

Lab-02

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)

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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.