



---

---

# Implementing and Operating Cisco Collaboration Core Technologies (CLCOR) V1.3

***WHERE GREAT TRAINING  
HAPPENS EVERYDAY!***



## Implementing and Operating Cisco Collaboration Core Technologies (CLCOR) V1.3

### Course Duration

5 Days

### Course Price

\$4,295.00

43 CLCs

### Methods of Delivery

In-Person ILT

Virtual ILT

Onsite ILT

### About this Class

The Implementing and Operating Cisco Collaboration Core Technologies (CLCOR) training provides you with the knowledge and skills to deploy, configure and troubleshoot core collaboration and networking technologies. Topics include infrastructure design protocols, codecs, and endpoints, Cisco Internetwork Operating System (IOS®) XE gateway and media resources, call control, and Quality of Service (QoS). This training also earns you 64 Continuing Education (CE) credits towards recertification. This training helps prepare you to take the 350-801 Implementing Cisco Collaboration Core Technologies (CLCOR) exam.

## Implementing and Operating Cisco Collaboration Core Technologies (CLCOR) V1.3

### How you will benefit

This class will help you:

- Integrate and troubleshoot Cisco Unified Communications Manager with Lightweight Directory Access Protocol (LDAP) for user synchronization and user authentication
- Implement Cisco Unified Communications Manager provisioning features
- Configure and troubleshoot collaboration endpoints
- Earn 64 credits toward recertification

### Why Attend with Current Technologies CLC

- Our Instructors are the top 10% rated by Cisco
- Our Lab has a dedicated 1 Gig Fiber Connection for our Labs
- Our Labs run up to Date Code for all our courses

### Who Should Attend

The job roles best suited to the material in this course are:

- Students preparing to take the CCNP Collaboration certification
- Network Administrators
- Network Engineers
- Systems Engineers

## Implementing and Operating Cisco Collaboration Core Technologies (CLCOR) V1.3

### Objectives

After taking this course, you should be able to:

- Describe the Cisco Collaboration solutions architecture
- Compare the IP Phone signaling protocols of Session Initiation Protocol (SIP), H323, Media Gateway Control Protocol (MGCP), and Skinny Client Control Protocol (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 analogue 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
- 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

## Implementing and Operating Cisco Collaboration Core Technologies (CLCOR) V1.3

### Cont. Objectives

After taking this course, you should be able to:

- Configure and troubleshoot Cisco Unity Connection integration
- Configure and troubleshoot Cisco Unity Connection call handlers
- Describe how Mobile Remote Access (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

## Implementing and Operating Cisco Collaboration Core Technologies (CLCOR) V1.3

### Course Outline

#### Module 1: Cisco Collaboration Solutions Architecture

- Module Topics
- Lesson 1: Overview of Cisco Collaboration Solutions Architecture
- Lesson 2: Collaboration Deployment Models
- Lesson 3: Licensing
- Lesson 4: High Availability
- Lesson 5: Capacity Planning
- Lesson 6: Security Requirements
- Lesson 7: Discovery 1: Using Certificates
- Lesson 8: Disaster Recovery
- Lesson 9: Dial Plan
- Lesson 10: IP Network Protocols
- Lesson 11: Discovery 2: Configure IP Network Protocol
- Lesson 12: Codecs
- Module Summary

#### Module 2: Call Signaling over IP Networks

- Module Topics
- Lesson 1: IP Phone Initialization
- Lesson 2: Single Site On-Cluster Calling
- Lesson 3: Single Site On-Cluster Call Setup Troubleshooting
- Lesson 4: Describe the Call Setup and Teardown Process
- Lesson 5: Describe SIP Call Signaling for Call Setup and Teardown
- Lesson 6: Discovery 3: Configure and Troubleshoot Collaboration Endpoints
- Lesson 7: Discovery 4: Troubleshoot Calling Issues
- Lesson 8: Compare the Call Control Protocols
- Lesson 9: Describe DTMF Signaling over IP Networks
- Module Summary

## Implementing and Operating Cisco Collaboration Core Technologies (CLCOR) V1.3

### Course Outline

#### Module 3: Cisco Unified Communications Manager LDAP

- Module Topics
- Lesson 1: Overview of LDAP Integration in Cisco Unified Communications Manager
- Lesson 2: LDAP Synchronization in Cisco Unified Communications Manager
- Lesson 3: LDAP Authentication in Cisco Unified Communications Manager
- Lesson 4: LDAP Attribute Mapping in Cisco Unified Communications Manager
- Lesson 5: LDAP Considerations in Cisco Unified Communications Manager
- Lesson 6: Access Control Groups in Cisco Unified Communications Manager
- Lesson 7: Feature Group Templates in Cisco Unified Communications Manager
- Lesson 8: Discovery 5: Configure and Troubleshoot LDAP Integration in Cisco Unified Communications
- Module Summary

#### Module 4: Cisco Unified Communications Manager Provisioning Features

- Module Topics
- Lesson 1: Overview of Provisioning Options
- Lesson 2: Discovery 6: Deploy an IP Phone Through Auto and Manual Registration
- Lesson 3: Self-Provisioning Prerequisites
- Lesson 4: Self-Provisioning Components
- Lesson 5: Self-Provisioning Authentication Modes
- Lesson 6: Discovery 7: Configure Self-Provisioning
- Lesson 7: Batch-Provisioning Tools
- Lesson 8: Discovery 8: Configure Batch Provisioning
- Module Summary

## Implementing and Operating Cisco Collaboration Core Technologies (CLCOR) V1.3

### Course Outline

#### Module 5: Exploring Codecs

- Module Topics
- Lesson 1: Define Codecs
- Lesson 2: Compare Audio Codecs
- Lesson 3: Compare Video Codecs
- Lesson 4: Evaluate the Effects of Encryption on Codecs
- Lesson 5: Discovery 9: Explore the Cisco VoIP Bandwidth Calculator
- Lesson 6: Describing Call Admission Control
- Lesson 7: Discovery 10: Configure Regions and Locations
- Module Summary

#### Module 6: Dial Plans and Endpoint Addressing

- Module Topics
- Lesson 1: Dial Plan Overview
- Lesson 2: Dial Plan Components and Their Functions
- Lesson 3: Endpoint Addressing
- Lesson 4: Overview of Cisco Unified Communications Manager Call Routing
- Lesson 5: Cisco Unified Communications Manager Call-Routing Logic
- Lesson 6: Address Methods and Digit Analysis
- Lesson 7: Variable-Length Patterns, Overlapping Patterns, and Urgent Priority
- Lesson 8: Discovery 11: Implement Endpoint Addressing and Call Routing
- Module Summary

#### Module 7: Cloud Calling Hybrid Local Gateway



## Implementing and Operating Cisco Collaboration Core Technologies (CLCOR) V1.3

### Course Outline

#### Module 8: Calling Privileges in Cisco Unified Communications Manager

- Module Topics
- Lesson 1: Calling Privileges Overview
- Lesson 2: Partitions and CSSs
- Lesson 3: Partition and CSS Considerations
- Lesson 4: Traditional-Approach Example: Single Site
- Lesson 5: Traditional-Approach Example: Multiple Sites
- Lesson 6: Time-of-Day Routing
- Lesson 7: Client Matter Codes and Forced Authorization Codes
- Lesson 8: Discovery 16: Configure Calling Privileges
- Module Summary

#### Module 9: Toll Fraud Prevention

- Module Topics
- Lesson 1: Toll Fraud Prevention Overview
- Lesson 2: Cisco Unified Communications Manager CoS for Toll Fraud Prevention
- Lesson 3: Discovery 17: Implement Toll Fraud Prevention on Cisco Unified Communications Manager
- Module Summary

#### Module 10: Globalized Call Routing

- Module Topics
- Lesson 1: Overview of Multisite Dial Plans
- Lesson 2: Globalized Call Routing Overview
- Lesson 3: Globalized Call Routing Number Formats
- Lesson 4: Globalization of Localized Call Ingress
- Lesson 5: Localization During Call Egress
- Module Summary

## Implementing and Operating Cisco Collaboration Core Technologies (CLCOR) V1.3

### Course Outline

#### Module 11: Media Resources in Cisco Unified Communications Manager

#### Module 12: Webex Calling Dial Plan Features

#### Module 13: Webex App

#### Module 14: Cisco Unity Connection Integration

- Module Topics
- Lesson 1: Overview of Cisco Unity Connection Integration
- Lesson 2: SIP Integration
- Lesson 3: Typical Integration Mistakes
- Lesson 4: Integration Considerations
- Lesson 5: Discovery 20: Configure the Integration Between Unity Connection and Cisco UCM
- Lesson 6: Discovery 21: Manage Unity Connection Users
- Module Summary

#### Module 15: Cisco Unity Connection Call Handlers

#### Module 16: Collaboration Edge Architecture

- Module Topics
- Lesson 1: Describe Collaboration Edge (Expressway-C, -E)
- Lesson 2: Describe Supported Services for B2B Collaboration
- Lesson 3: Describe Prerequisites for Mobile and Remote Access
- Lesson 4: Describe Service Discovery
- Lesson 5: Explore Expressway Settings for MRA
- Lesson 6: Describe Cisco Unified Border Element (CUBE)
- Module Summary

## Implementing and Operating Cisco Collaboration Core Technologies (CLCOR) V1.3

### Course Outline

#### Module 17: Quality Issues in Converged Networks

- Module Topics
- Lesson 1: Converged Networks
- Lesson 2: Available Bandwidth
- Lesson 3: Components of Network Delay
- Lesson 4: End-to-End Delay Calculations
- Lesson 5: Jitter
- Lesson 6: Packet Loss
- Module Summary

#### Module 18: QoS and QoS Models

- Module Topics
- Lesson 1: QoS Defined
- Lesson 2: Network Traffic Identification
- Lesson 3: Divide Network Traffic into Classes and Define Policies
- Lesson 4: QoS Mechanisms
- Lesson 5: QoS Models
- Lesson 6: DSCP Encoding
- Lesson 7: Expedited Forwarding and Assured Forwarding
- Lesson 8: AF Drop Probability
- Lesson 9: Class Selector
- Module Summary

#### Module 19: Classification and Marking

- Module Topics
- Lesson 1: Classification and Marking Overview
- Lesson 2: Classification and Marking at the Network and Data Link Layers
- Lesson 3: QoS Service Class
- Lesson 4: Cisco Marking Recommendations
- Lesson 5: QoS Markings in a SIP Call Flow
- Lesson 6: MQC Classification and Marking Options
- Lesson 7: Discovery 22: EAI: Configure QoS
- Module Summary

## Implementing and Operating Cisco Collaboration Core Technologies (CLCOR) V1.3

### Course Outline

#### Module 20: Classification and Marking on Cisco Catalyst Switches

- Module Topics
- Lesson 1: Campus Classification and Marking
- Lesson 2: Overview of QoS Trust Boundaries
- Lesson 3: Ingress QoS Models
- Lesson 4: QoS Marking and Table Maps
- Lesson 5: Internal DSCP
- Module Summary

## Implementing and Operating Cisco Collaboration Core Technologies (CLCOR) V1.3

### Lab Outline

- Using Certificates
- Configure IP Network Protocols
- Configure and Troubleshoot Collaboration Endpoints
- Troubleshoot Calling Issues
- Configure and Troubleshoot LDAP Integration in Cisco Unified Communications Manager
- Deploy an IP Phone Through Auto and Manual Registration
- Configure Self-Provisioning
- Configure Batch Provisioning
- Configure Regions and Locations
- Implement Endpoint Addressing and Call Routing
- Calling Using MGCP Gateways
- Configure and Troubleshoot Integrated Services Digital Network (ISDN) Primary Rate Interface (PRI)
- Examine Cisco IOS Gateway Inbound and Outbound Dial-Peer Functions
- Implement and Troubleshoot Digit Manipulation on a Cisco IOS Gateway

## Implementing and Operating Cisco Collaboration Core Technologies (CLCOR) V1.3

### Lab Outline Cont.

- Configure Calling Privileges
- Implement Toll Fraud Prevention on Cisco Unified Communications Manager (CUCM)
- Implement Globalized Call Routing
- Configure the Integration between Unity Connection and Cisco Unified CM
- Manage Unity Connection Users
- Configure QoS