

## Presentation

Our Prometheus training course will teach you how to monitor your applications effectively.

This time series database ([TSDB](#)) is optimized for log monitoring in the context of DevOps missions. In fact, its scrapping functionality enables it collect metrics via HTTP.

This gives you centralized control of your data, so you can be quickly alerted to any failures in your infrastructure. Speaking alerts, our training will give you the best practices for [configuring these warnings](#).

In this course, you'll learn how to install and configure Prometheus, up alerts, create PromQL queries and deploy dashboards.

By the end of this Prometheus training course, you'll know the basics and how to monitor your applications.

## Training content

- 2 days training
- More than 20 hours of video training (Monitoring Systems and Services with Prometheus LFS241)

## Objectives

- Understanding Prometheus, its advantages and limitations
- Monitoring applications with Prometheus
- Create dashboards and set alerts

## Target audience

- DevOps
- System administrators
- Developers
- Architects

## Prerequisites

- Knowledge of system administration
- Knowledge of containerization

## Prometheus Training Program

### Introduction to Prometheus and monitoring

- What is monitoring?
- What is Prometheus?
- The tool's advantages and limitations
- What isn't Prometheus?

### Architecture

- The link between applications and Prometheus
- The different elements
  - Client Libraries
  - Exporters
  - Service discovery
  - Scraping
  - Storage
  - Long-Term Storage
  - Dashboards
  - Recording Rules
  - Alerts
  - Querying

### Installation and configuration

- Download
- Installation
- Create a configuration file
- Use the browser expression
- Launch the Node Exporter
- Alerting

### First step with the tool

- Data model and format
- Perform queries
- Start discovery service
- What is instrumentation?
- Competition and efficiency
- Label metrics
- Create metrics
- Instrumentation
  - The counter
  - The gauge
  - Histogram
  - Unit testing

## PromQL

- The syntax
- The structure of language
- Types of results and nodes
- PromLens
- Select series
- Rates and derivatives
- Querying on graphs
- Filtering
- Sorting

## The dashboard

- Configure data collection rules
- Create a new dashboard
- Configuring a graphics panel
- Add visualizations
- Good visualization practices
- Default and custom variables
- Create an alert rule

## Alerting

- Alert expressions
- Annotations
- SLO alerts
- Scrape health alerts
- Using the alertmanager
  - Roads
  - Receivers
  - Inhibit rules
  - View alerts and notifications

## Monitor hosted metrics

- Detailed presentation of the Node Exporter
- Scrape the Node Exporter
- Check metrics ingestion
- Using metrics
- Using custom metrics

## Monitor container metrics

- Integrating Prometheus with Kubernetes
- Configuration
- Create a Namespace and a Cluster
- Create a config map
- Deploying Kubernetes and its dashboard
- Troubleshooting

## Companies concerned

This 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.

