Updated 06/24/2024

Sign up

OpenTelemetry training

3 days (21 hours)

Presentation

OpenTelemetry is an open source project that represents the merger of the OpenTracing and OpenCensus projects. Open Telemetry offers you a unique set of APIs and libraries that standardize the way you collect and send telemetry data to a back-end platform.

The main advantage of OpenTelemetry is that it provides a unified standard for the creation and ingestion of telemetry data, similar to the container orchestration standards established years ago by Kubernetes.

OpenTelemetry provides a consistent collection mechanism and format, without restricting technologists to a specific supplier. This solution supports all telemetry processes, from data export to import into the database. No need for third-party tools.

Thanks to our OpenTelemetry training course, you'll be able to telemeter easily and flexibly. You'll master a pluggable architecture that makes it easy to add additional protocols and technology formats.

Objectives

- Retrieve and export data with OpenTelemetry
- Collect traces and distributed metrics to monitor applications
- Solve application problems (reliability, security, etc.)

Target audience

- Developers
- Safety engineers

Prerequisites

- Knowledge of SQL and database management
- It is preferable to have already worked in a development or infrastructure department of an IT department.
- Basic DevOps culture recommended

Software requirements

- An IDE
- A robust terminal if you're using MacOS (like iTerm2)

OpenTelemetry Training Program

Introduction

- What is OpenTelemetry?
- Installation
- Source code SDK integration

OpenTelemetry architecture

- API
  - PLC tracker
  - Metrics API
  - Context API
  - The set of semantic conventions
- SDK
  - Implementation
  - Framework
    - Configuration
    - Plugins
    - Lifecycle
  - Pipeline tracer
  - Processor: data processing
  - Sampler: filter the data you want to extract
  - Exporter: transmit data to the backend
- Collector
  - Receive, process and export telemetry data
- OTLP protocol
  - Transmit telemetry data

Observability with OpenTelemetry

- Main categories
  - Logs
  - Metrics
  - Resource Metadata
  - Traces
- Integration of various forms of telemetry

The many components of OpenTelemetry

- Initialize Spark
- Attributes (tags)
- Logs
- Events

Frameworks and libraries

- Installation and integration
- Frameworks and libraries: Spring, ASP.NET Core, Express, Quarkus
- View and configure table history
- Discovering instruments
- Ensuring context propagation

Languages

- Software development kits (SDKs)
- OpenTelemetry client libraries
  - Javascript
  - Python
  - Go
  - Ruby
  - C#

Manual and automatic instruments

- Instrument configuration
- Manual instruments
  - Pros
  - Cons
- Core
  - API and SDK implementation
- Contribute
- Creating Telemetry data
- Anticipating DDoS attack attempts

Companies concerned

This course is aimed at both individuals and companies, large or small,

wishing to train its teams in a new advanced IT 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, with 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.