



# CCVP CIPT2 Quick Reference

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## Introduction

As a final exam preparation tool, the *CCVP CIPT2 Quick Reference* provides a concise review of all objectives on the CIPT2 exam (642-456). This digital Short Cut provides you with detailed, critical information, highlighting only the key topics in cram-style format.

With this document as your guide, you will review topics on deploying a Cisco Unified Communications Manager in a multi-site deployment model. This fact-filled Quick Reference enables you to get all-important information at a glance, helping you focus your study on areas of weakness and to enhance memory retention of essential exam concepts.

# Multisite Deployments

This chapter reviews issues and solutions related to multisite deployments. It also covers the connections between these sites and dial plans for such configurations.

## Issues

This section identifies the issues that can arise in a multisite Cisco Unified Communications Manager deployment.

### Issues Overview

Here are the major issues that can result:

- **Quality of Service**—Jitter must be avoided.
- **Bandwidth**—Optimize the use of bandwidth to ensure correct amounts for voice and video.
- **Availability**—Fallback solutions need to be implemented.
- **Dial plan**—Overlapping directory numbers must be solved.
- **NAT and Security**—Translation results in visibility on the Internet; IPsec and VPN tunnels can be used between sites.

## Solutions

This section reviews the solutions to issues that occur in Cisco Unified Communications Manager multisite deployments.

## Quality of Service

To solve bandwidth and jitter (quality) issues, Quality of Service (QoS) is used. Traffic is identified and divided into classes, and then a QoS policy is applied per class. With QoS enabled, voice traffic is given absolute priority over all other traffic.

## Bandwidth

Bandwidth on the IP WAN can be conserved using the following techniques:

- Using low-bandwidth codecs
- Using RTP-header compression
- Deploying local annunciators or disabling remote annunciators
- Deploying local conference bridges
- Deploying local Media Termination Points (MTP)
- Deploying transcoders or mixed conference bridges
- Deploying local Music on Hold (MOH) servers
- Using multicast MOH from branch router flash
- Limiting the number of voice calls using call admission control (CAC)

## Availability

Solutions include the following:

- PSTN backup
- MGCP fallback
- Fallback for IP Phones
- Call Forward Unregistered (CFUR)
- Automated alternate routing (AAR) and Call Forward on No Bandwidth (CFNB)
- Mobility solutions

## Dial Plan

Solutions include the following:

- Access codes and site codes for intersite dialing of Multisite Connections
- Variable-length numbering plans
- Direct inward dialing (DID) ranges and E.164 addressing
- Different number presentation in ISDN (Type of Number [TON])
- Toll bypass, tail-end hop-off (TEHO), and PSTN backup

## NAT

To solve NAT security issues, use Cisco Unified Border Element as an application proxy.

## Multisite Connections

This section reviews the configuration of gateways and trunks in multisite environments.

### MGCP Gateway Implementation

First, add the MGCP gateway to Cisco Unified Communications Manager. Then, add MGCP endpoints to the gateway, and configure the endpoints. Next, configure the gateway. Cisco Unified Communications Manager stores an XML configuration file in its TFTP server. Use the commands **ccm-manager config server** and **ccm-manager config**.

### H.323 Gateway Implementation

In Cisco Unified Communications Manager, complete the following:

- Step 1.** Create the gateway and specify its IP address.
- Step 2.** Create a route group and put the gateway into it.
- Step 3.** Create a route list and put the route group into it.
- Step 4.** Create one or more route patterns pointing to the route list.

The Cisco IOS gateway configuration includes these steps:

- Step 1.** Configure the H.323 gateway, specifying its H.323 ID and the IP address to use.
- Step 2.** Configure one or more VoIP dial peers pointing to Cisco Unified Communications Manager.
- Step 3.** Configure one or more POTS dial peers pointing to the PSTN.

## Implementing SIP Trunks

To add a session initiation protocol (SIP) trunk in Cisco Unified Communications Manager, complete the following:

- Step 1.** Navigate to **Device > Trunk** and click **Add New**.
- Step 2.** In the **Trunk Type** drop-down list, choose **SIP Trunk** and click **Next**.
- Step 3.** In the **Trunk Configuration** window, enter a name and description for the SIP trunk and choose the device pool that should be used.
- Step 4.** In the **SIP Information** area of the **Trunk Configuration** window, enter the destination address.
- Step 5.** Choose a **SIP Trunk Security Profile** and a **SIP Profile**.

## Dial Plans for Multisites

This section reviews the implementation of a dial plan to support inbound and outbound PSTN dialing, site-code dialing, and tail-end hop-off.