



CTCOLLAB: Troubleshooting Cisco IP Telephony and Video

Course ID #: 1575-983-ZZ-W

Hours: 35

Course Content

Course Description:

Troubleshooting Cisco IP Telephony Video (CTCOLLAB) v1.0 is a five-day course that prepares the learner for troubleshooting Cisco Unified Communications Manager, Cisco VCS-C, and Cisco Expressway series in a multisite voice and video network. The course teaches troubleshooting methodology, triage, resources, tools, and fixes at the integrated system or solution level for Cisco Collaboration Solutions. It covers troubleshooting of Cisco Unified Communications Manager, VCS Control and VCS Expressway, issues with Call Setup, issues with ILS, Cisco Unified Communications Manager Mobility Features, Cisco TelePresence Management Suite, and issues with Voice Quality and Media Resources.

At Course Completion:

Upon completing this course, you will be able to meet these objectives:

- Describe a systematic methodology to troubleshoot issues in Cisco collaboration deployments
- Troubleshoot issues that relate to Cisco Unified Communications Manager
- Troubleshoot issues that relate to Cisco VCS
- Troubleshoot call setup issues
- Troubleshoot ILS and GDPR issues
- Troubleshoot Cisco Unified Communications Manager mobility features
- Troubleshoot issues that relate to Cisco TelePresence Management Suite
- Troubleshoot media resource and voice quality issues

Prerequisites:

The knowledge and skills that a learner must have before attending this course are as follows:

- Working knowledge of converged voice, video, and data networks
- Working knowledge of the MGCP, SIP, and H.323 protocols and their implementation on Cisco IOS gateways
- Ability to configure and operate Cisco routers and switches
- Ability to configure and operate Cisco Unified Communications Manager in a single-site and multisite environments



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Target Student:

This course is intended for:

- Network administrators and network engineers
- CCNP Collaboration candidates
- Secondary audiences are:
- Systems engineers

Deliver Method:

This course is delivered through a mix of instructor-led training (ILT) and hands-on labs.

Topics:

Module 1: Introduction to Troubleshooting Cisco Collaboration Systems Solutions

Lesson 1: Identifying Cisco Collaboration Deployments

- Overview of Cisco Collaboration Systems Solution Components
- Network Infrastructure
- Call Control Systems in Cisco Collaboration Systems Solutions
- Endpoints in Cisco Collaboration Systems Solutions
- Media Resources in Cisco Collaboration Systems Solutions
- Applications in Cisco Collaboration Systems Solutions

Lesson 2: Using Troubleshooting Methodology

- Analyze the Troubleshooting Process
- Troubleshooting Methodology in Complex Environments
- Define the Problem
- Gather Facts
- Consider Possibilities

- Create an Action Plan
- Implement an Action Plan
- Observe Results
- Restart the Problem-Solving Process
- Document Facts

Lesson 3: Using Troubleshooting and Monitoring Tools

- Overview of Troubleshooting and Monitoring Tools
- Cisco Unified Serviceability
- Cisco Unified Communications Manager Traces
- Trace Output Example
- Session Trace Log View
- Cisco Unified RTMT Performance Monitor and Data Logging
- Generic Call Filter Module
- Sniffer Traces



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Module 2: Cisco Unified Communications Manager Troubleshooting

Lesson 1: Troubleshooting Common Gateway and Endpoint Registration Issues

- IP Phone Initialization
- Common DHCP-Related and TFTP-Related Issues
- Using Ping to Cisco IP Phones
- Verify TFTP Server Configuration
- Cisco Unified IP Phone Status Messages
- Cisco Unified IP Phone Network Configuration
- Cisco IOS MGCP Gateway Communications
- Cisco IOS MGCP Gateway and Endpoint
- Cisco IOS MGCP Gateway Configuration Elements
- Cisco IOS MGCP Gateway Registration
- Cisco IOS MGCP Gateway Registration Issues
- Verify Cisco IOS MGCP Gateway Status
- Cisco IOS MGCP Gateway Monitoring Commands
- Cisco IOS MGCP Gateway Unsuccessful Registration
- Cisco IOS H.323 Gateway and SIP Trunk Communications

Lesson 2: Troubleshooting Cisco Unified Communications Manager Availability Issues

- Cisco Unified Communications Manager Is Not Responding
- Cisco Unified Communications Manager Administration Web Page Is Not Displayed
- Slow Response of Cisco Unified Communications Manager Server

Lesson 3: Troubleshooting Database Replication Issues

- Review of Cisco Unified Communications Manager Database Replication
- Identification of Cisco Unified Communications Manager Database Replication Issues
- Resolving Cisco Unified Communications Manager Database Replication Issues

Lesson 4: Troubleshooting LDAP Integration Issues

- LDAP Integration Options with Cisco Unified Communications Manager
- LDAP Integration Considerations
- Resolving Synchronization Issues
- Resolving LDAP Authentication Issues

Module 3: Cisco VCS Troubleshooting

Lesson 1: Troubleshooting Endpoint Registration Issues

- Overview of Endpoint Registration Issues
- Troubleshooting Endpoints on Cisco VCS
- Troubleshooting Cisco TelePresence Endpoints

Lesson 2: Troubleshooting Cisco VCS Control and Cisco VCS Expressway Availability Issues

- Cisco VCS Is Not Responding
- Cisco VCS Administration Web Page Is Not Displayed
- Slow Response of Cisco VCS Server

Lesson 3: Troubleshooting Database Replication Issues

- Database Replication Review
- Identifying Database Replication Issues
- Fixing Cisco VCS Database Replication Issues



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Lesson 4: Troubleshooting LDAP Integration Issues

- Review of LDAP Integration Options
- General LDAP Integration Issues
- Troubleshooting of Device Authentication Issues
- Troubleshooting of Account Authentication Issues

Module 4: Call Setup Issues

Lesson 1: Describing Call Setup Issues and Causes

- Cisco Unified Communications Manager Call Setup Issues
- Cisco VCS Control Call Setup Issues
- Cisco Expressway Series Call Setup Issues
- Call Setup Issues Between Call Control Systems

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

- Review of Digit Analysis in Cisco Unified Communications Manager
- Review of Partitions and CSSs
- Troubleshoot Call Setup Issues in Cisco Unified Communications Manager
- Troubleshoot One-Way Calling Issues
- Troubleshoot Call-Forwarding Issues
- Review of SIP and H.323 Endpoint Registration in Cisco VCS
- Review of Subzones, Links, Pipes, and Search Rules
- Troubleshoot Call Setup Issues in Cisco VCS
- Troubleshoot Unified Communications Mobile and Remote Access Issues

Lesson 3: Troubleshooting On-Net Multisite Calling Issues

- Multisite Dial Plan Issues
- Cisco Unified Communications Manager Issues
- Cisco Unified Border Element Issues

Lesson 4: Troubleshooting Off-Net Calling Issues

- Common Off-Net Calling Issues
- Troubleshoot MGCP Gateway Issues
- Troubleshoot H.323 Gateway Issues
- Troubleshoot SIP Trunk Issues

Module 5: ILS and GDPR Issues

Lesson 1: Troubleshooting ILS and GDPR

- Review of ILS
- Review of GDPR
- Review of URI Call Routing When Using ILS
- Review of Numbered Call-Routing When Using ILS
- Common ILS-Related Issues and Their Causes
- Troubleshoot ILS-Related Issues

Module 6: Cisco Unified Communications Manager Mobility Issues

Lesson 1: Troubleshooting Device Mobility Issues

- Device Mobility Review
- Call-Routing Implementation Options
- Common Device Mobility-Related Issues and Their Causes
- Troubleshoot Device Mobility Configuration Mismatches
- Troubleshoot Device Mobility Call-Routing Problems
- Troubleshoot Device Mobility Call Privilege Problems



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Lesson 2: Troubleshooting Cisco Extension Mobility issues

- Cisco Extension Mobility Review
- Overview of Cisco Extension Mobility Issues
- Troubleshooting Cisco Extension Mobility Login and Logout Issues
- Troubleshoot Cisco Extension Mobility Call-Routing Issues

Lesson 3: Troubleshooting Cisco Unified Mobility Issues

- Review of Cisco Unified Mobility
- Review of Unified Mobility Configuration Elements
- CSS Implementation in Cisco Mobile Connect
- Cisco Unified Mobility Access List Functions
- Overview of Cisco Unified Mobility Issues
- Troubleshoot Cisco Mobile Connect
- Troubleshoot Cisco Unified Mobile Voice Access

Module 7: Cisco TelePresence Management Suite Issues

Lesson 1: Troubleshooting Cisco TMS Issues

- Review of Cisco TMS
- Troubleshoot Cisco TMS
- FindMe Review
- Common FindMe Issues

Module 8: Voice Quality and Media Resources Issues

Lesson 1: Troubleshooting MTP issues

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

Lesson 2: Troubleshooting Transcoder Issues

- Transcoder Review
- Troubleshoot Transcoder Registration Issues

Lesson 3: Troubleshooting Audio and Video Conferencing Issues

- Cisco Unified Communications Manager Conference Bridges
- Troubleshoot Conference Bridges Registered with Cisco Unified Communications Manager
- Troubleshoot Conference Bridges Accessible via SIP Trunks

Lesson 4: Troubleshooting Audio and Video Quality Issues

- Voice Quality Issues in Cisco Collaboration Systems
- Identify and Isolate Voice and Video Quality Problems
- Troubleshoot Layer 2 Quality Problems
- Troubleshoot Voice Quality Issues on a Gateway
- Troubleshoot Quality Issues at Endpoints
- One-Way Audio and Video Issues