Cisco TelePresence Server

Product Overview

Cisco TelePresence® Server brings multiparty video to unified communications deployments. Its flexible video, audio, and content-sharing capabilities allow users to participate in video conferences with multiple parties. Users can easily create, launch, and join meetings using standards-based video endpoints. Or their mobile devices or Cisco WebEx® clients. Or even third-party video endpoints. The server provides high-quality, standards-based video conferencing for mobile, desktop, and room systems.

This scalable video conferencing bridge works with Cisco Unified Communications Manager. For midmarket and larger enterprise customers, it works with Cisco TelePresence Conductor to offer cost-efficient conferencing. It also works with Cisco TelePresence Management Suite for conference booking, conference scheduling, and resource management.

Cisco TelePresence Server benefits include:

- A consistent user experience across mobile, desktop, and room-based video conferencing solutions
- Flexible layouts, and views optimized for the capabilities of each device
- An enhanced user experience with features including Cisco ActivePresence® layouts, ActiveControl in-meeting controls, and individual participant identifiers; and Cisco ClearPath for optimal video quality
- The ability to elastically scale meetings beyond the capacity of a single Cisco TelePresence Server
- Broader reach, by extending meetings to Cisco WebEx Meeting Center users
- Highly cost-efficient and scalable conferencing

Cisco TelePresence Server is available as a virtualized application compatible with standard Cisco Unified Computing System™ (Cisco UCS®) servers, or can be deployed on dedicated hardware platforms.

Flexible licensing options enable customers to deploy Cisco TelePresence Server capabilities in the way that best suits their needs. Cisco TelePresence Server can be licensed on a per-host basis with Cisco Multiparty licenses. These licenses are available in the form of Personal Multiparty (named host) and Shared Multiparty (shared host) licenses (visit cisco.com/go/personalmultiparty). Alternatively, you can purchase screen licenses for a concurrent call-based model (traditional license model). Cisco Multiparty licenses are recommended and are held centrally on Cisco TelePresence Conductor, offering increased efficiency and redundancy. For further information about ordering, please refer to Table 9 later in this document.

Figure 1 shows examples of supported modes of Cisco TelePresence Server.

Figure 1. Examples of Supported Modes

A critical requirement for all customers is ensuring a high return on investment (ROI). Cisco TelePresence Server has a software upgrade path that enables customers to deploy new features as required, and with the cost-effective licensing model they can closely manage their investment while reaping the rewards of enhanced business agility, faster decision making, lower travel expenses, and increased employee productivity.

Designed to meet the needs of organizations from small businesses to global multinationals, Cisco TelePresence Server has a scalable architecture, enabling deployments to start small and increase scale as the business grows.

Cisco TelePresence Server is compatible with a range of hardware platforms, enabling customers to select the solution most suited to their needs:

- Cisco TelePresence Server on Virtual Machine has been optimized to run on the Cisco Meeting Server 1000, as well as Cisco Business Edition 6000/7000. Cisco UCS and third-party specification-based server platforms are also supported.

- Cisco TelePresence Server on Multiparty Media 310 and Multiparty Media 320 entry-level appliance solutions can be stacked to grow with the customer's business video usage over the long term.

- Cisco TelePresence Server on Multiparty Media 820 is a chassis-based platform that is ideal for large enterprises and service providers requiring a high-availability and highly scalable solution. Scalability is achieved by clustering up to two 820 blades as a single unit.

Benefits of Cisco TelePresence Server

- A consistent, intuitive meeting experience for users with standards-based mobile, desktop, and immersive video systems.

- The ability to extend meetings beyond the capacity of one server by cascading from server to server or to include Cisco WebEx Meeting Center users, extending the scale of meetings and enabling more people to join meetings.

- Improved productivity: All users enjoy a high-quality experience, accessible from endpoints ranging from mobile devices running the Cisco Jabber® application to desktop or immersive systems. Remote and home workers can collaborate more effectively and decrease travel costs.

Features

Table 1 lists the features of Cisco TelePresence Server.

Table 1. Cisco TelePresence Server Features

Feature	Description
Design features	● Standards-based and compatible with major vendors' video conferencing endpoints. ● Highly scalable to meet current and future organizational needs. ● Provides participants with the best possible view for their endpoint. ● Provides an easy-to-use and versatile management interface. ● Designed to provide carrier-class levels of reliability and availability. ● Compatible with a range of dedicated hardware platforms or Cisco UCS servers.
Application features	● Cisco TelePresence ActivePresence capability supports a full-screen, immersive view of the primary speakers with an overlay of others in the call. Designed to maximize the large-scale immersive experience, it is available on all ports. ● Cisco TelePresence ActiveControl allows users to see the participant lists and control conferences and layouts. ● It supports single and multiscreen standards-based telepresence systems. ● The server interworks with Polycom RPX and TPX telepresence systems while preserving the full Cisco ActivePresence view. ● It integrates with Cisco TelePresence Management Suite and Cisco TelePresence Conductor. ● Four layout families are provided for single-screen endpoints, including segment-switched Cisco ActivePresence capability. ● Participants can dial in or can be called from the web interface.
Performance features	● Automatic Gain Control (AGC) is supported to adjust audio controls to help ensure a consistent experience. ● Support for Cisco ClearPath provides improved media resilience with lossy networks. ● Up to Full HD transcoding for both video and content is supported for every participant. ● Cisco TelePresence Universal Port technology is supported. ● Video resolutions of 360p to Full HD are supported (up to 1080p30 or 720p60 frames per second [fps] at up to 6 Mbps per screen, including content with H.264). ● Comprehensive high-definition (HD) audio is supported. ● Advanced Encryption Standard (AES) encryption is supported. ● Integrated Cisco TelePresence ClearVision technology provides resolution enhancement.

Product Specifications

Tables 2 through 4 list the technical specifications; video, network, and audio specifications; and network, management, and security specifications, respectively, of Cisco TelePresence Server.

Table 2. Technical Specifications

Feature	Description
Product compatibility	● The server is standards-based and compatible with major vendors' endpoints.
Universal transcoding and transrating	● The server can combine immersive, HD, standard-definition (SD), and 360p endpoints within the same virtual meeting. ● The server provides automatic audio and video transcoding along with transrating on all calls. ● Each endpoint has its own decode and encode.
Content features	● Automatic content handover is supported. ● The server supports standard (4:3) and wide-screen (16:9) content. ● Dual video is supported with H.239, Binary Floor Control Protocol (BFCP), or Auto Collaborate. ● Picture in picture: Video and content are composed into the video stream. ● Participants can have their own content transcoded at up to 1080p30 or WUXGA (1920 x 1200) at 27 fps.
Language support	● English is the standard language.

Table 3. Video, Network, and Audio Specifications

Bandwidth	● Up to 4 Mbps H.264 for each screen
Video standards	● H.261 ● H.263 ● H.263+ ● H.263++ ● H.264
Video resolution	● From Quarter Common Intermediate Format (QCIF) up to 1080p (1920 x 1080) including interlaced CIF (iCIF) and interlaced Standard Interchange Format (iSIF) ● Aspect ratios: 4:3 and 16:9
Frame rates	● Up to 60 fps
Audio standards	● G.711 ● G.722 ● G.722.1 ● G.723.1 (supported only on Cisco TelePresence Server MSE 8710) ● G.728 ● G.729 ● MPEG-4 AAC-LC ● MPEG-4 AAC-LD ● Polycom Siren14/G.722.1 Annex C
Audio features	● Wideband audio mixing ● Ability to adjust endpoint audio gain through web interface

Table 4. Network, Management, and Security Specifications

Protocols	● H.323[1] ● BFCP ● Network Time Protocol (NTP) ● Session Initiation Protocol (SIP) ● Telepresence Interoperability Protocol Version 8 (TIPv8) ● H.235 (AES)[1] ● H.239 (dual video)[1] ● FTP[1] ● Real-Time Transfer Protocol (RTP) ● HTTP ● Secure HTTP (HTTPS) ● Dynamic Host Configuration Protocol (DHCP) (supported only on the MSE 8710 and Multiparty Media 310 and 320)
Security features	● PIN-protected conferences ● Conference locking ● Secure non-PC hardware and operating system ● Transport Layer Security (TLS) ● Secure Real-Time Transport Protocol (SRTP) ● AES encryption, 128-bit key, and H.235 (H.235 only on MSE 8710)
System management	● An XML management API is available. ● All platforms are managed remotely using Cisco TelePresence Conductor. ● The server offers full H.323[1] (supported directly on the MSE 8710; other Cisco TelePresence Server platforms require Cisco TelePresence Video Communication Server [VCS] to interwork with H.323) and Session Initiation Protocol (SIP) decoding, which is supported on all platforms. ● The server offers configurable event logs. ● The server offers configuration backup to network. ● The server offers the ability to perform secure upgrades through Ethernet.

Quality of service (QoS)	● The server provides configurable differentiated-services-code-point (DSCP) or type-of-service (ToS)/IP precedence.
Network resilience	● Cisco TelePresence PacketSafe technology provides intelligent downspeeding, packet pacing, and packet-loss concealment to help ensure optimum video and audio quality. ● The server supports dynamic jitter buffering.

[1] Supported only on the MSE 8710.

Table 5 gives the physical specifications for Cisco TelePresence Server platforms.

Table 5.   Physical Specifications of Cisco TelePresence Server Platforms

Cisco Meeting Server 1000	
The Cisco Meeting Server 1000 is a preconfigured version of the Cisco UCS C220 M4 Rack Server. Full specifications for this server can be found at http://www.cisco.com/c/en/us/products/collateral/servers-unified-computing/ucs-c220-m4-rack-server/datasheet-c78-732386.html.	
Multiparty Media 820	
Physical dimensions	● (H x W x D): 33.25 x 17.2 x 20.5 in. (842 x 437 x 520 mm) (19 rack units [19RU]) ● 19-inch rack-mountable (kit supplied)
Weight	● 15 lb (6.8 kg)
Power	● Power: -48 VDC ● 100 to 240 VAC, 50 to 60 Hz
Environmental data	● Ambient operating temperature: 32° to 95°F (0° to 35°C) ● Relative humidity: Below 95% (noncondensing)
Approvals and compliance	● European safety: EN 60950-1 ● USA/Canada Safety: UL 60950-1 ● CB Scheme Safety, IEC 60950-1 ● EMC: EN55022 Class A, EN61000-3-2, EN61000-3-3, EN55024, EN61000-4-2,-3,-4,-5,-6,-11, FCC Part 15 Class A, VCCI Class A, AS/NZS CISPR 22, EN55024: EN61000-4-2,-3,-4,-5,-6,-11 ● RoHS compliant, WEEE: http://cisco-returns.com
MSE 8710	
Physical dimensions	● (H x W x D): 33.25 x 17.2 x 20.5 in. (842 x 437 x 520 mm) (19RU) ● 19-inch rack-mountable (kit supplied)
Weight	● 14.6 lb (6.6 kg)
Power	● Power: -48 VDC ● 100 to 240 VAC, 50 to 60 Hz
Environmental data	● Ambient operating temperature: 32° to 95°F (0° to 35°C) ● Relative humidity: Below 95% (noncondensing)
Approvals and compliance	● European safety: EN 60950-1 ● USA/Canada Safety: UL 60950-1 ● CB Scheme Safety, IEC 60950-1 ● EMC: EN55022 Class A, EN61000-3-2, EN61000-3-3, EN55024, EN61000-4-2,-3,-4,-5,-6,-11, FCC Part 15 Class A, VCCI Class A, AS/NZS CISPR 22, CCC: GB4943, GB9254, YD/T993EN61000-3-3, EN55024: EN61000-4-2,-3,-4,-5,-6,-11 ● RoHS compliant, WEEE: http://cisco-returns.com
Multiparty Media 310 and 320	
Physical dimensions	● (H x W x D): 1.75 x 17.4 x 16.7 in. (44.5 x 442 x 423 mm) (1RU) ● 19-in. rack-mountable (kit supplied) or standalone
Weight	● 17.6 lb (8 kg)
Power	● 100 to 240 VAC, 50 to 60 Hz ● 1177 BTU/hr (345W) maximum heat dissipation
Environmental data	● Ambient operating temperature: 32° to 95°F (0° to 35°C) ambient ● Relative humidity below 95% (noncondensing)

Approvals and compliance	● European Safety: EN 60950-1
	● USA/Canada Safety: UL 60950-1
	● CB Scheme Safety: IEC 60950-1
	● EMC: EN55022 Class A, EN61000-3-2, EN61000-3-3, EN55024, EN61000-4-2,-3,-4,-5,-6,-11, FCC Part 15 Class A, VCCI Class A, AS/NZS CISPR 22, CCC: GB4943, GB9254, YD/T993
	● RoHS compliant, WEEE: http://cisco-returns.com
	● Regulatory Approval Certification completed under Compliance Model Number: AD1A

Figure 2 shows the Cisco TelePresence Server interoperability solution.

Figure 2.   Cisco TelePresence Server Interoperability
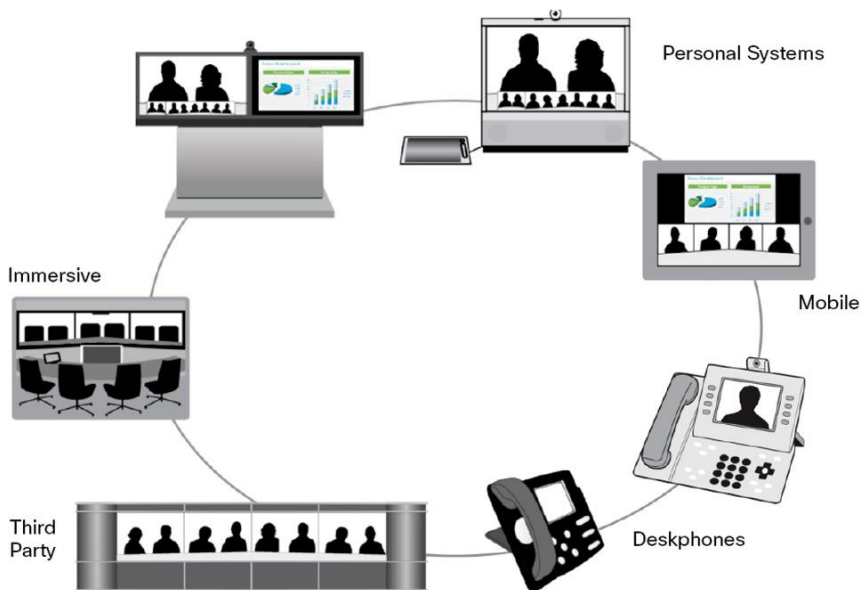
Cisco TelePresence Server Scale

When Cisco TelePresence Conductor is in multiparty mode, the capacity of all of the Cisco TelePresence Servers is available, and the number of conferences is determined by the number of Personal or Shared Multiparty licenses held on Cisco TelePresence Conductor and the Cisco TelePresence Server's platform capacity. The servers' capacity is explained in Table 6.

When Cisco TelePresence Server is in remotely managed mode, the server's capacity is determined by the number of screen licenses assigned. Table 7 shows the maximum number of screen licenses that can be applied to each platform. Table 8 shows the number of screen licenses required for each call, and Table 6 shows the capacity of the platforms by call type.

Table 6. Conferencing Capacity on Various Platforms

Service Level	Maximum Calls by Platform Type (with licenses to provide 100% of capacity)									
	8-Core Virtual Machine	Multiparty Media 310 or MCU 5310	30 vCPU/High-Density Virtual Machines[1]	Multiparty Media 320 or MCU 5320	7010, MSE 8710, or MCU MSE 8510	Two-Appliance Cluster with Multiparty Media 320s	Cisco Meeting Server 1000 (70 vCPUs)[2]	Multiparty Media 820	Four-Blade Cluster with 8710	Two-Blade Cluster with Multiparty Media 820
Audio	200[3]	200[3]	200[3]	200[3]	200[3]	200[3]	200[3]	200[3]	200[3]	200[3]
360p30	41	49	81	97	97	195	200[3]	200[3]	200[3]	200[3]
480p30 or 360p30 (720p5 content)	20	24	40	48	48	97	168	120	195	200[3]
480p30 (720p5 content)	15	18	30	36	36	73	126	90	146	180
720p30 (720p5 content)	10	12	20	24	24	48	84	60	97	120
720p30 (720p30 content) or 1080p30 (720p15 content) or 720p60 (720p15 content)	5	6	10	12	12	24	42	30	48	60
3 screens 720p30 (720p5 content)	3	4	6	8	8	16	28	20	32	40
3 screens 720p30 (720p30 content) or 1080p30 (1080p30 content)	2	3	5	6	6	12	21	15	24	30
3 screens 1080p30 (720p30 content)	1	2	3	4	4	8	14	10	16	20
3 screens 1080p30 (1080p30 content)	1	1	2	3	3	6	10	7	12	15

[1] To achieve the maximum number of calls, Cisco TelePresence Server on Virtual Machine must be the only virtual machine hosted on the Cisco Meeting Server 1000 or 30 vCPU/high-density virtual machines. It cannot be co-resident with any other unified communications application (unlike the 8-core option that runs at 2.4 GHz minimum and can be co-resident). In addition the Meeting Server 1000 needs to be running software version 4.4 or later to achieve the scale stated in the table.

[2] Cisco Meeting Server 1000 is configured with 70 vCPUs as per the high-density configuration, but it has a higher capacity.

[3] 200 is the maximum number of calls possible on a Cisco TelePresence Server. It requires Cisco TelePresence Conductor Version XC2.3.

Note: Table 6 assumes that calls of one type are used to reach these maximum values. To calculate the total number of licenses required for a variety of concurrent calls, add the screen licenses required for each concurrent call.

Table 7.   Maximum Supported Screen Licenses by Platform

Platform	8-Core Virtual Machine	Multiparty Media 310 or MCU 5310	30 vCPU/High-Density Virtual Machines[1]	Multiparty Media 320 or MCU 5320	7010, MSE 8710, or MCU MSE 8510	Cisco Meeting Server 1000[1] (70 vCPU)	Multiparty Media 820
Screen licenses	5	6	10	12	12	42[1]	30

[1] To support 42 screen licenses on the Cisco Meeting Server 1000, software version 4.4 or later is required.

Table 8.   Screen Licenses per Call for Each Call Type

Call Type Description			Screen Licenses Required per Call
Main Video	**Audio**	**Content**	
-	Mono	–	1/52
360p30[1]	Mono	In main video	1/8
360p30[1]	Stereo	720p5	1/4
480p30	Stereo	In main video	1/4
480p30	Stereo	720p5	1/3
720p30	Stereo	720p5	1/2
720p30	Stereo	720p30	1
1080p30	Stereo	720p15	1
720p60	Stereo	720p15	1
1080p30	Stereo	720p30	1 and 1/2
3-screen 720p30	Multichannel	720p5	1 and 1/2
3-screen 720p30	Multichannel	720p30	2
1080p30	Stereo	1080p30	2
Dual-screen 1080p30	Stereo	720p30	2
3-screen 1080p	Multichannel	720p30	3
3-screen 1080p	Multichannel	1080p30	4
4-screen 1080p	Stereo	1080p30	4

[1] Requires Cisco TelePresence Conductor Version XC2.2 or later.

Ordering Information

To order Cisco TelePresence Server, choose a platform and then select one of the three methods of licensing the platform, as shown in Table 9. Please visit the Cisco Ordering Home Page for additional information.

Table 9.   Ordering Information

Platform		Licensing	
Name	**Part Number**	**Personal Multiparty and Shared Multiparty**	**Screen Licenses**
Cisco Meeting Server 1000	CTI-CMS-1K-BUN-K9	CUWL-11X-K9/CUWL-10X-K9/R-CBE6K-K9/BE7K-M4-K9 (includes Personal Multiparty) TP-SMP-K9 (Shared Multiparty)	R-VTS-K9

Platform		Licensing	
Name	**Part Number**	**Personal Multiparty and Shared Multiparty**	**Screen Licenses**
Cisco TelePresence Server on Multiparty Media 820	CTI-8000-MSECH-K9 CTI-820-MEDIA-K9= CTI-820-MED-K9++=	CUWL-11X-K9/CUWL-10X-K9/R-CBE6K-K9/BE7K-M4-K9 (includes Personal Multiparty) TP-SMP-K9 (Shared Multiparty)	L-8000-CHLIC-PAK
Cisco TelePresence Server on Multiparty Media 310 or 320	CTI-310-TS-K9 CTI-320-TS-K9	CUWL-11X-K9/CUWL-10X-K9/R-CBE6K-K9/BE7K-M4-K9 (includes Personal Multiparty) TP-SMP-K9 (Shared Multiparty)	L-TS300-UPG-PAK

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For More Information

For more information about Cisco TelePresence Server, please visit the Cisco TelePresence Server product page or contact your local Cisco account representative or authorized Cisco partner. Product specifications are estimates and subject to change without notice.

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