

Troubleshooting Cisco Unified Communications v8.0 (TVOICE 8)

Course Objectives

- Describe a systematic methodology to troubleshoot Cisco Unified Communications solutions
- Isolate and troubleshoot reported issues that relate to Cisco Unified Communications Manager
- Diagnose a call setup issue and resolve the issues as you discover or reveal them, given a trouble call for which the source of the problem is unknown
- Solve the common issues of an SAF-enabled network and CCD
- Troubleshoot issues that are related to Cisco Unified Communications Manager features and applications
- Troubleshoot voice quality issues and issues that are related to media resources

Prerequisites

The knowledge and skills you must have before attending this course are as follows:

- Working knowledge of converged voice and data networks
- Working knowledge of the MGCP, SIP, and H.323 and their implementation on Cisco IOS gateways
- Working knowledge of Cisco Unified Communications Manager, Cisco Unified Communications features and applications, and Cisco IOS voice gateways in a single-site and multisite environment

Course Outline

Module 1: Introduction to Troubleshooting Cisco Unified Communications Solutions

Describe a systematic methodology to troubleshoot Cisco Unified Communications solutions.

Lesson 1: Identifying Cisco Unified Communications Deployments

This lesson defines how to identify the major components of a Cisco Unified Communications solution to isolate problem areas quickly during troubleshooting.

- Cisco Unified Communications Systems
- Network Infrastructure
- Cisco Unified Communications Manager
- Voice Clients
- Cisco Applications

Lesson 2: Using Troubleshooting Methodology

This lesson defines the steps, considerations, and requirements to systematically troubleshoot a problem in a Cisco Unified Communications solution.

- Prepare Your Network for Troubleshooting and Recovery
- Troubleshoot Systematically
- Define the Problem
- Gather the Facts
- Evaluate the Possibilities
- Create an Action Plan
- Implement an Action Plan
- Observe the Results
- Restart the Problem-Solving Process
- Document the Results

Lesson 3: Using Troubleshooting and Monitoring Tools

This lesson defines how to identify the troubleshooting and monitoring tools that can be used in a Cisco Unified Communications solution.

- Using Cisco Unified Communications System Troubleshooting Tools
- Cisco Unified Serviceability
- Controlling Cisco Unified Communications Manager Services
- Alarms
- Traces
- Trace Output
- Cisco Unified Communications Manager Dialed Number Analyzer
- Cisco Unified RTMT
- Alerts
- Syslog Viewer
- Trace & Log Central
- Performance Monitor and Data Logging
- Cisco Unified Reporting
- Cisco Unified Communications Manager CLI
- Cisco IOS Troubleshooting Tools
- Sniffer Traces

Module 2: Cisco Unified Communications Manager Troubleshooting

Isolate and troubleshoot reported issues that relate to Cisco Unified Communications Manager.

Lesson 1: Troubleshooting Common Gateway and Endpoint Registration Issues

This lesson defines the issues that are related to gateway and endpoint registration in Cisco Unified Communications Manager and that enable you to describe common solutions to these issues.

- IP Phone Initialization
- Troubleshooting Endpoints Using Cisco Unified Communications Manager Tools
- Troubleshooting Endpoints from Endpoints
- MGCP Gateway Initialization and Communication

- Verifying MGCP Gateway Status
- H.323 and SIP Gateway Communications

Lesson 2: Troubleshooting Cisco Unified Communications Manager Availability Issues

This lesson defines issues that can cause Cisco Unified Communications Manager to become unavailable in the network and describe how to isolate and troubleshoot these issues.

- Cisco Unified Communications Manager System Stops Responding
- Cisco Unified Communications Manager Administration Does Not Display
- Slow Server Response

Lesson 3: Troubleshooting Database Replication Issues

This lesson defines how to identify database replication issues in Cisco Unified Communications Manager clusters and how to repair or re-create database replication.

- Database Replication Issues
- Diagnosing Database Replication Issues with Cisco Unified Communications Manager
- Resolving Database Replication Issues with Cisco Unified Communications Manager

Lesson 4: Troubleshooting LDAP Integration Issues

This lesson defines how to troubleshoot LDAP synchronization or LDAP authentication issues when using LDAP integration.

- LDAP Integration Options with Cisco Unified Communications Manager
- Resolving Synchronization Issues in Cisco Unified Communications Manager Using Active Directory
- Resolving Authentication Issues in Cisco Unified Communications Manager Using Active Directory

Module 3: Troubleshooting Call Setup Issues

Diagnose a call setup issue and resolve the issues as you discover or reveal them, given a trouble call for which the source of the problem is unknown.

Lesson 1: Examining Call Setup Issues and Causes

This lesson defines commonly experienced call setup issues including call setup failure, caller ID issues, inefficient routing, and redirecting number issues and the most likely causes of these issues.

- Define the major issue types that cause call setup failure in the Cisco Unified Communications system
- Describe the common reasons that calls can fail to set up in a single-site environment
- List major causes of why calls that are placed within a Cisco Unified Communications Manager cluster can fail

- Describe the common causes of call setup failure between clusters, including the call control discovery

Lesson 2: Troubleshooting On-Premises Single-Site Calling Issues

This lesson defines the common calling issues that can occur in a single-site Cisco Unified Communications Manager deployment and identify the most likely causes of these issues.

- On-Premises Call Setup Issues
- Digit Collection in Cisco Unified Communications Manager
- Partitions and Calling Search Spaces
- Troubleshooting Single-Site Call Setup Failure
- One-Way Calling
- Call-Forwarding Issues
- Forwarding to Voice-Mail Issues

Lesson 3: Troubleshooting On-Net Multisite Calling Issues

This lesson defines the common calling issues that can occur in a multisite Cisco Unified Communications Manager deployment and identify the most likely causes of these issues.

- Multisite Dial Plan Issues
- Overlapping Dial Plan
- Intercluster Call Setup
- Troubleshooting Gatekeepers
- Troubleshooting Cisco Unified Border Element
- Immediate Remote Call Drops

Lesson 4: Troubleshooting Off-Net Calling Issues

This lesson defines the common calling issues that can occur with off-net calls and identify the most likely causes of these issues.

- Common Off-Net Calling Issues
- Gateway Troubleshooting
- Gateway Digit Collection and Analysis
- Issues with Discard Digits Instruction
- Dial Plan Issues
- Troubleshooting Common Voice Call Issues
- Globalized Call-Routing Issues

Module 4: SAF and CCD Issues

Solve the common issues of an SAF-enabled network and CCD.

Lesson 1: Troubleshooting SAF

This lesson defines the common issues that relate to the SAF Client and SAF Forwarder in an environment with CCD and identify the most likely causes of these issues.

- Service Advertisement Framework
- Troubleshooting SAF

Lesson 2: Troubleshooting CCD

This lesson defines the common issues that relate to the CCD as an application of SAF and identify the most likely causes of these issues.

- Call Control Discovery
- Troubleshooting the SAF Client in CCD

Module 5: Troubleshooting Cisco Unified Communications Manager Features and Application Issues

Troubleshoot issues that are related to Cisco Unified Communications Manager features and applications.

Lesson 1: Troubleshooting Device Mobility Issues

This lesson defines the common issues that are related to Cisco Device Mobility and identify the most likely causes of these issues.

- Device Mobility and Its General Issues
- Troubleshooting IP Infrastructure Problems
- Troubleshooting Device Mobility Configuration Mismatches
- Troubleshooting Device Mobility Call-Routing Problems
- Troubleshooting Device Mobility Call Privilege Problems

Lesson 2: Troubleshooting Cisco Extension Mobility Issues

This lesson defines the common issues that are related to Cisco Extension Mobility and identify the most likely causes of these issues.

- Cisco Extension Mobility General Issues
- Troubleshooting Cisco Extension Mobility Error Messages and Login and Logout Issues
- Troubleshooting Cisco Extension Mobility Call Privilege Problems
- Troubleshooting Cisco Extension Mobility Call Routing Problems

Lesson 3: Troubleshooting Cisco Unified Mobility Issues

This lesson defines the common issues that are related to Cisco Unified Mobility and identify the most likely causes of these issues.

- Cisco Unified Mobility and Its General Issues
- Troubleshooting Cisco Unified Mobility Mobile Connect

- Troubleshooting Cisco Unified Mobility Mobile Voice Access
- Troubleshooting Enterprise Feature Access and Distinguishing Feature Problems

Lesson 4: Troubleshooting Cisco Unified Communications Manager Native Presence Issues

This lesson defines the common issues that are related to native Cisco Unified Communications Manager presence and identify the most likely causes of these issues.

- Native Cisco Unified Communications Manager Presence General Issues
- Troubleshooting Line Presence Indications
- Troubleshooting Trunk Presence Indications
- Troubleshooting Historical Presence Indications

Module 6: Voice Quality and Media Resources Issues

Troubleshoot voice quality issues and issues that are related to media resources.

Lesson 1: Troubleshooting MOH Issues

This lesson defines the common issues that are related to MOH and identify the most likely causes of these issues.

- MOH Review
- MOH Performance
- Troubleshooting MOH Registration and Unresponsive Software Issues
- Tuning MOH Loudness
- TOH Instead of MOH
- Troubleshooting Multicast MOH
- Troubleshooting Multicast MOH from Branch Router Flash

Lesson 2: Troubleshooting MTP Issues

This lesson defines the common issues that are related to MTP and identify the most likely causes of these issues.

- MTP Review
- Troubleshooting MTP Registration and Nonresponsive Software Issues
- MTP Allocation

Lesson 3: Troubleshooting Issues with Conferences

This lesson defines the common issues that are related to conferences and identify the most likely causes of these issues.

- Conferencing in Cisco Unified Communications
- Troubleshooting Conference Bridge Registration and Nonresponsive Software Issues
- Troubleshooting Ad Hoc Conferencing
- Troubleshooting Meet-Me Conferencing

Lesson 4: Troubleshooting Transcoder Issues

This lesson defines the common issues that are related to transcoders and identify the most likely causes of these issues.

- Transcoder Review
- Troubleshooting Transcoder Registration Issues
- Troubleshooting Transcoder Allocation

Lesson 5: Troubleshooting Issues with RSVP Agents

This lesson defines the common issues that are related to RSVP agents and identify the most likely causes of these issues.

- RSVP CAC
- Troubleshooting the RSVP Agent Registration
- Troubleshooting the RSVP CAC Operation
- Troubleshooting Intercluster RSVP with SIP Preconditions

Lesson 6: Troubleshooting Voice Quality Issues

This lesson defines the common voice quality issues and identifies the most likely causes of these issues.

- Voice Quality Issues in Cisco Unified Communications Systems
- QoS Requirements and QoS Policy
- Identifying and Isolating Voice Quality Problems
- Troubleshooting Layer 2 Quality Problems
- Troubleshooting Voice Quality Issues on a Gateway
- Quality Report Tool for IP Phones
- Sample Troubleshooting Scenarios

TVOICE 8.0 LABS

- Lab 2-1: Troubleshooting Gateway and Endpoint Registration Issues
- Lab 2-2: Troubleshooting LDAP Integration Issues
- Lab 3-1: Troubleshooting On-Net Single-Site Calling Issues
- Lab 3-2: Troubleshooting On-Net Multisite Calling Issues
- Lab 3-3: Troubleshooting Off-Net Calling Issues
- Lab 3-4: Troubleshooting Globalized Call Routing Issues
- Lab 4-1: Troubleshooting SAF Client and Forwarder Issues
- Lab 5-1: Troubleshooting Device Mobility Issues
- Lab 5-2: Troubleshooting Cisco Extension Mobility Issues
- Lab 5-3: Troubleshooting Cisco Unified Mobility Issues
- Lab 5-4: Troubleshooting Cisco Unified Communications Manager Native Presence Issues
- Lab 6-1: Troubleshooting MOH Issues
- Lab 6-2: Troubleshooting Transcoder Issues
- Lab 6-3: Troubleshooting Issues with RSVP Agents

