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.
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 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.

Call Preservation

The call preservation feature of Cisco Unified Communications Manager ensures that an active call does not get interrupted when a Cisco Unified Communications Manager fails or when communication fails between the device and the Cisco Unified Communications Manager that set up the call.

Cisco Unified Communications Manager supports full call preservation for an extended set of Cisco Unified Communications devices. This support includes call preservation between Cisco Unified IP Phones, Media Gateway Control Protocol (MGCP) gateways that support Foreign Exchange Office (FXO) (non-loop-start trunks) and Foreign Exchange Station (FXS) interfaces, and, to a lesser extent, conference bridge, MTP, and transcoding resource devices.

Enable H.323 call preservation by setting the advanced service parameter, Allow Peer to Preserve H.323 Calls, to True.

The following devices and applications support call preservation. If both parties connect through one of the following devices, Cisco Unified Communications Manager maintains call preservation:

- Cisco Unified IP Phones
- SIP trunks
- Software conference bridge
- Software MTP
- Hardware conference bridge (Cisco Catalyst 6000 8 Port Voice E1/T1 and Services Module, Cisco Catalyst 4000 Access Gateway Module)
- Transcoder (Cisco Catalyst 6000 8 Port Voice E1/T1 and Services Module, Cisco Catalyst 4000 Access Gateway Module)
- Non-IOS MGCP gateways (Catalyst 6000 24 Port FXS Analog Interface Module, Cisco DT24+, Cisco DE30+, Cisco VG200)
- Cisco IOS H.323 gateways (such as Cisco 2800 series, Cisco 3800 series)
- Cisco IOS MGCP Gateways (Cisco VG200, Catalyst 4000 Access Gateway Module, Cisco 2620, Cisco 3620, Cisco 3640, Cisco 3660, Cisco 3810)
- Cisco VG248 Analog Phone Gateway

Note The DMMSStationD is a dual-mode Cisco Jabber device. If you register the DMMSStationD on a high priority node which is down, it will failover to the secondary node. The device will immediately fall back to high priority node once it is up. In this scenario, the system drops any active call and does not preserve it.

The following devices and applications do not support call preservation:

- Annunciator
- H.323 endpoints such as NetMeeting or third-party H.323 endpoints
- CTI applications

- TAPI applications
- JTAPI applications

Call Preservation Scenarios

The below table lists and describes how call preservation is handled in various scenarios.

Table 2: Call Preservation Scenarios

Scenario	Call Preservation Handling
Cisco Unified Communications Manager fails.	A Cisco Unified Communications Manager failure causes the call-processing function for all calls that were set up through the failed Cisco Unified Communications Manager to be lost. Cisco Unified Communications Manager maintains affected active calls until the end user hangs up or until the devices can determine that the media connection has been released. Users cannot invoke any call-processing features for calls that are maintained as a result of this failure.
Communication failure occurs between Cisco Unified Communications Manager and device.	When communication fails between a device and the Cisco Unified Communications Manager that controls it, the device recognizes the failure and maintains active connections. The Cisco Unified Communications Manager recognizes the communication failure and clears call-processing entities that are associated with calls in the device where communication was lost. The Cisco Unified Communications Managers still maintain control of the surviving devices that are associated with the affected calls. Cisco Unified Communications Manager maintains affected active calls until the end user hangs up or until the devices can determine that the media connection has been released. Users cannot invoke any call-processing features for calls that are maintained as a result of this failure. **Note** The Phones or Devices will go into Call Preservation mode and Conference Bridge Profile gateway will have call entries until the user tears down the connection by placing the phones on-hook. Once the connectivity is back online, Conference Bridge Profile gateway will register to the CUCM, depending on **Switchback Guard time** configured under **sccp** settings on the gateway.

Scenario	Call Preservation Handling
Device failure (Phone, gateway, conference bridge, transcoder, MTP)	When a device fails, the connections that exist through the device stop streaming media. The active Cisco Unified Communications Manager recognizes the device failure and clears call-processing entities that are associated with calls in the failed device. The Cisco Unified Communications Managers maintain control of the surviving devices that are associated with the affected calls. Cisco Unified Communications Manager maintains the active connections (calls) that are associated with the surviving devices until the surviving end users hang up or until the surviving devices can determine that the media connection has been released.

Conference Bridge Configuration Task Flow

Procedure

	Command or Action	Purpose
Step 1	Configure Conference Bridges, on page 7	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 8	Perform this procedure when your network includes both Cisco IOS Conference Bridge and Cisco IOS Enhanced 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 8.

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**.