Designing Cisco Enterprise Networks v2.0

Course Description

The Designing Cisco Enterprise Networks (ENSLD) training deepens your knowledge of designing enterprise networks. Topics covered include enterprise network design, including protocols and media for wired and wireless networks, SD-Access, VPN, Quality of Service (QoS), IPv6, and network programmability. This training earns you 40 Continuing Education (CE) credits towards recertification and helps prepare you to take the 300-420 Designing Cisco Enterprise Networks (ENSLD) exam, which is part of the CCNP Enterprise, Cisco Certified Specialist - Enterprise Design certification.

Course Objectives

- Design Enhanced Interior Gateway Routing Protocol (EIGRP) internal routing for the enterprise network
- Design Open Shortest Path First (OSPF) internal routing for the enterprise network
- Design Intermediate System to Intermediate System (IS-IS) internal routing for the enterprise network
- Design a network based on customer requirements
- Design Border Gateway Protocol (BGP) routing for the enterprise network
- Describe the different types and uses of Multiprotocol BGP (MP-BGP) address families
- Describe BGP load sharing
- Design a BGP network based on customer requirements
- Decide where the L2/L3 boundary will be in your Campus network and make design decisions
- Describe Layer 2 design considerations for Enterprise Campus networks
- Design a LAN network based on customer requirements
- Describe Layer 3 design considerations in an Enterprise Campus network
- Examine Cisco SD-Access fundamental concepts
- Describe Cisco SD-Access Fabric Design
- Design a Software-Defined Access (SD-Access) Campus Fabric based on customer requirements
- Design service provider-managed VPNs
- Design enterprise-managed VPNs
- Design a resilient WAN
- Design a resilient WAN network based on customer requirements
- Examine the Cisco SD-WAN architecture
- Describe Cisco SD-WAN deployment options
- Understand Cisco SD-WAN – NAT and hybrid design considerations
- Design Cisco SD-WAN redundancy
- Explain the basic principles of Quality of Service (QoS)
- Design QoS for the WAN
- Design QoS for enterprise network based on customer requirements
- Explain the basic principles of multicast
- Explore multicast with PIM-SM
- Designing rendezvous point distribution solutions
- Describe high-level considerations when doing IP addressing design
- Create an IPv6 addressing plan
- Plan an IPv6 deployment in an existing enterprise IPv4 network

- Describe the challenges that you might encounter when transitioning to IPv6
- Design an IPv6 addressing plan based on customer requirements
- Describe Network APIs and protocols
- Describe Yet Another Next Generation (YANG), Network Configuration Protocol (NETCONF), and Representational State Transfer Configuration Protocol (RESTCONF)

Prerequisites

Before taking this offering, you should be familiar with the following:

- Understanding network fundamentals
- Implementing LANs
- Implementing LAN connectivity

Course Outline

- Module 1: Designing EIGRP routing
- Module 2: Designing OSPF routing
- Module 3: Designing IS-IS routing
- Module 4: Designing BGP routing and redundancy
- Module 5: Exploring BGP Address Families and Attributes
- Module 6: Designing an Enterprise Campus LAN
- Module 7: Designing Layer 2 Campus
- Module 8: Designing a Layer 3 Campus
- Module 9: Discovering the Cisco SD-Access Architecture
- Module 10: Exploring Cisco SD-Access Fabric Design
- Module 11: Exploring Cisco SD-Access Site Design Strategy and Considerations
- Module 12: Discovering Service Provider-Managed VPNs
- Module 13: Designing Enterprise-Managed VPNs
- Module 14: Designing WAN Resiliency
- Module 15: Examining Cisco SD-WAN Architectures
- Module 16: Examining Cisco SD-WAN Deployment Design Considerations
- Module 17: Examining Cisco SD-WAN—NAT and Hybrid Design Considerations
- Module 18: Designing Cisco SD-WAN Routing and High Availability
- Module 19: Exploring QoS
- Module 20: Designing LAN and WAN QoS
- Module 21: Introducing Multicast
- Module 22: Exploring Multicast with PIM-SM
- Module 23: Designing Rendezvous Point Distribution Solutions
- Module 24: Designing an IPv4 Address Plan
- Module 25: Exploring IPv6
- Module 26: Deploying IPv6
- Module 27: Introducing Network APIs and Protocols
- Module 28: Exploring YANG, NETCONF, RESTCONF, and Model-Driven Telemetry

Who Should Attend?

- Network design engineers
- Network engineers
- System administrators

Associated Certifications

- CCNP® Enterprise certification
- Cisco Certified Specialist - Enterprise Design certification.

Course Duration

4 days