Understanding and Mastering BGP

A comprehensive course on Border Gateway Protocol… simply explained!

Welcome to Understanding and Mastering BGP: The ultimate practical guide to Border Gateway Protocol for network engineers

The Course at a Glance

- **38 video lessons** (14+ hours of training)
- **36 PDF guides** (250+ pages of reference material)
- **31 hands-on labs** with real BGP configurations
- **65 Cisco CML lab topologies** ready to load and run
- **5 quizzes + final exam** from a pool of 180+ questions
- **A personalized certificate** of completion after

The Goals of this Course

Understanding is the first and most important part of learning BGP. Obtaining a fundamental understanding of BGP, what it does, and how it achieves it is foundational to becoming proficient with BGP.

Once understanding is achieved, **Mastering** is the next step. Mastering involves gaining deep insight into its operation and predicting how it behaves in both small and large-scale deployments.

Whether you're preparing for **certifications**, designing **enterprise or service provider networks**, or simply want **to gain confidence in understanding** one of the most important routing protocols in networking, this course will take you step-by-step through the principles, configuration, and operation of BGP… simply explained.

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This course provides hands-on labs, deep dives into real-world scenarios, and conceptual explanations that bridge the gap between theory and practice. While demonstrated using Cisco IOS, the concepts apply universally across all vendors that implement BGP.

The Course Includes:

- Comprehensive videos that go over the fundamentals as well as the details of BGP, how it works, and how it can be implemented.
- Practical labs performed in real time that you can follow along with, ensuring that your understanding is reinforced through practical hands-on examples.
- Lab guidance and topologies for lessons that involve configuration.
- Quizzes and a final exam to test your knowledge and prepare you for certification or production work.
- Cisco configuration examples suitable for use in CML, GNS3, or EVE-NG.

What You Will Learn:

By the end of this course, you will be able to:

- Explain what BGP is, where it's used, and how it differs from IGPs
- Configure and verify iBGP and eBGP sessions
- Understand and apply concepts like multi-hop, update-source, and next-hop-self
- Describe and interpret the BGP table and path selection process
- Understand the BGP finite state machine and how neighbor adjacencies form
- Configure and analyze BGP attributes, including:
    - Weight, Local Preference, AS Path, Origin, MED, Router ID and Next-Hop
- Implement BGP Route Reflectors and Confederations to scale iBGP
- Configure and verify Multi-Protocol BGP (MP-BGP) for IPv6
- Understand and configure BGP Multipath, Peer Groups, and Additional Paths
- Learn about advanced topics like RPKI validation, AS Override, AllowAS-In, and Route Refresh
- Understand BGP communities and other BGP features
- Troubleshoot BGP adjacencies and routing issues using show and debug commands

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- Build robust and scalable BGP topologies suitable for enterprise and ISP environments

Materials and Resources Provided:

- A downloadable PDF summary for each video includes key concepts, study, and discussion questions to help solidify your understanding.
- Lab topologies and configuration examples.
- Practice quizzes for self-assessment.
- Course wrap-up guide with suggested next steps.
- Cisco IOS configuration examples (suitable for various emulators).

Prerequisites:

- Good understanding of IPv4 addressing and subnetting
- Working knowledge of IGPs such as OSPF or EIGRP
- Basic knowledge of routing tables and route selection
- Familiarity with Cisco IOS CLI

Target Audience:

- Network engineers and students who want to understand BGP from the ground up
- CCNA, CCNP, or CCIE candidates preparing for Cisco certification exams
- IT professionals working with enterprise or service provider networks
- Engineers transitioning from IGPs to inter-domain routing
- Anyone wanting to confidently design, configure, and troubleshoot BGP networks

If you have any questions or concerns, you can email me directly at lazarus@telecomtech.io. I look forward to engaging with you in the course!

I'm Lazarus at telecomTech, I hope this has been helpful for you, and I'd like to thank you for watching!

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