

200-101: Interconnecting Cisco Networking Devices Part 2 v2.0 (ICND2)

Course Overview

This course provides students with the knowledge and skills to successfully install, operate, and troubleshoot a small to medium size enterprise branch network.

<u>Course Introduction</u>	2m
Course Introduction	
<u>ICND Part 1 Review</u>	34m
<u>Module 01 - Implementing Scalable Medium-Sized Networks</u>	2h 41m
Troubleshooting VLAN Connectivity	
VLAN Overview	
Creating VLANs	
Trunk Operation	
Configuring Trunks	
Dynamic Trunking Protocol	
VLAN Troubleshooting	
Trunk Troubleshooting	
Summary	
Building Redundant Switched Topologies	
Issues In Redundant Topologies	
Spanning Tree Operation	
Types of Spanning-Tree Protocols	
Per VLAN Spanning Tree Plus	
Modifying the Bridge ID	
Analyzing the STP Topology	
Spanning-Tree Failure Consequences	
PortFast and BPDU Guard	
Summary	
Improving Redundant Switched Topologies with EtherChannel	
The Need for EtherChannel	
Advantages of EtherChannel	
EtherChannel Protocols	
Configuring EtherChannel	
Verifying EtherChannel	
Summary	
Understanding Layer 3 Redundancy	
The Need for Default Gateway Redundancy	
Default Gateway Redundancy	
HSRP	
HSRP Interface Tracking	
HSRP Load Balancing	
Gateway Load Balancing Protocol	

Summary
Demo - Initial Lab Setup
Demo - Optimizing STP
Demo - PortFast and BPDU Guard
Demo - Configuring EtherChannel
Module 01 Review

Module 02 - Troubleshooting Basic Connectivity

1h 18m

Troubleshooting IPv4 Network Connectivity
Components of Troubleshooting End-to-End Connectivity
Verification of End-to-End Connectivity
Verification of Physical Connectivity Issue
Identification of Current and Desired Path
Default Gateway Issues
Name Resolution Issues
ACL Issues
Summary
Troubleshooting IPv6 Network Connectivity
IPv6 Unicast Addresses
Troubleshooting End-to-End IPv6 Connectivity
Verification of End-to-End IPv6 Connectivity
Identification of Current and Desired IPv6 Path
Default Gateway Issues in IPv6
Name Resolution Issues in IPv6
ACL Issues in IPv6
Summary
Demo - Troubleshooting an ACL
Module 02 Review

Module 03 - Implementing an EIGRP-Based Solution

1h 37m

Implementing EIGRP
Dynamic Routing Protocols
Administrative Distance
EIGRP Features
EIGRP Path Selection
EIGRP Metric
EIGRP Configuration
Verification of EIGRP Configuration
Load Balancing with EIGRP
Summary
Troubleshooting EIGRP
Components of Troubleshooting EIGRP
Troubleshooting EIGRP Neighbor Issues
Troubleshooting EIGRP Routing Tables Issues
Summary
Implementing EIGRP for IPv6
EIGRP for IPv6
EIGRP for IPv6 Commands
EIGRP for IPv6 Configuration Example
Summary

Demo - EIGRP
Demo - Troubleshooting EIGRP
Demo - Routing Table Issues
Demo - EIGRP with IPv6
Module 03 Review

Module 04 - Implementing a Scalable, Multiarea Network,

2h 25m

OSPF-Based Solution

OSPF Overview

Link-State Routing Protocol Overview
Link-State Routing Protocol Data Structures
OSPF Metric
Establishing OSPF Neighbor Adjacencies
Building a Link-State Database
OSPF Area Structure
Basic LSA Types
Summary

Multiarea OSPF Implementation

Single-Area vs. Multiarea OSPF
Planning for the Implementation of OSPF
Multiarea OSPF Configuration
Multiarea OSPF Verification
Summary

Troubleshooting Multiarea OSPF

OSPF Neighbor States
Components of Troubleshooting OSPF
Troubleshooting OSPF Neighbor Issues
Troubleshooting OSPF Routing Table Issues
Troubleshooting OSPF Path Selection
Summary

Examining OSPFv3

OSPFv3 Key Characteristics
OSPFv3 Configuration
Cisco OSPFv3 Verification
Summary

Demo - Multicore OSPF

Demo - Troubleshooting OSPF

Demo - Configuring OSPF for IPv6

Module 04 Review

Module 05 - Wide-Area Networks

2h 37m

Understanding WAN Technologies

Introduction to WAN Technologies
WAN Devices
Serial WAN Cabling
WAN Layer 2 Protocols
WAN Link Options
Summary

Configuring Serial Encapsulation

Serial Communication Links

Configuration of a Serial Interface
HDLC Protocol
Point-to-Point Protocol
PPP Configuration
PPP Authentication: PAP
PPP Authentication: CHAP
Configuring CHAP for PPP Authentication
Verifying CHAP Configuration
Troubleshooting Serial Connections
Summary
Establishing a WAN Connection Using Frame Relay
Understanding Frame Relay
Frame Relay Topologies
Frame Relay Reachability Issues
Frame Relay Signaling
Frame Relay Address Mapping
Configuring Frame Relay
Point-to-Point vs. Multipoint
Configuring Point-to-Point Frame Relay
Configuring Multipoint Frame Relay
Verifying Frame Relay Configuration
Summary
Introducing VPN Solutions
VPNs and Their Benefits
Cisco SSL VPN Solutions
IPsec Characteristics
Summary
Configuring GRE Tunnels
GRE Tunnel Overview
GRE Tunnel Configuration
GRE Tunnel Verification
Summary
Demo - Enabling HDLC
Demo - Troubleshooting PPP
Demo - Frame Relay
Module 05 Review

Module 06 - Network Device Management

3h 39m

Configuring Network Devices to Support Network Management Protocols

SNMP Overview
SNMP Versions
Obtaining Data from an SNMP Agent
SNMP Configuration
Syslog Overview
Syslog Message Format
Syslog Configuration
NetFlow Overview
NetFlow Architecture
NetFlow Configuration
Summary

Managing Cisco Devices

Router Internal Components Overview

ROM Functions

Stages of the Router Power-On Boot Sequence

Configuration Register

Changing Configuration Register

Locating Cisco IOS Image Files

Loading Cisco IOS Image Files

Loading Cisco IOS Configuration Files

Cisco IOS Integrated File System and Devices

Managing Cisco IOS Images

Deciphering IOS Image Filenames

Creating the Cisco IOS Image Backup

Upgrading Cisco IOS Images

Device Configuration Sources

Managing Device Configuration Files

Password Recovery

Summary

Licensing

Licensing Overview

Licensing Verification

Permanent License Installation

Evaluation License Installation

Backing up the License

Uninstalling the License

Summary

Demo - Managing Files

Demo - Logging

Demo - Superlab Initial Setup

Demo - Superlab

Module 06 Review

Course Closure

Total Duration: 15hrs 5m