



# Networking III

2023-2024 Catalog

[ARCHIVED CATALOG]

## NETI 209 - Networking III

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**PREREQUISITES:** [NETI 119](#) or a current, valid CCENT certification.

PROGRAM: Network Infrastructure

**CREDIT HOURS MIN:** 3

LECTURE HOURS MIN: 1.5

LAB HOURS MIN: 3

DATE OF LAST REVISION: N/A

Networking III is the 3rd of 3 courses in the Cisco CCNAv7 curriculum. The course includes activities using Packet Tracer, hands-on lab work, and a wide array of assessment types and tools. This course describes the architecture, components, operations, and security to scale for large, complex networks, including wide area network (WAN) technologies. The course emphasizes network security concepts and introduces network virtualization and automation. Students learn how to configure, troubleshoot, and secure enterprise network devices and understand how application programming interfaces (API) and configuration management tools enable network automation.

**MAJOR COURSE LEARNING OBJECTIVES:** Upon successful completion of this course the student will be expected to:

1. Configure single-area OSPFv2 in both point-to-point and multiaccess networks.
2. Explain how to mitigate threats and enhance network security using access control lists and security best practices.
3. Implement standard IPv4 ACLs to filter traffic and secure administrative access.
4. Configure NAT services on the edge router to provide IPv4 address scalability.
5. Explain techniques to provide address scalability and secure remote access for WANs.
6. Explain how to optimize, monitor, and troubleshoot scalable network architectures.
7. Explain how networking devices implement QoS.
8. Implement protocols to manage the network.
9. Explain how technologies such as virtualization, software defined networking, and automation affect evolving networks.

**COURSE CONTENT:** Topical areas of study include -

- Cisco IOS
- WANs
- QoS
- Dynamic Routing Protocols
- Single-area OSPF
- VLANs
- Network Management
- Network Automation
- SDN
- ACLs
- Virtualization
- Troubleshooting

- IPv6
- NAT

**DELIVERY METHOD:**

This course requires a dedicated classroom in which students have administrator privileges to the computers. Campuses and sites that offer this course must also provide students with access to a datacenter that meets the requirements of the Cisco Networking Academy (see below).

**Minimum Pod Configuration**

Qty	Product Number	Description	Notes
2	ISR 4221/K9	Cisco ISR 4221 (2GE, 2NIM, 8G Flash, 4G RAM, IPB)	Should be ordered with IOS-XE Image with Payload Encryption
2	WS-C2960+24TC-L	Catalyst 2960 Plus 24 10/100 +2T/SFP LAN Base Image	
1	Wireless Router	Wireless router (generic brand) with WPA2 support.	

**Ideal Pod Configuration**

Qty	Product Number	Description	Notes
2	ISR 4321/K9	Cisco ISR 4321 (3GE, 2NIM, 1SM, 4G Flash, 4G RAM, IPB)	Should be ordered with IOS-XE Image with Payload Encryption
3	WS-C2960+24TC-L	Catalyst 2960 Plus 24 10/100 +2T/SFP LAN Base Image	
1	Wireless Router	Wireless router (generic brand) with WPA2 support.	
3	NIM-2T	2-Port Serial WAN Interface card	Not required for labs, but recommended if you want to avoid doing labs in Packet Tracer
3	ACS-4220-RM-19	19 inch rack mount kit for Cisco ISR 4221 series	
3	CAB-SS-V35MT	V.35 Cable, DTE Male to Smart Serial, 10 Feet	For use with the NIM-2T Serial cards
3	CAB-SS-V35FC	V.35 Cable, DCE Female to Smart Serial, 10 feet	For use with the NIM-2T Serial cards

Hardware		
Qty	Description	Notes
1	(optional) PC acting as an application server (MS Windows Server or Windows 7 or later)	
3	Desktop PCs acting as clients (MS Windows 7 or later)	

2	Wireless LAN Adapters for the client PCs	
--	Ethernet cables and Serial Cables as required	
<b>Software</b>		
<b>Qty</b>	<b>Description</b>	<b>Notes</b>
--	Packet Tracer v7.3	
--	Tera Term source SSH client software for lab PCs.	
--	Oracle VirtualBox, most recent version.	
--	Wireshark version 2.5 or higher.	
--	Open-source server software: For various services and protocols, such as Telnet, SSH, HTTP, DHCP, FTP, TFTP, etc.	

[Course Addendum - Syllabus \(Click to expand\)](#)