- ➢ BGP Konuşan bütün Router'larda,
  - o Router-ID Loopback 0 olacak,
  - o Default IPv4 address family kapatılacak,
  - o Loopback 0 IP adresleri BGP ile anons edilecek.
- ➢ BGP AS 100 de sadece R01 ve R02 dış ISP'ler ile eBGP komşuluğu kuracak. OSPF ve BGP karşılıklı redistribute edilecek.
- ➢ BGP AS 103 de Full Mesh iBGP komşulukları kuracak.
- ➢ BGP AS 103 de sadece R08, R09 ve R11 eBGP komşulukları kuracak.
- ➢ BGP AS 105 de R13 Loopback 43 ve Loopback 44 interface IP adreslerini BGP`ye redistribute edecek.
- ➢ BGP AS 105 de R13 Loopback 40, Loopback 41 ve Loopback 42 interface IP adreslerini BGP `ye network komutu ile anons edecek.

- ✓ R5 ve R13 birbirlerine Loopback IP adresleri üzerinden erişebilecek:

```
R13#ping 172.16.14.14 source Loopback 44
Type escape sequence to abort.
Sending 5, 100-byte ICMP Echos to 172.16.14.14, timeout is 2 seconds:
Packet sent with a source address of 172.16.44.44
!!!!!
Success rate is 100 percent (5/5), round-trip min/avg/max = 19/20/25 ms
R13#
```

```
R13#traceroute 172.16.14.14 source Loopback 41 probe 2 numeric
Type escape sequence to abort.
Tracing the route to 172.16.14.14
VRF info: (vrf in name/id, vrf out name/id)
  1 192.168.93.9 0 msec 0 msec
  2 192.168.89.8 0 msec 1 msec
  3 192.168.78.7 8 msec 8 msec
  4 192.168.17.1 6 msec 8 msec
  5 192.168.13.3 [AS 100] 17 msec 16 msec
  6 192.168.35.5 [AS 100] 17 msec *
R13#
```

- ✓ R5, R13 ve R10`un routing tabloları:

```
R05#show ip route ospf
Codes: L - local, 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, H - NHRP, l - LISP
       a - application route
       + - replicated route, % - next hop override

Gateway of last resort is not set

      1.0.0.0/32 is subnetted, 1 subnets
O        1.1.1.1 [110/75] via 192.168.45.4, 00:50:36, Ethernet0/1
                 [110/75] via 192.168.35.3, 00:50:36, Ethernet0/0
```

1

```
      2.0.0.0/32 is subnetted, 1 subnets
O        2.2.2.2 [110/75] via 192.168.45.4, 00:50:36, Ethernet0/1
                 [110/75] via 192.168.35.3, 00:50:36, Ethernet0/0
      3.0.0.0/32 is subnetted, 1 subnets
O        3.3.3.3 [110/11] via 192.168.35.3, 00:50:36, Ethernet0/0
      4.0.0.0/32 is subnetted, 1 subnets
O        4.4.4.4 [110/11] via 192.168.45.4, 00:50:36, Ethernet0/1
      6.0.0.0/32 is subnetted, 1 subnets
O E2     6.6.6.6 [110/1] via 192.168.45.4, 00:44:36, Ethernet0/1
                 [110/1] via 192.168.35.3, 00:44:36, Ethernet0/0
      7.0.0.0/32 is subnetted, 1 subnets
O E2     7.7.7.7 [110/1] via 192.168.45.4, 00:44:33, Ethernet0/1
                 [110/1] via 192.168.35.3, 00:44:33, Ethernet0/0
      8.0.0.0/32 is subnetted, 1 subnets
O E2     8.8.8.8 [110/1] via 192.168.45.4, 00:44:02, Ethernet0/1
                 [110/1] via 192.168.35.3, 00:44:02, Ethernet0/0
      9.0.0.0/32 is subnetted, 1 subnets
O E2     9.9.9.9 [110/1] via 192.168.45.4, 00:43:30, Ethernet0/1
                 [110/1] via 192.168.35.3, 00:43:30, Ethernet0/0
      10.0.0.0/32 is subnetted, 1 subnets
O E2    10.10.10.10 [110/1] via 192.168.45.4, 00:43:30, Ethernet0/1
                    [110/1] via 192.168.35.3, 00:43:30, Ethernet0/0
      11.0.0.0/32 is subnetted, 1 subnets
O E2    11.11.11.11 [110/1] via 192.168.45.4, 00:43:30, Ethernet0/1
                    [110/1] via 192.168.35.3, 00:43:30, Ethernet0/0
      12.0.0.0/32 is subnetted, 1 subnets
O E2    12.12.12.12 [110/1] via 192.168.45.4, 00:43:35, Ethernet0/1
                    [110/1] via 192.168.35.3, 00:43:35, Ethernet0/0
      13.0.0.0/32 is subnetted, 1 subnets
O E2    13.13.13.13 [110/1] via 192.168.45.4, 00:39:11, Ethernet0/1
                    [110/1] via 192.168.35.3, 00:39:11, Ethernet0/0
      172.16.0.0/32 is subnetted, 10 subnets
O E2    172.16.40.40 [110/1] via 192.168.45.4, 00:39:11, Ethernet0/1
                     [110/1] via 192.168.35.3, 00:39:11, Ethernet0/0
O E2    172.16.41.41 [110/1] via 192.168.45.4, 00:39:11, Ethernet0/1
                     [110/1] via 192.168.35.3, 00:39:11, Ethernet0/0
O E2    172.16.42.42 [110/1] via 192.168.45.4, 00:39:11, Ethernet0/1
                     [110/1] via 192.168.35.3, 00:39:11, Ethernet0/0
O E2    172.16.43.43 [110/1] via 192.168.45.4, 00:38:41, Ethernet0/1
                     [110/1] via 192.168.35.3, 00:38:41, Ethernet0/0
O E2    172.16.44.44 [110/1] via 192.168.45.4, 00:38:41, Ethernet0/1
                     [110/1] via 192.168.35.3, 00:38:41, Ethernet0/0
O     192.168.12.0/24 [110/138] via 192.168.45.4, 00:50:36, Ethernet0/1
                      [110/138] via 192.168.35.3, 00:50:36, Ethernet0/0
O     192.168.13.0/24 [110/74] via 192.168.35.3, 00:50:36, Ethernet0/0
O     192.168.14.0/24 [110/74] via 192.168.45.4, 00:50:36, Ethernet0/1
O     192.168.23.0/24 [110/74] via 192.168.35.3, 00:50:36, Ethernet0/0
O     192.168.24.0/24 [110/74] via 192.168.45.4, 00:50:36, Ethernet0/1
R05#
```

```
R13#show ip route bgp
Codes: L - local, 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, H - NHRP, l - LISP
       a - application route
       + - replicated route, % - next hop override


Gateway of last resort is not set

      1.0.0.0/32 is subnetted, 1 subnets
B        1.1.1.1 [20/0] via 192.168.93.9, 00:40:26
      2.0.0.0/32 is subnetted, 1 subnets
B        2.2.2.2 [20/0] via 192.168.93.9, 00:40:26
      3.0.0.0/32 is subnetted, 1 subnets
B        3.3.3.3 [20/0] via 192.168.93.9, 00:40:26
      4.0.0.0/32 is subnetted, 1 subnets
B        4.4.4.4 [20/0] via 192.168.93.9, 00:40:26
      5.0.0.0/32 is subnetted, 1 subnets
B        5.5.5.5 [20/0] via 192.168.93.9, 00:40:26
      6.0.0.0/32 is subnetted, 1 subnets
B        6.6.6.6 [20/0] via 192.168.123.12, 00:40:26
      7.0.0.0/32 is subnetted, 1 subnets
B        7.7.7.7 [20/0] via 192.168.93.9, 00:40:26
      8.0.0.0/32 is subnetted, 1 subnets
B        8.8.8.8 [20/0] via 192.168.93.9, 00:40:26
      9.0.0.0/32 is subnetted, 1 subnets
B        9.9.9.9 [20/0] via 192.168.93.9, 00:40:26
      10.0.0.0/32 is subnetted, 1 subnets
B        10.10.10.10 [20/0] via 192.168.93.9, 00:40:26
      11.0.0.0/32 is subnetted, 1 subnets
B        11.11.11.11 [20/0] via 192.168.93.9, 00:40:26
      12.0.0.0/32 is subnetted, 1 subnets
B        12.12.12.12 [20/0] via 192.168.123.12, 00:40:26
      172.16.0.0/32 is subnetted, 10 subnets
B        172.16.10.10 [20/0] via 192.168.93.9, 00:40:26
B        172.16.11.11 [20/0] via 192.168.93.9, 00:40:26
B        172.16.12.12 [20/0] via 192.168.93.9, 00:40:26
B        172.16.13.13 [20/0] via 192.168.93.9, 00:40:26
B        172.16.14.14 [20/0] via 192.168.93.9, 00:40:26
B     192.168.12.0/24 [20/0] via 192.168.93.9, 00:40:26
B     192.168.13.0/24 [20/0] via 192.168.93.9, 00:40:26
B     192.168.14.0/24 [20/0] via 192.168.93.9, 00:40:26
B     192.168.23.0/24 [20/0] via 192.168.93.9, 00:40:26
B     192.168.24.0/24 [20/0] via 192.168.93.9, 00:40:26
B     192.168.35.0/24 [20/0] via 192.168.93.9, 00:40:26
B     192.168.45.0/24 [20/0] via 192.168.93.9, 00:40:26
R13#
```

```
R10#show ip route bgp
Codes: L - local, 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, H - NHRP, l - LISP
       a - application route
       + - replicated route, % - next hop override


Gateway of last resort is not set

      1.0.0.0/32 is subnetted, 1 subnets
B        1.1.1.1 [200/0] via 8.8.8.8, 00:21:26
      2.0.0.0/32 is subnetted, 1 subnets
B        2.2.2.2 [200/0] via 8.8.8.8, 00:21:26
      3.0.0.0/32 is subnetted, 1 subnets
B        3.3.3.3 [200/0] via 8.8.8.8, 00:21:26
      4.0.0.0/32 is subnetted, 1 subnets
B        4.4.4.4 [200/0] via 8.8.8.8, 00:21:26
      5.0.0.0/32 is subnetted, 1 subnets
B        5.5.5.5 [200/0] via 8.8.8.8, 00:21:26
      6.0.0.0/32 is subnetted, 1 subnets
B        6.6.6.6 [200/0] via 8.8.8.8, 00:21:26
      7.0.0.0/32 is subnetted, 1 subnets
B        7.7.7.7 [200/0] via 8.8.8.8, 00:21:26
      12.0.0.0/32 is subnetted, 1 subnets
B        12.12.12.12 [200/0] via 11.11.11.11, 00:21:26
      13.0.0.0/32 is subnetted, 1 subnets
B        13.13.13.13 [200/0] via 11.11.11.11, 00:21:26
      172.16.0.0/32 is subnetted, 10 subnets
B        172.16.10.10 [200/0] via 8.8.8.8, 00:21:26
B        172.16.11.11 [200/0] via 8.8.8.8, 00:21:26
B        172.16.12.12 [200/0] via 8.8.8.8, 00:21:26
B        172.16.13.13 [200/0] via 8.8.8.8, 00:21:26
B        172.16.14.14 [200/0] via 8.8.8.8, 00:21:26
B        172.16.40.40 [200/0] via 11.11.11.11, 00:21:26
B        172.16.41.41 [200/0] via 11.11.11.11, 00:21:26
B        172.16.42.42 [200/0] via 11.11.11.11, 00:21:26
B        172.16.43.43 [200/0] via 11.11.11.11, 00:21:26
B        172.16.44.44 [200/0] via 11.11.11.11, 00:21:26
B     192.168.12.0/24 [200/0] via 8.8.8.8, 00:21:26
B     192.168.13.0/24 [200/0] via 8.8.8.8, 00:21:26
B     192.168.14.0/24 [200/0] via 8.8.8.8, 00:21:26
B     192.168.23.0/24 [200/0] via 8.8.8.8, 00:21:26
B     192.168.24.0/24 [200/0] via 8.8.8.8, 00:21:26
B     192.168.35.0/24 [200/0] via 8.8.8.8, 00:21:26
B     192.168.45.0/24 [200/0] via 8.8.8.8, 00:21:26
R10#
```

✓ R10`un BGP tablosu:

```
R10#show ip bgp ipv4 unicast
BGP table version is 315, local router ID is 10.10.10.10
Status codes: s suppressed, d damped, h history, * valid, > best, i - internal,
              r RIB-failure, S Stale, m multipath, b backup-path, f RT-Filter,
              x best-external, a additional-path, c RIB-compressed,
Origin codes: i - IGP, e - EGP, ? - incomplete
RPKI validation codes: V valid, I invalid, N Not found

     Network          Next Hop            Metric LocPrf Weight Path
 *>i 1.1.1.1/32       8.8.8.8                  0    100      0 102 100 i
 *>i 2.2.2.2/32       8.8.8.8                  0    100      0 102 100 i
 *>i 3.3.3.3/32       8.8.8.8                  0    100      0 102 100 ?
 *>i 4.4.4.4/32       8.8.8.8                  0    100      0 102 100 ?
 *>i 5.5.5.5/32       8.8.8.8                  0    100      0 102 100 ?
 * i 6.6.6.6/32       11.11.11.11              0    100      0 105 104 101 i
 *>i                  8.8.8.8                  0    100      0 102 100 101 i
 * i                  9.9.9.9                  0    100      0 105 104 101 i
 *>i 7.7.7.7/32       8.8.8.8                  0    100      0 102 i
 r>i 8.8.8.8/32       8.8.8.8                  0    100      0 i
 r>i 9.9.9.9/32       9.9.9.9                  0    100      0 i
 *>  10.10.10.10/32   0.0.0.0                  0          32768 i
 r>i 11.11.11.11/32   11.11.11.11              0    100      0 i
 *>i 12.12.12.12/32   11.11.11.11              0    100      0 105 104 i
 * i                  9.9.9.9                  0    100      0 105 104 i
 *>i 13.13.13.13/32   11.11.11.11              0    100      0 105 i
 * i                  9.9.9.9                  0    100      0 105 i
 *>i 172.16.10.10/32  8.8.8.8                  0    100      0 102 100 ?
 *>i 172.16.11.11/32  8.8.8.8                  0    100      0 102 100 ?
 *>i 172.16.12.12/32  8.8.8.8                  0    100      0 102 100 ?
 *>i 172.16.13.13/32  8.8.8.8                  0    100      0 102 100 ?
 *>i 172.16.14.14/32  8.8.8.8                  0    100      0 102 100 ?
 *>i 172.16.40.40/32  11.11.11.11              0    100      0 105 i
 * i                  9.9.9.9                  0    100      0 105 i
 *>i 172.16.41.41/32  11.11.11.11              0    100      0 105 i
 * i                  9.9.9.9                  0    100      0 105 i
 *>i 172.16.42.42/32  11.11.11.11              0    100      0 105 i
 * i                  9.9.9.9                  0    100      0 105 i
 *>i 172.16.43.43/32  11.11.11.11              0    100      0 105 ?
 * i                  9.9.9.9                  0    100      0 105 ?
 *>i 172.16.44.44/32  11.11.11.11              0    100      0 105 ?
 * i                  9.9.9.9                  0    100      0 105 ?
 *>i 192.168.12.0     8.8.8.8                  0    100      0 102 100 ?
 *>i 192.168.13.0     8.8.8.8                  0    100      0 102 100 ?
 *>i 192.168.14.0     8.8.8.8                  0    100      0 102 100 ?
 *>i 192.168.23.0     8.8.8.8                  0    100      0 102 100 ?
 *>i 192.168.24.0     8.8.8.8                  0    100      0 102 100 ?
 *>i 192.168.35.0     8.8.8.8                  0    100      0 102 100 ?
 *>i 192.168.45.0     8.8.8.8                  0    100      0 102 100 ?
R10#
```