# Configuring BGP on Cisco Routers

**Duration: 5 Days**

**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)

**Course Description:**

The Configuring BGP on Cisco Routers (BGP) v.4.0 course teaches the underlying foundations of the Internet and new-world technologies such as Multiprotocol Label Switching (MPLS). It prepares students to design and implement efficient, optimal, and trouble-free BGP networks covering:

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

**Course Objectives:**

Upon completion of this course, you will 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

**Intended Audience:**

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

**Course Outline:**

- Module 1: BGP Overview
- Module 2: BGP Transit Autonomous Systems
- Module 3: Route Selection Using Policy Controls
- Module 4: Route Selection Using Attributes
- Module 5: Customer to Provider Connectivity with BGP
- Module 6: Scaling Service Provider Networks
- Module 7: Optimizing BGP Scalability

**Lab outline**

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