CYBERIUM

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INTRODUCTION

The Cisco Certified Network Associate (CCNA v1.1) Course is a comprehensive training program designed to equip learners with the essential networking knowledge and hands-on skills required for modern IT and networking environments. The CCNA certification is one of the most sought-after credentials in the IT industry, validating an individual's ability to install, configure, operate, and troubleshoot enterprise-level networks.

This detailed course covers fundamental networking concepts, IP addressing, routing and switching, network security, automation, artificial intelligence and wireless networking. The course prepares candidates for the CCNA 200-301 certification exam, ensuring they gain real-world expertise in Cisco networking technologies

COURSE OBJECTIVES

By the end of this course, learners will:

- Understand network fundamentals and how data is transmitted over a network.
- Learn about OSI and TCP/IP models, IP addressing, and subnetting.
- Configure and troubleshoot Cisco routers and switches for small to medium-sized networks.
- Gain hands-on experience with routing protocols such as OSPF and static routing.
- Implement VLANs, trunking, and inter-VLAN routing for efficient network segmentation.
- Understand wireless networking principles, configuration, and security best practices.
- Learn about network security concepts, including firewall policies, access control, and secure network design.
- Explore network automation, SDN (Software-Defined Networking), and cloud networking.

Overview of CCNAv1.1 exam

The Cisco Certified Network Associate (CCNA v1.1) exam (200-301) is a globally recognized certification that validates essential networking skills, including network fundamentals, IP addressing, routing, switching, VLANs, wireless networking, network security, artificial intelligence and automation. It is designed for IT professionals, network engineers, and system administrators seeking to build expertise in Cisco networking technologies.

The exam duration is 120 minutes and consists of 100-120 questions in multiple formats such as multiple-choice, drag-and-drop, simulations, and test-lets. The passing score typically ranges between 800-850 out of 1000. The exam is available in English, Japanese, Portuguese, and Simplified Chinese and can be taken online or at a Pearson VUE test center. While there are no formal prerequisites, basic networking knowledge is recommended. The certification remains valid for three years before requiring recertification.

The exam covers six major domains, including network access, IP connectivity, security fundamentals, automation, and programmability. Candidates should prepare using Cisco's official training, study guides, hands-on labs with Packet Tracer, and real-world networking scenarios. Upon certification, individuals can pursue careers as Network Engineers, Systems Administrators, IT Support Specialists, and Network Security Analysts. The CCNA certification also serves as a foundation for advanced Cisco certifications like CCNP and CCIE, making it a valuable credential for career growth in the networking industry.

Course Duration- 40 Hours

CCNAv1.1 SYLLABUS

Module 01- Introduction to Networking Fundamentals

1. **Introduction to Networking**
2. **OSI and TCP/IP Models**
3. **Types of Networks (LAN, WAN, WLAN, MAN)**
4. **Network Topologies and Architectures**
5. **Data Transmission Methods**

Module 02- Network Access & Switching

1. **Introduction to Cisco Switches**
2. **MAC Address Table and Frame Forwarding**
3. **VLANs and Trunking**
4. **Spanning Tree Protocol (STP)**
5. **SSH Protocol**

Module 03- IP Connectivity & Routing

1. **Introduction to IP Addressing (IPv4 and IPv6)**
2. **Subnetting**
3. **DHCP Protocol**
4. **MAC Addresses**
5. **Static vs. Dynamic Routing**
6. **Routing Protocols: OSPF, RIP**
7. **Configuring and Verifying Routing Tables**

Module 04- Wireless Networks

1. Introduction to Wireless Standards (802.11a/b/g/n/ac/ax)
2. WLAN Configuration and Security
3. Wireless Authentication and Encryption Methods
4. Troubleshooting Wireless Connectivity

Module 05- Network Security Essentials

1. Common Cybersecurity Threats
2. Configuring Firewalls and Access Control Lists (ACLs)
3. CDP and LLDP Protocol
4. Firewalls, IDS and IPS
5. VPNs and Secure Remote Access

Module 06- Network Automation & Programmability

1. Introduction to Network Automation
2. Using Python and Ansible for Network Configuration
3. YAML Syntax
4. Cloud Networking Concepts

Module 07- Artificial Intelligence (AI)

1. Introduction to Artificial Intelligence
2. Application of AI in Networking
3. Cisco's new innovation in AI

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