

Prometheus

Lab_2

1-How do I trigger a Prometheus alert?

1. Setup and configure AlertManager.
2. Configure the config file on Prometheus so it can talk to the AlertManager
"/etc/prometheus/prometheus.yml".
3. Define alert rules in Prometheus server configuration "/etc/prometheus/rules.yml".
4. Define alert mechanism in AlertManager to send alerts via Slack and Mail

2-What is the difference between node exporter and mysql exporter?

Node-exporter:

- The Prometheus Node Exporter is an open-source time-series monitoring and alerting system for cloud-native environments.
- It can collect and store node-level metrics as time-series data, recording information with a timestamp, various server resources such as RAM, disk space, and CPU utilization.
- It can also collect and record labels, which are optional key-value pairs.
- It works on port 9100.

Mysql-exporter:

- MySQL Exporter is a client application used to get MySQL metrics and export to Prometheus server.
- SQL Exporter is a configuration driven exporter that exposes metrics gathered from DBMSs, for use by the Prometheus monitoring system.
- It works on port 9104.

3-what is the maximum retention period to save data in Prometheus and how to increase it?

-By default the retention is configured to 15 days. The amounts of data stored on disk depends on retention, higher retention means more data on disk.

- To increase:

1. On the management node, open the /etc/sysconfig/prometheus file to edit, set the needed retention period for the STORAGE_RETENTION option, and then save your changes. For example:
`STORAGE_RETENTION="--storage.tsdb.retention.time=30d"`
2. Restart the Prometheus service:
`systemctl restart prometheus.service`

4-What are the different PromQL data types available in Prometheus Expression language?

PromQL subsequently has four data types:

- 1- Floats (mostly scalars)
- 2- Range vectors
- 3- Instant vectors
- 4- Time (though it's often not counted in this category)

5- How To calculate the average request duration over the last 5 minutes from a histogram?

```
rate(http_request_duration_seconds_sum[5m])  
/  
rate(http_request_duration_seconds_count[5m])
```

6- What is Thanos Prometheus?

- Thanos is a set of components that can be composed into a highly available metric system with unlimited storage capacity, which can be added seamlessly on top of existing Prometheus deployments.
- Thanos can help any organization using Prometheus that needs to enable high availability and virtually unlimited historical data storage.
- Using Thanos makes it easier to scale Prometheus horizontally and obtain a global view of data from multiple Prometheus servers

7- what is promtool and how i can use it?

- Prometheus ships with a very useful supporting command-line tool called promtool.
- This small Golang binary can be used to quickly perform several troubleshooting actions and is packed with helpful subcommands.
- Used as a Tool for the Prometheus monitoring system.
- This [link](#) is the man of ptomtool where we can find all commands

8-What types of Monitoring can be done via Grafana?

- Grafana is used to monitor their **infrastructure and log analytics**, predominantly to improve their operational efficiency. Dashboards make tracking users and events easy as it automates the collection, management, and viewing of data.

9-Can we see different Servers CPU comparison in Grafana?

- Yes, by making different queries for each server.