Introduction to Networking
CR100i

40 hours

Course Outline:

Students of the CCNA course will acquire a broad range of fundamental knowledge that will enable them to progress in their IT-related careers & be ready for the Cisco CCNA certification, together with supplemental independent study. Students will learn how to install, operate, configure, and test IPv4 and IPv6 networks.

Additional topics include configuration of network components, such as switches, routers, and wireless LAN controllers, managing network devices, and identifying basic security threats. The course also teaches network automation, and software-defined networking.

Who should attend the course:

Technical personnel or IT professionals who want to sharpen their skills in the areas covered by the Cisco CCNA.

Prerequisites:

- Basic computer experience
- Basic PC operating system navigation skills.
- Basic Internet usage skills.
- Basic knowledge of IP addresses.

Course Contents:

Module 1 - Operation of IP Data Networks

- Operation of IP Data Networks
- Recognize the purpose and functions of various network devices such as Routers, Switches, Bridges and Hubs.
- Select the components required to meet a given network specification.
- Identify common applications and their impact on the network
- Describe the purpose and basic operation of the protocols in the OSI and TCP/IP models.
- Predict the data flow between two hosts across a network.

– Identify the appropriate media, cables, ports, and connectors to connect Cisco network devices to other network devices and hosts in a LAN

Module 2 - LAN Switching Technologies

– Determine the technology and media access control method for Ethernet networks
– Identify basic switching concepts and the operation of Cisco switches.
– Configure and verify initial switch configuration including remote access management.
– Verify network status and switch operation using basic utilities such as ping, telnet and ssh.
– Identify enhanced switching technologies
– Describe how VLANs create logically separate networks and the need for routing between them.
– Configure and verify VLANs
– Configure and verify trunking on Cisco switches
– Configure and verify PVSTP operation

Module 3 - IP addressing

– Describe the operation and necessity of using private and public IP addresses for IPv4 addressing
– Identify the appropriate IPv6 addressing scheme to satisfy addressing requirements in a LAN/WAN environment.
– Identify the appropriate IPv4 addressing scheme using VLSM and summarization to satisfy addressing requirements in a LAN/WAN environment.
– Describe the technological requirements for running IPv6 in conjunction with IPv4 such as dual stack

Module 4 - IP Routing Technologies

– Describe basic routing concepts
– Describe the boot process of Cisco IOS routers
– Configure and verify utilizing the CLI to set basic Router configuration
– Configure and verify operation status of a device interface, both serial and ethernet
– Verify router configuration and network connectivity
– Configure and verify routing configuration for a static or default route given specific routing requirements
– Manage Cisco IOS Files
– Differentiate methods of routing and routing protocols