Cisco VPN Services Port Adapter

Q. What is the Cisco® VPN Services Port Adapter?

A. The Cisco VPN Services Port Adapter (VSPA) is the evolution of the IPsec VPN services module (VPN SPA) for the Cisco Catalyst 6500-E Service chassis and provides for increased performance over the VPNSPA.

Q. What software release will first support the VPN?

A. The VSPA will first be supported with Cisco IOS® Software Release 12.2(33)SXI.

Q. What are the features/advantages of the VPN Services Port Adapter?

A.

- **Security integrated into network infrastructure:** The Cisco VSPA supports IPsec VPN encryption in the Cisco Catalyst® 6500 Series Switches. When VPNs are integrated into these infrastructure platforms, the network can be secured without extra overlay equipment or network alterations. Furthermore, the broad range of LAN and WAN interfaces, as well as the entire line of security services modules (VPN, firewall, network anomaly detection, intrusion detection and prevention, content services, Secure Sockets Layer [SSL], and wireless LAN) can now be used together within the same platform.

- **Support for industry-leading encryption technology:** In addition to Data Encryption Standard (DES) and Triple Data Encryption Standard (3DES), the Cisco VSPA also supports Advanced Encryption Standard (AES) with 128, 192 and 256 key sizes, the latest standard in encryption technology demanded by most government agencies and the leading financial institutions in the most secure network environments.

- **High performance:** Using the latest in encryption hardware acceleration modules, each Cisco VSPA can deliver up to 8 Gbps Full Duplex of AES traffic at large packet sizes and 7 Gbps Full Duplex at average packet sizes as defined by Internet mix traffic (IMIX) traffic.

- **Modular design and scalability:** The Cisco VSPA can terminate up to 16,000 site-to-site or remote-access IPsec tunnels simultaneously and can establish those tunnels at up to 65 new tunnels per second. Taking advantage of modular architecture, each slot of the Cisco Catalyst 6500 can support up to 2 Cisco VSPAs, and up to 10 Cisco VSPAs can be combined in a single chassis. Additionally, the half-slot form factor of the Cisco VSPA allows the customer to reduce slot consumption, potentially reducing cost while enhancing per-slot and overall system encryption performance.

- **Enhanced quality of service (QoS):** The VSPA is designed to handle preencryption QoS configured on IPsec tunnel interfaces and provides priority, bandwidth, and traffic shaping services. Because it does not rely on the physical interface for QoS classification of outbound packets, packets are less likely to be dropped because of antireplay issues.

- **Scalable IPv6 encryption:** Support for multigigabit IPv6 networks based on Static Virtual Tunnel Interfaces (sVTIs).

- **Engine sharing:** Physical ports can terminate multiple tunnels on multiple VSPAs simultaneously.

- **VPN resiliency and high availability:** Using innovative features such as stateful failover for IPsec and generic routing encapsulation (GRE), Hot Standby Router Protocol with Reverse Route Injection (HSRP+RRI), Dead Peer Detection (DPD), and support of dynamic routing updates over site-to-site tunnels, the Cisco VSPA provides superior VPN resiliency and high availability.

- **Advanced security services:** Adding strong encryption, authentication, and integrity to network services is easy with the Cisco VSPA. Secured campus and provider-edge VPN applications, including integrated data, voice, and video-enabled VPN; storage area networks; and integration of IPsec and MPLS VPNs, are now easily deployable. The Cisco VSPA provides advanced site-to-site and remote-access IPsec services over both LAN and WAN interfaces.

Q. **What supervisor options are required to use the VPN Services Port Adapter?**

A. The VSPA will work with the Cisco Catalyst 6500 Series Supervisor Engine 32, 720 Series, inlcuding the SUP720-10G.

Q. **Is there any additional hardware required to use the VPN Services Port Adapter?**

A. Yes, the Services SPA Carrier (WS-SSC-600) is required, and each carrier module can support up to two VSPAs. Each carrier card consume a single slot in the Catalyst chassis.

Q. **What is the Services SPA Carrier Card?**

A. The Cisco Services SPA Carrier (WS-SSC-600) is a carrier module for the Cisco Catalyst 6500 and can accommodate up to two VSPAs. Up to 10 Services SPA Carrier-600 modules can be equipped in a Cisco Catalyst 6500, supporting up to 10 VSPAs.

Q. **Can I use my existing Cisco 7600 Series/Cisco Catalyst 6500 Series Services SPA Carrier-400 (7600-SSC-400)?**

A. No, the VSPA will not work with the older carrier modules. An WS-SSC-600 carrier card must be used.

Q. **How many VSPAs can be used in one Cisco Catalyst 6500?**

A. Two VSPAs can fit into a single SSC-600 carrier module. Each WS-SSC-600 takes one slot in the Cisco Catalyst 6500 chassis. Up to 10 VSPAs are supported in one chassis.

Q. **What is the performance of the VSPA?**

A. The VSPA supports a maximum of 8 Gbps Full Duplex, large packet crypto traffic (4 Gbps unidirectional) and 7 Gbps Full Duplex IMIX traffic. Adding a second VSPA to the same WS-SSC-600 carrier increases crypto throughput to 16 and 14 Gbps Full Duplex for large packet and IMIX traffic, respectively.

Q. **Can I pair my existing VPNSPA with the VSPA for increased performance?**

A. This is not recommended, but the VSPA can coexist in the same chassis. Some feature will only work between identical blades, blade to blade failover is one of those.

Q. **What is the scalability of the VSPA?**

A. The VSPA can support a maximum of 16,000 IP tunnels however, headroom for rekeying will cause a reduction of scalability.

Q. **What kinds of redundancy are provided with the VSPA?**

A. The VSPA supports intrachassis (blade-to-blade) as well as interchassis failover.

Q. **Can I use IPsec without the VSPA?**

A. No, IPsec encryption is not supported without hardware acceleration.

Q. How does the VSPA fit into Cisco's VPN product portfolio?

A.

	ASR-1000 ESP-5G	6500/7600 VPN SPA (Up to 10 SPAs per Chassis)	ASR-1000 ESP-10G	ASR-1000 ESP-20G	6500 VSPA (Up to 10 VPSAs per Chassis)
Performance Max/IMIX	1.8 Gbps 1 Gbps	2.5 Gbps 1.7 Gbps	4 Gbps 2.5 Gbps	7 Gbps 6 Gbps	8 Gbps 7 Gbps
IP Tunnels Scale (Max/Deployable)	5,000/4000	16,000/10,000	10,000/4000	10,000/4000	16,000/10,000
RP Redundancy	Redundant RP	Redundant RP	Redundant RP	Redundant RP	Redundant RP
IPsec HA	ESP to ESP	Blade to blade	ESP to ESP	ESP to ESP	Blade to blade
Group Encrypted Transport VPN	Roadmap	No	Roadmap	Roadmap	Roadmap
DMVPN	DMVPN P2—Yes DMVPN P3—Roadmap	DMVPN Phase 2	DMVPN P2—Yes DMVPN P3—Roadmap	DMVPN P2—Yes DMVPN P3—Roadmap	DMVPN P2
Easy VPN	Yes	Yes	Yes	Yes	Yes
VRF-Aware IPsec	Roadmap	Yes	Roadmap	Roadmap	Yes

Q. What are the relevant part numbers for the VSPA?

A.

Part Number	Product Name
WS-IPSEC-3=	VPN Services Port Adaptor
WS-SSC-600=	Services SPA Carrier-600

For more information about the VSPA, visit the Cisco website at http://www.cisco.com/go/spa, email ask-stg-ios-pm@cisco.com, or contact your local Cisco account representative.

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