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Course/Section:CPE 212-CPE31S2	Date Submitted:11/06/2024
Instructor: Engr. Robin Valenzuela	Semester and SY:

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 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.

Task 1: Before beginning the examination activity, the first thing to do is to create a new GitHub repository CPE_MIDEXAM_SURNAME.
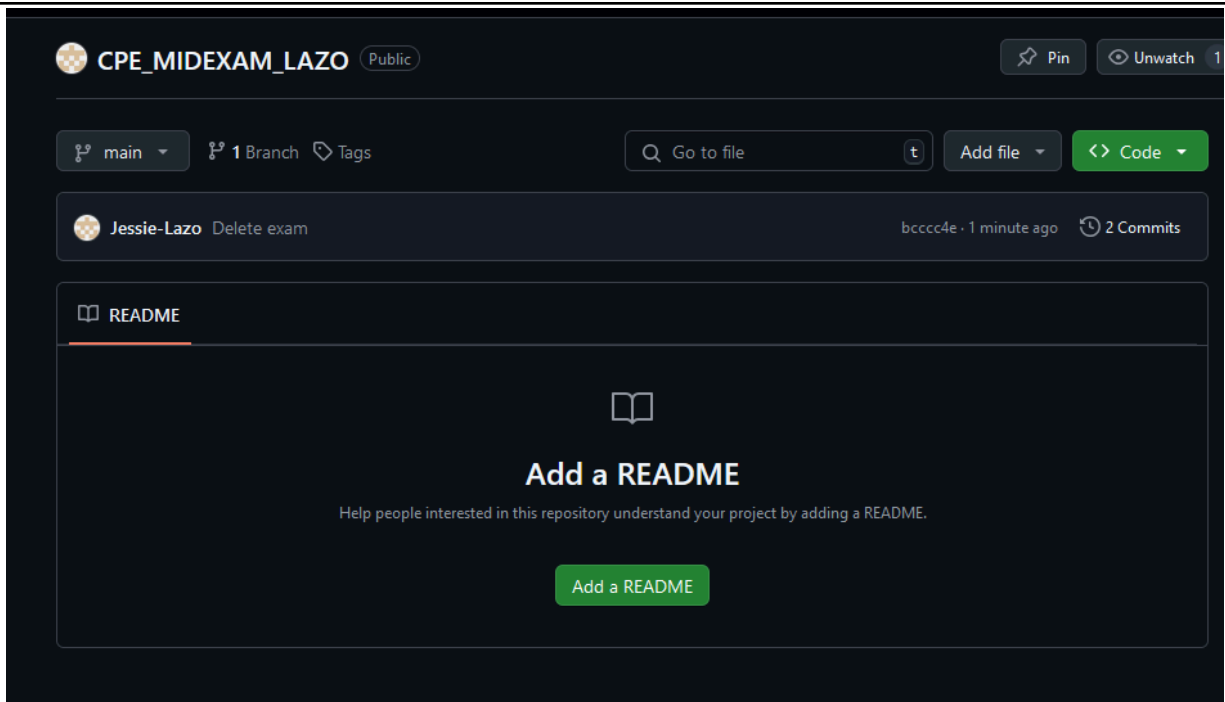
2. Clone the GitHub repository to the local machine, and setup the Ansible environment with one Ubuntu remote node and one CentOS remote node. Make an ansible configuration file and an inventory file needed for the ansible environment.

```
jessielazo@Desktop:~$ git clone https://github.com/Jessie-Lazo/CPE_MIDEXAM_LAZO
.git
Cloning into 'CPE_MIDEXAM_LAZO'...
remote: Enumerating objects: 5, done.
remote: Counting objects: 100% (5/5), done.
remote: Compressing objects: 100% (2/2), done.
remote: Total 5 (delta 0), reused 0 (delta 0), pack-reused 0 (from 0)
Unpacking objects: 100% (5/5), done.
jessielazo@Desktop:~$ cd midexam
jessielazo@Desktop:~/midexam$
```

```
                          jessielazo@Desktop: ~/midexam                    ⊖ ▢ ⊗

 File  Edit  View  Search  Terminal  Help
   GNU nano 2.9.3                        ansible.cfg

[defaults]

inventory = inventory
host_key_checking = False

deprecation_warning = False

remote_user = jessielazo
private_key_file = ~/.ssh/




```

```
                          jessielazo@Desktop: ~/midexam                    ⊖ ▢ ⊗

 File  Edit  View  Search  Terminal  Help
   GNU nano 2.9.3                          inventory

[ubuntu_servers]
192.168.56.105 ansible_user=jessieserve ansible_python_interpreter=/usr/bin/py$

[centos_servers]
192.168.56.108 ansible_user=lazocentos  ansible_python_interpreter=/usr/bin/py$



```

```
jessielazo@Desktop:~/midexam$ ansible all -m ping
192.168.56.108 | SUCCESS => {
    "changed": false,
    "ping": "pong"
}
192.168.56.105 | SUCCESS => {
    "changed": false,
    "ping": "pong"
}
jessielazo@Desktop:~/midexam$
```

3. Apply the concept of roles and create necessary folders and subfolders.

```
jessielazo@Desktop:~/midexam$ cd
jessielazo@Desktop:~$ cd CPE_MIDEXAM_LAZO
jessielazo@Desktop:~/CPE_MIDEXAM_LAZO$ ls
ansible.cfg  inventory
jessielazo@Desktop:~/CPE_MIDEXAM_LAZO$ mkdir -p roles/ElasticStack--CentOS/task
s
jessielazo@Desktop:~/CPE_MIDEXAM_LAZO$ mkdir -p roles/ElasticStack--Ubuntu/task
s
jessielazo@Desktop:~/CPE_MIDEXAM_LAZO$ mkdir -p roles/HTTPD_PHP_MariaDB--CentOS
/tasks
jessielazo@Desktop:~/CPE_MIDEXAM_LAZO$ mkdir -p roles/HTTPD_PHP_MariaDB--Ubuntu
/tasks
jessielazo@Desktop:~/CPE_MIDEXAM_LAZO$ mkdir -p roles/InfluxDB_Grafana_Promethe
us--CentOS/tasks
jessielazo@Desktop:~/CPE_MIDEXAM_LAZO$ mkdir -p roles/InfluxDB_Grafana_Promethe
us--Ubuntu/tasks
jessielazo@Desktop:~/CPE_MIDEXAM_LAZO$ mkdir -p roles/Nagios--Ubuntu/tasks
jessielazo@Desktop:~/CPE_MIDEXAM_LAZO$
```

```
jessielazo@Desktop:~/CPE_MIDEXAM_LAZO$ sudo nano roles/ElasticStack--CentOS/tas
ks/main.yml
[sudo] password for jessielazo:
jessielazo@Desktop:~/CPE_MIDEXAM_LAZO$ sudo nano roles/ElasticStack--Ubuntu/tas
ks/main.yml
jessielazo@Desktop:~/CPE_MIDEXAM_LAZO$ sudo nano roles/HTTPD_PHP_MariaDB--CentO
S/tasks/main.yml
jessielazo@Desktop:~/CPE_MIDEXAM_LAZO$ sudo nano roles/HTTPD_PHP_MariaDB--Ubunt
u/tasks/main.yml
jessielazo@Desktop:~/CPE_MIDEXAM_LAZO$ sudo nano roles/InfluxDB_Grafana_Prometh
eus--CentOS/tasks/main.yml
jessielazo@Desktop:~/CPE_MIDEXAM_LAZO$ sudo nano roles/InfluxDB_Grafana_Prometh
eus--CentOS/tasks/prometheus.service
jessielazo@Desktop:~/CPE_MIDEXAM_LAZO$ sudo nano roles/InfluxDB_Grafana_Prometh
eus--Ubuntu/tasks/main.yml
jessielazo@Desktop:~/CPE_MIDEXAM_LAZO$ sudo nano roles/InfluxDB_Grafana_Prometh
eus--Ubuntu/tasks/prometheus.service
jessielazo@Desktop:~/CPE_MIDEXAM_LAZO$ sudo nano roles/Nagios--Ubuntu/tasks/mai
n.yml
jessielazo@Desktop:~/CPE_MIDEXAM_LAZO$
```

```
jessielazo@Desktop:~/CPE_MIDEXAM_LAZO$ tree
.
├── ansible.cfg
├── inventory
└── roles
    ├── ElasticStack--CentOS
    │   └── tasks
    │       └── main.yml
    ├── ElasticStack--Ubuntu
    │   └── tasks
    │       └── main.yml
    ├── HTTPD_PHP_MariaDB--CentOS
    │   └── tasks
    │       └── main.yml
    ├── HTTPD_PHP_MariaDB--Ubuntu
    │   └── tasks
    │       └── main.yml
    ├── InfluxDB_Grafana_Prometheus--CentOS
    │   └── tasks
    │       ├── main.yml
    │       └── prometheus.service
    ├── InfluxDB_Grafana_Prometheus--Ubuntu
    │   └── tasks
    │       ├── main.yml
    │       └── prometheus.service
    └── Nagios--Ubuntu
        └── tasks
            └── main.yml
```

4. Create a playbook 'config.yml' which contains basic repository updates for both Ubuntu and CentOS machines followed by the actual program with the concept of roles, for both Ubuntu and CentOS nodes.

File Edit View Search Terminal Help

GNU nano 2.9.3   config.yml

```yaml
---
- hosts: all
  become: true
  pre_tasks:

  - name: install update and repositories (CentOS)
    tags: always
    yum:
      name: "*"
      update_cache: yes
      state: latest
    changed_when: false
    when: ansible_distribution == "CentOS"
```

File Edit View Search Terminal Help

GNU nano 2.9.3   config.yml

```yaml
    when: ansible_distribution == "CentOS"

  - name: Ensure dpkg is configured (Ubuntu)
    raw: sudo dpkg --configure -a
    ignore_errors: yes
    changed_when: false
    when: ansible_distribution == "Ubuntu"

  - name: install update and repositories (Ubuntu)
    tags: always
    apt:
      upgrade: yes
      update_cache: yes
      cache_valid_time: 86400
    changed_when: false
    when: ansible_distribution == "Ubuntu"
```

```
  GNU nano 2.9.3                          config.yml


     update_cache: yes
     cache_valid_time: 86400
   changed_when: false
   when: ansible_distribution == "Ubuntu"

 hosts: ubuntu_servers
 become: true
 roles:
   - HTTPD_PHP_MariaDB--Ubuntu
   - Nagios--Ubuntu
   - InfluxDB_Grafana_Prometheus--Ubuntu
   - ElasticStack--Ubuntu

 hosts: centos_servers
 become: true
 roles:
   - HTTPD_PHP_MariaDB--CentOS
   - InfluxDB_Grafana_Prometheus--CentOS
   - ElasticStack--CentOS
```

5. **Enter the codes for Ubuntu and the necessary configurations.**
        Role: HTTPD_PHP_MariaDB--Ubuntu

File Edit View Search Terminal Help

GNU nano 2.9.3   main.yml

```
- name: install httpd and php (Ubuntu)
  apt:
    name:
      - apache2
      - libapache2-mod-php
    state: present

- name: install mariadb package (Ubuntu)
  apt:
    name: mariadb-server
    state: present

- name: start httpd (Ubuntu)
  service:
    name: apache2
    state: started

- name: start MariaDB (Ubuntu)
  service:
    name: mariadb
    state: started

- name: enable httpd (Ubuntu)
```

Role: Nagios--Ubuntu

```
- name: compile and install plugins (Ubuntu)
  shell: |
    cd ~/nagios/nagios-plugins*
    ./tools/setup
    ./configure
    make
    make install
  when: not (ansible_facts['file_exists']|default({}))['~/nagios/nagios-plug$

- name: Add a user and permissions  (Ubuntu)
  community.general.htpasswd:
    path: /usr/local/nagios/etc/htpasswd.users
    name: chrysler
```

^G Get Help   ^O Write Out   ^W Where Is   ^K Cut Text   ^J Justify
^X Exit   ^R Read File   ^\ Replace   ^U Uncut Text   ^T To Spell

```
  - name: starting/enabling nagios (Ubuntu)
    service:
      name: nagios
      state: started
      enabled: true

  - name: starting/enabling apache2 (Ubuntu)
    service:
      name: apache2
```

```
^G Get Help    ^O Write Out   ^W Where Is    ^K Cut Text    ^J Justify
^X Exit        ^R Read File   ^\ Replace     ^U Uncut Text  ^T To Spell
```

Role: InfluxDB_Grafana_Prometheus--Ubuntu

jessielazo@Desktop: ~/CPE_MIDEXAM_LAZO/roles/InfluxDB_Grafana_Prometheus--Ubuntu...

File Edit View Search Terminal Help

  GNU nano 2.9.3   main.yml

```
  - name: install InfluxDB package (Ubuntu)
    apt:
      name: influxdb
      state: present

  - name: Install required packages for Grafana (Ubuntu)
    apt:
      name: apt-transport-https
      state: present

  - name: Install the Grafana GPG key (Ubuntu)
    apt_key:
      url: https://packages.grafana.com/gpg.key
    when: not (ansible_facts['apt_keys']|default([]) | select('match', 'grafan$

  - name: Add Grafana APT repository (Ubuntu)
    apt_repository:
      repo: deb https://packages.grafana.com/oss/deb stable main
      state: present
    when: not (ansible_facts['apt_sources']|default([]) | select('match', 'gra$

  - name: Install Grafana (Ubuntu)
    apt:
```

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```
  GNU nano 2.9.3                          main.yml


      url: https://packages.grafana.com/gpg.key
    when: not (ansible_facts['apt_keys']|default([]) | select('match', 'grafan$

  - name: Add Grafana APT repository (Ubuntu)
    apt_repository:
      repo: deb https://packages.grafana.com/oss/deb stable main
      state: present
    when: not (ansible_facts['apt_sources']|default([]) | select('match', 'gra$

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

  - name: Update Grafana configuration to allow network host
    lineinfile:
      dest: /etc/grafana/grafana.ini
      regexp: '^;http_addr ='
      line: 'http_addr = 0.0.0.0'

  - name: Update Grafana configuration to change the default port to 3000
    lineinfile:
      dest: /etc/grafana/grafana.ini
```

```
^G Get Help    ^O Write Out    ^W Where Is    ^K Cut Text     ^J Justify
^X Exit        ^R Read File    ^\ Replace     ^U Uncut Text   ^T To Spell
```

```
  GNU nano 2.9.3                        main.yml

      state: present

   - name: Update Grafana configuration to allow network host
     lineinfile:
       dest: /etc/grafana/grafana.ini
       regexp: '^;http_addr ='
       line: 'http_addr = 0.0.0.0'

   - name: Update Grafana configuration to change the default port to 3000
     lineinfile:
       dest: /etc/grafana/grafana.ini
       regexp: '^;http_port ='
       line: 'http_port = 3000'

   - name: install necessary packages for Prometheus (Ubuntu)
     apt:
       name: prometheus
       state: present

   - name: Copying the Prometheus Configuration (Ubuntu)
     copy:
       src: prometheus.service
       dest: /etc/systemd/system/prometheus.service


^G Get Help     ^O Write Out    ^W Where Is     ^K Cut Text     ^J Justify
^X Exit         ^R Read File    ^\ Replace      ^U Uncut Text   ^T To Spell
```

```
  GNU nano 2.9.3                         main.yml


      group: root
      mode: 777

 - name: enable / start InfluxDB (Ubuntu)
   service:
     name: influxdb
     state: started
     enabled: true

 - name: Start and enable Grafana service (Ubuntu)
   service:
     name: grafana-server
     state: started
     enabled: true

 - name: enable / start prometheus (Ubuntu)
   service:
     name: prometheus
     state: started
     enabled: yes
```

prometheus.service (Ubuntu)

```
  GNU nano 2.9.3                    prometheus.service

[Unit]
Description=Prometheus
After=network.target

[Service]
Type=simple
ExecStart=/usr/local/bin/prometheus/prometheus --config.file=/usr/local/bin/pr$

[Install]
WantedBy=multi-user.target
```

Role: ElasticStack--Ubuntu

File Edit View Search Terminal Help

```
  GNU nano 2.9.3                        main.yml

  - name: install required packages (Ubuntu)
    apt:
      name: apt-transport-https
      state: present

  - name: Install the Elasticsearch GPG key (Ubuntu)
    apt_key:
      url: https://artifacts.elastic.co/GPG-KEY-elasticsearch
    when: not (ansible_facts['apt_keys']|default([]) | select('match', 'elasti$

  - name: Add Elasticsearch APT repository (Ubuntu)
    apt_repository:
      repo: deb https://artifacts.elastic.co/packages/7.x/apt stable main
      state: present
    when: not (ansible_facts['file_exists']|default({}))['/etc/apt/sources.lis$

  - name: Install Elasticsearch (Ubuntu)
    apt:
      name: elasticsearch
      state: present

  - name: updating the configuration file to allow outside access
    lineinfile:
```

```
^G Get Help      ^O Write Out    ^W Where Is     ^K Cut Text     ^J Justify
^X Exit          ^R Read File    ^\ Replace      ^U Uncut Text   ^T To Spell
```

File Edit View Search Terminal Help

```
GNU nano 2.9.3                          main.yml


    regexp: 'network.host:'
    line: 'network.host: 0.0.0.0'

- name: updating port in configuration file
  lineinfile:
    destfile: /etc/elasticsearch/elasticsearch.yml
    regexp: 'http.port:'
    line: 'http.port: 9200'

- name: updating the config file to allow outside access
  lineinfile:
    destfile: /etc/elasticsearch/elasticsearch.yml
    regexp: 'cluster.initial_master_nodes:'
    line: 'cluster.initial_master_nodes: ["{{ ansible_default_ipv4.address }$

- name: Install Kibana (Ubuntu)
  apt:
    name: kibana
    state: present

- name: Install Logstash (Ubuntu)
  apt:
    name: logstash
```

^G Get Help   ^O Write Out   ^W Where Is   ^K Cut Text   ^J Justify
^X Exit   ^R Read File   ^\ Replace   ^U Uncut Text ^T To Spell

```
File  Edit  View  Search  Terminal  Help
 GNU nano 2.9.3                          main.yml


  - name: Enable / Start Elasticsearch (Ubuntu)
    service:
      name: elasticsearch
      state: started
      enabled: true

  - name: Enable / Start Kibana (Ubuntu)
    service:
      name: kibana
      state: started
      enabled: true

  - name: Enable / Start Logstash (Ubuntu)
    service:
      name: logstash
      state: started
      enabled: true
```

6. Enter the codes for CentOS and the necessary configurations.
   Role: HTTPD_PHP_MariaDB--CentOS

GNU nano 2.9.3   main.yml   Modified

```
- name: install httpd and php (CentOS)
  dnf:
    name:
      - httpd
      - php
    state: present

- name: install mariadb package (CentOS)
  yum:
    name: mariadb-server
    state: present

- name: start httpd (CentOS)
  service:
    name: httpd
    state: started

- name: start MariaDB (CentOS)
  service:
    name: mariadb
    state: started

- name: enable httpd (CentOS)
```

^G Get Help   ^O Write Out   ^W Where Is   ^K Cut Text   ^J Justify

Role: InfluxDB_Grafana_Prometheus--CentOS

File Edit View Search Terminal Help

GNU nano 2.9.3   main.yml

```
- name: install InfluxDB package (CentOS)
  shell: sudo yum localinstall influxdb_package.rpm

- name: install InfluxDB package (CentOS)
  dnf:
    name: influxdb
    state: present

- name: Install required packages for Grafana (CentOS)
  yum:
    name: epel-release
    state: present

- name: Add Grafana YUM repository (CentOS)
  yum_repository:
    name: grafana
    description: Grafana repository
    baseurl: https://packages.grafana.com/oss/rpm
    gpgcheck: yes
    gpgkey: https://packages.grafana.com/gpg.key
    enabled: yes
  when: not (ansible_facts['yum_repos']|default([]) | select('match', 'grafa$
```

[Read 94 lines]

^G Get Help   ^O Write Out   ^W Where Is   ^K Cut Text   ^J Justify

```
- name: Install Grafana (CentOS)
  package:
    name: grafana
    state: present

- name: Update Grafana configuration to allow network host
  lineinfile:
    dest: /etc/grafana/grafana.ini
    regexp: '^;http_addr ='
    line: 'http_addr = 0.0.0.0'

- name: Update Grafana configuration to change the default port to 3000
```

^G Get Help   ^O Write Out   ^W Where Is   ^K Cut Text   ^J Justify
^X Exit   ^R Read File   ^\ Replace   ^U Uncut Text ^T To Spell

Right Ctrl

```
- name: Update Grafana configuration to allow network host
  lineinfile:
    dest: /etc/grafana/grafana.ini
    regexp: '^;http_addr ='
    line: 'http_addr = 0.0.0.0'

- name: Update Grafana configuration to change the default port to 3000
  lineinfile:
    dest: /etc/grafana/grafana.ini
    regexp: '^;http_port ='
    line: 'http_port = 3000'

- name: prothemetus download directory (CentOS)
  file:
    path: ~/prometheus
    state: directory

- name: Downloading and extracting Prometheus (CentOS)
  unarchive:
```

Right Ctrl

File Edit View Search Terminal Help

GNU nano 2.9.3   main.yml

```
    dest: /etc/systemd/system/prometheus.service
    owner: root
    group: root
    mode: 777

- name: start InfluxDB (CentOS)
  service:
    name: influxdb
    state: started
    enabled: true

- name: Start and enable Grafana service (CentOS)
  service:
    name: grafana-server
    state: started
    enabled: yes

- name: enable / start Prometheus (CentOS)
  service:
    name: prometheus
    state: started
    enabled: yes
```

^G Get Help   ^O Write Out   ^W Where Is   ^K Cut Text   ^J Justify
^X Exit   ^R Read File   ^\ Replace   ^U Uncut Text   ^T To Spell

prometheus.service(CentOS)

File Edit View Search Terminal Help

GNU nano 2.9.3   prometheus.service

```
[Unit]
Description=Prometheus
After=network.target

[Service]
Type=simple
ExecStart=/usr/local/bin/prometheus/prometheus --config.file=/usr/local/bin/pr$

[Install]
WantedBy=multi-user.target
```

Role: ElasticStack–CentOS

File Edit View Search Terminal Help

```
 GNU nano 2.9.3                        main.yml

 - name: install required packages (CentOS)
   yum:
     name: epel-release
     state: present

 - name: Add Elasticsearch YUM repository (CentOS)
   yum_repository:
     name: elasticsearch
     description: Elasticsearch repository
     baseurl: https://artifacts.elastic.co/packages/7.x/yum
     gpgcheck: yes
     gpgkey: https://artifacts.elastic.co/GPG-KEY-elasticsearch
     enabled: yes
   when: not (ansible_facts['yum_repos']|default([]) | select('match', 'elast$

 - name: Install Elasticsearch (Centos)
   package:
     name: elasticsearch
     state: present

 - name: updating the configuration file to allow outside access
   lineinfile:
     destfile: /etc/elasticsearch/elasticsearch.yml
                      [ Read 65 lines ]
^G Get Help    ^O Write Out   ^W Where Is    ^K Cut Text    ^J Justify
^X Exit        ^R Read File   ^\ Replace     ^U Uncut Text  ^T To Spell
```

File Edit View Search Terminal Help

```
  GNU nano 2.9.3                          main.yml

      line: 'cluster.initial_master_nodes: ["{{ ansible_default_ipv4.address }$

 - name: Install Kibana (Centos)
   yum:
     name: kibana
     state: present

 - name: Install Logstash (Centos)
   yum:
     name: logstash
     state: present

 - name: Enable / Start Logstash (Centos)
   systemd:
     name: logstash
     state: started
     enabled: true

 - name: Enable / Start Elasticsearch (Centos)
   service:
     name: elasticsearch
     state: started
     enabled: true

^G Get Help    ^O Write Out   ^W Where Is    ^K Cut Text    ^J Justify
^X Exit        ^R Read File   ^\ Replace     ^U Uncut Text  ^T To Spell
```

Right Ctrl

3. **Output** (screenshots and explanations)

For Ubuntu:

```
TASK [HTTPD_PHP_MariaDB--Ubuntu : install httpd and php (Ubuntu)] *************
*
ok: [192.168.56.105]

TASK [HTTPD_PHP_MariaDB--Ubuntu : install mariadb package (Ubuntu)] ***********
*
ok: [192.168.56.105]

TASK [HTTPD_PHP_MariaDB--Ubuntu : start httpd (Ubuntu)] ***********************
*
ok: [192.168.56.105]

TASK [HTTPD_PHP_MariaDB--Ubuntu : start MariaDB (Ubuntu)] *********************
*
ok: [192.168.56.105]

TASK [HTTPD_PHP_MariaDB--Ubuntu : enable httpd (Ubuntu)] *********************
*
ok: [192.168.56.105]

TASK [HTTPD_PHP_MariaDB--Ubuntu : enable MariaDB (Ubuntu)] ********************
*
ok: [192.168.56.105]
```

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```
TASK [Nagios--Ubuntu : Downloading and extracting Nagios (Ubuntu)] ***********
*
ok: [192.168.56.105]

TASK [Nagios--Ubuntu : Downloading and extracting Nagios plugins (Ubuntu)] ****
*
ok: [192.168.56.105]

TASK [Nagios--Ubuntu : install, compile, adding users and groups in Nagios (Ubu
ntu)] ***
changed: [192.168.56.105]

TASK [Nagios--Ubuntu : compile and install plugins (Ubuntu)] *****************
*
changed: [192.168.56.105]

TASK [Nagios--Ubuntu : starting/enabling nagios (Ubuntu)] ********************
*
ok: [192.168.56.105]

TASK [Nagios--Ubuntu : starting/enabling apache2 (Ubuntu)] *******************
*
ok: [192.168.56.105]
```

```
TASK [InfluxDB_Grafana_Prometheus--Ubuntu : install InfluxDB package (Ubuntu)]
***
ok: [192.168.56.105]

TASK [InfluxDB_Grafana_Prometheus--Ubuntu : Install required packages for Grafa
na (Ubuntu)] ***
ok: [192.168.56.105]

TASK [InfluxDB_Grafana_Prometheus--Ubuntu : Install the Grafana GPG key (Ubuntu
)] ***
ok: [192.168.56.105]

TASK [InfluxDB_Grafana_Prometheus--Ubuntu : Add Grafana APT repository (Ubuntu)
] ***
ok: [192.168.56.105]

TASK [InfluxDB_Grafana_Prometheus--Ubuntu : Install Grafana (Ubuntu)] *********
*
ok: [192.168.56.105]

TASK [InfluxDB_Grafana_Prometheus--Ubuntu : Update Grafana configuration to all
ow network host] ***
```

```
TASK [ElasticStack--Ubuntu : install required packages (Ubuntu)] **************
*
ok: [192.168.56.105]

TASK [ElasticStack--Ubuntu : Install the Elasticsearch GPG key (Ubuntu)] ******
*
ok: [192.168.56.105]

TASK [ElasticStack--Ubuntu : Add Elasticsearch APT repository (Ubuntu)] *******
*
ok: [192.168.56.105]

TASK [ElasticStack--Ubuntu : Install Elasticsearch (Ubuntu)] ******************
*
ok: [192.168.56.105]

TASK [ElasticStack--Ubuntu : updating the configuration file to allow outside a
ccess] ***
ok: [192.168.56.105]

TASK [ElasticStack--Ubuntu : updating port in configuration file] *************
*
```

```
TASK [ElasticStack--Ubuntu : updating the config file to allow outside access]
***
ok: [192.168.56.105]

TASK [ElasticStack--Ubuntu : Install Kibana (Ubuntu)] ***********************
*
ok: [192.168.56.105]

TASK [ElasticStack--Ubuntu : Install Logstash (Ubuntu)] *********************
*
ok: [192.168.56.105]

TASK [ElasticStack--Ubuntu : Enable / Start Elasticsearch (Ubuntu)] ***********
*
ok: [192.168.56.105]

TASK [ElasticStack--Ubuntu : Enable / Start Kibana (Ubuntu)] *****************
*
ok: [192.168.56.105]

TASK [ElasticStack--Ubuntu : Enable / Start Logstash (Ubuntu)] ***************
*
```

For CentOS

```
TASK [Gathering Facts] ********************************************************
*
ok: [192.168.56.108]

TASK [HTTPD_PHP_MariaDB--CentOS : install httpd and php (CentOS)] *************
*
ok: [192.168.56.108]

TASK [HTTPD_PHP_MariaDB--CentOS : install mariadb package (CentOS)] ***********
*
ok: [192.168.56.108]

TASK [HTTPD_PHP_MariaDB--CentOS : start httpd (CentOS)] ***********************
*
ok: [192.168.56.108]

TASK [HTTPD_PHP_MariaDB--CentOS : start MariaDB (CentOS)] *********************
*
ok: [192.168.56.108]

TASK [HTTPD_PHP_MariaDB--CentOS : enable httpd (CentOS)] **********************
*
ok: [192.168.56.108]

TASK [HTTPD_PHP_MariaDB--CentOS : enable MariaDB (CentOS)] ********************
*
ok: [192.168.56.108]
```

Ubuntu

MariaDB


```
jessieserve@Server2:~$ sudo systemctl status mysql
[sudo] password for jessieserve:
● mariadb.service - MariaDB 10.1.48 database server
   Loaded: loaded (/lib/systemd/system/mariadb.service; enabled; vendor preset:
   Active: active (running) since Wed 2024-11-06 09:45:40 +08; 33min ago
     Docs: man:mysqld(8)
           https://mariadb.com/kb/en/library/systemd/
 Main PID: 960 (mysqld)
   Status: "Taking your SQL requests now..."
    Tasks: 27 (limit: 4656)
   CGroup: /system.slice/mariadb.service
           └─960 /usr/sbin/mysqld

Nov 06 09:45:31 Server2 systemd[1]: Starting MariaDB 10.1.48 database server...
Nov 06 09:45:35 Server2 mysqld[960]: 2024-11-06  9:45:35 139656201854080 [Note]
Nov 06 09:45:40 Server2 systemd[1]: Started MariaDB 10.1.48 database server.
Nov 06 09:45:40 Server2 /etc/mysql/debian-start[1226]: Upgrading MySQL tables i
Nov 06 09:45:44 Server2 /etc/mysql/debian-start[1232]: /usr/bin/mysql_upgrade:
Nov 06 09:45:44 Server2 /etc/mysql/debian-start[1232]: Looking for 'mysql' as:
Nov 06 09:45:44 Server2 /etc/mysql/debian-start[1232]: Looking for 'mysqlcheck'
Nov 06 09:45:44 Server2 /etc/mysql/debian-start[1232]: This installation of MyS
Nov 06 09:45:44 Server2 /etc/mysql/debian-start[1249]: Triggering myisam-recove
lines 1-20/20 (END)
```

InfluxDB

```
                        jessieserve@Server2: ~

File  Edit  View  Search  Terminal  Help

jessieserve@Server2:~$ sudo systemctl status influxdb
[sudo] password for jessieserve:
● influxdb.service - InfluxDB is an open-source, distributed, time series datab
     Loaded: loaded (/lib/systemd/system/influxdb.service; enabled; vendor preset
     Active: active (running) since Wed 2024-11-06 09:45:31 +08; 35min ago
       Docs: man:influxd(1)
   Main PID: 847 (influxd)
      Tasks: 12 (limit: 4656)
     CGroup: /system.slice/influxdb.service
             └─847 /usr/bin/influxd -config /etc/influxdb/influxdb.conf

Nov 06 09:45:38 Server2 influxd[847]: [shard-precreation] 2024/11/06 09:45:38 S
Nov 06 09:45:38 Server2 influxd[847]: [snapshot] 2024/11/06 09:45:38 Starting s
Nov 06 09:45:38 Server2 influxd[847]: [continuous_querier] 2024/11/06 09:45:38
Nov 06 09:45:38 Server2 influxd[847]: [httpd] 2024/11/06 09:45:38 Starting HTTP
Nov 06 09:45:38 Server2 influxd[847]: [httpd] 2024/11/06 09:45:38 Authenticatio
Nov 06 09:45:38 Server2 influxd[847]: [httpd] 2024/11/06 09:45:38 Listening on
Nov 06 09:45:38 Server2 influxd[847]: [retention] 2024/11/06 09:45:38 Starting
Nov 06 09:45:38 Server2 influxd[847]: [run] 2024/11/06 09:45:38 Listening for s
Nov 06 09:45:38 Server2 influxd[847]: [monitor] 2024/11/06 09:45:38 Storing sta
Nov 06 10:15:39 Server2 influxd[847]: [retention] 2024/11/06 10:15:39 retention
lines 1-19/19 (END)
```

Nagios
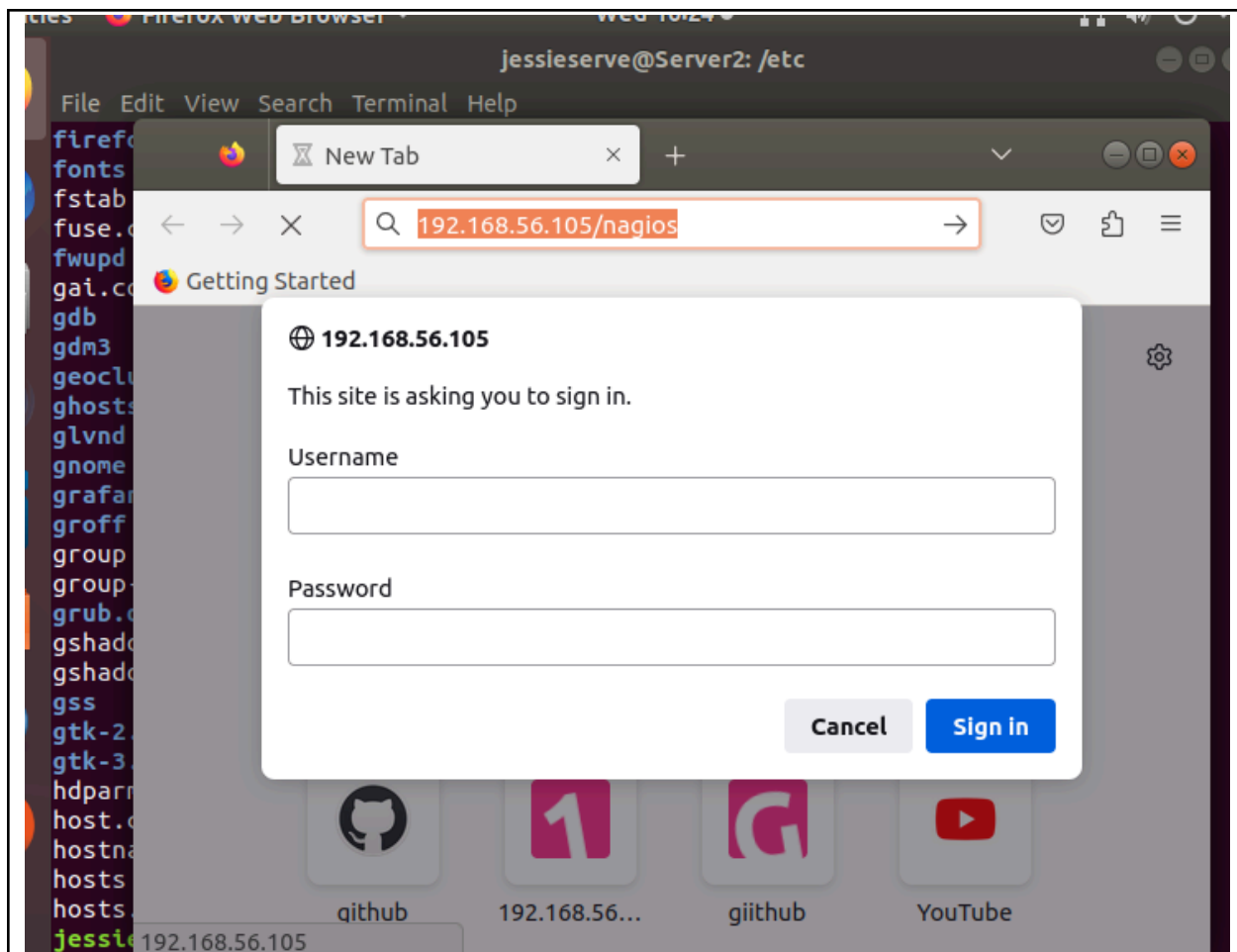
Grafana
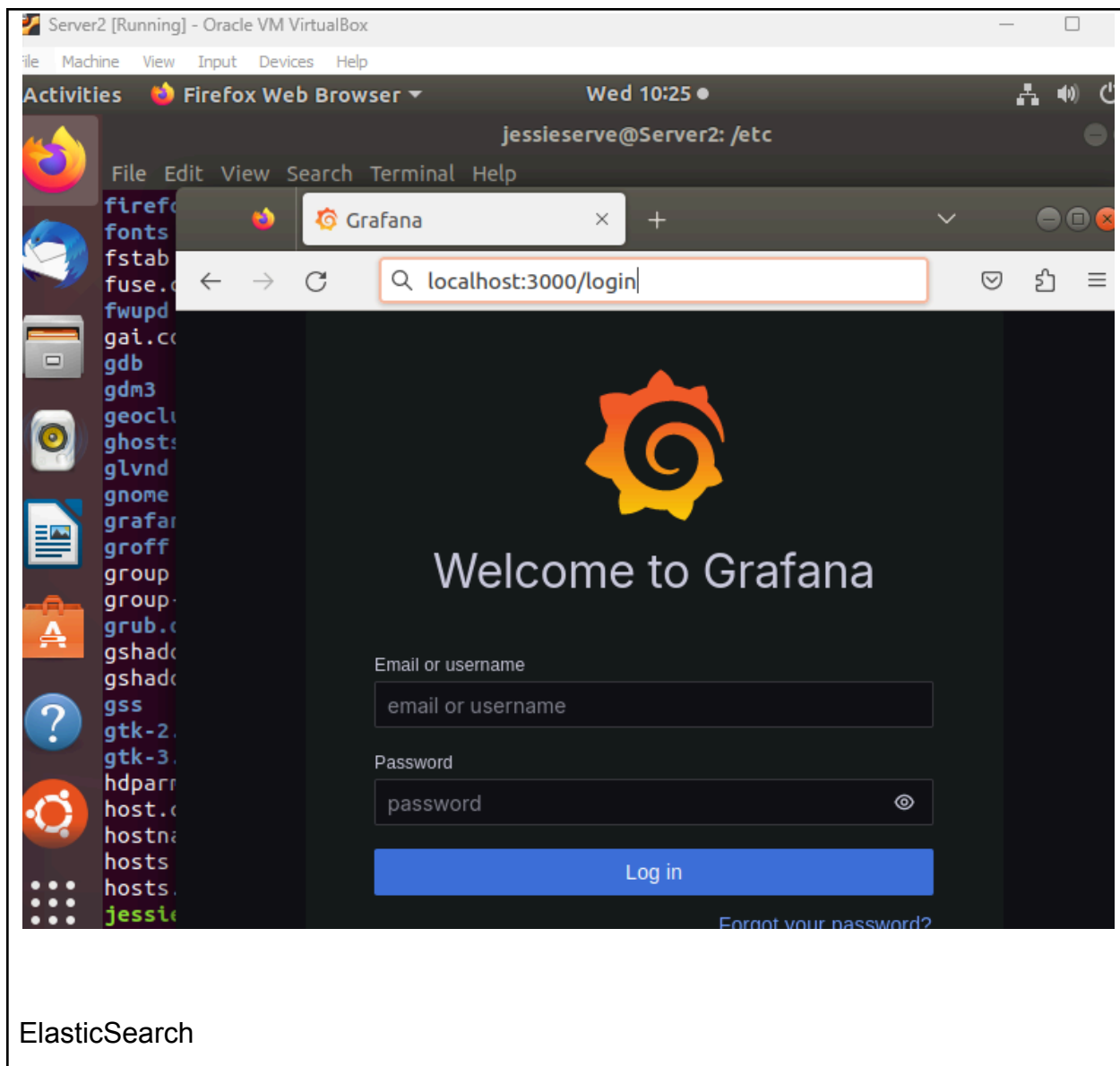
ElasticSearch

name: "192.168.56.105"
cluster_name: "my-elasticsearch-cluster"
cluster_uuid: "qCRTSeJwSNqS6QQIan0TlA"
version:
    number: "7.17.25"
    build_flavor: "default"
    build_type: "deb"
    build_hash: "f9b6b57d1d0f76e2d14291c04fb50abeb642cfbf"
    build_date: "2024-10-16T22:06:36.904732810Z"
    build_snapshot: false
    lucene_version: "8.11.3"
    minimum_wire_compatibility_version: "6.8.0"
   minimum_index_compatibility_version: "6.0.0-beta1"
tagline: "You Know, for Search"

Kibana

```
jessieserve@Server2:/etc$ cd
jessieserve@Server2:~$ sudo systemctl status logstash
[sudo] password for jessieserve:
● logstash.service - logstash
   Loaded: loaded (/etc/systemd/system/logstash.service; enabled; vendor preset
   Active: active (running) since Wed 2024-11-06 09:59:43 +08; 27min ago
 Main PID: 24378 (java)
    Tasks: 23 (limit: 4656)
   CGroup: /system.slice/logstash.service
           └─24378 /usr/share/logstash/jdk/bin/java -Xms1g -Xmx1g -XX:+UseConcM

Nov 06 09:59:43 Server2 systemd[1]: Started logstash.
Nov 06 09:59:43 Server2 logstash[24378]: Using bundled JDK: /usr/share/logstash
Nov 06 09:59:43 Server2 logstash[24378]: OpenJDK 64-Bit Server VM warning: Opti
Nov 06 09:59:52 Server2 logstash[24378]: Sending Logstash logs to /var/log/logs
Nov 06 09:59:52 Server2 logstash[24378]: [2024-11-06T09:59:52,855][INFO ][logst
Nov 06 09:59:52 Server2 logstash[24378]: [2024-11-06T09:59:52,862][INFO ][logst
Nov 06 09:59:52 Server2 logstash[24378]: [2024-11-06T09:59:52,863][INFO ][logst
Nov 06 09:59:54 Server2 logstash[24378]: [2024-11-06T09:59:54,295][INFO ][logst
Nov 06 09:59:54 Server2 logstash[24378]: [2024-11-06T09:59:54,309][ERROR][logst
Nov 06 09:59:54 Server2 logstash[24378]: [2024-11-06T09:59:54,320][INFO ][logst
lines 1-18/18 (END)
```
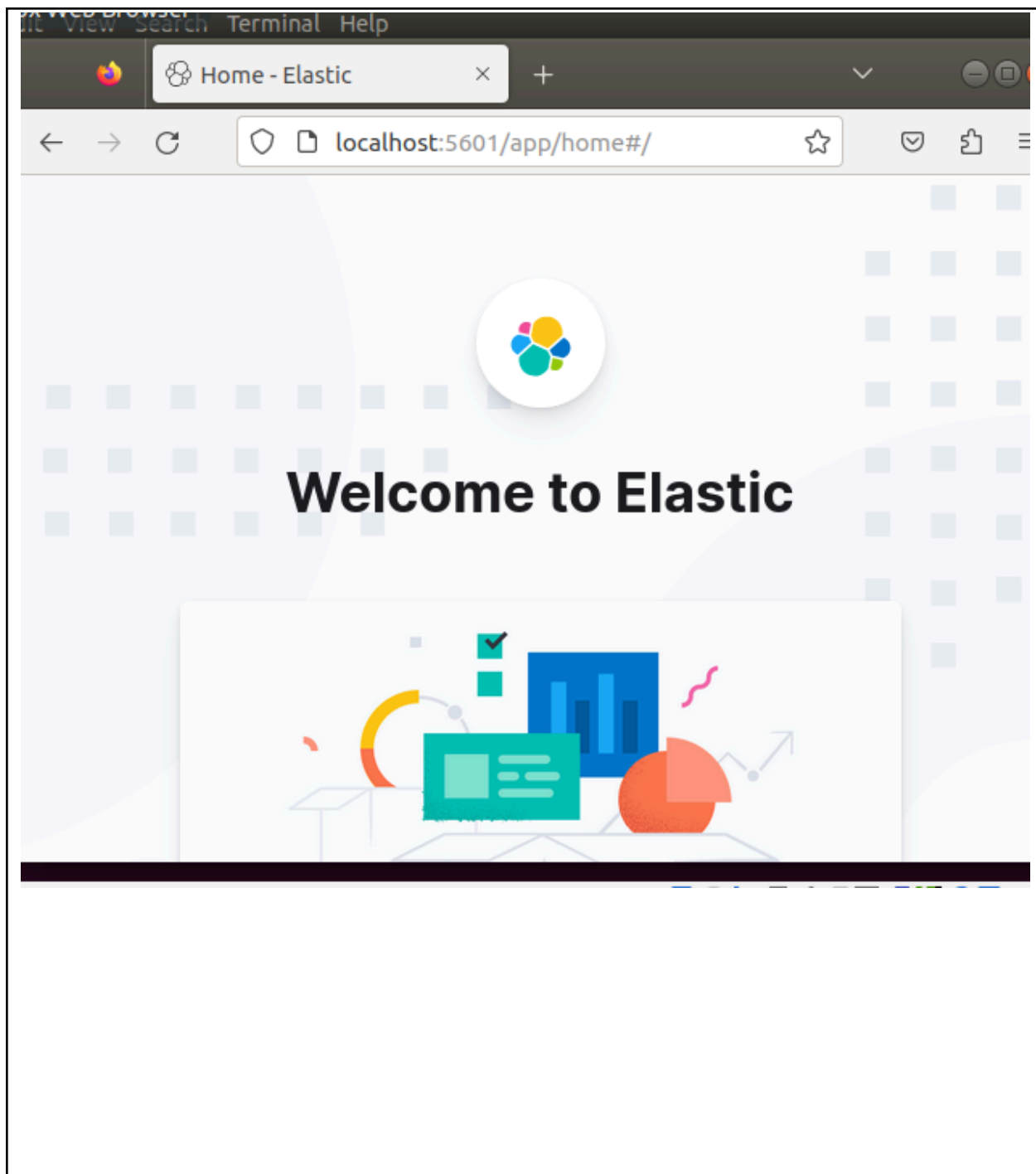
Centos

```
·alled to start influxdb.service: Unit not round.
 lazocentos@localhost yum.repos.d]$ sudo systemctl status mariadb
) mariadb.service - MariaDB database server
   Loaded: loaded (/usr/lib/systemd/system/mariadb.service; enabled; vendor preset: dis
 bled)
   Active: active (running) since Tue 2024-11-05 20:14:01 EST; 1h 2min ago
 Main PID: 32472 (mysqld_safe)
    Tasks: 20
   CGroup: /system.slice/mariadb.service
           ├─32472 /bin/sh /usr/bin/mysqld_safe --basedir=/usr
           └─32637 /usr/libexec/mysqld --basedir=/usr --datadir=/var/lib/mysql --plu...

 Iov 05 20:13:55 localhost.localdomain mariadb-prepare-db-dir[32390]: MySQL manual fo...
 Iov 05 20:13:55 localhost.localdomain mariadb-prepare-db-dir[32390]: Please report a...
 Iov 05 20:13:55 localhost.localdomain mariadb-prepare-db-dir[32390]: The latest info...
 Iov 05 20:13:55 localhost.localdomain mariadb-prepare-db-dir[32390]: You can find ad...
 Iov 05 20:13:55 localhost.localdomain mariadb-prepare-db-dir[32390]: http://dev.mysq...
 Iov 05 20:13:55 localhost.localdomain mariadb-prepare-db-dir[32390]: Consider joinin...
 Iov 05 20:13:55 localhost.localdomain mariadb-prepare-db-dir[32390]: https://mariadb...
 Iov 05 20:13:55 localhost.localdomain mysqld_safe[32472]: 241105 20:13:55 mysqld_saf...
 Iov 05 20:13:55 localhost.localdomain mysqld_safe[32472]: 241105 20:13:55 mysqld_saf...
 Iov 05 20:14:01 localhost.localdomain systemd[1]: Started MariaDB database server.
 lint: Some lines were ellipsized, use -l to show in full.
 lazocentos@localhost yum.repos.d]$ S
```

lazocentos@localhost:/etc/yum.re...   The CentOS Project — Mozilla Fir...   Right Ctrl
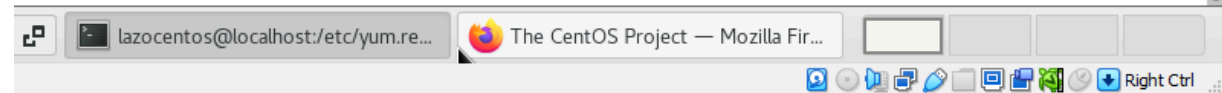
GitHub link:
https://github.com/Jessie-Lazo/CPE_MIDEXAM_LAZO

Conclusions: (link your conclusion from the objective)

In this exam, our objective was to design and develop a design workflow for installing, configuring, and managing tools of enterprise availability, performance, and log monitoring through the use of Ansible as an Infrastructure as Code tool. In order to satisfy my learning objectives, I have researched multiple sources and references for gathering knowledge about Httpd, PHP, MariaDB, Nagios, Prometheus, Elastic Search, Kibana, Logstash, InfluxDB, and Grafana. These services sure are many but

since I could install some of them from the previous activities I can save time and focus on learning about the InfluxDB and Grafana which was just introduced in this activity. While doing the activity, I encountered some errors which I had to figure out by myself. Unfortunately, there is no package available for Influxdb and I cannot proceed further with that. However, to other areas, since we repeatedly apply roles in every activities, I can feel that I, myself is starting to get fond of using roles and I can say that I have understand what does roles help in network administration. Performing this activity helped me to achieve the learning outcome as desired.