



# TROUBLESHOOTING CISCO DATA CENTER INFRASTRUCTURE (DCIT)

## COURSE OVERVIEW

The Troubleshooting Cisco Data Center Infrastructure (DCIT) training builds your knowledge and skills in troubleshooting LANs, SANs, Cisco Unified Fabric, Cisco Unified Computing System (Cisco UCS), and Cisco Application-Centric Infrastructure (Cisco ACI). You'll gain hands-on experience resolving problems on Cisco Multilayer Director Switch (MDS) switches, Cisco Nexus switches, Cisco Fabric Extenders (FEXs), Cisco UCS, Cisco ACI, and more. This training also earns you 50 Continuing Education (CE) credits towards recertification.

## WHO WILL BENEFIT FROM THIS COURSE?

- Network designers
- Network administrators
- Network engineers
- System engineers
- Consulting systems engineers
- Technical solutions architects
- Server administrators
- Network managers
- Cisco integrators and partners

## PREREQUISITES

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

- Configure, secure, and maintain LAN and SAN-based on Cisco Nexus and MDS switches
- Configure, secure, and maintain Cisco Unified Computing System
- Configure, secure, and maintain Cisco ACI

## COURSE OBJECTIVES

- Describe how to troubleshoot the data center network
- Describe the troubleshooting tools and methodologies that are available from the Command-Line Interface (CLI) and are used to identify and resolve issues in a Cisco Data Center network architecture
- Identify and resolve issues that are related to Virtual LANs (VLANs) and private VLANs (PVLANS)
- Identify and resolve issues that are related to port channels and virtual port channels
- Identify and resolve issues that are related to VXLAN
- Describe troubleshooting of routing and high-availability protocols
- Describe troubleshooting of the LAN security features
- Identify and resolve issues that are related to a single device
- Identify and resolve issues that are related to Fibre Channel interface operation



- Identify and resolve Fibre Channel switching issues when the Cisco NX-OS Software is used in switched mode
- Identify and resolve issues that are related to Fibre Channel switching when a Cisco NX-OS switch is used in N-Port Virtualization (NPV) mode
- Identify and resolve issues that are related to FIP and FCoE, including Fibre Channel over Ethernet (FCoE) performance
- Describe Cisco UCS architecture, initial setup, tools, and service aids that are available for Cisco UCS troubleshooting and interpretation of the output
- Describe Cisco UCS configuration and troubleshooting
- Describe Cisco UCS B-Series Blade Server operation and troubleshoot related issues
- Describe Cisco UCS B-Series LAN, SAN, and Fibre Channel operations, including in-depth troubleshooting procedures
- Describe Cisco Integrated Management Controller (IMC) tools for validating performance and facilitating data-gathering activities for Cisco UCS C-Series server troubleshooting, and the troubleshooting approach for hardware and firmware failures
- Define the proper procedures for configuring Cisco UCS C-Series LAN and SAN connectivity, avoiding issues with the VIC, and troubleshooting connectivity issues
- Troubleshoot Cisco UCS C-Series server integration with Cisco UCS Manager
- Identify the tools, protocols, and methods to effectively troubleshoot Cisco ACI
- Describe how to troubleshoot automation and scripting tools
- Describe how to troubleshoot programmability

## **COURSE OUTLINE**

- Section 1: Describing the Troubleshooting Process
- Section 2: Understanding CLI Troubleshooting Tools
- Section 3: Troubleshooting VLANs and PVLANS
- Section 4: Troubleshooting Port Channels and Virtual Port Channels
- Section 5: Troubleshooting VXLAN
- Section 6: Troubleshooting Routing and High-Availability Protocols
- Section 7: Troubleshooting Data Center LAN Security
- Section 8: Troubleshooting Platform-Specific Issues
- Section 9: Troubleshooting Fibre Channel Interfaces
- Section 10: Troubleshooting Fibre Channel Fabric Services
- Section 11: Troubleshooting NPV Mode
- Section 12: Troubleshooting FCoE
- Section 13: Troubleshooting Cisco UCS Architecture and Initialization
- Section 14: Troubleshooting Cisco UCS Configuration
- Section 15: Troubleshooting Cisco UCS B-Series Servers
- Section 16: Troubleshooting Cisco UCS B-Series LAN and SAN Connectivity
- Section 17: Troubleshooting Cisco UCS C-Series Servers
- Section 18: Troubleshooting Cisco UCS C-Series LAN and SAN Connectivity



- Section 19: Troubleshooting Cisco UCS C-Series and Cisco UCS Manager Integration
- Section 20: Exploring the Tools and Methodologies for Troubleshooting Cisco ACI
- Section 21: Troubleshooting Automation and Scripting Tools
- Section 22: Troubleshooting Programmability

#### Lab Outline

- Discovery 1: Document the Network Baseline
- Discovery 2: Troubleshoot Rapid PVST+
- Discovery 3: Troubleshoot LACP
- Discovery 4: Troubleshoot vPC
- Discovery 5: Troubleshoot VXLAN
- Discovery 6: Troubleshoot OSPF
- Discovery 7: Troubleshoot FHRP
- Discovery 8: Troubleshoot Cisco Fabric Services
- Discovery 9: Troubleshoot VRF
- Discovery 10: Troubleshoot Cisco FEX
- Discovery 11: Troubleshoot Fibre Channel Interfaces
- Discovery 12: Troubleshoot Fibre Channel VSANs, Zones, and Domain Services
- Discovery 13: Troubleshoot NPV Mode
- Discovery 14: Troubleshoot FCoE
- Discovery 15: Troubleshoot DCB
- Discovery 16: Troubleshoot Cisco UCS Management and Service Profile Deployment
- Discovery 17: Troubleshoot Cisco UCS C-Series Server LAN Connectivity
- Discovery 18: Troubleshoot Cisco UCS C-Series Server Boot from the Fibre Channel LUN
- Discovery 19: Troubleshoot Cisco UCS C-Series Server Management Connectivity
- Discovery 20: Troubleshoot Cisco ACI Integration with VMware vCenter
- Discovery 21: Troubleshoot Contracts in Cisco ACI
- Discovery 22: Troubleshoot Cisco ACI External Layer 3 Connectivity
- Discovery 23: Troubleshoot Cisco ACI External Layer 2 Connectivity

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- An enthusiastic student services team is available to answer any questions and ensure a quality training experience

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