

Troubleshooting Cisco Data Center Infrastructure

Duration: 5 Days Course Code: DCIT Version: 6.2

Overview:

Troubleshooting Cisco Data Center Infrastructure is a skills-building course focused on the troubleshooting of LAN, SAN, Cisco Data Center Unified Fabric, Cisco Unified Computing System (UCS), and Cisco Application Centric Infrastructure (ACI). The course provides rich, hands-on experience in resolving problems on Cisco MDS switches, Cisco Nexus switches, Cisco fabric extenders (FEXs), Cisco UCS and Cisco ACI. The course is designed to help students prepare for Cisco CCNP Data Center certification and for professional-level data center roles.

Target Audience:

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

Objectives:

- **After completing this course you should be able to:**
- Outline the troubleshooting process, and highlight which questions to ask
- Describe the troubleshooting tools and methodologies that are available from the CLI and are used to identify and resolve issues in a Cisco Data Center network architecture
- Identify and resolve issues related to VLANs and PVLANS
- Identify and resolve issues related to port channels and virtual port channels
- Identify and resolve issues related to Cisco FabricPath
- Identify and resolve issues related to OTV
- Identify and resolve issues related to VXLAN
- Identify and resolve issues related to LISP
- Describe troubleshooting of routing protocols, such as OSPF, ISIS, and PIM.
- Describe troubleshooting of the AAA and RBAC
- Identify and resolve issues related to a single device
- Identify and resolve issues related to Fibre Channel interface operation
- Identify and resolve issues related to Fibre Channel switching when the Cisco NX-OS software switch is used in switched mode (vs. NPV mode)
- Identify and resolve issues related to Fibre Channel switching when the NX-OS switch is used in N Port Virtualization (NPV) mode
- Identify and resolve issues related to FIP and FCoE, 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 and troubleshoot related issues
- Describe Cisco UCS B-Series operation and troubleshoot related issues
- Describe LAN, SAN and Fibre Channel operations, including in depth troubleshooting procedures
- Describe Cisco IMC utilities to validate performance and facilitate data-gathering activities for Cisco UCS C-Series troubleshooting, as well troubleshooting approach to hardware and firmware failures
- Define proper procedures to configure LAN and SAN connectivity and avoid issues with the P81E virtual interface card (VIC)
- Troubleshoot integration of Cisco UCS C-Series servers with Cisco UCS Manager
- Identify tools, protocols and methods to effectively troubleshoot Cisco ACI

Prerequisites:

Testing and Certification

Attendees should meet the following prerequisites:

Have attended or have knowledge equivalent to:

- **DCICN** - Introducing Cisco Data Center Networking
- **DCICT** - Introducing Cisco Data Center Technologies
- **DCII** - Implementing Cisco Data Center Infrastructure
- **DCVAI** - Implementing Cisco Data Center Virtualization and Automation
- **DCUCI** - Implementing Cisco Data Center Unified Computing

Recommended as preparation for exam:

- **300-180 - DCIT** - Troubleshooting Cisco Data Center Infrastructure
This is one of four exams required for the Cisco CCNP Data Center Certification

Follow-on-Courses:

Students looking to achieve their CCNP in Data Center will also require :

- **DCUCI** - Implementing Cisco Data Center Unified Computing
- **DCII** - Implementing Cisco Data Center Infrastructure
- **DCVAI** - Implementing Cisco Data Center Virtualization and Automation

Content:

Troubleshooting the Data Center LAN Network

- Overview of the Troubleshooting Process
- Understanding CLI Troubleshooting Tools
- Troubleshooting VLANs and Private VLANs
- Troubleshooting Port Channels and Virtual Port Channels
- Troubleshooting Cisco FabricPath
- Troubleshooting Cisco OTV
- Troubleshooting VXLAN
- Troubleshooting LISP
- Troubleshooting Routing Protocols
- Troubleshooting Data Center LAN Security
- Troubleshooting Platform-Specific Issues

Troubleshooting Data Center SAN

- Troubleshooting Fibre Channel Interfaces
- Troubleshooting Fibre Channel Fabric Service
- Troubleshooting NPV Mode
- Troubleshooting FCoE

Troubleshooting Data Center Unified Computing

- Troubleshooting Cisco UCS Architecture and Initialization
- Troubleshooting Cisco UCS Configuration
- Troubleshooting Cisco UCS B-Series Servers
- Troubleshooting Cisco UCS B-Series LAN and SAN Connectivity
- Troubleshooting Cisco UCS C-Series Servers
- Troubleshooting Cisco UCS C-Series LAN and SAN Connectivity
- Troubleshooting Cisco UCS C-Series and Cisco UCS Manager Integration

Troubleshooting Data Center ACI

- Exploring the Tools and Methodology of Troubleshooting Cisco ACI

Labs:

- Lab 1: Document the Network Baseline
- Lab 2: Troubleshoot LAN-RSTP
- Lab 3: Troubleshoot LAN-LACP
- Lab 4: Learning Lab: Troubleshoot LAN-vPC
- Lab 5: Troubleshoot LAN-FabricPath
- Lab 6: Troubleshoot LAN-OTV
- Lab 7: Troubleshoot LAN-OSPF
- Lab 8: Troubleshoot LAN-FHRP
- Lab 9: Troubleshoot LAN-VRF
- Lab 10: Troubleshoot LAN-VXLAN
- Lab 11: Troubleshoot LAN-CFS
- Lab 12: Troubleshoot LAN-FEX
- Lab 13: Troubleshoot SAN-FC Interfaces
- Lab 14: Troubleshoot SAN-FC VSANs, Zones, and Domain Services
- Lab 15: Troubleshoot SAN-NPV Mode
- Lab 16: Troubleshoot SAN-FCoE
- Lab 17: Troubleshoot SAN-DCB
- Lab 18: Troubleshoot Compute-Cisco UCS Management and Service Profile Deployment
- Lab 19: Troubleshoot Compute-Cisco UCS C-Series Server Boot from SAN
- Lab 20: Troubleshoot Compute-LAN Connectivity, Part 1
- Lab 21: Troubleshoot Compute-LAN Connectivity, Part 2
- Lab 22: Troubleshoot Compute-Cisco UCS C-Series Server Boot from SAN
- Lab 23: Troubleshoot Compute-Network Connectivity
- Lab 24: Troubleshoot ACI-Bare Metal Hosts
- Lab 25: Troubleshoot ACI-VMM
- Lab 26: Troubleshoot ACI-Contracts
- Lab 27: Troubleshoot ACI-External Layer 3
- Lab 28: Troubleshoot ACI-External Layer 2

Further Information:

For More information, or to book your course, please call us on 353-1-814 8200

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