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Course/Section: CPE31S2	**Date Submitted:** 10/10/25
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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 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

```
PLAY RECAP *********************************************************************************************************
192.168.56.107             : ok=6    changed=0    unreachable=0    failed=0    skipped=1    rescued=0
 ignored=0
192.168.56.112             : ok=7    changed=2    unreachable=0    failed=0    skipped=1    rescued=0
 ignored=0
```

Figure 3.1. Ansible playbook recap

```
north@server1:~$ systemctl status apache2
● apache2.service - The Apache HTTP Server
     Loaded: loaded (/usr/lib/systemd/system/apache2.service; enabled; preset:
     Active: active (running) since Fri 2025-10-10 08:51:38 UTC; 1h 40min ago
       Docs: https://httpd.apache.org/docs/2.4/
   Main PID: 1286 (apache2)
      Tasks: 6 (limit: 2266)
     Memory: 17.4M (peak: 18.1M)
        CPU: 304ms
     CGroup: /system.slice/apache2.service
             ├─1286 /usr/sbin/apache2 -k start
             ├─1298 /usr/sbin/apache2 -k start
             ├─1300 /usr/sbin/apache2 -k start
             ├─1301 /usr/sbin/apache2 -k start
             ├─1305 /usr/sbin/apache2 -k start
             └─1306 /usr/sbin/apache2 -k start

Oct 10 08:51:38 server1 systemd[1]: Starting apache2.service - The Apache HTTP
Oct 10 08:51:38 server1 apachectl[1269]: AH00558: apache2: Could not reliably d
Oct 10 08:51:38 server1 systemd[1]: Started apache2.service - The Apache HTTP S
```

```
● mariadb.service - MariaDB 10.11.13 database server
     Loaded: loaded (/usr/lib/systemd/system/mariadb.service; enabled; preset:
     Active: active (running) since Fri 2025-10-10 10:04:31 UTC; 27min ago
       Docs: man:mariadbd(8)
             https://mariadb.com/kb/en/library/systemd/
   Main PID: 5421 (mariadbd)
     Status: "Taking your SQL requests now..."
      Tasks: 11 (limit: 14961)
     Memory: 78.9M (peak: 81.9M)
        CPU: 655ms
     CGroup: /system.slice/mariadb.service
             └─5421 /usr/sbin/mariadbd

Oct 10 10:04:31 server1 mariadbd[5421]: 2025-10-10 10:04:31 0 [Note] InnoDB: lo
Oct 10 10:04:31 server1 mariadbd[5421]: 2025-10-10 10:04:31 0 [Note] Plugin 'FE
Oct 10 10:04:31 server1 mariadbd[5421]: 2025-10-10 10:04:31 0 [Note] InnoDB: Lo
Oct 10 10:04:31 server1 mariadbd[5421]: 2025-10-10 10:04:31 0 [Warning] You nee
Oct 10 10:04:31 server1 mariadbd[5421]: 2025-10-10 10:04:31 0 [Note] Server soc
Oct 10 10:04:31 server1 mariadbd[5421]: 2025-10-10 10:04:31 0 [Note] InnoDB: Bu
Oct 10 10:04:31 server1 mariadbd[5421]: 2025-10-10 10:04:31 0 [Note] /usr/sbin/
Oct 10 10:04:31 server1 mariadbd[5421]: Version: '10.11.13-MariaDB-0ubuntu0.24.
Oct 10 10:04:31 server1 systemd[1]: Started mariadb.service - MariaDB 10.11.13
Oct 10 10:04:31 server1 /etc/mysql/debian-start[5440]: Upgrading MariaDB tables
```

Figure 3.2. Evidence of installation on Ubuntu host (Lamp)

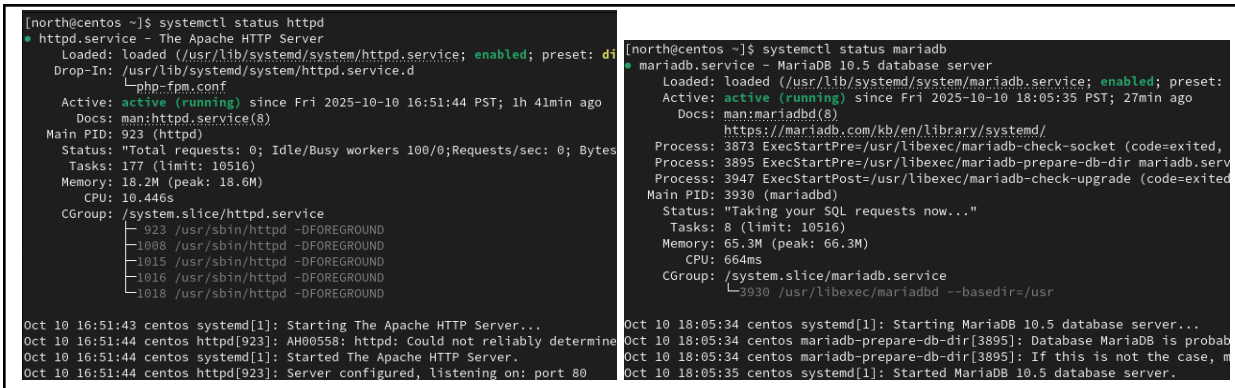

Figure 3.3. Evidence of installation on CentOS host (Lamp)

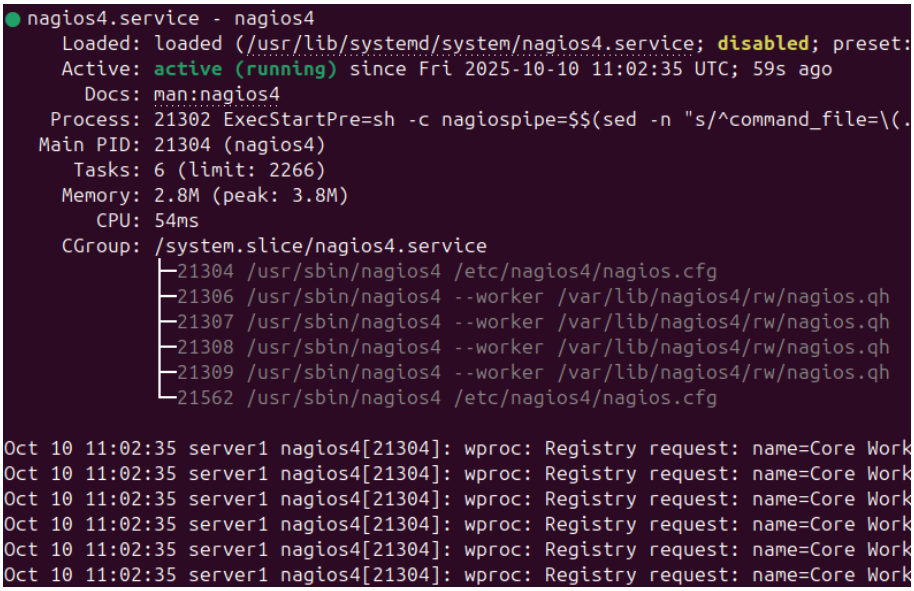

Figure 3.4. Evidence of installation on Ubuntu host (Nagios)

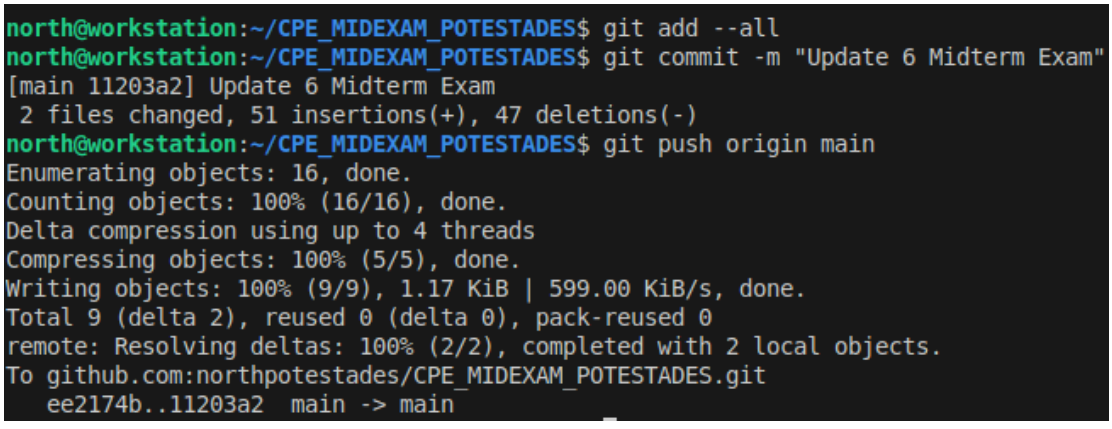

Figure 3.5. Final commit and push to GitHub

GitHub link: [Midterm Exam Repository]

Conclusions: (link your conclusion from the objective)
In conclusion, I was able to perform the task of creating a workflow which installs the Lamp Stack on both CentOS and Ubuntu, and installing Nagios on one system, but I was not able to implement the ELK/Elastic Stack on either one. In the future, I should do more experimenting with unknown commands like wget, so that I do not have the same problems in the future. Overall, I was at least able to do one task properly, which was to implement the Lamp Stack on both systems.