

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

### Overview

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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).

### Prerequisite Comments

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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

### Target Audience

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

### Course Objectives

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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

### Course Outline

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## 1 - Broadband Network Gateway Overview

BNG Architecture  
BNG Software and Hardware Requirements

## 2 - Configuring and Verifying Authentication, Authorization, and Accounting

AAA Overview and Operation  
RADIUS Operation and Configuration  
DIAMETER Operation and Configuration

## 3 - Activating Control Policy

Control Policy Overview  
Creating and Activating Class Maps and Policy Maps  
Defining Dynamic Templates

## 4 - 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

## 5 - Deploying Quality of Service

Quality of Service Overview and QoS Feature Support  
RADIUS Based Policing  
Share Policy Instances and Merged Policy-Maps

## 6 - Configuring Subscriber Features

Managing Control Plane Traffic  
Controlling Packet Forwarding  
Providing Multicast Services  
Routing and Traffic Mirroring on Subscriber Sessions

## 7 - BNG Geo Redundancy and XML Support

Geo Redundancy Overview and Deployment Models  
Configuring and Verifying Geo Redundancy  
XML Support