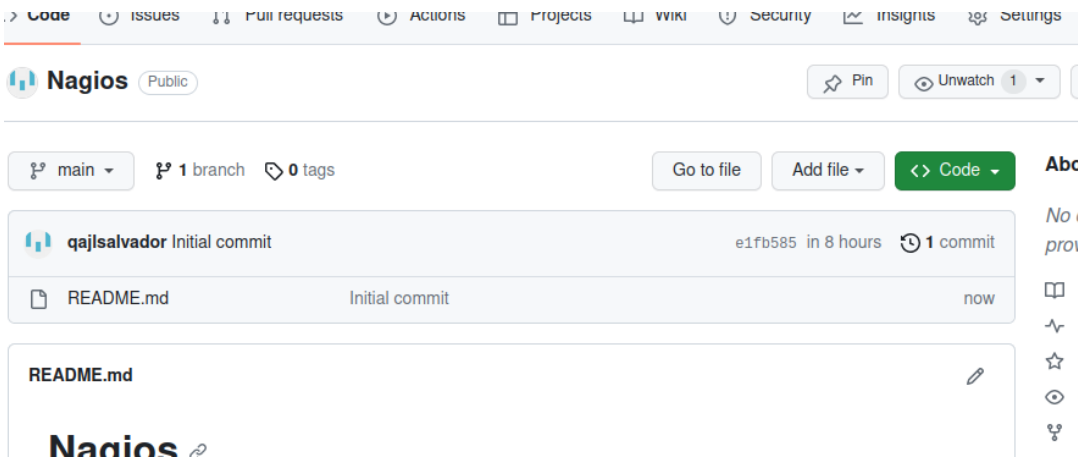


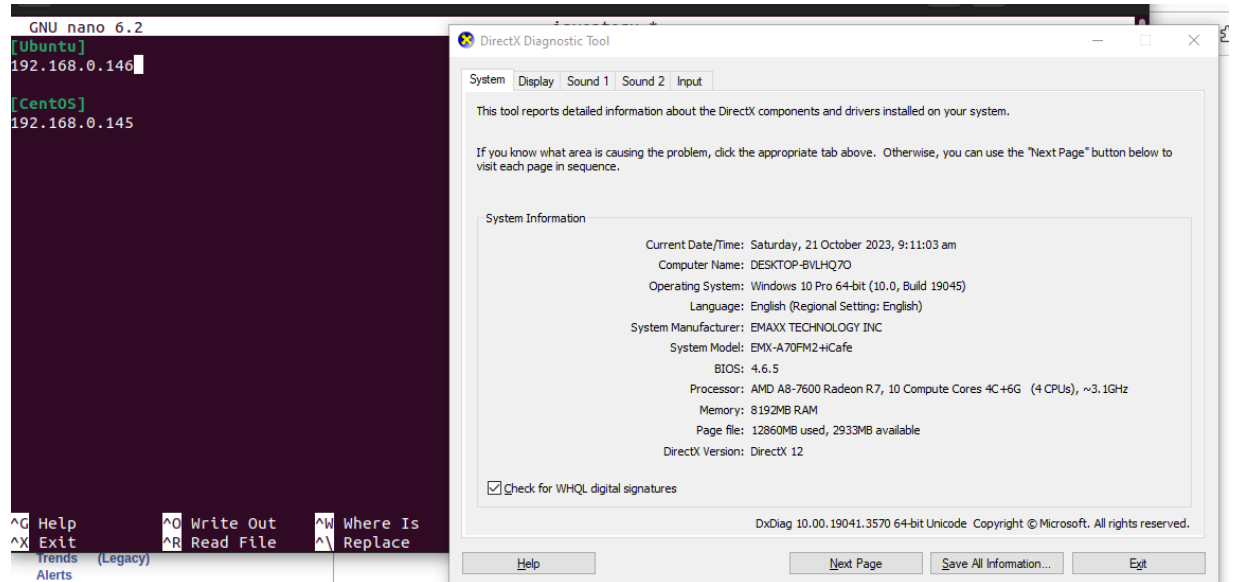
Name: Andreu John Salvador	Date Performed: 18/10/2023
Course/Section: CPE31S5	Date Submitted: 21/10/2023
Instructor: Engr. Roman Richard	Semester and SY: 1st sem 2023-2024
Activity 8: Install, Configure, and Manage Availability Monitoring tools	
1. Objectives	
Create and design a workflow that installs, 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	
<ol style="list-style-type: none"> 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)	
<p>Part 1: Creating the Repository</p> <p>First is create a new repository for the installation and configuration of the playbook</p> 	

Clone the repository to your workstation for you to access that repository.

```
salvador@Workstation:~$ git clone git@github.com:qajlsalvador/Nagios.git
Cloning into 'Nagios'...
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.
salvador@Workstation:~$ ls
ansible Desktop Downloads id_rsa.pub Nagios Pictures Salvador_PrelimExam Templates
CPE232_AndreuSalvador Documents id_rsa Music nagios-ansible Public snap
salvador@Workstation:~$ cd Nagios
salvador@Workstation:~/Nagios$
```

Part 2: Installing Nagios on Ubuntu

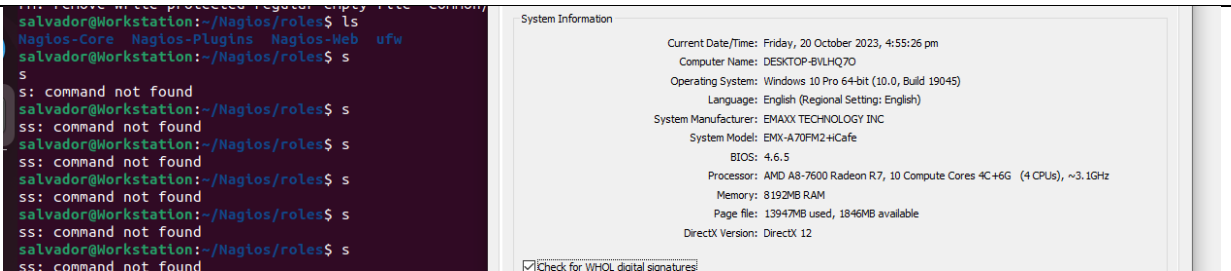
1. Make sure to be on the directory of the repository when creating the necessary files.
2. Create an inventory and put the ip addresses of the live server that you have.



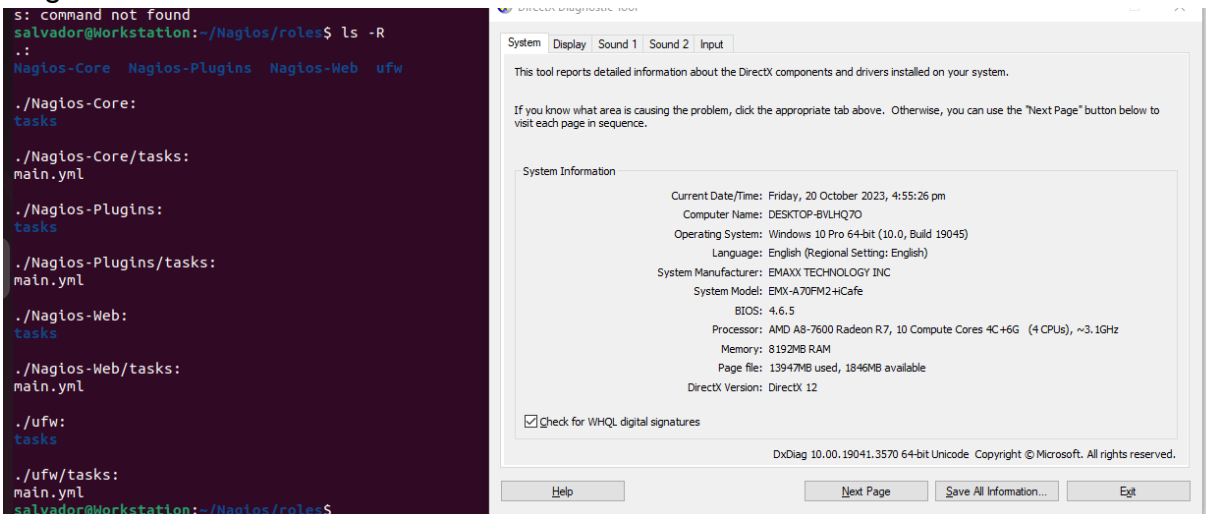
Make sure to save the file before exiting.

3. Create a roles directory and inside that directory, create the directories of the roles you need.

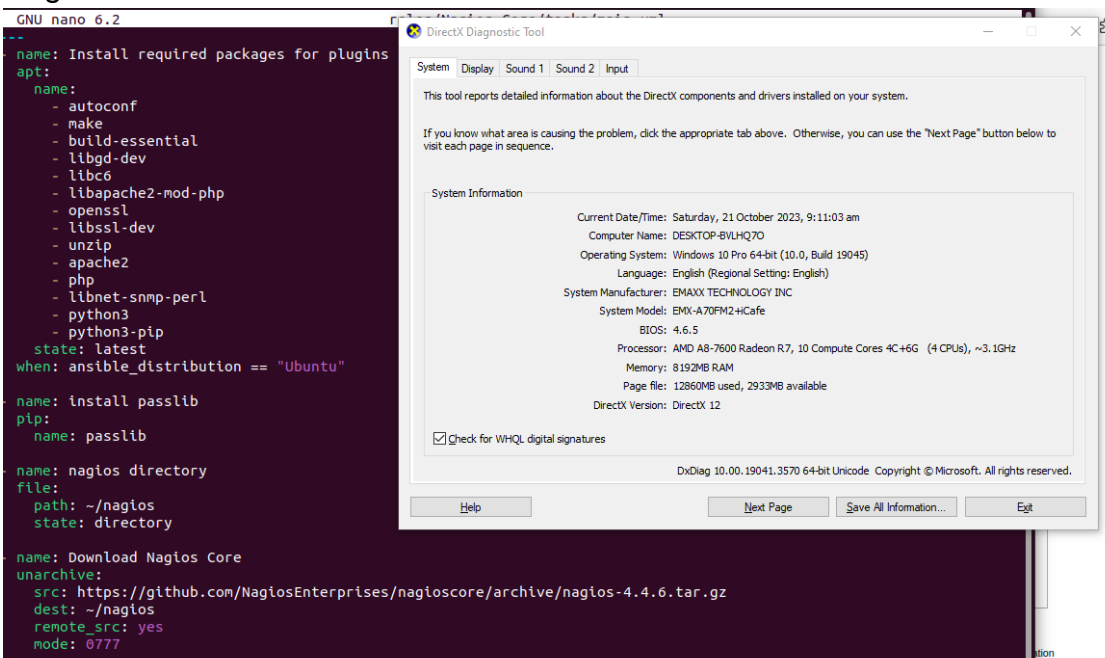
```
salvador@Workstation:~/Nagios$ mkdir roles
salvador@Workstation:~/Nagios$ ls
inventory README.md roles
salvador@Workstation:~/Nagios$
```



4. Access each roles directory and create a directory name tasks and inside the tasks directory, create a main.yml file that contains the necessary tasks in order to install Nagios.



Nagios-Core



Nagios-Plugins

The terminal window shows the following commands and output:

```
GNU nano 6.2
--
- name: Download Plugins
  unarchive:
    src: https://github.com/nagios-plugins/nag
    dest: ~/nagios
    remote_src: yes
    mode: 0777
    owner: root
    group: root

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

The DirectX Diagnostic Tool window displays the following system information:

- Current Date/Time: Saturday, 21 October 2023, 9:11:03 am
- Computer Name: DESKTOP-BVLHQ70
- Operating System: Windows 10 Pro 64-bit (10.0, Build 19045)
- Language: English (Regional Setting: English)
- System Manufacturer: EMAXX TECHNOLOGY INC
- System Model: EMX-A70FM2-iCafe
- BIOS: 4.6.5
- Processor: AMD A8-7600 Radeon R7, 10 Compute Cores 4C+6G (4 CPUs), ~3.1GHz
- Memory: 8192MB RAM
- Page file: 12860MB used, 2933MB available
- DirectX Version: DirectX 12

Check for WHQL digital signatures is checked. The bottom of the window shows "DxDiag 10.00.19041.3570 64-bit Unicode Copyright © Microsoft. All rights reserved." and buttons for Help, Next Page, Save All Information..., and Exit.

Nagios-Web

The terminal window shows the following commands and output:

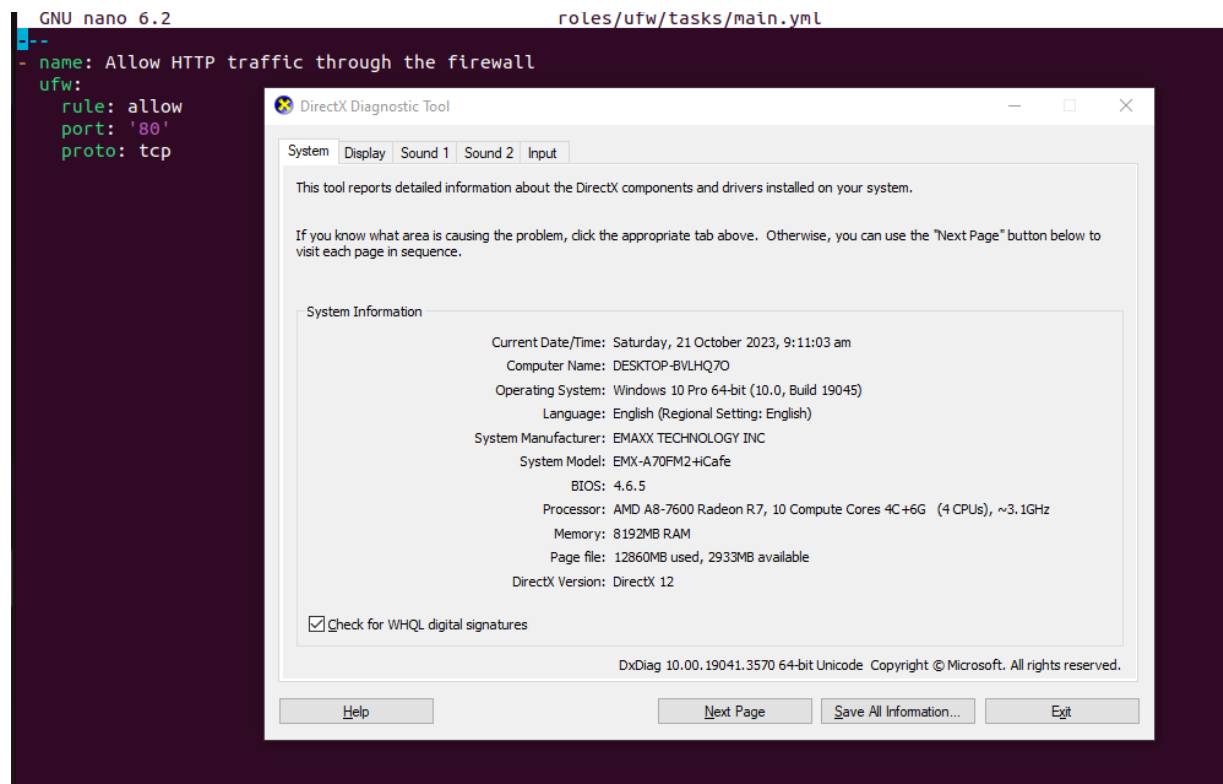
```
GNU nano 6.2
--
- name: Adding users to Nagios
  community.general.htpasswd:
    path: /usr/local/nagios/etc/htpasswd.users
    name: user
    password: user

- name: start nagios
  service:
    name: nagios
    enabled: true
    state: restarted

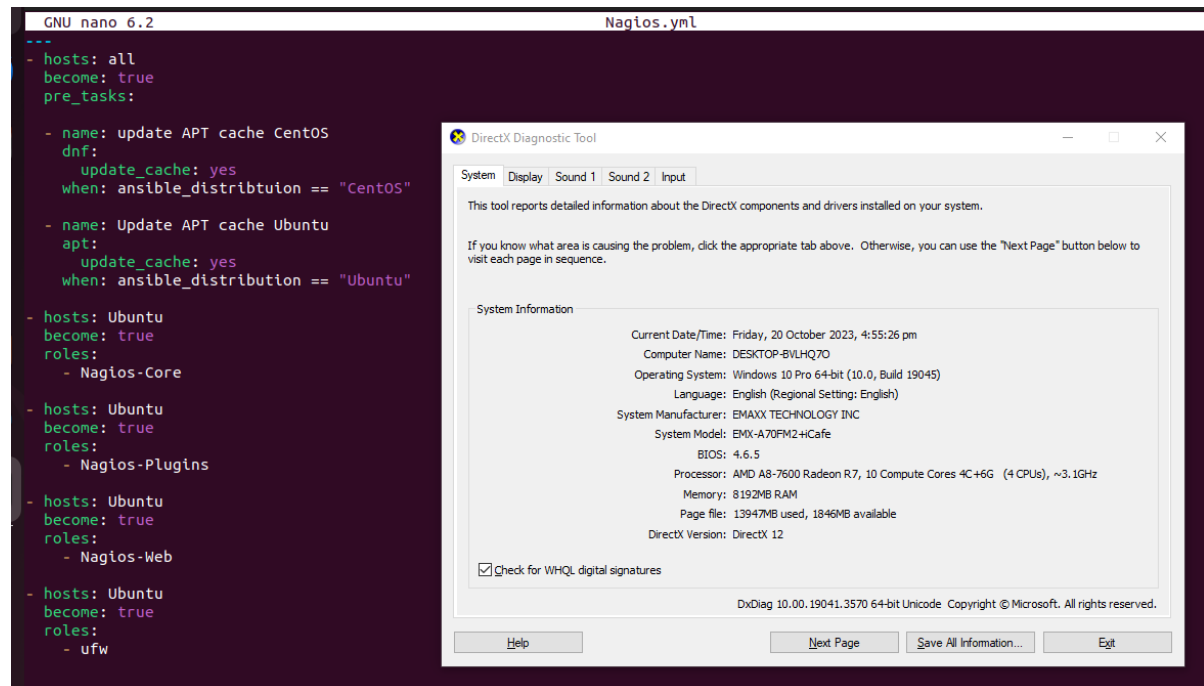
- name: Enable and start Apache service
  service:
    name: apache2
    enabled: true
    state: restarted
```

The DirectX Diagnostic Tool window displays the same system information as the previous screenshot.

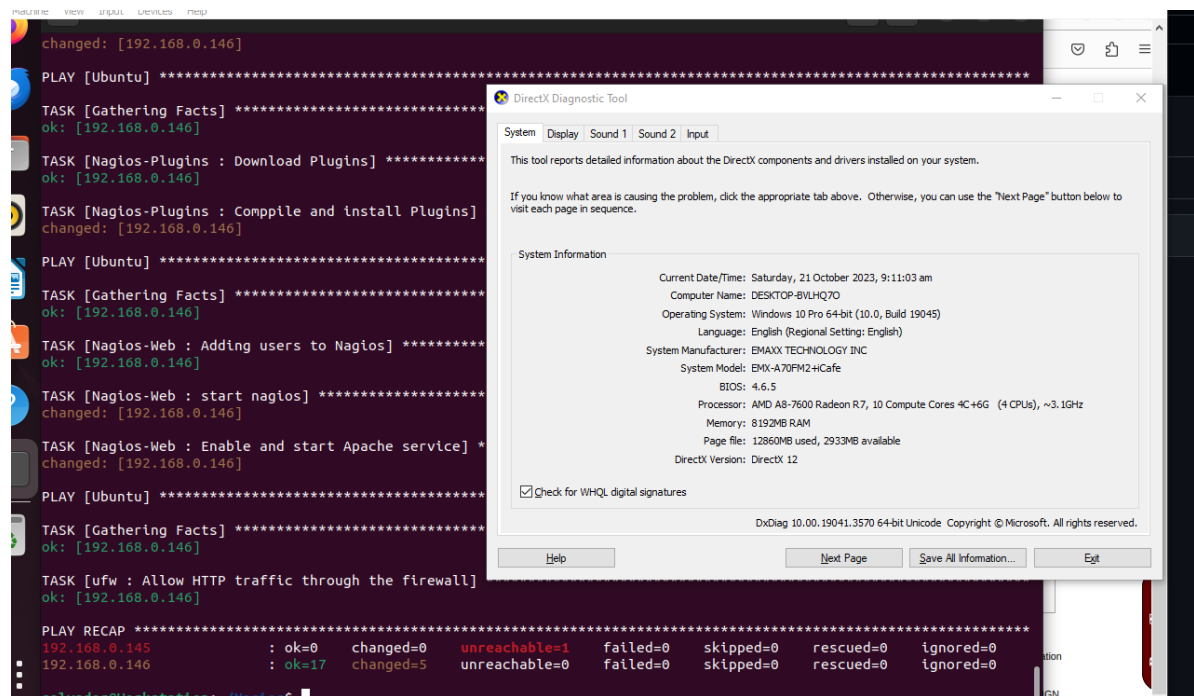
Ufw



5. create the main playbook for the roles to be played



6. Run the playbook



Note: the other ip address is for my CentOS, since my computer can't handle 3 virtual machine running all at the same time, Im installing this 1 by 1.



Part 3: Installing Nagios on CentOS

We already made the inventory and the roles directory, now we need to make the roles for our CentOS installation just like what we did in Ubuntu before.

1. Create the necessary roles for the installation of the Nagios for CentOS, and then access each roles to make a tasks directory and inside those tasks directory you create the yml file named main.yml and write the tasks that will install the Nagios.

```
salvador@Workstation: ~/Nagios/roles$ mkdir Nagios-CentOS-core
salvador@Workstation:~/Nagios/roles$ cd Nagios-CentOS-core
salvador@Workstation:~/Nagios/roles/Nagios-CentOS-core$ mkdir tasks
salvador@Workstation:~/Nagios/roles/Nagios-CentOS-core$ cd tasks
salvador@Workstation:~/Nagios/roles/Nagios-CentOS-core/tasks$ sudo nano.yml
sudo: nano.yml: command not found
salvador@Workstation:~/Nagios/roles/Nagios-CentOS-core/tasks$ sudo nano main.yml
salvador@Workstation:~/Nagios/roles/Nagios-CentOS-core/tasks$ ls
main.yml
salvador@Workstation:~/Nagios/roles/Nagios-CentOS-core/tasks$
```

```
main.yml
salvador@Workstation:~/Nagios/roles/Nagios-CentOS-core/tasks$ cd
salvador@Workstation:~/Nagios/roles$ cd Nagios/roles
salvador@Workstation:~/Nagios/roles$ mkdir Nagios-CentOS-Plugins
salvador@Workstation:~/Nagios/roles$ cd Nagios-CentOS-Plugins
salvador@Workstation:~/Nagios/roles/Nagios-CentOS-Plugins$ mkdir tasks
salvador@Workstation:~/Nagios/roles/Nagios-CentOS-Plugins$ cd tasks
salvador@Workstation:~/Nagios/roles/Nagios-CentOS-Plugins/tasks$ sudo nano main.yml
salvador@Workstation:~/Nagios/roles/Nagios-CentOS-Plugins/tasks$ ls
main.yml
salvador@Workstation:~/Nagios/roles/Nagios-CentOS-Plugins/tasks$
```

```
salvador@Workstation:~/Nagios/roles/Nagios-CentOS-Plugins/tasks$ cd
salvador@Workstation:~/Nagios/roles$ cd Nagios/roles
salvador@Workstation:~/Nagios/roles$ mkdir Nagios-CentOS-Web
salvador@Workstation:~/Nagios/roles$ cd Nagios-CentOS-Web
salvador@Workstation:~/Nagios/roles/Nagios-CentOS-Web$ mkdir tasks
salvador@Workstation:~/Nagios/roles/Nagios-CentOS-Web$ cd tasks
salvador@Workstation:~/Nagios/roles/Nagios-CentOS-Web/tasks$ sudo nano main.yml
salvador@Workstation:~/Nagios/roles/Nagios-CentOS-Web/tasks$ ls
main.yml
salvador@Workstation:~/Nagios/roles/Nagios-CentOS-Web/tasks$
```

This tool reports detailed information about the DirectX components and drivers installed on your system.

If you know what area is causing the problem, click the appropriate tab above. Otherwise, you can use the "Next Page" button below to visit each page in sequence.

System Information

Current Date/Time: Saturday, 21 October 2023, 9:11:03 am
Computer Name: DESKTOP-8VLHQ70
Operating System: Windows 10 Pro 64-bit (10.0, Build 19045)
Language: English (Regional Setting: English)
System Manufacturer: EMAXX TECHNOLOGY INC
System Model: EMX-A70FM2-iCafe
BIOS: 4.6.5
Processor: AMD A8-7600 Radeon R7, 10 Compute Cores 4C+6G (4 CPUs), ~3.1GHz

System Display Sound 1 Sound 2 Input

This tool reports detailed information about the DirectX components and drivers installed on your system.

If you know what area is causing the problem, click the appropriate tab above. Otherwise, you can use the "Next Page" button below to visit each page in sequence.

System Information

Current Date/Time: Saturday, 21 October 2023, 9:11:03 am
Computer Name: DESKTOP-8VLHQ70

This tool reports detailed information about the DirectX components and drivers installed on your system.

If you know what area is causing the problem, click the appropriate tab above. Otherwise, you can use the "Next Page" button below to visit each page in sequence.

System Information

Current Date/Time: Saturday, 21 October 2023, 9:11:03 am
Computer Name: DESKTOP-8VLHQ70
Operating System: Windows 10 Pro 64-bit (10.0, Build 19045)
Language: English (Regional Setting: English)

Nagios-CentOS-core

```
GNU nano 6.2 main.yml
--
- name: Epel installations
  dnf:
    name: epel-release
    state: latest

- name: install pip
  become: yes
  ansible.builtin.package:
    name: python-pip
    state: present

- name: Install required packages for plugins
  package:
    name:
      - autoconf
      - automake
      - gd
      - gcc
      - make
      - perl
      - gcc-c++
      - gd-devel
      - glibc
      - httpd
      - make
      - glibc-common
      - openssl-devel
      - unzip
      - php
      - libtool
    state: latest
  when: ansible_distribution == "CentOS"

- name: install passlib
  pip:
```

DirectX Diagnostic Tool

System Display Sound 1 Sound 2 Input

This tool reports detailed information about the DirectX components and drivers installed on your system.

If you know what area is causing the problem, click the appropriate tab above. Otherwise, you can use the "Next Page" button below to visit each page in sequence.

System Information

Current Date/Time: Saturday, 21 October 2023, 12:15:10 pm
Computer Name: DESKTOP-8VLHQ70
Operating System: Windows 10 Pro 64-bit (10.0, Build 19045)
Language: English (Regional Setting: English)
System Manufacturer: EMAXX TECHNOLOGY INC
System Model: EMX-A70FM2-iCafe
BIOS: 4.6.5
Processor: AMD A8-7600 Radeon R7, 10 Compute Cores 4C+6G (4 CPUs), ~3.1GHz
Memory: 8192MB RAM
Page file: 13743MB used, 2050MB available
DirectX Version: DirectX 12

☒ Check for WHQL digital signatures

DxDiag 10.00.19041.3570 64-bit Unicode Copyright © Microsoft. All rights reserved.

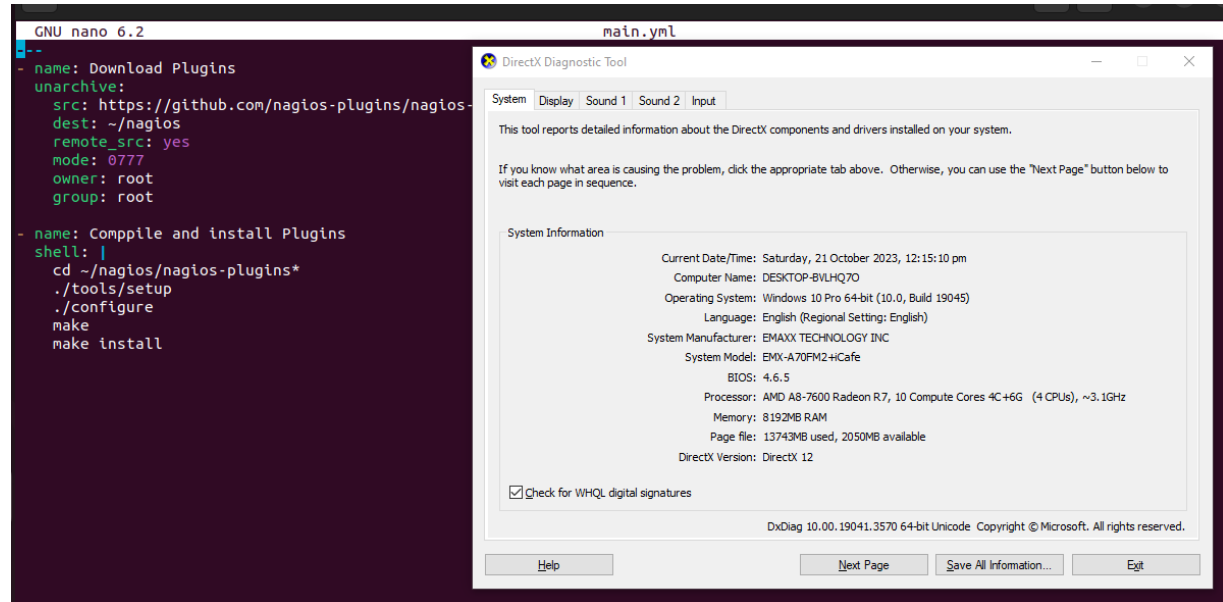
Help

Next Page

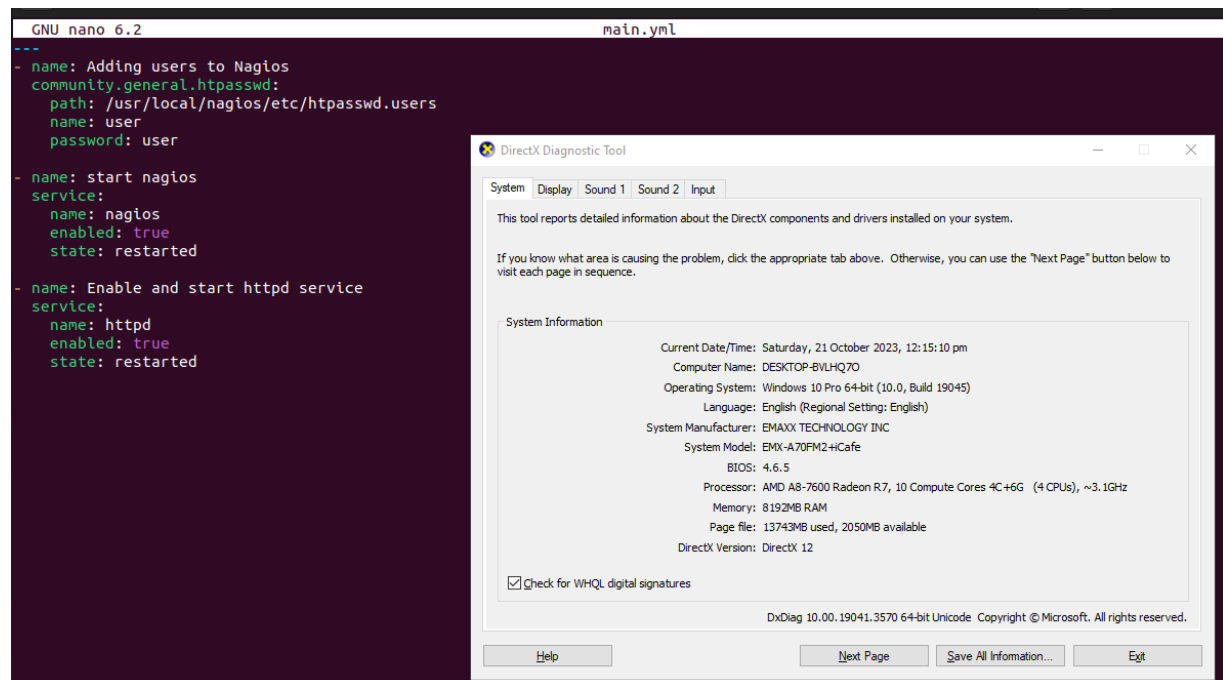
Save All Information...

Exit

Nagios-CentOS-Plugins



Nagios-CentOS-Web



2. Add the roles inside your Nagios.yml that you will run

```
- ufw

hosts: CentOS
become: true
roles:
  - Nagios-CentOS-core

hosts: CentOS
become: true
roles:
  - Nagios-CentOS-Plugins

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

System | Display | Sound 1 | Sound 2 | Input

This tool reports detailed information about the DirectX components and drivers installed on your system.

If you know what area is causing the problem, click the appropriate tab above. Otherwise, you can use the "Next Page" button below to visit each page in sequence.

System Information

Current Date/Time: Saturday, 21 October 2023, 12:15:10
Computer Name: DESKTOP-BVLHQ70
Operating System: Windows 10 Pro 64-bit (10.0, Build 19045)
Language: English (Regional Setting: English)
System Manufacturer: EMAXX TECHNOLOGY INC
System Model: EMX-A70FM2-iCafe
BIOS: 4.6.5
Processor: AMD A8-7600 Radeon R7, 10 Compute
Memory: 8192MB RAM

3. Run the playbook

```
TASK [Nagios-CentOS-core : Download Nagios Core] *****
ok: [192.168.0.145]

TASK [Nagios-CentOS-core : Compile and install Nagios Core] *****
changed: [192.168.0.145]

PLAY [centOS] *****

TASK [Gathering Facts] *****
ok: [192.168.0.145]

TASK [Nagios-CentOS-Plugins : Download Plugins] *****
ok: [192.168.0.145]

TASK [Nagios-CentOS-Plugins : Compile and install Plugins] *****
changed: [192.168.0.145]

PLAY [centOS] *****

TASK [Gathering Facts] *****
ok: [192.168.0.145]

TASK [Nagios-CentOS-Web : Adding users to Nagios] *****
ok: [192.168.0.145]

TASK [Nagios-CentOS-Web : start nagios] *****
changed: [192.168.0.145]

TASK [Nagios-CentOS-Web : Enable and start Apache service] *****
changed: [192.168.0.145]

PLAY RECAP *****
192.168.0.145 : ok=21 changed=4 unreachable=0 failed=0 skipped=1 rescued=0 ignored=0
192.168.0.146 : ok=0 changed=0 unreachable=1 failed=0 skipped=0 rescued=0 ignored=0
```

DirectX Diagnostic Tool

System | Display | Sound 1 | Sound 2 | Input

This tool reports detailed information about the DirectX components and drivers installed on your system.

If you know what area is causing the problem, click the appropriate tab above. Otherwise, you can use the "Next Page" button below to visit each page in sequence.

System Information

Current Date/Time: Saturday, 21 October 2023, 12:15:10 pm
Computer Name: DESKTOP-BVLHQ70
Operating System: Windows 10 Pro 64-bit (10.0, Build 19045)
Language: English (Regional Setting: English)
System Manufacturer: EMAXX TECHNOLOGY INC
System Model: EMX-A70FM2-iCafe
BIOS: 4.6.5
Processor: AMD A8-7600 Radeon R7, 10 Compute Cores 4C+6G (4 CPUs), ~3.1GHz
Memory: 8192MB RAM
Page file: 13743MB used, 2050MB available
DirectX Version: DirectX 12

☒ Check for WHQL digital signatures

DxDiag 10.00.19041.3570 64-bit Unicode Copyright © Microsoft. All rights reserved.

Help Next Page Save All Information... Exit

Nagios: 192.168.0.145 - Mozilla Firefox

os: 192.168.0.145 x +

192.168.0.145/nagios/

Nagios® Core™

✓ Daemon running with PID 13928

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](#)

DirectX Diagnostic Tool

System | Display | Sound 1 | Sound 2 | Input

This tool reports detailed information about the DirectX components and drivers installed on your system.

If you know what area is causing the problem, click the appropriate tab above. Otherwise, you can use the "Next Page" button below to visit each page in sequence.

System Information

Current Date/Time: Saturday, 21 October 2023, 12:15:10 pm
Computer Name: DESKTOP-BVLHQ70
Operating System: Windows 10 Pro 64-bit (10.0, Build 19045)
Language: English (Regional Setting: English)
System Manufacturer: EMAXX TECHNOLOGY INC
System Model: EMX-A70FM2-iCafe
BIOS: 4.6.5
Processor: AMD A8-7600 Radeon R7, 10 Compute Cores 4C+6G (4 CPUs), ~3.1GHz
Memory: 8192MB RAM
Page file: 13743MB used, 2050MB available
DirectX Version: DirectX 12

☒ Check for WHQL digital signatures

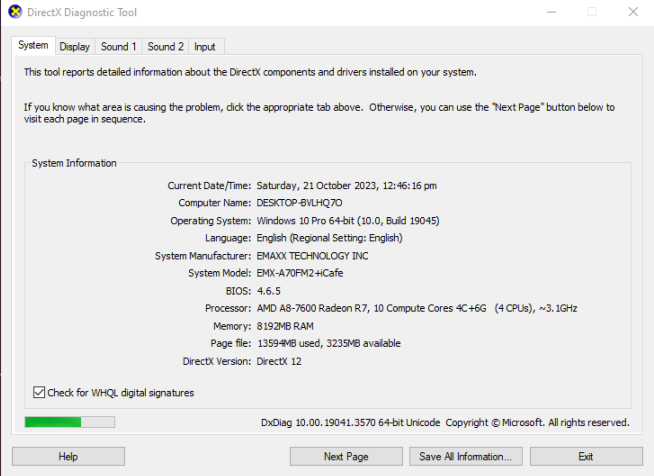
DxDiag 10.00.19041.3570 64-bit Unicode Copyright © Microsoft. All rights reserved.

Help Next Page Save All Information... Exit

Adding everything to github

```
salvador@Workstation:~/Nagios$ ls
Inventory Nagios.yml README.md roles
salvador@Workstation:~/Nagios$ git add roles
salvador@Workstation:~/Nagios$ git commit -m "NEW"
[main 9cac05a] NEW
7 files changed, 216 insertions(+)
create mode 100644 roles/Nagios-CentOS-Plugins/tasks/main.yml
create mode 100644 roles/Nagios-CentOS-Web/tasks/main.yml
create mode 100644 roles/Nagios-CentOS-core/tasks/main.yml
create mode 100644 roles/Nagios-Core/tasks/main.yml
create mode 100644 roles/Nagios-Plugins/tasks/main.yml
create mode 100644 roles/Nagios-Web/tasks/main.yml
create mode 100644 roles/ufw/tasks/main.yml
salvador@Workstation:~/Nagios$ git add Nagios.yml
salvador@Workstation:~/Nagios$ git add inventory
salvador@Workstation:~/Nagios$ git commit -m "NEW"
[main e4a1f71] NEW
2 files changed, 54 insertions(+)
create mode 100644 Nagios.yml
create mode 100644 inventory
salvador@Workstation:~/Nagios$ git push origin main
Enumerating objects: 29, done.
Counting objects: 100% (29/29), done.
Compressing objects: 100% (13/13), done.
Writing objects: 100% (28/28), 3.20 KiB | 546.00 KiB/s, done.
Total 28 (delta 2), reused 0 (delta 0), pack-reused 0
remote: Resolving deltas: 100% (2/2), done.
To github.com:qajlsalvador/Nagios.git
   e1fb585..e4a1f71 main -> main
salvador@Workstation:~/Nagios$ git status
On branch main
Your branch is up to date with 'origin/main'.

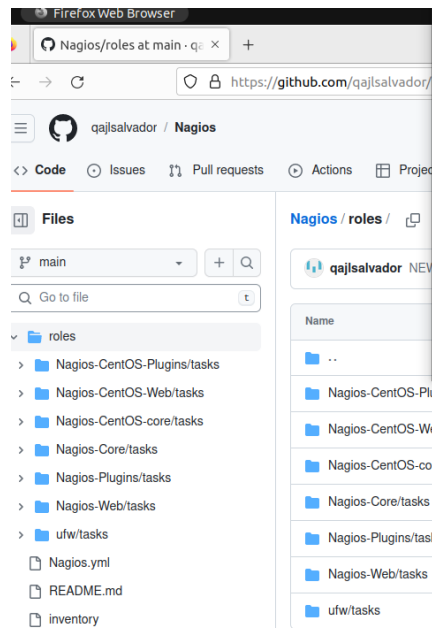
nothing to commit, working tree clean
salvador@Workstation:~/Nagios$
```



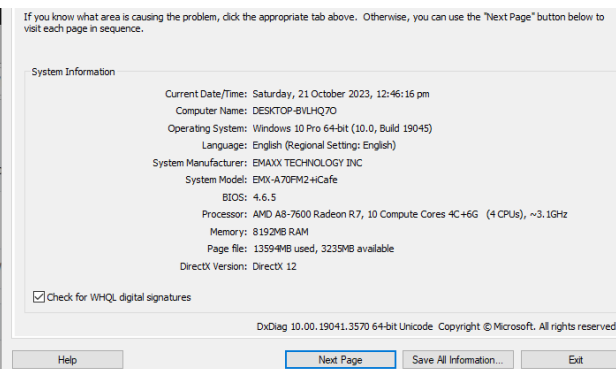
The screenshot shows the DirectX Diagnostic Tool window. It has tabs for System, Display, Sound 1, Sound 2, and Input. The System tab is active, displaying system information. At the bottom, there are buttons for Help, Next Page, Save All Information..., and Exit.

System Information	
Current Date/Time:	Saturday, 21 October 2023, 12:46:16 pm
Computer Name:	DESKTOP-BVLHQ70
Operating System:	Windows 10 Pro 64-bit (10.0, Build 19045)
Language:	English (Regional Setting: English)
System Manufacturer:	EMAXX TECHNOLOGY INC
System Model:	EMX-A70FM2-iCafe
BIOS:	4.6.5
Processor:	AMD A8-7600 Radeon R7, 10 Compute Cores 4C+6G (4 CPUs), ~3.1GHz
Memory:	8192MB RAM
Page file:	13594MB used, 3235MB available
DirectX Version:	DirectX 12

Confirming if the git push was successful



The screenshot shows the GitHub repository page for 'qajlsalvador / Nagios'. The 'Code' tab is selected, showing the file structure. The 'roles' directory is expanded, showing subdirectories like 'Nagios-CentOS-Plugins/tasks', 'Nagios-CentOS-Web/tasks', 'Nagios-CentOS-core/tasks', 'Nagios-Core/tasks', 'Nagios-Plugins/tasks', 'Nagios-Web/tasks', and 'ufw/tasks'. Each subdirectory has a 'NEW' label and a timestamp of '2 minutes ago'.



The screenshot shows the DirectX Diagnostic Tool window, identical to the one in the previous block, displaying system information.

Reflections:

Answer the following:

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

- Having a monitoring tool is a great help when dealing with live server or any other servers or connection. Using monitoring tools you can easily identify problem that appears. Also, you can debug errors that will come in your way.

Conclusions:

Installing using the playbook is a simple yet complex thing to do. Everything is set up for you but you can still run into problems that will “bug” you a significant amount of time. In this activity I’ve applied the techniques and followed the instructions on how to create the playbook that will let you install the live monitoring tool, Nagios. The roles I created were for the individual access of tasks so that when debugging I will not be guessing which failed and which should be replaced. Divided into 3 roles wherein the core is for the Nagios files, plugins is for the custom plugins for the Nagios, and web to create the user and access it online. During the runtime or when I played the playbook I stumbled upon some relative problems that hindered me from finishing this task. Installation of some dependencies are highly needed in order to progress because without these, there’s no way you will use that function or tools that should be used when configuring the files that were downloaded. And in the end the files were allocated successfully and it ran without fail and errors, I also checked if the user were created online by accessing it in a web browser using the IP address of that specific server along with the following line /Nagios to access the installed monitoring tool, Nagios.