

Interconnecting Cisco Networking Devices Part 2 (ICND2)



Course Overview

This course will teach students about implementing scalable medium-sized networks, troubleshooting basic connectivity, implementing an EIGRP-based solution, implementing a scalable, multiarea network, OSPF-based solution, wide-area networks, and network device management.

Module 01 - Implementing Scalable Medium-Sized Networks

Course Introduction

- Troubleshooting VLAN Connectivity
- VLAN Review
- How to Create a VLAN
- What is a Trunk
- How to Configure a Trunk
- DTP
- VLAN Troubleshooting
- Troubleshooting Trunks
- Summary
- Building Redundant Switched Topologies
- Problems with Redundant Topologies
- How Spanning-Tree Works
- Versions of Spanning-Tree
- PVST+
- Changing the Bridge ID
- Reviewing the STP Topology
- What if STP Fails?
- PortFast and BPDU Guard
- Summary
- Improving Redundant Switched Topologies with EtherChannel

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- What is EtherChannel
- EtherChannel Protocols
- How to Configure EtherChannel
- Verify EtherChannel
- Summary
- Understanding Layer 3 Redundancy
- Why Have Default Gateway Redundancy
- Default Gateway Redundancy
- FHRP
- HSRP
- HSRP Configuration
- Introducing HSRP
- HSRP (Cont.)
- HSRP Track Interface
- HSRP Load Balancing
- Gateway Load Balancing Protocol
- QoS
- QoS Configuration
- QoS Options
- Marking
- Queuing Methods
- Congestion Avoidance
- Summary
- Demo - Initial Lab Setup
- Demo - Optimizing STP
- Demo - PortFast and BPDU Guard
- Demo - Configuring EtherChannel
- Demo - VTP
- Demo - HSRP
- Demo - QoS
- Module 01 Review

Module 02 - Troubleshooting Basic Connectivity

- Troubleshooting IPv4 Network Connectivity
- Troubleshooting End-to-End
- Verify End-to-End Connectivity
- Verify Physical Connectivity
- What is the Current and Desired Path?
- Default Gateway Problems

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- DNS Issues
- ACL Issues
- Summary
- Troubleshooting IPv6 Network Connectivity
- IPv6 Address Types
- How to Troubleshoot IPv6 Connectivity
- Verify End-to-End Connectivity
- Identifying the Path
- Default Gateway Problems
- DNS Problems
- ACL Problems
- Summary
- Demo - Troubleshooting an ACL
- Module 02 Review

- **Module 03 - Implementing an EIGRP-Based Solution**
- Implementing EIGRP
- Dynamic Routing Protocols
- Administrative Distance
- Features of EIGRP
- EIGRP Path Selection
- The EIGRP Metric
- Configuring EIGRP
- Verify Neighbors
- Verify EIGRP
- EIGRP Load Balancing
- Summary
- Troubleshooting EIGRP
- EIGRP Troubleshooting Components
- Troubleshooting EIGRP Neighbors
- EIGRP Routing Table Troubleshooting
- Summary
- Implementing EIGRP for IPv6
- EIGRP for IPv6
- EIGRP Commands for Configuration
- Summary
- Demo - EIGRP
- Demo - Troubleshooting EIGRP
- Demo - Routing Table Issues
- Demo - EIGRP with IPv6
- Module 03 Review

Module 04 - Implementing a Scalable, Multiarea Network, OSPF-Based Solution

- OSPF Overview
- Overview of the Link-State Routing Protocol
- Data Stored in a Link-State Protocol
- Metric
- OSPF Adjacencies
- Establishing OSPF Neighbor Adjacencies (eNotes)
- Building the Link-State Database
- What are OSPF Areas?
- OSPF Router Types
- Types of OSPF LSAs
- Basic LSA Types (eNotes)
- Summary
- Multiarea OSPF Implementation
- Single vs. Multiple OSPF Area
- Planning for OSPF
- Multiarea OSPF Configuration
- Verify Multiarea OSPF
- Summary
- Troubleshooting Multiarea OSPF
- OSPF Neighbor States
- Troubleshooting OSPF
- OSPF Neighbor Problems
- Summary
- Examining OSPFv3
- OSPFv3
- Configuring OSPFv3
- Verify OSPFv3
- Summary
- Demo - Multicare OSPF
- Demo - Troubleshooting OSPF
- Demo - Configuring OSPF for IPv6
- Module 04 Review

Module 05 - Wide-Area Networks

- Understanding WAN Technologies
- What is the WAN
- WAN Components
- WAN Serial Cabling
- L2 WAN Protocols
- Options for the WAN
- Summary
- Configuring Serial Encapsulation
- What are Serial Links?
- Configuring a Serial Interface
- HDLC Protocol
- Other Point-to-Point Protocols
- Configuring PPP
- PAP
- CHAP
- How to Configure CHAP
- Verify CHAP
- Troubleshooting Serial Interfaces
- MLP
- MLP Configuration
- Verify MLP
- PPPoE
- PPPoE Client
- Verify PPPoE Client
- Summary
- Establishing a WAN Connection Using Frame Relay
- What is Frame Relay
- Topologies
- Reachability Issues
- Frame Relay Signaling
- Frame Relay Mapping
- How to Configure Frame Relay
- Point-to-Point and Multipoint Frame Relay
- Configure Point-to-Point Frame Relay
- Multipoint Frame Relay Configuration
- How to Verify Frame Relay
- Summary
- Introducing VPN Solutions

- Benefits of Secure VPNs
- Other Cisco SSL Solutions
- Characteristics of IPSec
- Summary
- Configuring GRE Tunnels
- GRE Tunnel Overview
- How to Configure the GRE
- Verify the Tunnel
- Summary
- Demo - Enabling HDLC
- Demo - Troubleshooting PPP
- Demo - Frame Relay
- Demo - External BGP
- Demo - GRE Tunnel
- Demo - Dialer Interface
- Module 05 Review

Module 06 - Network Device Management

- Configuring Network Devices to Support Network Management Protocols
- Overview
- SNMP Versions
- Obtaining Data from an SNMP Agent
- Configuring SNMP
- What is Syslog?
- Syslog Format
- Syslog Configuration
- NetFlow Overview
- NetFlow Architecture
- Configuring NetFlow
- Summary
- Managing Cisco Devices
- Internal Components of a Router
- What Does ROM Do?
- Router Bootup Sequence
- Configuration Register
- Changing the Configuration Register
- How the IOS is Found
- IOS Loading
- Loading the IOS Configuration File

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- Cisco IOS Integrated File System
- Viewing the Integrated System
- Managing IOS Images
- Reading the IOS Filename
- Backing Up the Image
- Upgrading the IOS
- Copy Command Results
- Managing Device Configuration Files
- Recovering the Enable Password/Secret
- Summary
- Licensing
- Overview of Licensing
- Config-Register
- Summary
- Demo - Managing Files
- Demo - Logging
- Demo - Syslog
- Demo - Password Recovery
- Demo - Superlab Initial Setup
- Demo - Superlab
- Module 06 Review
- Course Closure
- Verifying the Licenses
- Installing a Permanent License
- Installing an Evaluation License
- Backup the License
- Uninstalling the License
- Password Recovery
- Recovery



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