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Course/Section: CPE232 - CPE31S4	**Date Submitted:** 10-17-23
Instructor: Dr. Jonathan V. Taylar	**Semester and SY:** 1st Sem '23 - '24

Activity 8: Install, Configure, and Manage Availability Monitoring tools

1. Objectives

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

2. Discussion

Availability monitoring is a type of monitoring tool that we use if the certain workload is up or reachable on our end. Site downtime can lead to loss of revenue, reputational damage and severe distress. Availability monitoring prevents adverse situations by checking the uptime of infrastructure components such as servers and apps and notifying the webmaster of problems before they impact on business.

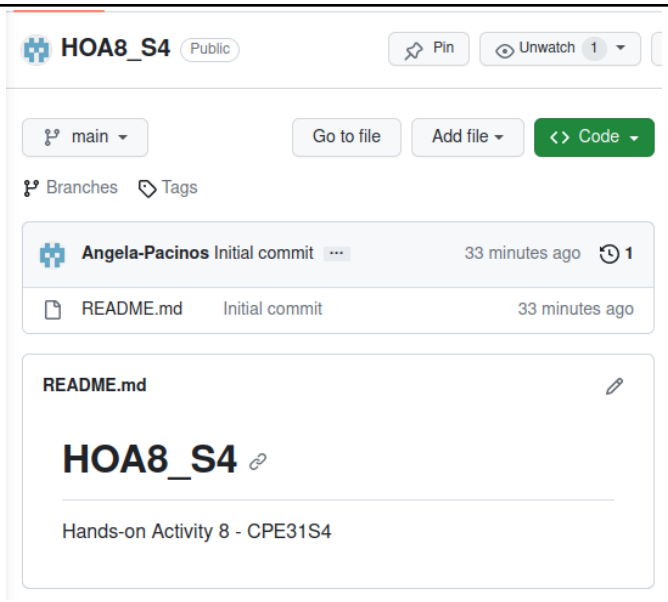
3. Tasks

1. Create a playbook that installs Nagios 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 Nagios for both Ubuntu and CentOS.
4. Make sure to create a new repository in GitHub for this activity.

4. Output

- **Create a new repository and configure it with the needed files.**

  Create a new repository in the Github for the new activity and clone it into the workstation.

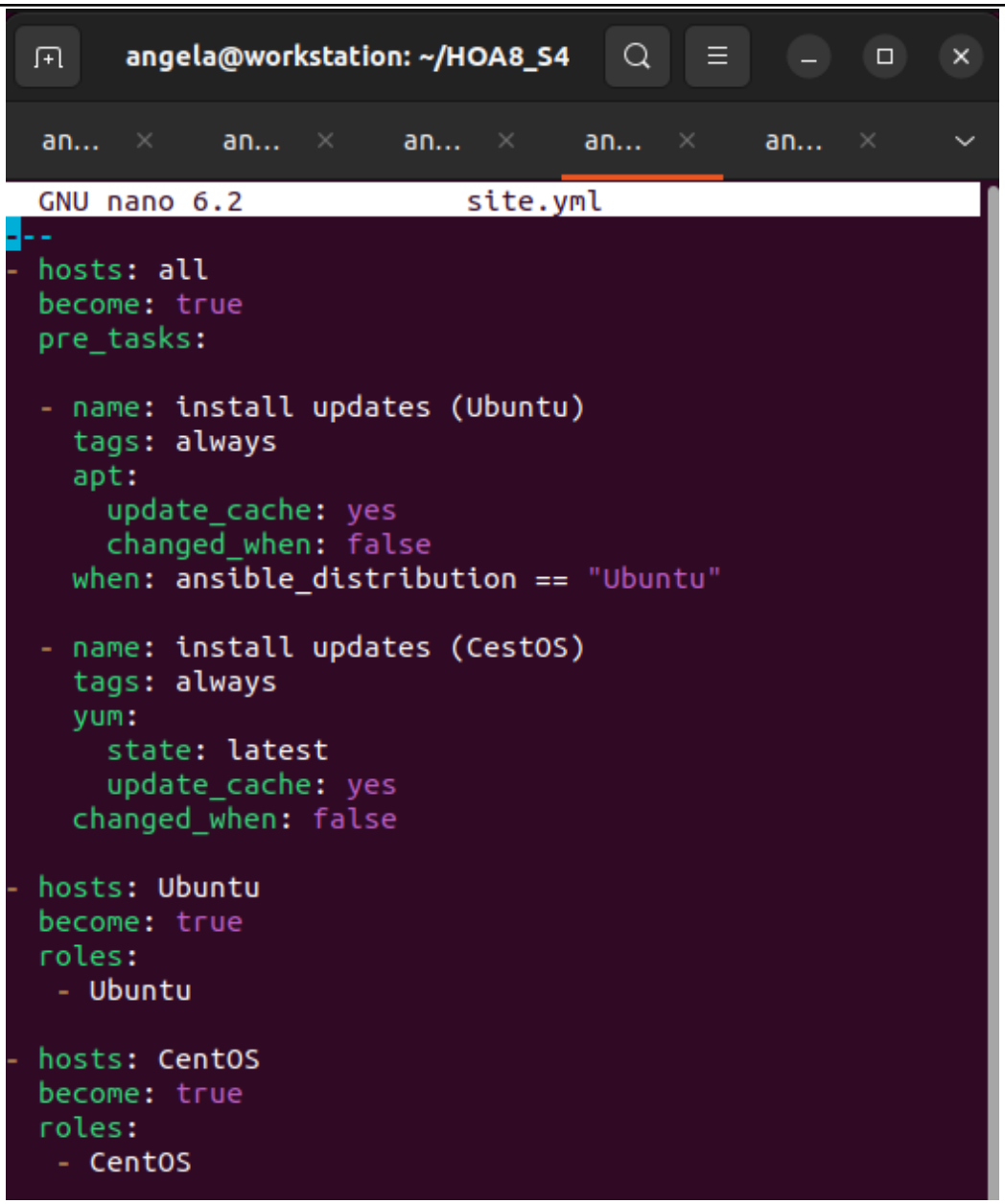



```
angela@workstation:~$ git clone https://github.com/Angela-Pacinos/HOA8_S4.git
Cloning into 'HOA8_S4'...
remote: Enumerating objects: 3, done.
remote: Counting objects: 100% (3/3), done.
remote: Total 3 (delta 0), reused 0 (delta 0), pack-reused 0
Receiving objects: 100% (3/3), done.
```

Create the inventory, ansible.cfg, site.yml and configure as follows.

```
  GNU nano 6.2 inventory *
[Ubuntu]
192.168.56.101
#192.168.56.102

[CentOS]
192.168.56.104
```

```
  GNU nano 6.2 ansible.cfg
[defaults]

inventory = inventory
host_key_checking = False

deprecation_warning = False

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

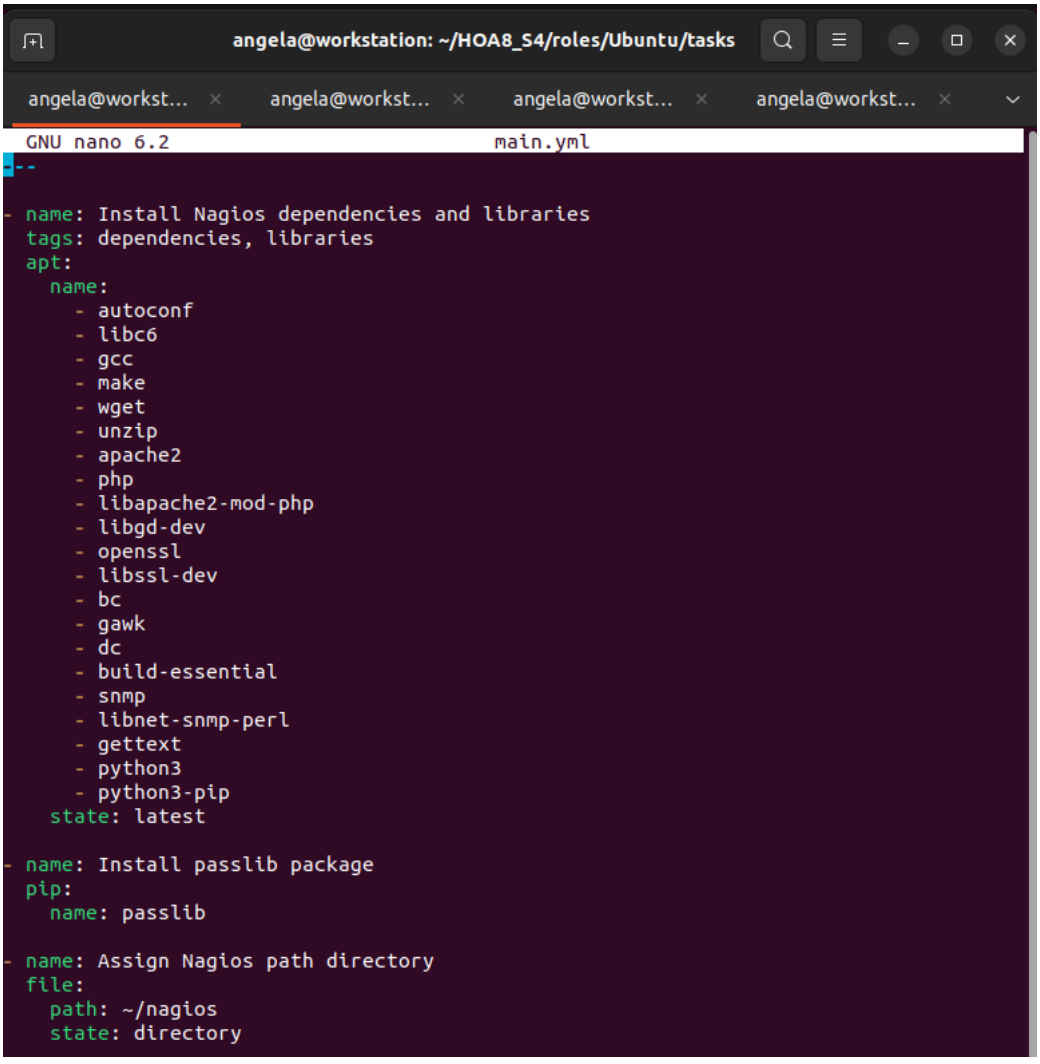


Under the same directory, create a new directory and name it roles. Enter the roles directory and create new directories: Ubuntu and CentOS. For each directory, create a directory and name it tasks.

```
angela@workstation:~/HOA8_S4/roles$ tree
.
├── CentOS
│   └── tasks
│       └── main.yml
└── Ubuntu
    └── tasks
        └── main.yml
```

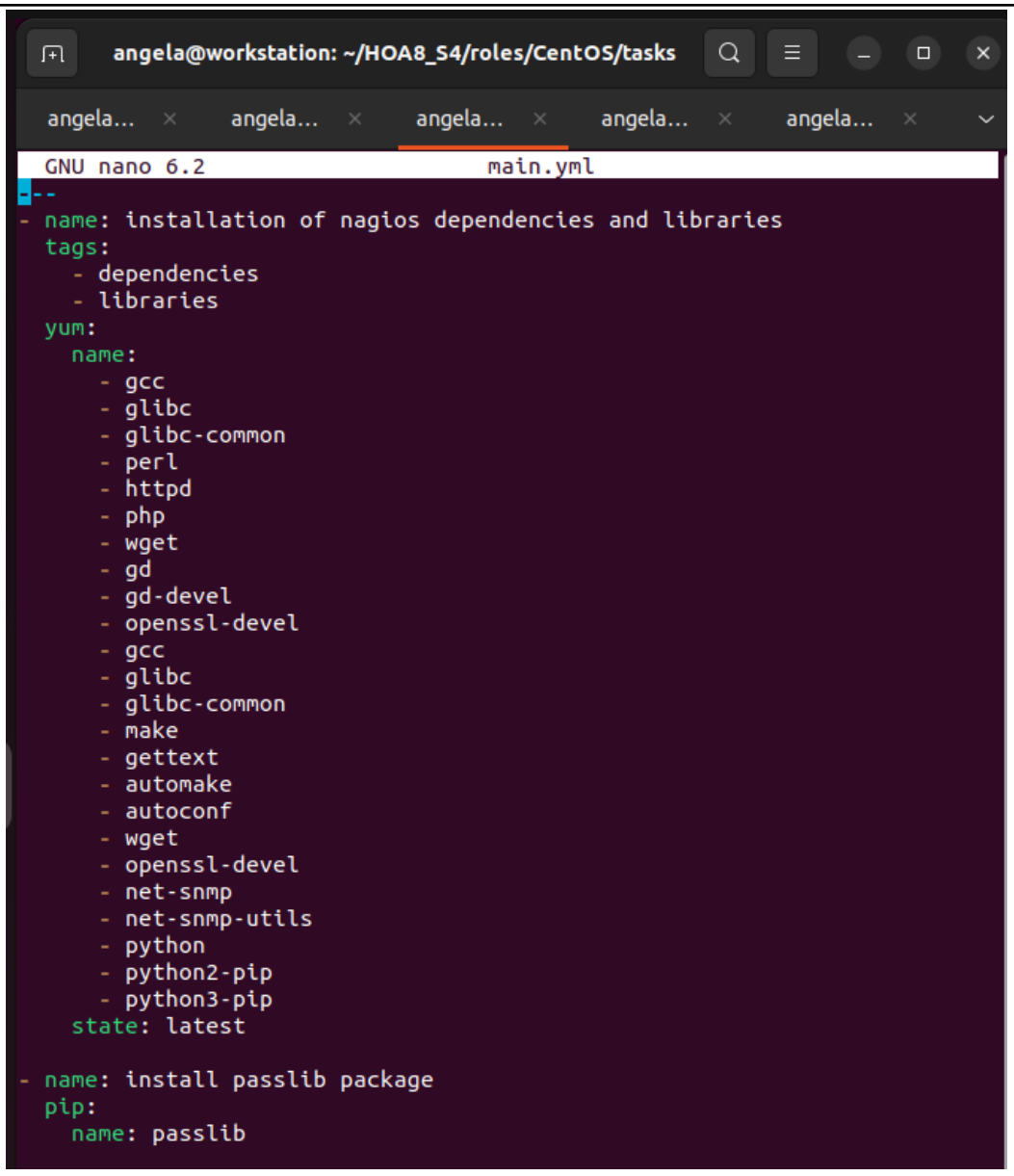
- **Install the Nagios package**
  Edit the main.yml for both Ubuntu and CentOS directory as follows. Save and exit.

```
angela@workstation:~/HOA8_S4/roles$ cd Ubuntu
angela@workstation:~/HOA8_S4/roles/Ubuntu$ cd tasks
angela@workstation:~/HOA8_S4/roles/Ubuntu/tasks$ ls
main.yml
angela@workstation:~/HOA8_S4/roles/Ubuntu/tasks$ sudo nano main.yml
```



```
- name: Download Nagios
  unarchive:
    src: https://github.com/NagiosEnterprises/nagioscore/archive/nagios-4.4.6.tar.gz
    dest: ~/nagios
    remote_src: yes
    mode: 0777
    owner: root
    group: root

- name: Add users to Nagios
  community.general.htpasswd:
    path: /usr/local/nagios/etc/htpasswd.users
    name: admin
    password: admin

- name: Start and Enable Nagios
  service:
    name: nagios4
    state: restarted
    enabled: true

- name: Start and Enable apache
  service:
    name: apache2
    state: restarted
    enabled: true
```

```
angela@workstation:~/HOA8_S4/roles$ cd CentOS
angela@workstation:~/HOA8_S4/roles/CentOS$ cd tasks
angela@workstation:~/HOA8_S4/roles/CentOS/tasks$ ls
main.yml
angela@workstation:~/HOA8_S4/roles/CentOS/tasks$ sudo nano main.yml
```


angela@workstation: ~/HOA8_S4/roles/CentOS/tasks
angela...
angela...
angela...
angela...
angela...
GNU nano 6.2 main.yml

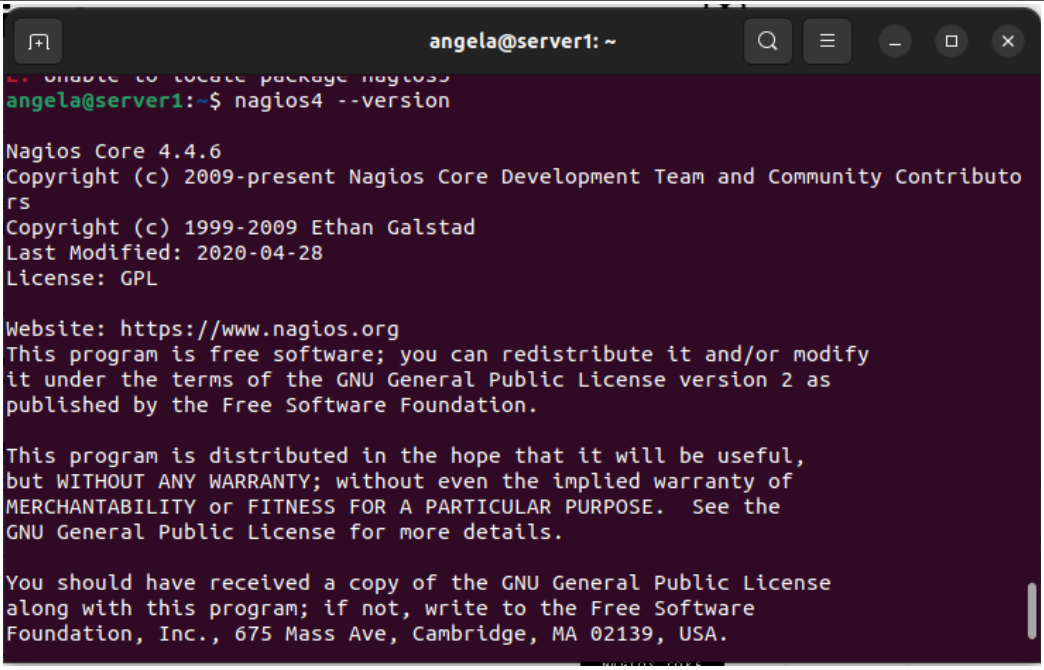
- name: installation of nagios dependencies and libraries
tags:
- dependencies
- libraries
yum:
name:
- gcc
- glibc
- glibc-common
- perl
- httpd
- php
- wget
- gd
- gd-devel
- openssl-devel
- gcc
- glibc
- glibc-common
- make
- gettext
- automake
- autoconf
- wget
- openssl-devel
- net-snmp
- net-snmp-utils
- python
- python2-pip
- python3-pip
state: latest
- name: install passlib package
pip:
name: passlib

```
- name: assign nagios path directory
  file:
    path: ~/nagios
    state: directory

- name: download nagios
  unarchive:
    src: https://github.com/NagiosEnterprises/nagioscore/archive/nagios-
    dest: ~/nagios
    remote_src: yes
    mode: 0777
    owner: root
    group: root

- name: add users to nagios
  community.general.htpasswd:
    path: /usr/local/nagios/etc/htpasswd.users
    name: admin
    password: admin

- name: start and enable nagios
  service:
    name: nagios
    state: restarted
    enabled: true

- name: start and enable httpd
  service:
    name: httpd
    state: restarted
    enabled: true
```

Run the site.yml playbook.

I wasn't able to take a screenshot of the running of the playbook as after I did that my Ubuntu desktop stopped working. But the playbook was running okay.

To check if the Nagios was successfully installed, go to the remote server, open the browser and enter the ip address.


angela@server1: ~
angela@server1:~$ nagios4 --version
Nagios Core 4.4.6
Copyright (c) 2009-present Nagios Core Development Team and Community Contributors
Copyright (c) 1999-2009 Ethan Galstad
Last Modified: 2020-04-28
License: GPL
Website: https://www.nagios.org
This program is free software; you can redistribute it and/or modify
it under the terms of the GNU General Public License version 2 as
published by the Free Software Foundation.
This program is distributed in the hope that it will be useful,
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GNU General Public License for more details.
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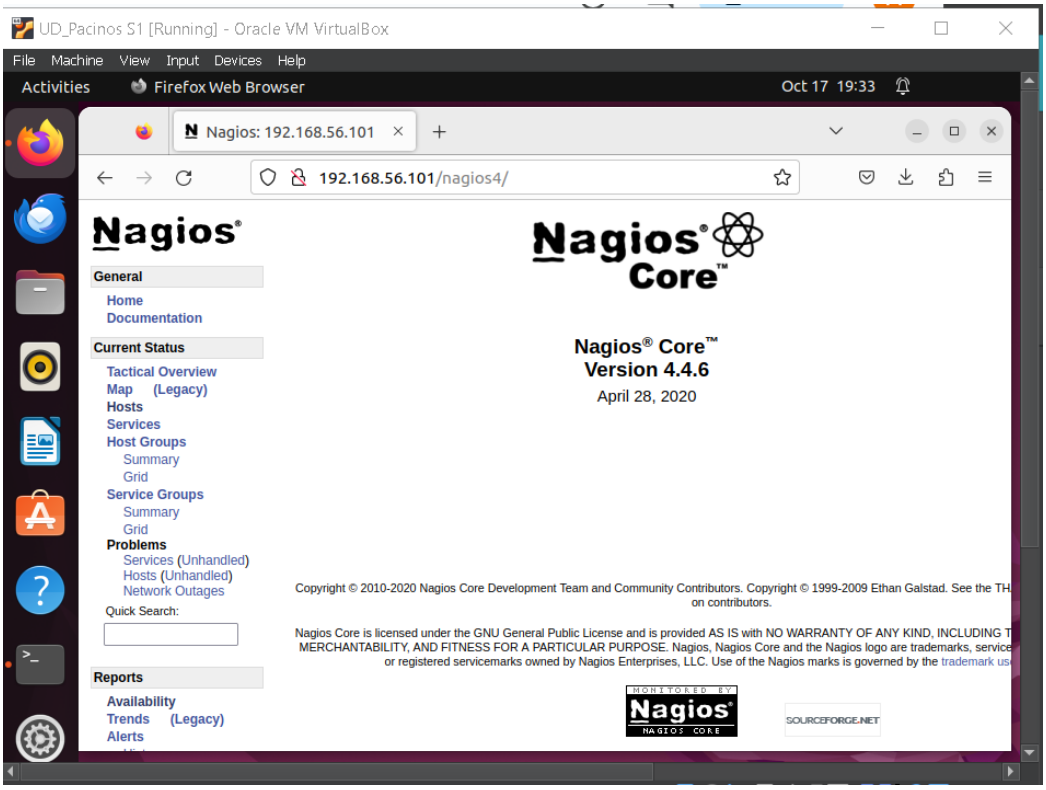
along with this program; if not, write to the Free Software
Foundation, Inc., 675 Mass Ave, Cambridge, MA 02139, USA.


UD_Pacinos S1 [Running] - Oracle VM VirtualBox
File Machine View Input Devices Help
Activities
Firefox Web Browser
Oct 17 19:33
Nagios: 192.168.56.101
192.168.56.101/nagios4/
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:
Reports
Availability
Trends (Legacy)
Alerts
Nagios Core
Nagios® Core™
Version 4.4.6
April 28, 2020
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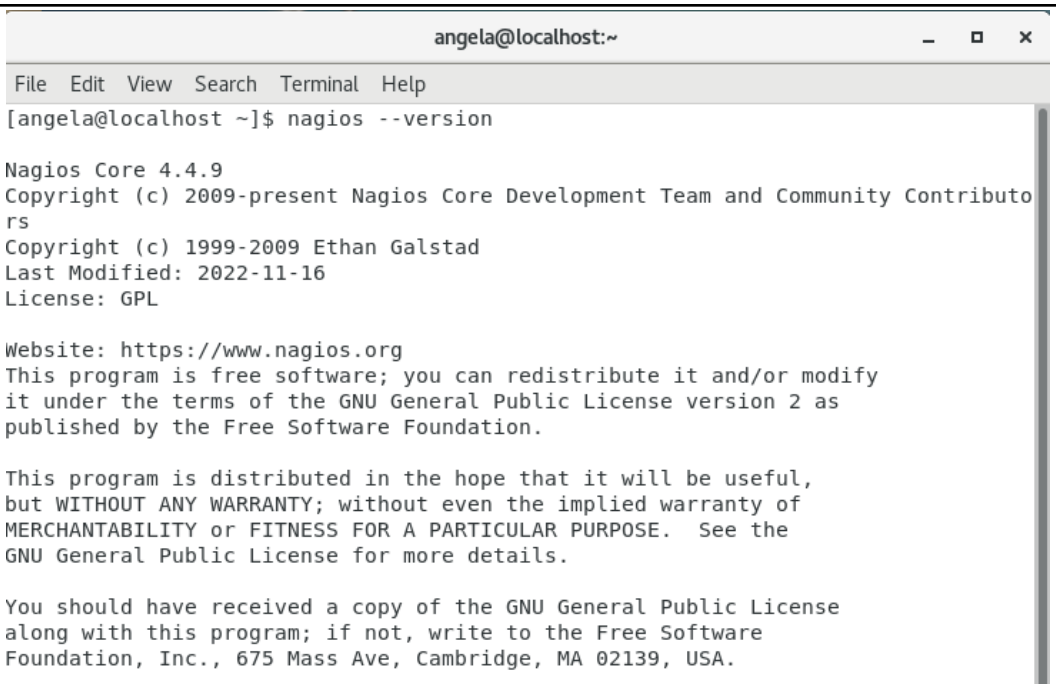

- **Make sure that the repository is in sync with Github.**
  Use the git push command to save the repository in Github.
  I will just re do this activity to be able sync the repository on my Github.

Reflections:

Answer the following:

1. **What are the benefits of having an availability monitoring tool?**
   Availability monitoring is a type of tool that we use if the tasks from the workstation are available to our remote servers. We used this kind of tool for many reasons and one of which is that it can be managed and done 24/7. If we are available and have access to the server, we have the ability to monitor and administer the server, look for down time and fix it immediately.

Conclusions:

This activity was kind of similar to the previous one where we have to use roles and groups to install the specific package that is needed. There were a lot of errors that I had to fix for the installation of nagios to be fully successful. I had problems with the site.yml which I was able to fix when I follow what is done from the last activity since they have similar structure. For the installation of nagios, doing the playbook itself took a lot of time and I searched and tried a lot of configurations. I encountered a lot of problems within my server 1 that I even had

to sudo dpkg to install something on the server. I also figured out that the remote server1 only caters to the nagios4 version and is one of the errors that I keep encountering because I only input nagios which the server cannot locate. Towards the end my Ubuntu Desktop just suddenly stopped working and I wasn't able to open it, that is why some screenshots are missing. Overall, this activity was very challenging to do as we had to do the steps and the components of the playbooks ourselves.