Implementing and Operating Cisco Enterprise Network Core Technologies (ENCOR)

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In this Implementing and Operating Cisco Enterprise Network Core Technologies course provides an in-depth exploration of enterprise network architecture, focusing on the design, implementation, optimization, and security of modern Cisco-based networks. It is designed for experienced network professionals who need a deeper understanding of routing, switching, wireless, security, and automation technologies used in large-scale enterprise environments. The curriculum balances architectural theory with practical implementation and troubleshooting skills.

Students examine Cisco enterprise network architecture and switching and routing paths, progressing through campus LAN design, Layer 2 and Layer 3 redundancy, port aggregation, and dynamic routing protocols such as OSPF, EIGRP, and BGP. Wireless topics include access point operation, client authentication, roaming, and troubleshooting, while services such as NAT, VPNs, multicast, QoS, and network management tools are covered to support end-to-end enterprise connectivity. Security concepts are integrated throughout the course, including infrastructure protection, access control, and enterprise security architecture.

The course also introduces modern operational and automation technologies, including Python fundamentals, network programmability protocols, APIs, and software-defined solutions such as Cisco Catalyst Center, Cisco SD-Access, and Cisco SD-WAN. Extensive hands-on labs reinforce each topic, allowing students to configure, optimize, and troubleshoot enterprise networks using real-world scenarios. By the end of the course, learners are well prepared for advanced enterprise networking roles and the Cisco 350-401 certification exam.

How you'll benefit

This class will help you:

- Configure, troubleshoot, and manage enterprise wired and wireless networks
- Implement security principles, automation, and programmability within an enterprise network
- Overlay network design by using Cisco SD-Access and SD-WAN solutions
- Prepare for the 350-401 ENCOR v1.1 exam
- Earn 64 CE credits toward recertification

Why Attend with Current Technologies CLC

- Our Instructors are in the top 10% rated by Cisco
- Our Lab has a dedicated 1 Gig Fiber Connection for our Labs
- Our Labs run up to Date Code for all our courses

Course Duration
5 days

Course Price
$4,295.00 or 43 CLCs

Methods of Delivery
- Instructor Led
- Virtual ILT
- On-Site

Who Should Attend

The primary audience for this course is as follows:

- Entry to Mid-level Network Engineers
- Network Administrators

- Network Support Technicians
- Help Desk Technicians

Prerequisites

There are no prerequisites for this training. However, the knowledge and skills you are recommended to have before attending this training are:

- Understanding of how to implement enterprise LAN networks
- Basic understanding of enterprise routing and wireless connectivity
- Basic understanding of Python scripting

OUTLINE

Module 1: Examining Cisco Enterprise Network Architecture

Module 2: Exploring Cisco Switching Paths

Module 3: Implementing Campus LAN Connectivity

Module 4: Building Redundant Switched Topology

Module 5: Implementing Layer 2 Port Aggregation

Module 6: Implementing OSPF

Module 7: Optimizing OSPF

Module 8: Explaining EIGRP

Module 9: Exploring EBGP

Module 10: Implementing Network Redundancy

Module 11: Implementing NAT

Module 12: Introducing Virtualization Protocols and Techniques

Module 13: Exploring Virtual Private Networks and Interfaces

Module 14: Examining Wireless Deployment Options

Module 15: Examining Wireless AP Operation

Module 16: Implementing Wireless Client Authentication

Module 17: Troubleshooting Wireless Client Connectivity

Module 18: Implementing Network Services

Module 19: Introducing Multicast Protocols

Module 20: Introducing QoS

Module 21: Using Network Analysis Tools

Module 22: Implementing Infrastructure Security

Module 23: Implementing Secure Access Control

Module 24: Discovering the Basics of Python Programming

Module 25: Introducing Network Programmability Protocols

Module 26: Explaining Wireless Principles

Module 27: Exploring Wireless Roaming and Location Services

Module 28: Exploring Enterprise Network Security Architecture

Module 29: Exploring Cisco Catalyst Center—Network Automation and Management

Module 30: Examining the Cisco SD-Access Solution

Module 31: Exploring the Working Principles of the Cisco Catalyst SD-WAN Solution

Module 32: Introducing APIs in Cisco Catalyst Center and Cisco Catalyst SD-WAN Manager

LAB OUTLINE

- Lab 1: Investigate the CAM
- Lab 2: Analyze Cisco Express Forwarding
- Lab 3: Troubleshoot VLAN and Trunk Issues
- Lab 4: Tune STP and Configure RSTP
- Lab 5: Configure Multiple STP
- Lab 6: Troubleshoot EtherChannel
- Lab 7: Implement Multiarea OSPF
- Lab 8: Implement OSPF Tuning
- Lab 9: Apply OSPF Optimization
- Lab 10: Implement OSPFv3
- Lab 11: Configure and Verify Single-Homed EBGP
- Lab 12: Implement HSRP
- Lab 13: Configure VRRP
- Lab 14: Implement NAT
- Lab 15: Configure and Verify VRF
- Lab 16: Configure and Verify a GRE Tunnel
- Lab 17: Configure Static VTI Point-to-Point Tunnels
- Lab 18: Configure Wireless Client Authentication in a Centralized Deployment
- Lab 19: Troubleshoot Wireless Client Connectivity Issues
- Lab 20: Configure Syslog
- Lab 21: Configure and Verify Flexible NetFlow

- Lab 22: Configure Cisco IOS EEM
- Lab 23: Troubleshoot Connectivity and Analyze Traffic with Ping, Traceroute, and Debug
- Lab 24: Configure and Verify Cisco IP SLAs
- Lab 25: Configure Standard and Extended ACLs
- Lab 26: Configure Control Plane Policing
- Lab 27: Implement Local and Server-Based AAA
- Lab 28: Write and Troubleshoot Python Scripts
- Lab 29: Explore JSON Objects and Scripts in Python
- Lab 30: Use NETCONF Via SSH
- Lab 31: Use RESTCONF with Cisco IOS XE Software