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Instructor: Engr. Roman Richard	Semester and SY: 1st sem/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 tools.

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

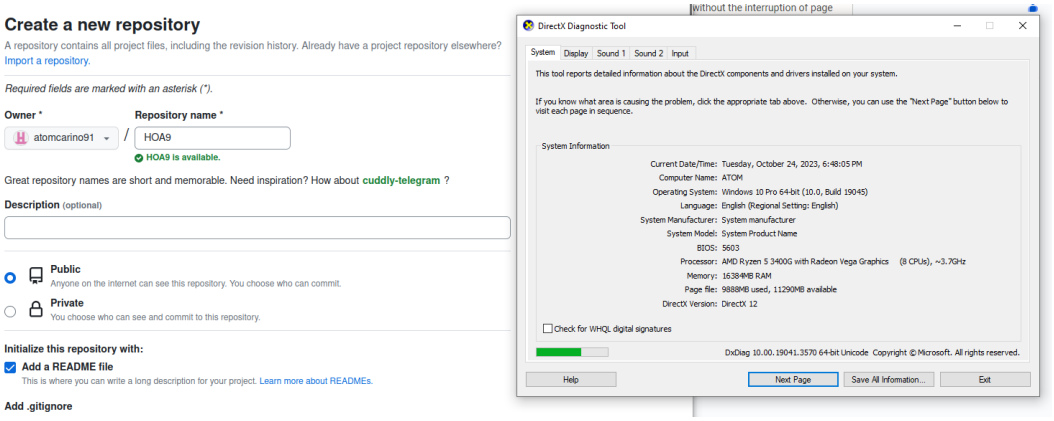
Cacti

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

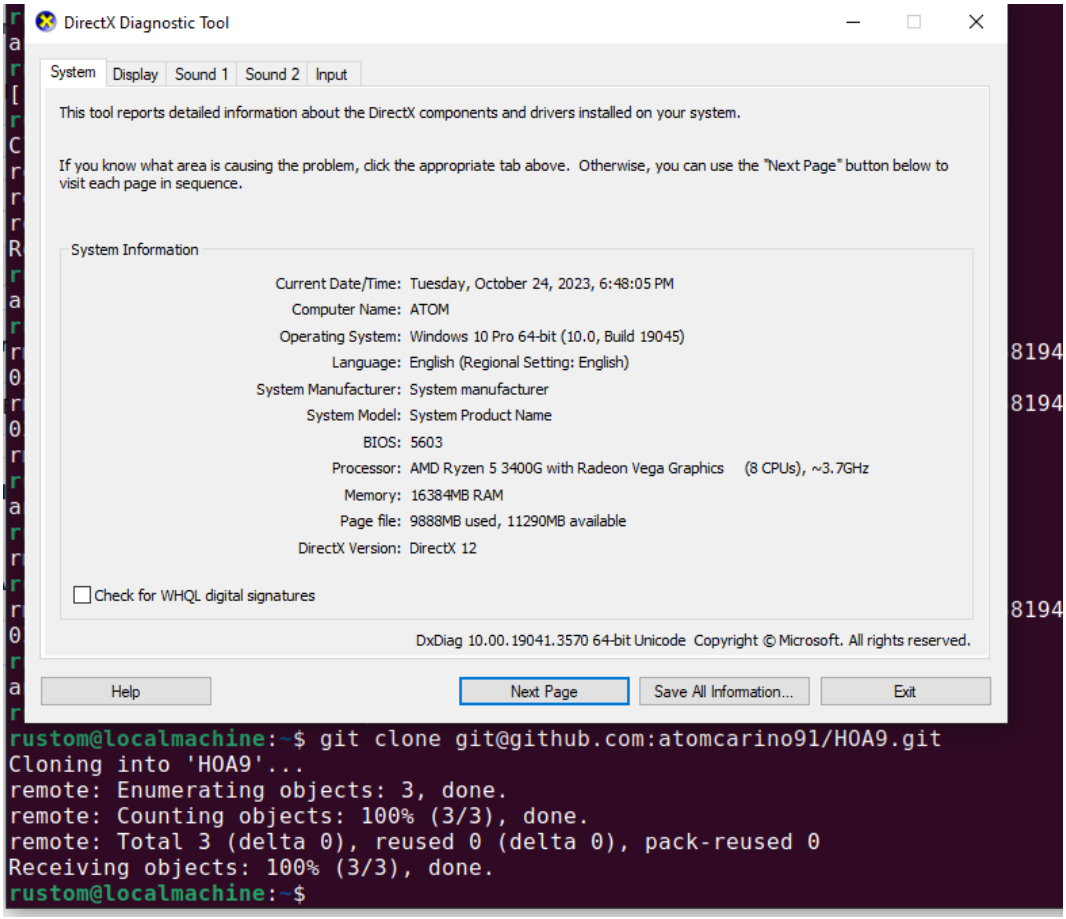
3. Tasks

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.

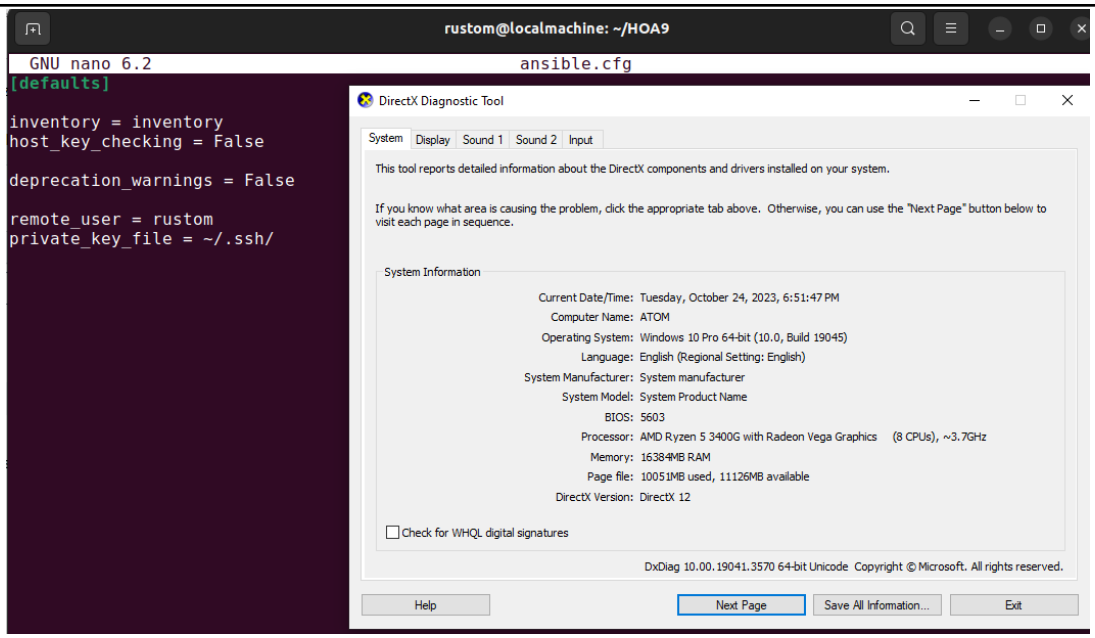
4. **Output** (screenshots and explanations)



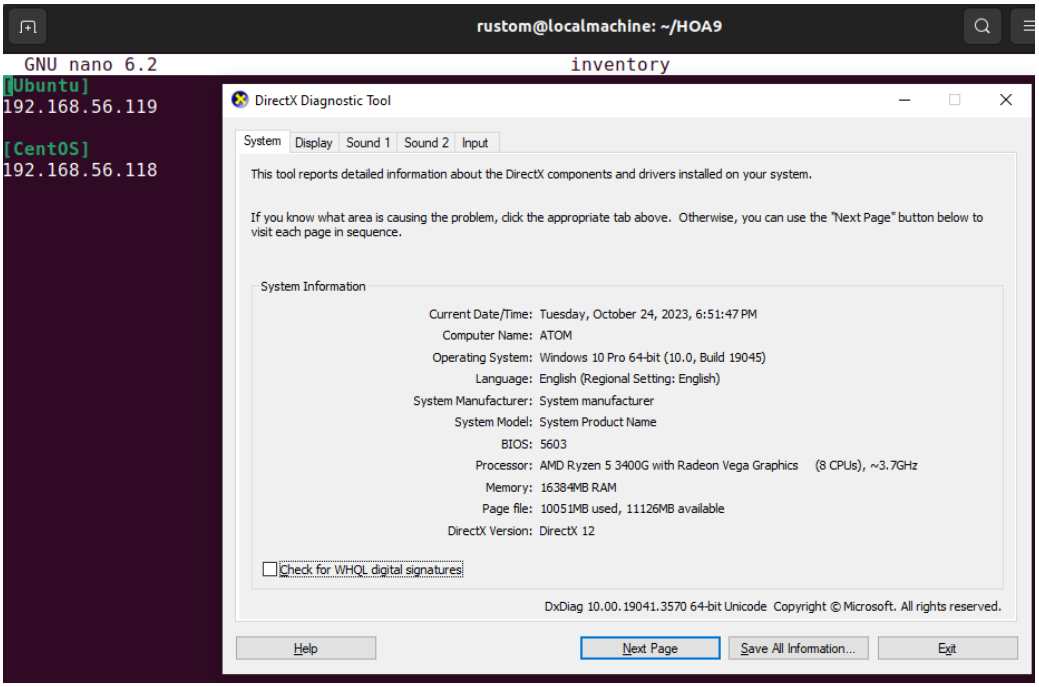
- First, I created a new repository named HOA9.



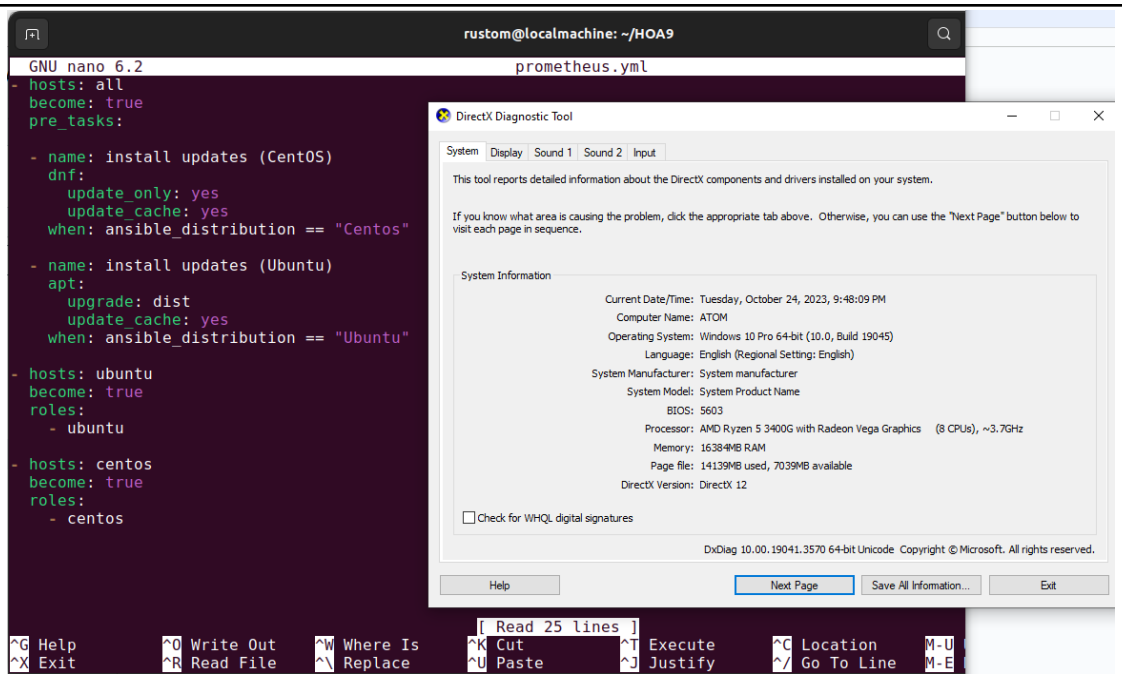
- Then I cloned the freshly made repository in my ubuntu



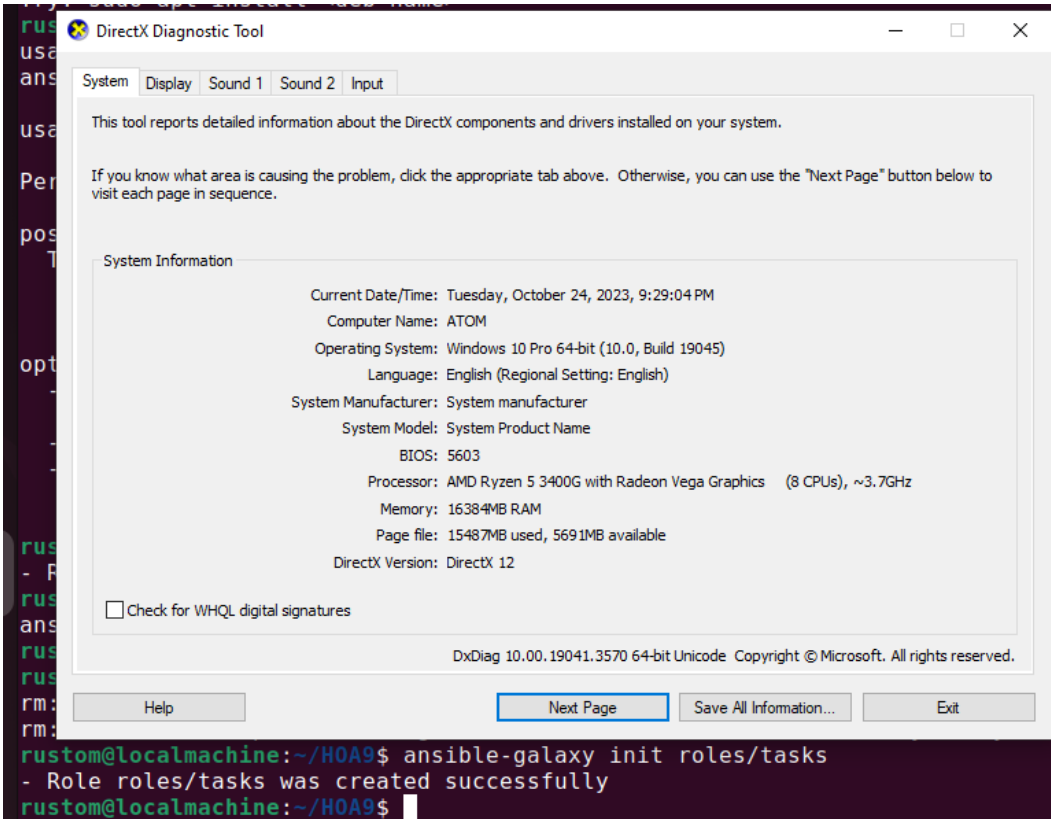
- I created a new ansible.cfg since I am on the freshly made repository.



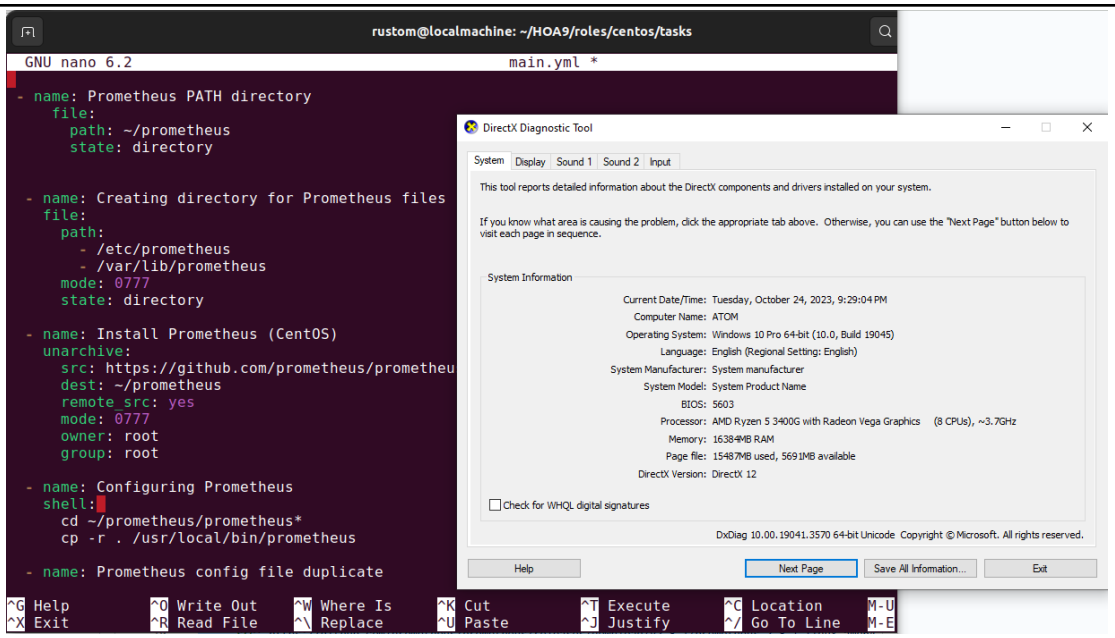
- Next is the new inventory that has the server 3 and the centos ip address.



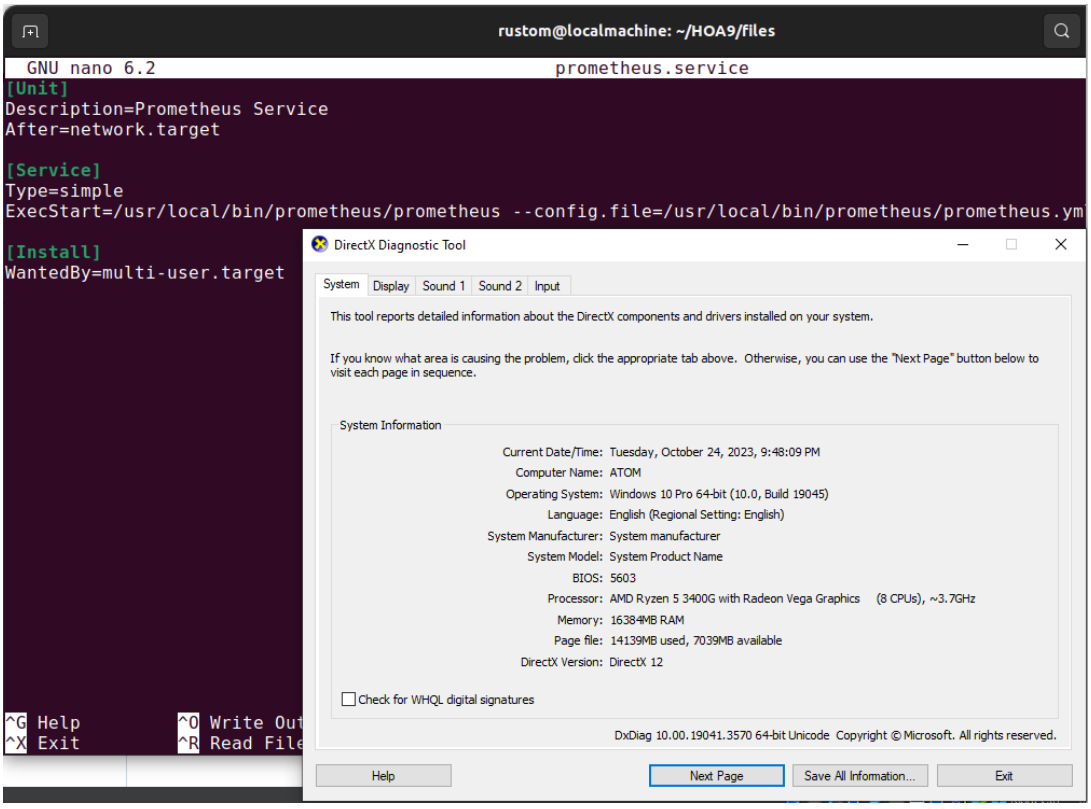
- My main playbook has the parameters where the ubuntu and centos will install the prometheus separated because of the roles. It will install the prometheus whether the managed node has the prometheus or not without deleting the existing prometheus.



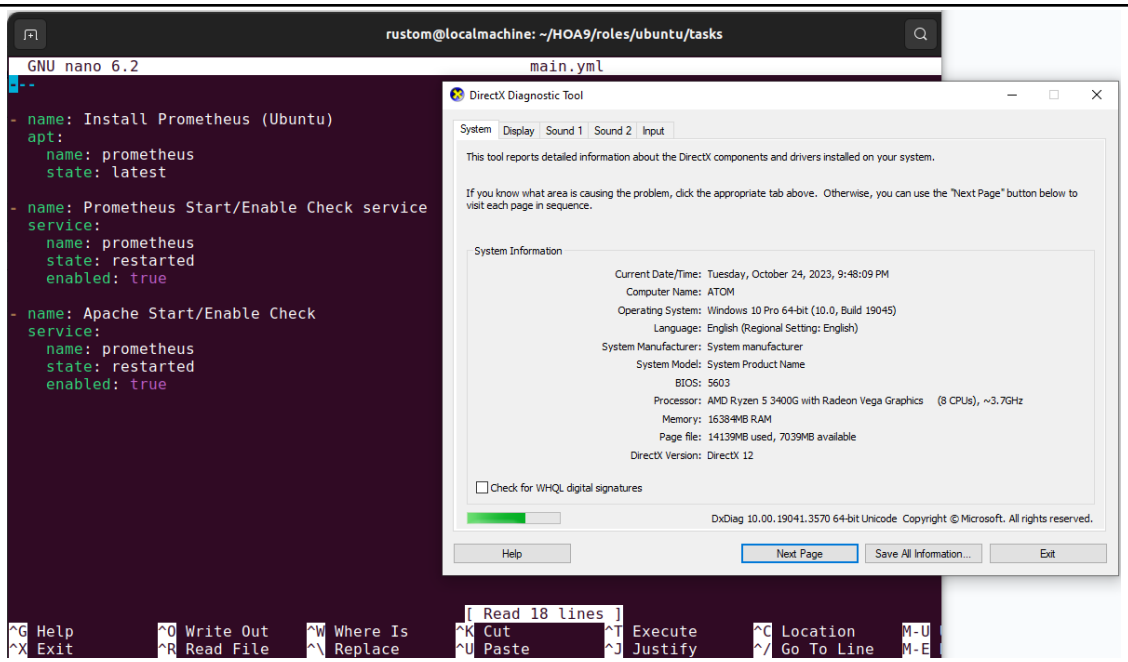
- I also used ansible-galaxy for creating the roles automatically.



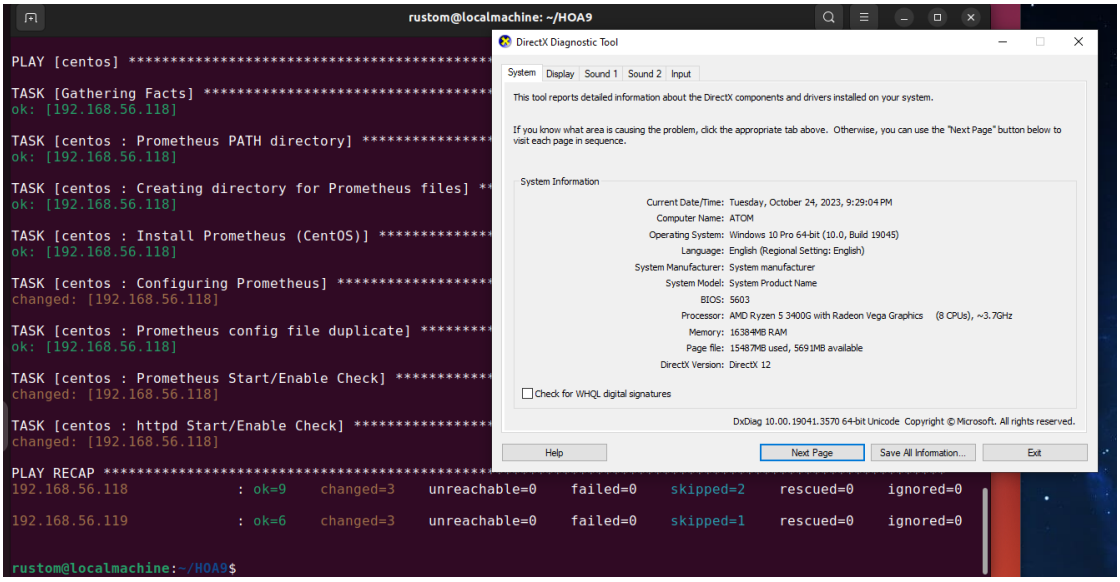
- The files directory in the repository must have a file called prometheus.service for the main.yml playbook for CentOS to function. This file includes commands that would allow the playbook to function by calling back on the prometheus service.



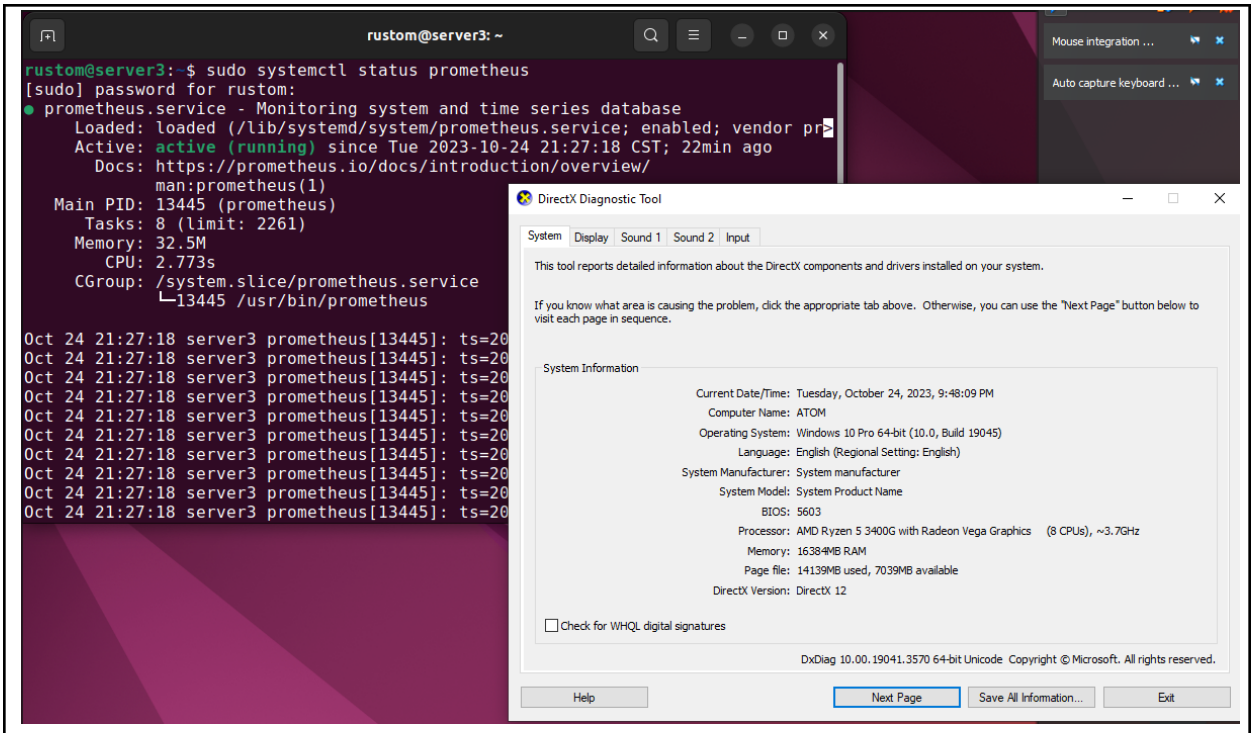
- Before launching the service, it will install Prometheus and begin checking the service.



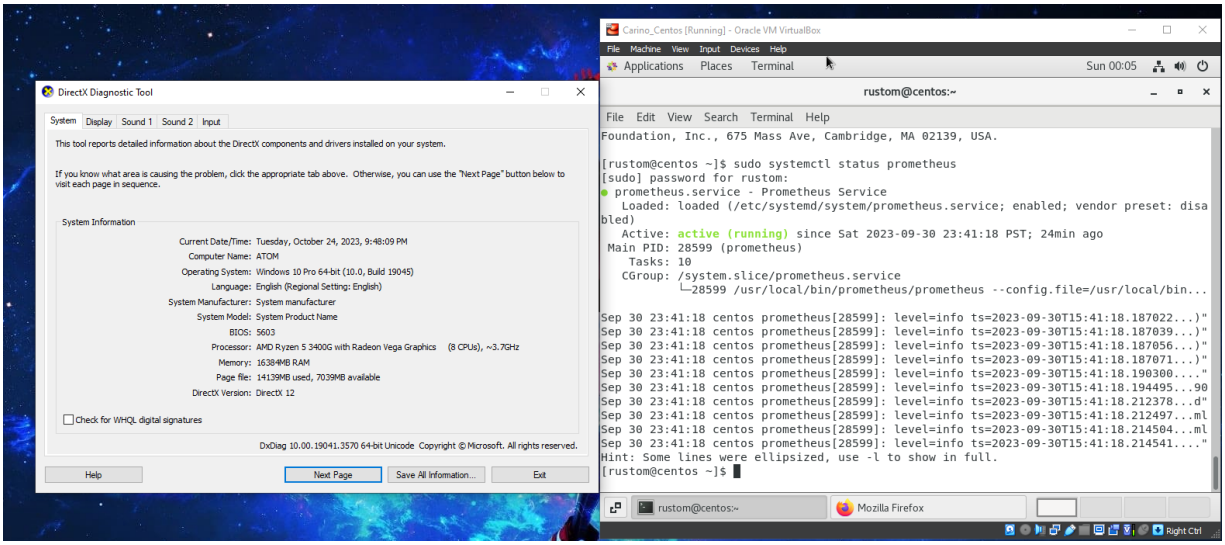
- This is the playbook in ubuntu where the prometheus is installed and enabled.



- In running the playbook, I didn't encounter an error and as you can see my server 3 and centos were changed after I installed the prometheus.



- Checking if the prometheus is installed in ubuntu using the sudo systemctl status prometheus. As you can see the prometheus is active or running in my ubuntu.



- Checking if the prometheus is installed in centos using the sudo systemctl status prometheus. As you can see the prometheus is active or running in my centos.

Reflections:

Answer the following:

1. **What are the benefits of having a performance monitoring tool?**
   Performance monitoring tools can help identify and troubleshoot performance problems quickly and easily, optimize systems for performance, plan for future growth and capacity needs, and ensure compliance with performance requirements. They can help identify areas for improvement, such as memory usage, CPU load, and disk I/O, and help save time and money in the long run.

Conclusions:

- In conclusion, I will be able to create and design a workflow that installs, configure and manage enterprise performance tools using the ansible as an infrastructure as Code (IaC) tool.This is done by using an ansible playbook. Because of the numerous issues observed when installing Prometheus on CentOS whereas it worked without any problems for Ubuntu, this task is exceedingly difficult.