



# CHAPTER 1

## Introduction

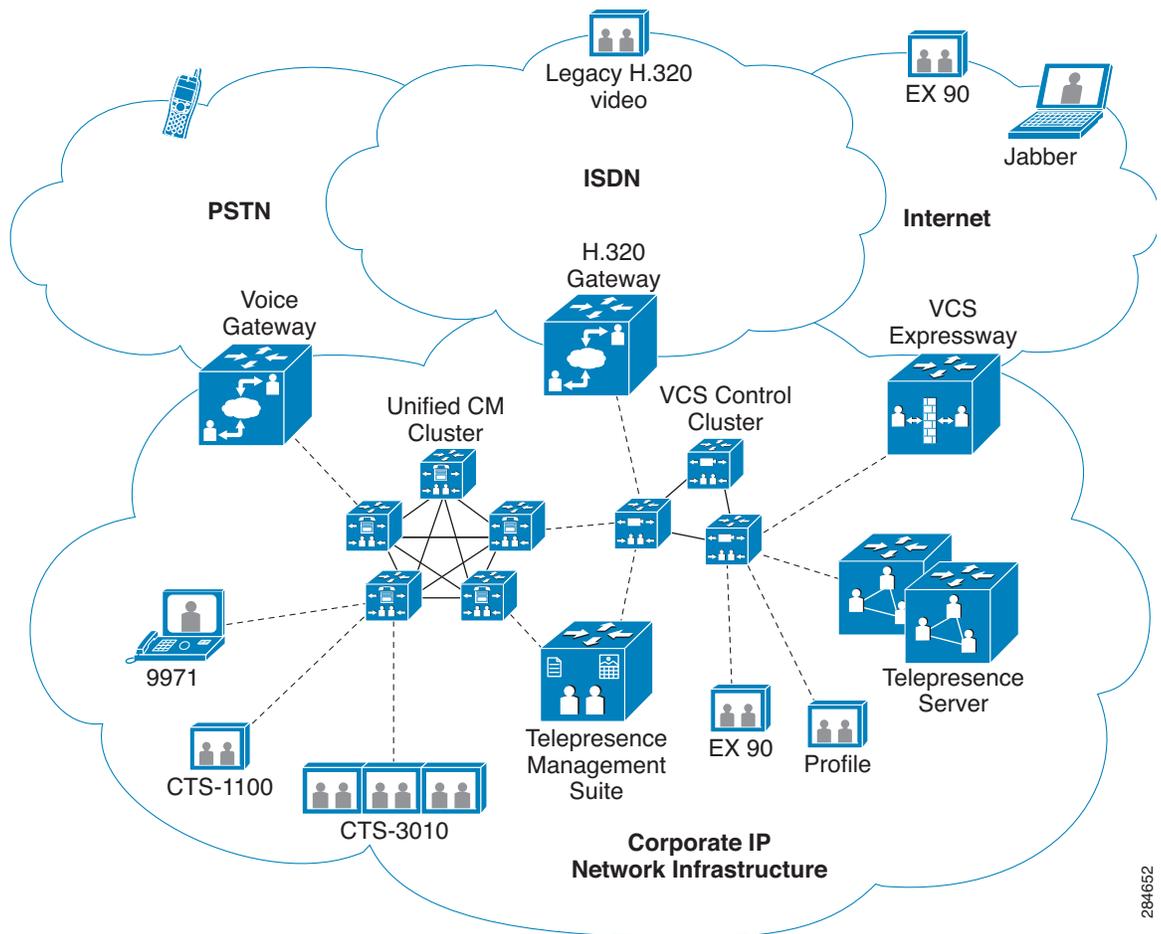
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This document focuses on the two-way interactive video solutions available from Cisco, including Cisco TelePresence and Cisco Unified Communications, and it provides an explanation of the overall solution, technology components, and deployment considerations. With the TelePresence and Unified Communications product families, Cisco offers a wide range of video solutions from interactive video applications for large boardrooms down to mobile users. Cisco also offers a comprehensive set of one-way video applications such as streaming video, digital signage, video surveillance, and even media transformation, which are not covered in this document.

Each solution, Cisco TelePresence or Cisco Unified Communications, can be deployed as a standalone solution or together as an integrated solution. [Figure 1-1](#) illustrates an example of a video architecture that supports both TelePresence and Unified Communications video endpoints. This specific example also shows access to the PSTN for voice calls, ISDN for legacy video, and the Internet-based video device.

**Figure 1-1 Cisco TelePresence and Unified Communications Video Architecture**



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This architecture incorporates the endpoints and infrastructure components listed in [Table 1-1](#) and [Table 1-2](#), respectively.

**Table 1-1** *Current Cisco TelePresence and Unified Communications Video Endpoints*

<b>Category</b>	<b>Endpoint</b>
TelePresence – Immersive	TX9000 Series CTS 3000 Series CTS T Series TX1300 Series
TelePresence – Multipurpose	CTS MX Series CTS Profile MXP Series CTS Profile Series
TelePresence – Desktop	CTS EX Series CTS MXP Series
TelePresence –Office	CTS 1100 CTS 500
TelePresence – Personal	Cisco Jabber Video for TelePresence (Movi)
TelePresence – Video phone	CTS E20
Unified Communications – Video phone	Cisco Unified IP Phones 9900 Series
Unified Communications – Desktop	Cisco Unified Personal Communicator Cisco Jabber
Unified Communications – Tablet	Cius

**Table 1-2 Cisco Video Infrastructure Products**

<b>Purpose</b>	<b>Product Name</b>	<b>Product Category</b>	<b>Description</b>
Call Control	Cisco Unified Communications Manager	Unified Communications and TelePresence	Call control for Unified Communications and TelePresence devices
	Cisco TelePresence Video Communications Server	Control	Call control for TelePresence and videoconferencing devices
Conferencing	Cisco Integrated Services Router G2 Conferencing Services	Unified Communications	Multipoint conferencing for all video endpoints except three-screen immersive
	Cisco TelePresence Server	TelePresence	Multipoint Control Unit for all video endpoints, including three-screen immersive
	Cisco TelePresence Conductor	TelePresence	Policy server for multipoint device management
	Cisco TelePresence Multipoint Control Unit	TelePresence	Multipoint Control Unit for all video endpoints except three-screen immersive
	Cisco TelePresence Multipoint Switch	TelePresence	Multipoint switch for CTS, EX, and Profile series video endpoints
Gateways	ISDN Gateway	TelePresence	Video gateway allowing connectivity from H.323 and SIP video endpoints to ISDN H.320 endpoints
	Advanced Media Gateway	TelePresence	Gateway allowing connectivity from standard H.323 and SIP video endpoints to Microsoft Lync and Office Communicator devices
	Cisco Telepresence Video Communications Server Expressway	TelePresence	Gateway that provides secure communications between SIP and H.323 video endpoints across the internet
	Cisco Unified Border Element	TelePresence	Gateway that provides a secure demarcation between IP networks
	Cisco Intercompany Media Engine	Unified Communications	Gateway that provides intercompany connectivity when used with Unified CM and ASA firewalls
Recording and Streaming	Cisco TelePresence Content Server	TelePresence	Recording and streaming for all video endpoints
	Cisco TelePresence Recording Server	TelePresence	Recording server for CTS series video endpoints
Management	Cisco TelePresence Manager	TelePresence	Scheduling and management platform for Cisco and third-party video endpoints
	Cisco TelePresence Management Suite	TelePresence	Scheduling and management platform for Cisco and third-party video endpoints
	Cisco Prime Collaboration Manager	TelePresence	Network and endpoint management for media flows

Addressing complex customer requirements is possible due in part to the large number of Cisco TelePresence and Unified Communications video endpoints and infrastructure components. However, a large number of options can make choosing the right solution difficult.

As you will see throughout this document, Cisco TelePresence and Cisco Unified Communications endpoints and infrastructure components share the same protocols, audio and video codecs, and similar deployment considerations. This document explores deeper into the following areas related to Cisco TelePresence and Cisco Unified Communications:

- **Video components**

Video components consist of devices such as video endpoints, call control, conferencing, gateways, and management platforms.
- **Basic concepts and terminology of video solutions**

TelePresence and video in general introduce a lot of new terminology and concepts that are not found in other technologies. In just the past few years many new products and features have been introduced with the advancement of video endpoints, conferencing devices, and error concealment.
- **Call control protocols**

Call control protocols handle the setup and processing of media flows across the network. A number of video call control protocols are used for transporting interactive video over various network media.
- **Quality of Service (QoS) and call admission control**

Interactive video is very sensitive to delay, loss, and jitter. Allowing admission to the network only when bandwidth is available and guaranteeing media flows that meet Service Level Agreements (SLAs) are key factors to any successful video deployment.
- **Dial plan**

Dial plans provide call routing between video devices and devices external to an enterprise, such as video intercompany calls over the Internet and the PSTN, as well as PSTN audio-only calls. Dial plans might need special attention, depending on the method used to address endpoints or to support advanced feature sets.
- **Deployment scenarios**

There are a number of deployment scenarios available for interactive video deployments. Deployment scenarios are based on a number of factors such as the number and type of endpoints, and they focus on all aspects of call control, video services, and network design.
- **Business-to-business (B2B)**

Business-to-business video communications is becoming more important as video continues to be deployed and used by more companies. There are a number of ways to allow business-to-business video communications, depending on the call control platforms and endpoints used in an enterprise.
- **Conferencing**

Conferencing allows more than two devices to communicate in a single meeting. There are a number of options for initiating a conference and a number of different platforms available for conferencing video endpoints.
- **Security**

Security for video calls is a must for many enterprises, especially those using video for business-to-business communications. There are a number of methods available for encrypting signaling traffic and media, and a number of factors that must be considered when deploying secured video communications.

In addition to this document, a number of design and deployment guides have been written to help users choose the correct architecture. These guides not only help with video architecture, but in many cases they also outline the network requirements to ensure proper handling of video calls across the network. The following design and deployment guides cover the deployment of both Cisco TelePresence and Cisco Unified Communications video:

- Cisco Unified Communications System SRND  
<http://www.cisco.com/go/ucsrnd>
- Cisco TelePresence Network Systems Design Guide  
[http://www.cisco.com/en/US/solutions/ns340/ns414/ns742/ns819/landing\\_vid\\_tPresence.html](http://www.cisco.com/en/US/solutions/ns340/ns414/ns742/ns819/landing_vid_tPresence.html)