Ex No: 8 **Installation of OpenStack and creation of Virtual Machines**

01/09/25

AIM:

To set up OpenStack using DevStack and provision virtual machines for cloud resource deployment and management.

PROCEDURE:

1. Add a user named 'stack'.

```
tce@tce-VirtualBox:~$ sudo adduser stack
Adding user `stack' ...
Adding new group `stack' (1001) ...
Adding new user `stack' (1001) with group `stack' ...
Creating home directory `/home/stack' ...
Copying files from `/etc/skel' ...
Enter new UNIX password:
Retype new UNIX password:
passwd: password updated successfully
Changing the user information for stack
Enter the new value, or press ENTER for the default
        Full Name []: Openstack
        Room Number []:
        Work Phone []:
        Home Phone []:
        Other []:
Is the information correct? [Y/n] y
tce@tce-VirtualBox:~$
```

2. Grant passwordless sudo privileges to the stack user.

```
root@tce-VirtualBox:~# echo "stack ALL=(ALL) NOPASSWD: ALL" >> /etc/sudoers
root@tce-VirtualBox:~#
```

3. Install required packages.

```
root@tce-VirtualBox:~# apt-get install git sudo
Reading package lists... Done
Building dependency tree
Reading state information... Done
sudo is already the newest version (1.8.21p2-3ubuntu1.6).
sudo set to manually installed.
The following additional packages will be installed:
  git-man liberror-perl
Suggested packages:
  git-daemon-run | git-daemon-sysvinit git-doc git-el git-email git-gui gitk
  gitweb git-cvs git-mediawiki git-svn
The following NEW packages will be installed:
  git git-man liberror-perl
0 upgraded, 3 newly installed, 0 to remove and 56 not upgraded.
```

4. Switch to the stack user

```
root@tce-VirtualBox:~# su - stack
```

5. Clone DevStack from git.

```
stack@tce-VirtualBox:~$ git clone https://opendev.org/openstack/devstack.git
Cloning into 'devstack'...
remote: Enumerating objects: 51974, done.
remote: Counting objects: 100% (31551/31551), done.
remote: Compressing objects: 100% (10716/10716), done.
remote: Total 51974 (delta 30781), reused 20835 (delta 20835), pack-reused 20423
Receiving objects: 100% (51974/51974), 9.71 MiB | 1.34 MiB/s, done.
Resolving deltas: 100% (36901/36901), done.
stack@tce-VirtualBox:~$ cd devstack
stack@tce-VirtualBox:~/devstack$
```

6. Configure local.conf file.

- ADMIN_PASSWORD → used for Horizon admin/demo logins
- DATABASE_PASSWORD → root password for MySQL
- RABBIT_PASSWORD → RabbitMQ password
- SERVICE_PASSWORD → used by OpenStack services to talk to Keystone

```
stack@tce-VirtualBox:~/devstack$ nano local.conf
stack@tce-VirtualBox:~/devstack$
```

```
  GNU nano 6.2                                local.conf *
[[local|localrc]]

ADMIN_PASSWORD=secret
DATABASE_PASSWORD=$ADMIN_PASSWORD
RABBIT_PASSWORD=$ADMIN_PASSWORD
SERVICE_PASSWORD=$ADMIN_PASSWORD
```

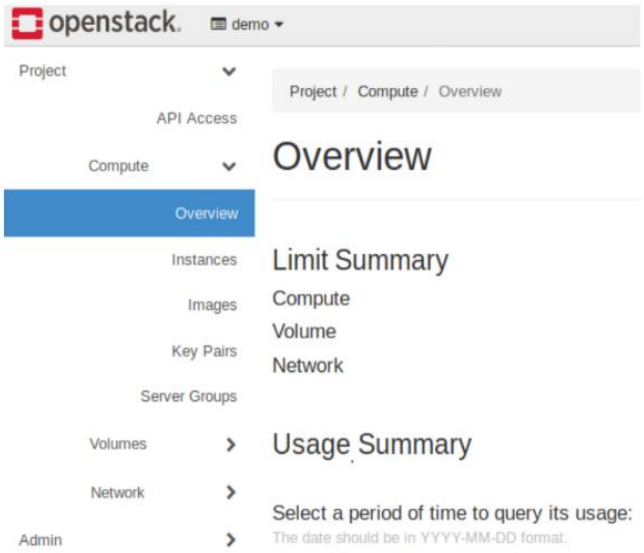
7. Run DevStack.

```
stack@tce-VirtualBox:~/devstack$ ./stack.sh
+ unset GREP_OPTIONS
+ unset LANG
+ unset LANGUAGE
+ LC_ALL=en_US.utf8
+ export LC_ALL
++ cut -d = -f 1
++ grep -E '^OS_'
++ env
+ unset
+ umask 022
+ PATH=/usr/local/sbin:/usr/local/bin:/usr/sbin:/usr/bin:/sb
```

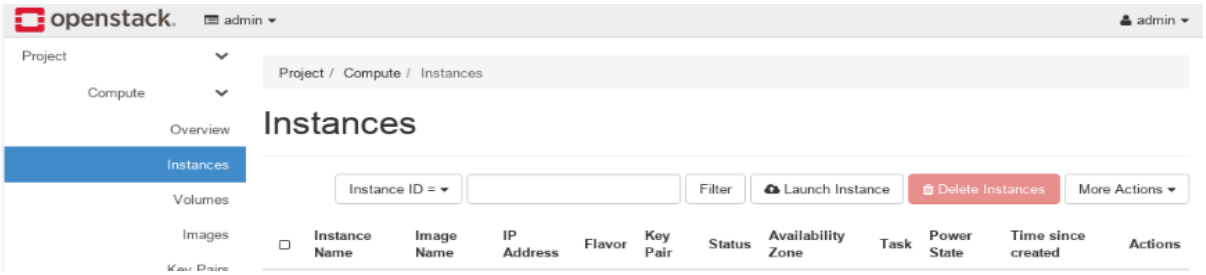
```
=========================
DevStack Component Timing
=========================
Total runtime          5366

run_process              71
test_with_retry           5
apt-get-update           27
pip_install             691
restart_apache_server    14
wait_for_service         23
git_timed              1942
apt-get                1571
=========================
```

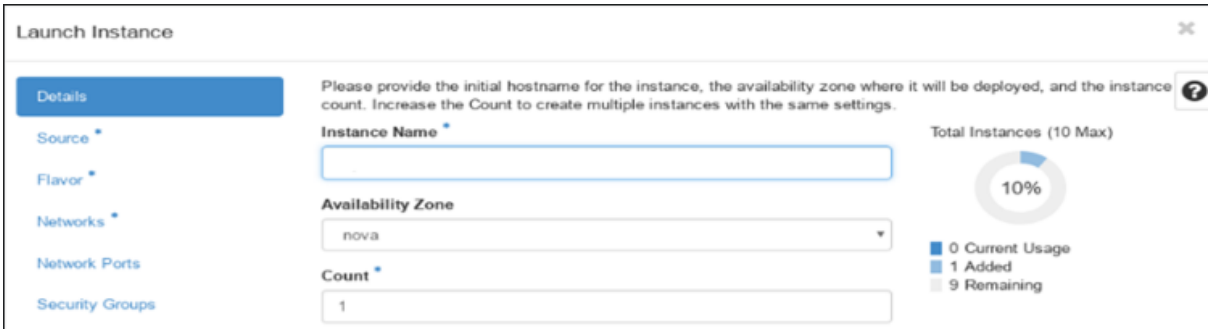
8. Access Horizon Dashboard
    - Open a browser and go to http://<your-machine-ip>/dashboard

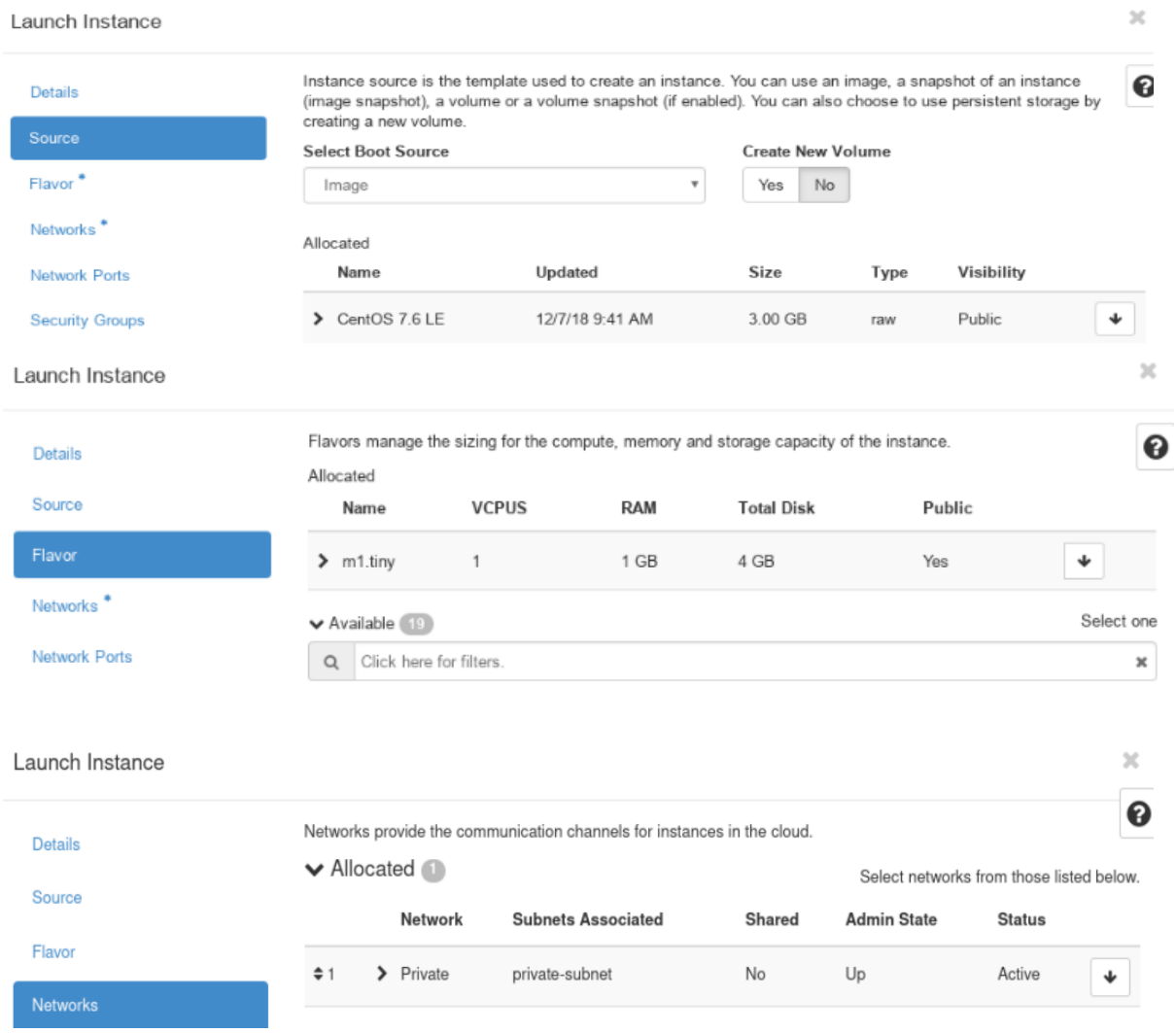


9. From the left menu, click Project → Compute → Instances → Click Launch Instance button

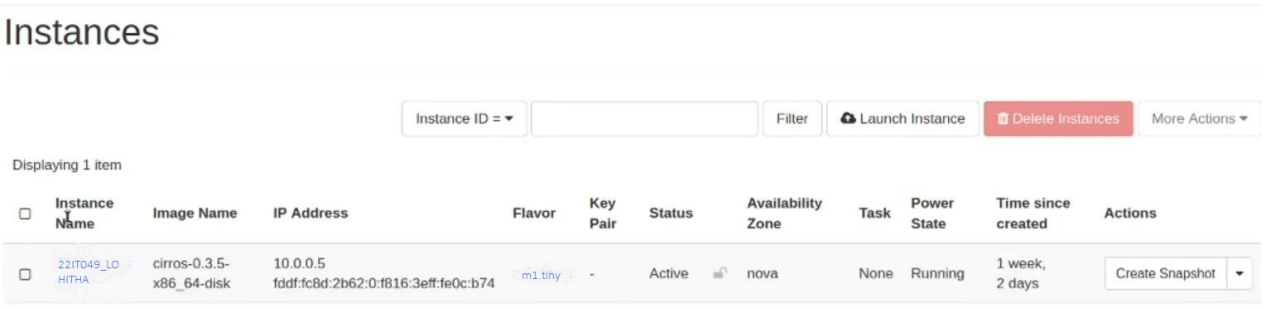


10. Fill in Details





11. Click Launch Instance



RESULT:

Thus, the OpenStack was successfully installed using DevStack, and virtual machines were created for cloud resource deployment and management.