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Instructor: Engr. Roman Ricard	**Semester and SY: 1st sem SY 23-24**

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

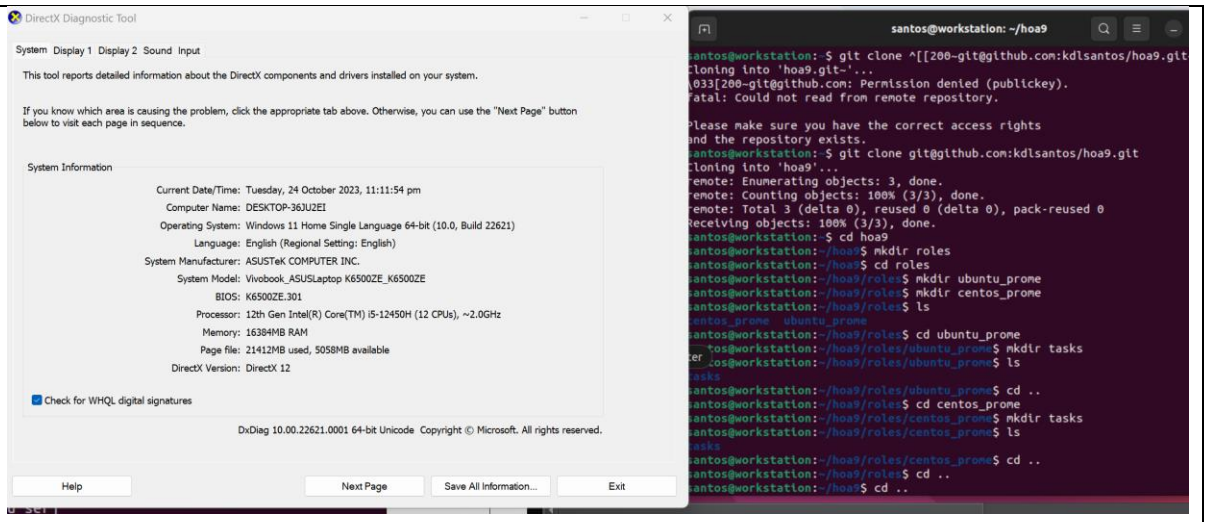
Cacti

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

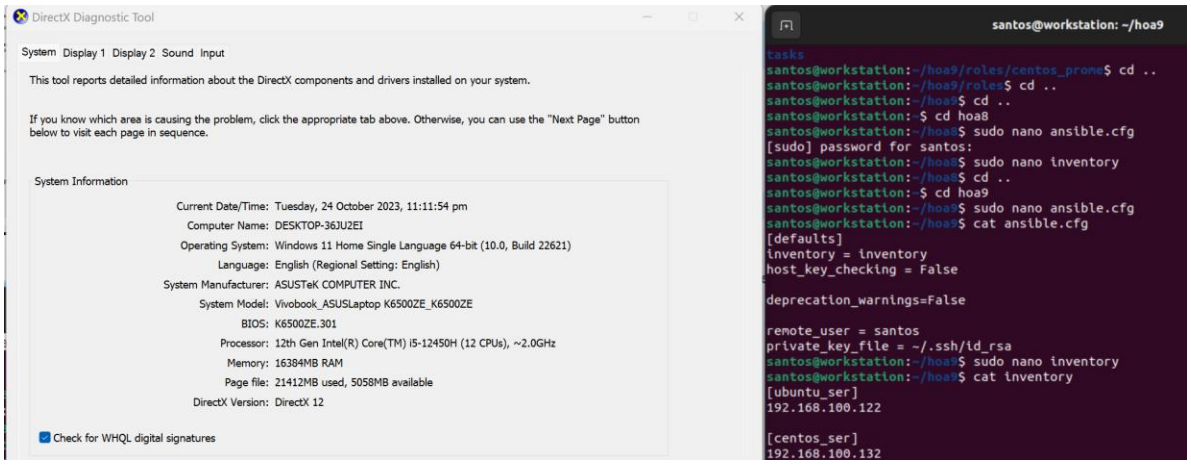
3. Tasks

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.

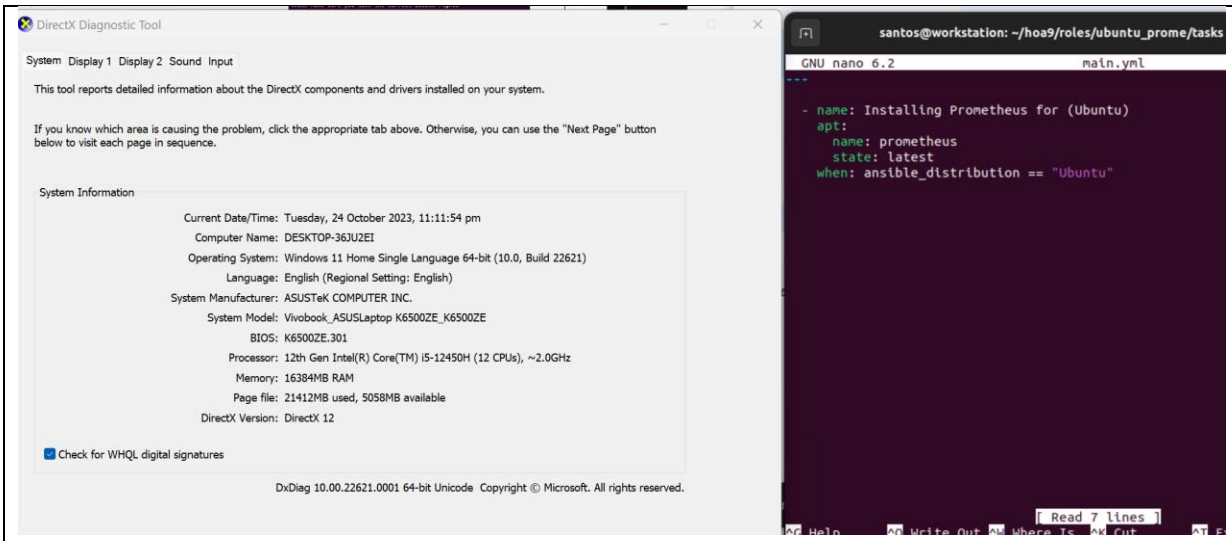
4. Output (screenshots and explanations)



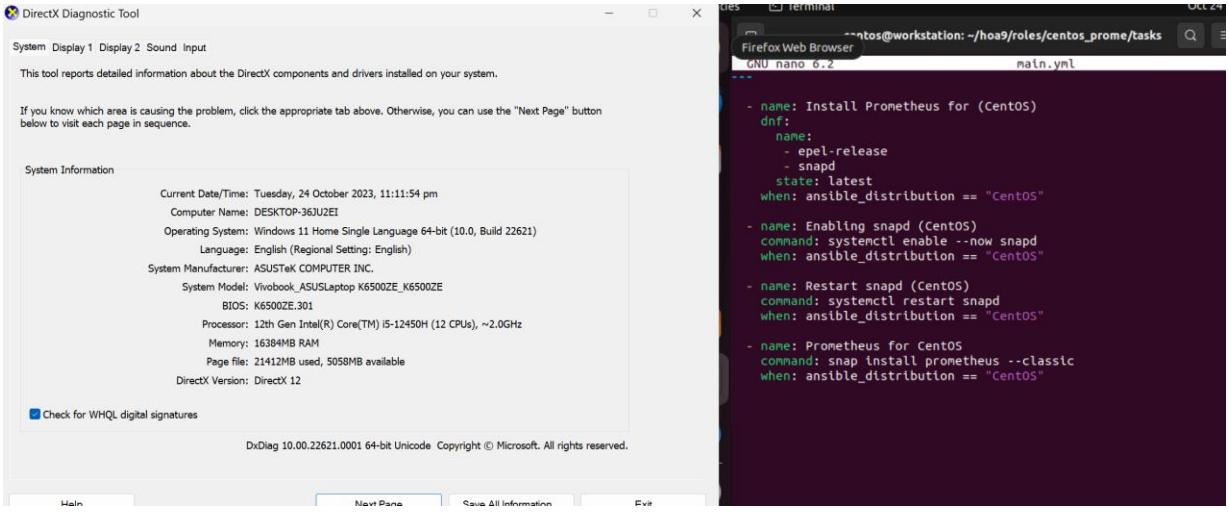
First, I clone the repository that I made in GitHub into the workstation to make a directory for this activity. After that, I made the needed directory like the roles where it contains the directory for Ubuntu and Centos for installing the Prometheus.



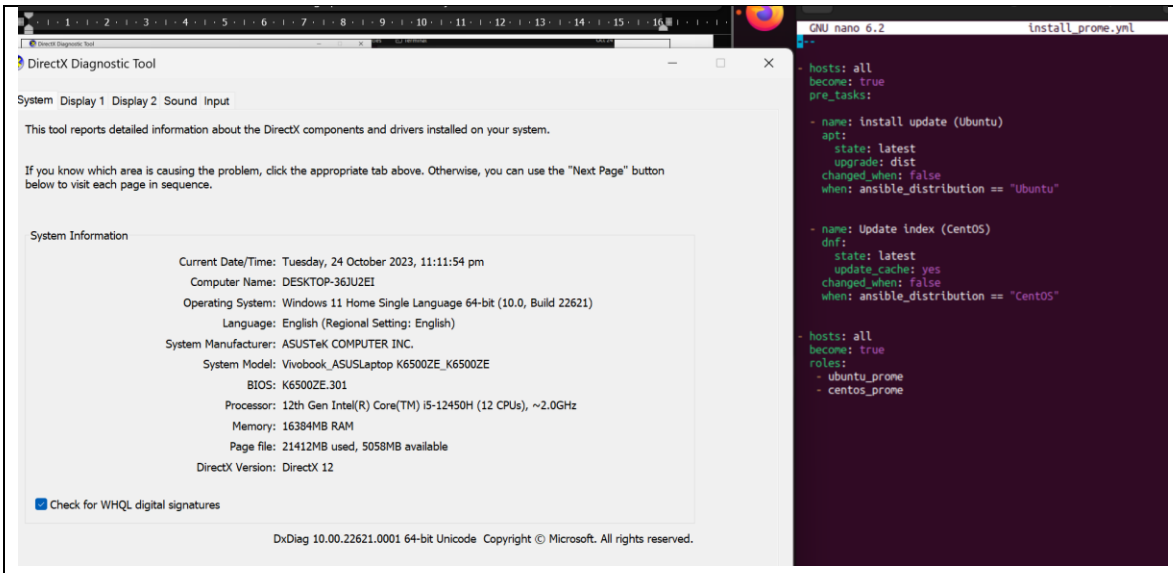
I proceed in making the inventory where it contains the ip address of Ubuntu and Centos server. Then I also made ansible.cfg and show it using the cat command.



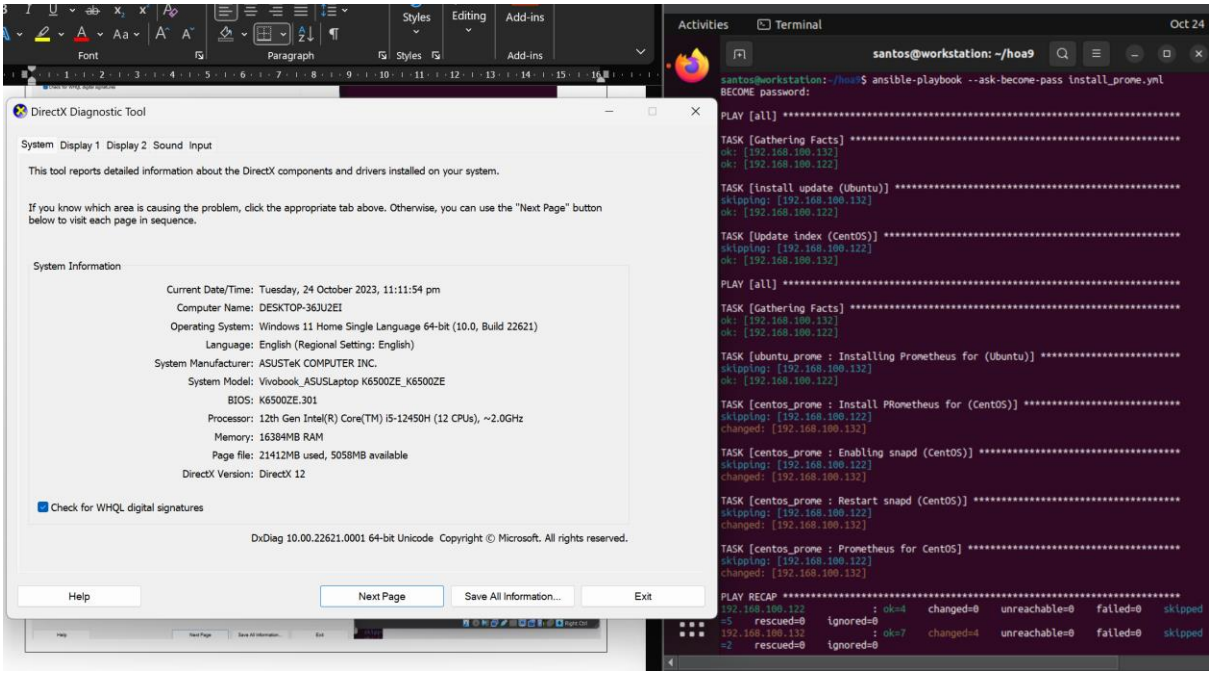
The screenshot shows the command for installation of Prometheus for Ubuntu server. It named main.yml and it can find inside of the tasks directory inside of Ubuntu directory.



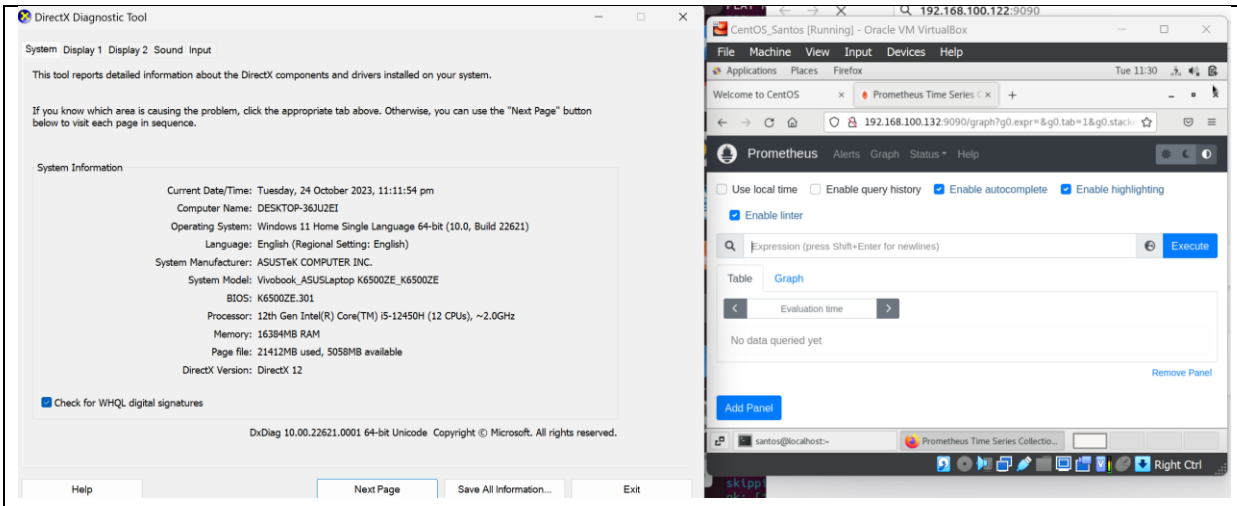
This is for installation of Prometheus for Centos server. The first task is for the Prometheus to be install in Centos then the next task to ensure that the snapd service is enable and working. Next is for the snapd to restarts the service it will help to ensure that it is activated. Lastly, it is about installing Prometheus but it using the snap package for it to install, and it using –classic to help the Prometheus to run.



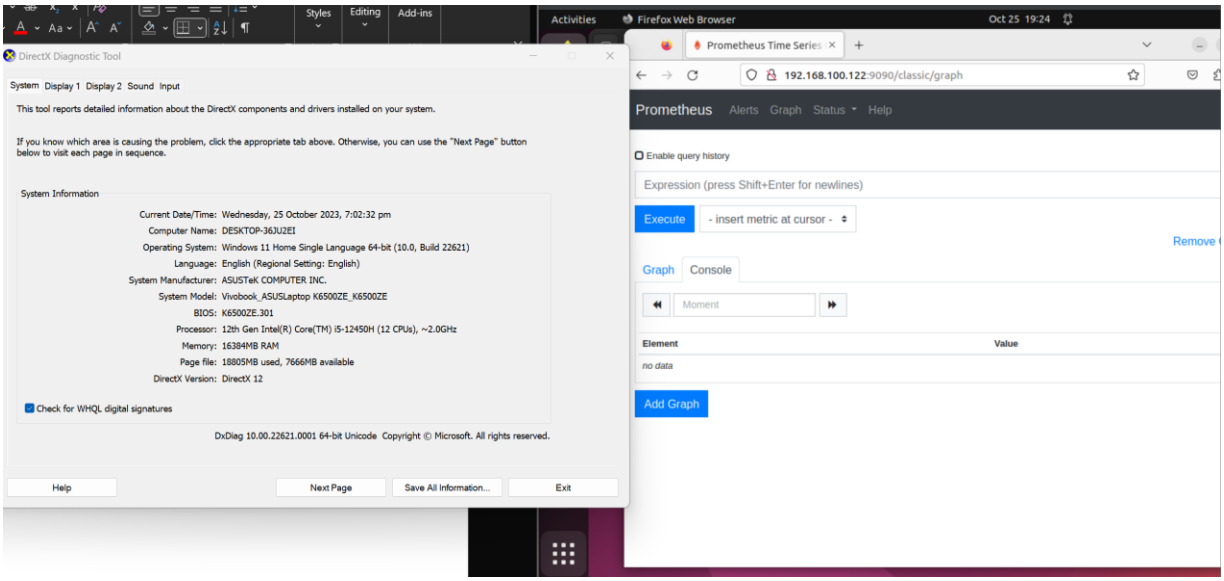
The first part, it contains the pre-tasks where it is about making sure that the both Ubuntu and Centos server is updated. Next is I called the different roles that I made earlier for Ubuntu and centos Server.



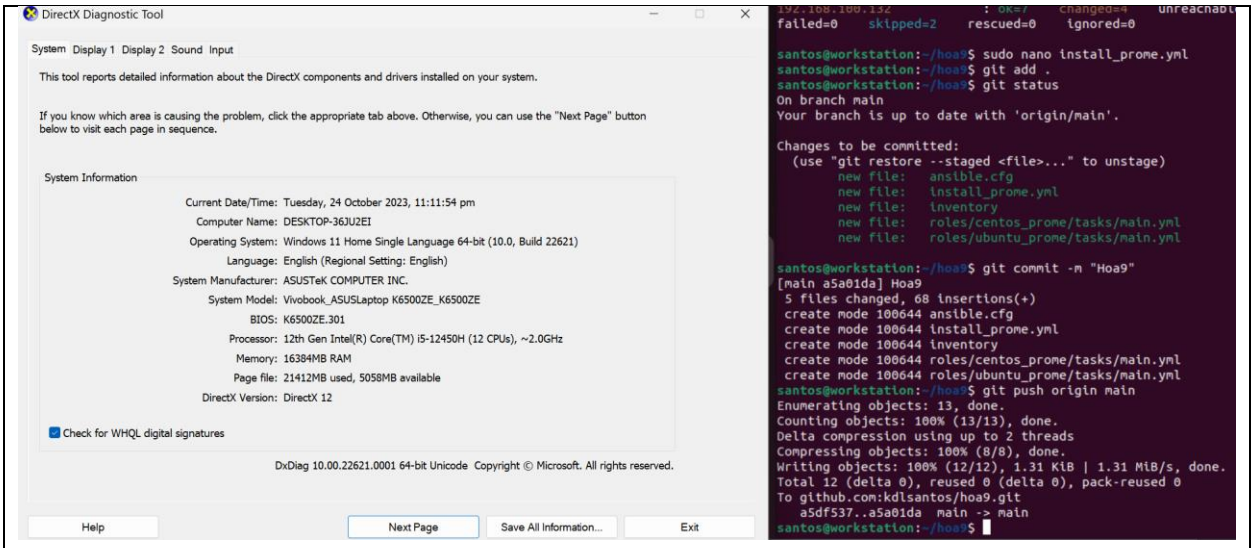
As you can see in the screenshot provided, after I run the playbook, it don't have error and it be able to install the Prometheus successfully in both server.



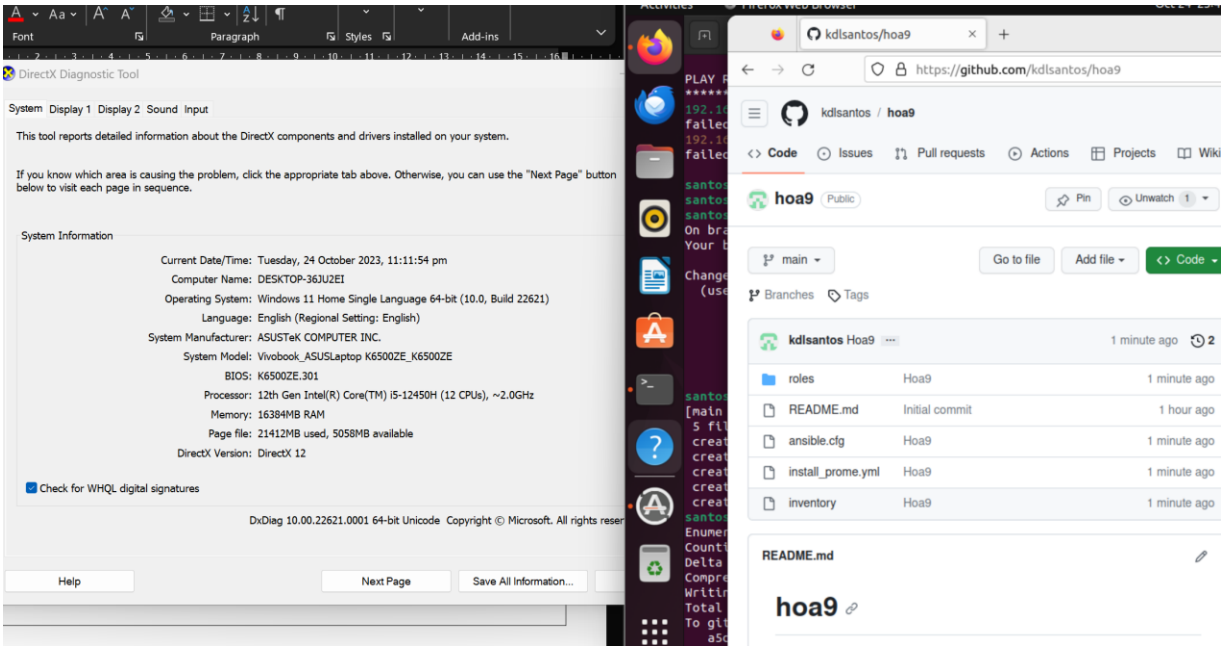
This the output looks like when you check if it successfully installed the Prometheus. I enter the ip address of centos which is 192.168.100.132 and add :9090 on it end.



Similar to Ubuntu server, to check if it is successfully installed I enter the ip address which is 192.168.100.122:9090 to the web.



To add the things I made to GitHub, I use git add . then check if its ready but using git status. After that I use hit commit -m “Hoa9” to add message and label. Lastly is use the git push origin main, it will help to push all the changes to my git repository.



The screenshot shows my GitHub repository updated and it contain all the directory I made.

GitHub link:

https://github.com/kdlsantos/hoa9

Reflections:

Answer the following:

1. What are the benefits of having a performance monitoring tool?
    - **Having performance monitoring tool will help to improve the health and also the efficiency of the system. It will be able to detect the issues and problem in real time so it will allow to solve the problem before it got worst. It also minimizes the downtime of the system since the troubleshooting will be faster. Another one is it help to check and be able to monitor the history data of the system, it will help to analyze the past performance and check the health of it. The system will grow eventually, the performance monitoring tools will to adapt and be able to monitor the needs of the system. All in all, we can say that it helps a lot in making sure maintain the availability and optimal performance of the system that you are working with.**

Conclusions:

In this activity, I able to learn the importance of performance monitoring system. In the discussion part, it shows what is Prometheus and also the Cacti. I learned that the Prometheus will store all the data as a timeseries. Installing the Prometheus is the task that I need to do in Ubuntu and Centos. In doing this activity I able to learn how to properly install Prometheus and also troubleshoot error when I encounter one. Aside from the result that will be seen after the playbook execute, I check the if I successfully installed the Prometheus using the web by using Ip address and add :9090. In the reflection of this activity, it helps me to understand more why we need and the different benefits of implementing performance monitoring to the system. I can say that this activity really help in introducing to me the importance of performance monitory and give us idea how to implement it in our servers.