Name: Agpaoa, Ma.Diane J.	**Date Performed:** 25/10/2022
Course/Section: CPE232-CPE31S22	**Date Submitted:** 25/10/2022
Instructor: Dr. Jonathan Taylar	**Semester and SY:** 1st Sem 2022-2023

Midterm Skills Exam: Install, Configure, and Manage Log Monitoring tools

1. Objectives

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

2. Instructions

1. Create a repository in your GitHub account and label it CPE_MIDEXAM_SURNAME.
2. Clone the repository and do the following:
   2.1. Create an Ansible playbook that does the following with an input of a config.yaml file and arranged Inventory file:
   2.2. Install and configure Elastic Stack in separate hosts (Elastic Search, Kibana, Logstash) • Install Nagios in one host
   2.3. Install Grafana,Prometheus and Influxdb in seperate hosts (Influxdb,Grafana,Prometheus)
   2.4. Install Lamp Stack in separate hosts (Httpd + Php,Mariadb)
3. Document all your tasks using this document. Provide proofs of all the ansible playbooks codes and successful installations.
4. Document the push and commit from the local repository to GitHub.
5. Finally, paste also the link of your GitHub repository in the documentation.

3. Output (screenshots and explanations)

1. Create a repository in your GitHub account and label it

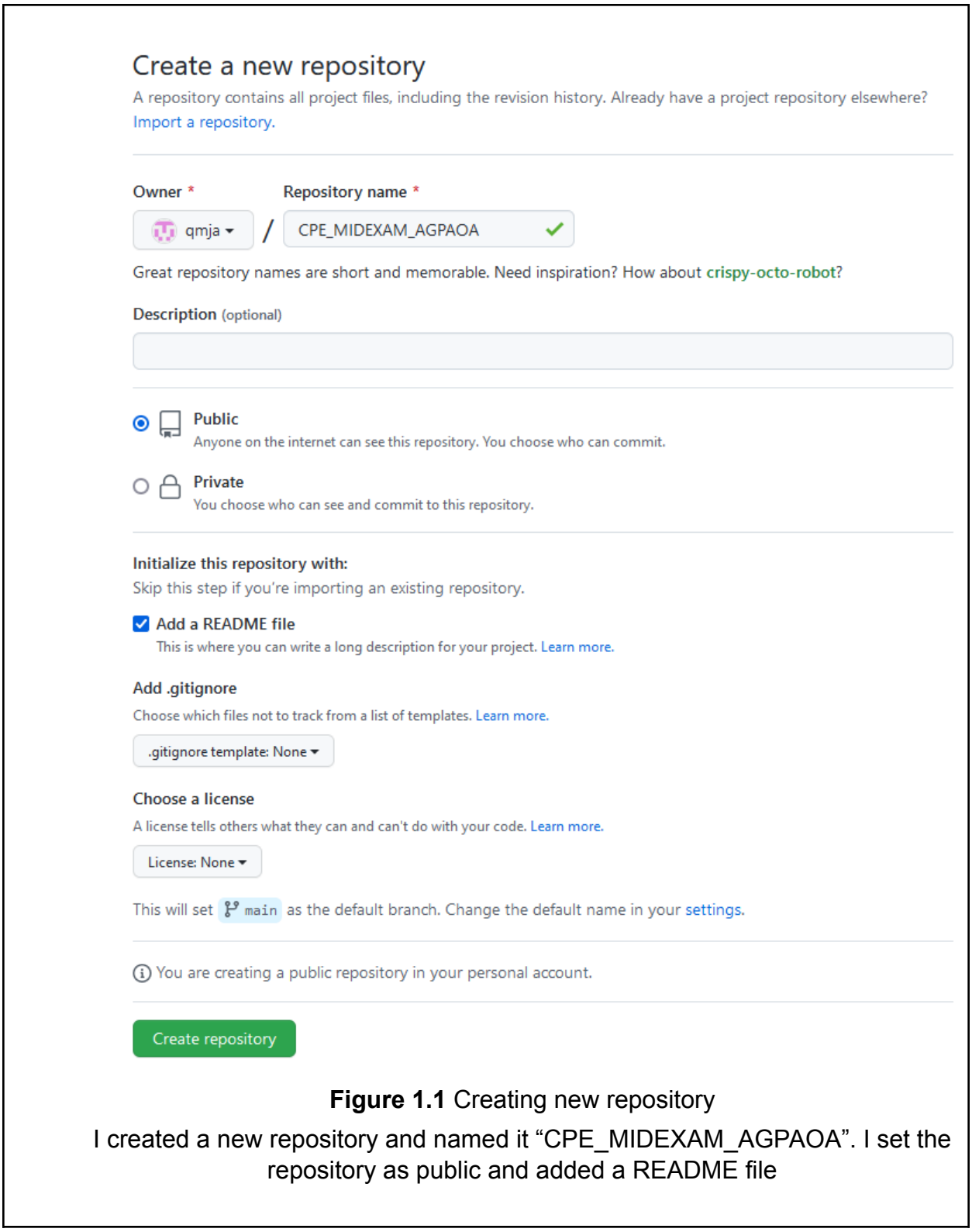


Figure 1.1 Creating new repository

I created a new repository and named it “CPE_MIDEXAM_AGPAOA”. I set the repository as public and added a README file

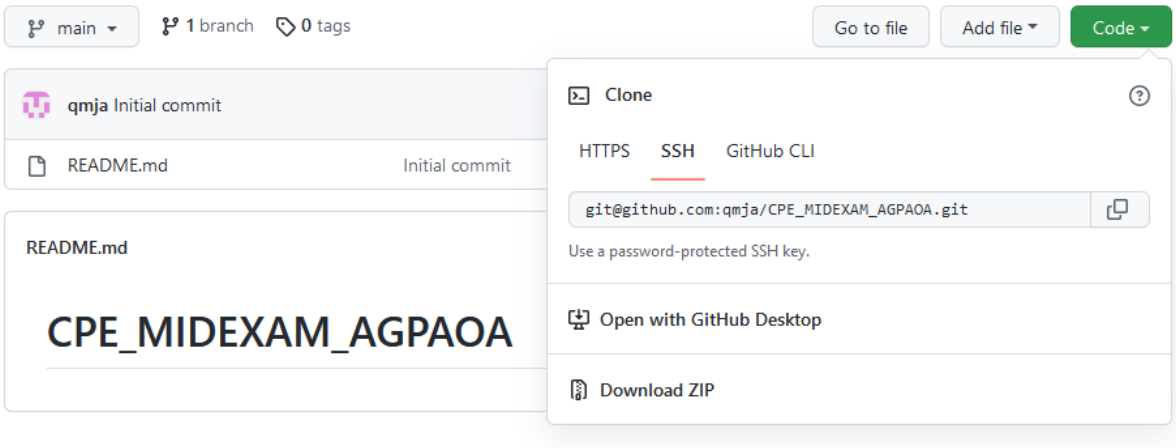


Figure 1.2 Copying the SSH link of the CPE_MIDEXAM_AGPAOA repository

2. Clone the repository and do the following:

```
madiane@workstation:~$ git clone git@github.com:qmja/CPE_MIDEXAM_AGPAOA.git
Cloning into 'CPE_MIDEXAM_AGPAOA'...
remote: Enumerating objects: 3, done.
remote: Counting objects: 100% (3/3), done.
remote: Total 3 (delta 0), reused 0 (delta 0), pack-reused 0
Receiving objects: 100% (3/3), done.
```

Figure 2.1 Cloning the CPE_MIDEXAM_AGPAOA repository

```
madiane@workstation:~$ cd CPE_MIDEXAM_AGPAOA
madiane@workstation:~/CPE_MIDEXAM_AGPAOA$ mkdir roles
```

Figure 2.2 Changing directory to CPE_MIDEXAM_AGPAOA and creating roles directory

I changed the directory to CPE_MIDEXAM_AGPAOA by using the cd command. After that I created a new directory and named it “roles”.

```
madiane@workstation:~/CPE_MIDEXAM_AGPAOA/roles$ mkdir elasticstack grafana prometheus influxdb lampst
ack nagios
madiane@workstation:~/CPE_MIDEXAM_AGPAOA/roles$ ls
elasticstack  grafana  influxdb  lampstack  nagios  prometheus
```

Figure 2.3 Creating new directories within the roles directory

I created the elasticstack, grafana, prometheus, influxdb, lampstack and nagios directories within the roles directory.

```
madiane@workstation:~/CPE_MIDEXAM_AGPAOA/roles$ cd elasticstack
madiane@workstation:~/CPE_MIDEXAM_AGPAOA/roles/elasticstack$ mkdir tasks
madiane@workstation:~/CPE_MIDEXAM_AGPAOA/roles/elasticstack$ cd tasks
madiane@workstation:~/CPE_MIDEXAM_AGPAOA/roles/elasticstack/tasks$ sudo nano main.yml
```

```
madiane@workstation:~/CPE_MIDEXAM_AGPAOA/roles/elasticstack$ cp -r tasks ~/CPE_MIDEXAM_AGPAOA/roles/grafana
madiane@workstation:~/CPE_MIDEXAM_AGPAOA/roles/elasticstack$ cp -r tasks ~/CPE_MIDEXAM_AGPAOA/roles/influxdb
madiane@workstation:~/CPE_MIDEXAM_AGPAOA/roles/elasticstack$ cp -r tasks ~/CPE_MIDEXAM_AGPAOA/roles/lampstack
madiane@workstation:~/CPE_MIDEXAM_AGPAOA/roles/elasticstack$ cp -r tasks ~/CPE_MIDEXAM_AGPAOA/roles/nagios
madiane@workstation:~/CPE_MIDEXAM_AGPAOA/roles/elasticstack$ cp -r tasks ~/CPE_MIDEXAM_AGPAOA/roles/prometheus
```

Figure 2.4 Creating tasks directory and main.yml within the tasks directory which is in the directories inside the roles directory.

First, I created the tasks directory within the elasticstack and within the tasks directory I created the main.yml. After that, I copied the tasks directory to all other directories within the roles directory.

```
madiane@workstation:~/CPE_MIDEXAM_AGPAOA$ sudo nano config.yaml
[sudo] password for madiane:
```

Figure 2.5 Creating the playbook config.yaml

I created the config.yaml playbook by executing the command “sudo nano config.yaml”.

```
madiane@workstation:~/CPE_MIDEXAM_AGPAOA$ ls
ansible.cfg  config.yaml  inventory  README.md  roles
```

Figure 2.6 Initial files within the CPE_MIDEXAM_AGPAOA directory

The CPE_MIDEXAM_AGPAOA now contains ansible.cfg, config.yaml, inventory file, README.md and roles directory.

```
madiane@workstation: ~/CPE_MIDEXAM_AGPAOA
  GNU nano 6.2                                    inventory
[ubuntu]
192.168.56.103

[centos]
192.168.56.120
```

Figure 2.7 Contents of inventory file

The inventory contains the IP addresses of the managed remote servers. The 192.168.56.120 is the remote server with an operating system of CentOS and the 192.168.56.103 is the remote server with an operating system of Ubuntu.

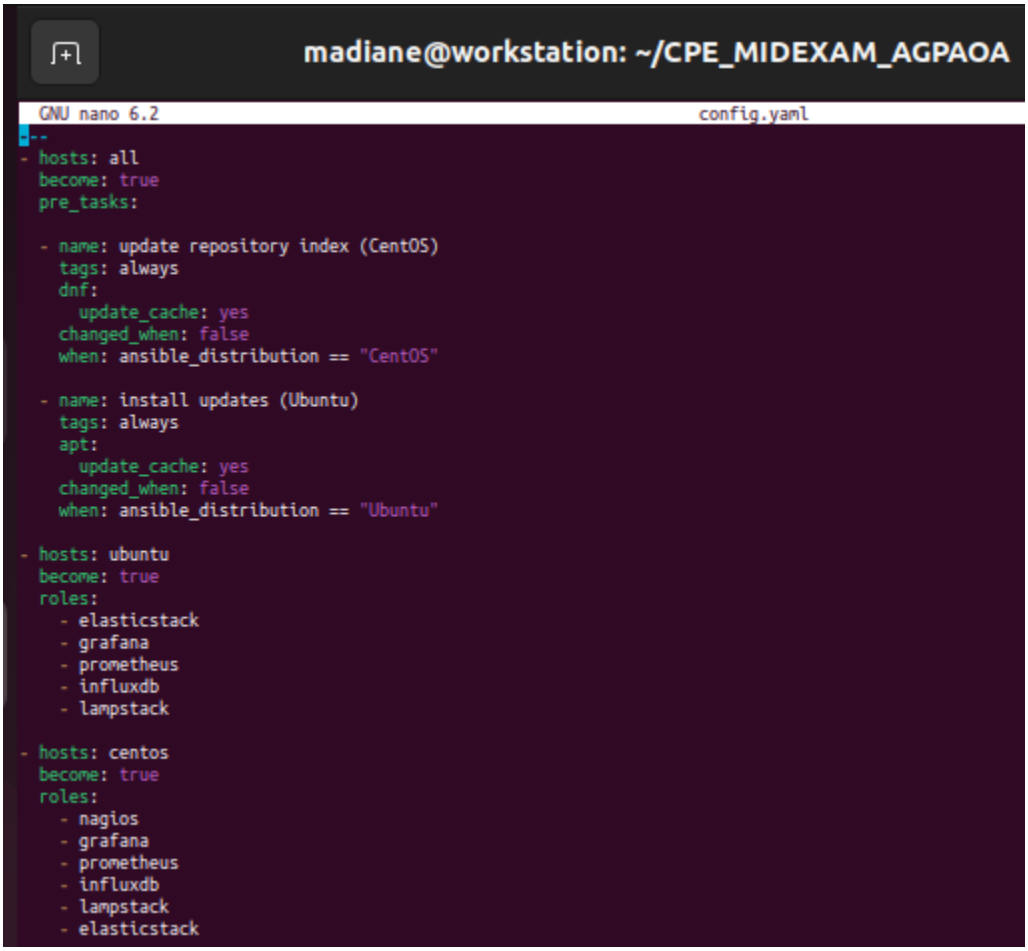


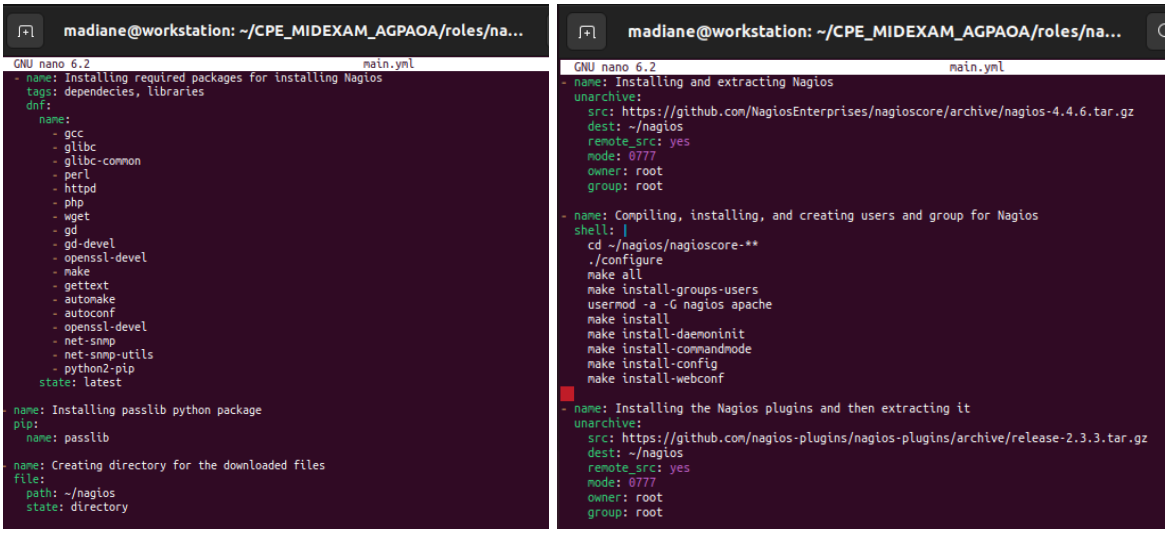
Figure 2.8 Contents of the playbook config.yaml

The config.yaml contains the pre-tasks for all the remote servers, the installation of Elastic Stack, Grafana, Prometheus, Influxdb and Lamp stack in separate hosts and the installation of Nagios in one host.

Elastic Stack in separate hosts

Figure 2.9 Contents of main.yml of the elasticstack directory

Nagios in one host



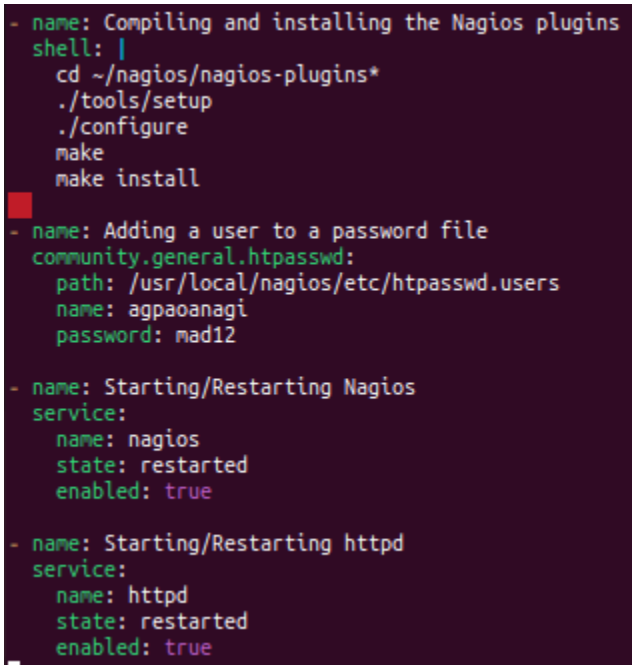


Figure 2.10 Contents of main.yml of the nagios directory

Influxdb, Grafana, Prometheus separate hosts

Figure 2.11 Contents of main.yml of the influxdb directory

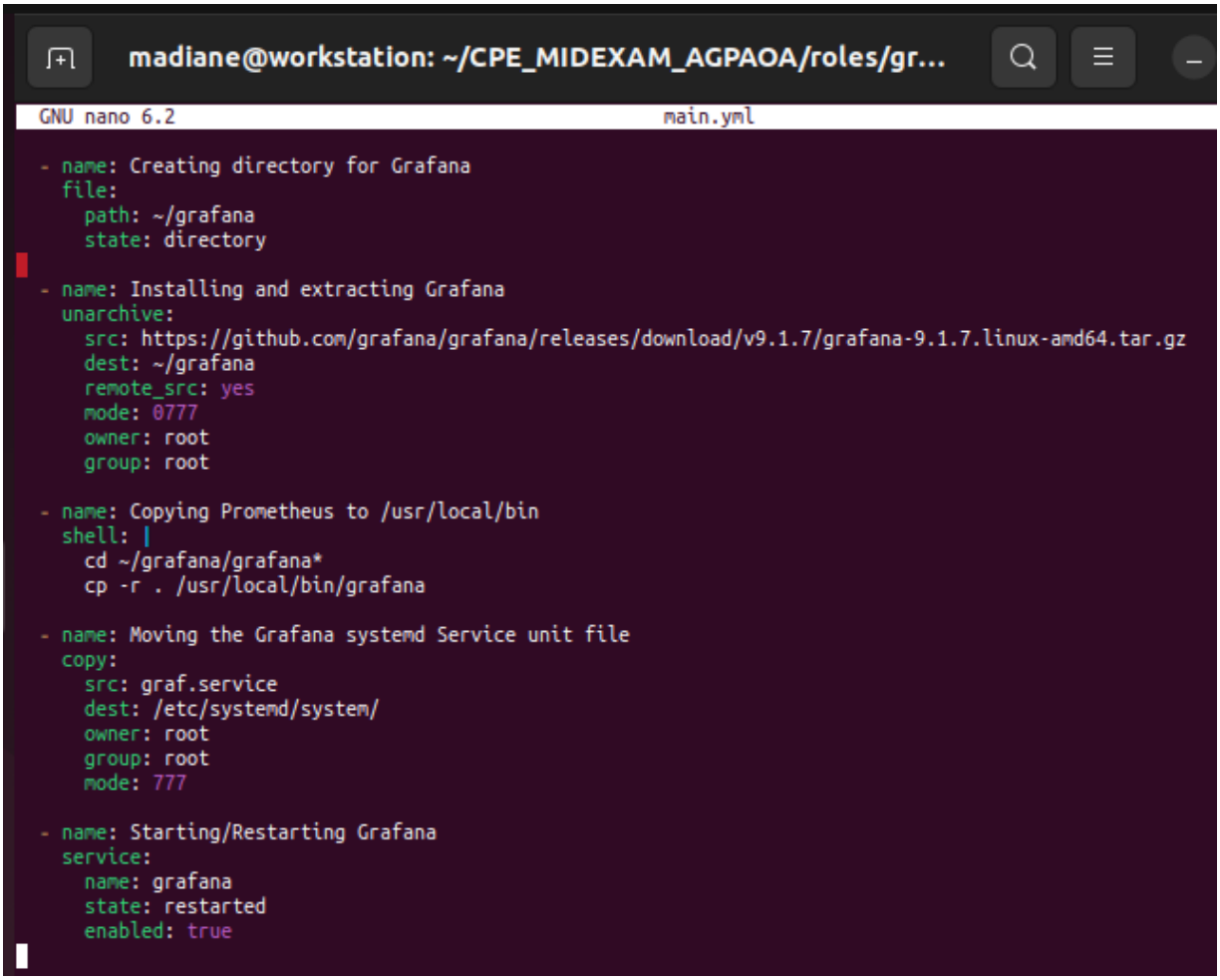


Figure 2.12 Contents of main.yml of the grafana directory

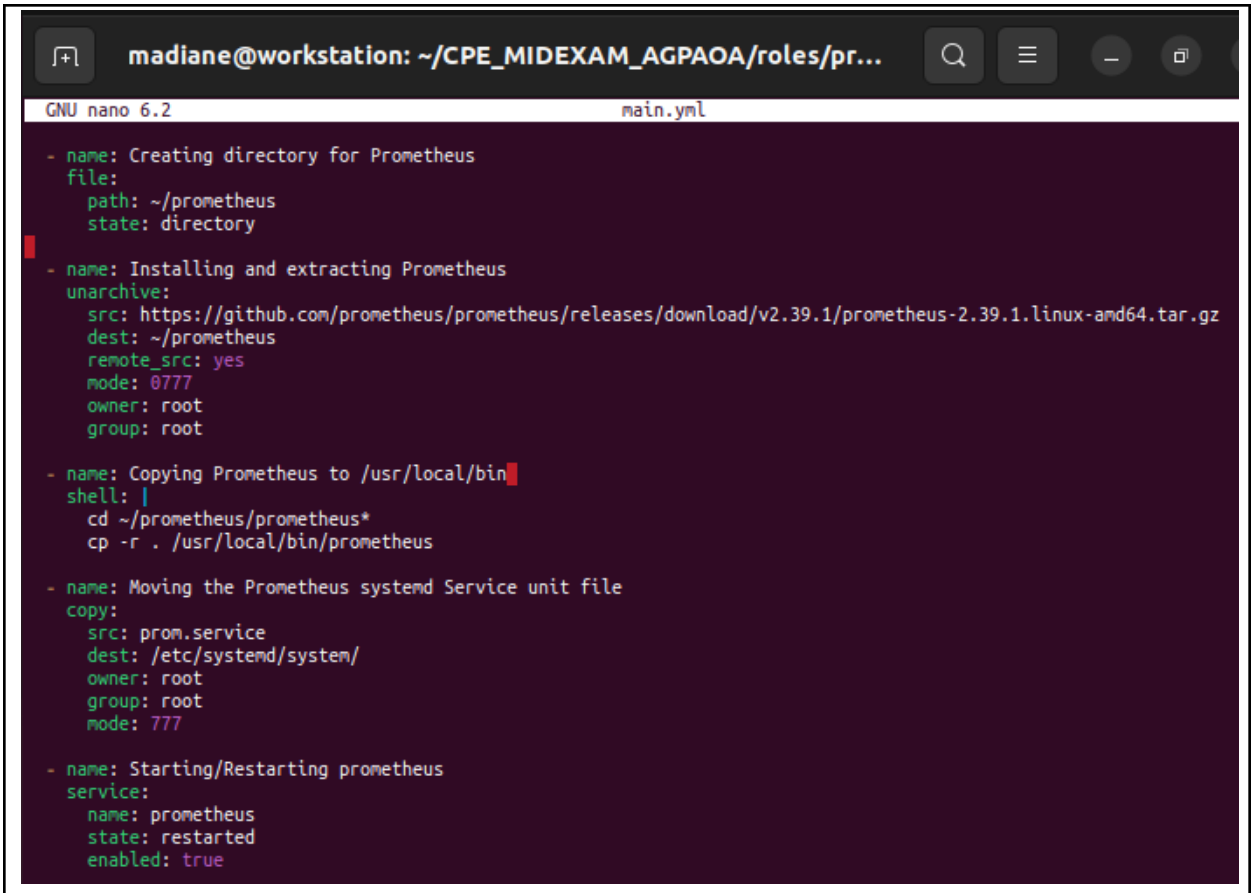


Figure 2.13 Contents of main.yml of the prometheus directory

Lamp Stack in separate hosts

Figure 2.14 Contents of main.yml of the lampstack directory

```
madiane@workstation:~/CPE_MIDEXAM_AGPAOA$ ansible-playbook --ask-become-pass config.yaml
BECOME password:

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

TASK [Gathering Facts] *********************************************************************************************
ok: [192.168.56.103]
ok: [192.168.56.120]

TASK [update repository index (CentOS)] ****************************************************************************
skipping: [192.168.56.103]
ok: [192.168.56.120]

TASK [install updates (Ubuntu)] ************************************************************************************
skipping: [192.168.56.120]
ok: [192.168.56.103]

PLAY [centos] ******************************************************************************************************

TASK [Gathering Facts] *********************************************************************************************
ok: [192.168.56.120]

TASK [nagios : Installing required packages for installing Nagios] *************************************************
ok: [192.168.56.120]

TASK [nagios : Installing passlib python package] ******************************************************************
ok: [192.168.56.120]

TASK [nagios : Creating directory for the downloaded files] ********************************************************
ok: [192.168.56.120]

TASK [nagios : Installing and extracting Nagios] *******************************************************************
ok: [192.168.56.120]

TASK [nagios : Compiling, installing, and creating users and group for Nagios] *************************************
changed: [192.168.56.120]

TASK [nagios : Installing the Nagios plugins and then extracting it] ***********************************************
ok: [192.168.56.120]
```

```
TASK [nagios : Compiling and installing the Nagios plugins] ********************************************************
changed: [192.168.56.120]

TASK [nagios : Adding a user to a password file] *******************************************************************
ok: [192.168.56.120]

TASK [nagios : Starting/Restarting Nagios] *************************************************************************
changed: [192.168.56.120]

TASK [nagios : Starting/Restarting httpd] **************************************************************************
changed: [192.168.56.120]

TASK [prometheus : Creating directory for Prometheus] **************************************************************
ok: [192.168.56.120]

TASK [prometheus : Installing and extracting Prometheus] ***********************************************************
ok: [192.168.56.120]

TASK [prometheus : Copying Prometheus to /usr/local/bin] ***********************************************************
changed: [192.168.56.120]

TASK [prometheus : Moving the Prometheus systemd Service unit file] ************************************************
ok: [192.168.56.120]

TASK [prometheus : Starting/Restarting prometheus] *****************************************************************
changed: [192.168.56.120]

TASK [grafana : Creating directory for Grafana] ********************************************************************
ok: [192.168.56.120]

TASK [grafana : Installing and extracting Grafana] *****************************************************************
ok: [192.168.56.120]

TASK [grafana : Copying Grafana to /usr/local/bin] *****************************************************************
changed: [192.168.56.120]

TASK [grafana : Moving the Grafana systemd Service unit file] ******************************************************
ok: [192.168.56.120]

TASK [grafana : Starting/Restarting Grafana] ***********************************************************************
```

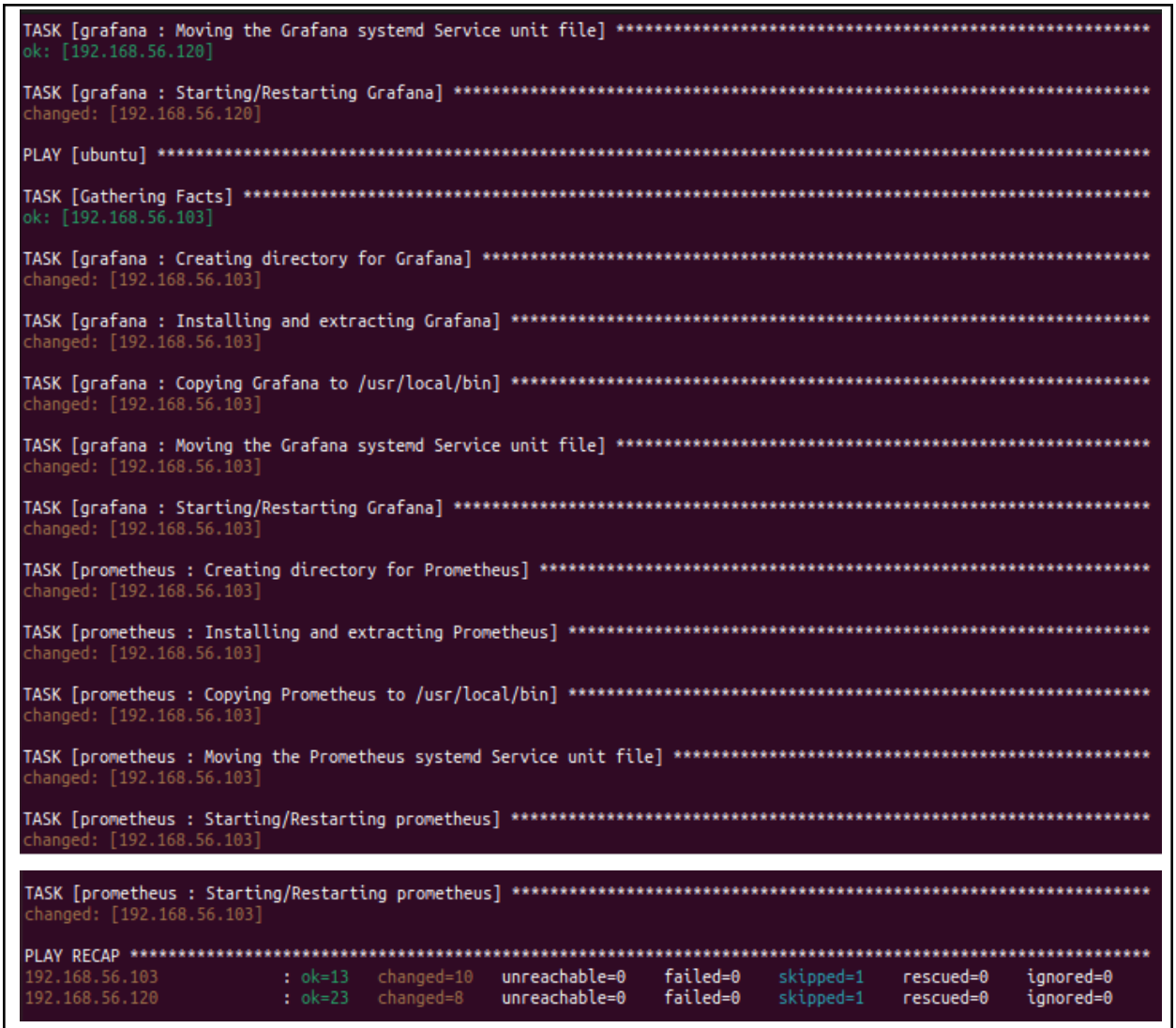
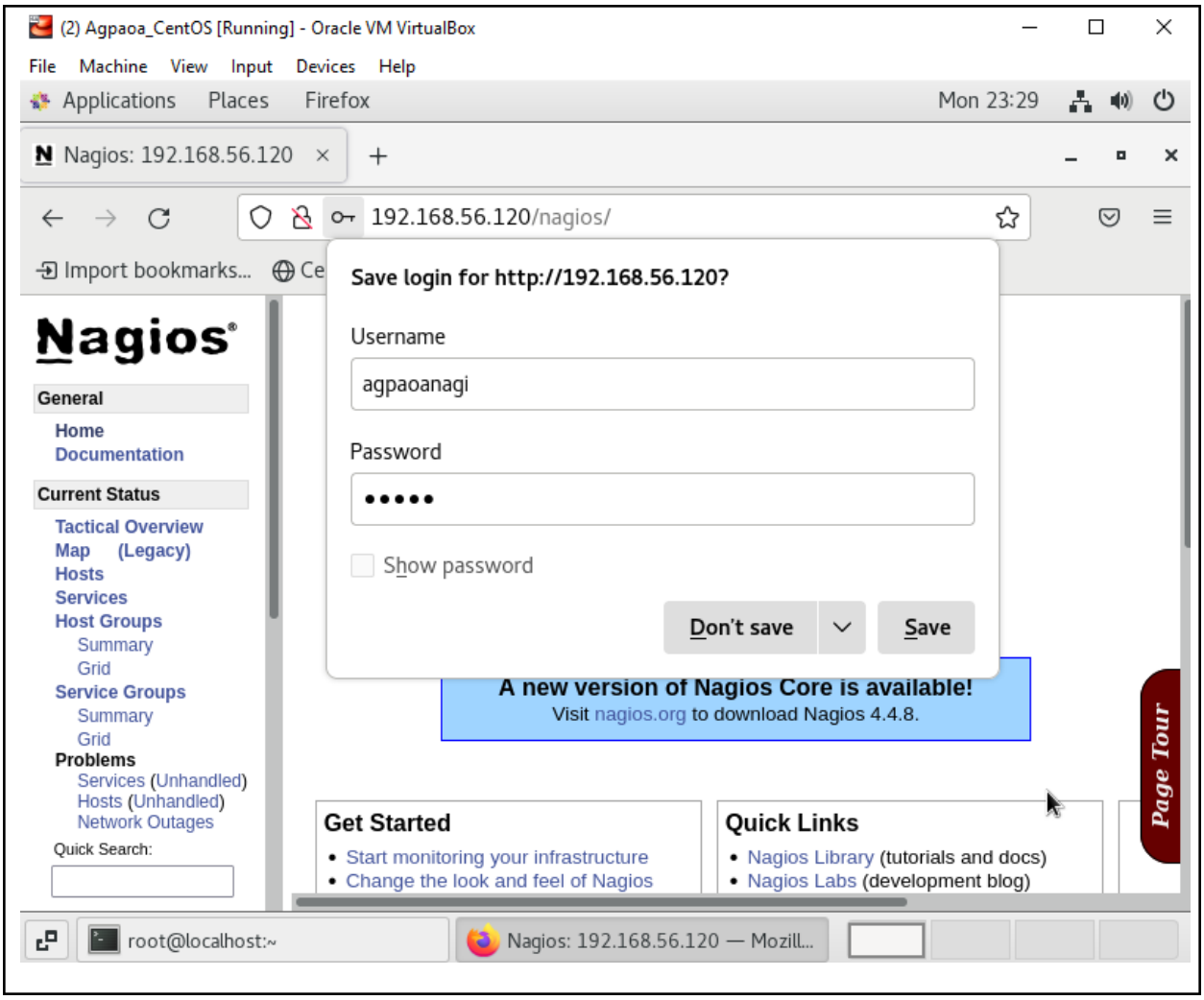
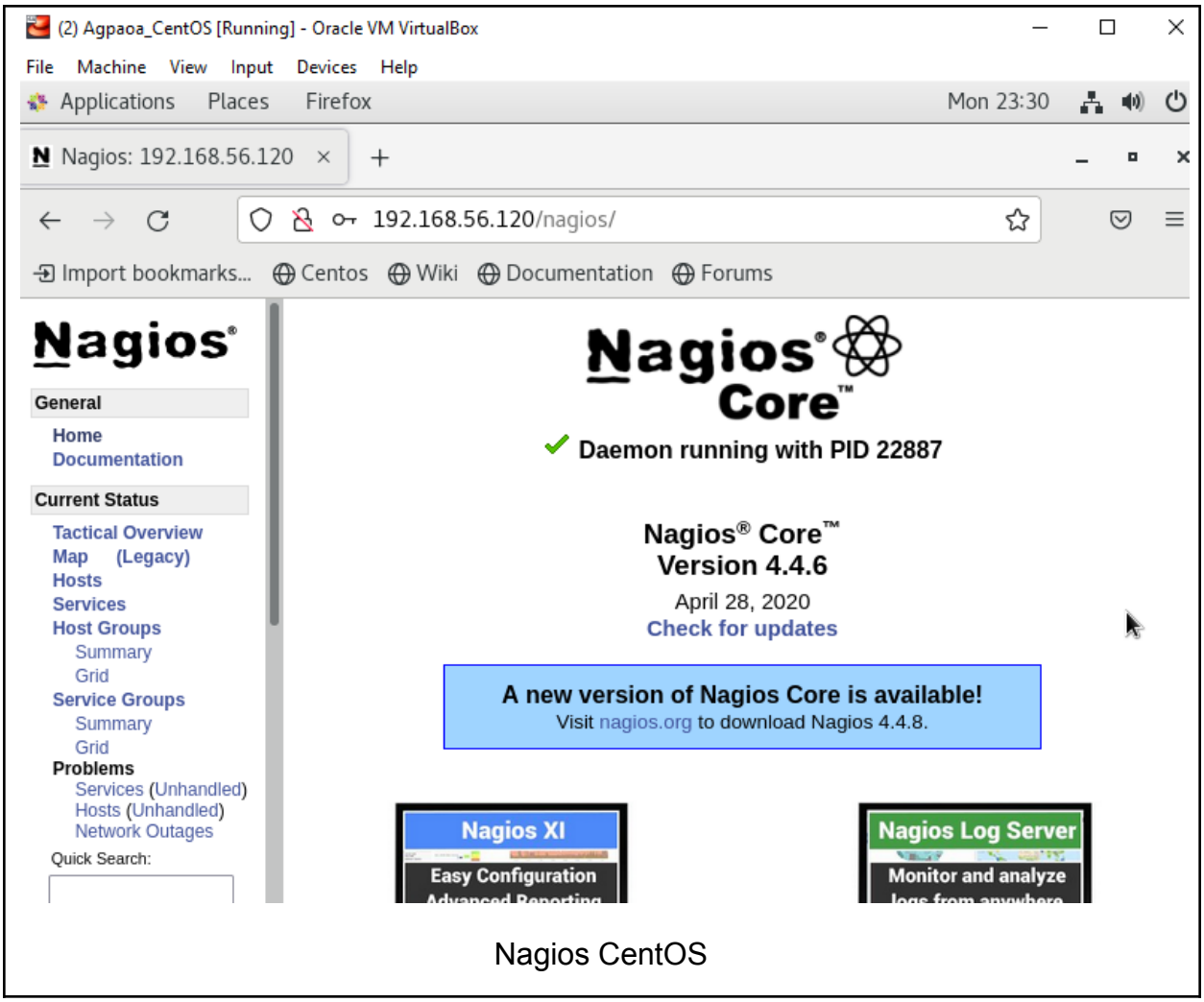


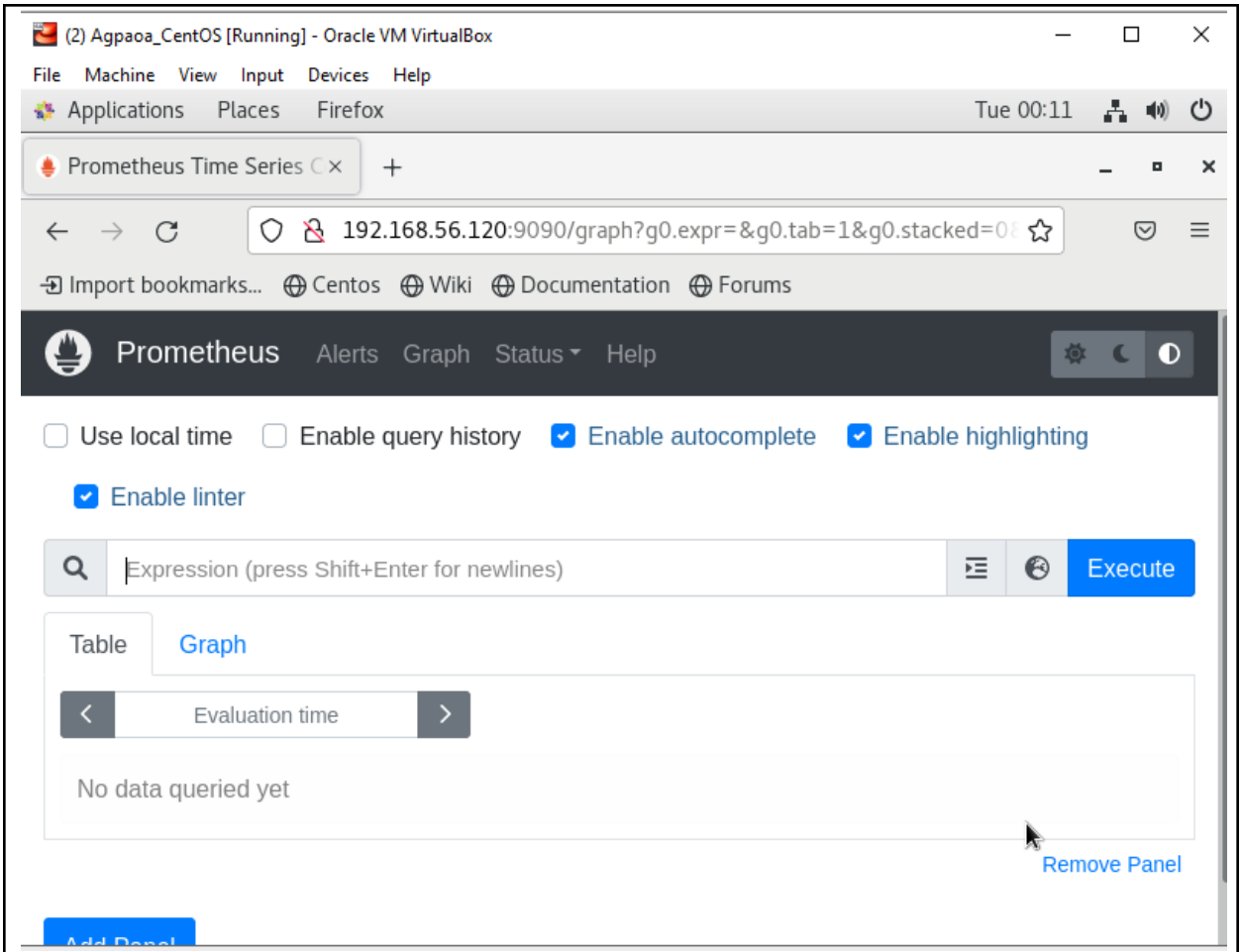
Figure 2.15 Running the playbook config.yaml

Installing and configuration of Nagios, Prometheus and Grafana was successful.

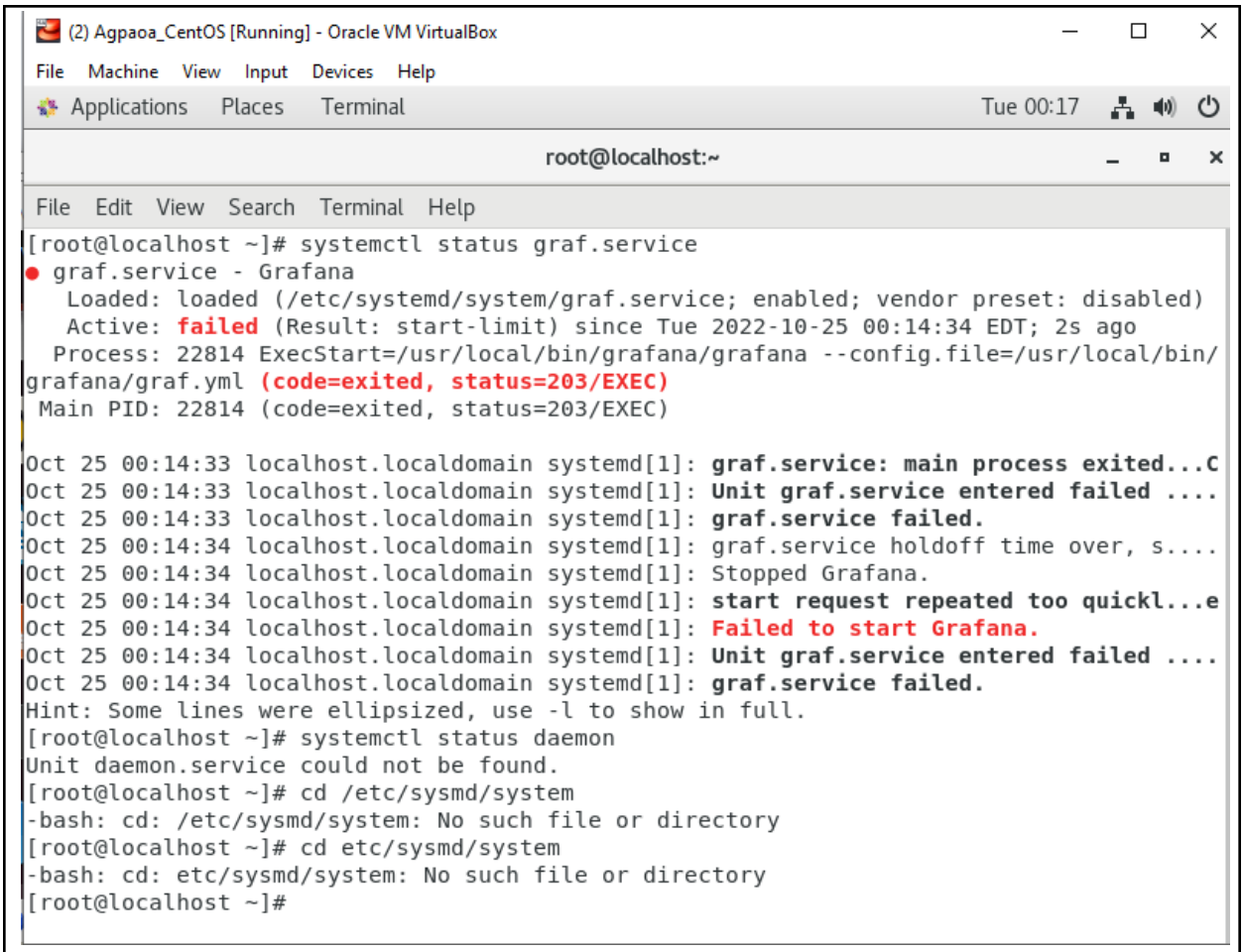

(2) Agpaoa_CentOS [Running] - Oracle VM VirtualBox
File Machine View Input Devices Help
Applications Places Firefox
Mon 23:29
Nagios: 192.168.56.120
192.168.56.120/nagios/
Import bookmarks...
Save login for http://192.168.56.120?
Username
agpaoanagi
Password
Show password
Don't save
Save
Nagios
General
Home
Documentation
Current Status
Tactical Overview
Map (Legacy)
Hosts
Services
Host Groups
Summary
Grid
Service Groups
Summary
Grid
Problems
Services (Unhandled)
Hosts (Unhandled)
Network Outages
Quick Search:
A new version of Nagios Core is available!
Visit nagios.org to download Nagios 4.4.8.
Page Tour
Get Started
Start monitoring your infrastructure
Change the look and feel of Nagios
Quick Links
Nagios Library (tutorials and docs)
Nagios Labs (development blog)
root@localhost:~
Nagios: 192.168.56.120 — Mozill...



Nagios CentOS



Prometheus CentOS



3. Push and Commit from the local repository to GitHub

```
madiane@workstation:~/CPE_MIDEXAM_AGPAOA$ git add *
```

```
madiane@workstation:~/CPE_MIDEXAM_AGPAOA$ git commit -m "MIDTERM EXAM"
[main 5b346f1] MIDTERM EXAM
 11 files changed, 227 insertions(+)
 create mode 100644 ansible.cfg
 create mode 100644 config.yaml
 create mode 100644 inventory
 create mode 100644 roles/elasticstack/tasks/main.yml
 create mode 100644 roles/grafana/graf.service
 create mode 100644 roles/grafana/tasks/main.yml
 create mode 100644 roles/influxdb/tasks/main.yml
 create mode 100644 roles/lampstack/tasks/main.yml
 create mode 100644 roles/nagios/tasks/main.yml
 create mode 100644 roles/prometheus/prom.service
 create mode 100644 roles/prometheus/tasks/main.yml
madiane@workstation:~/CPE_MIDEXAM_AGPAOA$ git push
Enumerating objects: 21, done.
Counting objects: 100% (21/21), done.
Delta compression using up to 3 threads
Compressing objects: 100% (13/13), done.
Writing objects: 100% (20/20), 2.87 KiB | 1.43 MiB/s, done.
Total 20 (delta 1), reused 0 (delta 0), pack-reused 0
remote: Resolving deltas: 100% (1/1), done.
To github.com:qmja/CPE_MIDEXAM_AGPAOA.git
   58ec366..5b346f1  main -> main
```

GitHub link:

https://github.com/qmja/CPE_MIDEXAM_AGPAOA.git

Conclusions: (link your conclusion from the objective)

In conclusion, I learned how to

Faculty Performance Evaluation:

T.I.P. Faculty Performance Evaluation by the Students (1st Semester, S.Y. 2022-2023, Modular Group 4-part 2)

Your response has been recorded.

Edit your response

Submit another response