VSP Operating System Software 4.2 delivers the following major enhancements:

- Introduces the VSP 8404 4-Slot Ethernet Switch
- Introduces the first four VSP 8400 Ethernet Switch Modules, supporting high-density 10 & 40 Gigabit Ethernet
- Introduces Enhanced Security Mode options

AVAYA

Engage The Power of We™

Avaya Virtual Services Platform 8000 Series

Compact Form-Factor Ethernet Switches designed to deliver sophisticated yet simplified functionality for deployments by businesses striving for greater efficiency.

Avaya heralds the introduction of a new concept in networking, the 'Compact Form-Factor' Ethernet Switch, a design that seeks to address the needs of 'middle business', but is able to address a range of deployment scenarios from mid-market through to larger Enterprises.

The Compact Form-Factor

The Avaya Virtual Services Platform 8000 Series is the first incarnation of a new concept in data networking, the compact form-factor (CFF) Ethernet Switch. The CFF concept seeks to address the needs of businesses that range from the mid-market all the way up to mid-to-large Enterprises, with highly flexible deployment capabilities. These businesses are increasingly dependent upon IT, and access to business applications – much like their larger cousins – but they do not have the same IT resources or funding available to build-out and maintain feature-rich networks using conventional techniques and products. They need sophisticated capabilities, but delivered in a streamlined, simplified, and cost-effective package.

It is this challenge that has driven the development of the CFF concept and the creation of the Avaya Virtual Services Platform 8000 Series (VSP 8000). By delivering a package that combines simplicity, agility, efficiency, and versatility, Avaya has created a compelling solution for businesses that have fewer resources but want to do more.

The VSP 8000 Series features tight integration between the Industry's leading hardware and Avaya's proven VSP Operating System (VOSS), delivering enhanced levels of functionality and robustness. Leveraging Avaya's unique virtualization technologies – Switch Cluster and Fabric Connect – businesses can benefit from real-time service agility, avoiding the delays associated with conventional designs, and the outages introduced trying to maintain them. The CFF concept revolutionizes the cost/benefit proposition for the mid-market/mid-sized Core Switch role; delivering – when compared to a conventional Chassis – higher port density, better price/port, a lower entry price point, better power efficiency, it features reduced maintenance, a smaller physical footprint, and it scales seamlessly.

Essentially, the CFF gives businesses everything that they need, and enables them to avoid the 'Chassis Tax'; the costs and burden traditionally associated with conventional Chassis-based designs shoe-horned into smaller deployment scenarios. Leveraging next-generation hardware and software technologies help this platform support

today's connectivity-centric requirements and be primed for tomorrow's software-defined future.

Game-changing capabilities

The Core of the network has traditionally been the place where the Chassis-based Ethernet Switch came into its own; the virtues of port density, reliability, scalability, and performance mandated something more than simply a variation of the products deployed into the Wiring Closets themselves. There's been a resistance to using 'Stackables'; even those featuring Avaya's clearly superior Stackable Chassis technology – with all of its positive attributes – have not always been universally embraced in this particular role for smaller deployments.

But time moves on, and technology advances. Avaya is now able to debut the Compact Form Factor concept. With CFF products, we are able to change the game, delivering higher port density – especially for high-capacity 10/40 Gigabit connections – offering better price per port (relatively to a Chassis), a much lower entry price point (without the overhead of Chassis, Control Processor and Switch Fabric modules, etc.), combined with numerous efficiencies in the areas of operational simplicity and reduced operational costs. Key enabling technologies from the Avaya Networking toolkit – Switch Cluster and Fabric Connect – deliver solutions that promote flexibility and scalability.

In short, the CFF delivers the benefits typically associated with Chassis-based solutions, but without the penalties that are usually encountered, both in terms of capital costs and operational burden.

Confluence of Advancements

It's a confluence of technology advancements that make the delivery of the CFF concept possible.

The first is something called 'die shrink', a term that refers to the scaling of semiconductor devices, essentially the mass of transistors that form a chipset. Shrinking a semi-conductor die, creating superior circuit density, is made possible by using a more advanced fabrication process. This reduces overall costs of the chipset, delivering more from less. That's a roundabout way of saying that you can get more capacity and capability by leveraging the most advanced chipsets, and additionally reducing costs and being more power efficient.

This has, of course, been occurring in PC and Server markets for years – we commonly refer to the phenomenon as 'Moore's Law' – and now it has finally made its way to Networking. What this specifically delivers is the ability to drive many more high-capacity connections using a more intense chipset. These developments have reached the point where it's the physical requirement of the interfaces that determine now how small the box can be made, rather than size being driven by a mass of circuitry behind the front panel. So, to begin with, we've got these incredibly sophisticated and intense chipsets to build upon.

In parallel, we've seen a tremendous advancement in the functionality of network virtualization, led of course by the Avaya Fabric Connect technology, an extended implementation of the Shortest Path Bridging standard. Fabric Connect offers the ability to create a simplified network that can dynamically virtualize elements, empowering efficient provisioning and utilization of resources, thereby reducing the strain on the network and IT personnel. Fabric Connect offers a robust and resilient alternative to conventional offerings and it delivers innovative services and solutions while maintaining Ethernet's key value propositions of simplicity and cost-effectiveness. Fabric Connect delivers new capabilities in the crucial areas of simplicity, scalability, performance, reliability, and service orchestration and abstraction.

Finally, there a subtle but important transition in how the various physical connectivity requirements – the actual interfaces – are delivered. A traditional Chassis-based solution requires multiple interface module types in order to cover a broad range of physical media types and interface speeds; from copper to various forms of fiber, and from 10/100Mbps, through to 10Gbps and now beyond. However, the commoditization of Pluggable Transceiver technology is making that traditional approach largely redundant, thereby highlighting its inherent inefficiency. We now recognize that a better way to deliver versatility of interface is to leverage the wide array of available Transceivers. This change means that a networking device can support multiple interface requirements by leveraging low-cost Transceivers.

These three trends converge to produce a tipping point; together they create the potential for change. The rationale for proceeding with change, as opposed to change merely for the sake of change, is to enable an evolution away from old-world, conventional, and inflexible networking.

Improving Resiliency, Enhancing Value

One of the typical rationales for a Chassis-base Core is that a big, complex, and expensive device is the only really dependable option. However, always-on availability is not merely a function of hardware, but more correctly a product of the 'solution'. The Avaya Switch Cluster technology delivers this, and when executed on a CFF platform, it provides a compelling offering for the mid-market and smaller Core deployments within the Enterprise. In short, rather than over-investing in a 'highly resilient' Chassis, with redundant hardware, but vulnerable control plane and based on obsolete networking techniques, the Switch Cluster technology enhances network survivability through physical separation of the switching hardware.

Avaya pioneered, more than a decade ago, the concept of the high-availability network with its development of the Switch Cluster technology. Avaya creates a single, unified, logical Core from two physically independent Switches – clustering them – so that no one single point-of-failure can disrupt dual/multi-homed connectivity. This is the very essence of end-to-end always-on availability. Deploying Switch Cluster technology in the Core delivers high-availability for the Edge of the network, supporting the Campus Wiring Closet, Servers, Routers, or other networking devices in the Core/Data Center.

Therefore, building a Core using a cluster of cost-effective VSP 8000 Series CFF Ethernet Switches enhances a business' resiliency posture. In addition to the various high-availability factors offered by conventional Chassis-based products (i.e. CPU, switching fabric, power, cooling, and of course, link), the combination of Switch Cluster and distributed hardware delivers total physical independence, and includes the ability to have the 'virtual' Core split and deployed across different physical locations, independent and isolated control planes (delivering genuine process separation, isolation, and greater protection), and enabling in-service software upgrades. Big business, operating at larger scale, has for years benefitted from being able to deploying Switch Cluster technology with Avaya's high-end products; the VSP 8000 Series now brings this advantage to mid-sized businesses. The primary difference is that this capability is now available at a vastly different price point, tailored for mid-sized businesses operating more modest IT delivery models.

Empowering the Scale-Out Core

Another of the historical justifications for a conventional Chassis-base Core is that it delivers flexibility of hardware and therefore ensures scalability. This is largely true; however, it comes at a cost, in terms of up-front capital investment, operational burden, and even in terms of future expansion. Every component has a premium attached as a function of embedding this flexibility. Additionally, there are often life cycle considerations that mean the flexibility that businesses assumed would be worth the extra cost does not actually materialize when they ultimately go to exercise it.

The VSP 8000 Series can implement our Switch Cluster technology in the classic – physically connected – manner, but will also act as the delivery vehicle for the next evolution of Switch Cluster technology; 'Virtual IST'. This is an enhancement of the Inter-Switch Trunk functionality; it leverages a virtualized connection between the Cluster members, rather than via the traditional physical link. This delivers greater flexibility, optimizes utilization of high-value backbone connections, and forms the basis of further developments that will include scalability of a Cluster beyond two members, and the ability to mix-and-match device types within a Cluster.

Virtual IST (vIST) delivers a dependable scalability capability to the VSP 8000 Series, and de-risks purchasing decisions because the Core can provide both always-on high-availability and flexible pay-as-you-grow efficiencies.

Replacing Complexity with Capability

Traditionally, to provision new services or to change existing ones, engineers are required to touch every device in the service path, configuring every device to enable both the active and redundant links. The bigger the network the more complex and risky this becomes. Leveraging Fabric Connect technology to virtualize the

VOSS Unification

Avaya is undertaking a unification program for the operating system software used on Virtual Service Platform products. Moving to a single, common VSP Operating System Software (VOSS) accelerates time-to-market for new features, and ensures higher levels of feature consistency across the product portfolio.

network enables a profound change. Rather than the network appearing as a mass of individual devices, it becomes an opaque cloud, so that engineers only need to touch the single unique device that is providing service directly to the end-point. Fabric Connect technology automatically and instantly propagates all service attributes to every other node within the cloud, delivering end-to-end connectivity.

Transitioning to an autonomic network delivers crucial advantages. It means that businesses no longer need to configure the Core of the network for every service change; service is only configured at the Edge of the network. This has dramatic impacts for the entire change paradigm.

Fabric Connect technology has the added advantage of separating and segmenting traffic to unique service constructs. This delivers 'stealth networking' solutions that help with compliance for business processes such as those that require special handling for credit card payments (PCI) or the protection of heath data (HIPAA).

Network segmentation means that each service is uniquely encapsulated and carried independently of every other service. Leveraging a single unified protocol, with integrated IP Routing and IP Multicast capabilities, enables Fabric Connect to deliver the Industry's premier solution for simplified, scalable, and resilient IP Multicast-based applications. The Edge-only provisioning model also delivers significant advances in how the network interacts with virtual machine mobility. Layer 2 VLANs can be easily and seamlessly extended throughout the Core or Data Center whether that is a single site or multi-site. Traffic flows are automatically load-balanced and more protected across all available links.

SDN that redefines Networking

Software-Defined Networking is certainly topical; however, much of the discussion remains centered on finding real-world business justification for what is essentially a technology side step. Avaya takes a pragmatic view and delivers solutions aimed fairly and squarely at simplifying and automating tasks that are currently complex and manual; Avaya is more concerned about what the technology delivers and less about what it is labeled.

A case in point is a new technology innovation that Avaya has introduced called 'Fabric Attach'. This is an adjunct to the Fabric Connect technology and allows us to extend network virtualization directly into the conventional Wiring Closet, deployed on existing, non-Fabric products, and fully automate the provisioning of devices to the appropriate virtual network. This is particularly relevant for the mass of unattended network end-points that are permeating businesses, such as IP Phones, Wireless Access Points, and IP Cameras.

This is a perfect example of how networking is being redefined through the seamless integration of a pervasive services-orientated network virtualization technology with intelligent and open policy-based access management techniques. The VSP 8000 Series is designed to deliver the Fabric Attach Server Switch functionality in the model, interfacing conventional Switches with the Fabric Connect cloud.

Summary

Personal Computers have been with us for decades, and Laptops and portable computing for a decade or more; however, these devices were never universally integrated into people's everyday lifestyle in the way that Tablets now are.

This new class of product, the Tablet, was created by the relatively simple act of packaging a number of technology advancement into a new compelling offering. However, until it actually happened, until one manufacturer had the vision to change, it wasn't something that people actually knew they wanted. Crucial to the success of a new product category is unification of the right emerging technologies, and faultless execution is absolutely vital.

Avaya is bringing this same attitude for game-changing innovation to networking. We have packaged and tightly integrated the latest technology advances with proven capabilities to deliver a compelling new offering, one that businesses may not necessarily have envisioned until Avaya demonstrated the vision and leadership necessary to pioneer change.

VSP 8284XSQ Ethernet Switch

The Virtual Services Platform 8284XSQ is the first model in the VSP 8000 Series range of CFF Ethernet Switch products. With it, businesses can easily transition their network from the inefficiencies of legacy technologies, migrating to a genuine next-generation solution that dramatically reduces the operational burden and helps businesses realize revolutionary benefits in service agility.

Every IT department is seeking solutions that enable them to spend less of their time maintaining basic operations. Research indicates that 80-85% of IT effort is currently focused on satisfying the day-to-day operational burden[1]. The VSP 8284XSQ is just such a solution to that time-consuming activity. The platform can deploy and operationalize quickly, minimize ongoing operational burden, and enable real-time, in-service change and maintenance. The VSP 8284XSQ enables businesses to put their finite IT resources to work on important value-adding projects. Additional benefits include lifetime warranty, reduced maintenance costs, and all-inclusive software licensing combine to deliver a package with a dramatically enhanced total cost of ownership.

Leveraging both next-generation hardware and software technology delivers a solution that is ready to support both today's requirements and tomorrow's emerging needs. The VSP 8284XSQ also provides business with a future-ready solution that is based on the Industry's most software-definable network virtualization technology.

Product Overview

The VSP 8284XSQ Ethernet Switch provides a total of 84 fixed ports, configured as 80 ports of 10 Gigabit Ethernet with SFP+ sockets, and 4 ports of 40 Gigabit Ethernet with QSFP+ sockets.

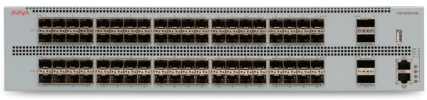
The innovative design leverages the most advanced chipset from the Industry's leading supplier, featuring 2.56Tbps of switching and 1,428Mpps of frame forwarding performance. The selected chipset is designed to deliver Terabit-scale, wire-speed capabilities, with a fully integrated 10/40/100 Gigabit ASIC architecture that facilitates multiple design opportunities. Latency has been optimized, with a 40% advance over current best examples. Five-fold efficiency gains, relative to existing static designs, are delivered by intelligent buffer technology that self-tunes thresholds to improve burst absorption. A flexible, Unified Forwarding Table allows for future in-field optimization, with up to four mission profiles supported. This chipset has the ability to also be developed to provide embedded support for a range of advanced technologies such as DCB, SPB, VXLAN, PIM, FCoE, and NAT/PAT.

Benefits

The VSP 8284XSQ delivers significant flexibility, and is compatible with, and complementary to, existing products and technologies from the Avaya Networking portfolio. A new product, introducing the Compact Form-Factor concept, the VSP 8284XSQ, provides the very high-capacity, high-performance connectivity solution for mid-sized Campus networks.

Building genuine high-availability enhances a network's resiliency posture. In addition to the various HA factors offered by premium Chassis-based products, Switch Cluster technology delivers physical independence; isolated control planes (delivering process separation, isolation, and greater protection), and

VSP 8284XSQ 84-port Switch



VSP 8284XSQ Features

- 80 ports of 10 Gigabit Ethernet and 4 ports of 40 Gigabit Ethernet
- AC or DC high-availability power
- Non-blocking, wire-speed switching architecture
- Integrated design that is optimized for low latency
- Flexible L2/L3 address table entry architecture delivers MAC, ARP, and IP Routing scalability
- Feature-rich support for Standards-based VLAN, MLT, STP, and SPB technologies
- IPv6-optimized Hardware
- MACsec and Enhanced Security Mode options

[1]Nemertes: State of IT Report 2013

Avaya is bringing game-changing innovation to networking, packaging and tightly integrating the latest technology advances with proven capabilities to deliver businesses a compelling new offering.

allows for in-service software upgrades. The VSP 8284XSQ brings the advantages of deploying Switch Cluster technology to mid-sized businesses.

The VSP 8284XSQ also natively supports the Avaya Fabric Connect network virtualization technology. Some of the key advantages that Fabric Connect delivers include:

- Making the need to configure network-wide VLANs obsolete
- Replacing multiple sequential legacy protocols with this one single unified technology
- Removing the risk of network loops
- Delivering the Edge-only provisioning model which seamlessly integrates with orchestration and automation
- Fully optimizing all links and all devices, enabling businesses to get the most out of infrastructure investments

Features & Capabilities

- Non-blocking, wire-speed switching architecture
- Integrated design that is optimized for low latency
- Flexible table architecture delivers MAC, ARP, and IP Routing scalability
- Feature-rich support for Standards-based VLAN, Multi-Link Trunking, Spanning Tree Protocol, and Shortest Path Bridging technologies
- IPv4 & IPv6 Routing includes support for Static, RIP, OSPF, eBGP, ECMP, VRRP, PIM-SM, and VRF
- IPv6-optimized Hardware
- Avaya Switch Cluster technology supports Triangle & Square configurations, with both Layer 2 Split Multi-Link (SMLT) and Layer 3 Routed Split Multi-Link Trunking (RSMLT) functionality, and Virtual IST
- Avaya Fabric Connect technology supports L2 Virtual Service Networks (VSNs), Layer 3 Virtual Service Networks, Inter-VSN Routing, IP Shortcut Routing, and IP Multicast-over-Fabric Connect.

High Availability Power & Cooling

- Up to 2 field-replaceable, hot-swappable internal AC Power Supplies
- 4 field-replaceable Fan Modules

Warranty

- Lifetime Next Business Day shipment of replacement hardware
- Lifetime Basic Technical Support
- 90-Day Advanced Technical Support
- A complete range of support options are also available, either directly from Avaya or indirectly from our Authorized Business Partner network

Software Licensing

- Base Software License, included with hardware purchase, enables most features with the exception of those specifically noted an enabled by the Premier Software License.
- Premier Software License, an optional accessory, enables the following features: Layer 3 Virtual Service Networks and - where local regulations permit - MACsec.

Country of Origin

- China (PRC)

VSP 8404 Ethernet Switch

The Virtual Services Platform 8404 is the newest model in the VSP 8000 Series range of CFF Ethernet Switch products. It complements the existing VSP 8284XSQ, adding a high degree of interface flexibility and diversity to the value proposition common to all VSP 8000 Series products. The VSP 8404 enables businesses to satisfy many typical deployments scenarios with a consistent hardware platform, and one that leverages the unified VSP Operating System Software (VOSS) code base to deliver feature parity across a range of products.

Transitioning the network from the inefficiencies of legacy technologies, and migrating to a next-generation solution, positions businesses to reduce their operational burden. This networking philosophy can also help businesses to realize revolutionary time-to-service enhancements.

The VSP 8000 Series debuted the Compact Form-Factor design concept, ushering in a unique approach to product and solution design. The original VSP 8284XSQ has come to define simplification, and the new VSP 8404 now adds flexibility to the equation. Leveraging the ability to support a diverse mix of Ethernet interfaces – from 100Mbps to 40Gbps, Copper- and Fiber-based – businesses can use the VSP 8404 to address a range of networking applications. The VSP 8404 is equally at home in the Core of a mid-sized network, or as the Spine Switch in a Data Center Spine/Leaf Top-of-Rack deployment. The VSP 8404 can also be deployed as a Campus Distribution Switch, providing and aggregation point between the Core and Access tiers. Supporting Avaya's innovative Fabric Connect and Switch Cluster technologies, in addition to conventional Routed IPv4 and IPv6, the VSP 8404 is an agile and versatile player in a number of distinct scenarios.

The VSP 8404 deploys and operationalizes quickly, minimizes ongoing operational burden, and Avaya's unique network virtualization technologies enable real-time service deployment. As a product line, the VSP 800 Series enables businesses to redirect their finite IT resources to important value-adding projects.

The new VSP 8404 shares the same next-generation hardware and software technology basis as the existing VSP 8284XSQ. This positions the product line to support both today's requirements and tomorrow's emerging needs. The VSP 8000 Series provides business with a future-ready solution that leverages the Industry's most software-definable network virtualization technology.

Product Overview

The VSP 8404 Ethernet Switch provides four front-panel slots that support the flexible deployment of high-density VSP 8400 Series Ethernet Switch Modules. By default, the VSP 8404 is a "zero port" system, with a Chassis that pre-integrates the switching fabric, CPU, and all associated control and management electronics.

Ethernet interfaces are delivered by the addition of one or more field-swappable Ethernet Switch Modules (ESMs).

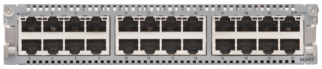
The ESMs made available in the initial release include support for 10 Gigabit Ethernet (SFP+ and Copper), and 40 Gigabit Ethernet. The VSP 8404 can scale from as little as 16 ports of 10 Gigabit and 2 ports of 40 Gigabit, up to 96 ports or 24 ports respectively. In this manner, the VSP 8404

VSP 8404 4-Slot Ethernet Switch

8408QQ Ethernet Switch Module

8418XSQ Ethernet Switch Module

8424XS Ethernet Switch Module



8424XT Ethernet Switch Module

VSP 8404 Features:

- Flexible support for up to 96 ports of 10 Gigabit Ethernet or 24 ports of 40 Gigabit Ethernet
- Supports AC or DC high-availability power
- Non-blocking, wire-speed switching architecture
- Integrated design that is optimized for low latency
- Flexible L2/L3 address table entry architecture delivers MAC, ARP, and IP Routing scalability
- Feature-rich support for Standards-based VLAN, MLT, STP, and SPB technologies
- IPv4 & IPv6 Routing includes support for Static, RIP, OSPF, eBGP, ECMP, VRRP, PIM-SM, and VRF
- IPv6-optimized Hardware
- MACsec, and Enhanced Security Mode options

provides a low-cost, pay-as-you-grow solution for mid-sized businesses that wish to retain a high degree of flexibility as they develop solutions for their networking requirements.

Ethernet Switch Modules

The VSP 8400 Series Ethernet Switch Modules delivered at launch are as follows:

- 8408QQ 8-port 40 Gigabit Ethernet QSFP+ ESM
- 8418XSQ 16-port 10 Gigabit Ethernet SFP+ and 2-port 40 Gigabit Ethernet QSFP+ Combo ESM
- 8424XS 24-port 10 Gigabit Ethernet SFP+ ESM
- 8424XT 24-port 10 Gigabit Ethernet RJ45 ESM

It should also be noted:

- The VSP 8404 currently enables 6 of the 8 ports physically supported by each 8408QQ ESM.
- 40 Gigabit Ethernet QSFP+ ports support Channelization and can therefore be individual sub-divided into four 10 Gigabit Ethernet channels.
- 10 Gigabit Ethernet SFP+ ports also support a wide range of 1 Gigabit Ethernet SFP Transceivers.
- 10 Gigabit Ethernet RJ45 ports also support 100/1000Mbps connectivity.

Please refer to the product technical documentation for further details.

As with the VSP 8284XSQ, the VSP 8404 leverages the most advanced chipset from the Industry's leading supplier, featuring 2.56Tbps of switching and 1,428Mpps of frame forwarding performance. This delivers Terabit-scale, wire-speed capabilities, with a fully integrated 10/40/100 Gigabit ASIC architecture that facilitates multiple design opportunities.

Benefits

The VSP 8404 delivers enhanced flexibility, and is compatible with, and complementary to, existing products and technologies from the Avaya Networking portfolio. A new product, extending the Compact Form-Factor concept, the VSP 8404 provides the very high-capacity, high-performance, and flexible connectivity solution for mid-sized Campus and Data Center networks.

Building genuine high-availability enhances a network's resiliency posture. In addition to the various HA factors offered by premium Chassis-based products, Switch Cluster technology delivers physical independence; isolated control planes (delivering process separation, isolation, and protection), and allows for in-service software upgrades. The VSP 8000 Series brings the advantages of deploying Switch Cluster technology to mid-sized businesses.

The VSP 8404 also natively supports the Avaya Fabric Connect network virtualization technology. Some of the key advantages that Fabric Connect delivers include:

- Making the need to configure network-wide VLANs obsolete
- Replacing multiple sequential legacy protocols with this one single unified technology
- Removing the risk of network loops
- Delivering the Edge-only provisioning model which seamlessly integrates with orchestration and automation
- Fully optimizing all links and all devices, enabling businesses to get the most out of infrastructure investments

Features & Capabilities

- Non-blocking, wire-speed switching architecture
- Integrated design that is optimized for low latency
- Flexible address table architecture delivers MAC, ARP, and IP Routing scalability
- Feature-rich support for Standards-based VLAN, Multi-Link Trunking, Spanning Tree Protocol, and Shortest Path Bridging technologies
- Routed IPv4 & IPv6 includes support for Static, RIP, OSPF, eBGP, ECMP, VRRP, PIM-SM, and VRF
- IPv6-optimized Hardware
- Avaya Switch Cluster technology supports Triangle & Square configurations, with both Layer 2 Split Multi-Link Trunking (SMLT) and Layer 3 Routed Split Multi-Link Trunking (RSMLT) functionality, and Virtual IST
- Avaya Fabric Connect technology supports Layer 2 Virtual Service Networks (VSNs), Layer 3 Virtual Service Networks, Inter-VSN Routing, IP Shortcut Routing, and IP Multicast-over-Fabric Connect.

High Availability Power & Cooling

- Up to 2 field-replaceable, hot-swappable internal AC or DC Power Supplies
- 4 field-replaceable Fan Modules

Warranty

- 12-month Hardware Warranty
- A complete range of support options are also available, either directly from Avaya or indirectly from our Authorized Business Partner network

Software Licensing

- Base Software License, included with hardware purchase, enables most features with the exception of those specifically noted an enabled by the Premier Software License.
- Premier Software License, an optional accessory, enables the following features: Layer 3 Virtual Service Networks and - where local regulations permit - MACsec.

Country of Origin

- China (PRC)

VSP 8000 Series Standards Compliance

The VSP 4.2 Software release provides compliance with the following IEEE and IETF standards:

IEEE

802.1 Bridging (Networking) and Network Management

- 802.1D MAC Bridges (a.k.a. Spanning Tree Protocol)
- 802.1p Traffic Class Expediting and Dynamic Multicast Filtering
- 802.1t 802.1D Maintenance
- 802.1w Rapid Reconfiguration of Spanning Tree (RSTP)
- 802.1Q Virtual Local Area Networking (VLAN)
- 802.1s Multiple Spanning Trees (MSTP)
- 802.1v VLAN Classification by Protocol and Port
- 802.1ag Connectivity Fault Management
- 802.1ah Provider Backbone Bridges
- 802.1aq Shortest Path Bridging (SPB) MAC-in-MAC
- 802.1Qbp Equal-Cost Multi-Path (Shortest Path Bridging)
- 802.1X Port-Based Network Access Control
- 802.1AE Media Access Control Security
- 802.1AX Link Aggregation

802.3 Ethernet

- 802.3 CSMA/CD Ethernet (ISO/IEC 8802-3)
- 802.3u 100BASE-TX Fast Ethernet 100Mbit/s with Auto-Negotiation
- 802.3x Full Duplex and Flow Control
- 802.3z 1000BASE-X Gigabit Ethernet over Fiber
- 802.3ab 1000BASE-T Gigabit Ethernet over Twisted Pair
- 802.3ae 10 Gigabit Ethernet over Fiber: 10GBASE-SR, 10GBASE-LR, 10GBASE-ER, 10GBASE-SW, 10GBASE-LW, 10GBASE-EW
- 802.3an 10GBASE-T 10 Gigabit Ethernet over Twisted Pair
- 802.3ba 40 Gigabit and 100 Gigabit Ethernet over Copper and Fiber: 40 Gigabit, implemented as 40BASE-QSFP+

IEFT

Generic RFCs

- 768 UDP
- 783 TFTP
- 791 IP
- 792 ICMP
- 793 TCP
- 826 ARP
- 854 Telnet
- 894 Transmission of IP Datagrams over Ethernet Networks
- 896 Congestion Control in IP/TCP internetworks
- 950 Internet Standard Subnetting Procedure
- 951 BOOTP: Relay Agent-only
- 1027 Using ARP to Implement Transparent Subnet Gateways
- 1058 RIP
- 1112 Host Extensions for IP Multicasting
- 1122 Requirements for Internet Hosts - Communication Layers
- 1256 CMP Router Discovery
- 1305 NTPv3
- 1340 Assigned Numbers
- 1519 CIDR
- 1541 DHCP
- 1542 Clarifications & Extensions for BOOTP
- 1587 OSPF NSSA Option
- 1591 DNS Client
- 1723 RIPv2 Carrying Additional Information
- 1812 Router Requirements
- 1981 Path MTU Discovery for IPv6
- 2131 DHCP
- 2138 RADIUS Authentication
- 2139 RADIUS Accounting
- 2236 IGMPv2 Snooping
- 2328 OSPFv2
- 2362 PIM-SM
- 2404 HMAC-SHA-1-96 within ESP and AH[1]
- 2407 Internet IP Security Domain of Interpretation for ISAKMP[1]
- 2408 Internet Security Association and Key Management Protocol[1]
- 2453 RIPv2
- 2460 IPv6 Basic Specification
- 2463 ICMPv6
- 2464 Transmission of IPv6 Packets over Ethernet Networks
- 2740 OSPF for IPv6
- 2874 DNS Extensions for IPv6
- 2992 ECMP Algorithm
- 3046 DHCP Relay Agent Information Option 82
- 3162 RADIUS and IPv6
- 3315 DHCPv6
- 3376 IGMPv3
- 3484 Default Address Selection for IPv6
- 3513 IPv6 Addressing Architecture
- 3569 Overview of SSM
- 3587 IPv6 Global Unicast Address Format
- 3768 VRRP: plus draft VRRP for IPv6
- 3810 Multicast Listener Discovery Version 2 for IPv6: Host Mode-only
- 4007 IPv6 Scoped Address Architecture
- 4213 Basic Transition Mechanisms for IPv6 Hosts and Routers
- 4291 IPv6 Addressing Architecture
- 4301 Security Architecture for IP[1]
- 4302 IP Authentication Header[1]
- 4303 IP Encapsulating Security Payload[1]
- 4552 Authentication/Confidentiality for OSPFv3[1]
- 4835 Cryptographic Algorithm Implementation Requirements for ESP & AH[1]
- 4861 Neighbor Discovery for IPv6
- 4862 Pv6 Stateless Address Auto-Configuration
- 5095 Deprecation of Type 0 Routing Headers in IPv6
- 5308 Routing IPv6 with IS-IS
- 5340 OSPF for IPv6[2]
- 5798 VRRPv3 for IPv4 & IPv6[2]
- 6329 IS-IS Extensions supporting Shortest Path Bridging

QoS RFCs

- 2474 Differentiated Services Field Definitions in IPv4 & IPv6 Headers
- 2475 Architecture for Differentiated Service
- 2597 Assured Forwarding PHB Group
- 2598 Expedited Forwarding PHB

OA&M RFCs

- 906 Bootstrap Loading using TFTP
- 959 FTP
- 1157 SNMP
- 1215 Convention for Defining Traps for use with the SNMP
- 1258 BSD Rlogin
- 1305 NTP: Client / Unicast mode only
- 1350 TFTPv2
- 1866 HTMLv2
- 2068 HTTP
- 2428 FTP Extensions for IPv6 and NAT
- 2541 DNS Security Operational Considerations
- 2572 Message Processing and Dispatching for SNMP
- 2573 SNMP Applications
- 2574 User-based Security Model for SNMPv3
- 2575 View-based Access Control Model for SNMP
- 2576 Coexistence between v1, v2, & v3 of the Internet-standard Network Management Framework
- 2616 HTTPv1.1
- 3411 Architecture for Describing SNMP Management Frameworks
- 3596 DNS Extensions to support IPv6
- 4250 SSH Assigned Numbers
- 4251 SSH Protocol Architecture
- 4252 SSH Authentication Protocol
- 4253 SSH Transport Layer Protocol
- 4254 SSH Connection Protocol
- 4255 DNS to Securely Publish SSH Key Fingerprints
- 4256 Generic Message Exchange Authentication for SSH
- 4443 ICMP for IPv6

MIB RFCs

- 1155 Structure and Identification of Management Information for TCP/IP-based Internets
- 1156 MIB for Network Management of TCP/IP
- 1212 Concise MIB Definitions
- 1213 MIB for Network Management of TCP/IP-based Internets: MIB-II
- 1398 Ethernet MIB
- 1442 SMIv2 of SNMPv2
- 1450 SNMPv2 MIB
- 1573 Evolution of the Interfaces Group of MIB-II
- 1650 Definitions of Managed Objects for the Ethernet-like Interface Types
- 1657 Definitions of Managed Objects for BGP-4 using SMIv2
- 1850 OSPFv2 MIB
- 1907 SNMPv2 MIB
- 2021 Remote Network Monitoring MIBv2 using SMIv2
- 2452 TCP IPv6 MIB
- 2454 UDP IPv6 MIB
- 2466 MIB for IPv6: ICMPv6 Group
- 2578 SMIv2
- 2787 Definitions of Managed Objects for VRRP
- 2819 Remote Network Monitoring MIB
- 2863 Interfaces Group MIB
- 2925 Definitions of Managed Objects for Remote Ping, Traceroute, & Lookup Operations
- 2933 IGMP MIB
- 2934 PIM MIB for IPv4
- 3416 Protocol Operations Version 2 for SNMP
- 4022 TCP MIB
- 4087 IP Tunnel MIB
- 4113 UDP MIB
- 4292 IP Forwarding Table MIB
- 4293 IP MIB
- 4363 Definitions of Managed Objects for Bridges with Traffic Classes, Multicast Filtering and Virtual LAN Extensions

[1] Implemented to deliver IPsec capability for Control Plane traffic only.
[2] Planned future support.

For a complete listing of all specifications and compliance please refer to the product documentation.

Additional Information

For further information about the Avaya Virtual Services Platform 8000 Series please visit **www.avaya.com/products**, and for the complete Avaya Networking portfolio, **www.avaya.com/networking**.

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