Evening CCNA Roadmap 📚

Networking | Cisco | CCNA | Study Plan | Detailed

Phase 1: Foundations (Weeks 1-4)

- Networking Fundamentals
  - TCP/IP Model: Layers, protocols, functions
  - OSI Model: Layers, protocols, functions, comparison with TCP/IP
  - Network Topologies: Bus, star, ring, mesh, hybrid
  - Basic Networking Concepts: LAN, WAN, MAN, internetworking
- IP Addressing & Subnetting
  - IPv4 Addressing: Classes, private addresses, public addresses
  - Subnet Masks: Calculating subnets, determining usable IP addresses
  - CIDR Notation: Classless Inter-Domain Routing, understanding CIDR blocks
  - Subnetting Techniques: Variable-length subnet masking (VLSM), supernetting
  - IPv6 Addressing: Advantages over IPv4, addressing schemes
- Basic Routing Concepts
  - Routing Protocols: RIP (Routing Information Protocol), Static Routing
  - Routing Tables: Structure, contents, dynamic updates
  - Default Gateways: Function, configuration
- Hands-on Labs: Basic Network Configuration
  - Configure Basic Routers
  - Configure Basic Switches
  - Practice IP Addressing and Subnetting

Phase 2: Switching (Weeks 5-8)

- Switching Fundamentals
  - MAC Addresses: Function, learning process
  - Switching Methods: Cut-through, store-and-forward, fragment-free
  - Switch Configurations: Basic commands, interface configuration
- VLANs
  - VLAN Creation and Management: Assigning ports to VLANs, VLAN configuration
  - Inter-VLAN Routing: Routing between VLANs using routers or VLAN Trunking Protocol (VTP)
  - Trunking: 802.1Q trunking, configuring trunk ports
- Switch Security
  - Port Security: Limiting MAC addresses per port, preventing MAC address flooding
  - 802.1x Authentication: RADIUS, secure network access
  - Access Control Lists (ACLs): Controlling access to ports and VLANs
  - Spanning Tree Protocol (STP): Preventing loops in switched networks
- Hands-on Labs: Switching Configuration
  - Configure VLANs
  - Implement Switch Security Features
  - Troubleshoot Switching Issues

Phase 3: Routing (Weeks 9-12)

- Routing Protocols
  - EIGRP: Operation, configuration, features
  - OSPF: Operation, configuration, areas, features
  - Routing Table Dynamics: Route updates, convergence
- Advanced Routing Concepts
  - Route Summarization: Aggregating routes for efficiency
  - Route Redistribution: Sharing routes between different routing protocols
  - Policy-Based Routing: Controlling route selection based on policies
- WAN Technologies
  - Serial Connections: Configuration, troubleshooting
  - Frame Relay: Concepts, configuration
  - PPP: Point-to-Point Protocol, authentication methods
  - MPLS: Multiprotocol Label Switching, basics
- Hands-on Labs: Routing Configuration
  - Configure EIGRP and OSPF
  - Implement WAN Connections
  - Troubleshoot Routing Issues

Phase 4: Advanced Topics & Exam Prep (Weeks 13-16)

- Network Management: SNMP, syslog
- Access Control Lists (ACLs): Detailed ACL configuration and troubleshooting
- Troubleshooting: Common networking issues, techniques for diagnosing problems
- Practice Exams: Take several practice exams to assess your readiness