Cisco Collaboration

AAUCMF: AAUCMF v12.5 – Advanced Administration for Unified Communications Manager and Features

$4,295.00

- 5 Days

Upcoming Dates

May 12 - May 16
Sep 29 - Oct 03

Course Description

Advanced Administration for Unified Communications Manager and Features (AAUCMF) is a 5-day instructor-led course that is intended for experienced unified communications administrators who need in-depth knowledge of Cisco Unified Communications Manager advanced features, services, and troubleshooting. This course is intended to be a follow-on course to ACUCM+AUC and combines elements from off-the-shelf courses CLFNDU, CLCOR, CLACCM, and CLCEI as well as additional material developed exclusively by Sunset Learning Institute.

The class utilizes Cisco Unified Communications Manager 12.5 and will employ the North American Numbering Plan (NANP). Both SCCP and SIP phones are implemented, as well as both H.323 and SIP gateways.

After a short review of Unified Communication architecture and basic administration, the course begins with a discussion of new and changed features from previous versions of CUCM. It then moves into the implementation of a multi-site dial plan architecture including signaling, call routing for multiple sites with overlapping directory numbers, digit manipulation, and automated alternate routing with PSTN backup. Next, call admission control, hardware media resource implementation, and inter-cluster communications are addressed. Students will also implement a basic CUBE, allowing them to become familiar with the function and foundational configuration of CUBEs. Students will spend time implementing extension mobility, unified mobility (including single-number reach), and device mobility. The CUCM portion of the class concludes with a module on tools, and experience reading router debugs and CUCM trace files for troubleshooting.

Sunset Learning developed this course to provide additional training for those who already have a basic understanding of CUCM and Unity Connection administration and are looking for further training. This is not a certification or implementation course.

Course Outline

Module 1: Review of CUCM and Overview of New Features

Module 2: Understanding End-User Implementation Options

- Lesson 1: Implementing End Users in CUCM Including LDAP Integration
- Lesson 2: Review of Cisco IP Phones and SCCP and SIP Signaling
- Lesson 3: Universal Device and Line Templates and Feature Group Templates
- Lesson 4: Deploying the Self-Provisioning IVR

Module 3: Dial Plan Architecture

- Lesson 1: H.323 and SIP Protocols and Signaling
- Lesson 2: Local Route Groups
- Lesson 3: Inbound Calls Routing in a Multisite Environment
- Lesson 4: Implementing Survivable Remote Site Telephony
- Lesson 5: Implementing Cisco Unified SCCP SRST
- Lesson 6: Implementing SIP SRST
- Lesson 7: Implementing Communications Manager Express in SRST Mode

Module 4: Intersite and Intercluster Calling Architecture and Features

- Lesson 1: Locations-Based Call Admission Control and AAR
- Lesson 2: Media Resource Implementation (DSPs)
- Lesson 3: Native Call Queuing
- Lesson 4: Configuring Intercluster Enhanced Locations Call Admission Control
- Lesson 5: Configuring a Basic CUBE

Module 5: Implementing Mobile and Remote Access

- Lesson 1: Expressway Architecture
- Lesson 2: Mobile Remote Access Features and Functions
- Lesson 3: Deploying Mobile and Remote Access

Lab 2-1: Implementing Site-Specific Device Pools

- Task 1: Activate Services on the CUCM servers
- Task 2: Create Regions and Locations for HQ and Branch
- Task 3: Create a Phone NTP Reference and Date-Time Groups for HQ and Branch
- Task 4: Create Cisco Unified CM Groups for HQ and Branch
- Task 5: Create Site-Specific Device Pools for Servers, HQ, and Branch

Lab 2-2: Building Phones using the Self-Provisioning IVR and End Users using LDAP Integration

- Task 1: Configure Cisco IP Communicator Phones for the Lab
- Task 2: Configure a Universal Device Template, a Universal Line Template, and User Profile for HQ Phones
- Task 3: Configure the Self-Provisioning IVR
- Task 4: Configure LDAP Integration
- Task 5: Add Phones Using the Self-Provisioning IVR

Lab 2-3: Building Branch Phones

- Task 1: Manually Configure a Cisco Unified SIP Phone
- Task 2: Prepare CUCM for Jabber Clients
- Task 3: Deploy Jabber in Phone-Only Mode

Lab 3-1: Implementing Basic Multisite Connections

- Task 1: Add an H.323 Gateway to Cisco Unified Communications Manager
- Task 2: Configure an H.323 Gateway for HQ PSTN Access
- Task 3: Add a SIP Trunk to Cisco Unified Communications Manager for Branch PSTN Access
- Task 4: Configure the SIP Gateway on the Branch Router

- Task 5: Create Route Groups and Assign Local Route Groups
- Task 6: Configure PSTN Calling Routing Using Local Route Groups
- Task 7: Test and Troubleshooting Outbound HQ Calls

Lab 3-2: Building Line/Device Class of Service

- Task 1: Create a PSTN Dialing Plan with Site-Specific Elements
- Task 2: Configure CSS for Calling Privileges

Lab 3-3: Implementing Call Routing in a Multisite Environment

- Task 1: Implement Site-Code Intersite Dialing Using Enterprise Alternate Numbers
- Task 2: Configure Site-Specific Vanity Numbers for Operator

Lab 3-4: Configuring Inbound Calling in a Multisite Environment

- Task 1: Configure Partitions, Calling Search Spaces, and Translation Patterns for Inbound PSTN Calls
- Task 2 Optional: Configure Inbound Call Routing Based on Caller-ID

Lab 3-5: Implementing SIP SRST

- Task 1: Configure CUCM and Phones for SRST
- Task 2: Configure the Branch Router for SRST
- Task 3: Implement a Dial Plan in CUCM Supporting Outbound Calls During SRST Mode
- Task 4 Optional: Implement a Dial Plan at the Branch SRST Gateway Supporting Inbound and Outbound Calls When in SRST Mode
- Task 5: Restore Normal Operations

Lab 4-1: Implementing CAC and AAR

- Task 1: Configuring Regions and Locations for CAC
- Task 2 Optional: Configure AAR and CFNB to Route Calls over the PSTN If Denied by CAC
- Task 3: Restore Normal Operations

Lab 4-2: Implementing Media Resources

- Task 1: Add a Hardware Conference Media Resource
- Task 2: Configure Hardware Media Resources Access

Lab 4-3: Deploying the Intercluster Lookup Service (ILS) and Global Dial Plan Replication (GDPR)

- Task 1: Configure Global Dial Plan Replication
- Task 2: Configure the Intercluster Lookup Service
- Task 3: Configure SIP Route Patterns for Intercluster Dialing

Lab 4-4: Implementing a Basic CUBE with Local Transcode Resources

- Task 1: Configure SIP Trunks and Route Patterns to Path Intersite Calls Through the CUBE

- Task 2: Configure Translation Patterns for Calls Inbound from the CUBE
- Task 3: Configure the Branch Router with CUBE Services and Dial Peers
- Task 4: Implement a DSP-Based Transcoder and Register it to the Branch Router CUBE as a Local Transcoding Interface (LTI)

Lab 4-5: Implementing Mobile and Remote Access via Cisco Expressway

- Task 1: Verify DNS Configuration on the HQ PC
- Task 2: Verify Initial Settings on the Cisco Expressways
- Task 3: Generate Server Certificates for the Expressway-C and Expressway-E
- Task 4: Configure Mobile and Remote Access on Cisco Expressway Series
- Task 5: Configure the Traversal Zone Between Expressway-C and Expressway-E
- Task 6: Connect the Expressway-C to CUCM
- Task 7: Configure Cisco Jabber to Register via Mobile and Remote Access
- Task 8: Return to Normal Operations

Optional Lab 1: Configure Extension Mobility

- Task 1: Enable Cisco Extension Mobility
- Task 2: Enable Phones and End Users for Cisco Extension Mobility

Optional Lab 2: Configure Device Mobility

- Task 1: Configure Device Mobility
- Task 2: Verify Device Mobility

Optional Lab 3: Configuring Cisco Unified Mobility (SNR and MVA)

- Task 1: Prepare Cisco Unified Communications Manager for Mobile Connect/Single Number Reach
- Task 2: Associate an End User Account with the IP Phone and Enable the Use of Mobility
- Task 3: Configure Remote Destination Profiles and Remote Destinations
- Task 4: Configure Ring Schedules and Access Lists for Remote Destinations
- Task 5: Enable Mobile Voice Access on CUCM
- Task 6: Configure the Cisco IOS Gateway for Cisco Unified Mobility and Test MVA Functionality

Optional Lab 4: (Alternate) Implementing SRST for SIP and SCCP

- Task 1: Use the Self-Provisioning IVR to Build an SCCP Phone
- Task 2: Configure SRST Gateways in Cisco Unified Communications Manager
- Task 3: Configure the HQ and Branch routers for SRST
- Task 4: Implement a Dial Plan in CUCM Supporting Outbound Calls During SRST Mode
- Task 5 Optional: Implement a Dial Plan at the Branch SRST Gateway Supporting Inbound and Outbound Calls When in SRST Mode
- Task 6: Restore Normal Operations

Optional Lab 5: Configuring Hunting with Native Call Queuing

- Task 1: Create a Softkey Template with the HLog Softkey
- Task 2: Create a Line Group, Hunt List, and Hunt Pilot
- Task 3: Configure the MoH Audio Source for Announcements
- Task 4: Configure Final Forwarding Behavior for the Hunt Pilot and Native Call Queuing

Audience

- Experienced Unified Communications Engineers
- Anyone who has attended ACUCM+AUC and needs more training on advanced features and troubleshooting

Prerequisites

To fully benefit from this course, students should have the following prerequisite skills and knowledge:

- CCNA Voice or equivalent knowledge, or
- ACUCM+AUC and additional field experience

What You Will Learn

After completion of this course, students will be able to:

- Describe CUCM signaling to phones, gateways, and media resources (H.323, SIP, SCCP)
- Configure inbound and outbound call routing in a multisite environment with overlapping DNs
- Configure intersite dialing with PSTN backup using Local Route Groups
- Use class of control to control inbound call flow and permit blocking of inbound calls
- Implement Survivable Remote Site Telephony for both SCCP and SIP devices
- Implement intersite and intercluster Call Admission Control and intersite Automated Alternate Routing
- Implement DSP hardware media resources
- Implement a basic CUBE with Local Transcode Resources
- Configure Extension Mobility, Unified Mobility (Single Number Reach and Mobile Voice Access), and Device Mobility
- Use CUCM Tools such as the Real-Time Monitoring Tool to Monitor and perform basic Troubleshooting
- Deploy CUCM features such as Native Call Queuing, Intercluster CAC, and Deterministic Codec Selection
- Generate and Read Trace Files for SCCP, SIP, and H.323 Call Setup and Resource Allocation