INR Lab 5 - BGP

1. Preparation:

a. Select a virtual routing solution that you would like to try. For example (Mikrotik, vyos, Pfsense).
b. GNS3 already has a template for these routers (Mikrotik, vyos, Pfsense), try to use these templates as it will save you a lot of time and troubleshooting.
c. Try to draw a network scheme before you start the lab. This will help you in the deployment phase.
d. The network scheme should include at least two networks, each one of them should have at least 3 routers, these routers can be the same routers from the OSPF lab.
e. This lab should be done in teams of 2, 3, or 4. As long as each team member uses a different network device
f. Connect one of your OSPF ASBR router interfaces (BGP interface) to your physical interface (bridge can also be used)
g. Agree with other teams on a subnet that your team will use (**DO NOT USE** 10.1.1.0/24)
h. Check that you can ping your teammates ASBR router from your ASBR router

2. Deployment:

a. Define an AS number that your ASBR router will use, again agree with the other teams on which AS number each team will use (64512 to 65534)
b. Enable BGP and start advertising your OSPF network to your peer.
c. Can your peers reach your internal subnets? And can you reach their internal subnets?
d. How can the OSPF Internal router know about your peer's OSPF Internal router? One way is to redistribute BGP routes into the OSPF routing table, but is this a practical method? why?

3. Verification:

a. How can you check if you have an established status with your peer?
b. How can you check in the routing table of ASBR and OSPF Internal routers to see which networks did you receive from your neighbors?
c. Use traceroute to verify that you have full BGP and OSPF connectivity.

4. Transit:

a. Peer with other teams and send them the routers that you receive from your peer in task 2
b. Can the new peer reach your network and your teammate network through you?

5. ISP (Bonus)

a. Become a transit for all/most of the networks that are available.

Notes:

- Make the report as technical as possible (no installation guide please).
- Try to include a network scheme in your report
- If you paste some data (routing table), please make sure it is readable and the format did not change
- If you want to include a command in the report, please highlight it (bold, italic, different format, ...)
- **avoid waiting 30 minutes for the BGP routes to refresh**