Installasi dan Konfigurasi Kolla-Ansible Ubuntu Server 18.04

1. Aktifkan network interfaces, sebelumnya ada salah satu interface yang tidak aktif.

```
ridho@ubuntu-allinone:~$ sudo ip link set up enp3s0
ridho@ubuntu-allinone:~$
```

2. Setelah network interface sudah diaktifkan, verifikasi terlebih dahulu.

```
ridho@ubuntu-allinone:~$ ip link
1: lo: <LOOPBACK,UP,LOWER_UP> mtu 65536 qdisc noqueue state UNKNOWN mode DEFAULT group default qlen 1000
    link/loopback 00:00:00:00:00:00 brd 00:00:00:00:00:00
2: enp2s0: <BROADCAST,MULTICAST,UP,LOWER_UP> mtu 1500 qdisc fq_codel state UP mode DEFAULT group default qlen 1000
    link/ether 00:e0:62:44:07:0a brd ff:ff:ff:ff:ff:ff
3: enp3s0: <BROADCAST,MULTICAST,UP,LOWER_UP> mtu 1500 qdisc fq_codel state UP mode DEFAULT group default qlen 1000
    link/ether 00:30:67:31:5d:6b brd ff:ff:ff:ff:ff:ff
ridho@ubuntu-allinone:~$
```

3. Update package

```
ridho@ubuntu-allinone:~$ sudo apt-get update
Hit:1 https://download.docker.com/linux/ubuntu bionic InRelease
Hit:2 http://archive.ubuntu.com/ubuntu bionic InRelease
Get:3 http://archive.ubuntu.com/ubuntu bionic-updates InRelease [88.7 kB]
Get:4 http://archive.ubuntu.com/ubuntu bionic-backports InRelease [74.6 kB]
Get:5 http://archive.ubuntu.com/ubuntu bionic-security InRelease [88.7 kB]
Get:6 http://archive.ubuntu.com/ubuntu bionic-updates/main amd64 Packages [1072 kB]
Get:7 http://archive.ubuntu.com/ubuntu bionic-updates/universe amd64 Packages [1107 kB]
Fetched 2431 kB in 3s (751 kB/s)
Reading package lists... Done
```

4. Install python build dependencies

```
ridho@ubuntu-allinone:~$ sudo apt-get install python3-dev libffi-dev gcc libssl-dev -y
Reading package lists... Done
Building dependency tree
Reading state information... Done
The following additional packages will be installed:
  dh-python libexpat1-dev libpython3-dev libpython3.6-dev python3-distutils python3-lib2to3 python3.6-dev
Suggested packages:
  gcc-multilib autoconf automake libtool flex bison gdb gcc-doc libssl-doc
The following NEW packages will be installed:
  dh-python gcc libexpat1-dev libffi-dev libpython3-dev libpython3.6-dev libssl-dev python3-dev python3-distutils python3-lib2to3 python3.6-dev
0 upgraded, 11 newly installed, 0 to remove and 73 not upgraded.
```

5. Install PIP

```
ridho@ubuntu-allinone:~$ sudo apt-get install python3-dev libffi-dev gcc libssl-dev -y
Reading package lists... Done
Building dependency tree
Reading state information... Done
The following additional packages will be installed:
  dh-python libexpat1-dev libpython3-dev libpython3.6-dev python3-distutils python3-lib2to3 python3.6-dev
Suggested packages:
  gcc-multilib autoconf automake libtool flex bison gdb gcc-doc libssl-doc
The following NEW packages will be installed:
  dh-python gcc libexpat1-dev libffi-dev libpython3-dev libpython3.6-dev libssl-dev python3-dev python3-distutils python3-lib2to3 python3.6-dev
0 upgraded, 11 newly installed, 0 to remove and 73 not upgraded.
ridho@ubuntu-allinone:~$ sudo apt-get install python3-pip -y
Reading package lists... Done
Building dependency tree
Reading state information... Done
The following additional packages will be installed:
  build-essential g++ g++-7 libstdc++-7-dev python-pip-whl python3-crypto python3-keyring python3-keyrings.alt python3-secretstorage python3-setuptools python3-wheel python3-xdg
Suggested packages:
  g++-multilib g++-7-multilib gcc-7-doc libstdc++6-7-dbg libstdc++-7-doc python-crypto-doc gnome-keyring libkf5wallet-bin gir1.2-gnomekeyring-1.0 python-secretstorage-doc
  python-setuptools-doc
The following NEW packages will be installed:
  build-essential g++ g++-7 libstdc++-7-dev python-pip-whl python3-crypto python3-keyring python3-keyrings.alt python3-pip python3-secretstorage python3-setuptools python3-wheel
  python3-xdg
0 upgraded, 13 newly installed, 0 to remove and 73 not upgraded.
ridho@ubuntu-allinone:~$ sudo -H pip3 install -U pip --proxy="152.118.29.41:8080"
Cache entry deserialization failed, entry ignored
Collecting pip
  Using cached https://files.pythonhosted.org/packages/4e/5f/528232275f6509b1fff703c9280e58951a81abe24640905de621c9f81839/pip-20.2.3-py2.py3-none-any.whl
Installing collected packages: pip
  Found existing installation: pip 9.0.1
    Not uninstalling pip at /usr/lib/python3/dist-packages, outside environment /usr
Successfully installed pip-20.2.3
ridho@ubuntu-allinone:~$
```

6. Verifikasi PIP

```
ridho@ubuntu-allinone:~$ pip -V
pip 20.2.3 from /usr/local/lib/python3.6/dist-packages/pip (python 3.6)
ridho@ubuntu-allinone:~$
```

7. Install ansible versi 2.8 ke atas

```
ridho@ubuntu-allinone:~$ sudo -H pip install -U 'ansible<2.10' --proxy="152.118.29.41:8080"
Collecting ansible<2.10
  Using cached ansible-2.9.13.tar.gz (14.3 MB)
Requirement already satisfied, skipping upgrade: PyYAML in /usr/lib/python3/dist-packages (from ansible<2.10) (3.12)
Requirement already satisfied, skipping upgrade: cryptography in /usr/lib/python3/dist-packages (from ansible<2.10) (2.1.4)
Requirement already satisfied, skipping upgrade: jinja2 in /usr/lib/python3/dist-packages (from ansible<2.10) (2.10)
Building wheels for collected packages: ansible
  Building wheel for ansible (setup.py) ... done
  Created wheel for ansible: filename=ansible-2.9.13-py3-none-any.whl size=16173087 sha256=749cd2b6c2e2d0ef72c4e354c4caaf3fb135e933838325158c8a33ceaa03103e
  Stored in directory: /root/.cache/pip/wheels/72/1c/ac/63be364e920735ac523abc18cce7c50ec9abb1a5c35f7feff5
Successfully built ansible
Installing collected packages: ansible
Successfully installed ansible-2.9.13
ridho@ubuntu-allinone:~$
```

8. Verifikasi Ansible

```
ridho@ubuntu-allinone:~$ ansible --version
ansible 2.9.13
  config file = None
  configured module search path = ['/home/ridho/.ansible/plugins/modules', '/usr/share/ansible/plugins/modules']
  ansible python module location = /usr/local/lib/python3.6/dist-packages/ansible
  executable location = /usr/local/bin/ansible
  python version = 3.6.9 (default, Jul 17 2020, 12:50:27) [GCC 8.4.0]
ridho@ubuntu-allinone:~$
```

9. Install kolla-ansible

```
ridho@ubuntu-allinone:~$ sudo -H pip install kolla-ansible --proxy="152.118.29.41:8080"
Collecting kolla-ansible
  Downloading kolla_ansible-10.1.0-py3-none-any.whl (1.4 MB)
     |████████████████████████████████| 1.4 MB 367 kB/s
Collecting pbr!=2.1.0,>=2.0.0
  Downloading pbr-5.5.0-py2.py3-none-any.whl (106 kB)
     |████████████████████████████████| 106 kB 511 kB/s
Requirement already satisfied: PyYAML>=3.12 in /usr/lib/python3/dist-packages (from kolla-ansible) (3.12)
Collecting oslo.utils>=3.33.0
  Downloading oslo.utils-4.5.0-py3-none-any.whl (96 kB)
     |████████████████████████████████| 96 kB 369 kB/s
Requirement already satisfied: Jinja2>=2.10 in /usr/lib/python3/dist-packages (from kolla-ansible) (2.10)
Collecting oslo.config>=5.2.0
  Downloading oslo.config-8.3.1-py3-none-any.whl (119 kB)
     |████████████████████████████████| 119 kB 349 kB/s
Collecting jmespath>=0.9.3
  Downloading jmespath-0.10.0-py2.py3-none-any.whl (24 kB)
Requirement already satisfied: cryptography>=2.1 in /usr/lib/python3/dist-packages (from kolla-ansible) (2.1.4)
Collecting debtcollector>=1.2.0
  Downloading debtcollector-2.2.0-py3-none-any.whl (20 kB)
Requirement already satisfied: netifaces>=0.10.4 in /usr/lib/python3/dist-packages (from oslo.utils>=3.33.0->kolla-ansible) (0.10.4)
Collecting packaging>=20.4
  Downloading packaging-20.4-py2.py3-none-any.whl (37 kB)
Collecting pyparsing>=2.1.0
  Downloading pyparsing-2.4.7-py2.py3-none-any.whl (67 kB)
     |████████████████████████████████| 67 kB 151 kB/s
Collecting pytz>=2013.6
  Downloading pytz-2020.1-py2.py3-none-any.whl (510 kB)
     |████████████████████████████████| 510 kB 549 kB/s
Requirement already satisfied: six>=1.10.0 in /usr/lib/python3/dist-packages (from oslo.utils>=3.33.0->kolla-ansible) (1.11.0)
Collecting oslo.i18n>=3.15.3
  Downloading oslo.i18n-5.0.0-py3-none-any.whl (46 kB)
     |████████████████████████████████| 46 kB 361 kB/s
Collecting iso8601>=0.1.11
  Downloading iso8601-0.1.12-py2.py3-none-any.whl (12 kB)
Collecting netaddr>=0.7.18
  Downloading netaddr-0.8.0-py2.py3-none-any.whl (1.9 MB)
     |████████████████████████████████| 1.9 MB 207 kB/s
Collecting stevedore>=1.20.0
  Downloading stevedore-3.2.1-py3-none-any.whl (42 kB)
     |████████████████████████████████| 42 kB 144 kB/s
Collecting importlib-metadata>=1.7.0; python_version < "3.8"
  Downloading importlib_metadata-1.7.0-py2.py3-none-any.whl (31 kB)
Collecting rfc3986>=1.2.0
  Downloading rfc3986-1.4.0-py2.py3-none-any.whl (31 kB)
Requirement already satisfied: requests>=2.18.0 in /usr/lib/python3/dist-packages (from oslo.config>=5.2.0->kolla-ansible) (2.18.4)
```

10. Membuat direktori kolla di /etc

```
ridho@ubuntu-allinone:~$ sudo mkdir -p /etc/kolla
ridho@ubuntu-allinone:~$ sudo chown $USER:$USER /etc/kolla
ridho@ubuntu-allinone:~$
```

11. Copy global.yml dan password .yml ke /etc/kolla dan copy isi file inventory= y ke direktori saat ini.

```
ridho@ubuntu-allinone:~$ cp -r /usr/local/share/kolla-ansible/etc_examples/kolla/* /etc/kolla
ridho@ubuntu-allinone:~$ cp /usr/local/share/kolla-ansible/ansible/inventory/* .
```

12. Tambahkan ke file konfigurasi ansible

```
ridho@ubuntu-allinone:~$ sudo mkdir /etc/ansible
ridho@ubuntu-allinone:~$ sudo cp /usr/local/lib/python3.6/dist-packages/ansible/galaxy/data/container/tests/ansible.cfg /etc/ansible/
ridho@ubuntu-allinone:~$ sudo vim /etc/ansible/ansible.cfg
```

Isi file :

```
[defaults]
#inventory=./inventory
host_key_checking=False
pipelining=True
forks=100
```

13. Tes Ping

```
ridho@ubuntu-allinone:~$ ansible -i all-in-one all -m ping
[WARNING]: Invalid characters were found in group names but not replaced, use -vvvv to see details
localhost | SUCCESS => {
    "ansible_facts": {
        "discovered_interpreter_python": "/usr/bin/python3"
    },
    "changed": false,
    "ping": "pong"
}
ridho@ubuntu-allinone:~$
```

14. Kolla-password

```
ridho@ubuntu-allinone:~$ kolla-genpwd
ridho@ubuntu-allinone:~$ cat /etc/kolla/passwords.yml | grep admin
grafana_admin_password: j8OmMyjBCcWIUt3zcPD3zcWfixg2fs0jdX5KOFBc
heat_domain_admin_password: S4378Nrh2VEN9o2kIEVdZ4MvQ2vU9Uu8YnkMriS7
infoblox_admin_password: twirls1GRDAdfEb4tVsPLvKTspulCBZ57xFYwwMh
keystone_admin_password: NNggrgSsXgHnxr4IUnZs7BH6xvbF4g1IGIfeIx8z
monasca_grafana_admin_password: NGfVeZhP6pgdQ8pBQ7soYr4Iz6ubhn0wAJjvawje
ridho@ubuntu-allinone:~$
```

15. Edit file globals.yml (Disini menggunakan OS Ubuntu)

Valid options are ['centos', 'debian', 'rhel', 'ubuntu']
#kolla_base_distro: "centos" (disesuaikan)

Valid options are [binary, source]
#kolla_install_type: "binary" (disesuaikan)

#kolla_internal_vip_address: "10.10.10.254"
kolla_internal_vip_address: "10.119.216.252" (disesuaikan dengan IP pada interface pertama)

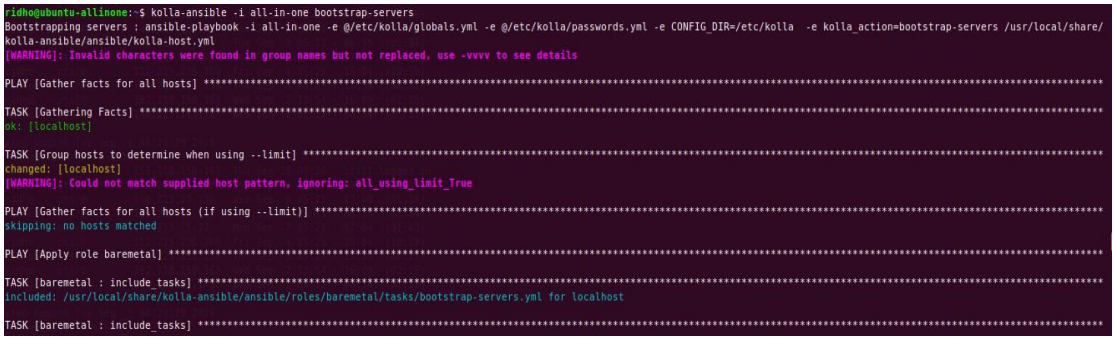
#network_interface: "eth0"
network_interface: "enp2s0" (disesuaikan dengan network interface pertama yang dipakai)

#neutron_external_interface: "eth1"
neutron_external_interface: "enp3s0" (disesuaikan dengan network interface kedua yang dipakai)

16. Lalu install docker dengan pip

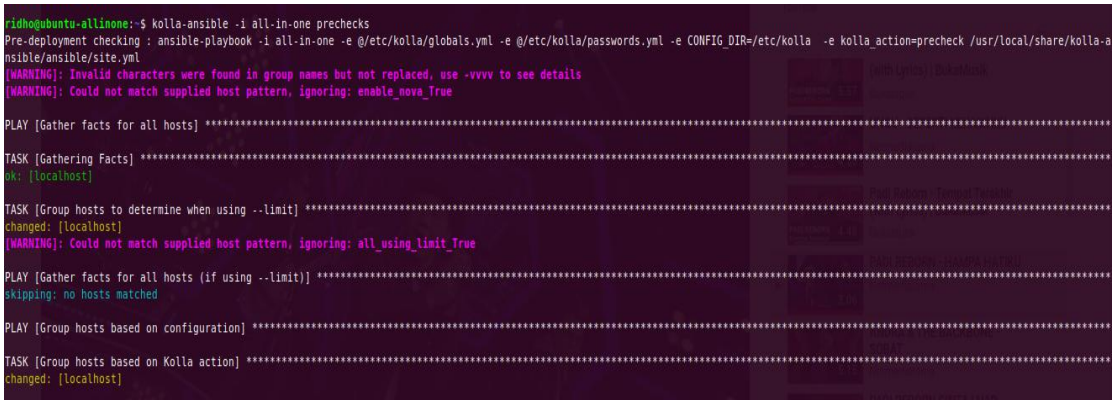
```
ridho@ubuntu-allinone:~$ sudo -H pip install docker --proxy="152.118.29.41:8080"
Collecting docker
  Downloading docker-4.3.1-py2.py3-none-any.whl (145 kB)
     |████████████████████████████████| 145 kB 466 kB/s
Collecting websocket-client>=0.32.0
  Downloading websocket_client-0.57.0-py2.py3-none-any.whl (200 kB)
     |████████████████████████████████| 200 kB 748 kB/s
Requirement already satisfied: six>=1.4.0 in /usr/lib/python3/dist-packages (from docker) (1.11.0)
Requirement already satisfied: requests!=2.18.0,>=2.14.2 in /usr/lib/python3/dist-packages (from docker) (2.18.4)
Installing collected packages: websocket-client, docker
Successfully installed docker-4.3.1 websocket-client-0.57.0
ridho@ubuntu-allinone:~$
```

17. Setelah itu jalankan Bootstrap servers dengan kolla deploy dependencies

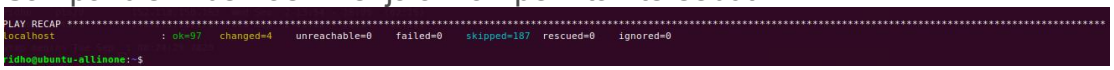


Sampai disini berhasil menjalankan perintah tersebut.

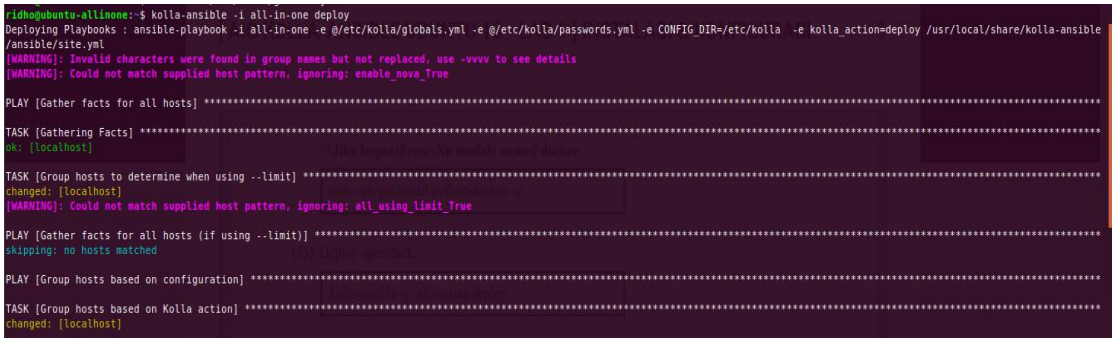
18. Jalankan pre-deployment check untuk host



Sampai disini berhasil menjalankan perintah tersebut.



19. Deploy openstack



Sampai disini sudah berhasil mendeploy openstack

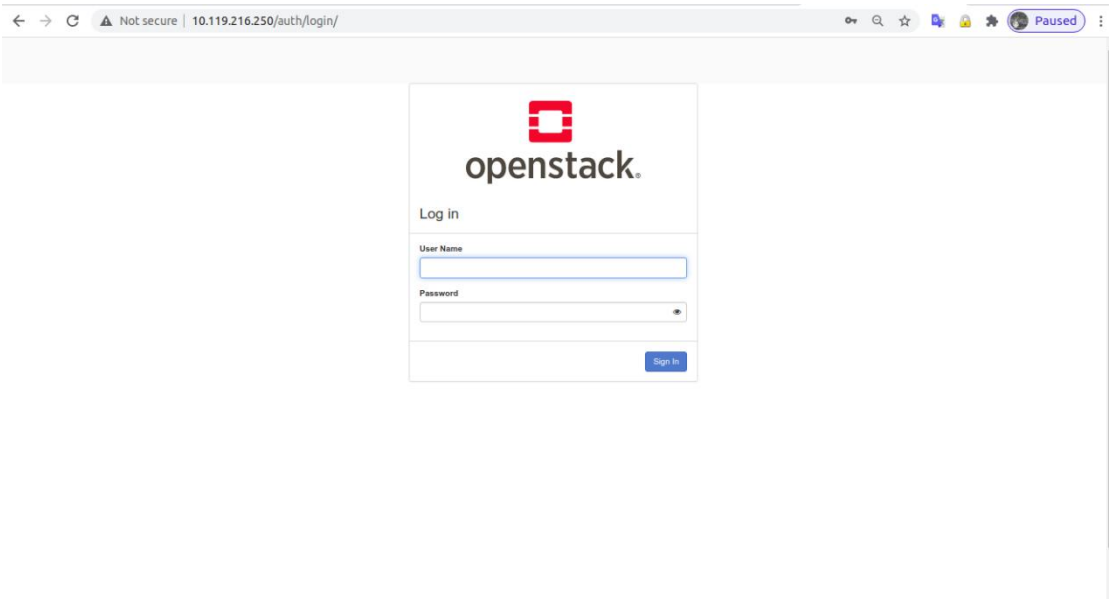
20. Install Openstack CLI Client

```
ridho@ubuntu-allinone:~$ sudo -H pip install python-openstackclient --proxy="152.118.29.41:8080"
Collecting python-openstackclient
  Downloading python_openstackclient-5.3.1-py3-none-any.whl (884 kB)
     |████████████████████████████████| 884 kB 2.6 MB/s
Collecting python-novaclient>=15.1.0
  Downloading python_novaclient-17.2.1-py3-none-any.whl (319 kB)
     |████████████████████████████████| 319 kB 16.0 MB/s
Requirement already satisfied: oslo.i18n>=3.15.3 in /usr/local/lib/python3.6/dist-packages (from python-openstackclient) (5.0.0)
Collecting python-keystoneclient>=3.22.0
  Downloading python_keystoneclient-4.1.0-py3-none-any.whl (390 kB)
     |████████████████████████████████| 390 kB 19.2 MB/s
Requirement already satisfied: oslo.utils>=3.33.0 in /usr/local/lib/python3.6/dist-packages (from python-openstackclient) (4.5.0)
Collecting osc-lib>=2.0.0
  Downloading osc_lib-2.2.1-py3-none-any.whl (83 kB)
     |████████████████████████████████| 83 kB 287 kB/s
Requirement already satisfied: six>=1.10.0 in /usr/lib/python3/dist-packages (from python-openstackclient) (1.11.0)
Requirement already satisfied: stevedore>=2.0.1 in /usr/local/lib/python3.6/dist-packages (from python-openstackclient) (3.2.1)
Requirement already satisfied: pbr!=2.1.0,>=2.0.0 in /usr/local/lib/python3.6/dist-packages (from python-openstackclient) (5.5.0)
Collecting cliff!=2.9.0,>=2.8.0
  Downloading cliff-3.4.0-py3-none-any.whl (76 kB)
     |████████████████████████████████| 76 kB 859 kB/s
Collecting openstacksdk>=0.48.0
  Downloading openstacksdk-0.49.0-py3-none-any.whl (1.3 MB)
     |████████████████████████████████| 1.3 MB 20.4 MB/s
Collecting python-cinderclient>=3.3.0
  Downloading python_cinderclient-7.1.0-py3-none-any.whl (271 kB)
     |████████████████████████████████| 271 kB 19.9 MB/s
Requirement already satisfied: iso8601>=0.1.11 in /usr/local/lib/python3.6/dist-packages (from python-novaclient>=15.1.0->python-openstackclient) (0.1.12)
```

21. OpenStack membutuhkan file openrc di mana kredensial untuk pengguna admin ditetapkan. Untuk menghasilkan file ini, jalankan seperti ini:

```
ridho@ubuntu-allinone:~$ kolla-ansible -i all-in-one post-deploy
Post-Deploying Playbooks : ansible-playbook -i all-in-one -e @/etc/kolla/globals.yml -e @/etc/kolla/passwords.yml -e CONFIG_DIR=/etc/kolla  /usr/local/share/kolla-ansible/ansible/post-deploy.yml
[WARNING]: Invalid characters were found in group names but not replaced, use -vvvv to see details

PLAY [Creating admin openrc file on the deploy node] ***************************************************************************************************************************************

TASK [Gathering Facts] *********************************************************************************************************************************************************************
ok: [localhost]

TASK [Template out admin-openrc.sh] ********************************************************************************************************************************************************
changed: [localhost]

PLAY RECAP *********************************************************************************************************************************************************************************
localhost                  : ok=2    changed=1    unreachable=0    failed=0    skipped=0    rescued=0    ignored=0

ridho@ubuntu-allinone:~$
```

22. Sampai disini sudah berhasil mendeploy openstack dengan kolla-ansible.



B. Konfigurasi External Network dan Router

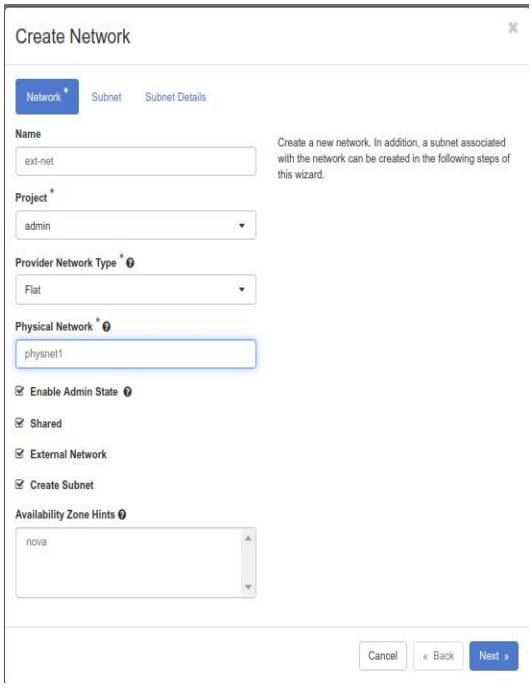
1. Cek bridge mapping

```
ridho@ubuntu-allinone:~$ sudo cat /etc/kolla/neutron-openvswitch-agent/openvswitch_agent.ini
[agent]
tunnel_types = vxlan
l2_population = true
arp_responder = true

[securitygroup]
firewall_driver = neutron.agent.linux.iptables_firewall.OVSHybridIptablesFirewallDriver

[ovs]
bridge_mappings = physnet1:br-ex
datapath_type = system
ovsdb_connection = tcp:127.0.0.1:6640
local_ip = 10.119.216.250

ridho@ubuntu-allinone:~$
```

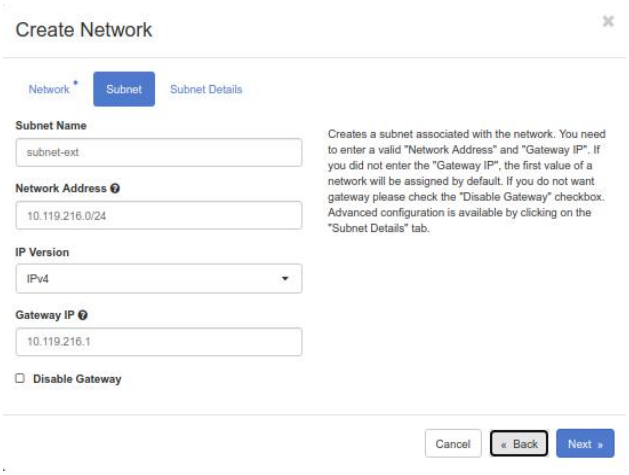
2. Membuat eksternal network lewat dashboard

   Admin - Network - Networks - Create Network

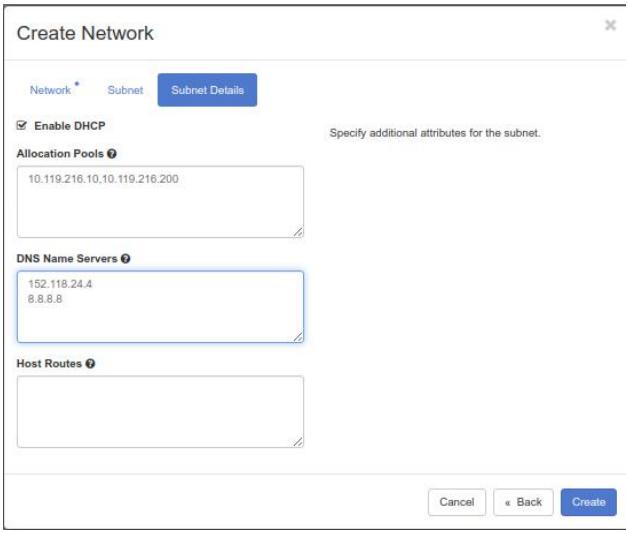
   - Network



- Subnet

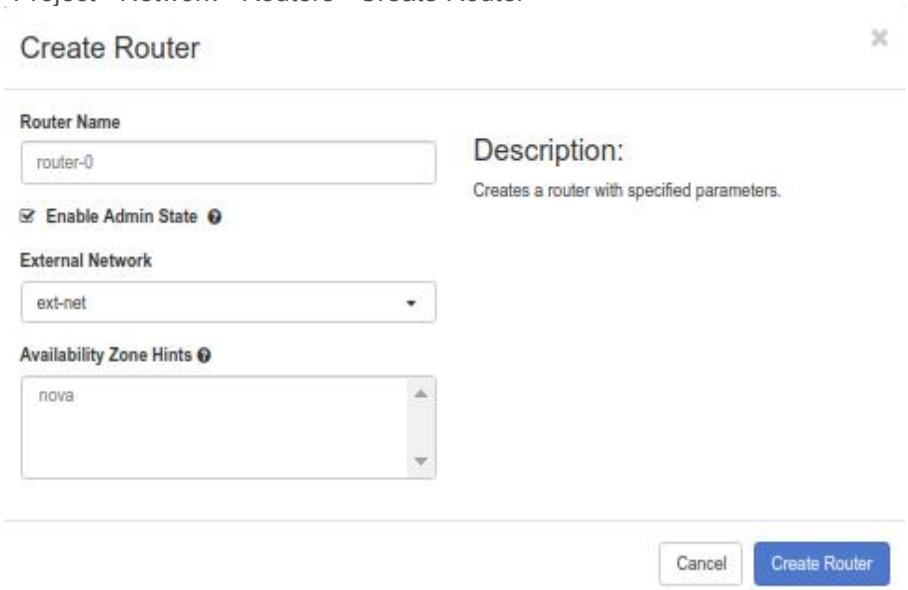


- Subnet Details



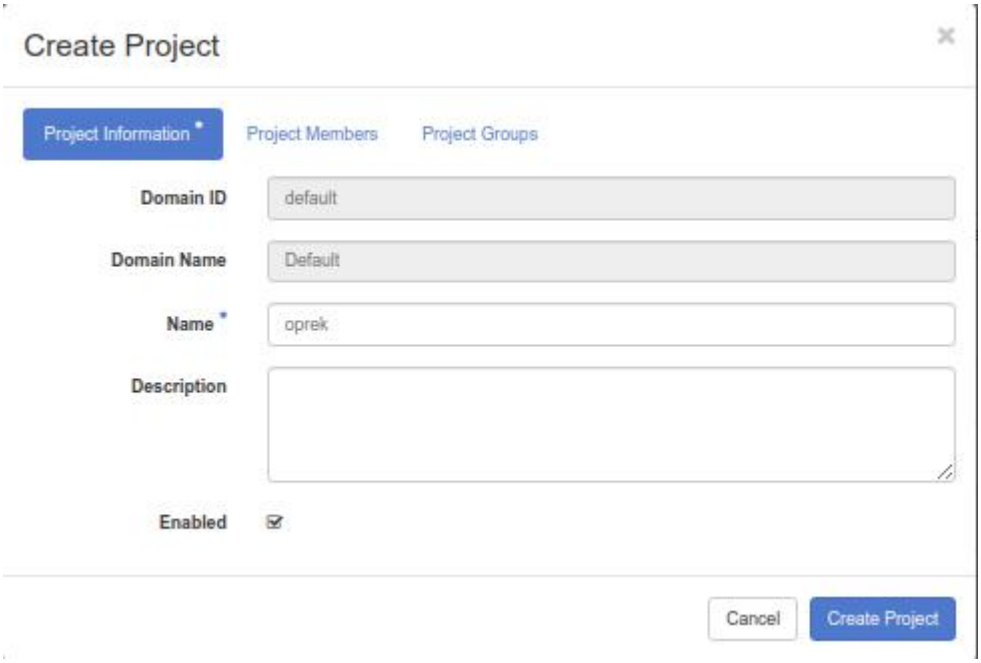
3. Membuat Router

Project - Network - Routers - Create Router

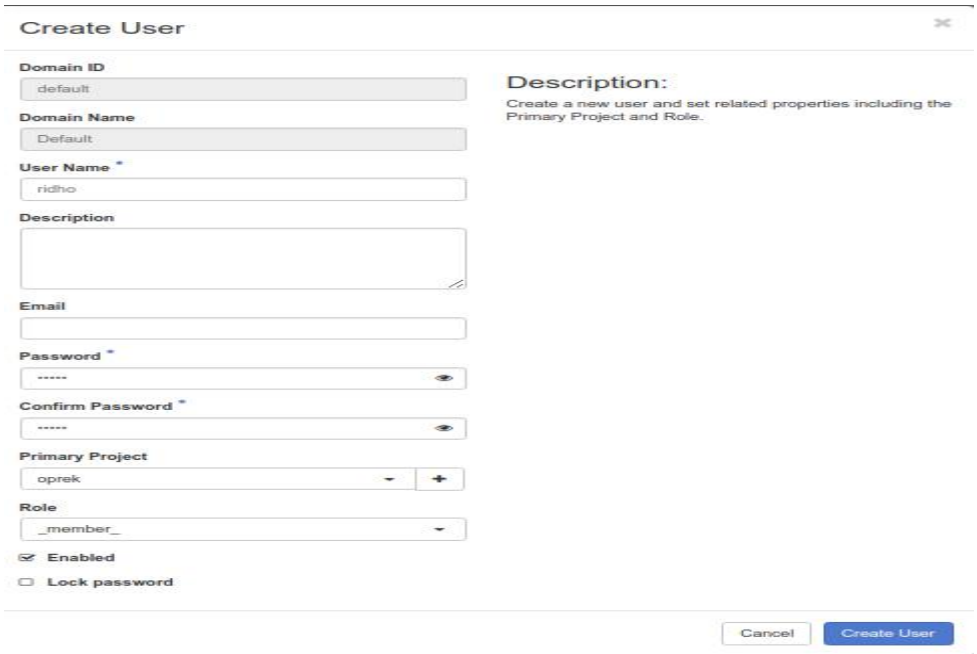


C. Membuat Instance

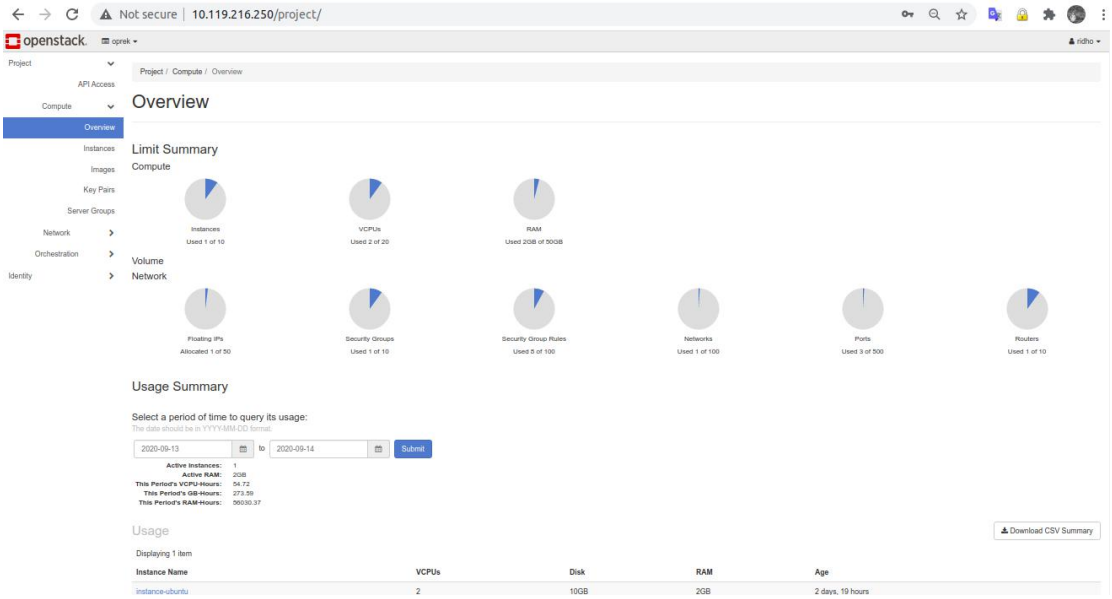
1. Create Project, dimana disini berfungsi sebagai tempat untuk membuat berapa instance.



2. Lalu membuat user

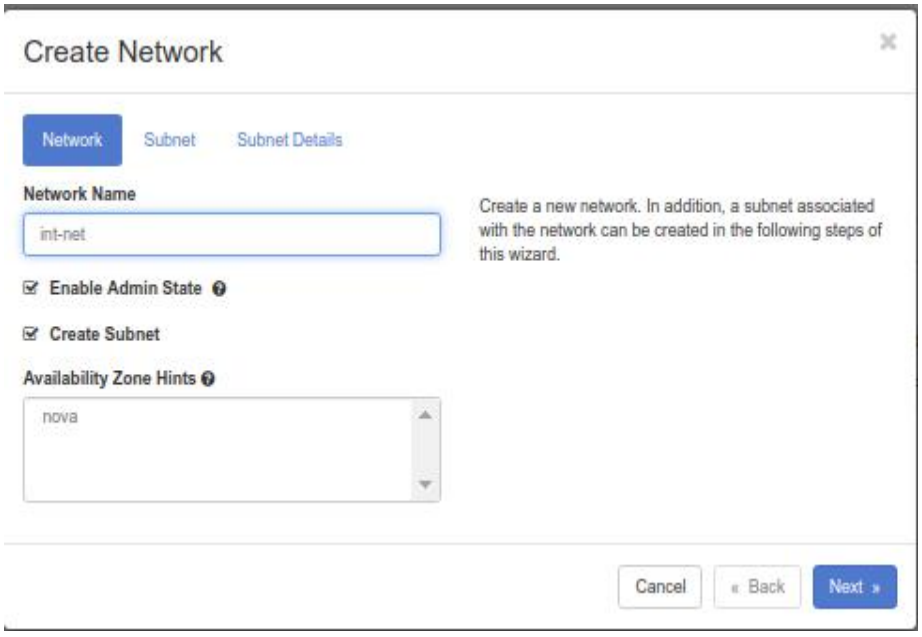


3. Setelah itu login,
jika berhasil seperti dibawah ini telah menggunakan user dan project yang telah dibuatkan.

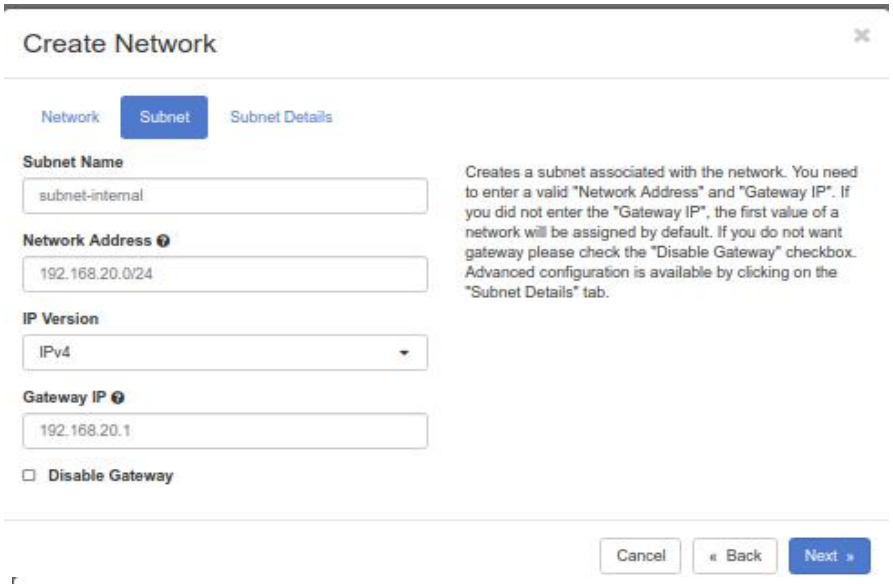


4. Kemudian membuat Network Internal

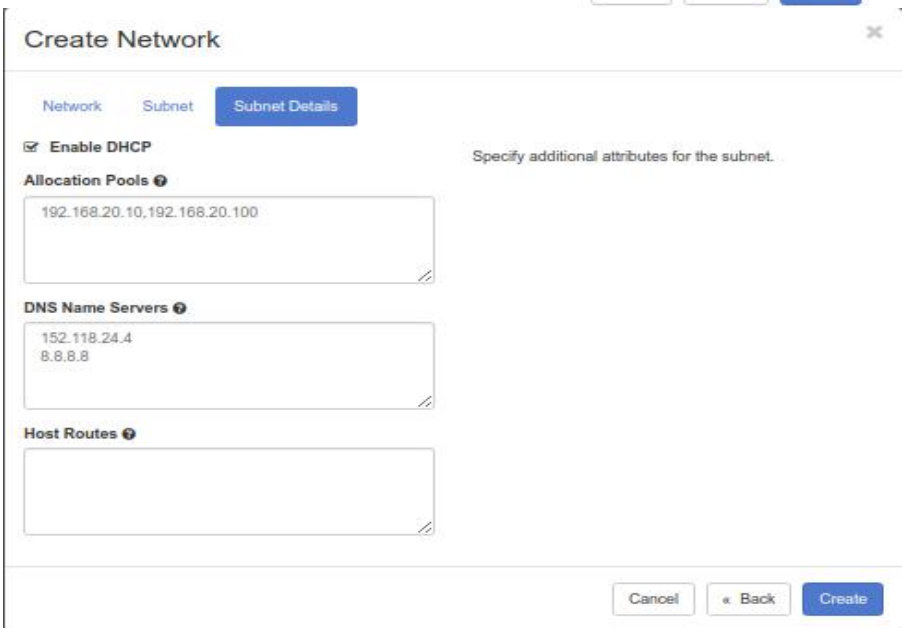
- Network
  Project - Network - Networks - Create Network



❖ Subnet



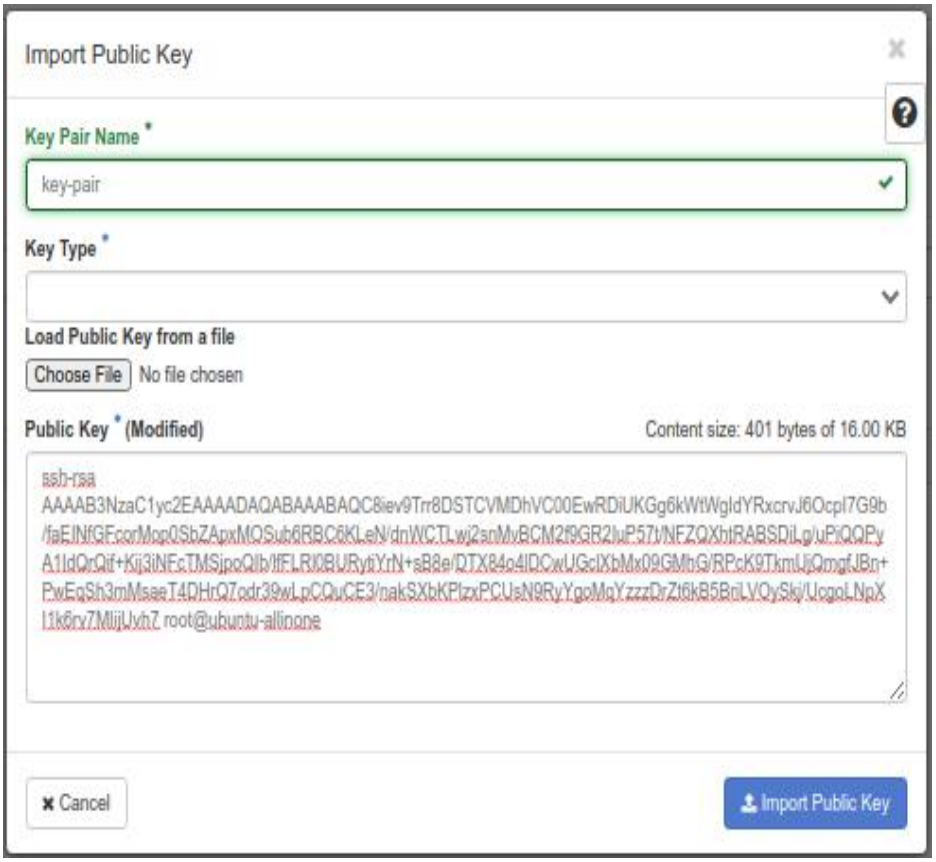
❖



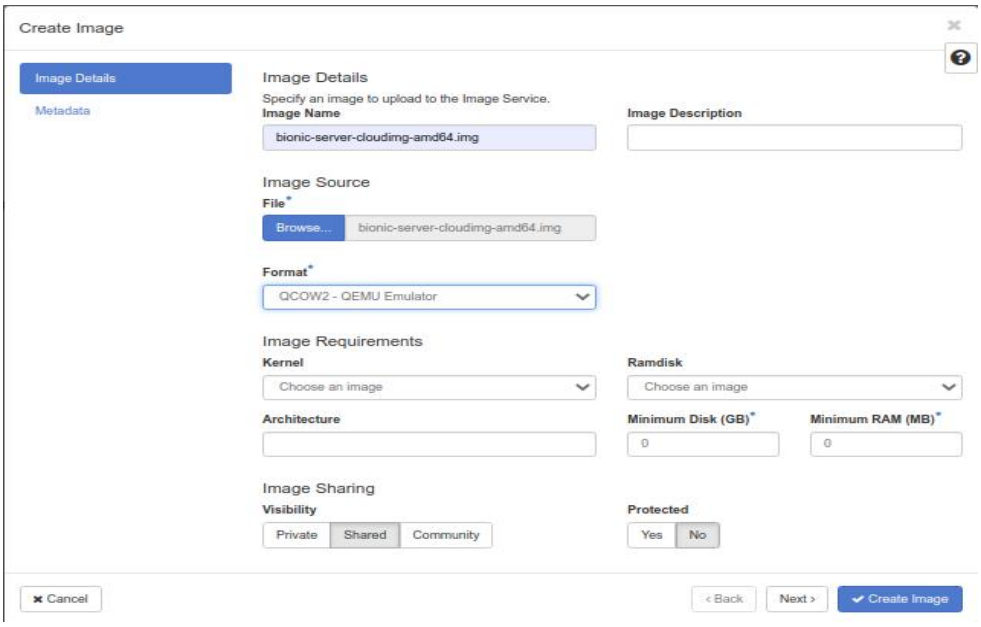
❖ Menambah Interface pada router ke network internal
Project - Network - Routers - Router - Interfaces - Add Interface

5. Keypair

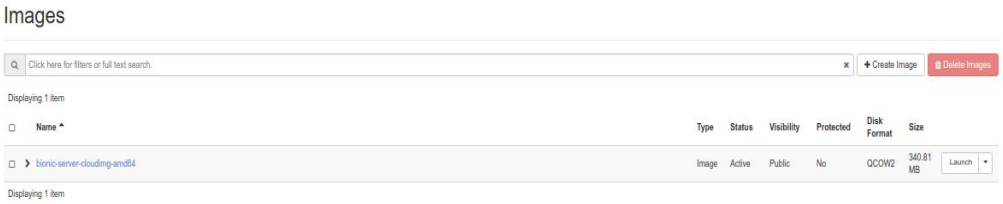
   - Generate public key id_rsa.pub di server, dengan menjalankan ssh-keygen
   - Copy id_rsa.pub
   - Import public key di dashboard
     - Project - Compute - Key Pairs - Import Public Key



6. Import Image
   - Project - Compute -Images - Create Image

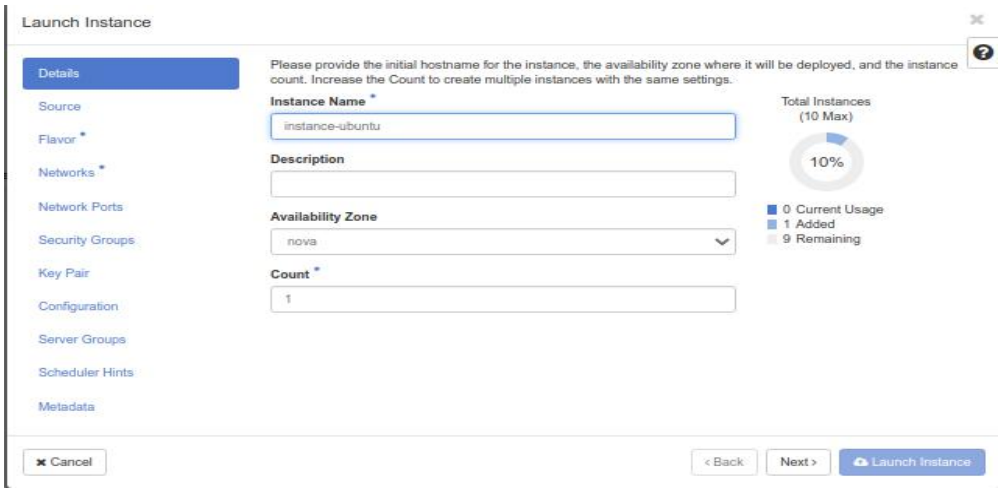


❖ Sampai disini image sudah berhasil di upload.

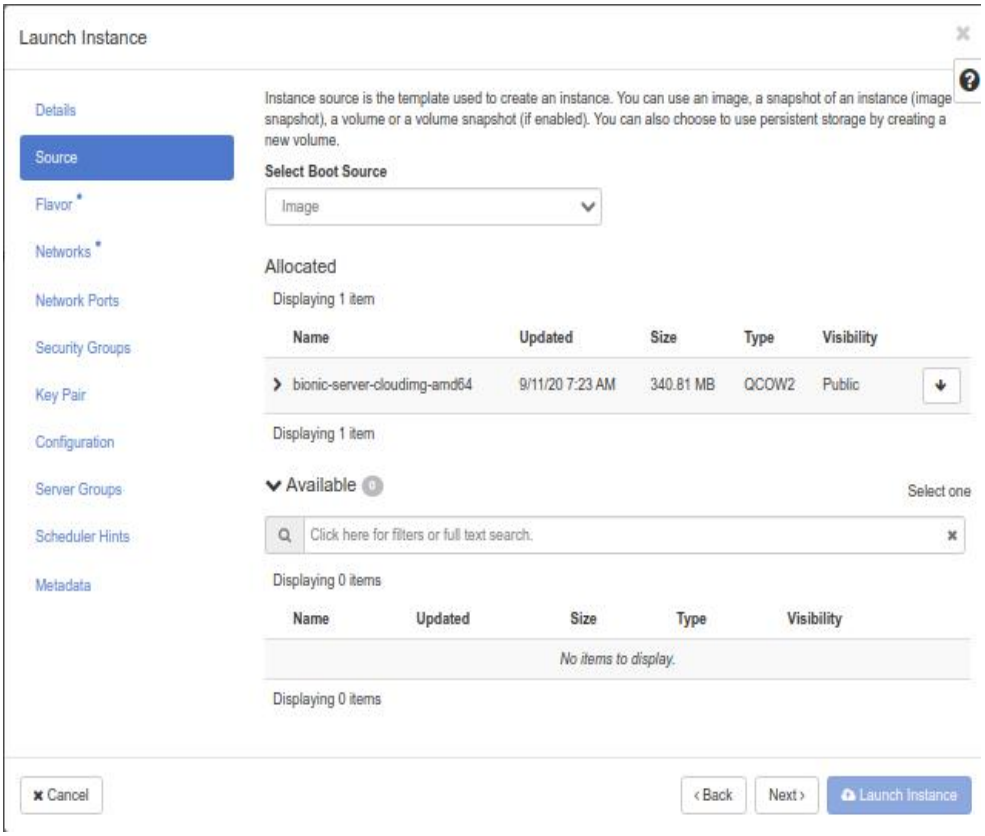


7. Setelah itu membuat instance
Project - Compute - Instances - Launch Instance

##Details
Instance-Name = Instance-ubuntu

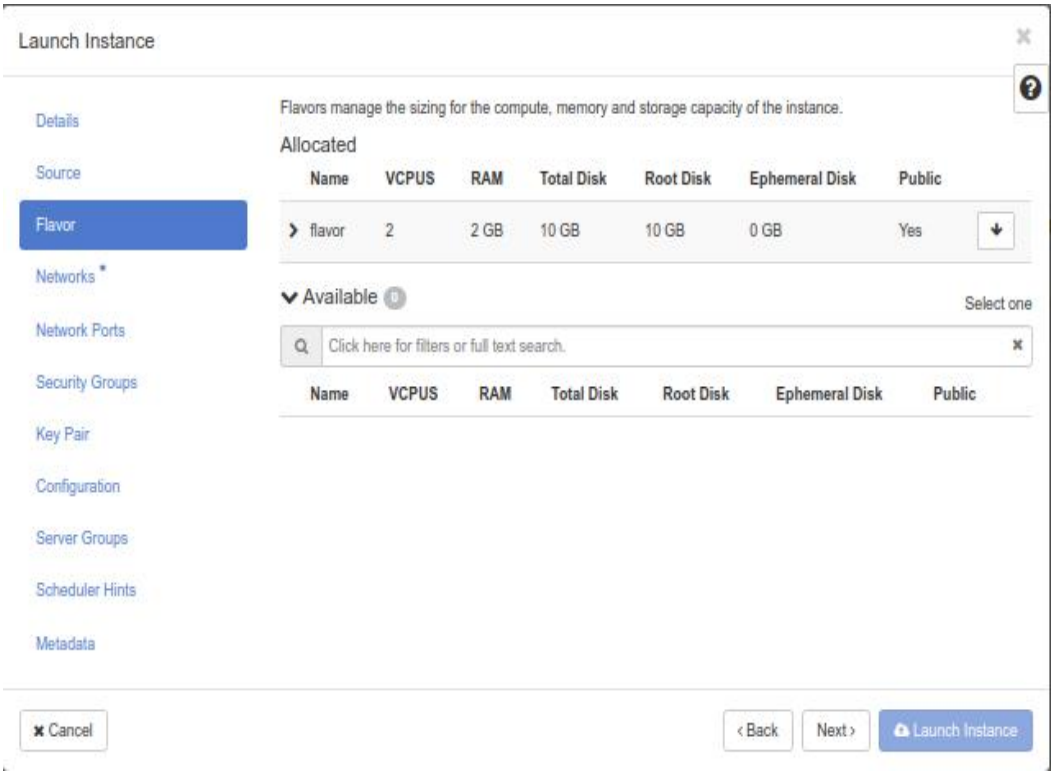


##Source
Allocated = “bionic”



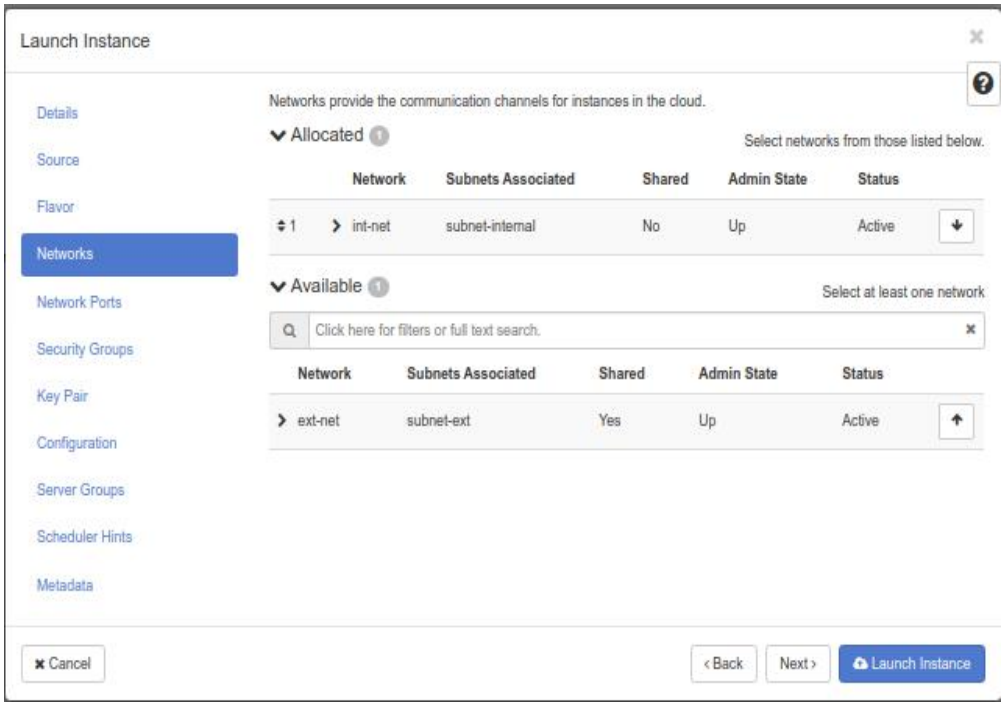
##Flavor

Allocated = “flavor”



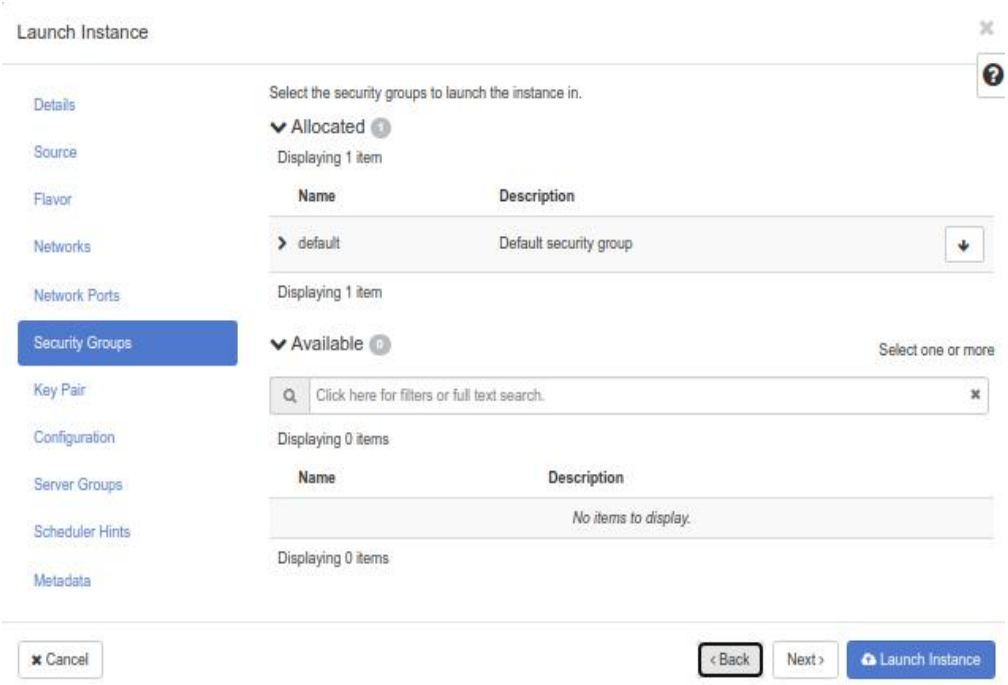
##Network

Allocated = “Int-net”



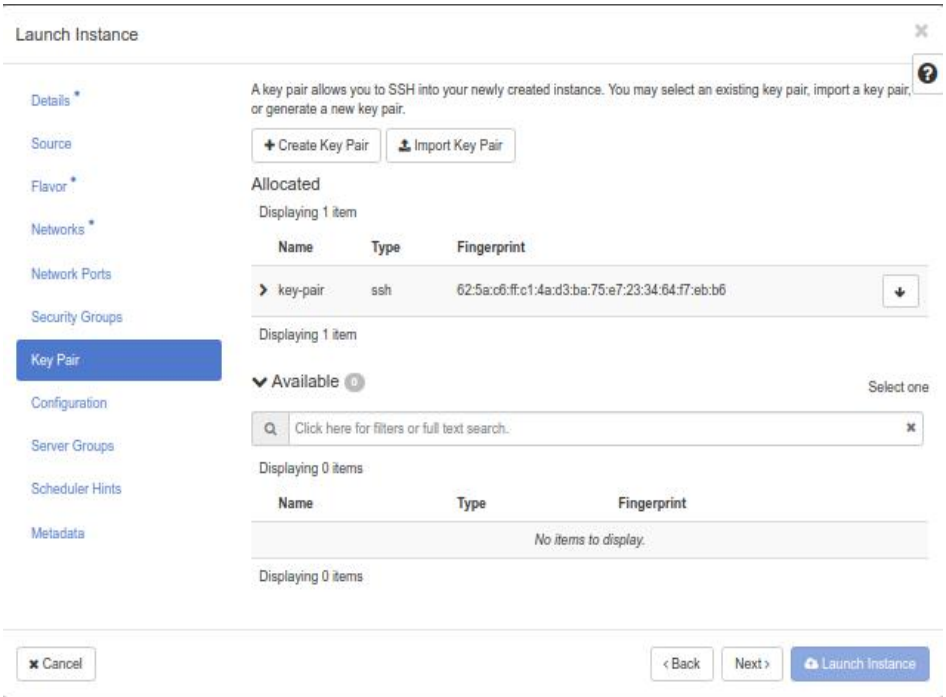
##Security Group

Allocated = “Default”



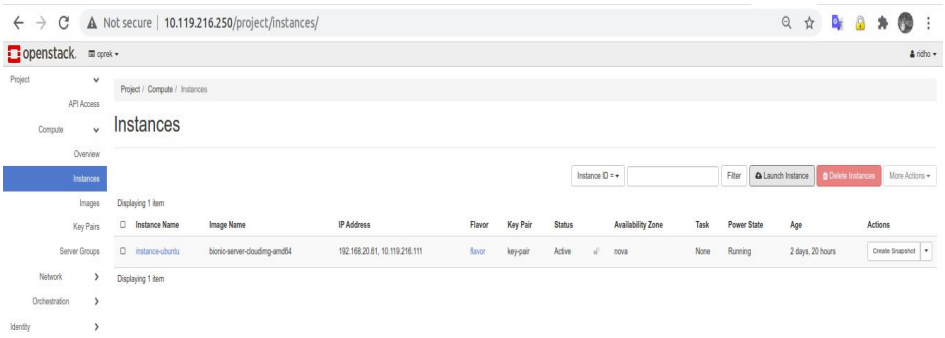
##Keypair

Allocated = “key-pair”

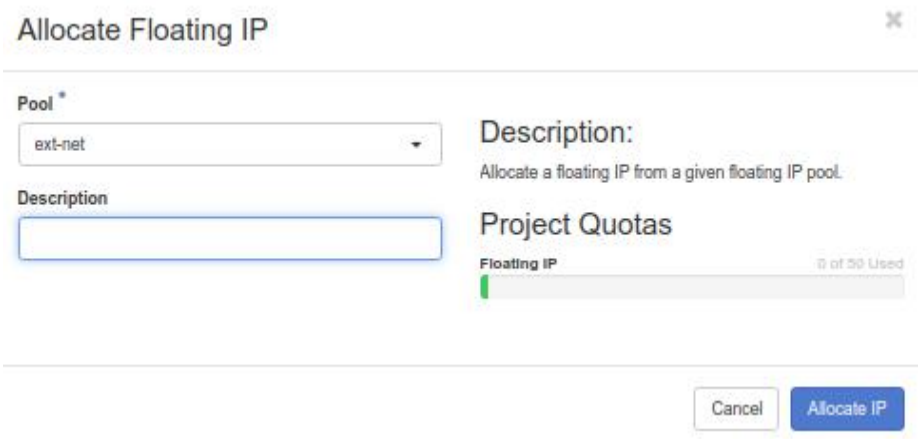


**Selain konfigurasi di atas biarkan default

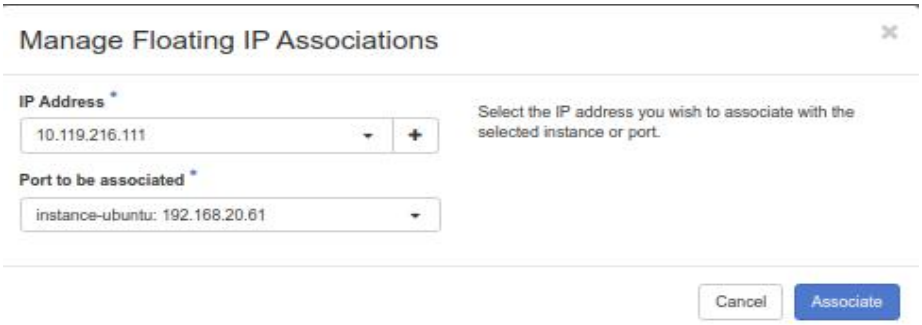
8. Sampai disini sudah bisa membuat instance



9. Associate Floating IP agar bisa diakses dari luar
Action - Associate Floating IP



Associate ke Instance ubuntu



10. SSH ke instance Ubuntu melalui floating IP