

## Troubleshooting Cisco Data Center Infrastructure (DCIT)

### **COURSE OVERVIEW:**

The Troubleshooting Cisco Data Center Infrastructure (DCIT) course is designed to help students prepare for the Cisco CCNP Data Center certification and for professional-level data center roles. The focus of this skills-building course is troubleshooting of LANs, SANs, Cisco 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.

### **WHO WILL BENEFIT FROM THIS COURSE?**

- Data center administrators and engineers
- Network administrators and engineers
- Consulting systems engineers
- Cisco integrators and partners
- Data center designers and managers
- Network designers and managers
- Systems engineers

### **PREREQUISITES:**

Students considered for this training should have attended the following classes or obtained equivalent level of knowledge:

- Introducing Cisco Data Center Networking (DCICN) v6.0
- Introducing Cisco Data Center Technologies (DCICT) v6.0
- Implementing Cisco Data Center Infrastructure (DCII) v6.0
- Implementing Cisco Data Center Virtualization and Automation (DCVAI) v6.0
- Implementing Cisco Data Center Unified Computing (DCUCI) v6.0

### **COURSE OBJECTIVES:**

Upon completing this course, the learner will be able to meet these overall objectives:

- 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

## **COURSE OUTLINE:**

### **Module 1: Troubleshooting the Data Center LAN Network**

- Lesson 1: Overview of the Troubleshooting Process
- Lesson 2: Understanding CLI Troubleshooting Tools
- Lesson 3: Troubleshooting VLANs and Private VLANs
- Lesson 4: Troubleshooting Port Channels and Virtual Port Channels
- Lesson 5: Troubleshooting Cisco FabricPath
- Lesson 6: Troubleshooting Cisco OTV
- Lesson 7: Troubleshooting VXLAN
- Lesson 8: Troubleshooting LISP
- Lesson 9: Troubleshooting Routing Protocols
- Lesson 10: Troubleshooting Data Center LAN Security
- Lesson 11: Troubleshooting Platform-Specific Issues

### **Module 2: Troubleshooting Data Center SAN**

- Lesson 1: Troubleshooting Fibre Channel Interfaces
- Lesson 2: Troubleshooting Fibre Channel Fabric Service
- Lesson 3: Troubleshooting NPV Mode
- Lesson 4: Troubleshooting FCoE

### **Module 3: Troubleshooting Data Center Unified Computing**

- Lesson 1: Troubleshooting Cisco UCS Architecture and Initialization
- Lesson 2: Troubleshooting Cisco UCS Configuration
- Lesson 3: Troubleshooting Cisco UCS B-Series Servers
- Lesson 4: Troubleshooting Cisco UCS B-Series LAN and SAN Connectivity

- Lesson 5: Troubleshooting Cisco UCS C-Series Servers
- Lesson 6: Troubleshooting Cisco UCS C-Series LAN and SAN Connectivity
- Lesson 7: Troubleshooting Cisco UCS C-Series and Cisco UCS Manager Integration

**Module 4: Troubleshooting Data Center ACI**

- Lesson 1: Exploring the Tools and Methodology of Troubleshooting Cisco ACI

**Lab Outline**

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

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What sets SLI apart is not only our immense selection of trainings options, but our convenient and consistent delivery system. No matter how complex your environment is or where you are located, SLI is sure to have a training solution that you can count on!

**Premiere World Class Instruction Team**

- All SLI instructors have a four-year technical degree, instructor level certifications and field consulting work experience.
- Sunset Learning has won numerous Instructor Excellence and Instructor Quality Distinction awards since 2012

**Enhanced Learning Experience**

- The goal of our instructors during class is ensure students understand the material, guide them through our labs and encourage questions and interactive discussions.

**Convenient and Reliable Training Experience**

- You have the option to attend classes at any of our established training facilities or from the convenience of your home or office with the use of our HD-ILT network (High Definition Instructor Led Training)
- All Sunset Learning Institute classes are guaranteed to run – you can count on us to deliver the training you need when you need it!

**Outstanding Customer Service**

- Dedicated account manager to suggest the optimal learning path for you and your team
- Enthusiastic Student Services team available to answer any questions and ensure a quality training experience