



CHAPTER 1

Overview

Unified Communications deployments using Cisco Unified Communications Manager Session Management Edition (Unified CM Session Management Edition) are a variation of the multisite distributed call processing deployment model and are typically employed to interconnect large numbers of unified communications systems through a single front-end system, in this case the Unified CM Session Management Edition. This document discusses the relevant design considerations for deploying Unified CM Session Management Edition.

Unified CM Session Management Edition is essentially a Cisco Unified Communications Manager (Cisco Unified CM) cluster with trunk interfaces only and no IP endpoints. It enables aggregation of multiple unified communications systems, referred to as leaf systems.

Unified CM Session Management Edition deployments can be used to migrate a deployment of multiple PBXs and associated phones to a Cisco Unified CM cluster with IP phones and relatively few trunks. The Unified CM Session Management Edition cluster may start with a large number of trunks interconnecting third-party PBXs; and migrate over time to a Cisco Unified CM cluster deployment with thousands of IP phones.

This section contains the following information:

- [Unified CM Session Management Edition Basics, page 1-1](#)
- [Architecture Overview, page 1-4](#)
- [Trunk Type and Feature Recommendations for Multi-Cluster Deployments, page 1-7](#)
- [Unified CM Session Management Edition Components, page 1-10](#)
- [Centralized Applications, page 1-11](#)
- [Before you Begin, page 1-12](#)

Unified CM Session Management Edition Basics

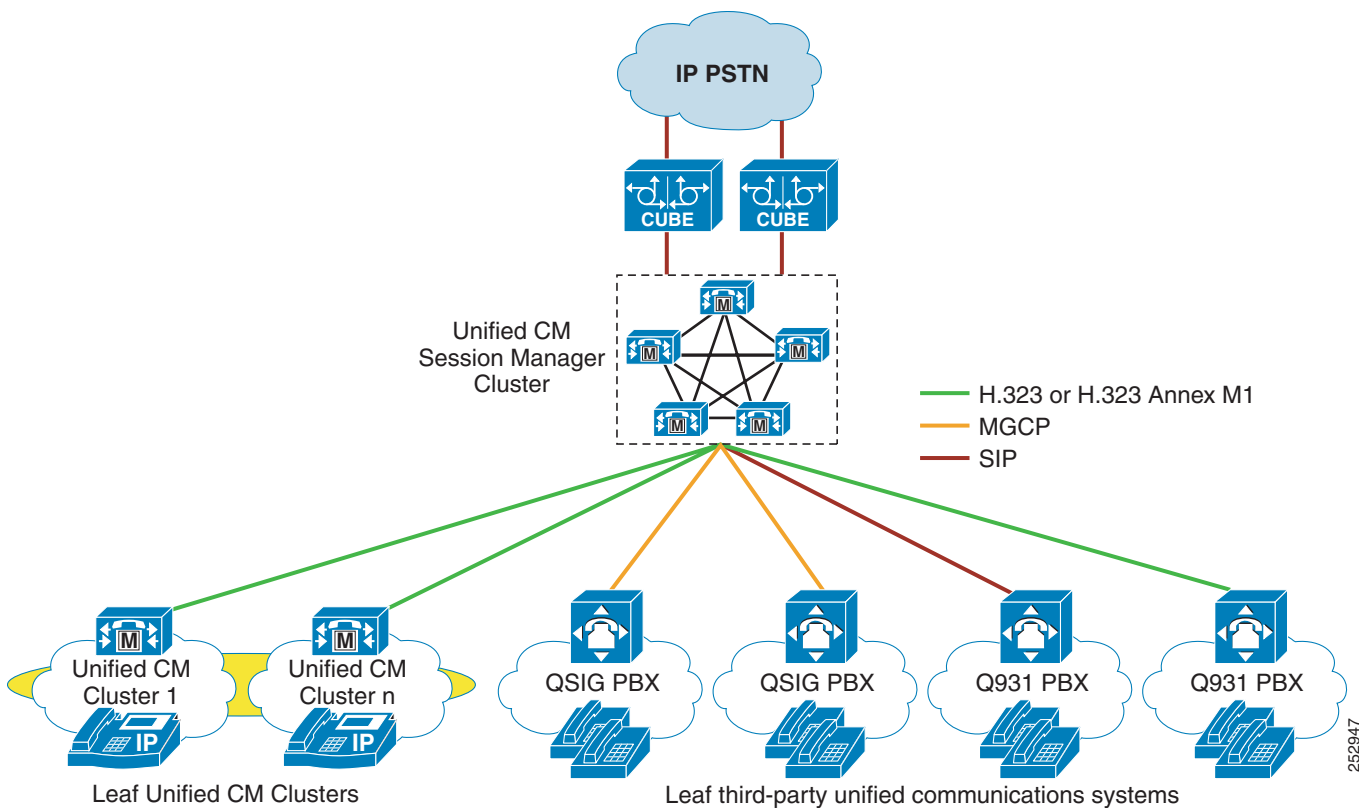
With Cisco Unified CM 8.0 and later releases, Unified CM Session Management Edition supports the following features:

- H.323 Annex M1 intercluster trunks
- SIP intercluster trunks
- SIP trunks
- H.323 trunks
- MGCP trunks

- Voice calls
- Video calls
- Encrypted calls
- Fax calls

Unified CM Session Management Edition may also be used to connect to third-party unified communications systems such as IP PSTN connections, PBXs, and centralized unified communications applications. (See [Figure 1-1](#).) However, as with any standard Cisco Unified CM cluster, third-party connections to Unified CM Session Management Edition should be system tested for interoperability prior to use in a production environment.

Figure 1-1 Multisite Deployment with Unified CM Session Management Edition



When to Deploy Unified CM Session Management Edition

Cisco recommends that you deploy Unified CM Session Management Edition if you want to take any of the following actions:

- Create and manage a centralized dial plan—Rather than configuring each unified communications system with a separate dial plan and trunks to connect to all other unified communications systems, Unified CM Session Management Edition allows you to configure the leaf unified communications

systems with a simplified dial plan and trunk(s) that point to the session management cluster. Unified CM Session Management Edition maintains the centralized dial plan and corresponding reachability information about all of the other unified communications systems.

- Provide centralized PSTN access—Unified CM Session Management Edition can be used to aggregate PSTN access to one (or more) centralized IP PSTN trunks. Centralized PSTN access is commonly combined with the reduction, or elimination, of branch-based PSTN circuits.
- Centralize applications—The deployment of a Unified CM Session Management Edition enables commonly used applications, such as conferencing or videoconferencing to connect directly to the session management cluster, which reduces the overhead of managing multiple trunks to leaf systems.
- Aggregate PBXs for migration to a unified communications system—Unified CM Session Management Edition provides an aggregation point for multiple PBXs as part of the migration from legacy PBXs to a Cisco Unified CM system.

Differences Between Unified CM Session Management Edition and Standard Cisco Unified CM Clusters

The Unified CM Session Management Edition software is exactly the same as Cisco Unified CM; however, the software has been enhanced significantly to satisfy the requirements and the constraints of this new deployment model. Unified CM Session Management Edition is designed to support a large number of trunk-to-trunk connections, and as such, it is subject to the following design considerations:

- Capacity—It is important to correctly size the Unified CM Session Management Edition cluster based on the expected BHCA traffic load between leaf unified communications systems (for example, Cisco Unified CM clusters and PBXs), to and from any centralized IP PSTN connections, and to any centralized applications. Work with your Cisco account Systems Engineer (SE) or Cisco partner to size your Unified CM Session Management Edition cluster correctly.
- Trunks—Where possible, avoid the use of static MTPs on Cisco Unified CM trunks (that is, "MTP required" must not be checked on the leaf or session management Cisco Unified CM SIP or H.323 trunks). MTP-less trunks offer more codec choices, support voice, video, and encryption, and do not anchor trunk calls to MTP resources. If SIP Early Offer is required by a third-party unified communications system, use the Delayed Offer to Early Offer feature with Cisco Unified Border Element (CUBE). Dynamically inserted MTPs can be used on trunks (for example, for DTMF translation from in-band to out-of-band).
- Unified CM versions —Both the Unified CM Session Management Edition and Cisco Unified CM leaf clusters should be deployed with Cisco Unified CM 7.1(2) or later release. Earlier versions of Cisco Unified CM can be deployed but might experience problems that can be resolved only by upgrading your cluster to a Cisco Unified CM 7.1(2) or later release.
- Interoperability—Though most vendors do conform to standards, differences can and do exist between protocol implementations from various vendors. As with any standard Cisco Unified CM cluster, Cisco strongly recommends that you conduct end-to-end system interoperability testing with any unverified third-party unified communications system before deploying the system in a production environment. The interoperability testing should verify call flows and features from Cisco and third-party leaf systems through the Unified CM Session Management Edition cluster. To

learn which third-party unified communications systems have been tested by the Cisco Interoperability team, go to www.cisco.com/go/interoperability and select the link for Cisco Unified Communications Manager - Session Management Edition.

- Load balancing for inbound and outbound calls—Configure trunks on the Unified CM Session Management Edition and leaf unified communications systems so that inbound and outbound calls are evenly distributed across the Cisco Unified CM servers within the session management cluster. For more information on load balancing for trunk calls, refer to the chapter on “[Cisco Unified Communications Manager Trunks](#)” section on page 2-1.
- Design assistance—Unified CM Session Management Edition designs should be reviewed by your Cisco SE in conjunction with the Cisco Unified CM Session Management Team. For more information of the Unified CM Session Management Edition design review process, Cisco partners and employees can refer to the documentation at the following URL:

http://docwiki.cisco.com/wiki/Unified_Communications_Manager_-_Session_Manager_Edition

Architecture Overview

Every Unified CM Session Management Edition design consists of a Unified CM Session Management Edition cluster and a number of leaf Cisco Unified CM clusters or leaf third-party unified communications systems. How these leaf systems connect to the Unified CM Session Management Edition cluster largely depends on the protocols and features that are required to be supported by each system. A Unified CM Session Management Edition cluster can support SIP, H.323 or MGCP Trunks. Each of these trunk protocols have their own merits, but as a general rule, with a Unified CM Session Management Edition cluster that runs Cisco Unified CM 8.5, Cisco recommends SIP trunks as they offer a greater set of features when compared to H.323 and MGCP trunks. The choice of trunk used on Unified CM Session Management Edition is often determined by the end system to which Unified CM Session Management Edition is connecting.

The following topics give a brief overview of Unified CM Session Management Edition trunk capabilities (the features and capabilities of Unified CM Session Management Edition trunk types are discussed in detail later in this document) and describes a number of Unified CM Session Management Edition trunking use cases:

- [SIP Trunks, page 1-4](#)
- [H.323 Intercluster Trunks, page 1-5](#)
- [H.323 Gateways, page 1-6](#)
- [MGCP Gateways, page 1-6](#)

SIP Trunks

SIP trunks can be used as intercluster trunks between Unified CM Session Management Edition and leaf Cisco Unified CM clusters, as trunks to third party unified communications systems, and SIP-based IP PSTNs. Today, SIP is arguably the most commonly chosen protocol when connecting to service providers and unified communications applications. Cisco Unified CM 8.5 provides the following SIP trunk and call routing related features and functionality, which provides highly available trunk connections with dynamic reachability detection and good load balancing capabilities :

- Up to 16 destination IP addresses per trunk, which can be run on all Cisco Unified CM nodes
- SIP OPTIONS Ping keepalives

- SIP Early Offer support for voice and video calls (insert MTP if needed)
- QSIG over SIP
- SIP Trunk Normalization and Transparency
- Route Lists that can be run on all Unified CM nodes

Because of the SIP trunk features that are available in this release, Cisco recommends SIP for new and existing trunk connections.

SIP Trunks for IP PSTN Connectivity

Service providers are increasingly offering IP PSTN connections to enterprise customers. Cisco strongly recommends that you connect to the IP PSTN via a CUBE as an enterprise edge session border controller (SBC). CUBE provides a controlled demarcation and security point for the following functions:

- Address and port translations (privacy and Layer 7 topology hiding)
- Media interworking (DTMF, fax, codec transcoding and transrating, volume/gain control, RTP-SRTP conversion)
- Call Admission Control (based on total calls, CPU, Memory, call arrival spike detection, or maximum calls per destination)
- Security (DoS attack protection, toll fraud protection, SIP malformed packet detection, and number of signaling and media encryption options)
- Compliance with the SP SIP trunk UNI specification

H.323 Intercluster Trunks

For intercluster trunk (ICT) connections between Unified CM Session Management Edition and Cisco Unified CM leaf clusters, where the leaf cluster is using a version of Cisco Unified CM prior to release 8.5, Cisco generally recommends H.323 non-gatekeeper-controlled ICTs as they offer additional features in comparison with SIP and MGCP trunks, such as up to three configurable destination addresses, support for H.323 Annex M1 (QSIG over H.323).

For ICT connections between Unified CM Session Management Edition and Cisco Unified CM leaf clusters using Cisco Unified CM release 8.5, H.323 non-gatekeeper-controlled ICTs offer the following additional functionality:

- Run on all Cisco Unified CM nodes
- Allow up to 16 destination IP addresses per trunk
- Run route lists on all Cisco Unified CM nodes



Note

H.323 gatekeeper-controlled ICTs do not support the capability to run on all Cisco Unified CM nodes or allow up to 16 destination IP addresses to be defined per trunk; however, they can support more than 16 destination IP addresses by using the gatekeeper to return destination addresses to the calling cluster.

H.323 Gateways

Use H.323 gateway trunks for non-gatekeeper-controlled connections to H.323-based third party Cisco Unified CM systems. H.323 gateway trunks support standard Cisco Unified CM groups and a single configurable destination IP address.

MGCP Gateways

MGCP gateways support standard Cisco Unified CM groups and a single configurable destination IP address. Prior to Cisco Unified CM 8.5, MGCP gateways were the only option for connecting a QSIG-based TDM PBX to Cisco Unified CM via an IOS gateway. Cisco Unified CM 8.5 now supports QSIG over SIP connections to IOS gateways. These standard Cisco Unified CM SIP trunks support all of the features described previously for SIP trunks. MGCP trunks are often preferred by customers because minimal configuration is required in the IOS gateway. For example, no dial peers need to be configured in the IOS gateway as the Q.931/QSIG signaling is backhauled to Cisco Unified CM. Although MGCP trunks reduce configuration overhead, they do not support the dynamic reachability detection and load balancing capabilities of SIP trunks.

Features New to Cisco Unified CM Release 8.5(1)

Cisco Unified CM 8.5 and later releases provide the following SIP trunk and call routing enhancements. These enhancements can be utilized in a Unified CM Session Management Edition deployment when the system components run this version of Cisco Unified CM.

- **SIP OPTIONS**—The SIP OPTIONS method allows a SIP trunk to track the status of remote destinations. By sending outgoing OPTIONS and checking the incoming response message, the SIP trunk knows whether remote peers are ready to receive a new request. The SIP trunk does not attempt to set up new calls to unreachable remote peers; this approach allows for quick failovers.
- **Up to 16 destination IP addresses per trunk**—For SIP trunks, Cisco Unified Communications Manager supports up to 16 IP addresses for each DNS SRV and up to 10 IP addresses for each DNS host name. The order of the IP addresses depends on the DNS response and may be identical in each DNS query. The OPTIONS request may go to a different set of remote destinations each time if a DNS SRV record (configured on the SIP trunk) resolves to more than 16 IP addresses, or if a host name (configured on the SIP trunk) resolves to more than 10 IP addresses. Thus, the status of a SIP trunk may change because of a change in the way a DNS query gets resolved, not because of any change in the status of any of the remote destinations.
- **SIP Early Offer support for voice and video calls (insert MTP if needed)**—To enhance interoperability with third party SIP devices, Cisco Unified CM now allows you to configure SIP trunks to enable early offer for outgoing voice and video calls without requiring MTP, when media capabilities and media port information of the calling endpoint is available. For outgoing call setup for an early offer trunk, Cisco Unified CM includes an SDP with the calling device media port, codecs, and IP address of the calling device (when available); inserts an MTP for early offer only when the media information for the caller is unavailable; and advertises multiple codecs when an MTP that supports multiple codecs gets inserted. The early offer feature enhancement in this release ensures that a higher percentage of outbound early offer SIP trunk calls get made without requiring an MTP, thus reducing the number of MTP resources needed and improving interoperability with third party PBXs.

- QSIG over SIP—Cisco Unified CM supports QSIG tunneling over a SIP trunk. QSIG tunneling supports the following features: Call Back, Call Completion, Call Diversion, Call Transfer, Identification Services, Message Waiting Indication, and Path Replacement.
- SIP trunk normalization and transparency—SIP transparency and normalization allow Cisco Unified CM to seamlessly interoperate with a variety of PBXs and service providers. Normalization allows you to modify incoming and outgoing SIP messages at a protocol level on their way through Cisco Unified CM. Transparency allows Cisco Unified CM to pass headers, parameters, and content bodies from one call leg to the other.
- Run route lists on all Cisco Unified CM nodes— The SIP trunk features available in the 8.5 release make SIP the preferred choice for new and existing trunk connections. The QSIG over SIP feature provides parity with H.323 intercluster trunks and can also be used to provide QSIG over SIP trunk connections to Cisco IOS gateways (and on to QSIG-based TDM PBXs). The ability to run on all Cisco Unified CM nodes and to handle up to 16 destination IP addresses improves outbound call distribution from Cisco Unified CM clusters and reduces the number of SIP trunks required between clusters and devices. SIP OPTIONS ping provides dynamic reachability detection for SIP trunk destinations, rather than per-call reachability determination. SIP Early Offer support for voice and video calls (insert MTP if needed) can reduce or eliminate the need to use MTPs and allows voice, video, and encrypted calls to be made over SIP Early Offer trunks.

For the complete list of new enhancements for SIP trunks for this release, refer to the *New and Changed for Cisco Unified Communications Manager 8.5(1)* document available at

http://www.cisco.com/en/US/products/sw/voicesw/ps556/prod_release_notes_list.html

Trunk Type and Feature Recommendations for Multi-Cluster Deployments

This section describes the following multi-cluster deployments:

- [Multiple Clusters That Run Cisco Unified CM 8.5, page 1-7](#)
- [Multiple Clusters That Run Cisco Unified CM 8.5 and Pre-8.5 Versions, page 1-8](#)

Multiple Clusters That Run Cisco Unified CM 8.5

When all Cisco Unified CM clusters run version 8.5, the following SIP trunk features and functionality should be used where applicable:

- SIP OPTIONS Ping
- Early offer support for voice and video (insert MTP if needed)
- Capability to run on all nodes
- Multiple destination IP addresses
- QSIG over SIP

Deploying these features reduces MTP usage, provides high availability, even call distribution, and dynamic SIP trunk failure detection. For inbound SIP trunk calls to Cisco Unified CM, Cisco recommends SIP Early Offer.

SIP ICTs support voice, video, and encrypted media between Cisco Unified CM clusters, as well as all of the features previously listed. If multiple trunks are used with route lists, enable the "Run on All Nodes" feature on the route list.

For SIP trunks to an IP PSTN, SIP Early Offer is typically required by the service provider and most providers support voice calls only; however, video calls and encrypted media are also supported. For inbound SIP trunk calls to Cisco Unified CM, Cisco recommends SIP Early Offer.

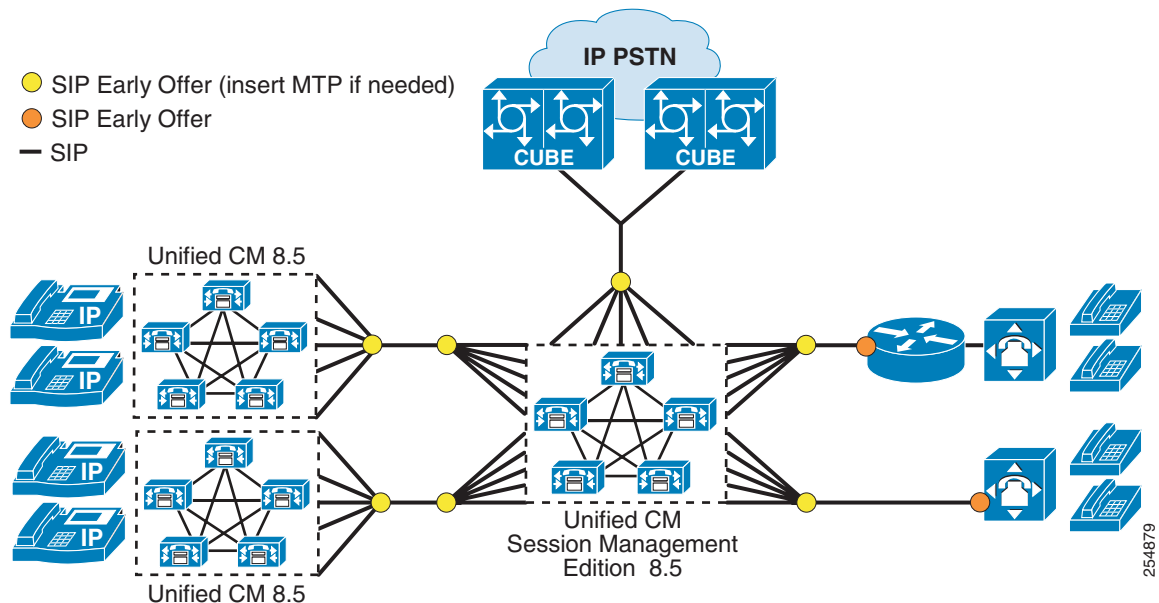
SIP trunks to third party Cisco Unified CM systems may support voice, video, and encrypted media. Check the capabilities of the end system to determine the SIP trunk features and media capabilities that it supports. For inbound SIP trunk calls to Cisco Unified CM, Cisco recommends SIP Early Offer.

**Note**

Be aware that SIP trunks on IOS gateways always send SIP Early Offer.

For SIP trunk connections to the IP PSTN and third party Cisco Unified CM systems, you can use Normalization and Transparency scripts to address SIP interoperability issues. Cisco also recommends the deployment of the CUBE on any IP PSTN SIP trunk connection from Cisco Unified CM to a voice service provider. [Figure 1-2](#) provides an example of multi-cluster deployments with Cisco Unified CM 8.5.

Figure 1-2 Multi-Cluster Deployments With Cisco Unified CM 8.5



Multiple Clusters That Run Cisco Unified CM 8.5 and Pre-8.5 Versions

This section describes the trunk types and features that you should use when Cisco Unified CM leaf clusters run release 8.5 and pre-8.5 versions of Cisco Unified CM.

When the leaf cluster runs an earlier version (pre-8.5) of Cisco Unified CM and voice, video and encryption are required, use H.323 Slow Start ICTs and Annex M1 (QSIG), if desired. Deploy one or more H.323 Slow Start ICTs that use standard Cisco Unified CM groups and up to three destination IP addresses. If multiple trunks are used with route lists, and to avoid the "route local" rule described in the ["Route Lists Run on All Active Unified CM Nodes"](#) section on page 2-13, ensure that the primary server in the route list's Cisco Unified CM group is not co-resident on the same node as an associated outbound H.323 trunk.

For leaf clusters that run Cisco Unified CM 8.5, use a SIP Delayed Offer ICT, enable the “Run on All Nodes” feature, and use multiple destination IP addresses and SIP OPTIONS Ping for high availability and even call distribution. If multiple trunks are used with route lists, enable the “Run on All Nodes” feature on the route list.

Using SIP Delayed Offer ICTs on Cisco Unified CM 8.5 leaf clusters and H.323 Slow Start ICTs on leaf clusters using earlier versions of Cisco Unified CM, allows voice, video and encrypted calls to be made between clusters and reduces the number of MTPs required (MTPs are only inserted when required for DTMF translation, transcoding and so on).

For Unified CM Session Management Edition SIP trunks to IP PSTN deployments, SIP Early Offer is typically required by the service provider and most providers support voice calls only. Use Early Offer support for voice and video (insert MTP if needed), or Delayed Offer on this SIP trunk and, if supported by the end system, SIP OPTIONS Ping, Run on All Nodes, and multiple destination IP addresses. For inbound SIP trunk calls to Cisco Unified CM, Cisco recommends SIP Early Offer.

Unified CM Session Management Edition SIP trunks to third party Cisco Unified CM systems may support voice, video and encrypted media. Use Early Offer support for voice and video (insert MTP if needed), or Delayed Offer on this SIP trunk. Check the capabilities of the end system to determine which other Cisco Unified CM SIP trunk features are available. For inbound SIP trunk calls to Cisco Unified CM, Cisco recommends SIP Early Offer.

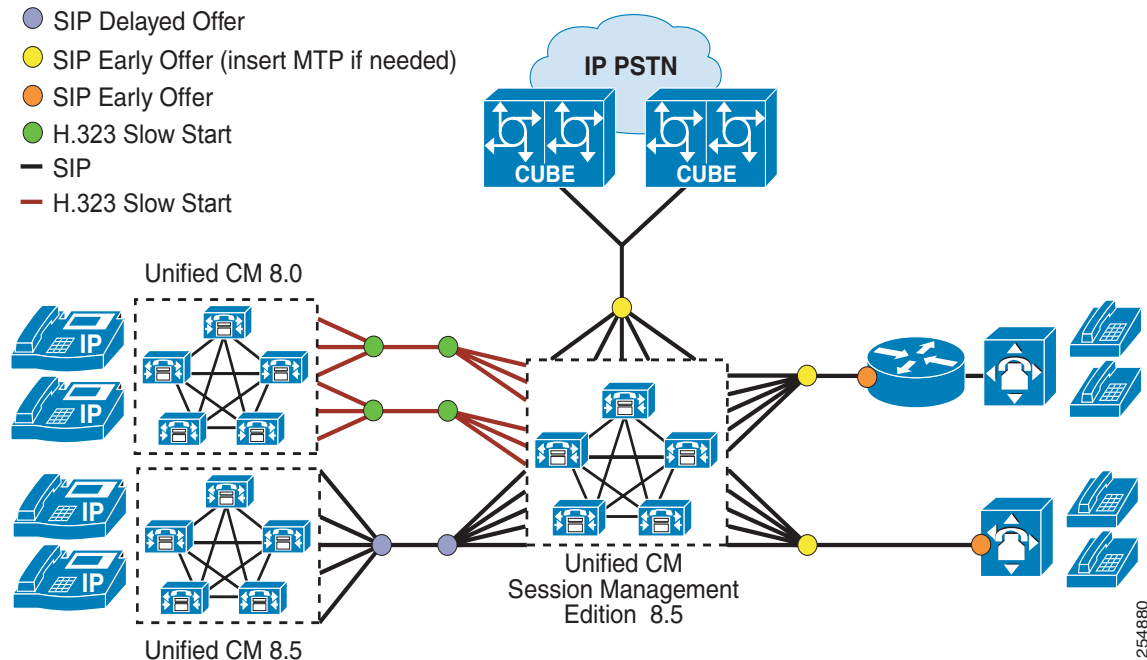
**Note**

Be aware that SIP trunks on IOS gateways always send SIP Early Offer.

For Unified CM Session Management Edition SIP trunk connections to the IP PSTN and third party Cisco Unified CM systems, you can use Normalization and Transparency scripts to address SIP interoperability issues. Cisco also recommends the deployment of the CUBE on any IP PSTN SIP trunk connection from Cisco Unified CM to a voice service provider.

[Figure 1-3](#) provides an example of multi-cluster deployments with Unified CM Session Management Edition 8.5 and Cisco Unified CM leaf clusters that run release 8.5 and pre-8.5 versions of Cisco Unified CM.

Figure 1-3 Multi-Cluster Deployments With Unified CM Session Management Edition 8.5, Cisco Unified CM 8.5 and Cisco Unified CM Pre-8.5



Unified CM Session Management Edition Components

This section describes the components of the Unified CM Session Management Edition and contains the following topics:

- [Unified CM Session Management Edition Clusters, page 1-10](#)
- [Unified CM Leaf Clusters, page 1-11](#)
- [Third Party Leaf Cisco Unified CM Systems, page 1-11](#)
- [IP PSTN Connectivity, page 1-11](#)

Unified CM Session Management Edition Clusters

Unified CM Session Management Edition cluster servers can be deployed on the following platforms:

- UCS B200 M1/M2 blade server
- UCS C210 M1/M2 2U rack server
- MCS 7845-I3 and HP DL380G6

As a general recommendation, Cisco Unified CM 8.5 or later should be deployed on the Unified CM Session Management Edition cluster, as these versions benefit from a number of trunk-specific feature enhancements. If you want to use an earlier version of Cisco Unified CM, Cisco recommends Cisco Unified CM 7.1(2) or later. Although you can deploy versions of Cisco Unified CM that are earlier than release 7.1(2), be aware that you may experience problems that can be resolved only by upgrading your cluster to a Cisco Unified CM 7.1(2) or later release.

Unified CM Leaf Clusters

Cisco recommends that you deploy Cisco Unified CM leaf clusters with a Cisco Unified CM 7.1(2) or later release. Earlier versions of Cisco Unified CM can be deployed but might experience problems that can be resolved only by upgrading your cluster to Cisco Unified CM 7.1(2) or later release.

Third Party Leaf Cisco Unified CM Systems

In most cases, the third party Cisco Unified CM system's capabilities (for example, support for SIP and/or H.323) determines the trunking protocol that is used by Unified CM Session Management Edition. When an application supports both SIP and H.323 protocols, use SIP trunks with Unified CM Session Management Edition 8.5 clusters. For Unified CM Session Management Edition clusters that run versions prior to version 8.5, use either SIP trunks or H.323-based gateways/trunks.

Where possible, if SIP is used, the third party Cisco Unified CM system should send SIP Early Offer over the SIP trunk to Unified CM Session Management Edition. If H.323 is used, the third party Cisco Unified CM system should send H.323 Fast Start over the H.323 trunk to Unified CM Session Management Edition.

IP PSTN Connectivity

CUBE is a key component in the enterprise network and is deployed at the edge of the enterprise network for IP PSTN connectivity to service providers. It provides a controlled demarcation and security network-to-network interface point. CUBE is a licensed Cisco IOS application that is available on the following platforms:

- Cisco Integrated Service Routers Generation 2 (ISR-G2s such as 29xx, 39xx)
- Cisco 1000 Series Aggregation Services Routers (ASRs)
- Cisco Integrated Service Routers (ISRs such as 28xx, 38xx)
- Cisco AS5000XM Media Gateways

Depending on the hardware platform, CUBE can provide session scalability from 4 to 16,000 concurrent voice calls. For scalability and redundancy, CUBE offers the following functionality:

- The ISR-G2 platforms offer Box-to-box redundancy with media preservation for stable active calls (CUBE 8.5 in Cisco IOS Release 15.1.2T)
- The ASR platforms offer box-to-box or inbox redundancy with media and signaling preservation (stateful failover) for stable active calls (Release 3.2)

Centralized Applications

The deployment of a Unified CM Session Management Edition enables commonly used applications, such as conferencing or videoconferencing to connect directly to the session management cluster, which reduces the overhead of managing multiple trunks to leaf systems.

Unified CM Session Management Edition supports the following applications:

- Unity, Unity Connection
- Meeting Place, Meeting Place Express

- SIP and H.323-based video conferencing systems
- Third Party voice mail systems
- Fax servers
- Cisco Unified Mobility

The following applications must connect to the leaf cluster:

- Unified Contact Centre, Unified Contact Centre Express
- Cisco Unified Presence Server
- Attendant Console
- Manager Assistant
- IP IVR
- Cisco Voice Portal

As a general rule, applications that rely only on numbering to establish calls can connect to Unified CM Session Management Edition. Applications that require additional interfaces or need to track device state, such as CTI, must connect to the leaf cluster.

If phones are deployed on the Unified CM Session Management Edition cluster, any standard Cisco Unified CM applications can be deployed to serve these phones.

Before you Begin

Mindy, reformat and possibly add info to this section to tie all of these loose ends together. Consider a checklist with these sections linked from the checklist.

Licensing

You can purchase Unified CM Session Management Edition session licenses as part of the hardware and software purchasing process, or as part of a Cisco Unified CM system upgrade. You can purchase additional session licenses and install them at any time after the initial Unified CM Session Management Edition installation.

For information about ordering Unified CM Session Management Edition licenses, refer to the *Cisco Unified Communications Solutions Ordering Guide* at the following URL:

http://www.cisco.com/web/partners/downloads/partner/WWChannels/technology/ipc/downloads/uc_solog_ucl_final.pdf

Unified CM Session Management Edition licenses are based on the number of sessions. The number of Sessions is the number of Concurrent calls that are supported through the Unified CM Session Management Edition system.

Interoperability Testing

Although most vendors do conform to standards, differences can and do exist between protocol implementations from various vendors. As with any standard Cisco Unified CM cluster, Cisco strongly recommends that you conduct end-to-end system interoperability testing with any unverified third party unified communications system before deploying the system in a production environment. The interoperability testing should verify call flows and features from Cisco and third party leaf systems

through the Cisco Unified CM cluster. To learn which third party unified communications systems have been tested by the Cisco Interoperability team, go to <http://www.cisco.com/go/interoperability> and select the link for Cisco Unified Communications Manager—Session Management Edition.

CUBE has also been tested for interoperability with different service providers for their SIP trunk offerings, as well as connectivity to different IP-PBXs. The detailed list and configuration guides are available at <http://www.cisco.com/go/interoperability>.

Make sure that you have a discussion about system testing with your Cisco account team. Cisco can provide a generic system test plan if you require it and Cisco advanced services can also be engaged to conduct onsite interoperability testing.

Installation Considerations

Unified CM Session Management Edition uses exactly the same software as Cisco Unified CM and supports a subset of Cisco Unified CM hardware platforms. The installation of an Unified CM Session Management Edition cluster is exactly the same as a Cisco Unified CM cluster.

Unified CM Session Management Edition Design Considerations

Unified CM Session Management Edition cluster designs are a variation on distributed call processing designs for Cisco Unified CM clusters, as described in the *Cisco Unified Communications System 8.x SRND* document. The key difference between Cisco Unified CM and Unified CM Session Management Edition cluster designs is that, with a Unified CM Session Management Edition design the focus is on trunks rather than endpoints, such as IP Phones. Use the design guidelines that are provided in the *Cisco Unified Communications System 8.x SRND* document for aspects of Unified CM Session Management Edition cluster design that are not covered in this document. You can access the *Cisco Unified Communications System 8.x SRND* document at the following URL:

http://www.cisco.com/en/US/partner/products/sw/voicesw/ps556/products_implementation_design_guides_list.html

All Unified CM Session Management Edition deployments use either one, or a combination of Cisco Unified CM trunks to interconnect leaf Cisco Unified CM systems, IP PSTN connections and Cisco Unified CM applications. The following chapter discusses Cisco Unified CM trunks in detail.

