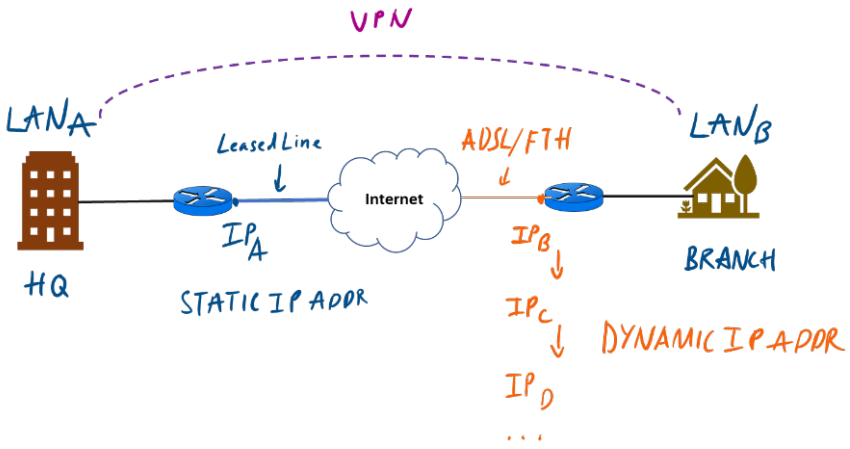
Monitor Skill

Introduction:

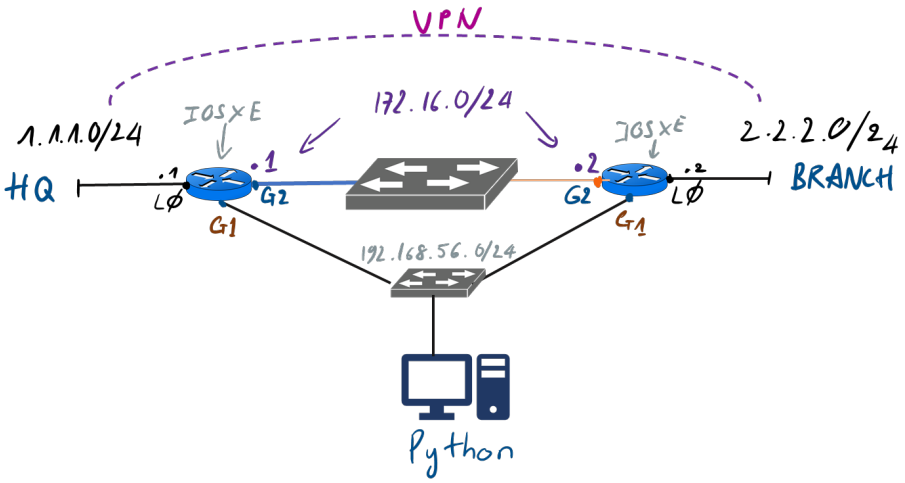
Bank_X has opened its branches in one of the most northern places where ADSL is the only internet service available. Like every other bank, Bank_X wants secure connections with its branches to collect data. And usually, VPN Site-to-Site is the first option. Unfortunately, the remote sites with ADSL connections could not maintain a VPN tunnel due to dynamic IP Address (public IP) assignments; for example, the branch's Internet IP address is renewed every 3 hours. Therefore, the VPN tunnel will drop without a static IP when the ISP assigns a new IP.



As an IT engineer, your job is to find a solution to this problem. However, you cannot change the nature of the Network. Instead, you can apply your automation skills to solve this problem programmatically.

LAB Setup:

To simplify the problem, you can set up your lab as the figure below:



The Python machine is your VM LAB machine. HQ router will be your CSR1000v router (IOS XE). For the branch router, you can import another CSR1000v router to your **VirtualBox**.

By default, there is only one port (G1) on CSR1000vs. However, to get the G2 interface for internet connections (172.16.0.0/24), you can change the Setting of each router in **VirtualBox**:

1. Turn off the routers if they are running. Then repeat the following steps for each router.
2. Select a router in **VirtualBox**, then click on ***Setting***.
3. Then select ***Network*** on the left, select ***Adapter 2*** on the right.
4. In the ***Adapter 2*** tab, check ***Enable Network Adapter*** option.
5. Select ***Bridged Adapter*** from ***Attached to*** drop-box.
6. Select an option from ***Name:*** drop-box but make sure you have the same selection for both routers.
7. Expand ***Advanced*** and select ***Paravirtualized Network*** from ***Adapter Type*** drop-box
8. Click *OK* to finish the setup. Now, G2 interfaces will appear on your routers.

For your convenience, I have the VPN configuration here, CSR1 is for HQ, and CSR2 is the branch.