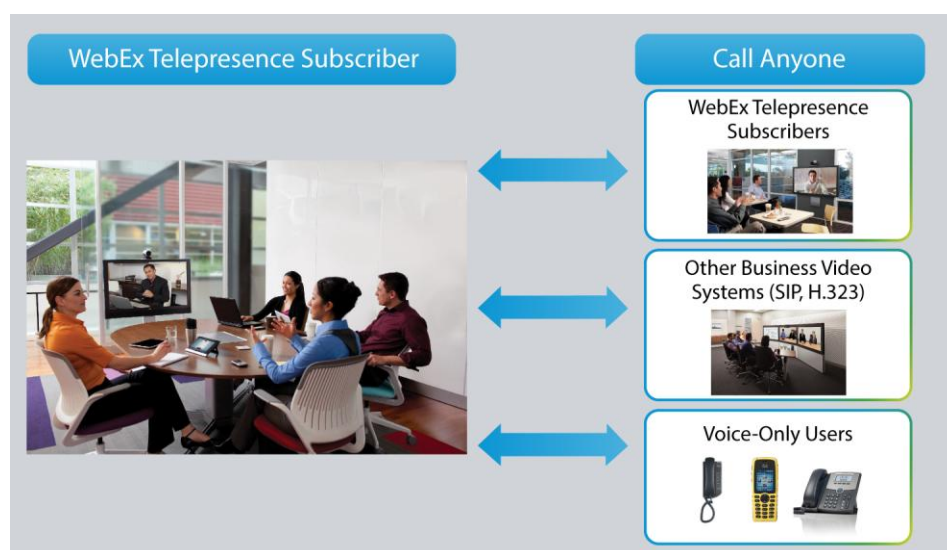# WebEx Telepresence Technical Overview

Cisco WebEx® Telepresence can enable you to collaborate "in person" with contacts across your business community—within your organization and with partners, suppliers, and customers. Enjoy high-quality audio and video at up to 1080p high-definition (HD) video resolution. Connect with an individual or multiple parties with the click of a button. An "in-person" meeting can be as simple as highlighting a contact and starting the call. Share documents or your desktop as if you were together in the same location. Discussions are confidential through support for highly secure signaling and media encryption.

A high-level overview of the different calling scenarios is illustrated in Figure 1.

Figure 1.   Overview of Calling Scenarios

This document outlines the different calling options for Cisco WebEx Telepresence customers and provides some helpful tips and technical information for your WebEx® Telepresence deployments.

Collaborate with Another Cisco WebEx Telepresence Subscriber in Your Organization

Each device you register to the Cisco WebEx Telepresence network is automatically populated in your private company directory so you can see all new and existing internal users and videoconferencing bridges. To talk to a contact, just highlight the applicable entry and start the call.

Your device will automatically rate adapt according to current network conditions to help ensure that you get the best video experience.

You can share documents or your desktop with the other party at the click of a button. You also can change the screen layout to focus on either the video or the data being shared at any given moment.

Collaborate with an External Business Contact

Calling a contact outside your organization is also easy, whether that contact is on the Cisco WebEx Telepresence network or not. Simply enter the contact's video address (for example, user@webex.com or user@company.com) and start the call.

You can share documents or your desktop and change your screen layout to suit your viewing preference in the same way as on any video call.

Cisco WebEx Telepresence offers standards-based business-to-business interoperability and interworking that can enable you to collaborate with external business contacts. Business contacts not on the WebEx Telepresence network must ensure that they are also using a compatible standards-compliant Session Initiation Protocol (SIP) or H.323 video device that is business-to-business–enabled. For more information about interoperability, refer to the section "Interop Guidance for Users Outside the WebEx Telepresence Network".

If an external business contact has a compatible H.323 video device that does not have a video address in a SIP-style Uniform Resource Identifier (URI) format but is reachable over the public Internet, Cisco WebEx Telepresence offers the ability to call that contact's public IP address. For more information about this feature, refer to the section "Calls Using an IP Address".

As with all video calling on the Cisco WebEx Telepresence network, your device will automatically rate adapt according to current network conditions to help ensure that you get the best video experience.

Each Cisco WebEx Telepresence subscription also has its own unique 10-digit video number, which can be used for voice-only users to call you. Refer to the section "Make a Voice-Only Call" for more information.

Up to Nine-Way Video Calling

You can include up to nine users on the Cisco WebEx Telepresence and Cisco Jabber Video networks (including you) in a video call by using the personal bridge video address that is available as part of your WebEx Telepresence device subscription.

Each personal bridge has its own unique video address with the suffix .mybridge. It will populate with a standard address: username.mybridge@webex.com for individuals and roomname.mybridge@webex.com for rooms. However, you can customize each personal bridge video address in the Cisco WebEx Telepresence portal if you wish to make changes. Refer to the section "Manage Your Business Contacts" for more information about the portal.

You can share this video address with contacts on the Cisco WebEx Telepresence and Cisco Jabber Video networks when you are ready to meet. Access is controlled so that the session will not start until the meeting organizer joins the call, but the organizer can always drop off if necessary and allow others to continue a discussion (refer to Figure 2).

Figure 2.   Up to Nine-Way Video Calling for Cisco WebEx Telepresence Users
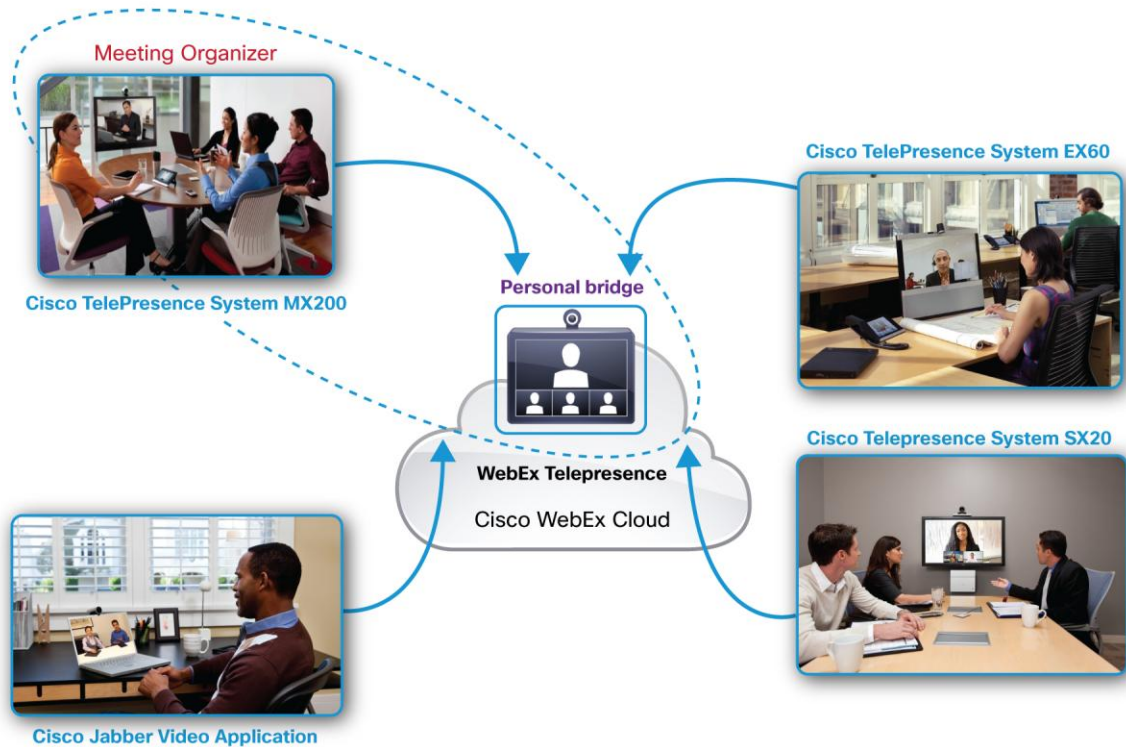
Each party can independently connect at up to 720p30 HD video resolution. Video quality is determined by the video device and service connectivity of each caller, not the lowest common denominator of all parties on the bridge. A caller delivering HD video can thus be seen in HD by those parties capable of receiving and viewing HD. Cisco ActivePresence® technology, with voice-activated switching, lets you see all the other users on the call while giving prominence to the active speaker.

Desktop sharing is available in the same way as on other video calls—simply click to share and, on your device, select whether you would like to focus on the video or the data.

Videoconferencing Bridging Service: Bring Any Business Contact Together

Cisco WebEx Telepresence provides a videoconferencing bridging service that lets you collaborate with multiple parties from a variety of different networks, including video or voice-only callers. Available as a monthly subscription to connect up to 6 or 12 parties, the service provides a cloud-based WebEx Telepresence bridge that lets participants dial in from any of the following:

- Device on the Cisco WebEx Telepresence network
- SIP or H.323 standards-compliant video device (Note: The device must be able to dial a SIP-style URI reachable through the public Internet.)
- Voice-only device

The broad range of callers who can join a Cisco WebEx Telepresence bridge is illustrated in Figure 3.

Figure 3.   Videoconferencing Bridging Service
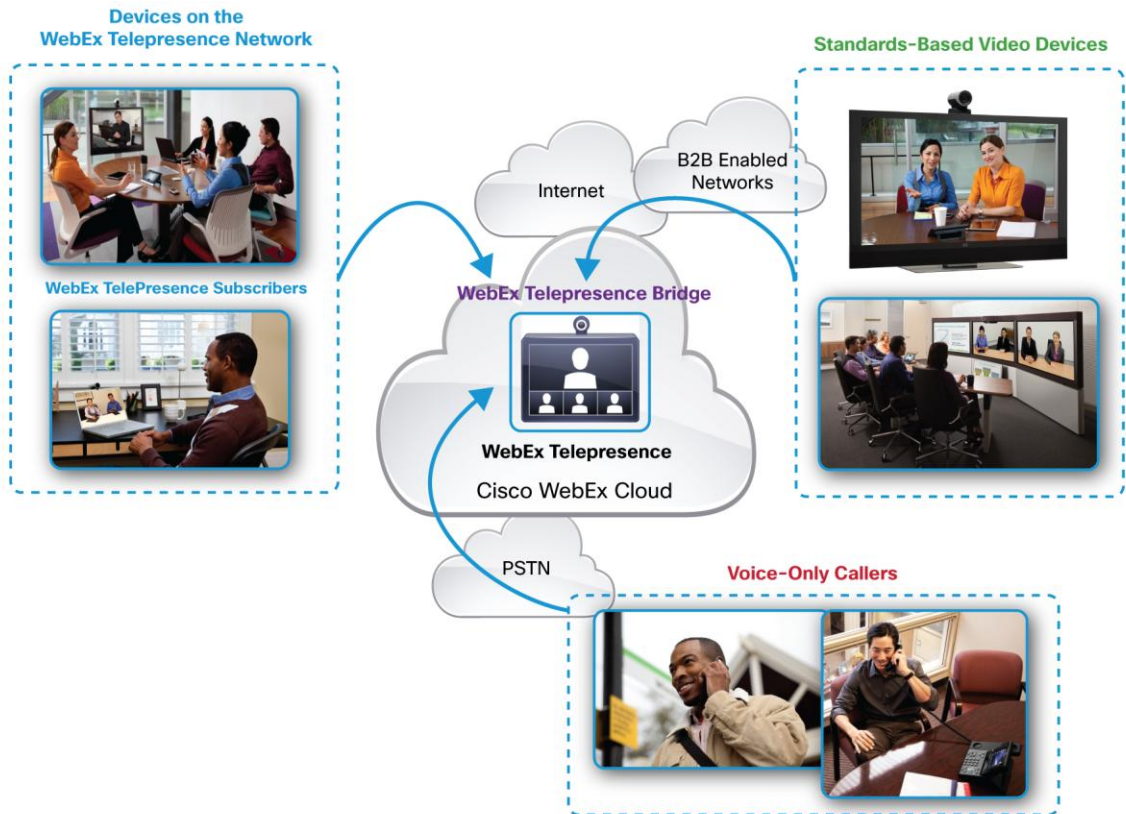
A Cisco WebEx Telepresence bridge is accessible by any video user with a compatible SIP or H.323 standards-compliant video device that can dial a URI on the public Internet. Thus customers (whether or not they have WebEx Telepresence device subscriptions) can subscribe to this service and enable collaboration across a broad community of users.

Each bridge has its own unique video address with the suffix `.bridge@webex.com`, and you can customize the video address to reflect your business. For example, you may choose your Cisco WebEx Telepresence bridge address to be `yourcompanyname.bridge@webex.com`. You can share this video address with videoconference participants and have them call this video address to join the videoconference. Internal WebEx Telepresence subscribers can simply highlight the applicable bridge entry in the company directory and start the call.

No reservation or scheduling is required. You can use the bridge as often, whenever, and for as long as you need to.

Similar to the functions within the personal bridge, a Cisco WebEx Telepresence bridge lets each party independently connect at up to 720p30 HD video resolution. Video quality is determined by the video device and service connectivity of each caller, not the lowest common denominator of all parties on the bridge. A caller delivering HD video can thus be seen in HD by those parties capable of receiving and viewing HD. Cisco ActivePresence technology, with voice-activated switching, lets you see all of the other users on the call while giving prominence to the active speaker.

Desktop sharing is available in the same way as on other video calls—simply click to share and, on your device, select whether you would like to focus on the video or the data.

In addition to a video address, each Cisco WebEx Telepresence bridge has its own unique 8-digit conference ID. This ID enables voice-only users to join the videoconference by dialing an access number and entering the conference ID.

An additional feature available for collaboration between multiple parties is Cisco TelePresence® MultiSite (MultiSite). Enabled by a feature license you purchase with your endpoint, MultiSite allows you to add multiple parties into a call by either calling them directly or adding them to a call when they call you. You can use this feature in several situations, including:

- Impromptu videoconferencing among up to four parties on a variety of different networks
- When you want to bring in more parties than are supported on your bridge
- When you want to bring in a video party that cannot dial a SIP-style URI

For more information about the endpoints that support MultiSite, contact your Cisco channel partner or sales representative, or visit the Cisco WebEx Telepresence endpoint webpage.

Make a Voice-Only Call

For those times when business contacts do not have access to their video devices, you can still collaborate from your Cisco WebEx Telepresence device with a voice-only call. Each WebEx Telepresence subscription has a unique 10-digit video number (U.S. or Canada area code, depending on where the subscription was purchased) that can be dialed from anywhere in the world. You simply dial it as either a long-distance or international number, depending on where you are located.

And you can make a voice-only call to a business contact directly from your device by adding the voice-over-IP (VoIP)-Out option to your Cisco WebEx Telepresence subscription (available only in the United States). For a small additional fee, this feature gives you unlimited outbound voice calling to any landline, mobile phone, or toll-free phone number in the United States and Canada.

Calls Using an IP Address

If an external business contact has a compatible H.323 video device that does not have a video address in a SIP-style URI format but does have a publicly accessible IP address on the Internet, you can call that contact by dialing an IP address.

From a Cisco TelePresence endpoint, simply dial "h323:a.b.c.d", where "a.b.c.d" represents the IP address of the H.323 video device you wish to call.

From a Cisco IP Video Phone E20 or a Cisco Jabber™ Video application on the Cisco WebEx Telepresence network, dial "ip" to access an interactive-voice-response (IVR) system that will walk you through the required steps.

Note that the IP address of the H.323 video device must be reachable either using the local routing table or calling over the Internet to a public IP address.

An H.323 video device can also call a Cisco WebEx TelePresence endpoint by dialing its IP address. Again, note that the IP address of the endpoint on Cisco WebEx Telepresence must be reachable either using the local routing

table or calling over the Internet to a public IP address. This feature is not available on a Cisco IP Video Phone E20 or a Cisco Jabber™ Video application.

Manage Your Business Contacts

Cisco WebEx Telepresence offers two primary ways to manage business contacts—the company directory and Favorites. Your company directory serves as an organization-wide address book that is available to all your users. Favorites is a short list of frequent contacts that is stored locally on a particular device.

Your company directory is automatically populated with the video addresses of the devices, personal bridges, and videoconferencing bridges that you have subscribed to on the Cisco WebEx Telepresence network. A company-designated administrator can access the WebEx Telepresence portal to hide an entry, modify a video address, add external business contacts, and perform other tasks.

Favorites is a user's own short list of frequent contacts. You can create Favorites by copying entries from the company directory, manually adding external contacts, or adding any contact from your call history. You can edit Favorites anytime you wish. You can start calls from Favorites by highlighting the applicable entry and starting the call.

Interoperability Guidance for Users Outside the Cisco WebEx Telepresence Network

Successful business-to-business calling with a business contact who is not on the Cisco WebEx Telepresence network requires the following elements in order to achieve successful interoperability:

- Standards-compliant SIP or H.323 video deployment
- A video device on which you can dial a URI on the public Internet, e.g., user@example.com
- A video device reachable over the public Internet through a URI
- A video domain registered in the public Domain Name System (DNS) registry with a DNS service (SRV) record for SIP or H.323 calling services
- Data sharing ability using the IETF standard known as the Binary Floor Control Protocol (BFCP; RFC 4582, for SIP-based video devices) or the ITU standard H.239 (for H.323-based video devices)

Highly Secure Calling

Secure communication requires the successful negotiation of both secure signaling and media encryption. This negotiation helps ensure the end-to-end security of communication, so that you can collaborate with confidence.

Cisco WebEx Telepresence offers highly secure communication through support for Transport Layer Security (TLS) for secure signaling and Secure Real-Time Transport Protocol (sRTP) with Advanced Encryption Standard (AES) 128-bit encryption for secure media. The establishment of secure communication for business-to-business calling is standards-based, employing a public key infrastructure (PKI) with X.509 certificates signed by a trusted public root Certificate Authority (CA).

Calls between Cisco WebEx Telepresence subscribers are highly secure, indicated by a small padlock icon that appears on your screen.

If you are calling a business contact who is not on the Cisco WebEx Telepresence network, successful negotiation of secure communication requires that the video service being used by the contact you called also supports secure signaling and media encryption. By default, a device registered to the WebEx Telepresence network will always

attempt to establish a secure session with a remote device. If this negotiation is successful, you will see the small padlock icon appear on your screen. If not, the padlock icon will have a red line through it so that you have a clear indication that communication is not secure and can adjust your discussion accordingly.

If external business contacts who are not on the Cisco WebEx Telepresence network want to ensure the successful negotiation of secure communication, the primary requirements for them to verify within their video service include:

- Support for TLS for signaling and AES 128-bit encryption for media
- TLS video services and available video edge hosts published in a public DNS SRV record for the video domain of the video service being used
- A valid X.509 certificate signed by a trusted public root Certificate Authority installed on each video edge host
- Either a full trust path to the public root Certificate Authority that signed the X.509 certificate of the WebEx cloud video edge hosts or no certificate verification

Summary

Cisco WebEx Telepresence can enable you to collaborate "in person" with your business contacts so that you can be present with them whenever you need to. With a range of different calling options, you can interact with the different individuals, locations, and groups that make up your day-to-day work life in the way that works best for you.

Cisco WebEx Telepresence is simple, affordable video collaboration from the cloud.

For More Information

For more information about Cisco WebEx Telepresence and the range of devices and features available, please visit our website at http://www.cisco.com/go/webextelepresence.