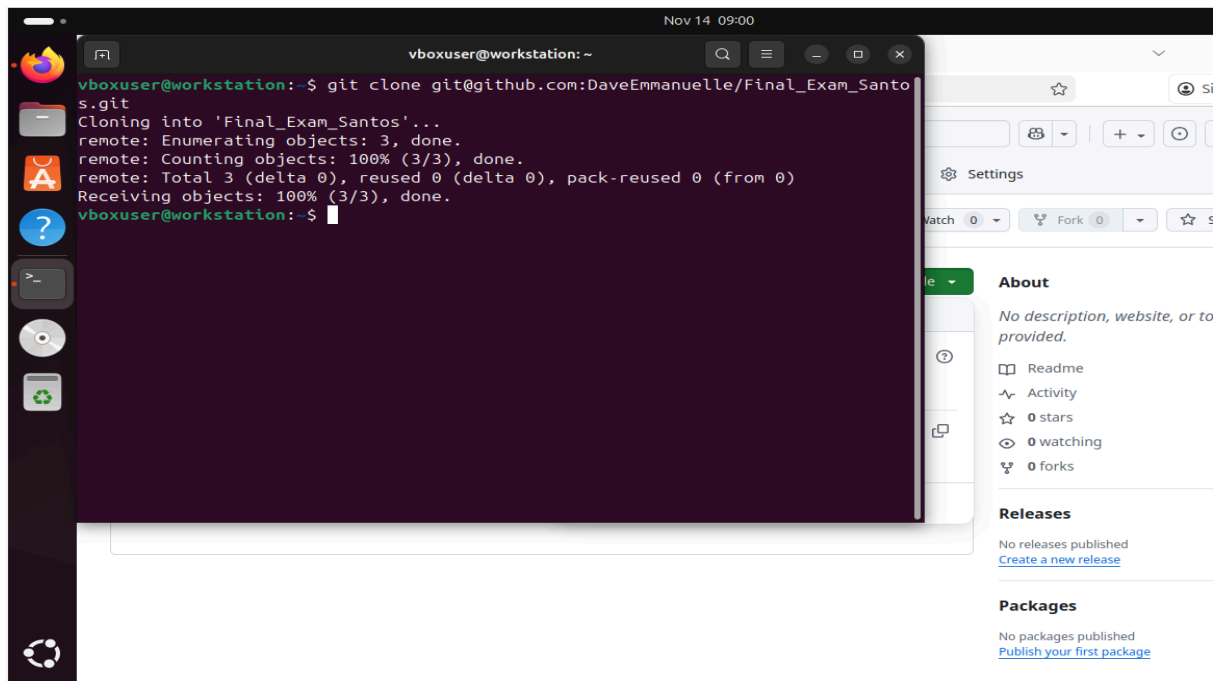
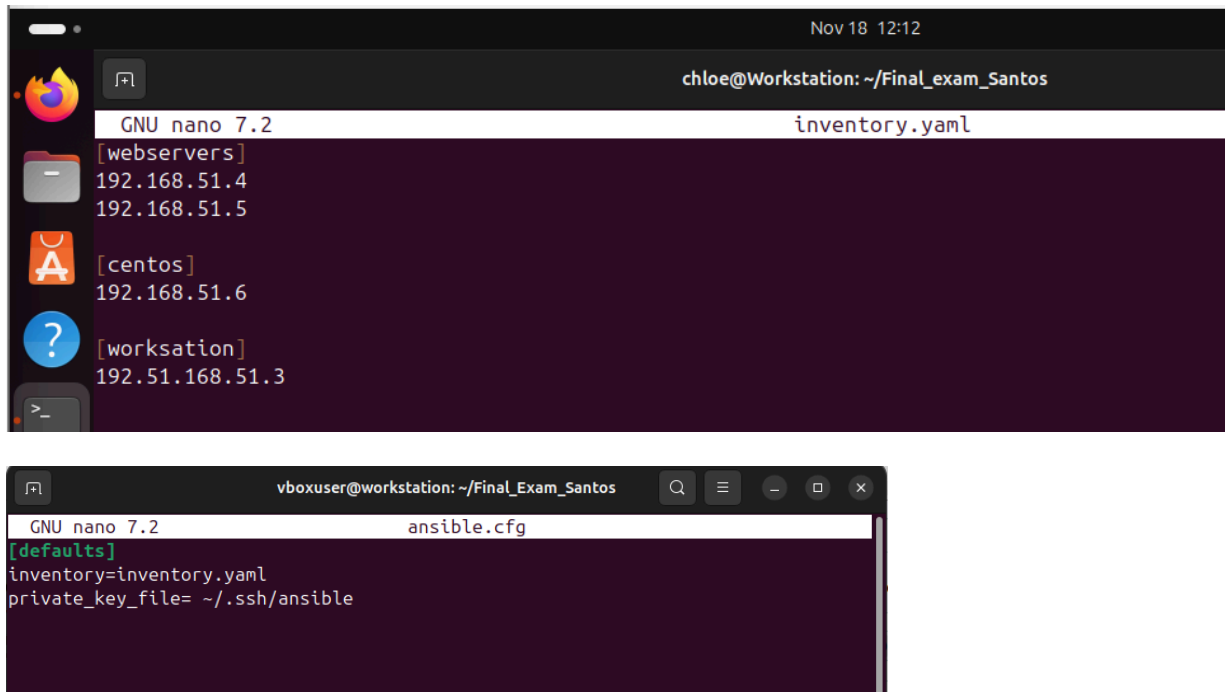


CPE212: FINAL EXAM	
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Section: CPE31S2	Date Submitted:
Course: CPE212	Instructor: Engr. Robin Valenzuela

<b>Tools Needed:</b>
1. VM with Ubuntu, CentOS and Ansible installed 2. Web browser
<b>Procedures:</b>
1. Create a repository and label it as "Final_Exam_Surname" <div data-bbox="209 966 1317 1209"> <div> <b>README</b> </div> <div> <h2>Final_exam_Santos</h2> </div> </div>
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.



```
GNU nano 7.2                                config.yaml
enterprise_service: apache
monitoring_tool: grafana
motd_user: Dave Santos
```

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

```
--
- name: Install Enterprise Service and Monitoring Tool
  hosts: all
  become: true
  vars_files:
    - config.yaml

  tasks:
    - name: Install Apache (Debian)
      apt:
        name: apache2
        state: present
        when: ansible_distribution == "Debian"
        tags:
          - apache
        become: true

    - name: Install Apache (centos)
      dnf:
        name: httpd
        state: present
        when: ansible_distribution == "centos"
        tags:
          - apache
        become: true
```

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: Add Grafana GPG Key (Debian/Ubuntu)
  apt_key:
    url: https://packages.grafana.com/gpg.key
    state: present
  when: ansible_distribution == "Debian"
  tags:
    - monitoring

- name: Download Grafana repo file
  get_url:
    url: https://packages.grafana.com/oss/deb/grafana.list
    dest: /etc/apt/sources.list.d/grafana.list
  when: ansible_distribution == "Debian"
  tags:
    - monitoring

- name: Install Grafana (Debian/Ubuntu)
  apt:
    name: grafana
    state: present
```

```
state: present
update_cache: yes
when: ansible_distribution == "Debian"
tags:
  - monitoring

- name: Download Grafana repo file for CentOS
  get_url:
    url: https://packages.grafana.com/oss/rpm/grafana.repo
    dest: /etc/yum.repos.d/grafana.repo
  when: ansible_distribution == "centos"
  tags:
    - monitoring

- name: Install Grafana (CentOS)
  yum:
    name: grafana
    state: present
  when: ansible_distribution == "centos"
  tags:
```

```

tags:
  - monitoring

- name: Install Grafana (CentOS)
  yum:
    name: grafana
    state: present
  when: ansible_distribution == "centos"
  tags:
    - monitoring

```

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

```

- name: Update MOTD
  lineinfile:
    path: /etc/motd
    line: "Ansible Managed by {{ motd_user }}"
    create: yes
  become: true
  tags:
    - motd

```

#### 4. Push and commit your files in GitHub

```

chloe@Workstation:~/Final_exam_Santos$ git push origin main --force
Enumerating objects: 8, done.
Counting objects: 100% (8/8), done.
Delta compression using up to 4 threads
Compressing objects: 100% (6/6), done.
Writing objects: 100% (8/8), 1.14 KiB | 1.14 MiB/s, done.
Total 8 (delta 0), reused 1 (delta 0), pack-reused 0
To github.com:ChloeMargarettePronebo/Final_exam_Santos.git
+ e0f511a...b6d0dec main -> main (forced update)

```

#### Codes and Output:

##### 3.1 Service Enterprise (Apache) Output

Debian:

```

chloe@Server1:~$ apache2 -v
Server version: Apache/2.4.58 (Ubuntu)
Server built: 2025-08-11T11:10:09

```

```
chloe@Server2:~$ apache2 -v
Server version: Apache/2.4.58 (Ubuntu)
Server built: 2025-08-11T11:10:09
```

CentOS:

```
chloemargarette@localhost:~$ httpd -v
Server version: Apache/2.4.63 (CentOS Stream)
Server built: Sep 8 2025 00:00:00
chloemargarette@localhost:~$
```

### 3.2 Monitoring tool (Grafana) Output

```
TASK [Install Grafana (CentOS)] *****
skipping: [192.168.51.4]
skipping: [192.168.51.5]
skipping: [192.168.51.6]

TASK [Start Grafana] *****
ok: [192.168.51.5]
ok: [192.168.51.4]
ok: [192.168.51.6]

TASK [Update MOTD] *****
ok: [192.168.51.5]
ok: [192.168.51.4]
ok: [192.168.51.6]

PLAY RECAP *****
192.168.51.4      : ok=3    changed=0    unreachable=0    failed=0    s
kipped=7    rescued=0    ignored=0
192.168.51.5      : ok=3    changed=0    unreachable=0    failed=0    s
kipped=7    rescued=0    ignored=0
192.168.51.6      : ok=3    changed=0    unreachable=0    failed=0    s
kipped=7    rescued=0    ignored=0

chloe@Workstation:~/Final_exam_Santos$
```

CentOS:

```
chloemargarette@localhost:~$ grafana-server -v
Deprecation warning: The standalone 'grafana-server' program is deprecated and will be removed in the future. Please update all uses of 'grafana-server' to 'grafana server'
Version 10.2.6 (commit: NA, branch: main)
```

```

chloemargarette@localhost:~$ sudo systemctl status grafana-server
[sudo] password for chloemargarette:
● grafana-server.service - Grafana instance
   Loaded: loaded (/usr/lib/systemd/system/grafana-server.service; enabled; p>
   Active: active (running) since Wed 2025-11-19 20:31:41 PST; 29min ago
  Invocation: 670eb47479084036b29a3353d3168ec4
     Docs: http://docs.grafana.org
    Main PID: 23217 (grafana)
      Tasks: 21 (limit: 26361)
     Memory: 95.3M (peak: 97.3M)
        CPU: 9.776s
    CGroup: /system.slice/grafana-server.service
            └─23217 /usr/sbin/grafana server --config=/etc/grafana/grafana.ini>
              └─23227 /usr/libexec/grafana-pcp/datasources/valkey/pcp_valkey_dat>

Nov 19 20:31:41 localhost.localdomain grafana[23217]: logger=ngalert.multiorg.a>
Nov 19 20:31:41 localhost.localdomain grafana[23217]: logger=ngalert.state.mana>
Nov 19 20:31:41 localhost.localdomain grafana[23217]: logger=ngalert.scheduler >
Nov 19 20:31:41 localhost.localdomain grafana[23217]: logger=ticker t=2025-11-1>
Nov 19 20:31:42 localhost.localdomain grafana[23217]: logger=plugins.update.che>
Nov 19 20:33:40 localhost.localdomain grafana[23217]: logger=infra.usagestats t>
Nov 19 20:41:41 localhost.localdomain grafana[23217]: logger=cleanup t=2025-11->
Nov 19 20:41:43 localhost.localdomain grafana[23217]: logger=plugins.update.che>

```

Ubuntu/Debian:

```

chloe@Server1:~$ sudo systemctl status grafana-server
● grafana-server.service - Grafana instance
   Loaded: loaded (/usr/lib/systemd/system/grafana-server.service; enabled; p>
   Active: active (running) since Wed 2025-11-19 12:11:40 UTC; 46min ago
     Docs: http://docs.grafana.org
    Main PID: 5122 (grafana)
      Tasks: 20 (limit: 5778)
     Memory: 123.8M (peak: 149.4M)
        CPU: 1min 33.964s
    CGroup: /system.slice/grafana-server.service
            └─5122 /usr/share/grafana/bin/grafana server --config=/etc/grafana>

Nov 19 12:21:56 Server1 grafana[5122]: logger=cleanup t=2025-11-19T12:21:56.127>
Nov 19 12:21:57 Server1 grafana[5122]: logger=plugins.update.checker t=2025-11->
Nov 19 12:26:55 Server1 grafana[5122]: logger=sqlstore.transactions t=2025-11-1>
Nov 19 12:31:56 Server1 grafana[5122]: logger=cleanup t=2025-11-19T12:31:56.294>
Nov 19 12:31:57 Server1 grafana[5122]: logger=plugins.update.checker t=2025-11->
Nov 19 12:41:56 Server1 grafana[5122]: logger=cleanup t=2025-11-19T12:41:56.102>
Nov 19 12:41:57 Server1 grafana[5122]: logger=plugins.update.checker t=2025-11->
Nov 19 12:42:31 Server1 grafana[5122]: logger=infra.usagestats t=2025-11-19T12:>
Nov 19 12:51:56 Server1 grafana[5122]: logger=cleanup t=2025-11-19T12:51:56.105>
Nov 19 12:51:57 Server1 grafana[5122]: logger=plugins.update.checker t=2025-11->
lines 1-21/21 (END)

```

```
chloe@Server1:~$ grafana-server -v
Version 12.2.1+security-01 (commit: 1276aa9aacadeeb92e40a6fa5db94998be7ffd8b, branch: release-12.2.1+security-01)
chloe@Server1:~$
```

```
chloe@Server2:~$ sudo systemctl status grafana-server
[sudo] password for chloe:
● grafana-server.service - Grafana instance
   Loaded: loaded (/usr/lib/systemd/system/grafana-server.service; enabled; p>
   Active: active (running) since Wed 2025-11-19 11:59:17 UTC; 1h 0min ago
     Docs: http://docs.grafana.org
   Main PID: 5631 (grafana)
    Tasks: 21 (limit: 5778)
   Memory: 123.9M (peak: 147.9M)
      CPU: 4min 37.856s
   CGroup: /system.slice/grafana-server.service
           └─5631 /usr/share/grafana/bin/grafana server --config=/etc/grafana>
```

```
Nov 19 12:17:24 Server2 grafana[5631]: logger=sqlstore.transactions t=2025-11-1>
Nov 19 12:22:32 Server2 grafana[5631]: logger=cleanup t=2025-11-19T12:22:32.624>
Nov 19 12:22:40 Server2 grafana[5631]: logger=plugins.update.checker t=2025-11->
Nov 19 12:32:32 Server2 grafana[5631]: logger=cleanup t=2025-11-19T12:32:32.458>
Nov 19 12:32:38 Server2 grafana[5631]: logger=plugins.update.checker t=2025-11->
Nov 19 12:33:22 Server2 grafana[5631]: logger=infra.usagestats t=2025-11-19T12:>
Nov 19 12:42:32 Server2 grafana[5631]: logger=cleanup t=2025-11-19T12:42:32.387>
Nov 19 12:42:38 Server2 grafana[5631]: logger=plugins.update.checker t=2025-11->
Nov 19 12:52:32 Server2 grafana[5631]: logger=cleanup t=2025-11-19T12:52:32.118>
Nov 19 12:52:38 Server2 grafana[5631]: logger=plugins.update.checker t=2025-11->
lines 1-21/21 (END)
```

```
chloe@Server2:~$ grafana-server -v
Version 12.2.1+security-01 (commit: 1276aa9aacadeeb92e40a6fa5db94998be7ffd8b, branch: release-12.2.1+security-01)
```

#### 4.4 MOTD

```
chloemargarette@localhost:~$ cat /etc/motd
Ansible Managed by Dave Santos
```

```
chloe@Server2:~$ cat /etc/motd
Ansible Managed by Dave Santos
```

```
chloe@Server1:~$ sudo cat /etc/motd
Ansible Managed by Dave Santos
```

Repository link:

[git@github.com:DaveEmmanuelle/Final\\_exam\\_Santos.git](https://github.com/DaveEmmanuelle/Final_exam_Santos.git)



