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CCNA 200-301

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Cisco Certified Network Associate (CCNA 200-301) Training

Overview

The Cisco Certified Network Associate (CCNA 200-301) training course provides participants with the knowledge and practical skills required to install, configure, operate, and troubleshoot medium-sized routed and switched networks. The course covers networking fundamentals, IP connectivity, network access, IP services, security fundamentals, automation, and programmability.

This training prepares participants for the Cisco CCNA 200-301 certification exam and equips them with the skills needed for entry-level networking roles in modern enterprise environments.

Training Objectives

By the end of this training, participants will be able to:

- Understand networking concepts and architectures.
- Explain the functions of network devices and protocols.
- Configure and troubleshoot IPv4 and IPv6 addressing.
- Implement Ethernet LANs and VLANs.
- Configure switching technologies and Spanning Tree Protocol (STP).
- Configure and verify inter-VLAN routing.
- Understand routing concepts and protocols.
- Configure static and dynamic routing.
- Implement network security fundamentals.
- Configure access control lists (ACLs).
- Understand wireless networking concepts.
- Configure IP services such as DHCP and NAT.
- Monitor and troubleshoot network operations.
- Understand network automation and programmability concepts.
- Prepare for the Cisco CCNA 200-301 certification examination.

Training Outline

Module 1: Networking Fundamentals

- Network components and functions
- Network topologies
- Network models (OSI and TCP/IP)
- Types of networks
- Data encapsulation
- Ethernet fundamentals

Module 2: Network Access

- Ethernet switching concepts
- MAC address tables
- VLAN configuration
- VLAN trunking
- Inter-VLAN routing
- Spanning Tree Protocol (STP)
- EtherChannel fundamentals

Module 3: IP Connectivity

- IPv4 addressing and subnetting
- IPv6 addressing
- Static routing
- Dynamic routing concepts
- OSPF fundamentals
- Route selection process
- First-hop redundancy concepts

Module 4: IP Services

- DHCP operation and configuration
- DNS fundamentals
- NTP configuration
- SNMP concepts
- Syslog services
- NAT and PAT
- QoS fundamentals

Module 5: Security Fundamentals

- Security concepts and threats
- Device access security
- Password management
- Secure remote access using SSH
- Access Control Lists (ACLs)
- Layer 2 security features
- Wireless security concepts

Module 6: Wireless Networking

- Wireless architectures
- Wireless standards
- Wireless components
- WLAN configuration concepts
- Wireless security mechanisms
- Troubleshooting wireless networks

Module 7: Automation and Programmability

- Network automation concepts
- Controller-based networking
- Software-defined networking (SDN)
- APIs and data formats
- JSON fundamentals
- Automation tools overview

Module 8: Network Troubleshooting

- Troubleshooting methodology
- Connectivity troubleshooting
- VLAN troubleshooting
- Routing troubleshooting
- DHCP and NAT troubleshooting
- Wireless troubleshooting
- Network monitoring tools

Module 9: Practical Labs and Hands-on Exercises

- Switch configuration labs
- VLAN implementation labs
- Routing configuration labs
- OSPF implementation labs
- ACL configuration labs
- DHCP and NAT labs
- Wireless network labs
- Troubleshooting scenarios

Module 10: Certification Preparation

- CCNA 200-301 exam overview
 - Exam domains and objectives
 - Practice questions
 - Mock examinations
 - Exam strategies and tips
 - Certification readiness assessment
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Target Audience

- Network Administrators
 - Network Engineers
 - IT Support Specialists
 - Help Desk Technicians
 - Systems Administrators
 - Cybersecurity Professionals
 - Students pursuing networking careers
 - Individuals preparing for the CCNA 200-301 certification exam
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Prerequisites

- Basic computer skills
 - Basic understanding of operating systems
 - No prior Cisco certification required
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