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Section: CPE31S21	Date Submitted: 12/13/24
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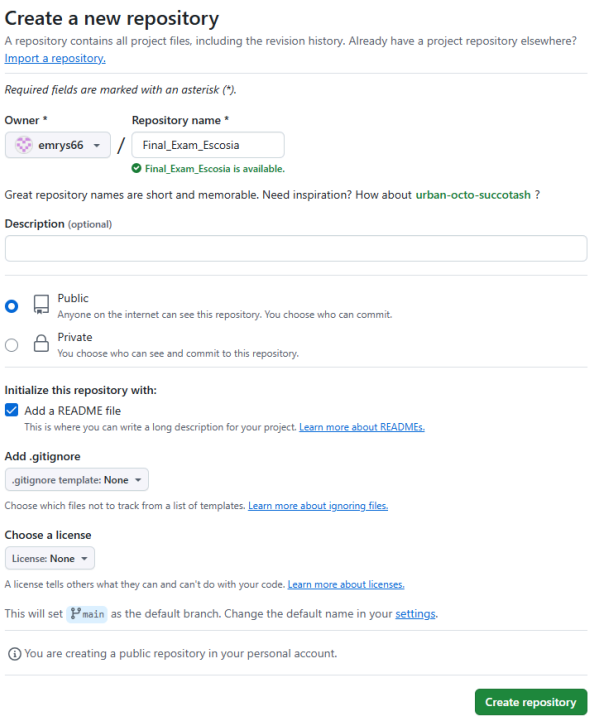
Tools Needed:

1. VM with Ubuntu, CentOS and Ansible installed
2. Web browser

Procedure:

1. Create a repository and label it as "Final_Exam_Surname"



2. Clone your new repository in your VM

```
workstation@workstation:~$ git clone git@github.com:emrys66/Final_Exam_Escosia.git
Cloning into 'Final_Exam_Escosia'...
remote: Enumerating objects: 3, done.
remote: Counting objects: 100% (3/3), done.
remote: Total 3 (delta 0), reused 0 (delta 0), pack-reused 0 (from 0)
Receiving objects: 100% (3/3), done.
workstation@workstation:~$ cd Final_Exam_Escosia
workstation@workstation:~/Final_Exam_Escosia$
```

3. Create an Ansible playbook that does the following with an input of a config.yaml file and structure inventory file.

3.1 Install and configure one enterprise service that can be installed in Debian and Centos servers

workstation@workstation: ~/Final_Exam_Escosia

GNU nano 7.2 enterprise.yml

```yaml
---
- name: Install and configure web and database servers
  hosts: all
  become: yes
  tasks:

    - name: Remove problematic APT source file on Ubuntu
      file:
        path: /etc/apt/sources.list.d/cloud_archive_ubuntu_com_ubuntu.list
        state: absent
      when: ansible_distribution == "Ubuntu"

    - name: Install mariadb package (CentOS)
      yum:
        name: mariadb-server
        state: present
      when: ansible_distribution == "CentOS"


    - name: Start MariaDB (CentOS)
      service:
        name: mariadb
        state: started
      when: ansible_distribution == "CentOS"


    - name: Enable MariaDB (CentOS)
      service:
        name: mariadb
        enabled: true
      when: ansible_distribution == "CentOS"


    - name: Install mariadb package (Ubuntu)
      apt:
        name: mariadb-server
        state: present
      when: ansible_distribution == "Ubuntu"
```

```yaml
    - name: Start MariaDB (Ubuntu)
      service:
        name: mariadb
        state: started
      when: ansible_distribution == "Ubuntu"

    - name: Enable MariaDB (Ubuntu)
      service:
        name: mariadb
        enabled: true
      when: ansible_distribution == "Ubuntu"
```

3.2 Install and configure one monitoring tool that can be installed in Debian and Centos servers (if it is a stack there should be option of different host)

```
ok: [centos]

TASK [Extract Monitoring tools] ************************************************************************
ok: [centos]

TASK [Move Monitoring tool files] **********************************************************************
ok: [centos]

TASK [Create Monitoring tool user] *********************************************************************
ok: [centos]

TASK [Set Monitoring Ownership] ************************************************************************
ok: [centos]

TASK [Configure Monitoring tool as a Service] **********************************************************
ok: [centos]

TASK [Reload systemd and Enable Monitoring tool] *******************************************************
ok: [centos]

PLAY RECAP *********************************************************************************************
centos                     : ok=8    changed=0    unreachable=0    failed=0    skipped=0    rescued=0    ignored=0
```

workstation@workstation: ~/Final_Exam_Escosia

GNU nano 7.2 monitoring.yml

```
- name: Enterprise Service and Monitoring Setup
  hosts: all
  become: true
  tasks:
    - name: Download Monitoring tools
      get_url:
        url: "https://github.com/prometheus/prometheus/releases/download/v2.46.0/prometheus-2.4
        dest: /tmp/prometheus.tar.gz

    - name: Extract Monitoring tools
      unarchive:
        src: /tmp/prometheus.tar.gz
        dest: /opt
        remote_src: true

    - name: Move Monitoring tool files
      command:
        cmd: mv /opt/prometheus-2.46.0.linux-amd64 /opt/prometheus
      args:
        creates: /opt/prometheus

    - name: Create Monitoring tool user
      user:
        name: prometheus
        shell: /sbin/nologin

    - name: Set Monitoring Ownership
      file:
        path: /opt/prometheus
        owner: prometheus
        group: prometheus
        state: directory
        recurse: yes
```

MONITORING TOOLS PROOF

UBUNTU

```
workstation@server1:~$ prometheus --version
prometheus, version 2.1.0+ds (branch: debian/sid, revision: 2.1.0+ds-1)
  build user:       pkg-go-maintainers@lists.alioth.debian.org
  build date:       20180121-21:30:42
  go version:       go1.9.2
workstation@server1:~$
```

CENTOS

```
centos@centos ~]$ systemctl status prometheus
 prometheus.service - Prometheus Monitoring
    Loaded: loaded (/etc/systemd/system/prometheus.service; enabled; preset: disabled)
    Active: active (running) since Fri 2024-12-13 11:22:03 PST; 9min ago
  Main PID: 82288 (prometheus)
     Tasks: 10 (limit: 38222)
    Memory: 30.3M
       CPU: 517ms
    CGroup: /system.slice/prometheus.service
            └─82288 /opt/prometheus/prometheus --config.file=/opt/prometheus/prometheus.yml --stora>
```

4.4 Change Motd as "Ansible Managed by <username>"

```
workstation@workstation: ~/Final_Exam_Escosia
 GNU nano 7.2                                  motd.yml
---
- name: Enterprise Service and Monitoring Setup
  hosts: all
  become: true
  tasks:  # This line is necessary to define the tasks section
    - name: Update MOTD
      copy:
        dest: /etc/motd
        content: "Ansible Managed by ESCOSIA!!"
```

```
TASK [Update MOTD] *************************************************************************************************
changed: [server1]
changed: [centos]

PLAY RECAP *********************************************************************************************************
centos                     : ok=2    changed=1    unreachable=0    failed=0    skipped=0    rescued=0    ig
nored=0
server1                    : ok=2    changed=1    unreachable=0    failed=0    skipped=0    rescued=0    ig
nored=0

workstation@workstation:~/Final_Exam_Escosia$ sudo nano motd.yml
```

MOTD PROOF

UBUNTU

```
workstation@server1:~$ cat /etc/motd
Ansible Managed by ESCOSIA!!workstation@server1:~$
```

CENTOS

```
[centos@centos ~]$ cat /etc/motd
Ansible Managed by ESCOSIA!![centos@centos ~]$
```

4. Push and commit your files in GitHub

5. Make sure to show evidence of input (codes) process (codes successfully running) and output (evidence of installation)

Enterprise Tools Proof

Ubuntu

```
workstation@server1:~$ systemctl status mariadb
● mariadb.service - MariaDB 10.1.48 database server
   Loaded: loaded (/lib/systemd/system/mariadb.service; enabled; vendor preset:
   Active: active (running) since Fri 2024-12-13 08:45:56 +08; 1h 22min ago
     Docs: man:mysqld(8)
           https://mariadb.com/kb/en/library/systemd/
  Process: 2498 ExecStartPost=/bin/sh -c systemctl unset-environment _WSREP_STA
  Process: 2493 ExecStartPost=/etc/mysql/debian-start (code=exited, status=0/SU
  Process: 973 ExecStartPre=/bin/sh -c [ ! -e /usr/bin/galera_recovery ] && VAR
  Process: 971 ExecStartPre=/bin/sh -c systemctl unset-environment _WSREP_START
  Process: 964 ExecStartPre=/usr/bin/install -m 755 -o mysql -g root -d /var/ru
 Main PID: 1281 (mysqld)
   Status: "Taking your SQL requests now..."
    Tasks: 27 (limit: 4915)
   CGroup: /system.slice/mariadb.service
           └─1281 /usr/sbin/mysqld
```

Centos

```
centos@centos:~ — systemctl status mariadb
● mariadb.service - MariaDB 10.5 database server
   Loaded: loaded (/usr/lib/systemd/system/mariadb.service; enabled; preset: disabled)
   Active: active (running) since Fri 2024-12-13 09:59:33 PST; 16min ago
     Docs: man:mariadbd(8)
           https://mariadb.com/kb/en/library/systemd/
 Main PID: 70242 (mariadbd)
   Status: "Taking your SQL requests now..."
    Tasks: 8 (limit: 38222)
   Memory: 71.7M
      CPU: 762ms
   CGroup: /system.slice/mariadb.service
           └─70242 /usr/libexec/mariadbd --basedir=/usr
```

5. For your final exam to be counted, please paste your repository link as an answer

in this exam.

Note: Extra points if you will implement the said services via containerization