

# Cisco Virtual Application Cloud Segmentation Services

## Product Overview

Cisco® Virtual Application Cloud Segmentation (VACS) Services is an integrated solution that helps IT professionals efficiently deploy virtualized applications by automating the provisioning of virtual private data centers. Using best-in-class virtual network services from Cisco, VACS offers industry-leading secure virtual network connectivity, boosts overall productivity in the IT department, and helps lower operating costs.

## IT Challenges

Customers increasingly are deploying virtualized private clouds to deliver infrastructure as a service (IaaS). This approach leads to unsecured virtual machine sprawl on converged infrastructure, which can result in noncompliance with security and regulatory requirements.

Providing the same levels of security in virtual data centers as in traditional nonvirtualized environments and effectively securing east-west virtual machine traffic is another significant challenge.

In addition, it is time consuming to configure network connectivity for application services with the proper security policies while also allowing workload mobility and providing policy consistency.

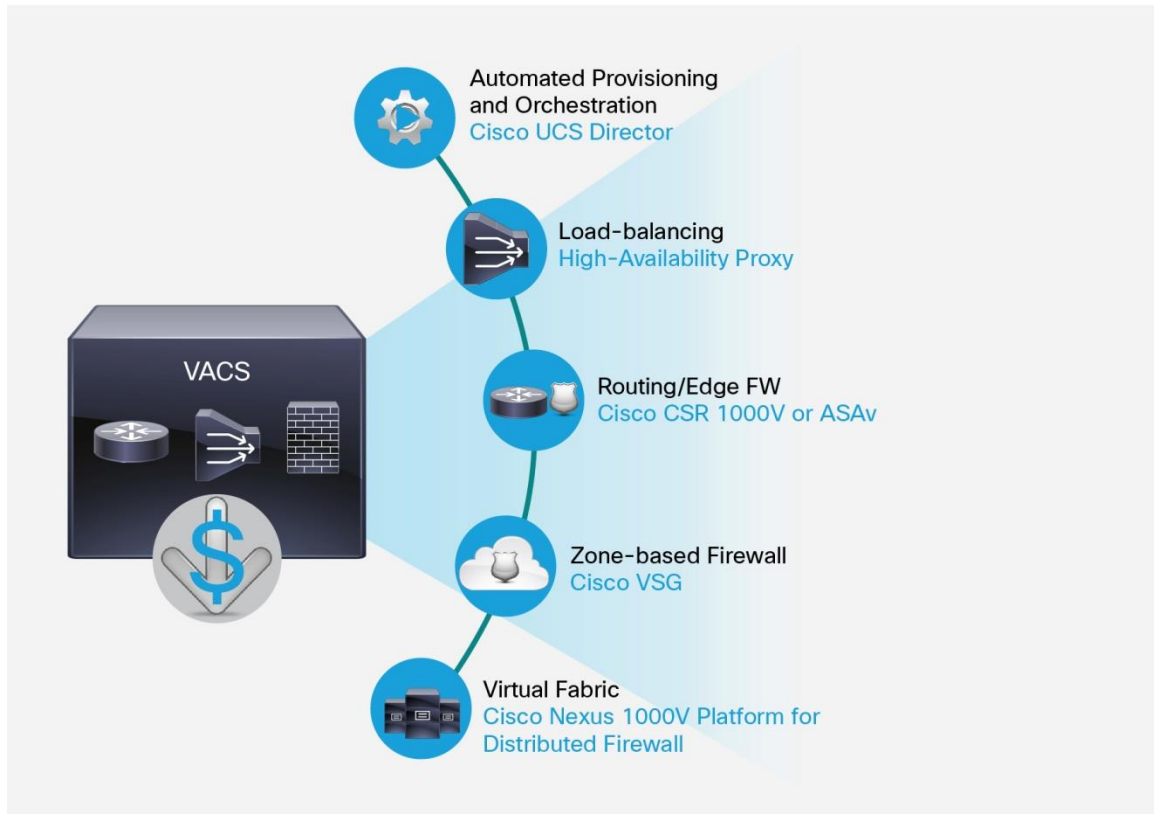
Furthermore, virtual networking services can be prohibitively costly for production deployments.

## Features and Benefits

VACS is a complete solution with preconfigured and integrated virtual networking, virtual security, Layer 4 through Layer 7 (L4-L7) services, workflow automation, and configuration tools. It simplifies policy definition, integration, and deployment. The deployment and provisioning of virtual networking and network services such as security and load-balancing services are completed automatically and consistently across hypervisor environments.

As shown in Figure 1, VACS is a tightly integrated solution with best-in-class virtualized distributed switching, distributed firewall, advanced security, L4-L7 services and routing delivered through industry-leading Cisco NX-OS Software and Cisco IOS® Software, and other open-source technologies. VACS also facilitates the use of the NX-OS and Cisco IOS Software command-line interfaces (CLIs) for debugging and troubleshooting purposes.

**Figure 1.** Cisco VACS Offers Preconfigured and Integrated Tools for Deploying Virtualized Applications Through Automated Provisioning



VACS includes these components:

- Cisco UCS® Director for automated provisioning and orchestration
- Cisco Nexus® 1000V Switch, a distributed virtual switch for virtualized switching
- Cisco Virtual Security Gateway (VSG), a distributed firewall for protecting east-west traffic
- Cisco Prime™ Network Services Controller (NSC)
- Cisco Cloud Services Router (CSR) 1000V for routing, edge firewall, and protocol inspection and filtering
- Cisco Adaptive Security Virtual Appliance (ASA v) for complete ASA perimeter firewall capabilities
- Open-source High-Availability Proxy (HAProxy) for server load-balancing capabilities

### Simplified Deployments

VACS automates the installation, licensing, and provisioning of all included components through an integrated GUI. It comes with predefined templates to deploy a container for traditional three-tier workloads in a few clicks. VACS logically isolates the virtual application workloads at the virtual layer, providing consistent provisioning and orchestration across physical and virtual assets through Cisco UCS Director.

## Rapid Secure Segmentation on Shared Infrastructure

Current physical segmentation in data centers results in longer provisioning time and underutilized resources. VACS accelerates the deployment of virtualized applications and consolidates physical resources on a shared infrastructure with the same level of isolation and segmentation. The policies enforced by VACS help ensure a consistent operational model and compliance in the virtualized data center.

## Simplified Virtual Networking and Security

VACS provides a wizard-based provisioning model with full lifecycle management of virtual networking and security services. IT and server administrators no longer have to configure and manage individual components.

## Unified Virtual Services Licensing

The current pricing for virtual services makes them cost prohibitive for production deployments: every vendor has different licensing schema, and licensing can become expensive as throughput increases. VACS offers the option of a unified licensing scheme for all security and Layer 2 through 7 services, with a perpetual license on a per-server basis, enabling customers to deploy secure application containers with up to 10-Gbps throughput.<sup>1</sup>

## End-to-End Physical and Virtual Automation

In conjunction with Cisco UCS Director, VACS provides a common management plane and consistent user experience for end to end automation and orchestration on both virtual and physical infrastructure.

## System Requirements

Table 1 summarizes system requirements for VACS.

**Table 1.** Cisco VACS System Requirements

Requirement	Description
<b>Hosts</b>	<ul style="list-style-type: none"><li>• 2 hosts for infrastructure virtual machines (Cisco UCS Director, Cisco Nexus 1000V, and Cisco Prime Network Services Controller)</li><li>• 2 or more hosts for container virtual machines</li></ul>
<b>Virtual CPUs (vCPUs)</b>	Infrastructure hosts: <ul style="list-style-type: none"><li>• Cisco UCS Director: 4</li><li>• Cisco Virtual Switch Update Manager: 2</li><li>• Cisco Nexus 1000V VSM: 2 per VSM; 4 for high availability</li><li>• Cisco Prime Network Services Controller: 4</li></ul> Container hosts: 8 CPU cores
<b>Memory</b>	Infrastructure hosts: <ul style="list-style-type: none"><li>• Cisco UCS Director: 8 GB</li><li>• Cisco Virtual Switch Update Manager: 4 GB</li><li>• Cisco Nexus 1000V VSM: 4 GB per VSM, 8 GB for high availability</li><li>• Cisco Prime Network Services Controller: 4 GB</li></ul> Container hosts: 16 GB
<b>VMware vSphere</b>	<ul style="list-style-type: none"><li>• Releases 5.5 and 6.0</li></ul>
<b>Cisco UCS Director</b>	<ul style="list-style-type: none"><li>• Release 5.4 and later</li></ul>
<b>Cisco Nexus 1000V Virtual Supervisor Module (VSM)</b>	<ul style="list-style-type: none"><li>• Release 5.2(1)SV3(1.4)</li></ul>
<b>Cisco Virtual Switch Update Manager</b>	<ul style="list-style-type: none"><li>• Release 1.3</li></ul>

<sup>1</sup> Unified licensing and 10-Gbps throughput are available with a CSR 1000V -based VACS solution. For an ASA v -based VACS solution, the ASA v license is a bring-your-own-license (BYOL) option and needs to be procured separately.

Requirement	Description
Cisco Prime Network Services Controller	<ul style="list-style-type: none"> <li>Release 3.4.1b</li> </ul>
Cisco Virtual Security Gateway	<ul style="list-style-type: none"> <li>Release 5.2(1)VSG2(1.3)</li> </ul>
Cisco Cloud Services Router 1000V XE	<ul style="list-style-type: none"> <li>Release 3.16.1a</li> </ul>
Cisco Adaptive Security Virtual Appliance (ASAv)	<ul style="list-style-type: none"> <li>Release 9.6.1</li> </ul>
Open-source HAProxy	<ul style="list-style-type: none"> <li>Release 1.5.2</li> </ul>

## System Scalability

Table 2 provides scalability information for VACS.

**Table 2.** System Scalability

Virtual machines per host	50
Containers per host	15
Virtual network interface cards (vNICs) per host	300
Cisco CSR throughput	Up to 10 Gbps
Cisco ASAv throughput	Up to 2 Gbps
Virtual machines per container	60
Maximum number of containers per VACS license	128
Maximum number of containers that can be deployed in parallel	5

## Licensing and Ordering Information

Table 3 provides ordering information for VACS.

**Table 3.** Cisco VACS Ordering Information

Part Number	Description
CUIC-VACS-01=	VACS Licenses, eDelivery Qty=1
CUCI-VACS-OFFERS=	VACS Licenses, Qty=1-250+

VACS is also available as part of Cisco ONE™ Enterprise Cloud Suite. For more information, see <http://www.cisco.com/c/en/us/solutions/data-center-virtualization/one-enterprise-suite/index.html>.

The ASAv license is not part of the VACS license. For more information about ASAv licenses, see <http://www.cisco.com/c/en/us/products/collateral/security/adaptive-security-virtual-appliance-asav/datasheet-c78-733399.html>.

## Warranty

VACS has a 90-day limited software warranty. For more information about the Cisco Nexus 1000V warranty, see [http://www.cisco.com/en/US/docs/general/warranty/English/EU1KEN\\_.html](http://www.cisco.com/en/US/docs/general/warranty/English/EU1KEN_.html).

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## Service and Support

Cisco Software Application Support plus Upgrades (SASU) is a comprehensive support service that helps you maintain and enhance the availability, security, and performance of your business-critical applications. SASU includes the following benefits:

- Software updates and upgrades: SASU service provides timely, uninterrupted access to software updates and upgrades to help you keep existing systems stable and network release levels current. Update releases, including major upgrade releases that may include significant architectural changes and new capabilities for your licensed feature set, are available by software download from Cisco.com or by CD-ROM.
- Cisco Technical Assistance Center (TAC): TAC engineers provide accurate, rapid diagnosis and resolution of software application problems to help you reduce outages and performance degradation. These specialized software application experts are trained to support Cisco software products. Their expertise is available to you 24 hours a day, 365 days a year, by telephone, fax, email, or the Internet.
- Online support: SASU provides access to a wide range of online tools and communities to help you resolve problems quickly, support business continuity, and improve competitiveness.

## Cisco Capital Financing to Help You Achieve Your Objectives

Cisco Capital<sup>®</sup> financing can help you acquire the technology you need to achieve your objectives and stay competitive. We can help you reduce capital expenditures (CapEx), accelerate your growth, and optimize your investment dollars and ROI. Cisco Capital financing gives you flexibility in acquiring hardware, software, services, and complementary third-party equipment. And there's just one predictable payment. Cisco Capital financing is available in more than 100 countries. [Learn more.](#)

## For More Information

- Cisco UCS Director: <http://www.cisco.com/go/ucsdirector>
- Cisco Nexus 1000V portfolio: <http://www.cisco.com/go/1000v>
- Cisco Virtual Security Gateway (VSG): <http://www.cisco.com/go/vsg>
- Cisco Cloud Services Router (CSR) 1000V: <http://www.cisco.com/go/csr1000v>
- Cisco Adaptive Security Virtual Appliance (ASAv): <http://www.cisco.com/go/asav>
- Open-source HAProxy: <http://www.haproxy.org>



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