Cisco IOS XR Broadband Network Gateway Implementation and Verification (IOSXR304) v1.0

What you'll learn in this course

The **Cisco IOS XR Broadband Network Gateway Implementation and Verification** (IOSXR304) v1.0 course teaches you how to successfully deploy, configure, operate, maintain, and support a Cisco IOS® XR Broadband Network Gateway (BNG) solution. This course will show you how to implement and verify BNG on a Cisco IOS XR device to manage subscriber access. You will also learn how to implement and verify subscriber management functions, including authentication, authorization, and accounting of subscriber sessions, address assignment, security, policy management, and Quality of Service (QoS).

Course duration

- Instructor-led training: 4 days in the classroom with hands-on lab practice
- Virtual instructor-led training: 5 days of web-based classes with hands-on lab practice
- E-learning: Equivalent of 4 days of video-based instruction with hands-on lab practice

How you'll benefit

This course will help you:

- Prepare to deploy, implement, configure, operate, and maintain a Cisco IOS XR BNG solution
- Gain hands-on practice using BNG with lab exercises
- Deepen your understanding of the Cisco IOS XR BNG solution

Who should enroll

- System installers
- System integrators
- System administrators
- Network administrators
- Solution designers

How to enroll

- For instructor-led training, visit the Cisco Learning Locator.
- For private group training, visit Cisco Private Group Training.
- For digital library access, visit Cisco Platinum Learning Library.
- For e-learning volume discounts, email ask_cpll@cisco.com.

Technology areas

- Routing and switching
- Service provider

Course details
Objectives

After taking this course, you should be able to:

- Describe the architecture and function of the Cisco IOS XR Broadband Network Gateway
- Configure and verify Authentication, Authorization, and Accounting (AAA) in a Broadband Network Gateway deployment
- Define policies to control subscriber traffic
- Establish and verify subscriber sessions
- Prioritize subscriber traffic using QoS
- Implement subscriber features
- Deploy redundancy for subscriber sessions

Prerequisites

Before taking this course, you should have the following knowledge and skills:

- Experience working with Cisco IOS XR Software-based platforms
- Basic understanding of routing protocols and Multiprotocol Label Switching (MPLS)
- Basic understanding of AAA functions

Outline

- Broadband Network Gateway Overview
  - BNG Architecture
  - BNG Software and Hardware Requirements
- Configuring and Verifying Authentication, Authorization, and Accounting
  - AAA Overview and Operation
  - RADIUS Operation and Configuration
  - DIAMETER Operation and Configuration
- Activating Control Policy
  - Control Policy Overview
  - Creating and Activating Class Maps and Policy Maps
  - Defining Dynamic Templates
- Establishing Subscriber Sessions
  - Subscriber Session Overview
  - Establishing IPoE and PPPoE Sessions
  - DHCP Operation
  - Subscriber Interface Neighbor Discovery
  - Static Session and Session Limits
  - BGP Subscriber Support

- Deploying Quality of Service
  - Quality of Service Overview and QoS Feature Support
  - RADIUS Based Policing
  - Share Policy Instances and Merged Policy-Maps
- Configuring Subscriber Features
  - Managing Control Plane Traffic
  - Controlling Packet Forwarding
  - Providing Multicast Services
  - Routing and Traffic Mirroring on Subscriber Sessions
- BNG Geo Redundancy and XML Support
  - Geo Redundancy Overview and Deployment Models
  - Configuring and Verifying Geo Redundancy
  - XML Support

Lab outline

- Configuring and Verifying Authentication, Authorization, and Accounting
- Activating Control Policy
- Establishing Subscriber Sessions
- Configuring QoS
- Configuring Subscriber Features
- Configuring BNG Geo Redundancy

IOSXR304_1-0   C22-741203-01   02/19