

CCNA Exam Topics

Cisco Certified Network Associate Exam (CCNA 640-801)

From the Cisco CCNA 640-801 Exam Topics

Planning and Designing

- Design a simple LAN using Cisco Technology
- Design an IP Addressing scheme to meet design requirements
- Select an appropriate routing protocol based on user requirements
- Design a simple internetwork using Cisco technology
- Develop an access list to meet user specifications
- Choose WAN services to meet customer requirements

Implementation and Operation

- Configure routing protocols given user requirements
- Configure IP addresses, subnet masks, and gateway addresses on routers and hosts
- Configure a router for additional administrative functionality
- Configure a switch with VLANs and inter-switch communications
- Implement a LAN
- Customize a switch configuration to meet specified network requirements
- Manage system image and device configuration files
- Perform an initial configuration on a router
- Perform an initial configuration on a switch
- Implement access lists
- Implement simple WAN protocols

Troubleshooting

- Utilize the OSI model as a guide for systematic network troubleshooting
- Perform LAN and VLAN troubleshooting
- Troubleshoot routing protocols
- Troubleshoot IP addressing and host configuration
- Troubleshoot a device as part of a working network
- Troubleshoot an access list
- Perform simple WAN troubleshooting

Technology

- Describe network communications using layered models
- Describe the Spanning Tree process
- Compare and contrast key characteristics of LAN environments
- Evaluate the characteristics of routing protocols
- Evaluate TCP/IP communication process and its associated protocols
- Describe the components of network devices
- Evaluate rules for packet control

- Evaluate key characteristics of WANs

Planning and Designing

- Design a simple LAN using Cisco Technology
 - LAN Switching*
 - Layer 2 Switching – Virtual Local Area Networks (VLANs)*
 - Layer 2 Switching and Bridging*
 - OSI Reference Model*
 - Layer 1 and Layer 2 Ethernet*
- Design an IP Addressing scheme to meet design requirements
 - Topology and IP Addressing*
- Select an appropriate routing protocol based on user requirements
 - IP Routing*
 - OSPF in Single Areas: Learning the Protocol*
- Design a simple internetwork using Cisco technology
 - Basic Router Operation*
 - IP Routing*
 - OSI Reference Model*
 - Access Denied: Network Security with Cisco Routers*
 - ISDN and DDR*
 - LAN Switching*
 - Network Management*
 - Physical Internetworking and Industry Standards for Networks*
- Develop an access list to meet user specifications
 - Access Denied: Network Security with Cisco Routers*
 - Network Management*
 - The Other VPNs: It's Not All MPLS*
 - Layer 2 Switching – Virtual Local Area Networks (VLANs)*
 - ISDN and DDR*
- Choose WAN services to meet customer requirements
 - WAN Protocols*
 - Address Resolution Protocol (ARP)*
 - Physical Internetworking and Industry Standards for Networks*
 - OSI Reference Model*
 - Network Management*
 - Layer 2 Switching and Bridging*
 - Basic Router Operation*

Implementation and Operation

- Configure routing protocols given user requirements

IP Routing
Basic Router Operation
OSPF in Single Areas: Learning the Protocol
Layer 2 Switching and Bridging

- Configure IP addresses, subnet masks, and gateway addresses on routers and hosts
Topology and IP Addressing
Layer 1 and Layer 2 Ethernet
- Configure a router for additional administrative functionality
Basic Router Operation
- Configure a switch with VLANs and inter-switch communications
Layer 2 Switching – Virtual Local Area Networks (VLANs)
Layer 2 Switching and Bridging
- Implement a LAN
LAN Switching
Layer 2 Switching – Virtual Local Area Networks (VLANs)
Layer 2 Switching and Bridging
OSI Reference Model
Layer 1 and Layer 2 Ethernet
- Customize a switch configuration to meet specified network requirements
New Age Bridging and Switching
LAN Switching
Layer 2 Switching and Bridging
Layer 2 Switching – Virtual Local Area Networks (VLANs)
- Manage system image and device configuration files
Basic Router Operation
Network Management
- Perform an initial configuration on a router
Basic Router Operation
- Perform an initial configuration on a switch
LAN Switching
Layer 2 Switching and Bridging
Layer 2 Switching – Virtual Local Area Networks (VLANs)
New Age Bridging and Switching
Layer 1 and Layer 2 Ethernet
Basic Router Operation
- Implement access lists
Access Denied: Network Security with Cisco Routers

Network Management

The Other VPNs: It's Not All MPLS

Layer 2 Switching – Virtual Local Area Networks (VLANs)

ISDN and DDR

- Implement simple WAN protocols

WAN Protocols

Address Resolution Protocol (ARP)

Physical Internetworking and Industry Standards for Networks

OSI Reference Model

Network Management

Layer 2 Switching and Bridging

Basic Router Operation

Troubleshooting

- Utilize the OSI model as a guide for systematic network troubleshooting

OSI Reference Model

Basic Router Operation

Physical Internetworking and Industry Standards for Networks

Troubleshooting Ethernet Networks

WAN Troubleshooting Guide

- Perform LAN and VLAN troubleshooting

Layer 2 Switching – Virtual Local Area Networks (VLANs)

Basic Router Operation

New Age Bridging and Switching

Layer 1 and Layer 2 Ethernet

LAN Switching

Layer 2 Switching and Bridging

Network Management

Troubleshooting Ethernet Networks

- Troubleshoot routing protocols

IP Routing

Address Resolution Protocol (ARP)

Layer 1 and Layer 2 Ethernet

OSPF in Single Areas: Learning the Protocol

WAN Protocols

Troubleshooting Ethernet Networks

WAN Troubleshooting Guide

- Troubleshoot IP addressing and host configuration

Topology and IP Addressing

Layer 1 and Layer 2 Ethernet

Troubleshooting Ethernet Networks

WAN Troubleshooting Guide

- Troubleshoot a device as part of a working network
 - Basic Router Operation*
 - Physical Internetworking and Industry Standards for Networks*
 - Network Management*
 - WAN Troubleshooting Guide*
 - Troubleshooting Ethernet Networks*
- Troubleshoot an access list
 - Access Denied: Network Security with Cisco Routers*
 - Network Management*
 - The Other VPNs: It's Not All MPLS*
 - Layer 2 Switching – Virtual Local Area Networks (VLANs)*
 - ISDN and DDR*
- Perform simple WAN troubleshooting
 - WAN Protocols*
 - Address Resolution Protocol (ARP)*
 - Physical Internetworking and Industry Standards for Networks*
 - OSI Reference Model*
 - Network Management*
 - Layer 2 Switching and Bridging*
 - Basic Router Operation*
 - WAN Troubleshooting Guide*

Technology

- Describe network communications using layered models
 - OSI Reference Model*
 - WAN Protocols*
 - The Other VPNs: It's Not All MPLS*
 - Physical Internetworking and Industry Standards for Networks*
- Describe the Spanning Tree process
 - Introduction to the Spanning Tree Protocol*
 - Layer 2 Switching and Bridging*
 - Layer 2 Switching – Virtual Local Area Networks (VLANs)*
 - LAN Switching*
 - Layer 1 and Layer 2 Ethernet*
 - New Age Bridging and Switching*
 - Physical Internetworking and Industry Standards for Networks*
- Compare and contrast key characteristics of LAN environments
 - Layer 1 and Layer 2 Ethernet*
 - New Age Bridging and Switching*
 - LAN Switching*
 - Layer 2 Switching and Bridging*

Physical Internetworking and Industry Standards for Networks

- Evaluate the characteristics of routing protocols
 - IP Routing*
 - Address Resolution Protocol (ARP)*
 - Layer 1 and Layer 2 Ethernet*
 - OSPF in Single Areas: Learning the Protocol*
 - WAN Protocols*
- Evaluate TCP/IP communication process and its associated protocols
 - IP Routing*
 - Access Denied: Network Security with Cisco Routers*
 - Address Resolution Protocol (ARP)*
 - OSI Reference Model*
 - Network Management*
 - The Other VPNs: It's Not All MPLS*
- Describe the components of network devices
 - Basic Router Operation*
 - Physical Internetworking and Industry Standards for Networks*
 - How to Implement Wireless Networks*
- Evaluate rules for packet control
 - Address Resolution Protocol (ARP)*
 - OSI Reference Model*
 - Access Denied: Network Security with Cisco Routers*
 - Layer 2 Switching and Bridging*
 - WAN Protocols*
 - ISDN and DDR*
- Evaluate key characteristics of WANs
 - WAN Protocols*
 - Address Resolution Protocol (ARP)*
 - Physical Internetworking and Industry Standards for Networks*
 - OSI Reference Model*
 - Network Management*
 - Layer 2 Switching and Bridging*