# **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](https://github.com/prometheus/prometheus/blob/0ea3a2218d3a71d7a721c078efa2919175beb7a4/cmd/prometheus/main.go#L75). 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"

1. 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])

1. **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](https://linuxcommandlibrary.com/man/promtool) 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.