BGP OPERATIONS AND SECURITY

Border Gateway Protocol plays a central role in the functioning of the Internet. It is important to have a full understanding of the protocol and the security measures that should be deployed to prevent accidental or intentional routing disturbances.

Goals

- Connect enterprises and operators to the Internet
- Describe how BGP works
- List, describe and configure the main BGP attributes
- Implement and troubleshoot BGP
- Describe BGP security measures
- Register routing information in IRR
- Implement filtering on eBGP sessions
- Create ROAs in RPKI system
- Describe different RPKI implementation models
- Validate BGP routes with RPKI
- Implement Best Current Operational Practices (BCOP) for BGP

Pre-requisites

- For this course you should have:
  - Good knowledge of the TCP/IP and IP routing
  - Basic understanding of the Classless Inter-Domain Routing (CIDR)
  - Basic experience in creating and updating objects in the RIPE Database

Course Content

Day 1

- Introduction to BGP
  - *Exercise: Your First BGP Session*
- Running BGP
  - *Exercise: Connecting BGP Customers*
- BGP Attributes
- Traffic Engineering
  - *Exercise: Using Attributes*
- iBGP Scalability
  - *Exercise: Using a Route Reflector*
- Multiprotocol BGP
  - *Exercise: Multiprotocol BGP*

Day 2

- BGP & Routing Security
- Internet Routing Registry (IRR)
  - *Exercise: Create Route(6) Objects*
- Filtering
  - *Exercise: Defining Filters*
- RPKI
  - *Exercise: Creating ROAs*
  - *Exercise: Running Validators*
  - *Exercise: BGP Origin Validation with RPKI*
- What else?
- BGP Tips & Tricks

- Online courses: **https://academy.ripe.net**
- Learning & Development: **https://www.ripe.net/support/training**
- Contact us: **learning@ripe.net**

RIPE NCC
RIPE NETWORK COORDINATION CENTRE