

## Implementing the Cisco NCS540 Series Routers (CPLL-NCS540HWE)

Duration: 180 Days

The Implementing the Cisco NCS540 Series Router (NCS540HWE) training teaches you how to deploy Cisco Network Convergence System (NCS) 540 Series routers in a network environment. You will be introduced to the features and functions of the Cisco NCS 540 series platforms, system architecture, services implementation, quality of service (QoS), system security, model-driven telemetry, and programmability. This training also earns you 40 Continuing Education (CE) credits towards recertification.

### Skills You'll Learn:

- Discover all major aspects of the Cisco NCS 540 Series router platforms
- Recognize, implement, and manage enhancements and system security features within Cisco IOS XR Software systems
- Understand the main factors leading to the development and deployment of segment routing, including Segment Routing Traffic Engineering (SR-TE)
- Implement and troubleshoot issues within Layer 2 VPN and Layer 3 MPLS VPN operations in a service provider environment

### Learning Path Objectives:

- Classify the Cisco NCS 540 platform hardware and understand the variations between large, medium, small, and fronthaul form factors, their features, use cases, and positioning
- Describe the hardware architecture of the NCS 540 series and the components necessary for packet queuing and forwarding, understand the life of a packet on ingress and egress traffic
- Explain the system architecture for traffic queuing, scheduling, and forwarding to introduce concepts of Cisco IOS XR modular QoS on the NCS 540 platform
- Describe the methods and protocols for establishing timing and synchronization on Cisco IOS XR router platforms
- Describe the Cisco NCS 540 fronthaul router family and its features and how they can be used to make mobile network architecture simpler
- Describe Cisco IOS XR software architecture, its programmable features, and how to install software packages
- Explain how to install Cisco IOS XR software packages

- Recognize, implement, and manage system security features within Cisco IOS XR software systems, ensuring the protection of network infrastructure and data
- Describe the main factors leading to the development and deployment of segment routing, segment types, segment routing global block (SRGB), and configure and verify intermediate system to intermediate system (IS-IS) and open shortest path first (OSPF) segment routing operation
- Discuss how topology independent loop-free alternate (TI-LFA) is implemented in Cisco IOS XR software
- Demonstrate segment routing traffic engineering (SR-TE) and the traffic engineering components used in segment routing
- Implement and configure advanced SR-TE features and SR IPv6
- Describe the components and functionality of Layer 3 multiprotocol label switching (MPLS) virtual private networks (VPNs) implementation in Cisco IOS XR software deployments
- Implement Layer 2 VPN operations in a service provider environment
- Explain how Ethernet VPN (EVPN) gets around the problems that regular Layer 2 VPNs have, what the model for EVPN delivery is, and how to implement and troubleshoot EVPN solutions
- Comprehend and implement model-driven telemetry for enhanced network visibility and management