

**Module Title : CIPTV1 - Implementing Cisco IP Telephony and Video Part 1 V1.0**

**Duration : 5 days**

## What you will learn

CIPTV1 - Implementing Cisco IP Telephony & Video Part 1 V1.0 - This hands-on course prepares you for implementing a Cisco collaboration solution in a single-site environment. Focusing primarily on Cisco Unified Communications Manager v10.x, you will learn post-installation tasks, such as configuring users and associating them with phones, as well as more advanced topics such as dial plan design and configuration, single site on-cluster and off-cluster calling, Media Gateway Control Protocol (MGCP), H.323 call signaling, SIP trunks, audio and video conferencing, QoS, and media resources. In addition, you will use the Cisco Unified Border Element (CUBE) with SIP Trunks.

With the increasing importance of video and video conferencing, you will also learn the configuration tasks for audio and video conference bridges, Cisco TelePresence conferencing products (including TelePresence Server, TelePresence MCU, and TelePresence Conductor). The dial plan lessons are enhanced with URI dialing for endpoints and configuration, single site on-cluster and off-cluster calling, Media Gateway Control Protocol (MGCP), H.323 call signaling, SIP trunks, audio and video conferencing, QoS, and media resources. In addition, you will use the Cisco Unified Border Element (CUBE) with SIP Trunks.

With the increasing importance of video and video conferencing, you will also learn the configuration tasks for audio and video conference bridges, Cisco TelePresence conferencing products (including TelePresence Server, TelePresence MCU, and TelePresence Conductor). The dial plan lessons are enhanced with URI dialing for endpoints.

## Who Needs to Attend

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

## Course Certifications

This course is part of the following Certifications:

## Prerequisites

- CICA - Implementing Cisco Collaboration Devices
- CIVND2 - Implementing Cisco Video Network Devices V1.0

## 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

## Course Content

### 1. 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

## 2. 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

## 3. 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

## 4. Media Resources

- Describing Media Resources in Cisco Unified Communications Manager
- Implementing Annunciators and MOH
- Implementing MTPs

## 5. 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

## 6. Quality of Service

- Analyzing Quality of Service Requirements
- Describing QoS Components and their Functions
- Implementing Marking
- Implementing Policing and Shaping

## 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