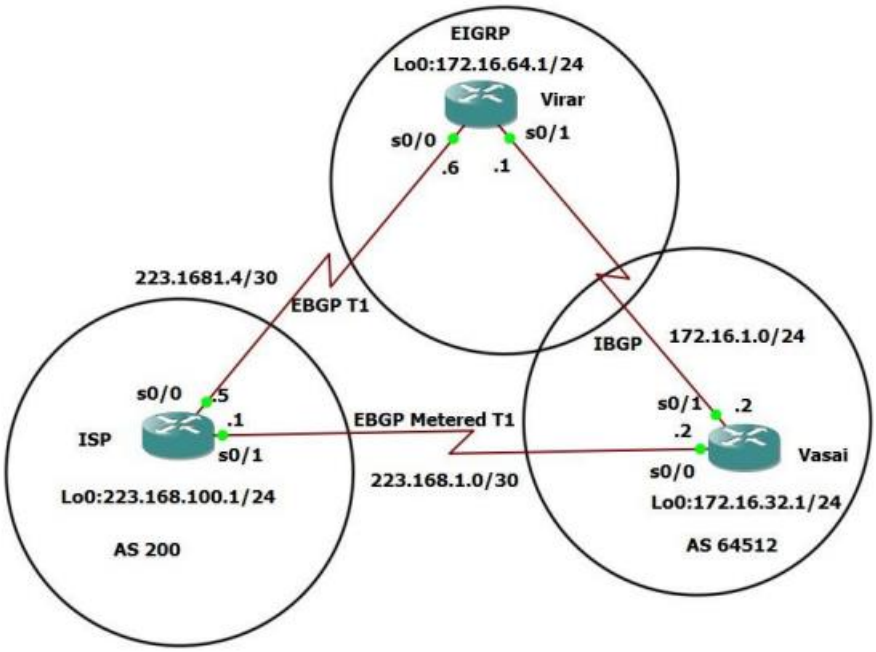
Configure IBGP and EBGP Sessions, Local Preference, and MED.



Step 1: Configure interface addresses.

Router R1(hostname ISP)

ISP (config)# interface Loopback 0

ISP (config-if) #ip address 223.168.100.1 255.255.255.0

ISP (config-if) #exit

ISP (config) #interface Serial 0/0/0

ISP (config-if) #ip address 223.168.1.5 255.255.255.252

ISP (config-if) #exit

ISP (config) #interface Serial 0/0/1

ISP (config-if) #ip address 223.168.1.1 255.255.255.252

ISP (config-if) #no shutdown

ISP (config-if) #end

Router R2(hostname Virar)

Virar(config) #interface Loopback 0

Virar(config-if) #ip address 172.16.64.1 255.255.255.0

Virar(config) #exit

Virar(config) #interface Serial 0/0/0

Virar(config-if) #ip address 223.168.1.6 255.255.255.252

Virar(config-if) #no shutdown

Virar(config-if) #exit

Virar(config) interface Serial 0/0/1

Virar(config-if) #ip address 172.16.1.1 255.255.255.0

Virar(config-if) #no shutdown

Virar(config-if) #end

Router R3(hostname Vasai)

Vasai(config) #interface Loopback 0

Vasai(config-if) #ip address 172.16.32.1 255.255.255.0

Vasai(config-if) #exit

Vasai(config) #interface Serial 0/0/0

Vasai(config-if) #ip address 223.168.1.2 255.255.255.252

Vasai(config-if) #no shutdown

Vasai(config-if) #exit

Vasai(config) #interface Serial 0/0/1

Vasai(config-if) #ip address 172.16.1.2 255.255.255.0

Vasai(config-if) #no shutdown

Vasai(config-if) #end

Step 2: Configure EIGRP

Virar(config) #router eigrp 1

Virar(config-router) #network 172.16.0.0

Vasai(config) #router eigrp 1

Vasai(config-router) #network 172.16.0.0

Step 3: Configure IBGP and Verify BGP neighbors.

Virar(config) #router bgp 64512

Virar(config-router) #neighbor 172.16.32.1 remote-as 64512

Virar(config-router) #neighbor 172.16.32.1 update-source Lo0

b. Complete the IBGP configuration on Vasai using the Following commands.

Vasai(config) #router bgp 64512

Vasai(config-router) # neighbor 172.16.64.1 remote-as 64512

Vasai(config-router) #neighbor 172.16.64.1 update-source Lo0

Step 4: Configure EBGP and Verify BGP neighbors.

d. Configure ISP to run EBGP with Virar and Vasai.

Enter the following commands on ISP. ISP (config)

#router bgp 200 ISP (config-router) #neighbor 223.168.1.6 remote-as 64512

ISP (config-router) #neighbor 223168.1.2 remote-as 64512

ISP (config-router) #network 223.168.100.0

Virar(config) #ip route 172.16.0.0 255.255.0.0 null0

. Configure Virar as an EBGP peer to ISP

Virar(config) #router bgp 64512

Virar(config-router) #neighbor 223.168.1.5 remote-as 200

Virar(config-router) #network 172.16.0.0

virar# show ip bgp neighbors

Vasai(config) #ip route 172.16.0.0 255.255.0.0 null0

Vasai(config) #router bgp 64512

Vasai(config-router) #neighbor 223.168.1.1 remote-as 200

Vasai(config-router) #network 172.16.0.0

Vasai# show ip bgp summary

ISP# clear ip bgp *

ISP# ping 172.16.64.1

ISP# ping 172.16.1.1

ISP# ping 172.16.32.1

ISP# ping 172.16.1.2

ISP# show ip bgp

ISP# ping 172.16.1.1 source 223.168.100.1

ISP# ping 172.16.32.1 source 223.168.100.1

ISP# ping 172.16.1.2 source 223.168.100.1

ISP# ping 172.16.64.1 source 223.168.100.1

Configure the BGP next-hop-self feature.

j. Issue the following commands on the ISP router.

ISP (config) # router bgp 200

ISP (config-router) # network 223.168.1.0 mask 255.255.255.252

ISP (config-router) # network 223.168.1.4 mask 255.255.255.252

ISP# show ip bgp
Vasai# show ip route

ISP (config) #router bgp 200

ISP (config-router) #no network 223.168.1.0 mask 255.255.255.252

ISP (config-router) #no network 223.168.1.4 mask 255.255.255.252

ISP (config-router) #exit

ISP (config) #interface serial 0/0/1 ISP

(config-if) #shutdown

show ip bgp

Vasai# show ip bgp

Vasai# show ip route

Virar(config) #router bgp 64512

Virar(config-router) #neighbor 172.16.32.1 next-hop-self

Vasai(config) # router bgp 64512

Vasai(config-router) #neighbor 172.16.64.1 next-hop-self

Virar# clear ip bgp *

show ip bgp

show ip route

ISP (config)# interface serial 0/0/1

ISP (config-if) #no shutdown

Vasai # show ip route

Virar(config) # route-map PRIMARY_T1_IN permit 10

Virar(config-route-map) # set local-preference 150

Virar(config-route-map) #exit

Virar(config) # router bgp 64512

Virar(config-router) #neighbor 223.168.1.5 route-map PRIMARY_T1_IN in

Vasai(config) # route-map SECONDARY_T1_IN permit 10

Vasai(config-route-map) # set local-preference 125

Vasai(config-router-map) #exit

Vasai(config) # router bgp 64512

Vasai(config-router) #neighbor 223.168.1.1 route-map SECONDARY_T1_IN in

Vasai# clear ip bgp * soft

Virar# show ip bgp

ISP# show ip bgp

ISP# show ip route.

b. Create a new policy to force the ISP router to return all traffic via Virar. Create a second route map utilizing the MED (metric) that is shared between EBGP neighbors.

Virar(config) #route-map PRIMARY_T1_MED_OUT permit 10

Virar(config-route-map) #set Metric 50

Virar(config-router-map) # exit

Virar(config) #router bgp 64512

Virar(config-router) #neighbor 223.168.1.5 route-map PRIMARY_T1_MED_OUT out

Vasai(config) #route-map SECONDARY_T1_MED_OUT permit 10

Vasai(config-route-map) # set metric 75

Vasai(config-route-map) # exit

Vasai(config) #router bgp 64512

Vasai(config-router) #neighbor 223.168.1.1 route-map SECONDARY_T1_MED_OUT out

Virar# show ip bgp * soft

Vasai# show ip bgp * soft

Virar# show ip bgp

Vasai# show ip bgp

ISP# show ip bgp

ISP (config)# router bgp 200

ISP (config-router) #neighbor 223.168.1.6 default-originate

ISP (config-router) #neighbor 223.168.1.2 default-originate

ISP (config-router) # exit ISP (config) # interface Loopback 10

ISP (config-if) #ip address 10.0.0.1 255.255.255.0

Virar# show ip route

Vasai# show ip bgp

Vasai# traceroute 10.0.0.1

ISP (config)# interface serial 0/0/0

Virar# show ip route

Vasai# show ip route

Vasai# show ip route

Vasai# traceroute 10.0.0.1

ISP (config)# interface serial 0/0/0

Virar# show ip route

Vasai# show ip route

Vasai# trace 10.0.0.1