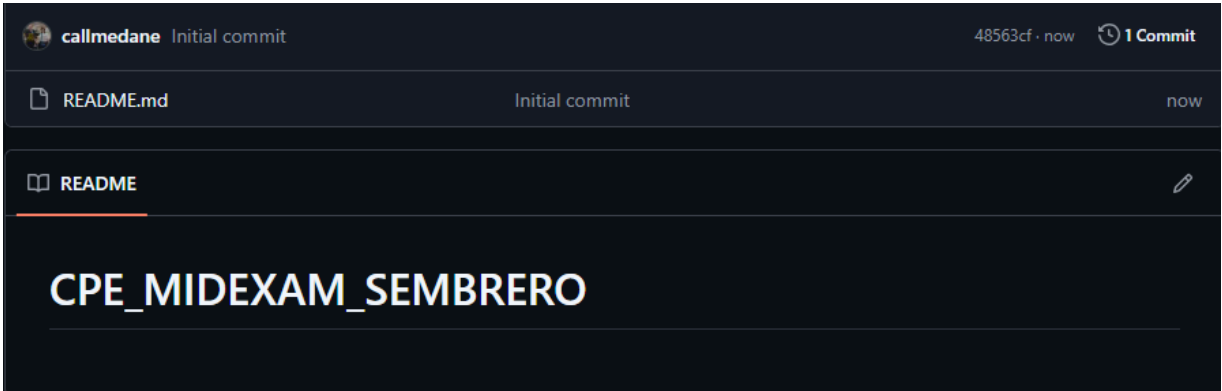| Name: Sembrero, Christian Dane D.	Date Performed: 10/10/2025
Course/Section: CPE 212-CPE31S2	Date Submitted: 10/10/2025
Instructor: Engr. Robin Valenzuela	Semester and SY: 1st Sem 2025-2026

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 ofi 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)

Created a repository in github

```
vboxuser@Workstation:~$ git clone https://github.com/callmedane/CPE_MIDEXAM_SEM
BRERO.git
Cloning into 'CPE_MIDEXAM_SEMBRERO'...
remote: Enumerating objects: 3, done.
remote: Counting objects: 100% (3/3), done.
remote: Total 3 (delta 0), reused 0 (delta 0), pack-reused 0 (from 0)
Unpacking objects: 100% (3/3), done.
```

Cloned the repository from github to linux ubuntu, this is to have the directory with the same name.

- Elastic Search (Ubuntu)
  Playbook

```yaml
---

- hosts: all
  become: yes
  tasks:

  - name: Install and configure Elastic Stack in Ubuntu
    apt:
      name: apt-transport-https
      state: present
      update_cache: yes
    when: ansible_distribution is defined and ansible_distribution == "Ubuntu"

  - name: add elasticsearch GPG key
    apt_key:
      url: https://artifacts.elastic.co/GPG-KEY-elasticsearch
      state: present
    when: ansible_distribution is defined and ansible_distribution == "Ubuntu"
```

```yaml
  - name: add elastic search repository
    apt_repository:
      repo: "deb https://artifacts.elastic.co/packages/8.x/apt stable main"
      state: present
    when: ansible_distribution is defined and ansible_distribution == "Ubuntu"


  - name: install elasticsearch
    package:
      name: elasticsearch
      state: present

  - name: start elasticsearch
    service:
      name: elasticsearch
      state: started
```

Output

```
vboxuser@Workstation:~/CPE_MIDEXAM_SEMBRERO$ ansible-playbook --ask-become-pass
 config.yaml
SUDO password:

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

TASK [Gathering Facts] ******************************************************
*
fatal: [192.168.56.111]: UNREACHABLE! => {"changed": false, "msg": "Failed to c
onnect to the host via ssh: vboxuser@192.168.56.111: Permission denied (publick
ey,password).\r\n", "unreachable": true}
ok: [192.168.56.109]
 [WARNING]: Module invocation had junk after the JSON data:
AttributeError("module 'platform' has no attribute 'dist'")

ok: [192.168.56.112]

TASK [Install] **************************************************************
*
skipping: [192.168.56.112]
ok: [192.168.56.109]

TASK [add elasticsearch GPG key] *******************************************
*
skipping: [192.168.56.112]
ok: [192.168.56.109]

TASK [install elasticsearch] ***********************************************
*
ok: [192.168.56.109]
fatal: [192.168.56.112]: FAILED! => {"changed": false, "module_stderr": "Shared
 connection to 192.168.56.112 closed.\r\n", "module_stdout": "\r\nErrors during
 downloading metadata for repository 'baseos':\r\n  - Status code: 404 for http
s://mirrors.centos.org/metalink?repo=centos-baseos-$stream&arch=x86_64&protocol
=https,http (IP: 34.211.44.206)\r\n  - Status code: 404 for https://mirrors.cen
tos.org/metalink?repo=centos-baseos-$stream&arch=x86_64&protocol=https,http (IP
: 47.129.217.146)\r\n  - Status code: 404 for https://mirrors.centos.org/metali
nk?repo=centos-baseos-$stream&arch=x86_64&protocol=https,http (IP: 13.233.161.2
29)\r\nTraceback (most recent call last):\r\n  File \"/usr/lib/python3.9/site-p
a_____py\", line 574, in load\r\n    ret = self._repo.load()\r\n  Fi
le \"/usr/lib64/python3.9/site-packages/libdnf/repo.py\", line 331, in load\r\n
    return _repo.Repo_load(self)\r\nlibdnf._error.Error: Failed to download met
adata for repo 'baseos': Cannot prepare internal mirrorlist: Status code: 404 f
or https://mirrors.centos.org/metalink?repo=centos-baseos-$stream&arch=x86_64&p
rotocol=https,http (IP: 34.211.44.206)\r\n\r\nDuring handling of the above exce
ption, another exception occurred:\r\n\r\nTraceback (most recent call last):\r\
n  File \"/tmp/ansible_26eohdif/ansible_module_dnf.py\", line 534, in <module>\
r\n    main()\r\n  File \"/tmp/ansible_26eohdif/ansible_module_dnf.py\", line 5
26, in main\r\n    base = _base(\r\n  File \"/tmp/ansible_26eohdif/ansible_modu
le_dnf.py\", line 251, in _base\r\n    base.fill_sack(load_system_repo='auto')\
r\n  File \"/usr/lib/python3.9/site-packages/dnf/base.py\", line 406, in fill_s
ack\r\n    self._add_repo_to_sack(r)\r\n  File \"/usr/lib/python3.9/site-packag
es/dnf/base.py\", line 141, in _add_repo_to_sack\r\n    repo.load()\r\n  File \
"/usr/lib/python3.9/site-packages/dnf/repo.py\", line 581, in load\r\n    raise
 dnf.exceptions.RepoError(str(e))\r\ndnf.exceptions.RepoError: Failed to downlo
ad metadata for repo 'baseos': Cannot prepare internal mirrorlist: Status code:
```

LibreOffice Writer

```
TASK [start elasticsearch] ******************************************
*
changed: [192.168.56.109]
        to retry, use: --limit @/home/vboxuser/CPE_MIDEXAM_SEMBRERO/config.retr
y
  Help

PLAY RECAP ************************************************************
*
192.168.56.109             : ok=6    changed=1    unreachable=0    failed=0
192.168.56.111             : ok=0    changed=0    unreachable=1    failed=0
192.168.56.112             : ok=1    changed=0    unreachable=0    failed=1
```

It seems that elastic search to 192.168.56.109 (192.168.56.111 is my workstation which I'm using for ansibles) did not start, it was already installed in that server which is server 1 but when I try the systemclt commands, it can't find the service.

Also there is a bunch of fatal error message when installing elastic search on centos.

● Kibana

```
  GNU nano 2.9.3                    config1.yaml

---

- hosts: all
  become: yes
  tasks:

  - name: install kibana
    apt:
      name: kibana
      state: present
    when: ansible_distribution is defined and ansible_distribution == "Ubuntu"

  - name: start and enable kibana
    service:
     name: kibana
     enabled: yes
     state: started
    when: ansible_distribution is defined and ansible_distribution == "Ubuntu"

  - name: add kibana repo key
    apt_key:
     url: https://artifacts.elastic.co/GPG-KEY-elasticsearch
     state: present
```

```
vboxuser@Workstation:~/CPE_MIDEXAM_SEMBRERO$ ansible-playbook --ask-become-pass
 config1.yaml
SUDO password:

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

TASK [Gathering Facts] **********************************************************
*
fatal: [192.168.56.111]: UNREACHABLE! => {"changed": false, "msg": "Failed to c
onnect to the host via ssh: vboxuser@192.168.56.111: Permission denied (publick
ey,password).\r\n", "unreachable": true}
 [WARNING]: Module invocation had junk after the JSON data:
AttributeError("module 'platform' has no attribute 'dist'")

ok: [192.168.56.112]
ok: [192.168.56.109]

TASK [install kibana] ***********************************************************
*
skipping: [192.168.56.112]
fatal: [192.168.56.109]: FAILED! => {"cache_update_time": 1760092781, "cache_up
dated": false, "changed": false, "msg": "'/usr/bin/apt-get -y -o \"Dpkg::Option
s::=--force-confdef\" -o \"Dpkg::Options::=--force-confold\"     install 'kiban
a'' failed: E: Could not get lock /var/lib/dpkg/lock-frontend - open (11: Resou
rce temporarily unavailable)\nE: Unable to acquire the dpkg frontend lock (/var
/lib/dpkg/lock-frontend), is another process using it?\n", "rc": 100, "stderr":
 "E: Could not get lock /var/lib/dpkg/lock-frontend - open (11: Resource tempor
arily unavailable)\nE: Unable to acquire the dpkg frontend lock (/var/lib/dpkg/
 "E: Could not get lock /var/lib/dpkg/lock-frontend - open (11: Resource tempor
arily unavailable)\nE: Unable to acquire the dpkg frontend lock (/var/lib/dpkg/
lock-frontend), is another process using it?\n", "stderr_lines": ["E: Could not
 get lock /var/lib/dpkg/lock-frontend - open (11: Resource temporarily unavaila
ble)", "E: Unable to acquire the dpkg frontend lock (/var/lib/dpkg/lock-fronten
d), is another process using it?"], "stdout": "", "stdout_lines": []}

TASK [start and enable kibana] **************************************************
*
skipping: [192.168.56.112]

TASK [add kibana repo key] ******************************************************
*
fatal: [192.168.56.112]: FAILED! => {"changed": false, "msg": "Failed to find r
equired executable apt-key in paths: /sbin:/bin:/usr/sbin:/usr/bin:/usr/local/s
bin"}
        to retry, use: --limit @/home/vboxuser/CPE_MIDEXAM_SEMBRERO/config1.ret
ry

PLAY RECAP **********************************************************************
*
192.168.56.109             : ok=1    changed=0    unreachable=0    failed=1
192.168.56.111             : ok=0    changed=0    unreachable=1    failed=0
192.168.56.112             : ok=1    changed=0    unreachable=0    failed=1
```

Like elasticsearch, kibana was also installed only on server 1 but no in centos

● Logstash

```
  GNU nano 2.9.3                    config2.yaml

---

- hosts: ubuntu_server
  become: yes
  tasks:

  - name: add elasticsearch GPG key
    apt_key:
      url: https://artifacts.elastic.co/GPG-KEY-elasticsearch
      state: present
    when: ansible_distribution is defined and ansible_distribution == "Ubuntu"

  - name: add elastic search repository
    apt_repository:
      repo: "deb https://artifacts.elastic.co/packages/8.x/apt stable main"
      state: present
    when: ansible_distribution is defined and ansible_distribution == "Ubuntu"

  - name: install logstash
    apt:
      name: logstash
      state: present
    when: ansible_distribution is defined and ansible_distribution == "Ubuntu"
```

```
  - name: start and enable logstash
    systemd:
      name: logstash
      enabled: yes
      state: started
```

```
vboxuser@Workstation:~/CPE_MIDEXAM_SEMBRERO$ ansible-playbook --ask-become-pass
 config2.yaml
SUDO password:

PLAY [ubuntu_server] ***********************************************************
*

TASK [Gathering Facts] *********************************************************
*
ok: [192.168.56.109]

TASK [add elasticsearch GPG key] ***********************************************
*
ok: [192.168.56.109]

TASK [add elastic search repository] *******************************************
*
ok: [192.168.56.109]

TASK [install logstash] ********************************************************
*
ok: [192.168.56.109]

TASK [start and enable logstash] ***********************************************
*
changed: [192.168.56.109]
```

```
PLAY RECAP ********************************************************************
*
192.168.56.109          : ok=5    changed=1    unreachable=0    failed=0
```

Now I tried to change the hosts to ubuntu server only and it seems like that logstash is working fine.

- Lamp stack
  HTTPD

```
---
- hosts: centos_server
  become: yes
  tasks:

  - name: install httpd
    dnf:
      name: httpd
      state: latest
    when: ansible_distribution is defined and ansible_distribution == "CentOS"
```

```
vboxuser@Workstation:~/CPE_MIDEXAM_SEMBRERO$ ansible-playbook --ask-become-pass
 lamp.yaml
SUDO password:

PLAY [centos_server] *********************************************************
*

TASK [Gathering Facts] ******************************************************
*
 [WARNING]: Module invocation had junk after the JSON data:
AttributeError("module 'platform' has no attribute 'dist'")

ok: [192.168.56.112]

TASK [install httpd] ********************************************************
*
skipping: [192.168.56.112]

PLAY RECAP *****************************************************************
*
192.168.56.112          : ok=1    changed=0    unreachable=0    failed=0
```

htttpd installation is perfectly working fine

GitHub link: https://github.com/callmedane/CPE_MIDEXAM_SEMBRERO

Conclusions: (link your conclusion from the objective)
Due to a bunch of errors I encounter I can't finish the second part which is Lamp stack, the only thing I installed working fine is httpd, but the rest has some errors especially on CentOS server.