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Configuring BGP on Cisco Routers (BGP) V4.1

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Configuring BGP on Cisco Routers (BGP) V4.1

Course Duration

5 days

Course Price

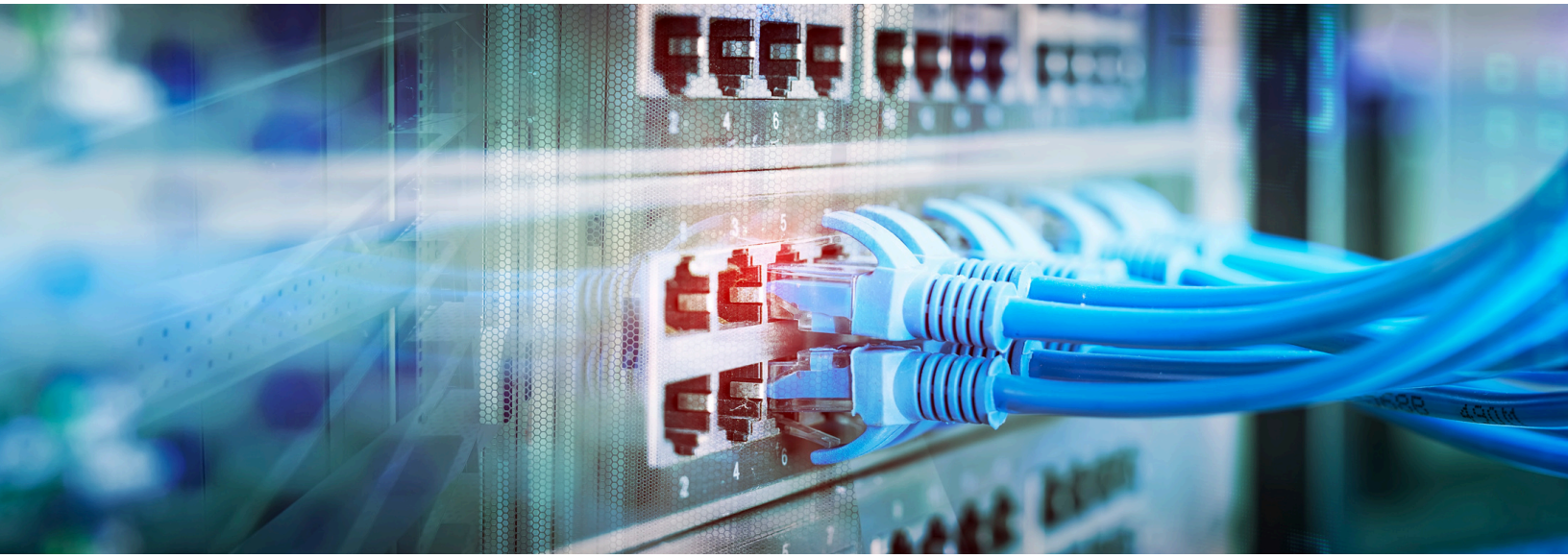
$4,295.00
43 CLCs

Methods of Delivery

In-Person ILT
Virtual ILT
Onsite ILT

About this Class

This course offers comprehensive insights into the underlying foundations of the Internet and advanced technologies like Multiprotocol Label Switching (MPLS). Participants will gain a deep understanding of Border Gateway Protocol (BGP) configuration and operation, equipping them with the skills to optimize network performance and security. This course covers configuring BGP in various network scenarios, managing BGP routing policies, and troubleshooting common BGP issues. By mastering these concepts, attendees will be able to implement and manage robust, scalable, and secure network infrastructures that meet modern enterprise demands.



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How you will benefit

This class will help you:

- Learn the theory of BGP and configuration of BGP on Cisco IOS routers
- Understand detailed troubleshooting information and use hands-on exercises that provide students with the skills needed to configure and troubleshoot BGP networks in customer environments
- Learn BGP network design issues and usage rules for various BGP features

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 Engineers
- Network Administrators
- IT Professionals

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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

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

Module 2: BGP Transit Autonomous Systems

- Module Topics
- 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 Summary

Module 3: Route Selection Using Policy Controls

- Module Topics
- 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 Summary

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Course Outline

Module 4: Route Selection Using Attributes

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

Module 5: Customer-to-Provider Connectivity with BGP

- Module Topics
- 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 Summary

Module 6: Scaling Service Provider Networks

- Module Topics
- 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 Summary

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Course Outline

Module 7: Optimizing BGP Scalability

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

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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

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