

## Topic 2

### Clash of Titans

According to Hesiod's Theogony, there were 12 original Titans: the brothers Oceanus, Coeus, Crius, Hyperion, Iapetus, and Cronus and the sisters Thea, Rhea, Themis, Mnemosyne, Phoebe, and Tethys. At the instigation of Gaea, the Titans rebelled against their father, who had shut them up in the underworld (Tartarus). However, among these 12, only six (6) titans' locations have been identified using some special kind of magic. Each of these titans have a certain number of armies created by their special abilities. However, they cannot contact one another without a special magical way called the network. Your task is to establish this magical network among the six titans so that they can communicate with each other and can make a plan to escape from the underworld. In the bellow table the distance (Km) from each titan and number of soldiers are mentioned in brackets besides their name.

	<b>Coeus</b>	<b>Crius</b>	<b>Hyperion</b>	<b>Thea</b>	<b>Rhea</b>	<b>Tethys</b>
<b>Coeus (2055)</b>	0					
<b>Crius (8700)</b>	256	0				
<b>Hyperion (256)</b>	186	458	0			
<b>Thea (700)</b>	1158	269	356	0		
<b>Rhea (458)</b>	2260	197	658	203	0	
<b>Tethys (1158)</b>	875	224	356	456	159	0

\*The numbers in brackets ( ) specify the population size of the location and the values in the table specifies the distance (in miles) between locations. \*

Additionally, Oceanus's (800) location has been found recently.

- Choose an appropriate network address and create subnets to assign to each of the areas with the least amount of waste.
- Assume that the sister titans are using public addresses while all the others are using private addresses.
- One DHCP server to assign Ip addresses to all the brother titans.
- Oceanus (800) has a web server to contact more soldiers for recruitment.
- Establish connections among the networks with the shortest route possible
  - Must have one floating route.
  - Must have a backup system to handle missing routing entries. Here remember the default route cannot be used while exchanging packets. Data will be delivered using static or dynamic routes only. For an ISP router you can use the default route but for communicating among the given networks in the above table you have to use static or dynamic routing.
  - Configure at least one network to be routed dynamically and one to be routed statically.

- Configure a special web server for communication between the sisters and the server should be in such a place from where the distance of each sister is minimum.
- Showing 2 end devices per network is good enough to represent the whole population.
  - Brother titans have a desktop in their network
  - Sister titans have a laptop and printer in their network
- Oceanus (800) can communicate with his sisters too with email only. So, set up an email server for sending and receiving emails among Oceanus and his sisters.
- You need to be able to ping from each network to other networks after all setups are complete.

### **Deliverables**

- The network mentioned above should be implemented in packet tracer, with necessary devices and full configuration.
- After completion you should be able to test the conditions imposed.
- You will have to submit the followings:
  - Network topology diagram with proper labels
  - The configuration commands of all the routers that you have implemented.
  - VLSM tree
  - IP address table