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Updated on 04/11/2025

Register

Grafana Loki Training

3 days (21 hours)

Overview

Grafana Loki is a tool that provides you with a panel for indexing your system logs and viewing them on a dashboard. It does not index the content of the logs, but rather a set of tags 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 mainly used with tools such as Grafana, Prometheus, and cloud providers.

In this Grafana Loki training, you will learn how to collect and display logs with Grafana Loki. We will take a detailed look at the three components of Grafana Loki: Promtail, Loki, and Grafana.

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

Objectives

- Master the architecture and concepts of Grafana Loki
- Know how to choose a good indexing strategy for logs
- Configure Loki on a Kubernetes cluster using the official Helm Chart

Target audience

- System administrators DevOps
- Developers
- Infrastructure architects

Prerequisites

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

Software prerequisites

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

Our 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

- Installing Grafana Loki
- Installing Grafana Alloy (or its equivalents with Opentelemetry Collector and Vector)
- Installing Grafana
- Accessing data
- Data lifecycle
- System integration
- Adding entry points

Discovering the LogQL language

- PromQL language
- LogQL language
- Using LogCLI

Customizing Grafana and using Loki

- Introduction
- Data Sources
- Creating dashboards
- TDB and community
- Sharing TDB

Output management

- Instrumentation via the open telemetry SDK in your code vs. using Prometheus Exporters
- Integration of standard output logs (stderr, stdout)
- Implementation via Nginx or FastAPI
- Exposure of Grafana, Loki, and Prometheus
- Access protection

Application preparation and configuration

- Management of Nginx output (or equivalent)
- Management of Java Spring Boot or FastAPI output
- Label enrichment

Dashboard

- Metrics and PromQL (linear regression, histograms, etc.)
- Traffic light dashboards for exceeded alert thresholds
- Geospatial data on maps

Addition of alert manager

- How it works
- Email/Slack notification configuration
- Alert inhibition

Docker and Kubernetes

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

Target companies

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

acquire specific business knowledge or modern methods.

Positioning at the start of training

The positioning at the start of the training complies with Qualiopi quality criteria. Upon final registration, the learner receives a self-assessment questionnaire that allows us to assess their estimated level of proficiency in different types of technologies, as well as their expectations and personal objectives for the upcoming training, within the limits imposed by the selected format. This questionnaire also allows us to anticipate certain connection or internal security issues within the company (intra-company or virtual classroom) that could be problematic for the monitoring and smooth running of the training session.

Teaching methods

Practical training: 60% practical, 40% theory. Training materials distributed in digital format to all participants.

Organization

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

Assessment

At the end of the session, a multiple-choice questionnaire is used to verify that the skills have been correctly acquired.

Certification

A certificate will be issued to each trainee who has completed the entire training course.