**Grafana**

* Grafana is open-source solution for running data analytics.
* Helps us to study, analyze and monitor data over period (Time series analytics)
* Pulling up metrics that makes sense of the massive amount of data and to monitor our apps with cool customized dashboard’s.
* Grafana connects with every possible data source
  + Graphite
  + Prometheus
  + Influx DB
  + Elastic search
  + MySQL, PostgreSQL etc.
* A big upside of the project is it can be deployed [on-prem](https://scaleyourapp.com/what-is-on-premises-or-on-prem-everything-you-should-know/) by organizations which do not want their data to be streamed over to a vendor cloud for security & other reasons.
* Grafana Dashboard:
  + It pulls time series data from plugged in data sources.
  + They contain many visualizations options such as Geo Maps, heat maps, histograms etc.

**What Is Prometheus Grafana?**

* Prometheus is an open-source data monitoring tool. The combination of [Prometheus & Grafana](http://docs.grafana.org/features/datasources/prometheus/) is the de-facto tool combination in the industry for deploying a data visualization setup. Grafana dashboard is used for visualizing the data whereas the backend is powered by [Prometheus](https://prometheus.io/).
* Though Prometheus too has data visualization features & stuff. But still, Grafana is preferred for visualizing data. Queries are fired from the dashboard & the data is fetched from Prometheus.  
  It acts as a perfect open-source data model for storing time series data.

**Common Grafana features:**

* **Visualize**: Grafana has a plethora of visualization options to help you understand your data from graphs to histograms, you have it all.
* **Alerts**: Grafana lets you define thresholds visually, and get notified via Slack, PagerDuty, and more
* **Unify**: You can bring your data together to get better context. Grafana supports dozens of databases, natively.
* **Open-Source**: It’s completely open source. You can use Grafana Cloud, or easily install on any platform.
* **Explore Logs**: Using label filters you can quickly filter and search through the laundry list of logs.
* **Display dashboards**: Visualize data with templated or custom reports. Create and Share reports:
* **Create and Share reports**: Create and share reports to your customers and stakeholders. This feature is not available in the open-source version. You can upgrade to avail it.

**What are Synthetic Metrics?**

* Synthetic metrics are a collection of multi-stage steps required to complete an API call or transaction.
* A set of metrics for an API call would contain:
  + Time to connect to API (connect latency)
  + Duration of request (response latency)
  + Size of response payload
  + Result Code of request (200, 204, 400, 500, etc)
  + Success/Failure state of the request