

# NETWORKING – CCNA CERTIFICATION COURSE CONTENT

- BASICS OF NETWORKING
  - OSI Layers
  - IP Addressing
  - Subnetting
  - Interpret network diagrams
  - Determine the path between two hosts across a network
  - Describe the components required for network and internet communications
  - Describe the operation and benefits of using private and public IP addressing
- INTRODUCTION TO ROUTER, ROUTING PROTOCOLS
  - Describe basic routing concepts (including: router lookup process)
  - Describe the operation of Cisco routers (including: router boot up process, POST, router components)
  - Manage IOS configuration files (including: save, edit, upgrade, restore)
  - Manage Cisco IOS
  - Different Modes of Router
  - Perform and verify routing configuration tasks for a static or default route given specific routing requirements
  - Configure, verify and troubleshoot RIPv2
  - Access and utilize the router to set basic parameters
  - Connect, configure and verify operation status of device interface
  - Verify device configuration and network connectivity using ping, traceroute, telnet, or other utilities
  - Configure, verify and troubleshoot EIGRP
  - Configure, verify and troubleshoot OSPF (Single Area)
  - Verify network connectivity (including: using ping, traceroute and telnet)
  - Verify router hardware and software operation using SHOW & DEBUG

- Implement basic router security
- WAN Protocols
  - Implement and verify WAN links
  - Describe different methods for connecting to a WAN
  - Configure and verify a basic WAN serial connection
  - Configure and verify Frame Relay on Cisco routers
  - Troubleshoot WAN implementation issues
  - Configure and verify a PPP connection between Cisco routers
- ACCESS CONTROL LIST AND NAT
  - Implement, verify and troubleshoot NAT and ACLs in a medium-size Enterprise branch office network
  - Describe the purpose and types of ACLs
  - Configure and apply an ACLs based on network filtering requirements
  - Configure and apply an ACLs to limit telnet
  - Verify and monitor ACLs in a network environment
  - Explain the basic operation of NAT
  - Configure NAT for given network requirements
- Switching
  - Explain network segmentation and basic traffic management concepts
  - Verify network status and switch operation using basic utilities(including:ping, trace route, telnet, arp, ipconfig)
  - SHOW & DEBUG commands
  - Configure, verify and troubleshoot trunking on Cisco switches
  - Configure, verify and troubleshoot interVLAN routing
  - Configure, verify, and troubleshoot VTP
  - Interpret the output of various show and debug commands to verify the operational status of a Cisco switched network Implement basic switch security (including:port security, trunk access, management vlan other than vlan 1, etc)
  - Backup & Restoring
    - Backup of Start-up configuration
    - Backup of Running configuration
    - Backup of Cisco router IOS
    - Restoring Start-up Configuration

- Restoring Running Configuration
- Restoring IOS of a Cisco router
- Password Recovery
- Troubleshooting of Cisco Routers