



IP Video Telephony Configuration

This topic provides an overview of how IP Video Telephony was configured for Cisco IP Communications Release 5.1(1) testing. This topic does not include detailed installation and configuration instructions. Rather, it is intended to provide you with guidance and serve as a reference as you set up video devices in your IP telephony solution.

For additional information and guidelines for implementing Cisco IP Video Telephony, refer to the documents listed [Table 12-1](#). You can also refer to documentation provided by the vendors of Tandberg video endpoints and Polycom video endpoints.

Table 12-1 *IP Video Telephony Related Documentation*

| Document | Reference |
|--|--|
| <i>Cisco Unified CallManager System Guide</i> “Understanding Video Telephony” chapter | http://www.cisco.com/univercd/cc/td/doc/product/voice/c_callmg/5_0/sys_ad/5_0_2/ccmsys/index.htm |
| <i>IP Video Telephony Solution Reference Network Design (SRND) for Cisco Unified CallManager</i> | http://www.cisco.com/go/srnd |
| Cisco Unified Videoconferencing 3500 Series video conferencing products documentation | http://www.cisco.com/en/US/products/hw/video/ps1870/tsd_products_support_series_home.html |
| Cisco Unified Video Advantage documentation | http://www.cisco.com/en/US/products/sw/voicesw/ps5662/tsd_products_support_series_home.html |
| <i>Deploying Video Telephony</i> | http://cco/en/US/partner/about/ac123/ac114/ac173/Q3-04/tech_videotel.html (You must be a registered user of Cisco.com to access this URL) |

This topic includes the following sections:

- [IP Video Telephony Components and Topology, page 12-2](#)
- [Supported Call Types, page 12-4](#)
- [Call Routing, page 12-5](#)
- [Gatekeeper Configuration for IP Video Telephony, page 12-7](#)
- [Cisco Unified Videoconferencing 3540 MCU Conference Bridge Configuration for IP Video Telephony, page 12-9](#)
- [Cisco Unified Videoconferencing Gateway Configuration for Video PSTN Gateway, page 12-13](#)

- [Cisco Unified CallManager Configuration for IP Video Telephony, page 12-16](#)
- [Video Endpoints Configuration, page 12-26](#)

IP Video Telephony Components and Topology

The IP Video Telephony test deployment included the following components:

- Cisco Unified IP Phone 7985
- Cisco Unified Video Advantage
- Cisco Unified Videoconferencing 3521 with EMP
- Cisco Unified Videoconferencing 3526
- Cisco Unified Videoconferencing 3540 MC10A/MC10A MCU with EMP3
- Cisco Unified Videoconferencing 3540-GW2P
- Cisco Unified Videoconferencing 3545 MCU with EMP3
- Cisco Unified Videoconferencing 3545-GW2P
- Third-party SCCP endpoints
- Third-party H.323 endpoints
- SCCP/H.323 conference bridge

[Figure 12-1](#) shows how Cisco IP Video Telephony was deployed in Cisco IP Communications Release 5.1(1).

Figure 12-1 IP Video Telephony Topology

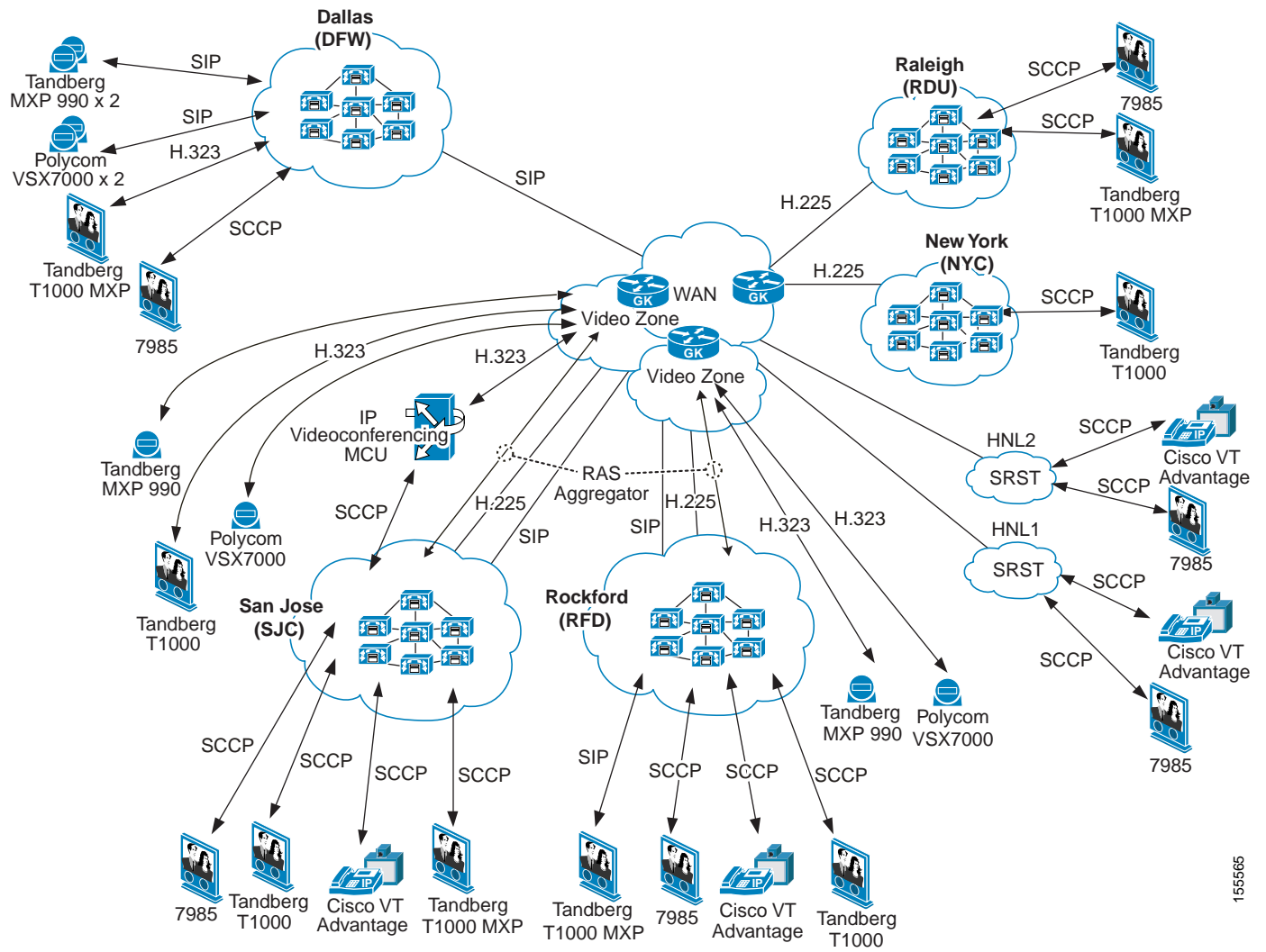
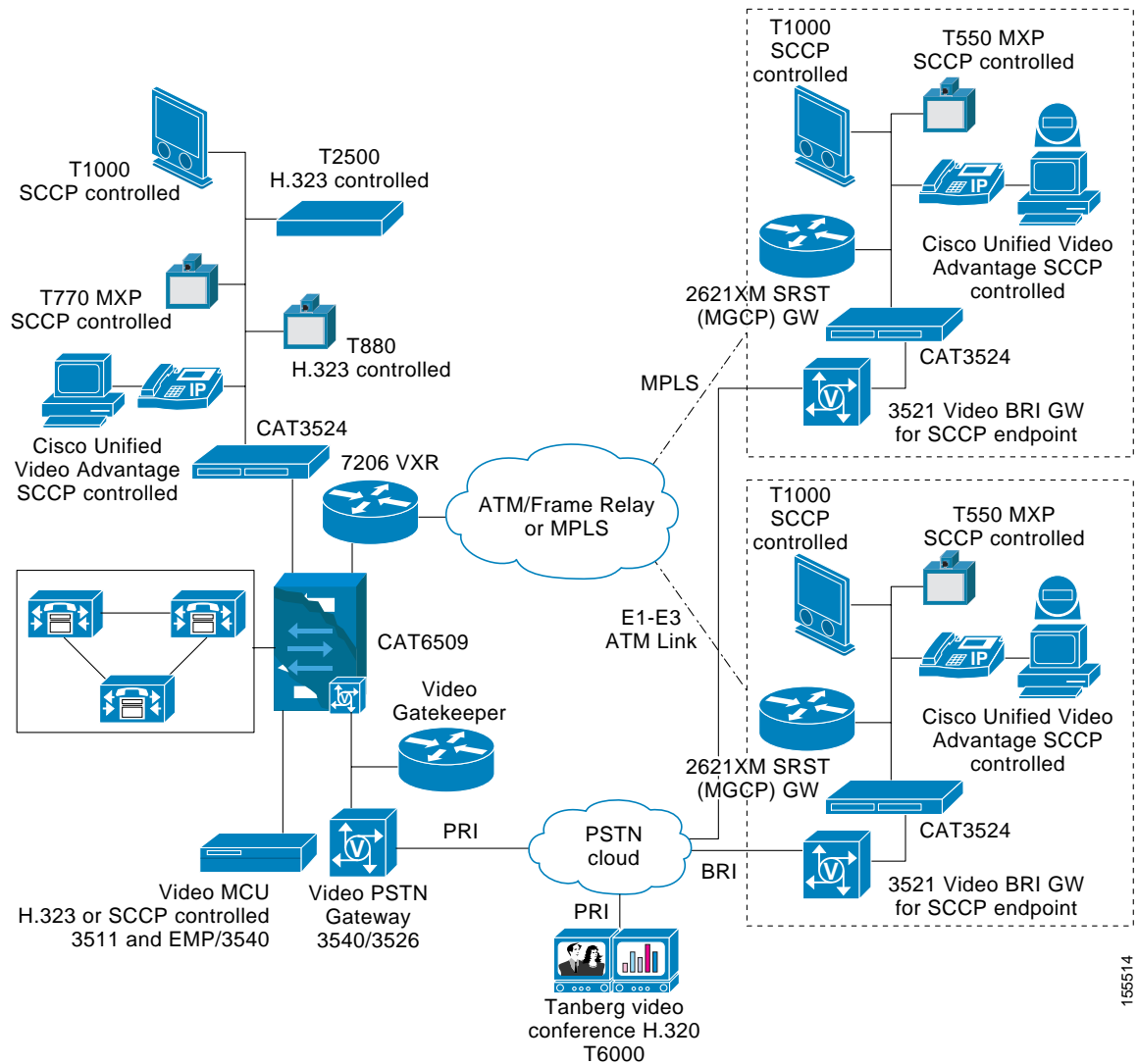


Figure 12-2 shows an example of a multi-site centralized video deployment that uses a Cisco IP Video Telephony PSTN gateway.

Figure 12-2 Multi-Site Centralized Video Deployment using Cisco IP Video Telephony PSTN Gateway



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Supported Call Types

The IP Video Telephony deployment supports video calls made between endpoints as shown in [Table 12-2](#). In this table,

- V = video and audio
- A = audio only

Table 12-2 IP Video Telephony Call Type Matrix

| | Third Party SCCP Endpoint | Third Party H.323 Endpoint | Cisco Unified IP Phone 7985 | SCCP Cisco Unified Video Advantage | SCCP Audio Only | SCCP MCU Conference | H.323 MCU Conference | PSTN Gateways | PSTN Cisco Unified Video-conferencing |
|------------------------------------|---------------------------|----------------------------|-----------------------------|------------------------------------|-----------------|---------------------|----------------------|---------------|---------------------------------------|
| Third Party SCCP Endpoint | V | V | V | V | A | V | V | A | V |
| Third Party H.323 Endpoint | V | V | V | V | A | V | V | A | V |
| SCCP Cisco Unified Video Advantage | V | V | V | V | A | V | V | A | V |
| SCCP Audio Only | A | A | A | A | A | A | A | A | A |
| SCCP MCU Conference | V | V | V | V | A | V | V | A | V |
| H.323 MCU Conference | V | V | V | V | A | V | V | A | V |
| PSTN ¹ Gateways | A | A | A | A | A | A | A | A | A |
| H.225 Trunk | V | V | V | V | A | V | V | A | V |
| SIP Trunk | V | V | V | V | A | V | V | A | A |

1. PSTN = public switched telephone network.



Note

Cisco Unified CallManager 5.1 supports security on the Cisco Unified IP Phone 7940G/7941G/7960G/7961G/7970G/7971G running SCCP. These phone models also have video capabilities when associated with Cisco Unified Video Advantage. If two secure video-capable endpoints call each other, the SCCP signaling and audio media path will be encrypted. Video will work, however signaling and the video media path to Cisco Unified Video Advantage will not be encrypted.

Call Routing

The IP Video Telephony deployment supports the following call routings. SCCP endpoints include SCCP Tandberg T1000, and Cisco Unified Video Advantage associated with Cisco IP Phone models 7940G/7960G/7970G. H.323 endpoints include H.323 Tandberg T1000 and Polycom VSX 7000.

- SCCP endpoint > Cisco Unified CallManager > SCCP endpoint
- H.323 endpoint > Gatekeeper > Cisco Unified CallManager > SCCP endpoint
- SCCP endpoint > Cisco Unified CallManager > Gatekeeper > H.323 endpoint

- H.323 endpoint > Gatekeeper > Cisco Unified CallManager > Gatekeeper > H.323 endpoint
- SCCP endpoint > Cisco Unified CallManager > Gatekeeper > Cisco Unified CallManager > Gatekeeper > H.323 endpoint
- SCCP endpoint > Cisco Unified CallManager > SIP trunk > Cisco Unified CallManager > Gatekeeper > H.323 endpoint
- SCCP endpoint > Cisco Unified CallManager > SIP trunk > Cisco Unified CallManager > SCCP endpoint
- H.323 endpoint > Gatekeeper > Cisco Unified CallManager > Gatekeeper > Cisco Unified CallManager > SCCP endpoint
- H.323 endpoint > Gatekeeper > Cisco Unified CallManager > Gatekeeper > Cisco Unified CallManager > Gatekeeper > H.323 endpoint
- H.323 endpoint > Gatekeeper > Cisco Unified CallManager > SIP Trunk > Cisco Unified CallManager > Gatekeeper > H.323 endpoint
- SCCP endpoint > Cisco Unified CallManager > Gatekeeper > Cisco Unified CallManager > SCCP endpoint
- SCCP adhoc or Meet-Me video conferences with these call flows:
 - SCCP endpoint > Cisco Unified CallManager > SCCP MCU
 - SCCP endpoint > Cisco Unified CallManager > Gatekeeper > Cisco Unified CallManager > SCCP MCU
 - SCCP endpoint > Cisco Unified CallManager > SIP trunk > Cisco Unified CallManager > SCCP MCU
 - H.323 endpoint > Gatekeeper > Cisco Unified CallManager > SCCP MCU
 - H.323 endpoint > Gatekeeper > Cisco Unified CallManager > Gatekeeper > Cisco Unified CallManager > SCCP MCU
 - H.323 endpoint > Gatekeeper > Cisco Unified CallManager > SIP trunk > Cisco Unified CallManager > SCCP MCU
- H.323 adhoc or scheduled video conferences with these call flows:
 - SCCP endpoint > Cisco Unified CallManager > H.323 MCU
 - SCCP endpoint > Cisco Unified CallManager > Gatekeeper > Cisco Unified CallManager > H.323 MCU
 - SCCP endpoint > Cisco Unified CallManager > SIP trunk > Cisco Unified CallManager > H.323 MCU
 - H.323 endpoint > Gatekeeper > Cisco Unified CallManager > H.323 MCU
 - H.323 endpoint > Gatekeeper > Cisco Unified CallManager > Gatekeeper > Cisco Unified CallManager > H.323 MCU
 - H.323 endpoint > Gatekeeper > Cisco Unified CallManager > SIP trunk > Cisco Unified CallManager > H.323 MCU
- PSTN call with these call flows:
 - SCCP endpoint > Cisco Unified CallManager > Cisco Unified Videoconferencing gateway > PSTN > Cisco Unified Videoconferencing gateway > Gatekeeper > Cisco Unified CallManager > SCCP endpoint

- SCCP endpoint > Cisco Unified CallManager > Cisco Unified Videoconferencing gateway > PSTN > Cisco Unified Videoconferencing gateway > Gatekeeper > Cisco Unified CallManager > H.323 endpoint
- SCCP endpoint > Cisco Unified CallManager > Cisco Unified Videoconferencing gateway > PSTN > H.320 endpoint
- H.323 endpoint > Gatekeeper > Cisco Unified CallManager > Cisco Unified Videoconferencing gateway > PSTN > H.320 endpoint
- H.323 endpoint > Gatekeeper > Cisco Unified CallManager > Cisco Unified Videoconferencing gateway > PSTN > Cisco Unified Videoconferencing gateway > Gatekeeper > Cisco Unified CallManager > SCCP endpoint
- H.320 endpoint > Cisco Unified Videoconferencing Gateway > Gatekeeper > Cisco Unified CallManager > SCCP or H.323 endpoint

The call routing for video calls functions just as the call routing for audio calls. For more information, refer to the “Understanding Video Telephony” chapter in *Cisco Unified CallManager System Guide*.

Cisco Unified CallManager supports the Dynamic H.323 Addressing call routing feature. This feature allows H.323 endpoints with DHCP addressing to remain registered to a Gatekeeper while Cisco Unified CallManager controls call routing. For more information, refer to the “Understanding Video Telephony” section in *Cisco Unified CallManager System Guide*. (Table 12-1 provides a link to this document.)

Gatekeeper Configuration for IP Video Telephony

The following sections provide a general description of how gatekeepers were configured for IP Video Telephony:

- [Gatekeeper Configuration Overview, page 12-7](#)
- [Gatekeeper Call Routing, page 12-9](#)

Gatekeeper Configuration Overview

Gatekeepers were configured in pairs to create gatekeeper clusters that provide gatekeeper-based Call Admission Control and call routing redundancy. The endpoints must provide alternate gatekeeper registration so that the endpoints can utilize both gatekeepers in the cluster.

Three local gatekeeper zones were created, one for Cisco Unified CallManager, one for Cisco Unified Videoconferencing MCUs, and one for the H.323 endpoints. Zones for Cisco Unified Videoconferencing MCUs and H.323 endpoints were configured with Invia and Outvia parameters. This configuration allows gatekeepers to route incoming and outgoing calls to and from these zones to Cisco Unified CallManager.

The Send Product ID And Version ID Cisco Unified CallManager service parameter must be set to True to allow the Dynamic H.323 Addressing feature to work and to allow the gatekeeper to route incoming or outgoing calls to the Cisco Unified CallManager in a given zone.

After the Cisco Unified CallManager service parameter Send Product ID And Version ID is set to True, the endpoint type of Cisco Unified CallManager H.225 trunks will change to H323-GW.

The following partial output from the Show Gatekeeper Endpoints command shows a single Cisco Unified CallManager H.225 trunk that is registered to a gatekeeper:

```
SJC-RFD-GK-1#show gatekeeper endpoints
GATEKEEPER ENDPOINT REGISTRATION
```

```

=====
CallSignalAddr  Port  RASSignalAddr  Port  Zone Name      Type  Flags
-----
0.9.10.5        33209 10.9.10.5      32783 SJC-MP-GK-1    H323-GW
H323-ID: SJC-RFD-MP-1-CM1_2_3

```

```
Voice Capacity Max.= Avail.= Current.= 0
```

Zone prefixes were configured in the Cisco Unified CallManager zone for intercluster call flows. This configuration is required for intercluster gatekeeper-controlled call routing. The other two zones do not require a local zone prefix to be configured. The endpoints and MCUs are directed to these zones by the Zone Subnet command in the gatekeeper configuration.

The Cisco Unified CallManager cluster uses the default technology prefix 1#* to register its gatekeeper-controlled intercluster trunks in the Cisco Unified CallManager zone. Then, Cisco Unified CallManager cluster registers a dedicated H.225 gatekeeper-controlled trunk to the MCU zone. The trunk and the MCU zone are used for invites initiated from the MCU Conference control web pages. Finally, the Cisco Unified CallManager cluster registers a special trunk called RasAggregator to the H.323 endpoints zone. This trunk is dynamically created and registered as a result of the H.323 endpoints device pool configuration in Cisco Unified CallManager.

The following partial output from the Show Gatekeeper Endpoints command shows a single Cisco Unified CallManager RasAggregator trunk that is registered to a gatekeeper:

```

SJC-RFD-GK-1#show gatekeeper endpoints
GATEKEEPER ENDPOINT REGISTRATION
=====
CallSignalAddr  Port  RASSignalAddr  Port  Zone Name      Type
-----
10.9.10.5        33206 10.9.10.5      32783 SJC-VIDEO-GK-1 H323-GW
H323-ID: RasAggregator_1#*_SJC-VIDEO-GK-1_3
Voice Capacity Max.= Avail.= Current.= 0

```

A single RasAggregator trunk was created for all gatekeeper-controlled H.323 endpoints that share the same gatekeeper zone and Cisco Unified CallManager group. All gatekeeper-controlled H.323 endpoints within the same gatekeeper endpoint zone must be configured as part of the same Cisco Unified CallManager group and device pool, otherwise Cisco Unified CallManager will register multiple RasAggregator trunks to a single gatekeeper endpoint zone. In this situation, some incoming calls from the H.323 endpoints will fail.



Note

This configuration prevents gatekeeper-controlled H.323 endpoints from being load balanced across multiple Cisco Unified CallManager servers by using device pools and Cisco Unified CallManager groups. One way to accomplish such load balancing is to create multiple gatekeeper zones dedicated to H.323 endpoints for each device pool or Cisco Unified CallManager group.

For an example of a video gatekeeper configuration, see the >>>>>>>

Gatekeeper Call Routing

Calls are routed through the gatekeeper as follows:

- Inbound call to Cisco Unified CallManager zone from other gatekeepers—Routed to the registered Cisco Unified CallManager Gatekeeper-controlled H.225 intercluster trunks within the Cisco Unified CallManager zone in a Round Robin distribution algorithm using the Default Technology prefix.
- Outbound call from Cisco Unified CallManager zone to other gatekeepers—Normal gatekeeper call routing using location request.
- Inbound Call to MCU zone from other gatekeepers—Routed out to the registered Cisco Unified CallManager gatekeeper-controlled H.225 intercluster trunks within the Cisco Unified CallManager zone in a round robin distribution algorithm using the Default Technology prefix. Then routed by Cisco Unified CallManager directly to the MCU via its H.323 gateway.
- Outbound call from MCU—Routed to Cisco Unified CallManager via the MCU dedicated H.225 gatekeeper-controlled trunks that are registered to the MCU zone.
- Outbound call from H.323 endpoints—Routed to Cisco Unified CallManager via RasAggregator H.225 trunk.
- Inbound call from other Gatekeepers to H.323 endpoints—Call is first routed out the Registered Cisco Unified CallManager gatekeeper-controlled H.225 trunk within the Cisco Unified CallManager zone in a round robin distribution algorithm using the Default Technology prefix. It is then routed back to the gatekeeper video endpoint zone via the RasAggregator trunk.
- Inbound call from MCUs to H.323 endpoints—Call is first routed to Cisco Unified CallManager via the MCU dedicated H.225 gatekeeper-controlled trunks that are registered to the MCU zone. It is then routed back to the Gatekeeper Video endpoint zone via the RasAggregator trunk.
- Inbound call from Cisco Unified Videoconferencing gateway—Call is routed to the registered Cisco Unified CallManager gatekeeper. The gatekeeper receives an admission request from the Cisco Unified Videoconferencing gateway, and the gatekeeper replies with an admission confirm to send the call to Cisco Unified CallManager via the RasAggregator trunk.

Cisco Unified Videoconferencing 3540 MCU Conference Bridge Configuration for IP Video Telephony

This section provides basic information about configuring the Cisco Unified Videoconferencing 3540 for IP video telephony.

For related information, refer to *Administrator's Guide for Cisco Unified Videoconferencing 3511 MCU and Cisco Unified Videoconferencing 3540 MCU Module Releases*, which are available at this URL:

http://www.cisco.com/en/US/products/hw/video/ps1870/prod_maintenance_guides_list.html

The Very Large Campus Clustering over the WAN deployment model consisted of these components:

- 3544 Cisco Unified Videoconferencing chassis
- Cisco Unified Videoconferencing 3544 System 100-port MCU module
- EMP3 board

In addition, these components were tested in the Large Multi-Site Centralized with SRST site model for EUEM:

- 3544 Cisco Unified Videoconferencing chassis
 - Cisco Unified Videoconferencing 3544 System 60-port MCU module
 - EMP3 board
- 3511 MCU with integrated EMP

The configuration of the 3511 is similar to the 3540 MCU configuration that this section describes.

Half of the Cisco Unified Videoconferencing-3540-MC10A MCU ports were configured to register as a SCCP Cisco video conference bridge (Cisco Unified Videoconferencing-35xx) device and were registered with Cisco Unified CallManager. The remaining ports were deployed as H.323 video conference resources and registered to the gatekeeper cluster in the MCU zone.

When deployed in a Cisco Unified CallManager SCCP environment, the primary function of the Cisco Unified Videoconferencing MCU is to provide media processing for conferences. In this capacity, the Cisco Unified Videoconferencing MCU negotiates parameters with the terminals participating in a conference, and it provides media processing. Cisco Unified CallManager manages the call flow. Terminals use Cisco Unified CallManager processes to initiate conferences, and Cisco Unified CallManager manages the allocation of Cisco Unified Videoconferencing MCU resources.

When deployed in an H.323 environment, the Cisco Unified Videoconferencing MCU manages its own resources and provides media processing. Calls are initiated using the processes that the Cisco Unified Videoconferencing MCU uses for H.323 terminals. In this scenario, you must configure Cisco Unified CallManager to communicate with an H.323 gatekeeper for inbound calls from the MCU. For outbound calls, you must configure in Cisco Unified CallManager an H.323 gateway with the MCU IP address as the device name. This arrangement allows SCCP terminals to participate in conferences that include other SCCP terminals, H.323 terminals, or terminals of both types.

The following tables show how the Cisco Unified Videoconferencing 3540 MCU was configured using the Cisco Unified Videoconferencing Administrator web page. Fields not shown in these tables were set to their default values.

- [Table 12-3](#)—IP/VC Board > Basics
- [Table 12-4](#)—IP/VC Board > Addressing
- [Table 12-5](#)—IP/VC MCU > Settings > Basics
- [Table 12-6](#)—IP/VC MCU > Protocols > H.323 Protocol Configuration
- [Table 12-7](#)—IP/VC MCU > IP/VC MCU > Protocols > H.323 Protocol Configuration > Advanced Gatekeeper Settings
- [Table 12-8](#)—IP/VC MCU > Protocols > SCCP Protocol Configuration

Table 12-3 Cisco Unified Videoconferencing MCU Configuration: IP/VC Board > Basics

| Field | Setting |
|------------------|--------------------------|
| Board name | MC10A |
| Location | <i>Appropriate value</i> |
| Serial number | <i>Appropriate value</i> |
| Hardware version | <i>Appropriate value</i> |
| Date/Time | <i>Appropriate value</i> |

Table 12-3 Cisco Unified Videoconferencing MCU Configuration: IP/VC Board > Basics

| Field | Setting |
|------------------|-------------------|
| Slot number | Appropriate value |
| Software version | 4.2.10 |

Table 12-4 Cisco Unified Videoconferencing MCU Configuration: IP/VC Board > Addressing

| Field | Setting |
|----------------------|------------------------|
| IP Address | Appropriate value |
| Subnet Mask | Appropriate value |
| Router IP | Appropriate value |
| DNS Suffix | XX.com |
| Preferred DNS server | Appropriate value |
| Alternate DNS server | Appropriate value |
| Port type | Ethernet-CSMA/CD |
| MAC Address | Appropriate value |
| Port settings | 100/Mbps / Full Duplex |
| Port status | 100/Mbps / Full Duplex |

Table 12-5 Cisco Unified Videoconferencing MCU Configuration: IP/VC MCU > Settings > Basics

| Field | Setting |
|----------------------|---------|
| MCU Mode | MCU |
| Number of SCCP ports | 30 |

Table 12-6 Cisco Unified Videoconferencing MCU Configuration: IP/VC MCU > Protocols > H.323 Protocol Configuration

| Field | Setting |
|-----------------------------------|------------------------------|
| Activate protocol settings | Checked |
| Description | H.323 Protocol Configuration |
| Registration Name | SJC-RFD-MCU-1 |
| Gatekeeper Address | 10.9.12.99 |
| Gatekeeper Port | 1719 |
| Strip zone prefix | Unchecked |
| Enable H.329 | Unchecked |
| Enable Fast Start | Unchecked |
| Enable generic audio capabilities | Unchecked |

Table 12-6 *Cisco Unified Videoconferencing MCU Configuration: IP/VC MCU > Protocols > H.323 Protocol Configuration (continued)*

| Field | Setting |
|-----------------------------|-----------|
| Enable alternate Gatekeeper | Unchecked |
| Enable H.245 tunneling | Unchecked |

Table 12-7 *Cisco Unified Videoconferencing MCU Configuration: IP/VC MCU > Protocols > H.323 Protocol Configuration > Advanced Gatekeeper Settings*

| Field | Setting |
|-----------------------|---------|
| MCU Registration Mode | MCU |



Note

The configuration shown in [Table 12-7](#) directly affects gatekeeper call routing. If MCU Registration Mode is not set to MCU and instead left at its default setting of Gateway, gatekeeper call routing may not function in the Very Large Campus Clustering over the WAN deployment model.

Table 12-8 *Cisco Unified Videoconferencing MCU Configuration: IP/VC MCU > Protocols > SCCP Protocol Configuration*

| Field | Setting |
|--|---------------------------|
| TFTP Servers: IP Address / Port | <i>Appropriate values</i> |
| CallManagers: IP Address / Port | <i>Appropriate values</i> |
| Perform MCU reset on CallManager Reset message | Checked |
| Local port base | 11000 |
| Priority | 24 |
| Registration: Retries | 3 |
| Initial timeout | 30 |
| Consequent timeout | 10 |
| Keep Alive: Retries | 3 |
| Timeout | 10 |
| Recovery mode | Not applicable |
| Change configuration locally | Unchecked |

To create the Cisco Unified CallManager dedicated H.323 service on the MCU, information was copied from the existing default service prefix 87 named Continuous Presence (MP). The only change made to this default service prefix was to change the prefix to 25. This prefix must be used when configuring Cisco Unified CallManager route patterns, as described in the [“Route Pattern Configuration for MCU Service”](#) section on page 12-25.

Cisco Unified Videoconferencing Gateway Configuration for Video PSTN Gateway

This section provides information about configuring a Cisco Unified Videoconferencing gateway for a video PSTN gateway.

For related information, refer to this URL:

<http://www.cisco.com/univercd/cc/td/doc/product/ipvc/ipvcgw/index.htm>

The following tables show how the 2 PRI port version of the Cisco Unified Videoconferencing 3544 System Gateway module was configured using the Cisco Unified Videoconferencing Administrator web page. Fields not shown in these tables were set to their default values.

- [Table 12-9](#)—IPVC/3540 GW > Board > Basics
- [Table 12-10](#)—IPVC/3540 GW > Board > Addressing
- [Table 12-11](#)—IPVC/3540 GW > Settings > Basics
- [Table 12-12](#)—IPVC/3540 GW > Settings > IP Connectivity
- [Table 12-13](#)—IPVC/3540 GW > Settings > Media Modes
- [Table 12-14](#)—IPVC/3540 GW > Settings > Bonding
- [Table 12-15](#)—IPVC/3540 GW > Services > Voice
- [Table 12-16](#)—IPVC/3540 GW > Services > Video
- [Table 12-17](#)—IPVC/3540 GW > PRI > Port 1 Basics
- [Table 12-18](#)—IPVC/3540 GW > PRI Port 1 Physical Interface

Table 12-9 *Cisco Unified Videoconferencing MCU Configuration: IPVC/3540 GW > Board > Basics*

| Field | Setting |
|------------------|--------------------------|
| Model number | IPVC-3540-GW2P |
| Location | <i>Appropriate value</i> |
| Serial number | <i>Appropriate value</i> |
| Hardware version | <i>Appropriate value</i> |
| Date/Time | <i>Appropriate value</i> |
| Slot number | <i>Appropriate value</i> |
| Software version | 4.0.40 |

Table 12-10 *Cisco Unified Videoconferencing MCU Configuration: IPVC/3540 GW > Board > Addressing*

| Field | Setting |
|---------------|--------------------------|
| IP Address | <i>Appropriate value</i> |
| Subnet Mask | <i>Appropriate value</i> |
| Router IP | <i>Appropriate value</i> |
| DNS server IP | <i>Appropriate value</i> |

Table 12-10 *Cisco Unified Videoconferencing MCU Configuration: IPVC/3540 GW > Board > Addressing (continued)*

| Field | Setting |
|-----------------|--------------------------|
| Device DNS name | <i>Appropriate value</i> |
| Port type | Ethernet-CSMA/CD |
| MAC address | <i>Appropriate value</i> |
| Port settings | 100/Mbps / Full Duplex |
| Port status | 100/Mbps / Full Duplex |

Table 12-11 *Cisco Unified Videoconferencing MCU Configuration: IPVC/3540 GW > Settings > Basics*

| Field | Setting |
|--------------------|--------------------------|
| Gateway Identifier | <i>Appropriate value</i> |

Table 12-12 *Cisco Unified Videoconferencing MCU Configuration: IPVC/3540 GW > Settings > IP Connectivity*

| Field | Setting |
|----------------------------|--------------------------|
| IP connectivity mode | Using gatekeeper |
| Specify gatekeeper address | Selected |
| Gatekeeper address | <i>Appropriate value</i> |
| Gatekeeper port | <i>Appropriate value</i> |
| Gateway registration mode | Version 2 |

Table 12-13 *Cisco Unified Videoconferencing MCU Configuration: PVC/3540 GW > Settings > Media Modes*

| Field | Setting |
|---------------|-----------|
| Enable G722 | Checked |
| Enable G722.1 | Unchecked |
| Enable G728 | Checked |
| Enable H263 | Checked |
| Enable H263+ | Unchecked |
| Enable H264 | Checked |
| Enable T120 | Checked |
| Enable FECC | Checked |

Table 12-14 *Cisco Unified Videoconferencing MCU Configuration: PVC/3540 GW > Settings > Bonding*

| Field | Setting |
|--|--------------------------|
| Enable bonding | Checked |
| Maximum B channels for a bonded call | <i>Appropriate value</i> |
| For bonded calls, allow downspeeding down to x calls | <i>Appropriate value</i> |

Table 12-15 *Cisco Unified Videoconferencing MCU Configuration: PVC/3540 GW > Services > Voice*

| Field | Setting |
|-------------|------------|
| Prefix | 9 |
| Description | Voice call |
| Call type | Voice |
| Bit rate | 64 |
| PRI port 1 | Enabled |
| PRI port 2 | Enabled |

Table 12-16 *Cisco Unified Videoconferencing MCU Configuration: PVC/3540 GW > Services > Video*

| Field | Setting |
|-------------|-------------------------|
| Prefix | 79 |
| Description | Video call bonding 6*64 |
| Call type | Voice |
| Bit rate | 384 |
| PRI port 1 | Enabled |
| PRI port 2 | Enabled |

Table 12-17 *Cisco Unified Videoconferencing MCU Configuration: PVC/3540 GW > PRI Port 1 > Basics*

| Field | Setting |
|--------------------------|----------------------------|
| Port enable | Checked |
| Post phones number range | 01917400000 to 01917400029 |
| Local area | 0191740 |
| Strip Local Area Code | Checked |

Table 12-18 Cisco Unified Videoconferencing MCU Configuration: PVC/3540 GW > PRI Port 1 > Physical Interface

| Field | Setting |
|--------------------|--------------------------|
| Interface | E1/T1 |
| Country | <i>Appropriate value</i> |
| Network access | <i>Appropriate value</i> |
| Signaling protocol | <i>Appropriate value</i> |

Cisco Unified CallManager Configuration for IP Video Telephony

The following sections provide an overview of how Cisco Unified CallManager was configured for IP Video telephony testing. For additional information about how Cisco Unified CallManager was configured for Cisco IP Communications Release 5.1(1) testing, see [Chapter 2, “Cisco Unified CallManager Configuration.”](#)

- [Cisco Unified CallManager Configuration Overview, page 12-17](#)
- [Region Configuration in Cisco Unified CallManager, page 12-17](#)
- [Video Deployment with RSVP, page 12-21](#)
- [Gatekeeper Configuration in Cisco Unified CallManager, page 12-23](#)
- [MCU Configuration in Cisco Unified CallManager, page 12-23](#)
- [Route Pattern Configuration for MCU Service, page 12-25](#)
- [Cisco Unified Videoconferencing PSTN Gateway Configuration for Cisco Unified CallManager, page 12-25](#)

Cisco Unified CallManager Configuration Overview

The following table provides an overview of how to configure Cisco Unified CallManager for IP Video telephony.

| | Procedure | Reference |
|--------|--|---|
| Step 1 | If you are not using a single Region for all call types, configure Regions. | <ul style="list-style-type: none"> Refer to the “Region Configuration” chapter in <i>Cisco Unified CallManager Administration Guide</i>. Refer to the “Call Admission Control” chapter in <i>Cisco Unified CallManager System Guide</i>. |
| Step 2 | If you use locations for call admission control, configure locations for video call bandwidth. | <ul style="list-style-type: none"> Refer to the “Location Configuration” chapter in <i>Cisco Unified CallManager Administration Guide</i>. Refer to the “Call Admission Control” chapter in <i>Cisco Unified CallManager System Guide</i>. |
| Step 3 | To use a Cisco video conference bridge, configure the appropriate conference bridge for your network. | <ul style="list-style-type: none"> Refer to the “Conference Bridge Configuration” chapter in <i>Cisco Unified CallManager Administration Guide</i>. |
| Step 4 | To configure a user to use the video conference bridge instead of other conference bridges, configure the media resource groups and media resource group lists for the user. | <ul style="list-style-type: none"> Refer to the “Media Resource Group Configuration” chapter in <i>Cisco Unified CallManager Administration Guide</i>. Refer to the “Media Resource Group List Configuration” chapter in <i>Cisco Unified CallManager Administration Guide</i>. |

Region Configuration in Cisco Unified CallManager

This section provides an overview of how regions were configured in the Very Large Campus Clustering over the WAN deployment model. These configurations were made in Cisco Unified CallManager Administration.

For additional information about regions, refer to *IP Video Telephony Solution Reference Network Design (SRND) for Cisco Unified CallManager*. ([Table 12-1](#) provides a link to this document.)

The total bitrate for the video bandwidth of the region should be set to accommodate the total bitrate of the video and audio RTP streams used in video calls.

[Table 12-19](#) shows the regions matrix that was created in Cisco Unified CallManager.

Table 12-19 *Regions Matrix*

| | Default | SIP | SJC-Local | Video | WAN |
|-----------|------------|------------|------------|------------|------------|
| Default | G.711/384 | G.711/None | G.711/384 | G.711/384 | G.711/384 |
| SIP | G.711/None | G.711/None | G.711/None | G.711/None | G.711/None |
| SJC-Local | G.711/384 | G.711/None | G.711/384 | G.711/384 | G.729/384 |
| Video | G.711/384 | G.711/None | G.711/384 | G.711/384 | G.711/384 |
| WAN | G.711/384 | G.711/None | G.711/384 | G.711/384 | G.711/384 |

The following devices were assigned to the regions shown:

- SJC-Local region—Includes all phones without video capabilities, CTI ports, voice mail ports, conference bridges, transcoders, and PSTN gateways without video capabilities.
- SIP region—Includes SIP trunks to Cisco Unified CallManager 4.(x).
- Video region—To provide the maximum level of interoperability and features, these video endpoints have been assigned to this region:
 - Cisco Unified Video Advantage associated with Cisco Unified IP Phone 7940G/7941G/7960G/7961G/ 7970G/7971G running SCCP.
 - Cisco Unified IP Phone 7985
 - Polycom H.323 video endpoints. (The Polycom VSX 7000 with firmware version 8.0.3 supports G.722, G.722.1, G.711, G.728, audio codecs.)
 - SCCP Tandberg T1000 video endpoints.
 - SCCP Tandberg MXP video endpoints.
 - H.323 Tandberg 990 MXP video endpoints
 - Cisco Unified Videoconferencing 3540 MCU SCCP Video Conference Bridge.
 - Cisco Unified Videoconferencing 3540 MCU H.323 Gateway.
- WAN region—Includes H.225 intercluster trunks and SIP trunks to other cluster.



Note For additional information about codecs support by endpoints, refer to the “Endpoints” section in *IP Video Telephony Solution Reference Network Design (SRND) for Cisco Unified CallManager*. ([Table 12-1](#) provides a link to this document.)

H.245 Capabilities Exchange with Intercluster Trunks

The codec specified for a region is the maximum codec that will be exchanged during an intercluster trunk call. For example, the Cisco Unified IP Phone 7960G supports G.729, G.711, and Cisco wideband audio codec. If audio codec between two regions is configured for G.711, Cisco Unified CallManager will advertise G.711 and G.729, not G.711 only. If audio codec between two regions is configured for G.729, Cisco Unified CallManager will advertise only G.729 because the phone does not support a lower bandwidth codec.

SIP Trunk Calls with Asymmetric Regions

This section provides an overview of two asymmetric regions scenarios for intercluster calls across SIP trunks.

Scenario 1—Device with an associated Cisco Unified Video Advantage in Region A calls a device in Region D through an intercluster trunk

In this scenario, a call proceeds as follows:

Region A – SJC Cisco Unified CallManager – Region B – SIP trunk – Region C – DFW Cisco Unified CallManager – Region D

The regions include the following devices:

- Region A (Video)—All video enabled phones, including Cisco Unified Video Advantage
- Region B (SJC-WAN)—All intercluster trunks
- Region C (DFW-WAN)—All intercluster trunks
- Region D (SJC-Local)—All devices without video capabilities

Table 12-20 shows the regions matrix for SJC.

Table 12-20 SJC Regions Matrix

| | Region A | Region B |
|----------|-----------|-----------|
| Region A | G.711/384 | G.711/384 |
| Region B | G.711/384 | G.729/384 |

Table 12-21 shows the regions matrix for DFW.

Table 12-21 DFW Regions Matrix

| | Region C | Region D |
|----------|-----------|-----------|
| Region C | G.729/384 | G.729/384 |
| Region D | G.729/384 | G.711/384 |

When a device with an associated Cisco Unified Video Advantage in Region A calls through an intercluster trunk in Region B, G.729 and G.711 codecs are sent from SJC to DFW during the capabilities exchange process.

The call will arrive at DFW through an intercluster trunk in Region C and will then be routed to a device in Region D. Only the G.729 codec will be sent from DFW to SJC during the capabilities exchange process.

After the capabilities exchange process completes, the call will connect using the G.729 codec.

Scenario 2—H.323 video endpoint with only G.711 capabilities in Region A calls a device in Region E through an SIP trunk

In this scenario, a call proceeds as follows:

Region A – SJC Cisco Unified CallManager – Region B – Transcoder – Region C – Intercluster trunk – Region D – DFW Cisco Unified CallManager – Region E

The regions include the following devices:

- Region A (Video)—All video enabled phones, including Cisco Unified Video Advantage
- Region B (SJC-Local)—All devices without video capabilities
- Region C (SJC-WAN)—All intercluster trunks
- Region D (DFW-WAN)—All intercluster trunks
- Region E (DFW-Local)—All devices without video capabilities

Table 12-22 shows the regions matrix for SJC.

Table 12-22 SJC Regions Matrix

| | Region A | Region B | Region C |
|----------|-----------|-----------|-----------|
| Region A | G.711/384 | G.711/384 | G.711/384 |
| Region B | G.711/384 | G.711/384 | G.729/384 |
| Region C | G.711/384 | G.729/384 | G.729/384 |

Table 12-23 shows the regions matrix for DFW.

Table 12-23 DFW Regions Matrix

| | Region D | Region E |
|----------|-----------|-----------|
| Region D | G.729/384 | G.729/384 |
| Region E | G.729/384 | G.711/384 |

When an H.323 video endpoint in Region A calls through an intercluster trunk in Region B, only the G.711 codec is sent from SJC to DFW during the capabilities exchange process.

The call will arrive at DFW through an intercluster trunk in Region C and will then be routed to a device in Region D. Only the G.729 codec will be sent from DFW to SJC during the capabilities exchange process.

After the capabilities exchange process completes, the call will connect using the G.729 codec.

The Cisco Unified CallManager at SJC will invoke a transcoder between the H.323 video device and the intercluster trunk. The transcoder will transcode the call between the G.729 and the G.711 codecs.

Transcoders and Call Transfer

This section provides an overview of a call-transfer scenario that involves a legacy transcoder.



Note

Cisco legacy transcoders (6608, CMM ACT, NM-HDV) currently do not support video pass-through. If a video call is sent through a transcoder, the call will become an audio-only call.

Before the call is transferred in this scenario, it proceeds as described for Scenario 2 in the [“SIP Trunk Calls with Asymmetric Regions”](#) section on page 12-19. That is, an H.323 video endpoint with only G.711 capabilities in Region A calls a device in Region E through an intercluster trunk.

After the call is established, it is transferred by the device in Region E to a local video endpoint in Region F. In this call-forward scenario, the call proceeds as follows:

Region A – SJC Cisco Unified CallManager – Region B – Transcoder – Region C – Intercluster trunk – Region D – transcoder – Region E – DFW Cisco Unified CallManager – Region F

The regions include the following devices:

- Region A (SJC-Video)—All video enabled phones, including Cisco Unified Video Advantage
- Region B (SJC-Local)—All devices without video capabilities
- Region C (SJC-WAN)—All intercluster trunks
- Region D (DFW-WAN)—All intercluster trunks
- Region E (DFW-Local)—All devices without video capabilities
- Region F (DFW-Video)—All video enabled phones, including Cisco Unified Video Advantage

Table 12-24 shows the regions matrix for SJC.

Table 12-24 SJC Regions Matrix

| | Region A | Region B | Region C |
|----------|-----------|-----------|-----------|
| Region A | G.711/384 | G.711/384 | G.711/384 |
| Region B | G.711/384 | G.711/384 | G.729/384 |
| Region C | G.711/384 | G.729/384 | G.729/384 |

Table 12-25 shows the regions matrix for DFW.

Table 12-25 DFW Regions Matrix

| | Region D | Region E | Region F |
|----------|-----------|-----------|-----------|
| Region D | G.729/384 | G.729/384 | G.711/384 |
| Region E | G.729/384 | G.711/384 | G.711/384 |
| Region F | G.711/384 | G.711/384 | G.711/384 |

If the H.323 video endpoint in SJC called directly to an H.323 video endpoint in DFW, a transcoder would not be invoked and video would be available for the call. However, in this scenario, a transcoder is invoked before the call is transferred. Therefore, video is not available after the call transferred.



Note

This transfer scenario applies to all calls transferred via Cisco Unity Automated Attendant and via Cisco IPCC Express.

Video Deployment with RSVP

You can use Cisco RSVP Agent to control video bandwidth. Such a deployment could be used in a situation where an audio device can use only G.711 and audio transcoding is necessary.

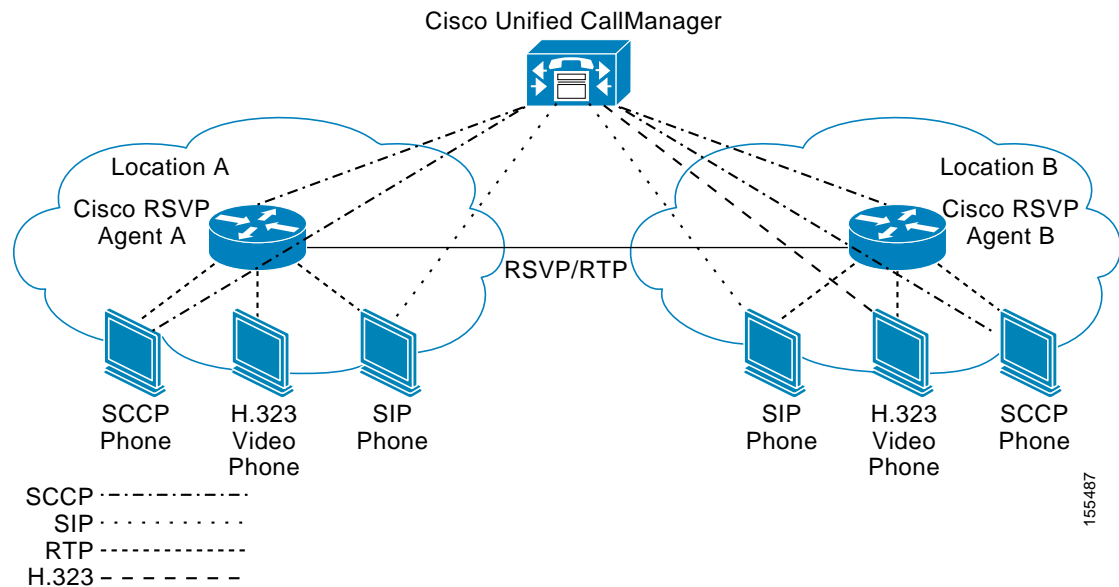
Cisco RSVP Agent is an IOS-based RSVP proxy with an SCCP interface and is the only method for performing audio transforming of a video call. Cisco RSVP Agent registers to Cisco Unified CallManager through SCCP as an MTP or transcoder. Video endpoints do not need to support RSVP, but they do need to be allocated a media resource group that contains a Cisco RSVP agent. When RSVP or audio transcoding is required, Cisco Unified CallManager inserts a Cisco RSVP Agent in the call to perform RSVP reservation or transcoding.

In addition to Cisco RSVP Agent, you can use Cisco Unified CallManager region and location settings to establish video bandwidth for a call. However, with the introduction of RSVP agent in video call, the following rule is required to establish the bandwidth for a video call:

```
end-to-end video region = minimum of (region (A,agentA), region(agentA,agentB),
region(agentB,B) and region(A,B) )
```

Figure 12-3 shows a basic video deployment using Cisco RSVP Agent.

Figure 12-3 Basic Video Deployment with Cisco RSVP Agent



The following configuration was used for the Cisco RSVP Agent. The codec pass-through allows the audio transcoding of a video call:

```
dspfarm profile 2 transcode
codec pass-through
codec gsmfr
codec g729ar8
codec g729abr8
codec g711ulaw
codec g711alaw
rsvp
maximum sessions 8
associate application SCCP
```

The following command confirms that the Cisco RSVP Agent is configured properly:

```
SCCP Admin State: UP
User Masked Codec list: None
Call Manager: 10.10.110.11, Port Number: 2000
Priority: 1, Version: 5.0.1, Identifier: 1
Transcoding Oper State: ACTIVE - Cause Code: NONE
Active Call Manager: 10.10.110.11, Port Number: 2000
TCP Link Status: CONNECTED, Profile Identifier: 2
Reported Max Streams: 16, Reported Max OOS Streams: 0
Supported Codec: pass-thru, Maximum Packetization Period: N/A
Supported Codec: gsmfr, Maximum Packetization Period: 20
Supported Codec: g729ar8, Maximum Packetization Period: 60
Supported Codec: g729abr8, Maximum Packetization Period: 60
```

```
Supported Codec: g711ulaw, Maximum Packetization Period: 30
Supported Codec: g711alaw, Maximum Packetization Period: 30
RSVP : ENABLED
```

Gatekeeper Configuration in Cisco Unified CallManager

This section describes how gatekeepers were configured for video endpoints in Cisco Unified CallManager Administration.

For additional information, refer to the “Gatekeeper Configuration” chapter in *Cisco Unified CallManager Administration Guide*.

To access the Cisco Unified CallManager Administration web pages for adding and configuring gatekeepers, choose **Device > Gatekeeper** from the Cisco Unified CallManager Administration application.

[Table 12-26](#) shows how one of the gatekeepers was configured in the Very Large Campus Clustering over the WAN deployment model.

Table 12-26 Gatekeeper Configuration

| Field | Setting |
|-----------------------------------|-----------------------------------|
| Host Name/IP Address | Host Name/IP Address ¹ |
| Description | SJC-RFD-GK-1 |
| Registration Request Time To Live | 60 |
| Registration Retry Timeout | 300 |
| Enable Device | Checked |

1. Only the primary gatekeeper address in a cluster is required.

MCU Configuration in Cisco Unified CallManager

The following sections describe how Cisco Unified CallManager was configured with the Cisco Unified Videoconferencing 3540 MCU. This MCU registers with Cisco Unified CallManager as a video conference bridge. It also functions as a stand-alone H.323 video conferencing resource.

- [SCCP Video Conference Bridge](#)
- [H.323 Video Conference Bridge](#)

For additional information, refer to the “Conference Bridges” chapter in *Cisco Unified CallManager System Guide*. ([Table 12-1](#) provides a link to this document.)

SCCP Video Conference Bridge

To access the Cisco Unified CallManager Administration web pages for adding and configuring video endpoints, choose **Media Resources > Conference Bridge** from the Cisco Unified CallManager Administration application.

[Table 12-27](#) shows how the video conference bridge was configured in the Very Large Campus Clustering over the WAN deployment model. Fields not shown in this table were set to their default values.

Table 12-27 MCU SCCP Video Conference Bridge Configuration

| Field | Setting |
|------------------------|--|
| Conference Bridge Type | Cisco Video Conference Bridge (Cisco Unified Videoconferencing-35xx) |
| MAC Address | 0003D60028CE |
| Description | VCB0003D60028CE |
| Device Pool | DP-Video |
| Location | SJC |

After this video conference bridge was added to Cisco Unified CallManager, it was added to a media resource group. This media resource group was then added to a media resource group list, which was assigned to all video-enabled phones.

For additional information, refer to the “Media Resource Management” chapter in *Cisco Unified CallManager System Guide*. ([Table 12-1](#) provides a link to this document.)

H.323 Video Conference Bridge

An H.323 gateway was created to allow Cisco Unified CallManager to route calls to the H.323 video conference bridge.

To access the Cisco Unified CallManager Administration web pages for adding and configuring gateways, choose **Device > Gateway** from the Cisco Unified CallManager Administration application. [Table 12-28](#) shows how the MCU H.323 gateway was configured in the Very Large Campus Clustering over the WAN deployment model. Fields not shown in this table were set to their default values.

Table 12-28 MCU H.323 Gateway Configuration

| Field | Setting |
|---|----------------|
| Device Name | 10.9.14.14 |
| Description | SJC-RFD-MCU-1 |
| Device Pool | DP-Video |
| Call Classification | OnNet |
| Media Resource Group List | MRGL_SJC_VIDEO |
| Location | SJC |
| AAR Group | SJC |
| Signaling Port | 2720 |
| Media Termination Point Required | Unchecked |
| Retry Video Call as Audio | Checked |
| Wait for Far End H.245 Terminal Capability Set | Checked |
| Multilevel Precedence and Preemption (MLPP) Information | Not applicable |
| Significant Digits | All |
| Calling Search Space | SJC_CSS |

Table 12-28 *MCU H.323 Gateway Configuration (continued)*

| Field | Setting |
|--|-----------|
| AAR Calling Search Space | SJC_CSS |
| Prefix DN | blank |
| Redirecting Number IE Delivery – Inbound | Unchecked |
| Enable Inbound FastStart | Unchecked |

Route Pattern Configuration for MCU Service

Cisco Unified CallManager routes outbound calls to the MCU via this H.323 gateway utilizing a route pattern. In Very Large Campus Clustering over the WAN deployment model this route pattern was 21XXX.



Note

The route pattern must begin with the same digits as the service prefix configured on the Cisco Unified Videoconferencing 3540 MCU.

Cisco Unified Videoconferencing PSTN Gateway Configuration for Cisco Unified CallManager

These sections describe how the PSTN gateway was configured for Cisco Unified Videoconferencing:

- [Video PSTN Gateway, page 12-25](#)
- [Route Pattern Configuration for Cisco Unified Videoconferencing PSTN Gateways, page 12-26](#)

Video PSTN Gateway

A Cisco Unified Videoconferencing gateway registers as a gateway on Cisco Unified CallManager, and it uses a specific signaling port. [Table 12-29](#) lists the signaling port for each type of MCU and gateway.



Note

If you want to use the 1720 standard value for the signaling port on Cisco Call Manager configuration, you can change this value for Cisco Unified Videoconferencing devices.

Table 12-29 *Cisco Unified Videoconferencing MCU and Gateway Signaling Ports*

| MCU and Gateway Type | Default Signaling Port |
|----------------------|------------------------|
| 3540 | 1820 |
| 3526 | 1820 |
| 3521 | 1920 |
| 3511 | 2720 |

**Note**

By default, Cisco Unified CallManager waits for an endpoint to send its capability before Cisco Unified CallManager sends a Terminal Capability Set. However, calls from Cisco Unified Video Advantage to an H.323 device require Cisco Unified Call Manager to send its capability immediately, without waiting for the destination endpoint to send its capability first. Otherwise, calls may fail due to capability negotiation issues.

To avoid this situation, uncheck the Wait for Far End H.245 Terminal Capability Set parameter in the configurations for Cisco Unified Video Conferencing and for H.323 clients.

Route Pattern Configuration for Cisco Unified Videoconferencing PSTN Gateways

Cisco Unified CallManager routes outbound calls to the Cisco Unified Videoconferencing PSTN gateway via a H.323 gateway utilizing a route pattern. In the Very Large Campus Clustering over the WAN deployment model this route pattern was 79XXX.

**Note**

The route pattern must begin with the same digits as the service prefix configured on the Cisco Unified Videoconferencing 3540 PSTN gateway

The Cisco Unified Videoconferencing gateway registers with a prefix followed by the #. Cisco Unified CallManager was configured with a route pattern that sends all outgoing video PSTN calls to the Cisco Unified Videoconferencing gateway and that inserts the # after the Video PSTN prefix. This route pattern is in a partition that can be reached only by video endpoints. Video endpoint will use the Cisco Unified Videoconferencing gateway for audio and video PSTN calls.

For example, assume that a user dials 79 as the PSTN prefix and that the required route pattern is 79.XXXXXXXXXX.

To create this route pattern, Called Party Transformation was applied with the following settings:

- Discard Digits: PreDot
- Prefix Digits (outgoing calls): 79#

In this case, when a user dials 790123456789, Cisco Unified CallManager sends an H.225 Setup message to the Cisco Unified Videoconferencing gateway with a called number of 79#0123456789.

Video Endpoints Configuration

The following sections describe how Cisco Unified CallManager was configured for Tandberg endpoints:

- [Phone Configuration for Tandberg SCCP Video Endpoints, page 12-27](#)
- [Phone Configuration for Gatekeeper-Controlled H.323 Video Endpoints, page 12-27](#)
- [Phone Configuration for Non-Gatekeeper-Controlled H.323 Video Endpoints, page 12-28](#)
- [Phone Configuration for SCCP Video Endpoints with Associated Cisco Unified Video Advantage, page 12-30](#)

For additional information about how Cisco Unified CallManager was configured for the Very Large Campus with Clustering over the WAN site model, see [Chapter 2, “Cisco Unified CallManager Configuration.”](#)

For additional information about adding and configuring phones and endpoints in Cisco Unified CallManager, refer to the “Cisco Unified IP Phone Configuration” chapter in *Cisco Unified CallManager Administration Guide*.

Phone Configuration for Tandberg SCCP Video Endpoints

To access the Cisco Unified CallManager Administration web pages for adding and configuring video endpoints, choose **Device > Phone** from the Cisco Unified CallManager Administration application.

TANDBERG Video Endpoint will appear as a phone device type in Cisco Unified CallManager Administration only if you first install the Tandberg Cisco Unified CallManager Plug-in on the publisher node in the cluster. For information about accessing and installing this patch, see your Tandberg documentation.

One Tandberg SCCP video endpoint was configured for the Very Large Campus Clustering over the WAN deployment model. [Table 12-30](#) shows how this device was configured. Field not shown in shown in this table were set to their default values.

Table 12-30 Phone Configuration for Tandberg SCCP Video Endpoint

| Field | Setting |
|----------------------|----------------|
| MAC Address | 00506000FAD6 |
| Description | SJC Tandberg-1 |
| Owner User ID | blank |
| Device Pool | DP-Video |
| Calling Search Space | SJC_CSS |

Phone Configuration for Gatekeeper-Controlled H.323 Video Endpoints

To access the Cisco Unified CallManager Administration web pages for adding and configuring video endpoints, choose **Device > Phone** from the Cisco Unified CallManager Administration application.

The video endpoints were entered in Cisco Unified CallManager Administration as an H.323 client device model type.

[Table 12-31](#) shows how one of these devices was configured. Fields not shown in this table were set to their default values.



Note

All gatekeeper-controlled H.323 endpoints that are assigned to the same device pool and Cisco Unified CallManager group must be configured with the same zone setting.

Table 12-31 Phone Configuration for Gatekeeper-Controlled H.323 Video Endpoint

| Field | Setting |
|----------------------|-------------------------------|
| Device Name | SJC-TBERG-2 |
| Description | SJC Tandberg-2 |
| Device Pool | DP-Video |
| Common Phone Profile | Standard Common Phone Profile |

Table 12-31 Phone Configuration for Gatekeeper-Controlled H.323 Video Endpoint (continued)

| Field | Setting |
|--|----------------------|
| Calling Search Space | SJC_CSS |
| AAR Calling Search Space | SJC_css |
| Media Resource Group List | MRGL_SJC_Video |
| Location | SJC |
| Signaling Port | 1720 |
| Owner User ID | 51002 |
| Retry Video Call as Audio | Checked |
| Wait for Far End H.245 Terminal Capability Set | Checked |
| Ignore Presentation Indicators (internal calls only) | Unchecked |
| Protocol Specific Information | |
| SRTP Allowed | Unchecked |
| MTP Preferred Originating Codec | <i>No applicable</i> |
| SUBSCRIBE Calling Search Space | <None> |
| Media Termination Point Required | Unchecked |
| Unattended Port | Unchecked |
| H.323 Information | |
| Outgoing Caller ID Pattern | blank |
| Calling Party Selection | Originator |
| Display IE Delivery | Checked |
| Redirecting Number IE Delivery Outbound | Unchecked |
| Redirecting Number IE Delivery Inbound | Unchecked |
| Gatekeeper Information | |
| Gatekeeper Name | 10.4.100.5 |
| E.164 | 2600as1 |
| Technology Prefix | 1#* |
| Zone | SJC-VIDEO-GK1 |
| MLPP Information | |
| MLPP Domain | <None> |
| Secure Shell Information | |
| Secure Shell User | blank |
| Secure Shell Password | blank |

Phone Configuration for Non-Gatekeeper-Controlled H.323 Video Endpoints

To access the Cisco Unified CallManager Administration web pages for adding and configuring video endpoints, choose **Device > Phone** from the Cisco Unified CallManager Administration application.

This video endpoints were entered in Cisco Unified CallManager Administration as an H.323 client device model type.

Table 12-32 shows how this device was configured. Fields not shown in this table were set to their default values.

Table 12-32 Phone Configuration for Non-Gatekeeper-Controlled H.323 Video Endpoint

| Field | Setting |
|--|---|
| Device Name | <i>IP address of the H.323 endpoint</i> |
| Description | SJC Tandberg-2 |
| Device Pool | DP-Video |
| Common Phone Profile | Standard Common Phone Profile |
| Calling Search Space | SJC_CSS |
| AAR Calling Search Space | SJC_css |
| Media Resource Group List | MRGL_SJC_Video |
| Location | SJC |
| Signaling Port | 1720 |
| Owner User ID | blank |
| Retry Video Call as Audio | Checked |
| Wait for Far End H.245 Terminal Capability Set | Checked |
| Ignore Presentation Indicators (internal calls only) | Unchecked |
| Protocol Specific Information | |
| SRTP Allowed | Unchecked |
| MTP Preferred Originating Codec | <i>No applicable</i> |
| SUBSCRIBE Calling Search Space | <None> |
| Media Termination Point Required | Unchecked |
| Unattended Port | Unchecked |
| H.323 Information | |
| Outgoing Caller ID Pattern | blank |
| Calling Party Selection | Originator |
| Display IE Delivery | Checked |
| Redirecting Number IE Delivery Outbound | Unchecked |
| Redirecting Number IE Delivery Inbound | Unchecked |
| Gatekeeper Information | |
| Gatekeeper Name | 10.4.100.5 |
| E.164 | 2600as1 |
| Technology Prefix | 1#* |
| Zone | SJC-VIDEO-GK1 |
| MLPP Information | |
| MLPP Domain | <None> |

Table 12-32 Phone Configuration for Non-Gatekeeper-Controlled H.323 Video Endpoint

| Field | Setting |
|---------------------------------|---------|
| Secure Shell Information | |
| Secure Shell User | blank |
| Secure Shell Password | blank |

Phone Configuration for SCCP Video Endpoints with Associated Cisco Unified Video Advantage

Cisco Unified Video Advantage clients were installed and configured for the Very Large Campus with Clustering over the WAN site model and for the Large SIP Site deployment model. These Cisco Unified Video Advantage clients were installed on a mix of phone models, including the Cisco IP Phone 7940G/7941G/7960G/7961G/7970G/7971G.



Note

Cisco Unified VT Advantage version 1.0(2) is supported only on SCCP phones.

For additional information about installing Cisco CT Advantage and configuring Video endpoints in Cisco Unified CallManager, refer to the following documents. ([Table 12-1](#) provides links to these documents.)

- “Understanding Video Telephony” chapter in *Cisco Unified CallManager System Guide*
- *Cisco Unified Video Advantage Administration Guide*

To configure a phone with an associated Cisco Unified Video Advantage, choose **Device > Phone** from Cisco Unified CallManager Administration.

[Table 12-33](#) shows how this device was configured. Fields not shown in this table were set to their default values.

Table 12-33 Phone Configuration for Non-Gatekeeper-Controlled H.323 Video Endpoint

| Field | Setting |
|--------------------|---------|
| Video Capabilities | Enabled |

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