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Course/Section: CPE31S24	**Date Submitted: 10/24/2022**
Instructor: Dr. Jonathan Taylar	**Semester and SY: 1st sem 2022-2023**

Activity 9: Install, Configure, and Manage Performance Monitoring tools

1. Objectives

Create and design a workflow that installs, configure and manage enterprise performance tools using Ansible as an Infrastructure as Code (IaC) tool.

2. Discussion

Performance monitoring is a type of monitoring tool that identifies current resource consumption of the workload, in this page we will discuss multiple performance monitoring tool.

Prometheus

Prometheus fundamentally stores all data as timeseries: streams of timestamped values belonging to the same metric and the same set of labeled dimensions. Besides stored time series, Prometheus may generate temporary derived time series as the result of queries. Source: Prometheus - Monitoring system & time series database

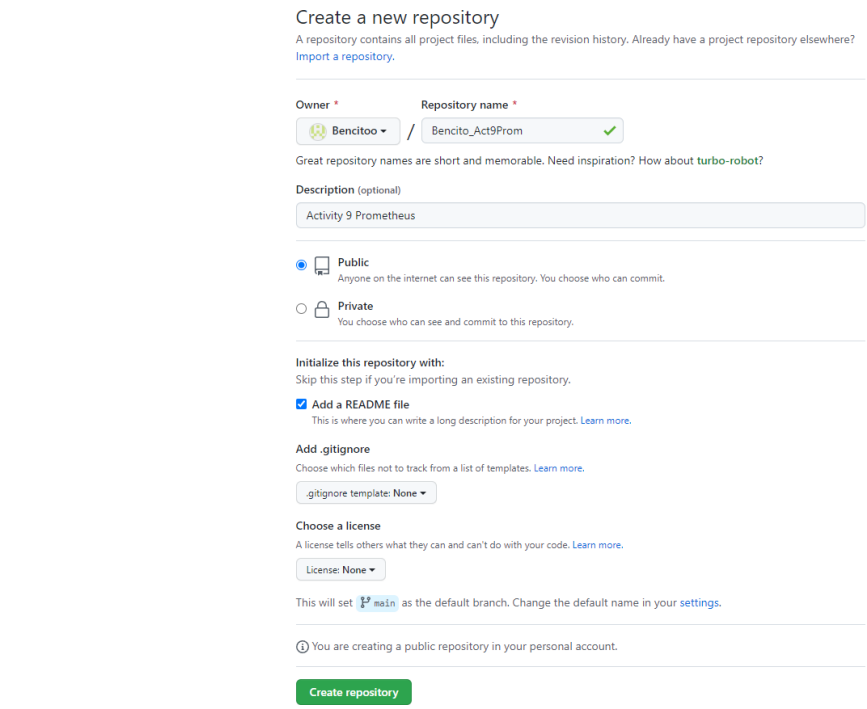
Cacti

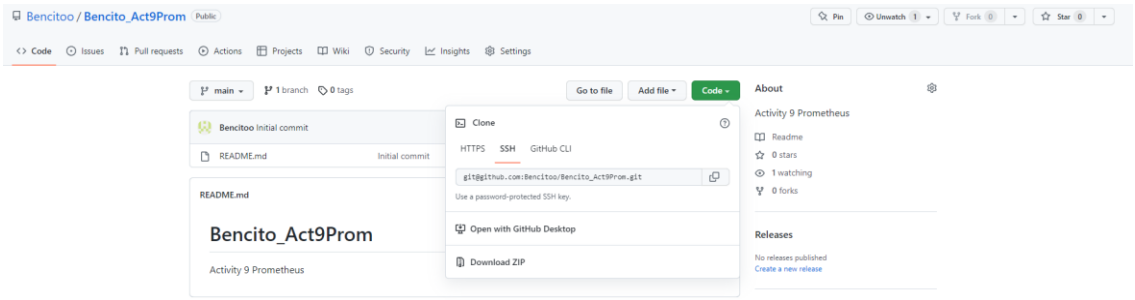
Cacti is a complete network graphing solution designed to harness the power of RRDTool's data storage and graphing functionality. Cacti provides a fast poller, advanced graph templating, multiple data acquisition methods, and user management features out of the box. All of this is wrapped in an intuitive, easy to use interface that makes sense for LAN-sized installations up to complex networks with thousands of devices. Source: Cacti® - The Complete RRDTool-based Graphing Solution

3. Tasks

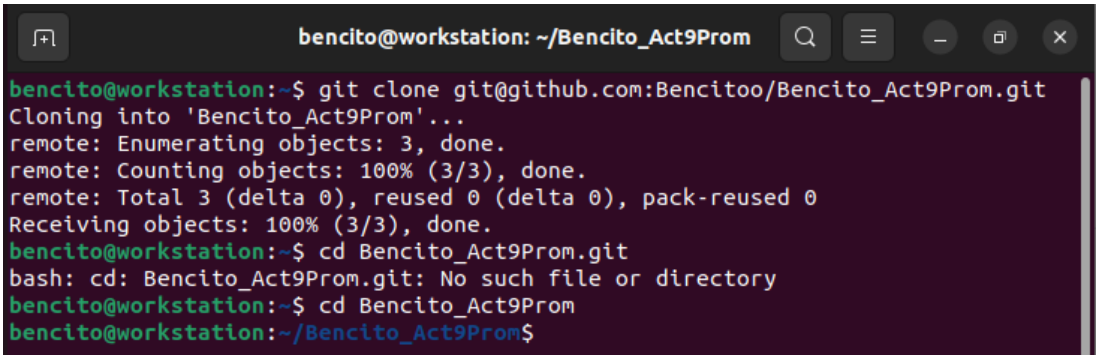
1. Create a playbook that installs Prometheus in both Ubuntu and CentOS. Apply the concept of creating roles.
2. Describe how you did step 1. (Provide screenshots and explanations in your report. Make your report detailed such that it will look like a manual.)
3. Show an output of the installed Prometheus for both Ubuntu and CentOS.
4. Make sure to create a new repository in GitHub for this activity.

4. Output (screenshots and explanations)





I create a repository on my github name Bencito_Act9Prom



When it's done I git clone it to my manage node.

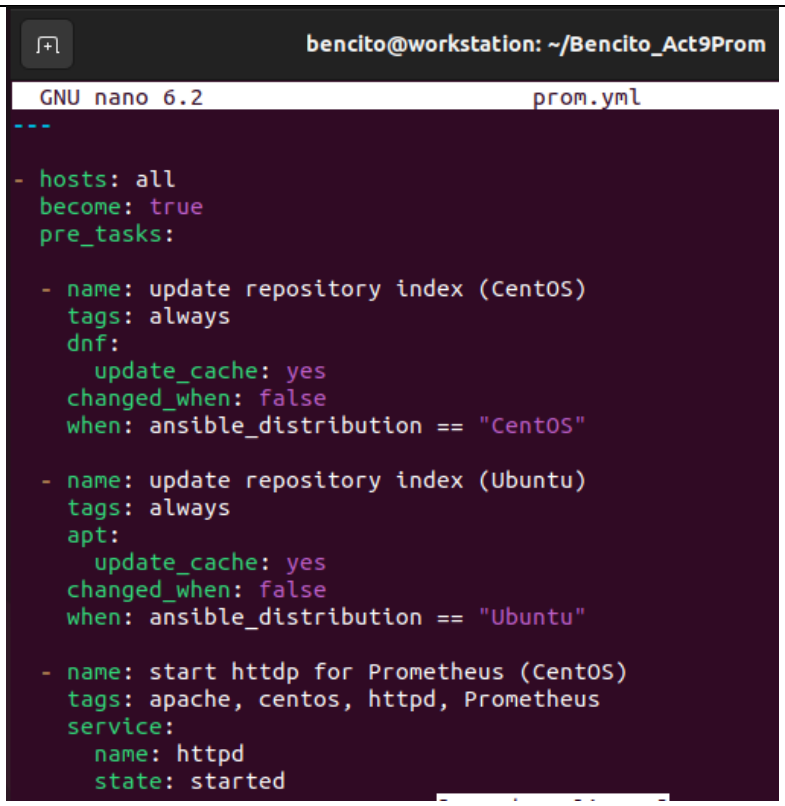
```
bencito@workstation:~/Bencito_Act9Prom$ nano inventory
bencito@workstation:~/Bencito_Act9Prom$ nano ansible.cfg
bencito@workstation:~/Bencito_Act9Prom$
```

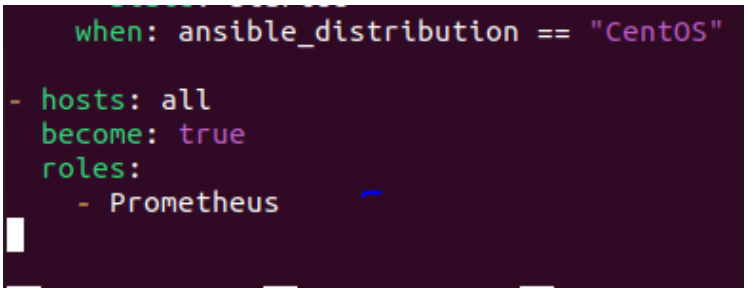
```
 GNU nano 6.2                          inventory
[remote_servers]
192.168.56.101
192.168.56.105
```

```
bencito@workstation: ~/Bencito_Act9Prom
 GNU nano 6.2                          ansible.cfg
[defaults]

inventory = inventory
Host_key_checking = False

deprecation_warnings = False

remote_user = bencito
private_key_file = ~/.ssh/
```

```
bencito@workstation:~/Bencito_Act9Prom$ ansible -m ping all
192.168.56.105 | SUCCESS => {
    "ansible_facts": {
        "discovered_interpreter_python": "/usr/bin/python"
    },
    "changed": false,
    "ping": "pong"
}
192.168.56.101 | SUCCESS => {
    "ansible_facts": {
        "discovered_interpreter_python": "/usr/bin/python3"
    },
    "changed": false,
    "ping": "pong"
}
bencito@workstation:~/Bencito_Act9Prom$
```

After when I git clone it. I create an inventory that inside of it was my two control nodes IP and the ansible.cfg that control it. After that I ping it and it was successful.



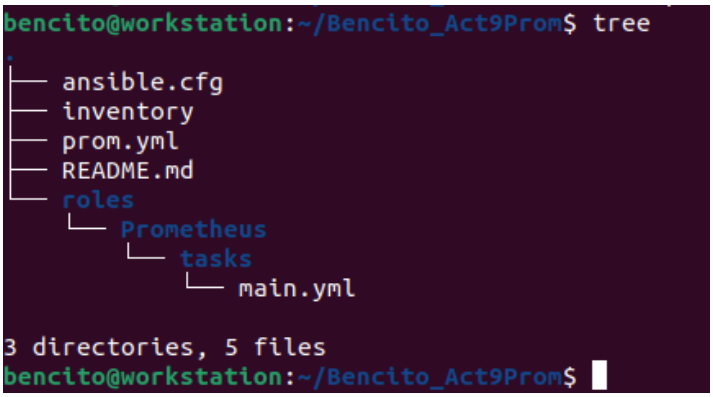


After that I create a prom.yml that will use a head playbook to install the Prometheus and the to update those repositories.

```
bencito@workstation:~/Bencito_Act9Prom/roles$ mkdir Prometheus
bencito@workstation:~/Bencito_Act9Prom/roles$ cd Prometheus
bencito@workstation:~/Bencito_Act9Prom/roles/Prometheus$ mkdir tasks
bencito@workstation:~/Bencito_Act9Prom/roles/Prometheus$ cd tasks
bencito@workstation:~/Bencito_Act9Prom/roles/Prometheus/tasks$ nano main.yml
```

After creating the main playbook. I create a directory name Prometheus to add there the task that install the Prometheus.

As you can see here. I create a playbook name main.yml inside of it was the code that will install the Prometheus. I use the Snapd for the CentOS. It is like a playstore that have all the apps on linux. Because When I'm searching There is no direct Prometheus on CentOS.



After creating all of it. I use the command tree to show all the created directory if its correctly.

```
bencito@workstation:~/Bencito_Act9Prom$ ansible-playbook --ask-become-pass prom
.yml
BECOME password:

PLAY [all] *********************************************************************
*

TASK [Gathering Facts] *********************************************************
*
ok: [192.168.56.101]
ok: [192.168.56.105]

TASK [update repository index (CentOS)] ****************************************
*
skipping: [192.168.56.101]
ok: [192.168.56.105]

TASK [update repository index (Ubuntu)] ****************************************
*
skipping: [192.168.56.105]
ok: [192.168.56.101]

TASK [start httdp for Prometheus (CentOS)] *************************************
*
skipping: [192.168.56.101]
changed: [192.168.56.105]
```

```
ok: [192.168.56.105]
ok: [192.168.56.101]

TASK [Prometheus : Installation Prometheus (Ubuntu)] ***************************
*
skipping: [192.168.56.105]
changed: [192.168.56.101]

TASK [Prometheus : Pre-req installation for (CentOS)] **************************
*
skipping: [192.168.56.101]
changed: [192.168.56.105]

TASK [Prometheus : Enabling snapd for (CentOS)] ********************************
*
skipping: [192.168.56.101]
changed: [192.168.56.105]

TASK [Prometheus : Installation of Prometheus (CentOS)] ************************
*
skipping: [192.168.56.101]
fatal: [192.168.56.105]: FAILED! => {"changed": true, "cmd": ["snap", "install"
, "prometheus", "--classic"], "delta": "0:00:00.834461", "end": "2022-10-24 20:
46:21.649851", "msg": "non-zero return code", "rc": 10, "start": "2022-10-24 20
:46:20.815390", "stderr": "error: too early for operation, device not yet seede
d or device model not acknowledged", "stderr_lines": ["error: too early for ope
ration, device not yet seeded or device model not acknowledged"], "stdout": "",
 "stdout_lines": []}
```

```
PLAY RECAP *********************************************************************
*
192.168.56.101             : ok=4    changed=1    unreachable=0    failed=0
skipped=5    rescued=0    ignored=0
192.168.56.105             : ok=6    changed=3    unreachable=0    failed=1
skipped=2    rescued=0    ignored=0
```

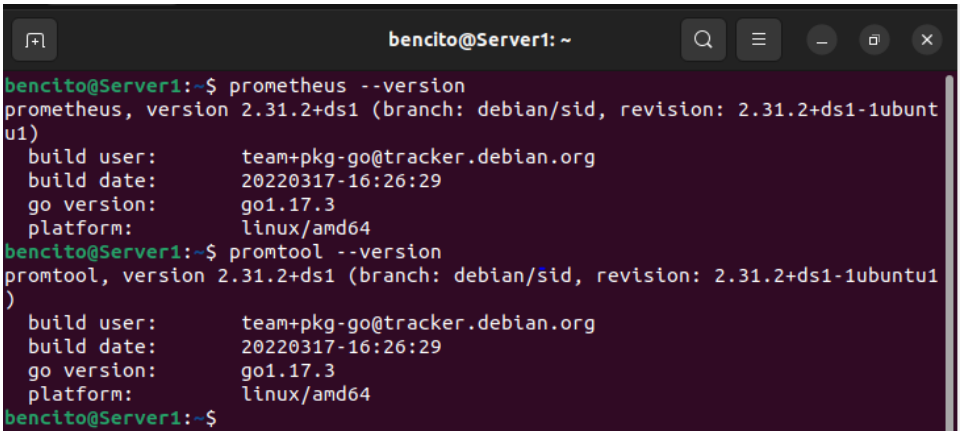
As you can see here. I run the main playbook by using the ansible-playbook –ask-become-pass (name of the main playbook). When I run it on my first try there is an error on installing the Prometheus. Because the snapd and Prometheus did not see each other because they are same installing it. The snapd was not running because it was installing it and you need to re-run again the playbook. To read the new install snapd

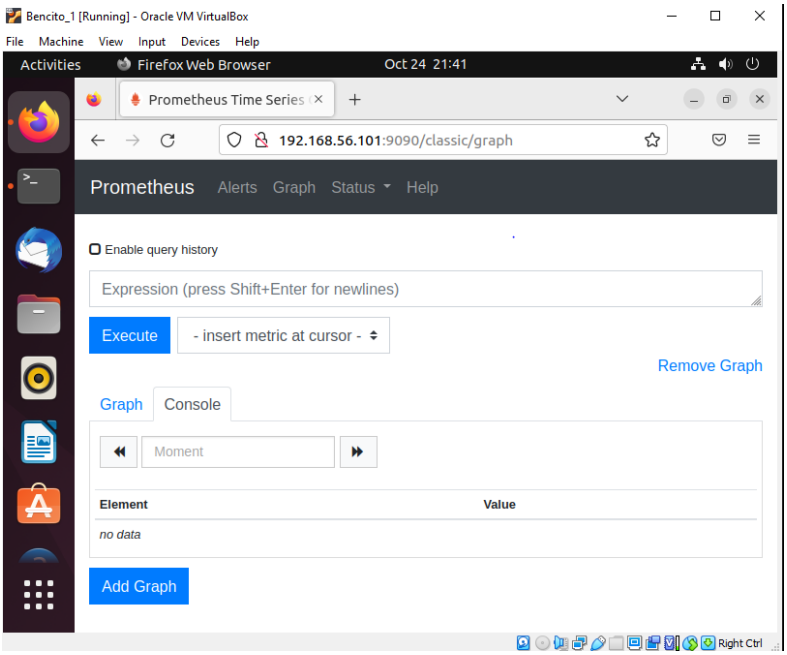
```
bencito@workstation:~/Bencito_Act9Prom$ ansible-playbook --ask-become-pass prom
.yml
BECOME password:

PLAY [all] *********************************************************************
*

TASK [Gathering Facts] *********************************************************
*
ok: [192.168.56.105]
ok: [192.168.56.101]

TASK [update repository index (CentOS)] ****************************************
*
skipping: [192.168.56.101]
ok: [192.168.56.105]

TASK [update repository index (Ubuntu)] ****************************************
*
skipping: [192.168.56.105]
ok: [192.168.56.101]

TASK [start httdp for Prometheus (CentOS)] *************************************
*
skipping: [192.168.56.101]
ok: [192.168.56.105]
```

```
TASK [Prometheus : Installation Prometheus (Ubuntu)] ***************************
*
skipping: [192.168.56.105]
ok: [192.168.56.101]

TASK [Prometheus : Pre-req installation for (CentOS)] **************************
*
skipping: [192.168.56.101]
ok: [192.168.56.105]

TASK [Prometheus : Enabling snapd for (CentOS)] ********************************
*
skipping: [192.168.56.101]
changed: [192.168.56.105]

TASK [Prometheus : Installation of Prometheus (CentOS)] ************************
*
skipping: [192.168.56.101]
changed: [192.168.56.105]

PLAY RECAP *********************************************************************
*
192.168.56.101             : ok=4    changed=0    unreachable=0    failed=0
skipped=5    rescued=0    ignored=0
192.168.56.105             : ok=7    changed=2    unreachable=0    failed=0
skipped=2    rescued=0    ignored=0

bencito@workstation:~/Bencito_Act9Prom$
```

I re-run again and it was successfully installed because. The snapd was read on my centOS.

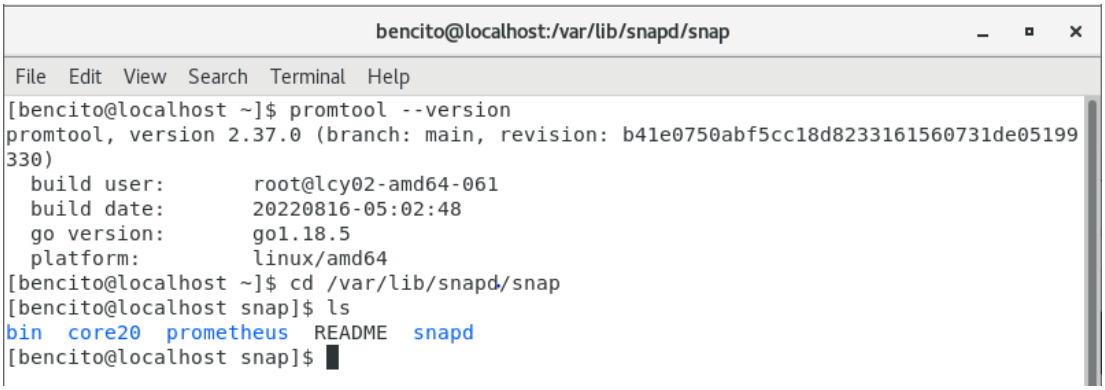
Output Ubuntu

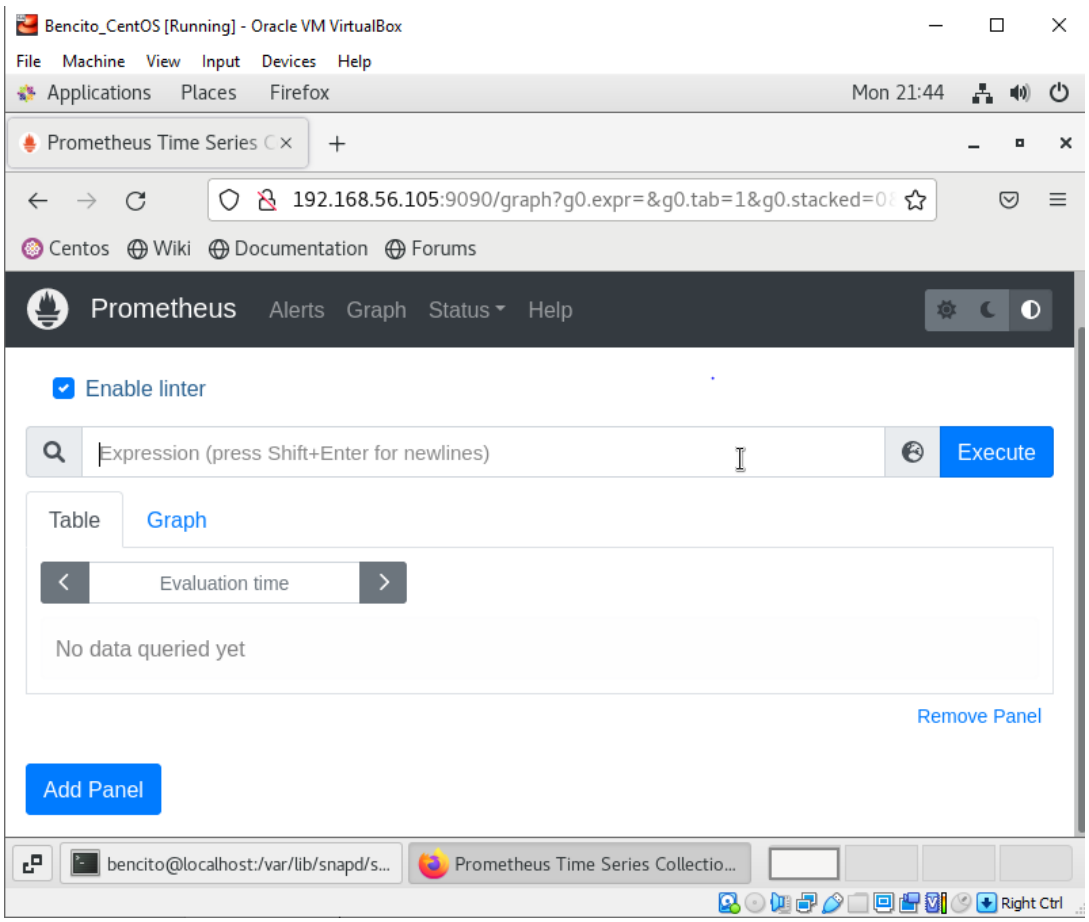




As you can see. It was successfully installed on my ubuntu.

Output CentOS

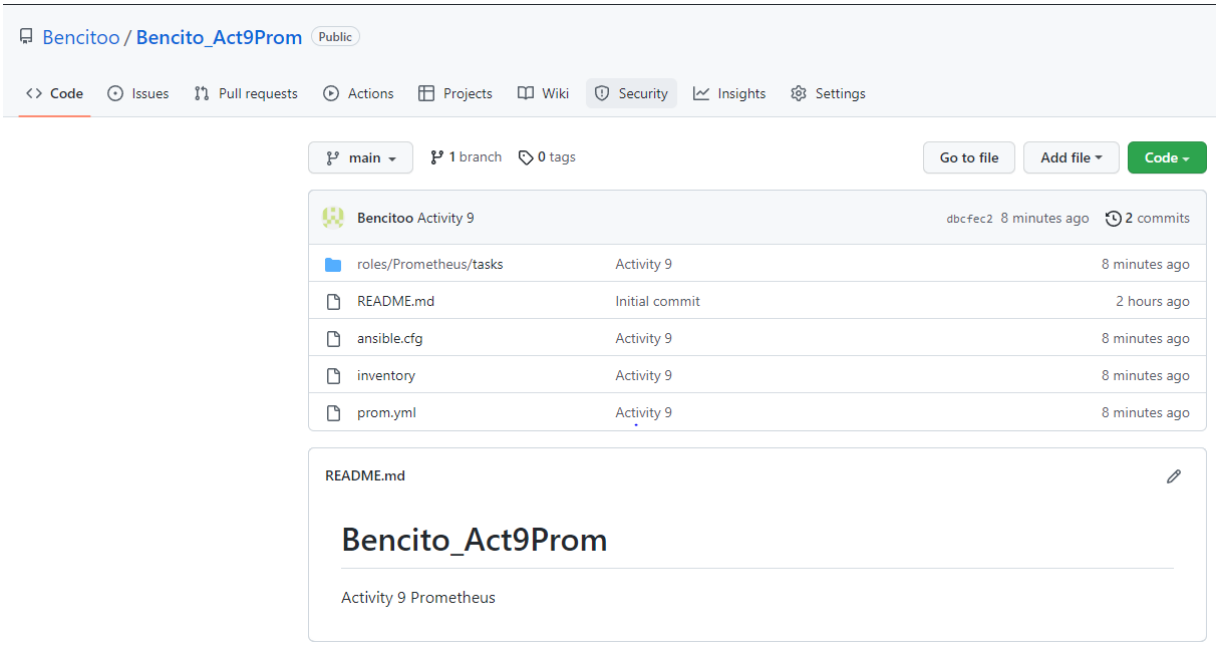




As you can see. It was successfully installed on my centOS and the Prometheus is inside of the snapd. Because I use the snapD to install the Prometheus.

Add to Github

```
bencito@workstation:~/Bencito_Act9Prom$ git add inventory
bencito@workstation:~/Bencito_Act9Prom$ git add ansible.cfg
bencito@workstation:~/Bencito_Act9Prom$ git add prom.yml
bencito@workstation:~/Bencito_Act9Prom$ git add roles/
bencito@workstation:~/Bencito_Act9Prom$ git commit -m "Activity 9"
[main dbcfec2] Activity 9
 4 files changed, 69 insertions(+)
 create mode 100644 ansible.cfg
 create mode 100644 inventory
 create mode 100644 prom.yml
 create mode 100644 roles/Prometheus/tasks/main.yml
bencito@workstation:~/Bencito_Act9Prom$ git push
Enumerating objects: 10, done.
Counting objects: 100% (10/10), done.
Compressing objects: 100% (5/5), done.
Writing objects: 100% (9/9), 1.14 KiB | 72.00 KiB/s, done.
Total 9 (delta 0), reused 0 (delta 0), pack-reused 0
To github.com:Bencitoo/Bencito_Act9Prom.git
   8d623ff..dbcfec2  main -> main
bencito@workstation:~/Bencito_Act9Prom$
```



After successfully installed the Prometheus. I do the git add and git push to make sure it was saved on my new repository on GitHub.

Reflections:

Answer the following:

1. What are the benefits of having a performance monitoring tool?

   There so many benefits of performance monitoring tool. It helps you to monitor realtime check of the data security and the health of the computer system. It can do accelerate your computer system to sleep and disable the unnecessary application.

Also, I use the performance monitoring tool to check my hardware accessories like my hard drive. If it's running smoothly and if there is a problem.

Conclusions:

In my conclusion. After making this activity I learn that how to create a playbook that will install the given task. Like when I'm doing the installation of prometheus it is the same on the last activity you need to create a roles and input there the playbook code. But I have encountered some error like the installation of the Prometheus using the snapd. Because you need first install the snapd before the Prometheus. We need to wait some minutes to re-run again the playbook for us to read the snapd on our CentOS. After that It was smoothly installed on both control nodes and I realize that you need to familiarize those codes. Because it will help you to the next activity or on your future works. I'm happy when it was successfully run and I don't encounter some error.