Name: Shaniah Rose Hope M. Sumaoang	Date Performed: October 18, 2023
Course/Section: CPE 232-CPE31S5	Date Submitted: October 20, 2023
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

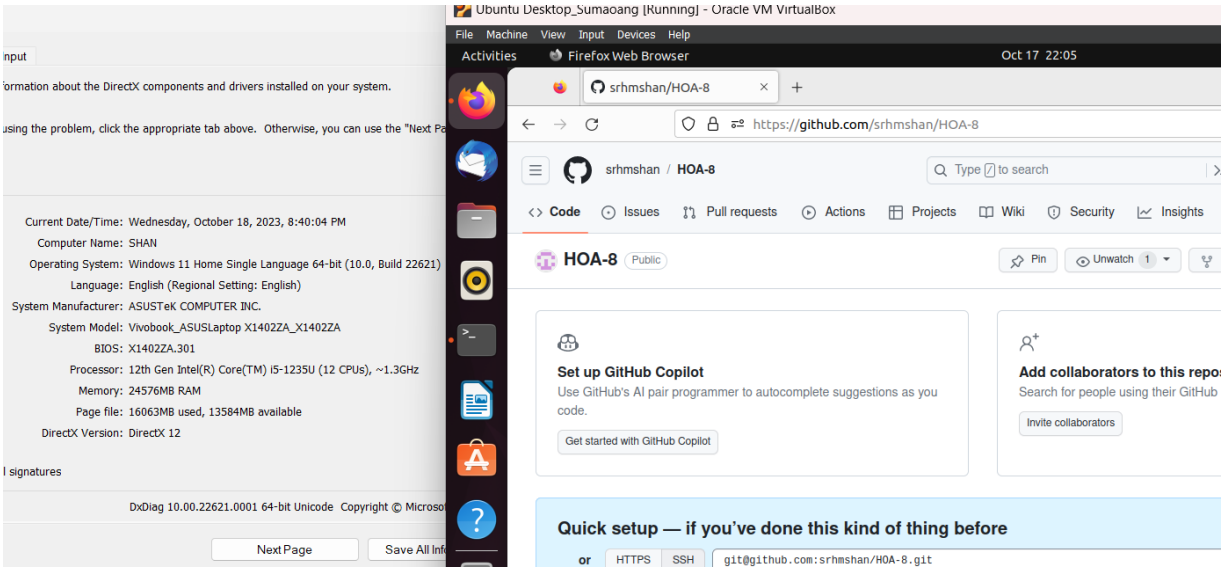
Availability monitoring is a type of monitoring tool that we use if the certain workload is up or reachable on our end. Site downtime can lead to loss of revenue, reputational damage and severe distress. Availability monitoring prevents adverse situations by checking the uptime of infrastructure components such as servers and apps and notifying the webmaster of problems before they impact on business.

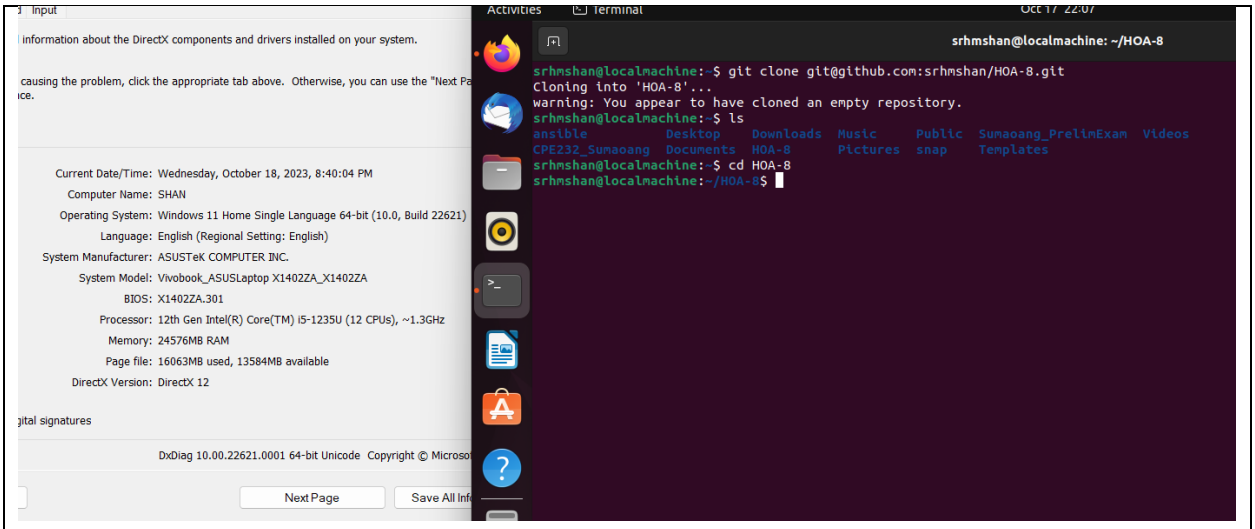
3. Tasks

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

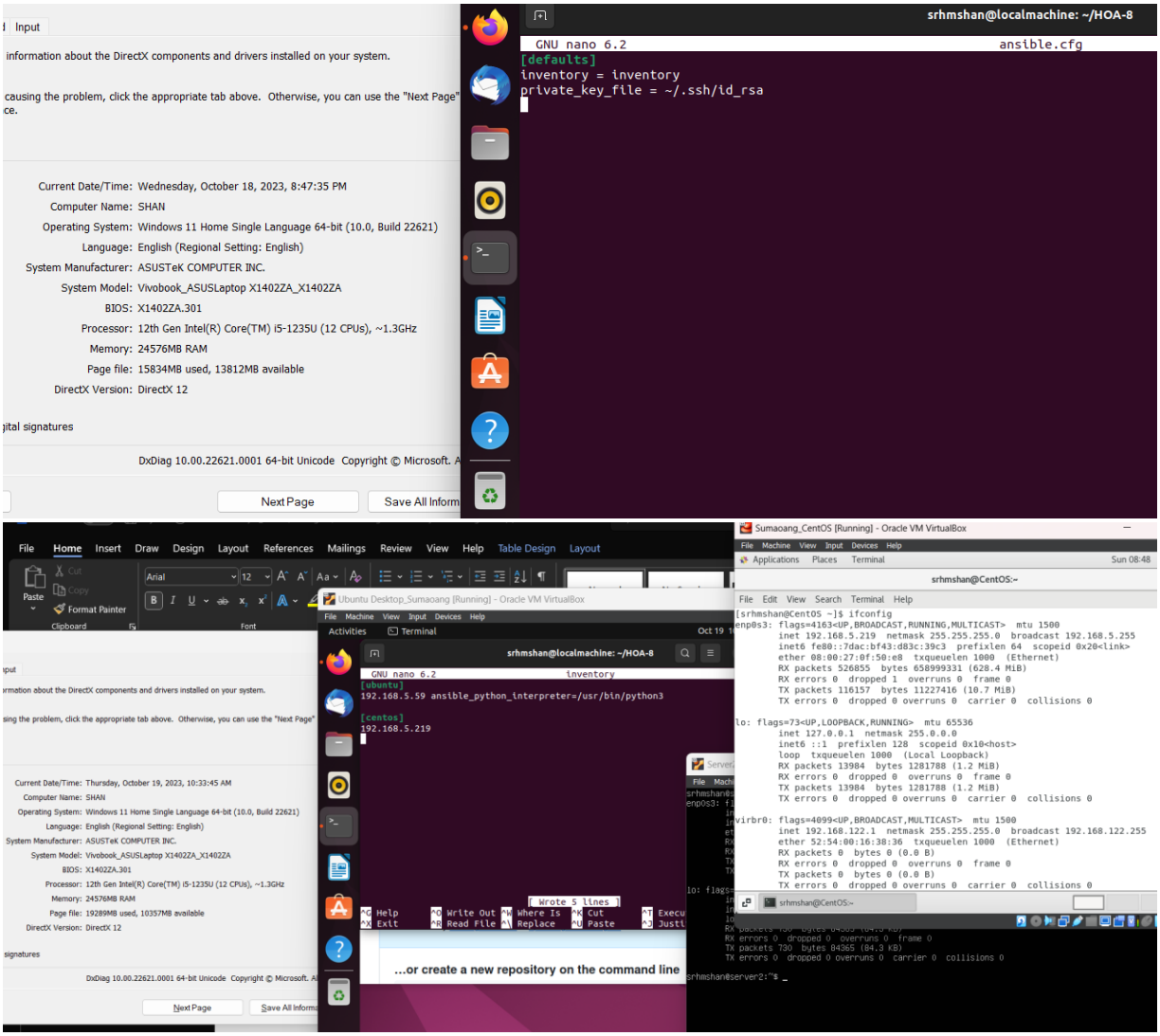
2. Describe how you did step 1. (Provide screenshots and explanations in your report. Make your report detailed such that it will look like a manual.)

Step 1: Create a new repository in GitHub for this activity. Adding anything to it is optional. Next, copy your new repository in your CN using the code in the 2nd image.

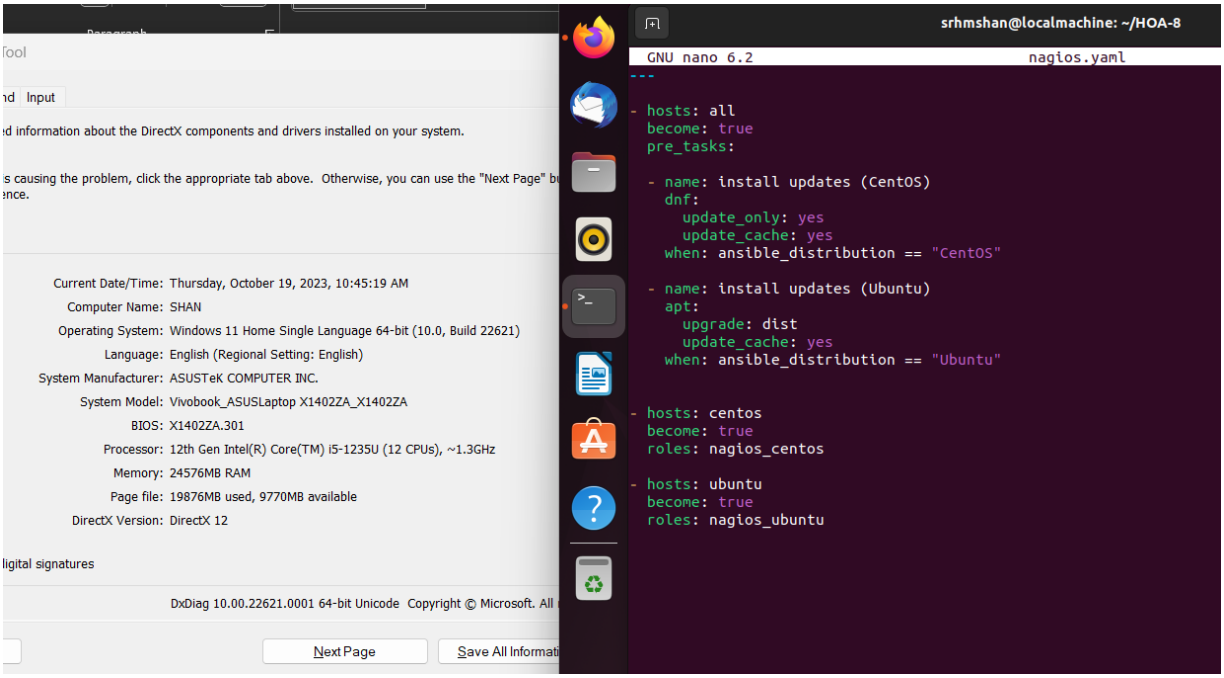




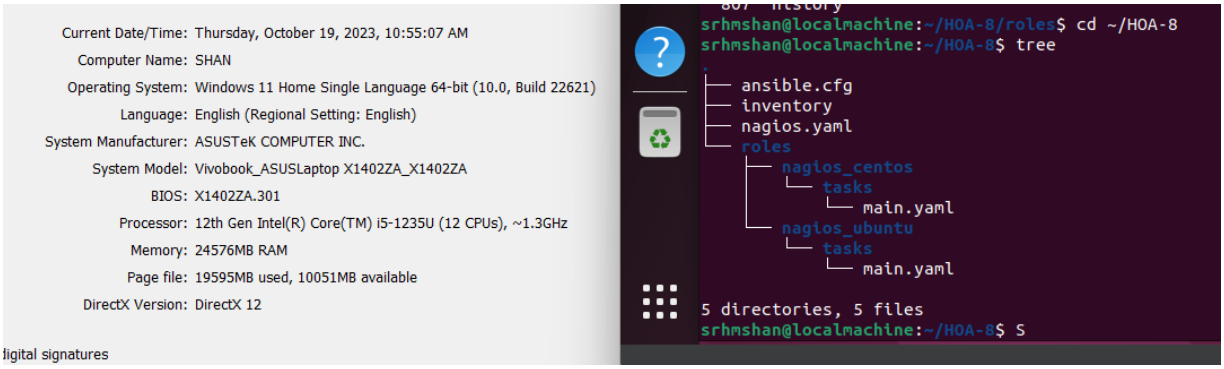
Step 2: Create your ansible.cfg and inventory files using the *sudo nano* command.



Step 3: Create a nagios.yaml file with the following command:

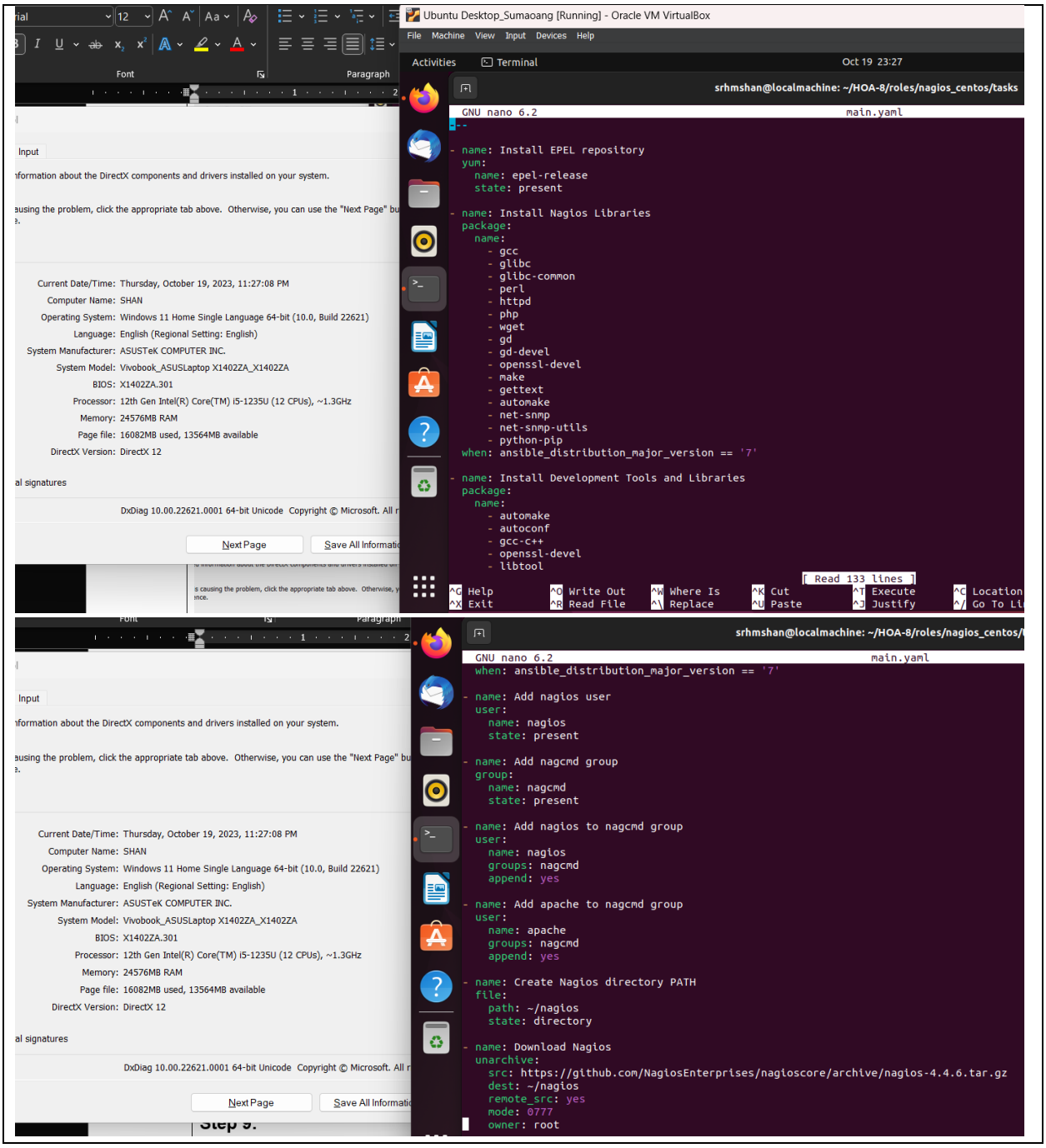


Step 4: Create a "roles" directory under your current directory. Under the "roles" directory, make 2 more directories according to the roles you defined in the nagios.yaml. Under each directory, create a "tasks" directory and make a "main.yaml" file.



Step 5: Edit your main.yaml files and input all the needed tasks to install Nagios, its libraries, dependencies and plugins.

[CentOS]


Ubuntu Desktop_Sumaoang [Running] - Oracle VM VirtualBox
File Machine View Input Devices Help
Activities
Terminal
Oct 19 23:27
srhmshan@localmachine: ~/HOA-8/roles/nagios_centos/tasks
GNU nano 6.2
main.yaml

- name: Install EPEL repository
yum:
name: epel-release
state: present
- name: Install Nagios Libraries
package:
name:
- gcc
- glibc
- glibc-common
- perl
- httpd
- php
- wget
- gd
- gd-devel
- openssl-devel
- make
- gettext
- automake
- net-snmp
- net-snmp-utils
- python-pip
when: ansible_distribution_major_version == '7'
- name: Install Development Tools and Libraries
package:
name:
- automake
- autoconf
- gcc-c++
- openssl-devel
- libtool
[Read 133 lines]
^G Help ^O Write Out ^W Where Is ^K Cut ^T Execute ^C Location
^X Exit ^R Read File ^\ Replace ^U Paste ^J Justify ^/ Go To Li
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formation about the DirectX components and drivers installed on your system.
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Current Date/Time: Thursday, October 19, 2023, 11:27:08 PM
Computer Name: SHAN
Operating System: Windows 11 Home Single Language 64-bit (10.0, Build 22621)
Language: English (Regional Setting: English)
System Manufacturer: ASUSTeK COMPUTER INC.
System Model: Vivobook_ASUSLaptop X1402ZA_X1402ZA
BIOS: X1402ZA.301
Processor: 12th Gen Intel(R) Core(TM) i5-1235U (12 CPUs), ~1.3GHz
Memory: 24576MB RAM
Page file: 16082MB used, 13564MB available
DirectX Version: DirectX 12
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Save All Informati
srhmshan@localmachine: ~/HOA-8/roles/nagios_centos/
GNU nano 6.2
main.yaml
when: ansible_distribution_major_version == '7'
- name: Add nagios user
user:
name: nagios
state: present
- name: Add nagcmd group
group:
name: nagcmd
state: present
- name: Add nagios to nagcmd group
user:
name: nagios
groups: nagcmd
append: yes
- name: Add apache to nagcmd group
user:
name: apache
groups: nagcmd
append: yes
- name: Create Nagios directory PATH
file:
path: ~/nagios
state: directory
- name: Download Nagios
unarchive:
src: https://github.com/NagiosEnterprises/nagioscore/archive/nagios-4.4.6.tar.gz
dest: ~/nagios
remote_src: yes
mode: 0777
owner: root
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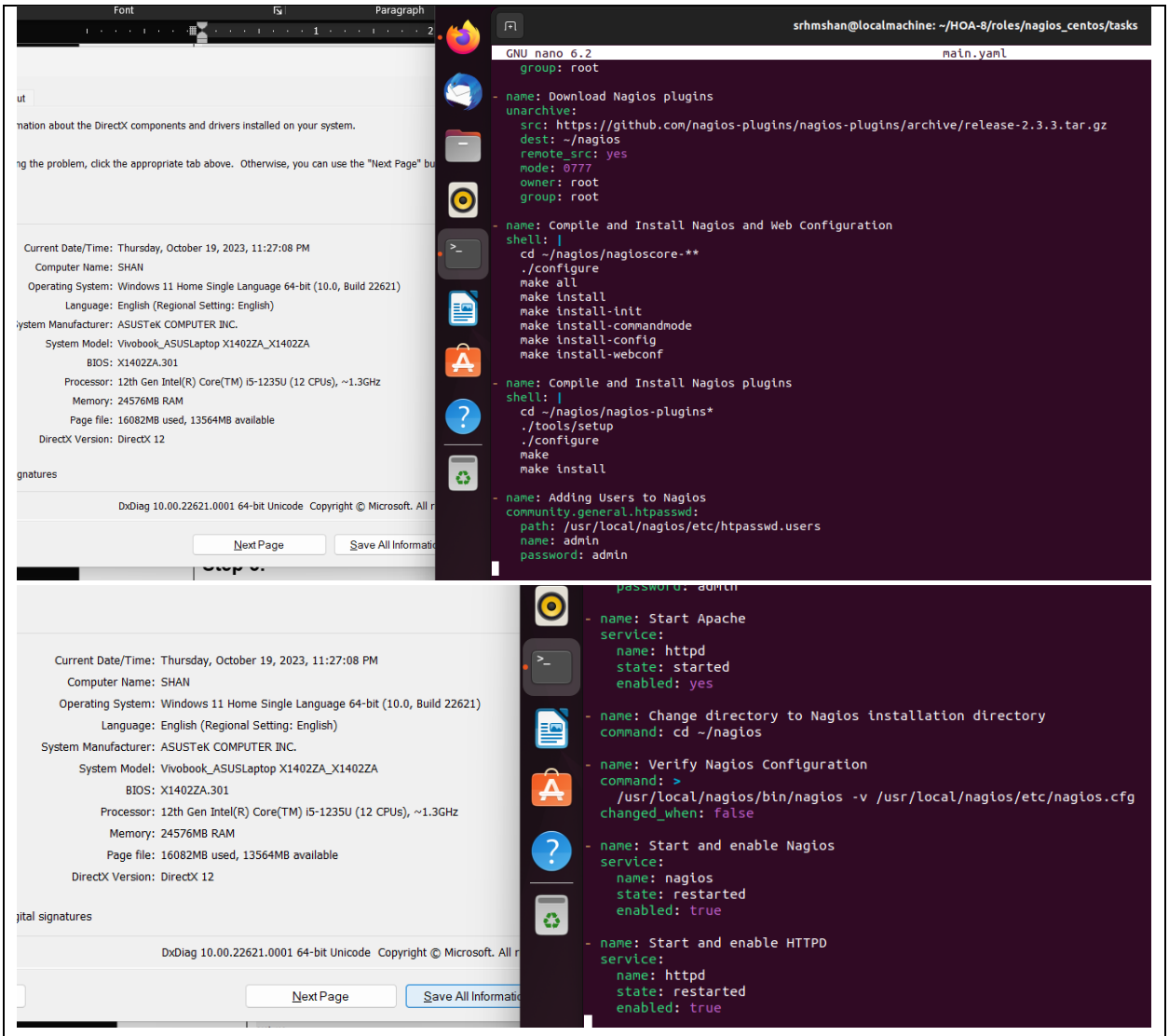
Step 9: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srhmshan@localmachine: ~/HOA-8/roles/nagios_centos/tasks
GNU nano 6.2
main.yaml
group: root
- name: Download Nagios plugins
unarchive:
src: https://github.com/nagios-plugins/nagios-plugins/archive/release-2.3.3.tar.gz
dest: ~/nagios
remote_src: yes
mode: 0777
owner: root
group: root
- name: Compile and Install Nagios and Web Configuration
shell: |
cd ~/nagios/nagioscore-**
./configure
make all
make install
make install-init
make install-commandmode
make install-config
make install-webconf
- name: Compile and Install Nagios 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
Current Date/Time: Thursday, October 19, 2023, 11:27:08 PM
Computer Name: SHAN
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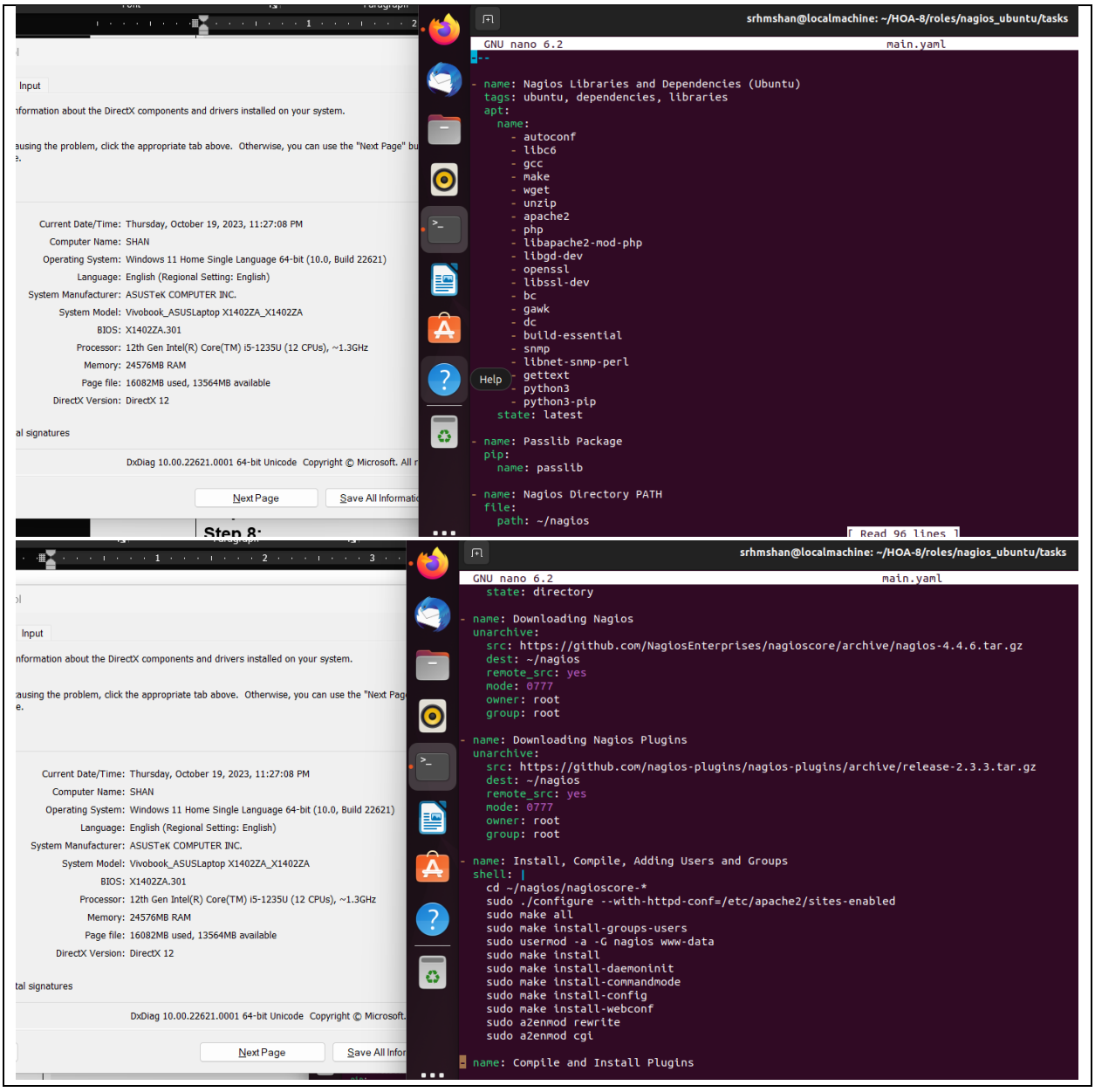
password: admin
- name: Start Apache
service:
name: httpd
state: started
enabled: yes
- name: Change directory to Nagios installation directory
command: cd ~/nagios
- name: Verify Nagios Configuration
command: >
/usr/local/nagios/bin/nagios -v /usr/local/nagios/etc/nagios.cfg
changed_when: false
- name: Start and enable Nagios
service:
name: nagios
state: restarted
enabled: true
- name: Start and enable HTTPD
service:
name: httpd
state: restarted
enabled: true

[Ubuntu]


srhmshan@localmachine: ~/HOA-8/roles/nagios_ubuntu/tasks
GNU nano 6.2 main.yaml

- 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
Help
[Read 96 lines]
Input
nformation about the DirectX components and drivers installed on your system.
ausing the problem, click the appropriate tab above. Otherwise, you can use the "Next Page" bu
Current Date/Time: Thursday, October 19, 2023, 11:27:08 PM
Computer Name: SHAN
Operating System: Windows 11 Home Single Language 64-bit (10.0, Build 22621)
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srhmshan@localmachine: ~/HOA-8/roles/nagios_ubuntu/tasks
GNU nano 6.2 main.yaml
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
Input
nformation about the DirectX components and drivers installed on your system.
ausing the problem, click the appropriate tab above. Otherwise, you can use the "Next Pag
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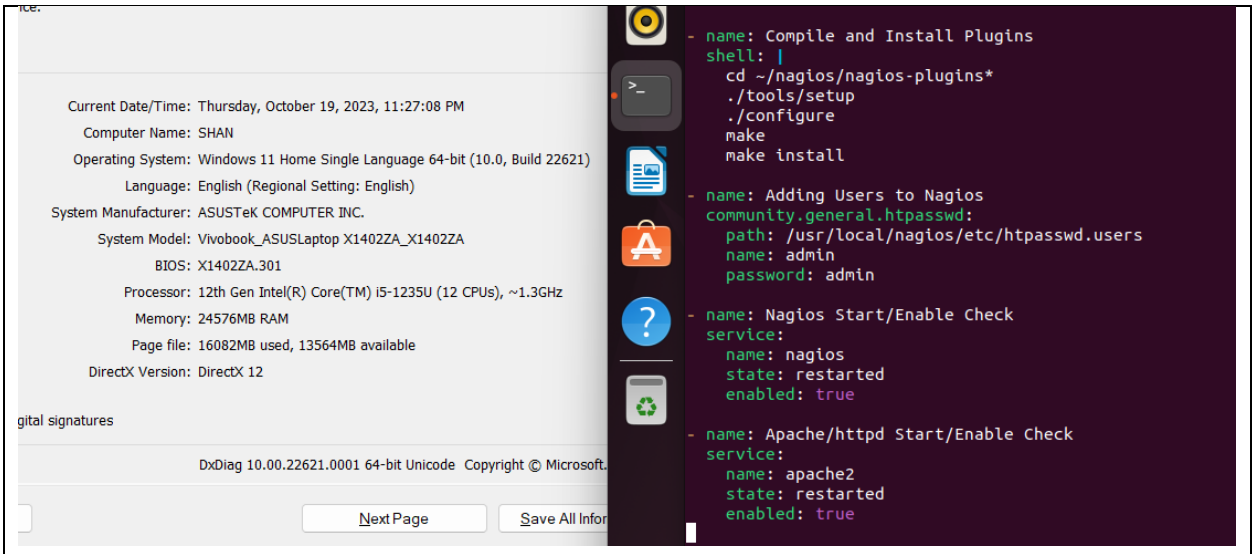
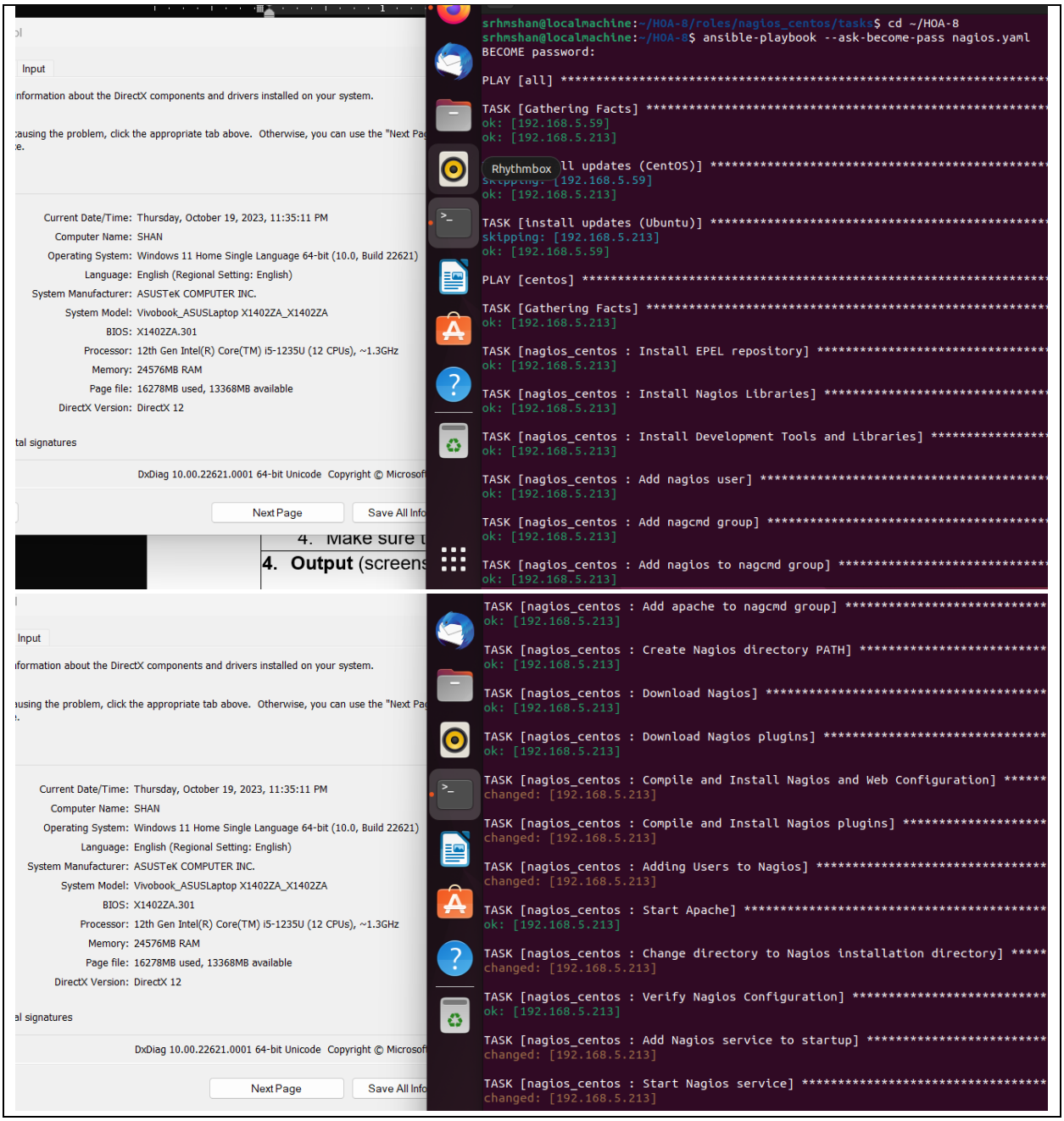


Step 6: Run the ansible playbook.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information about the DirectX components and drivers installed on your system.
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Computer Name: SHAN
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BIOS: X1402ZA.301
Processor: 12th Gen Intel(R) Core(TM) i5-1235U (12 CPUs), ~1.3GHz
Memory: 24576MB RAM
Page file: 16278MB used, 13368MB available
DirectX Version: DirectX 12
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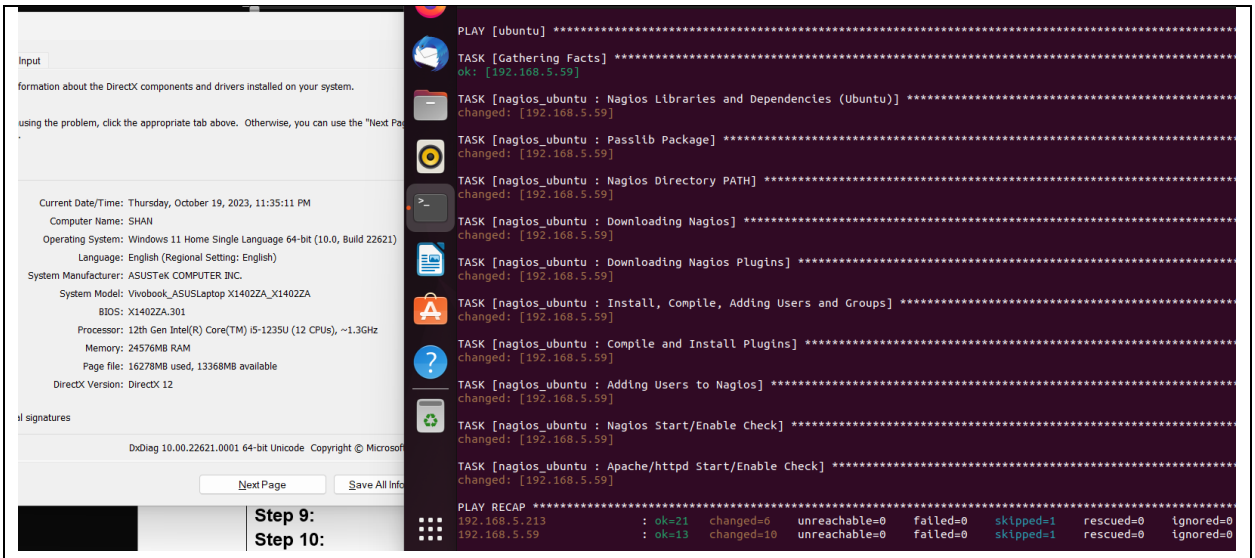
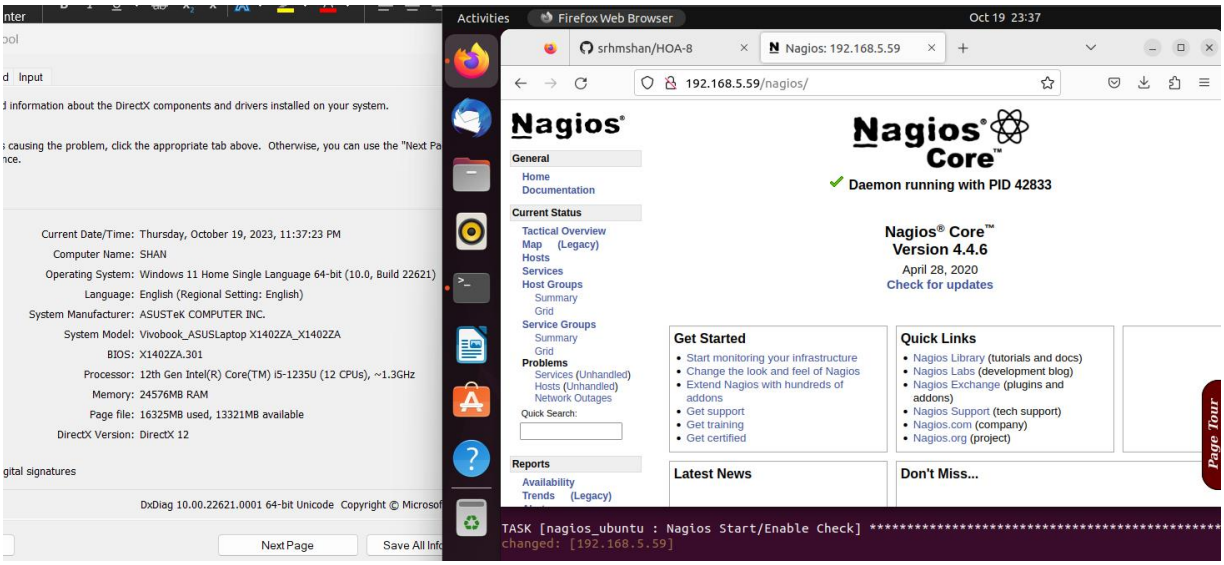
Save All Info
4. Output (screens
srhmshan@localmachine:~/HOA-8/roles/nagios_centos/tasks$ cd ~/HOA-8
srhmshan@localmachine:~/HOA-8$ ansible-playbook --ask-become-pass nagios.yaml
BECOME password:
PLAY [all]
TASK [Gathering Facts]
ok: [192.168.5.59]
ok: [192.168.5.213]
Rhythmbox
TASK [install updates (Ubuntu)]
skipping: [192.168.5.213]
ok: [192.168.5.59]
PLAY [centos]
TASK [Gathering Facts]
ok: [192.168.5.213]
TASK [nagios_centos : Install EPEL repository]
ok: [192.168.5.213]
TASK [nagios_centos : Install Nagios Libraries]
ok: [192.168.5.213]
TASK [nagios_centos : Install Development Tools and Libraries]
ok: [192.168.5.213]
TASK [nagios_centos : Add nagios user]
ok: [192.168.5.213]
TASK [nagios_centos : Add nagcmd group]
ok: [192.168.5.213]
TASK [nagios_centos : Add nagios to nagcmd group]
ok: [192.168.5.213]
TASK [nagios_centos : Add apache to nagcmd group]
ok: [192.168.5.213]
TASK [nagios_centos : Create Nagios directory PATH]
ok: [192.168.5.213]
TASK [nagios_centos : Download Nagios]
ok: [192.168.5.213]
TASK [nagios_centos : Download Nagios plugins]
ok: [192.168.5.213]
TASK [nagios_centos : Compile and Install Nagios and Web Configuration]
changed: [192.168.5.213]
TASK [nagios_centos : Compile and Install Nagios plugins]
changed: [192.168.5.213]
TASK [nagios_centos : Adding Users to Nagios]
changed: [192.168.5.213]
TASK [nagios_centos : Start Apache]
ok: [192.168.5.213]
TASK [nagios_centos : Change directory to Nagios installation directory]
changed: [192.168.5.213]
TASK [nagios_centos : Verify Nagios Configuration]
ok: [192.168.5.213]
TASK [nagios_centos : Add Nagios service to startup]
changed: [192.168.5.213]
TASK [nagios_centos : Start Nagios service]
changed: [192.168.5.213]



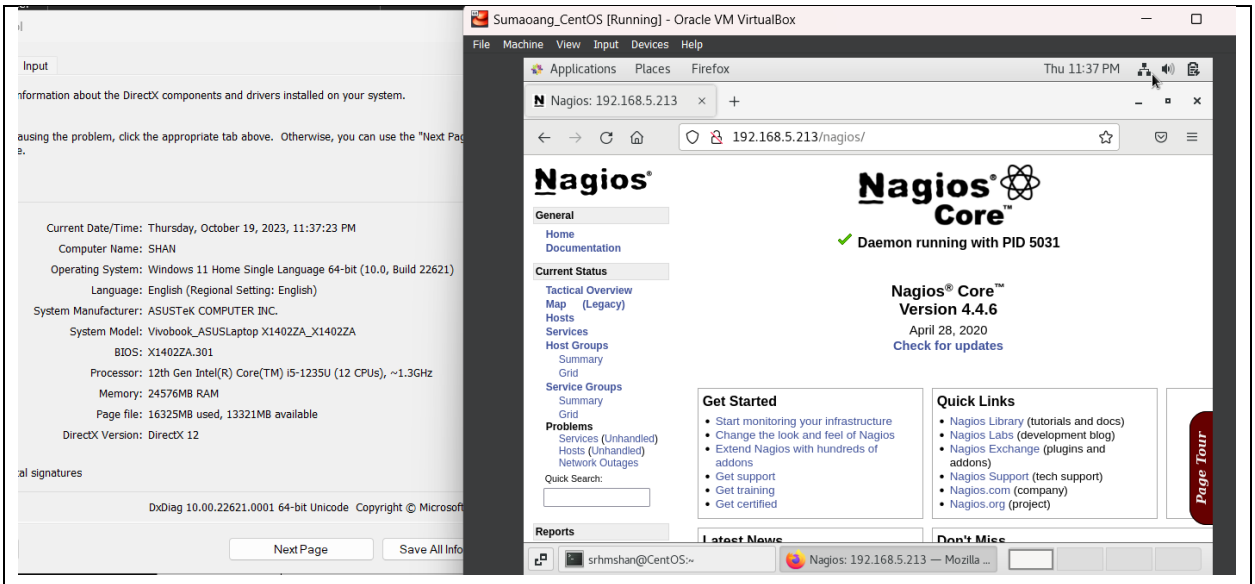
3. Show an output of the installed Nagios for both Ubuntu and CentOS.

Put in your browser: https://[ip address]/nagios

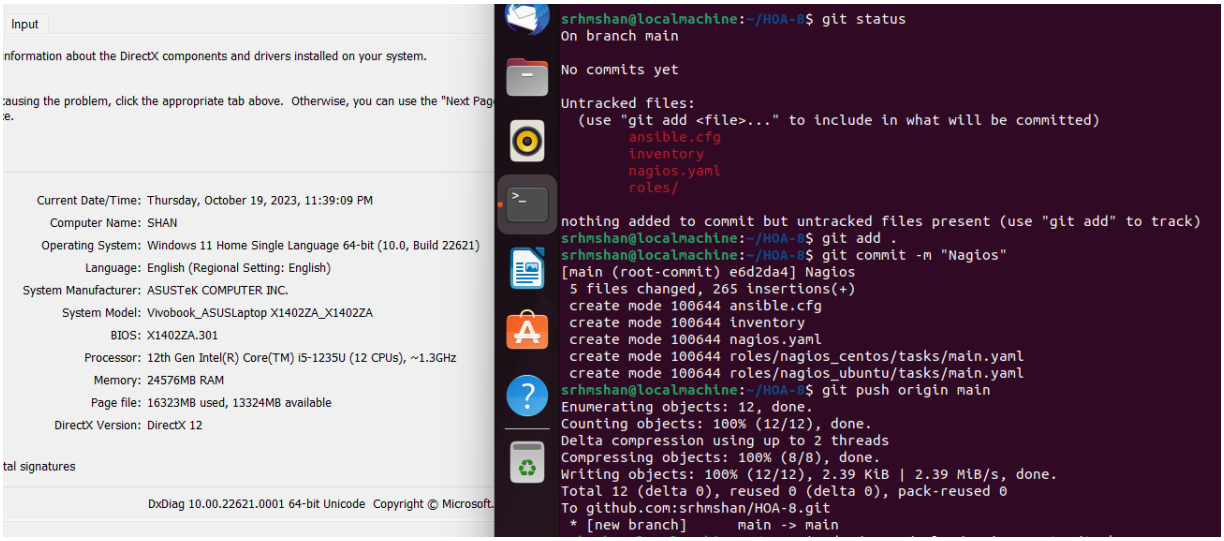
[Ubuntu]

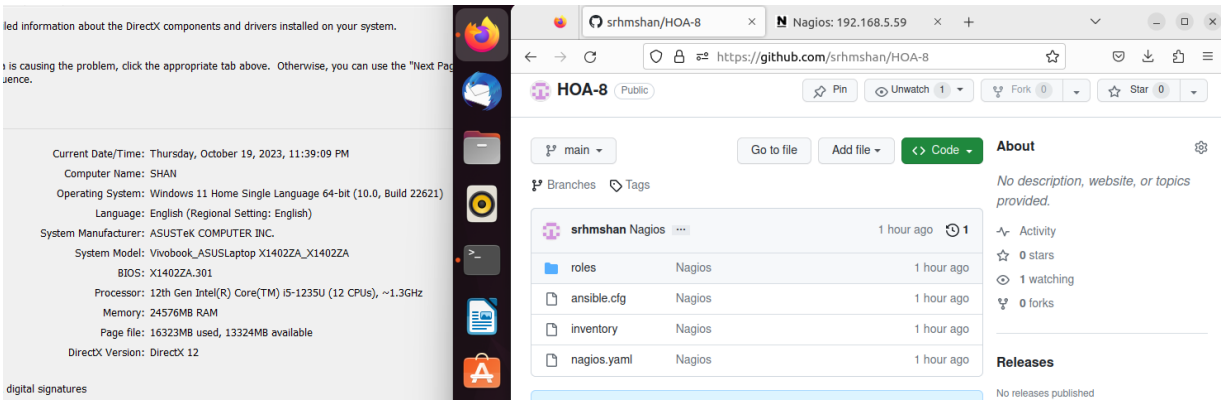


[CentOS]



4. Make sure to create a new repository in GitHub for this activity.





Reflections:

Answer the following:

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

An availability monitoring tool like Nagios has some clear advantages. It helps keep systems and services up and running smoothly by checking on their health around the clock. This proactive approach helps identify and fix problems before they disrupt operations, keeping things running smoothly and users happy. Plus, it saves money by making sure resources are used wisely, as you can address issues before they become major headaches. In short, these tools keep everything ticking along nicely, helping your IT setup stay reliable and efficient.

Conclusions:

In this activity, I created Ansible playbooks for setting up Nagios on both CentOS and Ubuntu servers using roles. I had to consider the different ways each system manages packages, like using 'yum' for CentOS and 'apt' for Ubuntu, and ensure proper user and group management for security. I learned how to download and install Nagios, deal with unexpected challenges like installing 'python-pip2', and understand the importance of the EPEL repository for CentOS (for downloading Nagios). Overall, this experience helped me become more proficient in automating system tasks, making software setup and management simpler and consistent across various Linux systems.