Static Routing for the following Network through VLSM

Subnet Name	Needed Size	Allocated Size	Address	Mask	Dec Mask	Assignable Range	Broadcast
LAB-1	1050	2046	170.10.0.0	/21	255.255.248.0	170.10.0.1 - 170.10.7.254	170.10.7.255
LAB-2	850	1022	170.10.8.0	/22	255.255.252.0	170.10.8.1 - 170.10.11.254	170.10.11.255
LAB-3	500	510	170.10.12.0	/23	255.255.254.0	170.10.12.1 - 170.10.13.254	170.10.13.255
Lab-4	300	510	170.10.14.0	/23	255.255.254.0	170.10.14.1 - 170.10.15.254	170.10.15.255
Lab-5	230	254	170.10.16.0	/24	255.255.255.0	170.10.16.1 - 170.10.16.254	170.10.16.255
Serial-1	2	2	170.10.17.0	/30	255.255.255.252	170.10.17.1 - 170.10.17.2	170.10.17.3
Serial-2	2	2	170.10.17.4	/30	255.255.255.252	170.10.17.5 - 170.10.17.6	170.10.17.7
Serial-3	2	2	170.10.17.8	/30	255.255.255.252	170.10.17.9 - 170.10.17.10	170.10.17.11
Serial-4	2	2	170.10.17.12	/30	255.255.255.252	170.10.17.13 - 170.10.17.14	170.10.17.15

TOPOLOGY
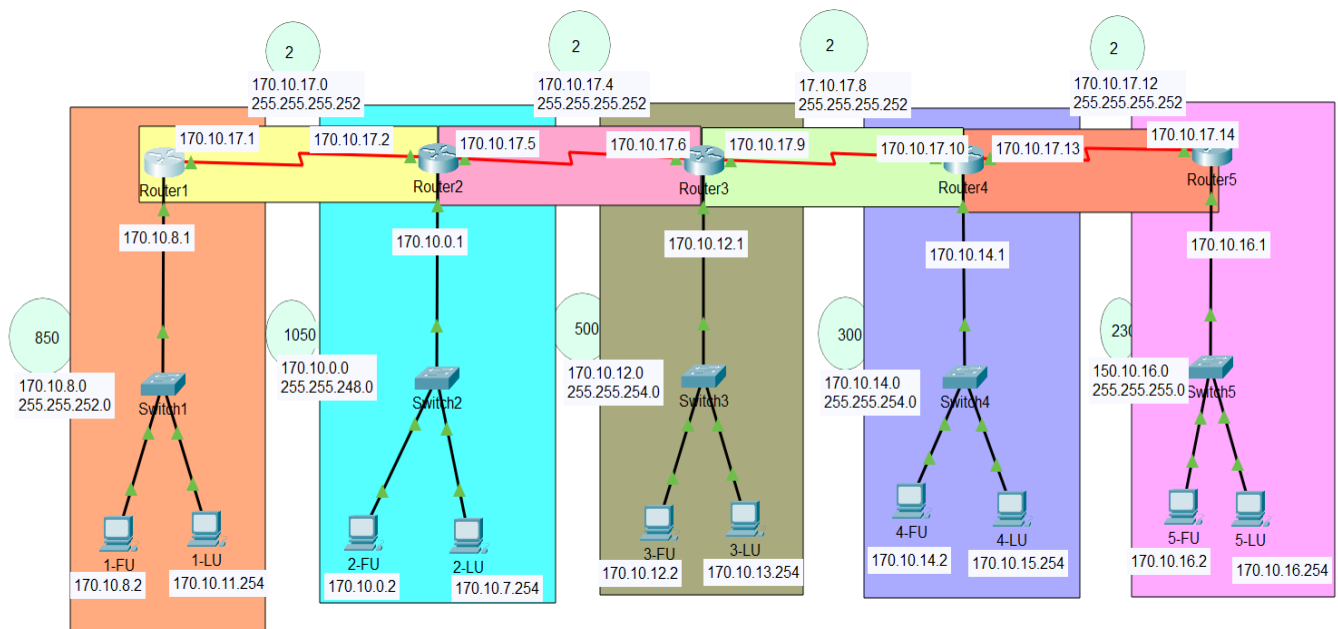
Router#1:

```
Router>en
Router#show ip route
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, E - EGP
i - IS-IS, 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

170.10.0.0/16 is variably subnetted, 13 subnets, 7 masks
S    170.10.0.0/16 [1/0] via 170.10.17.2
S    170.10.0.0/21 [1/0] via 170.10.17.2
C    170.10.8.0/22 is directly connected, GigabitEthernet0/0/0
L    170.10.8.1/32 is directly connected, GigabitEthernet0/0/0
S    170.10.12.0/23 [1/0] via 170.10.17.6
                    [1/0] via 170.10.17.2
S    170.10.14.0/23 [1/0] via 170.10.17.13
S    170.10.16.0/23 [1/0] via 170.10.17.14
S    170.10.16.0/24 [1/0] via 170.10.17.2
C    170.10.17.0/30 is directly connected, Serial0/1/0
L    170.10.17.1/32 is directly connected, Serial0/1/0
--More--
```

Router#2:

```
Router>en
Router#show ip route
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, E - EGP
i - IS-IS, 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

170.10.0.0/16 is variably subnetted, 12 subnets, 6 masks
C    170.10.0.0/21 is directly connected, GigabitEthernet0/0/0
L    170.10.0.1/32 is directly connected, GigabitEthernet0/0/0
S    170.10.8.0/22 [1/0] via 170.10.17.1
S    170.10.12.0/23 [1/0] via 170.10.17.6
S    170.10.14.0/23 [1/0] via 170.10.17.6
                    [1/0] via 170.10.17.10
S    170.10.16.0/24 [1/0] via 170.10.17.6
                    [1/0] via 170.10.17.14
```

```
C 170.10.17.0/30 is directly connected, Serial0/1/0
L 170.10.17.2/32 is directly connected, Serial0/1/0
C 170.10.17.4/30 is directly connected, Serial0/1/1
        --More--
```

Router#3:

```
Router>en
Router#show ip route
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, E - EGP
i - IS-IS, 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

170.10.0.0/16 is variably subnetted, 12 subnets, 6 masks
S 170.10.0.0/21 [1/0] via 170.10.17.5
S 170.10.8.0/22 [1/0] via 170.10.17.5
[1/0] via 170.10.17.1
C 170.10.12.0/23 is directly connected, GigabitEthernet0/0/0
L 170.10.12.1/32 is directly connected, GigabitEthernet0/0/0
S 170.10.14.0/23 [1/0] via 170.10.17.10
S 170.10.16.0/24 [1/0] via 170.10.17.14
[1/0] via 170.10.17.10
S 170.10.17.0/30 [1/0] via 170.10.17.5
C 170.10.17.4/30 is directly connected, Serial0/1/1
L 170.10.17.6/32 is directly connected, Serial0/1/1
                                    --More--
```

Router#4:

```
Router>en
Router#show ip route
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, E - EGP
i - IS-IS, 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
```

```
170.10.0.0/16 is variably subnetted, 12 subnets, 6 masks
S 170.10.0.0/21 [1/0] via 170.10.17.5
[1/0] via 170.10.17.9
S 170.10.8.0/22 [1/0] via 170.10.17.1
[1/0] via 170.10.17.9
S 170.10.12.0/23 [1/0] via 170.10.17.9
[1/0] via 170.10.17.6
C 170.10.14.0/23 is directly connected, GigabitEthernet0/0/0
L 170.10.14.1/32 is directly connected, GigabitEthernet0/0/0
S 170.10.16.0/24 [1/0] via 170.10.17.14
S 170.10.17.0/30 [1/0] via 170.10.17.9
S 170.10.17.4/30 [1/0] via 170.10.17.9
        --More--
```

Router#5:

```
Router>en
Router#show ip route
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, E - EGP
i - IS-IS, 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

170.10.0.0/16 is variably subnetted, 12 subnets, 6 masks
S 170.10.0.0/21 [1/0] via 170.10.17.5
[1/0] via 170.10.17.13
S 170.10.0.0/22 [1/0] via 170.10.17.13
S 170.10.8.0/22 [1/0] via 170.10.17.0
[1/0] via 170.10.17.13
S 170.10.12.0/23 [1/0] via 170.10.17.6
[1/0] via 170.10.17.13
S 170.10.14.0/23 [1/0] via 170.10.17.13
C 170.10.16.0/24 is directly connected, GigabitEthernet0/0/0
L 170.10.16.1/32 is directly connected, GigabitEthernet0/0/0
S 170.10.17.0/30 [1/0] via 170.10.17.13
        --More--
```