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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

1. Create a playbook that installs Nagios in both Ubuntu and CentOS. Apply the concept of creating roles.
2. 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.)
3. Show an output of the installed Nagios for both Ubuntu and CentOS.
4. Make sure to create a new repository in GitHub for this activity.

4. Output (screenshots and explanations)

a. Add the necessary files and its contents .

```
jonjeous@localmachine-VirtualBox:~/Recto_HOA8$ ls
ansible.cfg  inventory  playbook.yml  README.md  roles
jonjeous@localmachine-VirtualBox:~/Recto_HOA8$ cat ansible.cfg
[defaults]
inventory = inventory
private_key_file = ~/.ssh/ansible
jonjeous@localmachine-VirtualBox:~/Recto_HOA8$ cat inventory
[ubuntu_servers]
192.168.56.123 #Server1
192.168.56.122 #Server2
192.168.56.120 #ManagedNode

[centos_servers]
192.168.56.121 #CentOS
jonjeous@localmachine-VirtualBox:~/Recto_HOA8$ cat playbook.yml
---
- name: Install Nagios Monitoring
  hosts: ubuntu_servers:centos_servers
  become: true
  roles:
    - role: base
    - role: nagios
```

b. Roles

```
jonjeous@localmachine-VirtualBox:~/Recto_HOA8$ tree roles
roles
├── base
│   └── tasks
│       └── main.yml
└── nagios
    └── tasks
        └── main.yml

4 directories, 2 files
jonjeous@localmachine-VirtualBox:~/Recto_HOA8$
```

c. Tasks for each role.

```
jonjeous@localmachine-VirtualBox:~/Recto_HOA8$ cat roles/base/tasks/main.yml
---
- name: update repository index (CentOS)
  tags: always
  dnf:
    update_cache: yes
  changed_when: false
  when: ansible_distribution == "CentOS"
  become: true

- name: install updates (Ubuntu)
  tags: always
  apt:
    update_cache: yes
  changed_when: false
  when: ansible_distribution == "Ubuntu"
  become: true
jonjeous@localmachine-VirtualBox:~/Recto_HOA8$
```

```
jonjeous@localmachine-VirtualBox:~/Recto_HOA8$ cat roles/nagios/tasks/main.yml
---
- name: Install Nagios on Ubuntu
  apt:
    name: nagios4
    state: present
  when: ansible_distribution == "Ubuntu"

- name: Install Nagios on CentOS
  yum:
    name: nagios
    state: present
  when: ansible_distribution == "CentOS"

- name: Enable and start Nagios service (Ubuntu)
  service:
    name: nagios4
    state: started
    enabled: yes
  when: ansible_distribution == "Ubuntu"

- name: Enable and start Nagios service (CentOS)
  systemd:
    name: nagios
    state: started
    enabled: yes
  when: ansible_distribution == "CentOS"
```

d. Run the playbook.

```
jonjeous@localmachine-VirtualBox:~/Recto_HOA8$ ansible-playbook --ask-become-pass playbook.yml
BECOME password:

PLAY [Install Nagios Monitoring] ***********************************************************************

TASK [Gathering Facts] *********************************************************************************
ok: [192.168.56.123]
ok: [192.168.56.121]
ok: [192.168.56.120]
ok: [192.168.56.122]

TASK [base : update repository index (CentOS)] *********************************************************
skipping: [192.168.56.123]
skipping: [192.168.56.122]
skipping: [192.168.56.120]
ok: [192.168.56.121]

TASK [base : install updates (Ubuntu)] *****************************************************************
skipping: [192.168.56.121]
ok: [192.168.56.123]
ok: [192.168.56.122]
ok: [192.168.56.120]

TASK [nagios : Install Nagios on Ubuntu] ***************************************************************
skipping: [192.168.56.121]
ok: [192.168.56.123]
ok: [192.168.56.122]
ok: [192.168.56.120]
```

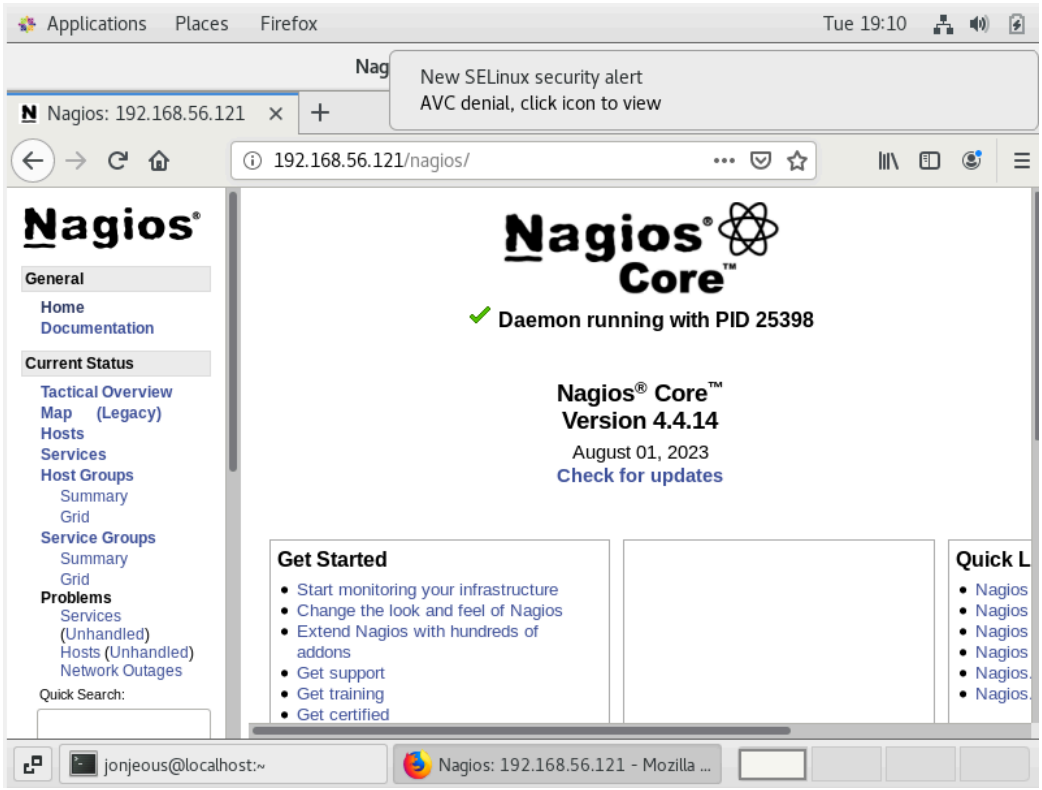
```
TASK [nagios : Install Nagios on CentOS] ***************************************************************
skipping: [192.168.56.123]
skipping: [192.168.56.122]
skipping: [192.168.56.120]
ok: [192.168.56.121]

TASK [nagios : Enable and start Nagios service (Ubuntu)] ***********************************************
skipping: [192.168.56.121]
ok: [192.168.56.120]
ok: [192.168.56.123]
ok: [192.168.56.122]

TASK [nagios : Enable and start Nagios service (CentOS)] ***********************************************
skipping: [192.168.56.123]
skipping: [192.168.56.122]
skipping: [192.168.56.120]
changed: [192.168.56.121]

PLAY RECAP *********************************************************************************************
192.168.56.120             : ok=4    changed=0    unreachable=0    failed=0    skipped=3    rescued=0    ign
ored=0
192.168.56.121             : ok=4    changed=1    unreachable=0    failed=0    skipped=3    rescued=0    ign
ored=0
192.168.56.122             : ok=4    changed=0    unreachable=0    failed=0    skipped=3    rescued=0    ign
ored=0
192.168.56.123             : ok=4    changed=0    unreachable=0    failed=0    skipped=3    rescued=0    ign
ored=0

jonjeous@localmachine-VirtualBox:~/Recto_HOA8$
```

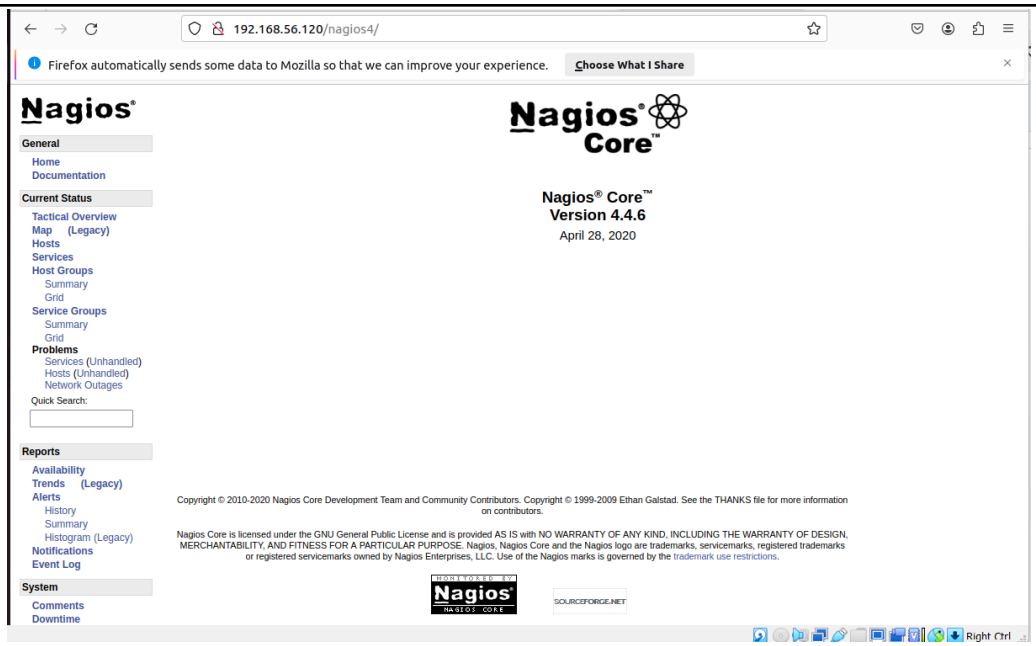
e. Restart the Nagios on both Ubuntu and CentOS servers

```
jonjeous@localmachine-VirtualBox:~/Recto_HOA8$ sudo systemctl start nagios4
jonjeous@localmachine-VirtualBox:~/Recto_HOA8$ sudo systemctl enable nagios4
Synchronizing state of nagios4.service with SysV service script with /lib/system
d/systemd-sysv-install.
Executing: /lib/systemd/systemd-sysv-install enable nagios4
jonjeous@localmachine-VirtualBox:~/Recto_HOA8$ sudo systemctl status nagios4
● nagios4.service - nagios4
     Loaded: loaded (/lib/systemd/system/nagios4.service; enabled; vendor prese>
     Active: active (running) since Wed 2024-03-20 12:01:38 PST; 11min ago
       Docs: man:nagios4
   Main PID: 686 (nagios4)
      Tasks: 6 (limit: 2260)
     Memory: 4.0M
        CPU: 296ms
     CGroup: /system.slice/nagios4.service
             ├─686 /usr/sbin/nagios4 /etc/nagios4/nagios.cfg
             ├─736 /usr/sbin/nagios4 --worker /var/lib/nagios4/rw/nagios.qh
             ├─737 /usr/sbin/nagios4 --worker /var/lib/nagios4/rw/nagios.qh
```

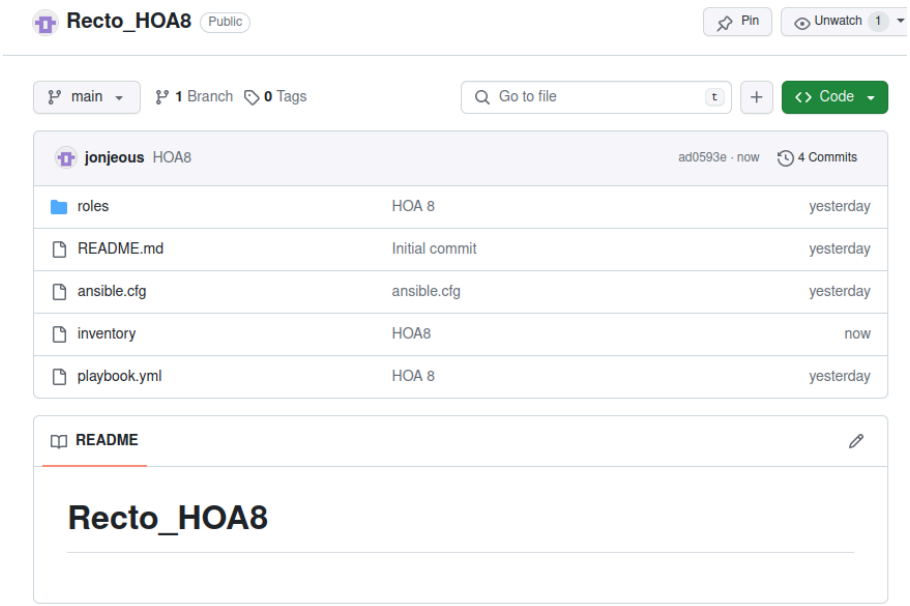
```
jonjeous@localmachine-VirtualBox:~/Recto_HOAB$ ssh jonjeous@192.168.56.117
Last login: Tue Mar 19 02:21:00 2024 from 192.168.56.116
[jonjeous@server3 ~]$ systemctl status nagios
● nagios.service - Nagios Core 4.4.14
   Loaded: loaded (/usr/lib/systemd/system/nagios.service; enabled; vendor preset:
disabled)
   Active: active (running) since Tue 2024-03-19 00:53:45 EDT; 1h 29min ago
     Docs: https://www.nagios.org/documentation
  Process: 11856 ExecStart=/usr/sbin/nagios -d /etc/nagios/nagios.cfg (code=exited,
 status=0/SUCCESS)
  Process: 11850 ExecStartPre=/usr/sbin/nagios -v /etc/nagios/nagios.cfg (code=exit
ed, status=0/SUCCESS)
 Main PID: 11858 (nagios)
    Tasks: 6
   CGroup: /system.slice/nagios.service
           ├─11858 /usr/sbin/nagios -d /etc/nagios/nagios.cfg
           ├─11859 /usr/sbin/nagios --worker /var/spool/nagios/cmd/nagios.qh
           ├─11860 /usr/sbin/nagios --worker /var/spool/nagios/cmd/nagios.qh
           ├─11861 /usr/sbin/nagios --worker /var/spool/nagios/cmd/nagios.qh
           ├─11862 /usr/sbin/nagios --worker /var/spool/nagios/cmd/nagios.qh
           └─11880 /usr/sbin/nagios -d /etc/nagios/nagios.cfg
[jonjeous@server3 ~]$
```

f. Check if it is installed properly





g. Commit changes to github



Reflections:

Answer the following:

1. What are the benefits of having an availability monitoring tool?
   - An availability monitoring tool helps detect problems with systems and services early, reducing downtime and improving performance. It ensures users can access applications smoothly, helps plan for future needs, enhances security,

and ensures compliance with regulations. Ultimately, it leads to better reliability, performance, and user satisfaction.

Conclusions:

In conclusion, setting up a process to install, configure, and manage monitoring tools like Nagios using Ansible is crucial for ensuring that our systems remain available and operational. These tools help us detect and address issues before they impact our business. By using Ansible's automation features, we can simplify the deployment and management of these monitoring solutions across different environments. This approach allows us to maintain the reliability and continuity of our IT services efficiently.