NETLOGIC TRAINING CENTER

Couse Outline

Configuration BGP (4.0)

Course Content

This course provides 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. Different service solutions 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. Additional terms and conditions apply--please ask your Account Executive

Course Objectives

Upon completing this course, you will be able to meet these objectives:

- 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

Course Prerequisite

This course is required CCNA and CCNP Routing and Switching

Course Pre-Test

Not Required

Course Details

Day 1

Item	Subject	Details	Personal Lab and devices
	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	
	Summary challenge advance lab for Establish IGP and MPLS Environment		Lab 1 • Configuring basic BGP • Create BGP peering • Advertise networks into BGP • Redistribute your IGP into BGP • Examine the effects of BGP auto-summarization • Summarize routes to your neighbor • Implement BGP Authentication Lab 2 • Configuring IBGP Peerings • Configure an IBGP peering with another edge router • Peering with loopback interfaces • Examine effect of BGP synchronization • Discover BGP next-hop behavior • Examine the effects of multihoming on path selection

Course Details

Day 2

Item	Subject	Details	Personal Lab and devices
	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	
	Summary challenge advance lab for MPLS VPN and IGP Routing		**Lab 3** - Using AS-Path Filters and Regular Expressions - Filter updates to external routers - Manipulate path selection using AS-path filters and regular expressions **Lab 4** - Configure Route Maps for BGP Filtering - Configure a route map as a BGP filter **Lab 5** - Configuring the Weight Attribute - Configure a second BGP peering for each router - Set a weight value for routes received from each EBGP neighbor - Monitor the resulting path choice

Course Details

Day 3

Item	Subject	Details	Personal Lab and devices
	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	
	Summary challenge advance lab for MPLS VPN Services		Lab 6 • Using Route Reflectors • Configure a hierarchical route reflector structure • Examine the effects of route reflectors on routing updates Lab 7 • Using Route Dampening • Configure and apply route dampening to external peers • Monitor the results when that peer's routes flap

Course Post-Test

Not Required

Course Materials

Not include in this class training (but you can requested from sale team)

Course Devices Training (Per 1 Person)

Cisco Router ISR 4321

Cisco Catalyst 2960

Cisco Catalyst 3605-CX