

Little Kingdom

King Gristle, who is the emperor of the Southern Kingdom of MANIBOR lives in a Castle along with Queen Gristle and Prince Gristle Jr. The wizards live at the Black Drum Valley, who play the role of a mission control service and maintain a factory for wands.

The leader of wizards, Lady Glittersparkles, is Simon's mother. Wizards live in Sparkles' Hollow and hold the belief that they should not use magic in every day's work. Rather, magic should be used on special occasions. Trolls live in the Troll Village, where there are wood houses made for the trolls to live-in.

There is a Pirate territory which is just beside the blue sea. Though most pirates targeted ships, some also launched attacks on Troll Village. Some pirates believe they can only feel happy by consuming a Troll. Pirates have a separate network where they make plans about attacking trolls. But pirates do not communicate with anyone from the Kingdom of MANIBOR. The wizards work on troll rescue, they also manage MANIBOR Pastoral farm. Pastoral farming is the practice of rearing animals only in cold and wet climates not ideal for growing crops. Prince Gristle Jr likes to play Snowboarding with the Trolls at the Squaw Valley, MANIBOR.

Now, King Gristle has asked Lady Glittersparkles to establish networks for their Kingdom, but Lady Glittersparkles refuses to build one as she does not want to use magic in this case. Now, Lady Glittersparkles has appointed you to design the network. She has provided you the list of the locations and their population. Your Job is to design a network infrastructure so that everyone can communicate with ease.

	King's Castle	Sparkles' Hollow	MANIBOR Pastoral farm	Pirate territory	Troll Village	Squaw Valley
King's Castle (31)	0					
Sparkles' Hollow (64)	350	0				
MANIBOR Pastoral farm (400)	600	150	0			
Pirate territory (1100)	150	250	500	0		
Troll Village (5000)	750	50	350	40	0	
Squaw Valley (100)	285	550	60	900	120	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. *

While creating the network infrastructure there are certain restrictions and rules that you need to follow:

- Consider each location as a separate network connected by routers.
- For that you need to choose an appropriate network address starting from (a.b.x.x/?) [first two octet can be any useable value of your choice but the last two octet must be the last two digit of your student's ID who fills up the project group information form] and from that create subnets to assign to each location.
- Assign ip addresses to all interfaces and devices. You have to show at least two end devices for a location.
- Sparkles' Hollow has a web server where the entire system is operated from. It also has a DNS server that will be used to control the entire system. The web server shows a message ("Welcome to Southern Kingdom of MANIBOR") in the homepage www.dreamworld.com when you access the web server from any location.
- Establish connections among all the networks with the shortest route possible based on the distance.
 - Must have at least one floating route.
 - There will be no default route in the system.
 - Must Configure static routing between King's Castle and Sparkles' Hollow and Sparkles' Hollow and Troll Village. Other network information will be configured using dynamic routing.
 - For assigning IP addresses in MANIBOR Pastoral farm, must use the DHCP server. The DHCP server is situated in Sparkles' Hollow LAN.
- After completion, make sure that you can ping from a device in one location to another.

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