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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)

```
tracey@Workstation:~$ git clone git@github.com:Tssukkii/Act9.git
Cloning into 'Act9'...
remote: Enumerating objects: 3, done.
remote: Counting objects: 100% (3/3), done.
remote: Total 3 (delta 0), reused 0 (delta 0), pack-reused 0 (from 0)
Receiving objects: 100% (3/3), done.
```

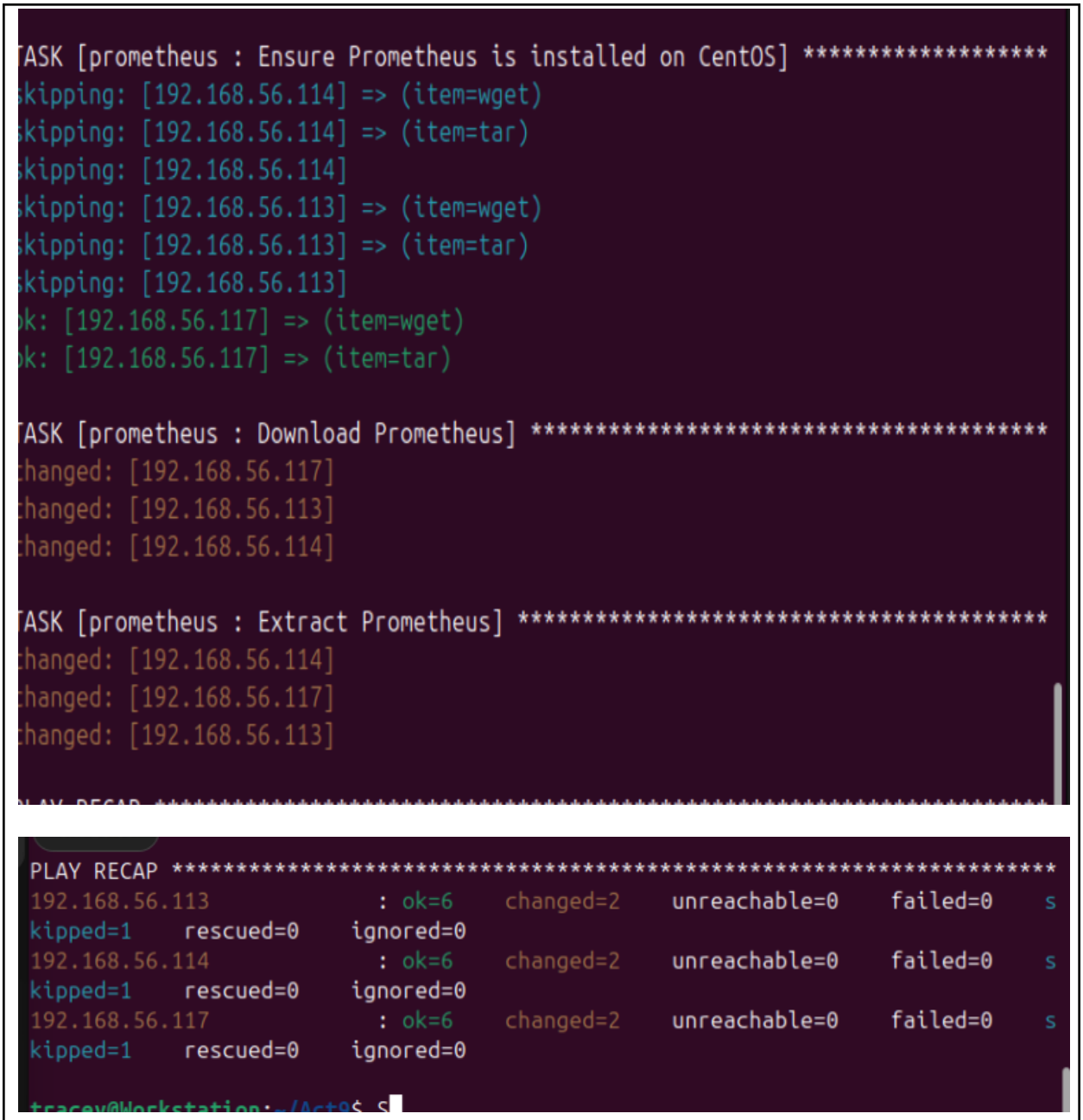
this shows that i git cloned the repository to my ubuntu workstation

```
 GNU nano 7.2                          main.yml *
---
- name: Ensure Prometheus is installed on Ubuntu
  apt:
    name: "{{ item }}"
    state: present
  loop:
    - wget
    - tar
  when: ansible_os_family == "Debian"

- name: Ensure Prometheus is installed on CentOS
  yum:
    name: "{{ item }}"
    state: present
  loop:
    - wget
    - tar
  when: ansible_os_family == "RedHat"

- name: Download Prometheus
                          [ Read 29 lines ]
^G Help      ^O Write Out ^W Where Is  ^K Cut       ^T Execute   ^C Location
^X Exit      ^R Read File ^\ Replace   ^U Paste     ^J Justify   ^/ Go To Line
```

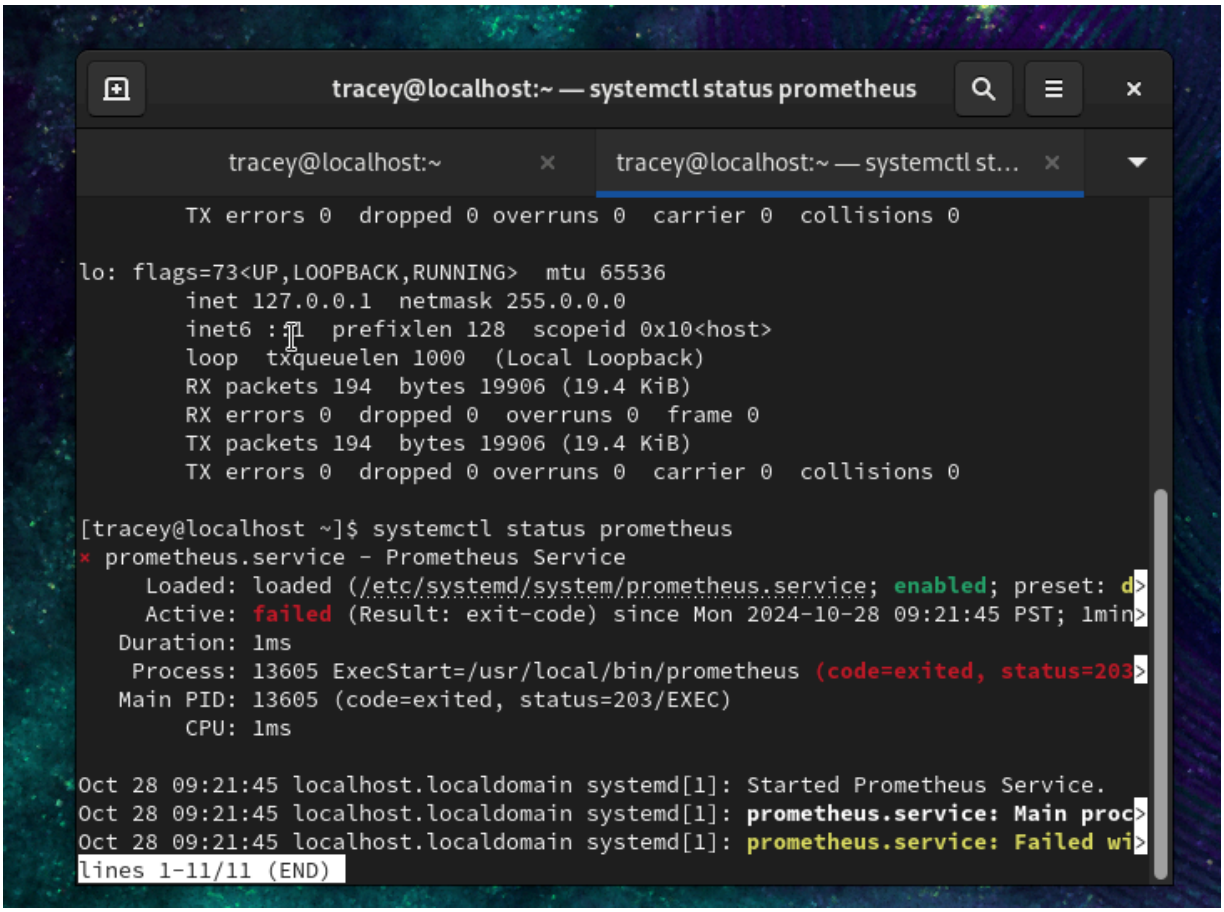
this is the inside of my main.yml in the tasks



this shows that the codes worked

```
tracey@Server2:~$ systemctl status prometheus
× prometheus.service - Prometheus Service
     Loaded: loaded (/etc/systemd/system/prometheus.service; enabled; preset: enabled)
     Active: failed (Result: exit-code) since Mon 2024-10-28 09:21:48 PST; 5s ago
   Duration: 16ms
    Process: 5638 ExecStart=/usr/local/bin/prometheus (code=exited, status=203/EXEC)
   Main PID: 5638 (code=exited, status=203/EXEC)
        CPU: 4ms

Oct 28 09:21:48 Server2 systemd[1]: Started prometheus.service - Prometheus Service.
Oct 28 09:21:48 Server2 systemd[1]: prometheus.service: Main process exited, code=exited, status>
Oct 28 09:21:48 Server2 systemd[1]: prometheus >_ ce: Failed with result 'exit-code'.
lines 1-11/11 (END)
```



this shows that it has successfully installed but i cannot activate it for some reason

Reflections:

Answer the following:

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

A performance monitoring tool provides real-time insights into system health and application performance, enabling organizations to quickly identify and resolve issues before they impact users. It enhances decision-making by offering detailed analytics and reporting, allowing teams to optimize resources and improve overall efficiency. Additionally, it supports proactive maintenance and capacity planning, reducing downtime and ensuring a better user experience.

Conclusions:

In conclusion, implementing a performance monitoring tool like Prometheus using Ansible as an Infrastructure as Code solution streamlines the installation and management process across different operating systems. By leveraging Ansible roles, we can maintain a modular and organized codebase, making it easier to update and scale our monitoring infrastructure. The detailed documentation and verification steps ensure that the installation is successful and that the tool operates effectively. Overall, this approach enhances operational efficiency and provides valuable insights into system performance, ultimately contributing to improved resource management and user experience.