

Pluribus Freedom 9372-X Switch

High-Performance Open Network Switch with Advanced Network Services for Leaf and Top of Rack Deployments with 48x10GbE SFP+ Interfaces and 6x40GbE QSFP+ Interfaces

Highlights

- Compact 1RU standards-based open network switch built on ONIE
- Optimized to support Netvisor ONE OS advanced services
- Deployment-proven Broadcom StrataXGS® Trident2+ switching ASIC
- Intel Atom C2538 quad-core 2.4GHz x86 processor
- Sustained performance and throughput for all configurations
- VXLAN supported in hardware
- Redundant power and fans to support high-availability operations
- Hot-swappable, load sharing, redundant AC or -48 VDC PSUs. 12 VDC power input option
- Reversible air flow supports hot-aisle and cold-aisle placement
- Low heat dissipation minimizes cooling requirements



Product Overview

The Pluribus Freedom™ 9372-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 2+ switching ASIC, the Pluribus Freedom 9372-X switch is optimized to deliver the advanced networking and service capabilities of the Pluribus Netvisor® ONE Operating System (OS). The Pluribus Freedom 9372-X 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 meet future networking requirements.

The Pluribus Freedom 9372-X switch delivers wire-speed Layer 2 and Layer 3 switching and routing with sustained packet forwarding performance of 1.44Tbps full-duplex and 1Bpps throughput with all network services enabled. The Pluribus Freedom 9372-X switch provides 48x10GbE ports and 6x40GbE uplinks. The switch can be deployed either as a top-of-rack switch or as part of a 10GbE or 40GbE distributed spine, forming a non-blocking folded-Clos data center fabric.

The platform is built for high availability environments with redundant and hot-swappable power and fan units. The switch is highly power efficient and offer airflow flexibility to support hot or cold aisle deployments. The compact design of the Pluribus Freedom 9372-X switch minimizes its deployment footprint, requires less power and lowers cooling requirements, which reduce the cost of network operations.

System Highlights

- Wire-speed Layer 2 and Layer 3 forwarding up to 1.44Tbps full duplex and 1Bpps
- 48xSFP+ switch ports, supporting 10GbE (DAC, 10GBASE-SR/LR) or 1GbE (1000BASE-T/SX/LX)
- 6x40 QSFP switch ports, each supporting 40GbE (DAC, 40GBASE-SR4/LR4) or 4x10GbE (DAC or fiber breakout cable)
- Port grouping to group 4x10G ports into one 40G port at the physical layer for maximum bandwidth utilization, and for 300m optical reach over MMF (subject to NOS options)
- Broadcom Trident2+ switching ASIC
- Intel Atom C2538 quad-core 2.4GHz x86 processor
- VXLAN services supported in hardware at wire speed
- 16MB integrated packet buffer
- All ports on front; PSUs and fans accessible from rear
- Hot-swappable, load-sharing, redundant AC or -48 VDC PSUs. 12 VDC power input option
- 5+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

Unified Cloud Fabric™

The Unified Cloud Fabric (UCF) delivers the benefits of hyperscale agility, simplicity and availability to data centers, unified cloud networks and many other networking applications. The UCF unites networks across multiple dimensions: switches and servers, overlay and underlay networks, and distributed clouds. Powered by the Linux-based Netvisor® ONE operating system, the UCF solution features fabric-wide provisioning from any single switch in the fabric, resulting in massive service delivery speed-up and error reduction. This automation is achieved in a distributed, controller-less fashion, without the need for costly and complex software-defined networking appliances. The UCF solution offers a rich set of Layer 2 and Layer 3 overlay services to allow network architects and engineers to solve virtually any networking problem with agility in the overlay while maintaining a highly stable and scalable underlay. When deployed in servers with data processing units (DPUs), the fabric provides even finger-grained microsegmentation with distributed firewalls at the individual application level.

Netvisor ONE Operating System

Enabling simple, plug-and-play deployments, the Pluribus Freedom 9372-T switch is delivered as an integrated, turnkey solution that is shipped pre-configured with the Pluribus Netvisor ONE OS installed on the Open Network Install Environment 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 Unified Cloud Fabric™ architecture and embedded network performance monitoring telemetry.

Netvisor ONE Licensing Options

- **Netvisor ONE Enterprise Edition** — This license supports Layer 2 and Layer 3 switching and routing functionality with all standard networking protocols and high-availability features.
- **Netvisor ONE Fabric Edition** — This license supports VXLAN, telemetry, Unified Cloud Fabric and security and segmentation capabilities (not included with the switch).
- **vNET** — This license 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+™** — This license includes the Fabric license and enables VirtualWire capabilities (not included with the switch).
- **VirtualWire™** — This license enables VirtualWire capabilities in standalone Layer 1 VirtualWire mode (not included with the switch).

Warranty

The Pluribus Netvisor® ONE OS and Pluribus Freedom™ Open Networking Switches are backed by a 90-Day limited warranty and access to technical support. Pluribus FreedomCare™ extended support options provide for extended support coverage, which includes advanced product replacements, software updates and upgrades and access to 24x7 technical support. Contact Pluribus Networks or a Pluribus Networks authorized reseller for details on advanced support options.

Specifications

Pluribus Freedom 9372-X Switch

Switching Engine

- Broadcom BCM56864 Trident2+ 720

Onboard CPU

- Intel Atom C2538 quad-core 2.4GHz x86 processor
- 8GB SO-DIMM DDR3 RAM with ECC
- 16MB SPI
- 32GB mSATA

Software

- Switch is loaded with Open Network Environment Install Environment (ONIE) software installer
- Pluribus Netvisor ONE OS - based upon options ordered

Interface Ports

Network Interfaces

- 48xSFP+ each supporting 10GbE or 1GbE
- 6xQSFP each supporting 40GbE or 4x10GbE

Management Ports

- 1xRJ-45 serial console
- 1xRJ-45 100/1000BASE-T management
- 1xUSB Type A storage port

Performance

- Switching Capacity: 1.44Tbps full duplex
- Forwarding Rate: 1Bpps
- Jumbo frames support up to 9398 bytes
- Packet buffer size: 16MB integrated packet buffer

Hardware Capacity

- Please refer to the Pluribus Netvisor® ONE OS data sheet

Operational

- PSUs: 2 redundant, load-sharing, hot-swappable AC or -48 VDC
- Input Voltage: 90 to 264 VAC at 50-60 Hz. -48 to -72 VDC
- Input current: Max 6 A@100/120 VAC, 3 A@ 200/240 VAC, 10 A@ -72 VDC
- PSU efficiency: Up to 93% for AC PSUs
- Power input option: 12 VDC
- Max power: 282 Watts
- Typical power: 224 Watts

Physical and Environmental

- Dimensions (WxDxH): 44.3 x 47.3 x 4.34 cm (17.4 x 18.6 x 1.71 in)
- Weight: 8.95 kg (19.73 lb.), with two installed PSU modules
- Fans: hot-swappable 4+1 redundant fans
- Operating temperature: 0°C to 40°C (32°F to 104°F)
- Storage temperature: -40°C to 70°C (-40°F to 158°F)
- Operating humidity: 5% to 95% non-condensing

LEDs

- 10G SFP+ Port LEDs: Link Speed, Link Status, Activity
- 40G QSFP Port LEDs: Link Status, Activity for 40G status
- 40G QSFP Breakout LEDs: set of 24 LEDs, 4 per QSFP port, show Link, Status, Activity 10G links with 4 x 10G breakout
- Ethernet Management Port LED: Link Status, Activity
- Console Port LED: Link Status
- System LEDs: PSU1, PSU2, Diagnostic, Fans, Locator

Regulatory

EMI

- CE Mark (EN55032 Class A)
- FCC Part 15 Class A
- VCCI

Safety

- CB, EN 62368
- UL

Environmental

- Temperature: IEC 68-2-14
- Drop: ISTA 2A
- Vibration: IEC 68-2-36, IEC 68-2-6
- Shock: IEC 68-2-29
- Acoustic Noise Level: Target at under 60 dB in 40°C

RoHS-6 Compliant

