THINQTANK® LEARNING

CISCO CERTIFIED NETWORK PROFESSIONAL COLLABORATION CORE

Implementing and Operating Cisco Collaboration Core Technologies (CLCOR)
Implementing Cisco Collaboration Applications (CLICA)

Our Learning Exclusive

- Custom exam prep software and materials
- Exam delivery in classroom with 98% success
- Course specific thinQtank® Learning publications to promote fun exciting learning
- Extended hours of training including immersive hands-on exercises
- WE DO NOT "TEACH THE TEST" We always deliver valuable hands-on experience
- Receive all reading material and study guides when you register
- All courses taught by CCIE expert instructors

Course Duration

- Nine days of instructor-led learning
- Five days CLCOR and four days CLICA
- 60% lecture, 40% hands-on labs

Prerequisites

- Working knowledge of computer networking, including LANs, WANs, switching, and routing
- Basic understanding of voice and video
- Basics of digital interfaces, PSTNs, and VoIP
- Fundamental knowledge of converged voice and data networks and Cisco Unified Communications Manager deployment

Target Audience

- Students preparing to take the CCNP Collaboration certification
- Network administrators
- Network engineers
- Systems engineers

Exam Information

- 350-801 – Implementing and Operating Cisco Collaboration Core Technologies (CLCOR)
- 300-815 – Implementing Cisco Collaboration Applications (CLICA)

Delivery Methods

- Instructor-Led Training
- Immersive Live-Online Training
- On-Site and Custom Delivery

Exclusive Tools and Learning Package

- Comprehensive video training package
- Virtual builds of all labs and hand-on learning objectives so learners can continue their hands on experience after the completion of the course
- Industry unique training course to achieve multiple certifications in one training camp

Course Overview

thinQtank® Learning is offering a unique nine-day training camp comprised of five days of instructor-led learning for Implementing and Operating Cisco Collaboration Core Technologies (CLCOR) and four days of instructor-led learning for Implementing Cisco Collaboration Applications (CLICA). As with all of our Cisco Training Experiences – exams are delivered in the classroom.

CLCOR

This portion of the course prepares students to gain the knowledge and skills needed to implement and deploy core collaboration and networking technologies, including infrastructure and design, protocols, codecs, and endpoints, Cisco Internetwork Operating System (IOS) XE gateway and media resources, call control, Quality of Service (QoS), and additional Cisco collaboration applications.

This course also helps students prepare you to take the exam, Implementing Cisco Collaboration Core Technologies (350-801 CLCOR), which is part of the new CCNP Collaboration, CCIE Collaboration, and the Cisco Certified Specialist – Collaboration Core certifications.

CLICA

This portion of the course provides students the knowledge and skills to streamline communication protocol, strengthen compliance measures, and enhance your communication systems and devices with knowledge about Single Sign-On (SSO), Cisco Unified IM & Presence, Cisco Unity Connection and Cisco Unity Express, and Application clients. Through a combination of lessons and hands-on training, you acquire the skills to maximize the agility of robust management systems.

Course Objectives CLCOR

This course will help students:

- 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

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Course Objectives CLCOR Continued

After taking this course, students 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
- Implement Public Switched Telephone Network (PSTN) access using MGCP gateways
- Implement a Cisco gateway for PSTN access
- 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
- Describe Cisco Instant Messaging and Presence, including call flows and protocols
- Describe and configure endpoints and commonly required features
- 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

Course Objectives CLICA

After taking this course, students should be able to:

- Configure Cisco Unity Connection integration
- Configure and troubleshoot Cisco Unity Connection and Cisco Unity Connection call handlers
- Configure and troubleshoot Cisco Unity Express
- Describe SSO for Cisco Unified Communications applications
- Describe how Cisco Jabber©_ and Cisco Unified Communications Manager IM and Presence are integrated with other Cisco or third-party applications
- Customize the Cisco Unified Communications Manager IM and Presence and Cisco Jabber functionality
- Configure and troubleshoot chat rooms and message archiving
- Troubleshoot Cisco Jabber and Cisco Unified Communications Manager IM and Presence
- Integrate Cisco Unified Attendant Console Advanced with Cisco Unified Communications Manager and Cisco Unified
- Communications Manager IM & Presence server
- Configure call recording and monitoring

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CLCOR Course Modules

1

- Describing the Cisco Collaboration Solutions Architecture
  - Overview of Cisco Collaboration Solutions Architecture
  - Collaboration Deployment Models
  - Licensing
  - High Availability
  - Capacity Planning
  - Security Requirements
  - Discovery 1: Using Certificates
  - Disaster Recovery
  - Dial Plan
  - IP Network Protocols
  - Discovery 2: Configure IP Network Protocols
  - Codecs

2

- Exploring 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
  - Discovery 3: Configure and Troubleshoot Collaboration Endpoints
  - Discovery 4: Troubleshoot Calling Issues
  - Compare the Call Control Protocols
  - Describe DTMF Signaling over IP Networks

3

- Integrating Cisco Unified Communications Manager LDAP
  - Overview of LDAP Integration in Cisco Unified Communications Manager
  - 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
  - Discovery 5: Configure and Troubleshoot LDAP Integration in Cisco Unified Communications

4

- Implementing Cisco Unified Communications Manager Provisioning Features
  - Overview of Provisioning Options
  - Discovery 6: Deploy an IP Phone Through Auto and Manual Registration
  - Self-Provisioning Prerequisites
  - Self-Provisioning Components
  - Self-Provisioning Authentication Modes
  - Discovery 7: Configure Self-Provisioning
  - Batch-Provisioning Tools
  - Discovery 8: Configure Batch Provisioning

5

- Exploring Codecs
  - Define Codecs
  - Compare Audio Codecs
  - Compare Video Codecs
  - Evaluate the Effects of Encryption on Codecs
  - Discovery 9: Explore the Cisco VoIP Bandwidth Calculator
  - Describing Call Admission Control
  - Discovery 10: Configure Regions and Locations

6

- Describing Dial Plans and Endpoint Addressing
  - Dial Plan Overview
  - Dial 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
  - Discovery 11: Implement Endpoint Addressing and Call Routing

7

- Implementing MGCP Gateways
  - Overview of MGCP Gateways
  - MGCP Gateway Implementation
  - Path Selection in Cisco Unified Communications Manager
  - Route Groups
  - Route Lists and Route Patterns
  - Digit Manipulation in Cisco Unified Communications Manager
  - Discovery 12: Implement PSTN Calling Using MGCP Gateways

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CLCOR Course Modules Continued

8

- Implementing Voice Gateways
  - Overview of Dial Peers
  - Discovery 13: Configure and Troubleshoot ISDN PRI
  - Discovery 14: Examine Cisco IOS Gateway Inbound and Outbound Dial-Peer Functions
  - Digit Manipulation Features on Cisco IOS Gateways
  - Discovery 15: Implement and Troubleshoot Digit Manipulation on a Cisco IOS Gateway
  - Codec and DTMF-Relay Selection on Cisco IOS Gateways

9

- Configuring Calling Privileges in Cisco Unified Communications Manager
  - Calling Privileges Overview
  - Partitions and CSSs
  - Partition and CSS Considerations
  - Traditional-Approach Example: Single Site
  - Traditional-Approach Example: Multiple Sites
  - Time-of-Day Routing
  - Client Matter Codes and Forced Authorization Codes
  - Discovery 16: Configure Calling Privileges

10

- Implementing Toll Fraud Prevention
  - Toll Fraud Prevention Overview
  - Cisco Unified Communications Manager CoS for Toll Fraud Prevention
  - Discovery 17: Implement Toll Fraud Prevention on Cisco Unified Communications Manager

11

- Implementing 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
  - Discovery 18: Implement Globalized Call Routing

12

- Implementing and Troubleshooting 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
  - Cisco Meeting Server Platforms
  - Cisco Meeting Server Call Capacity
  - Comparison of Audio-Conference Bridges
  - Audio and Video Conference Bridge Integration Options
  - MTP and Transcoder Devices
  - MTP and Transcoder Requirements

13

- Describing Cisco Instant Messaging and Presence
  - Describe Cisco IM and Presence Features and Architecture
  - Compare the Protocols XMPP and SIMPLE SIP
  - Clustering
  - Describe Cisco Unified Communications IM and Presence Components and Communication Flows

14

- Enabling Cisco Jabber
  - Cisco Jabber Deployment Modes
  - Cisco Jabber Operational Modes
  - Discovery 19: Deploy an On-Premise Cisco Jabber Client for Windows

15

- Configuring Cisco Unity Connection Integration
  - Overview of Cisco Unity Connection Integration
  - SIP Integration
  - Typical Integration Mistakes
  - Integration Considerations
  - Discovery 20: Configure the Integration Between Unity Connection and Cisco UCM
  - Discovery 21: Manage Unity Connection Users

16

- Configuring Cisco Unity Connection Call Handlers
  - Call Handler Overview
  - System Call Handler
  - Caller Input
  - Operator Call Handler
  - Goodbye Call Handler
  - Directory Handler
  - Interview Handler

17

- Describing Collaboration Edge Architecture
  - Describe Collaboration Edge (Expressway-C, -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)

18

- Analyzing Quality Issues in Converged Networks
  - Converged Networks
  - Available Bandwidth
  - Components of Network Delay
  - End-to-End Delay Calculations
  - Jitter
  - Packet Loss

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CLCOR Course Modules Continued

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- Defining QoS and QoS Models
  - QoS Defined
  - Network Traffic Identification
  - Divide Network Traffic into Classes and Define Policies
  - QoS Mechanisms
  - QoS Models
  - DSCP Encoding
  - Expedited Forwarding and Assured Forwarding
  - AF Drop Probability
  - Class Selector

20

- Implementing 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
  - Discovery 22: EAI: Configure QoS

21

- Configuring Classification and Marking on Cisco Catalyst Switches
  - Campus Classification and Marking
  - Overview of QoS Trust Boundaries
  - Ingress QoS Models
  - QoS Marking and Table Maps
  - Internal DSCP

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CLICA Course Topics

- Configuring and Troubleshooting Cisco Unity Connection Integration
- Configuring and Troubleshooting Cisco Unity Connection Call Handlers
- Troubleshooting Cisco Unity Connection
- Configuring and Troubleshooting Cisco Unity Express
- Configuring Single Sign-On (SSO) for Cisco Unified Communications Applications
- Integrating Cisco Unified Communications Manager IM and Presence and Cisco Jabber
- Customizing Cisco Unified Communications Manager IM and Presence and Cisco Jabber Functionality
- Configuring Cisco Unified Communications Manager IM and Presence Service Compliance and Message Archiving
- Troubleshooting Cisco Unified Communications Manager IM and Presence Service
- Integrating Cisco Unified Attendant Console Advanced
- Implementing Call Recording and Monitoring

CLICA Labs and Demonstrations

- Integrate and Set Up Cisco Unity Connection
- Configure Cisco Unity Connection Call Handlers
- Implement Toll Fraud Prevention
- Troubleshoot Cisco Unity Connection Call Handlers
- Troubleshoot Cisco Unity Connection
- Configure Cisco Unity Express
- Troubleshoot Cisco Unity Express
- Configure Cisco Unified Communications Manager IM and Presence High Availability
- Implement Cisco Jabber
- Configure Centralized Cisco Unified Communications Manager IM and Presence
- Configure Cisco Unified Communications Manager IM and Presence Service Functionality
- Enable Message Archiving and Chat Rooms
- Troubleshoot the Cisco Unified Communications IM and Presence Database Connection
- Troubleshoot Cisco Unified Communications Manager IM and Presence High Availability
- Troubleshoot Cisco Unified Communications Manager IM and Presence Service
- Integrate Cisco Unified Attendant Console Advanced
- Implement Call Recording and Monitoring Using a Switched Port Analyzer (SPAN)-based Solution
- Implement Cisco Unified Communications Manager Call Recording and Monitoring

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