Name: Quizon, Nowell Gabriel C.	**Date Performed:** 10/24/2023
Course/Section: CPE31S5	**Date Submitted:** 10/ /2023
Instructor: Engr. Roman Richard	**Semester and SY: 1st and 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 timeseries: 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

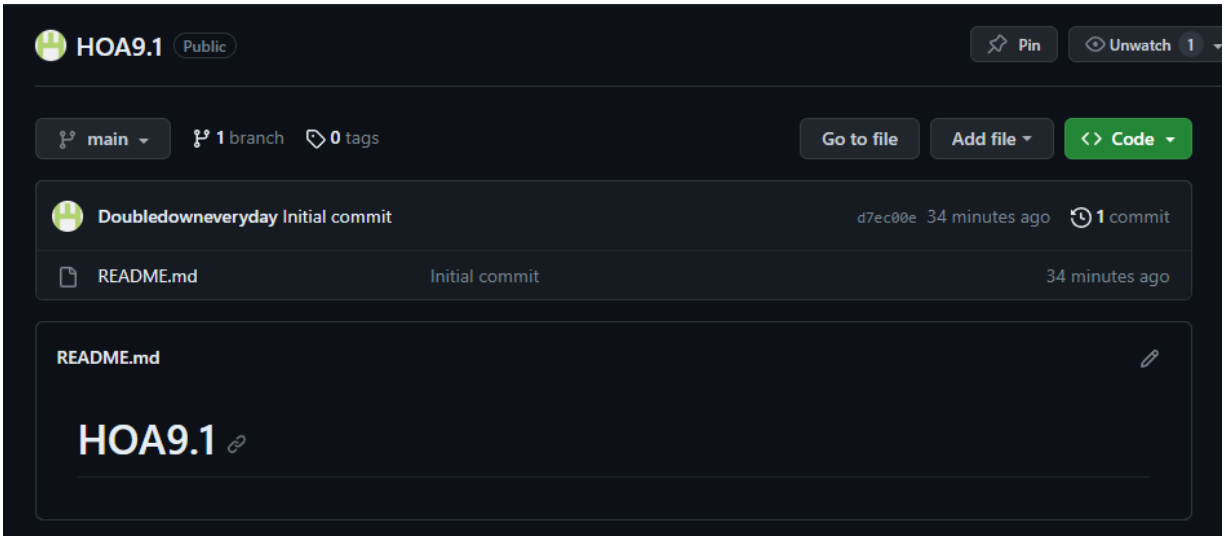
Cacti

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.

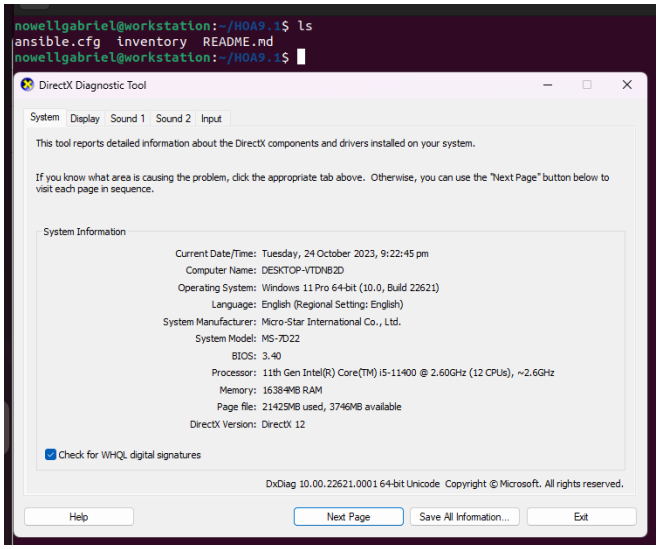
4. Output (screenshots and explanations)



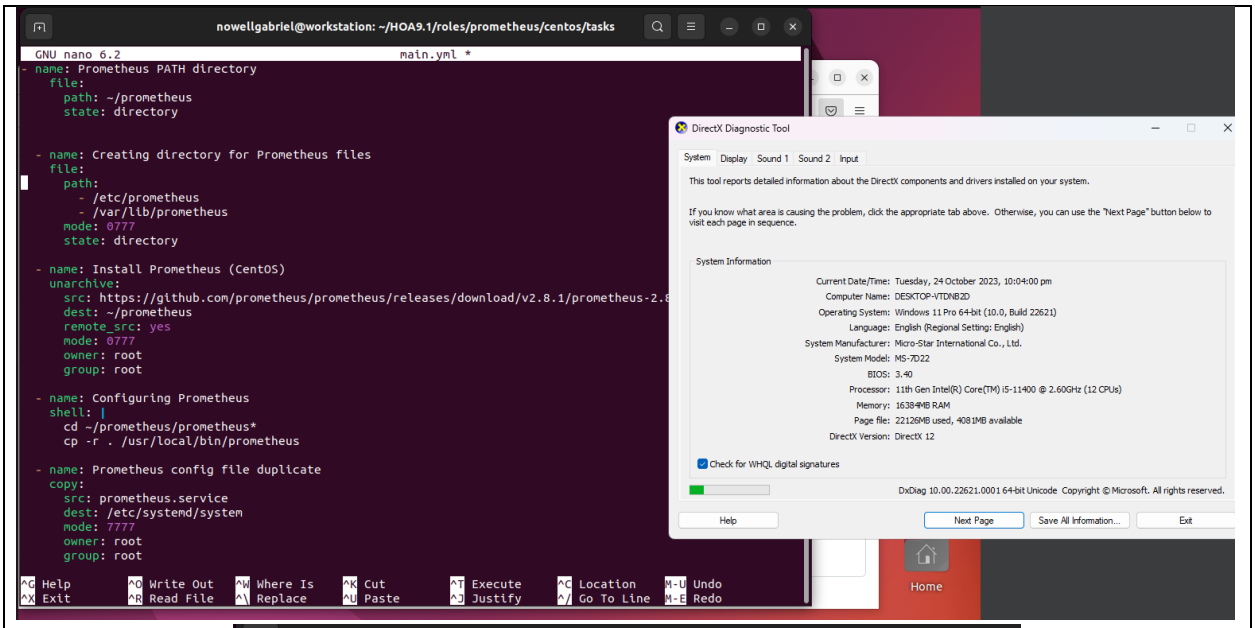
- Created a new repository

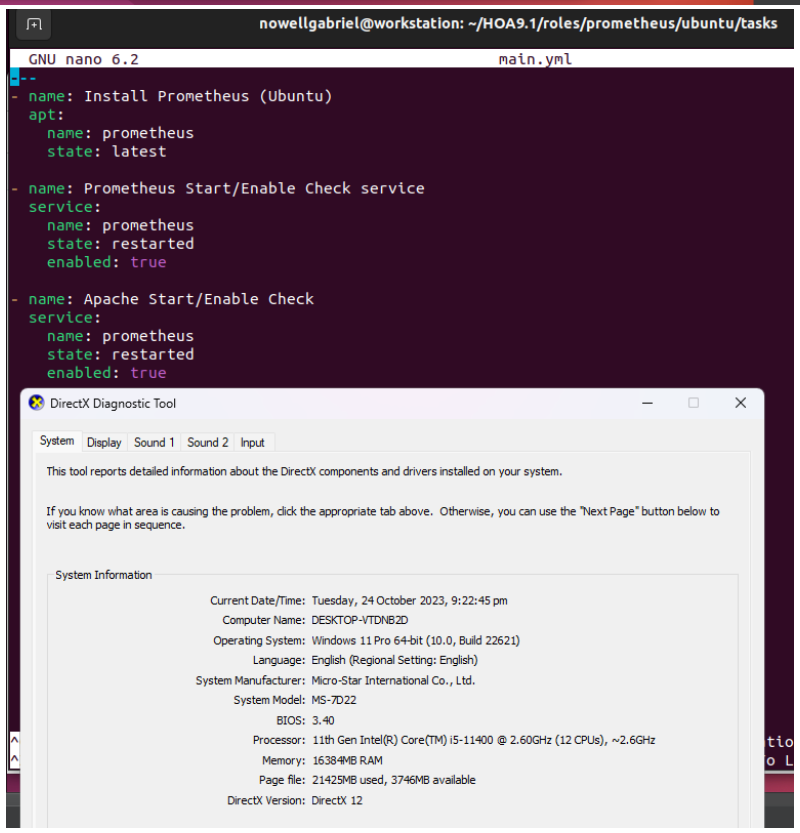
```
nowellgabriel@workstation:~$ git clone git@github.com:Doubledowneveryday/HOA9.1.git
Cloning into 'HOA9.1'...
remote: Enumerating objects: 3, done.
remote: Counting objects: 100% (3/3), done.
remote: Total 3 (delta 0), reused 0 (delta 0), pack-reused 0
Receiving objects: 100% (3/3), done.
nowellgabriel@workstation:~$ ls
CPE232_Quizon  Documents  HOA8.1  Music     Public            site.yml  Templates
Desktop        Downloads  HOA9.1  Pictures  Quizon_PrelimExam  snap      Videos
nowellgabriel@workstation:~$ cd HOA9.1
nowellgabriel@workstation:~/HOA9.1$ ls
README.md
```

- Cloned the repository to the

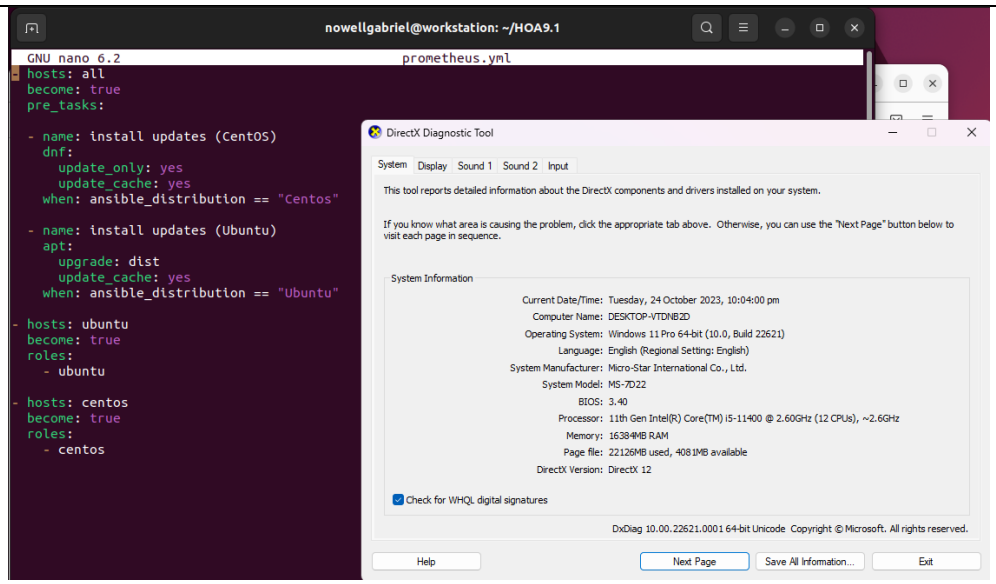


- Created the ansible.cfg and inventory file.

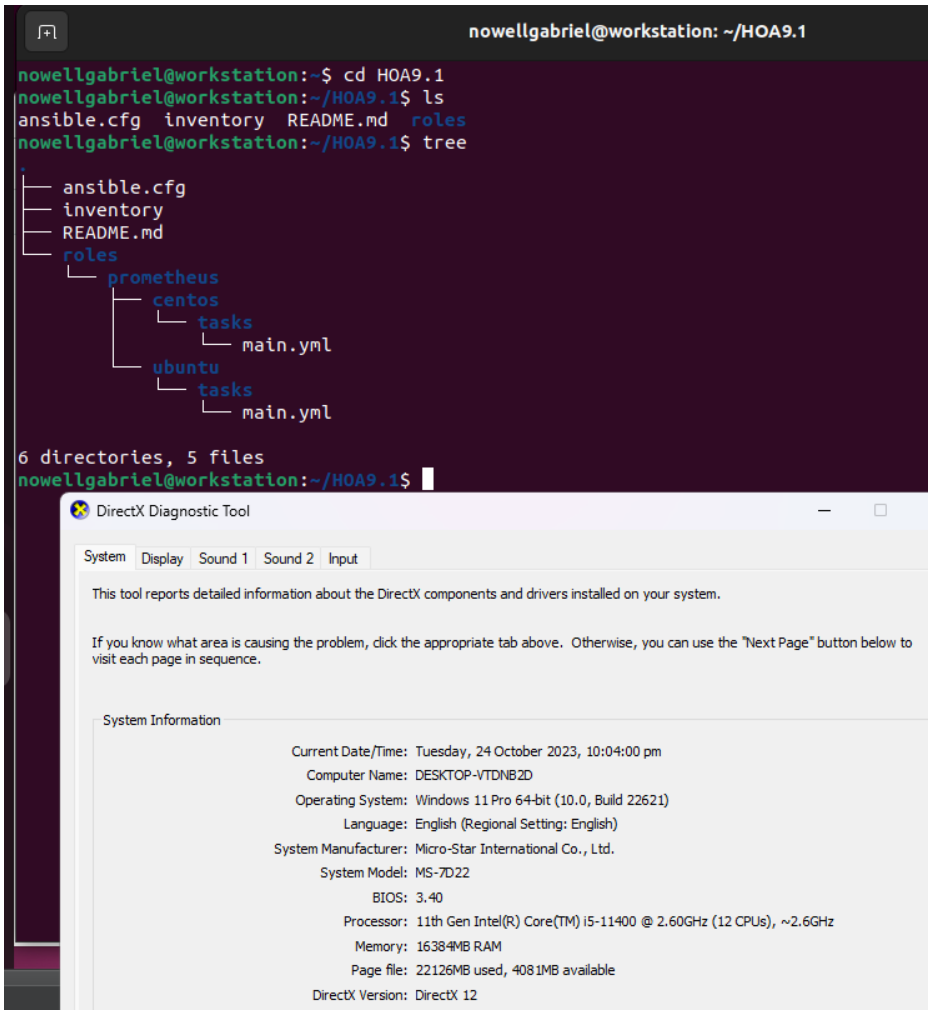




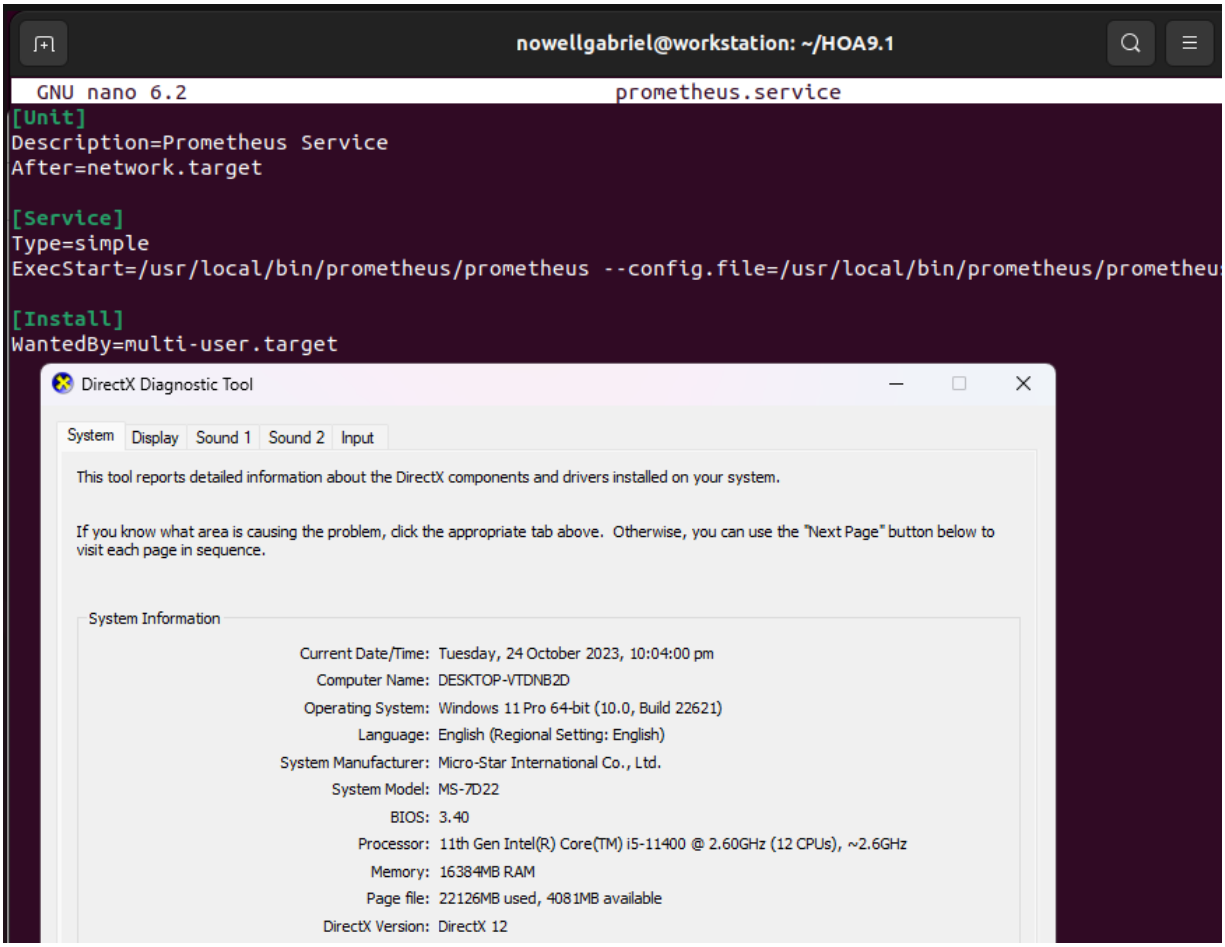
- Created the main.yml files for both nodes.



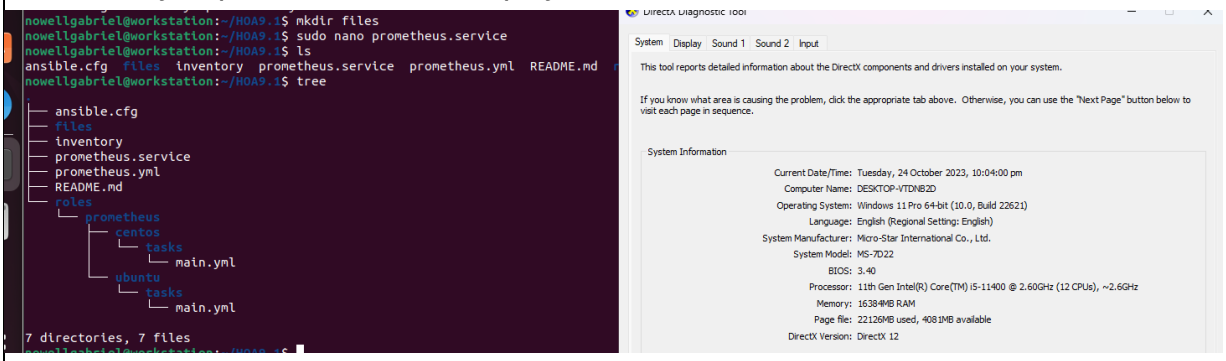
- Created prometheus.yml



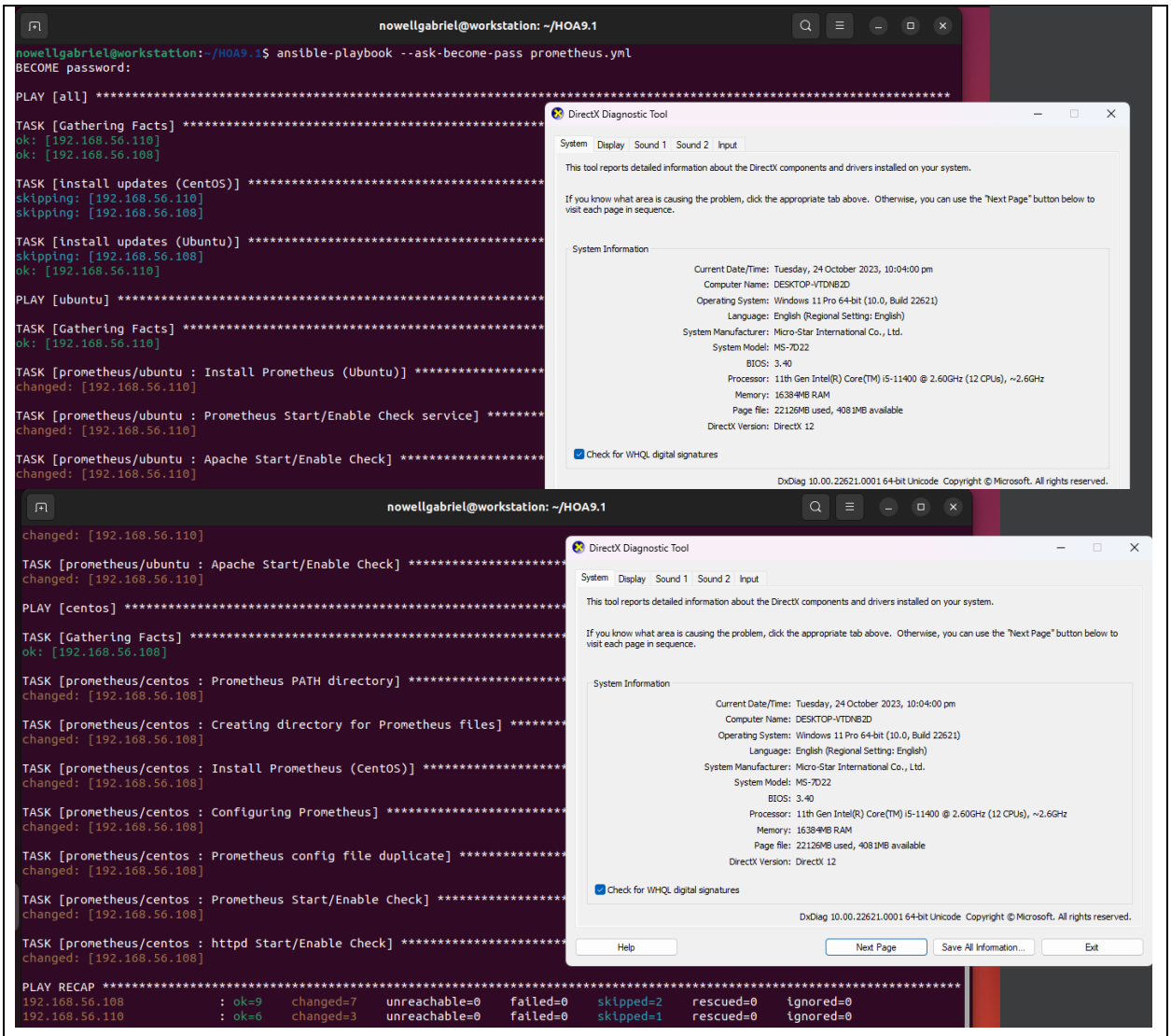
- The created files and directories



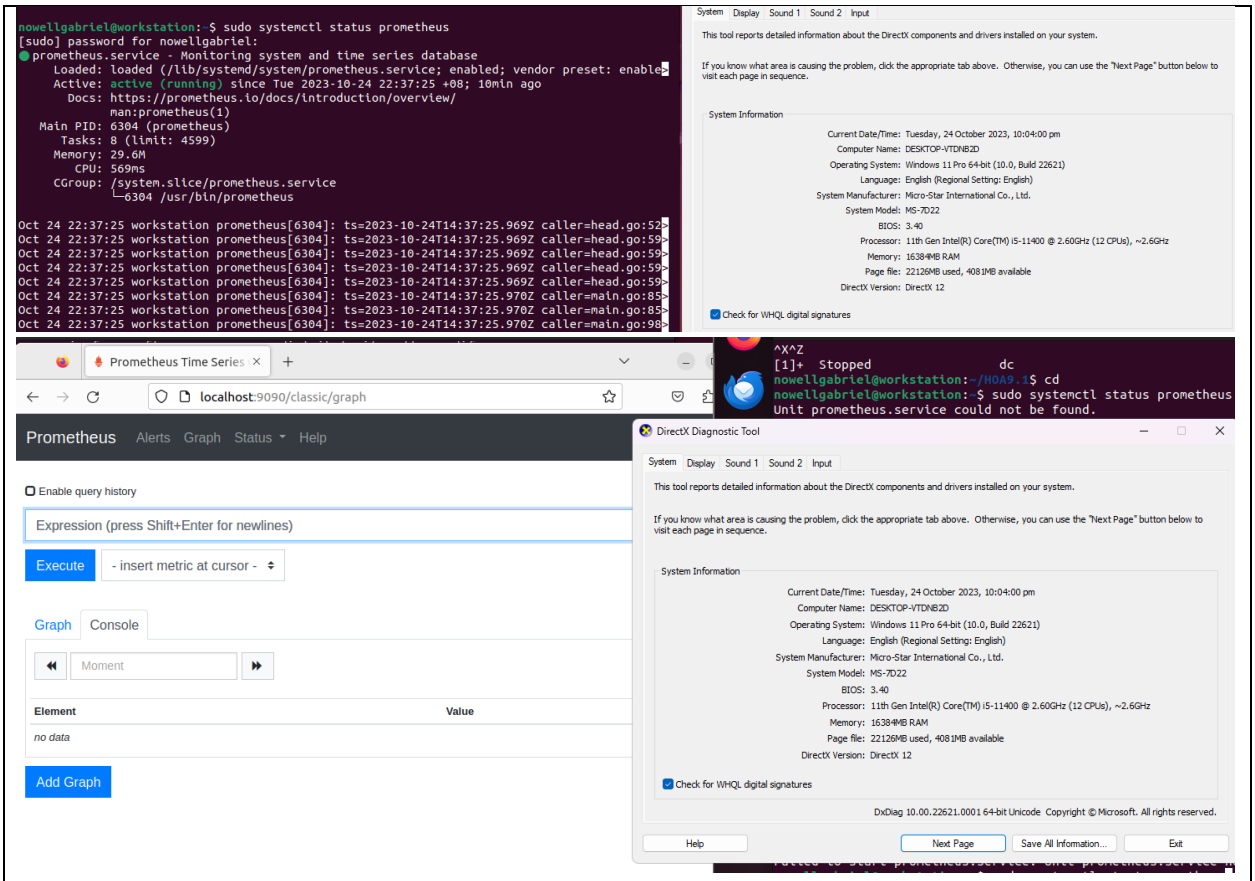
- Creating the prometheus.service file is vital because the commands within is very important to make the playbook work for CentOS.



- The summary of files and directories created.



- After playing the playbook, there was no error in installing Prometheus.


nowellgabriel@workstation:~$ sudo systemctl status prometheus
[sudo] password for nowellgabriel:
prometheus.service - Monitoring system and time series database
Loaded: loaded (/lib/systemd/system/prometheus.service; enabled; vendor preset: enabled)
Active: active (running) since Tue 2023-10-24 22:37:25 +08; 10min ago
Docs: https://prometheus.io/docs/introduction/overview/
man:prometheus(1)
Main PID: 6304 (prometheus)
Tasks: 8 (limit: 4599)
Memory: 29.6M
CPU: 569ms
CGroup: /system.slice/prometheus.service
└─6304 /usr/bin/prometheus
Oct 24 22:37:25 workstation prometheus[6304]: ts=2023-10-24T14:37:25.969Z caller=head.go:52
Oct 24 22:37:25 workstation prometheus[6304]: ts=2023-10-24T14:37:25.969Z caller=head.go:59
Oct 24 22:37:25 workstation prometheus[6304]: ts=2023-10-24T14:37:25.969Z caller=head.go:59
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Oct 24 22:37:25 workstation prometheus[6304]: ts=2023-10-24T14:37:25.970Z caller=main.go:85
Oct 24 22:37:25 workstation prometheus[6304]: ts=2023-10-24T14:37:25.970Z caller=main.go:85
Oct 24 22:37:25 workstation prometheus[6304]: ts=2023-10-24T14:37:25.970Z caller=main.go:98
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: Tuesday, 24 October 2023, 10:04:00 pm
Computer Name: DESKTOP-VTDNB2D
Operating System: Windows 11 Pro 64-bit (10.0, Build 22621)
Language: English (Regional Setting: English)
System Manufacturer: Micro-Star International Co., Ltd.
System Model: MS-7D22
BIOS: 3.40
Processor: 11th Gen Intel(R) Core(TM) i5-11400 @ 2.60GHz (12 CPUs), ~2.6GHz
Memory: 16384MB RAM
Page file: 22126MB used, 4081MB available
DirectX Version: DirectX 12
Check for WHQL digital signatures
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 Value
no data
Add Graph
^X^Z
[1]+ Stopped dc
nowellgabriel@workstation:~/HOA9.1$ cd
nowellgabriel@workstation:~$ sudo systemctl status prometheus
Unit prometheus.service could not be found.
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.
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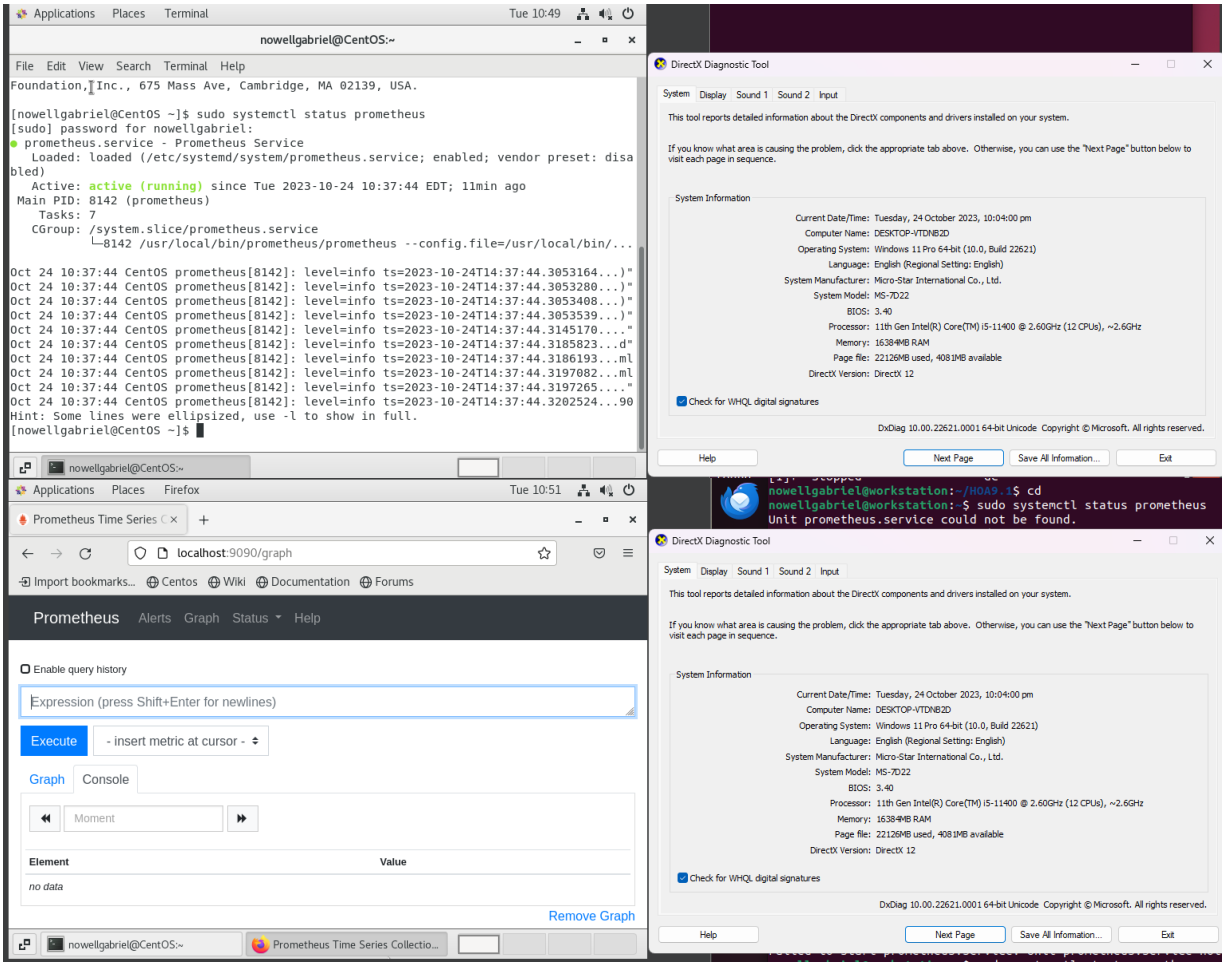
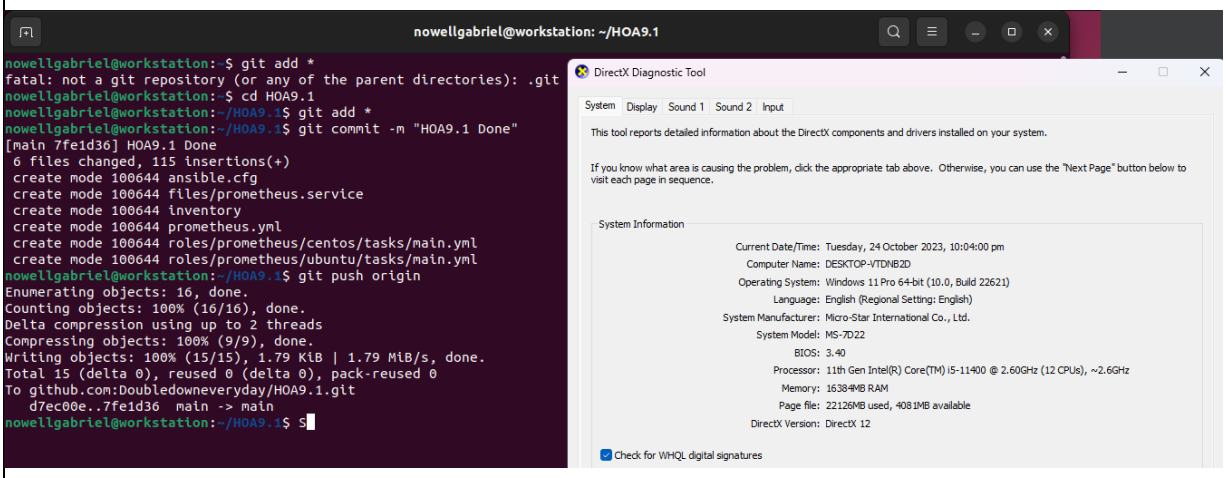
Page file: 22126MB used, 4081MB available
DirectX Version: DirectX 12
Check for WHQL digital signatures
DxDiag 10.00.22621.0001 64-bit Unicode Copyright © Microsoft. All rights reserved.
Help
Next Page
Save All Information...
Exit

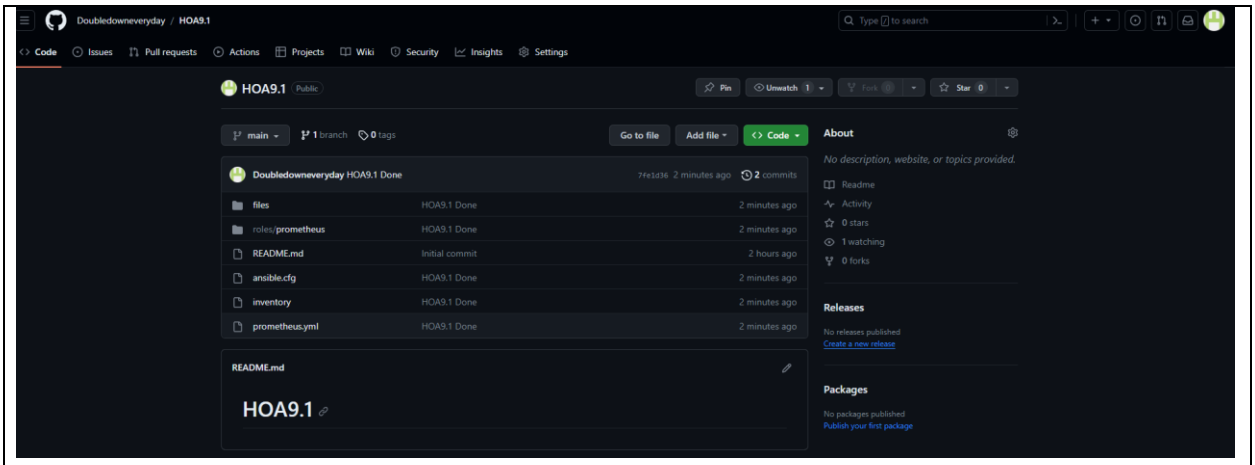
- Ubuntu



- CentOS



- git add, git commit, git push



Reflections:

Answer the following:

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

   For enterprises, a performance monitoring tool that provides real-time information on the condition of IT resources is essential. By monitoring indicators like response times and resource usage, it improves system performance and makes proactive troubleshooting possible. Enhancing capacity planning ensures effective resource allocation. Early identification of errors enhances user experience by preventing system breakdowns. Cost effectiveness is attained by minimizing excessive spending on overstocked resources. Thorough reporting meets compliance standards. Data pertaining to security help to spot possible breaches. Long-term performance patterns and trend analysis are made easier by historical data. It promotes a dependable and effective IT environment by holding outside providers accountable for SLA adherence and offering feedback for application optimization.

Conclusions:

In conclusion, using Ansible as an Environment as Code tool to design a process for installing and giving enterprise performance tools is an intelligent approach for effective system administration. Prometheus stands out among the performance monitoring tools mentioned for its powerful time series database capabilities, while Cacti provides a complete network graphing solution with cutting-edge features. To guarantee maximum resource use and efficiency in complex IT settings, both tools are essential. This use of cutting-edge monitoring tools is an excellent example of being proactive in maintaining a high-performing infrastructure.