**Lab 3**

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Lab 3. Set up the connectivity for computers behind NATs using a [free Google] VM with a public IP address as the lighthouse.  
  
Recommendations:  
0. <https://cloud.google.com/free/docs/free-cloud-features#compute>  
  
1. <https://github.com/slackhq/nebula>

[Read Getting started (quickly)]

2. use a data comparison utility such as Meld and [Beyond Compare] to compare the configuration files attached to see where the changes should be made.  
  
3. configure the config.yaml for the lighthouse and all participating computers.  
  
4. some useful example commands:  
nebula-cert sign -name "Lei" -ip "[192.168.100.4/24](http://192.168.100.4/24)"  
sudo nebula -config ~/.nebula/config.yaml

I have difficulties doing this lab, here is my attempt at it.

1. **Google Cloud VM Setup:**

* **What to do:** You need to set up a free VM on Google Cloud. This VM will act as a lighthouse for your network. A lighthouse in networking, especially with Nebula, is a node that has a static IP and is directly reachable by other nodes. It helps other nodes find and connect with each other.
* **How to do it:** You can start by creating a Google Cloud account and then setting up a free tier VM. Use the link provided in your assignment to understand what free resources you get and how to use them.

A screenshot of a computer

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1. **Nebula Network Tool:**

* **What to do:** Nebula is a scalable overlay networking tool with a focus on performance, simplicity, and security. It lets you seamlessly connect computers anywhere in the world. Your task involves using Nebula to set up the network.
* **How to do it:** Follow the Nebula documentation on GitHub. Start with the "Getting started (quickly)" section to understand how to install and configure Nebula.

1. **Data Comparison Utility:**

* **What to do:** Use tools like Meld or Beyond to compare configuration files. This will help you identify the required changes in your configuration to make all systems work together.
* **How to do it:** Download and install either of these utilities. Then load the provided configuration files into the utility to compare them visually.

1. **Configuring config.yaml:**

* **What to do:** This file will contain configuration for your Nebula network. You will have one for the lighthouse and others for each participating computer.
* **How to do it:** Modify the configurations based on your network setup requirements and the differences you noted from the comparison utility.

1. **Useful Commands:**

* **What they do:** These commands are used to generate certificates and start the Nebula network.
* **How to use them:** nebula-cert sign -name "Lei" -ip "192.168.100.4/24": This command is used to create a Nebula certificate for a node with the name "Lei" and a specified IP.  
  sudo nebula -config ~/.nebula/config.yaml: This runs the Nebula node according to the settings in your config.yaml file.