DCIT

Troubleshooting Cisco Data Center Infrastructure

40 horas | Data Center | Cisco

Cisco Continuing Education Credits

50 CE Credits

INTRODUÇÃO

The Troubleshooting Cisco Data Center Infrastructure (DCIT) v7.0 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:
• 300-615 Troubleshooting Cisco Data Center Infrastructure (DCIT).

The 300-615 DCIT exam certifies your knowledge of troubleshooting a data center infrastructure including network, compute platforms, storage network, automation, management, and operations.

After you pass 300-615 DCIT, you earn the Cisco Certified Specialist - Data Center Operations certification and you satisfy the concentration exam requirement for new CCNP Data Center certification.

OBJETIVO DO CURSO

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.

PÚBLICO-ALVO

Professionals interested in supporting and troubleshooting Cisco Data Center Solutions.

This course also helps prepare student to take the 300-615 Troubleshooting Cisco Data Center Infrastructure (DCIT) exam, which is part of the new CCNP® Data Center.

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.

For reference the following Cisco courses 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);

CONTEÚDO PROGRAMÁTICO

Course Introduction

Course Outline

Course Goals & Objectives

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

SPAN and Encapsulated Remote SPAN

Ethanalyzer and Data Plane Sampling Capture

Logging

Cisco Generic Online Diagnostics

SNMP, Cisco EEM, and RMON

Troubleshooting VLANs and PVLANs

Troubleshoot VTP

Troubleshoot Layer 2 Issues

VLANs and SVIs on Cisco Nexus Series Switches

Troubleshoot VLANs, PVLANs, and SVIs

Troubleshoot Rapid PVST+

Troubleshooting Port Channels and Virtual Port Channels

Port Channel Overview

vPC Overview

Common vPC Issues

Troubleshooting Cisco OTV

Cisco OTV Features

Common Cisco OTV Issues

Cisco OTV Troubleshooting

HSRP Isolation Between Data Centers Using Cisco OTV

Troubleshooting VXLAN

VXLAN Overlay Features

VXLAN 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 FHRP

Troubleshoot Data Center LAN Security

Troubleshoot AAA and RBAC

Troubleshoot First-Hop Security

Troubleshoot CoPP

Troubleshoot ACLs

Troubleshooting Platform-Specific Issues

Cisco Fabric Services Overview

Troubleshoot Cisco Fabric Services

Configure and Troubleshoot Configuration Profiles

Common VDC Issues

Troubleshoot VDC

Troubleshoot VRF

Cisco FEX Troubleshooting

Troubleshoot Cisco ISSU

Troubleshooting Fibre Channel Interfaces

Fibre Channel Overview

Troubleshoot Fibre Channel Interfaces and Device Registration

Troubleshoot SAN Port Channels

Troubleshoot Port Security and Fabric Binding

Troubleshooting Fibre Channel Fabric Services

Troubleshoot VSANs

Troubleshoot Fibre Channel Domain and Name Services

Troubleshoot Zoning and Fabric Merges

Troubleshoot Cisco Fabric Services

Troubleshooting NPV Mode

NPIV and NPV Overview

Troubleshoot NPV Mode

Troubleshooting FCoE

FCoE and FIP Overview

Troubleshoot FIP

Troubleshoot FCoE- and QoS-Related Issues

Troubleshoot 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

Cisco UCS Manageability

Troubleshoot Authentication Failures

Troubleshooting Cisco UCS B-Series Servers

Troubleshoot Cisco UCS B-Series Server Boot

Troubleshoot 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 Tra?c

Troubleshoot Cisco UCS C-Series Boot from the Fibre Channel 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 IOS EEM

Troubleshoot the Cisco NX-OS Scheduler

Troubleshooting Programmability

Troubleshoot Bash Shell and Guest Shell for NX-OS

Troubleshoot REST API, JSON, and XML Encodings

Lab Outline

Lab 0: Document the Network Baseline

Lab 1: Troubleshoot Rapid PVST+

Lab 2: Troubleshoot LACP

Lab 3: Troubleshoot vPC

Lab 4: Troubleshoot OTV

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 Cisco FEX

Lab 11: Troubleshoot Fibre Channel Interfaces

Lab 12: Troubleshoot Fibre Channel VSANs, Zones, and Domain Services

Lab 13: Troubleshoot NPV Mode

Lab 14: Troubleshoot FCoE

Lab 15: Troubleshoot DCB

Lab 16: Troubleshoot Cisco UCS Management and Service Profile Deployment

Lab 17: Troubleshoot Cisco UCS C-Series Server LAN Connectivity

Lab 18: Troubleshoot Cisco UCS C-Series Server Boot from the Fibre Channel LUN

Lab 19: Troubleshoot Cisco UCS C-Series Server iSCSI Boot

Lab 20: Troubleshoot Cisco UCS C-Series Server Management Connectivity

Lab 21: Troubleshoot Bare-Metal Hosts Connectivity Through Cisco ACI

Lab 22: Troubleshoot Cisco ACI Integration with VMware vCenter

Lab 23: Troubleshoot Contracts in Cisco ACI

Lab 24: Troubleshoot Cisco ACI External Layer 3 Connectivity

Lab 25: Troubleshoot Cisco ACI External Layer 2 Connectivity