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Instructor: Engr. Robin	Semester and SY:

Midterm Skills Exam: Install, Configure, and Manage Log Monitoring tools

1. Objectives

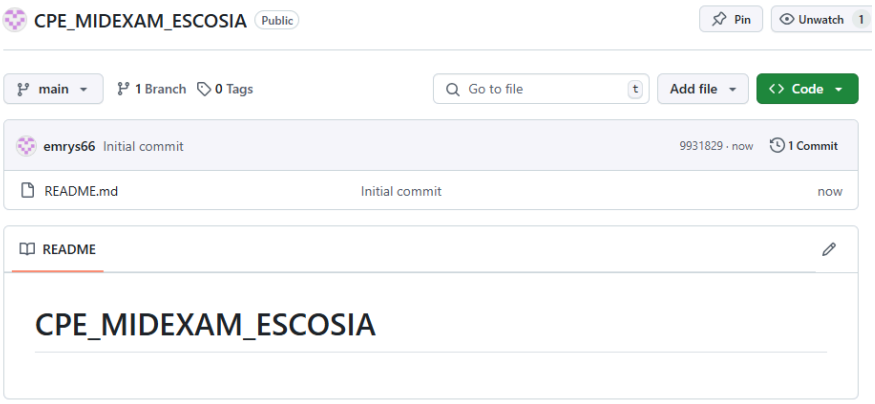
Create and design a workflow that installs, configure and manage enterprise availability, performance and log monitoring tools using Ansible as an Infrastructure as Code (IaC) tool.

2. Instructions

1. Create a repository in your GitHub account and labelit 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.

3. Output (screenshots and explanations)

1.



2.

```
workstation@workstation: ~
workstation@workstation:~$ git clone git@github.com:emrys66/CPE_MIDEXAM_ESCOSIA.
git
Cloning into 'CPE_MIDEXAM_ESCOSIA'...
remote: Enumerating objects: 9, done.
remote: Counting objects: 100% (9/9), done.
remote: Compressing objects: 100% (7/7), done.
remote: Total 9 (delta 1), reused 0 (delta 0), pack-reused 0 (from 0)
Receiving objects: 100% (9/9), done.
Resolving deltas: 100% (1/1), done.
```

2.1

```
workstation@workstation: ~/CPE_MIDEXAM_ESCOSIA
  GNU nano 7.2                                ansible.cfg
[defaults]

inventory = inventory
host_key_checking = False

deprecation_warnings= False

remote_user = workstation
private_key_file = ~/.ssh/
```

```
workstation@workstation: ~/CPE_MIDEXAM_ESCOSIA
  GNU nano 7.2                                inventory
[servers]

server1 ansible_host=192.168.56.135
centos ansible_host=192.168.56.137 ansible_user=centos
```

```
workstation@workstation: ~/CPE_MIDEXAM_ESCOSIA
  GNU nano 7.2                                config.yaml
---
- name: Install all
  hosts: all
  become: true
  roles:
    - servers
```

```
workstation@workstation:~/CPE_MIDEXAM_ESCOSIA$ mkdir -p roles/servers/tasks && touch roles/servers/tasks/main.yml
workstation@workstation:~/CPE_MIDEXAM_ESCOSIA$ ls
ansible.cfg  inventory  README.md  roles
workstation@workstation:~/CPE_MIDEXAM_ESCOSIA$ cd roles
workstation@workstation:~/CPE_MIDEXAM_ESCOSIA/roles$ ls
servers
workstation@workstation:~/CPE_MIDEXAM_ESCOSIA/roles$ cd servers
workstation@workstation:~/CPE_MIDEXAM_ESCOSIA/roles/servers$ ls
tasks
workstation@workstation:~/CPE_MIDEXAM_ESCOSIA/roles/servers$ cd tasks
workstation@workstation:~/CPE_MIDEXAM_ESCOSIA/roles/servers/tasks$ ls
main.yml
```

created roles directory inside the repo.

2.2

workstation@workstation: ~/CPE_MIDEXAM_ESCOSIA/roles/servers/tasks

GNU nano 7.2 main.yml

```
---
- name: Install Elasticsearch
  apt_repository:
    repo: deb https://artifacts.elastic.co/packages/7.x/apt stable main
    state: present
    filename: elasticsearch-7.x
  when: ansible_distribution == 'Ubuntu'

- name: Install Elasticsearch
  yum_repository:
    name: elasticsearch-7.x
    description: Elasticsearch repository for 7.x packages
    baseurl: https://artifacts.elastic.co/packages/7.x/yum
    gpgcheck: 1
    gpgkey: https://artifacts.elastic.co/GPG-KEY-elasticsearch
  when: ansible_distribution == 'CentOS'

- name: Install Elasticsearch
  package:
    name: elasticsearch
    state: present
  vars:
    ansible_python_interpreter: /usr/bin/python3
```

workstation@workstation: ~/CPE_MIDEXAM_ESCOSIA/roles/servers/tasks

GNU nano 7.2 main.yml

```
- name: Install Kibana
  apt:
    name: kibana
    state: present
  when: ansible_distribution == 'Ubuntu'

- name: Install Kibana
  yum:
    name: kibana
    state: present
  when: ansible_distribution == 'CentOS'

- name: Install Logstash
  apt:
    name: logstash
    state: present
  when: ansible_distribution == 'Ubuntu'

- name: Install Logstash
  yum:
    name: logstash
    state: present
  when: ansible_distribution == 'CentOS'
```

```
- name: install nagios (Ubuntu)
  apt:
    name: nagios3
    state: latest
    update_cache: yes
  when: ansible_distribution == 'Ubuntu'
```

```
TASK [servers : Install Elasticsearch] ******
skipping: [centos]
ok: [server1]

TASK [servers : Install Elasticsearch] ******
skipping: [server1]
ok: [centos]

TASK [servers : Install Elasticsearch] ******
ok: [centos]
ok: [server1]

TASK [servers : Install Kibana] *************
skipping: [server1]
ok: [centos]
```

```
TASK [servers : Install Prometheus in CentOS] *********************************
skipping: [server1]
fatal: [centos]: FAILED! => {"changed": false, "failures": ["No package prometheus available."], "msg": "
Failed to install some of the specified packages", "rc": 1, "results": []}

PLAY RECAP ********************************************************************
centos                     : ok=5    changed=0    unreachable=0    failed=1    skipped=7    rescued=0
ignored=0
server1                    : ok=9    changed=3    unreachable=0    failed=0    skipped=4    rescued=0
ignored=0
```

3.

Ubuntu Proof

```
root@server1:/home/workstation# sudo systemctl status kibana
● kibana.service - Kibana
   Loaded: loaded (/etc/systemd/system/kibana.service; disabled;
   Active: inactive (dead)
     Docs: https://www.elastic.co

root@server1:/home/workstation# sudo systemctl status logstash
● logstash.service - logstash
   Loaded: loaded (/etc/systemd/system/logstash.service; disabled
   Active: inactive (dead)
```

```
root@server1:/home/workstation# sudo systemctl status elasticsear
ch
● elasticsearch.service - Elasticsearch
     Loaded: loaded (/usr/lib/systemd/system/elasticsearch.service;
     Active: inactive (dead)
       Docs: https://www.elastic.co
lines 1-4/4 (END)
```

Centos Proof

```
[root@centos centos]# sudo systemctl status kibana
/etc/sudoers:101:22: syntax error
workstation ALL=(ALL)
                    ^
○ kibana.service - Kibana
     Loaded: loaded (/etc/systemd/system/kibana.service; disabled; preset: disable>
     Active: inactive (dead)
       Docs: https://www.elastic.co

[root@centos centos]# sudo systemctl status logstash
/etc/sudoers:101:22: syntax error
workstation ALL=(ALL)
                    ^
○ logstash.service - logstash
     Loaded: loaded (/etc/systemd/system/logstash.service; disabled; preset: disab>
     Active: inactive (dead)
```

```
[root@centos centos]# sudo systemctl status elasticsearch
/etc/sudoers:101:22: syntax error
workstation ALL=(ALL)
                    ^
○ elasticsearch.service - Elasticsearch
     Loaded: loaded (/usr/lib/systemd/system/elasticsearch.service; disabled; preset: disabled)
     Active: inactive (dead)
       Docs: https://www.elastic.co
[root@centos centos]#
```

4.

```
workstation@workstation:~/CPE_MIDEXAM_ESCOSIA$ git commit -m "update on roles dir"
[main 95e9cf6] update on roles dir
 2 files changed, 5 insertions(+)
 create mode 100644 config.yml
 create mode 100644 roles/servers/tasks/main.yml
workstation@workstation:~/CPE_MIDEXAM_ESCOSIA$ git push origin main
Enumerating objects: 8, done.
Counting objects: 100% (8/8), done.
Delta compression using up to 3 threads
Compressing objects: 100% (3/3), done.
Writing objects: 100% (7/7), 574 bytes | 574.00 KiB/s, done.
Total 7 (delta 0), reused 0 (delta 0), pack-reused 0
To github.com:emrys66/CPE_MIDEXAM_ESCOSIA.git
   a9947e5..95e9cf6  main -> main
```

GitHub link:

https://github.com/emrys66/CPE_MIDEXAM_ESCOSIA.git

Conclusions: (link your conclusion from the objective)

This activity makes us perform installation of packages using ansible that'll let us control specific nodes remotely. Finding different packages for the monitoring softwares is the challenging part but upon finding those packages some of the plays still didn't work.