BGP
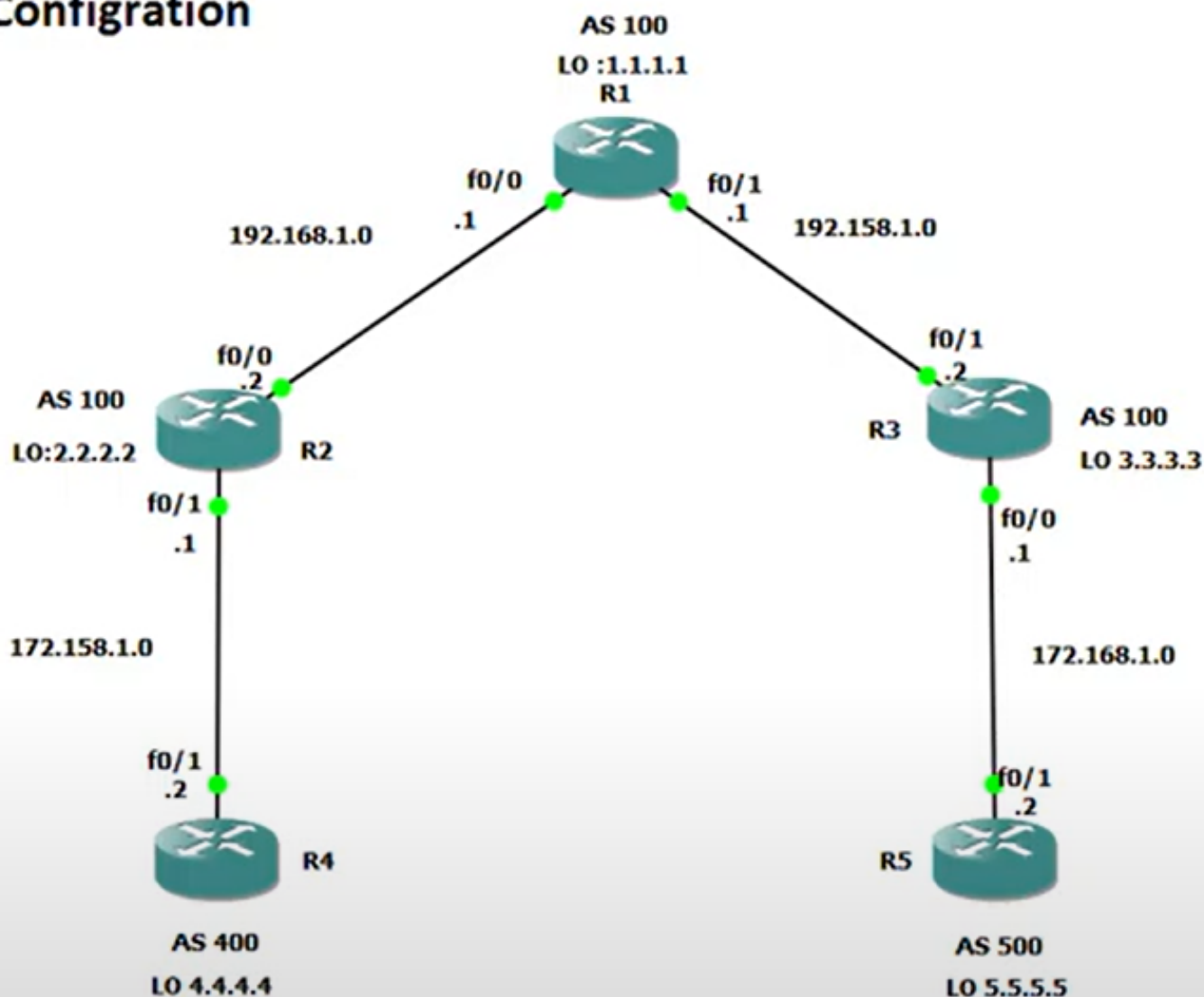
Rules

1) To Run eBGP between directly connected router we need to have point to point ip connectivity
2) To Run iBGP between directly connected or dynamically connected (like ibgp over OSPF) we need to have loopback address reachability between routers

Here iBGP Loop prevention mechanism doesn't forward the route learned from one iBGP router (R1) to another iBGP router (R3)

1) To Avoid this, we can use Mesh connection to R2 to R3
2) Or else another method is to use route reflector on R1 – iBGP router to R3 iBGP router

iBGP
eBGP
Configration

AS 100
LO :1.1.1.1
R1

f0/0   f0/1
.1   .1   192.158.1.0
192.168.1.0

AS 100   f0/1
                                          .2
f0/0
.2
LO:2.2.2.2   R2   R3   AS 100
                                         LO 3.3.3.3
f0/1
.1   f0/0
                                          .1

172.158.1.0   172.168.1.0

f0/1   f0/1
.2   .2

            R4   R5

AS 400   AS 500

LO 4.4.4.4   LO 5.5.5.5

```
R1#
R1#sh ip int br | e unas
Interface                 IP-Address      OK? Method Status
FastEthernet0/0           192.168.1.1     YES manual up
FastEthernet0/1           192.158.1.1     YES manual up
Loopback0                 1.1.1.1         YES manual up
Loopback2                 1.1.2.1         YES manual up
R1#
R1#
```

OSPF

Router ospf 100

Network 0.0.0.0 255.255.255.255 area 85

Sh ip ospf neighbor

Ping 2.2.2.2

Ping 3.3.3.3

BGP

Router bgp 100

Redistribute connected   ------ ### BGP will started to advertise it connected network to peering neighbor

Neighbor 2.2.2.2 reomte-as 100

Neighbor 2.2.2.2 description R2

Neighbor 3.3.3.3 reomte-as 100

Neighbor 3.3.3.3 description R3

No synchronization

No auto-summary

Bgp log-neighbor-changes

Neighbor 3.3.3.3 route-reflector-client

Sh ip bgp sum

Clear ip bgp * soft ---------------------- will not disrupt the existing bgp routing table **recommended**

clear ip bgp * soft in

clear ip bgp * soft out

3)   To Avoid this we can use Mesh connection to R2 to R3
4)   Or else another method is to use route reflector on R1 – iBGP router

R2

```
R2#
R2##sh ip int br | e unas
R2#sh ip int br | e unas
Interface                  IP-Address      OK? Method Status              Protocol
FastEthernet0/0            192.168.1.2     YES manual up                  up
FastEthernet0/1            172.158.1.1     YES manual up                  up
Loopback0                  2.2.2.2         YES manual up                  up
Loopback20                 20.20.20.20     YES manual up                  up
R2#conf t
```

OSPF

Router ospf 100

Network 0.0.0.0 255.255.255.255 area 85

BGP

ibgp

Router bgp 100

Redistribute connected

Neighbor 1.1.1.1 reomte-as 100

Neighbor 1.1.1.1 description R1

Neighbor 1.1.1.1 update-source loopback 0   ####when we are peering using loopback interface in BGP means need to use this command ######

no synchronization

No auto-summary

Bgp log-neighbor-changes

ebgp

Router bgp 100

Neighbor 172.158.1.2 reomte-as 400

Neighbor 172.158.1.2 description R4

```
R3#
R3#sh ip int br | e unas
Interface              IP-Address      OK? Method Status            Protocol
FastEthernet0/0        172.168.1.1     YES manual up               up
FastEthernet0/1        192.158.1.2     YES manual up               up
Loopback0              3.3.3.3         YES manual up               up
Loopback30             30.30.30.30     YES manual up               up
R3#
R3#
```

OSPF

Router ospf 100

Network 0.0.0.0 255.255.255.255 area 85

BGP

ibgp

Router bgp 100

Redistribute connected

Neighbor 1.1.1.1 reomte-as 100

Neighbor 1.1.1.1 description R1

Neighbor 1.1.1.1 update-source loopback 0   ####when we are peering using loopback interface in BGP means need to use this command ######

no synchronization

No auto-summary

Bgp log-neighbor-changes

ebgp

Router bgp 100

Neighbor 172.168.1.2 remote-as 500

Neighbor 1.1.1.1 description R5

```
R4#
R4#sh ip int br | e unas
Interface                IP-Address       OK? Method Status              Protocol
FastEthernet0/1          172.158.1.2      YES manual up                  up
Loopback0                4.4.4.4          YES manual up                  up
Loopback40               40.40.40.40      YES manual up                  up
R4#
R4#
```

BGP

ebgp

Router bgp 400

Redistribute connected

Neighbor 172.158.1.1 reomte-as 100

Neighbor 172.158.1.1 description R2

```
R5#
R5#sh ip int br | e unas
Interface                IP-Address       OK? Method Status              Protocol
FastEthernet0/1          172.168.1.2      YES manual up                  up
Loopback0                5.5.5.5          YES manual up                  up
Loopback50               50.50.50.50      YES manual up                  up
R5#
R5#
```

BGP

ebgp

Router bgp 500

Redistribute connected

Neighbor 172.168.1.1 reomte-as 100

Neighbor 172.168.1.1 description R3