# Cisco Adaptive Security Virtual Appliance (ASAv)

Meet the latest step in the evolution of Cisco® ASA security appliances: the Cisco Adaptive Security Virtual Appliance (ASAv). Cisco ASAv brings the power of ASA appliances to the virtual domain and private cloud environments. Cisco ASAv runs the same software as the physical Cisco ASA to deliver proven security functionality in a virtual form factor. You can use Cisco ASAv to protect virtual workloads within your data center. Later, you can expand, contract, or shift the location of these workloads over time and span physical and virtual infrastructures.

In the past, computing infrastructure elements were implemented using specialized hardware built for that purpose. With the advent of x86 server virtualization and increased power requirements, the virtualization of computing infrastructure is becoming increasingly popular. Businesses are choosing to deploy their computing, storage, and network infrastructure using virtual devices because of benefits such as deployment flexibility, increased server utilization, and ease of management. Cisco ASAv provides security in a virtual machine (VM) form factor to address security needs in virtual environments.

Product Overview

Cisco ASAv runs as a VM inside a hypervisor in a virtual host (Figure 1). Most of the features that are supported on a physical Cisco ASA by Cisco ASA software are supported on Cisco ASAv as well, except for clustering and multiple contexts. Cisco ASAv supports site-to-site VPN, remote-access VPN and clientless VPN functionalities as supported by physical Cisco ASA devices.

Figure 1.   Cisco ASAv Architecture
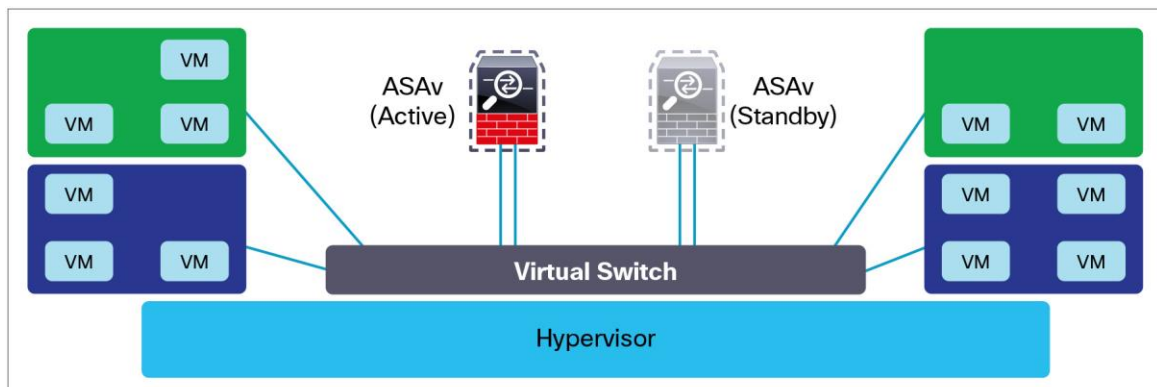
Cisco ASAv uses Cisco Smart Licensing to validate its entitlements. Cisco Smart Licensing makes it easier to deploy, manage, and track virtual instances of Cisco ASAv running on customer premises.

Cisco ASAv Benefits

Cisco ASAv offers multiple customer benefits, including the following.

Uniform Security across Deployment Domains

Cisco ASAv provides uniform security across physical and virtual deployment domains with multiple hypervisors. Increasingly, customers are deploying some parts of an application on physical infrastructure and others on virtual infrastructure. Even with virtual infrastructure, customers use multiple hypervisors to deploy their applications. Cisco ASAv, along with Cisco ASA, normalizes the deployment options such that one security policy can be deployed for both physical and virtual appliances.

Ease of Management

Cisco ASAv offers the representational state transfer (REST) API, an HTTP-based interface that offers capabilities to manage the device, including those for changing security policies and monitoring status. The REST API allows Cisco ASA to be introduced into software-defined networking (SDN) environments and to be used with custom policy-orchestration systems easily.

Ease of Provisioning

Cisco ASAv can be provisioned within a matter of minutes with a predetermined configuration to quickly deploy security services to match the speed of application deployment. With Smart Licensing, the entitlements can be automatically obtained by Cisco ASAv while providing a single holistic view of resources being consumed within an enterprise.

Cisco ASAv Appliance Family

Cisco ASAv is available in multiple models to provide a suitable fit for customer needs. There are three models available in this family:

- Cisco ASAv5: Consumes up to 2 GB of memory and delivers up to 100 Mbps of throughput.
- Cisco ASAv10: Consumes up to 2 GB of memory and delivers up to 1 Gbps of throughput.
- Cisco ASAv30: Consumes up to 8 GB of memory and delivers up to 2 Gbps of throughput.

Cisco Smart Licensing

Cisco Smart Software Licensing makes it easier to buy, deploy, track, and renew Cisco ASAv licenses. Smart Licensing moves away from the product activation key (PAK)-based licensing to a new model that supports more flexibility and visibility. With Cisco Smart Software Licensing, customers enjoy:

- Simpler purchase and activation of Cisco ASAv, as outlined in Figure 2
- Easier license management and reporting of Cisco ASAvs due to license pooling
- Automatic license activation on provisioning of Cisco ASAv

Customers, their chosen partners, and Cisco can view product entitlements and services in the Cisco Smart Software Manager. Upon configuration and activation with a single token, Cisco ASAv will self-register with a Cisco server in the cloud, removing the need of going to a website and registering products with PAKs. Instead of using PAKs or license files, Smart Software Licensing establishes a pool of software licenses or entitlements that can be used across the customer's business. When a Cisco ASAv is instantiated on a customer's premises, an entitlement is decremented from the pool. When Cisco ASAv is decommissioned, or a Cisco ASAv is deinstantiated within the Smart Software Manager, an entitlement is incremented in the pool.

Customers can self-manage license deployment throughout their company easily and quickly in the Smart Software Manager. The Smart Software Manager can be used to manage multiple products from Cisco that support Smart Licensing.

Cisco ASAv uses Cisco Smart Licensing exclusively. Older forms of licensing are not supported.
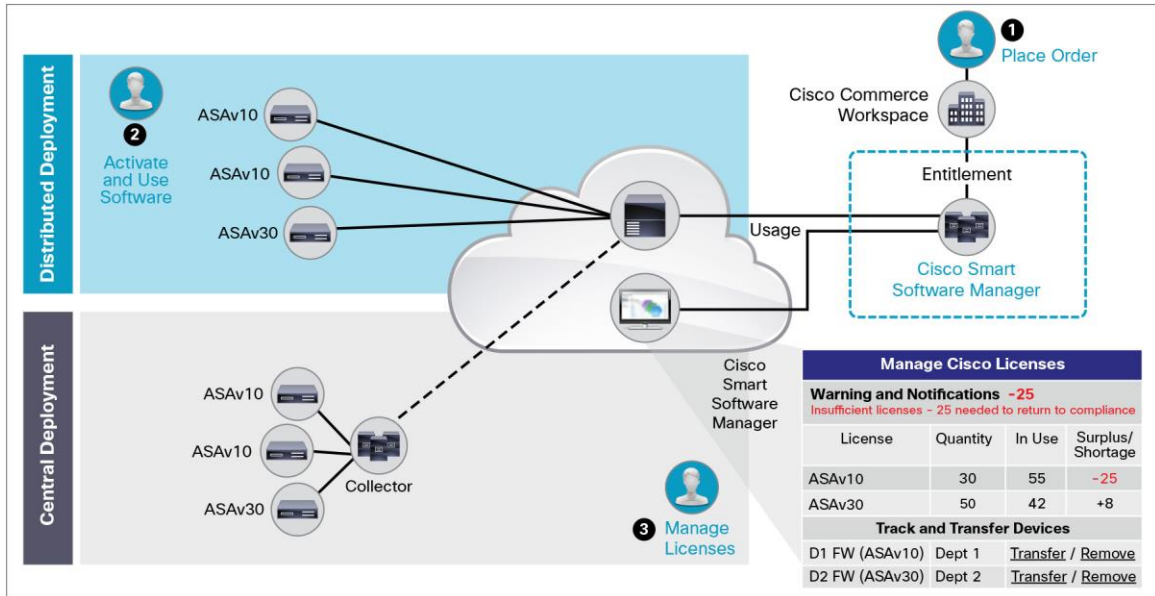
Figure 2.   Cisco Smart Licensing

Table 1 lists the specifications for all three Cisco ASAv models. Table 2 provides ordering information.

Table 1.   Cisco ASAv Specifications

	Cisco ASAv5	Cisco ASAv10	Cisco ASAv30
Stateful inspection throughput (Maximum)[1]	100 Mbps	1 Gbps	2 Gbps
Stateful inspection throughput (Multiprotocol)[2]	50 Mbps	500 Mbps	1 Gbps
Triple Data Encryption Standard/Advanced Encryption Standard (3DES/AES) VPN throughput[3]	30 Mbps	125 Mbps	300 Mbps
Connections per second	8,000	20,000	60,000
Concurrent sessions	50,000	100,000	500,000
VLANs	25	50	200
Bridge groups	12	25	100
IPsec VPN peers	50	250	750
Cisco AnyConnect® or clientless VPN user sessions	50	250	750
Unified communications phone proxy	50	250	1,000
Cisco Cloud Web Security Users	250	1,000	5,000
High availability	Active/standby	Active/standby	Active/standby
Hypervisor support	VMware ESX/ESXi 5.X, KVM 1.0	VMware ESX/ESXi 5.X, KVM 1.0	VMware ESX/ESXi 5.X, KVM 1.0
Modes	Routed/transparent	Routed/transparent	Routed/transparent
vCPUs	1	1	4

	Cisco ASAv5	Cisco ASAv10	Cisco ASAv30
Memory	2 GB	2 GB	8 GB
Minimum disk storage[4]	8 GB	8 GB	16 GB

Note: Testing was done on the Cisco Unified Computing System™ (Cisco UCS®) B200 M3 Blade Server with Intel® Xeon® CPU ES-26400 with 2.5-GHz processors. Each performance number above was obtained while only running the associated test.

[1] Maximum throughput measured with User Datagram Protocol (UDP) traffic under ideal conditions.

[2] Multiprotocol = Traffic profile consisting primarily of TCP-based protocols/applications like HTTP, SMTP, FTP, IMAPv4, BitTorrent, and DNS.

[3] VPN throughput and sessions count depend on the ASA device configuration and VPN traffic patterns. These elements should be taken into consideration as part of your capacity planning.

[4] Thin provisioning supported

Table 2.   Ordering Information

Part Number	Description
L-ASAV10S-K9=	Cisco ASAv10 (1 Gbps) selector on the Cisco Purchasing Portal
L-ASAV10S-STD	Cisco ASAv10 (1 Gbps) with all firewall features licensed
L-ASAV10S-STD-16	16-pack Cisco ASAv10 (1 Gbps) with all firewall features licensed
L-ASAV30S-K9=	Cisco ASAv30 (2 Gbps) selector on the Cisco Purchasing Portal
L-ASAV30S-STD	Cisco ASAv30 (2 Gbps) with all firewall features licensed
L-ASAV30S-STD-4	4-pack Cisco ASAv30 (1 Gbps) with all firewall features licensed
L-ASAV5S-K9=	Cisco ASAv5 (100 Mbps) selector on the Cisco Purchasing Portal
L-ASAV5S-STDK9-8	8-pack Cisco ASAv5 (100 Mbps) with all firewall features licensed

Remote access VPN and clientless VPN functionality can be licensed separately as outlined in http://www.cisco.com/c/en/us/products/collateral/security/anyconnect-secure-mobility-client/guide-c07-732790.html

Additional Information

- Cisco ASAv: http://www.cisco.com/c/en/us/products/security/virtual-adaptive-security-appliance-firewall/index.html
- Cisco Adaptive Security Appliance (ASA) Software: http://www.cisco.com/c/en/us/products/security/adaptive-security-appliance-asa-software/index.html
- Cisco Smart Software Licensing: http://www.cisco.com/c/en/us/products/abt_sw.html
- Cisco ASA Configuration Guide: http://www.cisco.com/c/en/us/support/security/asa-5500-series-next-generation-firewalls/products-installation-and-configuration-guides-list.html
- Cisco AnyConnect Licensing: http://www.cisco.com/c/en/us/products/collateral/security/anyconnect-secure-mobility-client/guide-c07-732790.html

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