Cisco IOS SSL VPN: Router-Based Remote Access for Employees and Partners

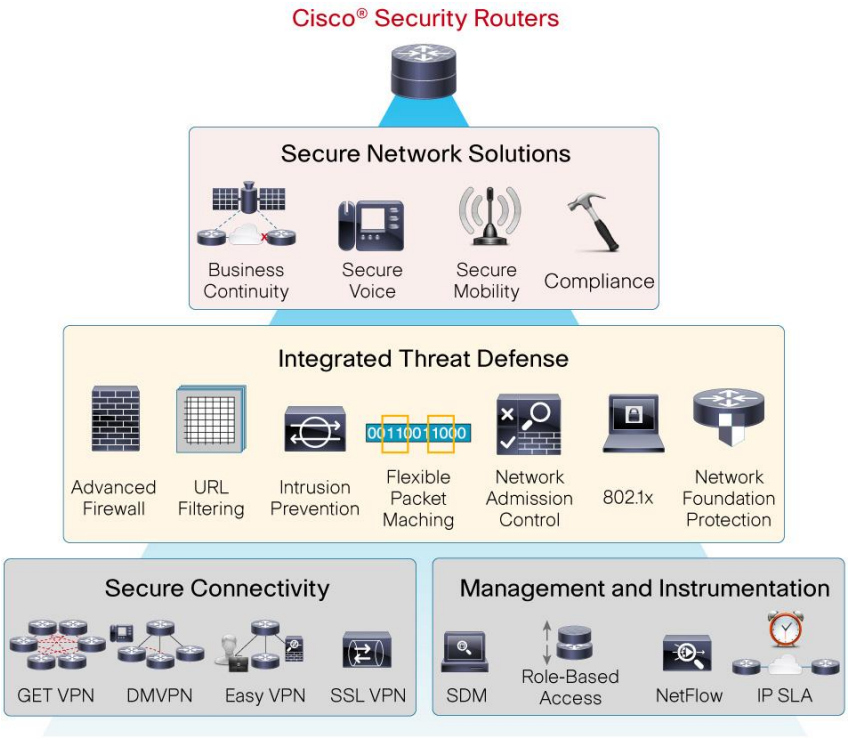
Product Overview

Cisco IOS® SSL VPN is the first router-based solution offering Secure Sockets Layer (SSL) VPN remote-access connectivity integrated with industry-leading security and routing features on a converged data, voice, and wireless platform. SSL VPN is compelling; the security is transparent to the end user and easy for IT to administer.

With Cisco IOS SSL VPN, end users gain access securely from home or any Internet-enabled location such as wireless hotspots. Cisco IOS SSL VPN also enables companies to extend corporate network access to offshore partners and consultants, keeping corporate data protected all the while.

Cisco IOS SSL VPN in conjunction with the dynamically downloaded Cisco AnyConnect VPN Client provides remote users with full network access to virtually any corporate application. Cisco IOS SSL VPN features easy-to-use wizards that simplify deployment, and powerful tools to monitor and manage sessions in real time. Cisco IOS SSL VPN is a single-box VPN, security, and routing solution, unlike other vendor products that require multiple devices and management systems (Figure 1).

Figure 1. Cisco Security Routers with Cisco IOS SSL VPN

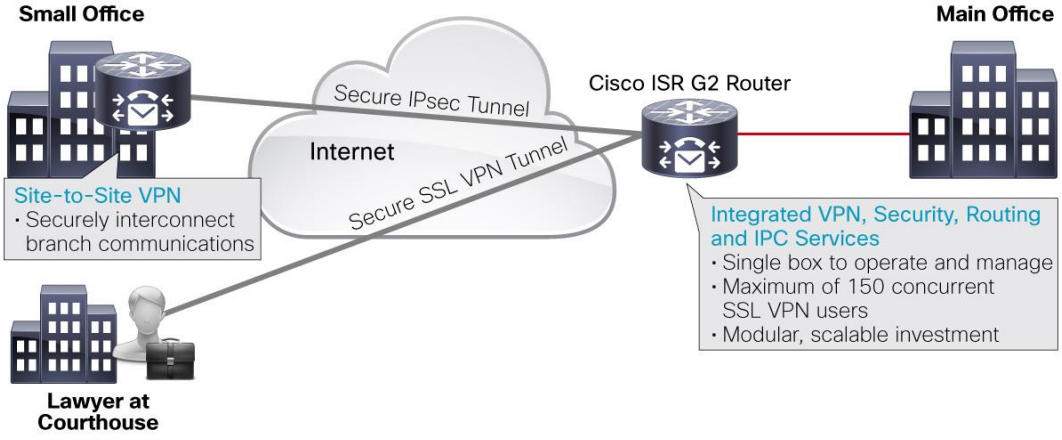


An integrated solution is easier to learn, deploy, provision, manage, and maintain, and has higher availability. This integrated solution has lower initial capital expenditure, lower deployment costs, and lower ongoing operational costs than competing multiple-device solutions.

Applications

Cisco IOS SSL VPN is useful for small and medium-sized businesses (SMBs) looking to extend remote access to employees and business partners. In addition, enterprises with a large number of small or medium-sized branches can use the Cisco IOS SSL VPN to combine remote access gateway capabilities with branch routers, thereby providing load-distribution functionality and redundancy to central-site VPN gateways. Figure 2 illustrates an application example for Cisco IOS SSL VPN.

Figure 2. Application Example: Regional Law Firm with Multiple Offices



Features and Benefits

- **Advanced full-network access:** The Cisco IOS SSL VPN solution offers extensive application support through its dynamically downloaded AnyConnect VPN Client, enabling network-layer connectivity to virtually any application.
- **Ease of deployment and management:** Intuitive, Web-based interface with wizards simplifies configuration. Advanced monitoring and management allow zero-touch remote endpoint management.
- **SSL VPN gateway network integration:** Advanced authentication and access-control features pinpoint who gains access to what; virtualization allows efficient segmentation into departments, customers, or other groups of users.
- **Simple and cost-effective licensing:** The simple licensing structure of Cisco IOS SSL VPN (no added licenses for special features), combined with the consolidated technology platform, provides customers with unparalleled cost savings and competitive per-user pricing.

Advanced Full-Network Access: Cisco AnyConnect VPN Client

With the Cisco AnyConnect VPN Client (Table 1), Cisco delivers a lightweight, centrally configured, easy-to-support SSL VPN tunneling client that allows access to virtually any application. The Cisco AnyConnect VPN Client can be loaded with any SSL-enabled browser and dynamically made available to the user in one of three methods: ActiveX, Java, or an .exe file.

Table 1. Cisco AnyConnect VPN Client: Features and Benefits

Feature	Description and Benefit
Universal Application Access	This feature provides full client capabilities over SSL, including access to Cisco IP SoftPhone and voice-over-IP (VoIP) support, increasing remote-user productivity.
Ease of Download and Installation	• Dynamic download and multiple delivery methods help ensure transparent download and distribution with Java, ActiveX, or .exe. • Small download size helps ensure rapid delivery. • No reboot is required after installation.
Increased Security	Client can be either removed at the end of a session or left permanently installed.
Zero-Touch Remote Administration	Central-site configuration provides integration, with no administration on the remote client side needed.

Ease of Deployment and Management

Cisco Configuration Professional(CCP) provides advanced wizards to make it easy to configure Cisco IOS SSL VPN.

Figure 3. Cisco Configuration Professional: Wizard-Based Management

Group-based management features allow administrators to design security policies and authentication methods for each group, a feature that is essential when extending network resources to non-corporate-managed users and endpoints.

In addition, Cisco IOS CLI can also be used to configure and monitor SSL VPN, for users who prefer that option.

For medium-sized or large installations, Cisco Security Manager Version 3.1 or later provides enterprise-class scalable SSL VPN configuration on Cisco routers and adaptive security appliances.

SSL VPN Gateway Network Integration

The Cisco IOS SSL VPN service running on Cisco routers allows the integration of SSL VPN with IP services on the router.

Table 3 lists the primary network integration capabilities.

Table 2. Cisco IOS SSL VPN Gateway Network Integration

Feature	Benefit
User Authentication: RADIUS or Authentication, Authorization, and Accounting (AAA) Server	• Ability to require users to authenticate with a username and password
Client Side Certification Authentication	• Ability to authenticate the client based on PKI certificates
Network Access Control	• Advanced options to control network access based on IP address, Differentiated Services Code Point/type of service (DSCP/ToS), TCP/UDP port, per-user, and per-group
Multiple Contexts	• Ability to divide into multiple contexts, each a logical representation of the Cisco IOS SSL VPN service, complete with separate policies and configuration
Virtual Route Forwarding (VRF) Awareness: • VRF mapping • Single IP model (URL-based or login-name-based) • Multiple IP model • Per-VRF AAA server • Per-VRF Domain Name System (DNS) server • Per-VRF gateway • Per-VRF number of users	• Ability for service providers to easily integrate the SSL VPN gateway into a shared MPLS network • Increased security by separating specific routes from global routing table • Support for overlapping IP address pools

Simple and Cost-Effective Licensing

Cisco IOS SSL VPN is a licensed feature available on Cisco routers running the Cisco IOS Advanced Security feature set. Cisco Router Security bundles entitle you to a certain number of free users; beyond that, you need to purchase additional feature licenses. Table 4 specifies the number of free users and the maximum number of users supported on each platform.

Table 3. Number of Concurrent SSL VPN Users Supported per Platform

Platform	Licenses Included with High Performance Security (HSEC) Bundles	Maximum Number of Users	
		Without Advanced Integration Module	With Advanced Integration Module
Cisco UC/SR500, 870, 880, and 890 Series Routers	-	10 users	-
Cisco 1800 and 1900 Fixed Routers	-	25 licensed users	-
Cisco 1841 and 2801 Routers	10 free users	-	75 licensed users
Cisco 1941 and 2901 Routers	-	75 licensed users	N/A
Cisco 2811 and 2821 Routers	10 free users	-	100 licensed users
Cisco 2911 and 2921 Routers	-	100 licensed users	N/A
Cisco 2851 Routers	10 free users	-	150 licensed users
Cisco 2951 Routers	-	150 licensed users	N/A
Cisco 3800 Series Routers	25 free users	-	200 licensed users
Cisco 3900 Series Routers	-	200 licensed users	N/A

The feature licenses are available in packs of 10, 25, or 100 simultaneous users directly from the Cisco.com configuration tool or through your Cisco partner or account team; Table 7 provides ordering information.

Product Specifications

Table 5 provides a listing of product specifications.

Table 4. Product Specifications

End-user operating systems supported	Windows 2000, Windows XP, and Windows Vista
Browser Compatibility	Netscape, Internet Explorer, Firefox, and Mozilla
Protocols	SSL 3.0 and 3.1; and Transparent LAN Services (TLS) 1.0 configuration and management
Cypher Suites	• SSL_RSA_WITH_RC4_128_MD5 • SSL_RSA_WITH_RC4_128_SHA • SSL_RSA_WITH_DES_CSC_SHA • SSL_RSA_WITH_3DES_EDE_CBC_SHA • SSL_RSA_WITH_AES_128_SHA • SSL_RSA_WITH_AES_256_SHA
Configuration Management	Console command-line interface (CLI), HTTP, HTTPS, Telnet, Secure Shell (SSH) Protocol, and Cisco CCP
Syslog Support	Console display, external server, and internal buffer

System Requirements

Table 6 lists the hardware and software requirements to install and use Cisco IOS SSL VPN.

Table 5. System Requirements

Hardware	Cisco SR500, 870, 880, 890, 1800, 1900, 2800, 2900, 3800, 3900, 7200 Series and Cisco 7301 Routers
Cisco IOS Software Release	Cisco IOS 12.4(9)T or later recommended
Cisco IOS Software Feature Set	Advanced Security or higher

Note: SSL VPN is supported in IOS Software. For hardware acceleration of IOS SSL VPN, a VPN AIM is required. This is supported on the Cisco 1841, 2800, and 3800 Series Integrated Services Routers

For SSL VPN Hardware Support on ISR G2 platforms, refer to the table below

Platform	Software	Onboard	ISM
8xx	Y	Y	N
1921	Y	N	N
1941	Y	N	Y
2901	Y	N	Y
2911	Y	N	Y
2921	Y	N	Y
2951	Y	Y	Y
3925	Y	Y	Y
3945	Y	Y	Y
3925E	Y	Y	N
3945E	Y	Y	N

ISM doesn't support DTLS

Ordering Information

Tables 7 and 8 provide a list of feature license part numbers. Customers can add these to the configuration while ordering the router system. Features licenses are platform specific and are not interchangeable.

In addition, customers with existing Cisco integrated services routers can gain support for Cisco IOS SSL VPN through a software upgrade, by purchasing these feature licenses and upgrading their Cisco IOS Software feature set as applicable.

To place an order, visit the Cisco Ordering Home Page. To download software, visit the Cisco Software Center.

Table 6. Ordering Information for ISRs (870, 880, 1800, 2800, and 3800 Series Routers)

Product Name	Part Number
Feature License SSL VPN for Up to 10 Users (incremental)	FL-SSLVPN-10-K9
Feature License SSL VPN for Up to 25 Users (incremental)	FL-SSLVPN-25-K9
Feature License SSL VPN for Up to 100 Users (incremental)	FL-SSLVPN-100-K9
Feature License SSL VPN for Up to 10 Users (incremental)	FL-SSLVPN-10-K9=
Feature License SSL VPN for Up to 25 Users (incremental)	FL-SSLVPN-25-K9=
Feature License SSL VPN for Up to 100 Users (incremental)	FL-SSLVPN-100-K9=

Table 7. Ordering Information for the ISRs Generation 2 (890, 1900, 2900, and 3900 Series Routers)

Product Name	Part Number
Feature License SSL VPN for Up to 10 Users (incremental)	FL-SSLVPN10-K9
Feature License SSL VPN for Up to 25 Users (incremental)	FL-SSLVPN25-K9
Feature License SSL VPN for Up to 100 Users (incremental)	FL-SSLVPN100-K9
Feature License SSL VPN for Up to 10 Users (incremental)	FL-SSLVPN10-K9=
Feature License SSL VPN for Up to 25 Users (incremental)	FL-SSLVPN25-K9=
Feature License SSL VPN for Up to 100 Users (incremental)	FL-SSLVPN100-K9=

Note: Part numbers ending in "=" are spares and can be ordered independently of any other product(s).

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For More Information

Visit the Cisco Software Center to download Cisco IOS Software. Cisco IOS Software Release 12.4(9)T Advanced Security Image or later is recommended to install and use the Cisco IOS SSL VPN feature set.

For more information about Cisco IOS SSL VPN, visit http://www.cisco.com/go/iossslvpn, contact your local Cisco account representative, or send e-mail to ask-isr-tme@cisco.com.

Acknowledgement

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