



# DCIT - TROUBLESHOOTING CISCO DATA CENTER INFRASTRUCTURE V7.1

Course Code: 100490

Learn to diagnose LAN, SAN, Cisco Data Center Unified Fabric, Cisco Unified Computing System and Cisco Application-Centric Infrastructure.

The Troubleshooting Cisco Data Center Infrastructure (DCIT) 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, and Cisco ACI.

This training prepares you for 300-615 DCIT exam. If passed, you earn the Cisco Certified Specialist – Data Center Operations certification and satisfy the concentration exam requirement for the Cisco Certified Network Professional (CCNP) Data Center certification.

This training also earns you 50 Continuing Education (CE) credits toward recertification.

## What You'll Learn

This course will help you:

- Learn how to deploy and troubleshoot various components of Cisco data center infrastructure to support performance, resiliency, scalability needs
- Gain knowledge and skills through Cisco's unique combination of lessons and hands-on practice using enterprise-grade Cisco learning technologies, data center equipment, and software
- Qualify for professional-level job roles

After taking this course, you should be able to:

- Describe how to troubleshoot the data center network
- Describe the 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; and Virtual Extensible LAN (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 and in N-Port Virtualization (NPV) mode
- Identify and resolve issues that are related to Fibre Channel switching when a Cisco NX-OS switch is used in NPV mode
- 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 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, troubleshooting connectivity issues
- Troubleshooting Cisco UCS C-Series server integration with Cisco UCS Manager
- Describe Cisco Intersight characteristics
- Explore the Cisco Nexus Dashboard platform
- Explain Cisco Nexus Dashboard cluster connectivity and installation procedures
- Identify the tools, protocols, and methods to effectively troubleshoot Cisco ACI
- Describe how to troubleshoot automation and programmability tools
- Understand functionality provided by the on-box tooling on the Cisco Nexus series switches and implement simple solutions to improve daily operations
- Describe the use of Python and Ansible to leverage the NX-API to implement and verify configuration state using modern workflows

## Who Needs to Attend

- Network Designers
- Network Administrators
- Network Engineers
- System Engineers
- Data Center Engineers
- Consulting Systems Engineers
- Technical Solutions Architects

- Cisco Integrators and Partners
- Server Administrators
- Network Managers
- Storage Administrators
- Program Managers
- Project Managers

## Prerequisites

There are no prerequisites for this course. However, the knowledge and skills you are recommended to have before attending this training are:

- 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

These skills can be found in the following Cisco courses:



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CLASSROOM LIVE

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5 Day

## Classroom Live Outline

### **Describing the Troubleshooting Process**

- Troubleshooting Overview
- Troubleshooting Overview and Issue Identification

### **Understanding CLI Troubleshooting Tools**

- Ping, Pong, and Traceroute
- Debugging, Event History, and System Monitoring
- SPAN and Encapsulated Remote SPAN
- Ethalyzer, ELAM, and Data Plane Sampling Capture
- Logging
- Cisco Generic Online Diagnostics
- SNMP, Cisco EEM, and RMON

### **Troubleshooting VLANs and PVLANS**

- Troubleshooting VTP
- Troubleshooting Layer 2 Issues
- VLANs and SVIs on Cisco Nexus Series Switches
- Troubleshooting VLANs, PVLANS, and SVIs
- Troubleshooting Rapid PVST+

### **Troubleshooting Port Channels and Virtual Port Channels**

- Port Channel Overview
- vPC Overview
- Troubleshooting vPCs
- Common vPC Issues

### **Troubleshooting VXLAN**

- VXLAN Overlay Features

- VXLAN MP-BGP Ethernet VPN
- Common VXLAN Issues
- Troubleshooting VXLAN

## **Troubleshooting Routing and High-Availability Protocols**

- Troubleshooting Basic Routing Issues
- Troubleshooting OSPFv2 and OSPFv3
- Troubleshooting EIGRP
- Troubleshooting PIM
- Troubleshooting FHRP

## **Troubleshooting Data Center LAN Security**

- Troubleshooting AAA and RBAC
- Troubleshooting First-Hop Security
- Troubleshooting ACLs

## **Troubleshooting Platform-Specific Issues**

- Cisco Fabric Services Overview
- Troubleshooting Cisco Fabric Services
- Troubleshooting Configuration Profiles
- Common VDC Issues
- Troubleshooting VDC
- Troubleshooting VRF
- Cisco FEX Troubleshooting
- Troubleshooting Cisco ISSU

## **Troubleshooting Fibre Channel Interfaces**

- Fibre Channel Overview
- Troubleshooting Fibre Channel Interfaces and Device Registration
- Troubleshooting Fibre Channel Port Channels
- Troubleshooting Port Security and Fabric Binding

## **Troubleshooting Fibre Channel Fabric Services**

- Troubleshooting VSANs
- Troubleshooting Fibre Channel Domain and Name Services
- Distributed Device Aliases
- Troubleshooting Zoning and Fabric Merges
- Troubleshooting Cisco Fabric Services

## **Troubleshooting NPV Mode**

- NPIV and NPV Overview
- Troubleshooting NPV Mode

## **Troubleshooting Cisco UCS Architecture and Initialization**

- Troubleshooting Fabric Interconnects in Standalone and Cluster Mode
- Troubleshooting Cisco UCS Management Access
- Troubleshooting Cisco UCS Manager CLI
- Troubleshooting Cisco UCS with Embedded Tools
- Troubleshooting Cisco UCS Hardware Discovery

## **Troubleshooting Cisco UCS Configuration**

- Stateless Computing
- Troubleshooting Service Profile Association Issues Due to Unavailable Addresses
- Other Service Profile Association Issues
- Cisco UCS Manageability
- Troubleshooting Authentication Failures

## **Troubleshooting Cisco UCS B-Series Servers**

- Troubleshooting Cisco UCS B-Series Blade Server
- Troubleshooting Firmware Upgrade and Operating System Drivers
- Troubleshooting Remote Access
- Troubleshooting Server Hardware

## **Troubleshooting Cisco UCS B-Series LAN and SAN Connectivity**

- Troubleshooting Link-Level Issues
- Troubleshooting Connectivity Issues for Specific Servers
- Troubleshooting Intermittent Connectivity
- Troubleshooting Disjoint Layer 2 Networks
- Troubleshooting Redundant Connectivity
- Troubleshooting Cisco UCS B-Series SAN Connectivity
- Troubleshooting Directly Attached Storage
- Troubleshooting Server Boot from SAN and iSCSI
- Using SPAN for Troubleshooting
- Analyzing Packet Flow

## **Troubleshooting Cisco UCS C-Series Servers**

- Troubleshooting Cisco UCS C-Series Initialization and Cisco IMC
- Troubleshooting Cisco UCS C-Series Hardware and Firmware

## **Troubleshooting Cisco UCS C-Series LAN and SAN Connectivity**

- Troubleshooting the Cisco UCS C-Series VIC Module and Connectivity to Cisco IMC
- Troubleshooting Cisco UCS C-Series LAN Connectivity
- Troubleshooting Cisco UCS C-Series SAN Connectivity
- Using SPAN to Capture Cisco UCS C-Series Server Traffic
- Troubleshooting Cisco UCS C-Series iSCSI Boot

## **Troubleshooting Cisco UCS C-Series and Cisco UCS Manager Integration**

- Integrating Cisco UCS C-Series Servers with Cisco UCS Manager
- Troubleshooting FEX Discovery and VIC Issues

## **Cisco Intersight Overview**

- Cisco Intersight
- Cisco Intersight Architecture
- Flexible Deployment Models
- Cisco Intersight Security
- Cisco Intersight Authentication Options

- Setup Cisco Intersight SaaS Account
- Cisco Intersight Role-Based Access Control
- Connected Cisco Technical Assistance Center
- Cisco Intersight Tagging
- Cisco Intersight Dashboard, Inventory, and Faults
- Firmware Management
- Hardware Compatibility List (HCL) Feature
- Best Practices for Updating Firmware using Cisco Intersight
- Cisco Intersight Managed Operating System Installation
- Context Launch and KVM

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- The Need for Day-2 Operations Tools
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- Cisco Nexus Dashboard Orchestrator Application Use Cases
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- Physical and Virtual Cisco Nexus Dashboard Platforms
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- Cisco Nexus Dashboard OneView
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## **Cisco Nexus Dashboard Connectivity and Installation**

- Cisco Nexus Dashboard Logical Network Connectivity
- Physical Cisco Nexus Dashboard Cluster Connection
- IP Pools for Services Configuration
- Connection Mode Comparison
- Cisco Nexus Dashboard Installation Procedures
- User Interface Bootstrap
- Node Registration
- Connection to Cisco Intersight
- Onboarding Sites

## **Exploring the Tools and Methodologies for Troubleshooting Cisco ACI**

- Troubleshooting the Fabric Discovery Process
- Traditional Troubleshooting Methods in Cisco ACI
- Atomic Counters, Faults, and Health Scores
- Troubleshooting Tenant-Based Policies
- Packet Flow Through the Cisco ACI Fabric
- Troubleshooting AAA and RBAC

## **Troubleshooting Automation and Programmability Tools**

- Troubleshooting the Cisco NX-OS Scheduler
- Troubleshooting REST API, JSON, and XML Encodings
- Cisco NX-OS Programmability

## **On-Box Programmability and Automation with Cisco NX-OS**

- Working with Cisco NX-OS Bash
- Linux Containers and Guest Shell
- Python API
- Embedded Event Manager
- Docker Containers on Cisco NX-OS

## **Off-Box Programmability and Automation with Cisco NX-OS**

- NX-API Enhancement
- Model-Driven Programmability on Cisco NX-OS
- Ansible for Cisco NX-OS
- Introduction to Terraform
- Utilization of Terraform
- Terraform for Cisco NX-OS

## Classroom Live Labs

- Document the Network Baseline
- Troubleshoot Rapid PVST+
- Troubleshoot LACP
- Troubleshoot vPC
- Troubleshoot VXLAN
- Troubleshoot OSPF
- Troubleshoot FHRP
- Troubleshoot Cisco Fabric Services
- Troubleshoot VRF
- Troubleshoot Fibre Channel Interfaces
- Troubleshoot Fibre Channel VSANs, Zones, and Domain Services
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- Troubleshoot Cisco UCS C-Series Server LAN Connectivity
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- Troubleshoot Cisco ACI Integration with VMware vCenter
- Troubleshoot Contracts in Cisco ACI
- Troubleshoot Cisco ACI External Layer 3 Connectivity
- Troubleshoot Cisco ACI External Layer 2 Connectivity



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VIRTUAL CLASSROOM LIVE

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- Port Channel Overview
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- Troubleshooting ACLs

## **Troubleshooting Platform-Specific Issues**

- Cisco Fabric Services Overview
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- Using SPAN to Capture Cisco UCS C-Series Server Traffic
- Troubleshooting Cisco UCS C-Series iSCSI Boot

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- Integrating Cisco UCS C-Series Servers with Cisco UCS Manager
- Troubleshooting FEX Discovery and VIC Issues

## **Cisco Intersight Overview**

- Cisco Intersight
- Cisco Intersight Architecture
- Flexible Deployment Models
- Cisco Intersight Security
- Cisco Intersight Authentication Options

- Setup Cisco Intersight SaaS Account
- Cisco Intersight Role-Based Access Control
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- Best Practices for Updating Firmware using Cisco Intersight
- Cisco Intersight Managed Operating System Installation
- Context Launch and KVM

## **Cisco Nexus Dashboard Overview**

- The Need for Day-2 Operations Tools
- Cisco Nexus Dashboard Insights Application Use Cases
- Cisco Nexus Dashboard Orchestrator Application Use Cases
- Cisco Nexus Dashboard Fabric Controller Application Use Cases
- Cisco Nexus Dashboard Data Broker Application Use Cases
- Physical and Virtual Cisco Nexus Dashboard Platforms
- Cisco Nexus Dashboard Cluster Node Roles
- Deployment and Placement of Nodes Across Sites
- Cisco Nexus Dashboard OneView
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- Cisco Nexus Dashboard Logical Network Connectivity
- Physical Cisco Nexus Dashboard Cluster Connection
- IP Pools for Services Configuration
- Connection Mode Comparison
- Cisco Nexus Dashboard Installation Procedures
- User Interface Bootstrap
- Node Registration
- Connection to Cisco Intersight
- Onboarding Sites

## **Exploring the Tools and Methodologies for Troubleshooting Cisco ACI**

- Troubleshooting the Fabric Discovery Process
- Traditional Troubleshooting Methods in Cisco ACI
- Atomic Counters, Faults, and Health Scores
- Troubleshooting Tenant-Based Policies
- Packet Flow Through the Cisco ACI Fabric
- Troubleshooting AAA and RBAC

## **Troubleshooting Automation and Programmability Tools**

- Troubleshooting the Cisco NX-OS Scheduler
- Troubleshooting REST API, JSON, and XML Encodings
- Cisco NX-OS Programmability

## **On-Box Programmability and Automation with Cisco NX-OS**

- Working with Cisco NX-OS Bash
- Linux Containers and Guest Shell
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## Virtual Classroom Live Labs

- Document the Network Baseline
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Mar 9 - 13, 2026 | 8:30 AM - 4:30 PM EDT

May 11 - 15, 2026 | 8:30 AM - 4:30 PM EDT

Jul 20 - 24, 2026 | 8:30 AM - 4:30 PM EDT

Sep 14 - 18, 2026 | 8:30 AM - 4:30 PM EDT

Nov 9 - 13, 2026 | 8:30 AM - 4:30 PM EST





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ON-DEMAND

\$1,500 USD

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- Troubleshoot Fibre Channel Interfaces
- Troubleshoot Fibre Channel VSANs, Zones, and Domain Services
- Troubleshoot NPV Mode
- Troubleshoot Cisco UCS Management and Service Profile Deployment
- Troubleshoot Cisco UCS C-Series Server LAN Connectivity
- Troubleshoot Cisco UCS C-Series Server Boot from the Fibre Channel LUN
- Troubleshoot Cisco UCS C-Series Server Management Connectivity
- Troubleshoot Cisco ACI Integration with VMware vCenter
- Troubleshoot Contracts in Cisco ACI
- Troubleshoot Cisco ACI External Layer 3 Connectivity
- Troubleshoot Cisco ACI External Layer 2 Connectivity



# DCIT - TROUBLESHOOTING CISCO DATA CENTER INFRASTRUCTURE V7.1

Course Code: 100490

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