

Soft-Train



*At Soft-Train
Technology Works*

Interconnecting Cisco Network Devices Part 2 (ICND2) (5 Days) ST1008

COURSE GOAL: To prepare students for Cisco Certified Network Associate (CCNA) Certification 640-816 or 640-802, while providing them with comparable and applicable skills.

PREREQUISITES: Students must have attended ST21007 Interconnecting Cisco Network Devices Part 1 (ICND1).

LEARNING OBJECTIVES:

Upon completion of this course the student will be able to:

- Review how to configure & troubleshoot a small network
- Expand a switched LAN network from small to medium-sized w/multiple switches, VLANs, trunking, & spanning tree
- Describe considerations when implementing routing on a network
- Configure, verify & troubleshoot OSPF
- Configure, verify & troubleshoot EIGRP
- Determine how to apply ACLs based on network requirements
- Identify & implement the appropriate WAN technology based on network requirements

KEY TOPICS:

I. Review of Cisco IOS for Routers and Switches

- A. Cisco IOS CLI Functions
- B. Configuration Modes of Cisco IOS Software
- C. Help Facilities of the Cisco CLI
- D. Commands Review
- E. Summary of Cisco IOS CLI Commands

II. Medium-Sized Switched Network Construction

- A. Implementing VLANs and Trunks
- B. Understanding VLAN
- C. VLAN Operation
- D. Understanding VLAN Trunking Protocol
- E. Configuring VLANs and Trunks
- F. Improving Performance with Spanning Tree
- G. Redundant Topology
- H. Recognizing Issues of a Redundant Switched Topology
- I. Resolving Issues with STP
- J. Routing Between VLANs
- K. Securing the Expanded Network
- L. Troubleshooting Switched Networks
- M. Troubleshooting Switches
- N. Troubleshooting Port Connectivity
- O. Troubleshooting VLANs and Trunking
- P. Troubleshooting VTP
- Q. Troubleshooting Spanning Tree

III. Medium-Sized Routed Network Construction

- A.** Reviewing Dynamic Routing
- B.** Understanding Distance Vector Routing Protocols
- C.** Link-State and Advanced Distance Vector Protocols
- D.** Implementing Variable-Length Subnet Masks
- E.** Reviewing Subnets
- F.** Introducing VSLMs

IV. Single-Area OSPF Implementation

- A.** Introducing OSPF
- B.** Establishing OSPF Neighbor Adjacencies
- C.** SPF Algorithm
- D.** Configuring and Verifying OSPF
- E.** Verifying the OSPF Configuration
- F.** Using OSPF Debug Commands
- G.** Load Balancing with OSPF
- H.** Configuring Plaintext Password Authentication
- I.** Troubleshooting OSPF
- J.** Components of Troubleshooting OSPF
- K.** Troubleshooting OSPF Neighbor Adjacencies
- L.** Troubleshooting OSPF Routing Tables
- M.** Troubleshooting Plaintext Password Authentication

V. Implementing EIGRP

- A.** Implementing EIGRP
- B.** Introducing EIGRP
- C.** Configuring and Verifying EIGRP
- D.** Load Balancing with EIGRP
- E.** EIGRP Authentication
- F.** Creating a Key Chain

- G.** Configuring MD5 Authentication for EIGRP
- H.** Verifying MD5 Authentication
- I.** Troubleshooting EIGRP
- J.** Components of Troubleshooting EIGRP

VI. Managing Traffic with Access Control Lists

- A.** Access Control List Operation
- B.** Understanding ACLs
- C.** ACL Operation
- D.** Types of ACLs
- E.** ACL Identification
- F.** Configuring ACLs
- G.** Configuring Numbered Standard IPv4 ACLs
- H.** Controlling Access to the Router Using ACLs
- I.** Configuring Numbered Extended IPv4 ACLs
- J.** Configuring Named ACLs
- K.** Creating Named Standard IP ACLs
- L.** Creating Named Extended IP ACLs
- M.** Named Extended ACL: Deny a Single Host from a Given Subnet
- N.** Troubleshooting ACLs

VII. Managing Address Spaces with NAT and IPv6

- A.** Scaling the Network with NAT and PAT
- B.** Transitioning to IPv6
- C.** Assigning IPv6 Addresses
- D.** Routing Considerations with IPv6
- E.** Strategies for Implementing IPv6
- F.** Configuring IPv6

VIII. Extending the Network into the WAN

- A.** Introducing VPN Solutions
- B.** Establishing a Point-to-Point WAN Connection with PPP
- C.** Establishing a WAN Connection with Frame Replay
- D.** Troubleshooting Frame Replay WANs