

The Valorant Troops

There are in total 6 zones active as the Valorant Troops. They are-**Lotus(L)** zone, **Split(S)** zone, **Haven(H)** zone, **Pearl(P)** zone, **Ascent(A)** zone) and **Bind(B)** zone.

Nicolo Laurent, the lead of all the Valorant Troop Zones, has informed you and your team of CSE421_Lab_Project that **Lotus(L)** has been nominated as the central zone of communication. This zone will be monitoring the rest of the zones across the Valorant Troops' intermediary communication. The distance(*in kms*) between each zone(*value in the cells*) and the number of agent devices(*value in the brackets*) needed for the each zone specific troop are listed below:

	L	S	H	P	A	B
L(30)	0					
S (25)	3	0				
H(20)	11	5	0			
P(15)	6	8	7	0		
A(10)	7	8	6	4	0	
B(5)	10	5	11	3	13	0

For instance, the distance or cost to travel from **Split(S)** to **Lotus(L)** is 3 kms and the **Split(L)** zone needs 25 agent devices in total.

Requirements for creating the network infrastructure:

While creating the network infrastructure, you and your team were provided with certain restrictions and rules that you needed to follow:

- Choose an appropriate network address and create subnets to assign to each branch with the least amount of waste.
- **Pearl(P)** will have its own **Web** server and a **DNS** server. The agents will be able to access the **Pearl's(P)** Web server where upon entering the server either as URL or IP address, it will show the message as an HTTP response:

“Pearl Troops are good at defending their zone.”
- As mentioned, **Lotus(L)** is the most important zone; for security, they will use static IP addressing while the other zones' IP addresses will be assigned using DHCP and handled by their network's **DHCP** server.
- **Ascent(A)** and **Bind(B)** will be communicating a lot, which is why they will require **Email** servers to be set up so that they can exchange mail among themselves. Make sure the email configurations are all set up for sending mail, receiving mail and replying to mail.
- **Haven(H) <-> Split(S)** and **Ascent <-> Bind** must be connected with each other manually.
- Establish connections among all the zones with the shortest route possible. When establishing a connection, keep the following things in mind:
 - There has to exist at least one floating route among the zones.
- Showing **1 device** per 5 devices is enough to represent the full active agent devices in each zone. Keep in mind that **Lotus(L)** will have laptops only.
- You have to remember the default route cannot be used while exchanging any packets. Data will be delivered using static or dynamic routes only.

- Configure at least one network to be routed dynamically and one to be routed statically.
- You have to be able to successfully ping from one zone to another after all the setups are properly completed.

Deliverables:

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