



Troubleshooting Cisco Data Center Infrastructure (DCIT)

Cisco

- **Nível:** Avançado
- **Duração:** 35h

Sobre o curso

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

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

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).

Condições

Após a formação, é possível adquirir, o exame de certificação do parceiro oficial com 10% de desconto. Oferta válida até 6 meses após a conclusão do curso.

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)

Metodologia

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

- Describing the Troubleshooting Process
- Understanding CLI Troubleshooting Tools
- Troubleshooting VLANs and PVLANS
- Troubleshooting Port Channels and Virtual Port Channels
- Troubleshooting Cisco Overlay Transport Virtualization (OTV)
- Troubleshooting Virtual Extensible LAN (VXLAN)
- Troubleshooting Routing and High-Availability Protocols
- Troubleshoot Data Center LAN Security
- Troubleshooting Platform-Specific Issues
- Troubleshooting Fibre Channel Interfaces
- Troubleshooting Fibre Channel Fabric Service
- Troubleshooting NPV Mode
- Troubleshooting FCoE
- Troubleshooting Cisco UCS Architecture and Initialization

- 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

- 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 (NPIV) 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