Cisco TelePresence Integration Guide

Documentation for integrating Cisco CTS/TX TelePresence Systems with BlueJeans

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Introduction

This document goes over how to integrate Cisco TelePresence System (CTS) to dial into a BlueJeans conference.

Architecture

The diagram below captures the overall setup and call flow. The enterprise architecture consists of the appropriate components based on the Cisco Video deployment guides. In this case, the CTS would register to the Cisco Unified Communications Manager (CUCM) and the CUCM would have a SIP trunk for external video calls to the Cisco VCS-Expressway. The VCS-Expressway is usually deployed in the DMZ as the video edge device for calls in or out of the enterprise.
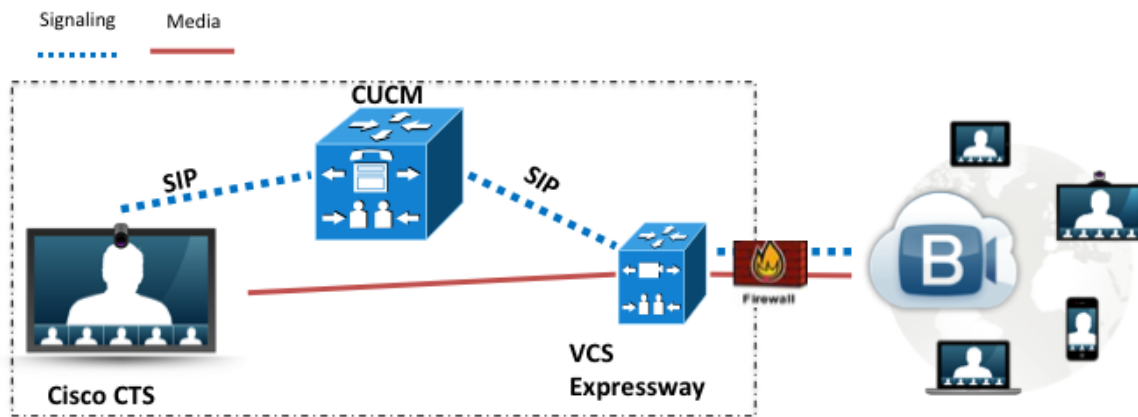

Figure 1 – Call Flow

Requirements

1. Customer has a working CTS deployment inside their Enterprise with the below software versions for the mandatory components:

    o   Cisco TelePresence System (CTS) version 1.8.0 or later
    o   Cisco Unified Communications Manager (CUCM) version 8.6.1 or later
    o   Cisco TelePresence Video Communications Server (VCS-Expressway) version 6.x or later with encryption and traversal licenses

2. Customer firewall has been setup to allow the following ports from their VCS-Expressway to BlueJeans:

    o   TCP 1720
    o   TCP 5000 – 5999

- UDP 5000 – 5999

3. The dial in number for BlueJeans from a CTS endpoint is (408) 740-7256

Configuration

The following steps cover the required one time setup for the CTS, CUCM and VCS-Expressway to dial into BlueJeans once the above requirements have been met.

1. Configure a new SIP Trunk Profile by going to Device > Device Settings > SIP Profiles and add new profile with values show in Figure 2 (below).

2. Leave all other parameters as default.

Note: If there is already a SIP Profile setup please ensure the configuration matches the below.

Parameter	Value
Name	SIP Profile with BFCP (or any name you choose)
SDP Session Level Bandwidth modifier	TIAS and AS
User-Agent and Server Header information	Pass through received information as User-Agent
Early Offer support for voice and video calls (insert MTP if needed)	Check the box
Allow presentation sharing using BFCP	Check the box

Figure 2 –SIP Profile Configuration

Figure 3 – CUCM Administration: SIP Profile Configuration

Figure 4 - CUCM Administration: Trunk Specific Configuration

3. Go to the CUCM Administration web interface, click on Device > Trunk and click Add New

4. All other parameters can be set to the default values.

Note: If there is already a SIP Trunk setup please ensure the configuration matches the below

Parameter	Value
Device Name	A name for the trunk
Device Pool	Appropriate device pool for video calls
Destination	Add IP address of internal VCS interface and port 5060
SIP Trunk Security Profile	Non Secure SIP Trunk Profile (NOTE if secure SIP Trunk is needed, need to modify this accordingly)

SIP Profile	SIP Profile with BFCP (configured in previous step)

Figure 5 - SIP Trunk Configuration

Figure 6 – Cisco CUCM Administration: SIP Trunk Configuration

Figure 7 - Cisco CUCM Administration: SIP Information

5. Add a route pattern to route the BlueJeans number from CTS to the VCS-Expressway via the SIP trunk from CUCM. Go to Call Routing > Route/Hunt > Route Pattern and click Add New

Parameters	Value
Route Pattern	Enter the 10 digit BlueJeans number - 4087407256
Route Partition	Set to a route partition that only allows CTS endpoints that dial this number to route out to

	the VCS-Expressway (CTS-Video is the example in this case)
Description	Add a description such as Calls to BlueJeans Production
Gateway/Route List	Choose SIP trunk created in previous step

Figure 8 - Cisco CUCM Administration: Route Pattern Settings

Figure 9 - Cisco CUCM Administration: Route Pattern Configuration

6. Configure the BlueJeans number as a favorite on all CTS room systems. On the CUCM administration page, go to Device > Phone and search for all CTS systems. Go to one of the CTS devices and on the right top choose "Add/Update Speed Dials" in the related links dropdown.

Figure 10 - Cisco CUCM Administration: Phone Configuration

7. Add the number you created in the route pattern (4087407256) with a meaningful label such as "BlueJeans Production".

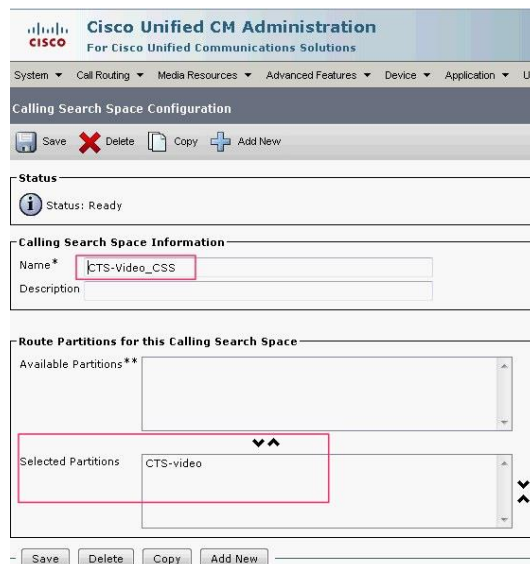8. Hit Save and reset the CTS device. Repeat this for every CTS device you want to connect to BlueJeans.

Figure 11 – Cisco CUCM Administration: Speed Dial Configuration

9. Ensure the CTS Line has the right Calling Search Space, which includes the partition, configured on the Route Pattern. Check the Calling Search Space (CSS) configuration by going to Call Routing > Class of Control > Calling Search Space and ensuring the Route Pattern Partition is in the Selected Partitions section (CTS-video in this example). See Figure 12 (below).

Figure 12 – Cisco CUCM Administration: Calling Search Space Information

10. Go to the CTS Line 1 on each CTS device by going to Device > Phone and searching for each CTS. Click on the Line configuration on the Left panel as shown below (3333 is the extension for this CTS)

Figure 13 – Cisco CUCM Administration: Phone Configuration

11. Ensure the display name is set correctly on the Cisco CTS endpoint by scrolling down at the page above and entering a valid name for the endpoint in the Display Internal Caller ID field.

12. Check the Calling Search Space configured on the Line to ensure it matches the value in Step 10 above (CTS-Video CSS in this example).

Figure 14 – Cisco CUCM Administration: Directory Number Configuration

13. Configure the VCS-Expressway to route calls to BlueJeans. Make sure VCS has the appropriate DNS server configured System > DNS

Figure 15 – VCS Expressway DNS Server Configuration

14. Also, ensure VCS is setup for dual network interfaces and the firewall rules are setup to allow traffic from CUCM / CTS to VCS-Expressway.

15. Create a DNS zone to route outbound calls by going to VCS Configuration > Zones > New DNS Zone and adding a zone per below configuration (Figure 16).

NOTE: If you already have one, make sure the configuration matches the below:

Figure 16 – VCS Expressway DNS Zone Configuration

16. Add a transform to convert the phone number into a BlueJeans URI by going to VCS Configuration > Dial Plan > Transforms & click on Add New.

Parameter	Value
Pattern Type	Regex

Pattern String	^(4087407256).*
Pattern Behavior	Replace
Replace String	\1.cts@sip.bjn.vc
State	Enabled

Figure 17 – VCS Expressway Transform Configuration Values

Figure 18 – VCS Expressway Transform Configuration

This completes the one time configuration of having a CTS endpoint dial 4087407256 (BlueJeans dial in number) and enters a meeting.

Joining Meetings

1. Login to BlueJeans and schedule / start a meeting – refer to "Scheduling a Meeting" for assistance OR if you received an invitation via email, click on the meeting link in the email.

2. To join the meeting: from Cisco IP Phone connected to the Cisco TelePresence System (CTS), click on the Favorites Icon, choose the BlueJeans number and hit dial. You should see the BlueJeans welcome screen come up as below:

Figure 19 – BlueJeans In Meeting Welcome Screen

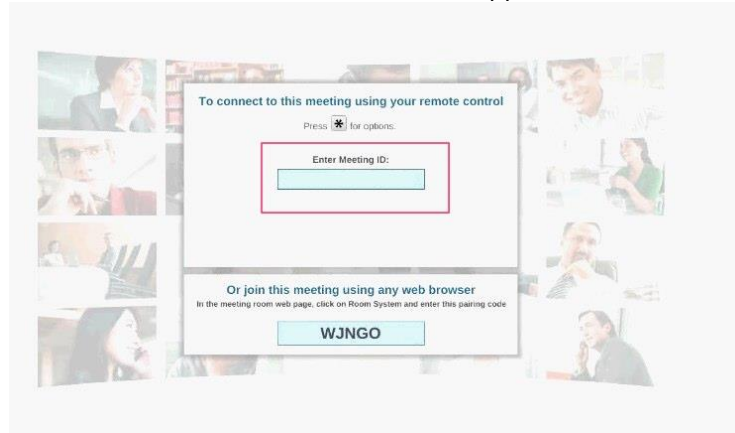3. After a few seconds, the BlueJeans IVR screen will appear.

Figure 20 – BlueJeans IVR

You have 2 options to join the meeting:

17. Dial into the meeting by entering the Meeting ID and Passcode from your email.
    1. Enter the Meeting ID using the keypad on the Cisco IP Phone (connected to the CTS room system) followed by the # sign.
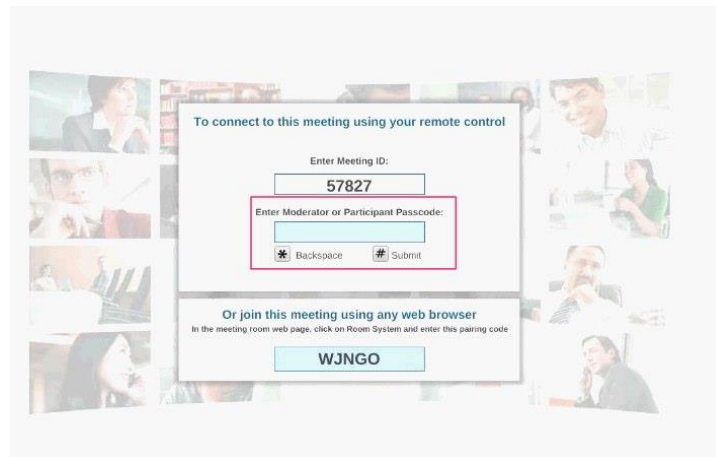   2. Once you enter the Meeting ID, enter the Passcode (if any) followed by the # sign.

Figure 21 – BlueJeans Participant Passcode

18. Join the meeting using the pairing code.
    1. On the welcome screen there will be an alphabetic pairing code (at the bottom), which you can then enter into the meeting web page (WJNGO in this example, Figure 22).
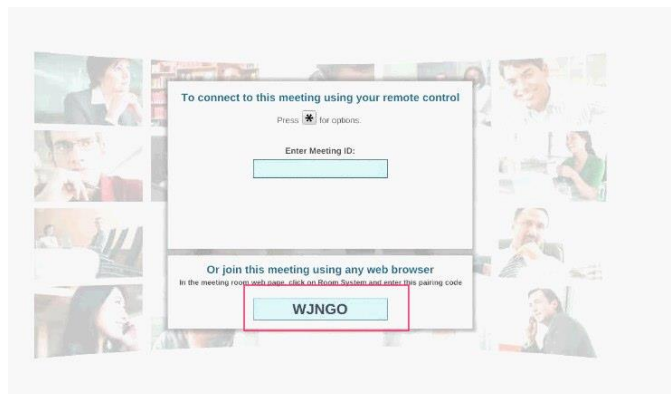
Figure 22 – BlueJeans Pairing Code

Known Caveats

1. Secure SIP signaling & media needs eToken on CUCM along with minor changes to the SIP Trunk configuration to include security.

2. Currently in CTS 1.8 with native SIP interop mode, there is no support for multi screen / multi camera (for example on a 3 screen system, only the middle screen will be used in the call).

Troubleshooting

1. Contact BlueJeans support (support@bluejeans.com) or view pertinent support documentation at support.bluejeans.com.

2. For additional troubleshooting, VCS-Expressway provides a Call History which allows you to view details when a call cannot get setup by going to Status > Calls > History and searching for the call in question. You can then click on View under Actions to get more details on the call itself.

Figure 23 – Call History

3. If there is a 30 second delay in the BlueJeans welcome screen showing up, it may be because the VCS-Expressway has SIP UDP enabled. Most times SIP UDP is not required for SIP video endpoints and can be turned off by going to VCS Configuration > Protocols > SIP > Configuration and setting the SIP UDP Mode to OFF. If SIP UDP cannot be turned off for a reason, then at this time the delay will be present.

Figure 24 – VCS Expressway SIP Configuration