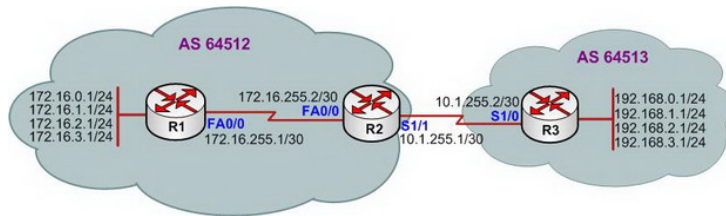


BGP Lab1 - Configuring Basic BGP

?Lab Objectives?

1. To master the basic configuration methods of BGP.
2. To master how to view the variety of BGP configuration information.

?Lab Topology?



?Lab Steps?

1. Configure the router's IP address, and use the command Ping to confirm the connect's interoperability of each router.
2. To configure BGP Routing Protocol in the R1, R2 and R3, and the configuration is shown as below:

```
R1(config)#router bgp 64512
R1(config-router)#neighbor 172.16.255.2 remote-as 64512
R1(config-router)#
R1(config-router)#network 172.16.255.0 mask 255.255.255.252
R1(config-router)#network 172.16.0.0 mask 255.255.255.0
R1(config-router)#network 172.16.1.0 mask 255.255.255.0
R1(config-router)#network 172.16.2.0 mask 255.255.255.0
R1(config-router)#network 172.16.3.0 mask 255.255.255.0
R1(config-router)#exit
R1(config)#
```

```
R2(config)#router bgp 64512
R2(config-router)#neighbor 172.16.255.1 remote-as 64512
R2(config-router)#neighbor 10.1.255.2 remote-as 64513
R2(config-router)#
R2(config-router)#network 172.16.255.0 mask 255.255.255.252
R2(config-router)#network 10.1.255.0 mask 255.255.255.252
R2(config-router)#exit
R2(config)#exit
```

```
R3(config)#router bgp 64513
R3(config-router)#neighbor 10.1.255.1 remote-as 64512
R3(config-router)#
R3(config-router)#network 10.1.255.0 mask 255.255.255.252
R3(config-router)#network 192.168.0.0
R3(config-router)#network 192.168.1.0
R3(config-router)#network 192.168.2.0
R3(config-router)#network 192.168.3.0
R3(config-router)#exit
R3(config)#
```

3. Check the neighbors relationship of BGP:

```
R1#show ip bgp neighbors
BGP neighbor is 172.16.255.2, remote AS 64512, internal link
BGP version 4, remote router ID 172.16.255.2
BGP state = Established, up for 00:29:25
Last read 00:00:24, hold time is 180, keepalive interval is 60 seconds
Neighbor capabilities:
Route refresh: advertised and received(old & new)
Address family IPv4 Unicast: advertised and received
Message statistics:
InQ depth is 0
OutQ depth is 0
Sent Rcvd
Opens: 1 1
Notifications: 0 0
Updates: 1 4
Keepalives: 32 32
Route Refresh: 0 0
Total: 34 37
Default minimum time between advertisement runs is 5 seconds
???
```

4. Check the concise summary information of BGP.

```
R2#show ip bgp summary
BGP router identifier 172.16.255.2, local AS number 64512
BGP table version is 19, main routing table version 19
10 network entries using 1010 bytes of memory
11 path entries using 528 bytes of memory
3 BGP path attribute entries using 180 bytes of memory
1 BGP AS-PATH entries using 24 bytes of memory
0 BGP route-map cache entries using 0 bytes of memory
0 BGP filter-list cache entries using 0 bytes of memory
BGP using 1742 total bytes of memory
BGP activity 14/4 prefixes, 16/5 paths, scan interval 60 secs

Neighbor V AS MsgRcvd MsgSent TblVer InQ OutQ Up/Down State/PfxRcd
10.1.255.2 4 64513 47 49 19 0 0 00:10:15 5
172.16.255.1 4 64512 42 45 19 0 0 00:37:53 4
```

5. Check the routing table of R1:

```
R1#show ip route

Gateway of last resort is not set

172.16.0.0/16 is variably subnetted, 5 subnets, 2 masks
C 172.16.255.0/30 is directly connected, FastEthernet0/0
C 172.16.0.0/24 is directly connected, Loopback0
C 172.16.1.0/24 is directly connected, Loopback0
C 172.16.2.0/24 is directly connected, Loopback0
C 172.16.3.0/24 is directly connected, Loopback0
10.0.0.0/30 is subnetted, 1 subnets
B 10.1.255.0 [200/0] via 172.16.255.2, 00:48:22
B 192.168.0.0/24 [200/0] via 10.1.255.2, 00:22:27
B 192.168.1.0/24 [200/0] via 10.1.255.2, 00:22:27
B 192.168.2.0/24 [200/0] via 10.1.255.2, 00:22:27
B 192.168.3.0/24 [200/0] via 10.1.255.2, 00:22:27
```

6. Some other commands:

```
R1#clear ip bgp *
```

```
R1#clear ip bgp 172.16.255.2
```

```
R1#clear ip bgp * soft
```

7. Lab completed.

Hope to helpful for you1