

Cisco® Implementing and Operating Cisco® Enterprise Network Core Technologies v1.1 (ENCOR)

Overview

The goal of this course is to develop the core networking skills needed to configure, troubleshoot, and manage Enterprise wired and wireless networks. It also requires you to understand and implement security principles within the Enterprise networks and introduces you to overlay network design by using solutions like SD-Access and SD-WAN. The course also lays focus implementing on automation and programmability in Enterprise networks. This course consists of 5 days of instructor led training, plus the equivalent of 3 days of self-paced training. This course includes post class lab access- a total of 60 hours of labs over a 90 day period.

Target Audience

Mid-level network engineers
Network administrators
Network support technicians
Help desk technicians

Course Objectives

Upon completing this course, students will be able to meet these objectives:

- Illustrate the hierarchical network design model and architecture using the access, distribution, and core layers.
- Compare and contrast the various hardware and software switching mechanisms and operation, while defining the TCAM and CAM, along with process switching, fast switching, and Cisco Express Forwarding concepts.
- Troubleshoot layer 2 connectivity using VLANs, trunking.
- Implementation of redundant switched networks using spanning tree protocol.
- Troubleshooting link aggregation using Etherchannel.
- Describe the features, metrics, and path selection concepts of EIGRP.
- Implementation and optimization of OSPFv2 and OSPFv3, including adjacencies, packet types, and areas, summarization and route filtering for IPv4 and IPv6.
- Implementing EBGp interdomain routing, path selection and single and dual-homed networking.
- Implementing network redundancy using protocols like HSRP and VRRP.
- Implementing internet connectivity within Enterprise using static and dynamic NAT.
- Describe the virtualization technology of servers, switches, and the various network devices and components.
- Implementing overlay technologies like VRF, GRE, VPN and LISP.
- Describe the components and concepts of wireless networking including RF, antenna characteristics, and define the specific wireless standards.
- Describe the various wireless deployment models available, include autonomous AP deployments and cloud-based designs within the centralized Cisco WLC architecture.
- Describe wireless roaming and location services.
- Describe how APs communicate with WLCs to obtain software, configurations, and centralized management.
- Configure and verify EAP, WebAuth, and PSK wireless client authentication on a WLC.
- Troubleshoot wireless client connectivity issues using various tools available.
- Troubleshooting Enterprise networks using services like NTP, SNMP, Cisco IOS IP SLAs, NetFlow and Cisco IOS Embedded Event Manager.
- Explain the use of available network analysis and troubleshooting tools, which include show and debug commands, as well as best practices in troubleshooting

Course Outline

1 - Course Outline

Examining Cisco Enterprise Network Architecture
Understanding Cisco Switching Paths
Implementing Campus Lan Connectivity
Building Redundant Switched Topology
Implementing Layer 2 Port Aggregation
Understanding EIGRP
Implementing OSPF
Optimizing OSPF
Exploring EBGp
Implementing Network Redundancy
Implementing NAT
Introducing Virtualization Protocols And Techniques
Understanding Virtual Private Networks And Interfaces
Understanding Wireless Principles
Examining Wireless Deployment Options
Understanding Wireless Roaming And Location Services
Examining Wireless AP Operation
Understanding Wireless Client Authentication
Troubleshooting Wireless Client Connectivity
Introducing Multicast Protocols
Introducing QoS
Implementing Network Services
Using Network Analysis Tools
Implementing Infrastructure Security
Implementing Secure Access Control
Understanding Enterprise Network Security Architecture
Exploring Automation and Assurance Using Cisco DNA Center
Examining the Cisco SD-Access Solution
Understanding the Working Principles of the Cisco SD-WAN Solution
Understanding the Basics of Python Programming
Introducing Network Programmability Protocols
Introducing APIs in Cisco DNA Center and vManage

Related Courses, Certifications, Exams

- Cisco® Implementing and Administering Cisco® Solutions v1.0 (CCNA)
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