Name: Victor B. Ortega	**Date Performed:** 10/24/23
Course/Section: CPE31S5	**Date Submitted:** 10/24/23
Instructor: Engr. Roman Richard	**Semester and SY:** 2023-2024

Activity 9: Install, Configure, and Manage Performance Monitoring tools

1. Objectives

Create and design a workflow that installs, configure and manage enterprise performance tools using Ansible as an Infrastructure as Code (IaC) tool.

2. Discussion

Performance monitoring is a type of monitoring tool that identifies current resource consumption of the workload, in this page we will discuss multiple performance monitoring tool.

Prometheus

Prometheus fundamentally stores all data as time series: streams of timestamped values belonging to the same metric and the same set of labeled dimensions. Besides stored time series, Prometheus may generate temporary derived time series as the result of queries. Source: Prometheus - Monitoring system & time series database

Cacti

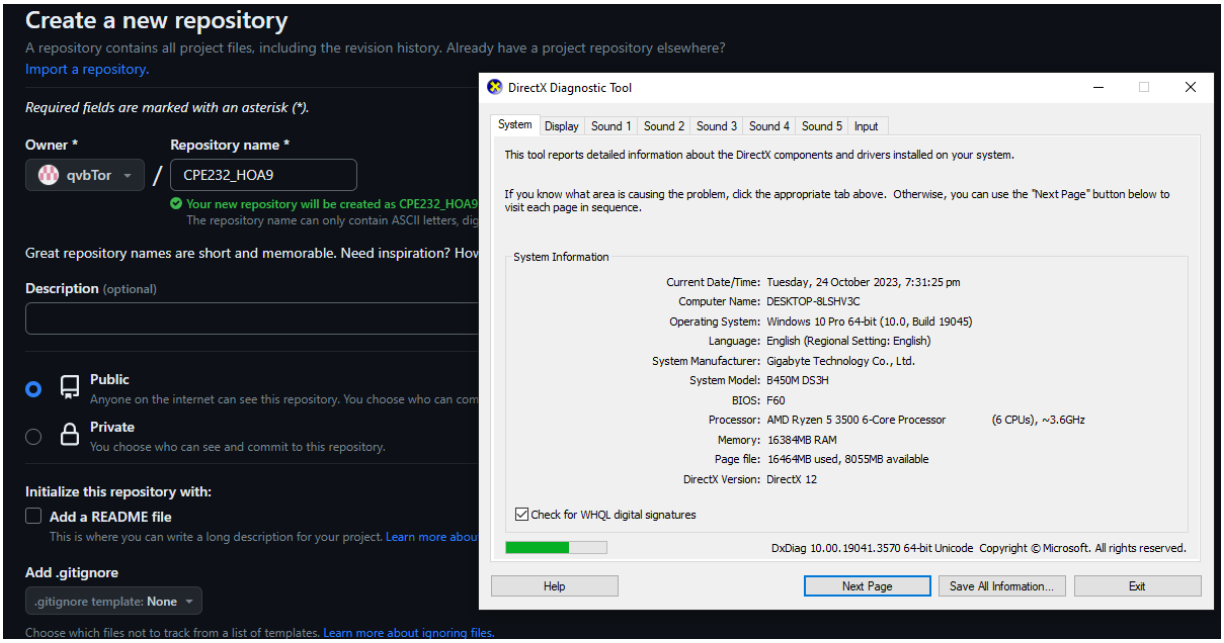
Cacti is a complete network graphing solution designed to harness the power of RRDTool's data storage and graphing functionality. Cacti provides a fast poller, advanced graph templating, multiple data acquisition methods, and user management features out of the box. All of this is wrapped in an intuitive, easy to use interface that makes sense for LAN-sized installations up to complex networks with thousands of devices. Source: Cacti® - The Complete RRDTool-based Graphing Solution

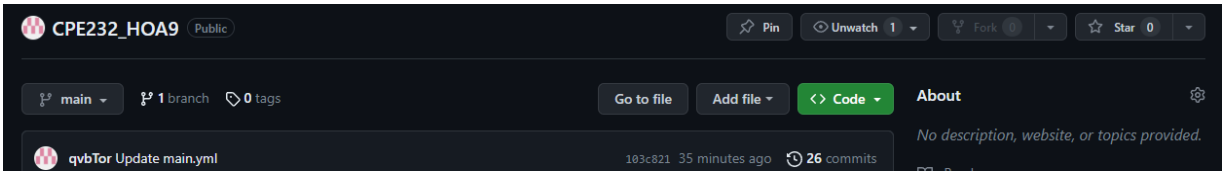
3. Tasks

1. Create a playbook that installs Prometheus 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 Prometheus for both Ubuntu and CentOS.
4. Make sure to create a new repository in GitHub for this activity.

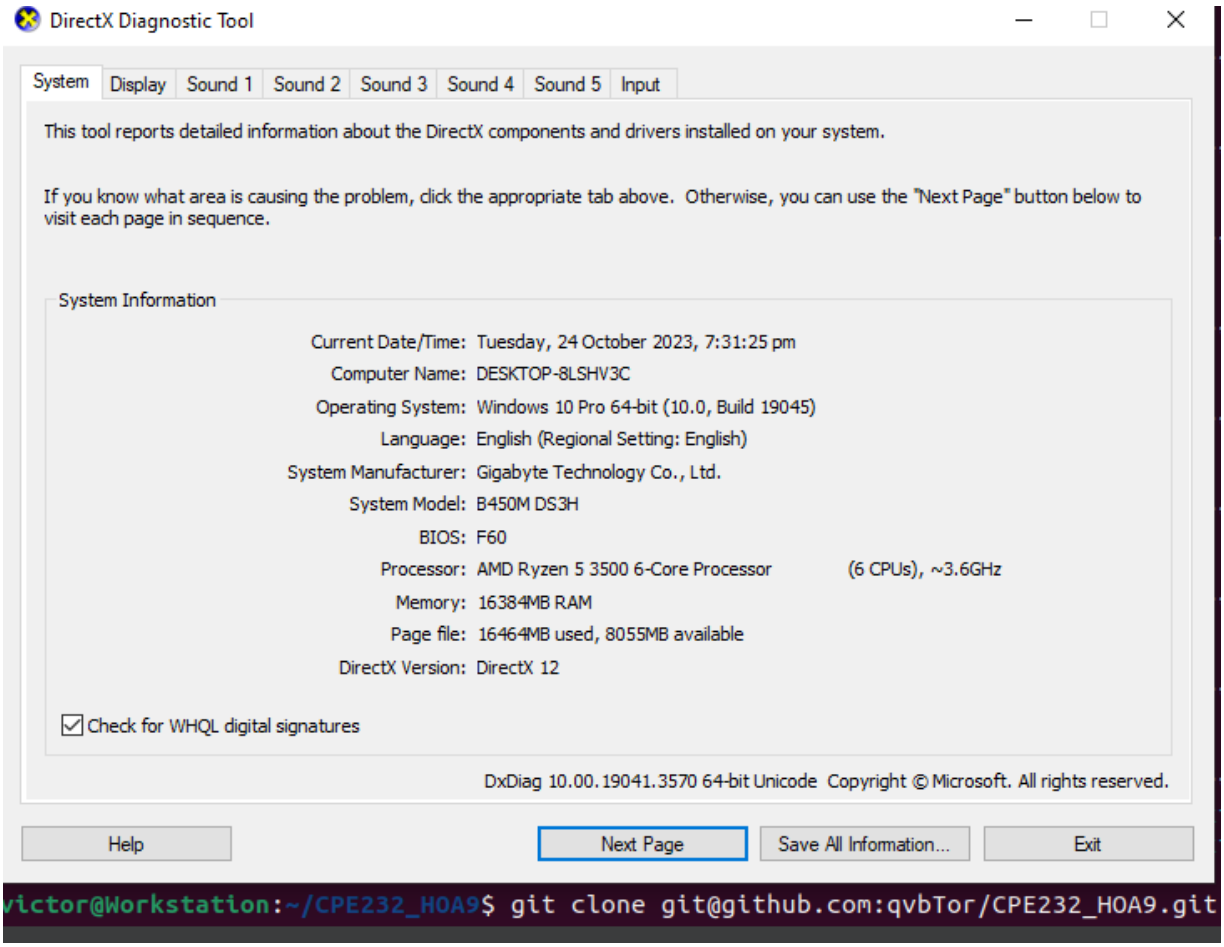
4. Output (screenshots and explanations)

Step 1: Making a repository.

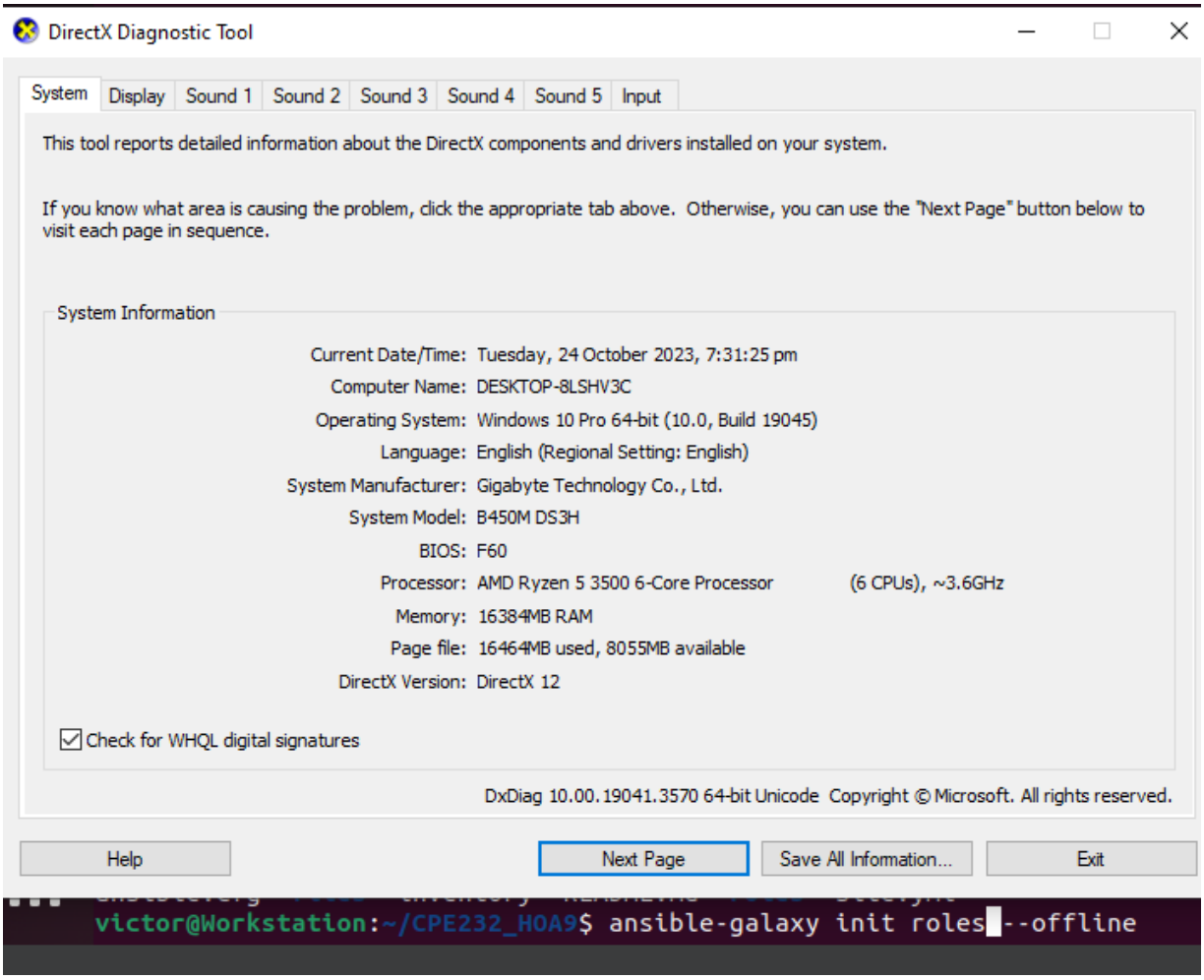


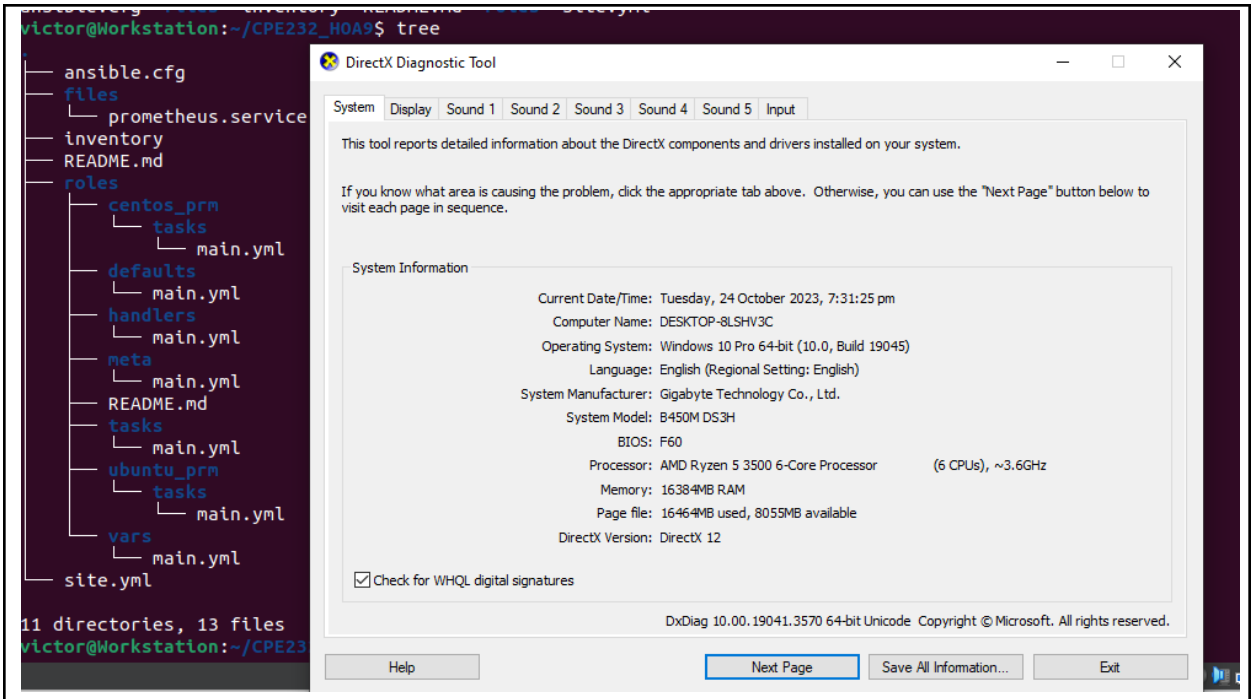


Step 2: git cloning



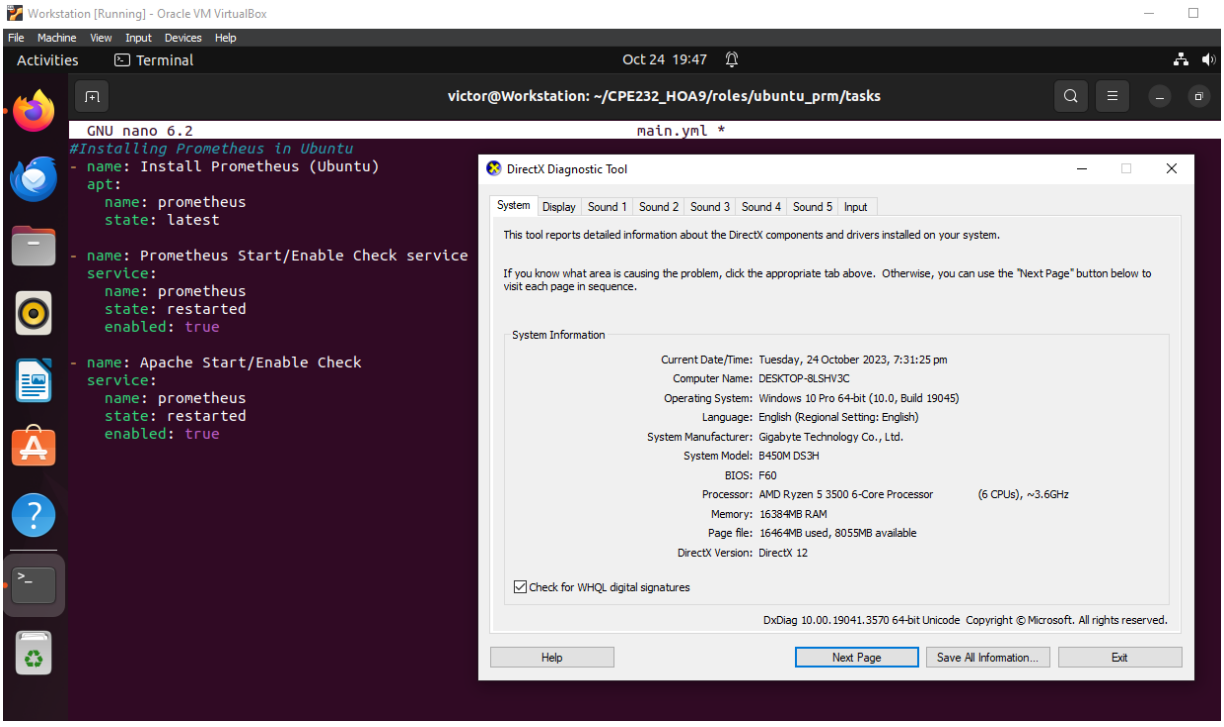
Step 3: Setting up for playbook such as ansible.cfg and inventory then creating galaxy as well.



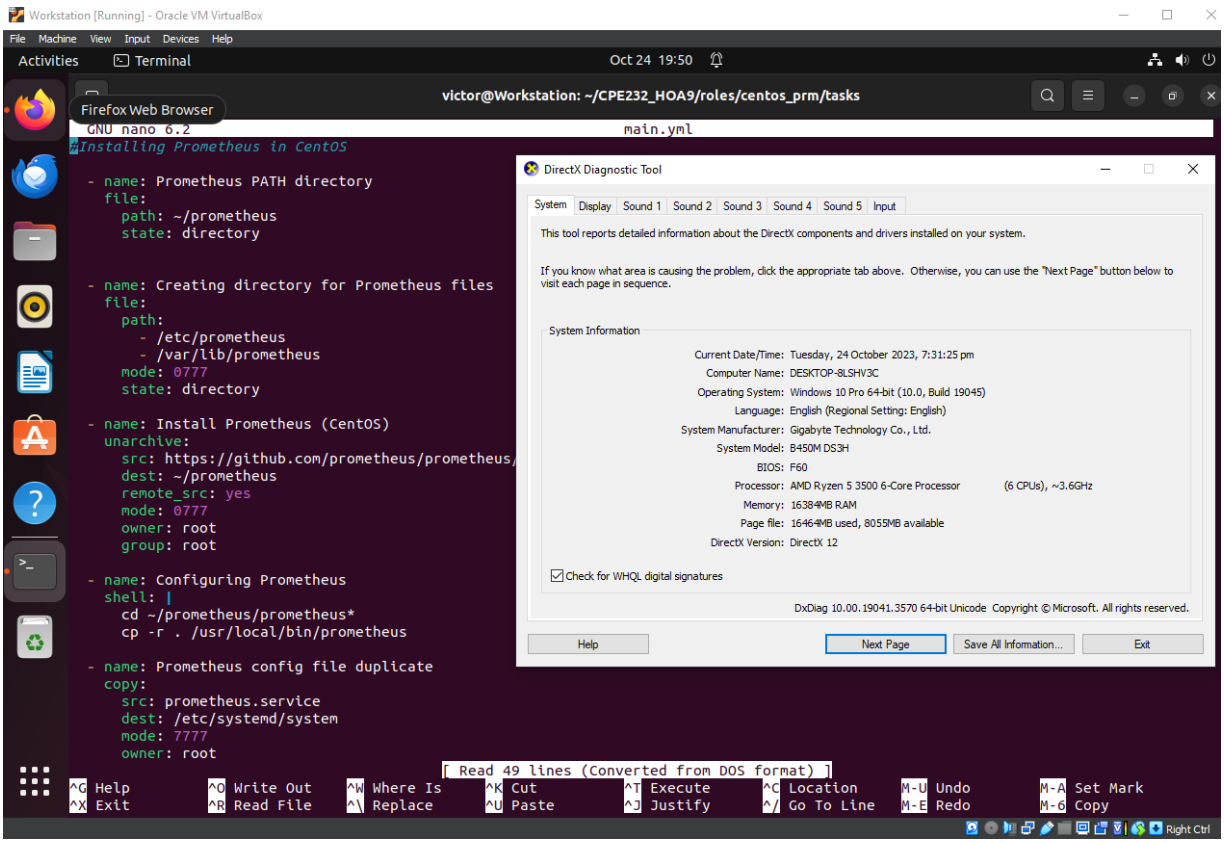


Step 4: Creating main.yml, and adding installation command of prometheus both ubuntu and centos.

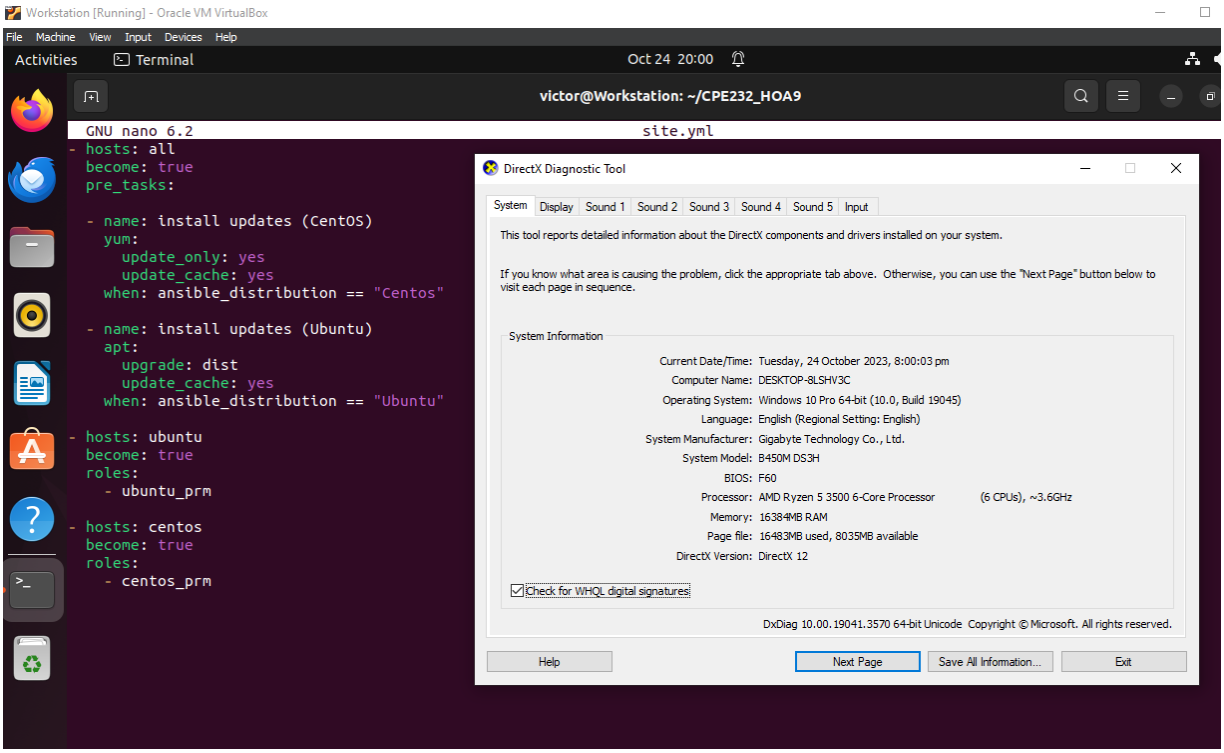
Ubuntu:



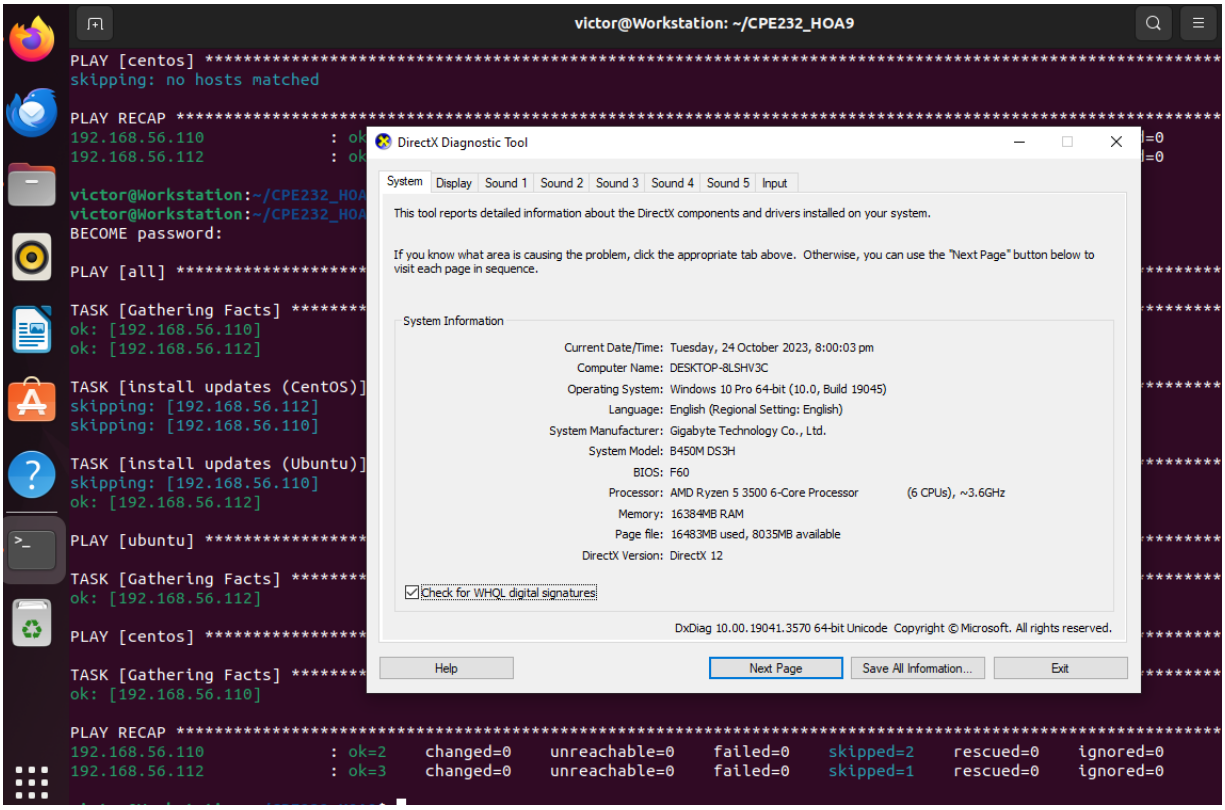
Centos:


Workstation [Running] - Oracle VM VirtualBox
File Machine View Input Devices Help
Activities
Terminal
Oct 24 19:50
Firefox Web Browser
victor@Workstation: ~/CPE232_HOA9/roles/centos_prm/tasks
GNU nano 6.2
main.yml
#Installing Prometheus in CentOS
- name: Prometheus PATH directory
file:
path: ~/prometheus
state: directory
- name: Creating directory for Prometheus files
file:
path:
- /etc/prometheus
- /var/lib/prometheus
mode: 0777
state: directory
- name: Install Prometheus (CentOS)
unarchive:
src: https://github.com/prometheus/prometheus/
dest: ~/prometheus
remote_src: yes
mode: 0777
owner: root
group: root
- name: Configuring Prometheus
shell: |
cd ~/prometheus/prometheus*
cp -r . /usr/local/bin/prometheus
- name: Prometheus config file duplicate
copy:
src: prometheus.service
dest: /etc/systemd/system
mode: 7777
owner: root
[Read 49 lines (Converted from DOS format)]
^G Help ^O Write Out ^W Where Is ^K Cut ^T Execute ^C Location M-U Undo M-A Set Mark
^X Exit ^R Read File ^\ Replace ^U Paste ^J Justify ^/ Go To Line M-E Redo M-6 Copy
DirectX Diagnostic Tool
System Display Sound 1 Sound 2 Sound 3 Sound 4 Sound 5 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: Tuesday, 24 October 2023, 7:31:25 pm
Computer Name: DESKTOP-8LSHV3C
Operating System: Windows 10 Pro 64-bit (10.0, Build 19045)
Language: English (Regional Setting: English)
System Manufacturer: Gigabyte Technology Co., Ltd.
System Model: B450M DS3H
BIOS: F60
Processor: AMD Ryzen 5 3500 6-Core Processor (6 CPUs), ~3.6GHz
Memory: 16384MB RAM
Page file: 16464MB used, 8055MB 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
Right Ctrl

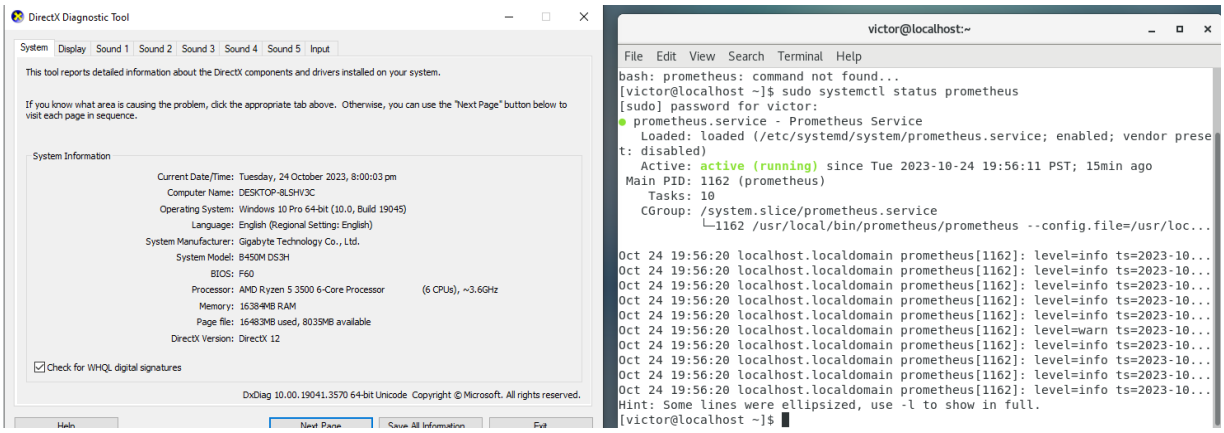
Setup 6: Calling the main.yml under centos_prm and ubuntu_prm directories using roles.

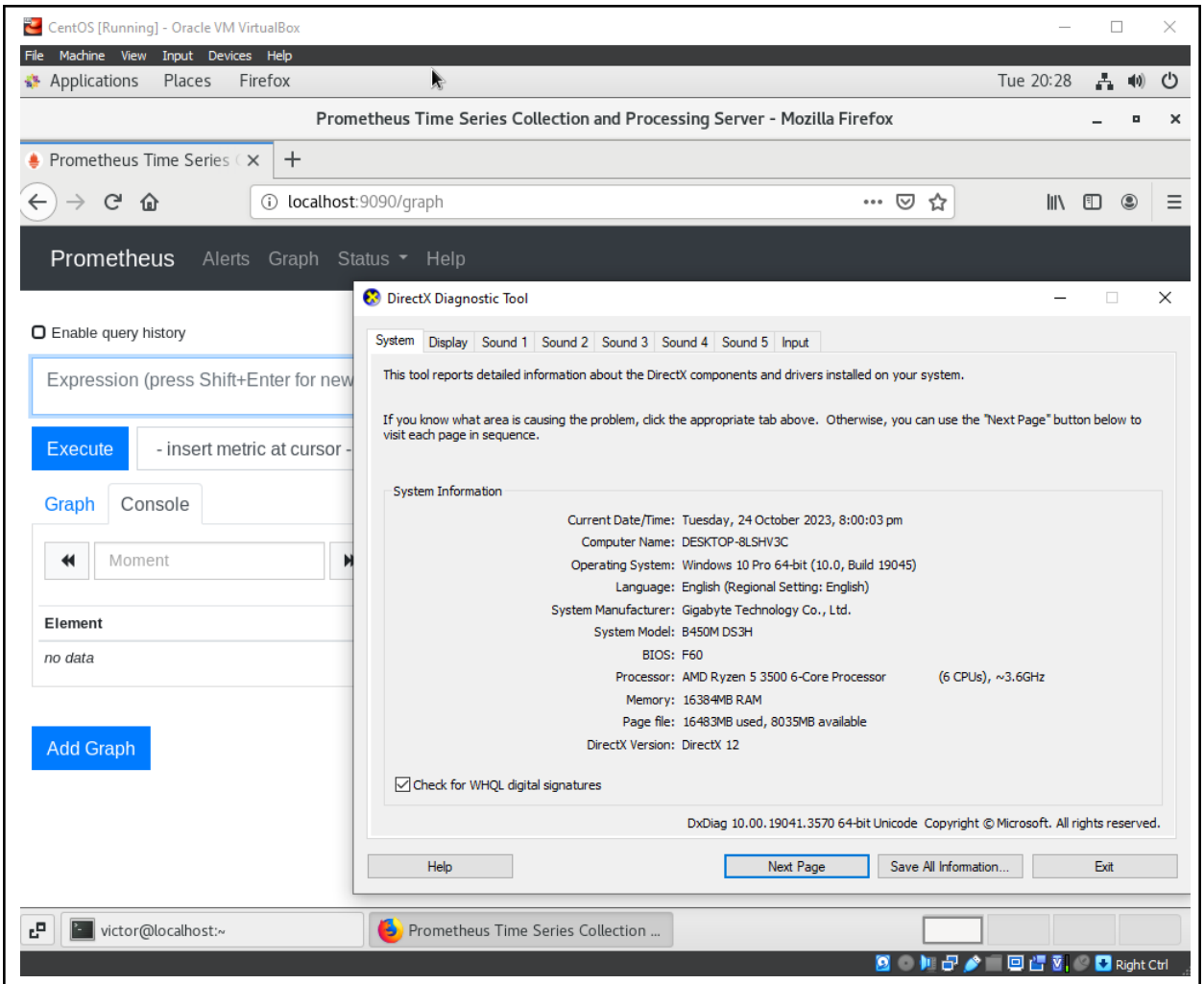


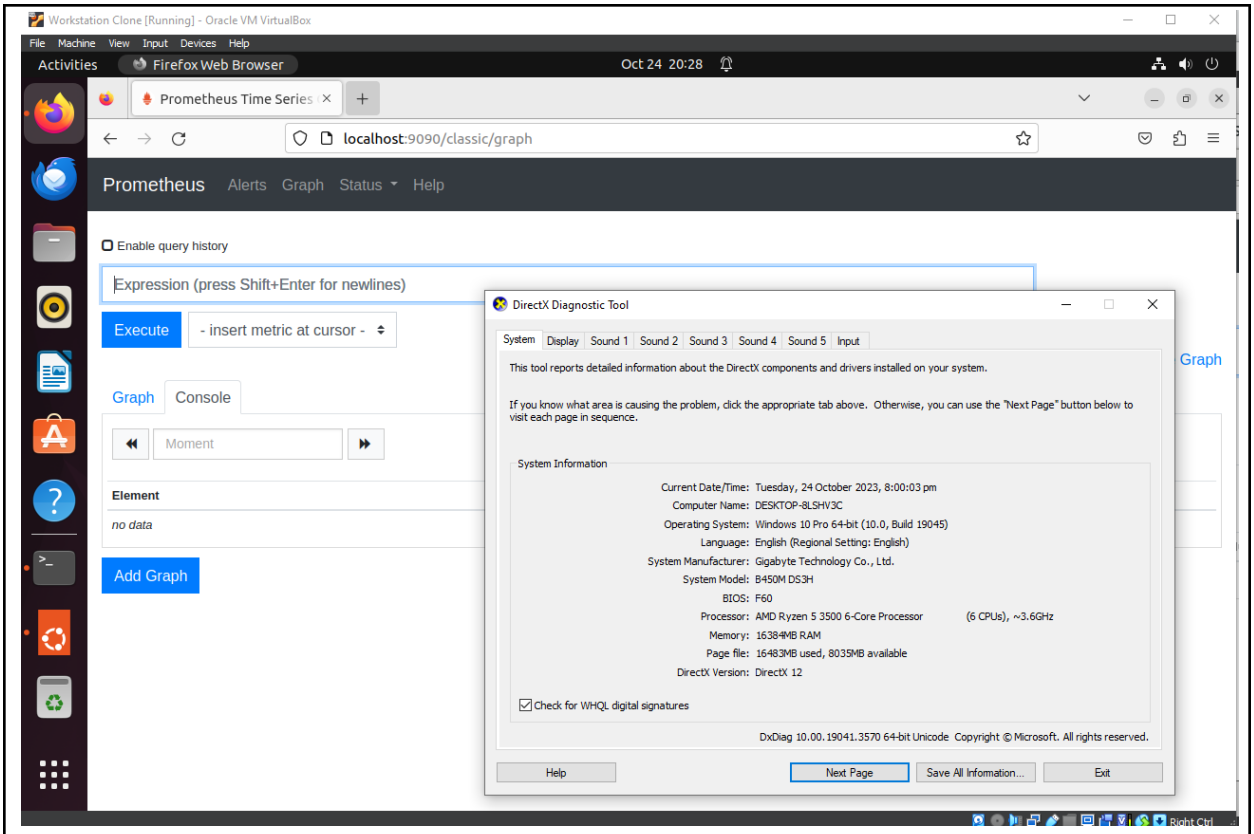
Step 7: Run the playbook.



Step 8: Checking if prometheus is installed.




CentOS [Running] - Oracle VM VirtualBox
File Machine View Input Devices Help
Applications Places Firefox
Tue 20:28
Prometheus Time Series Collection and Processing Server - Mozilla Firefox
Prometheus Time Series
localhost:9090/graph
Prometheus Alerts Graph Status Help
Enable query history
Expression (press Shift+Enter for new
Execute
- insert metric at cursor -
Graph Console
Moment
Element
no data
Add Graph
DirectX Diagnostic Tool
System Display Sound 1 Sound 2 Sound 3 Sound 4 Sound 5 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: Tuesday, 24 October 2023, 8:00:03 pm
Computer Name: DESKTOP-8LSHV3C
Operating System: Windows 10 Pro 64-bit (10.0, Build 19045)
Language: English (Regional Setting: English)
System Manufacturer: Gigabyte Technology Co., Ltd.
System Model: B450M DS3H
BIOS: F60
Processor: AMD Ryzen 5 3500 6-Core Processor (6 CPUs), ~3.6GHz
Memory: 16384MB RAM
Page file: 16483MB used, 8035MB 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
victor@localhost:~
Prometheus Time Series Collection ...
Right Ctrl


Workstation Clone [Running] - Oracle VM VirtualBox
File Machine View Input Devices Help
Activities
Firefox Web Browser
Oct 24 20:28
Prometheus Time Series
localhost:9090/classic/graph
Prometheus
Alerts
Graph
Status
Help
Enable query history
Expression (press Shift+Enter for newlines)
Execute
- insert metric at cursor -
Graph
Console
Moment
Element
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System
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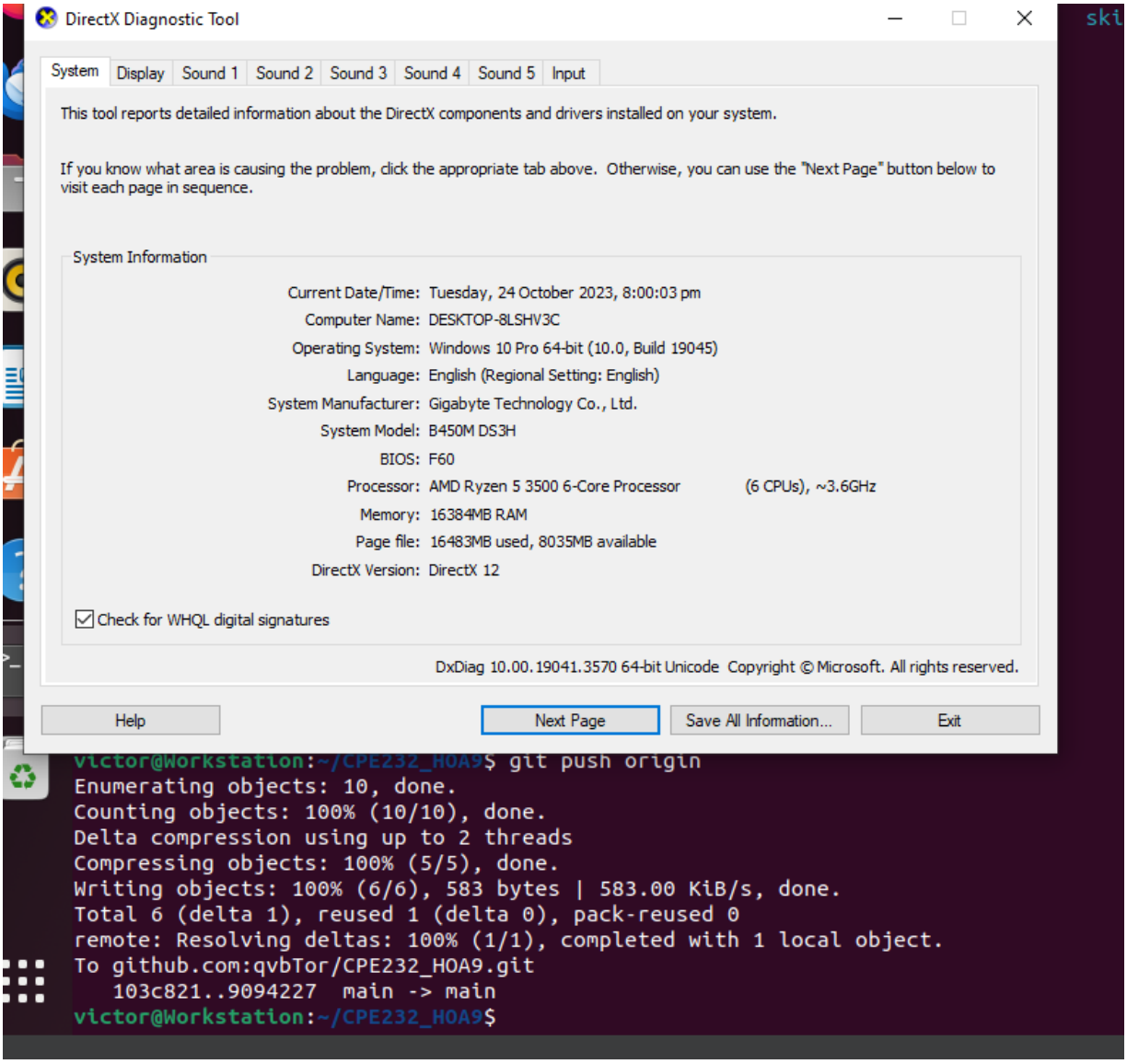
Check for WHQL digital signatures
DxDiag 10.00.19041.3570 64-bit Unicode Copyright © Microsoft. All rights reserved.
Help
Next Page
Save All Information...
Exit
Right Ctrl

Step 9: Updating git repository.



Reflections:

Answer the following:

1. What are the benefits of having a performance monitoring tool?

System performance monitoring tools proactively detect and promptly resolve potential problems, preventing over-provisioning and underutilization of hardware. This optimizes resource allocation, resulting in a smoother user experience, increased satisfaction, and strategic cost savings.

Conclusions:

Therefore, using Prometheus playbook roles streamlines the deployment of a comprehensive performance monitoring system. This enables proactive problem resolution, effective resource allocation, resulting in an enhanced user experience. Moreover, the tool's trend analysis capabilities further empower strategic decision-making, contributing to sustainable cost savings and operational excellence.