

CCIE Data Center Certification (Exam 400-151 CCIE DC) (Coming Soon)

Modality: On Demand

Duration:

This course is for professionals planning to enroll in the 400-151 CCIE Exam leading to the 400-151 CCIE Certification. The official exam voucher is not included in this course. However, the official exam voucher can be purchased separately on request.

About this Course:

This course is an advanced-level certification for professionals and support agents striving for furtherance in data sciences and information technology. This course helps professionals design, deploy, plan, and manage IT Data Center Infrastructure. The main topics covered in this course include fabric infrastructure, automation, connectivity, storage network computation, and network services orchestration. The CCIE Data Center coaching and training program helps nurture proficient leaders of the tech industry. This course is further disintegrated into the following two sub courses:

- *400-151 CCIE Data Center – Written Exam*
- *CCIE Data Center Lab Exam – Practical Exam*

The written exam needs to be completed within 2 hours and tests the key concepts relating to the data center and network infrastructures. While, the practical exams spans over 8 hours and tests configuring, diagnosing, and troubleshooting skills.

Course Objectives:

- Describing Support Agent Role and Responsibilities
- Improving Support Skills with Active Integration of Agent Roles
- Learning Support Agent Performance Enhancing Skills
- Understanding Customer Behavior and Support Agent Interactions
- Gaining Knowledge of Time-Viewing Capabilities of Numerous Cultures
- Developing the Link between Customer Behavior and Communication Pattern
- Understanding Customer Behavior and Cultural Dimensions
- Describing IT Support Case Management Fundamentals

Job Roles:

- Data Center Engineer – Annual Salary \$113,812
- Business Services Architect - \$113,200
- Data Center Architect - \$113,869

Audience:

- Data Center Engineer
- Business Services and Data Center Architect

Prerequisites:

There are no obligatory prerequisites for this course. However, professionals striving to attempt the 400-151 CCIE Exam need to comply with the following prerequisites:

- Know-How of CCIE Data Center Exam Topics
- It is highly recommended for professionals to have 8 years of experience
- Clearing CCIE Data Center Theory Exam is obligatory for attempting the Practical Exam

Course Outline:

Module 1: Data Center Layer 2/Layer 3 Connectivity

- Design, implement, and troubleshoot Layer 2 technologies
 - Link aggregation
 - Tagging/trunking
 - Spanning Tree Protocol
- Design, implement, and troubleshoot overlays
 - VXLAN
 - EVPN
 - OTV
- Design, implement, and troubleshoot routing protocols and features
 - OSPF
 - IS-IS
 - BGP
 - BFD
 - FHRP
- Design, implement, and troubleshoot multicast protocols
 - PIM
 - IGMP
- Describe interfabric connectivity
 - Multipod
 - Multisite
- Design, implement, and troubleshoot external fabric connectivity
 - L2/L3Out
 - VRF-Lite
- Design, implement, and troubleshoot traffic management
 - Queueing
 - Policing
 - Classification/marketing
 - RoCE

Module 2: Data Center Network Services

- Design, implement, and troubleshoot network services insertion and redirection

- Policy-based routing
 - Policy-based redirection
 - VRF stitching
 - BD/VLAN stitching
- Design, implement, and troubleshoot services
 - PTP
 - NTP
 - DNS
 - DHCP
- Design, implement, and troubleshoot RBAC
 - RADIUS
 - TACACS+
 - LDAP
 - AAA
- Design, implement, and troubleshoot maintenance tasks
 - Backup and restore
 - Firmware upgrades and downgrades
- Design, implement, and troubleshoot monitoring services
 - Flow export
 - SPAN
 - SNMP
 - Syslog
- Design, implement, and troubleshoot security features
 - CoPP
 - Storm control
 - ACLs
 - First-hop security
 - Contracts
 - Port security
 - MACsec
 - Private VLANs

Module 3: Data Center Storage Networking and Compute

- Describe, configure, and troubleshoot infrastructure to support block storage protocols
 - Fibre Channel
 - FCoE
 - iSCSI
- Design, implement, and troubleshoot data center storage networking features
 - Zoning
 - NPV/NPIV
- Design, implement, and troubleshoot compute policies and profiles
 - Cisco UCS Manager
 - Cisco Intersight
- Design, implement, and troubleshoot data center connectivity
 - SAN/LAN uplinks
 - Rack server integration
 - Fabric ports

- Appliance ports

Module 4: Data Center Automation and Orchestration

- Implement and troubleshoot data center tasks using provided Python scripts
 - Create, read, update, delete using RESTful APIs
 - Deploy and modify configurations
 - Data collection and statistics
- Describe and design data center orchestration using tools
 - Cisco Intersight
 - Cisco UCS Director
 - Cisco CloudCenter

Module 5: Data Center Fabric Infrastructure

- Configure and troubleshoot physical fabric components
 - Fabric discovery
 - Controllers/network managers
 - Switches
- Design, implement, and troubleshoot fabric policies
 - Access policies
 - Layer 2/Layer 3 multitenancy
 - Troubleshooting policies
 - Monitoring policies
- Design, implement, and troubleshoot tenant policies
 - Application profiles
 - Networking
 - Security
- Analyze and troubleshoot logical fabric elements
 - Faults
 - Events
 - Health indicators
- Design, implement, and troubleshoot virtual networking
 - Cisco AVE
 - vSphere Distributed Switch
 - Hyper-V switch

Module 6: Evolving Technologies v1.1

- Cloud
 - Compare and contrast public, private, hybrid, and multicloud design considerations
 - (i) Infrastructure, platform, and software as a service (XaaS)
 - (ii) Performance, scalability, and high availability
 - (iii) Security implications, compliance, and policy
 - (iv) Workload migration
 - Describe cloud infrastructure and operations
 - (i) Compute virtualization (containers and virtual machines)
 - (ii) Connectivity (virtual switches, SD-WAN and SD-Access)

- (iii) Virtualization functions (NFVi, VNF, and L4/L6)
- (iv) Automation and orchestration tools (CloudCenter, DNA-center, and Kubernetes)
- Network programmability (SDN)
 - Describe architectural and operational considerations for a programmable network
 - (i) Data models and structures (YANG, JSON and XML)
 - (ii) Device programmability (gRPC, NETCONF and RESTCONF)
 - (iii) Controller based network design (policy driven configuration and northbound/ southbound APIs)
 - (iv) Configuration management tools (agent and agentless) and version control systems (Git and SVN)
- Internet of things (IoT)
 - Describe architectural framework and deployment considerations for IoT
 - (i) IoT technology stack (IoT Network Hierarchy, data acquisition and flow)
 - (ii) IoT standards and protocols (characteristics within IT and OT environment)
 - (iii) IoT security (network segmentation, device profiling, and secure remote access)
 - (iv) IoT edge and fog computing (data aggregation and edge intelligence)