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Activity 8: Install, Configure, and Manage Availability Monitoring tools

1. Objectives

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

2. Discussion

Availability monitoring is a type of monitoring tool that we use if the certain workload is up or reachable on our end. Site downtime can lead to loss of revenue, reputational damage and severe distress. Availability monitoring prevents adverse situations by checking the uptime of infrastructure components such as servers and apps and notifying the webmaster of problems before they impact on business.

3. Tasks

4. Create a playbook that installs Nagios in both Ubuntu and CentOS. Apply the concept of creating roles.
5. Describe how you did step 1. (Provide screenshots and explanations in your report. Make your report detailed such that it will look like a manual.)
6. Show an output of the installed Nagios for both Ubuntu and CentOS.
7. Make sure to create a new repository in GitHub for this activity.

8. Output (screenshots and explanations)

```
tracey@Workstation:~$ git clone git@github.com:Tssukkii/Act8.git
Cloning into 'Act8'...
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.
tracey@Workstation:~$ ls
Act   Bringuela_PrelimExam  Documents  Pictures  Templates  y.pub
Act7  CPE232_BRINGUELA     Downloads  Public    Videos
Act8  Desktop              Music      snap      y
tracey@Workstation:~$ act 8
Command 'act' not found, but can be installed with:
sudo snap install act      # version 0.3.2, or
sudo apt  install artemis  # version 18.2.0+dfsg-3
See 'snap info act' for additional versions.
tracey@Workstation:~$ cd Act8
```

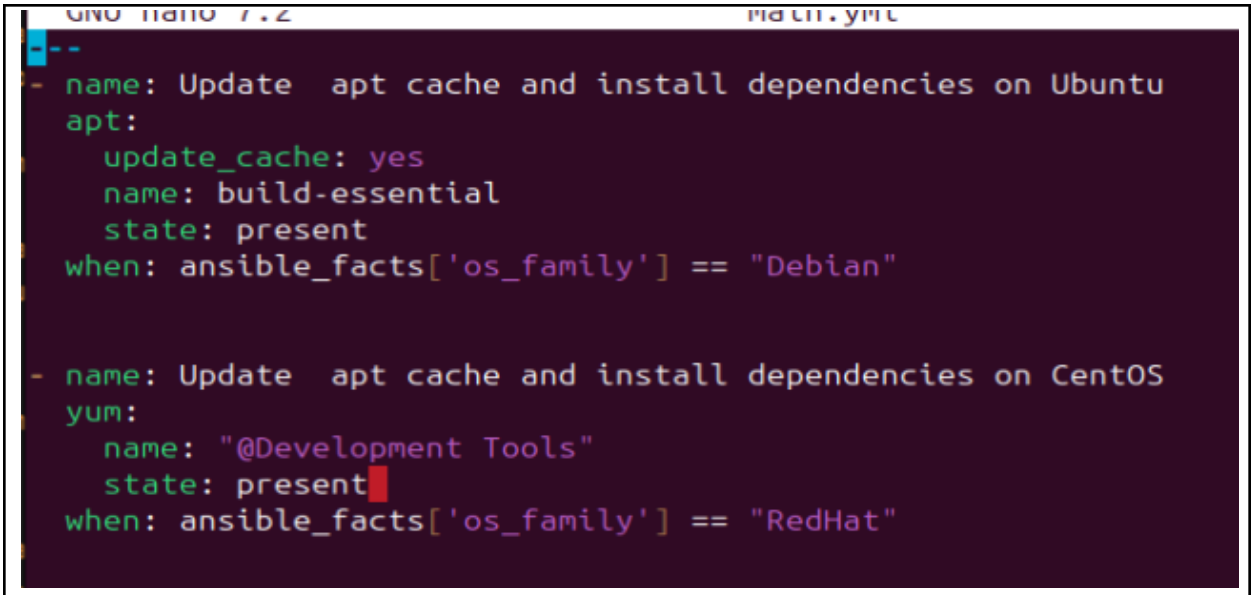
heres when i git clone the Act8 repository

```
racey@Workstation:~/Act8/Nagi_Setup$ ansible-galaxy init roles/common
 Role roles/common was created successfully
racey@Workstation:~/Act8/Nagi_Setup$ ansible-galaxy init roles/nagios
 Role roles/nagios was created successfully
racey@Workstation:~/Act8/Nagi_Setup$ cd
racey@Workstation:~$ cd Act8
racey@Workstation:~/Act8$ inventory.yml
nventory.yml: command not found
racey@Workstation:~/Act8$ sudo nano inventory.yml
sudo] password for tracey:
racey@Workstation:~/Act8$ playbook.yml
laybook.yml: command not found
racey@Workstation:~/Act8$ sudo nano playbook
racey@Workstation:~/Act8$ sudo nano playbook.yml
racey@Workstation:~/Act8$ cd roles
ash: cd: roles: No such file or directory
racey@Workstation:~/Act8$ ls
nventory.yml  Nagi_Setup  playbook.yml  README.md
racey@Workstation:~/Act8$ cd Nagi_Setup
racey@Workstation:~/Act8/Nagi_Setup$ ls
oles
```

this is when i created the roles common and nagios folders

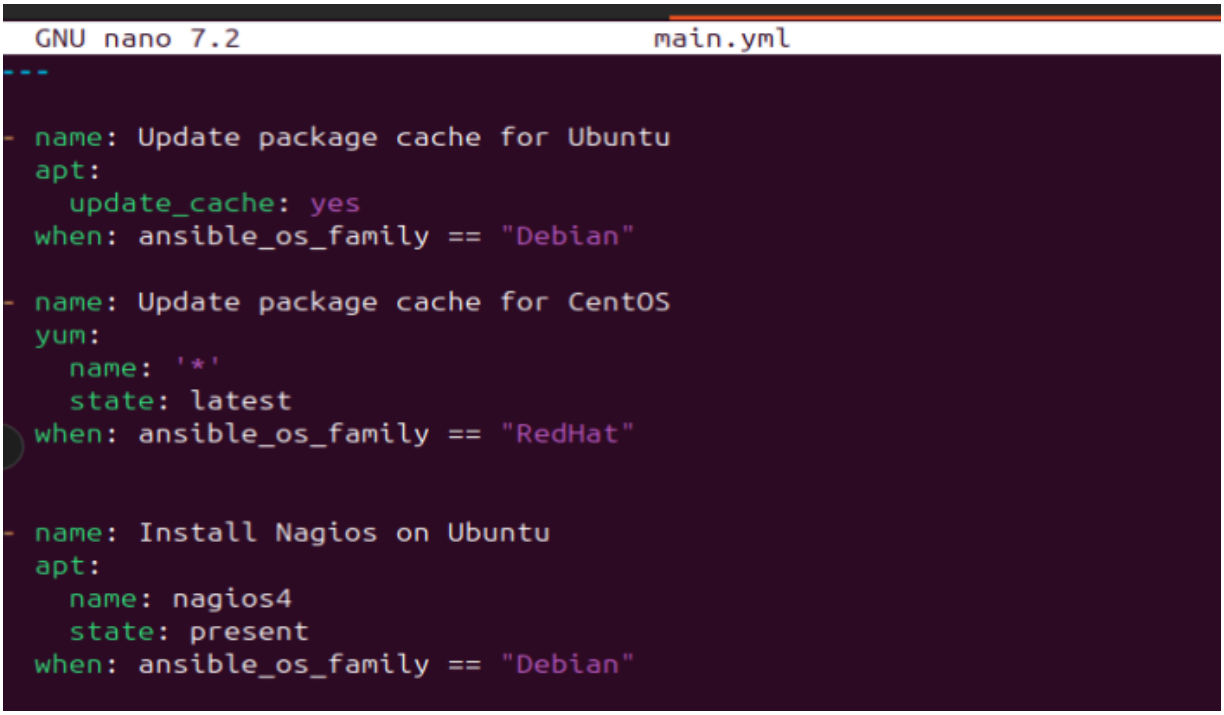
```yaml
---
- name: Install Nagios on Ubuntu and CentOS
  hosts: all
  become: yes
  roles:
    - common
    - nagios
```

this is the code inside of the playbook.yml



```
GNU nano 7.2                                  main.yml
---
- name: Update  apt cache and install dependencies on Ubuntu
  apt:
    update_cache: yes
    name: build-essential
    state: present
  when: ansible_facts['os_family'] == "Debian"


- name: Update  apt cache and install dependencies on CentOS
  yum:
    name: "@Development Tools"
    state: present
  when: ansible_facts['os_family'] == "RedHat"
```

this is the main.yml inside of the roles/common/tasks



```
GNU nano 7.2                                  main.yml
---

- name: Update package cache for Ubuntu
  apt:
    update_cache: yes
  when: ansible_os_family == "Debian"

- name: Update package cache for CentOS
  yum:
    name: '*'
    state: latest
  when: ansible_os_family == "RedHat"


- name: Install Nagios on Ubuntu
  apt:
    name: nagios4
    state: present
  when: ansible_os_family == "Debian"
```

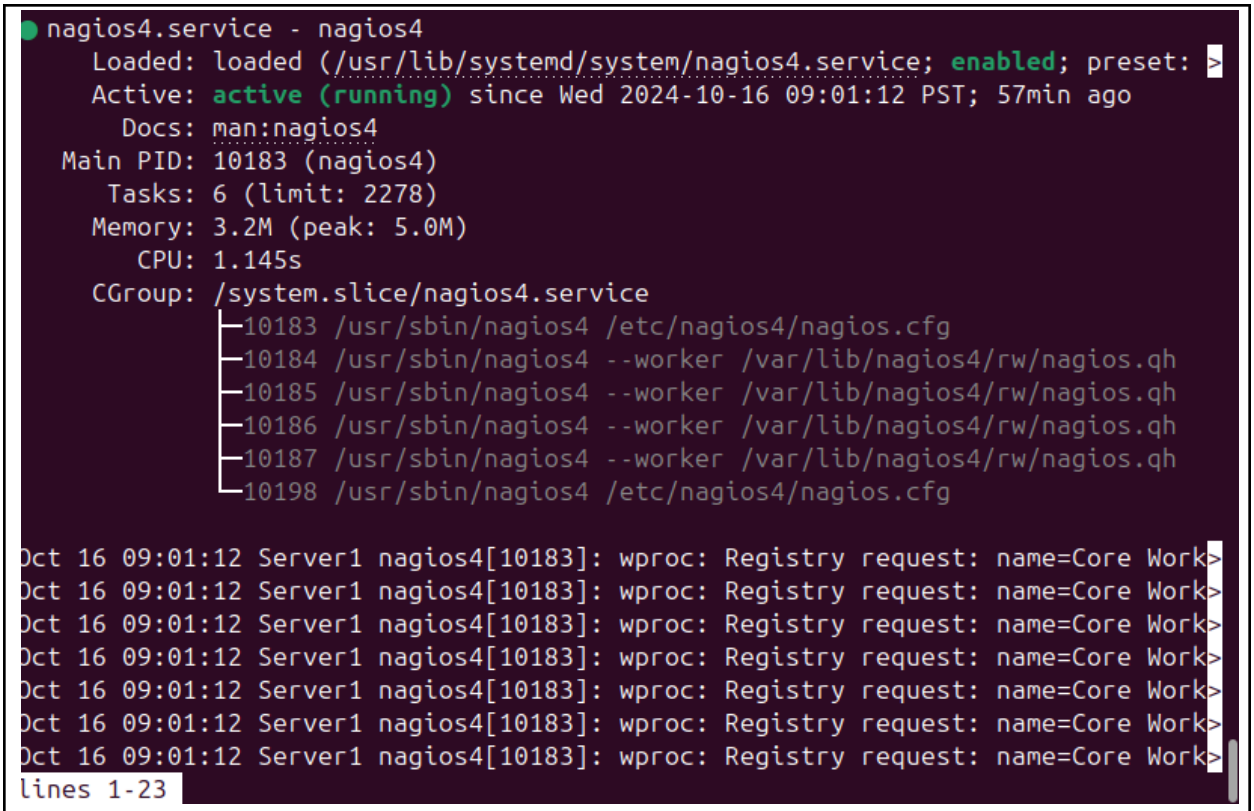
this is the main.yml inside of the roles/nagios/tasks

```
PLAY RECAP *********************************************************************
192.168.56.113             : ok=5    changed=1    unreachable=0    failed=0    skippe
d=5    rescued=0    ignored=0
192.168.56.114             : ok=5    changed=1    unreachable=0    failed=0    skippe
d=5    rescued=0    ignored=0
192.168.56.117             : ok=6    changed=0    unreachable=0    failed=0    skippe
d=4    rescued=0    ignored=0

tracey@Workstation:~/Act8$
```

this shows that the codes on the playbooks and in the roles worked

```
tracey@localhost:~ — sudo systemctl status nagios
● nagios.service - Nagios Core 4.4.14
     Loaded: loaded (/usr/lib/systemd/system/nagios.service; enabled; preset: d>
     Active: active (running) since Wed 2024-10-16 09:29:02 PST; 29min ago
       Docs: https://www.nagios.org/documentation
   Main PID: 102068 (nagios)
      Tasks: 6 (limit: 10962)
     Memory: 6.7M
        CPU: 956ms
     CGroup: /system.slice/nagios.service
             ├─102068 /usr/sbin/nagios -d /etc/nagios/nagios.cfg
             ├─102069 /usr/sbin/nagios --worker /var/spool/nagios/cmd/nagios.qh
             ├─102070 /usr/sbin/nagios --worker /var/spool/nagios/cmd/nagios.qh
             ├─102071 /usr/sbin/nagios --worker /var/spool/nagios/cmd/nagios.qh
             ├─102072 /usr/sbin/nagios --worker /var/spool/nagios/cmd/nagios.qh
             └─102094 /usr/sbin/nagios -d /etc/nagios/nagios.cfg

Oct 16 09:29:02 localhost.localdomain nagios[102068]: qh: core query handler re>
Oct 16 09:29:02 localhost.localdomain nagios[102068]: qh: echo service query ha>
Oct 16 09:29:02 localhost.localdomain nagios[102068]: qh: help for the query ha>
Oct 16 09:29:02 localhost.localdomain nagios[102068]: wproc: Successfully regis>
Oct 16 09:29:02 localhost.localdomain nagios[102068]: wproc: Registry request: >
Oct 16 09:29:02 localhost.localdomain systemd[1]: Started Nagios Core 4.4.14.
Oct 16 09:29:02 localhost.localdomain nagios[102068]: wproc: Registry request: >
lines 1-23
```

this shows that it worked in CentOS



this shows that it worked in Ubuntu

Repository:[Tssukkii/Act8 (github.com)]

Reflections:

Answer the following:

1. What are the benefits of having an availability monitoring tool?
   An availability monitoring tool helps ensure that critical systems and services are continuously operational, reducing downtime by alerting administrators to issues in real-time. It enables proactive identification of performance bottlenecks and failures, allowing for quick remediation. This improves overall system reliability and enhances user satisfaction by minimizing service interruptions.

Conclusions:

In conclusion, implementing Nagios as an availability monitoring tool significantly enhances the reliability and uptime of IT infrastructure by providing timely alerts and performance insights. It allows administrators to proactively address issues before they escalate, minimizing disruptions.

Ultimately, this leads to improved service quality, user satisfaction, and operational efficiency.