

Cisco TelePresence Multipoint Switch

The Cisco TelePresence® Multipoint Switch solution allows geographically dispersed organizations to hold Cisco TelePresence meetings across multiple locations reliably and easily. With support for up to 96 people in a single meeting across a mix of endpoints, the switch allows all participants to be seen in life-like, high-definition video and heard in CD-quality, spatial audio combined with the industry's lowest latency.

As part of the Cisco TelePresence solution, the multipoint switch allows you to connect through 48 single-screen Cisco TelePresence System 500 or Cisco TelePresence System 1000 endpoints, 16 three-screen Cisco TelePresence System 3000 or Cisco TelePresence System 3200 endpoints, or a mix of both in a single meeting. The industry-leading design of the Cisco TelePresence Multipoint Switch delivers voice-activated switching either site-by-site (site switching) or by individual table segment (segment switching). It is an affordable appliance that is also easy to install and manage.

True to the user-friendly Cisco TelePresence design, multipoint meetings are scheduled using enterprise groupware (such as Microsoft Outlook or Lotus Notes), and they start with just a push of a button on the meeting-room phone. It is simple—there is no need for support personnel to set up meetings for you. Organizations can connect participants quickly and easily with multiple locations in the same meeting, empowering you to communicate and collaborate like never before (Figure 1).

Figure 1. Cisco TelePresence Meeting



Applications

The Cisco TelePresence Multipoint Switch is ideal for organizations with geographically dispersed teams that want to quickly and easily include participants at three or more locations in a single meeting. The switch enhances internal communication and collaboration, improving productivity,

accelerating decision making and time to market, and facilitating frequent meetings with customers, partners, and suppliers. Integration with the highly available Cisco network offers reliability, quality of service (QoS), and security, giving you the confidence to use the Cisco TelePresence Multipoint Switch for both internal and customer-facing multipoint meetings.

Features and Benefits

The Cisco TelePresence Multipoint Switch offers the following important features and benefits:

- **Support for 48 video streams:** The system supports connections among 48 single-screen Cisco TelePresence 500 or Cisco TelePresence 1000 endpoints, 16 triple-screen Cisco TelePresence 3000 or Cisco TelePresence 3200 endpoints, or a mix of both in a single meeting. The Cisco TelePresence Multipoint Switch supports multiple simultaneous meetings up to the capacity of the total number of video streams supported.
- **Voice-activated switching:** The Cisco TelePresence Multipoint Switch supports voice-activated switching. Embedded smart-switching technology determines when to switch speakers and eliminates changes due to stray noises. Spatial audio and seating location on screen are always maintained as switching occurs.
- **Video conferencing interoperability:** When linked with the Cisco® Unified Videoconferencing 3515 or Unified Videoconferencing 3545 MCU, the Cisco TelePresence Multipoint Switch provides full interoperability with the installed base of H.323 and Session Initiation Protocol (SIP) video conferencing endpoints.
- **Life-like, high-definition images:** The Cisco TelePresence solution supports 1080p and 720p high-definition standards, with life-size images of far-end participants on 65-inch plasma screens for both point-to-point and multipoint calls.
- **Spatial, interactive audio:** Multichannel, discrete audio means sound comes from the direction of the speaker, allowing voice tracking as audio is switched between locations. Sub-10 ms latency brings transparent switching between sites or segments during a multipoint call.
- **Data sharing and auto-collaboration:** As with point-to-point Cisco TelePresence meetings, a multipoint participant at any endpoint can share images with all other participants and rooms in the conference by using a laptop or in-room document camera.
- **Affordable and easy to install and manage:** Web-based administration with role-based profiles is easy for administrators at both group and department levels. Three roles are available: system administrator for access to all functions, conference management for control over meetings, and diagnostics-only for technical access to system processes.

Table 1 summarizes the features and benefits of the Cisco TelePresence Multipoint Switch.

Table 1. Features and Benefits of Cisco TelePresence Multipoint Switch

Feature	Benefit
Scalability	The Cisco TelePresence Multipoint Switch is designed for any sized workgroup to deliver multipoint meetings among Cisco TelePresence endpoints. Up to 48 video streams are supported, with each multipoint meeting supporting up to 96 participants.
Impromptu calling	During an active meeting, the conference manager can add another party from the web interface and the participant is automatically added to the meeting.
High performance and low latency	The high-performance Cisco TelePresence Multipoint Switch server provides very low latency, allowing natural conversation and quick multipoint switching between Cisco TelePresence meeting rooms.

Audio add-on	Remote, audio-only participants can join a meeting by using conferencing features on the meeting-room phone or by integrating an audio conferencing bridge into the meeting in both point-to-point and multipoint calls.
Content sharing	The Cisco TelePresence Multipoint Switch fully supports the Cisco TelePresence Auto-Collaboration feature.
Video conferencing interoperability	Combined with a Cisco Unified Videoconferencing 3500 MCU, the Cisco TelePresence Multipoint Switch provides full audio and video interoperability with H.323, SIP, H.320, and Skinny Client Control Protocol (SCCP) video conferencing endpoints.
Meeting security	Security features prevent unauthorized participant or meeting entry; a host controls meeting start times. Only invited rooms can attend a scheduled conference.
Encryption	The Cisco TelePresence solution supports full media and signaling encryption with no discernable latency to the Cisco TelePresence call for up to 48 segments. In addition, Cisco TelePresence meetings can be designated as non-secure, secure best effort, and always secure. Meeting encryption status is indicated on-screen at the start of a call or when it changes, and on the phone at all times.
Video announce	This configurable option allows new participants joining a meeting to briefly be shown on the displays of all participants already in the meeting so they know a new party has joined.
Bandwidth management	Automatic camera transmission control significantly reduces network traffic by eliminating the data feeds of nonspeaking meeting participants. Each meeting can be assigned a maximum quality (rate). If a Cisco TelePresence endpoint that has been assigned a lower bandwidth rate joins, the bandwidth rate of the conference automatically decreases.
Comprehensive diagnostics	Diagnostics features include system status information, alarms, downloadable logs (syslog messages), and Simple Network Management Protocol (SNMP) support.
Call detail records (CDRs)	Call records provide meeting start and stop data and participant details. You can export records to a third-party application for manipulation and data sorting.

Table 2 lists the specifications of the Cisco TelePresence Multipoint Switch (Version 1.5).

Table 2. Product Specifications

Cisco TelePresence Attribute	Specification
Product compatibility	Cisco TelePresence Version 1.4.2 or later
Software compatibility	Cisco TelePresence Manager Version 1.5 or later
Call signaling	SIP trunk with Cisco Unified Communications Manager Version 6.1.3 or later and IP Version 4 (IPv4)
Media protocol	Real-Time Control Protocol (RTCP) and Real-Time Transport Protocol (RTP), User Datagram Protocol (UDP), and IP Unicast
Video protocol	H.264 baseline high-definition (HDTV) 16:9 aspect ratio
Video resolution	Progressive 1080p (1920 x 1080 pixels at 30 frames per second [fps]) and 720p (1280 x 720 pixels at 30 fps)
Auto-collaboration video	1024 x 768 pixels at 5 fps or 30-fps presentation video
Audio	Advanced audio coding with low delay (AAC-LD/HBR) 22-MHz (CD-quality) audio; 4-channel audio stream
Additional hardware	No additional hardware required
Cisco TelePresence Interoperability	Specification
Product compatibility	Cisco TelePresence Version 1.4.2 or later
Software compatibility	Cisco TelePresence Manager Version 1.5 or later
Call signaling	SIP trunk with Cisco Unified Communications Manager Version 6.1.3 or later and IP Version 4 (IPv4)
Media protocol	RTCP and RTP, UDP, and IP Unicast
Video protocol	H.264 baseline standard definition (TV) 4:3 aspect ratio (on demand only)
Video resolution	Common Interchange Format (CIF), 352 x 288 pixels at 30 fps
Auto-collaboration video	Not supported in current release
Audio	Full toll-quality G.711 single-channel audio (4 channels mixed)
Additional hardware	At least 1 Cisco Unified Videoconferencing 3500 MCU (model 3515, 3512, 3515, 3524, or 3545)

Cisco TelePresence Attribute	Specification
Capacity	Up to 48 1080p 30-fps video streams
Maximum meeting size	A single multipoint meeting can accommodate up to the total capacity of the system, which supports 48 video streams (1 plasma display = 1 video stream), so 16 Cisco TelePresence 3000 or Cisco TelePresence 3200 endpoints, 48 Cisco TelePresence 500 or Cisco TelePresence 1000 endpoints, or a mix can participate in a single meeting.
Concurrent meetings	The total capacity of the Cisco TelePresence Multipoint Switch is 48 simultaneous video streams, with each plasma display representing one video stream. This capacity can be divided into any number of meetings. For example, with 3 Cisco TelePresence 1000 systems per meeting, the switch supports 16 concurrent meetings. The maximum number of concurrent meetings (with at least 2 Cisco TelePresence 500 or 1000 systems) is 24.
Latency (added by Cisco TelePresence Multipoint Switch)	Less than 10 milliseconds (ms)
Jitter (added by Cisco TelePresence Multipoint Switch)	Less than 0.05%
Availability	99.99% (estimated)
SNMP MIBs	RFC 1213, ENTITY, IF, ENTITY-FRU-CONTROL, HOSTRESOURCES, UMSEVENT, and UMSLMSSENSOR,
CDR data	CDR ASCII format
Administrative interface	HTTP and HTTPS, Secure Shell (SSH) Protocol, role-based access control (RBAC), and password protection
Application programming interface (API)	Simple Object Access Protocol (SOAP) or XML for real-time (active meeting) conference and participant management
QoS	Support for Differentiated Services (DiffServ) markings

System Hardware Specifications

The Cisco MCS 7845 Media Convergence Server is a high-availability server platform. It is an integral part of a complete, scalable architecture for a new generation of high-quality IP voice solutions that run on enterprise data networks. It delivers the high performance and availability demanded by today's enterprise networks and is an innovative, easy-to-deploy, and highly cost-effective solution. At only 2 rack units (2RUs) high, the Cisco MCS 7845 packs tremendous power in a low-profile chassis. This server is used in a variety of Cisco Unified Communications applications. Table 3 lists the hardware specifications.

Table 3. System Hardware Specifications

Cisco MCS 7845 Attribute	Specification
Hardware	Cisco MCS 7845 (Cisco MCS 7845-H2 for HP or Cisco MCS 7845-I2 for IBM) quad-core-processor server; Restriction of Hazardous Substances (RoHS) compliant
Connectivity	Dual 1-Gb Ethernet network interfaces
Power	100 to 132 VAC (10A) and 200 to 240 VAC (6.1A); 50 to 60 Hz
Reliability	30,000 hours mean time between failure (MTBF) (estimated)
Dimensions (H x W x D) [[is that correct?]]	3.38 x 17.54 x 26.01 in. (8.59 x 44.54 x 66.07 cm)
Weight	60 lb (27.22 kg)
OS software	Red Hat Linux AS 3
Origin	Manufactured in United States
Hardware data sheet*	http://www.cisco.com/en/US/products/hw/voiceapp/ps378/products_data_sheet0900aecd80587390.html

* Server hardware is subject to change. Please refer to data sheet for the latest specifications.

Ordering Information

Table 4 lists ordering information for the Cisco TelePresence Multipoint Switch.

Table 4. Ordering Information

Product Name	Part Number
Cisco TelePresence Multipoint Switch (CTMS)	CTS-CTMS-1.5
Cisco CTMS Software License/Application	LIC-CTMS-1.5 (Included)
Cisco MCS 7845-H2 Media Convergence Server (HP)	MCS-7845-H2-CTS2 (Included – standard)
Cisco MCS 7845-I2 Media Convergence Server (IBM)	MCS-7845-I2-CTS2 (Included – alternate)

Service and Support

Critical to delivering the innovative Cisco TelePresence experience in your organization are integrated lifecycle services. Designed specifically for multisite organizations, these services deliver the Cisco TelePresence experience and accelerate the successful deployment of a high-quality, reliable “in-person” meeting experience. Initial prepare, planning, and design services prepare your network and organization to deliver the expected consistent quality level of the Cisco TelePresence meeting solution. Operate services provide peace of mind for your IT staff and reduce risk of downtime by providing critical day-2 maintenance support. These services use the proven Cisco Lifecycle Services approach to deliver a Cisco TelePresence experience. For more information, please visit <http://www.cisco.com/go/services>.

For More Information

For more information about the Cisco TelePresence Multipoint Switch, please visit <http://www.cisco.com/go/telepresencemultipoint> or contact your local Cisco account representative or authorized Cisco partner. To locate an authorized partner, please visit http://tools.cisco.com/WWChannels/LOCATR/jsp/partner_locator.jsp.



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