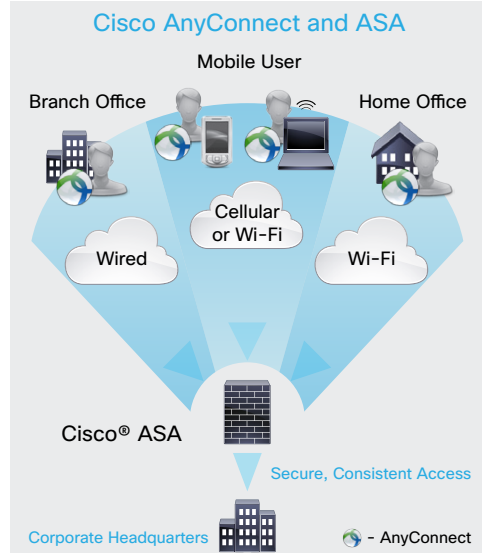# Cisco AnyConnect Secure Mobility Solution

The Cisco® AnyConnect Secure Mobility solution is powered by the industry's leading firewall: the Cisco ASA 5500 Series Adaptive Security Appliance. It offers a comprehensive suite of VPN access features along with powerful security features. It allows administrators to provision remote access through appropriate security policies for a variety of endpoints — from Mac or Windows environments to the latest iPad/iPhones and Android devices — using multiple access methods, such as the user-acclaimed Cisco AnyConnect® Secure Mobility Client or the Cisco clientless portal for any web browser (Figure 1).

Figure 1.
Cisco AnyConnect Secure Mobility Solution Overview

Cisco AnyConnect Secure Mobility solution provides:

· Context-aware, comprehensive, and preemptive security policy enforcement

· Intelligent, seamless, and always-on connectivity experience

· Secure mobility across today's proliferating managed and unmanaged mobile devices

Cisco AnyConnect Secure Mobility Solution Components

Cisco AnyConnect Secure Mobility Client: The industry's leading client is a multi-faceted endpoint software product that not only provides VPN access through Secure Sockets Layer (SSL) (including Transport Layer Security (TLS) and Datagram Transport Layer Security [DTLS]) or IPsec Internet Key Exchange (IKEv2) protocols, but also offers enhanced security through various built-in modules, such as the Cisco Network Access Manager, the Cisco HostScan package, and Cisco AnyConnect Web Security module. The Cisco AnyConnect Client is available across the broadest set of platforms, such as Windows, Mac OS X, Linux, iOS, Android, and more.

Cisco Network Access Manager: Provides superior connectivity features by giving administrators the ability to control which networks or resources endpoints are able to connect to. It provides an 802.1X supplicant that can be provisioned as part of authentication, authorization, and accounting (AAA) capabilities along with some unique encryption technologies such as MACsec IEEE 802.1AE.

Cisco Web Security: Cisco AnyConnect has a built-in module that enables web security either through the on-premises Cisco Web Security Appliance (WSA) or the cloud-based Cisco Cloud Web Security offering. Combining web security with VPN, administrators can provide comprehensive secure mobility to all end users, which is important for BYOD deployments.

Persistent security and policy enforcement: Enterprises have a choice to deploy a premises-based Cisco Web Security Appliance or use the software-as-a-service (SaaS) Cisco Cloud Web Security offering to keep malware off their corporate networks and control and secure their employees' web usage. The extensibility of the Cisco AnyConnect Secure Mobility Client supports both cloud-based and premises-based web security solutions, providing flexibility to help ensure a safe and productive Internet environment. Context-aware security policy, including enforcing acceptable use and protection from malware, is available for all users.

Clientless access: The Cisco ASA appliances provide SSL connectivity through a variety of browsers across multiple platforms. Cisco ASA enables administrators to provide clientless VPN access to unmanaged endpoints and offers access to various web and TCP/IP-based applications. These are provided through a rewriter, plugins, or smart tunnels using browser embedded SSL technology while ensuring granular access control and end-to-end security.

Virtual Desktop Infrastructure (VDI) access: The Cisco ASA can securely terminate a VDI session and seamlessly enable access to virtualized applications and desktops. Client and clientless access to virtual resources are offered for mobile devices, laptops, and desktop devices. Virtual-resource access powered by the Cisco Secure Remote Access is vendor-agnostic and benefits from a single access policy, defined for virtual and traditional resources.

Cisco HostScan package: The Cisco ASA scans endpoints requesting remote access and determines whether their state is compliant with the company's policy before granting access. An administrator can also remediate noncompliant endpoints. Cisco HostScan can be used whether the access is client-based or clientless.

Mobile devices: With the recent bring-your-own-device (BYOD) phenomenon, administrators need to support end-user productivity by enabling these users to use their own mobile devices for remote access to the company's network. The AnyConnect client can be deployed on most consumer devices, including Android and Apple based smartphones and tablets. Administrators will enjoy the ease of certificate deployment offered by the Simple Certificate Enrollment Protocol (SCEP) proxy built into Cisco ASA solutions, which includes pre-deployment device identification.

Benefits of Cisco AnyConnect Secure Mobility Solution

Cisco AnyConnect Secure Mobility Solution is consistently listed as a SSL VPN Gartner Magic Quadrant leader for its technology leadership and vision. Vendors are evaluated on Ability to Execute and Completeness of Vision.[1] Cisco has provided an end-to-end security solution by bringing together a full-spectrum of security products.

The Cisco AnyConnect Secure Mobility Solution provides benefits to all stakeholders who use the mobile network.

Benefits for End Users
- Intelligent, seamless, and always-on connectivity experience.
- Secure mobility, without compromise in choices, across today's wide range of managed and unmanaged devices.
- Browser-based, clientless SSL access on ad hoc or unmanaged devices.
- Ease of access: Always-on connectivity and a user interface specifically designed for an optimal experience connecting to corporate resources with minimal touch points.
- Broad platform support: Offers secure remote access on the widest range of mobile and PC devices. Enables businesses to securely respond to the growing user requirements for support on new endpoints and applications, including support for the Apple's iOS devices (iPhone/iPad/iPod Touch); Google Android devices; Windows 7, XP, and Vista devices; and Mac OS X devices. Clientless access is also available to a broad range of applications on any web browser.

Benefits for Security Administrators
- Single, comprehensive, context-aware security policy enforcement.
- Granular control: Empowers network and IT management with additional tools to provide controlled access to corporate resources and applications through granular policy setting and enforcement for each user group and device.
- Broadest OS support in the industry, through Cisco AnyConnect VPN software.
- Improved end-user satisfaction by providing flexibility and choice.
- Single hardened gateway including firewall. Cisco Intrusion Protection System (IPS) and Cisco AnyConnect Secure Mobility Solution built-in capabilities. Reduced operating costs with simplified IT operations for all end users.

- Scalability: Designed to deliver the highest VPN session counts. Supports up to 10,000 secure endpoint connections per appliance, and up to 100,000 endpoints with the load balancing feature built into Cisco ASA.
- Deployment flexibility: Provides client and clientless access for a broad spectrum of desktop and mobile platforms on a single appliance. Extends the appropriate VPN technology (clientless or IPsec/SSL/DTLS client networks).

Benefits for Company Executives
- Boost in productivity by enabling mobile access from any device without compromising security.
- Giving end users a choice of how, when, and where to access their information.
- The assurance that security and compliance guidelines are enforced.
- Low total cost of ownership (TCO): Reduces expensive help-desk calls associated with network connectivity issues, eliminates the cost of manually managing client software on every endpoint, and offers a converged, single client that provides enterprises with a lower cost of endpoint administration by unifying four Cisco clients into one.

Licensing

The Cisco AnyConnect Secure Mobility Solution offers the following VPN licensing options (Figure 2):

Cisco AnyConnect Essentials licenses enable basic VPN functionality using the AnyConnect client for the maximum session capacity of the Cisco ASA 5500 Series Adaptive Security Appliance. The Essentials license is for customers who require only basic VPN remote access connectivity.

Cisco AnyConnect Mobile licenses are required to enable secure remote access from mobile devices. A mobile license is an add-on license to an Essentials or Premium licenses. A single mobile license is required per Cisco ASA appliance.

Cisco AnyConnect Premium licenses enable all functionalities using either Cisco AnyConnect Secure Mobility Client or clientless and end-to-end security features (like Cisco Secure Desktop), for the set number of concurrent sessions described by the license. Web security and malware protection features available with the Cisco AnyConnect Secure Mobility Client solution enforce security policy, independent of user location.

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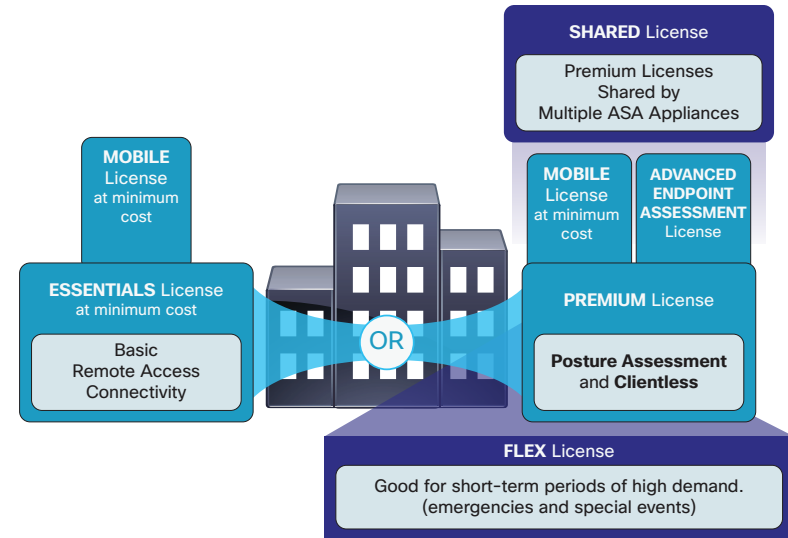
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Cisco AnyConnect Premium licensing is based on the number of simultaneous users, and is available as a single device or shared license. This license can be enabled on any Cisco ASA appliance model and provides flexibility to enable granular access based on various policies. Cisco AnyConnect Premium licensing is also a requirement for supporting the next-generation encryption, Suite B.

Cisco AnyConnect Advanced Endpoint Assessment license is required to enable remediation capabilities. This is an add-on license to the Premium license.

Cisco AnyConnect Shared licenses, which are Premium licenses that are shared across multiple Cisco ASA appliances, are another option for organizations looking to optimize their use of licenses. Use of Shared licenses does not allow per ASA Premium or Essentials licenses.

Cisco AnyConnect Flex licenses enable an organization to temporarily support a higher number of users to meet the increased user demand during a disaster or other large scale event. This 56-day license is consumed on a per-day basis.

Figure 2. Cisco AnyConnect Secure Mobility Licensing on Cisco ASA Appliances

Cisco ASA 5500 Series Models

The Cisco ASA 5500 Series delivers site-specific scalability, from the smallest business and home office deployments to the largest enterprise networks. The Cisco ASA 5500 Series comes in 10 different models. Each model is built with concurrent services scalability, investment protection, and future technology extensibility as its foundation.

Table 1 provides performance information for the Cisco ASA 5500 and 5500-X Series. Table 2 provides specifications for the different models.

Table 1. Performance Details for Cisco ASA 5500 and 5500-X Series Appliances

Platform	ASA 5505	ASA 5512-X	ASA 5515-X	ASA 5525-X	ASA 5545-X	ASA 5555-X	ASA 5585-S10	ASA 5585-S20	ASA 5585-S40	ASA 5585-S60
Maximum 3DES/AES VPN Throughput[2]	100 Mbps	200 Mbps	250 Mbps	300 Mbps	400 Mbps	700 Mbps	1 Gbps	2 Gbps	3 Gbps	5 Gbps
Maximum Site-to-Site and IPsec IKEv1 Client VPN User Sessions[2]	25	250	250	750	2500	5000	5000	10,000	10,000	10,000
Maximum Cisco AnyConnect or Clientless VPN User Sessions	25	250	250	750	2500	5000	5000	10,000	10,000	10,000
Bundled Premium User Sessions	2									
Stateful Failover	No	Yes								
VPN Load Balancing	No	Yes								
Shared VPN License Option	No	Yes								

[2] The total concurrent IPsec and SSL (clientless and tunnel-based) VPN sessions may not exceed the maximum concurrent IPsec session count shown in the chart. The SSL VPN session number (clientless or Cisco AnyConnect client) may also not exceed the number of licensed sessions on the device. The Cisco ASA 5585 supports a greater number of simultaneous users than the Cisco ASA 5555 at comparable overall SSL VPN throughput to the ASA 5555. VPN throughput and session count depend on the ASA device configuration and VPN traffic patterns. These elements should be taken in to consideration as part of your capacity planning.

Table 2. Specifications for Cisco ASA 5500 and 5500-X Series Appliances

	ASA 5505	ASA 5512-X	ASA 5515-X	ASA 5525-X	ASA 5545-X	ASA 5555-X	ASA 5585 SSP-10/20	ASA 5585 SSP-40/60
Hardware								
CPU	Single core	Multi-core, enterprise-class						
Memory (RAM)	512 MB	4 GB	8 GB		12 GB	16 GB	6/12 GB	12/24 GB
Flash	128 MB	4 GB	8 GB				2 GB	
Integrated Network (Gigabit Ethernet [GE]) Ports	8 x 10/100 switch ports with 2 Power-over-Ethernet (PoE) ports						8 x 10/100/1000 2 x 10 GE3 Enhanced Small Form-Factor Pluggable (SFP+) (SSP-10/20) 16 x 10/100/1000 4 x 10 GE3 SFP+ (SSP-10/20 or IPS SSP-10/20)	6x 10/100/1000 4x 10GE SFP+ (SSP-40/60) 12x 10/100/1000 8x 10GE SFP+ (SSP-40/6 or IPS SSP-40/60)
Interface Card Slots	1 x SSC	1 x SSM						
Interface Card Options	–	6-port 10/100/1000, 6-port GE SFP SX, LH, LX						
Redundant Power	No				Yes			
Power Supply	External, 96W	400W			450W		370W	
Physical Specifications								
Form Factor	Desktop	1 RU, 19-in. rack-mountable					2 RU, 19-in. rack-mountable	
Rack-mounting options	Yes, with rack-mount or wall-mount kit	Brackets included (slide rails optional)			Slide rails included		Rack mounts included	
Dimensions (H x W x D)	1.75 x 7.89 x 6.87 in. (4.45 x 20.04 x 17.45 cm)	1.67 x 16.7 x 15.6 in. (4.24 x 42.9 x 39.5 cm)			1.67 x 16.7 x 19.1 in. (4.24 x 42.9 x 48.4 cm)		3.47 x 19 x 26.5 in. (8.8 x 48.3 x 67.3 cm)	
Weight	4.0 lb (1.8 kg)	13.39 lb (6.07 kg)	13.39 lb (6.07 kg)	14.92 lb (6.77 kg)	16.82 lb (7.63 kg) with single power supply 18.86 lb (8.55 Kg) with dual power supplies		50 lb (22.7 kg) with single power supply 62 lb (28.2 kg) with dual power supplies	

Ordering Information

Tables 3 and 4 provide a subset of ordering information for the Cisco AnyConnect Secure Mobility Solution enabled by the Cisco ASA 5500 Series. All Cisco ASA 5500 Series appliances include the maximum number of IPsec (IKEv1) concurrent users in the base configuration of the chassis. Either an Essentials or Premium AnyConnect license is required for SSL (TLS, DTLS) or IPsec IKEv2 connectivity. Premium VPN on the Cisco ASA 5500 Series may be purchased under a single part number as an edition bundle, or the chassis and SSL VPN feature license may be purchased separately, as indicated in Table 3. To place an order, visit the Cisco Ordering homepage.

Table 3. Ordering Information for Cisco ASA Edition Bundles (with Cisco AnyConnect Premium and Mobile License)

VPN User Requirements	Edition Bundles	Edition Bundles
10 VPN users	ASA 5505 SSL/IPsec VPN Edition for 10 concurrent users	ASA5505-SSL10-K9*
25 VPN users	ASA 5505 SSL/IPsec VPN Edition for 25 concurrent users	ASA5505-SSL25-K9
25 VPN users	ASA 5512-X w/25 AnyConnect Premium and Mobile	ASA5512VPN-PM25K9
50 VPN users	ASA 5515-X w/50 AnyConnect Premium and Mobile	ASA5515VPN-PM50K9
100 VPN users	ASA 5515-X w/100 AnyConnect Premium and Mobile	ASA5515VPN-PM100K9
250 VPN users	ASA 5525-X w/250 AnyConnect Premium and Mobile	ASA5525VPN-PM250K9
500 VPN users	ASA 5525-X w/500 AnyConnect Premium and Mobile	ASA5525VPN-PM500K9
1000 VPN users	ASA 5545-X w/1000 AnyConnect Premium and Mobile	ASA5545VPN-PM1KK9
2500 VPN users	ASA 5545-X w/2500 AnyConnect Premium and Mobile	ASA5545VPN-PM25HK9
2500 VPN users	ASA 5555-X w/2500 AnyConnect Premium and Mobile	ASA5555VPN-PM25HK9
5000 VPN users	ASA 5555-X w/5000 AnyConnect Premium and Mobile	ASA5555VPN-PM5KK9
5000 VPN users	ASA 5585-S10 SSL/IPsec VPN Edition for 5000 concurrent users	ASA5585-S10-5K-K9*
10,000 VPN users	ASA 5585-S20/S40/S60 SSL/IPsec VPN Edition for 10,000 concurrent users	ASA5585S20-10K-K9*, ASA5585S40-10K-K9*, ASA5585S60-10K-K9*

Table 4. Ordering Information for Individual VPN Licenses (with Cisco AnyConnect Premium License) for Cisco ASA Models

Cisco ASA Chassis and Applicable SSL VPN Licenses											
User Requirements	Part Number	ASA 5505	ASA 5512	ASA 5515	ASA 5525	ASA 5545	ASA 5555	ASA 5585-S10	ASA 5580-20	ASA 5580-40	ASA 5585-S60
10 users	ASA5500-SSL-10	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
25 users	ASA5500-SSL-25	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
50 users	ASA5500-SSL-50		✓	✓	✓	✓	✓	✓	✓	✓	✓
100 users	ASA5500-SSL-100		✓	✓	✓	✓	✓	✓	✓	✓	✓
250 users	ASA5500-SSL-250		✓	✓	✓	✓	✓	✓	✓	✓	✓
500 users	ASA5500-SSL-500				✓	✓	✓	✓	✓	✓	✓
750 users	ASA5500-SSL-750				✓	✓	✓	✓	✓	✓	✓
1000 users	ASA5500-SSL-1000					✓	✓	✓	✓	✓	✓
2500 users	ASA5500-SSL-2500					✓	✓	✓	✓	✓	✓
5000 users	ASA5500-SSL-5000						✓	✓	✓	✓	✓
10,000 users	ASA5500-SSL-10K								✓	✓	✓

Cisco Security Services

Cisco and its partners provide services that can help you deploy and manage security solutions wordlwide. Cisco has adopted a lifecycle approach to services that addresses the necessary set of requirements for deploying and operating Cisco adaptive security appliances, as well as other Cisco security technologies. This approach can help you improve your network security posture to achieve a more available and reliable network, prepare for new applications, lower your network costs, and maintain network health through day-to-day operations. For more information about Cisco Security Services, visit: http://www.cisco.com/go/services/security.

Why Cisco?

Cisco is the leader in secure networks. Cisco SecureX Architecture™ uniquely brings together three key elements: a network that provides the contextual information and consistently enforces the security policies; global threat intelligence; and one of the broadest security portfolios. Cisco security also holds a proven track record of innovation and is recognized for leadership throughout the industry.

For More Information

- Cisco ASA 5500 Series: http://www.cisco.com/go/asa
- Cisco AnyConnect Secure Mobility Solution: http://www.cisco.com/go/asm
- Cisco AnyConnect Secure Mobility Client: http://www.cisco.com/go/anyconnect
- Cisco VPN solutions: http://www.cisco.com/go/vpn
- Licensing overview for Cisco ASA 5500 Series appliances: http://www.cisco.com/en/US/products/ps6120/products_licensing_information_listing.html
- Cisco Adaptive Security Device Manager: http://www.cisco.com/go/asdm
- Cisco product certifications: http://www.cisco.com/go/securitycert
- Cisco AnyConnect Secure Mobility License: http://www.cisco.com/en/US/prod/collateral/vpndevc/ps6032/ps6094/ps6120/overview_c78-527488.html

Acknowledgement

This product includes software developed by the OpenSSL Project for use in the OpenSSL Toolkit.