

Troubleshooting Cisco Data Center Infrastructure (DCIT)

- **Formato do curso:** Presencial e Live Training
- **Preço:** 2995€
- **Duração:** 35 horas

The Troubleshooting Cisco Data Center Infrastructure (DCIT) course 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 course helps prepare you to take the exam, **Troubleshooting Cisco Data Center Infrastructure** (300-615 DCIT), which leads to **CCNP® Data Center** and the **Cisco Certified Specialist - Data Center Operations** certifications.

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

Destinatários

- Engineers involved in the troubleshooting of LAN, SAN, Cisco Data Center Unified Fabric, Cisco Unified Computing System (UCS) and Cisco Application Centric Infrastructure (ACI).

Pré-requisitos

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

These are the recommended Cisco courses that may help you meet these prerequisites:

- [Implementing and Administering Cisco Networking Technologies \(CCNA®\)](#)
- Understanding Cisco Data Center Foundations (DCFNDU)
- [Implementing and Operating Cisco Data Center Core Technologies \(DCCOR\)](#)
- Introducing Cisco NX-OS Switches and Fabrics in the Data Center (DCINX)
- Configuring Cisco NX-OS Switches and Fabrics in the Data Center (DCCNX)
- Introducing Cisco Unified Computing System (DCIUCS)
- Configuring Cisco Unified Computing System (DCCUCS)
- Implementing Cisco Data Center Virtualization and Automation (DCVAI)

Objetivos

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

Metodologia

- Instructor-led training: 5 days in the classroom with hands-on lab practice
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Programa

- **Describing the Troubleshooting Process**
 - Troubleshooting Overview
 - Narrow Down the Cause of the Problem
- **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)
- **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+)
- **Troubleshooting Port Channels and Virtual Port Channels**
 - Port Channel Overview
 - Virtual Port Channel (vPC) Overview
 - Troubleshoot vPCs
 - Common vPC Issues
- **Troubleshooting Cisco Overlay Transport Virtualization (OTV)**
 - Cisco OTV Features
 - Common Cisco OTV Issues
 - Cisco OTV Troubleshooting
 - Hot Standby Routing Protocol (HSRP) Isolation Between Data Centers Using Cisco OTV
- **Troubleshooting Virtual Extensible LAN (VXLAN)**
 - VXLAN Overlay Features
 - VXLAN Multiprotocol Border Gateway Protocol (MP-BGP) Ethernet VPN
 - Common VXLAN Issues
 - VXLAN Troubleshooting
- **Troubleshooting Routing and High-Availability Protocols**
 - Troubleshoot Basic Routing Issues

- Troubleshoot OSPFv2 and OSPFv3
- Troubleshoot EIGRP
- Troubleshoot PIM
- Troubleshoot First Hop Redundancy Protocol (FHRP)
- **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)
- **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)
- **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
- **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
- **Troubleshooting NPV Mode**
 - N-Port ID Virtualization (NPV) and NPV Overview
 - Troubleshoot NPV Mode
- **Troubleshooting FCoE**
 - FCoE and FIP Overview
 - Troubleshoot FIP
 - Troubleshoot FCoE- and QoS-Related Issues
 - Troubleshoot Data Center Bridging (DCB)
- **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
- **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
- **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
- **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
- **Troubleshooting Cisco UCS C-Series Servers**
 - Troubleshoot Cisco UCS C-Series Initialization and Cisco IMC
 - Troubleshoot Cisco UCS C-Series Hardware and Firmware
- **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
 - 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
- **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
- **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
- **Troubleshoot Automation and Scripting Tools**
 - Troubleshoot Cisco Internetwork Operating System (IOS) EEM
 - Troubleshoot the Cisco NX-OS Scheduler

- **Troubleshooting Programmability**

- Troubleshoot Bash Shell and Guest Shell for NX-OS
- Troubleshoot Representational State Transfer (REST) API, JavaScript Object Notation (JSON), and Extensible Markup Language (XML) Encodings

Lab outline

- Designing Enterprise Connectivity
- Designing an Enterprise Network with BGP Internet Connectivity
- Designing an Enterprise Campus LAN
- Designing Resilient Enterprise WAN
- Designing QoS in an Enterprise Network
- Designing an Enterprise IPv6 Network

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