easier to deliver, manage and secure service delivery. The ACF can be deployed across a single data center, or geographically distributed to seamlessly interconnect multiple of data centers or aggregate the campus edge over existing core WAN infrastructure.

## Netvisor ONE Operating System

Enabling simple, plug-and-play deployments, the Pluribus Freedom 9460-X switch is delivered as an integrated, turnkey solution that is shipped pre-configured with the Pluribus Netvisor ONE OS installed on the ONIE foundation.

Pluribus Netvisor ONE is a Linux-based, containerized network operating system (NOS) that provides a best-in-class Layer 2 and Layer 3 networking foundation, Netvisor also offers the optionally licensed advanced network fabric overlay services of the Adaptive Cloud Fabric™ with embedded SDN-automation for underlay and overlay networking along with network performance monitoring telemetry.

## Netvisor ONE Licensing Options

- **Netvisor Enterprise** — included with the switch. It supports Layer 2 and Layer 3 switching and routing functionality with all standard networking protocols and high-availability features.
- **Netvisor Fabric** — It adds VXLAN, telemetry, Adaptive Cloud Fabric and security and segmentation capabilities (not included with the switch).
- **vNET License** — It supports multi-tenant and network/traffic segmentation requirements. Licensed one per switch. vNET Manager capabilities require Virtual Netvisor (vNV) to be deployed (not included with the switch).
- **VirtualWire+™ License** — It includes Fabric license and enables VirtualWire capabilities (not included with the switch).
- **VirtualWire™ License** — It enables VirtualWire capabilities in standalone L1 VirtualWire mode (not included with the switch).

## Warranty

The Pluribus Freedom 9460-X switch is backed by a 12-month limited hardware warranty. Multiple extended support options, including advanced replacement and 24x7 on-demand support services, are available. Contact Pluribus Networks or a Pluribus Networks authorized reseller for complete details.

# Specifications

## Pluribus Freedom 9460-X Switch

### Switching Engine

- Broadcom Trident 3 (BCM56771) ASIC

### Onboard CPU/NFV Engine

- Intel Atom (Denverton) C3558 quad-core 2.2 GHz processor
- 16 GB RAM SO-DIMM
- 64 GB SSD MLC

### Software

- Switch is loaded with ONIE software installer
- Pre-loaded with current shipping version of Pluribus Netvisor ONE OS based upon options ordered
- Supports qualified open networking OS software from any vendor

### Interface Ports

#### Network Interfaced

- 48x SFP+ — configurable as 48x 10G or 48x1G
- 6x QSFP28 — each port configurable as 1x 100G or 1x 40G; or up to 2 ports configurable as 4x10G or 4x25G

#### Management Ports

- 1x RJ45 serial console
- 1x RJ-45 100/1000BASE-T management
- 1x USB Type A Storage

### Performance

- Wire-speed L2 and L3 packet forwarding
- Switching capacity: 2.16 Tbps
- Forwarding rate: 1 Bpps
- Supports jumbo frames up to 9216 Bytes
- 32 MB pooled packet buffer

### Hardware Capacity

- VXLAN supported in hardware
- 224K MAC addresses
- 80K IPv4 host routes
- 32K IPv4 LPM routes
- VLAN IDs: 4K

### Operational

- 2x redundant, load-sharing, hot-swappable PSUs
- Input voltage 100-240 VAC at 50-60 Hz
- PSU efficiency up to 93%
- 356W maximum power (without pluggable optics)
- Hot-swappable 4+1 redundant fan modules
- Supports both hot-aisle and cold-aisle placement with reversible airflow

### Physical and Environmental

- 1RU, mountable in either 19" or 21" racks
- Dimension: (WxDxH) 44.25 x 47.33 x 4.395cm (17.42 x 18.63 x 1.73 in)
- Weight: 8.815 kg (19.43 lbs) with two PSU modules installed
- Storage Temperature: -40°C to 70°C (-40°F to 158°F)
- Operating Temperature: 0°C to 40°C (32°F to 104°F)
- Operating Humidity: 5% to 95% non-condensing

### LEDs

- SFP+: link speed, status, activity, rate
- QSFP28 (40G): link speed, status, activity
- QSFP28 breakout (4 per QSFP28 port): link speed, status, activity
- Ethernet management port: status, activity
- Console port: status
- System: diagnostic, locator, PSU and fan status

### Regulatory

#### EMI

- CE Mark
- EN55022 Class A
- EN55024
- EN6100-3-2
- EN6100-3-3

#### FCC Part 15 Subpart B Class A

#### VCCI Class A

#### Safety

- CB
- UL/CUL

#### Environmental

- NEBS GR63-CORE (Pre-test)

#### RoHS-2.0 compliant

