Configure Conference Bridges

Conference Bridges Overview

Conference bridge for Cisco Unified Communications Manager is a software or hardware application that is designed to allow both ad hoc and meet-me voice conferencing. Additional conference bridge types support other types of conferences, including video conferences. Each conference bridge can host several simultaneous, multiparty conferences. Both hardware and software conference bridges can be active at the same time. Software and hardware conference bridges differ in the number of streams and the types of codec that they support. When you add a new server, the system automatically adds software conference bridges.

Note When Cisco Unified Communications Manager server is created, the Conference Bridge Software is also created automatically and it cannot be deleted. You cannot add Conference Bridge Software to Cisco Unified Communications Manager Administration.

Conference Bridge Types

The following conference bridge types are available in Cisco Unified Communications Manager Administration.

Table 1: Conference Bridge Types

Conference Bridge Type	Description
Cisco Conference Bridge Hardware	This type supports the Cisco Catalyst 4000 and 6000 Voice Gateway Modules and the following number of conference sessions: **Cisco Catalyst 6000** • G.711 or G.729a conference - 32 participants per port; six participants maximum per conference; 256 total participants per module; 10 bridges with three participants. • GSM - 24 participants per port; six participants maximum per conference; 192 total participants per module. **Cisco Catalyst 4000** G.711 conference only - 24 conference participants; maximum of four conferences with six participants each.
Cisco Conference Bridge Software	Software conference devices support G.711 codecs by default. The maximum number of callers for this type equals 256. With a setting of 256, the software conference bridge can support 64 conference sessions of 4 parties each. The maximum number of caller parties in a conference session is specified via the **Maximum Ad Hoc Conference** and **Maximum MeetMe Conference Unicast** service parameters. **Caution** This type of conference bridge (SW Conference Bridge) is a simplified implementation. It does not identify parties that are silent and uses a simple summing algorithm which may cause audio quality and low volume levels for the conference when there is a large number of participants.
Cisco IOS Conference Bridge	• Uses the NM-HDV or NM-HDV-FARM network modules. • G.711 a/mu-law, G.729, G.729a, G.729b, and G.729ab participants can join in a single conference call • Up to six parties can join in a single conference call Cisco Unified Communications Manager assigns conference resources to calls on a dynamic basis. For more information about Cisco IOS Conferencing and Transcoding for Voice Gateway Routers, see the Cisco IOS documentation that you received with this product.

Conference Bridge Type	Description
Cisco IOS Enhanced Bridges	• Uses the onboard Cisco Packet Voice/Fax Digital Signal Processor Modules (PVDM2) on the Cisco 2800 and 3800 series voice gateway routers or uses the NM-HD or NM-HDV2 network modules. • G.711 a-law/mu-law, G.729, G.729a, G.729b, G.729ab, GSM FR, and GSM EFR participants can join in a single conference • Up to eight parties can join in a single call. **Note** With ISR4000 router and any of the SM-X-PVDM-3000/ SM-X-PVDM-2000/ SM-X-PVDM-1000/ SM-X-PVDM-500, each Conference Bridge Profile can register up to a maximum of 512 sessions, due to the Unified Communications Manager 4096 maximum stream limitation. Cisco Unified Communications Manager assigns conference resources to calls on a dynamic basis. For more information about Cisco IOS Enhanced Conferencing and Transcoding for Voice Gateway Routers, see the Cisco IOS documentation that you received with this product. This conference bridge type supports SRTP media encryption with AES_CM_128_HMAC_SHA1_80 for supported SIP phones where an ISR 4000 series gateway is deployed. SCCP phones and non-supported SIP phones fall back to AES_CM_128_HMAC_SHA1_32 encryption. **Note** Make sure that the gateway load supports the cipher. Please review your gateway documentation for support details.
Cisco Conference Bridge (WS-SVC-CMM)	This conference bridge type supports the Cisco Catalyst 6500 series and Cisco 7600 series Communication Media Module (CMM). It supports up to eight parties per conference and up to 64 conferences per port adapter. This conference bridge type supports the following codecs: This conference bridge type supports ad hoc conferencing. • G.711 a-law/mu-law • G.729 annex A and annex B • G.723.1
Cisco Video Conference Bridge (IPVC-35xx)	The Cisco Video Conference Bridge provides audio and video conferencing functions for Cisco IP video phones, H.323 endpoints, and audio-only Cisco Unified IP Phones. The Cisco Video Conference Bridge supports the H.261, H.263, and H.264 codecs for video.

Conference Bridge Type	Description
Cisco IOS Heterogeneous Video Conference Bridge	Cisco Integrated Services Routers Generation 2 (ISR G2) can act as IOS-based conference bridges that support ad hoc and meet-me video conferencing. DSP modules must be installed on the router to enable the router as a conference bridge. In a heterogeneous video conference, all the conference participants connect to the conference bridge with phones that use different video format attributes. In heterogeneous conferences, transcoding and transsizing features are required from the DSP to convert the signal between the various formats. For heterogeneous video conferences, callers connect to the conference as audio participants under either of the following conditions: • Insufficient DSP resources. • The conference bridge is not configured to support the video capabilities of the phone. For more detailed information about video conferencing with ISR G2 routers, refer to the document *Configuring Video Conferences and Video Transcoding*.
Cisco Guaranteed Audio Video Conference Bridge	Cisco Integrated Services Routers Generation 2 (ISR G2) can act as IOS-based conference bridges that support ad hoc and meet-me voice and video conferencing. DSP modules must be installed on the router to enable the router as a conference bridge. DSP resources are reserved for the audio portion of the conference, and video service is not guaranteed. Callers on video phones may have video service if DSP resources are available at the start of the conference. Otherwise, the callers connect to the conference as audio participants. For more detailed information about video conferencing with ISR G2 routers, refer to the document *Configuring Video Conferences and Video Transcoding*.
Cisco IOS Homogeneous Video Conference Bridge	Cisco Integrated Services Routers Generation 2 (ISR G2) can act as IOS-based conference bridges that support ad hoc and meet-me video conferencing. DSP modules must be installed on the router to enable the router as a conference bridge. Cisco IOS Homogeneous Video Conference Bridge specifies the IOS-based conference bridge type that supports homogeneous video conferencing. A homogeneous video conference is a video conference in which all participants connect using the same video format attributes. All the video phones support the same video format and the conference bridge sends the same data stream format to all the video participants. If the conference bridge is not configured to support the video format of a phone, the caller on that phone connects to the conference as an audio only participant. For more detailed information about video conferencing with ISR G2 routers, refer to the document *Configuring Video Conferences and Video Transcoding*.

Conference Bridge Type	Description
Cisco TelePresence MCU	Cisco TelePresence MCU is a set of hardware conference bridges for Cisco Unified Communications Manager. The Cisco TelePresence MCU is a high-definition (HD) multipoint video conferencing bridge. It delivers up to 1080p at 30 frames per second, full continuous presence for all conferences, full transcoding, and is ideal for mixed HD endpoint environments. The Cisco TelePresence MCU supports SIP as the signaling call control protocol. It has a built in Web Server that allows for complete configuration, control, and monitoring of the system and conferences. The Cisco TelePresence MCU provides XML management API over HTTP. Cisco TelePresence MCU allows both ad hoc and meet-me voice and video conferencing. Each conference bridge can host several simultaneous, multiparty conferences. Cisco Unified Communications Manager supports presentation sharing with the Binary Floor Control Protocol (BFCP) between Unified Communications Manager and a Cisco TelePresence MCU. Cisco TelePresence MCU must be configured in Port Reservation mode. For more information, consult the *Cisco TelePresence MCU Configuration Guide*. **Note** Cisco TelePresence MCU does not support a common out-of-band DTMF method. Under the default setting, Cisco Unified Communications Manager will not require a Media Termination Point (MTP). However, if the Media Termination Point Required check box is checked, Cisco Unified Communications Manager will allocate an MTP and the SIP trunk will negotiate DTMF according to RFC 2833.
Cisco TelePresence Conductor	Cisco TelePresence Conductor provides intelligent conference administrative controls and is scalable, supporting device clustering for load balancing across MCUs and multiple device availability. Administrators can implement the Cisco TelePresence Conductor as either an appliance or a virtualized application on VMware with support for Cisco Unified Computing System (Cisco UCS) platforms or third-party-based platforms. Cisco TelePresence Conductor dynamically selects the most appropriate Cisco TelePresence resource for each new conference. Ad hoc, “MeetMe”, and scheduled voice and video conferences can dynamically grow and exceed the capacity of individual MCUs. Up to three Cisco TelePresence Conductor appliances or virtualized applications may be clustered to provide greater resilience. One Cisco TelePresence Conductor appliance or Cisco TelePresence Conductor cluster has a system capacity of 30 MCUs or 2400 MCU ports.

Conference Bridge Type	Description
Cisco Meeting Server	The Cisco Meeting Server conference bridge solution allows Ad Hoc, Meet-Me, Conference Now, and Rendezvous conferences. This conference bridge offers premises-based audio, video, and web conferencing, and works with third-party on-premises infrastructure. It scales for small or large deployments. You can add capacity incrementally as needed, to ensure that you can support the current and future needs of your organization. This conference bridge provides advanced interoperability. Any number of participants can create and join meetings from: • Cisco or third-party room or desktop video systems • Cisco Jabber Client • Cisco Meeting App (can be native or with a WebRTC compatible browser) • Skype for Business A minimum release of Cisco Meeting Server 2.0 is required to use the Cisco Meeting Server conference bridge. The Cisco Meeting Server supports SIP as the signaling call control protocol. It has a built in Web Server that allows for complete configuration, control, and monitoring of the system and conferences. The Cisco Meeting Server provides XML management API over HTTP. **Note** Cisco Meeting Server does not support H.265 video codec and Far End camera Control.

Conference Bridge Configuration Task Flow

Procedure

	Command or Action	Purpose
Step 1	Configure Conference Bridges, on page 6	Configure a hardware or software conference bridge to allow ad hoc and meet-me voice conferencing.
Step 2	Configure Service Parameters for Conference Bridges, on page 7	Perform this procedure when your network includes both Cisco IOS Conference Bridge and Cisco IOS Enhanced Conference Bridge.
Step 3	Configure SIP Trunk Connection to Conference Bridge, on page 7	Perform this procedure to configure a SIP trunk connection to your conference bridge.

Configure Conference Bridges

You must configure a hardware or software conference bridge to allow ad hoc and meet-me voice conferencing.

Procedure

Step 1 From Cisco Unified CM Administration, choose **Media Resources** > **Conference Bridge**.

Step 2 Click **Add New**.

Step 3 Configure the fields in the **Conference Bridge Configuration** window. For detailed field descriptions, refer to the online help.

Step 4 Click **Save**.

What to do next

If your network includes both Cisco IOS Conference Bridge and Cisco IOS Enhanced Conference Bridge, Configure Service Parameters for Conference Bridges, on page 7.

Configure Service Parameters for Conference Bridges

Perform this procedure when your network includes both Cisco IOS Conference Bridge and Cisco IOS Enhanced Conference Bridge.

Procedure

Step 1 From Cisco Unified CM Administration, choose **System** > **Service Parameters**.

Step 2 In the *Service Parameter Configuration* window, choose a server and choose the Cisco CallManager service.

Step 3 In the Clusterwide Parameters (Features - Conference) section, set the following parameters to 6:

- Maximum Ad Hoc Conference
- Maximum MeetMe Conference Unicast

Step 4 Click **Save**.

Configure SIP Trunk Connection to Conference Bridge

Procedure

Step 1 From Cisco Unified CM Administration, choose **Device** > **Trunk**

Step 2 Complete one of the following steps:

- To create a new SIP trunk, click **Add New**.
- To add the connection to an existing trunk, click Find and select the appropriate trunk.

Step 3 Select the **Device Protocol** as **SIP**.

Step 4 Select the **Trunk Service Type** as **None**.

Step 5 Create an entry for the conference bridge in the **Destination** area by adding the IP address or hostname for the conference bridge. If you need a new line, you can click **(+)** to add it.

Step 6 From the **Normalization Script** drop-down list box, select a normalization script. For example, the following scripts are mandatory

- **cisco-telepresence-conductor-interop** – select this script if you are connecting this trunk to a Cisco TelePresence Conductor.
- **cisco-telepresence-mcu-ts-direct-interop** – select this script if you are connecting this trunk to a Cisco TelePresence MCU.
- **cisco-meeting-server-interop** – select this script if you are connecting this trunk to a Cisco Meeting Server.

Step 7 Complete any remaining fields in the Trunk Configuration window. For help with the fields and their settings, refer to the online help.

Step 8 Click Save.