

Configuring BGP on Cisco Routers

The **Configuring BGP on Cisco Routers training** 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

   
**Who Should Enroll**

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

   
**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



   
**Course 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 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