



**CTREC
HILTON**
IT ACADEMY

Troubleshooting Cisco Unified Communications 8.0 (TVOICE)

BUILDING TRAINING SOLUTIONS
FOR THE IT WORLD

Days: 5
Format: Instructor-Led
Class Code: TVOICE

Recommended Course Sequence

Knowledge of prerequisites noted below.

Course content is subject to change without notice.

Course Description:

Troubleshooting Cisco Unified Communications (TVOICE) v8.0 prepares network professionals with the knowledge and skills that are required to troubleshoot Cisco Unified Communications systems and solutions in enterprise, midmarket, and commercial deployments in single-site and multisite environments. The course teaches troubleshooting methodology, triage, resources, tools, and fixes at the integrated system or solution level for Cisco Unified Communications Manager.

Target Student:

This course is intended for:

- Network Administrators, Network Engineers, and Systems Engineers
- Anyone working towards CCNP Voice Certification

Prerequisites:

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

- 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 single-site and multisite environments
- Knowledge gained from attending authorized prerequisite Cisco courses: ICND 1 & 2 or CCNA Bootcamp, ICOMM, CVOICE, CIPT 1, and CIPT 2

At Course Completion:

After completing this course, students will be able to...

- 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

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Course Outline

Module 1: Introduction to Troubleshooting Cisco Unified Communications Solutions

Lesson 1: Identifying Cisco Unified Communications Deployments
<ul style="list-style-type: none">■ Cisco Unified Communications Systems■ Network Infrastructure■ Cisco Unified Communications Manager■ Voice Clients■ Cisco Applications
Lesson 2: Using Troubleshooting Methodology
<ul style="list-style-type: none">■ Prepare Your Network for Troubleshooting and Recovery■ Troubleshoot Systematically■ Define the Problem■ Gather Facts■ Consider Possibilities■ Create an Action Plan■ Implement an Action Plan■ Observe Results■ Restart the Problem-Solving Process■ Document Results
Lesson 3: Using Troubleshooting and Monitoring Tools
<ul style="list-style-type: none">■ 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

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Module 2: Cisco Unified Communications Manager Troubleshooting

Lesson 1: Troubleshooting Common Gateway and Endpoint Registration Issues
<ul style="list-style-type: none">■ 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
<ul style="list-style-type: none">■ Cisco Unified Communications Manager System Stops Responding■ Cisco Unified Communications Manager Administration Does Not Display■ Slow Server Response
Lesson 3: Troubleshooting Database Replication Issues
<ul style="list-style-type: none">■ 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
<ul style="list-style-type: none">■ 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

Lesson 1: Examining Call Setup Issues and Causes
<ul style="list-style-type: none">■ Call Setup Issues■ Single-Site Call Setup Failure■ Intracluster Call Setup Failure■ Intercluster Call Setup Failure
Lesson 2: Troubleshooting On-Premises Single-Site Calling Issues
<ul style="list-style-type: none">■ On-Premises Call Setup Issues■ Digit Collection in Cisco Unified Communications Manager■ Partitions and CSSs

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<ul style="list-style-type: none">■ 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
<ul style="list-style-type: none">■ 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
<ul style="list-style-type: none">■ 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

Lesson 1: Troubleshooting SAF
<ul style="list-style-type: none">■ Service Advertisement Framework■ Troubleshooting SAF
Lesson 2: Troubleshooting CCD
<ul style="list-style-type: none">■ Call Control Discovery■ Troubleshooting the SAF Client in CCD

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

Lesson 1: Troubleshooting Device Mobility Issues
<ul style="list-style-type: none">■ 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
<ul style="list-style-type: none">■ Cisco Extension Mobility and Its General Issues■ Troubleshooting Cisco Extension Mobility Error

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<ul style="list-style-type: none"> ■ 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
<ul style="list-style-type: none"> ■ 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 Dusting Feature Problems
Lesson 4: Troubleshooting Cisco Unified Communications Manager Native Presence Issues
<ul style="list-style-type: none"> ■ 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

Lesson 1: Troubleshooting MOH Issues
<ul style="list-style-type: none"> ■ MOH Review ■ MOH Performance ■ Troubleshooting MOH Registration and Nonresponsive Software Issues ■ Tuning MOH Loudness ■ TOH Instead of MOH ■ Troubleshooting Multicast MOH ■ Troubleshooting Multicast MOH from Branch Router Flash
Lesson 2: Troubleshooting MTP Issues
<ul style="list-style-type: none"> ■ MTP Review ■ Troubleshooting MTP Registration and Nonresponsive Software Issues ■ MTP Allocation
Lesson 3: Troubleshooting Issues with Conferences
<ul style="list-style-type: none"> ■ 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
<ul style="list-style-type: none"> ■ Transcoder Review

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<ul style="list-style-type: none">■ Troubleshooting Transcoder Registration Issues■ Troubleshooting Transcoder Allocation
Lesson 5: Troubleshooting Issues with RSVP Agents
<ul style="list-style-type: none">■ RSVP CAC■ Troubleshooting the RSVP Agent Registration■ Troubleshooting the RSVP CAC Operation■ Troubleshooting Intercluster RSVP with SIP Preconditions
Lesson 6: Troubleshooting Voice Quality Issues
<ul style="list-style-type: none">■ 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■ Sample Troubleshooting Scenarios