Setup NetworkAutomation Container on GNS3:

apt update
apt install python3
apt install python3 -m pip install netmiko, ipaddress, paramiko
apt install git

Generate SSH Key:

ssh-keygen -t ed25519 -C "siddharth.joshi@mycit.ie"

Check the key here:

- ➔ cat /root/.ssh/id_ed25519.pub
- ➔ Copy the ssh key
- ➔ Go to your GitHub page, Go to Setting (shown below)

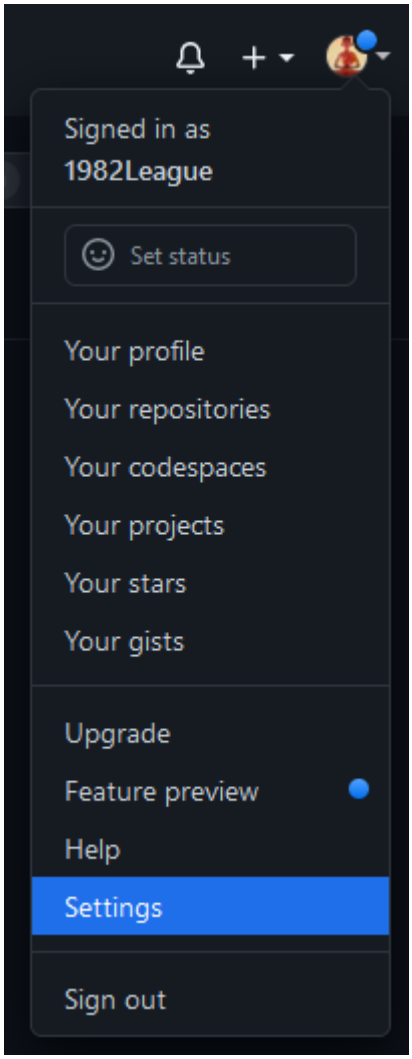

Figure 1 GitHub Settings

➔ Go to *SSH and GPG keys,*

Figure 2 SSH & GPG keys

➔ Click on New SSH key to create new SSH key, give an intuitive name

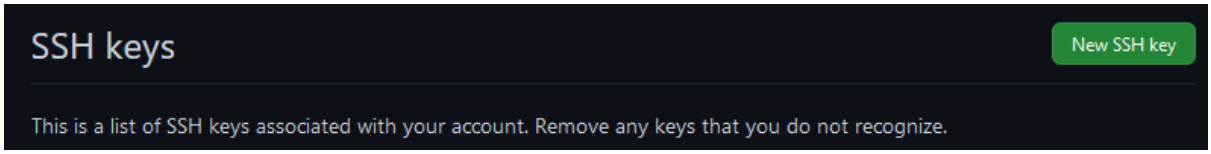

Figure 3 New SSH keys

➔ Paste the copied private SSH key into Key area

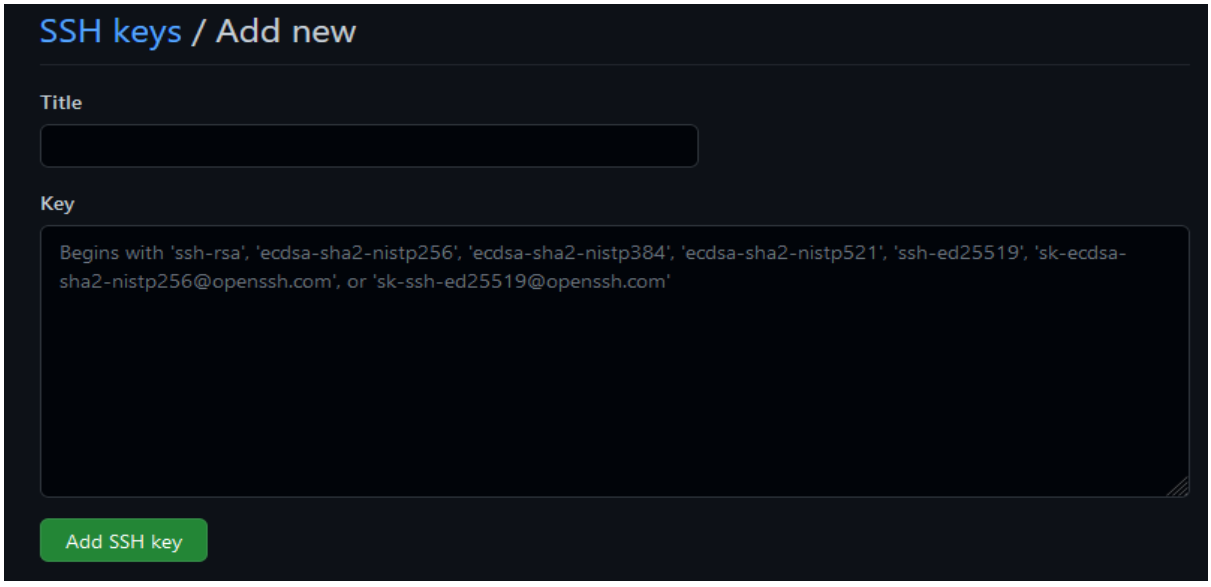

Figure 4 SSH keys

You should be able to download the repository now.

- ➔ Once the ssh key is setup, go to NetworkAutomation-1 docker container, and clone the FYP-2022 repository .
- ➔ Make sure you can reach the internet, confirm the connectivity before cloning or you may have some errors.

- ➔ git clone https://github.com/1982League/FYP-2022.git

```
root@netlabNetworkAutomation-1:~# ping github.com
PING github.com (140.82.121.3) 56(84) bytes of data.
64 bytes from lb-140-82-121-3-fra.github.com (140.82.121.3): icmp_seq=1 ttl=48 time=60.2 ms
64 bytes from lb-140-82-121-3-fra.github.com (140.82.121.3): icmp_seq=3 ttl=48 time=57.7 ms
64 bytes from lb-140-82-121-3-fra.github.com (140.82.121.3): icmp_seq=5 ttl=48 time=59.1 ms
64 bytes from lb-140-82-121-3-fra.github.com (140.82.121.3): icmp_seq=7 ttl=48 time=54.5 ms
^C
--- github.com ping statistics ---
7 packets transmitted, 4 received, 42.8571% packet loss, time 6040ms
rtt min/avg/max/mdev = 54.481/57.860/60.231/2.152 ms
root@netlabNetworkAutomation-1:~# git clone https://github.com/1982League/FYP-2022.git
Cloning into 'FYP-2022'...
remote: Enumerating objects: 52, done.
remote: Counting objects: 100% (52/52), done.
remote: Compressing objects: 100% (46/46), done.
remote: Total 52 (delta 12), reused 28 (delta 5), pack-reused 0
Unpacking objects: 100% (52/52), 37.51 KiB | 0 bytes/s, done.
root@netlabNetworkAutomation-1:~# ls
FYP-2022  bootstrap-salt.sh  napalm1.py  napalm_scripts  ntc-templates  project  root
```

Figure 5 Cloned FYP-2022 Project

- ➔ cd FYP-2022/
- ➔ After going to the directory, we must give write permission to all the files in FYP-2022.
- ➔ chmod +x *.*

```
netlabNetworkAutomation-
root@netlabNetworkAutomation-1:~/FYP-2022# ls
AUTHORS                 acl_gen.py       nplm_net_module.py     telnet_module.py
DOCKERFILE              acl_tool.py      policies.json          validate_addresses.py
LICENSE                 cisco_ace.txt    policies.py            validate_policy.py
README.md               find_target.py   rollback_ace.txt       validate_services.py
__pycache__             net_devices.py   serial_conn_module.py
acl_config_rollback.txt net_module.py    telnet_check.py
```

Figure 6 ACL Tool Files - Write Permission

- ➔ Run python3 -m pip install -r requirements.txt to install packages.
- ➔ Once all packages are installed, run the tool, shown in Figure 7.

```
root@netlabNetworkAutomation-1:~/FYP-2022# ./acl_tool.py
```

Figure 7 Project tool home screen