



# BORDER GATEWAY PROTOCOL [BGP]

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UPGRADE YOUR KNOWLEDGE

# Border Gateway Protocol Training

## Course Overview

The BGP training course aims to provide practical skills on BGP, its configuration and troubleshooting in enterprise environments. This course is intended for networking professionals looking to sharpen their skills in protocol which runs the internet.

## Duration & Module Coverage

Duration: 7 Days (14hrs)

Session Options	Module Coverage
<b>Session Weekdays[4] :</b>	
06:30 – 08:30 – Slot 1	<b>Day 1 - Modules 1</b>
18:00 – 20:00 – Slot 2	<b>Day 2 - Module 2</b>
	<b>Day 3 - Module 3</b>
	<b>Day 4 - Module 4</b>
	<b>Day 5 - Module 5</b>
<b>Session Weekends:</b>	<b>Day 6 – Module 6</b>
08:00 – 10:00 - Slot 1	<b>Day 7 – Module 7</b>
14:30 – 16:30 - Slot 2	

## Learning Goals

**By the end of this course participants will be able to:**

1. Demonstrate knowledge of the Border Gateway Protocol [BGP].
2. Understand features used in BGP.
3. Configuration and troubleshooting skills of all parameters in BGP.

## Pre-Requisites

This course is for networking professionals looking to work in a BGP environment. Understanding of basic routing and IP concepts is a pre-requisite for this training.

## Teaching Methodology

This is a very hands-on course where participants carry out practical exercises according to the lab guide provided. The concepts are taught through implementation of real-world use-cases. Our exercises have been carefully designed to replicate scenarios participants will face in real life work conditions.

## Who Should Take This Course?

This course is designed for network professionals with knowledge of basic networking looking forward to gain understanding of BGP configuration and troubleshooting.

## Course Content



## 1. BGP Overview

- Introducing BGP
- Understanding BGP Path Attributes
- Establishing BGP Sessions
- Processing BGP Routes
- Configuring Basic BGP
- Monitoring and Troubleshooting BGP

## 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
- Monitoring and Troubleshooting IBGP in a Transit AS

## 3. Route Selection using Policy Controls

- 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

## 4. Route Selection using Path Attributes

- Influencing BGP Route Selection with Weights
- Setting BGP Local Preference
- Using AS-Path Prepending
- Understanding the BGP Multi-Exit Discriminator
- Addressing BGP Communities

## 5. Customer to provider connectivity with BGP

- Understanding Customer-to-Provider Connectivity Requirements
- Implementing Customer Connectivity Using Static Routing
- Connecting a Multi-homed Customer to a Single Service Provider
- Connecting a Multi-homed Customer to Multiple Service Providers

## 6. Scaling Service Provider Networks

- Scaling IGP and BGP in Service Provider Networks
- Introducing and Designing Route Reflectors
- Configuring and Monitoring Route Reflectors
- Configuring and troubleshoot BGP tunnel
- Configuring BGP Confederation

## 7. Optimizing BGP Scalability

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



## Practical Learning Exercises

A lab guide will be provided to each student with requirement scenarios. Along with lab guide required VMs will be provided to set up individual labs for self practice.

Similarly there would be scenarios for implementing, verifying and troubleshooting all modules covered in the course.