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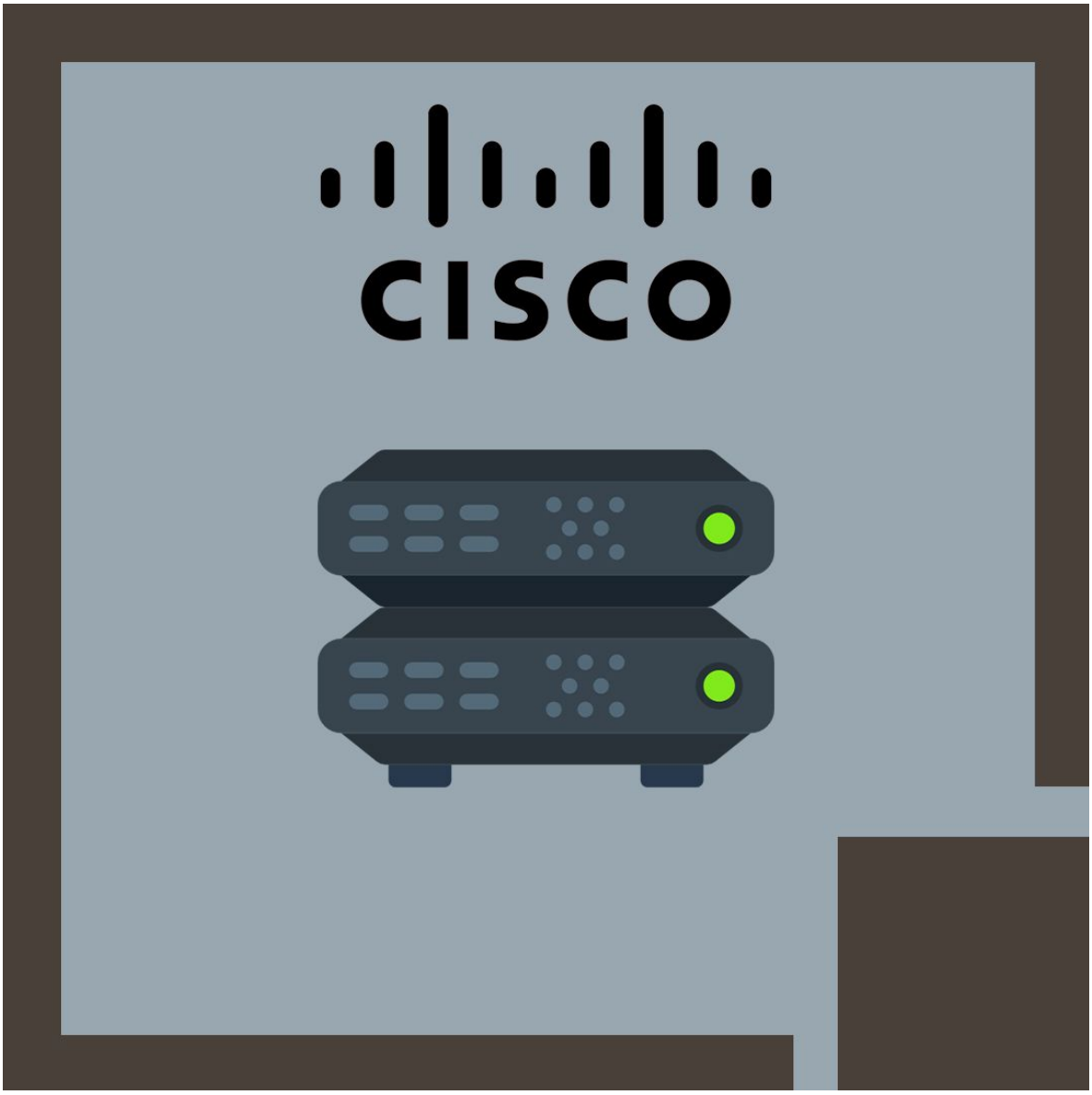
Learning Style: On Demand

Technology: Cisco

Difficulty: Intermediate

Course Duration: 40 Hours

Configuring BGP on Cisco Routers - On Demand (BGP 4.0)



About this course:

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.

Course Objective:

- 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

Audience:

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

Prerequisite:

- Implementing Cisco IP Routing

Course Outline:

BGP Overview

- Session Establishment
- Path Attributes

- Route Processing
- Basic Configuration
- Monitoring and Troubleshooting

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

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

Route Selection Using Attributes

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

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

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

Optimizing BGP Scalability

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

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