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Finals Exam

Procedure:

1. Create a repository and label it as "Final_Exam_Surname"

2. Clone your new repository in your VM

3. Create an Ansible playbook that does the following with an input of a config.yaml file and structure inventory file.

3.1 Install and configure one enterprise service that can be installed in Debian and Centos servers

3.2 Install and configure one monitoring tool that can be installed in Debian and Centos servers (if it is a stack there should be option of different host)

4.4 Change Motd as "Ansible Managed by <username>"

4. Push and commit your files in GitHub

5. Make sure to show evidence of input (codes) process (codes successfully running) and output (evidence of installation)

5. For your final exam to be counted, please paste your repository link as an answer in this exam.

Note: Extra points if you will implement the said services via containerization.
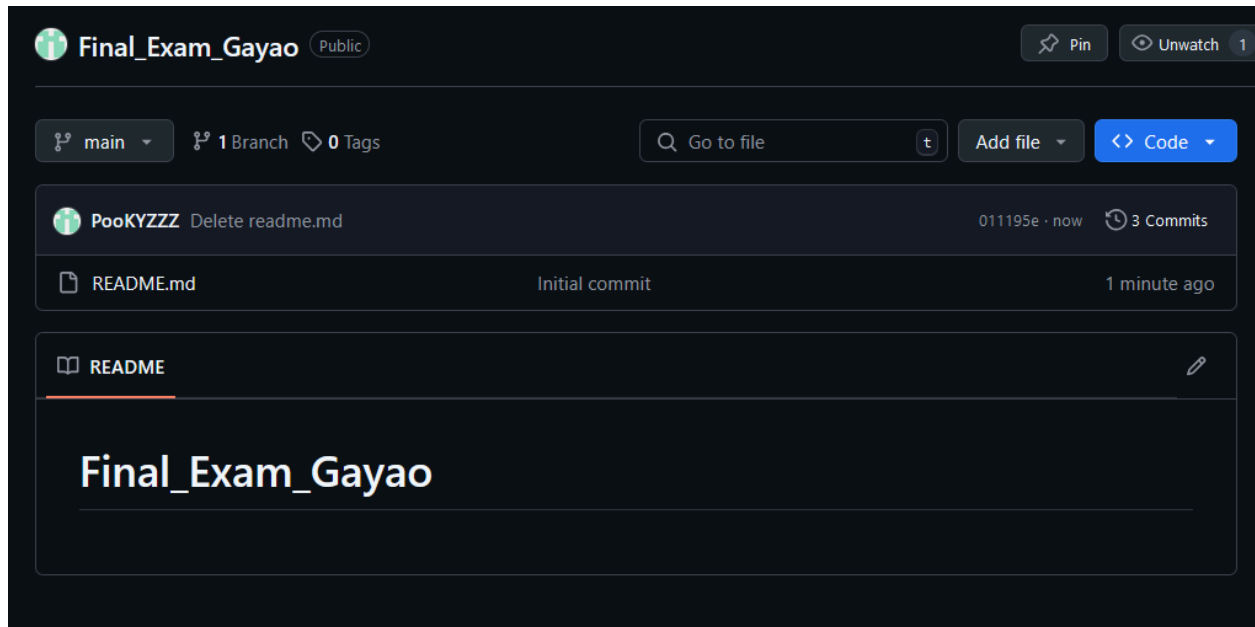
Created a new repository
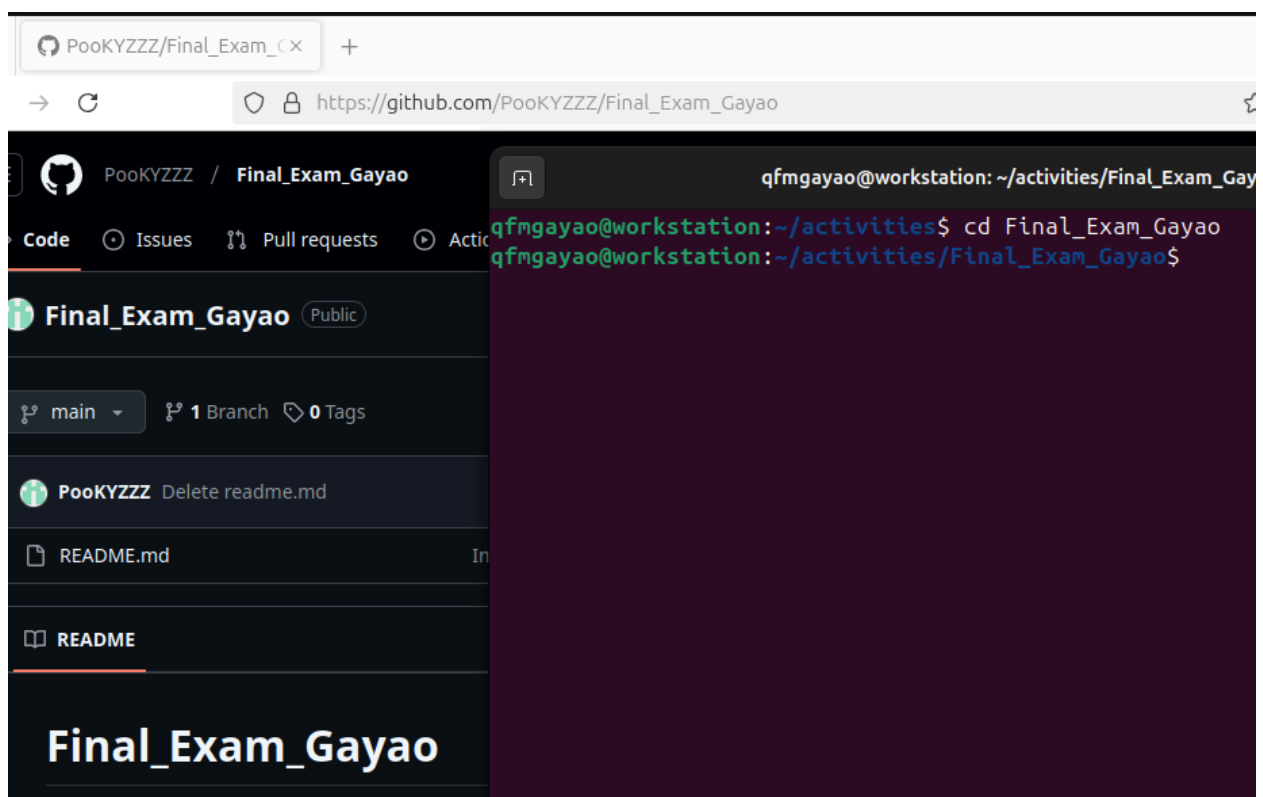
Git clone the repository

```
  GNU nano 7.2                        ansible.cfg
[defaults]
inventory = inventory
remote_user = qfmgayao
host_key_checking = True
```

Created a new ansible.cfg

```
   GNU nano 7.2                        inventory
[apache]
mn1 ansible_host=192.168.56.142 ansible_become_pass="dikoalam1991"

[nagios]
mn2 ansible_host=192.168.56.145 ansible_become_pass="qfmgayao"
```

Created an inventory and separate them

```
qfmgayao@workstation:~/activities/Final_Exam_Gayao/roles$ ls
nagios
qfmgayao@workstation:~/activities/Final_Exam_Gayao/roles$ cd nagios
qfmgayao@workstation:~/activities/Final_Exam_Gayao/roles/nagios$ ls
tasks
qfmgayao@workstation:~/activities/Final_Exam_Gayao/roles/nagios$ cd tasks
qfmgayao@workstation:~/activities/Final_Exam_Gayao/roles/nagios/tasks$ ls
main.yml
qfmgayao@workstation:~/activities/Final_Exam_Gayao/roles/nagios/tasks$
```

Made role for nagios

Made role for ubuntu


```
  GNU nano 7.2                                                        main.yml *
---
- name: Install Apache (apache2) on Ubuntu
  tags: apache, ubuntu
  apt:
    name: apache2
    state: latest
    update_cache: yes

- name: Start and enable Apache service on Ubuntu
  tags: apache, ubuntu, apache2
  service:
    name: apache2
    state: started
    enabled: true

- name: Copy default HTML file for Apache site
  tags: apache, ubuntu, apache2
  copy:
    src: files/default_site.html
    dest: /var/www/html/index.html
    owner: root
    group: root
    mode: '0644'
```

Setup the main.yml for apache for ubuntu

```
  GNU nano 7.2                                    main.yml
--
- name: Install dependencies for Nagios on CentOS
  yum:
    name:
      - httpd
      - php
      - wget
      - gcc
      - glibc
      - glibc-common
      - gd
      - gd-devel
      - make
      - net-snmp
      - unzip
    state: present

- name: Download Nagios tarball
  get_url:
    url: "https://assets.nagios.com/downloads/nagioscore/releases/nagios-4.4.6.tar.gz"
    dest: /tmp/nagios.tar.gz

- name: Extract Nagios tarball
  unarchive:
    src: /tmp/nagios.tar.gz
    dest: /opt/
    remote_src: yes
```

Setup main yml for NagiOS on centOS

```
qfmgayao@workstation:~/activities/Final_Exam_Gayao/roles$ mkdir -p ~/activities/Final_Exam_Gayao/roles/motd/tasks && tou
ch ~/activities/Final_Exam_Gayao/roles/motd/tasks/main.yml
qfmgayao@workstation:~/activities/Final_Exam_Gayao/roles$ ls
apache  motd  nagios
qfmgayao@workstation:~/activities/Final_Exam_Gayao/roles$ cd motd
qfmgayao@workstation:~/activities/Final_Exam_Gayao/roles/motd$ cd tasks
qfmgayao@workstation:~/activities/Final_Exam_Gayao/roles/motd/tasks$ ls
main.yml
qfmgayao@workstation:~/activities/Final_Exam_Gayao/roles/motd/tasks$
```

Setup a new role for motd

```
GNU nano 7.2                                                    main.yml
---
- name: Set the MOTD message
  copy:
    content: "Ansible Managed by {{ ansible_user_id }}"
    dest: /etc/motd
    owner: root
    group: root
    mode: '0644'
```

Main yml for MOTD

```
GNU nano 7.2                                                  installer.yml
---
- name: Setup NagiOS, and MOTD
  hosts: nagios
  become: true
  roles:
    - nagios
    - motd

- name: Setup Apache, and MOTD
  hosts: apache
  become: true
  roles:
    - apache
    - motd
```

This is the one I run for my roles which would install the nagios, motd, and apache for my centos and ubuntu

```
qfmgayao@workstation:~/activities/Final_Exam_Gayao$ ansible-playbook --ask-become-pass installer.yml
BECOME password:

PLAY [Setup NagiOS, and MOTD] *************************************************************

TASK [Gathering Facts] *******************************************************************
ok: [mn2]

TASK [nagios : Install dependencies for Nagios and Apache] *******************************
ok: [mn2]

TASK [nagios : Create Nagios group] ******************************************************
ok: [mn2]

TASK [nagios : Create Nagios user] *******************************************************
ok: [mn2]

TASK [nagios : Download Nagios tarball] **************************************************
ok: [mn2]

TASK [nagios : Extract Nagios tarball] ***************************************************
ok: [mn2]

TASK [nagios : Configure Nagios] *********************************************************
changed: [mn2]

TASK [nagios : Build Nagios] *************************************************************
changed: [mn2]

TASK [nagios : Install Nagios] **********************************************************

changed: [mn2]

TASK [nagios : Configure Nagios Admin User] *********************************************
changed: [mn2]

TASK [nagios : Enable and Start Apache] ************************************************
ok: [mn2]

TASK [motd : Set the MOTD message] *****************************************************
ok: [mn2]

PLAY [Setup Apache, and MOTD] *********************************************************

TASK [Gathering Facts] ***************************************************************
ok: [mn1]

TASK [apache : Install Apache (apache2) on Ubuntu] **********************************
ok: [mn1]

TASK [apache : Start and enable Apache service on Ubuntu] **************************
ok: [mn1]

TASK [motd : Set the MOTD message] ************************************************
ok: [mn1]

PLAY RECAP ***********************************************************************
mn1                        : ok=4    changed=0    unreachable=0    failed=0    skipped=0    rescued=0    ignored=0
mn2                        : ok=16   changed=8    unreachable=0    failed=0    skipped=0    rescued=0    ignored=0

qfmgayao@workstation:~/activities/Final_Exam_Gayao$
```

This is the result, this shows that it's successful.

```
once apache.service could not be found.
qfmgayao@mn1:~$ sudo systemctl status apache2
● apache2.service - The Apache HTTP Server
     Loaded: loaded (/usr/lib/systemd/system/apache2.service; enabled; preset: >
     Active: active (running) since Fri 2024-12-13 10:11:32 PST; 13min ago
       Docs: https://httpd.apache.org/docs/2.4/
   Main PID: 18590 (apache2)
      Tasks: 7 (limit: 4068)
     Memory: 11.4M (peak: 11.6M)
        CPU: 109ms
     CGroup: /system.slice/apache2.service
             ├─18590 /usr/sbin/apache2 -k start
             ├─18593 /usr/sbin/apache2 -k start
             ├─18594 /usr/sbin/apache2 -k start
             ├─18595 /usr/sbin/apache2 -k start
             ├─18596 /usr/sbin/apache2 -k start
             ├─18597 /usr/sbin/apache2 -k start
             └─21014 /usr/sbin/apache2 -k start

Dec 13 10:11:32 mn1 systemd[1]: Starting apache2.service - The Apache HTTP Serv>
Dec 13 10:11:32 mn1 apachectl[18589]: AH00558: apache2: Could not reliably dete>
Dec 13 10:11:32 mn1 systemd[1]: Started apache2.service - The Apache HTTP Serve>
lines 1-20/20 (END)
```

This shows that my apache works on my ubuntu

```
Docs: https://www.nagios.org/documentation
[qfmgayao@mn2 ~]$ sudo systemctl status nagios
● nagios.service - Nagios Core 4.4.6
     Loaded: loaded (/usr/lib/systemd/system/nagios.service; enabled; preset: disabled)
     Active: active (running) since Fri 2024-12-13 10:32:00 PST; 22s ago
       Docs: https://www.nagios.org/documentation
    Process: 14406 ExecStartPre=/usr/local/nagios/bin/nagios -v /usr/local/nagios/etc/nagios.cfg (code=exited, status=0/SUCCESS)
    Process: 14407 ExecStart=/usr/local/nagios/bin/nagios -d /usr/local/nagios/etc/nagios.cfg (code=exited, status=0/SUCCESS)
   Main PID: 14408 (nagios)
      Tasks: 11 (limit: 20510)
     Memory: 4.0M
        CPU: 41ms
     CGroup: /system.slice/nagios.service
             ├─14408 /usr/local/nagios/bin/nagios -d /usr/local/nagios/etc/nagios.cfg
             ├─14409 /usr/local/nagios/bin/nagios --worker /usr/local/nagios/var/rw/nagios.qh
             ├─14410 /usr/local/nagios/bin/nagios --worker /usr/local/nagios/var/rw/nagios.qh
             ├─14411 /usr/local/nagios/bin/nagios --worker /usr/local/nagios/var/rw/nagios.qh
             ├─14412 /usr/local/nagios/bin/nagios --worker /usr/local/nagios/var/rw/nagios.qh
             ├─14413 /usr/local/nagios/bin/nagios --worker /usr/local/nagios/var/rw/nagios.qh
             ├─14414 /usr/local/nagios/bin/nagios --worker /usr/local/nagios/var/rw/nagios.qh
             ├─14415 /usr/local/nagios/bin/nagios --worker /usr/local/nagios/var/rw/nagios.qh
             ├─14416 /usr/local/nagios/bin/nagios --worker /usr/local/nagios/var/rw/nagios.qh
             ├─14417 /usr/local/nagios/bin/nagios --worker /usr/local/nagios/var/rw/nagios.qh
             └─14626 /usr/local/nagios/bin/nagios -d /usr/local/nagios/etc/nagios.cfg

Dec 13 10:32:00 mn2 nagios[14408]: wproc: Registry request: name=Core Worker 14409;pid=14409
Dec 13 10:32:00 mn2 nagios[14408]: wproc: Registry request: name=Core Worker 14411;pid=14411
Dec 13 10:32:00 mn2 nagios[14408]: wproc: Registry request: name=Core Worker 14412;pid=14412
Dec 13 10:32:00 mn2 nagios[14408]: wproc: Registry request: name=Core Worker 14414;pid=14414
Dec 13 10:32:00 mn2 nagios[14408]: wproc: Registry request: name=Core Worker 14413;pid=14413
Dec 13 10:32:00 mn2 nagios[14408]: wproc: Registry request: name=Core Worker 14416;pid=14416
Dec 13 10:32:00 mn2 nagios[14408]: wproc: Registry request: name=Core Worker 14415;pid=14415
```

And this shows that nagios is successfully installed and running on my centos

```
qfmgayao@workstation:~/activities/Final_Exam_Gayao$ ssh qfmgayao@mn1
Welcome to Ubuntu 24.04.1 LTS (GNU/Linux 6.8.0-45-generic x86_64)

 * Documentation:  https://help.ubuntu.com
 * Management:     https://landscape.canonical.com
 * Support:        https://ubuntu.com/pro

Expanded Security Maintenance for Applications is not enabled.

121 updates can be applied immediately.
37 of these updates are standard security updates.
To see these additional updates run: apt list --upgradable

Enable ESM Apps to receive additional future security updates.
See https://ubuntu.com/esm or run: sudo pro status

*** System restart required ***
MOTD FOR TODEI:    Ansible Managed by root
Last login: Fri Dec 13 10:37:29 2024 from 192.168.56.141
qfmgayao@mn1:~$
```

This shows that my MOTD works for my managenode 1 which houses the apache


```
qfmgayao@workstation:~/activities/Final_Exam_Gayao$ ssh qfmgayao@mn2
MOTD FOR TODEI:    Ansible Managed by root
Activate the web console with: systemctl enable --now cockpit.socket

Last login: Fri Dec 13 10:37:20 2024 from 192.168.56.141
[qfmgayao@mn2 ~]$
```

And This shows that my MOTD works for my managenode 2 which houses the nagios