BGP - CONFIGURING BGP ON CISCO ROUTERS V4.1

Course Code: 3049

Learn to optimally deploy BGP in your network.

In this comprehensive course, you will gain in-depth knowledge of BGP, the routing protocol that is one of the underlying foundations of the Internet. You will explore the theory of BGP, configuration of BGP on Cisco IOS routers, and detailed troubleshooting information.

Our labs provide you with the skills needed to configure and troubleshoot BGP networks in both enterprise and service provider environments. You'll also learn BGP network design issues and usage rules for various features as well as how to design and implement efficient, optimal, and trouble-free BGP networks.

This course is eligible for 40 Continuing Education Credits (ILT & ELT Modality).

What You'll Learn

- Implement the correct BGP configuration to allow your network to act as an ISP
- Configure BGP with multiple BGP connections to other autonomous systems
- Configure a provider network to behave as a transit autonomous system (AS)
- Configure, monitor, and troubleshoot basic BGP to enable inter-domain routing in a network scenario with multiple domains
- Use BGP policy controls to influence the route selection process with minimal impact on BGP route processing in a network scenario where you must support connections to multiple ISPs
- Configure BGP to connect the customer network to the Internet when multiple connections must be implemented
- Enable route reflection and confederations as possible solutions to BGP scaling issues
- Optimize the scalability of the BGP routing protocol in a typical network

Learn more about this topic. View the recorded webinar [BGP – What is it and why should I care?](#)

Who Needs to Attend

- Internet service providers
- Networking professionals who need to connect to ISPs
- CCIE certification candidates
- Individuals who need to understand how to configure Cisco routers for the BGP protocol

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CLASSROOM LIVE	$3,695 USD	5 Day

Classroom Live Outline

1. BGP Overview

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

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

3. Route Selection Using Policy Controls

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

4. Route Selection Using Attributes

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

5. Customer-to-Provider Connectivity with BGP

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

6. Scaling Service Provider Networks

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

7. Optimizing BGP Scalability

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

Classroom Live Labs

Lab 1: Configuring basic BGP

- Create BGP peerings
- Advertise networks into BGP
- Redistribute your IGP into BGP
- Examine the effects of BGP auto-summarization
- Summarize routes to your neighbor
- Implement BGP TTL Security
- Implement BGP Authentication

Lab 2: Configuring IBGP Peerings

- Configure an IBGP peering with another edge router
- Peering with loopback interfaces
- Examine effect of BGP synchronization
- Discover BGP next-hop behavior
- Examine the effects of multihoming on path selection

Lab 3: Using AS-Path Filters and Regular Expressions

- Filter updates to external routers
- Manipulate path selection using AS-path filters and regular expressions

Lab 4: Using Prefix Lists

- Filter advertised AS routes using prefix lists
- Implement Outbound Route Filtering

Lab 5: Configure Route Maps for BGP Filtering

- Configure a route map as a BGP filter

Lab 6: Configuring the Weight Attribute

- Configure a second BGP peering for each router

- Set a weight value for routes received from each EBGP neighbor
- Monitor the resulting path choice

Lab 7: Configuring the Local Preference Attribute

- Use the Local Preference attribute to control BGP path selection

Lab 8: AS-Path Prepending

- Configure AS-Path Prepending to make one path into your AS look more attractive than the other

Lab 9: Configuring the Multi-Exit Discriminator (MED) Attribute

- Use the MED attribute to influence the BGP path selection by routers in neighboring systems

Lab 10: Using the Community Attribute

- Configure the community attribute in setting local preference BGP policies

Lab 11: Using Route Reflectors

- Configure a hierarchical route reflector structure
- Examine the effects of route reflectors on routing updates

Lab 12: Monitoring and Tuning BGP Resource Use

- Examine the effects of BGP session establishment and route updates on router resources
- Examine how timers speed BGP convergence
- Set a maximum prefix value

Lab 13: Using Peer Groups

- Place neighboring BGP routers into peer groups
- Apply policy configuration to peer groups

Lab 14: Using Route Dampening

- Configure and apply route dampening to external peers
- Monitor the results when that peer's routes flap

Lab 15: Implement BGP for IPv6 (Optional)

- Configure BGP to support IPv6

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VIRTUAL CLASSROOM LIVE	$3,695 USD	5 Day

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Aug 4 - 8, 2025 | 8:30 AM - 4:30 PM EDT

Oct 20 - 24, 2025 | 8:30 AM - 4:30 PM EDT

Jan 12 - 16, 2026 | 8:30 AM - 4:30 PM EST

BGP - CONFIGURING BGP ON CISCO ROUTERS V4.1

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ON-DEMAND	$750 USD

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PRIVATE GROUP TRAINING	5 Day

Visit us at www.globalknowledge.com or call us at 1-866-716-6688.