



Implementing Cisco Unified Communications Manager Part 2

Length
5 days

Format
Lecture/lab

Track
CCVP

Version
6.0

Course Description

CIPT2 v6.0 prepares you to configure a Cisco Unified Communications Manager multisite solution. This course includes H.323 and MGCP gateway implementation, the use of a Cisco Unified Border Element, configuration of Survivable Remote Site Telephony (SRST), different mobility features, and voice security. This course includes lab activities in which you will apply a dial plan for a multisite environment, configure survivability for remote sites during WAN failure, and implement solutions to reduce bandwidth requirements in the IP WAN. You will also enable Call Admission Control (CAC), configure Automated Alternate Routing (AAR), and implement device mobility, extension mobility, Cisco Unified Mobility, and voice security.

Who Should Attend

CIPT2 is designed for Cisco customers and Channel Partners who deploy, install, and maintain Cisco IP Telephony solutions.

Recommended Prerequisites

- Working knowledge of converged voice and data networks
- Working knowledge of MGCP, SIP, and H.323 and their implementation on Cisco IOS gateways
- Ability to configure Cisco Unified Communications Manager in a single-site environment

Related Training

- Implementing Cisco Unified Communications Manager Part 1 (CIPT1)

CIPT2

Learning Objectives

After you complete this course, you will be able to:

- Describe multisite deployment issues and solutions, and describe and configure required dial plan elements .
- Implement call processing resiliency in remote sites using SRST, MGCP fallback, and Cisco Unified Communications Manager Express in SRST mode.
- Implement call admission control to prevent oversubscription of the IP WAN.
- Implement features and applications that are pertinent for multisite deployments.
- Secure a Cisco Unified Communications IP Telephony deployment.





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Course Outline

Module 1: Multisite Deployments

Lesson 1: Identifying Issues in a Multisite Deployment

- Multisite Deployment Issues Overview
- Quality Issues
- Bandwidth Issues
- Availability Issues
- Dial Plan Issues
- NAT and Security Issues

Lesson 2: Identifying Multisite Deployment Solutions

- Multisite Deployment Solution Overview
- QoS
- Solutions to Bandwidth Limitations
- Availability
- Dial Plan Solutions
- NAT and Security Solutions

Lesson 3: Implementing Multisite Connections

- Examining Multisite Connection Options
- MGCP Gateway Implementation Review
- H.323 Gateway Implementation Overview
- Cisco IOS H.323 Gateway Configuration
- H.323 Gateway Configuration
- Trunk Implementation Overview
- Implementing SIP Trunks
- Implementing Intercluster and H.225 Trunks

Lesson 4: Implementing a Dial Plan for Multisite Deployments

- Multisite Dial Plan Overview
- Implementing Site Codes for On-Net Calls
- Implementing PSTN Access
- Implementing Selective PSTN Breakout
- Implementing PSTN Backup for On-Net Intersite Calls
- Implementing Tail-End Hop-Off

Lab 1-1: Implementing Basic Multisite Connections

Lab 1-2: Implementing Multisite Dial Plans

Module 2: Centralized Call-Processing Redundancy

Lesson 1: Examining Remote-Site Redundancy Options

- Remote-Site Redundancy Overview
- Cisco Unified SRST Operation
- MGCP Fallback Operation
- Cisco Unified SRST Versions and Feature Support
- Dial Plan Requirements for MGCP Fallback and SRST Scenarios

Lesson 2: Implementing Cisco Unified SRST and MGCP Fallback

- MGCP Fallback and SRST Configuration Overview
- Cisco Unified SRST Configuration
- SRST Configuration on the Cisco IOS Gateway
- MGCP-Gateway-Fallback Configuration on the Cisco IOS Gateway
- Dial Plan Configuration for SRST Support
- MGCP Fallback and SRST Dial Plan Configuration in the Cisco IOS Gateway
- Telephony Features Supported By Cisco Unified SRST

Lesson 3: Implementing Cisco Unified Communications Manager Express in SRST Mode

- Overview
- Features
- General Configuration
- Configuring SRST Mode

Lab 2-1: Implementing Cisco Unified SRST and MGCP Fallback

Lab 2-2: Implementing Cisco Unified Communications Manager Express as SRST Fallback



Learning Solutions



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Module 3: Bandwidth Management and Call Admission Control

Lesson 1: Implementing Bandwidth Management

Bandwidth Management Overview
Codec Configuration
Local Conference Bridge Implementation
Transcoder Implementation
Multicast MOH from Branch Router Flash Implementation

Lesson 2: Implementing Call Admission Control

Call Admission Control Overview
Locations
RSVP-Enabled Locations
Automated Alternate Routing
H.323 Gatekeeper CAC

Lab 3-1: Implementing Bandwidth Management

Lab 3-2: Implementing Call Admission Control

Module 4: Features and Applications for Multisite Deployments

Lesson 1: Implementing Call Applications on Cisco IOS Gateways

Call Applications Overview
Cisco IOS Call Application Support
Call Application Example: Auto-Attendant Script
Call Application Configuration

Lesson 2: Implementing Device Mobility

Issues with Devices Roaming Between Sites
Device Mobility Overview
Configuration Elements
Operation
Configuration

Lab 4-1: Implementing Device Mobility

Lab 4-2: Implementing Extension Mobility

Lab 4-3: Implementing Cisco Unified Mobility



Learning Solutions



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Course Outline

Module 5: IP Telephony Security

Lesson 1: Understanding Cryptographic Fundamentals and PKI

- Cryptographic Services
- Symmetric vs. Asymmetric Encryption
- Hash-Based Message Authentication Codes
- Digital Signatures
- Public Key Infrastructure
- PKI Example: SSL on the Internet

Lesson 2: Understanding Native Security Features and PKI

- Security Features Overview
- IPsec Support
- Signed Phone Loads
- SIP Digest Authentication
- SIP Trunk Encryption
- PKI Overview
- Cisco Certificate Trust List
- PKI Topology with Secure SRST

Lesson 3: Implementing Security

- Enabling PKI-Based Security Features
- LSC Enrollment
- Signed and Encrypted Configuration Files
- Secure Signaling
- Secure Media Transmission Between Cisco IP Phones
- Secure Media Transmission to H.323 and MGCP Gateways
- Secure Conferencing

Lab 5-1: Implementing Security in Cisco Unified Communications Manager



Learning Solutions