

## ROUTERGODS CCNP ROUTE Class 4

### OSPF Part 2

**Overview - We will finish single-area OSPF with the injection of a default route. Then we'll move on to multiple area OSPF.**

#### Task 1 - Default-information originate

1. Start area 0 ospf on all routers
2. Show ip route on R3 and notice there's no default route
3. Pretend R4's loopback 1 is the network's connection to the Internet, configure R4 to broadcast a default route to the OSPF network
4. Go back to R3 and show ip route again and notice the difference

#### Questions

- Does the default-information originate command work differently in OSPF versus EIGRP??
- What LSA does the default route show up as? What is the metric? Go on different routers and see the differences in metric.
- What happens if you have a default-information originate configured on another router? :)

#### Task 2 - Starting multiple area OSPF

Diagram - <http://www.routergods.com/files/topo11-basicspf.png>

1. Take a look at your ospf database on R2, R4 and R7 - Get the "before picture"
2. Configure OSPF according to - <http://www.routergods.com/files/topo11-basicspf.png>
3. Go back to R2, R4 and R7 and look at the ospf database

#### Questions

- What are the differences in the database between routers in the same area and routers in different areas? Look at one route and follow it through the network.
- What is area 0 used for? How is area 0 different than other areas?

### Task 3 - Filtering LSAs between areas

1. The administrator of area 1 and 99.99.99.0/24 network killed your father... he must now die, so prevent that network from going into area 0
2. The administrator of the 100.100.0.0/24 network ran over your dog. Unleash your fury and prevent that network from reaching areas 1 and 2

#### Questions

- In multi-area OSPF, where do you filter out LSAs?
- By filter outgoing LSAs, do you prevent incoming traffic?

### Task 4 - Virtual Links

Area 2's admin passed his MCITP exam and put the 200.1.1.0/24 into area 200 because he thought area numbers and IP addresses had to match. He is the CEO's son so you can't fire him.

1. Configure a virtual link to get connectivity to the 200.1.1.0/24 network
2. Look at the routing table and ospf database of R2 and R5

#### Questions

- Do you see anything strange in your routing table and ospf database?
- What is a demand circuit? Think money per minute or byte
- So if you're being charged for usage, wouldn't it make sense to decrease or eliminate all unnecessary traffic?

### Task 5 - Redistributing external routes

The administrator of area 1 crashed his car in a bizarre accident. Apparently all the lug nuts on his right tire came loose at freeway speeds. You've taken over duties in area 1.

1. Take the 98.1.0.0/24 network out of OSPF, if necessary.
2. Redistribute that network into area 1
3. Notice how that redistributed route shows up in area 1 and area 0

#### Questions

- Does the metric change as the route passes through the network?
- How might you filter this route so that area 2 never has connectivity to 98.1.0.0/24?