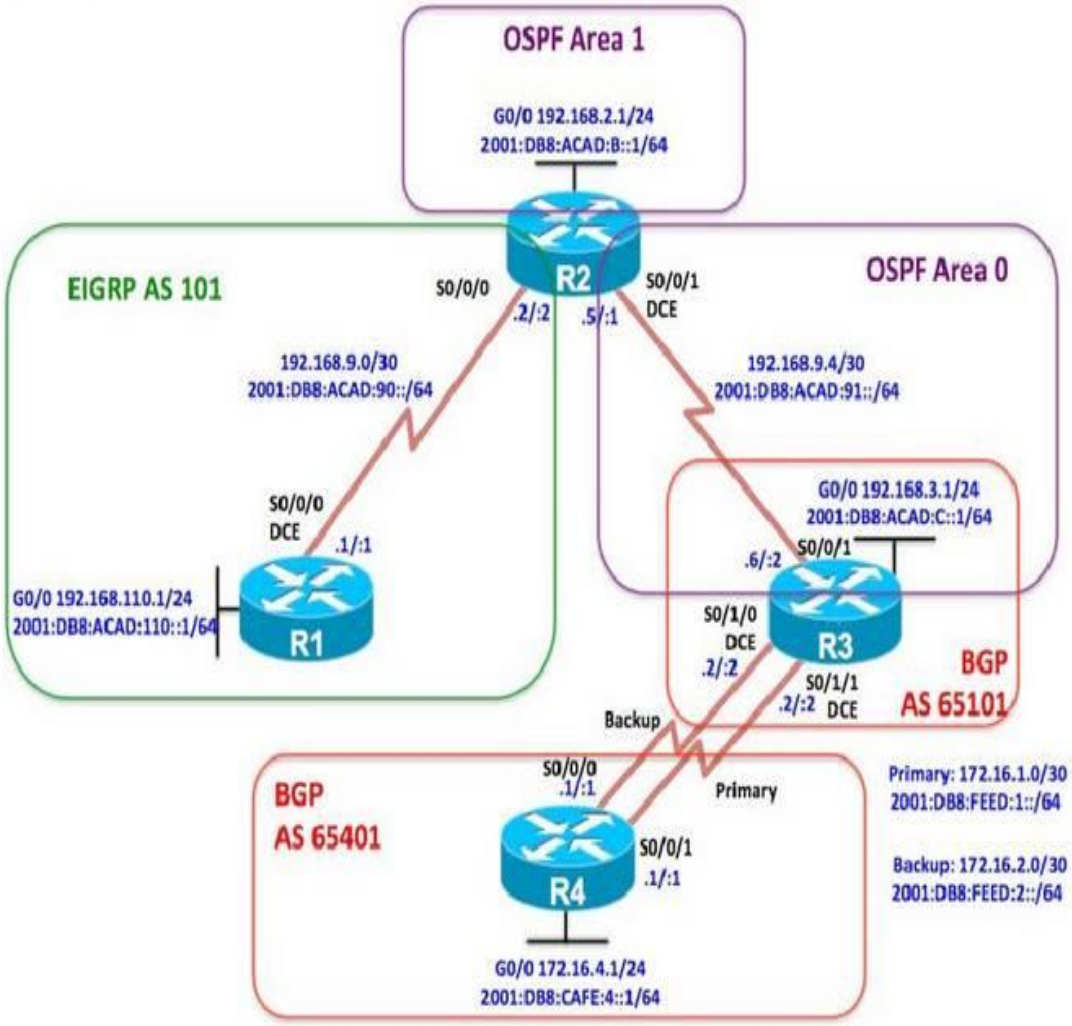
CCNPv7 ROUTE

Skills-Based Assessment

Topology



Objectives

- Part 1: Configure the routers in the topology according to the diagram and the specifications provided.
- Part 2: Test the network for appropriate connectivity and path control..

Exam Overview

This skills-based assessment (SBA) is the final practical exam of Academy training for the course CCNPv7 ROUTE. In Part 1, you configure multiple routing protocols, Named EIGRP, OSPFv3 with address families and MP-BGP to

create an integrated network. In Part 2, you create a Tcl script to test IPv4 and IPv6 connectivity and use **traceroute** and **show** commands to verify routing and path selection. This exam combines device configuration and troubleshooting.

Required Resources

- 4 routers (Cisco IOS Release 15.2 or comparable)
- Serial and Ethernet cables

Part 1: Configure the network according to specifications.

Interfaces Addressing

1. Configure interfaces with the IPv4 and IPv6 addresses shown in the diagram. Set the bandwidth to 128 kbps on the links between R1, R2, and R3 and set the clock rate on the DCE connections as appropriate.

OSPFv3 with Address Families

2. On R2 and R3 configure the OSPFv3 address families for IPv4 and IPv6. Use the router identifier 2.2.2.2 on R2 and 3.3.3.3 on R3 for both address families.
3. On R2, enable the G0/0 interface G0/0 in OSPF area 1 and the connection between R2 and R3 in OSPF area 0.
4. On R3, enable the G0/0 interface G0/0 in OSPF area 0 and the connection between R2 and R3.
5. Although there are no other routers in area 1, configure area 1 as a totally stubby area.
6. Propagate an IPv4 and IPv6 default route from R3 into the OSPFv3 domain. Note: No default IPv4 or IPv6 static routes are configured on R3.

Named EIGRP

7. Using Named EIGRP configuration for both IPv4 and IPv6, configure R1 to be in AS 101. Enable the G0/0 interface and the connection between R1 and R2 for EIGRP. Ensure that automatic summarization is disabled.
8. Using Named EIGRP configuration for both IPv4 and IPv6, configure R2 to be in AS 101. Enable the connection betweend R2 and R1 for EIGRP. Ensure that ***only*** the connection between R2 and R1 is enabled for name EIGRP. R2's G0/0 and S0/0/1 should not be enabled for EIGRP. Ensure that automatic summarization is disabled.
9. Configure passive interfaces for EIGRP as appropriate.

Redistribution, route filtering, and securing the control plane

10. On R2, configure mutual redistribution between OSPF and EIGRP for both IPv4 and IPv6. Assign appropriate metrics where required.
11. On R2, stop advertising the 192.168.3.0/24 route to R1 using a distribute list and ACL.
12. Secure the control plane by enable routing protocol authentication. Secure the EIGRP IPv4 and EIGRP IPv6 using SHA256.

MP-BGP

13. Enable EBGP between R3 and R4. R3 is in BGP AS 65101 with the router ID 3.3.3.3 and R4 is in BGP AS 65401 with the router ID 4.4.4.4.
14. Advertise R3's G0/0 interface and R4's G0/0 interface for IPv4 and IPv6 into BGP.

15. Modify the weight attributes on R3 and R4 so that both routers prefer the primary link between autonomou systems.

Note: If the BGP output results are not as expected, be sure to issue the **clear ip bgp *** on routers R3 and R4.

Part 2: Test network connectivity and path control.

a. Create a Tcl script and test connectivity from each router to the addresses shown in the diagram.

```
tclsh
```

Note: One or more addresses will not be reachable from all routers after final configuration due to the use of distrib lists to filter routes and the use of IPv4 and IPv6 addressing in the same network.

b. Verify that filtered routes are not present in routing tables of the correct routers.

c. Verify that traffic from AS 65101 to AS 65401 uses the preferred primary route.

Exam Notes: