Cisco Interconnecting Cisco Networking Devices Part 2

Meet the expert: As a certified Microsoft Instructor, Ken has focused his career on various security aspects of computer and network technology since the early 1980s. He has offered a wide variety of IT training and high level consulting projects for Fortune 500 companies globally. Through the course of his extensive career, he has taught a full line of Microsoft, CompTIA, Cisco, and other high level IT Security curricula.

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Course description: The Interconnecting Cisco Networking Devices Part 2 (ICND2) is the exam associated with the Cisco Certified Network Associate certification. Candidates can prepare for this exam by taking the Interconnecting Cisco Networking Devices Part 2 (ICND2) course. This exam tests a candidate's knowledge and skills required to successfully install, operate, and troubleshoot a small branch office network. The exam covers topics on extending switched networks with VLANs; VLSM and IPv6 addressing; the VTP, RSTP, OSPF and EIGRP protocols; determining IP routes; configuring, verifying and troubleshooting VLANs; managing IP traffic with access lists; NAT and DHCP; establishing point-to-point connections and establishing Frame Relay connections.

Course outline:

Troubleshoot VLAN Connectivity
- Introduction
- Overview of VLANs
- How to create a VLAN
- How to create a VLAN Continued
- What Is a Trunk
- How to Configure a Trunk
- How to Configure a Trunk Continued
- DTP
- VLAN Troubleshooting
- Destination MAC Addresses and VLANs
- VLAN Troubleshooting Continued
- Troubleshooting Trunks
- Troubleshooting Trunks Continued
- Summary
- Summary

Building Redundant Switched Topologies
- Introduction
- Problems with Redundant Topologies
- How Spanning-Tree Works
- How Spanning-Tree Works Continued
- STP Problems
- PVST+
- PVST+ Continued
- Changing the Bridge ID
- Reviewing the STP Topology
- Reviewing the STP Topology Continued
- What if STP Fails Continued
- What if STP Fails?
- PortFast and BPDU Guard
- PortFast and BPDU Guard Continued
- Summary
- Summary

Improve Redundant Switched Topologies
- Introduction
- What Is EtherChannel
- EtherChannel Protocols
- EtherChannel Protocols Continued
- PAgP
- LACP
- How to Configue EtherChannel
- How to Configure EtherChannel Continued
- Verify EtherChannel
- Verify EtherChannel Continued
- Summary
- Summary

Spanning Tree and Trunking Demo
- Introduction
- Demo: Spanning Tree
- Demo: show span
- Demo: Influencing Traffic
- Demo: Portfast
- Demo: EtherChannel
- Demo: Add Port Channels
- Layer 3 Redundancy
- Demo: Trunking
- Demo: VTP
- Demo: VTP Continued
- Summary

Understanding Layer 3 Redundancy
- Introduction
- Why Have Default Gateway Redundancy
- Default Gateway Redundancy
- Default Gateway Redundancy Continued
- FHRP
- HSRP
- HSRP Continued
- HSRP Failover
- HSRP Configuration
- The HSRP Protocol
- Show Standby
- Active and Standby Routers
- HSRP Track Interface
- HSRP Load Balancing
- Gateway Load Balancing Protocol
- QoS
- QoS Continued
- QoS Configuration
- QoS Options
- Marking
- Queuing Methods
- Congestion Avoidance
- Summary
- Summary

Troubleshoot IPv4 Connectivity
- Introduction
- Troubleshooting End-to-End
- Troubleshooting End-to-End Continued
- Verify End-to-End Connectivity
- Verify End-to-End Connectivity Continued
- Ping
- Traceroute
- Ping and Traceroute on Switches
- Telnet
- PC Host-Based ARP
- Show MAC Address Table
- End-to-End Connectivity
- Path Verification
- Speed Mismatch
- Using Show Interface
- What Is the Current Desired Path
- Codes to Know
- Default Gateway Problems
- Default Gateway Problems Continued
- DNS Issues
- DNS Issues Continued
- Resolution Mapping with Ping
- ACL Issues
- ACL Issues Continued
- Correct the ACL
- Permitting Telnet
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Troubleshoot IPv6 Connectivity
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- IPv6 Address Types
- Private Addresses
- IPv6 Address Types Continued
- How to Troubleshoot IPv6 Connectivity
- Physical Connectivity
- Verify End-to-End Connectivity
- Verify End-to-End Connectivity Continued
- Using Telnet

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- Show Neighbor
- Show IPv6 Neighbors
- Identifying the Path
- Default Gatway Problems
- DNS Problems
- DNS Problems Continued
- ACL Problems
- ACL Problems Continued
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Implmenting EIGRP
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- Routing by Rumor
- Administrative Distance
- EIGRP Features
- EIGRP Path Selection
- EIGRP Path Selection Continued
- The EIGRP Metric
- The EIGRP Metric Continued
- Configuring EIGRP
- Verify Neighbors
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Implmenting EIGRP for IPv6
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- Demo: OSPF
- EIGRP for IPv6
- Demo: EIGRP for IPv6
- Demo: EIGRP Routes
- Demo: Headquarters and Peers
- Supporting Multiple Protocols
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- EIGRP Commands for Configuration Continued
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- Troubleshooting EIGRP Neighbors
- Troubleshooting EIGRP Neighbors Continued
- EIGRP AS Mismatch
- Serial Interfaces on the Link
- Passive Interfaces
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- Metric
- OSPF Adjacencies
- Establishing OSPF Neighbor Adjacencies
- Building the Link-State Database
- What Are OSPF Areas
- OSPF Router Types
- LSAs
- Basic LSA Types
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Multiarea OSPF Implementation
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- Multiarea OSPF Planning
- Multiarea OSPF Configuration Continued
- Multiarea OSPF Configuration Continued
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- OSPF Neighbor States
- OSPF Neighbor States Continued
- Troubleshooting OSPF
- OSPF Neighbor Problems
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- OSPG Area
- Enabling Interfaces for OSPF
- Passive State
- HQ Advertisement
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- Demo: Advertising the Interface
- Demo: Optimal Route
- Demo: Adjacencies
- Demo: IPv6 Network Addresses
- Demo: IPv6 Network Addresses Continued
- Demo: IPv6 Gateways and OSPF
- Demo: IPv6 OSPF Continued
- Demo: OSPF Neighbors
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- What Is Frame Relay Continued
- Topologies
- Reachability Issues
- Reachability Issues Continued
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- Frame Relay Mapping
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- Split Horizon
- Configure Point-to=Point Frame Relay
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- Configuring Serial Encapsulation
- Configuring a Serial Interface
- Configuring a Serial Interface Continued
- HDLC Protocol
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- Other Point-to-Point Protocols
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- PAP
- CHAP
- How to Configure CHAP
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- Verify CHAP
- Verify CHAP Continued
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- MLP
- MLP Configuration
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Understanding WAN Technologies
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- What Is the WAN Continued
- WAN Components
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- WAN Serial Cabling
- L2 WAN Protocols
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- Benefits of Secure VPNs
- Benefits of Secure VPNs Continued
- Other Cisco SSL Solutions
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- Demo: Break Serial Link
- Demo: Verifying Authentication
- Demo: Frame Relay Connection
- Demo: Frame Relay Mapping
- Demo: Verifying Frame Relay
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- Demo: Ends of the Tunnel
- Demo: Using a Tunnel
- Demo: GRE Tunnel
- GRE Tunnel
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- Overview
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- Obtaining Data from an SNMP Agent
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- SNMP Configuration
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- Flow
- NetFlow Architecture
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- Router Bootup Sequence
- Configuration Register
- Changing the Configuration Register
- How the IOS Is Found
- IOS Loading
- IOS Loading Continued
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- Loading the IOS Configuration File Continued
- Cisco IOS Integrated File System
- Viewing the Integrated System
- Managing IOS Images
- Reading the IOS Filename
- Backing up the Image
- Backing up the Image Continued
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- Upgrading the IOS Continued
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- Demo: Severity Levels
- Demo: Router Secrets
- Demo: Changing a Router Secret
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- Licensing Intro
- Demo: Basic Configuration
- Demo: Create Sub-Interfaces
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- Installing an Evaluation License
- Back up the License
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- Universal Images
- Demo: Create Channel Groups
- Demo: Channel Group Verifications
- Demo: Multiple Hosts Per Port
- Demo: DHCP Service
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- Demo: Assign IPv6 Addresses
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- Demo: Access List
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