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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)

Create a repository containing ansibe.cfg, inventory and roles.

```
qadjuanson@workstation:~/HOA8$ ls
ansible.cfg  inventory  roles
qadjuanson@workstation:~/HOA8$
```

```
  GNU nano 2.9.3                    ansible.cfg

[defaults]
inventory = ~/HOA8/inventory
remote_user = qadjuanson
host_key_checking = False

deprecation_warnings = False

private_key_file = ~/.ssh/
```

```
 GNU nano 2.9.3                          inventory

[servers]
192.168.56.116
192.168.56.117
192.168.56.118
192.168.56.115 ansible_user=qadjuanson
```

Inside the roles, create a directory named base and workstations.

```
qadjuanson@workstation:~/HOA8/roles$ ls
base  workstations
```

Inside the base, create a directory named tasks and inside the tasks create a main.yml.

```
qadjuanson@workstation:~/HOA8/roles/base$ ls
tasks
qadjuanson@workstation:~/HOA8/roles/base$ cd tasks
qadjuanson@workstation:~/HOA8/roles/base/tasks$ ls
main.yml
qadjuanson@workstation:~/HOA8/roles/base/tasks$
```

```
 GNU nano 2.9.3                          main.yml

---
- name: install updates (CentOS)
  tags: always
  yum:
    update_only: yes
    update_cache: yes
  when: ansible_distribution == "CentOS"

- name: install updates (Ubuntu)
  tags: always
  apt:
    upgrade: dist
    update_cache: yes
  when: ansible_distribution == "Ubuntu"
```

Inside the workstations, create a directory named tasks and inside the tasks create a main.yml.

```
qadjuanson@workstation:~/HOA8/roles$ ls
base  workstations
qadjuanson@workstation:~/HOA8/roles$ cd workstations
qadjuanson@workstation:~/HOA8/roles/workstations$ mkdir tasks
qadjuanson@workstation:~/HOA8/roles/workstations$ cd tasks
qadjuanson@workstation:~/HOA8/roles/workstations/tasks$ sudo nano main.yml
qadjuanson@workstation:~/HOA8/roles/workstations/tasks$
```

```
  GNU nano 2.9.3                        main.yml

---
- name: install Nagios (CentOS)
  dnf:
    name: nagios
    state: present
    use_backend: dnf4
  when: ansible_distribution == "CentOS"

- name: install Nagios (Ubuntu)
  apt:
    name: nagios3
    state: present
  when: ansible_distribution == "Ubuntu"

- name: Start Nagios (CentOS)
  service:
    name: nagios
    state: restarted
    enabled: true
  when: ansible_distribution == "CentOS"

- name: Start Nagios (Ubuntu)
  service:
                              [ Read 50 lines ]
```

```
- name: Start Nagios (Ubuntu)
  service:
    name: nagios3
    state: restarted
    enabled: true
  when: ansible_distribution == "Ubuntu"

- name: Install Nagios Dependencies (CentOS)
  dnf:
    name:
      - gd-level
      - libpng-devel
      - freetype-devel
      - gcc
```

```
      - gcc
      - glibc
    state: present
    use_backend: dnf4
  when: ansible_distribution == "centOS"

- name: Install Nagios Dependencies (Ubuntu)
  apt:
    name:
      - libgd-dev
      - libpng-dev
      - libfreetype6-dev
      - gcc
      - libc6-dev
    state: present
  when: ansible_distribution == "Ubuntu"
```

Create nagios.yml inside the directory HOA8.

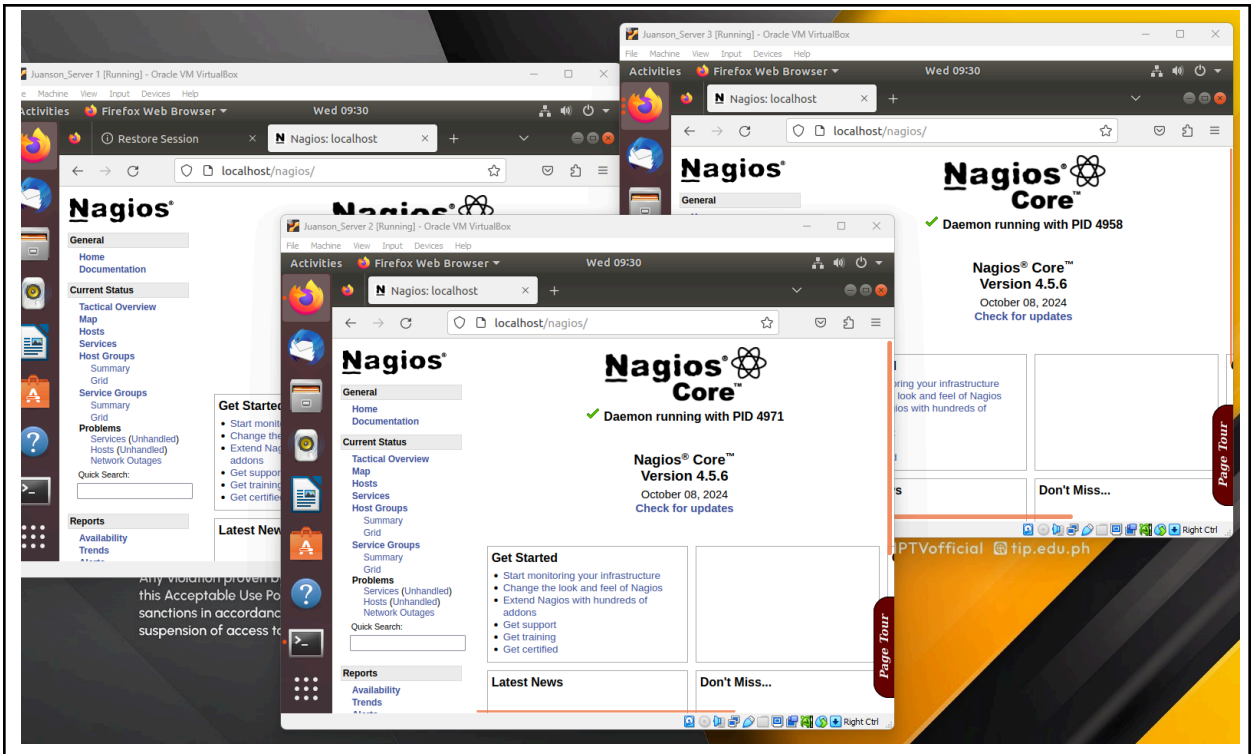
```
 GNU nano 2.9.3                    nagios.yml

---
- hosts: all
  become: true
  pre_tasks:

- hosts: all
  become: true
  roles:
    -  base

- hosts: workstations
  become: true
  roles:
    - workstations
```

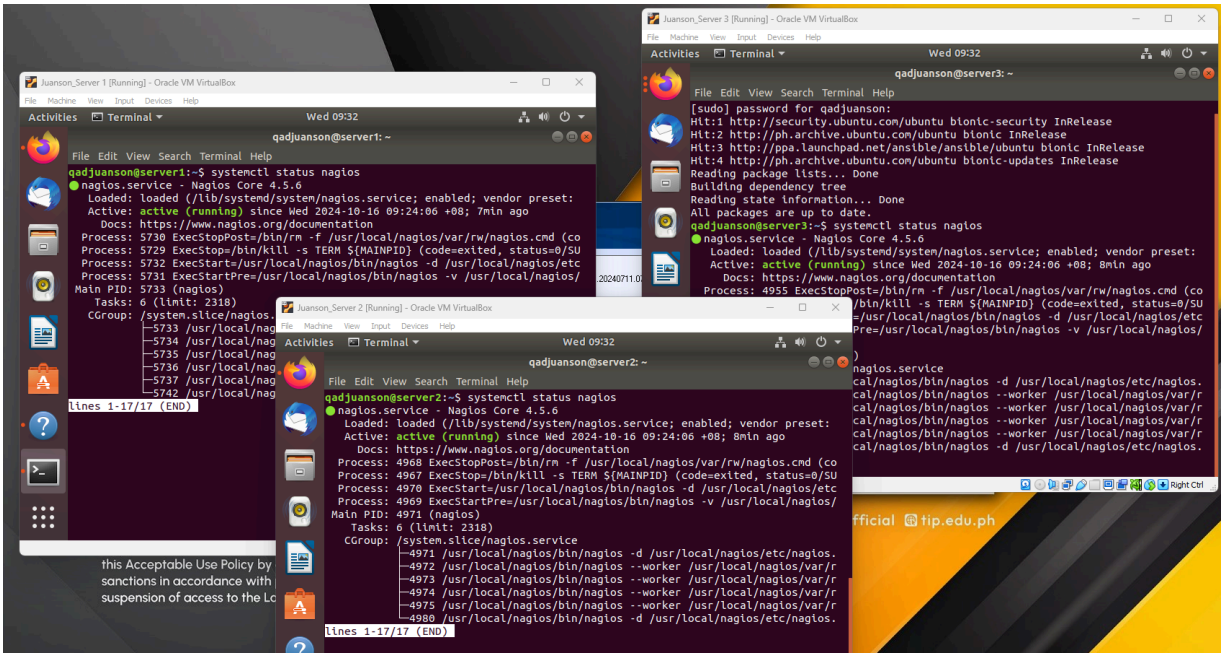
Run the playbook, *ansible-playbook --ask-become-pass nagios.yml.*

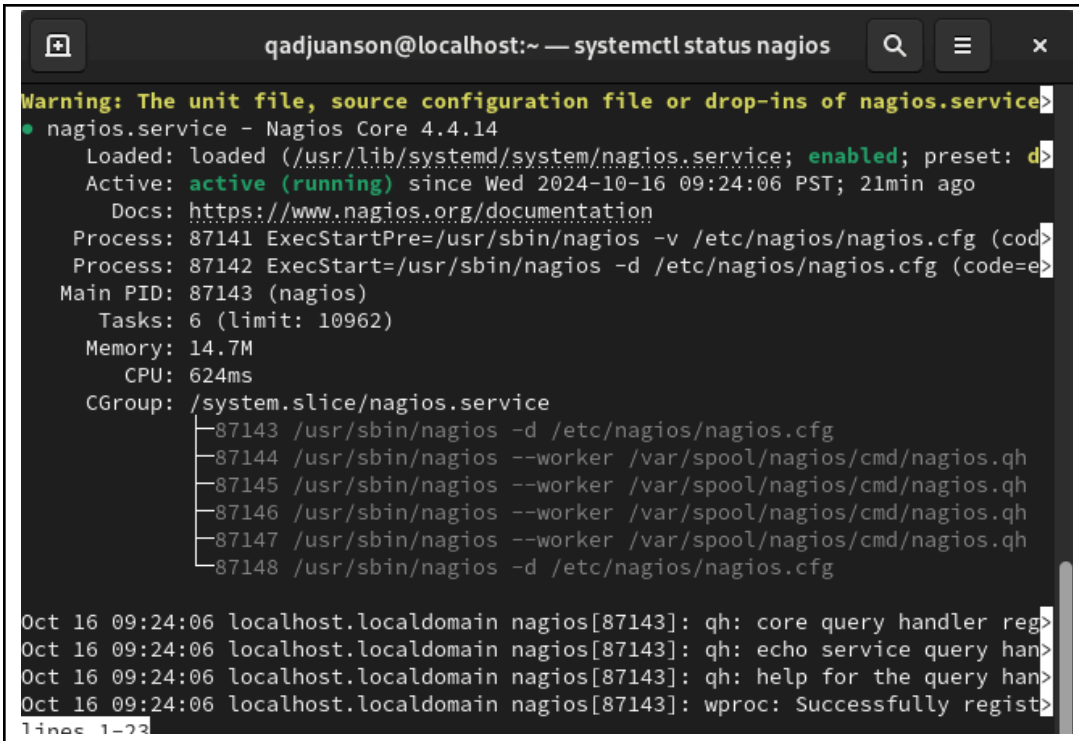
```
qadjuanson@workstation:~/HOA8$ ansible-playbook --ask-become-pass nagios.yml
BECOME password:

PLAY [all] *********************************************************************
*

TASK [Gathering Facts] *********************************************************
*
ok: [192.168.56.116]
ok: [192.168.56.117]
ok: [192.168.56.118]
ok: [192.168.56.115]

PLAY [all] *********************************************************************
*

TASK [Gathering Facts] *********************************************************
*
ok: [192.168.56.116]
ok: [192.168.56.117]
ok: [192.168.56.118]
ok: [192.168.56.115]

TASK [base : install updates (CentOS)] *****************************************
*
skipping: [192.168.56.116]
skipping: [192.168.56.117]
skipping: [192.168.56.118]

TASK [base : install updates (Ubuntu)] *****************************************
*
skipping: [192.168.56.115]
ok: [192.168.56.118]
ok: [192.168.56.117]
ok: [192.168.56.116]

PLAY [workstations] ************************************************************
*

TASK [Gathering Facts] *********************************************************
*
ok: [192.168.56.116]
ok: [192.168.56.117]
ok: [192.168.56.118]
ok: [192.168.56.115]

TASK [workstations : install Nagios (CentOS)] **********************************
*
skipping: [192.168.56.116]
skipping: [192.168.56.117]
skipping: [192.168.56.118]
changed: [192.168.56.115]

TASK [workstations : install Nagios (Ubuntu)] **********************************
*
skipping: [192.168.56.115]
ok: [192.168.56.116]
```

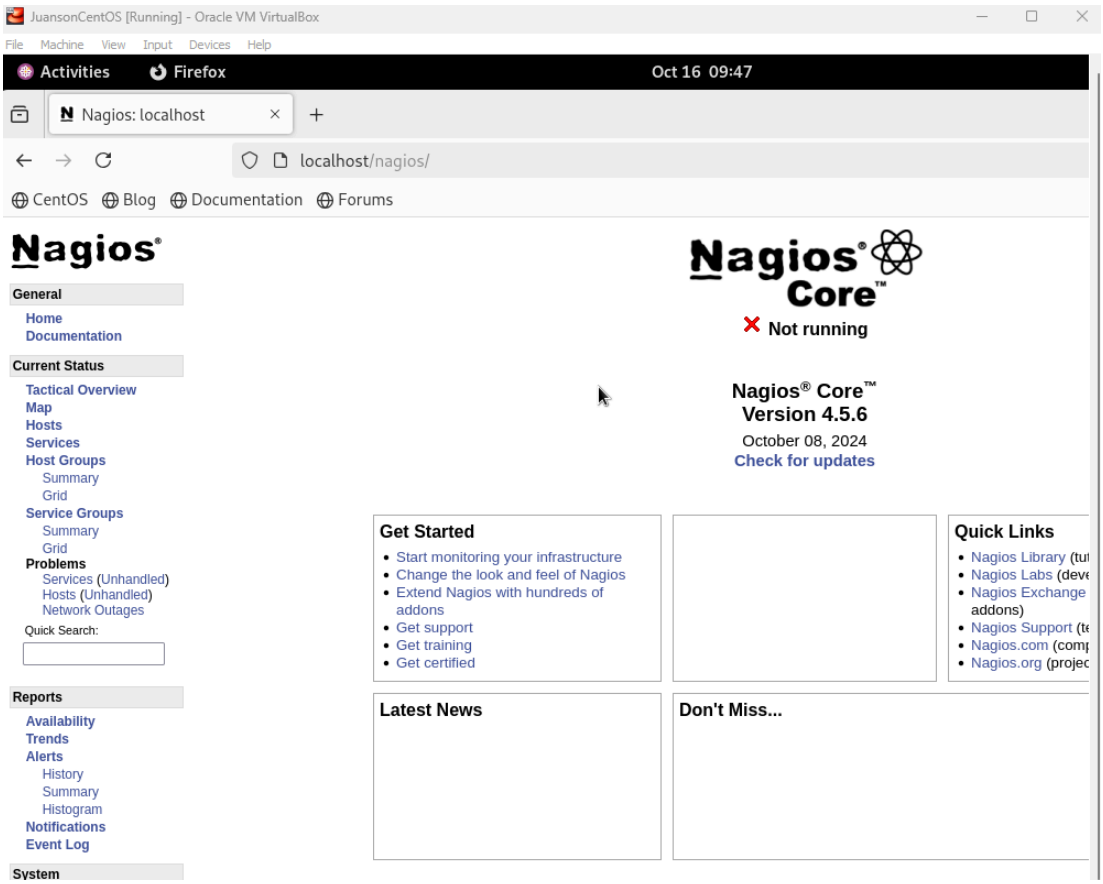
```
TASK [workstations : install Nagios (Ubuntu)] *********************************
*
skipping: [192.168.56.115]
ok: [192.168.56.116]
ok: [192.168.56.117]
ok: [192.168.56.118]

TASK [workstations : Start Nagios (CentOS)] ***********************************
*
skipping: [192.168.56.116]
skipping: [192.168.56.117]
skipping: [192.168.56.118]
changed: [192.168.56.115]

TASK [workstations : Start Nagios (Ubuntu)] ***********************************
*
skipping: [192.168.56.115]
changed: [192.168.56.116]
changed: [192.168.56.117]
changed: [192.168.56.118]

TASK [workstations : Install Nagios Dependencies (CentOS)] ********************
*
skipping: [192.168.56.116]
skipping: [192.168.56.117]
skipping: [192.168.56.118]
skipping: [192.168.56.115]
```

```
TASK [workstations : Install Nagios Dependencies (CentOS)] ********************
*
skipping: [192.168.56.116]
skipping: [192.168.56.117]
skipping: [192.168.56.118]
skipping: [192.168.56.115]

TASK [workstations : Install Nagios Dependencies (Ubuntu)] ********************
*
skipping: [192.168.56.115]
ok: [192.168.56.117]
ok: [192.168.56.116]
ok: [192.168.56.118]

PLAY RECAP ********************************************************************
*
192.168.56.115             : ok=6    changed=2    unreachable=0    failed=0
skipped=5    rescued=0    ignored=0
192.168.56.116             : ok=7    changed=1    unreachable=0    failed=0
skipped=4    rescued=0    ignored=0
192.168.56.117             : ok=7    changed=1    unreachable=0    failed=0
skipped=4    rescued=0    ignored=0
192.168.56.118             : ok=7    changed=1    unreachable=0    failed=0
skipped=4    rescued=0    ignored=0

qadjuanson@workstation:~/HOA8$
```


Juanson_Server 1 [Running] - Oracle VM VirtualBox
Juanson_Server 2 [Running] - Oracle VM VirtualBox
Juanson_Server 3 [Running] - Oracle VM VirtualBox
Activities
Firefox Web Browser
Wed 09:30
Restore Session
Nagios: localhost
localhost/nagios/
Nagios
Nagios Core
Daemon running with PID 4958
Daemon running with PID 4971
Nagios® Core™
Version 4.5.6
October 08, 2024
Check for updates
General
Home
Documentation
Current Status
Tactical Overview
Map
Hosts
Services
Host Groups
Summary
Grid
Service Groups
Problems
Reports
Availability
Trends
Get Started
Start monitoring your infrastructure
Change the look and feel of Nagios
Extend Nagios with hundreds of addons
Get support
Get training
Get certified
Latest News
Don't Miss...
Page Tour
Right Ctrl


Juanson_Server 1 [Running] - Oracle VM VirtualBox
Juanson_Server 2 [Running] - Oracle VM VirtualBox
Juanson_Server 3 [Running] - Oracle VM VirtualBox
Activities
Terminal
Wed 09:32
qadjuanson@server1: ~
qadjuanson@server2: ~
qadjuanson@server3: ~
File Edit View Search Terminal Help
qadjuanson@server1:~$ systemctl status nagios
nagios.service - Nagios Core 4.5.6
Loaded: loaded (/lib/systemd/system/nagios.service; enabled; vendor preset:
Active: active (running) since Wed 2024-10-16 09:24:06 +08; 7min ago
Docs: https://www.nagios.org/documentation
Process: 5730 ExecStopPost=/bin/rm -f /usr/local/nagios/var/rw/nagios.cmd (co
Process: 5729 ExecStop=/bin/kill -s TERM ${MAINPID} (code=exited, status=0/SU
Process: 5732 ExecStart=/usr/local/nagios/bin/nagios -d /usr/local/nagios/etc
Process: 5731 ExecStartPre=/usr/local/nagios/bin/nagios -v /usr/local/nagios/
Main PID: 5733 (nagios)
Tasks: 6 (limit: 2318)
CGroup: /system.slice/nagios.service
lines 1-17/17 (END)
qadjuanson@server2:~$ systemctl status nagios
nagios.service - Nagios Core 4.5.6
Loaded: loaded (/lib/systemd/system/nagios.service; enabled; vendor preset:
Active: active (running) since Wed 2024-10-16 09:24:06 +08; 8min ago
Docs: https://www.nagios.org/documentation
Process: 4968 ExecStopPost=/bin/rm -f /usr/local/nagios/var/rw/nagios.cmd (co
Process: 4967 ExecStop=/bin/kill -s TERM ${MAINPID} (code=exited, status=0/SU
Process: 4970 ExecStart=/usr/local/nagios/bin/nagios -d /usr/local/nagios/etc
Process: 4969 ExecStartPre=/usr/local/nagios/bin/nagios -v /usr/local/nagios/
Main PID: 4971 (nagios)
Tasks: 6 (limit: 2318)
CGroup: /system.slice/nagios.service
lines 1-17/17 (END)
[sudo] password for qadjuanson:
Hit:1 http://security.ubuntu.com/ubuntu bionic-security InRelease
Hit:2 http://ph.archive.ubuntu.com/ubuntu bionic InRelease
Hit:3 http://ppa.launchpad.net/ansible/ansible/ubuntu bionic InRelease
Hit:4 http://ph.archive.ubuntu.com/ubuntu bionic-updates InRelease
Reading package lists... Done
Building dependency tree
Reading state information... Done
All packages are up to date.
qadjuanson@server3:~$ systemctl status nagios
nagios.service - Nagios Core 4.5.6
Loaded: loaded (/lib/systemd/system/nagios.service; enabled; vendor preset:
Active: active (running) since Wed 2024-10-16 09:24:06 +08; 8min ago
Docs: https://www.nagios.org/documentation
Process: 4955 ExecStopPost=/bin/rm -f /usr/local/nagios/var/rw/nagios.cmd (co
this Acceptable Use Policy by
sanctions in accordance with
suspension of access to the Lo
tip.edu.ph
Right Ctrl





Reflections:

Answer the following:

1. What are the benefits of having an availability monitoring tool?
    - An availability monitoring tool helps keep track of whether your systems, like servers and networks, are working properly. It checks them all the time and alerts you if something goes wrong, like if a server goes down or slows down. This lets you fix problems quickly before they affect your systems. The tool also collects data over time, so you can spot patterns, avoid future issues, and plan for upgrades. Overall, it makes sure everything runs smoothly and helps avoid interruptions that could affect your systems.

Conclusions:

In this activity, I am able to install Nagios on my Ubuntu and CentOS despite the errors that I have encountered. This is quite challenging and took me a long time to finish this activity.