

```
R1:
conf t
int e0/0
Desc conn to R2
ip add 10.12.1.1 255.255.255.0
no sh
int e0/1
Desc conn to R3
ip add 10.13.1.1 255.255.255.0
no sh
int lo 0
ip add 172.16.0.1 255.255.255.0
int lo 1
ip add 172.16.1.1 255.255.255.0
int lo 2
ip add 172.16.2.1 255.255.255.0
int lo 3
ip add 172.16.3.1 255.255.255.0
exit

router bgp 100
  bgp router-id 1.1.1.1
  bgp log-neighbor-changes
  network 172.16.0.0 mask 255.255.255.0
  network 172.16.1.0 mask 255.255.255.0
  network 172.16.2.0 mask 255.255.255.0
  network 172.16.3.0 mask 255.255.255.0
  neighbor 10.12.1.2 remote-as 200
  neighbor 10.13.1.3 remote-as 300
exit
```

```
R2:
conf t
int e0/0
Desc conn to R1
ip add 10.12.1.2 255.255.255.0
no sh
int e0/1
Desc conn to R4
ip add 10.24.1.2 255.255.255.0
no sh
exit
```

```
router bgp 200
  bgp log-neighbor-changes
  no bgp default ipv4-unicast
  neighbor 10.12.1.1 remote-as 100
  neighbor 10.24.1.4 remote-as 400
  !
  address-family ipv4
    neighbor 10.12.1.1 activate
    neighbor 10.24.1.4 activate
  exit-address-family
```

```
R3:
conf t
```

```
int e0/0
Desc conn to R1
ip add 10.13.1.3 255.255.255.0
no sh
int e0/1
Desc conn to R6
ip add 10.36.1.3 255.255.255.0
no sh
exit
```

```
router bgp 300
  bgp log-neighbor-changes
  no bgp default ipv4-unicast
  neighbor 10.13.1.1 remote-as 100
  neighbor 10.36.1.6 remote-as 400
  !
  address-family ipv4
    neighbor 10.13.1.1 activate
    neighbor 10.36.1.6 activate
  exit-address-family
```

```
R4:
conf t
int e0/0
Desc conn to R2
ip add 10.24.1.4 255.255.255.0
no sh
int e0/1
Desc conn to R5
ip add 10.45.1.4 255.255.255.0
no sh
int lo 0
ip add 4.4.4.4 255.255.255.0
exit
```

```
int e0/1
ip ospf 1 a 0
exit
```

```
router bgp 400
  bgp router-id 4.4.4.4
  bgp log-neighbor-changes
  network 4.4.4.0 mask 255.255.255.0
  neighbor 10.24.1.2 remote-as 200
  neighbor 10.45.1.5 remote-as 400
  neighbor 10.56.1.6 remote-as 400
exit
```

```
R6:
conf t
int e0/0
Desc conn to R3
ip add 10.36.1.6 255.255.255.0
no sh
int e0/1
Desc conn to R5
ip add 10.56.1.6 255.255.255.0
```

```
no sh
int lo 0
ip add 6.6.6.6 255.255.255.0
exit
```

```
int e0/1
ip ospf 1 a 0
exit
```

```
router bgp 400
  bgp router-id 6.6.6.6
  bgp log-neighbor-changes
  network 6.6.6.0 mask 255.255.255.0
  neighbor 10.36.1.6 remote-as 300
  neighbor 10.56.1.5 remote-as 400
  neighbor 10.45.1.4 remote-as 400
```

```
R5:
conf t
int e0/0
Desc conn to R4
ip add 10.45.1.5 255.255.255.0
no sh
int e0/1
Desc conn to R6
ip add 10.56.1.5 255.255.255.0
no sh
int lo0
ip add 5.5.5.5 255.255.255.0
exit
```

```
int r e0/0-1
ip ospf 1 a 0
exit
```

```
=====
```

```
ASpath prepend
```

```
R1:
```

```
access-list 1 permit 172.16.0.0 0.0.0.255
```

```
route-map RM-ASPATH-PREPEND permit 10
  match ip address 1
  set as-path prepend 100
route-map RM-ASPATH-PREPEND permit 20
!
```

```
router bgp 100
  bgp router-id 1.1.1.1
  bgp log-neighbor-changes
  network 172.16.0.0 mask 255.255.255.0
  network 172.16.1.0 mask 255.255.255.0
  network 172.16.2.0 mask 255.255.255.0
  network 172.16.3.0 mask 255.255.255.0
  neighbor 10.12.1.2 remote-as 200
  neighbor 10.12.1.2 route-map RM-ASPATH-PREPEND out
```

```
neighbor 10.13.1.3 remote-as 300
exit
```

```
router bgp 100
no neighbor 10.12.1.2 route-map RM-ASPATH-PREPEND out
exit
```

Weight:

R5:

```
router bgp 400
neig 10.56.1.6 weight 40000
exit
```

Sh ip bgp

```
* i 172.16.0.0/24      10.45.1.4      0      100      0 200 100 i
 *>i                  10.56.1.6      0      100     40000 300 100 i
 * i 172.16.1.0/24    10.45.1.4      0      100      0 200 100 i
 *>i                  10.56.1.6      0      100     40000 300 100 i
 * i 172.16.2.0/24    10.45.1.4      0      100      0 200 100 i
 *>i                  10.56.1.6      0      100     40000 300 100 i
 * i 172.16.3.0/24    10.45.1.4      0      100      0 200 100 i
 *>i                  10.56.1.6      0      100     40000 300 100 i
```

R5:

```
access-list 1 permit 172.16.0.0 0.0.0.255
```

```
route-map RM-WT permit 10
 match ip address 1
 set weight 50000
route-map RM-WT permit 20
exit
```

```
router bgp 400
bgp router-id 5.5.5.5
bgp log-neighbor-changes
network 5.5.5.0 mask 255.255.255.0
neighbor 10.45.1.4 remote-as 400
neighbor 10.45.1.4 soft-reconfiguration inbound
neighbor 10.45.1.4 route-map RM-WT in
neighbor 10.56.1.6 remote-as 400
neighbor 10.56.1.6 weight 40000
exit
```

```
*>i 172.16.0.0/24      10.45.1.4      0      100     50000 200 100 i
 * i                  10.56.1.6      0      100     40000 300 100 i
```

Local preference:

R4:

```
router bgp 400
```

```
bgp default local-preference 200
exit
```

```
R6:
router bgp 400
bgp default local-preference 300
exit
```

R4: Specific route

```
ip prefix-list 172-16-3-0 seq 5 permit 172.16.3.0/24
```

```
route-map RM-LP permit 10
  match ip address prefix-list 172-16-3-0
  set local-preference 101
route-map RM-LP permit 20
```

```
router bgp 400
  bgp router-id 4.4.4.4
  bgp log-neighbor-changes
  network 4.4.4.0 mask 255.255.255.0
  neighbor 10.24.1.2 remote-as 200
  neighbor 10.24.1.2 soft-reconfiguration inbound
  neighbor 10.24.1.2 route-map RM-LP in
  neighbor 10.45.1.5 remote-as 400
  neighbor 10.45.1.5 next-hop-self
  neighbor 10.56.1.6 remote-as 400
  neighbor 10.56.1.6 next-hop-self
exit
```

=====