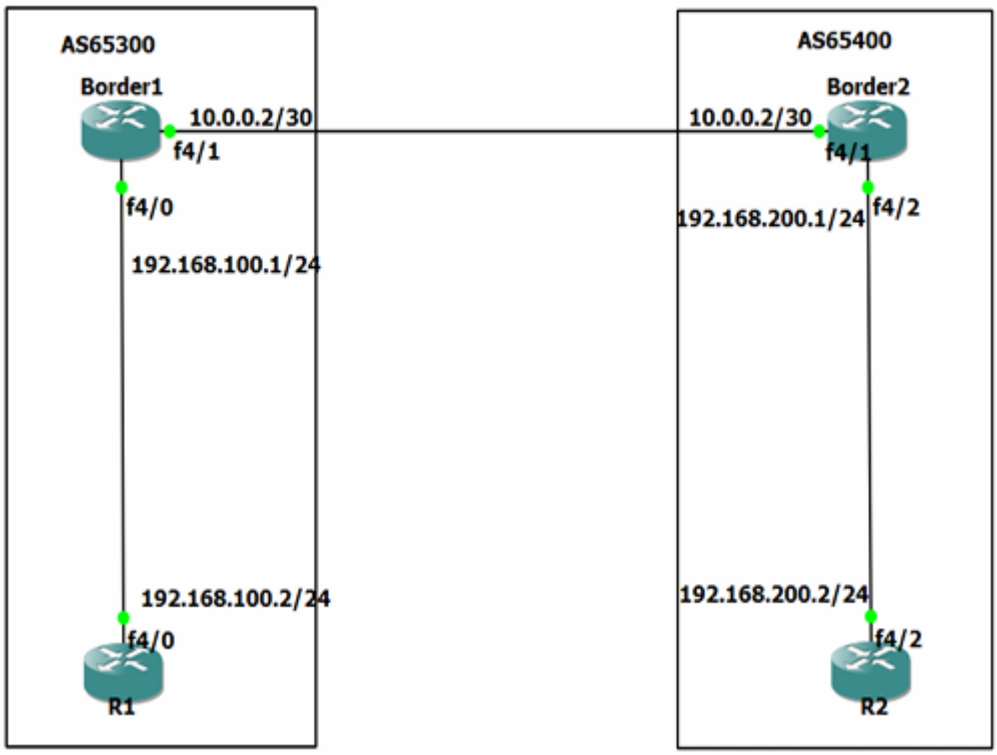
Prac 9 Configure Internal BGP(IBGP) and External BGP(EBGP)



R1

R1#conf t

Enter configuration commands, one per line. End with CNTL/Z.

R1(config)#int fa 0/0

R1(config-if)#ip add 192.168.100.2 255.255.255.0

R1(config-if)#no shut

R1(config-if)#ex

R1(config)#

*Mar 1 00:00:48.427: %LINK-3-UPDOWN: Interface FastEthernet0/0, changed state to up

Mar 1 00:00:49.427: %LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/0, changed state to up

R1(config)#router bgp 65300

R1(config-router)#neigh

R1(config-router)#neighbor 192.168.100.1 remo

R1(config-router)#neighbor 192.168.100.1 remote-as 65300

R1(config-router)#exit

R1(config)#

Border 1

```
Border1#conft
Enter configuration commands, one per line. End with CNTL/Z.
Border1(config)#int fa0/1
Border1(config-if)#ip add 10.0.0.1 255.2255.255.252
Invalid input detected at marker.
Border1(config-if)#ip add 10.0.0.1 255.255.255.252
Border1(config-if)#no shut
Border1(config-if)#ex
Border1(config)#
*Mar 1 00:02:24.711: %LINK-3-UPDOWN: Interface FastEthernete
*Mar 1 00:02:25.711: %LINEPROTO-5-UPDOWN: Line protocol on In
Border1(config)#int fa0/0
Border1(config-if)#ip add 192.168.100.1 255.255.255.0
Border1(config-if)#no shut
Border1(config-if)#ex
Border1(config)#
Border1(config)#router bgp 65300
Border1(config-router)#neigh
Border1(config-router)#neighbor 192.168.100.2 remo
Border1(config-router)#neighbor 192.168.100.2 remote-as 65300
*Mar 1 00:07:27.059: %BGP-5-ADJCHANGE: neighbor 192.168.100.2 Up
Border1(config-router)#network 192.168.100.0 mask 255.255.255.0
Border1(config-router)#exit
Border1(config)#
```

Border 2:

```
Border2#conf t
Enter configuration commands, one per line. End with CNTL/Z.
Border2(config)#int fa 0/1
Border2(config-if)#ip add 10.0.0.2 255.255.255.252
Border2(config-if)#no shut
Border2(config-if)#ex
```

```
Border2(config)#
*Mar 1 00:01:14.723: LINK-3-UPDOWN: Interface FastEthernet0/1, changed state t up
*Mar 1 00:01:15.723: XLINEPROTO-5-UPDOWN: Line protocol on Interface FastEthern et0/1,
changed state to up
Border2(config)#int fa 0/0
Border2(config-if)#ip add 192.168.200.1 255.255.255.0
Border2(config-if)#no shut
Border2(config-if)#ex
Border2(config)#
Border2(config)#router bgp 65400
Border2(config-router)#neigh
Border2(config-router)#neighbor 192.168.200.2 remot
Border2(config-router)#neighbor 192.168.200.2 remote-as 65400
Border2(config-router)#netwo
Border2(config-router) #network 192.168.200.0 mask 255.255.255.0
Border2(config-router)#neigh
Border2(config-router)#neighbor 10.0.0.1 remote
% Incomplete command.
Border2(config-router)#neighbor 10.0.0.1 remote-as 65300
Border2(config-router)#ex
Border2(config)#
```

R2:

```
R2#conf t
Enter configuration commands, one per line. End with CNTL/Z.
R2(config)#int fa 0/0
R2(config-if)#ip add 192.168.200.2 255.255.255.0
R2(config-if)#no shut
R2(config-if)#ex
R2(config)#
*Mar 1 00:12:52.271: LINK-3-UPDOWN: Interface FastEthernet0/0, changed state to up
*Mar 1 00:12:53.271: LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/8, changed
state to up
R2(config)#router bgp 65400
R2(config-router)#neigh
R2(config-router)#neighbor 192.168.200.1 remo
R2(config-router)#neighbor 192.168.200.1 remot
R2(config-router)#neighbor 192.168.200.1 remote-as 65400
R2(config-router)#ex
R2(config)#
```

Verify BGP status:

```
Borderl#show ip bgp
BGP table version is 3, local router ID is 192.168.100.1
Status codes: s suppressed, d damped, h history, * valid, best, i internal, RIB-failure, S Stale
Origin codes: i IGP, e EGP, ? incomplete
```

Network	Next Hop	Metric	LocPrf	Weight	Path
>192.168.100.0	10.0.0.2	32768	i	—	—
> 192.168.200.0	—	—	0	65400	i

Border1(config)#do sh ip bgp summary
BGP router identifier 192.168.100.1, local AS number 65300
BGP table version is 3, main routing table version 3
2 network entries using 234 bytes of memory
2 path entries using 184 bytes of memory
3/2 BGP path/bestpath attribute entries using 372 bytes of memory
1 BGP AS-PATH entries using 24 bytes of memory
BGP route-map cache entries using 0 bytes of memory
BGP Filter-list cache entries using 0 bytes of memory
BGP using 734 total bytes of memory
BGP activity 2/0 prefixes, 2/0 paths, scan interval 60 secs

Neighbor V AS MsgRcvd MsgSent TblVer InQ OutQ Up/Down State/PfxRcd
10.0.0.2 4 65400 16 16 3 0 0 0:00:11:11 1
192.168.100.2 4 65300 15 17 3 0 0 0:00:11:47 0

R1:
R1(config)#do sh ip route
Codes: C - connected, S - static, R - RIP, M - mobile, B - BGP
D - EIGRP, EX - EIGRP external, O - OSPF, IA - OSPF inter area
N1 - OSPF NSSA external type 1, N2 - OSPF NSSA external type 2
E1 - OSPF external type 1, E2 - OSPF external type 2
i - IS-IS, su - IS-IS summary, L1 - IS-IS level-1, L2 - IS-IS level-2

ia - IS-IS inter area, candidate default, U - per-user static route
o - ODR, P - periodic downloaded static route
Gateway of last resort is not set
C 192.168.100.0/24 is directly connected, FastEthernet0/0

Border 1: next hop self
Border1(config)#router bgp 65300
Border1(config-router)#neighbor 192.168.100.2 remote-as 65300
Border1(config-router)#neighbor 192.168.100.2 next-hop-self
Border1(config-router)#exit

Border 2: next hop self
Border2(config)#router bgp 65400
Border2(config-router)#neighbor 192.168.200.2 remote-as 65400
Border2(config-router)#neighbor 192.168.200.2 next-hop-self
Border2(config-router)#exit

R1: show ip route

R1(config)#do sh ip route
Codes: C - connected, S - static, R - RIP, M - mobile, B - BGP
D - EIGRP, EX - EIGRP external, O - OSPF, IA - OSPF inter area
N1 - OSPF NSSA external type 1, N2 - OSPF NSSA external type 2
E1 - OSPF external type 1, E2 - OSPF external type 2
i - IS-IS, su - IS-IS summary, L1 - IS-IS level-1, L2 - IS-IS level-2
ia - IS-IS inter area, * - candidate default, U - per-user static route
o - ODR, P - periodic downloaded static route

Gateway of last resort is not set

B 192.168.200.0/24 [200/0] via 192.168.100.1, 00:04:17
C 192.168.100.0/24 is directly connected, FastEthernet0/0

Output:

Ping from R1 to R2

R1(config)#do ping 192.168.100.2

Type escape sequence to abort.
Sending 5, 100-byte ICMP Echos to
192.168.100.2, timeout is 2 seconds:
!!!!!
Success rate is 100 percent (5/5), round-trip
min/avg/max = 1/1/4 ms