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Instructor: Engr. Roman Richard	Semester and SY: 1st sem SY 23-24

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

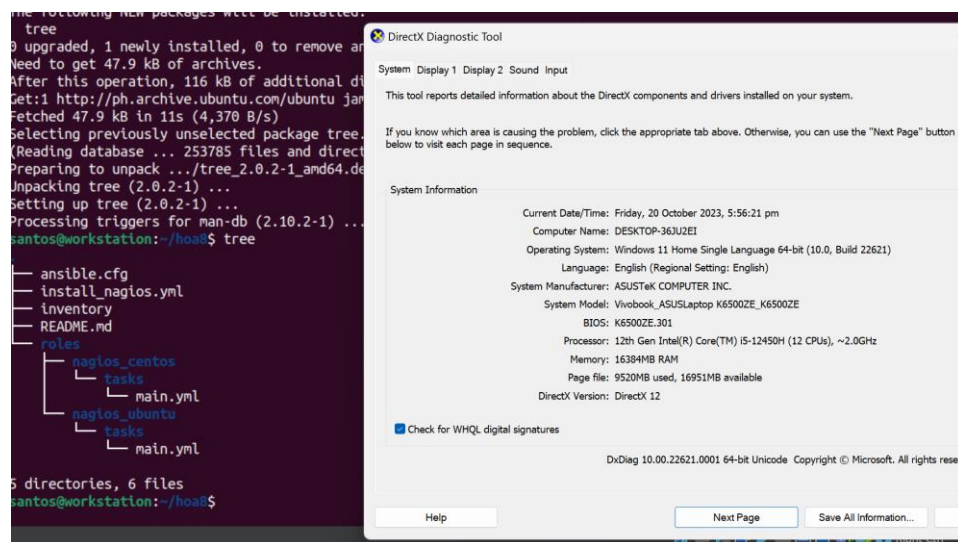
Availability monitoring is a type of monitoring tool that we use if the certain workload is up or reachable on our end. Site downtime can lead to loss of revenue, reputational damage and severe distress. Availability monitoring prevents adverse situations by checking the uptime of infrastructure components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

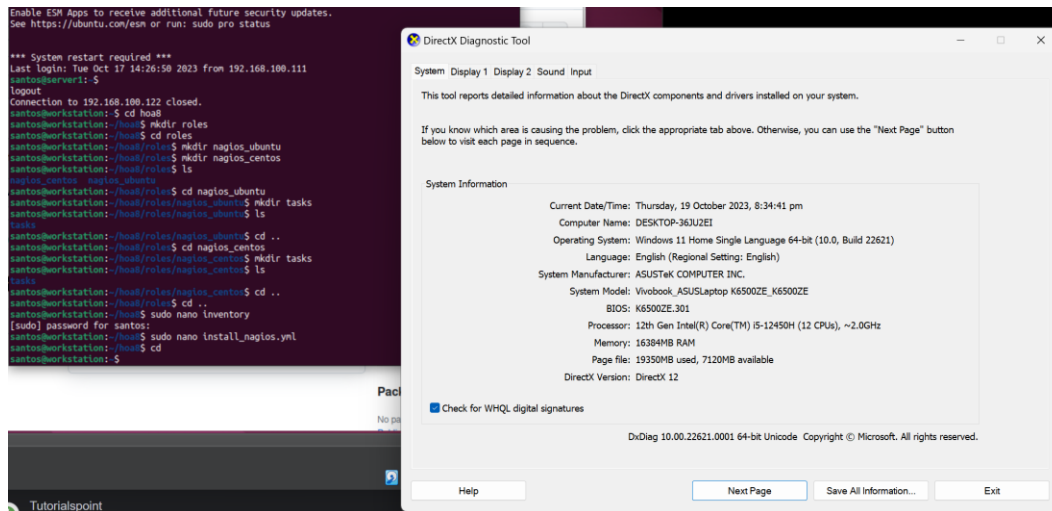
4. Output (screenshots and explanations)

Create a playbook that installs Nagios in both Ubuntu and CentOS. Apply the concept of creating roles.

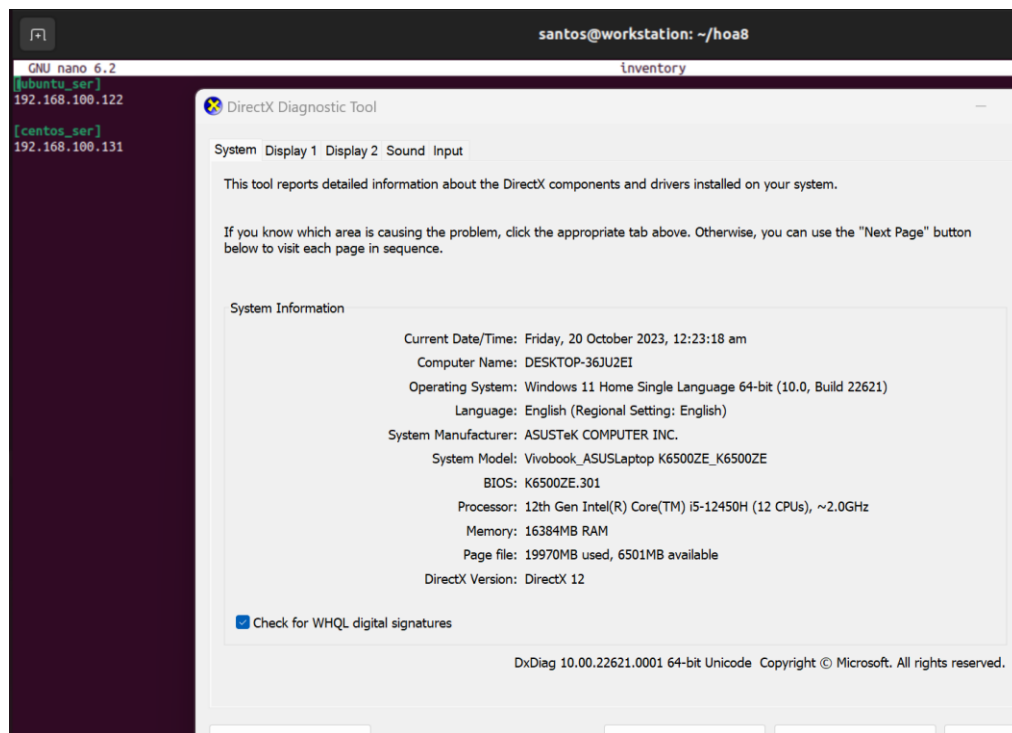


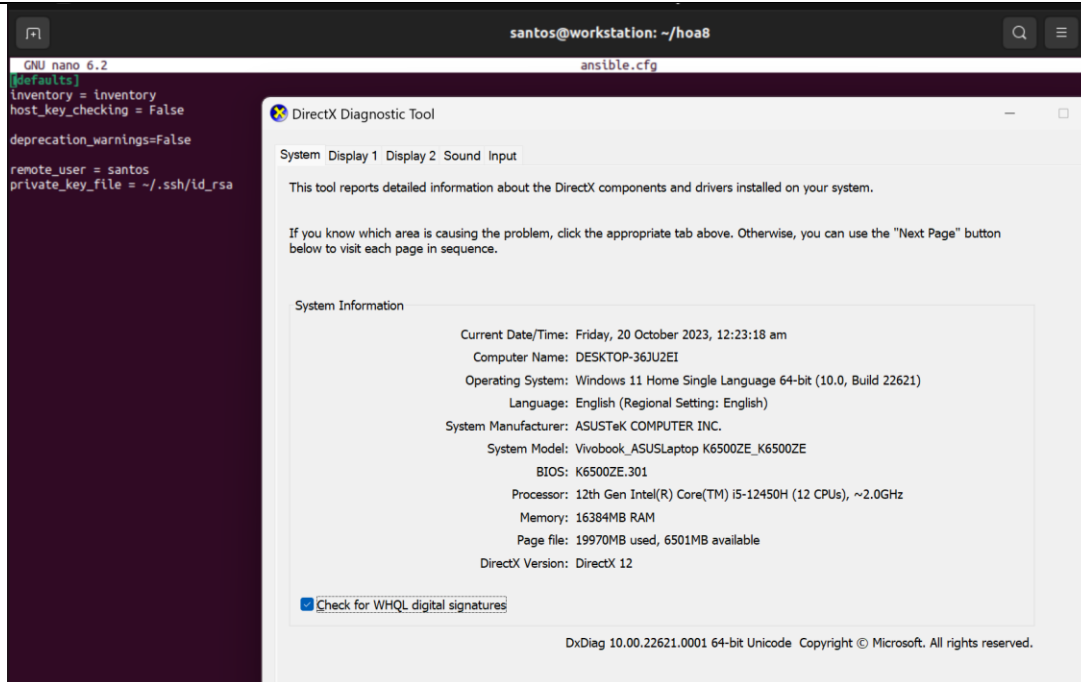
The screenshot above shows the created directory that is for installation of Nagios to ubuntu server and Centos. Its shows that it each directory which is for Ubuntu and Centos have tasks and main.yml files that is use for the playbook. The playbook used is install_nagios.yml.

Describe how you did step 1



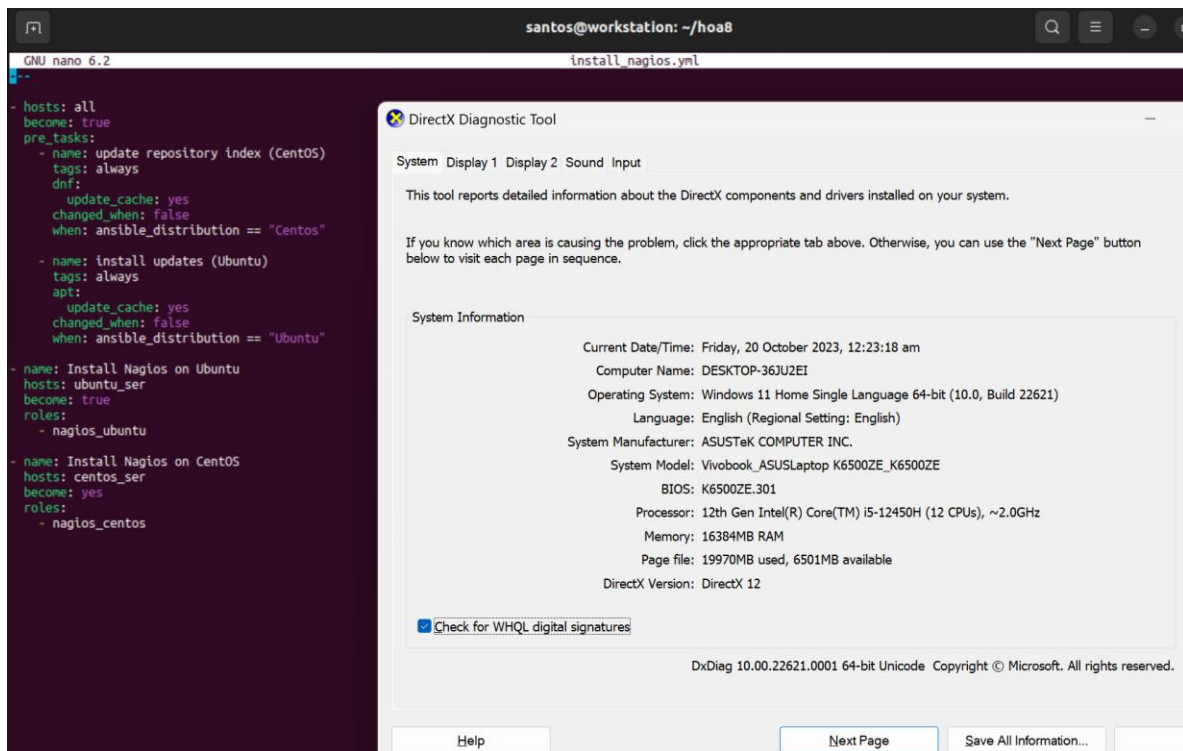
First, I made the needed directory for ubuntu and centos. It shows that inside of hoas8 directory it contains the different files that is needed a directory called roles. Inside of that directory is another directory for ubuntu and CentOS.





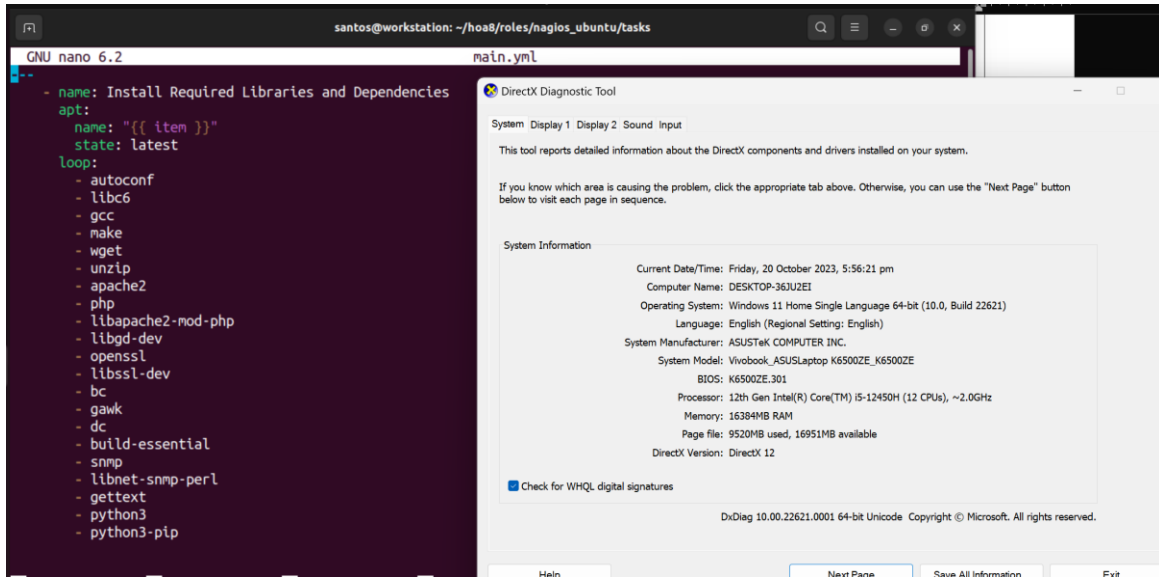
After that I made the inventory where I put the ip address of CentOS and Ubuntu server. Then, I proceed in making the `ansible.cfg` to ensure it will control the need target systems.

install_nagios.yml

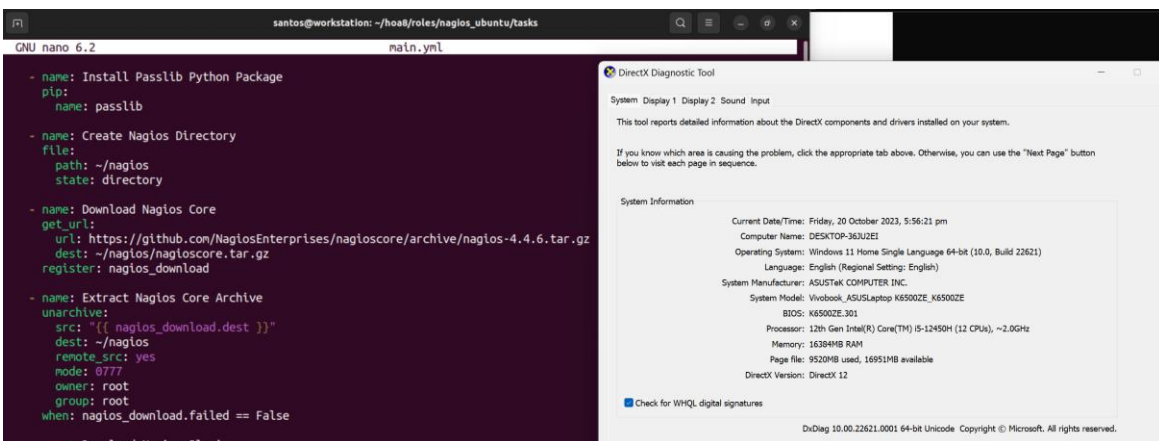


The content of install_nagios.yml is the different pre-tasks, it will help to make sure that the servers have the latest update to it latest versions. The next part is for calling the roles and directory for each Ubuntu and CentOS sever and its main.yml.

Ubuntu installation(main.yml)

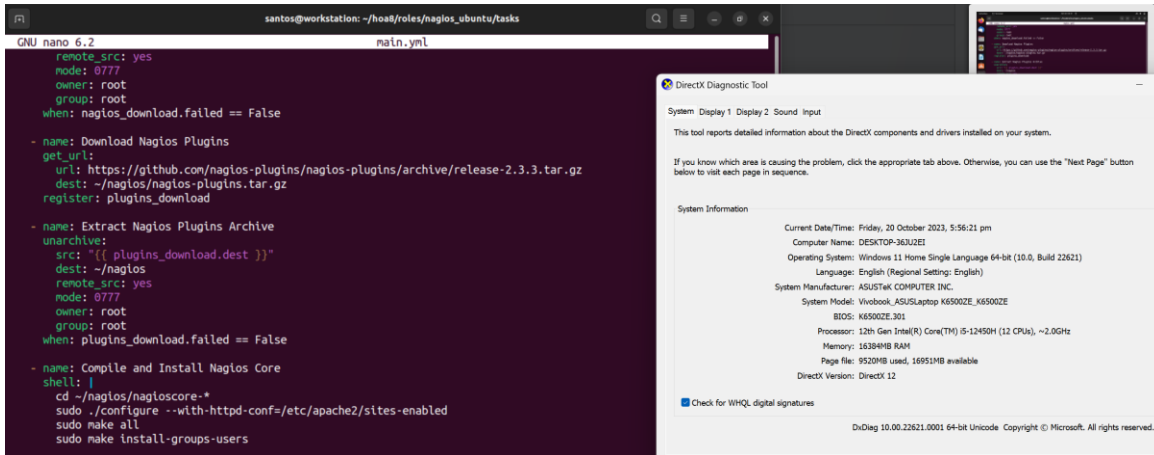


This task is about the different packages that is needed in installing Nagios in Ubuntu. It contains different things like openssl, development tools, libraries, apache2 and other things that needed.



This is about the installing passlib which is use pip module, since it required python3 pip for it to be installed.

The next one is about creating the directory named “nagios” into the home directory. Then the next task is about downloading the Nagios core. It is from GitHub and it was put in to Nagios directory with the specific permission and ownership.



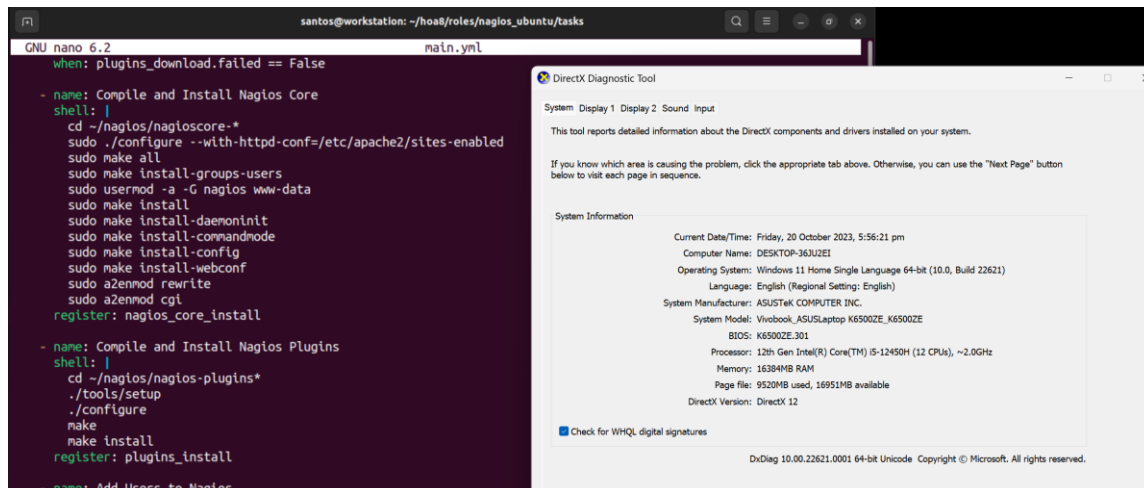
```
GNU nano 6.2 main.yml
remote_src: yes
mode: 0777
owner: root
group: root
when: nagios_download.failed == False

- name: Download Nagios Plugins
  get_url:
    url: https://github.com/nagios-plugins/nagios-plugins/archive/release-2.3.3.tar.gz
    dest: ~/nagios/nagios-plugins.tar.gz
    register: plugins_download

- name: Extract Nagios Plugins Archive
  unarchive:
    src: "{{ plugins_download.dest }}"
    dest: ~/nagios
    remote_src: yes
    mode: 0777
    owner: root
    group: root
    when: plugins_download.failed == False

- name: Compile and Install Nagios Core
  shell: |
    cd ~/nagios/nagioscore-*
    sudo ./configure --with-httpd-conf=/etc/apache2/sites-enabled
    sudo make all
    sudo make install-groups-users
```

This is similar to the previous task since it is about downloading and extracting the Nagios plugins that is from GitHub.



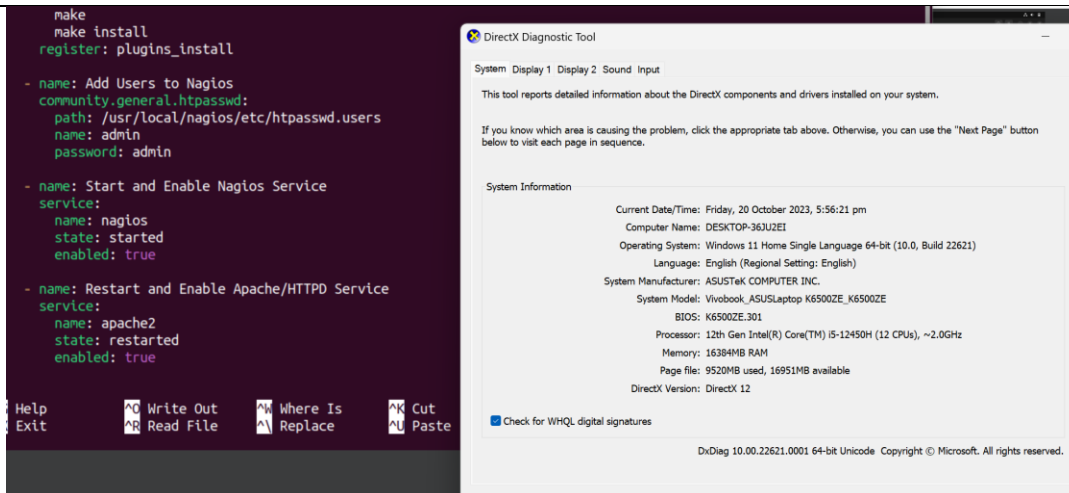
```
GNU nano 6.2 main.yml
when: plugins_download.failed == False

- name: Compile and Install Nagios Core
  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
  register: nagios_core_install

- name: Compile and Install Nagios Plugins
  shell: |
    cd ~/nagios/nagios-plugins*
    ./tools/setup
    ./configure
    make
    make install
  register: plugins_install

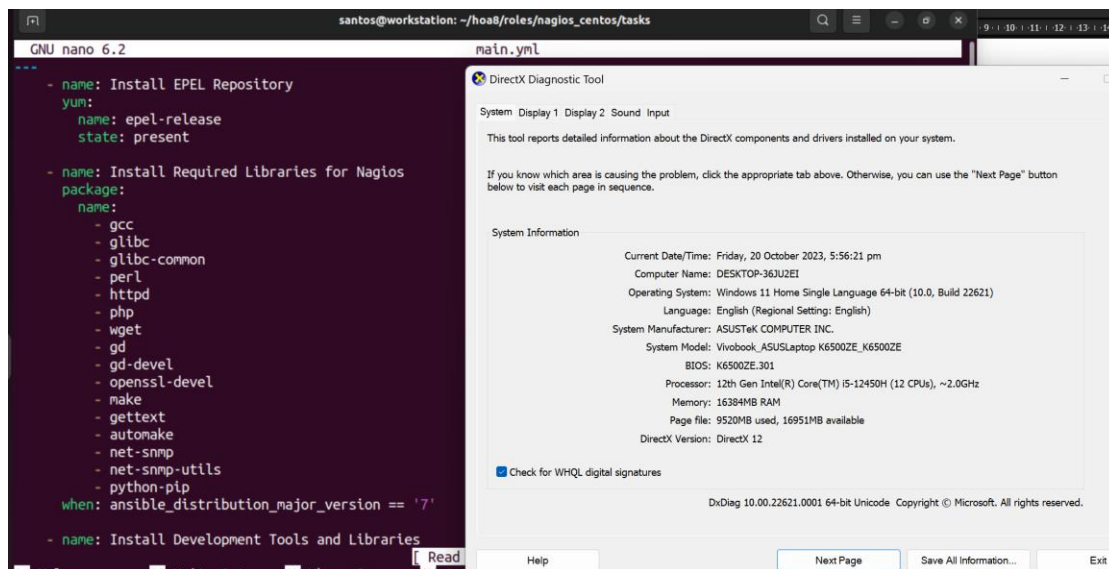
- name: Add Users to Nagios
```

In this part, the task is used shell in installing nagios with the user groups since it is required in using a specific user to be able to have access in nagios. After that the next task compiles and install the nagios plugins. It helps in monitoring the varios services.



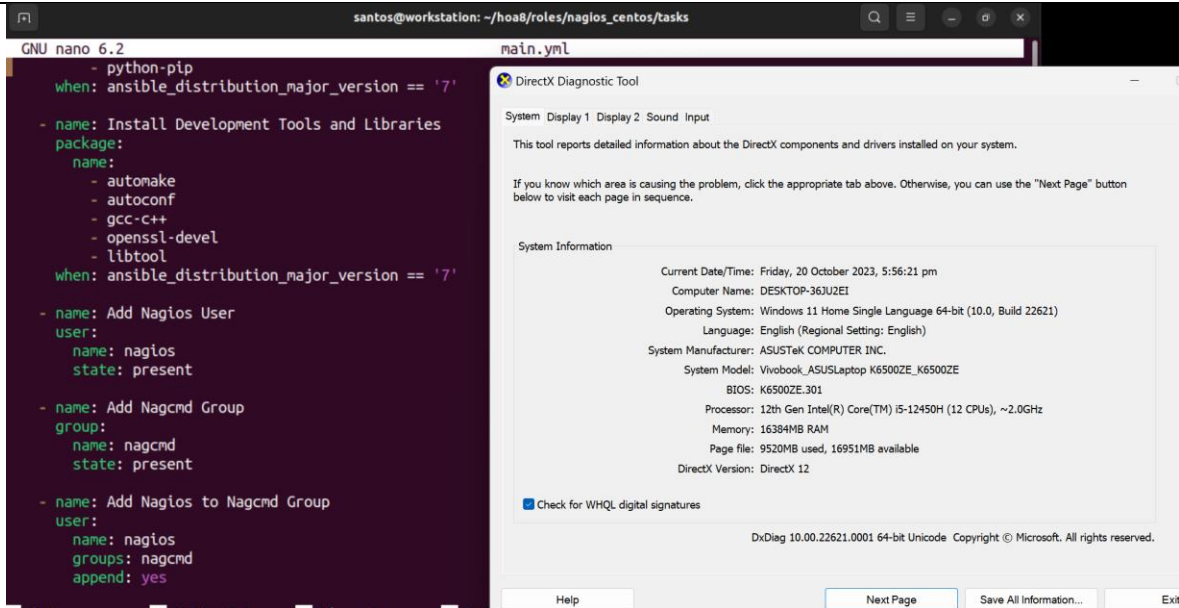
Next, I create a task that will create an admin user for Nagios and it have specific password to use. All the details are stored in htpasswd file. Next task is will going to ensure the Nagios service will going to be restart and enable when it starts.

CentOS installation(main.yml)

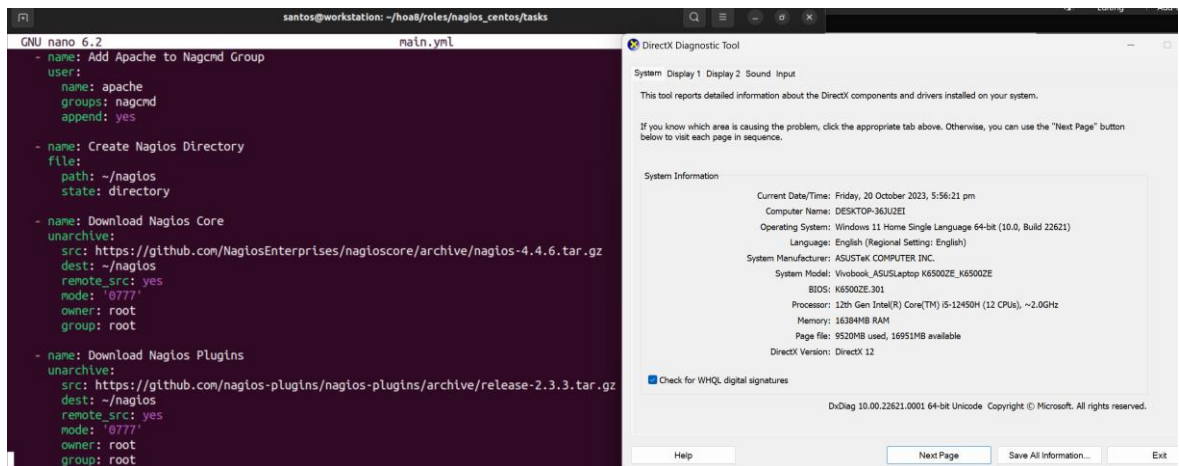


In the first task, it is about installing the EPEL repository, it will help provide additional package for Centos.

The next task is a list about the different packages that need to install. It contains different libraries and tools is needed in installation of Nagios.

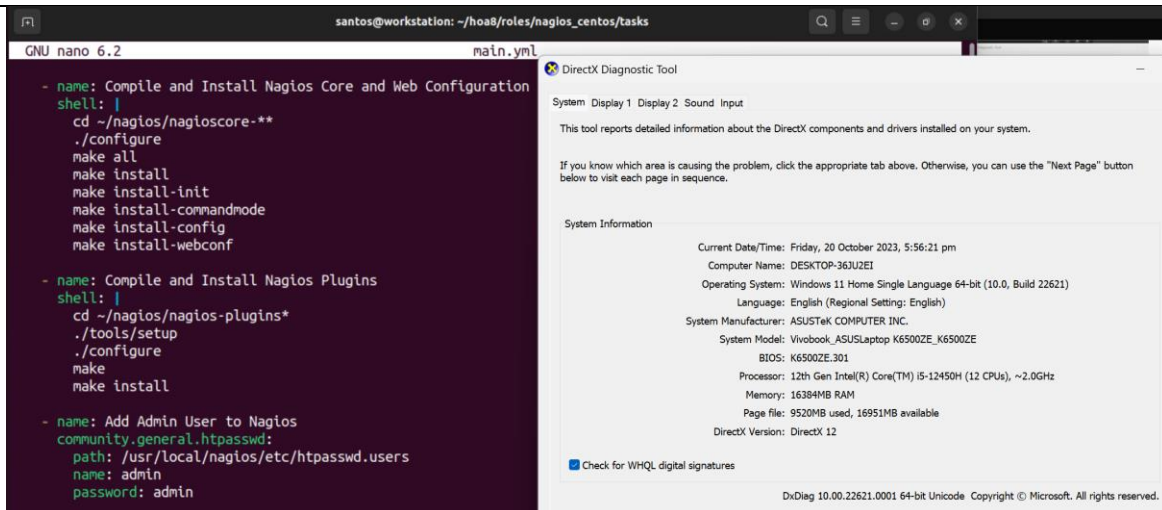


The next task is about the installation of development tools and libraries for Nagios. The next task is about making Nagios user named “nagios”. Next, is making nagcmd group named “nagcmd”. Lastly, is about adding Nagios to the nagcmd group.



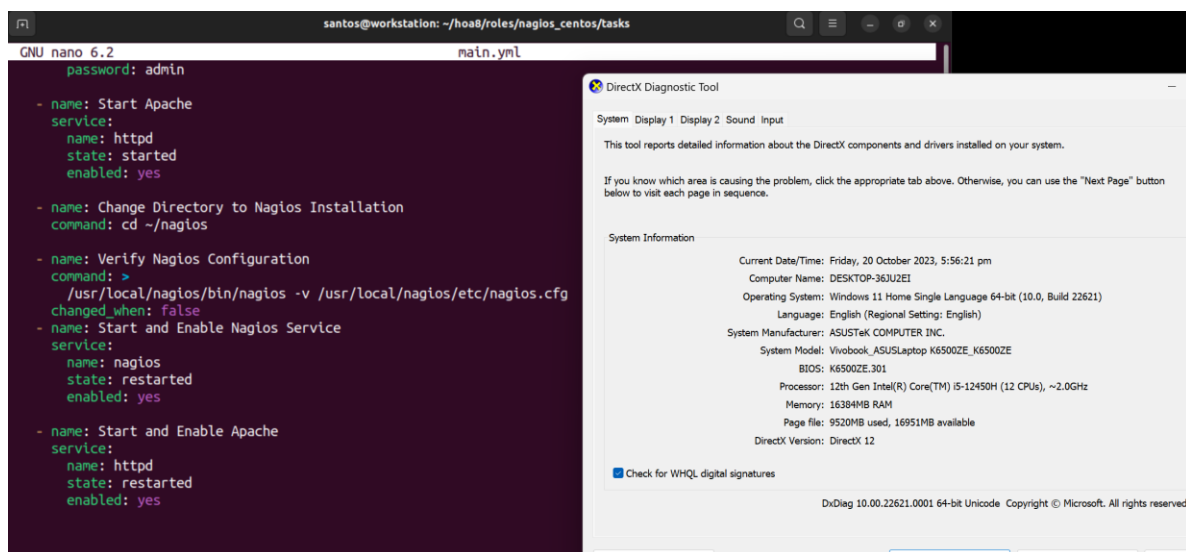
Next, is adding the apache to the nagcmd group. After that the next task is about creating Nagios directory named “nagios”.

After that, it will download the nagios with the help of GitHub. Then it will download the Nagios plugins with the help of the task and it was from GitHub.



The next task is for to compile and install the nagios core and the different needed directory and files.

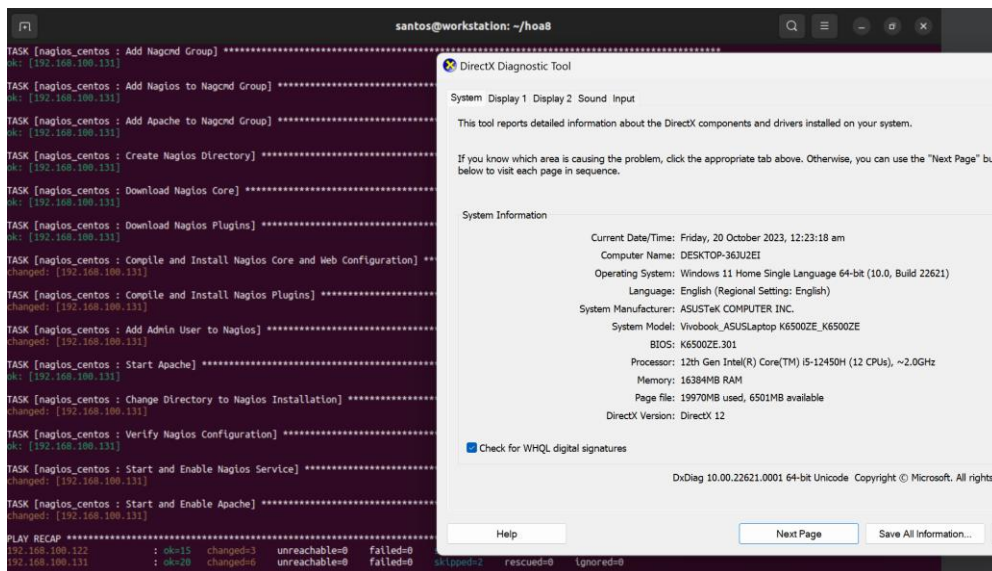
After that it will compile and install the different nagios plugins. Then it will add an admin user with the use of htpasswd.



Next, it will ensure that the Apache is started and enable. The next task is about changing directory to the Nagios.

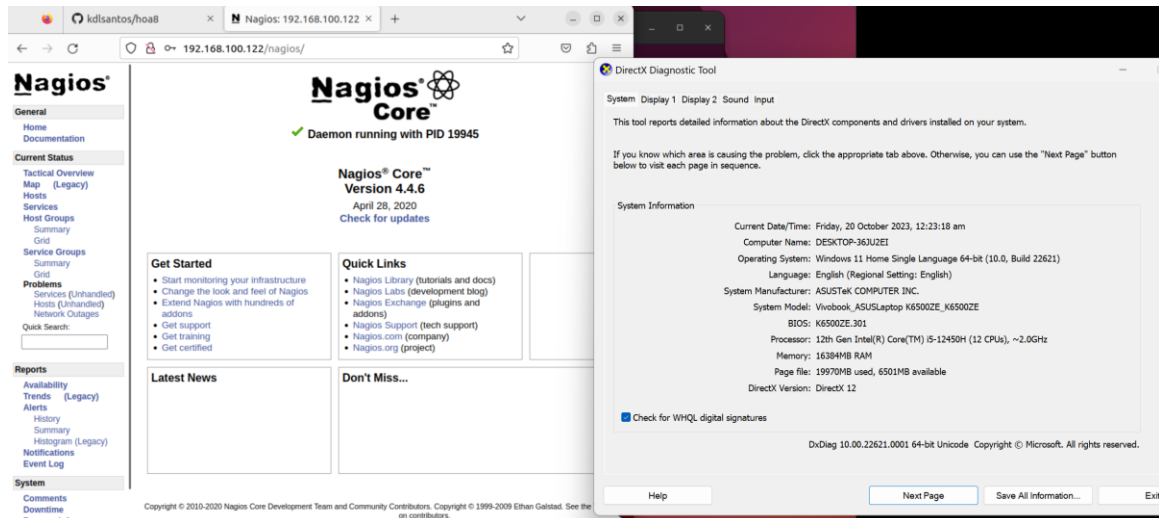
After that it will verify the Nagios configuration and ensure that it is valid and working.

Lastly, it will start and enable the Apache web server.

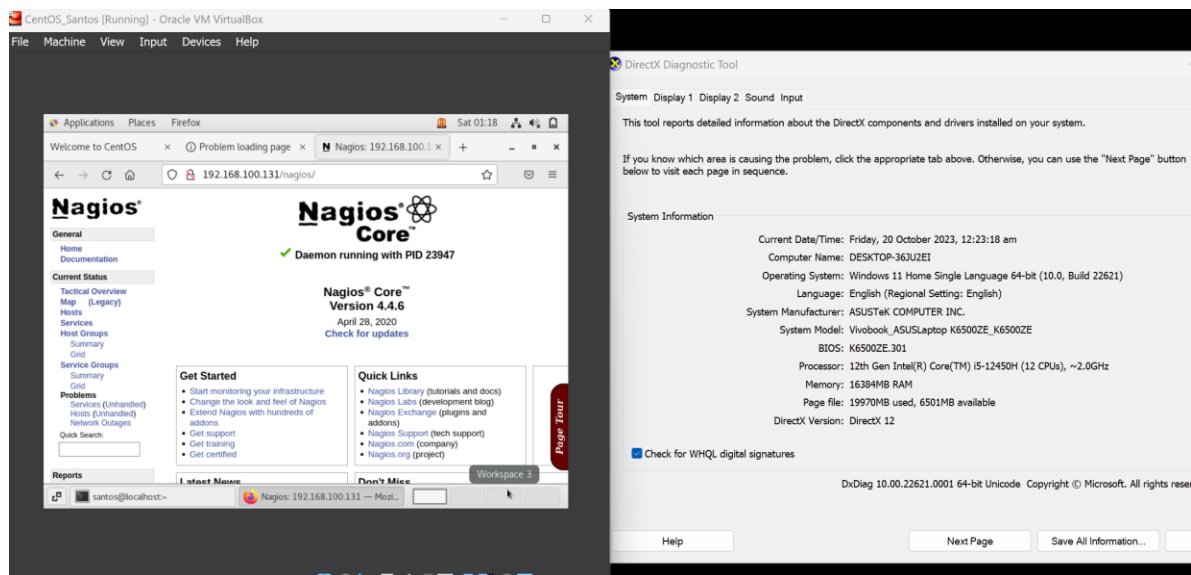


After I run the install_nagios.yml playbook, it shows that Nagios successfully installed. It shows in the play recap that it don't have failed in any tasks in the playbook.

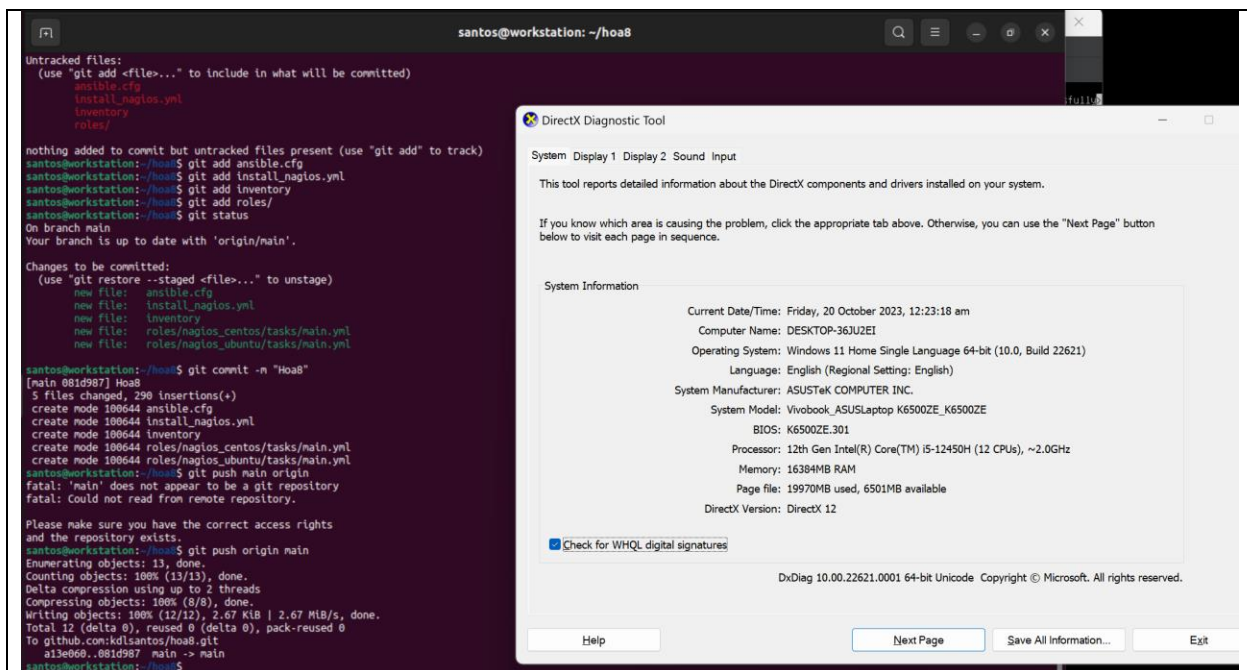
Ubuntu server



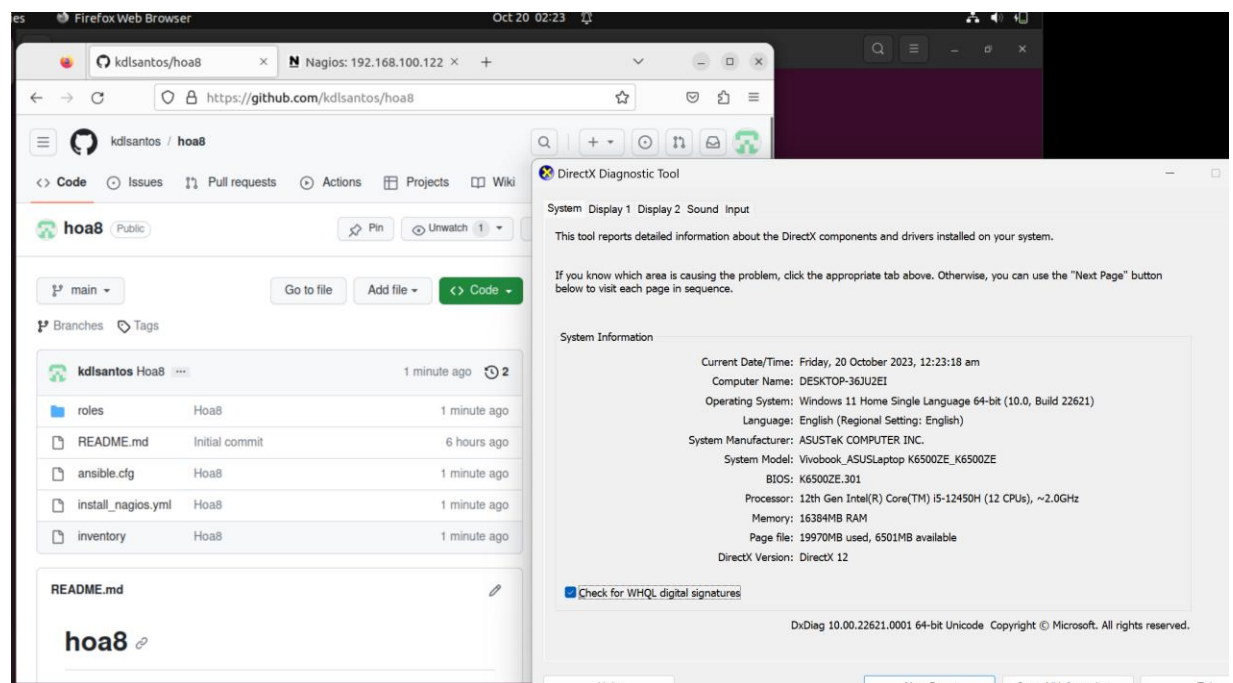
Centos



To verify the Nagios in Ubuntu and Centos, I type the ip address of it to Mozilla Fox and add /nagios on its end. If the Nagios is successfully install, the output should be the similar to the screenshot above.



I make sure to add all the files that I made to the GitHub for this activity.



Lastly, the screenshot shows the updated GitHub after I put all the files and directory I used in this activity.

GitHub link

<https://github.com/kdisantos/hoa8>

Reflections:

Answer the following:

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

- **It will help in monitoring the different server and be able to troubleshoot and make maintenance if it has a problem in the system and services. It helps to reduce the downtime and maintain the service always working. Aside from that it helps in enhancing the security since it can detect different security related issue and be able to improve the system service to keep it safe. It can help in optimizing the performance of the system services since it analyzes the different data and help to identify the needed resources that will result in improving the system performance.**

Conclusions:

This activity helps me to understand and be able to make a monitoring tool in the different servers. With the help of the different task, I be able to install configure and also manage the monitoring tools to the remote servers which is Ubuntu and CentOS. It will help to tell if the remote server is down or working. If a certain server is down, I can see if the and track the reason of the failure and be able to make a troubleshoot to solve the problem and be able to make the server work. I learn how important using monitoring tool since it is a good move in making sure that the system is ready in any failure in the future since it can give notification to the system administrator if there is a problem in the system. It gives more opportunity for the system be working in most of the time since it helps to deduce the time the system is down. This activity definitely helps me to understand well the meaning and the reason why we need monitoring tools and I hope to use this more in the future.