Implementing Cisco Collaboration Core Technologies (CLCOR)

Course Duration: 40Hours   **Course code: CLCOR**

1. Course Overview

The Implementing Cisco Collaboration Core Technologies (CLCOR) course will provide you with the knowledge and skills needed to implement and deploy core collaboration and networking technologies, including infrastructure and design, protocols, codecs, and endpoints,Call Control, QoS, and additional Cisco collaboration applications.

2. What you'll learn?

After completing this course, you should be able to:

- Describe the Cisco Collaboration solutions architecture.
- Compare the IP Phone signaling protocols of SIP, H323, and SCCP.
- Integrate and troubleshoot Cisco Unified Communications Manager with LDAP for user synchronization and user authentication.
- Implement Cisco Unified Communications Manager provisioning features.
- Describe the different codecs and how they are used to transform analog voice into digital streams.
- Describe a dial plan and explain call routing in Cisco Unified Communications Manager.
- Describe cloud calling using the on-premises local gateway option through Webex by Cisco.
- Configure calling privileges in Cisco Unified Communications Manager.
- Implement toll fraud prevention.
- Implement globalized call routing within a Cisco Unified Communications Manager cluster.

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- Implement and troubleshoot media resources in Cisco Unified Communications Manager.
- Implement and troubleshoot Webex Calling dial plan features in a hybrid environment.
- Deploy the Webex app in a Cisco Unified Communications Manager environment and migrate from Cisco Jabber to Webex app.
- Configure and troubleshoot Cisco Unity Connection integration.
- Configure and troubleshoot Cisco Unity Connection call handlers.
- Describe how MRA is used to allow endpoints to work from outside the company.
- Analyze traffic patterns and quality issues in converged IP networks supporting voice, video, and data traffic.
- Define QoS and its models.
- Implement classification and marking.
- Configure classification and marking options on Cisco Catalyst switches.

3. Target Audience

Engineers involved in the implementation and operation of a Cisco Collaboration solution.

4. Pre-Requisites

Attendees should meet the following prerequisites:

Basic understanding of networking technologies

Basic understanding of voice and video

5. Course content

1- Cisco Collaboration Solutions Architecture

- Overview of Cisco Collaboration Solutions Architecture
- Collaboration Deployment Models
- Licensing

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- High Availability
- Capacity Planning
- Security Requirements
- SIP OAuth on Cisco UCM
- Webex Control Hub Features
- Disaster Recovery
- Dial Plan
- IP Network Protocols
- Codecs

2- Call Signaling over IP Networks

- IP Phone Initialization
- Single Site On-Cluster Calling
- Single Site On-Cluster Call Setup Troubleshooting
- Describe the Call Setup and Teardown Process
- Describe SIP Call Signaling for Call Setup and Teardown
- Compare the Call Control Protocols
- Describe DTMF Signaling over IP Networks

3- Cisco Unified Communications Manager LDAP

- Overview of LDAP Integration in Cisco Unified Communications Manager
- Options for Importing and Synchronizing Cisco Unified Communications Manager Users in Webex
- LDAP Synchronization in Cisco Unified Communications Manager
- LDAP Authentication in Cisco Unified Communications Manager
- LDAP Attribute Mapping in Cisco Unified Communications Manager
- LDAP Considerations in Cisco Unified Communications Manager
- Access Control Groups in Cisco Unified Communications Manager
- Feature Group Templates in Cisco Unified Communications Manager
- Directory Connector

4- Cisco Unified Communications Manager Provisioning Features

- Overview of Provisioning Options
- Self-Provisioning Prerequisites
- Self-Provisioning Components
- Self-Provisioning Authentication Modes
- Batch-Provisioning Tools

5- Exploring Codecs

- Define Codecs
- Compare Audio Codecs
- Compare Video Codecs
- Evaluate the Effects of Encryption on Codecs
- Describing Call Admission Control

6- Dial Plans and Endpoint Addressing

- Dial Plan Overview
- Dal Plan Components and Their Functions
- EndPoint Addressing
- Overview of Cisco Unified Communications Manager Call Routing
- Cisco Unified Communications Manager Call-Routing Logic
- Address Methods and Digit Analysis
- Variable-Length Patterns, Overlapping Patterns and Urgent Priority

7- Cloud Calling Hybrid Local Gateway

- Overview of Webex Calling Using Local Gateway
- Routers Used for Local Gateway
- Scenarios Using Local Gateway

8- Calling Privileges in Cisco Unified Communications Manager

- Calling Privileges Overview
- Partitions and CSSs
- Partition and CSS Considerations
- Time-of-Day Routing
- Client Matter Codes and Forced Authorization Codes

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9- Toll Fraud Prevention

- Toll Fraud Prevention Overview
- Cisco Unified Communications Manager CoS for Toll Fraud Prevention

10- Globalized Call Routing

- Overview of Multisite Dial Plans
- Globalized Call Routing Overview
- Globalized Call Routing Number Formats
- Globalization of Localized Call Ingress
- Localization During Call Egress

11- Media Resources in Cisco Unified Communications Manager

- Media Resources Overview in Cisco Unified Communications Manager
- Media Resource Selection and Access Control in Cisco Unified Communications Manager
- Describing the Annunciator Feature
- Describing Unicast and Multicast MOH Characteristics
- Audio and Video Conference Bridge Devices
- Audio and Video Conference Bridge Integration Options
- MTP and Transcoder Devices
- MTP and Transcoder Requirements

12- Webex Calling Dial Plan Features

- Webex Control Hub Settings
- Router Configuration
- Testing and Troubleshooting Webex Calling

13- Deploy Webex App

- Migrating Cisco Jabber Users with Cisco Webex Cloud-Connected UC
- Migrating Cisco Jabber Clients to Cisco Webex

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14- Cisco Unity Connection Integration

- Overview of Cisco Unity Connection Integration
- SIP Integration
- Typcial Integration Mistakes
- Integration Considerations

15- Cisco Unity Connection Call Handlers

- Call Handler Overview
- System Call Handler
- Caller Input
- Operator Call Handler
- Goodbye Call Handler
- Directory Handler
- Interview Handler

16- Collaboration Edge Architecture

- Describe Collaboration Edge (Expressway -C and Expressway -E)
- Describe Supported Services for B2B Collaboration
- Describe Prerequisites for Mobile and Remote Access
- Describe Service Discovery
- Explore Expressway Settings for MRA
- Describe Cisco Unified Border Element (CUBE)
- Device Onboarding Using Activation Codes

17- Quality Issues in Converged Networks

- Converged Networks
- Available Bandwidth
- Components of Network Delay
- End-to-End Delay Calculations
- Jitter

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- Packet Loss

18- Defining QoS and QoS Models

- QoS Defined
- Network Traffic Indentification
- Divide Network Traffic into Classes and Define Policies
- QoS Mechanisms
- QoS Models
- DSCP Encoding
- Expedited Forwarding and Assured Forwarding
- Class Selector

19- Classification and Marking

- Classification and Marking Overview
- Classification and Marking at the Network and Data Link Layers
- QoS Service Class
- Cisco Marking Recommendations
- QoS Markings in a SIP Call Flow
- MQC Classification and Marking Options

20- Classification and Marking on Cisco Catalyst Switches

- Overview of QoS Trust Boundaries
- Ingress QoS Models
- QoS Marking and Table Maps
- Internal DSCP