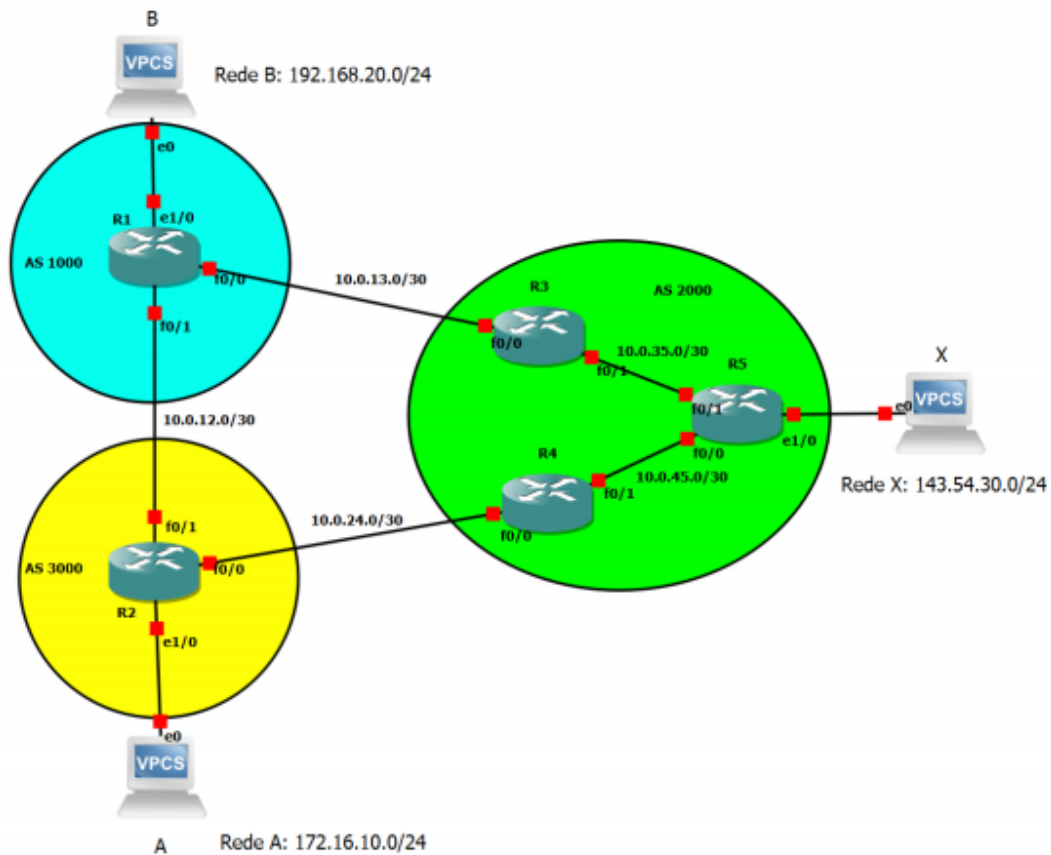Prática de laboratório com GNS3: Roteamento BGP

Aluno: Matheus Rambo da Roza

Atividade 1 – Comunicação de todos para todos

Utilize os comandos aprendidos na disciplina para configurar a comunicação livre entre todos os nós da rede. Realize pings e traceroutes para comprovar que a configuração foi bem sucedida.

Realizando o PING e Traceroute de B para A:

B> ping 172.16.10.10

84 bytes from 172.16.10.10 icmp_seq=1 ttl=62 time=60.559 ms

84 bytes from 172.16.10.10 icmp_seq=2 ttl=62 time=75.152 ms

84 bytes from 172.16.10.10 icmp_seq=3 ttl=62 time=75.052 ms

84 bytes from 172.16.10.10 icmp_seq=4 ttl=62 time=104.876 ms

84 bytes from 172.16.10.10 icmp_seq=5 ttl=62 time=60.199 ms

B> trace 172.16.10.10

trace to 172.16.10.10, 8 hops max, press Ctrl+C to stop

  1 192.168.20.1 30.063 ms 15.032 ms 15.564 ms

  2 10.0.12.2 60.107 ms 59.814 ms 59.895 ms

  3 *172.16.10.10 74.965 ms (ICMP type:3, code:3, Destination port unreachable)]

Realizando o PING e Traceroute de B para X:

B> ping 143.54.30.10

84 bytes from 143.54.30.10 icmp_seq=1 ttl=61 time=201.899 ms

84 bytes from 143.54.30.10 icmp_seq=2 ttl=61 time=199.408 ms

84 bytes from 143.54.30.10 icmp_seq=3 ttl=61 time=234.508 ms

84 bytes from 143.54.30.10 icmp_seq=4 ttl=61 time=205.958 ms

84 bytes from 143.54.30.10 icmp_seq=5 ttl=61 time=239.556 ms

B> trace 143.54.30.10

trace to 143.54.30.10, 8 hops max, press Ctrl+C to stop

  1 192.168.20.1 29.145 ms 28.110 ms 61.191 ms

  2 10.0.13.2 100.135 ms 84.330 ms 80.227 ms

  3 10.0.35.2 200.303 ms 199.267 ms 165.111 ms

  4   * * *

  5 *143.54.30.10 175.575 ms (ICMP type:3, code:3, Destination port unreachable)

Realizando PING e Traceroute de X para A:

X> ping 192.168.20.10

84 bytes from 192.168.20.10 icmp_seq=1 ttl=61 time=231.434 ms

84 bytes from 192.168.20.10 icmp_seq=2 ttl=61 time=206.583 ms

84 bytes from 192.168.20.10 icmp_seq=3 ttl=61 time=157.356 ms

84 bytes from 192.168.20.10 icmp_seq=4 ttl=61 time=211.199 ms

84 bytes from 192.168.20.10 icmp_seq=5 ttl=61 time=171.930 ms

X> trace 192.168.20.10

trace to 192.168.20.10, 8 hops max, press Ctrl+C to stop

 1 143.54.30.1   24.456 ms 25.402 ms 21.797 ms

 2 10.0.35.1   70.380 ms 106.611 ms 79.173 ms

 3 10.0.13.1   176.301 ms 181.696 ms 138.203 ms

 4   * * *

 5 *192.168.20.10   204.904 ms (ICMP type:3, code:3, Destination port unreachable)

Realizando PING e Traceroute de X para B:

X> ping 172.16.10.10

84 bytes from 172.16.10.10 icmp_seq=1 ttl=61 time=138.813 ms

84 bytes from 172.16.10.10 icmp_seq=2 ttl=61 time=215.192 ms

84 bytes from 172.16.10.10 icmp_seq=3 ttl=61 time=192.595 ms

84 bytes from 172.16.10.10 icmp_seq=4 ttl=61 time=208.812 ms

84 bytes from 172.16.10.10 icmp_seq=5 ttl=61 time=203.654 ms

X> trace 172.16.10.10

trace to 172.16.10.10, 8 hops max, press Ctrl+C to stop

 1 143.54.30.1   32.499 ms 11.698 ms 32.985 ms

 2 10.0.45.1   133.469 ms 98.901 ms 93.064 ms

 3 10.0.24.2   143.339 ms 169.899 ms 167.101 ms

 4 *172.16.10.10   201.146 ms (ICMP type:3, code:3, Destination port unreachable)

Realizando PING e Traceroute de A para B:

A> ping 192.168.20.10

84 bytes from 192.168.20.10 icmp_seq=1 ttl=62 time=75.175 ms

84 bytes from 192.168.20.10 icmp_seq=2 ttl=62 time=75.211 ms

84 bytes from 192.168.20.10 icmp_seq=3 ttl=62 time=60.174 ms

84 bytes from 192.168.20.10 icmp_seq=4 ttl=62 time=75.285 ms

84 bytes from 192.168.20.10 icmp_seq=5 ttl=62 time=60.843 ms

A> trace 192.168.20.10

trace to 192.168.20.10, 8 hops max, press Ctrl+C to stop

  1 172.16.10.1 15.080 ms 41.743 ms 45.236 ms

  2 10.0.12.1 45.186 ms 71.653 ms 76.542 ms

  3 *192.168.20.10 89.243 ms (ICMP type:3, code:3, Destination port unreachable)

Realizando PING e Traceroute de A para X:

A> ping 143.54.30.10

84 bytes from 143.54.30.10 icmp_seq=1 ttl=61 time=236.689 ms

84 bytes from 143.54.30.10 icmp_seq=2 ttl=61 time=213.549 ms

84 bytes from 143.54.30.10 icmp_seq=3 ttl=61 time=177.381 ms

84 bytes from 143.54.30.10 icmp_seq=4 ttl=61 time=237.582 ms

84 bytes from 143.54.30.10 icmp_seq=5 ttl=61 time=174.296 ms

A> trace 143.54.30.10

trace to 143.54.30.10, 8 hops max, press Ctrl+C to stop

  1 172.16.10.1   32.539 ms 31.466 ms 8.992 ms

  2 10.0.24.1   141.460 ms 104.691 ms 69.605 ms

  3 10.0.45.2   106.269 ms 126.614 ms 164.340 ms

  4 *143.54.30.10   200.482 ms (ICMP type:3, code:3, Destination port unreachable)

Atividade 2 – AS3000 quer enviar o tráfego de A para B via AS2000

Pesquise nas referências fornecidas como configurar o BGP para que o trânsito dos pacotes de A para B sejam enviados através do AS2000. Realize pings e traceroutes para comprovar que a configuração foi bem sucedida.

A> ping 192.168.20.10

192.168.20.10 icmp_seq=1 timeout

192.168.20.10 icmp_seq=2 timeout

84 bytes from 192.168.20.10 icmp_seq=3 ttl=62 time=155.249 ms

84 bytes from 192.168.20.10 icmp_seq=4 ttl=62 time=143.564 ms

84 bytes from 192.168.20.10 icmp_seq=5 ttl=62 time=211.023 ms

A> trace 192.168.20.10

trace to 192.168.20.10, 8 hops max, press Ctrl+C to stop

  1 172.16.10.1 15.247 ms 16.243 ms 16.302 ms

  2 10.0.24.1 74.646 ms 53.875 ms 94.354 ms

  3 10.0.45.2 111.133 ms 100.120 ms 91.784 ms

  4 10.0.35.1 105.093 ms 113.478 ms 171.128 ms

  5 10.0.13.1 105.204 ms 115.453 ms 103.213 ms

  6 *192.168.20.10 136.556 ms (ICMP type:3, code:3, Destination port unreachable)

Comandos para configuração:

R2(config)#router bgp 3000

R2(config-router)#neighbor 10.0.24.1 weight 1000

R2(config-router)#e

R2(config)#exit

R2#clear ip bgp * soft in

Atividade 3 – AS2000 quer evitar ser trânsito

Pesquise nas referências fornecidas como configurar o BGP para que o AS2000 não receba os pacotes configurados na atividade 3, ou seja, que ele não seja trânsito entre AS3000 e AS1000 Realize pings e traceroutes para comprovar que a configuração foi bem sucedida.

A> ping 192.168.20.10

*10.0.24.1 icmp_seq=1 ttl=254 time=102.235 ms (ICMP type:3, code:13, Communication administratively prohibited)

*10.0.24.1 icmp_seq=2 ttl=254 time=100.753 ms (ICMP type:3, code:13, Communication administratively prohibited)

*10.0.24.1 icmp_seq=3 ttl=254 time=93.991 ms (ICMP type:3, code:13, Communication administratively prohibited)

*10.0.24.1 icmp_seq=4 ttl=254 time=93.900 ms (ICMP type:3, code:13, Communication administratively prohibited)

*10.0.24.1 icmp_seq=5 ttl=254 time=131.066 ms (ICMP type:3, code:13, Communication administratively prohibited)

A> trace 192.168.20.10

trace to 192.168.20.10, 8 hops max, press Ctrl+C to stop

 1   172.16.10.1   50.810 ms 30.573 ms 33.667 ms

 2   *10.0.24.1   107.028 ms (ICMP type:3, code:13, Communication administratively prohibited)

Comandos para configuração:

R4#conf t

R4(config)#access-list 100 deny ip 172.16.10.0 0.0.0.255 192.168.20.0 0.0.0.255

R4(config)#access-list 100 permit ip any any

R4(config)#interface f0/0

R4(config-if)#ip access-group 100 in

R4(config-if)#e

R4(config)#exit