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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

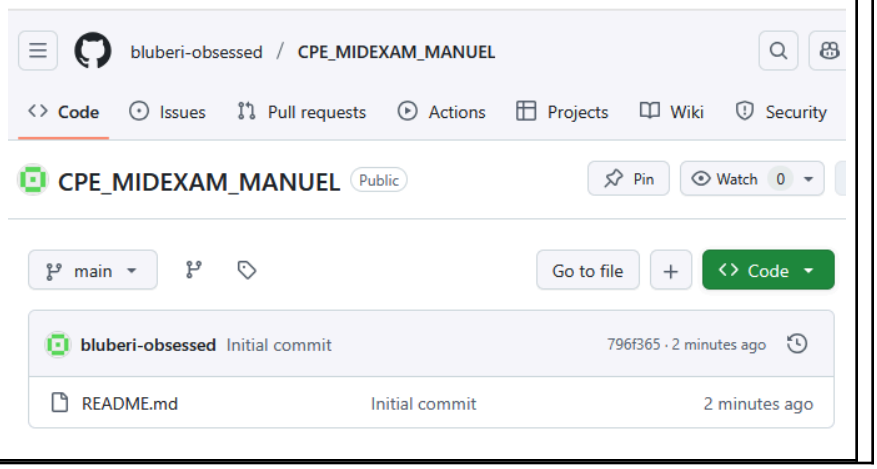
1. Create a repository in your GitHub account and label it CPE_MIDEXAM_SURNAME.
2. Clone the repository and do the following:
   2.1. Create an Ansible playbook that does the following with an input of a config.yaml file and arranged Inventory file:
   2.2. Install and configure Elastic Stack in separate hosts (Elastic Search, Kibana, Logstash) • Install Nagios in one host4
   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.

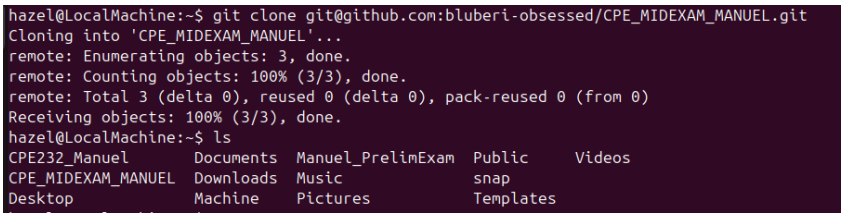
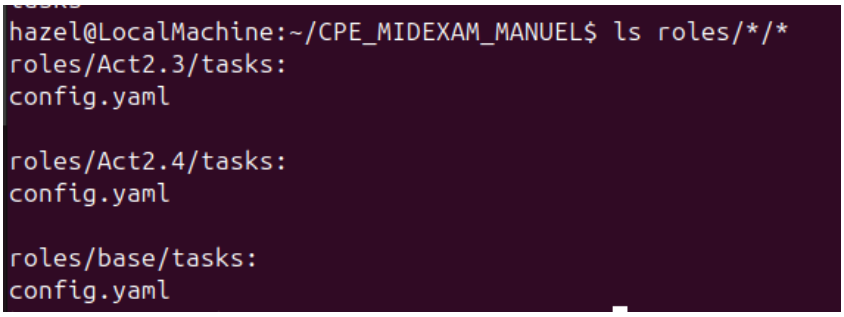
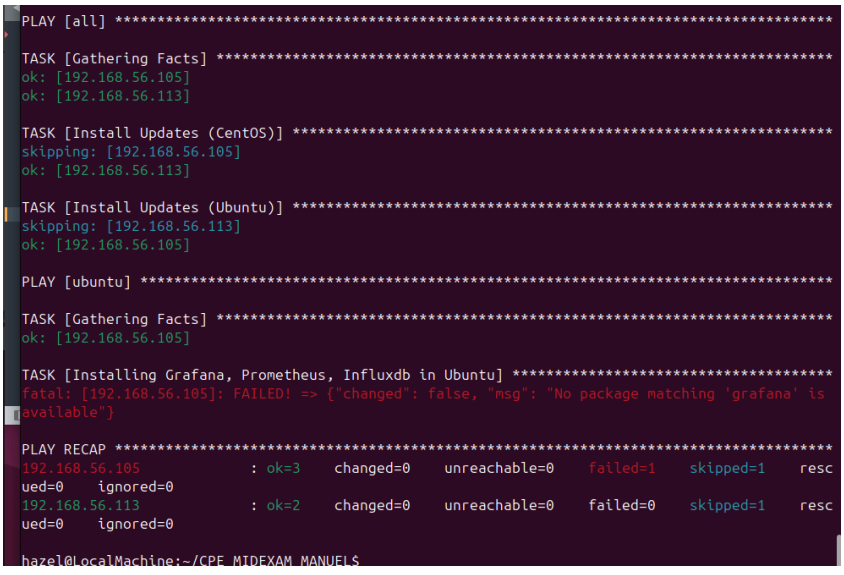
3. Output (screenshots and explanations)

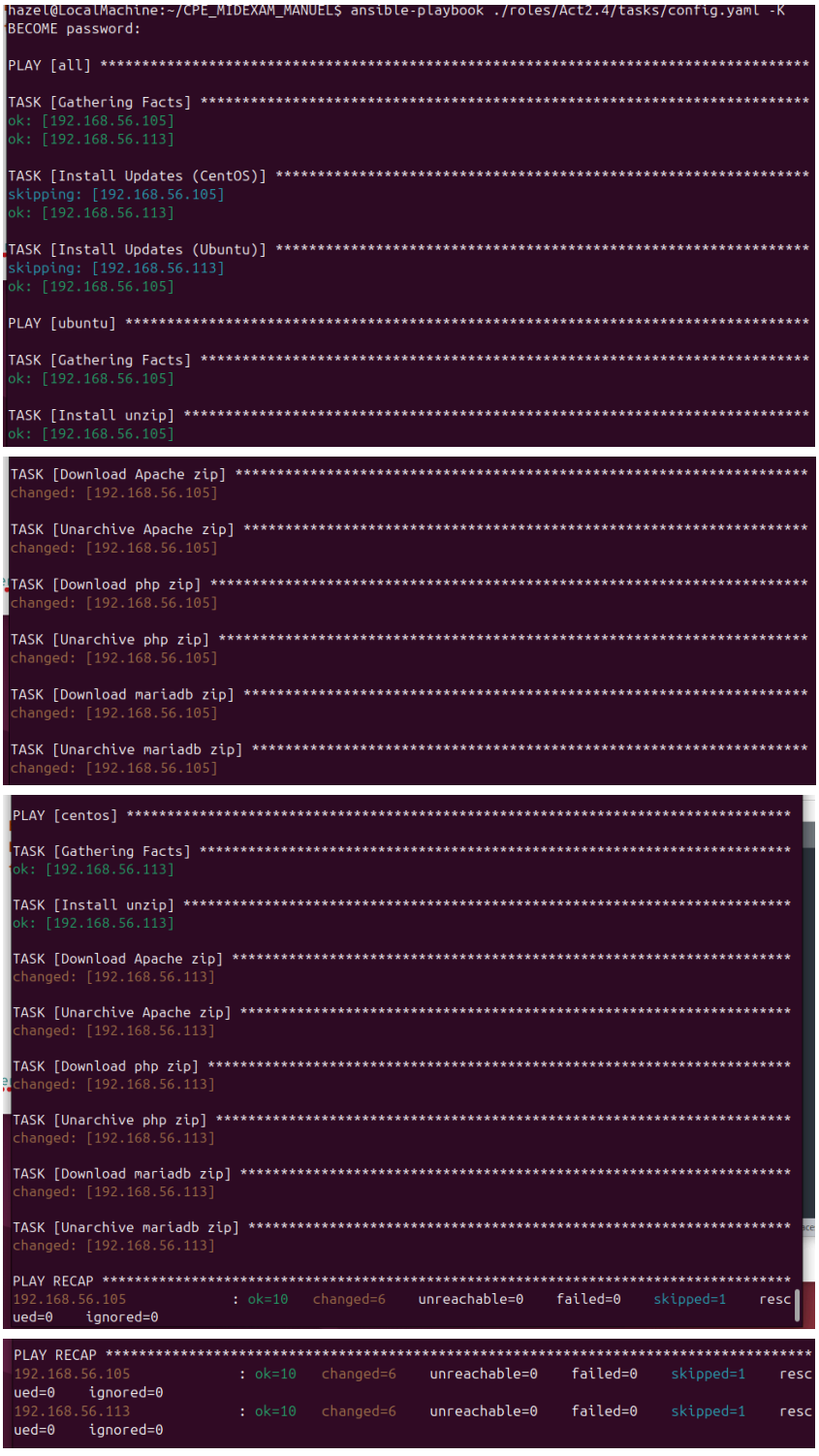
#1

Creating New Repository

In this picture, I have created a new repository in the Github



Cloning Repository Github Successfully cloned the github repository by copying the ssh link in github and git cloning it in the local machine	
Creating Roles Directory creating a role directory where eahc signifies the 2 activities I need to do. Furthermore, I have also copied and pasted the config.yaml in each task directory of the roles.	
2.3 Running the playbook, however, is unable to install grafana.	

2.4 In this picture, we have run the playbook which shows that it had the playbook have conducted changes to certain servers. In this part we are able to successfully installed the needed packages for Lamp Stack.	
Verifying that the packages have been installed in the servers	

GitHub link:

https://github.com/bluberi-obsessed/CPE_MIDEXAM_MANUEL.git

Conclusions: (link your conclusion from the objective)

In this midterm exam, I have implemented an installation and started this service in the Control Node. To achieve all of this in one run, I implemented Ansible roles so that it can load the tasks of the playbook depending on the file structure. This has allowed us to manage the files much more clearly and only made some changes depending on the tasks that each role have. It was quite difficult and I had to do a lot of debugging to make sure all of it works. Overall, I have hopefully made a playbook where ansible roles is implemented.

CONFIG PLAYBOOK

```
None
---

- hosts: all
  become: true
  pre_tasks:

  - name: Install Updates (CentOS)
    tags: always
    dnf:
      update_only: yes
      update_cache: yes
    when: ansible_distribution == "CentOS"

  - name: Install Updates (Ubuntu)
    tags: always
    apt:
      upgrade: dist
      update_cache: yes
    when: ansible_distribution == "Ubuntu"


- hosts: all
  become: true
  roles:
    - ~/CPE_MIDEXAM_MANUEL/roles/base

- hosts: all
  become: true
  roles:
    - ~/CPE_MIDEXAM_MANUEL/roles/Act2.4

- hosts: all
  become: true
  roles:
    - ~/CPE_MIDEXAM_MANUEL/roles/Act2.4
```

CONFIG PLAYBOOK: BASE

None

```
---

- hosts: all
  become: true
  pre_tasks:

  - name: Install Updates (CentOS)
    tags: always
    dnf:
      update_only: yes
      update_cache: yes
    when: ansible_distribution == "CentOS"

  - name: Install Updates (Ubuntu)
    tags: always
    apt:
      upgrade: dist
      update_cache: yes
    when: ansible_distribution == "Ubuntu"


- hosts: ubuntu
  become: true
  tasks:

    - name: Installing Grafana, Prometheus, Influxdb in Ubuntu
      apt:
        name:
          - grafana
          - promethus
          - influxdb
        state: latest


- hosts: centos
  become: true
  tasks:
    - name: Installing Grafana, Prometheus, Influxdb in CentOS
      apt:
        name:
          - grafana
          - promethus
          - influxdb
```

```
        state: latest


- hosts: ubuntu
  become: true
  tasks:

    - name: Install unzip
      package:
        name: unzip
        state: present

    - name: Download Apache zip
      get_url:
        url: https://dlcdn.apache.org/httpd/httpd-2.4.65.tar.bz2
        dest: /tmp/httpd-2.4.65.tar.bz2
        mode: 0644

    - name: Unarchive Apache zip
      unarchive:
        src: /tmp/httpd-2.4.65.tar.bz2
        dest: /usr/local/bin
        remote_src: yes
        mode: 0755
        owner: root
        group: root

    - name: Download php zip
      get_url:
        url: https://www.php.net/distributions/php-8.4.13.tar.gz
        dest: /tmp/php-8.4.13.tar.gz
        mode: 0644

    - name: Unarchive php zip
      unarchive:
        src: /tmp/php-8.4.13.tar.gz
        dest: /usr/local/bin
        remote_src: yes
        mode: 0755
        owner: root
        group: root

    - name: Download mariadb zip
      get_url:
        url:
https://ftp.ubuntu-tw.org/mirror/mariadb//mariadb-12.0.2/bintar-linux-systemd-x
86_64/mariadb-12.0.2-linux-systemd-x86_64.tar.gz
```

```
        dest: /tmp/mariadb-12.0.2-linux-systemd-x86_64.tar.gz
        mode: 0644

    - name: Unarchive mariadb zip
      unarchive:
        src: /tmp/mariadb-12.0.2-linux-systemd-x86_64.tar.gz
        dest: /usr/local/bin
        remote_src: yes
        mode: 0755
        owner: root
        group: root

- hosts: centos
  become: true
  tasks:
    - name: Install unzip
      package:
        name: unzip
        state: present

    - name: Download Apache zip
      get_url:
        url: https://dlcdn.apache.org/httpd/httpd-2.4.65.tar.bz2
        dest: /tmp/httpd-2.4.65.tar.bz2
        mode: 0644

    - name: Unarchive Apache zip
      unarchive:
        src: /tmp/httpd-2.4.65.tar.bz2
        dest: /usr/local/bin
        remote_src: yes
        mode: 0755
        owner: root
        group: root

    - name: Download php zip
      get_url:
        url: https://www.php.net/distributions/php-8.4.13.tar.gz
        dest: /tmp/php-8.4.13.tar.gz
        mode: 0644

    - name: Unarchive php zip
      unarchive:
        src: /tmp/php-8.4.13.tar.gz
        dest: /usr/local/bin
        remote_src: yes
        mode: 0755
```

```
        owner: root
        group: root

    - name: Download mariadb zip
      get_url:
        url:
https://ftp.ubuntu-tw.org/mirror/mariadb//mariadb-12.0.2/bintar-linux-systemd-x
86_64/mariadb-12.0.2-linux-systemd-x86_64.tar.gz
        dest: /tmp/mariadb-12.0.2-linux-systemd-x86_64.tar.gz
        mode: 0644

    - name: Unarchive mariadb zip
      unarchive:
        src: /tmp/mariadb-12.0.2-linux-systemd-x86_64.tar.gz
        dest: /usr/local/bin
        remote_src: yes
        mode: 0755
        owner: root
        group: root
```

CONFIG PLAYBOOK: 2.3

```
None
---

- hosts: all
  become: true
  pre_tasks:

  - name: Install Updates (CentOS)
    tags: always
    dnf:
      update_only: yes
      update_cache: yes
    when: ansible_distribution == "CentOS"

  - name: Install Updates (Ubuntu)
    tags: always
    apt:
      upgrade: dist
      update_cache: yes
    when: ansible_distribution == "Ubuntu"


- hosts: ubuntu
  become: true
  tasks:

    - name: Installing Grafana, Prometheus, Influxdb in Ubuntu
      apt:
        name:
          - grafana
          - promethus
          - influxdb
        state: latest


- hosts: centos
  become: true
  tasks:
    - name: Installing Grafana, Prometheus, Influxdb in CentOS
      apt:
        name:
          - grafana
          - promethus
          - influxdb
        state: latest
```

CONFIG PLAYBOOK: 2.4

```
None
---

- hosts: all
  become: true
  pre_tasks:

  - name: Install Updates (CentOS)
    tags: always
    dnf:
      update_only: yes
      update_cache: yes
    when: ansible_distribution == "CentOS"

  - name: Install Updates (Ubuntu)
    tags: always
    apt:
      upgrade: dist
      update_cache: yes
    when: ansible_distribution == "Ubuntu"


- hosts: ubuntu
  become: true
  tasks:

    - name: Install unzip
      package:
        name: unzip
        state: present

    - name: Download Apache zip
      get_url:
        url: https://dlcdn.apache.org/httpd/httpd-2.4.65.tar.bz2
        dest: /tmp/httpd-2.4.65.tar.bz2
        mode: 0644

    - name: Unarchive Apache zip
      unarchive:
        src: /tmp/httpd-2.4.65.tar.bz2
        dest: /usr/local/bin
        remote_src: yes
        mode: 0755
        owner: root
        group: root
```

```
    - name: Download php zip
      get_url:
        url: https://www.php.net/distributions/php-8.4.13.tar.gz
        dest: /tmp/php-8.4.13.tar.gz
        mode: 0644

    - name: Unarchive php zip
      unarchive:
        src: /tmp/php-8.4.13.tar.gz
        dest: /usr/local/bin
        remote_src: yes
        mode: 0755
        owner: root
        group: root

    - name: Download mariadb zip
      get_url:
        url:
https://ftp.ubuntu-tw.org/mirror/mariadb//mariadb-12.0.2/bintar-linux-systemd-x
86_64/mariadb-12.0.2-linux-systemd-x86_64.tar.gz
        dest: /tmp/mariadb-12.0.2-linux-systemd-x86_64.tar.gz
        mode: 0644

    - name: Unarchive mariadb zip
      unarchive:
        src: /tmp/mariadb-12.0.2-linux-systemd-x86_64.tar.gz
        dest: /usr/local/bin
        remote_src: yes
        mode: 0755
        owner: root
        group: root

- hosts: centos
  become: true
  tasks:
    - name: Install unzip
      package:
        name: unzip
        state: present

    - name: Download Apache zip
      get_url:
        url: https://dlcdn.apache.org/httpd/httpd-2.4.65.tar.bz2
        dest: /tmp/httpd-2.4.65.tar.bz2
        mode: 0644
```

```
    - name: Unarchive Apache zip
      unarchive:
        src: /tmp/httpd-2.4.65.tar.bz2
        dest: /usr/local/bin
        remote_src: yes
        mode: 0755
        owner: root
        group: root

    - name: Download php zip
      get_url:
        url: https://www.php.net/distributions/php-8.4.13.tar.gz
        dest: /tmp/php-8.4.13.tar.gz
        mode: 0644

    - name: Unarchive php zip
      unarchive:
        src: /tmp/php-8.4.13.tar.gz
        dest: /usr/local/bin
        remote_src: yes
        mode: 0755
        owner: root
        group: root

    - name: Download mariadb zip
      get_url:
        url:
https://ftp.ubuntu-tw.org/mirror/mariadb//mariadb-12.0.2/bintar-linux-systemd-x
86_64/mariadb-12.0.2-linux-systemd-x86_64.tar.gz
        dest: /tmp/mariadb-12.0.2-linux-systemd-x86_64.tar.gz
        mode: 0644

    - name: Unarchive mariadb zip
      unarchive:
        src: /tmp/mariadb-12.0.2-linux-systemd-x86_64.tar.gz
        dest: /usr/local/bin
        remote_src: yes
        mode: 0755
        owner: root
        group: root
```

MAIN CONFIG

None