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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)

```
jose@workstation:~$ git clone git@github.com:Liglig14/CPE212ACT8.1.git
Cloning into 'CPE212ACT8.1'...
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.
jose@workstation:~$ cd CPE212ACT8.1
jose@workstation:~/CPE212ACT8.1$ ls
README.md
```

Created a new repository for Activity 8.1

```yaml
---
  - name: Install requirements for CentOS
    yum:
      name:
        - gcc
        - make
        - glibc-devel
        - glibc
        - wget
        - unzip
        - httpd
        - php
        - gd
        - gd-devel
        - perl
        - postfix
      state: present
    when: ansible_distribution == "CentOS"

  - name: Install requirements for Ubuntu
    apt:
      name:
        - build-essential
        - apache2
        - php
        - libapache2-mod-php
        - php-gd
        - unzip
```

Figure 1

```yaml
        - postfix
      update_cache: yes
    when: ansible_distribution == "Ubuntu"

  - name: Download Nagios 4
    get_url:
      url: https://assets.nagios.com/downloads/nagioscore/releases/nagios-4.4.6.tar.gz
      dest: /tmp/nagios-4.4.6.tar.gz

  - name: Extract Nagios 4
    unarchive:
      src: /tmp/nagios-4.4.6.tar.gz
      dest: /tmp/
      remote_src: yes

  - name: Install Nagios on Ubuntu
    apt:
      name: nagios4
      state: present
    when: ansible_distribution == "Ubuntu"

  - name: Install EPEL repository on CentOS
    yum:
      name: epel-release
      state: present
    when: ansible_distribution == "CentOS"
```

Figure 2

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

    - name: Start and Enable Nagios 4 Service
      service:
        name: "{{ 'httpd' if ansible_distribution == 'CentOS' else 'apache2' }}"
        state: started
        enabled: true
```

Figure 3

Place these commands on each roles' main.yml

```
PLAY RECAP ***************************************************************************************
192.168.56.100          : ok=14   changed=0   unreachable=0   failed=0   skipped=7   rescued=0   ignored=0
192.168.56.101          : ok=8    changed=0   unreachable=0   failed=0   skipped=4   rescued=0   ignored=0
192.168.56.102          : ok=8    changed=0   unreachable=0   failed=0   skipped=4   rescued=0   ignored=0
192.168.56.103          : ok=16   changed=0   unreachable=0   failed=0   skipped=5   rescued=0   ignored=0
192.168.56.104          : ok=8    changed=0   unreachable=0   failed=0   skipped=4   rescued=0   ignored=0
```

All Ubuntu servers and my CentOS server have Nagios 4 installed successfully.

Output of the installed Nagios for both Ubuntu and CentOS:

Ubuntu:

```
jose@workstation:~/CPE212ACT8.1$ nagios4 --version

Nagios Core 4.4.6
Copyright (c) 2009-present Nagios Core Development Team and Community Contributors
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Last Modified: 2020-04-28
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```

CentOS:

```
[Jose@localhost ~]$ nagios --version

Nagios Core 4.4.14
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Last Modified: 2023-08-01
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Website: https://www.nagios.org
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```

Steps on installing Nagios on both Ubuntu and CentOS

1. Create a new repository on Github and have the same site.yml, ansible.cfg, inventory from the previous activity.

2. Have a separate directory on the repository containing the roles and tasks.

3. On tasks, create a yml playbook that contains the commands shown on figures.

4. Run the site.yml or any name you choose for it.

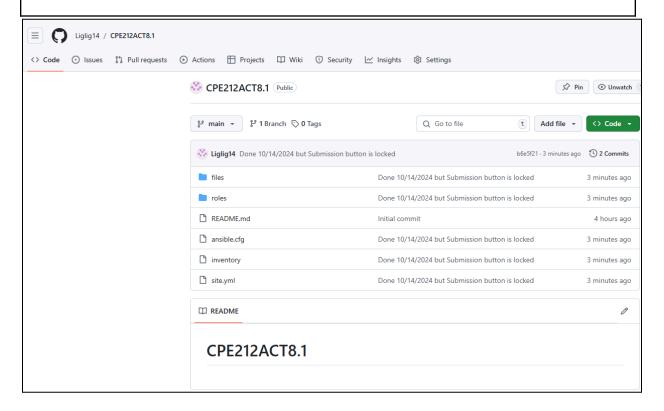5. Verify by running nagios[add which version number] –version

Reflections:

Answer the following:

1. What are the benefits of having an availability monitoring tool?

- Nagios is a very good option for availability monitoring tool because it is a free, open-source network monitoring tool that enables continuous operation of services and systems with many advantages. It will alert you about possible issues and problems. It keeps downtime to minimum by enabling fast responses. Nagios allows you to monitor your system's performance and enables systems to operate at highest efficiency for better user experiences.

Conclusions:

In conclusion, Nagios 4 was successfully installed on both Ubuntu and CentOS servers. The site.yml along with ansible.cfg and an orderly organization of roles and tasks made it possible to install it on all of my servers. The commands shown in the figures should be added into main.yml files of the roles as automation is the main essence of accomplishing our tasks. Installation verification proceeded properly, effectively confirming the successful installation of Nagios on both Ubuntu and CentOS servers. This activity pointed out the use of version control and automation tools in managing server configurations that provide efficiency and effectiveness of maintenance in future projects.

Github Repository Link: Liglig14/CPE212ACT8.1 (github.com)