

Pluribus Freedom 9572-V Switch

High-Performance Open Network Switch with Advanced Network Services for Leaf and Top of Rack Deployments with up to 48 10/25 Gigabit Ethernet Interfaces and 6 40/100 or 72 10/25 Gigabit Ethernet interfaces

Highlights

- Compact 1 RU standards-based open network switch built on ONIE
- Deployment-proven Broadcom Tomahawk+ switching ASIC
- Intel Broadwell CPU supports advanced control plane functions and integrated network services
- Optimized to support Netvisor ONE advanced services
- Wire-speed, sustained performance and throughput for all configurations
- Large-scale VXLAN configurations supported in hardware
- Redundant power and fans support high availability operations
- Minimal power consumption with up to 93% power efficiency reduces operating costs
- Reversible airflow supports hot-aisle and cold-aisle placement
- Low heat dissipation minimizes cooling requirements



Product Overview

The Pluribus Freedom™ 9572-V 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® Tomahawk+ switching ASIC, the Pluribus Freedom 9572-V switch is optimized to deliver the advanced networking and service capabilities of the Pluribus Netvisor® ONE Operating System (OS). The Pluribus Freedom 9572-V switch is Open Compute Project (OCP) compliant and is built with the Open Network Install Environment (ONIE) to support any compatible network operating system for maximum flexibility and adaptability to future data center networking requirements.

The Pluribus Freedom 9572-V switch delivers wire-speed layer 2 and layer 3 switching and routing with sustained packet forwarding performance of 1.8 Terabits per second (Tb/s) and 2.7 Billion packets per second (Bp/s) throughput with all network services enabled.

The Pluribus Freedom 9572-V switch provides 48 SFP28 server-facing ports that each support either 25G or 10G connections and 6 QSF28 that can each be configured as either additional 4x 10G or 4x 25G ports or 1x 40G or 1x 100G for uplink connections making it ideal for Leaf and ToR deployments.

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 air-flow flexibility to support hot or cold aisle deployments. The compact design of the Pluribus Freedom 9572-V switch minimizes its deployment footprint, requires less power and lowers cooling requirements, which reduces the cost of data center network operations.

System Highlights

- Wire-speed Layer 2 and Layer 3 forwarding up to 1.8 TB/s and 2.7 Bp/s
- 48 SFP28 ports each able to support either 1x 25G or 1x 10G (up to 48 total ports)
- 6 QSFP28 ports each configurable to support 1x 100G or 1x 40G as uplink ports or 4x 25G or 4x 10G ports
- Broadcom Tomahawk+ switching ASIC
- VXLAN services supported in hardware at wire-speed
- 16 Mb shared packet buffer with SmartTable and SmartBuffer technologies
- Intel Xeon D-1518 (Broadwell) quad-core 2.4 GHz processor
- All ports on front; PSUs and fans accessible from rear
- Dual redundant, load-sharing, hot-swappable PSUs
- 310 watt typical power consumption with efficiency of up to 93%
- 5+1 redundant, hot-swappable fan modules
- Configurable hot/cold aisle with port-to-power and power-to-port airflow
- 1 RU compact form factor mountable in either a standard 19" or 21" rack

Netvisor ONE Operating System

Enabling simple, plug-and-play deployments, the Pluribus Freedom 9572-V switch is delivered as an integrated, turn-key solution that is shipped pre-configured with the Pluribus Netvisor ONE OS installed on the Open Network Install Environment (ONIE) foundation.

Pluribus Netvisor ONE is a virtualized Network Operating System (NOS) that provides a best-in-class layer 2 and layer 3 networking foundation, and optionally licensed advanced network services such as VXLAN, the distributed Adaptive Cloud Fabric™ architecture and embedded network performance monitoring telemetry.

Netvisor ONE virtualizes the switch hardware, decoupling network resources from the underlying hardware to create multiple network containers on a single device. Each container can be dynamically allocated, and a single switch can instantiate multiple network containers. Each container has its own virtualized router and can support granular east/west and north/south network segmentation, strict multi-tenant services, security and policies, and the integration of virtualized network services and functions.

Netvisor ONE Licensing Options

- **Netvisor Enterprise** — includes Layer 2 and Layer 3 switching and routing functionality with all standard networking protocols and high availability features
- **Netvisor Fabric** — adds VXLAN, Telemetry, Adaptive Cloud Fabric, and security and segmentation capabilities
- **vNET License** — supports multi-tenant and network/traffic segmentation requirements. Licensed one per fabric based upon number of segments. vNET capabilities requires at least one Pluribus Freedom 9532-C or 9572-V switch to be a member of the Adaptive Cloud Fabric architecture or the deployment of Virtual Netvisor (vNV).
- **VirtualWire™ License** — additive license per switch and can co-exist with standard network interfaces

Warranty

The Pluribus Freedom 9572-V 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 9572-V Switch

Switching Engine

- Broadcom Tomahawk+ (BCM56963) ASIC

Onboard CPU / NFV Engine

- Intel Xeon D-1518 (Broadwell) quad-core 2.4 GHz processor
- 16 GB SO-DIMM DDR4 RAM
- 16 MB SPI Flash
- 8 GB NAND Flash
- 32 GB M.2 SSD MLC

Software

- Switch is loaded with Open Network Install Environment (ONIE) software installer
- Comes 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 Interfaces

- 48 x SFP28 — each supporting either 1x 10G or 1x 25G ports
- 6 x QSFP28 – each supporting 1x 40G or 1x 100G or with splitter cables each can support 4x 10G or 4x 25G ports

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: 1.8 Tb/s
- Forwarding rate: 2.7 Bp/s
- Supports jumbo frames up to 9216 Bytes
- 16 MB pooled packet buffer
- Ultra-low latency 450 ns with configurable pipeline latency enabling sub-400 ns port-to-port operation

Hardware Capacity

- VXLAN supported in hardware
- 136K MAC addresses
- 72K IPv4 host routes
- 36K IPv6 host routes
- 16K+ IPv4 routes
- VLAN IDs: 4K

Operational

- 2x redundant, load-sharing, hot-swappable PSUs
- Input voltage: 90 to 240 VAC at 50-60 Hz
- PSU efficiency up to 93%
- 310 L/C watt typical power without pluggable optics
- 350 L/C watt Maximum power without pluggable optics
- Hot-swappable 5+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) 43.8 x 51.5 x 4.35cm (17.3 x 20.3 x 1.71in)
- Weight: 10 kg (23 lbs), with two PSU modules installed
- Storage Temperature: -40°C to 70°C (-40°F to 158°F)
- Operating Temperature: 0°C to 45°C (32°F to 113°F)
- Operating Humidity: 5% to 95% non-condensing
- Operating Altitude: 0 to 3,048 meters (0 to 10,000 Feet)

LEDs

- SFP28 Port LEDs: Link Speed, Status, Activity
- QSFP28 Port LEDs: Link speed, Status, Activity
- Ethernet Management port: Status, Activity
- System: Diagnostic, Locator, PSU and Fan Status

Regulatory

EMI

- CE Mark
 - EN55032 Class A
 - EN55024
 - EN61000-3-2
 - EN61000-3-3

FCC Part 15 Subpart B Class A

VCCI Class A

Safety

- CB
- UL/CUL

Environmental

- Temperature: IEC 68-2-14
- Vibration: IEC 68-2-36, IEC 68-2-6
- Shock: IEC 68-2-29

RoHS-6 compliant

