

| | |
|---|--|
| Name: Ballesteros, John Erwin S. | Date Performed: 11/8/2024 |
| Course/Section: CpE31s2 | Date Submitted: 11/8/2024 |
| Instructor: Engr. Robin Valenzuela | Semester and SY: 1st Sem, '24-'25 |
| 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 | |
| <ol style="list-style-type: none"> 1. Create a repository in your GitHub account and label it CPE_MIDEXAM_SURNAME. 2. Clone the repository and do the following: <ol style="list-style-type: none"> 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 of 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) | |
| Inventory List | |

```
all:
  children:
    elasticsearch:
      hosts:
        192.168.56.116
    kibana:
      hosts:
        192.168.56.115
    logstash:
      hosts:
        192.168.56.113
    nagios:
      hosts:
        192.168.56.115
    grafana:
      192.168.56.116
    prometheus:
      192.168.56.115
    influxdb:
      192.168.56.113
    apache:
      192.168.56.114
    php:
      192.168.56.116
    mariadb:
      192.168.56.116
  vars:
```

Create roles directory and create appropriate directory for each roles/ Each directory containing their own roles and templates directory



Create a site.yml code that allows the roles to have a superuser privilege.

```
- hosts: elasticsearch
  become: true
  roles:
    - elasticsearch

- hosts: kibana
  become: true
  roles:
    - kibana

- hosts: logstash
  become: true
  roles:
    - logstash

- hosts: php
  become: true
  roles:
    - php

- hosts: nagios
  become: true
  roles:
    - nagios
```

Output:

```
erwin@workstation:~/CPE_MIDEXAM_BALLESTEROS$ ansible-playbook --ask-become-pass run.yml
BECOME password:
```

```
PLAY [elasticsearch] *****
```

```
TASK [Gathering Facts] *****
```

```
ok: [192.168.56.116]
```

```
TASK [elasticsearch : Install Java] *****
```

```
changed: [192.168.56.116] => (item=default-jdk)
```

```
TASK [elasticsearch : download elasticsearch (debian)] *****
```

```
changed: [192.168.56.116]
```

```
TASK [elasticsearch : install elasticsearch (debian)] *****
```

```
changed: [192.168.56.116]
```

```
TASK [elasticsearch : Create systemd service for Elasticsearch] *****
```

```
changed: [192.168.56.116]
```

```
TASK [elasticsearch : elasticsearch config] *****
```

```
changed: [192.168.56.116]
```

```
TASK [elasticsearch : reload systemd] *****
```

```
ok: [192.168.56.116]
```

```
TASK [elasticsearch : start and enable elasticsearch] *****
```

```
changed: [192.168.56.116]
```

```
TASK [kibana : download kibana (debian)] *****
```

```
changed: [192.168.56.115]
```

```
TASK [kibana : install kibana (Debian)] *****
```

```
changed: [192.168.56.115]
```

```
TASK [kibana : configure kibana] *****
```

```
changed: [192.168.56.115]
```

```
TASK [kibana : start and enable kibana] *****
```

```
changed: [192.168.56.115]
```

```
PLAY [logstash] *****

TASK [Gathering Facts] *****
ok: [192.168.56.113]

TASK [logstash : add logstash key] *****
changed: [192.168.56.113]

TASK [logstash : download logstash (redhat)] *****
ok: [192.168.56.113]

TASK [logstash : install logstash (RedHat)] *****
ok: [192.168.56.113]

TASK [logstash : download logstash (debian)] *****
skipping: [192.168.56.113]

TASK [logstash : install logstash (debian)] *****
skipping: [192.168.56.113]

TASK [logstash : configure logstash] *****
changed: [192.168.56.113]

TASK [logstash : start and enable logstash] *****
changed: [192.168.56.113]
```

```
TASK [Gathering Facts] *****
ok: [192.168.56.115]

TASK [apache : install apache2] *****
ok: [192.168.56.115]

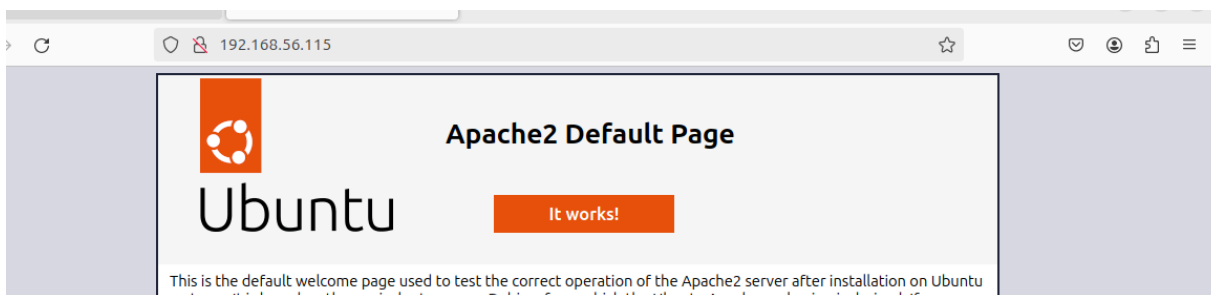
TASK [apache : start apache] *****
ok: [192.168.56.115]
```

Verification of Installed software:

```
erwin@server1:/tmp$ systemctl status elasticsearch.service
● elasticsearch.service - Elasticsearch
   Loaded: loaded (/etc/systemd/system/elasticsearch.service; enabled; preset:
   Active: active (running) since Wed 2024-11-06 09:57:25 PST; 8s ago
     Docs: https://www.elastic.co
    Main PID: 29358 (java)
      Tasks: 36 (limit: 4615)
     Memory: 2.1G (peak: 2.1G)
        CPU: 13.644s
    CGroup: /system.slice/elasticsearch.service
            └─29358 /usr/share/elasticsearch/jdk/bin/java -Xms4m -Xmx64m -XX:+
               29420 /usr/share/elasticsearch/jdk/bin/java -Des.networkaddress.>
```

```
erwin@server2:~$ systemctl status kibana.service
● kibana.service - Kibana
   Loaded: loaded (/usr/lib/systemd/system/kibana.service; enabled; preset: e
   Active: active (running) since Wed 2024-11-06 08:28:33 PST; 1h 27min ago
     Docs: https://www.elastic.co
    Main PID: 1141 (node)
      Tasks: 11 (limit: 4615)
     Memory: 381.0M (peak: 928.6M swap: 312.4M swap peak: 312.8M)
        CPU: 1min 13.069s
    CGroup: /system.slice/kibana.service
            └─1141 /usr/share/kibana/bin/../../node/glibc-217/bin/node /usr/share>
```

```
[erwin@centos9 ~]$ systemctl status logstash.service
● logstash.service - logstash
   Loaded: loaded (/usr/lib/systemd/system/logstash.service; enabled; preset:
   Active: active (running) since Wed 2024-11-06 09:55:09 PST; 2min 55s ago
    Main PID: 5376 (java)
      Tasks: 43 (limit: 23020)
     Memory: 677.9M
        CPU: 45.535s
    CGroup: /system.slice/logstash.service
            └─5376 /usr/share/logstash/jdk/bin/java -Xms1g -Xmx1g -Djava.awt.h>
```



GitHub link:

https://github.com/Moznaim/CPE_MIDEXAM_BALLESTEROS

Conclusions:

On this midterm exam I have learned how to handle and operate multiple installation of software at once in different hosts. We have also utilized the different skills required when managing and running ansible playbooks such as using templates, differentiation of roles and managing of playbooks between different Ansible Distribution