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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)

Step 1: Create a roles in the directory

```
abegail@workstation:~$ ls
cpe212   Documents  examples.desktop  Pictures  Templates
Desktop  Downloads  Music             Public    Videos
abegail@workstation:~$ cd cpe212
abegail@workstation:~/cpe212$ ls
abegail@workstation:~/cpe212$ mkdir roles
abegail@workstation:~/cpe212$ ls
roles
```

Step 2: Creating a directory for CentOS and Ubuntu roles.

```
abegail@workstation:~/cpe212/roles$ mkdir CentOS
abegail@workstation:~/cpe212/roles$ mkdir Ubuntu
abegail@workstation:~/cpe212/roles$ ls
CentOS  Ubuntu
```

Step 3: Creating tasks and main.yml for CentOS and Ubuntu.

```
abegail@workstation:~/cpe212/roles$ cd Ubuntu
abegail@workstation:~/cpe212/roles/Ubuntu$ mkdir task
abegail@workstation:~/cpe212/roles/Ubuntu$ touch main.yml
abegail@workstation:~/cpe212/roles/Ubuntu$ ls
main.yml  task
abegail@workstation:~/cpe212/roles/Ubuntu$ cd task
abegail@workstation:~/cpe212/roles/Ubuntu/task$ touch main.yml
abegail@workstation:~/cpe212/roles/Ubuntu/task$ ls
main.yml
```

```
abegail@workstation:~/cpe212/roles$ cd CentOS
abegail@workstation:~/cpe212/roles/CentOS$ ls
abegail@workstation:~/cpe212/roles/CentOS$ mkdir task
abegail@workstation:~/cpe212/roles/CentOS$ cd task
abegail@workstation:~/cpe212/roles/CentOS/task$ touch main.yml
abegail@workstation:~/cpe212/roles/CentOS/task$ ls
main.yml
```

Step 4: Create the Ubuntu and CentOS role.

CentOS

```
abegail@workstation:~/cpe212/roles/CentOS/task$ cat main.yml
---
- name: Install EPEL repository
  yum:
    name: epel-release
    state: present

- name: Install Nagios on CentOS
  yum:
    name:
      - nagios
      - nagios-pligins-all
      - nrpe
    state: present

- name: Start and enable Nagios
  systemd:
    name: nagios
    state: started
    enabled: yes
```

Ubuntu

```
abegail@workstation:~/cpe212/roles/Ubuntu/task$ cat main.yml
---
- name: Install Nagios on Ubuntu
  apt:
    name:
      - nagios3
      - nagios-nrpe-plugin
      - nagios-plugins
    state: present
    update_cache: yes

- name: Start and enable Nagios on Ubuntu
  systemd:
    name: nagios3
    state: started
    enabled: yes

- name: Start and enable Nagios on Ubuntu
  systemd:
    name: nagios3
    state: started
    enabled: yes

- name: Enable and start Apache/Httpd service on CentOS
  service:
    name: apache2
    enable: yes
    state: started
  when: ansible_distribution == "Ubuntu"
```

Step 5: Create the Main Playbook

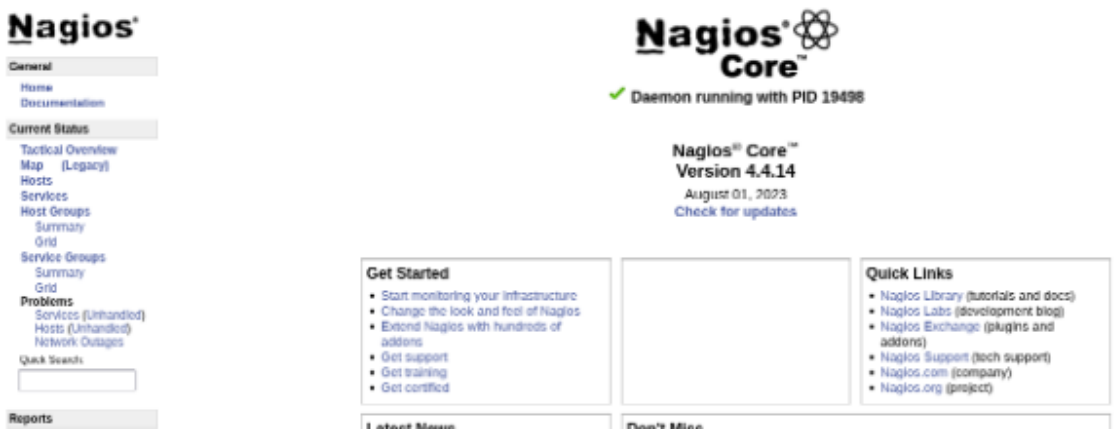
```
abegail@workstation:~/cpe212$ cat Install.yml
---
- hosts: CentOS, Ubuntu
  become: true
  pre_tasks:

  - name: Update repository Index (CentOS)
    tags: always
    yum:
      name: "*"
      update_cache: yes
    change_when: false
    when: ansible_distribution == "CentOS"

  - name: Update repository Index (Ubuntu)
    tags: always
    apt:
      update_cache: yes
    change_when: false
    when: ansible_distribution == "Ubuntu"

  - name: Ensured Required packages
    package:
      name:
        - gcc
        - make
        - wget
```

```
  - name: Create nagios group
    group:
      name: nagios_group1
      system: yes

- hosts: Ubuntu
  become: true
  roles:
    - CentOS
```

Step 6: Running the Playbook

```
SUDO password:

PLAY [CentOS, Ubuntu] ***********************************************************
*

TASK [Gathering Facts] **********************************************************
*
fatal: [192.168.56.125]: UNREACHABLE! => {"changed": false, "msg": "Failed to c
onnect to the host via ssh: abegail@192.168.56.125: Permission denied (publicke
y,gssapi-keyex,gssapi-with-mic,password).\r\n", "unreachable": true}
ok: [192.168.56.134]

TASK [Update repository Index (CentOS)] *****************************************
*
skipping: [192.168.56.134]

TASK [Update repository Index (Ubuntu)] *****************************************
*
ok: [192.168.56.134]

TASK [Ensured Required packages] ************************************************
* Amazon
ok: [192.168.56.134]

TASK [Create nagios group] ******************************************************
*
ok: [192.168.56.134]
```

```
PLAY [Ubuntu] ******************************************************************
*

TASK [Gathering Facts] *********************************************************
*
ok: [192.168.56.134]

TASK [Ubuntu : Install Nagios on Ubuntu] ***************************************
*
ok: [192.168.56.134]

TASK [Ubuntu : Start and Enable Nagios on Ubuntu] ******************************
*
ok: [192.168.56.134]

TASK [Ubuntu : Enable and Start Apache/HTTPD service on Ubuntu] ****************
*
ok: [192.168.56.134]
        to retry, use: --limit @/home/abegail/cpe212/Install.retry

PLAY RECAP *********************************************************************
*
192.168.56.125             : ok=0    changed=0    unreachable=1    failed=0
192.168.56.134             : ok=8    changed=0    unreachable=0    failed=0
```



My CentOS is still unreachable.

Reflections:

Answer the following:

1. What are the benefits of having an availability monitoring tool?
    - Availability monitoring tools ensure system reliability by tracking uptime and sending alerts during outages. They facilitate quick incident responses, prevent downtime, and provide performance insights for better resource management, ultimately enhancing user experience and business continuity.

Conclusions:

- In conclusion, the successful installation and configuration of Nagios for enterprise monitoring on Ubuntu partially met the objective. Even while connectivity problems made the CentOS installation difficult, the experience made clear how crucial availability monitoring tools are to preserving system dependability. The previously mentioned exercise showcased the expert application of Ansible for automating infrastructure administration. It also underlined the necessity of complete monitoring solutions in order to avoid system failures and guarantee excellent performance. To finish its execution, more work will be aimed at finding a solution for CentOS's connectivity issues.