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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)

PART 1: create repository

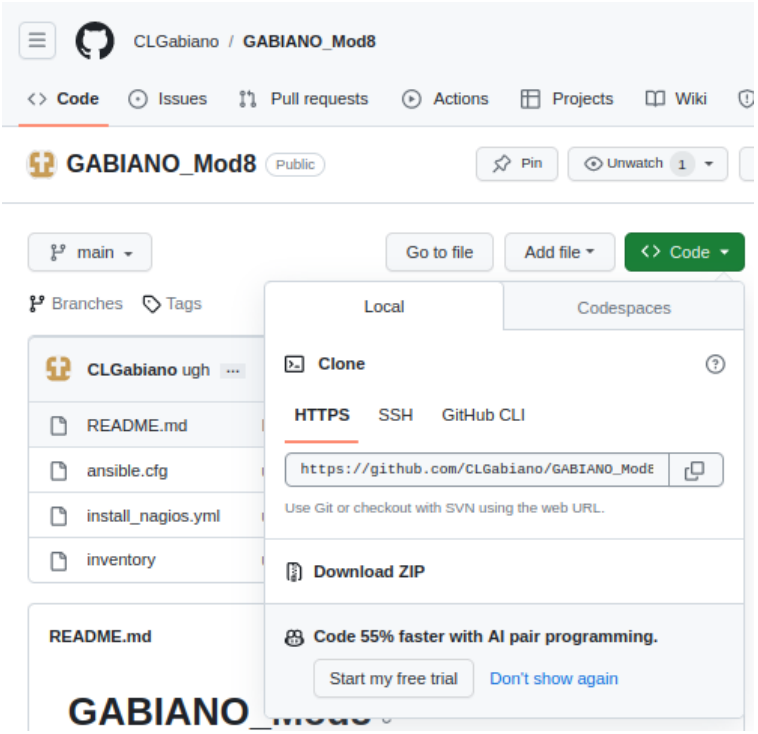


fig 1: create Activity 10 repository

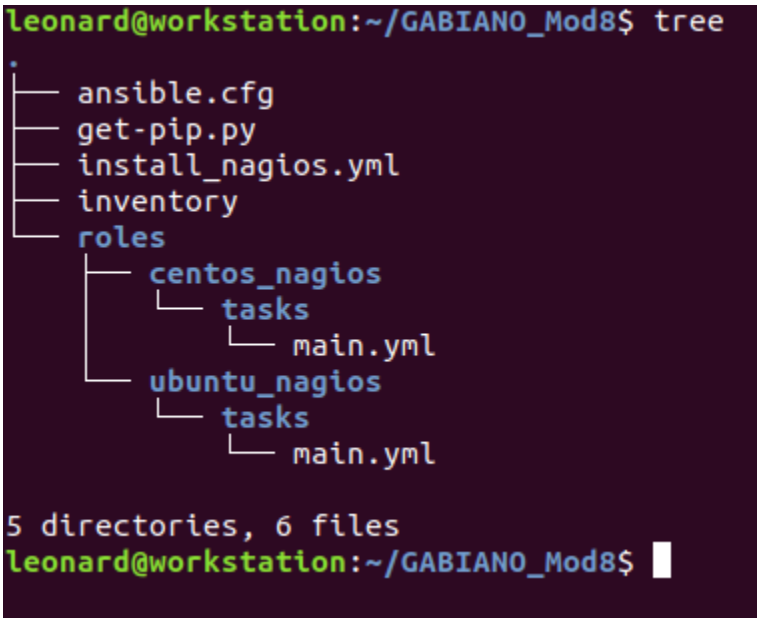


fig 2: files ansible.cfg, inventory created among directories.

PART 2: creating files for playbooks

```
 GNU nano 2.9.3                                ansible.cfg

[defaults]

inventory = inventory
host_key_checking = False

deprecation_warnings = False

remote_user = leonard
private_key_file = ~/.ssh
```

```
leonard@workstation:~/GABIANO_Mod8$ cat inventory
[ubuntu_nagios]
192.168.56.102

[centos_nagios]
192.168.56.109

leonard@workstation:~/GABIANO_Mod8$
```

```
 GNU nano 2.9.3

---

- hosts: all
  become: true
  pre_tasks:

    - name: dpkg in ubuntu
      shell: |
        dpkg --configure -a
      when: ansible_distribution == "Ubuntu"

    - name: install updates (CentOS)
      dnf:
        update_cache: yes
        update_only: yes
      when: ansible_distribution == "CentOS"

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

- hosts: ubuntu_nagios
  become: true
  roles:
    - ubuntu_nagios

- hosts: centos_nagios
  become: true
  roles:
    - centos_nagios
```

CentOS main.yml

```
 GNU nano 2.9.3                                                  main.yml

- name: Installing nagios dependecies and libraries
  tags: dependecies, libraries
  yum:
    name:
      - gcc
      - glibc
      - glibc-common
      - perl
      - httpd
      - php
      - wget
      - gd
      - gd-devel
      - openssl-devel
      - gcc
      - glibc
      - glibc-common
      - make
      - gettext
      - automake
      - autoconf
      - wget
      - openssl-devel
      - net-snmp
      - net-snmp-utils
      - python3-pip
    state: latest

- name: Creating a directory (where the downloaded files will be stored)
  file:
    path: ~/nagios
    state: directory

- name: Downloading and extracting Nagios
  unarchive:
    src: https://github.com/NagiosEnterprises/nagioscore/archive/nagios-4.4.6.tar.gz
    dest: ~/nagios
    remote_src: yes
```

```
 GNU nano 2.9.3                                                  main.yml

    remote_src: yes
    mode: 0777
    owner: root
    group: root

- name: Compiling, installing, and adding users and groups in nagios
  shell: |
    cd ~/nagios/nagioscore-**
    ./configure
    make all
    make install-groups-users
    usermod -a -G nagios apache
    make install
    make install-daemoninit
    make install-commandmode
    make install-config
    make install-webconf

- name: Downloading and extracting Nagios plugins
  unarchive:
    src: https://github.com/nagios-plugins/nagios-plugins/archive/release-2.3.3.tar.gz
    dest: ~/nagios
    remote_src: yes
    mode: 0777
    owner: root
    group: root

- name: Compiling and installing plugins
  shell: |
    cd ~/nagios/nagios-plugins*
    ./tools/setup
    ./configure
    make
    make install
- name: Add a user to a password file and ensure permissions are set
  community.general.htpasswd:
    path: /usr/local/nagios/etc/htpasswd.users
    name: admin
```

ubuntu main.yml

```
GNU nano 2.9.3
---
- name: nagios libraries and dependencies (Ubuntu)
  tags: ubuntu, dependencies, libraries
  apt:
    name:
      - autoconf
      - libc6
      - gcc
      - make
      - wget
      - unzip
      - apache2
      - php
      - libapache2-mod-php
      - libgd-dev
      - openssl
      - libssl-dev
      - bc
      - gawk
      - dc
      - build-essential
      - snmp
      - libnet-snmp-perl
      - gettext
      - python3
      - python3-pip
    state: latest

- name: passlib package
  pip:
    name: passlib

- name: nagios directory PATH
  file:
    path: ~/nagios
    state: directory

- name: downloading nagios
```

```
  unarchive:
    src: https://github.com/NagiosEnterprises/nagioscore/archive/nagios-4.4.6.tar.gz
    dest: ~/nagios
    remote_src: yes
    mode: 0777
    owner: root
    group: root

- name: downloading nagios plugins
  unarchive:
    src: https://github.com/nagios-plugins/nagios-plugins/archive/release-2.3.3.tar.gz
    dest: ~/nagios
    remote_src: yes
    mode: 0777
    owner: root
    group: root

- name: install, compile, adding users and groups
  shell: |
    cd ~/nagios/nagioscore-*
    sudo ./configure --with-httpd-conf=/etc/apache2/sites-enabled
    sudo make all
    sudo make install-groups-users
    sudo usermod -a -G nagios www-data
    sudo make install
    sudo make install-daemoninit
    sudo make install-commandmode
    sudo make install-config
    sudo make install-webconf
    sudo a2enmod rewrite
    sudo a2enmod cgi

- name: compile and install plugins
  shell: |
    cd ~/nagios/nagios-plugins*
    ./tools/setup
    ./configure
    make
```

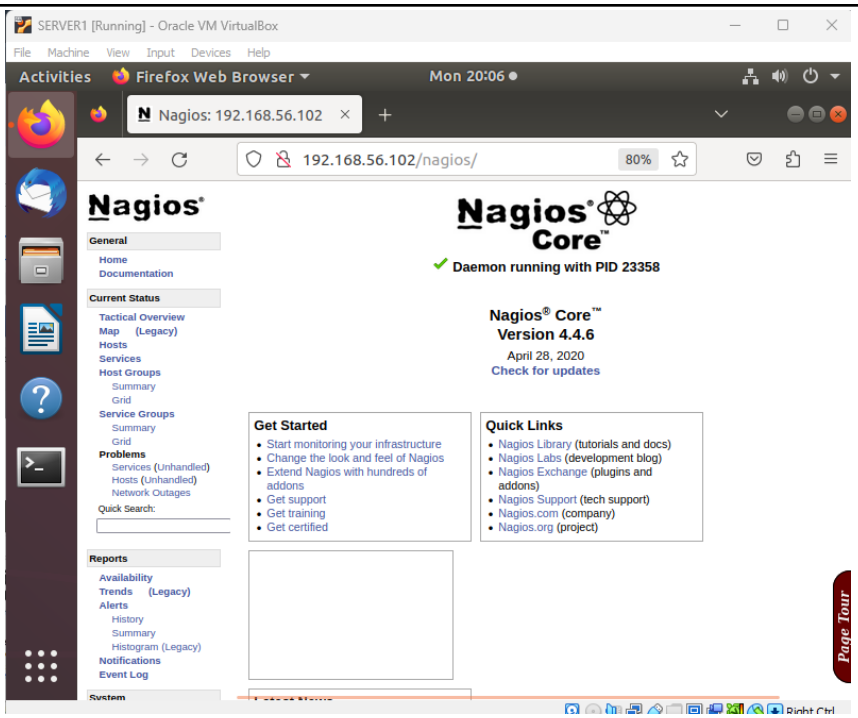
```
- name: compile and install plugins
  shell: |
    cd ~/nagios/nagios-plugins*
    ./tools/setup
    ./configure
    make
    make install

- name: adding users to nagios
  community.general.htpasswd:
    path: /usr/local/nagios/etc/htpasswd.users
    name: admin
    password: admin

- name: Nagios Start/Enable Check
  service:
    name: nagios
    state: restarted
    enabled: true

- name: Apache/httpd Start/Enable check
  service:
    name: apache2
```

```
GNU nano 2.9.3

    ./configure
    make
    make install

- name: adding users to nagios
  community.general.htpasswd:
    path: /usr/local/nagios/etc/htpasswd.users
    name: admin
    password: admin

- name: Nagios Start/Enable Check
  service:
    name: nagios
    state: restarted
    enabled: true

- name: Apache/httpd Start/Enable check
  service:
    name: apache2
    state: restarted
    enabled: true
```

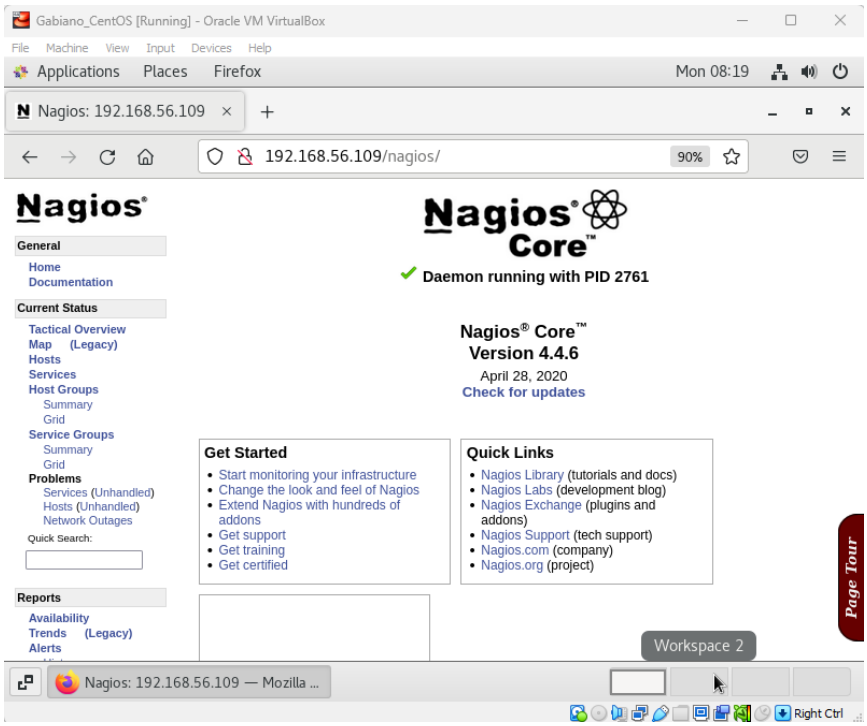
PART 3: Installation Verification

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

TASK [Gathering Facts] *********************************************************
ok: [192.168.56.102]
ok: [192.168.56.109]

TASK [dpkg in ubuntu] **********************************************************
skipping: [192.168.56.109]
changed: [192.168.56.102]

TASK [install updates (CentOS)] ************************************************
skipping: [192.168.56.102]
ok: [192.168.56.109]

TASK [install updates (Ubuntu)] ************************************************
skipping: [192.168.56.109]
ok: [192.168.56.102]

PLAY [ubuntu_nagios] ***********************************************************

TASK [Gathering Facts] *********************************************************
ok: [192.168.56.102]

TASK [ubuntu_nagios : nagios libraries and dependencies (Ubuntu)] **************
ok: [192.168.56.102]

TASK [ubuntu_nagios : passlib package] *****************************************
ok: [192.168.56.102]

TASK [ubuntu_nagios : nagios directory PATH] ***********************************
ok: [192.168.56.102]
```

```
TASK [ubuntu_nagios : downloading nagios] **************************************
ok: [192.168.56.102]

TASK [ubuntu_nagios : downloading nagios plugins] ******************************
ok: [192.168.56.102]

TASK [ubuntu_nagios : install, compile, adding users and groups] ***************
changed: [192.168.56.102]

TASK [ubuntu_nagios : compile and install plugins] *****************************
changed: [192.168.56.102]

TASK [ubuntu_nagios : adding users to nagios] **********************************
ok: [192.168.56.102]

TASK [ubuntu_nagios : Nagios Start/Enable Check] *******************************
changed: [192.168.56.102]

TASK [ubuntu_nagios : Apache/httpd Start/Enable check] *************************
changed: [192.168.56.102]
```



Ubuntu nagios



CentOS nagios

https://github.com/CLGabiano/GABIANO_Mod8.git

Reflections:

Answer the following:

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

   A performance monitoring tool provides real-time insights into system health, enabling proactive issue detection and resolution, thus minimizing downtime and improving overall system reliability. Additionally, it helps optimize resource utilization, leading to cost savings and enhanced user experience.

Conclusions:

In conclusion, we have successfully designed an Ansible workflow for the installation, configuration, and management of enterprise monitoring tools, focusing on Nagios, for both Ubuntu and CentOS systems. By adopting the role-based organization in the playbook, we ensure a structured and maintainable approach to system monitoring. Following the step-by-step instructions, we have installed Nagios on both Ubuntu and CentOS, enabling availability monitoring to prevent potential downtime and business impact. Additionally, we have created a GitHub repository to document and version control our activity for future reference and collaboration.