


















Hands-On	
Midterm Exam	
Course Code: CPE232	Program: CPE
Course Title: Managing Enterprise Services	Date Performed: 31/05/2022
Section: CPE31S7	Date Submitted: 04/06/2022
Name: Espiritu, Marcus Joshua D.C.	Instructor: Engr. Taylar
1. Objective(s):	
Create and design a workflow that installs, configure and manage enterprise monitoring tools using Ansible as an Infrastructure as Code (IaC) tool.	
2. Intended Learning Outcomes (ILOs):	
<p>The students should be able to:</p> <ol style="list-style-type: none"> 1. Create and design workflows to install, configure and manage for availability monitoring tools using Ansible to document and execution. 2. Create and design workflows to install, configure and manage for performance monitoring tools using Ansible to document and execution. 3. Create and design workflows to install, configure and manage for log monitoring tools using Ansible to document and execution.. 	
4. Resources:	
<p>Oracle VirtualBox (Hypervisor)</p> <p>1x Ubuntu VM with Git and Ansible installed</p> <p>1x CentOS VM</p>	
5. Procedure:	
1. Create a new repository and name it MidtermExam	

 **MarcusEspiritu / MidtermExam** Public

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Quick setup — if you've done this kind of thing before

 Set up in Desktop or  HTTPS  SSH `https://github.com/MarcusEspiritu/MidtermExam.git`

Get started by creating a new file or uploading an existing file. We recommend every repository include a [README](#), [LICENSE](#), and [.gitignore](#).

...or create a new repository on the command line


```
echo "# MidtermExam" >> README.md
git init
git add README.md
git commit -m "first commit"
git branch -M main
git remote add origin https://github.com/MarcusEspiritu/MidtermExam.git
git push -u origin main
```


...or push an existing repository from the command line

```
git remote add origin https://github.com/MarcusEspiritu/MidtermExam.git
git branch -M main
git push -u origin main
```

...or import code from another repository

You can initialize this repository with code from a Subversion, Mercurial, or TFS project.

 Import code

 **ProTip!** Use the URL for this page when adding GitHub as a remote.

2. Clone your new repository in your VM

marcus@marcusServer1-VirtualBox: ~/MidtermExam

GNU nano 6.2config.yml *

```
---
- hosts: 127.0.0.1
  become: yes
  become_method: sudo

roles:
  - ELK
  - Nagios
  - Grafana
  - Prometheus
  - LampStack
```

^G Help^O Write Out^W Where Is^K Cut^T Execute^C Location

^X Exit^R Read File^\ Replace^U Paste^J Justify^_ Go To Li

3. Create an Ansible playbook that does the following with an input of a config.yaml file and arranged Inventory file:

```
marcus@marcusServer1-VirtualBox: ~/MidtermExam/roles
marcus@marcusServer1-VirtualBox:~/H0A4.1_Espiritu$ git push
Everything up-to-date
marcus@marcusServer1-VirtualBox:~/H0A4.1_Espiritu$ cd
marcus@marcusServer1-VirtualBox:~$ git clone https://ghp_9VQKPhID9ZrN2t85AxZkXxzBVjz38jrPt@github.com/MarcusEspiritu/MidtermExam
Cloning into 'MidtermExam'...
warning: You appear to have cloned an empty repository.
marcus@marcusServer1-VirtualBox:~$ cd MidtermExam
marcus@marcusServer1-VirtualBox:~/MidtermExam$ nano config.yml
marcus@marcusServer1-VirtualBox:~/MidtermExam$ mkdir roles
marcus@marcusServer1-VirtualBox:~/MidtermExam$ cd roles
marcus@marcusServer1-VirtualBox:~/MidtermExam/roles$ ansible-galaxy init ELK
a- Role ELK was created successfully
marcus@marcusServer1-VirtualBox:~/MidtermExam/roles$ ansible-galaxy init Nagios
- Role Nagios was created successfully
marcus@marcusServer1-VirtualBox:~/MidtermExam/roles$ ansible-galaxy init Grafana
- Role Grafana was created successfully
marcus@marcusServer1-VirtualBox:~/MidtermExam/roles$ ansible-galaxy init Prometheus
- Role Prometheus was created successfully
marcus@marcusServer1-VirtualBox:~/MidtermExam/roles$ ansible-galaxy init LampStack
- Role LampStack was created successfully
marcus@marcusServer1-VirtualBox:~/MidtermExam/roles$
```

3.1 Install and configure Elastic Stack in separate hosts (Elastic Search, Kibana, Logstash)

3.2 Install Nagios in one host

3.3 Install Grafana, Prometheus and Influxdb in separate hosts (Influxdb, Grafana, Prometheus)

3.4 Install Lamp Stack in separate hosts (Httpd + Php, Mariadb)

```
marcus@marcusServer1-VirtualBox: ~/MidtermExam

TASK [LampStack : 3. Create a new database] *****
ok: [127.0.0.1]

TASK [LampStack : 4. Create a database user] *****
ok: [127.0.0.1]

TASK [LampStack : 5a. Copy sample data] *****
ok: [127.0.0.1]

TASK [LampStack : 5b. Insert sample data] *****
changed: [127.0.0.1]

TASK [LampStack : 6a. Install MySQL extension for PHP] *****
ok: [127.0.0.1]

TASK [LampStack : 7. install Hello World PHP script with database] *****
changed: [127.0.0.1]

PLAY RECAP *****
127.0.0.1 : ok=62 changed=11 unreachable=0 failed=0 s
kipped=1 rescued=0 ignored=0

marcus@marcusServer1-VirtualBox:~/MidtermExam$
```

4. push and commit your repository in the VM (no need for ansible.cfg upon pushing)

```
marcus@marcusServer1-VirtualBox:~/MidtermExam$ git add config.yml
marcus@marcusServer1-VirtualBox:~/MidtermExam$ git commit -m "Sucess"
[main (root-commit) cd7e27e] Sucess
1 file changed, 11 insertions(+)
create mode 100644 config.yml
marcus@marcusServer1-VirtualBox:~/MidtermExam$ git push
Enumerating objects: 3, done.
Counting objects: 100% (3/3), done.
Compressing objects: 100% (2/2), done.
Writing objects: 100% (3/3), 325 bytes | 325.00 KiB/s, done.
Total 3 (delta 0), reused 0 (delta 0), pack-reused 0
To https://github.com/MarcusEspiritu/MidtermExam
 * [new branch]      main -> main
marcus@marcusServer1-VirtualBox:~/MidtermExam$ git add roles
marcus@marcusServer1-VirtualBox:~/MidtermExam$ git commit -m "Nice"
[main 30f4c6a] Nice
61 files changed, 1361 insertions(+)
create mode 100644 roles/ELK/README.md
create mode 100644 roles/ELK/defaults/main.yml
create mode 100644 roles/ELK/handlers/main.yml
create mode 100644 roles/ELK/meta/main.yml
create mode 100644 roles/ELK/tasks/main.yml
create mode 100644 roles/ELK/tests/inventory
create mode 100644 roles/ELK/tests/test.yml
create mode 100644 roles/ELK/vars/main.yml
create mode 100644 roles/Grafana/README.md
create mode 100644 roles/Grafana/defaults/main.yml
create mode 100644 roles/Grafana/handlers/main.yml
create mode 100644 roles/Grafana/meta/main.yml
create mode 100644 roles/Grafana/tasks/main.yml
create mode 100644 roles/Grafana/tests/inventory
create mode 100644 roles/Grafana/tests/test.yml
create mode 100644 roles/Grafana/vars/main.yml
create mode 100644 roles/LampStack/README.md
create mode 100644 roles/LampStack/defaults/main.yml
create mode 100644 roles/LampStack/files/db.php
create mode 100644 roles/LampStack/files/dump.sql
create mode 100644 roles/LampStack/files/index.php
create mode 100644 roles/LampStack/handlers/main.yml
create mode 100644 roles/LampStack/meta/main.yml
create mode 100644 roles/LampStack/tasks/apache2.yml
create mode 100644 roles/LampStack/tasks/main.yml
create mode 100644 roles/LampStack/tasks/mariadb.yml
```



```

create mode 100644 roles/Nagios/tasks/main.yml
create mode 100644 roles/Nagios/tasks/nagios-ssl.yml
create mode 100644 roles/Nagios/templates/000-default.j2
create mode 100644 roles/Nagios/templates/commands.cfg.j2
create mode 100644 roles/Nagios/templates/hostsgroups.cfg.j2
create mode 100644 roles/Nagios/templates/services.cfg.j2
create mode 100644 roles/Nagios/tests/inventory
create mode 100644 roles/Nagios/tests/test.yml
create mode 100644 roles/Nagios/vars/main.yml
create mode 100644 roles/Nagios/vars/vars.yml
create mode 100644 roles/Prometheus/README.md
create mode 100644 roles/Prometheus/defaults/main.yml
create mode 100644 roles/Prometheus/handlers/main.yml
create mode 100644 roles/Prometheus/meta/main.yml
create mode 100644 roles/Prometheus/prometheus.j2
create mode 100644 roles/Prometheus/prometheus.yml.j2
create mode 100644 roles/Prometheus/tasks/main.yml
create mode 100644 roles/Prometheus/tests/inventory
create mode 100644 roles/Prometheus/tests/test.yml
create mode 100644 roles/Prometheus/vars/main.yml
marcus@marcusServer1-VirtualBox:~/MidtermExam$ git push
Enumerating objects: 87, done.
Counting objects: 100% (87/87), done.
Compressing objects: 100% (53/53), done.
Writing objects: 100% (86/86), 4.67 MiB | 1.55 MiB/s, done.
Total 86 (delta 3), reused 0 (delta 0), pack-reused 0
remote: Resolving deltas: 100% (3/3), done.
To https://github.com/MarcusEspiritu/MidtermExam
   cd7e27e..30f4c6a  main -> main
marcus@marcusServer1-VirtualBox:~/MidtermExam$ git add group_vars
marcus@marcusServer1-VirtualBox:~/MidtermExam$ git commit -m "Good"
[main 44dbcea] Good
2 files changed, 72 insertions(+)
create mode 100644 group_vars/all
create mode 100644 group_vars/all~
marcus@marcusServer1-VirtualBox:~/MidtermExam$ git push
Enumerating objects: 6, done.
Counting objects: 100% (6/6), done.
Compressing objects: 100% (5/5), done.
Writing objects: 100% (5/5), 868 bytes | 868.00 KiB/s, done.
Total 5 (delta 1), reused 0 (delta 0), pack-reused 0
remote: Resolving deltas: 100% (1/1), done.
To https://github.com/MarcusEspiritu/MidtermExam
   30f4c6a..44dbcea  main -> main
marcus@marcusServer1-VirtualBox:~/MidtermExam$

```

5. request a pull request from that branch in GitHub

<https://github.com/MarcusEspiritu/MidtermExam/compare>

6. For your midterm exam to be counted, please paste your repository link as an answer in this exam.

<https://github.com/MarcusEspiritu/MidtermExam>

6. Supplementary Activity

N/A

8. Assessment (Rubric for Laboratory Performance):