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Course/Section: CPE 232 - CPE31S6	**Date Submitted:12/10/2023**
Instructor: Dr. Jonathan Vidal Taylar	**Semester and SY: 1st Sem 2023-2024**

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

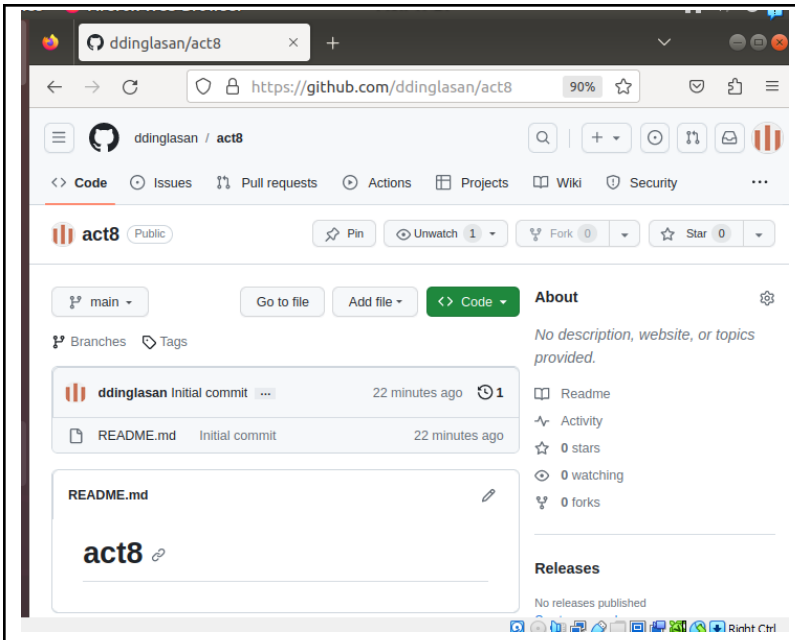
Availability monitoring is a type of monitoring tool that we use if the certain workload is up or reachable on our end. Site downtime can lead to loss of revenue, reputational damage and severe distress. Availability monitoring prevents adverse situations by checking the uptime of infrastructure components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

1. create a repository and clone it to the workstation computer.




```
dnzl@workstation:~$ git clone git@github.com:ddinglasan/act8.git
Cloning into 'act8'...
remote: Enumerating objects: 3, done.
remote: Counting objects: 100% (3/3), done.
remote: Total 3 (delta 0), reused 0 (delta 0), pack-reused 0
Receiving objects: 100% (3/3), done.
```

2. Create the basic files needed(ansible.cfg & inventory) and create the roles needed for the Ubuntu and CentOS computer with the main.yml file for their own tasks. Also created a task.yml file to run the tasks of the roles.

```
dnzl@workstation:~/act8$ tree
.
├── ansible.cfg
├── inventory
├── README.md
├── roles
│   ├── CentOS
│   │   └── tasks
│   │       └── main.yml
│   └── Ubuntu
│       └── tasks
│           └── main.yml
└── task.yml
```

3. Paste this on the main.yml of the CentOS role.

```
- 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
```

```
      - 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.$
    dest: ~/nagios
    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.$
    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: dnzl
    password: dnglsn

- 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
```

4. Paste this on the main.yml of the Ubuntu role.

```
  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
```

```
      - 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
```

```
  path: ~/nagios
  state: directory

name: downloading nagios
unarchive:
  src: https://github.com/NagiosEnterprises/nagioscore/archive/nagios-4.4.6.$
  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.$
   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: dnzl
    password: dnglsn
```

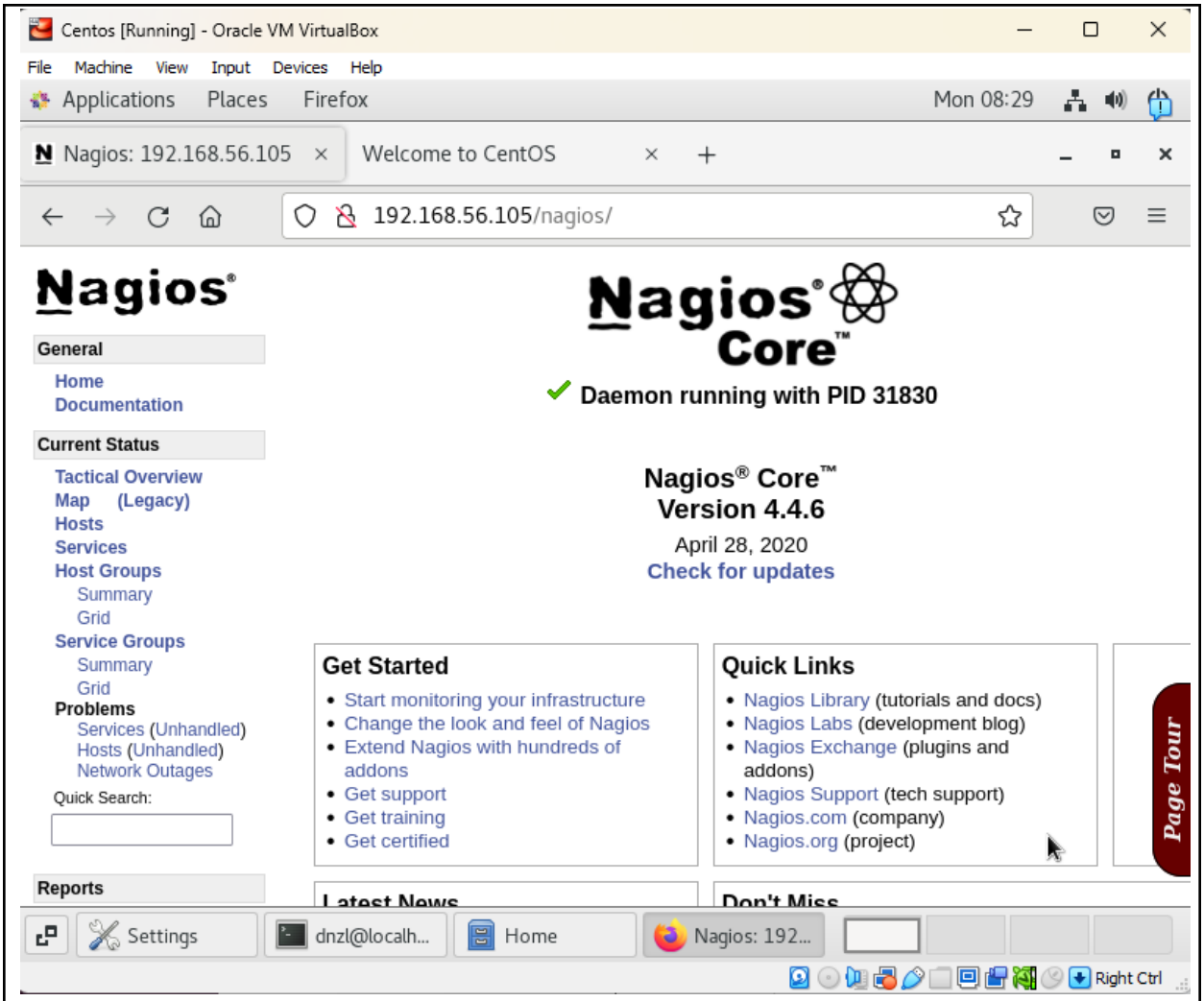
```
- name: Nagios Start/Enable Check
  service:
    name: nagios
    state: restarted
    enabled: true

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

5. Paste this on the task.yml in the main directory.

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

  - name: dnf & epel-release dl
    dnf:
      name:
        - epel-release
        - dnf
    when: ansible_distribution == "CentOS"

  - name: centos  upd and upg
    dnf:
      update_cache: yes
      name: "*"
      state: latest
    when: ansible_distribution == "CentOS"

  - name: ubuntu servers fixing by dpks
    shell:
      dpkg --configure -a
    when: ansible_distribution == "Ubuntu"

  - name: ubuntu upd and upg
    apt:
      update_cache: yes
      upgrade: yes
    when: ansible_distribution == "Ubuntu"

- hosts: Ubuntu
  become: true
  roles:
    - Ubuntu

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

6. Run the task.yml playbook and test if it works in their respective systems.


Server1 [Running] - Oracle VM VirtualBox
File Machine View Input Devices Help
Activities
Firefox Web Browser
Mon 20:29
Nagios: 192.168.56.102
192.168.56.102/nagios/
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 21781
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)
Page Tour
Latest News
Don't Miss...
Right Ctrl



https://github.com/ddinglasan/act8.git

Reflections:

Answer the following:

1. What are the benefits of having an availability monitoring tool?
   An availability monitoring tool helps ensure the uninterrupted operation of digital services and systems, minimizing downtime and optimizing performance, thereby enhancing user experience and preventing revenue loss.

Conclusions:

In this activity, I've learned how to install availability monitoring tools, specifically Nagios Core, into Ubuntu and CentOS computers while what I learned these past activities like implementing roles.