

Valorant: A Sentinel's Eagle Eye

In the universe 787, The realm of **valorant faced a great threat in the year 2049, when conflict ripped across their Land of wealth and prosperity, turning it into a battleground of chaos and savagery. A Moroccan information broker named **Cypher** joined the Valorant Protocol in order to keep tabs on everyone and everything by utilizing his surveillance tools. **Cypher** wants to keep his surveillance in his **city** along with different **cities** as well. There is a total of **6 cities** where **Cypher** needs to set up his surveillance tools in order to keep the cities under inspection for any occurrence. To ensure every city is properly monitored and information is gathered flawlessly, **Cypher** has assigned your team as the network engineer.

Cypher has considered his home town city **Bind** and **Ascent** will be the main monitoring cities, which should stay under surveillance at any cost. The distance between each **city** and the number of enemy troops (**host devices**) needed to protect each city is given below:

	Bind	Ascent	Fracture	Breeze	Icebox	Haven
Bind (780)	0					
Ascent (484)	896	0				
Fracture (674)	960	102	0			
Breeze (359)	651	453	434	0		
Icebox (441)	97	364	747	391	0	
Haven (293)	317	820	184	940	682	0

*The numbers in brackets () specify the number of devices in the city and the values in the table specify the distance (in kilometres) between branches. *

!! Please find your setup requirements on the next page !!

Requirements:

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

- Choose an appropriate network address and create subnets to assign to each of the branches with the least amount of waste.
- But remember you can use only the **odd IP addresses** from the available IP range of a network address i.e. 192.168.1.0/24 has 256 possible IP addresses, but you can take only 192.168.1.1/24, 192.168.1.3/24, 192.168.1.5/24 etc. as host IP addresses.
- **Bind** will have its own web server and a DNS server. Users can access the **Bind** server where upon entering the server, it will show the message :
 "I know exactly where you are!"
- As mentioned before, **Bind** and **Ascent** are the most important cities; for security, they will use static addressing while the other branches' IP addresses will be assigned using DHCP and will be handled by their own network's DHCP server.
- **Bind** and **Ascent** will be communicating a lot which is why they will require email server to be set up so that they can exchange mail among themselves
- **Fracture-Haven** and **Breeze-Icebox** must be connected with each other manually.
- Establish connections among all the branches with the shortest route possible. When establishing a connection, keep the following things in mind:
 - o There has to exist at least one floating route among the branches
- Showing **two end devices** per branch is enough to represent the whole army of each city. You must remember that **Breeze** and **Icebox** will have one laptop in each city.
- Configure at least one network to be routed dynamically and one to be routed statically.
- You have to be able to ping from one city to another after all the setups are properly completed
- You have to remember the default route cannot be used while exchanging packets. Data will be delivered using standard static routes or dynamic routes.

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 you have implemented.
 - VLSM tree
 - IP address table