CONFIGURING BGP ON CISCO ROUTERS (BGP)

Duración: 5 días, 35 horas

Temario

The Configuring BGP on Cisco Routers (BGP) course provides students with in-depth knowledge of BGP, the routing protocol that is one of the underlying foundations of the Internet and new-world technologies such as Multiprotocol Label Switching (MPLS). This curriculum covers the theory of BGP, 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. Different service solutions in the curriculum cover BGP network design issues and usage rules for various BGP features preparing students to design and implement efficient, optimal and trouble free BGP networks

Dirigido a

•Employee
•Customer
•Channel Partners/Resellers

Objetivos del curso

After completing this course the student should be able to:

- Given a network scenario with multiple domains, configure, monitor and troubleshoot basic BGP to enable interdomain routing
- Given a network scenario where connections to multiple ISPs must be supported, use BGP policy controls to influence the route selection process with minimal impact on BGP route processing
- Given a network scenario where multiple connections must be supported, use BGP attributes to influence the route selection process
- Given customer connectivity requirements, implement the correct BGP configuration to successfully connect the customer?s network to the Internet
- Given a typical service provider network with multiple BGP connections to other autonomous systems, enable the provider network to behave as a transit autonomous system

- Given a typical service provider network, identify common BGP scaling issues and enable route reflection and confederations as possible solutions to these issues.
- Given a typical BGP network, use available BGP tools and features to optimize the scalability of the BGP routing protocol

Contenido

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 Mulitple 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