

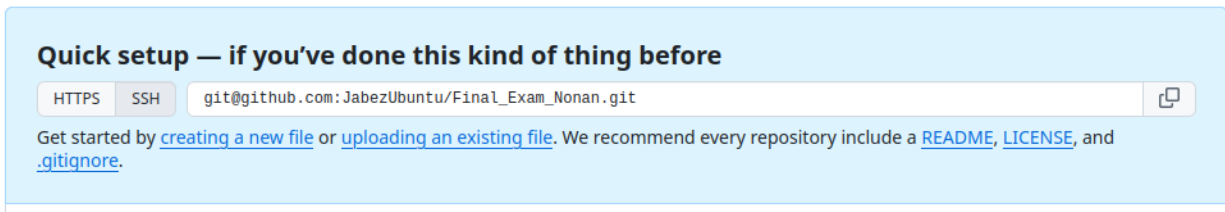
Finals Exam

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CPE31S21

13/12/24

Procedure:

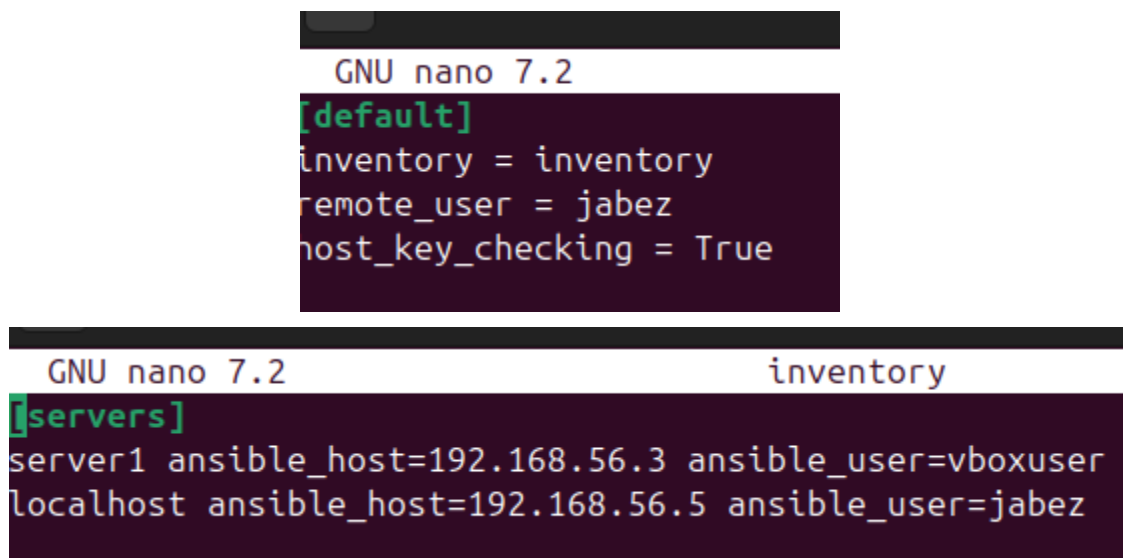
1. Create a repository and label it as "Final_Exam_Surname"



2. Clone your new repository in your VM

```
jabez@jabez:~$ git clone git@github.com:JabezUbuntu/Final_Exam_Nonan.git
Cloning into 'Final_Exam_Nonan'...
warning: You appear to have cloned an empty repository.
```

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

```
- name: Install Apache on Ubuntu
  apt:
    name: apache2
    state: present
  when: ansible_os_family == "Debian"

- name: Install Apache on Centos
  yum:
    name: httpd
    state: present
  when: ansible_os_family == "RedHat"

- name: Start and Enable Apache Service
  service:
    name: "{{ 'apache2' if ansible_os_family == 'Debian' else 'httpd' }}"
    state: started
    enabled: true

- name: Configure Apache Port
  lineinfile:
    path: "{{ '/etc/apache2/ports.conf' if ansible_os_family == 'Debian' else '/etc/httpd/conf/httpd.conf' }}"
    regexp: "^Listen"
    line: "Listen {{ apache_port }}"
  notify: Restart Apache
```

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)

```
- name: Download Prometheus
  get_url:
    url: "https://github.com/prometheus/prometheus/releases/download/v{{ prometheus_version }}"
    dest: /tmp/prometheus.tar.gz

- name: Extract Prometheus
  unarchive:
    src: /tmp/prometheus.tar.gz
    dest: /opt
    remote_src: true

- name: Move Prometheus Files
  command:
    cmd: mv /opt/prometheus-{{ prometheus_version }}.linux-amd64 /opt/prometheus
  args:
    creates: /opt/prometheus
```

```

- name: Configure Prometheus as a Service
  copy:
    dest: /etc/systemd/system/prometheus.service
    content: |
      [Unit]
      Description=Prometheus Monitoring
      After=network.target

      [Service]
      User=prometheus
      ExecStart=/opt/prometheus/prometheus \
        --config.file=/opt/prometheus/prometheus.yml \
        --storage.tsdb.path=/opt/prometheus/data
      Restart=always

      [Install]
      WantedBy=multi-user.target

- name: Reload systemd and Enable Prometheus
  systemd:
    daemon_reload: true
    name: prometheus
    state: started

```

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

```

vars:
  username: "jabez"

```

```

- name: Update MOTD
  copy:
    dest: /etc/motd
    content: "Ansible Managed by {{ username }}"

```

4. Push and commit your files in GitHub

```
jabez@jabez:~/Final_Exam_Nonan$ nano pbook.yml
jabez@jabez:~/Final_Exam_Nonan$ git add .
jabez@jabez:~/Final_Exam_Nonan$ git commit -m "passing grade pls"
[main (root-commit) 1b9d379] passing grade pls
 4 files changed, 204 insertions(+)
 create mode 100644 ansible.cfg
 create mode 100644 inventory
 create mode 100644 pbook.yml
 create mode 100644 pbook.yml
jabez@jabez:~/Final_Exam_Nonan$ git push origin main
Enumerating objects: 6, done.
Counting objects: 100% (6/6), done.
Delta compression using up to 3 threads
Compressing objects: 100% (6/6), done.
Writing objects: 100% (6/6), 1.39 KiB | 713.00 KiB/s, done.
Total 6 (delta 1), reused 0 (delta 0), pack-reused 0
remote: Resolving deltas: 100% (1/1), done.
To github.com:JabezUbuntu/Final_Exam_Nonan.git
 * [new branch]      main -> main
```

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

First run:

```
jabez@jabez:~/Final_Exam_Nonan$ ansible-playbook --ask-become-pass pbook.yml -i
inventory
BECOME password:
ERROR! We were unable to read either as JSON nor YAML, these are the errors we
ot from each:
JSON: Expecting value: line 1column 1 (char 0)

Syntax Error while loading YAML.
  mapping values are not allowed in this context

The error appears to be in '/home/jabez/Final_Exam_Nonan/pbook.yml': line 7, co
umn 12, but may
be elsewhere in the file depending on the exact syntax problem.

The offending line appears to be:

    - name: Install Apache on Ubuntu
      apt:
        ^ here
```

After solving the error:

```
jabez@jabez:~/Final_Exam_Nonan$ ansible-playbook --ask-become-pass pbook.yml -i
inventory
BECOME password:

PLAY [Enterprise Service and Monitoring Setup] *****

TASK [Gathering Facts] *****
ok: [localhost]
ok: [server1]

TASK [Install Apache on Ubuntu] *****
skipping: [localhost]
ok: [server1]

TASK [Install Apache on Centos] *****
skipping: [server1]
ok: [localhost]

TASK [Start and Enable Apache Service] *****
ok: [server1]
changed: [localhost]

TASK [Configure Apache Port] *****
fatal: [server1]: FAILED! => {"msg": "The task includes an option with an undefi
ned variable. The error was: 'apache_port' is undefined. 'apache_port' is undefi
ned\n\nThe error appears to be in '/home/jabez/Final_Exam_Nonan/pbook.yml': line
  17, column 17, but that might not be the cause if the task is being skipped"}

```

After solving the previous error:

```
PLAY RECAP *****
localhost      : ok=12    changed=7    unreachable=0    failed=0    s
kipped=1      rescued=0    ignored=0
server1        : ok=12    changed=7    unreachable=0    failed=0    s
kipped=1      rescued=0    ignored=0

jabez@jabez:~/Final_Exam_Nonan$
```

Checking Apache Service in CentOS and Ubuntu:

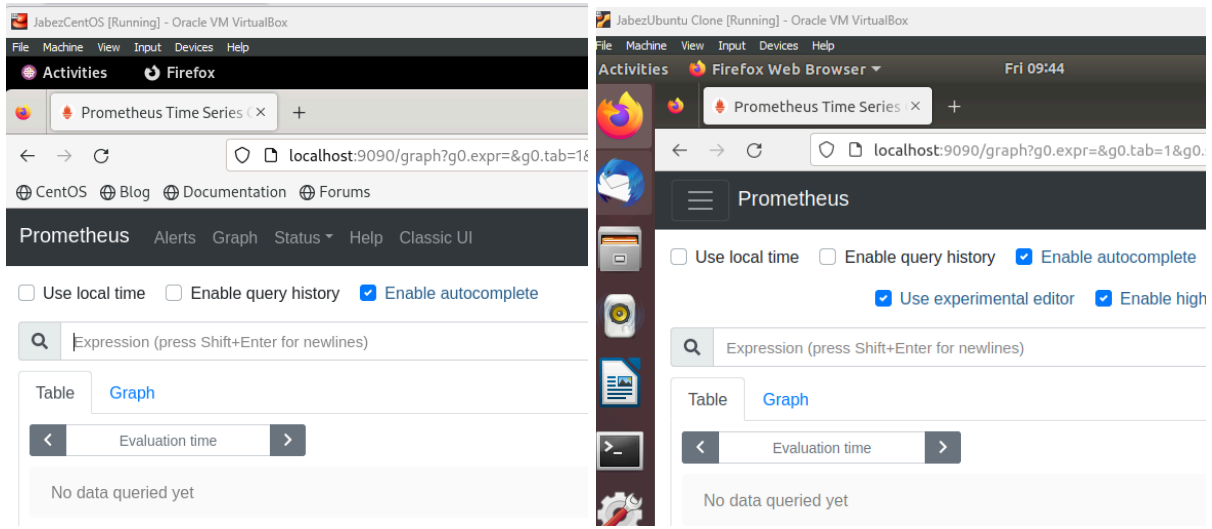
```
jabez@localhost:~ — systemctl status httpd httpd.service
httpd.service - The Apache HTTP Server
  Loaded: loaded (/usr/lib/systemd/system/httpd.service; enabled; preset: disabled)
  Drop-In: /usr/lib/systemd/system/httpd.service.d
           └─php-fpm.conf
  Active: active (running) since Fri 2024-12-13 09:28:38 PST; 17min ago
  Docs: man:httpd.service(8)
  Main PID: 3992 (httpd)
  Status: "Total requests: 0; Idle/Busy workers 100/0; Requests/sec: 0; Bytes"
  Tasks: 177 (limit: 25636)
  Memory: 38.4M
  CPU: 1.956s
  CGroup: /system.slice/httpd.service
          └─3992 /usr/sbin/httpd -DFOREGROUND
             4000 /usr/sbin/httpd -DFOREGROUND
             4001 /usr/sbin/httpd -DFOREGROUND
             4002 /usr/sbin/httpd -DFOREGROUND
             4003 /usr/sbin/httpd -DFOREGROUND

httpd.service - The Apache HTTP Server
  Loaded: loaded (/usr/lib/systemd/system/httpd.service; enabled; preset: disabled)
  Drop-In: /usr/lib/systemd/system/httpd.service.d
           └─php-fpm.conf
  Active: active (running) since Fri 2024-12-13 09:28:38 PST; 17min ago
lines 1-22
```

```
JabezUbuntu Clone [Running] - Oracle VM VirtualBox
Machine View Input Devices Help
Activities Terminal Fri 09:47
vboxuser@server1: ~
File Edit View Search Terminal Help
vboxuser@server1:~$ systemctl status httpd
Unit httpd.service could not be found.
vboxuser@server1:~$ systemctl status apache
Unit apache.service could not be found.
vboxuser@server1:~$ systemctl status apache2
● apache2.service - The Apache HTTP Server
  Loaded: loaded (/lib/systemd/system/apache2.service; enabled; vendor preset: enabled)
  Drop-In: /lib/systemd/system/apache2.service.d
           └─apache2-systemd.conf
  Active: active (running) since Fri 2024-12-13 08:54:15 +08; 53min ago
  Main PID: 1806 (apache2)
  Tasks: 6 (limit: 2318)
  CGroup: /system.slice/apache2.service
          └─1806 /usr/sbin/apache2 -k start
             3891 /usr/sbin/apache2 -k start
             3892 /usr/sbin/apache2 -k start
             3893 /usr/sbin/apache2 -k start
             3894 /usr/sbin/apache2 -k start
             3895 /usr/sbin/apache2 -k start

Warning: Journal has been rotated since unit was started. Log output is incomplete.
lines 1-16/16 (END)
```

Checking Prometheus Service in CentOS and Ubuntu:



Message of the day checking in CentOS and Ubuntu:

```
vboxuser@server1:~$ cat /etc/motd
Ansible Managed by jabezvboxuser@server1:~$

[jabez@localhost ~]$ cat /etc/motd
Ansible Managed by jabez[jabez@localhost ~]$
```

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

https://github.com/JabezUbuntu/Final_Exam_Nonan.git