
Configuring BGP on Cisco Routers (BGP)

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Course Duration

5 days

Course Price

\$4,295.00

43 CLCs

Methods of Delivery

In-Person ILT

Virtual ILT

Onsite ILT

About this Class

In this CONFIGURING BGP ON CISCO ROUTERS (BGP) course provides an in-depth exploration of Border Gateway Protocol, focusing on how BGP is used to build scalable, policy-driven, and resilient enterprise and service provider networks. It is designed for network engineers and architects who need a deep understanding of BGP behavior, route selection, and large-scale deployment considerations. The curriculum balances protocol theory with hands-on implementation and troubleshooting. Students begin with BGP fundamentals, including session establishment, path attributes, route processing, and basic configuration. The course then advances into transit autonomous system design, exploring IBGP and EBGP interactions, packet forwarding behavior, and operational troubleshooting in transit environments. Policy control is a major focus, with detailed coverage of filtering techniques using prefix lists, AS-path filters, outbound route filtering, and route maps.

Advanced modules examine how BGP attributes such as weight, local preference, AS-path prepending, MED, and communities influence route selection. The course also covers customer-to-provider connectivity models, multihoming strategies, and service provider scaling techniques using route reflectors, confederations, peer groups, and route dampening. Extensive hands-on labs reinforce these concepts, allowing students to configure, monitor, and optimize BGP behavior in realistic enterprise and service provider scenarios.

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Why Attend with Current Technologies CLC

- Our Instructors are the top 10% rated by Cisco
- Our Lab has a dedicated 1 Gig Fiber Connection for our Labs
- Our Labs run up to Date Code for all our courses

Who Should Attend

The job roles best suited to the material in this course are:

- Network administrators
- Network engineers
- Network managers
- Systems engineers (who would like to implement BGP)

Prerequisites

The knowledge and skills that a learner must have before attending this course are as follows:

- Intermediate to advanced knowledge of Cisco IOS Software configuration
- Configuring and troubleshooting RIP, EIGRP, OSPF and IS-IS
- Skills and knowledge equivalent to those learned in:
 - Implementing and Administering Cisco Solutions (CCNA)
 - Implementing Cisco Advanced Routing and Services (ENARSI)
 - Implementing and Operating Cisco Service Provider Core Technologies (SPCOR)

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Objectives

After taking this course, you should be able to:

- Describe how to configure, monitor, and troubleshoot basic BGP to enable interdomain routing in a network scenario with multiple domains
- Describe how to use BGP policy controls to influence the BGP route selection process in a network scenario in which you must support connections to multiple ISPs
- Describe how to use BGP attributes to influence the route selection process in a network scenario where you must support multiple connections.
- Describe how to successfully connect the customer network to the Internet in a network scenario in which multiple connections must be implemented
- Describe how to configure the service provider network to behave as a transit AS in a typical implementation with multiple BGP connections to other autonomous systems.
- Enable route reflection as possible solution to BGP scaling issues in a typical service provider network with multiple BGP connections to other autonomous systems.
- Describe the available BGP tools and features to optimize the scalability of the BGP routing protocol in a typical BGP network

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Course Outline

Module 1: BGP Overview

- Introduction to BGP
- BGP Session Establishment
- BGP Path Attributes
- BGP Route Processing
- Basic BGP Configuration
- Monitoring and Troubleshooting BGP

Module 2: BGP Transit Autonomous Systems

- Working with a Transit AS
- Interacting with IBGP and EBGP in a Transit AS
- Forwarding Packets in a Transit AS
- Configuring a Transit AS
- Monitoring and Troubleshooting IBGP in a Transit AS

Module 3: Route Selection Using Policy Controls

- Using Multihomed BGP Networks
- Employing AS Path Filters
- Filtering with Prefix Lists
- Using Outbound Route Filtering
- Applying Route Maps as BGP Filters
- Implementing Changes in BGP Policy

Module 4: Route Selection Using Attributes

- Influencing BGP Route Selection with Weights
- Setting BGP Local Preference
- Using AS-Path Prepending
- Understanding BGP Multi-Exit Discriminator (MED)
- Addressing BGP Communities

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Module 5: Customer-to-Provider Connectivity with BGP

- Understanding Customer-to-Provider Connectivity Requirements
- Implementing Customer Connectivity Using Static Routes
- Connecting a Multihomed Customer to a Single Service Provider
- Connecting a Multihomed Customer to Multiple Service Providers

Module 6: Scaling Service Provider Networks

- Scaling IGP and BGP in Service Provider Networks
- Introduction to Route Reflectors
- Designing Networks and Route Reflectors
- Configuring and Monitoring Route Reflectors
- Introducing Confederations
- Configuring and Monitoring Confederations

Module 7: Optimizing BGP Scalability

- Improving BGP Convergence
- Limiting the Number of Prefixes Received from a BGP Neighbor
- Implementing BGP Peer Groups
- Using BGP Route Dampening

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Lab Outline

- Lab 1: Configure Basic BGP
- Lab 2: Announcing Networks in BGP
- Lab 3: Implement BGP TTL Security Check
- Lab 4: BGP Route Propagation
- Lab 5: IBGP Full Mesh
- Lab 6: BGP Administrative Distance
- Lab 7: Configure Non-Transit Autonomous System
- Lab 8: Filtering Customer Prefixes
- Lab 9: Prefix-Based Outbound Route Filtering
- Lab 10: Configure Route Maps as BGP Filters
- Lab 11: Configure Per-Neighbor Weights
- Lab 12: Configure and Monitor Local Preference
- Lab 13: Configure Local Preference Using Route Maps
- Lab 14: Configure AS Path Prepending
- Lab 15: Configure MED
- Lab 16: Configure Local Preference Using the Communities
- Lab 17: Configure Route Reflector
- Lab 18: Configure BGP Route Limiting
- Lab 19: Configure BGP Peer Groups