

# CCNA® Training Course at CTS

## Course Objectives:

In this course, you will:

- Learn the basics of networking.
  - Learn the basics of Cisco devices and commands.
  - Set up an IPv4 network.
  - Set up an IPv6 network.
  - Learn infrastructure services.
  - Learn LAN switching basics.
  - Learn about routing basics.
  - Learn about NAT basics.
  - Maintain the network infrastructure.
  - Enhance network security.
  - Troubleshoot networks.
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- Manage VLANs on Cisco switches.
  - Manage STP.
  - Manage EtherChannels.
  - Describe the mechanisms used to mitigate network threats.
  - Configure infrastructure services.
  - Describe QoS concepts and techniques to manage congestion.
  - Perform infrastructure maintenance.
  - Manage devices using AAA with the TACACS+ and RADIUS protocols.
  - Describe the basics of network programmability.
  - Describe the features of WAN technologies.
  - Manage routing protocols.

## Course Content

### **Lesson 1: Basics of Networking**

**Topic A:** Network Concepts

**Topic B:** The TCP/IP Model

**Topic C:** The OSI Model

### **Lesson 2: Basics of Cisco Devices and Commands**

**Topic A:** Cisco Devices

**Topic B:** Infrastructure Components in Cisco Network

**Topic C:** Cisco Architecture Types

**Topic D:** Cabling Types

**Topic E:** Cisco IOS Commands

### **Lesson 3: Setting Up an IPv4 Network**

**Topic A:** Basics of IPv4 Addressing

**Topic B:** VLSM

**Topic C:** Troubleshooting Methodologies

**Topic D:** Troubleshoot IPv4 Addressing and Subnetting Issues

## **Lesson 4: Setting Up an IPv6 Network**

**Topic A:** Basics of IPv6 Addressing

**Topic B:** Troubleshoot IPv6 Addressing Issues

## **Lesson 5: Infrastructure Services**

**Topic A:** Configure DNS

**Topic B:** Configure DHCP

**Topic C:** Configure NTP

## **Lesson 6: LAN Switching Basics**

**Topic A:** Configure Switches

**Topic B:** Configure VLANs

**Topic C:** Interswitch Connectivity

**Topic D:** Layer 2 Protocols

## **Lesson 7: Routing Basics**

**Topic A:** Routing Concepts

**Topic B:** Configure Routing Interfaces

**Topic C:** Inter-VLAN Routing

**Topic D:** Configure IPv4 and IPv6 Static Routing

## **Lesson 8: NAT Basics**

**Topic A:** IPv4 Numbered and Named Access Lists

**Topic B:** Configure NAT

## **Lesson 9: Maintaining the Network Infrastructure**

**Topic A:** Monitor Network Devices

**Topic B:** Configure Network Devices

**Topic C:** Manage Network Devices

**Topic D:** Device Maintenance

## **Lesson 10: Enhancing Network Security**

**Topic A:** Configure Ports

**Topic B:** Secure Network Devices

## **Lesson 11: Troubleshooting Network**

**Topic A:** Troubleshoot Infrastructure Services

**Topic B:** Troubleshoot Common Network Issues

**Topic C:** Troubleshoot Switching Issues

**Topic D:** Troubleshoot Routing Issues

**Topic E:** Troubleshoot Port Security Issues

**Topic F:** Troubleshoot Inter-VLAN Routing Issues

**Topic G:** Troubleshoot Basic Device Hardening Issues

## **Lesson 12: Managing VLANs on Cisco Switches**

**Topic A:** Configure VLANs on Cisco Switches

**Topic B:** Configure Connectivity Between Cisco Switches

**Topic C:** Troubleshoot VLANs

**Topic D:** Troubleshoot Interswitch Connectivity

## **Lesson 13: Managing STP**

**Topic A:** Basics of STP

**Topic B:** Configure STP

**Topic C:** Troubleshoot STP

## **Lesson 14: Managing EtherChannel**

**Topic A:** Basics of Switch Stacks and VSS

**Topic B:** Configure EtherChannel

**Topic C:** Troubleshoot EtherChannel

## **Lesson 15: Mitigating Threats to the Access Layer**

**Topic A:** Configure Access and Trunk Interfaces

**Topic B:** Configure IEEE 802.1x Port-Based Authentication

**Topic C:** Configure DHCP Snooping

## **Lesson 16: Configuring Infrastructure Services**

**Topic A:** Configure HSRP

**Topic B:** Overview of Cloud Services

**Topic C:** Configure Traffic Filtering Using Access Lists

**Topic D:** Troubleshooting ACLs

**Topic E:** Configure VRRP

## **Lesson 17: Describing QoS Concepts**

**Topic A:** Describe the QoS Concepts

**Topic B:** Describe the Congestion Management and Avoidance Techniques

### **Lesson 18: Infrastructure Maintenance**

**Topic A:** Configure SNMP

**Topic B:** Troubleshoot Network Connectivity Issues Using ICMP Echo-based SLA

**Topic C:** Troubleshoot Problems Using Local SPAN

**Topic D:** Troubleshoot Basic Layer 3 End-to-End Connectivity Issues

### **Lesson 19: Managing Devices Using AAA**

**Topic A:** Manage a Device Using AAA with TACACS+

**Topic B:** Manage a Device Using AAA with RADIUS

### **Lesson 20: Network Programmability**

**Topic A:** Network Programmability Basics

### **Lesson 21: WAN Technologies**

**Topic A:** WAN Topology Basics

**Topic B:** WAN Access Connectivity Basics

**Topic C:** Configure PPP on WAN Interfaces Using Local Authentication

**Topic D:** Configure MLPPP on WAN Interfaces Using Local Authentication

**Topic E:** Configure PPPoE Client-Side Interfaces

**Topic F:** Configure GRE Tunnel Connectivity

**Topic G:** Describe Single-Homed Branch Connectivity

### **Lesson 22: Routing Technologies**

**Topic A:** Routing Protocols

**Topic B:** Configure Inter-VLAN Routing

**Topic C:** Configure OSPFv2 Routing for IPv4

**Topic D:** Configure OSPFv3 Routing for IPv6

**Topic E:** Configure EIGRPv4

**Topic F:** Configure EIGRPv6

**Topic G:** Troubleshoot Routing Protocols