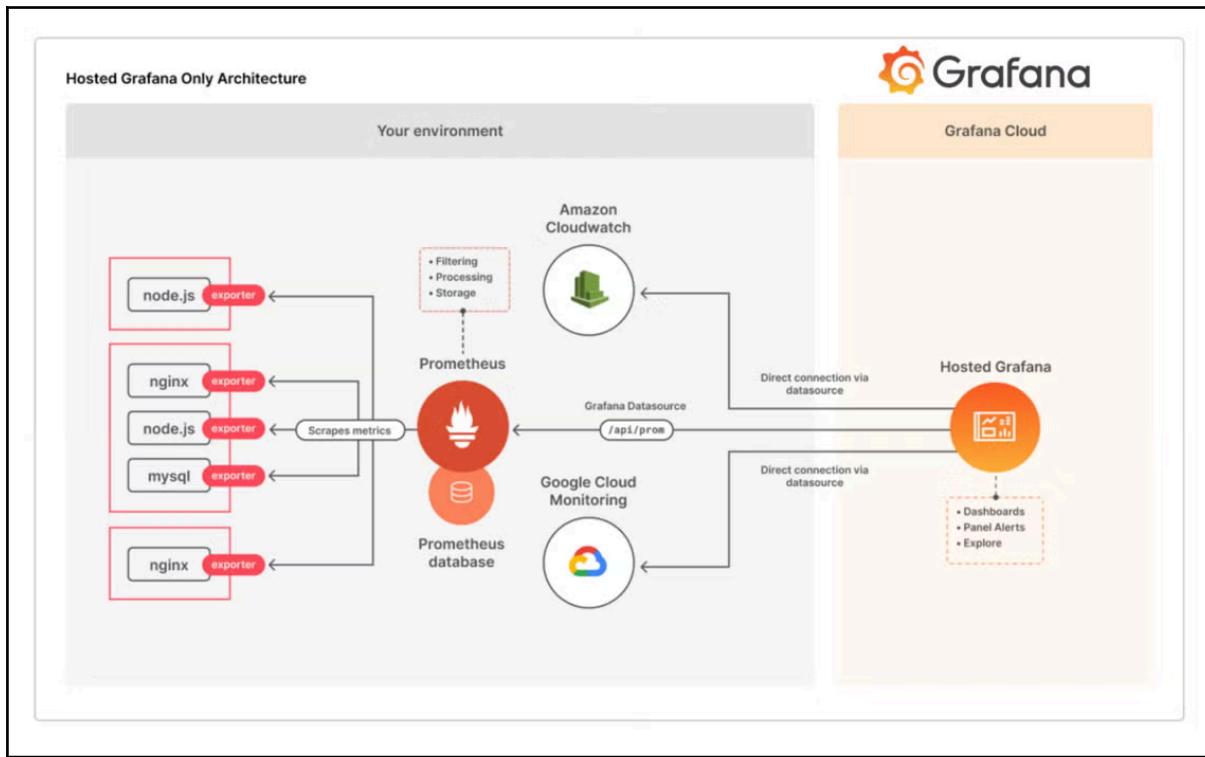


# Grafana

Grafana is an open-source data visualization and monitoring tool. It acts as a "single pane of glass" that allows you to query, visualize, and alert on metrics, logs, and traces, no matter where they are stored. Think of it as the **UI layer** of your technical stack. While databases like Prometheus or InfluxDB store your raw data, Grafana is the tool that turns those numbers into beautiful, actionable dashboards.



**Grafana** (specifically "Hosted Grafana" in the above diagram context) serves as the central visualization and management hub for our entire infrastructure.

## Why people use it?

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- **Unified View:** You can pull data from multiple sources (like SQL, CloudWatch, and Elasticsearch) and display them side-by-side on the same dashboard.
- **Highly Flexible:** It supports everything from simple line graphs and "Big Stat" numbers to complex heatmaps and geographical maps.
- **Alerting:** You can set rules that trigger notifications (via Slack, PagerDuty, or Email) when a metric crosses a certain threshold.
- **Dynamic Dashboards:** Using variables, you can create a single dashboard that can be filtered for hundreds of different servers or applications.

## Why people use it?

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Unlike many other monitoring tools, Grafana **does not store your data**. It connects to your existing databases through "Data Sources." When you open a dashboard, Grafana sends a query to the database, fetches the results, and renders the visual.

1. **Data Sources:** It uses **Direct connections via datasource** to communicate with cloud providers like **Amazon Cloudwatch** and **Google Cloud Monitoring**.
2. **API Integration:** It connects to **Prometheus** via a dedicated **Grafana Datasource API** (</api/prom>).
3. **The Pipeline:**
  - a. Individual services (like **node.js**, **nginx**, and **mysql**) use **exporters** to output their data.
  - b. **Prometheus** "scrapes" these metrics and stores them in its own database.
  - c. **Grafana** pulls that data from Prometheus to display it to the user.