



CCNA (ICND1+ICND 2)

مدت دوره: ۷۰ ساعت

پیش نیاز: تسلط کامل به شبکه های کامپیوتری LAN

فلاصه:

This course focuses on providing the skills and knowledge necessary to install, operate, and troubleshoot a small branch office Enterprise network, including configuring a switch, a router, and connecting to a WAN and implementing network security.

اهداف دوره: در انتهای این دوره دانشجویان قادر خواهند بود:

- Describe how networks function, identifying major components, function of network components and the Open System Interconnection (OSI) reference model.
- Using the host-to-host packet delivery process, describe issues related to increasing traffic on an Ethernet LAN and identify switched LAN technology solutions to Ethernet networking issues.
- Describes the reasons for extending the reach of a LAN and the methods that can be used with a focus on RF wireless access.
- Describes the reasons for connecting networks with routers and how routed networks transmit data through networks using TCP / IP.
- Describe the function of Wide Area Networks (WANs), the major devices of WANs, and configure PPP encapsulation, static and dynamic routing, PAT and RIP routing.
- Use the command-line interface to discover neighbors on the network and managing the router's startup and configuration.
- Review how to configure and troubleshoot a small network.
- Expand the switched network from a small LAN to a medium-sized LAN with multiple switches, supporting VLANs, trunking, and spanning tree.
- Describe routing concepts as they apply to a medium-sized network and discuss considerations when implementing routing on the network.
- Configure, verify, and troubleshoot OSPF.
- Configure, verify, and troubleshoot EIGRP.
- Determine how to apply ACLs based on network requirements, and to configure, verify, and troubleshoot ACLs on a medium-sized network.
- Describe when to use NAT or PAT on a medium-sized network, and configure NAT or PAT on routers.
- Identify and implement the appropriate WAN technology based on network requirements.

Introduction

- Cisco devices
- IOS
- OSI model
- SDM
- Cisco Boot Process
- LAN Cabling and Standards

Switching

- Ethernet LAN Switching Concepts
- Ethernet Switch Basic Configuration and Troubleshooting
- Virtual LANs
- Spanning Tree Protocol
- Wireless LANs

Network Introduction

- Introduction to Computer Networking Concepts
- The TCP/IP and OSI Networking Models
- Fundamentals of LANs
- Fundamentals of WANs
- Fundamentals of IP Addressing and Routing (VLSM and Subnetting)
- Fundamentals of TCP/IP Transport, Applications, and Security

Routing

- Cisco Routers Basic Configuration
- Routing Protocol Concept and Static Routing
- Distance Vector Routing Protocol Configuration and Troubleshooting (RIP)
- Link State Routing Protocol Configuration and Troubleshooting (OSPF)
- Advanced Distance Vector Routing Protocol Configuration and Troubleshooting (EIGRP)
- Advanced Routing Protocols Concepts (VLSM, Classless, Summarization ...)

Security

- Access List

Scaling IPV6 Addressing

- NAT
- IPv6

WAN

- Point-to-Point WANs
- VPN Overview (IPSec)
- Frame Relay