

Highlights

- Fixed-form switch for virtualized branch and network edge applications
- Leverages Extreme Fabric Connect to simplify the network, while helping segment traffic to meet regulatory/security needs
- Native Fabric Extend support enables transparent extension of Fabric Connect services over 3rd-party networks
- 48 ports of Gigabit Ethernet with IEEE 802.3at (30W) PoE
- Flexible 10Gb/25Gb/40Gb uplinks via optional VIM module
- Compact 1U form factor
- Non-blocking, wire-speed switching architecture
- MACsec on 10/100/1000 access as well as modular uplink ports for secure link encryption
- Hot-swappable, redundant power supplies and fans
- Supports both Fabric Connect and/or conventional Routed IP networking deployments



Virtual Services Platform 4900-48P

Simplify Your Network with an Extreme Fabric Connect Multi-service Edge Device

Designed to extend the reach of Extreme Fabric Connect technology to the branch and network edge, the Virtual Services Platform (VSP) 4900-48P delivers fully featured network virtualization capabilities in a cost-effective Ethernet platform. Optimized for small sites, the VSP 4900-48P offers full multi-service capabilities in a compact form factor and provides a simplified, streamlined way to build and manage networks.

Product Overview

The VSP 4900-48P provides 48 ports of 10/100/1000Mb Ethernet along with 30W Power over Ethernet (PoE). It also includes modular uplink options - at 10Gb, 25Gb and 40Gb - for flexible linkage to other switches or devices over a range of media. It further delivers a full set of Extreme Fabric Connect capabilities to enable simplified, automated network services delivery.

The VSP 4900 is ideal for small sites where there's a need to extend Extreme Fabric Connect technology across the wide area, the metro, or to the campus edge. In these scenarios, the VSP 4900 can help segment traffic for regulatory or security reasons or to support multiple entities or tenants. For these types of deployments, the VSP 4900 delivers a rich set of multi-service/multi-tenant functionality - all in cost-effective hardware platform.

The VSP 4900 can be deployed in conjunction with other Extreme Fabric Connect platforms or switches to simplify the network, streamline operations, lower costs and help businesses gain a competitive edge.

Extreme Fabric Connect

The VSP 4900 natively supports the Extreme Fabric Connect technology. Based on an extended implementation of the Shortest Path Bridging (SPB) standards of IEEE 802.1aq and IETF RFC 6329, Fabric Connect offers the ability to create a simplified virtualized network that simplifies network provisioning and reduces the strain on network and IT personnel. Benefits include:

- Eliminates need to configure network-wide VLANs
- Replaces legacy protocols with a single unified protocol
- Removes the risk of network loops
- Delivers an edge-only provisioning model that seamlessly integrates with orchestration and automation
- Supports both L2 and L3 virtualization, including IP multicast routing

Traditionally, provisioning new network services required engineers to touch every device in the service path, configuring each device to enable both the active and redundant links. The bigger the network the more complex this task becomes.

Leveraging Fabric Connect delivers fundamental change. Rather than the network appearing as a mass of individual devices, it becomes a single cloud, so that engineers only need to touch the unique device that is providing service directly to the end-point. Fabric Connect instantly propagates all the end-point's service attributes to every other node within the fabric.

Specific Fabric Connect features supported on the VSP 4900 Series include: L2 Virtual Service Networks (VSNs), Layer 3 Virtual Service Networks, Inter-VSN Routing, IPv4/IPv6 IP Shortcuts, IP Multicast over Fabric Connect, Fabric Extend and Fabric Attach Server.

Fabric Extend

The VSP 4900-48P natively supports Fabric Extend which enables it to extend Fabric Connect services over an intermediate 3rd-party network, whether Layer 2 or Layer 3-based. With Fabric Extend, enterprises can, for example, connect two Fabric Connect environments (or islands) over a Service Provider WAN, such as MPLS or Ethernet WAN. Fabric Connect simplified provisioning and virtualization services are transparently extended across the 3rd-party network.

Advanced Layer 3 Services

The VSP 4900 Series also supports advanced Layer 3 services that enable it to satisfy conventional IP routing deployments, in addition to its fabric-based services. Layer 3 services include IPv4 and IPv6 dynamic routing, as well as IP multicast services.

Specific IP routing technologies supported include RIPv1/2, RIPng, OSPFv2/v3, BGP/ BGP+ and VRF. Multicast services include PIM-SM/ SSM, IGMP v1/v2/v3, as well as Fabric Connect to PIM gateway. The VSP 4900 also supports Distributed Virtual Routing (DvR) leaf services.

Power Over Ethernet

The VSP 4900-48P provides standards-based IEEE 802.3at (30W) Power over Ethernet (PoE) on its 48 x 1Gb ports. This enables it to address the needs of powered edge devices, while eliminating the need for additional electrical cabling and circuits. In addition, the VSP 4900 provides the following capabilities to address the advanced needs of powered edge devices:

- **Perpetual PoE** which enables PoE power to be maintained during a switch re-start, preventing attached powered devices from being disrupted or rebooted during the switch reset
- **Fast PoE** which enables power to be supplied to connected edge devices before switch boot-up completion, speeding the time for powered end-points to start up

VIM Options for Flexible Uplinks

The VSP 4900 supports Versatile Interface Modules (VIM) for its uplink ports and has a single VIM slot that can be optionally used for this purpose. VIM options include 2 and 4-port modules that support 10Gb, 25Gb and 40Gb data rates.

MACsec Link Encryption

The VSP 4900 supports IEEE 802.1AE MACsec on its 10/100/1000 access ports, as well as on its modular uplink ports. MACsec is a hop-by-hop security capability which encrypts/decrypts packets between connected switches or devices. As a link-only encryption, the switches can still apply services to the packet, such as policy or QoS, without compromising the security of packets across the link. With support for both 128-bit and 256-bit Advanced Encryption Standard (AES) support, the VSP 4900 provides the most secure link encryption.

Application Telemetry

Application Telemetry is a unique feature of ExtremeAnalytics that enables the ExtremeSwitching infrastructure to participate in the forwarding and analysis of network application flows. By combining packet flow information from the VSP 4900 along with the deep packet inspection abilities of ExtremeAnalytics, actionable insights into network and application performance can be provided. This all without the need for expensive sensors or collectors.

Management

The VSP 4900 can be managed in a variety of ways. Simple on-box management functions are delivered by a web-based GUI and a generic CLI is available for manual configuration. For centralized management, the Extreme Management Center (XMC) delivers a comprehensive unified management capability. XMC provides a consolidated view of users, devices and applications for wired and wireless networks – from data center to edge. A granular view of users, devices and applications with an easy to understand dashboard enables efficient inventory and network topology management

Product Specifications

Performance and Scale

Switch Model	Max Active 10/100/1000Mb Ports	Max Active 1/10Gb SFP+ ports	Max Active 10/25Gb SPF28 ports	Max Active 40Gb QSFP+ ports*	Aggregated Switch Bandwidth	Frame Forwarding Rate
VSP4900-48P	48	4	2	1	196 Gbps	145.8 Mpps

* 40Gb ports on the VIM5 module can also be broken out individually into 4 x 10Gb ports.

External Ports/Slots

Part Number	Max Active 10/100/1000Mb Ports
VSP4900-48P	48 x 10/100/1000BASE-T 802.3at (30w) ports <ul style="list-style-type: none"> • Full / Half-Duplex • MACsec capable (128-bit) 1 x Serial (console port RJ-45) 1 x 10/100/1000BASE-T out-of-band management port 1 x USB Micro-B management port 2 x USB A ports for external USB flash 1 VIM5 slot
VIM5-4X	4 x 1/10GBASE-X SFP+ (unpopulated ports)
VIM5-4XE	4 x 1/10GBASE-X SFP+ (unpopulated ports) <ul style="list-style-type: none"> • LRM capable • MACsec capable (256-bit)
VIM5-2Y	2 x 10/25GBASE-X SFP28 (unpopulated ports)
VIM5-4YE	4 x 10/25GBASE-X SFP28 (unpopulated ports) <ul style="list-style-type: none"> • MACsec capable (256-bit)
VIM5-2Q	2 x 40GBASE-X QSFP+ (unpopulated ports)

Base Software and Licensing

The VSP 4900-48P is being introduced with the VSP Operating System Software (VOSS) 8.1 release, which is the minimum required to operate the switch. Base software included with the VSP 4900-48P hardware purchase provides most of the features available on the switch. A Premium Software license, however, is required to enable the following features on the switch:

- Layer 3 Virtual Services Networks (L3 VSNs)
- 17 or more BGP peers
- 25 or more VRFs
- MACsec support

Ordering Notes

The VSP 4900-48P is ordered and shipped as a bundled offering. The bundle includes the base VSP 4900 system along with a single Power Supply, Fan Modules and the VOSS operating system. VIM5 modules, additional power supply, power cords, transceiver/optics and optional Premier Software Licenses must be separately ordered.

Weights and Dimensions

Part Number	Weight	Physical Dimensions
Switch		
VSP4900-48P	18.49 lb / 8.39 Kg	17.34 in W / 1.7 in H / 19.23 in D 440mm / 43.6mm / 488mm
VIM Modules		
VIM5-4X	0.37 lb / 0.17 kg	1.92 in W / 1.61 in H / 5.76 in D 48.8mm / 40.8mm / 146.3mm
VIM5-4XE	0.41 lb / 0.19 kg	
VIM5-2Q	0.37 lb / 0.17 kg	
VIM5-2Y	0.38 lb / 0.17 kg	
VIM5-4YE	0.43 lb / 0.19 kg	
Power Supplies		
10941 (1100W)	2.55 lb / 1.16 kg	3.25 in W / 1.56 in H / 11.3 in D 40mm / 82.5mm / 287mm

Power Supply Unit Specifications

	1100W AC PSU
Voltage Input Range (nominal)	100-127 / 200-240VAC
Line Frequency Range	47 to 63 Hz
Power Supply Input Socket	IEC/EN 60320 C16
Power Cord Input Plug	IEC/EN 60320 C15
Operating Temperature	0° to 50° C normal operation

PoE Power Budget

Switch Model	1 x 1100W PSU	2 x 1100W PSU
VSP4900-48P	845W	1440W

Minimum/Maximum Power Consumption and Heat Dissipation

Switch Model	Minimum Heat Dissipation (BTU/hr)	Minimum Power Consumption (Watts)	Maximum Power Consumption (Watts)*	Maximum Heat Dissipation (BTU/hr)**
VSP4900-48P	280	82	1746	1046

* Includes maximum PoE load (W) through the switch

** Does not include PoE heat dissipated through external electronic load

General

CPU/Memory

- Dual Core x86 CPU
- 2GB DRAM
- 8GB eMMC NVRAM

Performance and Scale

Layer 2

- MAC Address: up to 80,000
- Port-based VLANs: 4,059
- MSTP Instances: 12
- LACP Links per Group: 8 Active

Layer 3 IPv4 Routing Services

- ARP Entries: up to 32,000
- IP Routes: up to 15,488
- RIP Interfaces: 200
- OSPF Interfaces: 500
- BGP Peers: 256
- VRF Instances: up to 256

Layer 3 IPv6 Routing Services

- Neighbors: up to 8,000
- IP Routes: up to 7,744
- RIPng Interfaces: 48
- OSPFv3 Interfaces: 500
- BGPv6 Peers: 256
- VRF Instances: up to 256

Multicast

- IGMP Interfaces: 4,059
- PIM Active Interfaces: 128
- MLD Interfaces: 4,059
- IP Multicast Streams: 6,000

Fabric Connect

- MAC Address: 40,000
- NNI Interfaces/Adjacencies: up to 255
- BEB Nodes per VSN: 500
- BCB/ BEB Nodes per Region: 550
- L2 Virtual Service Networks: 4,059
- L3 Virtual Service Networks: up to 256
- IP Shortcut Routes: IPv4 up to 15,488 and IPv6 7,488
- L2 Multicast Virtual Service Networks: 2,000
- L3 Multicast Virtual Service Networks: 256
- Maximum SGVs: 6,000

QoS and Filtering

- IPv4 ACE: 1536 (1024 Security + 512 QoS) Ingress and 248 Egress
- IPv6 ACE: 1024 Ingress and 256 Egress
- QoS priority queues- 8

Operations and Management

- Mirrored Ports: 49
- sFlow: up to 3100 samples per second
- Fabric RSPAN: 1,000 VLAN IDs

Environmental

Environmental Specifications

EN/ETSI 300 019-2-1 v2.1.2 - Class 1.2 Storage
EN/ETSI 300 019-2-2 v2.1.2 - Class 2.3 Transportation
EN/ETSI 300 019-2-3 v2.1.2 - Class 3.1e Operational
EN/ETSI 300 753 (1997-10) - Acoustic Noise
ASTM D3580 Random Vibration Unpackaged 1.5G

Environmental Compliance

EU RoHS	2011/65/EU
EU WEEE	2012/19/EU
China RoHS	SJ/T 11363-2006
Taiwan RoHS	CNS 15663(2013.7)

Operating Conditions

Temp: 0° C to 45° C (32° F to 113° F)
Humidity: 10% to 95% relative humidity, non-condensing
Altitude: 0 to 3,000 meters (9,850 feet)
Shock (half sine) 30m/s² (3G), 11ms, 60 shocks
Random vibration: 3 to 500 Hz at 1.5 G rms

Packaging and Storage Specifications

Temp: -40° C to 70° C (-40° F to 158° F)
Humidity: 10% to 95% relative humidity, non-condensing
Packaged Shock (half sine): 180 m/s² (18 G), 6 ms, 600 shocks
Packaged Vibration: 5 to 62 Hz at velocity 5 mm/s, 62 to 500 Hz at 0.2 G
Packaged Random Vibration: 5 to 20 Hz at 1.0 ASD w/-3 dB/oct. from 20 to 200 Hz
Packaged Drop Height: 14 drops minimum on sides and corners at 42 inches (<15 kg box)

Regulatory and Safety

North American ITE

UL 60950-1
UL 62368-1
Complies with FCC 21CFR 1040.10 (U.S. Laser Safety)
CDRH Letter of Approval (US FDA Approval)
CAN/CSA 22.2 No. 60950-1
CAN/CSA No. 22.2 62368-1-14

European ITE

EN 60950-1, EN 62368-1
EN 60825-1 Class 1 (Lasers Safety)
2014 / 35/ EU Low Voltage Directive

International ITE

CB Report & Certificate per IEC 60950-1 AS/NZS 60950-1 (Australia /New Zealand)
IEC 62368-1
GB 4943.1-2011
CNS 14336-1

EMI/EMC Standards

North American EMC for ITE

FCC CFR 47 part 15 Class A (USA)

ICES-003 Class A (Canada)

European EMC Standards

EN 55032 Class A

EN 55024

EN 61000-3-2,2014 (Harmonics)

EN 61000-3-3 2013 (Flicker)

EN 300 386 v1.6.1 (EMC Telecommunications)

2014/30/EU EMC Directive

EN 55011 Class A

International EMC Certifications

CISPR 32, Class A (International Emissions)

AS/NZS CISPR32

CISPR 24 Class A (International Immunity)

IEC 61000-4-2 / EN 61000-4-2 Electrostatic Discharge, 8kV Contact, 15 kV Air, Criteria A

IEC 61000-4-3 / EN 61000-4-3 Radiated Immunity 10V/m, Criteria A

IEC 61000-4-4 / EN 61000-4-4 Transient Burst, 1 kV, Criteria A

IEC 61000-4-5 / EN 61000-4-5 Surge, 2 kV L-L, 2 kV L-G, Level 3, Criteria A

IEC 61000-4-6 Conducted Immunity, 0.15-80 MHz, 10V/m unmod. RMS, Criteria A

IEC/EN 61000-4-11 Power Dips & Interruptions, >30%, 25 periods, Criteria C

IEC 61000-4-8 / EN 61000-4-8

CISPR 11 Class A

GB/T 9254-2008

Country Specific

VCCI Class A (Japan Emissions)

ACMA RCM (Australia Emissions)

CCC Mark (China)

KCC Mark, EMC Approval (Korea)

EAC Mark (Custom Union)

NRCS / SABS Mark (South Africa)

BSMI Mark (Taiwan)

Telecom Standards

CE 2.0 Compliant

IEEE 802.3 Media Access Standards

IEEE 802.3ab 1000BASE-T

IEEE 802.3ae 10GBASE-X

IEEE 802.3aq 10GBASE-LRM

25Gb Ethernet implemented per Ethernet Consortium specification and IEEE 802.3 standard

IEEE 802.3ba / 802.3bm 40GBASE-X

IEEE 802.3at PoE Plus

IEEE 802.3az Energy Efficient Ethernet

Ordering Information

Part Number	Product Name	Product Description
VSP 4900 Systems		
VSP4900-48P-B1-4X	VSP4900-48P, VIM5-4X Bundle	VSP 4900 System with 48 x 10/100/1000Base-T full/half duplex 802.3at PoE (30W) MACsec-capable ports, includes 3 fan modules, 1 VIM5-4X module, 1 x 1100W PSU FB (10941), 4 post rack mount kit, VOSS operating system
VSP4900-48P-B1-4XE	VSP4900-48P, VIM5-4XE Bundle	VSP 4900 System with 48 x 10/100/1000Base-T full/half duplex 802.3at PoE (30W) MACsec-capable ports, includes 3 fan modules, 1 VIM5-4XE module, 1 x 1100W PSU FB (10941), 4 post rack mount kit, VOSS operating system
VSP4900-48P-B1-2Y	VSP4900-48P, VIM5-2Y Bundle	VSP 4900 System with 48 x 10/100/1000Base-T full/half duplex 802.3at PoE (30W) MACsec-capable ports, includes 3 fan modules, 1 VIM5-2Y module, 1 x 1100W PSU FB (10941), 4 post rack mount kit, VOSS operating system
VSP4900-48P-B1	VSP4900-48P with 1100W PSU Bundle	VSP 4900 System with 48 x 10/100/1000Base-T full/half duplex 802.3at PoE (30W) MACsec-capable ports, includes 3 fan modules, 1 unpopulated VIM5 slot, 1 x 1100W PSU FB (10941), 4 post rack mount kit, VOSS operating system
Accessories/Spares		
VIM5-4X	VIM5-4X	4 x 1G/10G SFP+ VIM supported on VSP 4900
VIM5-4XE	VIM5-4XE	4 x 1G/10G SFP+ LRM and MACsec capable VIM supported on VSP 4900
VIM5-2Y	VIM5-2Y	2 x 10G/25G SFP28 VIM supported on VSP 4900
VIM5-4YE*	VIM5-4YE*	4 x 10G/25G SFP28 MACsec capable VIM supported on VSP 4900
10951	10951	715W PoE PSU for VSP 4900, also used on X465, X450-G2 and X460-G2
10941	10941	1100W PSU for VSP 4900, also used on X465, X450-G2 and X460-G2
XN-FAN-002-F	Spare Fan Module	Spare Fan module for VSP 4900
XN-4P-RKMT-001	Spare Four-Post Rack Mount Kit	Spare Four Post Rack Mount Kit for VSP 4900
XN-2P-RMKIT-001	Optional Two Post Rack Mount Kit	Optional Two Post Rack Mount Kit for VSP 4900
VSP-PRMR-L-LIC-P	Premier License for VSP 4900	VSP 4900 Premier Software License: Enables L3 VSNs, > 16 BGP peers, > 24 VRFs
VS-PRMR-LE-LIC-P	Premier License with MACsec for VSP 4900	VSP 4900 Premier Software License: Enables L3 VSNs, > 16 BGP peers, > 24 VRFs plus MACsec

* VSP 4900-48P limited to 2 x 25GbE ports on VIM5-4YE modules

** VSP 4900-48P limited to 1 x 40GbE port on VIM5-2Q module

Warranty

The VSP 4900 is covered under Extreme's Limited Lifetime Warranty Express with express Advanced Hardware Replacement. For warranty details, please visit:

<http://www.extremenetworks.com/support/policies>

Power Cords

VSP 4900 power cords can be ordered separately but need to be specified at time of ordering. Please refer to

www.extremenetworks.com/product/powercords/

for details on power cord availability for this product.



<http://www.extremenetworks.com/contact>

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