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CENTER FOR PROFESSIONAL DEVELOPMENT

CISCO® CCNA® CERTIFICATION TRAINING

150 Hours/6 Months/Instructor-Facilitated
Course Code: **CPD049**

OVERVIEW

The Cisco CCNA Online Training Program will give you the essential knowledge to install, configure, and operate a small enterprise branch networks, including basic network security. You'll learn about routed and switched LAN Emulation networks made up of Cisco equipment while you prepare for Cisco certification. The program provides focused coverage of Cisco router and switch configuration procedures. Upon completion of this program students will be prepared to take 100-101 ICND1 and earn the CCENT, followed by 200-101 ICND2. After passing ICND1 and ICND2 students will earn the CCNA Certification. Students can also finish the program and be prepared to take the 200-120 CCNA exam, which is a single exam that can result in the CCNA certification

No other self-paced program is as up-to-date or as complete as this one. This program contains online tutorials, practice questions, online labs (using real, not simulated, Cisco equipment), and a mentor to answer any questions you may have pertaining to the curriculum and program completion.

OBJECTIVES

Upon successful completion of this program, you'll be able to:

- IP Data Networks: Network devices such as routers, switches, bridges and hubs; Identify common applications; OSI and TCP/IP models; Network media
- LAN Switching Technologies: Determine media access control methods, Basic switching concepts; Configure switches, Ping, Telnet and SSH; VLANs; Trunking on Cisco switches.
- IP addressing (IPv4/IPv6): Describe, identify and configure addresses for both IPv4 and IPv6
- IP Routing Technologies: Routing concepts; Configure and verify routers with CLI; Static and default routes; Routing and routing protocols; OSPF, InterVLAN Routing; SVI interfaces.
- IP Services: DHCP, ACLs, NAT and NTP
- Network Device Security: Passwords, SSH, VTYs, physical security, disabling unused services and authentication; Switch Port Security features; Filter ACLs and limit telnet and SSH access.
- LAN Switching Technologies: RSTP, PVSTP, Etherchannels; and PVSTP operation.
- IP Routing Technologies: Cisco IOS router boot process; Configure a serial interface; Manage IOS files; Routing and routing protocols; OSPF and EIGRP.
- IP Services: Recognize High Availability (FHRP) including VRRP, HSRP and GLBP; Syslog; SNMP v2 & v3.
- Troubleshooting: Network Issues; VLAN problems; Trunking problems on switches; ACL issues; Netflow data; Spanning Tree operation issues; OSPF and EIGRP issues; InterVLAN routing problems; WAN implementation issues; NetFlow statistics; Etherchannel problems

- WAN Technologies: Identify different WAN Technologies; WAN serial connections; PPP connections between Cisco routers; Frame Relay on Cisco routers; PPPoE

MATERIALS INCLUDED

- *Cisco CCENT/CCNA ICD1 100-101 Official Cert Guide*
- *Cisco CCNA Routing and Switching ICND2 200-101 Official Cert Guide*

OUTLINE

CS-005 ICND1 100-101

I. Networking Fundamentals
- A. TCP/IP Networking Model
- B. OSI Networking Model
- C. Fundamentals of Ethernet LANs
- D. Fundamentals of WANs
- E. Fundamentals of IPv4 Addressing and Routing
- F. Fundamentals of TCP/IP Transport and Applications

II. Ethernet LANs and Switches
- A. Building Ethernet LANs with Switches
- B. Installing and Operating Cisco LAN Switches
- C. Configuring Ethernet Switching
- D. Implementing Ethernet Virtual LANs
- E. Troubleshooting Ethernet LANs

III. IP Version 4 Addressing and Subnetting
- A. Binary
- B. Subnetting
- C. Applying Subnets to Diagrams

IV. Implementing IP Version 4
- A. Operating Cisco Routers
- B. Configuring IPv4 Addresses and Routes
- C. Learning IPv4 Routes with OSPFv2
- D. Configuring and Verifying Host Connectivity
- E. Configuring Static Routes
- F. Configuring DNS and DHCP

V. IPv4 Services
- A. Basic IPv4 Access Control Lists
- B. Advanced IPv4 ACLs and Device Security
- C. Network Address Translation

VI. IP Version 6
- A. Fundamentals of IP Version 6
- B. IPv6 Addressing and Subnetting
- C. Implementing IPv6 Addressing on Routers
- D. Implementing IPv6 Addressing on Hosts
- E. Implementing IPv6 Routing

Outline – CS-006 ICND2 200-101

I. **LAN Switching**
   A. Spanning Tree Protocol Concepts
   B. Spanning Tree Protocol Implementation
   C. Troubleshooting LAN Switching
II. **IP Version 4 Routing**
   A. Troubleshooting IPv4 Networks
   B. Creating Redundant First Hop Routers
   C. Virtual Private Networks
III. **IP Version 4 Routing Protocols**
   A. Implementing OSPF for IPv4
   B. Implementing and Understanding EIGRP for IPv4
   C. Troubleshooting IPv4 Networks
IV. **Wide Area Networks**
   A. Implementing Point-to-Point WANs
   B. Understanding Frame Relay Concepts
   C. Implementing Frame Relay
   D. Identifying Other Types of WANs
V. **IP Version 6**
   A. Troubleshooting IPv6
   B. Implementing OSPF for IPv6
   C. Implementing EIGRP for IPv6
VI. **Network Management**
   A. Managing Network Devices
   B. Managing IOS Files
   C. Managing IOS Licensing

REQUIREMENTS

This program is compatible with the Windows XP and later operating systems and IE 8 and later browsers.

Remote Lab Requirements:

- The PC must be connected to a high-speed Internet connection.
- The PC must have pop-up blockers turned off.
- The PC must not be located behind a caching proxy firewall.
- The PC must have Java JRE version 1.6.0 or higher installed.

Please Note: It's possible to run the remote labs with other operating systems (Linux or Apple); however, only the designated Windows operating systems with the required browser will be eligible for support.

Certification Requirements:

Cisco Certified Network Associate (CCNA) Routing and Switching is a certification program for entry-level network engineers that helps them maximize their investments in foundational networking knowledge and increase the value of their employer's networks. CCNA Routing and Switching is for Network Specialists, Network Administrators, and Network Support Engineers with 1-3 years of experience. The CCNA Routing and Switching validates the ability to install, configure, operate, and troubleshoot medium-size routed and switched networks.

Prerequisites:

To enroll, we recommend that you have experience working in a network environment. If you do not have at least 1-3 years of networking experience, we highly recommend you take a course like CompTIA Network+ first. This program is for you if you want to learn the skills necessary to become Cisco CCNA certified.

INSTRUCTOR BIO

Brock Stout is a graduate of the University of Dayton. He has honed his skills as an IT professional and instructor, contracting with a multitude of Fortune 500 companies over the last 15 years. Brock has an extensive background in CCNA curriculum development and is currently teaching at the collegiate level. Brock also owns an IT consulting firm that provides a myriad of services, including remote labs. Brock has designed and taught numerous networking classes for adult education programs public and private. Brock can be contacted at brock@cyanna.com.

Tracey Rossi is the Director of Curriculum Services at a major education company. Prior to joining that team, Ms. Rossi served for six years as Director of Academics for TechSkills, a 30-campus national private postsecondary institution. She also worked as Director of Community Relations for Elmhurst Memorial Hospital and Senior Consultant at The Haymarket Group in Chicago, a Public Affairs and Community Relations firm. Ms. Rossi has a Bachelor of Arts in Communications from the University of Illinois at Chicago.