Zipkin

**What is Zipkin?**

Zipkin is an open-source distributed tracing tool used to track the flow of requests across microservices.

**Simple Definition:- [port is :- 9411]**

Zipkin helps you see what happened to a request as it travels across multiple microservices.

**✅ What is Zipkin Used For?**

**🔎 Use Cases:**

* Trace a request from start to end across services
* Find performance bottlenecks
* Debug failures in distributed systems
* Monitor latency between services

**🧩 How Zipkin Works in Microservices**

1. A client sends a request (e.g., to API Gateway).
2. That request flows through services:
3. ➡️ API Gateway → Order Service → Payment Service
4. Each service generates a trace ID and span ID.
5. Those traces are sent to the Zipkin server.
6. You can view the request's full journey in the Zipkin UI.

**Steps to use in sprinboot project:-**

Add dependencies to pom.xml:

<dependency>

<groupId>io.micrometer</groupId>

<artifactId>micrometer-tracing-bridge-brave</artifactId>

</dependency>

<dependency>

<groupId>io.zipkin.reporter2</groupId>

<artifactId>zipkin-reporter-brave</artifactId>

</dependency>

Start Zipkin (with Docker):

docker run -d -p 9411:9411 openzipkin/zipkin

Configure application.yml in each service:

spring:

application:

name: order-service # change per service

management:

tracing:

sampling:

probability: 1.0

zipkin:

tracing:

endpoint: <http://localhost:9411/api/v2/spans>