

1- How do I trigger a Prometheus alert?

- setup and configure AlertManager.
- Configure the config file on Prometheus so it can talk to the AlertManager.
- Define alert rules in Prometheus server configuration.
- Define an alert mechanism in AlertManager to send alerts via Slack and Mail.

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

About MySQL exporter :

Since databases are such a critical resource that downtime can cause significant financial and reputation losses, monitoring is a must. The MySQL exporter is required to monitor and expose MySQL metrics. It queries MySQL, scraps the data, and exposes the metrics to a Kubernetes service endpoint that can further be scrapped by Prometheus to ingest the time series data. For monitoring MySQL, an external Prometheus exporter can be used, which is maintained by the Prometheus Community.

About node exporter:

The Prometheus Node Exporter is an open-source time-series monitoring and alerting system for cloud-native environments, including Kubernetes, hosted by the Cloud Native Computing Foundation (CNCF) on GitHub. It can collect and store node-level metrics as time-series data, recording information with a timestamp. It can also collect and record labels, which are optional key-value pairs.

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

The maximum retention period to save data in Prometheus depends on the storage configuration and the available disk space. By default, Prometheus retains data for 15 days, but this can be adjusted by modifying the retention time setting in the configuration file. To increase the retention period in Prometheus, you need to follow these steps:

1. Open the Prometheus configuration file (**prometheus.yml**) and locate the **storage** section.
2. Set the **retention** parameter to the desired retention time in seconds, for example, **retention: 30d** for 30 days.
3. Save the configuration file and restart the Prometheus server.

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

- Scalars: Scalars represent a single numeric value and can be either integers or floating-point numbers. Examples of scalar values include the result of a mathematical operation or a metric value.
- Strings: Strings represent text values and are enclosed in double quotes. They are used for labels, metric names, and other metadata.
- Time: Time represents a point in time, and it is expressed as the number of seconds since the Unix epoch (January 1, 1970, UTC). Time is used to query and manipulate time-series data.
- Vectors: Vectors are sets of time-series data that share the same metric name and set of labels. They are the primary data type in PromQL and are used for most queries.
- Instant Vectors: Instant vectors are vectors that represent a snapshot of the current value of a metric at a specific point in time. They are created using the `instant_query` function.
- Range Vectors: Range vectors represent a range of values for a metric over a specified time range. They are created using the `range_query` function.
- Matrices: Matrices are collections of range vectors that have the same metric name and set of labels. They are used to represent sets of related time-series data. Matrices are created using the `matrix` function.

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

- `ate(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 Prometheus setup with long-term storage capabilities. Its main goals are operation simplicity and retaining Prometheus's reliability properties

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

Logs. powered by Grafana Loki.

- Grafana. for visualization.
- Traces. powered by Grafana Tempo.
- Metrics. powered by Grafana Mimir and Prometheus.
- Plugins. Connect Grafana to data sources, apps, and more.

- Incident Response & Management. with Grafana Alerting, Grafana Incident, and Grafana On Call.
- Performance testing. ...

Grafana Cloud

8- Can we see different Servers' CPU comparisons in Grafana? Yes

- In Grafana, create a new dashboard and add a new panel.
- In the panel, add a new query for each server that you want to compare. To do this, click on the "Add Query" button and select the server and CPU metric that you want to monitor.
- Once you've added all the queries, you should see the CPU usage for each server displayed in the panel.
- To compare the CPU usage of different servers, you can use the "Group By" feature in Grafana. To do this, click on the "Group By" button and select the label that corresponds to the server name or ID.
- Once you've grouped the data by server, you should see the CPU usage for each server displayed as a separate line or graph in the panel. You can also add a legend to the panel to help distinguish between the different servers.
- To further analyze and compare the CPU usage of different servers, you can use the various visualization and analysis tools available in Grafana. For example, you can add thresholds or alerts to the panel to notify you when the CPU usage of a particular server exceeds a certain threshold. You can also use Grafana's built-in analysis tools, such as the heatmap or scatter plot, to identify patterns or anomalies in the CPU usage data.