
Troubleshooting Cisco Data Center Infrastructure (DCIT)

***WHERE GREAT TRAINING
HAPPENS EVERYDAY!***

Troubleshooting Cisco Data Center Infrastructure (DCIT)

Course Duration

5 Days

Course Price

\$4,595.00

46 CLCs

Methods of Delivery

In-Person ILT

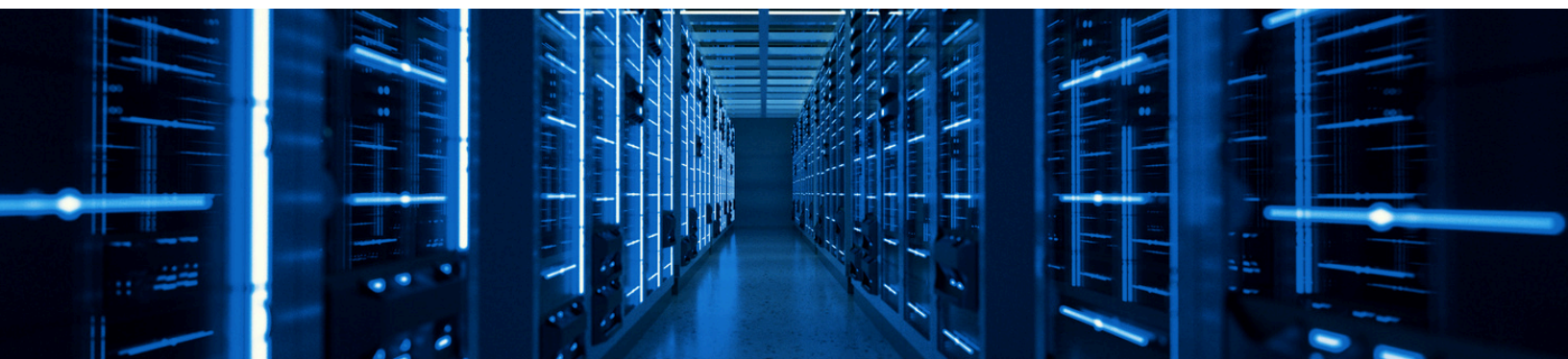
Virtual ILT

Onsite ILT

About this Class

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 v1.2 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.



Troubleshooting Cisco Data Center Infrastructure (DCIT)

How you will benefit

This class 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
- Prepare for the 300-615 DCIT v1.2 exam
- Earn 50 CE credits toward recertification

Why Attend with Current Technologies CLC

- Our Instructors are the top 10% rated by Cisco
- Our Lab has a dedicated 1 Gig Fiber Connection for our Labs
- Our Labs run up to Date Code for all our courses

Who Should Attend

The job roles best suited to the material in this course are:

- 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

Troubleshooting Cisco Data Center Infrastructure (DCIT)

Objectives

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

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Cont. Objectives

- 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

Prerequisites

There are no prerequisites for this training. 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

Troubleshooting Cisco Data Center Infrastructure (DCIT)

Course Outline

Module 1: Describing the Troubleshooting Process

- Troubleshooting Overview
- Narrow Down the Cause of the Problem

Module 2: Understanding CLI Troubleshooting Tools

- Ping, Pong, and Traceroute
- Debugging, Event History, and System Monitoring
- Switched Port Analyzer (SPAN) and Encapsulated Remote SPAN
- Ethalyzer, Embedded Logic Analyzer Module (ELAM), and Data Plane Sampling Capture
- Logging
- Cisco Generic Online Diagnostics
- Simple Network Management Protocol (SNMP), Cisco Embedded Event Manager (EEM), and Remote Network Monitor (RMON)

Module 3: Troubleshooting VLANs and PVLANS

- Troubleshoot VLAN Trunking Protocol (VTP)
- Troubleshoot Layer 2 Issues
- VLANs and Switched Virtual Interfaces (SVIs) on Cisco Nexus Series Switches
- Troubleshoot VLANs, PVLANS, and SVIs
- Troubleshoot Rapid Per VLAN Spanning Tree+ (PVST+)

Module 4: Troubleshooting Port Channels and Virtual Port Channels

- Port Channel Overview
- Virtual Port Channel (vPC) Overview
- Troubleshoot vPCs
- Common vPC Issues

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Course Outline

Module 5: Troubleshooting Virtual Extensible LAN (VXLAN)

- VXLAN Overlay Features
- VXLAN Multiprotocol Border Gateway Protocol (MP-BGP) Ethernet VPN
- Common VXLAN Issues
- VXLAN Troubleshooting

Module 6: Troubleshooting Routing and High-Availability Protocols

- Troubleshoot Basic Routing Issues
- Troubleshoot OSPFv2 and OSPFv3
- Troubleshoot EIGRP
- Troubleshoot PIM
- Troubleshoot First Hop Redundancy Protocol (FHRP)

Module 7: Troubleshoot Data Center LAN Security

- Troubleshoot Authentication, Authorization, and Accounting (AAA) and Role-Based Access Control (RBAC)
- Troubleshoot First-Hop Security
- Troubleshoot Control Plane Policing (CoPP)
- Troubleshoot Access Control Lists (ACLs)

Module 8: Troubleshooting Platform-Specific Issues

- Cisco Fabric Services Overview
- Troubleshoot Cisco Fabric Services
- Configure and Troubleshoot Configuration Profiles
- Common Virtual Device Contexts (VDC) Issues
- Troubleshoot VDC
- Troubleshoot Virtual Routing and Forwarding (VRF)
- Cisco FEX Troubleshooting
- Troubleshoot Cisco In-Service Software Upgrade (ISSU)

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Course Outline

Module 9: Troubleshooting Fibre Channel Interfaces

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

Module 10: Troubleshooting Fibre Channel Fabric Services

- Troubleshoot Virtual Storage Area Networks (VSANs)
- Troubleshoot Fibre Channel Domain and Name Services
- Troubleshoot Zoning and Fabric Merges
- Troubleshoot Cisco Fabric Services

Module 11: Troubleshooting NPV Mode

- N-Port ID Virtualization (NPIV) and NPV Overview
- Troubleshoot NPV Mode

Module 12: Troubleshooting Cisco UCS Architecture and Initialization

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

Module 13: Troubleshooting Cisco UCS Configuration

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

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Course Outline

Module 14: Troubleshooting Cisco UCS B-Series Servers

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

Module 15: Troubleshooting Cisco UCS B-Series LAN and SAN Connectivity

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

Module 16: Troubleshooting Cisco UCS C-Series Servers

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

Module 17: Troubleshooting Cisco UCS C-Series LAN and SAN Connectivity

- Troubleshoot the Cisco UCS C-Series VIC Module and Connectivity to Cisco IMC
- Troubleshoot Cisco UCS C-Series LAN Connectivity

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Course Outline

Cont. Module 17

- Troubleshoot Cisco UCS C-Series SAN Connectivity
- Use SPAN to Capture Cisco UCS C-Series Server Traffic
- Troubleshoot Cisco UCS C-Series Boot from the Fibre Channel Logical Unit Number LUN
- Troubleshoot Cisco UCS C-Series iSCSI Boot

Module 18: Troubleshooting Cisco UCS C-Series and Cisco UCS Manager Integration

- Integrate Cisco UCS C-Series Servers with Cisco UCS Manager
- Troubleshoot FEX Discovery and VIC Issues

Module 19: Cisco Intersight Overview

Module 20: Cisco Nexus Dashboard Overview

Module 21: Cisco Nexus Dashboard Connectivity and Installation

Module 22: Exploring the Tools and Methodologies for Troubleshooting Cisco ACI

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

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Course Outline

Module 23: Troubleshooting Automation and Programmability Tools

- Troubleshoot Cisco Internetwork Operating System (IOS) EEM
- Troubleshoot the Cisco NX-OS Scheduler
- Troubleshoot Bash Shell and Guest Shell for NX-OS
- Troubleshoot Representational State Transfer (REST) API, JavaScript Object Notation (JSON), and Extensible Markup Language (XML) Encoding

Module 24: On-Box Programmability and Automation with Cisco NX-OS

Module 25: Off-Box Programmability and Automation with Cisco NX-OS

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Lab Outline

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