

## COURSE OUTLINE

# Troubleshooting Cisco Data Center Infrastructure (DCIT) v7.0

**Duration: 5 Days**

### Prerequisites:

To fully benefit from this training, 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 Description:

The Troubleshooting Cisco Data Center Infrastructure (DCIT) v7.0 training shows you how to troubleshoot LAN, SAN, Cisco® Data Center Unified Fabric, Cisco Unified Computing System™ (Cisco UCS®), and Cisco Application-Centric Infrastructure (Cisco ACI®). You will learn methodologies and tools to identify issues that may occur in data center network architecture. You will get extensive hands-on practice troubleshooting installation, configuration and interconnectivity issues on Cisco Multilayer Director Switch (MDS) switches, Cisco Nexus® switches, Cisco Fabric Extenders (FEXs), Cisco UCS, Cisco ACI, and more. This training earns you 50 Continuing Education (CE) credits towards recertification.

### Course Objectives:

After taking this course, you should be able to:

- Describe how to troubleshoot the data center network, troubleshooting tools and methodologies available from the Command-Line Interface (CLI) that 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); port channels and virtual port channels; Overlay Transport Virtualization (OTV); and Virtual Extensible LAN (VXLAN)
- Describe troubleshooting of routing protocols such as Open Shortest Path First (OSPF), Enhanced Interior Gateway Routing Protocol (EIGRP), Protocol-Independent Multicast (PIM), and 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, and in N-Port Virtualization (NPV) mode

- Identify and resolve issues that are related to Fibre Channel over Ethernet (FCoE) and FCoE Initialization Protocol (FIP), including 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, Cisco UCS B-Series Blade Server operation and troubleshoot related issues
- Describe 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 LAN and SAN connectivity, avoiding issues with the VIC, troubleshooting connectivity issues and 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, scripting tools, and programmability

### Intended Audience:

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

### Course Outlines:

- 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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