Name:Espiritu, Diego Angelo G.	**Date Performed: 10/09/2023**
Course/Section:CPE232/CPE31S6	**Date Submitted: 10/09/2023**
Instructor: Dr. Jonathan Vidal Taylar	**Semester and SY: 1st sem 2023**

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

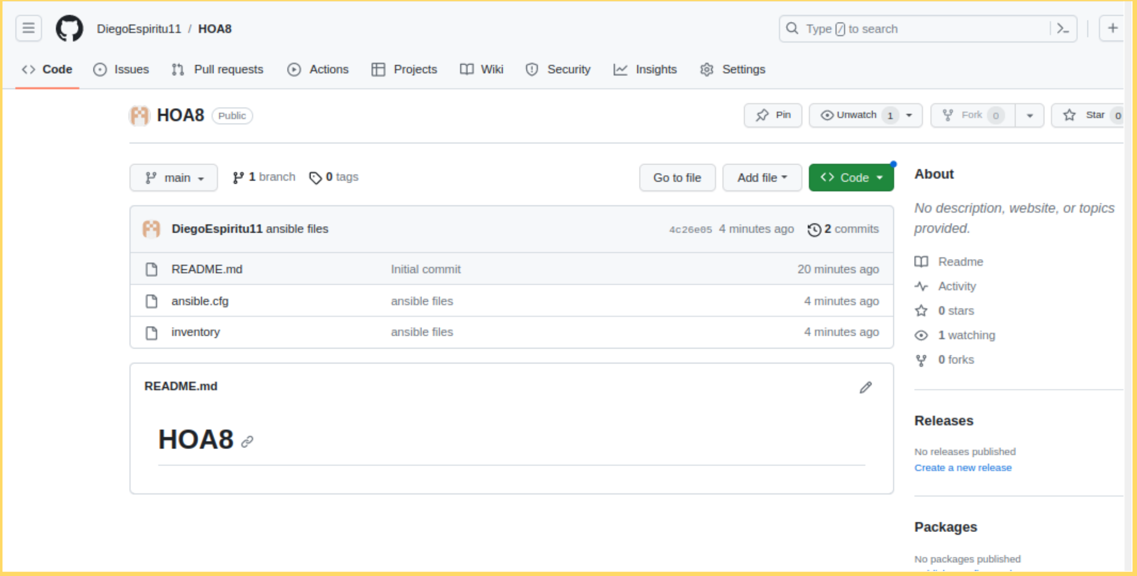
Availability monitoring is a type of monitoring tool that we use if the certain workload is up or reachable on our end. Site downtime can lead to loss of revenue, reputational damage and severe distress. Availability monitoring prevents adverse situations by checking the uptime of infrastructure components 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 repository



DiegoEspiritu11 ansible files 4c26e05 4 minutes ago 2 commits

README.md Initial commit 20 minutes ago

ansible.cfg ansible files 4 minutes ago

inventory ansible files 4 minutes ago

README.md

HOA8

About

No description, website, or topics provided.

Readme

Activity

0 stars

1 watching

0 forks

Releases

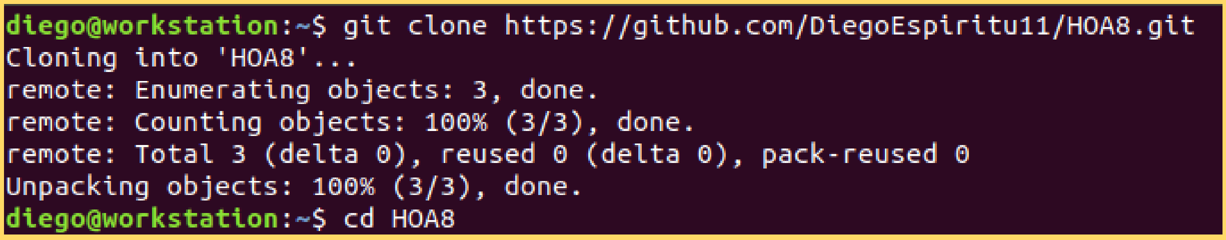
No releases published

Create a new release

Packages

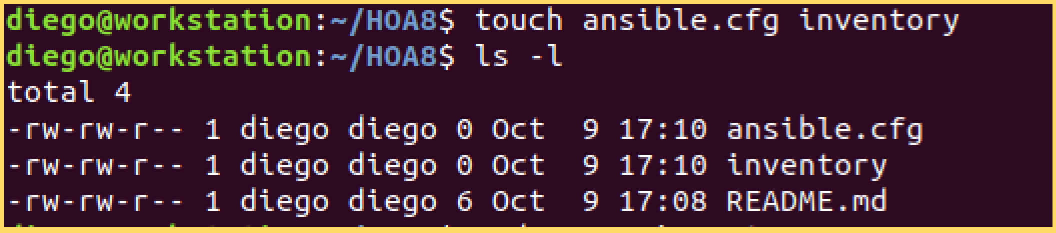
No packages published

Step 2: Clone the created repository



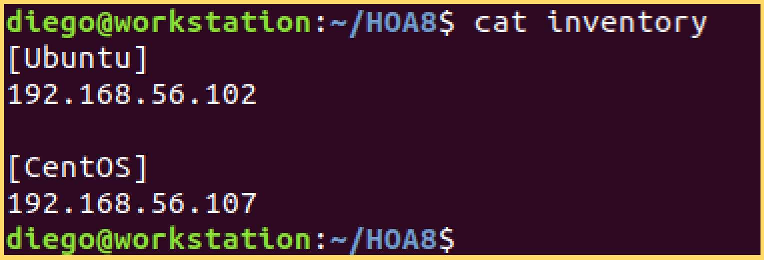
```
diego@workstation:~$ git clone https://github.com/DiegoEspiritu11/HOA8.git
Cloning into 'HOA8'...
remote: Enumerating objects: 3, done.
remote: Counting objects: 100% (3/3), done.
remote: Total 3 (delta 0), reused 0 (delta 0), pack-reused 0
Unpacking objects: 100% (3/3), done.
diego@workstation:~$ cd HOA8
```

Step 3: Creating a file inside the directory



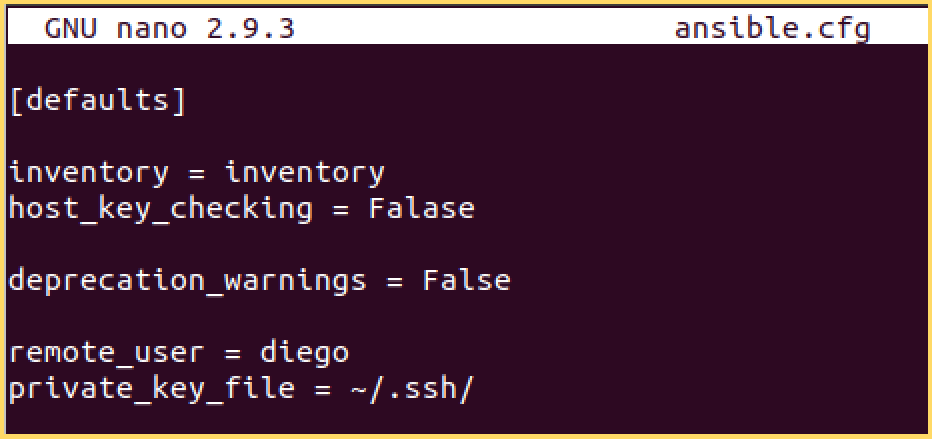
```
diego@workstation:~/HOA8$ touch ansible.cfg inventory
diego@workstation:~/HOA8$ ls -l
total 4
-rw-rw-r-- 1 diego diego 0 Oct  9 17:10 ansible.cfg
-rw-rw-r-- 1 diego diego 0 Oct  9 17:10 inventory
-rw-rw-r-- 1 diego diego 6 Oct  9 17:08 README.md
```

Step 4: Putting the ip address of server1 and CentOS in the inventory



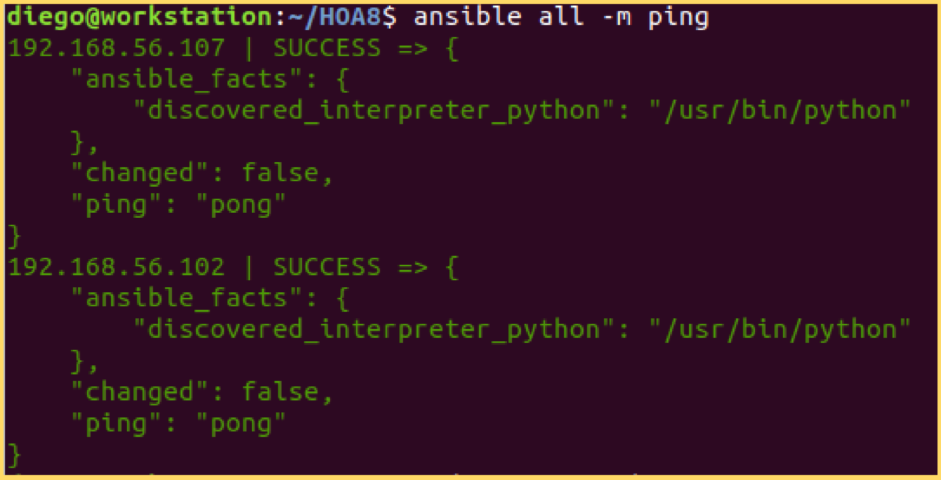
```
diego@workstation:~/HOA8$ cat inventory
[Ubuntu]
192.168.56.102

[CentOS]
192.168.56.107
diego@workstation:~/HOA8$
```

Step 5: Necessary file for ansible.cfg



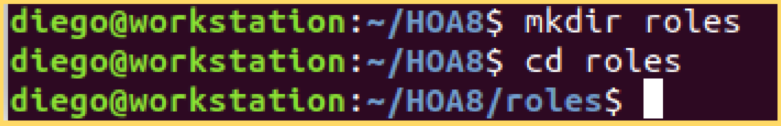
```
  GNU nano 2.9.3                    ansible.cfg

[defaults]

inventory = inventory
host_key_checking = Falase

deprecation_warnings = False

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

Step 6: Ping the servers in ansible to make sure it is working.



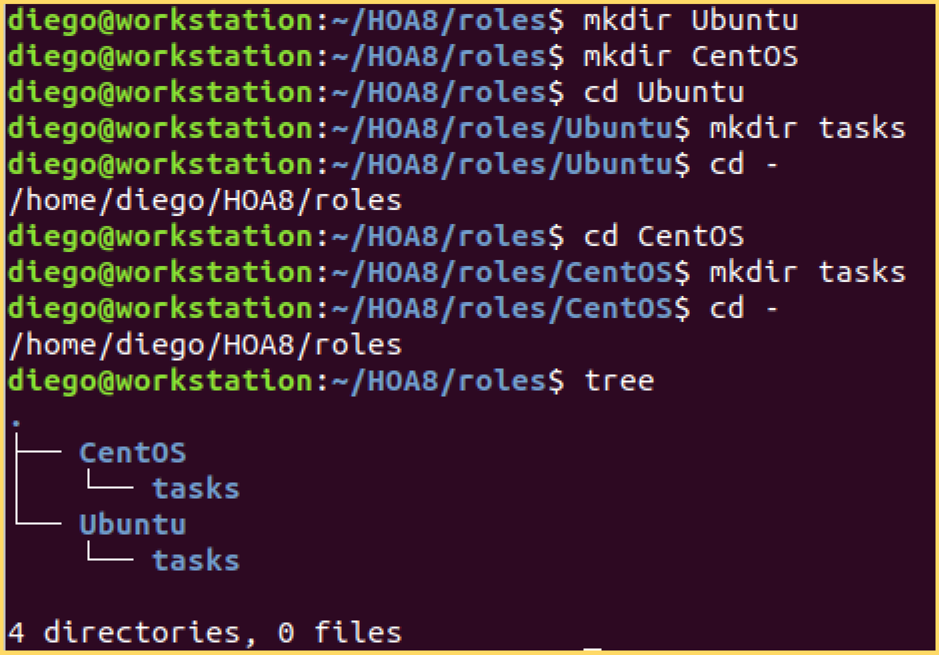
```
diego@workstation:~/HOA8$ ansible all -m ping
192.168.56.107 | SUCCESS => {
    "ansible_facts": {
        "discovered_interpreter_python": "/usr/bin/python"
    },
    "changed": false,
    "ping": "pong"
}
192.168.56.102 | SUCCESS => {
    "ansible_facts": {
        "discovered_interpreter_python": "/usr/bin/python"
    },
    "changed": false,
    "ping": "pong"
}
```

Step 7: Applying the concept of creating roles under the same directory, create a new directory and name it roles.



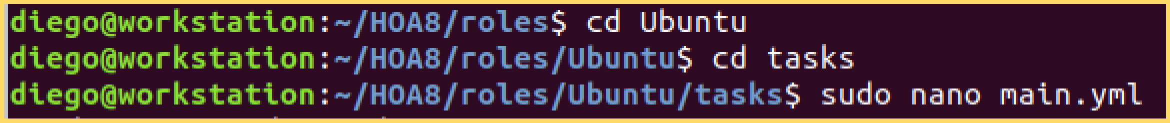
```
diego@workstation:~/HOA8$ mkdir roles
diego@workstation:~/HOA8$ cd roles
diego@workstation:~/HOA8/roles$
```

Step 8: Create new directories: Ubuntu, CentOS. For each directory, create a directory and name it tasks.

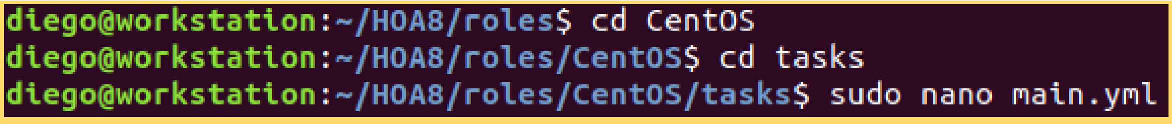


```
diego@workstation:~/HOA8/roles$ mkdir Ubuntu
diego@workstation:~/HOA8/roles$ mkdir CentOS
diego@workstation:~/HOA8/roles$ cd Ubuntu
diego@workstation:~/HOA8/roles/Ubuntu$ mkdir tasks
diego@workstation:~/HOA8/roles/Ubuntu$ cd -
/home/diego/HOA8/roles
diego@workstation:~/HOA8/roles$ cd CentOS
diego@workstation:~/HOA8/roles/CentOS$ mkdir tasks
diego@workstation:~/HOA8/roles/CentOS$ cd -
/home/diego/HOA8/roles
diego@workstation:~/HOA8/roles$ tree
.
├── CentOS
│   └── tasks
└── Ubuntu
    └── tasks

4 directories, 0 files
```

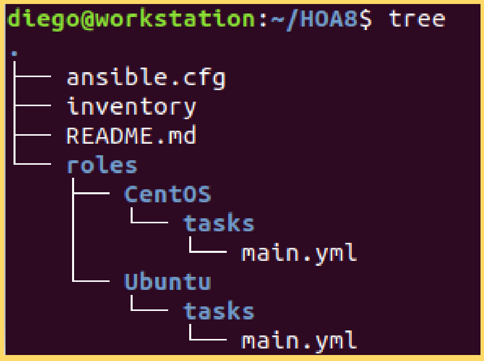
Step 9: Go to tasks for all directory and create a file. Name it main.yml. In each of the tasks for all directories.



```
diego@workstation:~/HOA8/roles$ cd Ubuntu
diego@workstation:~/HOA8/roles/Ubuntu$ cd tasks
diego@workstation:~/HOA8/roles/Ubuntu/tasks$ sudo nano main.yml
```

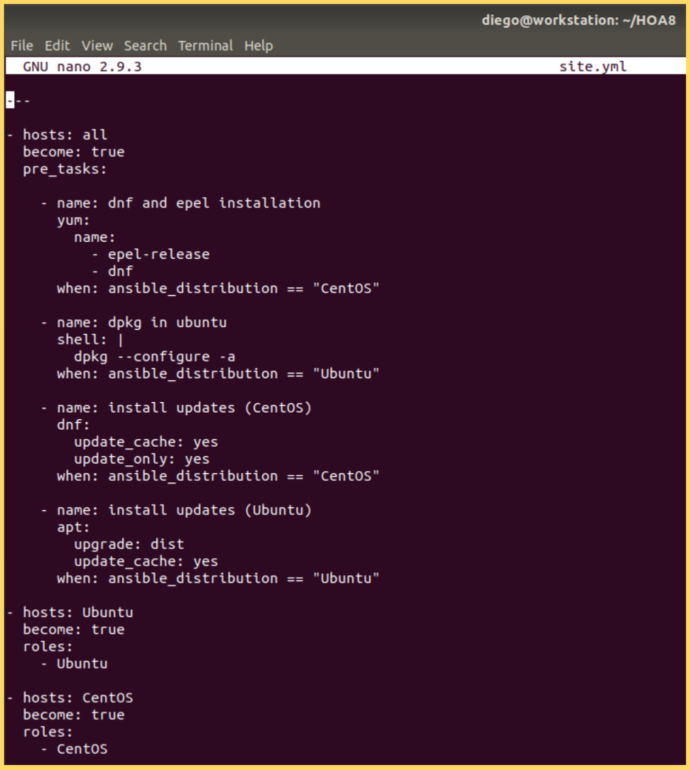


```
diego@workstation:~/HOA8/roles$ cd CentOS
diego@workstation:~/HOA8/roles/CentOS$ cd tasks
diego@workstation:~/HOA8/roles/CentOS/tasks$ sudo nano main.yml
```



```
diego@workstation:~/HOA8$ tree
.
├── ansible.cfg
├── inventory
├── README.md
└── roles
    ├── CentOS
    │   └── tasks
    │       └── main.yml
    └── Ubuntu
        └── tasks
            └── main.yml
```

Step 10: Create a file inside of the main directory and name it (site.yml) and create a playbook for running the installation of Nagios in both Ubuntu and CentOS.

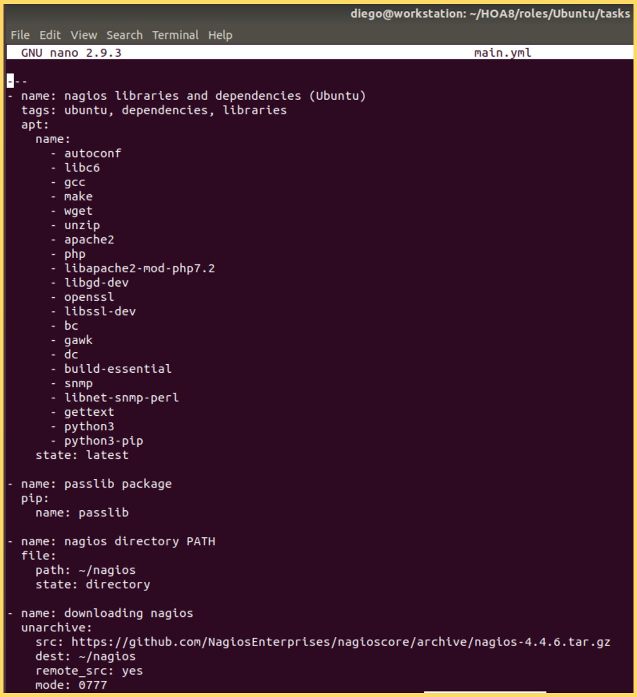


diego@workstation: ~/HOA8
File Edit View Search Terminal Help
GNU nano 2.9.3
site.yml

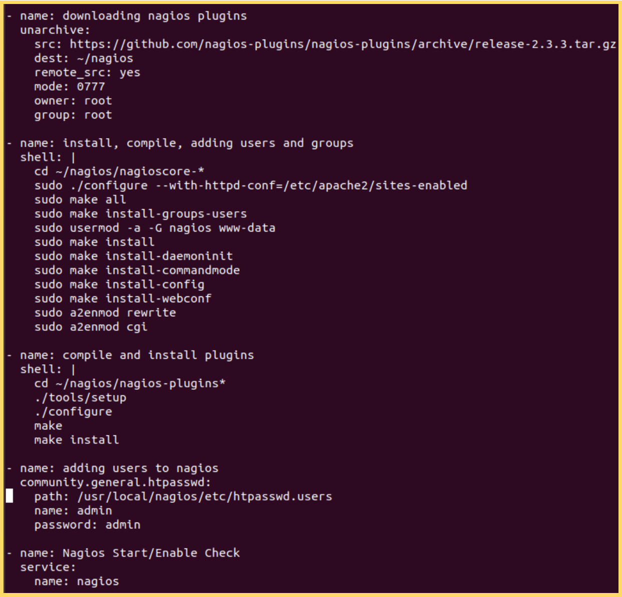
```
---

- hosts: all
  become: true
  pre_tasks:

    - name: dnf and epel installation
      yum:
        name:
          - epel-release
          - dnf
      when: ansible_distribution == "CentOS"

    - 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
  become: true
  roles:
    - Ubuntu

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

Step 11: Create a playbook for the installation of Nagios in Ubuntu and CentOS.

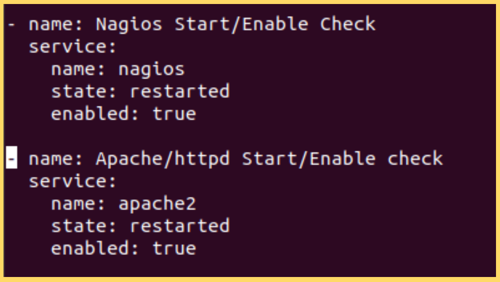
Ubuntu



```
diego@workstation: ~/HOA8/roles/Ubuntu/tasks
File  Edit  View  Search  Terminal  Help
  GNU nano 2.9.3                                            main.yml

---
- name: nagios libraries and dependencies (Ubuntu)
  tags: ubuntu, dependencies, libraries
  apt:
    name:
      - autoconf
      - libc6
      - gcc
      - make
      - wget
      - unzip
      - apache2
      - php
      - libapache2-mod-php7.2
      - 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
```

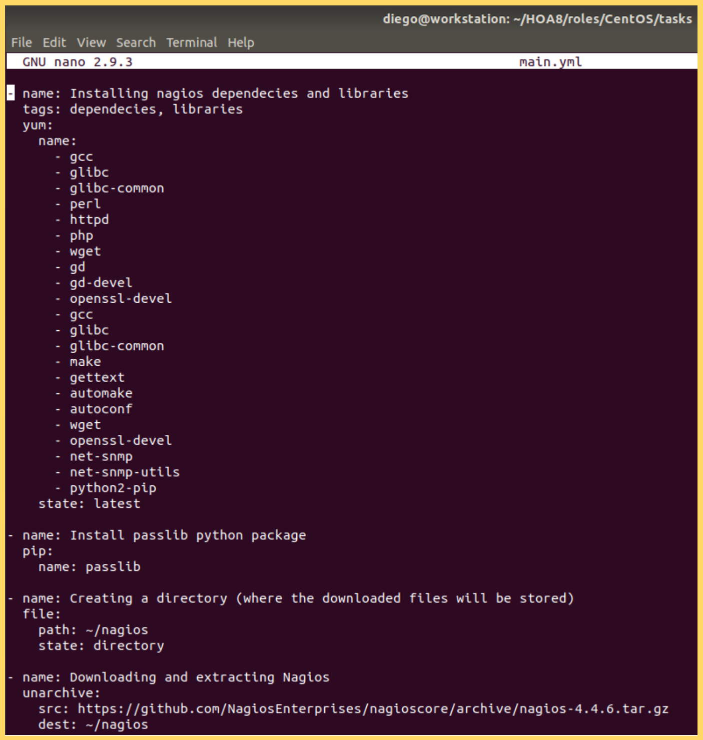


```
- name: downloading nagios plugins
  unarchive:
    src: https://github.com/nagios-plugins/nagios-plugins/archive/release-2.3.3.tar.gz
    dest: ~/nagios
    remote_src: yes
    mode: 0777
    owner: root
    group: root

- 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
    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
```



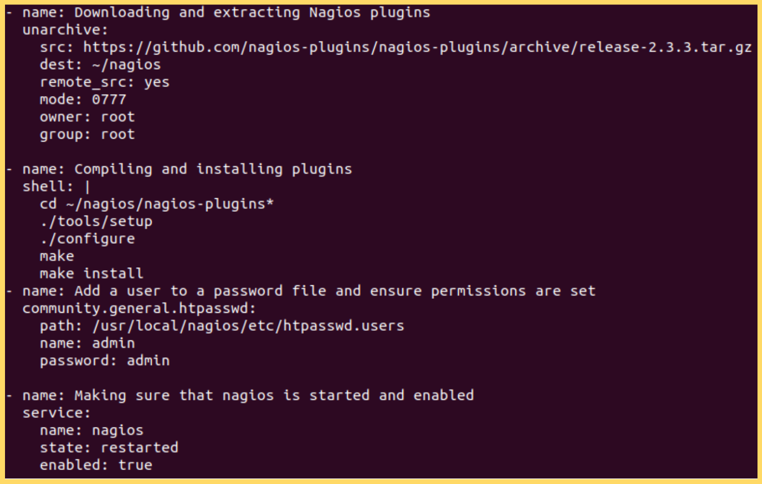
```
- name: Nagios Start/Enable Check
  service:
    name: nagios
    state: restarted
    enabled: true

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

CentOS

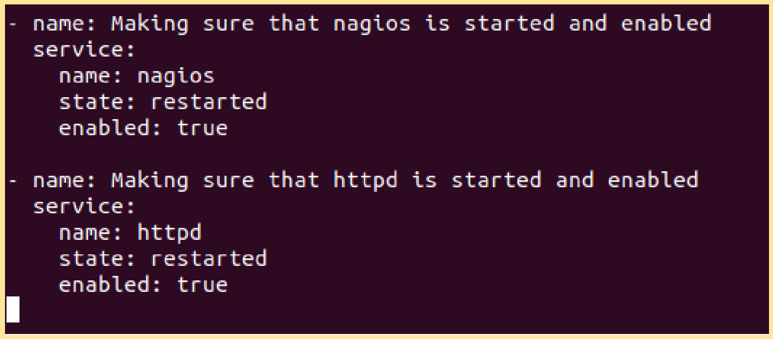


diego@workstation: ~/HOA8/roles/CentOS/tasks
File Edit View Search Terminal Help
GNU nano 2.9.3
main.yml

```
- 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
      - python2-pip
    state: latest

- name: Install passlib python package
  pip:
    name: passlib

- 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
```



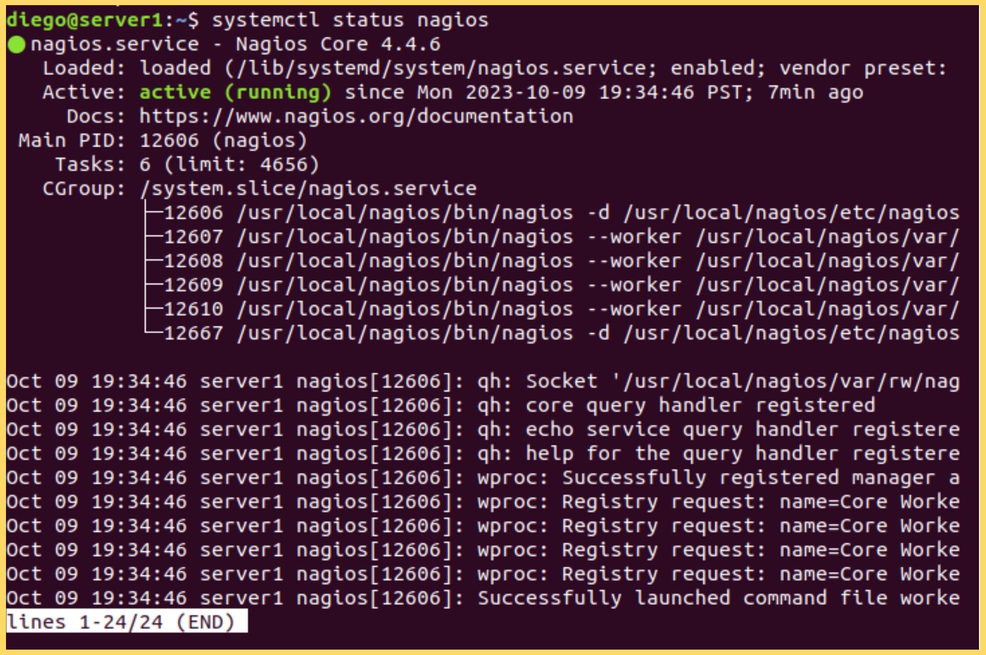
```
- name: Downloading and extracting Nagios plugins
  unarchive:
    src: https://github.com/nagios-plugins/nagios-plugins/archive/release-2.3.3.tar.gz
    dest: ~/nagios
    remote_src: yes
    mode: 0777
    owner: root
    group: root

- 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
    password: admin

- name: Making sure that nagios is started and enabled
  service:
    name: nagios
    state: restarted
    enabled: true
```



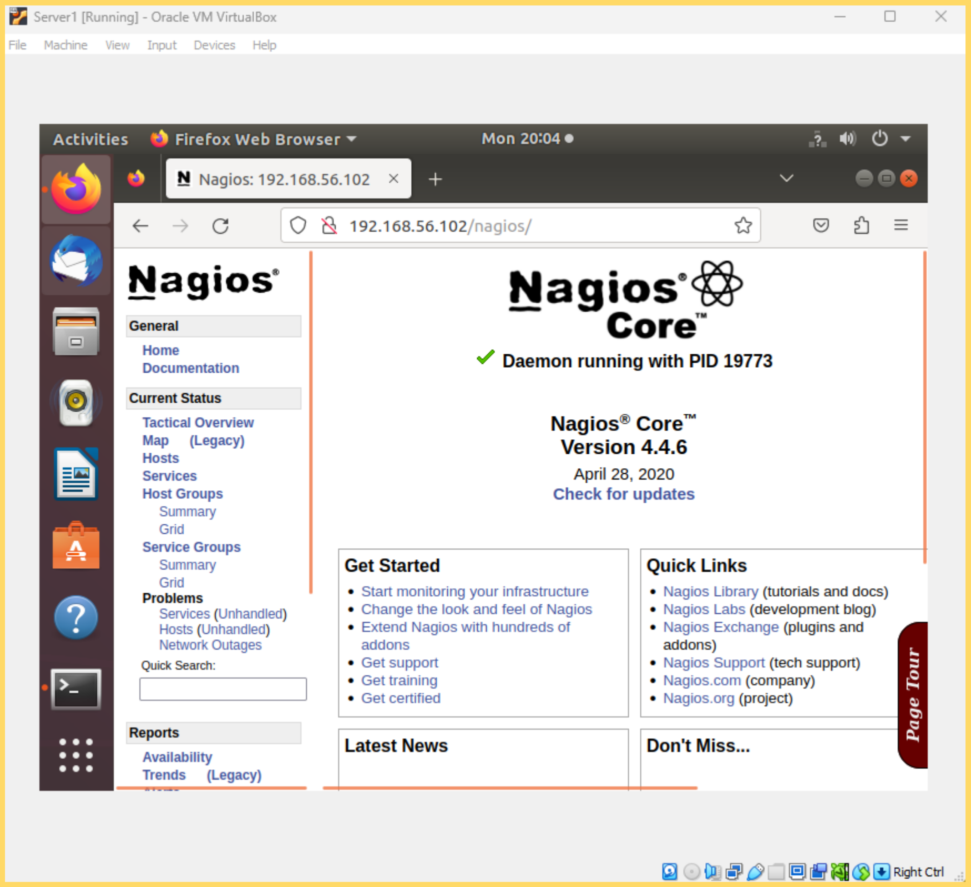
```
- name: Making sure that nagios is started and enabled
  service:
    name: nagios
    state: restarted
    enabled: true

- name: Making sure that httpd is started and enabled
  service:
    name: httpd
    state: restarted
    enabled: true
```

Output:

Ubuntu



```
diego@server1:~$ systemctl status nagios
● nagios.service - Nagios Core 4.4.6
   Loaded: loaded (/lib/systemd/system/nagios.service; enabled; vendor preset:
   Active: active (running) since Mon 2023-10-09 19:34:46 PST; 7min ago
     Docs: https://www.nagios.org/documentation
 Main PID: 12606 (nagios)
    Tasks: 6 (limit: 4656)
   CGroup: /system.slice/nagios.service
           ├─12606 /usr/local/nagios/bin/nagios -d /usr/local/nagios/etc/nagios
           ├─12607 /usr/local/nagios/bin/nagios --worker /usr/local/nagios/var/
           ├─12608 /usr/local/nagios/bin/nagios --worker /usr/local/nagios/var/
           ├─12609 /usr/local/nagios/bin/nagios --worker /usr/local/nagios/var/
           ├─12610 /usr/local/nagios/bin/nagios --worker /usr/local/nagios/var/
           └─12667 /usr/local/nagios/bin/nagios -d /usr/local/nagios/etc/nagios

Oct 09 19:34:46 server1 nagios[12606]: qh: Socket '/usr/local/nagios/var/rw/nag
Oct 09 19:34:46 server1 nagios[12606]: qh: core query handler registered
Oct 09 19:34:46 server1 nagios[12606]: qh: echo service query handler registere
Oct 09 19:34:46 server1 nagios[12606]: qh: help for the query handler registere
Oct 09 19:34:46 server1 nagios[12606]: wproc: Successfully registered manager a
Oct 09 19:34:46 server1 nagios[12606]: wproc: Registry request: name=Core Worke
Oct 09 19:34:46 server1 nagios[12606]: wproc: Registry request: name=Core Worke
Oct 09 19:34:46 server1 nagios[12606]: wproc: Registry request: name=Core Worke
Oct 09 19:34:46 server1 nagios[12606]: wproc: Registry request: name=Core Worke
Oct 09 19:34:46 server1 nagios[12606]: Successfully launched command file worke
lines 1-24/24 (END)
```



Nagios®

General
- Home
- Documentation

Current Status
- Tactical Overview
- Map (Legacy)
- Hosts
- Services
- Host Groups
  - Summary
  - Grid
- Service Groups
  - Summary
  - Grid
- Problems
  - Services (Unhandled)
  - Hosts (Unhandled)
  - Network Outages

Quick Search:

Reports
- Availability
- Trends (Legacy)

Nagios® Core™

✓ Daemon running with PID 19773

Nagios® Core™
Version 4.4.6
April 28, 2020
Check for updates

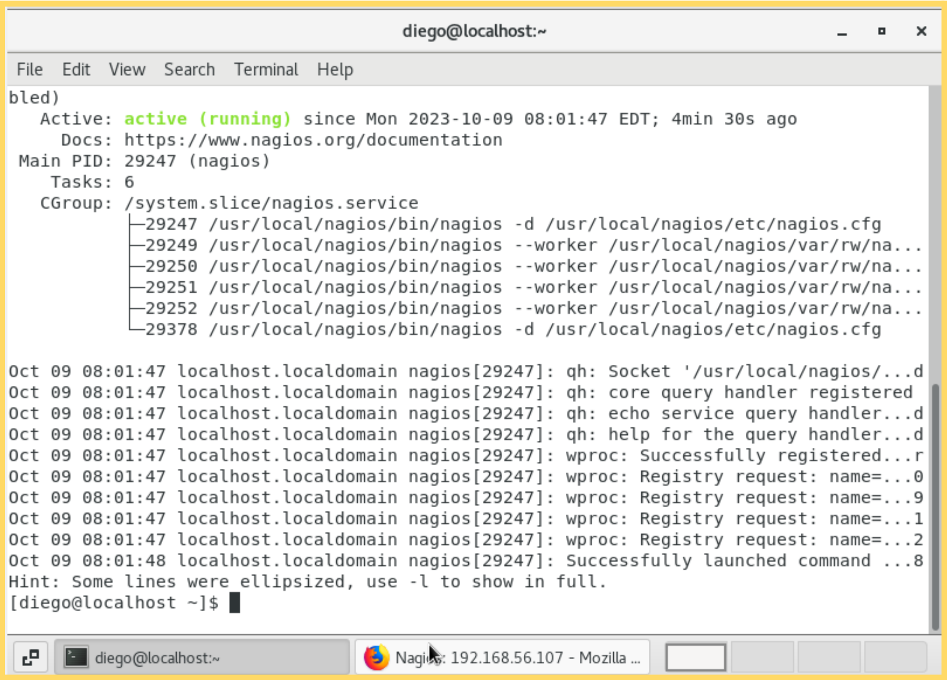
Get Started
- Start monitoring your infrastructure
- Change the look and feel of Nagios
- Extend Nagios with hundreds of addons
- Get support
- Get training
- Get certified

Quick Links
- Nagios Library (tutorials and docs)
- Nagios Labs (development blog)
- Nagios Exchange (plugins and addons)
- Nagios Support (tech support)
- Nagios.com (company)
- Nagios.org (project)

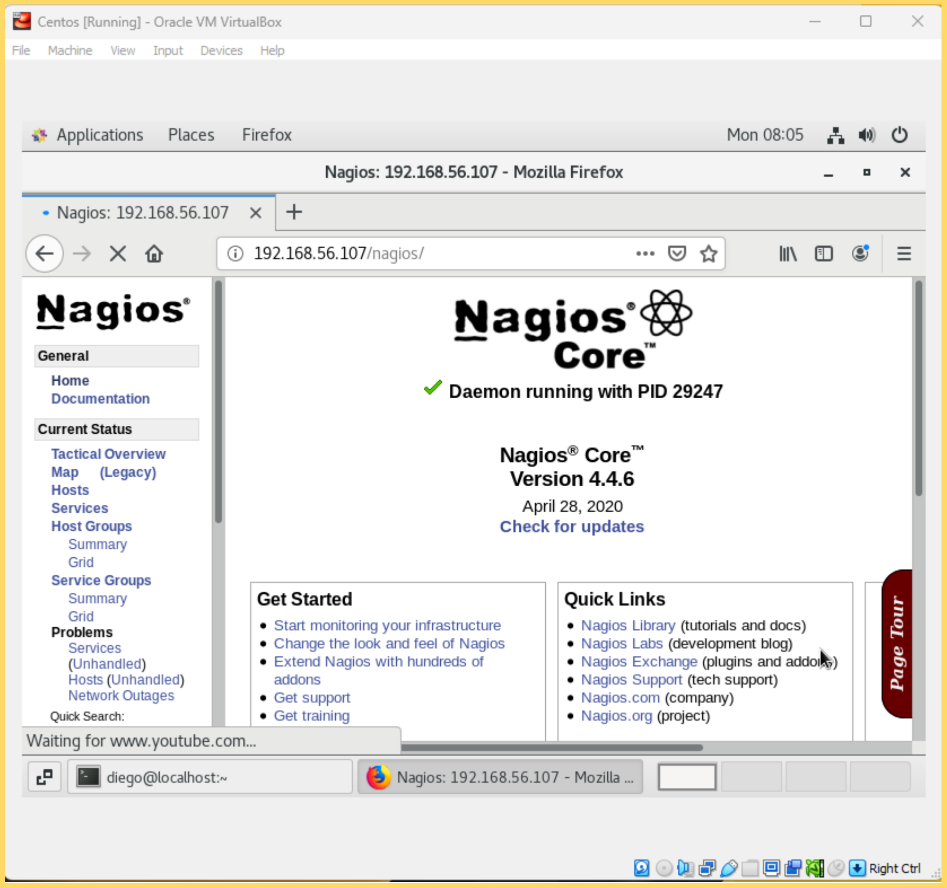
Latest News

Don't Miss...

CentOS:


diego@localhost:~
File Edit View Search Terminal Help
diego@localhost:~
Nagios: 192.168.56.107 - Mozilla ...

```
bled)
   Active: active (running) since Mon 2023-10-09 08:01:47 EDT; 4min 30s ago
     Docs: https://www.nagios.org/documentation
 Main PID: 29247 (nagios)
    Tasks: 6
   CGroup: /system.slice/nagios.service
           ├─29247 /usr/local/nagios/bin/nagios -d /usr/local/nagios/etc/nagios.cfg
           ├─29249 /usr/local/nagios/bin/nagios --worker /usr/local/nagios/var/rw/na...
           ├─29250 /usr/local/nagios/bin/nagios --worker /usr/local/nagios/var/rw/na...
           ├─29251 /usr/local/nagios/bin/nagios --worker /usr/local/nagios/var/rw/na...
           ├─29252 /usr/local/nagios/bin/nagios --worker /usr/local/nagios/var/rw/na...
           └─29378 /usr/local/nagios/bin/nagios -d /usr/local/nagios/etc/nagios.cfg

Oct 09 08:01:47 localhost.localdomain nagios[29247]: qh: Socket '/usr/local/nagios/...d
Oct 09 08:01:47 localhost.localdomain nagios[29247]: qh: core query handler registered
Oct 09 08:01:47 localhost.localdomain nagios[29247]: qh: echo service query handler...d
Oct 09 08:01:47 localhost.localdomain nagios[29247]: qh: help for the query handler...d
Oct 09 08:01:47 localhost.localdomain nagios[29247]: wproc: Successfully registered...r
Oct 09 08:01:47 localhost.localdomain nagios[29247]: wproc: Registry request: name=...0
Oct 09 08:01:47 localhost.localdomain nagios[29247]: wproc: Registry request: name=...9
Oct 09 08:01:47 localhost.localdomain nagios[29247]: wproc: Registry request: name=...1
Oct 09 08:01:47 localhost.localdomain nagios[29247]: wproc: Registry request: name=...2
Oct 09 08:01:48 localhost.localdomain nagios[29247]: Successfully launched command ...8
Hint: Some lines were ellipsized, use -l to show in full.
[diego@localhost ~]$ 
```



✓ Daemon running with PID 29247

Nagios® Core™
Version 4.4.6
April 28, 2020
Check for updates

Get Started

- Start monitoring your infrastructure
- Change the look and feel of Nagios
- Extend Nagios with hundreds of addons
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- Get training

Quick Links

- Nagios Library (tutorials and docs)
- Nagios Labs (development blog)
- Nagios Exchange (plugins and addons)
- Nagios Support (tech support)
- Nagios.com (company)
- Nagios.org (project)

Waiting for www.youtube.com...

https://github.com/DiegoEspiritu11/HOA8.git

Reflections:

Answer the following:

1. **What are the benefits of having an availability monitoring tool?**
   -The availability monitoring tool's is that it can identify errors and where are the errors' root causes. It facilitates work and can identify mistakes. immediately and also make your playbook more neat and can easily fix errors if anything occurs.

Conclusions:

In this activity the monitoring is highly helpful and makes the job simpler since It identifies the problem or mistake that caused the application to malfunction, or it displays what are the only functional components. Having monitoring tools has several advantages because you can check which ones need configuration or maintenance, which programs need fixing, and whether it is or is not