

Grafana for Beginners: Data Visualization and Monitoring

Course duration : 32 hours

Course Description:

This course introduces beginners to Grafana, a powerful open-source platform for monitoring and visualizing data. Participants will learn how to set up Grafana, create dashboards, and explore how to use various data sources to generate insightful visualizations and alerts. By the end of the course, learners will be able to monitor applications and systems using Grafana.

Audience Prerequisites:

- Basic understanding of data visualization concepts
- Familiarity with basic networking and server monitoring concepts will be good but not mandatory

Course Content:

Module 1: Introduction to Grafana

- What is Grafana?
- Overview of Grafana's features and use cases
- Grafana's role in monitoring and observability
- Installing Grafana on different platforms (Windows, docker, linux, Cloud)

Module 2: Getting Started with Grafana

- Logging into Grafana and navigating the interface
- Understanding Grafana's dashboard structure
- Configuring data sources (e.g., Prometheus, InfluxDB, MySQL)
- Creating your first dashboard

Module 3: Working with Dashboards and Panels

- Creating and customizing dashboards
- Adding and configuring panels (Graph, Table, Gauge, etc.)
- Using queries to extract data from different data sources
- Panel types and their use cases
- Basic filtering and data manipulation in panels

Module 4: Exploring Grafana Query Language

- Introduction to Grafana's query editor

- Writing queries for different data sources (Prometheus, MySQL, etc.)
- Filtering, grouping, and aggregating data
- Understanding time-series data and how to manipulate it

Module 5: Alerts and Notifications

- Setting up alerts in Grafana
- Configuring notification channels (email, Slack, etc.)
- Understanding alert rules and conditions
- Best practices for setting up alerts and notifications

Module 6: User Management and Permissions

- Creating and managing users in Grafana
- Understanding roles and permissions
- Organizing dashboards and folders for team access
- Sharing and exporting dashboards

Module 7: Grafana Plugins and Extensions

- Exploring Grafana plugins (data sources, visualizations, etc.)
- Installing and configuring Grafana plugins
- Customizing Grafana with third-party integrations

Module 9: Best Practices and Real-World Examples

- Organizing dashboards for effective monitoring
- Performance optimization for Grafana
- Real-world use cases (system monitoring, website performance monitoring)
- Troubleshooting common issues in Grafana

Module 10: Conclusion and Next Steps

- Review of key concepts
 - Exploring advanced Grafana features and resources
 - Community and support options for further learning
 - Final project: Create and present a monitoring dashboard
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