Cisco TelePresence Video Communication Server

Advanced Video Applications and Session Management

Product Overview

The Cisco TelePresence® Video Communication Server (Cisco VCS) software simplifies session management and control of telepresence conferences. It provides flexible and extensible conferencing applications, enabling organizations to benefit from increased employee productivity and enhanced communication with partners and customers.

The Cisco VCS delivers exceptional scalability and resiliency, secure communications, and simplified large-scale provisioning and network administration in conjunction with Cisco TelePresence Management Suite (Cisco TMS).

The Cisco VCS interworks transparently with Cisco® Unified Communications Manager (Cisco Unified CM), bringing rich telepresence services to organizations with Cisco Unified CM. It also offers interoperability with third-party unified communications, IP telephony networks, and voice-over-IP (VoIP) systems.

The Cisco VCS supports on-premises and cloud applications and is available as a dedicated appliance (Figure 1) or as a virtualized application on VMware, with additional support for Cisco Unified Computing System™ (Cisco UCS™) platforms.

Figure 1.   Cisco TelePresence Video Communication Server Appliance

You can deploy the Cisco VCS as the Cisco TelePresence Video Communication Server Control (Cisco VCS Control) for use within an enterprise and as the Cisco TelePresence Video Communication Server Expressway (Cisco VCS Expressway) for business-to-business and remote and mobile worker external communication (Figure 2). An alternative solution, suited to small to medium-sized businesses (SMBs), is the Cisco VCS Starter Pack Express.

Figure 2.   Cisco VCS Control and Cisco VCS Expressway
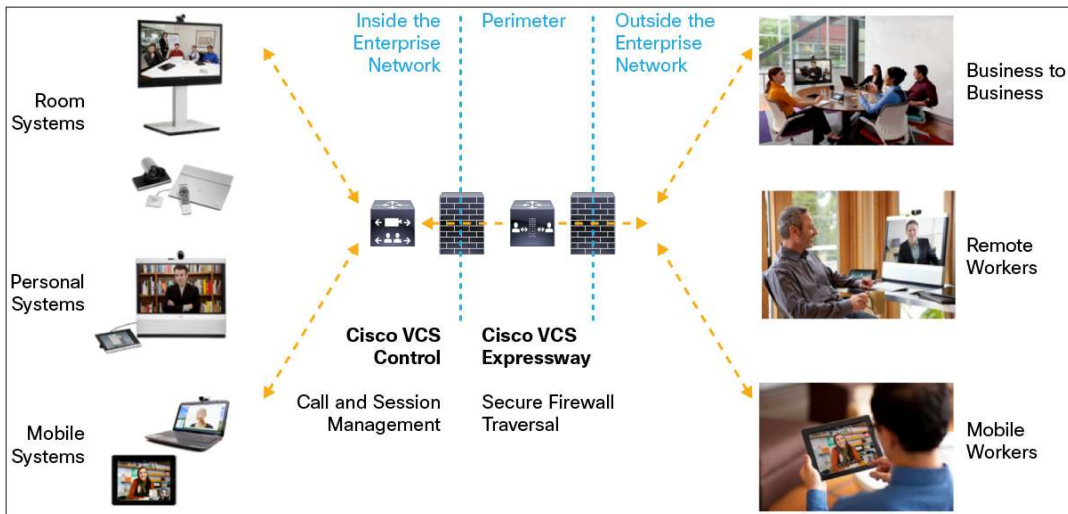
Cisco VCS Control

Cisco VCS Control delivers any-to-any enterprisewide conference and session management and interworking capabilities. It extends the reach of telepresence conferences by enabling interworking between Session Initiation Protocol (SIP)- and H.323-compliant endpoints, interworking with third-party endpoints; it integrates with Cisco Unified CM and supports third-party IP private-branch-exchange (IP PBX) solutions.

Cisco VCS Control implements the tools required for creative session management, including definition of aspects such as routing, dial plans, and bandwidth usage, while allowing organizations to define call-management applications, customized to their requirements.

Features and Benefits

Benefits of Cisco VCS Control

- Greater reach: Any-to-any interoperability facilitates smooth video communications between standards-based and third-party client users.
- Highly scalable: With features such as clustering and policy services integration, the Cisco VCS is architected to support enterprise growth, with smooth expansion as usage increases, protecting investment in video infrastructure.
- Extended telepresence capability: Integration with Cisco Unified CM helps reduce complexity for users and facilitates interworking between SIP- and H.323-compliant endpoints within an enterprise, regardless of individual endpoint capabilities.
- Secure: The industrially recognized secure performance of Cisco VCS provides administrators with complete confidence in their network security.
- Extensible: Part of a firewall traversal solution with Cisco VCS Expressway, Cisco VCS Control provides rich, video-enabled collaboration for remote workers and for business-to-business applications.
- Flexibility: Administrators can implement the Cisco VCS as either an appliance or a virtualized application to meet the needs of their organizations.

Features of Cisco VCS Control follow:

- SIP registrar, SIP proxy server, presence server, and presence user agent: The Cisco VCS supports the SIP protocol, acting as a SIP registrar, storing the Address of Record of registered endpoints, and forwarding SIP requests as a SIP proxy server. The Cisco VCS supports the SIP for Instant Messaging and Presence Leveraging Extensions (SIMPLE) protocol, and can act as a presence server and presence user agent.

- H.323 Gatekeeper: The Cisco VCS provides H.323 Gatekeeper functions. It accepts registrations from H.323 endpoints and provides call-control functions such as address translation and admission control.

- Interoperability and Interworking: The Cisco VCS provides interoperability between SIP and H.323 standards-compliant endpoints and supports communication with IBM Lotus Sametime and Microsoft Lync environments including Microsoft Lync 2013 (H.264 SVC) clients.

- Zone and bandwidth management: The Cisco VCS supports management of the allocation of bandwidth between sites, endpoints, and groups of endpoints. You can specify the amount of bandwidth available for intra- and interzone calls, allowing you to control the way in which bandwidth is used and calls are prioritized. Features of the Cisco VCS bandwidth management capability include the following:
  - Flexible, customizable zone configuration with named zone and default zone
  - Bandwidth management on both a per-call and a total-usage basis, configurable separately for calls within local subzones and to neighboring systems and zones
  - Automatic down-speeding option for calls that exceed the available bandwidth
  - Preconfigured defaults for:
    - Cisco Unified CM neighbor zones
    - Cisco TelePresence Advanced Media Gateway
    - Microsoft Lync neighbor zones
    - Nortel Communication Server neighbor zones

- Dial-plan and call-routing control: The Cisco VCS allows administrators to create dial plans to define the way in which calls are handled within the network. Transforms can be applied to source and destination address information to define general routing rules. Dial plans can be based on call aspects such as:
  - Source or destination address, zone, or subzone configuration
  - Call policy for authenticated or nonauthenticated endpoints
  - FindMe configuration

- Authentication: You can configure the Cisco VCS to allow both authenticated and unauthenticated endpoints to register to the same VCS, and to subsequently control the operation of those endpoints based on their authentication status. The Cisco VCS supports:
  - H.235 authentication
  - SIP digest authentication
  - Windows NT LAN Manager (NTLM) authentication
  - Control over which endpoints are allowed to register through allow and deny lists
  - Microsoft Active Directory (AD) integration for Cisco Jabber Video™ for TelePresence (Movi™) users
  - Administrator authentication through Active Directory
  - Integration with Lightweight Directory Access Protocol (LDAP)-accessible H.350 directories

- Policy services: A policy services interface is available to allow you to define call policies to be applied within your organization. For example, you can handle calls differently according to time of day, source or destination address, or more complex algorithms. The policy services interface supports Call Processing Language (CPL).
- Clustering: The Cisco VCS can function as a standalone system or in a cluster configuration for increased capacity and redundancy.
- Administration: The Cisco VCS provides administrative interfaces to allow setup, administration, and monitoring of the network configuration.

Table 1 lists general specifications, Table 2 lists appliance and virtualized application specifications, and Table 3 lists the certifications and awards of the Cisco VCS.

Table 1. Specifications of Cisco VCS Control

Product Feature	Product Specification
User Interface	
Web browsers supported	• Web interface support for Internet Explorer 8 or 9; Firefox 3 or later; and Chrome
Management interfaces	• Support for industry standards such as Secure HTTP (HTTPS), XML, Simple Network Management Protocol (SNMP v2 and v3), secure copy protocol (SCP), and Secure Shell (SSH) Protocol • Embedded setup wizard for initial configuration • Integration with Cisco TMS Version 13.2 or later for scalable provisioning and configuration • Call logging and advanced diagnostics support
Languages supported	• English, Chinese (Simplified), French, German, Japanese, Korean, Russian and Spanish
Endpoint Registration and Session Management	
Supported endpoints	• Cisco VCS is compatible with any standards-compliant H.323 or SIP videoconferencing or telepresence device; provisioning and configuration supported only for Cisco TelePresence endpoints
Endpoint registration	• Support for manual registration of H.323 and SIP endpoints • Support for registration of H.323 ID and E.164 aliases and services • Support for Unicode (UTF-8) registration for global implementation
Session control	• Support for H.225/Q.931 and H.245 call-control routed mode and non-call routed mode • Support for H.323-SIP Interworking Encryption • Support for H.323-SIP Interworking DuoVideo • Support for Uniform Resource Identifier (URI) dialing • Support for direct call signaling among neighbored Cisco VCSs, border controllers, and gatekeepers • Support for call policy management (RFC 3880), including call policy and user policy (FindMe) • Support for conference hunting for multipoint-control-unit (MCU) clusters • Support for call routed mode • Support for call loop detection

Zone control and bandwidth management	• Support for remote zone monitoring
	• Support for remote zone redundancy
	• Support for up to 1000 neighbor zones (including Cisco VCSs, border controllers, gatekeepers, and SIP proxies)
	• Support for subzone area definition for bandwidth management
	• Support for flexible zone configuration with named zones and default zone
	• Support for forwarding of requests to neighbor zones
	• Support for registration control (open, specifically allow, and specifically deny)
	• Support for interzone bandwidth management: definable call by call
	  ◦ Maximum bandwidth per call
	  ◦ Maximum aggregate bandwidth for all neighboring zones
	• Support for intrazone bandwidth management: definable call by call
	  ◦ Maximum bandwidth per call
	  ◦ Maximum aggregate bandwidth
	• Support for auto-down-speeding if call exceeds per-call maximum
	• Support for gateway load balancing
	• Support for automatic network failover

Product Feature	Product Specification
	• Support for capacity warnings for users and administrators
Network	• Support for Domain Name System (DNS) addressing • Support for IPv4 and IPv6 simultaneously • Support for IPv4 and IPv6 translation services
Scalability and Capacity	

Single VCS capacity: (appliance or small and medium virtual-machine deployments)	• The capacity of one Cisco VCS (appliance or small and medium virtual machine) follows:
	  ◦ Up to 2500 registrations
	  ◦ Up to 500 nontraversal calls
	  ◦ Up to 100 traversal calls
	  ◦ Up to 1000 subzones

Single VCS capacity: (large virtual-machine deployments)	• The capacity of one Cisco VCS (large virtual machine) follows:
	  ◦ Up to 5000 registrations
	  ◦ Up to 500 nontraversal calls
	  ◦ Up to 500 traversal calls
	  ◦ Up to 1000 subzones

Clustered VCS capacity	• Up to six VCS appliances or virtual machines can be clustered to increase capacity and provide redundancy. • Clustering increases the maximum registrations, traversal, and nontraversal calls by up to four times.
Microsoft Lync Interworking Capacity	The maximum number of calls interworked to Microsoft Lync is 100. It is highly recommended that a separate VCS Control server is deployed for use as a dedicated Microsoft Lync gateway.
System Security and Resilience	
Security features	• Secure management with HTTPS, SSH, and SCP • Secure file transfer • Inactivity timeout • Built-in firewall configuration rules • Ability to lock down IP services • Requirement for authentication on HTTP(S), SSH, and SCP • H.235 authentication support • Transport Layer Security (TLS) for SIP signaling • Roles-based password-protected GUI user access • Ability to enforce strict passwords • Ability to disable root access over SSH • Automated intrusion protection • Supports delegated credential checking across a traversal zone with Cisco VCS Expressway • Federal Information Processing Standards (FIPS) 140-2-compliant cryptographic modules
Resilience and reliability	• Ability to deploy in six-redundant cluster • Ability to share licenses across a cluster • Ability for registrations to survive system restart • Ability to replicate configuration for clusters

Table 2.   Cisco VCS Control Virtualized Application and Physical Appliance Specifications

Product Feature	Product Specification		
Virtualized Application Specifications			
Servers for virtual environment	• Cisco UCS B- or C- Series Servers or third-party servers that meet the minimum requirements • VMware vSphere or vCenter server running ESXi For full details of host requirements, refer to the Cisco TelePresence VCS Virtual Machine Deployment Guide.		
Virtual-Machine Host Requirements	**Small Deployment**	**Medium Deployment (typical installation)**	**Large Deployment (for performance and scalability)**
vCPU	2 core	2 core	8 core
Reserved CPU resource	3600 MHz (2 x 1.8 GHz)	4800 MHz (2 x 2.4 GHz)	26400 MHz (8 x 3.3 GHz)
Reserved RAM	4 GB	6 GB	8 GB

Product Feature	Product Specification		
Disk space	132 GB	132 GB	132 GB
Network interface card (NIC)	1 Gb	1 Gb	10 Gb
VCS Physical Appliance Specifications			
Physical dimensions (H x W x D)	• 1.72 x 16.8 x 18 in. (43.5 x 426 x 457.2 mm) • 1-rack unit (1 RU) rack-mount chassis		
Weight	• 17.6 lb (8 kg) (unpacked)		
Power	• Autosensing 250W (maximum) 580-BTU-per-hour power supply • 90-264 VAC full range at 47-63 Hz		
Environmental data	• Operating temperatures: 32 to 104℉ (0 to 40℃) • Storage temperatures: -4 to 140℉ (-20 to 60℃) • Relative humidity: 10 to 90% (noncondensing)		
Cooling system	• Five 40-millimeter fans for system cooling		
Interfaces	• Four 10/100/1000BASE-TX Ethernet ports (RJ-45) (front) • One RS-232 console port (RJ-45) (front)		
System control and indications	• One power LED • One alarm LED • One power on/off switch (rear) • Four act/link/10/100/1000 LEDs on Ethernet ports		

Table 3.   Certification, Approvals, and Awards for Cisco VCS

Product Feature	Product Specification
Certification	• LVD 73/23/EC • EMC 89/366/ECC • Cisco VCS Version X7 is ICSA Labs Certified
Approvals and compliance	• Directive 73/23/EEC (Low Voltage Directive) • Directive 89/336/EEC (EMC Directive) • Standards EN 60950, EN 55022 Class A, EN 55024, and EN 61000-3-2/-3-3 • Approved according to UL 60950 and CAN/CSA C22.2 No. 60950 • Compliance with FCC15B Class A • Joint Interoperability Test Command (JITC)
Supported RFCs	• RFCs 2543, 3261, 3264, 1889, 3265, 3325, 3515, 3891, 3892, 2327, 4566, 5626, 5627, 5389, and 5766
Awards	

Ordering Information

To order Cisco VCS, visit the Cisco Ordering Home Page and refer to Table 4.

Table 4.   Ordering Information for Cisco VCS Control

Product Name	Part Number	Compliance Model Number
Cisco Video Communication Server Control (VCS Appliance) **Comes with: Video Communication Server, Gateway feature, cables** **Note: A minimum of 10 non-traversal licenses must be selected when ordering the VCS Control Appliance**	CTI-VCS-CONTRL-K9	TTC2-04
Cisco Video Communication Server Control (Virtualized Application) **Comes with: Video Communication Server, Gateway feature, FindMe™ feature** **Note: A minimum of 10 non-traversal licenses must be selected when ordering the VCS Virtualized Application**	R-VMVCS-CTRL-K9	TTC2-04
Ordering Options for the Cisco VCS Control		
10 Non-Traversal Calls for Cisco VCS Control	LIC-VCS-10	N/A
Additional 20 Non-traversal calls for Cisco VCS Control	LIC-VCS-20	N/A
Additional 50 Non-traversal calls for Cisco VCS Control	LIC-VCS-50	N/A
Additional 200 Non-traversal calls for Cisco VCS Control	LIC-VCS-200	N/A
Additional 300 Non-traversal calls for Cisco VCS Control	LIC-VCS-300	N/A
VCS Advanced Account Security (JITC) for Cisco VCS Control	LIC-VCS-JITC	N/A
VCS Enhanced Microsoft Collaboration for Cisco VCS Control	LIC-VCS-OCS	N/A
Enable Device Provisioning for Cisco VCS	LIC-VCS-DEVPROV	N/A
VCS FindMe™ Application for Cisco VCS Control **(VCS Appliance Only)**	LIC-VCS-FINDME	N/A

Service and Support

Cisco offers a wide range of services programs to accelerate customer success. These innovative services programs are delivered through a unique combination of people, processes, tools, and partners, resulting in high levels of customer satisfaction. Cisco services can help you protect your network investment, optimize network operations, and prepare your network for new applications to extend network intelligence and the power of your business. For more information about Cisco Services, visit Cisco Technical Support Services online.

For More Information

For more information about the Cisco VCS Family, including Cisco VCS Expressway and Cisco VCS Starter Pack Express, please visit http://www.cisco.com/go/vcs or contact your local Cisco account manager.

Printed in USA

C78-626491-11   12/13