

BGP ROUTING SECURITY

This one-day course provides an overview of the most relevant BGP routing security topics. The participant will gain insight into industry best practice and gain a high-level understanding of the most pressing BGP security concerns today. The course includes theory and hands-on exercises.

Goals

- Identify the causes of BGP incidents, their types and their impact
- Identify the recommended security measures for preventing accidental and intentional BGP routing incidents
- Identify the purpose of BGP filtering and how it can be used to improve BGP routing security
- Identify the purpose of the IRR and how it can be used to improve BGP routing security
- Identify the purpose of RPKI and how it can be used to improve BGP routing security
- Validate BGP announcements by using RPKI information (BGP OV)

Pre-Requisites

- Ability to use a CLI to configure routers
- For this course you should know about:
 - TCP/IP and IP routing
 - Classless Inter-Domain Routing (CIDR)
 - BGP protocol, BGP attributes, and BGP communities
 - BGP routing relationships: Peer, Provider, IXP peering, Customer

Course Content

- Introduction
- The Need for BGP Security
 - Is BGP Secure?
- Analyse BGP Threats and Attacks
 - Vulnerabilities of the BGP Protocol
 - Causes of BGP Incidents
- BGP Security Measures
 - Protection of BGP Sessions
 - *Exercise: Securing BGP Sessions*
 - Implementing Route Filtering
 - *Exercise: Creating BGP Prefix Filters*
 - *Exercise: Filtering AS-Path and number of prefixes*
 - Route Leak Prevention and Detection
 - *Exercise: Setting up BGP roles and exploring OTC*
 - Registering in the IRR System
 - Implementing RPKI
 - *Exercise: Creating ROAs*
 - *Exercise: BGP Origin Validation*
- Next Steps for BGP Routing Security
- Best Practices

- Training Material: <https://www.ripe.net/training-material>
- Feedback Survey: <https://www.ripe.net/feedback/bgp/>
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Training Material



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