CIPTV-Implementing Cisco IP Telephony and Video, Part 1

Duration: **On-Demand**

Overview:

This is a Professional-level self-study technical course in the curriculum for the CCNP Collaboration certification. It prepares the learner for implementing a Cisco Collaboration solution at a single-site environment.

This course focuses primarily on Cisco Unified Communication Manager Version 10.x, which is the call-routing and signalling component for the Cisco Collaboration solution. Lab exercises included in the course help learners to perform post installation tasks, configure Cisco Unified Communications Manager, implement MGCP and H.323 and, SIP trunks, and build dial plans to place single site on-cluster and off-cluster calling for voice and video. Learners will also implement media resources, audio and video conferencing, and describe QoS

Audience:

- Network professionals who install, configure, and manage Cisco Collaboration solutions

Pre-requisites:

To fully benefit from this course, you should first complete the following course or obtain the equivalent level of knowledge:

- CICD- Implementing Cisco Collaboration Devices
- CIVND2-Implementing Cisco Video Network Devices

Module 1: Cisco Unified Communications Manager Introduction

Lessons:

- 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

Module 2: Dial Plan Introduction and Implementation of Single Site On-Cluster Calling

Lessons:

- Describing Dial Plan Components
- Implementing Endpoint Addressing and Call Routing
- Implementing Calling Privileges
- Implementing Call Coverage in Cisco Unified Communications Manager

Module 3: Implementation of Single-Site Off-Cluster Calling

Lessons:

- Analysing 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 Dialling

Module 4: Media Resources

Lessons:

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

Course Completion:

After completing this course, students will be able to:

- 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 synchronisation and LDAP authentication
- LDAP attribute mapping and filters
- Deploying IP phone services
- Configure phone features: 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 dialling
- Media Resources including MOH, annunciators, and Media Termination Points (MTPs)

Module 5: Audio and Video Conferencing

Lessons:

- Describing Conferencing Devices and Their Functions
- Implementing Conference Bridges
- Describing Cisco TelePresence MSE 8000
- Implementing Cisco TelePresence Server
- Implementing Cisco TelePresence Conductor

Module 6: Quality of Service

Lessons:

- Analysing Quality of Service Requirements
- Describing QoS Components and their functions
- Implementing Marking
- Implementing Policing and Shaping

- 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