



Tuition Cost:	\$2,995
Length:	35 Hours (5 days) for the combination ACUCM and ACU courses

Introduction: The ACUCM course provides system administrators and network professionals with an understanding of the Cisco Unified Communication Manager System from a Level One support perspective. ACUCM teaches the concepts of IP telephony using the Cisco Unified Communication Manager server, including its function, features, and configuration. This is an entry-level course that begins with the basic concepts of IP telephony and very quickly moves the learner forward into an understanding of the Cisco Unified Communication Manager concepts: clustering, route plans, digit manipulation, call admission control, survivability, media resource, and Cisco Unified Communication Manager features, which are all important to supporting IP telephony in the enterprise network.

ACUCM is geared to individuals who will be using Cisco Unified Communication Manager Administration to perform basic administration-level tasks and provide level one support. The course focus is on Cisco Unified Communications Manager version 7.x.

The ACU course is designed for administrators who need an in-depth knowledge on how to administer Cisco Unity Connection. Students will get hands-on with the administration interface and learn how to integrate Cisco Unity Connection with Unified Communications Manager.

Course Outline

ACUCM OUTLINE

I. Introduction to IP Telephony

A. Exploring IP Telephony

1. Explain the differences between the traditional voice and the IP telephony network
2. Describe the minimum system requirements and various platform requirements for installation of the Cisco Unified Communications Manager server software
3. Explain the role of the publisher, subscriber, and TFTP server in the IP telephony network
4. Detail the intracluster communications between the Cisco Unified Communications Manager servers
5. Illustrate the growth and function, in detail, of the Cisco Unified Communications Manager server within the IP telephony network
6. Describe the two clustering options of 2:1 and 1:1 clustering options for redundancy and high availability

B. Describing the Cisco Unified Communications Manager Deployment Models

1. Define the single-site deployment as it pertains to a single Cisco Unified Communications Manager cluster
2. Describe the centralized call processing deployment as it pertains to a single Cisco Unified Communications Manager cluster with remote locations

3. Explain the distributed call processing deployment as it pertains to a multiple Cisco Unified Communications Manager clusters between locations
4. Detail the distributed single-cluster call processing deployment as it pertains to a single Cisco Unified Communications Manager cluster between locations
5. Discuss the combination of the four deployments within the network

II. Defining the CUCM Basic Configuration

A. Logging into Cisco Unified Communications Manager

1. Illustrate logging into Cisco Unified Communications Manager Administration and Cisco Unified Serviceability, demonstrate navigation among the various applications, and discuss the functions and features of these applications
2. Explain the process of logging into the Cisco Unified OS Administration and Disaster Recovery System, and discuss the functions and features of the these applications
3. Discuss logging into the command line interface and its various commands, functions, and features

B. Configuring the Cisco Unified Communications Manager Server

1. Explain DNS and eliminating reliance within the server configuration in Cisco Unified Communications Manager Administration



2. Discuss editing the Phone URL Parameters to prepare for phone registration under the Enterprise Parameters

C. Describing Multilevel Administration

1. Describe the steps for configuring multilevel administration
2. Create end users in Cisco Unified Communications Manager Administration
3. Create new roles, copy existing roles, and use standard roles
4. Create new user groups, copy existing user groups, and use standard user groups
5. Assign users to the various user groups to allow various privileges

D. Configuring the Disaster Recovery System: Backup and Restore Procedures

1. Describe the steps necessary to create a successful backup under the Disaster Recovery System
2. Explain the restore procedures necessary to create a successful restore

III. Preparing for Phone Registration

A. Configuring Cisco Unified Communications Manager System Parameters

1. Configure the Cisco Unified Communications Manager and prepare for auto-registration of phones
2. Configure the Cisco Unified Communications Manager Group for redundancy and load sharing
3. Explain phone NTP configuration for SIP phones
4. Explain the Date/Time group and configuration in Cisco Unified Communications Manager Administration
5. Discuss the various codec and region configurations
6. Explain the Location configuration
7. Configure the device pool
8. Configure a DHCP server within the Cisco Unified Communications Manager server
9. Configure the Device Defaults
10. Describe the Enterprise and Service Parameters Configuration options
11. Describe licensing in Cisco Unified Communications Manager Administration

B. Supporting Cisco IP Phones

1. Describe the various Cisco IP Phones
2. Describe SCCP and SIP phone support for specific IP phone models
3. Describe the purpose, configuration, and features of the Phone Button Template

4. Describe the purpose, configuration, and features of the Softkey Template

C. Exploring Phone Registration and IP Phone Communications

1. Provide a detailed description of the IP Phone registration process for manual and auto-registration
2. Configure phone and directory number in Cisco Unified Communications Manager
3. Describe the protocols and communication between the Cisco Unified Communications Manager and Cisco IP phones

IV. Configuring a Basic Route Plan

A. Exploring Gateways

1. Describe the various gateway types used in the IP telephony network
2. Describe the various gateway protocols used with Cisco Unified Communications Manager
3. Provide an overview of the core gateway requirements
4. Describe the various network modules used in gateway

B. Creating a Route Plan

1. Describe dial plan in the IP telephony network, its function, and benefits
2. Describe the various route patterns and wildcards used in Cisco Unified Communications Manager for internal and external calling
3. Describe route patterns, route lists, and route groups
4. Describe how dialing decisions are accomplished in Cisco Unified Communications Manager for call routing
5. Configure call routing in Cisco Unified Communications Manager (route patterns, route lists, and route groups)

V. Discovering Route Filters and Digit Manipulation

A. Configuring Route Filters and Translation Patterns

1. Provide an explanation of the 9@ pattern and its use in route filters
2. Explain the function and configuration of route filters with introduction to DDI
3. Describe the configuration of translation patterns

B. Understanding Digit Manipulation

1. Describe the DDI and its function in the route pattern configuration



2. Provide a detailed description of transformation masks, and their function, purpose, and configuration
3. Explain and run a Route Plan Report

VI. Exploring Class of Control

A. Defining Class of Control

1. Describe the need for class of control within the IP telephony network
2. Provide a detailed description of partitions and their configuration
3. Describe the CSSs, their configuration, and their relationship to partitions
4. Explain the configuration of the PLAR application in Cisco Unified Communications Manager spaces

B. Configuring Advanced Class of Control Features

1. Provide a detailed description of call restrictions between classes of uses and geographic location
2. Describe time of day routing using time periods and time schedules
3. Provide an overview of the traditional and the line or device approach in the IP Telephony network

VII. Explaining CAC and SRST

A. Understanding CAC

1. Describe the need for CAC in the IP telephony network
2. Explain how locations are used as a CAC mechanism in a centralized deployment
3. Describe the function and configuration for Automated Alternate Routing (AAR) in a centralized deployment
4. Illustrate the use of the gatekeeper and CAC mechanism in distributed deployment
5. Describe the coded and bandwidth consideration in each of the types of deployments

B. Exploring SRST

1. Provide an overview of SRST, its function, and purpose
2. Describe the procedure of failover using SRST
3. Explain the configuration of SRST in Cisco Unified Communications Manager

VIII. Understanding Media Resources

A. Explaining Media Resources

1. Describe the various media resources that are available in Cisco Unified Communications Manager once the Cisco IP Voice Media Streaming Application is activated

2. Explain the configuration of hardware and software conference bridges. Describe the Ad Hoc and Meet Me conferencing
3. Describe the MTPs
4. Provide a detailed description of the transcoder and its use, function, and configuration
5. Explain how to configure a MOH server
6. Illustrate the purpose of the annunciator and its configuration

B. Exploring Media Resource Management

1. Provide an overview of the configuration steps of configuring the MRG and MRGL in Cisco Unified Communications Manager
2. Describe the media resource management in Cisco Unified Communications Manager and how resources are allocated
3. Explain the configuration of MRG and the assignment and prioritization of media resources
4. Describe the configuration of MRGLs

IX. Describing Cisco Unified Communications Manager Features

A. Understanding Basic Cisco Unified Communications Management Features

1. Describe the function and configuration of the Call Park and Directed Call Park features
2. Explain the Call Pickup and Group Call Pickup features and configuration
3. Provide a detailed description of the Call Back feature and creation of the softkey templates in Cisco Unified Communications Manager
4. Describe shared lines and Barge and Privacy feature as used in shared lines

B. Exploring Hunt Groups

1. Provide an overview of hunt group configuration and its components (line group, hunt list, and hunt pilot)
2. Describe the configuration of the line group and the assignment of directory numbers
3. Describe the configuration of the hunt list and assignment of line groups
4. Give a detailed configuration of the hunt pilot and assignment of the hunt list
5. Describe the Final Forwarding features and purpose in hunt groups

C. Describing Phone Services

1. Provide an overview of the Cisco Phone Services
2. Describe the configuration of the Cisco IP Phone Services in Cisco Unified Communications Manager



X. Exploring Moves, Adds, Changes, and Administration

- A. Understanding Phone Moves, Adds, and Changes
 - 1. Provide an overview of phone and directory number configurations
 - 2. Explain the copy with lines (super copy)
- B. Describing User Configuration
 - 1. Describe the configuration steps that are followed to add a user in Cisco Unified Communications Manager
 - 2. Explain the association of devices to users in user management
 - 3. Provide a detailed description of assigning user to user groups
 - 4. Describe the user web pages sign on and configuration
- C. Utilizing the Cisco Unified Communications Manager BAT
 - 1. Provide an overview of the Cisco Unified Communications Manager BAT, its features, purpose, and function
 - 2. Explain the configuration steps for creating phones and user using Cisco Unified Communications Manager
 - 3. Provide an overview of the process, flow, and use of the Cisco Unified Communications Manager Auto-Register Phone Tool

ACU OUTLINE

I. Cisco Unity Connection Overview

- A. Introducing Cisco Unity Connection

II. Cisco Unity Connection Basics

- A. Integration Options for Unity Connection
 - a. Integration Capabilities for Unity Connection
 - b. Extended Integration Options and Features
 - c. VPIM Networking

III. Integrating Cisco Unity Connection

- A. Integrating the Phone System
 - a. Integrating Cisco Unity Connection with Cisco Unified Communications Manager
 - b. Integrating Cisco Unity Connection with Cisco Unified Communications Manager Express

IV. Configuring Cisco Unity Connection Global System Operating Parameters

- A. Managing Class of Service
 - a. Features controlled by the Class of Service definitions
 - b. Add, modify, and delete Classes of Service

V. Configuring Cisco Unity Connection User Operation

- A. Managing Individual Users
 - a. Find individual users
 - b. Edit user basics
 - c. Configure password settings
 - d. Reset user passwords
 - e. Assign additional roles
 - f. Configure user MWI settings
 - g. Configure user transfer rules
 - h. Manage message settings
 - i. Configure call input
 - j. Edit and review mailbox settings, quotas, and status
 - k. Configure the playback message settings
 - l. Configure the send message settings
 - m. Edit message actions
 - n. Configure notification devices
 - o. Configure alternate extensions
 - p. Configure alternate names
 - q. Creating private distribution lists
 - r. Editing external service accounts
 - s. Editing SNMP proxy addresses

VI. Configuring Cisco Unity Connection Global System Operating Parameters

- A. Reviewing and Managing Message Storage
 - a. Managing Templates
 - i. Features controlled by user and call-handler templates
 - ii. Add, modify, and delete user templates
 - iii. Add, modify, and delete call-handler templates
- B. Managing Multiple Users
 - a. Operate the Bulk Edit tool
 - b. Create new users using the Bulk Administration Tool



VII. Integrating Cisco Unity Connection for User Management

- A. Integrating Cisco Unity Connection with Cisco Unified Communications Manager and Microsoft Active Directory
 - a. Import and maintain users through Cisco Unified Communications Manager
 - b. Import and maintain users through Microsoft Active Directory

VIII. Configuring Cisco Unity Connection User Operation

- A. Managing Distribution Lists
 - a. Default system distribution lists and the operating parameters of private distribution lists
 - b. Add, modify and delete system distribution lists
 - c. Add, modify and delete private distribution lists

IX. Configuring Cisco Unity Connection Global System Operating Parameters

- A. Setting Up User Workstations
 - a. Workstation requirements
 - b. Access Cisco Personal Communications Assistant (PCA)
- B. Reviewing the Incoming and Outgoing Call Flows
 - a. Review incoming call flows
 - b. Review outgoing call sources and call flows

X. Configuring Cisco Unity Connection

- A. Managing System Settings
 - a. Managing handlers
 - b. Managing system call handlers
 - c. Managing directory call handlers
 - d. Managing interview call handlers
 - e. Managing conversations

XI. Configuring Cisco Unity Connection User Operation

- A. Reviewing the Audiotext Application Design Process
 - a. Analyzing Audiotext requirements
 - b. Defining the Audiotext application components and actions

XII. Integrating, Troubleshooting, and Monitoring Cisco Unity Connection

- A. Implementing Dial Plans
 - a. Review the dial plan components and their purpose
 - b. Add, modify, and delete partitions
 - c. Add, modify, and delete search spaces
- B. Managing Call Routing
 - a. Implementing Call Routing
 - b. Managing direct incoming call routing
 - c. Managing forwarded incoming call routing
- C. Monitoring and Troubleshooting using Cisco Unity Connection Serviceability
 - a. Reviewing cluster management
 - b. Verifying feature service activation and obtaining serviceability reports
 - c. Viewing filtered alarms
 - d. Configuring SNMP support