Name:	Date Performed:
Course/Section:	Date Submitted:
Instructor:	Semester and SY:

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)

```yaml
---
- hosts: all
  become: true
  tasks:

  - name: Creating Prometheus user
    user:
      name: prometheus
      shell: /sbin/nologin
      system: yes
      createhome: no

  - name: Creating Prometheus group
    group:
      name: prometheus

  - name: Downloading Prometheus
    command: wget https://github.com/prometheus/prometheus/releases/download/v2.54.1/prometheus-2.5

  - name: Extracting Prometheus
    command: tar -vxf /tmp/prometheus-2.54.1.linux-amd64.tar.gz

  - name: Creating Prometheus directory
    file:
      path: "{{item}}"
      state: directory
      owner: prometheus
      group: prometheus
      mode: 0755
    loop:
      - /etc/prometheus
      - /var/lib/prometheus

  - name: Moving Prometheus files to /bin
    command: mv /tmp/prometheus-2.54.1.linux-amd64/prometheus /usr/local/bin/
```

- The commands in the playbook

```
TASK [Downloading Prometheus] ***********************************************
changed: [server1]
changed: [server2]
changed: [server3]
changed: [centos]

TASK [Extracting Prometheus] ************************************************
changed: [server1]
changed: [server3]
changed: [server2]
changed: [centos]

TASK [Creating Prometheus directory] ****************************************
ok: [server1] => (item=/etc/prometheus)
ok: [server3] => (item=/etc/prometheus)
ok: [server2] => (item=/etc/prometheus)
ok: [server1] => (item=/var/lib/prometheus)
ok: [server3] => (item=/var/lib/prometheus)
ok: [server2] => (item=/var/lib/prometheus)
ok: [centos] => (item=/etc/prometheus)
ok: [centos] => (item=/var/lib/prometheus)
```

- This is when the Prometheus files are downloaded

```
avalencia@workstation:~/act9$ ls /tmp/prometheus-2.54.1.linux-amd64
console_libraries  consoles  LICENSE  NOTICE  prometheus  prometheus.yml  promtool
```

- The files are existing now.

Reflections:

Answer the following:

1. What are the benefits of having a performance monitoring tool?
   - You can see the diagnostics of your device if it is currently working fine or if it is becoming less than before. Checking the performance of the devices in one main device is a huge time saver and it will nice if there would be an issue, it can be solved immediately.

Conclusions:

Having a remote control and monitoring to all the devices connected to your system is a big advantage in maintenance of the servers. Even one problem occurs can be fixed immediately. It is a bit hard when creating a playbook for it because there are many things needed to do before it works.