Pluribus Freedom 9460-T Switch

High-Performance Open Network Switch with Advanced Network Services for Leaf and Top of Rack Deployments with 48x 1/10GBASE-T RJ45 Interfaces and 6x 100 Gigabit Ethernet QSFP28 Interfaces

Highlights

- Compact 1RU standards based open network switch with ONIE software installer
- Optimized to support Netvisor ONE OS advanced services
- Deployment-proven Broadcom StrataXGS® Trident3 switching ASIC
- Wire-speed, sustained performance and throughput for all configurations
- Highly scalable VXLAN routing, bridging and gateway capabilities supported in hardware
- Hot-swappable, load sharing, redundant AC or -48 VDC PSUs
- Reversible airflow supports hot-aisle and cold-aisle placement

Product Overview

The Pluribus Freedom™ 9460-T 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-T switch is optimized to deliver the advanced networking and service capabilities of the Pluribus Netvisor® ONE Operating System (OS). The Pluribus Freedom 9460-T 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 9460-T switch delivers wire-speed Layer 2 and Layer 3 switching and routing with sustained packet forwarding performance of 2.16 terabit per second (Tbps) full duplex and 1 billion packets per second (Bpps) throughput with all network services enabled. The switch provides high-density and low-latency 10 GbE ports, with 100 GbE uplinks making it an ideal leaf/top of rack (ToR) switch. The Pluribus Freedom 9460-T switch provides 48 x 10 GbE ports and 6 x 100 GbE uplinks. The switch can be deployed either as a Top-of-Rack switch, or as part of a 40 GbE or 100 GbE 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 offers airflow flexibility to support hot- or cold-aisle deployments. The compact design of the Pluribus Freedom 9460-T 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 full duplex and 1 Bpps
• 48 RJ-45 copper 1/10GBase-T ports
• 6 x 100 QSFP28 switch ports, each supporting 100 GbE (DAC, 100GBase SR4/LR4) or 4 x 25 GbE (DAC or fiber breakout cable)
• Broadcom Trident3 switching ASIC
• Intel Atom(Denverton) C3558 2.2GHz quad-core x86 processor
• VXLAN services supported in hardware at wire speed
• 32 MB integrated packet buffer
• All ports on front; PSUs and fans accessible from rear
• Hot-swappable, load sharing, redundant AC or -48 VDC 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-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 Adaptive Cloud Fabric™ architecture and embedded 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 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 9460-T Switch

Switching Engine
• Broadcom BCM56771 Trident3 1.08 Tbps

Onboard CPU
• Intel Atom (Denverton) C3558 2.2GHz quad-core x86 processor
• DDR4: 8GB x 2 SO-DIMM
• SPI Flash: 16 MB x 2
• Storage: m.2 32GB MLC

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
• 48 x RJ-45 each supporting 10 GbE
• 6 x QSFP28 each supporting 100 GbE or 4 x 25 GbE

Note: When a DAC cable is used in a topology, a link issue may be encountered if the CR4 Auto-Negotiation/Link Training does not turn on. This can be solved by manually enabling CR4 Auto-Negotiation/Link Training.

Note: Due to a chip limitation, only two QSFP28 ports can support breakout modes at the same time. Ports 49 to 51 and 52 to 54 can only have one port in breakout mode. Currently, the default ports are 51 and 54, which can be changed according to user preference.

Management Ports
• 1 x RJ-45 serial console
• 2 x RJ-45 100/1000BASE-T management
• 1 x USB Type A storage port

Performance
• Switching Capacity: 2.16 Tbps full duplex
• Forwarding Rate: 1 Bpps
• Jumbo frames support up to 9398 Bytes
• Packet Buffer Size: 32 MB 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: 100-240 VAC at 50-60 Hz
• Max Power: 323 Watts
• Typical Power: 241 Watts
• Hot-swappable 4+1 redundant fan modules
• Supports both hot-aisle and cold-aisle placement with reversible airflow

Physical and Environmental
• Dimensions (WxDxH): 44.25 x 47.33 x 4.395 cm (17.42 x 18.63 x 1.73 in)
• Weight: 9.59 kg (21.14 lb.), with two installed PSUs
• 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
• 100G QSFP28 Port LEDs: Link Status, Activity
• Ethernet Management Port LED: Link Status, Activity
• System LEDs: PSU1, PSU2, Diagnostic, Fans, Locator

Regulatory
EMI
• CE Mark
• EN55032
• CISPR32
• AS/NZS CISPR 32
• EN55024
• CISPR 24
• CISPR 35
• EN 61000-3-3
• EN 61000-3-2
• FCC Title 47, Part 15, Subpart B Class A
• VCCI Class A
• CNS 13438 (BSMI)
• CCC

Safety
• CB
• EN60950, UL60950
• EN62368, UL62368
• CCC
• BSMI, 14336-1

Environmental
• NEBS GR63-CORE (Pre-test)
• WEEE Standards: The switches comply with the following WEEE standards: Waste Electrical and Electronic Equipment (WEEE Directive 2002/96/EC)

RoHS 2.0 Compliant

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