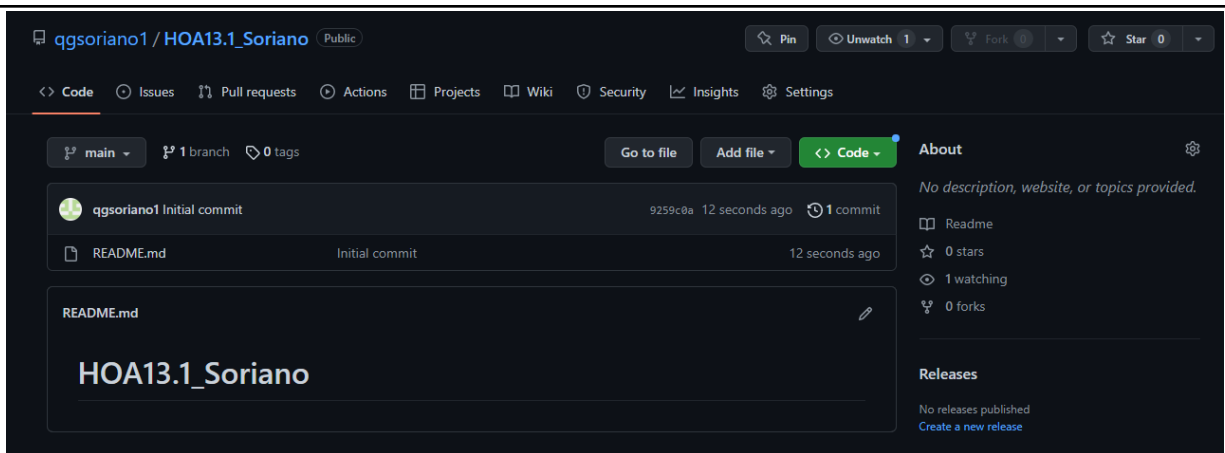


<b>Name: Gabriel Soriano</b>	<b>Date Performed: December 01, 2022</b>
<b>Course/Section: CPE31S23</b>	<b>Date Submitted: December , 2022</b>
<b>Instructor: Engr. Taylar</b>	<b>Semester and SY: 1st Sem - SY 2022-2023</b>
<b>Activity 13: OpenStack Prerequisite Installation</b>	
<b>1. Objectives</b>	
Create a workflow to install OpenStack using Ansible as your Infrastructure as Code (IaC).	
<b>2. Intended Learning Outcomes</b>	
<ol style="list-style-type: none"> <li>1. Analyze the advantages and disadvantages of cloud services</li> <li>2. Evaluate different Cloud deployment and service models</li> <li>3. Create a workflow to install and configure OpenStack base services using Ansible as documentation and execution.</li> </ol>	
<b>3. Resources</b>	
<p>Oracle VirtualBox (Hypervisor)</p> <p>1x Ubuntu VM or Centos VM</p>	
<b>4. Tasks</b>	
<ol style="list-style-type: none"> <li>1. Create a new repository for this activity.</li> <li>2. Create a playbook that converts the steps in the following items in <a href="https://docs.openstack.org/install-guide/">https://docs.openstack.org/install-guide/</a> <ol style="list-style-type: none"> <li>a. NTP</li> <li>b. OpenStack packages</li> <li>c. SQL Database</li> <li>d. Message Queue</li> <li>e. Memcached</li> <li>f. Etcd</li> <li>g. Create different plays in installing per server type (controller, compute etc.) and identify it as a group in Inventory file.</li> <li>h. Add, commit and push it to your GitHub repo.</li> </ol> </li> </ol>	
<b>5. Output</b>	
<b>SCREENSHOTS:</b>	



- This shows the successful creation of a new github repository named HOA 13.1.

```
GNU nano 5.4 inventory *
[workstation]
192.168.56.104

[remote_servers]
192.168.56.105
192.168.56.106
```

- This shows the content of the inventory file created for the connections between the workstation and the remote servers.

```
GNU nano 5.4 ansible.cfg
[defaults]
inventory = inventory
host_key_chcking = False

deprecation_warnings = False
remote_user = soriano2
private_key_file = ~/.ssh/
```

- This shows the content of the ansible.cfg file

```

GNU nano 5.4 openS.yml
---
- hosts: all
  become: true
  become_method: sudo
  become_user: root
  pre_tasks:

  - name: update repository index (CentOS)
    tags: always
    dnf:
      update_cache: yes
      changed_when: false
      when: ansible_distribution == "CentOS"

  - name: install updates (Ubuntu)
    tags: always
    apt:
      update_cache: yes
      changed_when: false
      when: ansible_distribution == "Ubuntu"

- hosts: all
  become: true
  roles:
    - install

```

- This is the content of the openS.yml ansible playbook file. It contains the pre tasks and updates needed before the installations.

```

TASK [Install ntp client package] *****
fatal: [localhost]: FAILED! => ("changed": false, "msg": "Could not import the dnf python module using /usr/bin/python (3.
9.2 (default, Feb 28 2021, 17:03:44) [GCC 10.2.1 20210110]). Please install 'python3-dnf' or 'python2-dnf' package or ensu
re you have specified the correct ansible_python_interpreter. (attempted ['/usr/libexec/platform-python', '/usr/bin/python
3', '/usr/bin/python2', '/usr/bin/python'])", "results": [])

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

qgsoriano1@cloudshell:~/HOA13.1_Soriano$ nano openS.yml
qgsoriano1@cloudshell:~/HOA13.1_Soriano$ ansible-playbook --ask-become-pass openS.yml
/home/qgsoriano1/.local/lib/python2.7/site-packages/ansible/parsing/vault/_init_.py:44: CryptographyDeprecationWarning:
Python 2 is no longer supported by the Python core team. Support for it is now deprecated in cryptography, and will be rem
oved in the next release.
  from cryptography.exceptions import InvalidSignature
BECOME password:

PLAY [all] *****

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

TASK [update repository index (CentOS)] *****
skipping: [localhost]

TASK [install updates (Ubuntu)] *****
skipping: [localhost]

TASK [Install ntp client package] *****
ok: [localhost]

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

qgsoriano1@cloudshell:~/HOA13.1_Soriano$

```

- This shows the first run of the openS.yml for the installation of the ntp packages, and turns out that it was successful.

```

qgsoriano1@cloudshell:~/HOA13.1_Soriano$ ls
ansible.cfg inventory openS.yml README.md
qgsoriano1@cloudshell:~/HOA13.1_Soriano$ nano openS.yml
qgsoriano1@cloudshell:~/HOA13.1_Soriano$ nano openS.yml
qgsoriano1@cloudshell:~/HOA13.1_Soriano$ ansible-playbook --ask-become-pass openS.yml
/home/qgsoriano1/.local/lib/python2.7/site-packages/ansible/parsing/vault/_init_.py:44: CryptographyDeprecationWarning:
Python 2 is no longer supported by the Python core team. Support for it is now deprecated in cryptography, and will be rem
oved in the next release.
    from cryptography.exceptions import InvalidSignature
BECOME password:

PLAY [all] *****

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

TASK [update repository index (CentOS)] *****
skipping: [localhost]

TASK [install updates (Ubuntu)] *****
skipping: [localhost]

TASK [Install ntp client package] *****
ok: [localhost]

TASK [Install openstack packages] *****
Fatal: [localhost]: FAILED! => !"changed": false, "msg": "No package matching 'openstack' is available")

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

qgsoriano1@cloudshell:~/HOA13.1_Soriano$
qgsoriano1@cloudshell:~/HOA13.1_Soriano$

```

- This is the first run and try for installing the openstack packages, turns out that it was a failure, and will try to resolve this.

```

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

qgsoriano1@cloudshell:~/HOA13.1_Soriano$
qgsoriano1@cloudshell:~/HOA13.1_Soriano$ nano openS.yml
qgsoriano1@cloudshell:~/HOA13.1_Soriano$ ansible-playbook --ask-become-pass openS.yml
/home/qgsoriano1/.local/lib/python2.7/site-packages/ansible/parsing/vault/_init_.py:44: CryptographyDeprecationWarning:
Python 2 is no longer supported by the Python core team. Support for it is now deprecated in cryptography, and will be rem
oved in the next release.
    from cryptography.exceptions import InvalidSignature
BECOME password:

PLAY [all] *****

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

TASK [update repository index (CentOS)] *****
skipping: [localhost]

TASK [install updates (Ubuntu)] *****
skipping: [localhost]

TASK [Install ntp client package] *****
ok: [localhost]

TASK [Install openstack packages] *****
changed: [localhost]

PLAY RECAP *****
localhost                : ok=3    changed=1    unreachable=0    failed=0    skipped=2    rescued=0    ignored=0

qgsoriano1@cloudshell:~/HOA13.1_Soriano$
qgsoriano1@cloudshell:~/HOA13.1_Soriano$

```

- This the second run of the openS.yml for the trial of installing the openstack packages, and it went successful.

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

qgsoriano1@cloudshell:~/HOA13.1_Soriano$ nano openS.yml
qgsoriano1@cloudshell:~/HOA13.1_Soriano$ ansible-playbook --ask-become-pass openS.yml
/home/qgsoriano1/.local/lib/python2.7/site-packages/ansible/parsing/vault/__init__.py:44: CryptographyDeprecationWarning:
Python 2 is no longer supported by the Python core team. Support for it is now deprecated in cryptography, and will be removed in the next release.
  from cryptography.exceptions import InvalidSignature
BECOME password:

PLAY [all] *****

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

TASK [update repository index (CentOS)] *****
skipping: [localhost]

TASK [install updates (Ubuntu)] *****
skipping: [localhost]

TASK [Install ntp client package] *****
ok: [localhost]

TASK [Install openstack packages] *****
ok: [localhost]

TASK [Install SQL database] *****
fatal: [localhost]: FAILED! => {"changed": false, "msg": "No package matching 'mysql-server' is available"}

PLAY RECAP *****
localhost : ok=3 changed=0 unreachable=0 failed=1 skipped=2 rescued=0 ignored=0

qgsoriano1@cloudshell:~/HOA13.1_Soriano$
```

- This the trial of installing the sql database but turns out unsuccessful.

```

PLAY RECAP *****
localhost          : ok=3    changed=0    unreachable=0    failed=1    skipped=2    rescued=0    ignored=0

qgsoriano1@cloudshell:~/HOA13.1_Soriano$ nano openS.yml
qgsoriano1@cloudshell:~/HOA13.1_Soriano$ ansible-playbook --ask-become-pass openS.yml
/home/qgsoriano1/.local/lib/python2.7/site-packages/ansible/parsing/vault/__init__.py:44: CryptographyDeprecationWarning:
Python 2 is no longer supported by the Python core team. Support for it is now deprecated in cryptography, and will be rem
oved in the next release.
  from cryptography.exceptions import InvalidSignature
BECOME password:

PLAY [all] *****

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

TASK [update repository index (CentOS)] *****
skipping: [localhost]

TASK [install updates (Ubuntu)] *****
skipping: [localhost]

TASK [Install ntp client package] *****
ok: [localhost]

TASK [Install openstack packages] *****
ok: [localhost]

TASK [Install SQL database] *****
changed: [localhost]

PLAY RECAP *****
localhost          : ok=4     changed=1    unreachable=0    failed=0    skipped=2    rescued=0    ignored=0

qgsoriano1@cloudshell:~/HOA13.1_Soriano$

```

- Before this successful run, there were a lot of errors encountered like errors in the python3 libraries, and the first two tasks were having errors several times, but luckily it was resolved. And now the sql is also installed.

```

$ ^--- all spaces here.
qgsoriano1@cloudshell:~/HOA13.1_Soriano$ nano openS.yml
qgsoriano1@cloudshell:~/HOA13.1_Soriano$ ansible-playbook --ask-become-pass openS.yml
/home/qgsoriano1/.local/lib/python2.7/site-packages/ansible/parsing/vault/__init__.py:44: CryptographyDeprecationWarning:
Python 2 is no longer supported by the Python core team. Support for it is now deprecated in cryptography, and will be rem
oved in the next release.
  from cryptography.exceptions import InvalidSignature
BECOME password:

PLAY [all] *****

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

TASK [update repository index (CentOS)] *****
skipping: [localhost]

TASK [install updates (Ubuntu)] *****
skipping: [localhost]

TASK [Install ntp client package] *****
ok: [localhost]

TASK [Install openstack packages] *****
ok: [localhost]

TASK [Install SQL database] *****
ok: [localhost]

TASK [Install message queue] *****
changed: [localhost]

PLAY RECAP *****
localhost          : ok=5     changed=1    unreachable=0    failed=0    skipped=2    rescued=0    ignored=0

qgsoriano1@cloudshell:~/HOA13.1_Soriano$

```

- This is the first trial run for the installation of the message queue, there were no errors encountered at all, and it is successful.

```
/home/qgsoriano1/.local/lib/python2.7/site-packages/ansible/parsing/vault/_init_.py:44: CryptographyDeprecationWarning:
Python 2 is no longer supported by the Python core team. Support for it is now deprecated in cryptography, and will be removed in the next release.
  from cryptography.exceptions import InvalidSignature
BECOME password:

PLAY [all] *****

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

TASK [update repository index (CentOS)] *****
skipping: [localhost]

TASK [install updates (Ubuntu)] *****
skipping: [localhost]

TASK [Install ntp client package] *****
ok: [localhost]

TASK [Install openstack packages] *****
ok: [localhost]

TASK [Install SQL database] *****
ok: [localhost]

TASK [Install message queue] *****
ok: [localhost]

TASK [Install memcached] *****
changed: [localhost]

PLAY RECAP *****
localhost                : ok=6    changed=1    unreachable=0    failed=0    skipped=2    rescued=0    ignored=0

qgsoriano1@cloudshell:~/HOA13.1_Soriano$
```

- This shows the first trial run for the attempt to install memcached. There were no errors encountered, and the installation was successful.

```

Python 2 is no longer supported by the Python core team. Support for it is now deprecated in cryptography, and will be removed in the next release.
from cryptography.exceptions import InvalidSignature
BECOME password:

PLAY [all] *****

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

TASK [update repository index (CentOS)] *****
skipping: [localhost]

TASK [install updates (Ubuntu)] *****
skipping: [localhost]

TASK [Install openstack packages] *****
ok: [localhost]

TASK [Install SQL database] *****
changed: [localhost]

TASK [Install message queue] *****
changed: [localhost]

TASK [Install memcached] *****
changed: [localhost]

TASK [Install etcd] *****
changed: [localhost]

PLAY RECAP *****
localhost : ok=6    changed=4    unreachable=0    failed=0    skipped=2    rescued=0    ignored=0

qgsoriano1@cloudshell:~/HOA13.1_Soriano$ nano openS.yml
qgsoriano1@cloudshell:~/HOA13.1_Soriano$

```

- This shows that the trial run for the installation of the etcd is also successful.



```

Changes not staged for commit:
  (use "git add <file>..." to update what will be committed)
  (use "git restore <file>..." to discard changes in working directory)
        modified:   openS.yml

Untracked files:
  (use "git add <file>..." to include in what will be committed)
        get-pip.py
        get-pip.py.1
        get-pip.py.2
        get-pip.py.3

no changes added to commit (use "git add" and/or "git commit -a")
qgsoriano1@cloudshell:~/HOA13.1_Soriano$ git add *
qgsoriano1@cloudshell:~/HOA13.1_Soriano$ git commit -m "finished in december 05, 2022 at 09:05pm"
[main acdf3b5] finished in december 05, 2022 at 09:05pm
 5 files changed, 128860 insertions(+), 5 deletions(-)
 create mode 100644 get-pip.py
 create mode 100644 get-pip.py.1
 create mode 100644 get-pip.py.2
 create mode 100644 get-pip.py.3
qgsoriano1@cloudshell:~/HOA13.1_Soriano$ git push origin main
Enumerating objects: 6, done.
Counting objects: 100% (6/6), done.
Delta compression using up to 2 threads
Compressing objects: 100% (4/4), done.
Writing objects: 100% (4/4), 1.96 MiB | 1.34 MiB/s, done.
Total 4 (delta 0), reused 0 (delta 0), pack-reused 0
To github.com:qgsoriano1/HOA13.1_Soriano.git
   a008565..acdf3b5  main -> main
qgsoriano1@cloudshell:~/HOA13.1_Soriano$ git status
On branch main
Your branch is up to date with 'origin/main'.

nothing to commit, working tree clean
qgsoriano1@cloudshell:~/HOA13.1_Soriano$

```

9:09 Mon, 5 Dec

Web Conferences: CPE 017 x qgsoriano1/HOA13.1\_Soriano x +

github.com/qgsoriano1/HOA13.1\_Soriano

qgsoriano1 / HOA13.1\_Soriano Public

Pin Unwatch 1 Fork 0 Star 0

<> Code Issues Pull requests Actions Projects Wiki Security Insights Settings

main 1 branch 0 tags Go to file Add file <> Code About

qgsoriano1 finished in december 05, 2022 at 09:05pm acdf3b5 3 minutes ago 3 commits

README.md	Initial commit	4 days ago
ansible.cfg	initial	4 days ago
get-pip.py	finished in december 05, 2022 at 09:05pm	3 minutes ago
get-pip.py.1	finished in december 05, 2022 at 09:05pm	3 minutes ago
get-pip.py.2	finished in december 05, 2022 at 09:05pm	3 minutes ago
get-pip.py.3	finished in december 05, 2022 at 09:05pm	3 minutes ago
inventory	initial	4 days ago
openS.yml	finished in december 05, 2022 at 09:05pm	3 minutes ago

README.md

HOA13.1\_Soriano

About

No description, website, or topics provided.

Readme

0 stars

1 watching

0 forks

Releases

No releases published

Create a new release

Packages

No packages published

Publish your first package

Languages

- This shows the successful git adding, committing, and pushing from the cli to the github repository.

Github link: [git@github.com](mailto:git@github.com):qgsoriano1/HOA13.1\_Soriano.git

[https://github.com/qgsoriano1/HOA13.1\\_Soriano.git](https://github.com/qgsoriano1/HOA13.1_Soriano.git)

### **Reflections:**

Answer the following:

1. What are the benefits of implementing OpenStack?

- By offering a platform with on-demand, resource pooling, self-service, highly elastic, and measured services capabilities, OpenStack increases business agility, availability, and efficiency. That's because cloud computing is what this sounds like. Your primary tool for creating your own cloud infrastructure is OpenStack. End users and business units won't have to wait days or weeks to start using the network services and applications they require thanks to quicker IT resource deployment. They will then be better equipped to begin and complete projects earlier than they otherwise could. OpenStack private clouds still provide a substantial amount of scalability even though they are less scalable than public clouds. Servers can still instantly start up and shut down. Because of this, IT resources may be briefly switched from other departments to the one that needs them the most, if, for example, one department experiences a spike in the demand for computing resources.

### **Conclusions:**

While performing this activity, I have encountered a lot of errors, specifically about the libraries in the pip python3 installation. There are sudden runs of the trial installation where some of the tasks suddenly go red and have errors. Somehow, I have outdone these errors myself and successfully performed all of the requirements posted above, there are also step by step screenshots on how the activity was done.