

CSEE 4119 Computer Networks

Project 2 Build your own Internet Preliminary Stage Report

Student: Qiaoyu Gu

UNI: qg2172

Task 1: Establish cross-AS link to AS 22

The screenshot of the successful ping from MILW router:

```
qiaoyu — root@byoi-as6: ~ — ssh -p 3006 byoi-user@104.197.46.2 — 80x24
[G6_MILW# ping 200.0.6.1
PING 200.0.6.1 (200.0.6.1) 56(84) bytes of data.
64 bytes from 200.0.6.1: icmp_seq=1 ttl=64 time=0.149 ms
64 bytes from 200.0.6.1: icmp_seq=2 ttl=64 time=0.148 ms
64 bytes from 200.0.6.1: icmp_seq=3 ttl=64 time=0.181 ms
64 bytes from 200.0.6.1: icmp_seq=4 ttl=64 time=0.382 ms
64 bytes from 200.0.6.1: icmp_seq=5 ttl=64 time=0.137 ms
64 bytes from 200.0.6.1: icmp_seq=6 ttl=64 time=0.162 ms
64 bytes from 200.0.6.1: icmp_seq=7 ttl=64 time=0.172 ms
64 bytes from 200.0.6.1: icmp_seq=8 ttl=64 time=0.205 ms
64 bytes from 200.0.6.1: icmp_seq=9 ttl=64 time=0.162 ms
64 bytes from 200.0.6.1: icmp_seq=10 ttl=64 time=0.142 ms
64 bytes from 200.0.6.1: icmp_seq=11 ttl=64 time=0.147 ms
64 bytes from 200.0.6.1: icmp_seq=12 ttl=64 time=0.161 ms
64 bytes from 200.0.6.1: icmp_seq=13 ttl=64 time=0.177 ms
64 bytes from 200.0.6.1: icmp_seq=14 ttl=64 time=0.173 ms
64 bytes from 200.0.6.1: icmp_seq=15 ttl=64 time=0.142 ms
64 bytes from 200.0.6.1: icmp_seq=16 ttl=64 time=0.191 ms
64 bytes from 200.0.6.1: icmp_seq=17 ttl=64 time=0.172 ms
64 bytes from 200.0.6.1: icmp_seq=18 ttl=64 time=0.137 ms
64 bytes from 200.0.6.1: icmp_seq=19 ttl=64 time=0.160 ms
64 bytes from 200.0.6.1: icmp_seq=20 ttl=64 time=0.174 ms
^C
--- 200.0.6.1 ping statistics ---
```

Task 2: Configure eBGP sessions with AS22

The screenshot of **show ip bgp summary** results from MILW router:

```
qiaoyu — root@byoi-as6: ~ — ssh -p 3006 byoi-user@104.197.46.2 — 80x24
% Command incomplete.
[G6_MILW(config-router)# exit
[G6_MILW(config)# exit
[G6_MILW# conf t
[G6_MILW(config)# router bgp 6
BGP is already running; AS is 22
[G6_MILW(config)# no router bgp 22
[G6_MILW(config)# router bgp 6
[G6_MILW(config-router)# neighbor 200.0.6.1 remote-as 22
[G6_MILW(config-router)# show ip bgp summary
% Unknown command.
[G6_MILW(config-router)# exit
[G6_MILW(config)# exit
[G6_MILW# show ip bgp summary
BGP router identifier 200.0.6.2, local AS number 6
RIB entries 1, using 112 bytes of memory
Peers 1, using 9088 bytes of memory

Neighbor      V      AS MsgRcvd MsgSent   TblVer  InQ OutQ Up/Down  State/P
fxRcd
200.0.6.1     4     22      4      4       0    0    0 00:00:49    1

Total number of neighbors 1
G6_MILW#
```

The screenshot of **show ip bgp**:

```
qiaoyu — root@byoi-as6: ~ — ssh -p 3006 byoi-user@104.197.46.2 — 80x24
      i internal, r RIB-failure, S Stale, R Removed
Origin codes: i - IGP, e - EGP, ? - incomplete

   Network          Next Hop              Metric LocPrf Weight Path
*> 22.0.0.0          200.0.6.1                  0           0 22 i

Displayed 1 out of 1 total prefixes
[G6_MILW# show ip route bgp
Codes: K - kernel route, C - connected, S - static, R - RIP,
       O - OSPF, I - IS-IS, B - BGP, P - PIM, A - Babel,
       > - selected route, * - FIB route

B>* 22.0.0.0/8 [20/0] via 200.0.6.1, ebgp, 00:04:31
[G6_MILW# show ip bgp
BGP table version is 0, local router ID is 200.0.6.2
Status codes: s suppressed, d damped, h history, * valid, > best, = multipath,
               i internal, r RIB-failure, S Stale, R Removed
Origin codes: i - IGP, e - EGP, ? - incomplete

   Network          Next Hop              Metric LocPrf Weight Path
*> 22.0.0.0          200.0.6.1                  0           0 22 i

Displayed 1 out of 1 total prefixes
G6_MILW#
```

Task 3: Advertise prefix to AS22

The screenshot of the output of running **show ip bgp neighbor 200.0.6.1 advertise**

```
qiaoyu — root@byoi-as6: ~ — ssh -p 3006 byoi-user@104.197.46.2 — 80x24
*> 22.0.0.0          200.0.6.1                  0           0 22 i

Displayed 1 out of 1 total prefixes
[G6_MILW# conf t
[G6_MILW(config)# router bgp 6
[G6_MILW(config-router)# network 6.0.0.0/8
[G6_MILW(config-router)# end
[G6_MILW# show ip route bgp
Codes: K - kernel route, C - connected, S - static, R - RIP,
       O - OSPF, I - IS-IS, B - BGP, P - PIM, A - Babel,
       > - selected route, * - FIB route

B>* 22.0.0.0/8 [20/0] via 200.0.6.1, ebgp, 00:20:53
[G6_MILW# show ip bgp neighbor 200.0.6.1 advertise
BGP table version is 0, local router ID is 200.0.6.2
Status codes: s suppressed, d damped, h history, * valid, > best, = multipath,
               i internal, r RIB-failure, S Stale, R Removed
Origin codes: i - IGP, e - EGP, ? - incomplete

   Network          Next Hop              Metric LocPrf Weight Path
*> 6.0.0.0           200.0.6.2                  0          32768 i

Total number of prefixes 1
G6_MILW#
```