

## CCIE Enterprise Infrastructure v1.0 Bootcamp Labs - OSPF

1. OSPF
  - 1.1. Configure OSPF Area 0 on the links between R1, R2, R3, R4, and R5.
  - 1.2. Configure OSPF Area 0 on the links between R2 & R10, R3 & R7, R4 & R13, R5 & R8, and R10 & R13.
  - 1.3. Advertise their Loopback 0 interfaces into area 0.
2. OSPF
  - 2.1. Configure OSPF Area 1 between R10, SW1, R11, and R12.
  - 2.2. Advertise the Loopback0 interfaces of SW1, R11, and R12 into Area 1.
3. OSPF
  - 3.1. Configure OSPF Area 2 between R2 and R6.
  - 3.2. Advertise R6's Loopback0 into OSPF as an External Type 1 Route.
4. OSPF
  - 4.1. Configure OSPF Area 3 between R7, R8, R9, and SW6.
  - 4.2. Advertise the Loopback0 interfaces of R9 and SW6 into Area 3.
5. OSPF
  - 5.1. Configure OSPF Area 4 between R13, SW2, SW3, SW4, and SW5.
  - 5.2. Advertise the Loopback0 interfaces of SW2, SW3, SW4, and SW5 into Area 4.
  - 5.3. SW5's Loopback0 interface should be advertised as an External Type 2 Route.
6. OSPF
  - 6.1. Configure OSPF Area 14 between R13 & R14 and R8 & R14.
  - 6.2. Advertise R14's Loopback0 into Area 0.
  - 6.3. Ensure that reachability is maintained to R14's Loopback0 if either the link to R8 or the link to R13 goes down.
7. OSPF Authentication
  - 7.1. Authenticate the OSPF adjacency between R13 & R14 with an MD5 hash of the password CISCO.
  - 7.2. Authenticate the OSPF adjacency between R8 & R14 with a SHA hash of the password CISCOSHA.
8. OSPF Filtering
  - 8.1. Configure the network so that R10 filters Type-4 and Type-5 LSAs from entering OSPF Area 1.
  - 8.2. Once complete you should still be able to reach all prefixes in the OSPF network from Area 1.

9. OSPF Filtering
  - 9.1. Configure the network so that R13 does not allow external routes to enter Area 4.
  - 9.2. Once complete you should still be able to reach all prefixes in the OSPF network from Area 4.
  
10. OSPF Summarization
  - 10.1. Configure R6 to advertise its Loopback0 network as the prefix 192.168.255.6/31.
  - 10.2. Ensure that all devices still have reachability to this destination once complete.
  
11. OSPF Traffic Engineering
  - 11.1. Configure Area 3 so that traffic for R1's Loopback0 network prefers to exit via R8.
  - 11.2. If R8 is down traffic should still be able to exit via R7.
  
12. OSPFv3
  - 12.1. Configure OSPFv3 for IPv6 on R1, R2, and R10 in area 0. Advertise their Loopback0 networks into area 0.
  - 12.2. Configure IPv6 OSPFv3 between R2 and R6 in area 2. Advertise R6's Loopback0 as an OSPF External Route.
  - 12.3. Configure IPv6 OSPFv3 area 1 between R10, R11, R12, and SW1. Advertise their Loopback0 networks into area 1.
  
13. OSPFv3 Filtering
  - 13.1. Configure area 1 so that it does not accept any External OSPF Routes.
  - 13.2. Ensure that you still have reachability to R6's Loopback0
  
14. Bonus Task: OSPFv3 IPv4 AFI
  - 14.1. Remove your previous OSPFv2 configurations from all devices.
  - 14.2. Replace this with OSPFv3 IPv4 AFI.