AMBIENT-IT

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Updated on 10/04/2025

Sign up

Grafana Loki training

3 days (21 hours)

Presentation

Grafana Loki is a tool that provides you with a panel for indexing your systems' logs and viewing them on a dashboard. It doesn't index the content of the logs, but rather a set of labels for each log stream. This reduces the effort involved in processing and storing logs.

Grafana Loki is a multi-tenant log aggregation system inspired by Prometheus. Designed to be highly cost-effective and easy to operate, it is highly available and horizontally scalable. It is used primarily with tools such as Grafana, Prometheus and Cloud providers.

In this Grafana Loki training course, you'll learn how to collect and display logs with Grafana Loki. We'll look in detail at the three components of Grafana Loki: Promtail, Loki and Grafana.

As always, our training based on the latest versions of these toolsnamely Grafana 11 and Loki 3.3.

Objectives

- Master the architecture and concepts of Grafana Loki
- Choosing the right indexing strategy for logs
- Configure Loki on a Kubernetes cluster using the official Helm Chart

Target audience

- DevOps system administrators
- Developers
- Infrastructure architects

Prerequisites

- Basic knowledge of a Unix/Linux system
- Basic knowledge of Kubernetes/Helm
- Have already taken our Prometheus & Grafana training course or have a good command of the subject
- Experience Prometheus

Software requirements

- Recent version of Docker
- Latest version of Kubectl
- Latest version of Helm
- Recent version of Minikube or Kind

Grafana Loki training program

Introduction to Prometheus, Grafana Stack, Loki and Alloy

- Log centralization
- Introduction to Prometheus
- Introduction to Grafana Stack
- How Loki works
- Introduction to Grafana Alloy (or its equivalents with Opentelemetry Collector and Vector)

Setting up Loki

- Grafana Loki installation
- Installation of Grafana Alloy (or its equivalents with Opentelemetry collector and vector)
- Installing Grafana
- Data access
- Data life cycle
- System integration
- Adding entry points

Discover the LogQL language

- PromQL language
- LogQL language
- Using LogCLI

Customization of Grafana and Exploitation of Loki

- Introduction
- Data sources
- Dashboard creation
- TDB and the community
- TDB sharing

Output management

- Instrumentation via the opentelemetry SDK in its code vs. using Prometheus Exporters
- Integration of standard output logs (stderr, stdout)
- Setup via Nginx or FastAPI
- Grafana, Loki and Prometheus exhibition
- Access protection

Preparing and configuring applications

- Nginx output management (or equivalent)
- Java Spring boot or FastAPI output management
- Label enrichment

Dashboard

- Metrics and PromQL (linear regression, histograms, etc.)
- Dashboards in the form of traffic lights for alert thresholds exceeded
- Geospatial data on maps

Alerts manager added

- Operating principle
- Email/slack notification configuration
- Inhibiting alerts

Docker and Kubernetes

- Deploying Loki in Docker
- Introduction to Kubernetes
- Principle of Loki integration
- Deployment in Kubernetes
- Creating a dashboard for the Nginx controller

Companies concerned

This training course is aimed at both individuals and companies, large or small, wishing to train their teams in a new advanced computer technology or to

acquire specific business knowledge or modern methods.

Positioning on entry to training

Positioning at the start of training complies with Qualiopi quality criteria. As soon as registration is finalized, the learner receives a self-assessment questionnaire which enables us to assess his or her estimated level of proficiency in different types of technology, as well as his or her expectations and personal objectives for the training to come, within the limits imposed by the selected format. This questionnaire also enables us to anticipate any connection or security difficulties within the company (intra-company or virtual classroom) which could be problematic for the follow-up and smooth running of the training session.

Teaching methods

Practical course: 60% Practical, 40% Theory. Training material distributed in digital format to all participants.

Organization

The course alternates theoretical input from the trainer, supported by examples, brainstorming sessions and group work.

Validation

At the end of the session, a multiple-choice questionnaire verifies the correct acquisition of skills.

Sanction

A certificate will be issued to each trainee who completes the course.