



Preparation Implementing Cisco IP Telephony and Video, Part 1

This course focuses on providing the skills and knowledge necessary to implement Cisco Unified Communications (UC) solutions. It covers administration of end-user interfaces, telephony and mobility features, and Cisco UC solutions maintenance. A new type of lab called a Discovery lab is introduced. Discovery labs are a learning environment, embedded in the lessons, that enables students to learn about principles and technology in a more interactive, hands-on way. The course also contains Challenge labs. Challenge labs are labs where students test their knowledge gained through a lesson or multiple lessons.

Who Needs to Attend


Network Professionals who install, configure and manage Cisco collaboration solutions.

Course Certifications

This course is part of the following Certifications:


- CCNP Collaboration

Prerequisites

- Working knowledge of fundamental terms and concepts of computer networking, including LANs, WANs, switching and routing
 - Ability to configure and operate Cisco routers and switches and to enable VLANs and DHCP
 - Basics of digital interfaces, PSTN, and VoIP
 - Fundamental knowledge of converged voice and data networks
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Course Objectives

- How the CUCM administrative and service GUIs work
 - Activate, start, and stop CUCM services
 - Configure base CUCM components, such as date time groups, device pools, Call Manager groups, and other common elements
 - Add and delete phones manually and using auto registration
 - Add users, assign them capabilities, and associate them with phones
 - LDAP Integration including LDAP synchronization and LDAP authentication
 - LDAP attribute mapping and filters
 - Deploying IP Phone services
 - Configure phone features: Music on Hold (MOH) and phone services
 - Set up media resources to use for MOH and conferencing
 - Build a dial plan including route patterns, route lists, and route groups supporting both the NANP and variable-length dial plans
 - Deploy line/device Class of Service using partitions and calling search spaces for call blocking
 - Call hunting (hunt lists) and call queuing configuration
 - PSTN access methods, gateway vs. Cisco Unified Border Element (CUBE), and codec selection
 - PSTN access using MGCP gateways, including route lists, route groups, and digit manipulation
 - PSTN access using H.323 gateways including inbound and outbound dial peer selection
 - H.323 gateway digit manipulation, codec selection, and class of restriction
 - PSTN access using the CUBE and SIP trunks
 - CUBE and URI dialing
 - Media Resources including MOH, annunciators, and Media Termination Points (MTPs)
 - Hardware and software audio and video conference bridges
 - TelePresence MSE 800, TelePresence server, and TelePresence Conductor conferencing
 - Quality of Service (QoS) and bandwidth calculations
 - Best-Effort, IntServ, and DiffServ QoS models
 - QoS classification and marking
 - QoS policing and shaping
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Course Content

- **Cisco Unified Communications Manager Introduction**
 - Describing the Role of Cisco Unified Communications Manager, Its Architecture, and Its Deployment and Redundancy Options
 - Performing Initial Cisco Unified Communications Manager Configuration
 - Deploying Endpoints and Users
 - Deploying IP Phone Services
 - **Dial Plan Introduction and Implementation of Single-Site On-Cluster Calling**
 - Describing Dial Plan Components
 - Implementing Endpoint Addressing and Call Routing
 - Implementing Calling Privileges
 - Implementing Call Coverage in Cisco Unified Communications Manager
 - **Implementation of Single-Site Off-Cluster Calling**
 - Analyzing Single-Site Off-Cluster Calling Requirements
 - Implementing PSTN Access Using MGCP Gateways
 - Describing Cisco IOS H.323 and SIP Gateways
 - Implementing PSTN access Using H.323 Gateways
 - Describing the Cisco Unified Border Element
 - Using the Cisco Unified Border Element to Access the PSTN via a SIP Trunk
 - Using the Cisco Unified Border Element for URI Dialing
 - Describing Dial Plan Interworking
 - **Media Resources**
 - Describing Media Resources in Cisco Unified Communications Manager
 - Implementing Annunciators and MOH
 - Implementing MTPs
 - **Audio and Video Conferencing**
 - Describing Conferencing Devices and Their Functions
 - Implementing Conference Bridges
 - Describing Cisco TelePresence MSE 8000
 - Implementing Cisco TelePresence Server
 - Implementing Cisco TelePresence Conductor
 - **Quality of Service**
 - Analyzing Quality of Service Requirements
 - Describing QoS Components and their Functions
 - Implementing Marking
 - Implementing Policing and Shaping
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Labs

Discovery Labs:

Discovery Lab 1: Exploring Cisco IOS Gateway Functions - Explore the Inbound Dial-Peer Selection Process

Discovery Lab 2: Exploring Cisco IOS Gateway Functions - Explore the Outbound Dial-Peer Selection Process

Hardware Labs:

Lab 1: Remote Lab Access

Lab 2: Configuring Cisco Unified Communications Manager Initial Settings

Lab 3: Deploying Endpoints and Users

Lab 4: Implementing Endpoint Addressing and Call Routing

Lab 5: Implementing Calling Privileges

Lab 6: Implementing Call Coverage

Lab 7: Implementing PSTN Calling Using MGCP Gateways

Lab 8: Implementing PSTN Calling Using H.323 Gateways

Lab 9: Implementing PSTN Calling Using SIP Trunks through Cisco Unified Border Element

Lab 10: Using Cisco Unified Border Element for URI Dialing

Lab 11: Implementing Annunciators and MOH

Lab 12: Implementing Conference Bridges

Lab 13: Implementing Cisco TelePresence Conductor

