Instrumentation Report

Overview of the system:

The system itself is a Todo manager that is built with HTML and Java as the languages. The following technologies and tools were used:

1. Spring Boot
2. H2 In-memory database
3. Spring Data JPA
4. BootStrap
5. ThymeLeaf
6. Spring Tool Suite (STS)

This To do application allows the user to make a To Do list. You can add, delete, and update the to do items. There is also a login page to keep your to-do list safe.

Introduction:

Instrumentation and telemetry data visualization are essential parts of modern software development. They help developers to understand the behavior and performance of their applications, detect and diagnose issues, and optimize their software systems. Software instrumentation is the primary method for collecting data in software systems. Data collected while instrumenting a system can be used to analyze faults, performance issues, understand system behavior, etc. In this report, we will provide an overview of instrumentation and telemetry data visualization.

Description of Instrumentation:

Instrumentation is the process of adding code to software applications to collect data on their behavior and performance. Instrumentation is typically done using specialized tools or frameworks that allow developers to add telemetry data collection to their applications without having to modify the code directly. The telemetry data collected through instrumentation can include metrics, traces, logs, and other data types that provide insights into the application's behavior and performance. In this assignment, OpenTelemetry was used for the collection of application telemetry data such as metrics, logs and traces. Since the system I used was in Java, the Open Telemetry that was implemented is for Java systems. Additionally, Zipkin was used to visualize the telemetry data.

Telemetry Data Visualization: Telemetry data visualization is the process of transforming the telemetry data collected from an application into visual representations that are easy to understand and interpret. Telemetry data visualization tools typically provide developers with dashboards, charts, graphs, and other visualizations that allow them to quickly identify trends, anomalies, and issues in their applications.

There are several types of telemetry data visualization tools available, including open-source tools such as Grafana, Kibana, and Jaeger, as well as commercial tools such as Datadog, New Relic, and

Splunk. These tools allow developers to customize their telemetry data visualizations and create dashboards that are tailored to their specific needs.

Conclusion:

Instrumentation and telemetry data visualization are critical components of modern software development. They allow developers to understand the behavior and performance of their applications, detect and diagnose issues, and optimize their software systems. By using specialized tools and frameworks to instrument their applications and visualizing the telemetry data collected, developers can gain valuable insights into their software systems and improve their overall quality and performance.

Here is my link to the GitHub repository where this was uploaded:
https://github.com/haarisyahya/Instrumentation-and-Visualization-of-a-Java-Application

Screenshots have been attached below, they display the bash terminal commands and output along with the Zipkin telemetry data visuals. There were 9 results and 4 of the results had 5 spans each.

Bash terminal results:

```
hyb8d@Sherdil MINGW64 ~/Desktop/Assignment 2/spring-boot-todo-app (main)
$ java  -javaagent:opentelemetry-javaagent.jar  -Dotel.service.name=spring-boot-
application -Dotel.traces.exporter=zipkin -jar target/spring-boot-todo-app-0.0.1
-SNAPSHOT.jar
Error: Unable to access jarfile target/spring-boot-todo-app-0.0.1-SNAPSHOT.jar

hyb8d@Sherdil MINGW64 ~/Desktop/Assignment 2/spring-boot-todo-app (main)
$ java  -javaagent:opentelemetry-javaagent.jar  -Dotel.service.name=spring-boot-
application -Dotel.traces.exporter=zipkin -jar target/spring-boot-todo-app-0.0.1
-SNAPSHOT.jar
Java HotSpot(TM) 64-Bit Server VM warning: Sharing is only supported for boot lo
ader classes because bootstrap classpath has been appended
[otel.javaagent 2023-03-26 16:48:50:066 -0400] [main] INFO io.opentelemetry.java
agent.tooling.VersionLogger - opentelemetry-javaagent - version: 1.24.0

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 \\/  ___)| |_)| | | | | || (_| |  ) ) ) )
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 =========|_|==============|___/=/_/_/_/
 :: Spring Boot ::                (v2.6.6)

2023-03-26 16:48:52.800  INFO 8284 --- [           main] c.s.s.todo.SpringBootTo
doAppApplication  : Starting SpringBootTodoAppApplication v0.0.1-SNAPSHOT using
Java 17.0.6 on Sherdil with PID 8284 (C:\Users\hyb8d\Desktop\Assignment 2\spring
-boot-todo-app\target\spring-boot-todo-app-0.0.1-SNAPSHOT.jar started by hyb8d i
n C:\Users\hyb8d\Desktop\Assignment 2\spring-boot-todo-app)
2023-03-26 16:48:52.813  INFO 8284 --- [           main] c.s.s.todo.SpringBootTo
doAppApplication  : No active profile set, falling back to 1 default profile: "d
efault"
2023-03-26 16:48:53.734  INFO 8284 --- [           main] .s.d.r.c.RepositoryConf
igurationDelegate : Bootstrapping Spring Data JPA repositories in DEFAULT mode.
2023-03-26 16:48:53.779  INFO 8284 --- [           main] .s.d.r.c.RepositoryConf
igurationDelegate : Finished Spring Data repository scanning in 34 ms. Found 1 J
PA repository interfaces.
2023-03-26 16:48:54.479  INFO 8284 --- [           main] o.s.b.w.embedded.tomcat
.TomcatWebServer  : Tomcat initialized with port(s): 8282 (http)
2023-03-26 16:48:54.501  INFO 8284 --- [           main] o.apache.catalina.core.
StandardService   : Starting service [Tomcat]
2023-03-26 16:48:54.502  INFO 8284 --- [           main] org.apache.catalina.cor
e.StandardEngine  : Starting Servlet engine: [Apache Tomcat/9.0.60]
2023-03-26 16:48:54.560  INFO 8284 --- [           main] o.a.c.c.C.[Tomcat].[loc
alhost].[/]       : Initializing Spring embedded WebApplicationContext
2023-03-26 16:48:54.561  INFO 8284 --- [           main] w.s.c.ServletWebServerA
pplicationContext : Root WebApplicationContext: initialization completed in 1679
 ms
2023-03-26 16:48:54.603  INFO 8284 --- [           main] com.zaxxer.hikari.Hikar
iDataSource       : HikariPool-1 - Starting...
2023-03-26 16:48:54.823  INFO 8284 --- [           main] com.zaxxer.hikari.Hikar
iDataSource       : HikariPool-1 - Start completed.
2023-03-26 16:48:54.854  INFO 8284 --- [           main] o.s.b.a.h2.H2ConsoleAut
oConfiguration    : H2 console available at '/myurl'. Database available at 'jdb
c:h2:mem:amitava'
2023-03-26 16:48:55.300  INFO 8284 --- [           main] o.hibernate.jpa.interna
l.util.LogHelper  : HHH000204: Processing PersistenceUnitInfo [name: default]
2023-03-26 16:48:55.374  INFO 8284 --- [           main] org.hibernate.Version
                  : HHH000412: Hibernate ORM core version 5.6.7.Final
2023-03-26 16:48:55.547  INFO 8284 --- [           main] o.hibernate.annotations
.common.Version   : HCANN000001: Hibernate Commons Annotations {5.1.2.Final}
2023-03-26 16:48:55.714  INFO 8284 --- [           main] org.hibernate.dialect.D
ialect            : HHH000400: Using dialect: org.hibernate.dialect.H2Dialect
Hibernate:

    drop table if exists todo CASCADE
Hibernate:

    drop sequence if exists hibernate_sequence
Hibernate: create sequence hibernate_sequence start with 1 increment by 1
Hibernate:

    create table todo (
       id bigint not null,
        completed varchar(255),
        todo_item varchar(255),
        primary key (id)
    )
2023-03-26 16:48:56.438  INFO 8284 --- [           main] o.h.e.t.j.p.i.JtaPlatfo
rmInitiator       : HHH000490: Using JtaPlatform implementation: [org.hibernate.
engine.transaction.jta.platform.internal.NoJtaPlatform]
2023-03-26 16:48:56.455  INFO 8284 --- [           main] j.LocalContainerEntityM
anagerFactoryBean : Initialized JPA EntityManagerFactory for persistence unit 'd
efault'
2023-03-26 16:48:56.959  WARN 8284 --- [           main] JpaBaseConfiguration$Jp
aWebConfiguration : spring.jpa.open-in-view is enabled by default. Therefore, da
tabase queries may be performed during view rendering. Explicitly configure spri
ng.jpa.open-in-view to disable this warning
2023-03-26 16:48:57.193  INFO 8284 --- [           main] o.s.b.a.w.s.WelcomePage
HandlerMapping    : Adding welcome page template: index
2023-03-26 16:48:57.406  WARN 8284 --- [           main] .s.s.UserDetailsService
AutoConfiguration :

Using generated security password: 73608332-394e-45bc-b27d-1917181f8ff3

This generated password is for development use only. Your security configuration
 must be updated before running your application in production.
```

Bash terminal when Zipkin was ran:

```
hyb8d@Sherdil MINGW64 ~
$ curl -sSL https://zipkin.io/quickstart.sh | bash -s
Thank you for trying Zipkin!
This installer is provided as a quick-start helper, so you can try Zipkin out
without a lengthy installation process.

Fetching version number of latest io.zipkin:zipkin-server release...
Latest release of io.zipkin:zipkin-server seems to be 2.24.0

Downloading io.zipkin:zipkin-server:2.24.0:exec to zipkin.jar...
> curl -fL -o 'zipkin.jar' 'https://repo1.maven.org/maven2/io/zipkin/zipkin-serv
er/2.24.0/zipkin-server-2.24.0-exec.jar'
  % Total    % Received % Xferd  Average Speed   Time    Time     Time  Current
                                 Dload  Upload   Total   Spent    Left  Speed
100 65.4M  100 65.4M    0     0  93.0M      0 --:--:-- --:--:-- --:--:-- 93.0M

Verifying checksum...
> curl -fL -o 'zipkin.jar.md5' 'https://repo1.maven.org/maven2/io/zipkin/zipkin-
server/2.24.0/zipkin-server-2.24.0-exec.jar.md5'
  % Total    % Received % Xferd  Average Speed   Time    Time     Time  Current
                                 Dload  Upload   Total   Spent    Left  Speed
100    32  100    32    0     0    783      0 --:--:-- --:--:-- --:--:--   800
> md5sum -c <<< "$(cat zipkin.jar.md5)  zipkin.jar"
zipkin.jar: OK
Checksum for zipkin.jar passes verification

Verifying GPG signature of zipkin.jar...
> curl -fL -o 'zipkin.jar.asc' 'https://repo1.maven.org/maven2/io/zipkin/zipkin-
server/2.24.0/zipkin-server-2.24.0-exec.jar.asc'
  % Total    % Received % Xferd  Average Speed   Time    Time     Time  Current
                                 Dload  Upload   Total   Spent    Left  Speed
100   833  100   833    0     0  16633      0 --:--:-- --:--:-- --:--:-- 17000

GPG signing key is not known, skipping signature verification.
Use the following commands to manually verify the signature of zipkin.jar:

    gpg --keyserver keyserver.ubuntu.com --recv FF31B515
    # Optionally trust the key via 'gpg --edit-key FF31B515', then typing 'trust
',
    # choosing a trust level, and exiting the interactive GPG session by 'quit'
    gpg --verify zipkin.jar.asc zipkin.jar


You can now run the downloaded executable jar:

    java -jar zipkin.jar


hyb8d@Sherdil MINGW64 ~
$ java -jar zipkin.jar

                  oo
                 oooo
                oooooo
               oooooooo
              oooooooooo
             oooooooooooo
          ooooooo  ooooooo
         oooooo     ooooooo
        oooooo       ooooooo
       oooooo   o  o   oooooo
      oooooo   oo  oo   oooooo
     ooooooo  oooo  oooo  ooooooo
    oooooo   ooooo  ooooo  ooooooo
   oooooo   oooooo  oooooo  ooooooo
  oooooooo      oo  oo      oooooooo
  ooooooooooooo oo  oo ooooooooooooo
      ooooooooooo  ooooooooooo
          oooooooo  oooooooo
              oooo  oooo


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     / / | || |_) | ' / | ||  \| |
    / /_ | ||  __/| . \ | || |\  |
   |____|___|_|   |_|\_\___|_| \_|

:: version 2.24.0 :: commit 025fb71 ::

2023-03-25 15:47:56.171  INFO [/] 12676 --- [oss-http-*:9411] c.l.a.s.Server
                    : Serving HTTP at /[0:0:0:0:0:0:0:0]:9411 - http://127.0.
0.1:9411/


hyb8d@Sherdil MINGW64 ~
$  java -jar zipkin.jar


                  oo
                 oooo
                oooooo
               oooooooo
              oooooooooo
             oooooooooooo
          ooooooo  ooooooo
         oooooo     ooooooo
        oooooo       ooooooo
```
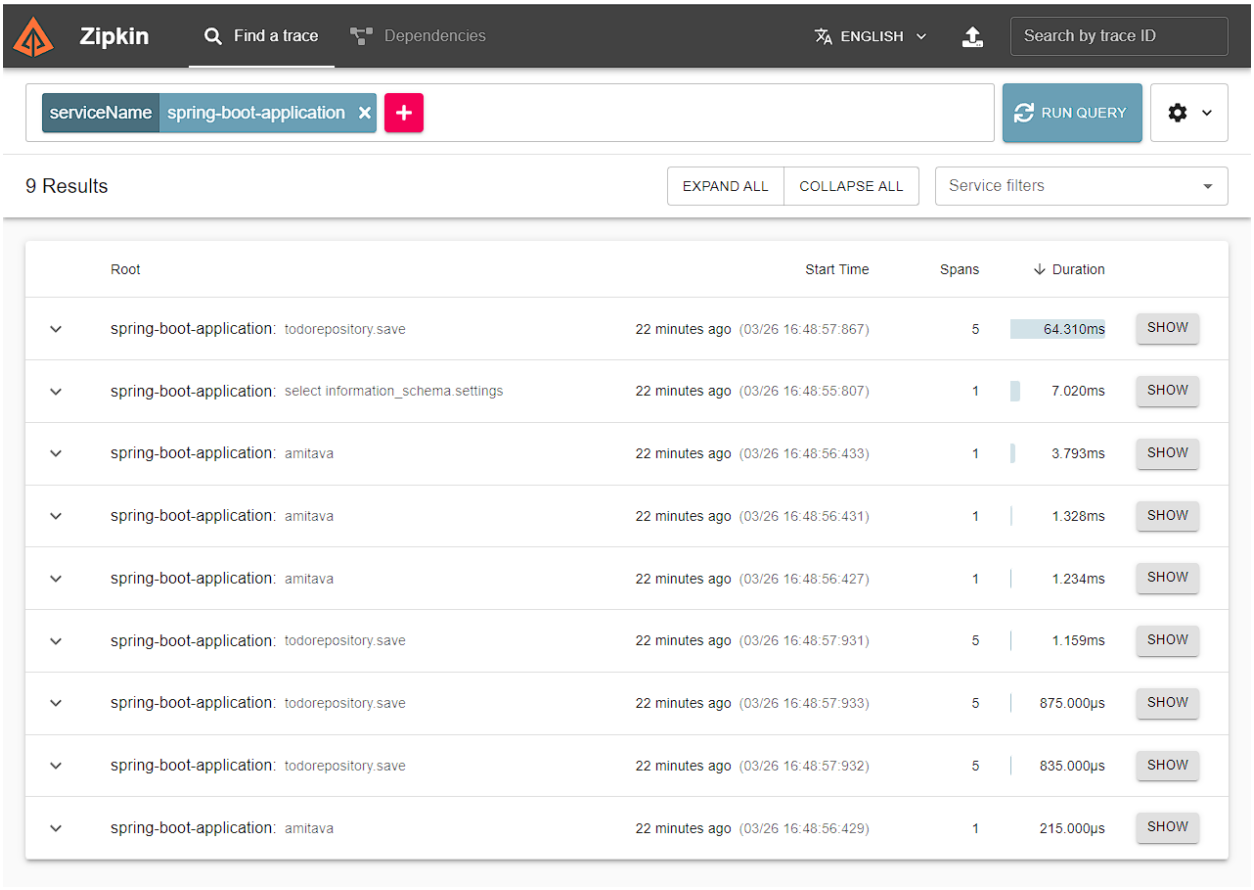
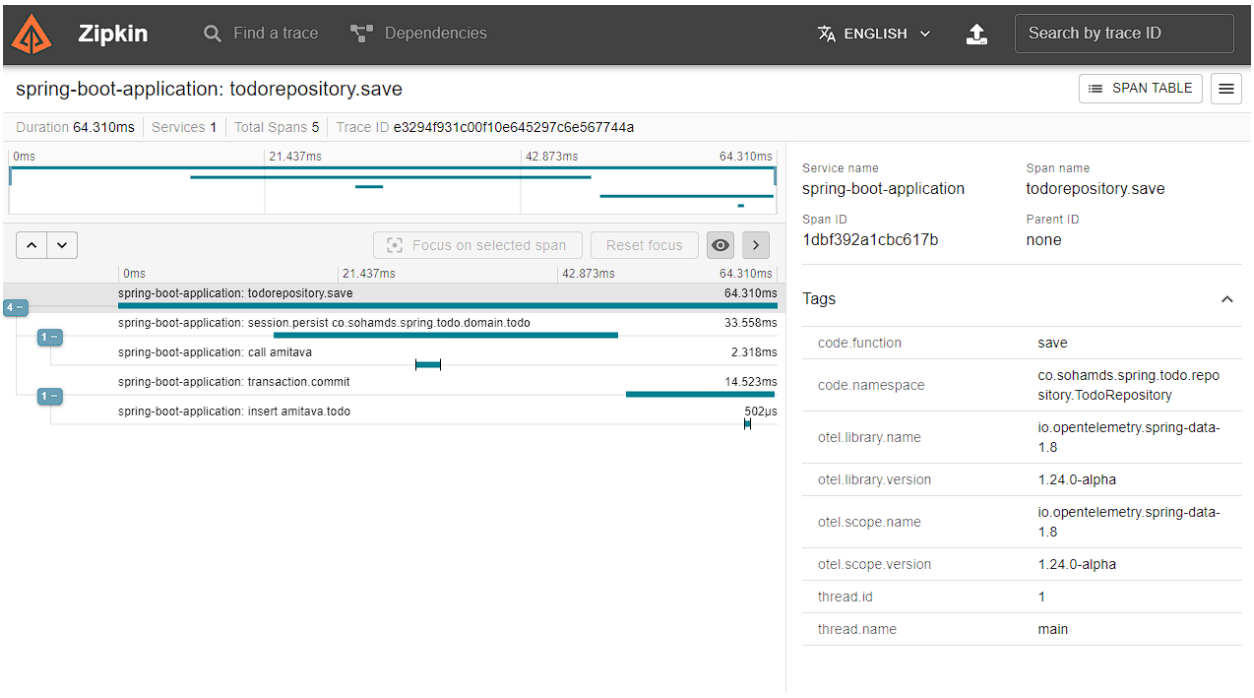

List of results:

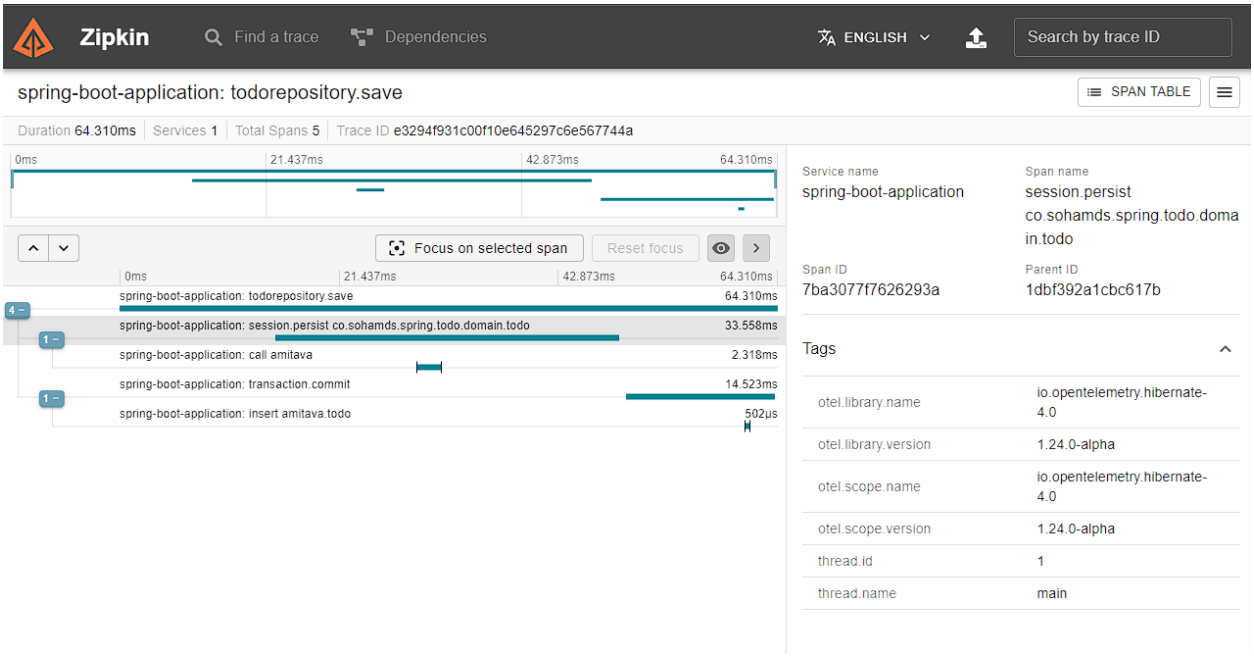


Result 1:

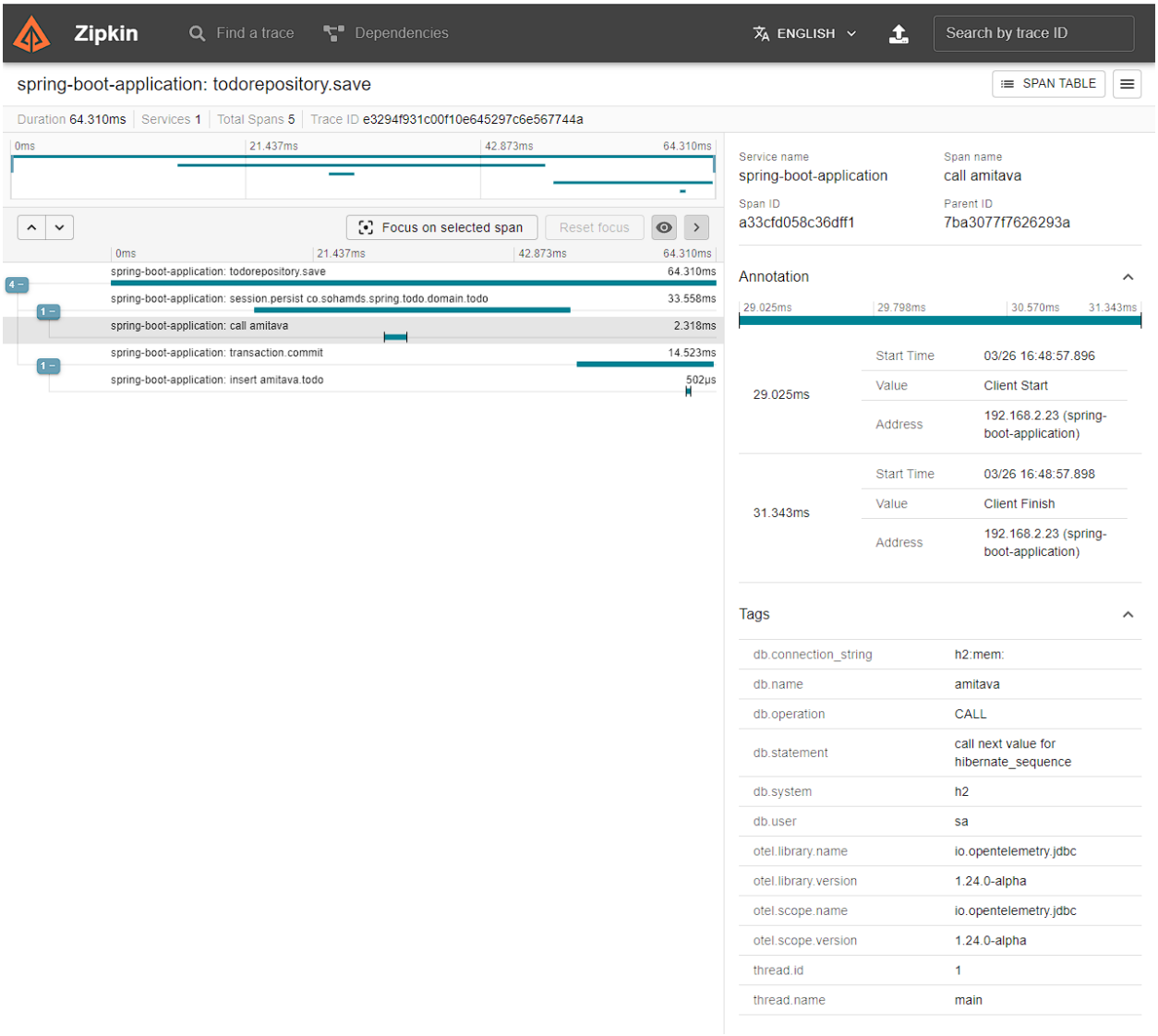
Span 1:


Zipkin
Find a trace
Dependencies
ENGLISH
Search by trace ID
spring-boot-application: todorepository.save
SPAN TABLE
Duration 64.310ms | Services 1 | Total Spans 5 | Trace ID e3294f931c00f10e645297c6e567744a
0ms
21.437ms
42.873ms
64.310ms
Focus on selected span
Reset focus
spring-boot-application: todorepository.save 64.310ms
spring-boot-application: session.persist co.sohamds.spring.todo.domain.todo 33.558ms
spring-boot-application: call amitava 2.318ms
spring-boot-application: transaction.commit 14.523ms
spring-boot-application: insert amitava.todo 502µs
Service name
spring-boot-application
Span name
todorepository.save
Span ID
1dbf392a1cbc617b
Parent ID
none
Tags
code.function save
code.namespace co.sohamds.spring.todo.repository.TodoRepository
otel.library.name io.opentelemetry.spring-data-1.8
otel.library.version 1.24.0-alpha
otel.scope.name io.opentelemetry.spring-data-1.8
otel.scope.version 1.24.0-alpha
thread.id 1
thread.name main

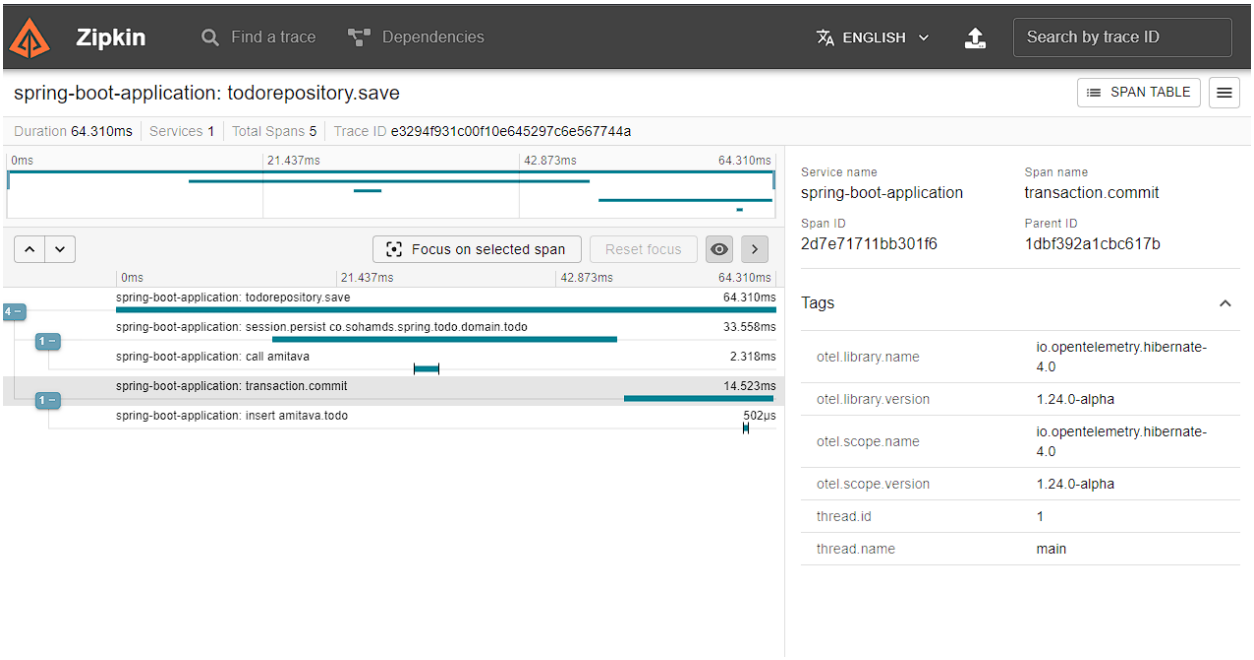
Span 2:


Zipkin
Find a trace
Dependencies
ENGLISH
Search by trace ID
spring-boot-application: todorepository.save
SPAN TABLE
Duration 64.310ms | Services 1 | Total Spans 5 | Trace ID e3294f931c00f10e645297c6e567744a
0ms
21.437ms
42.873ms
64.310ms
Focus on selected span
Reset focus
spring-boot-application: todorepository.save 64.310ms
spring-boot-application: session.persist co.sohamds.spring.todo.domain.todo 33.558ms
spring-boot-application: call amitava 2.318ms
spring-boot-application: transaction.commit 14.523ms
spring-boot-application: insert amitava.todo 502µs
Service name
spring-boot-application
Span name
session.persist co.sohamds.spring.todo.domain.todo
Span ID
7ba3077f7626293a
Parent ID
1dbf392a1cbc617b
Tags
otel.library.name io.opentelemetry.hibernate-4.0
otel.library.version 1.24.0-alpha
otel.scope.name io.opentelemetry.hibernate-4.0
otel.scope.version 1.24.0-alpha
thread.id 1
thread.name main

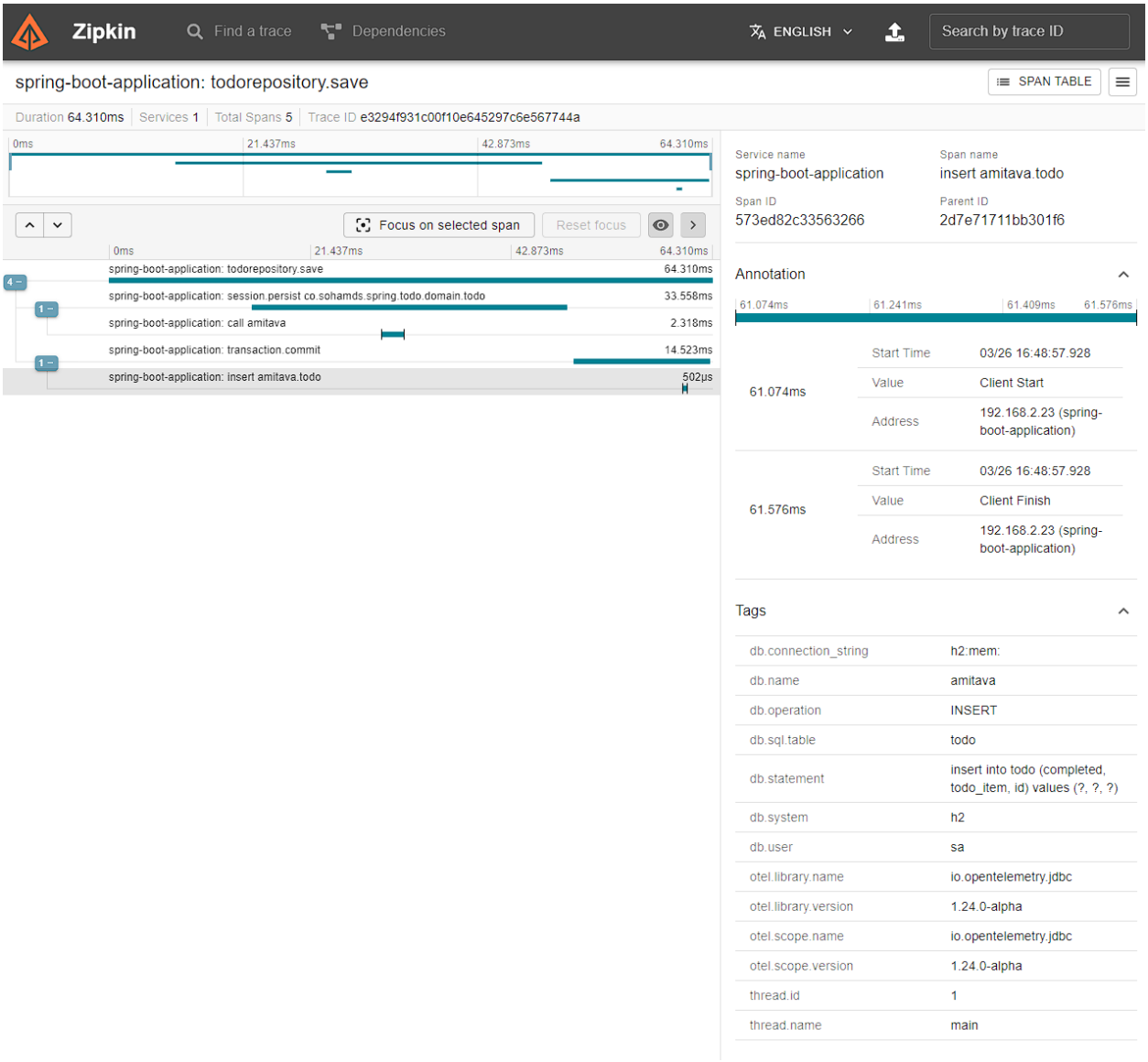
Span 3:


Zipkin
Find a trace
Dependencies
ENGLISH
Search by trace ID
spring-boot-application: todorepository.save
SPAN TABLE
Duration 64.310ms | Services 1 | Total Spans 5 | Trace ID e3294f931c00f10e645297c6e567744a
0ms
21.437ms
42.873ms
64.310ms
Focus on selected span
Reset focus
spring-boot-application: todorepository.save 64.310ms
spring-boot-application: session.persist co.sohamds.spring.todo.domain.todo 33.558ms
spring-boot-application: call amitava 2.318ms
spring-boot-application: transaction.commit 14.523ms
spring-boot-application: insert amitava.todo 502µs
Service name
spring-boot-application
Span name
call amitava
Span ID
a33cfd058c36dff1
Parent ID
7ba3077f7626293a
Annotation
29.025ms
29.798ms
30.570ms
31.343ms
29.025ms
Start Time 03/26 16:48:57.896
Value Client Start
Address 192.168.2.23 (spring-boot-application)
31.343ms
Start Time 03/26 16:48:57.898
Value Client Finish
Address 192.168.2.23 (spring-boot-application)
Tags
db.connection_string h2:mem:
db.name amitava
db.operation CALL
db.statement call next value for hibernate_sequence
db.system h2
db.user sa
otel.library.name io.opentelemetry.jdbc
otel.library.version 1.24.0-alpha
otel.scope.name io.opentelemetry.jdbc
otel.scope.version 1.24.0-alpha
thread.id 1
thread.name main

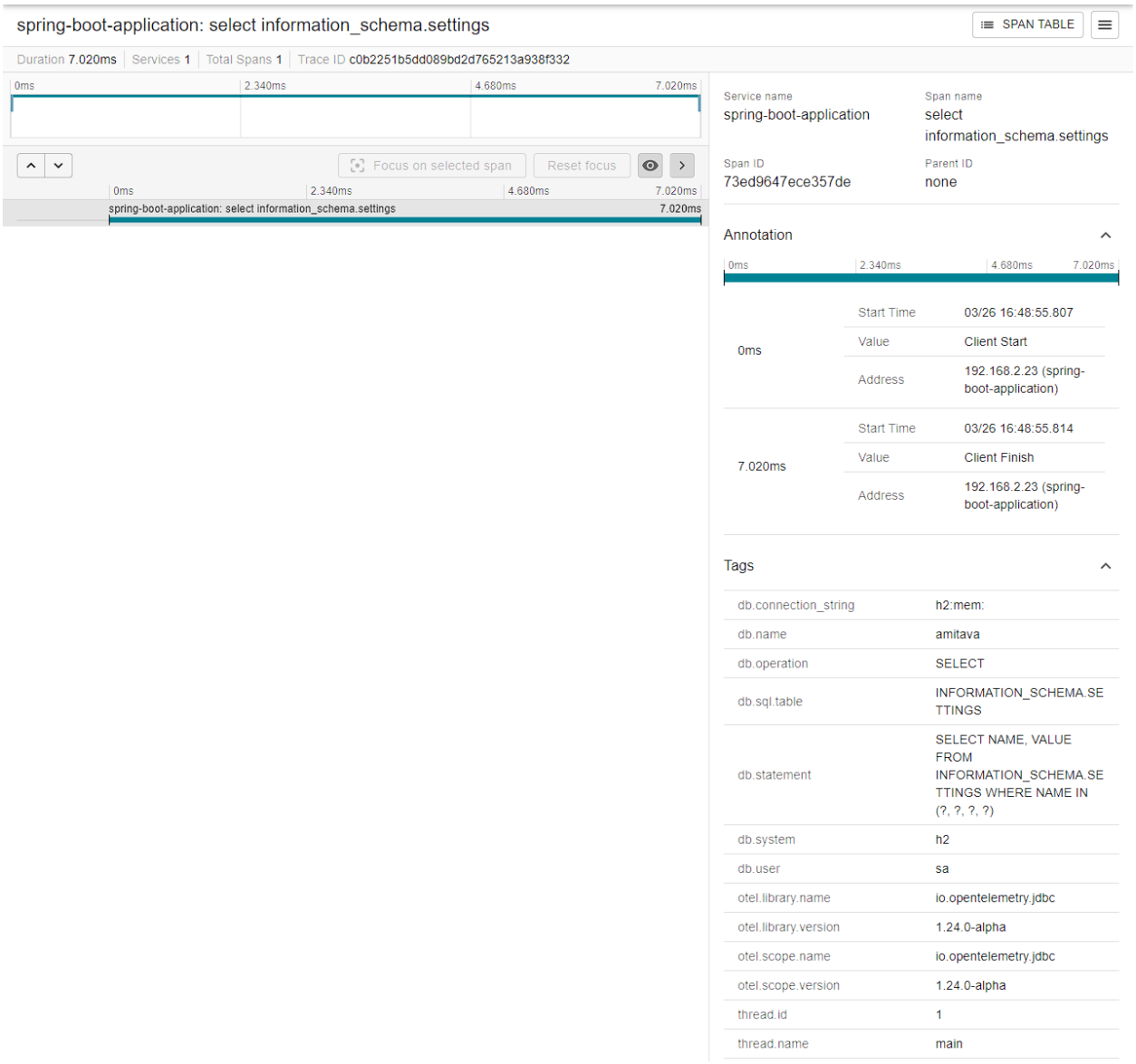
Span 4:


Zipkin
Find a trace
Dependencies
ENGLISH
Search by trace ID
spring-boot-application: todorepository.save
SPAN TABLE
Duration 64.310ms
Services 1
Total Spans 5
Trace ID e3294f931c00f10e645297c6e567744a
0ms
21.437ms
42.873ms
64.310ms
Focus on selected span
Reset focus
spring-boot-application: todorepository.save 64.310ms
spring-boot-application: session.persist co.sohamds.spring.todo.domain.todo 33.558ms
spring-boot-application: call amitava 2.318ms
spring-boot-application: transaction.commit 14.523ms
spring-boot-application: insert amitava.todo 502µs
Service name
spring-boot-application
Span name
transaction.commit
Span ID
2d7e71711bb301f6
Parent ID
1dbf392a1cbc617b
Tags
otel.library.name
io.opentelemetry.hibernate-4.0
otel.library.version
1.24.0-alpha
otel.scope.name
io.opentelemetry.hibernate-4.0
otel.scope.version
1.24.0-alpha
thread.id
1
thread.name
main

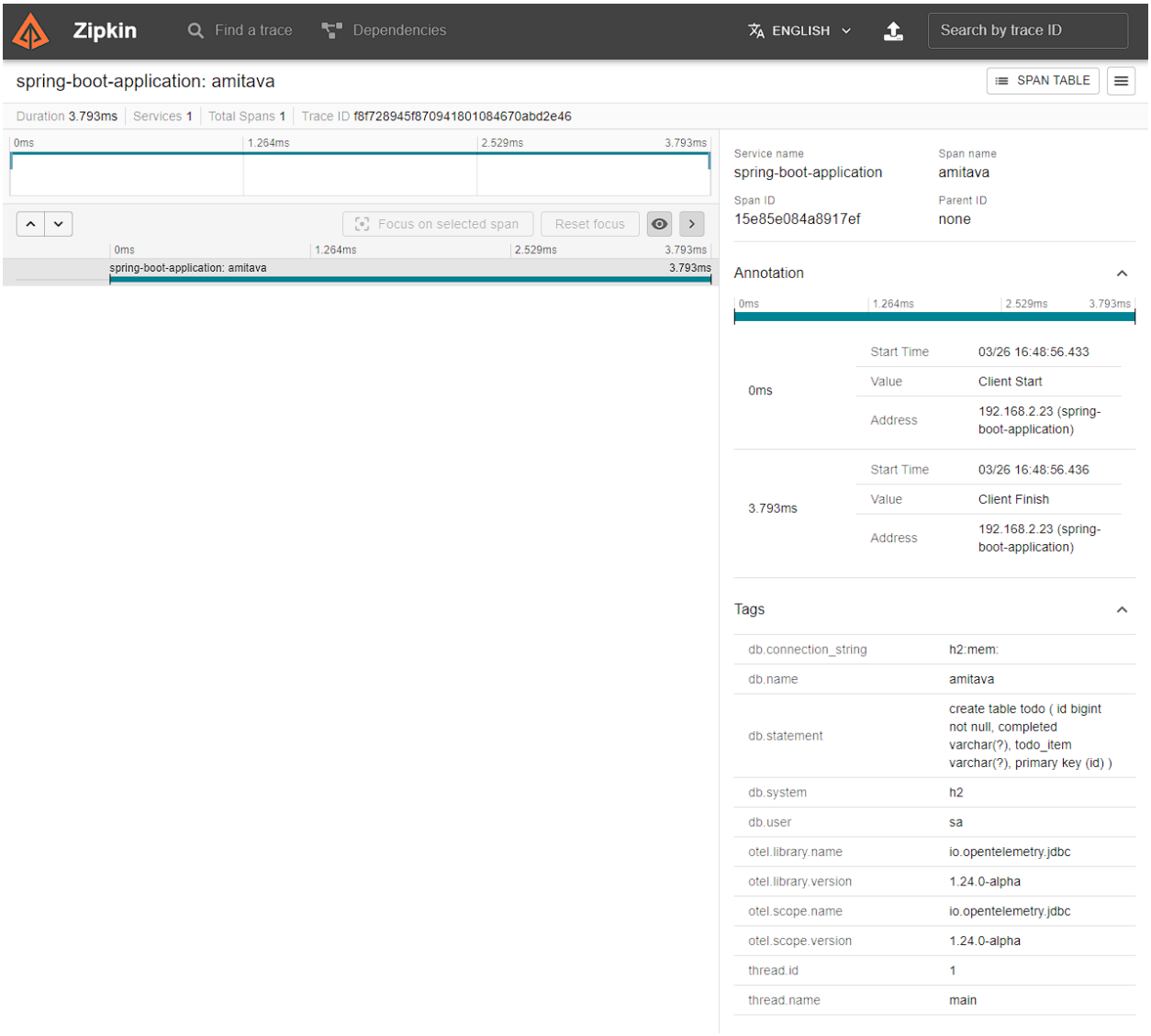
Span 5:


Zipkin
Find a trace
Dependencies
ENGLISH
Search by trace ID
spring-boot-application: todorepository.save
SPAN TABLE
Duration 64.310ms | Services 1 | Total Spans 5 | Trace ID e3294f931c00f10e645297c6e567744a
0ms
21.437ms
42.873ms
64.310ms
Focus on selected span
Reset focus
spring-boot-application: todorepository.save 64.310ms
spring-boot-application: session.persist co.sohamds.spring.todo.domain.todo 33.558ms
spring-boot-application: call amitava 2.318ms
spring-boot-application: transaction.commit 14.523ms
spring-boot-application: insert amitava.todo 502µs
Service name
spring-boot-application
Span name
insert amitava.todo
Span ID
573ed82c33563266
Parent ID
2d7e71711bb301f6
Annotation
61.074ms
61.241ms
61.409ms
61.576ms
61.074ms
Start Time 03/26 16:48:57.928
Value Client Start
Address 192.168.2.23 (spring-boot-application)
61.576ms
Start Time 03/26 16:48:57.928
Value Client Finish
Address 192.168.2.23 (spring-boot-application)
Tags
db.connection_string h2:mem:
db.name amitava
db.operation INSERT
db.sql.table todo
db.statement insert into todo (completed, todo_item, id) values (?, ?, ?)
db.system h2
db.user sa
otel.library.name io.opentelemetry.jdbc
otel.library.version 1.24.0-alpha
otel.scope.name io.opentelemetry.jdbc
otel.scope.version 1.24.0-alpha
thread.id 1
thread.name main

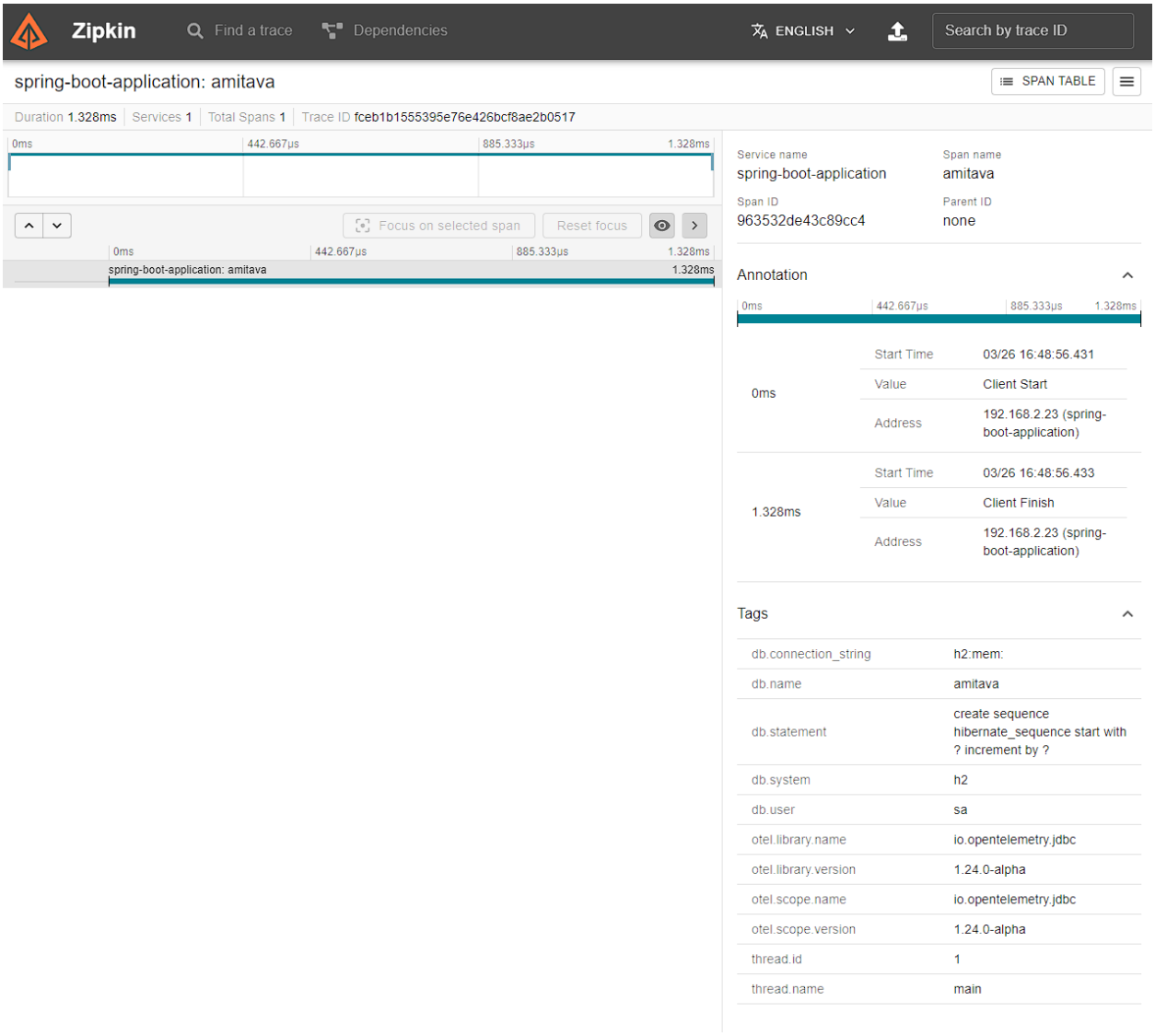
Result 2:


spring-boot-application: select information_schema.settings
SPAN TABLE
Duration 7.020ms | Services 1 | Total Spans 1 | Trace ID c0b2251b5dd089bd2d765213a938f332
0ms
2.340ms
4.680ms
7.020ms
Focus on selected span
Reset focus
spring-boot-application: select information_schema.settings
Service name
spring-boot-application
Span name
select information_schema.settings
Span ID
73ed9647ece357de
Parent ID
none
Annotation
Start Time
03/26 16:48:55.807
Value
Client Start
Address
192.168.2.23 (spring-boot-application)
Start Time
03/26 16:48:55.814
Value
Client Finish
Address
192.168.2.23 (spring-boot-application)
Tags
db.connection_string
h2:mem:
db.name
amitava
db.operation
SELECT
db.sql.table
INFORMATION_SCHEMA.SETTINGS
db.statement
SELECT NAME, VALUE FROM INFORMATION_SCHEMA.SETTINGS WHERE NAME IN (?, ?, ?, ?)
db.system
h2
db.user
sa
otel.library.name
io.opentelemetry.jdbc
otel.library.version
1.24.0-alpha
otel.scope.name
io.opentelemetry.jdbc
otel.scope.version
1.24.0-alpha
thread.id
1
thread.name
main

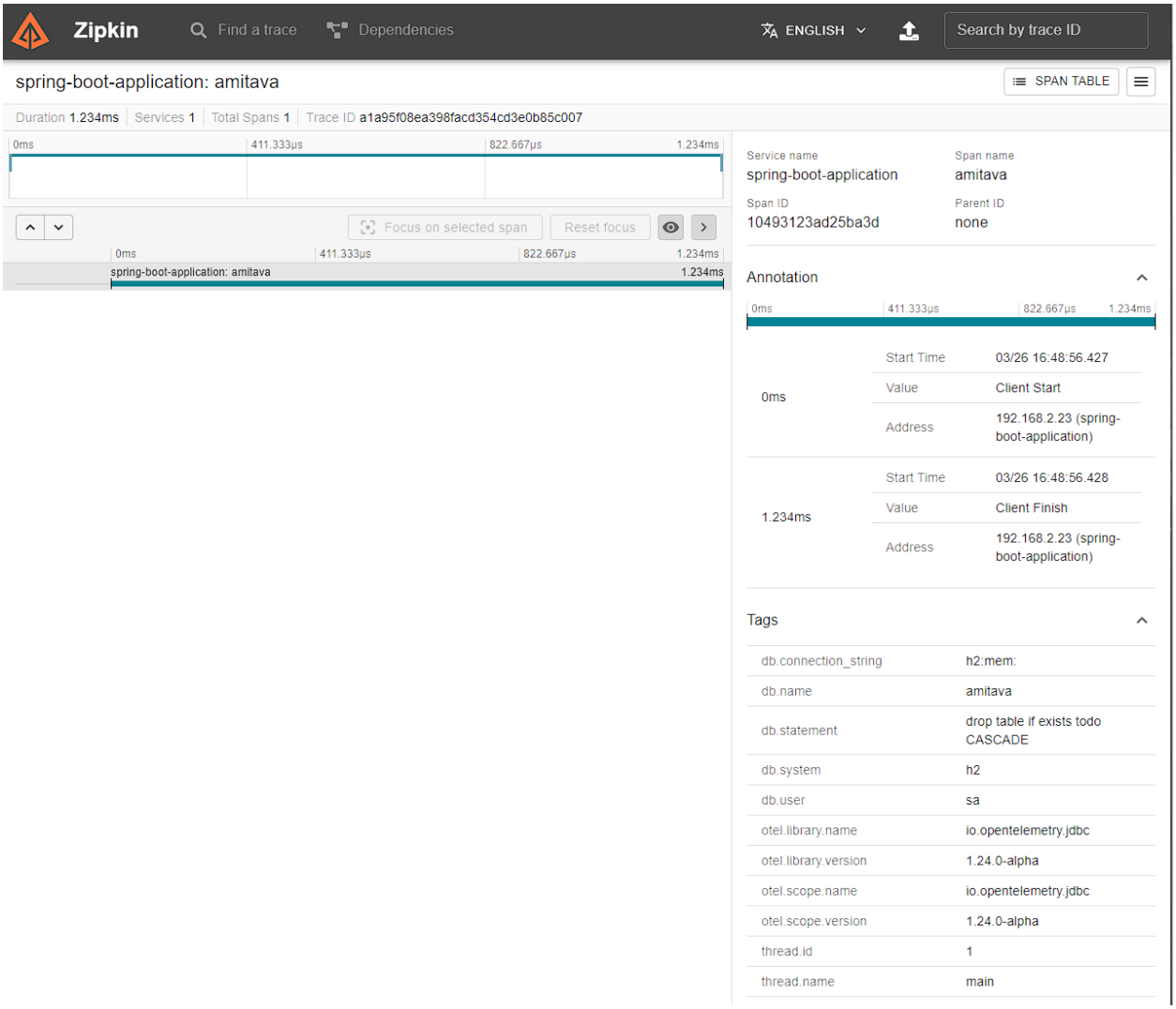
Result 3:


Zipkin
Find a trace
Dependencies
ENGLISH
Search by trace ID
spring-boot-application: amitava
SPAN TABLE
Duration 3.793ms | Services 1 | Total Spans 1 | Trace ID f8f728945f870941801084670abd2e46
0ms
1.264ms
2.529ms
3.793ms
Focus on selected span
Reset focus
spring-boot-application: amitava
Service name
spring-boot-application
Span name
amitava
Span ID
15e85e084a8917ef
Parent ID
none
Annotation
0ms
Start Time 03/26 16:48:56.433
Value Client Start
Address 192.168.2.23 (spring-boot-application)
3.793ms
Start Time 03/26 16:48:56.436
Value Client Finish
Address 192.168.2.23 (spring-boot-application)
Tags
db.connection_string h2:mem:
db.name amitava
db.statement create table todo (id bigint not null, completed varchar(?), todo_item varchar(?), primary key (id))
db.system h2
db.user sa
otel.library.name io.opentelemetry.jdbc
otel.library.version 1.24.0-alpha
otel.scope.name io.opentelemetry.jdbc
otel.scope.version 1.24.0-alpha
thread.id 1
thread.name main

Result 4:

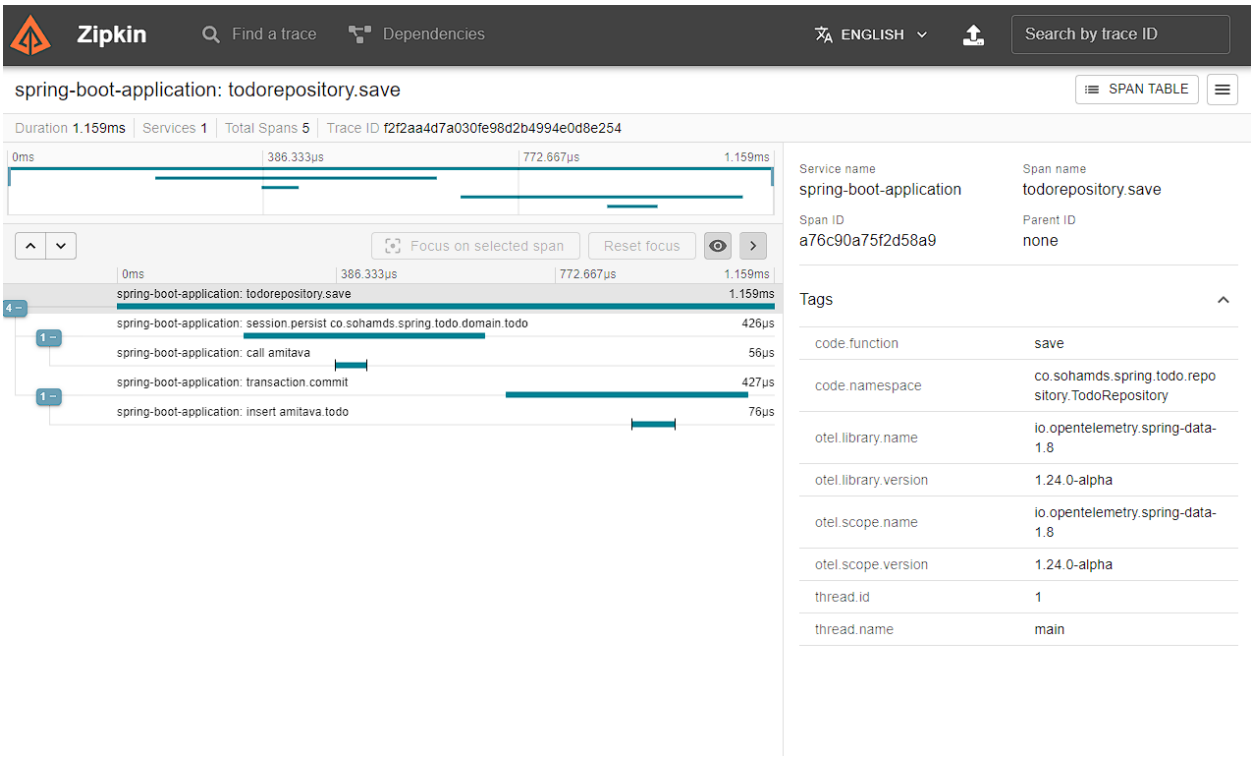

Zipkin
Find a trace
Dependencies
ENGLISH
Search by trace ID
spring-boot-application: amitava
SPAN TABLE
Duration 1.328ms | Services 1 | Total Spans 1 | Trace ID fceb1b1555395e76e426bcf8ae2b0517
0ms
442.667µs
885.333µs
1.328ms
Focus on selected span
Reset focus
spring-boot-application: amitava
Service name
spring-boot-application
Span name
amitava
Span ID
963532de43c89cc4
Parent ID
none
Annotation
0ms
Start Time
03/26 16:48:56.431
Value
Client Start
Address
192.168.2.23 (spring-boot-application)
1.328ms
Start Time
03/26 16:48:56.433
Value
Client Finish
Address
192.168.2.23 (spring-boot-application)
Tags
db.connection_string
h2:mem:
db.name
amitava
db.statement
create sequence hibernate_sequence start with ? increment by ?
db.system
h2
db.user
sa
otel.library.name
io.opentelemetry.jdbc
otel.library.version
1.24.0-alpha
otel.scope.name
io.opentelemetry.jdbc
otel.scope.version
1.24.0-alpha
thread.id
1
thread.name
main

Result 5:

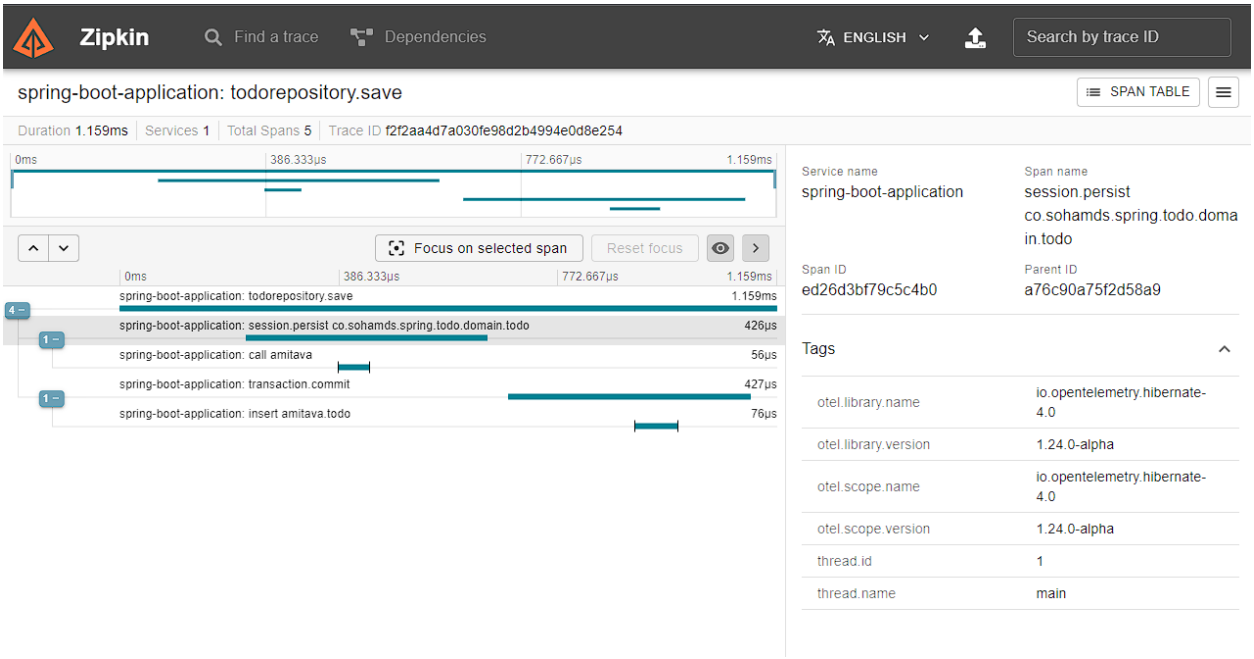


Result 6:

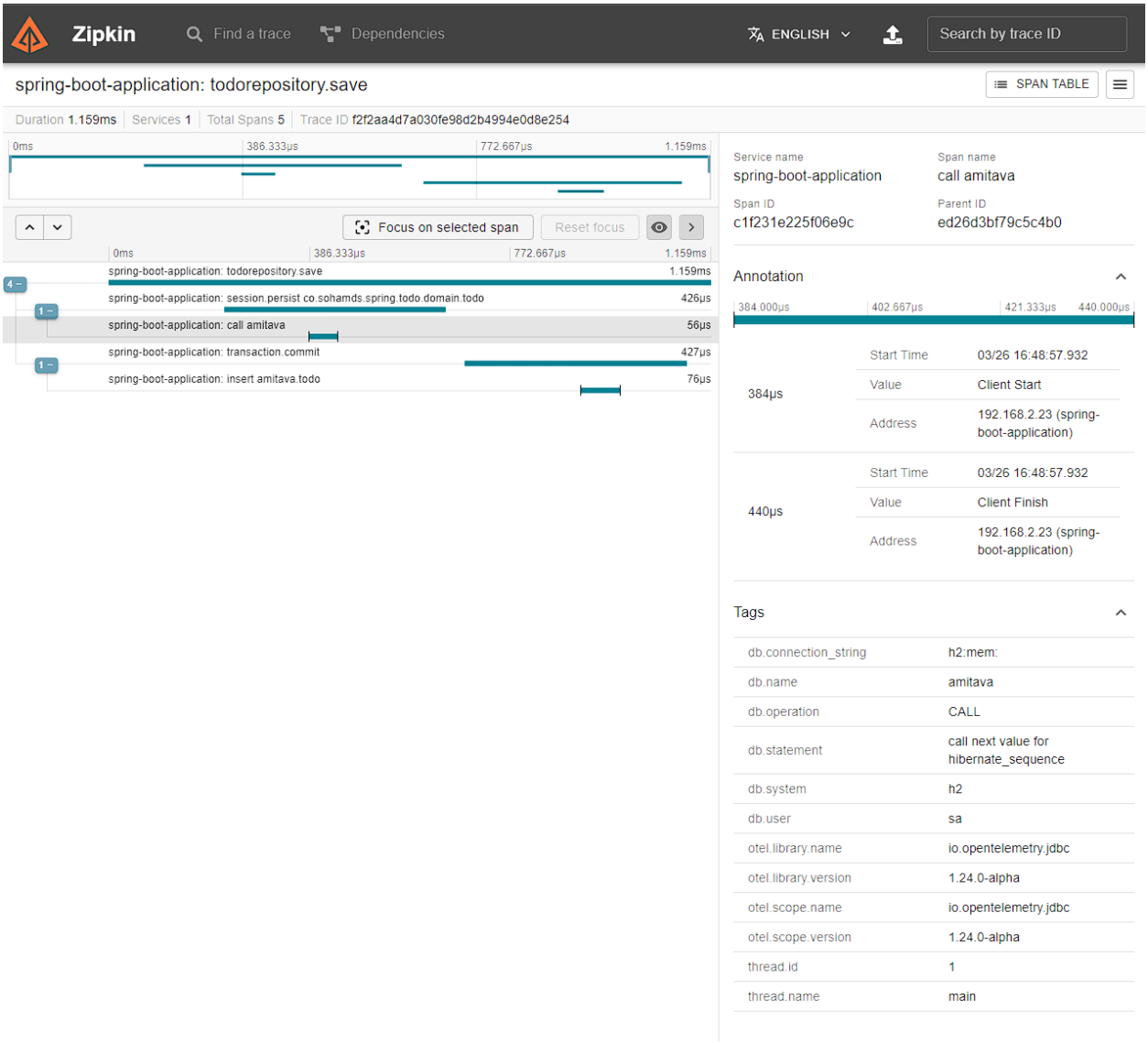
Span 1:


Zipkin
Find a trace
Dependencies
ENGLISH
Search by trace ID
spring-boot-application: todorepository.save
SPAN TABLE
Duration 1.159ms | Services 1 | Total Spans 5 | Trace ID f2f2aa4d7a030fe98d2b4994e0d8e254
0ms
386.333µs
772.667µs
1.159ms
Focus on selected span
Reset focus
spring-boot-application: todorepository.save 1.159ms
spring-boot-application: session.persist co.sohamds.spring.todo.domain.todo 426µs
spring-boot-application: call amitava 56µs
spring-boot-application: transaction.commit 427µs
spring-boot-application: insert amitava.todo 76µs
Service name
spring-boot-application
Span name
todorepository.save
Span ID
a76c90a75f2d58a9
Parent ID
none
Tags
code.function save
code.namespace co.sohamds.spring.todo.repository.TodoRepository
otel.library.name io.opentelemetry.spring-data-1.8
otel.library.version 1.24.0-alpha
otel.scope.name io.opentelemetry.spring-data-1.8
otel.scope.version 1.24.0-alpha
thread.id 1
thread.name main

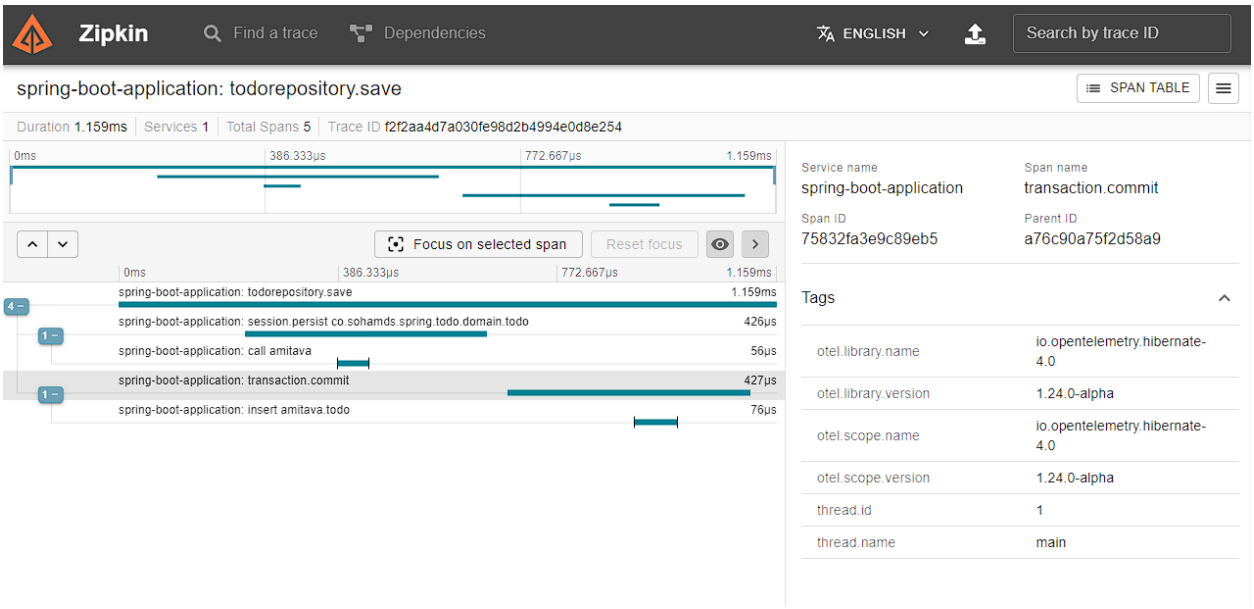
Span 2:


Zipkin
Find a trace
Dependencies
ENGLISH
Search by trace ID
spring-boot-application: todorepository.save
SPAN TABLE
Duration 1.159ms | Services 1 | Total Spans 5 | Trace ID f2f2aa4d7a030fe98d2b4994e0d8e254
0ms
386.333µs
772.667µs
1.159ms
Focus on selected span
Reset focus
spring-boot-application: todorepository.save 1.159ms
spring-boot-application: session.persist co.sohamds.spring.todo.domain.todo 426µs
spring-boot-application: call amitava 56µs
spring-boot-application: transaction.commit 427µs
spring-boot-application: insert amitava.todo 76µs
Service name
spring-boot-application
Span name
session.persist co.sohamds.spring.todo.domain.todo
Span ID
ed26d3bf79c5c4b0
Parent ID
a76c90a75f2d58a9
Tags
otel.library.name io.opentelemetry.hibernate-4.0
otel.library.version 1.24.0-alpha
otel.scope.name io.opentelemetry.hibernate-4.0
otel.scope.version 1.24.0-alpha
thread.id 1
thread.name main

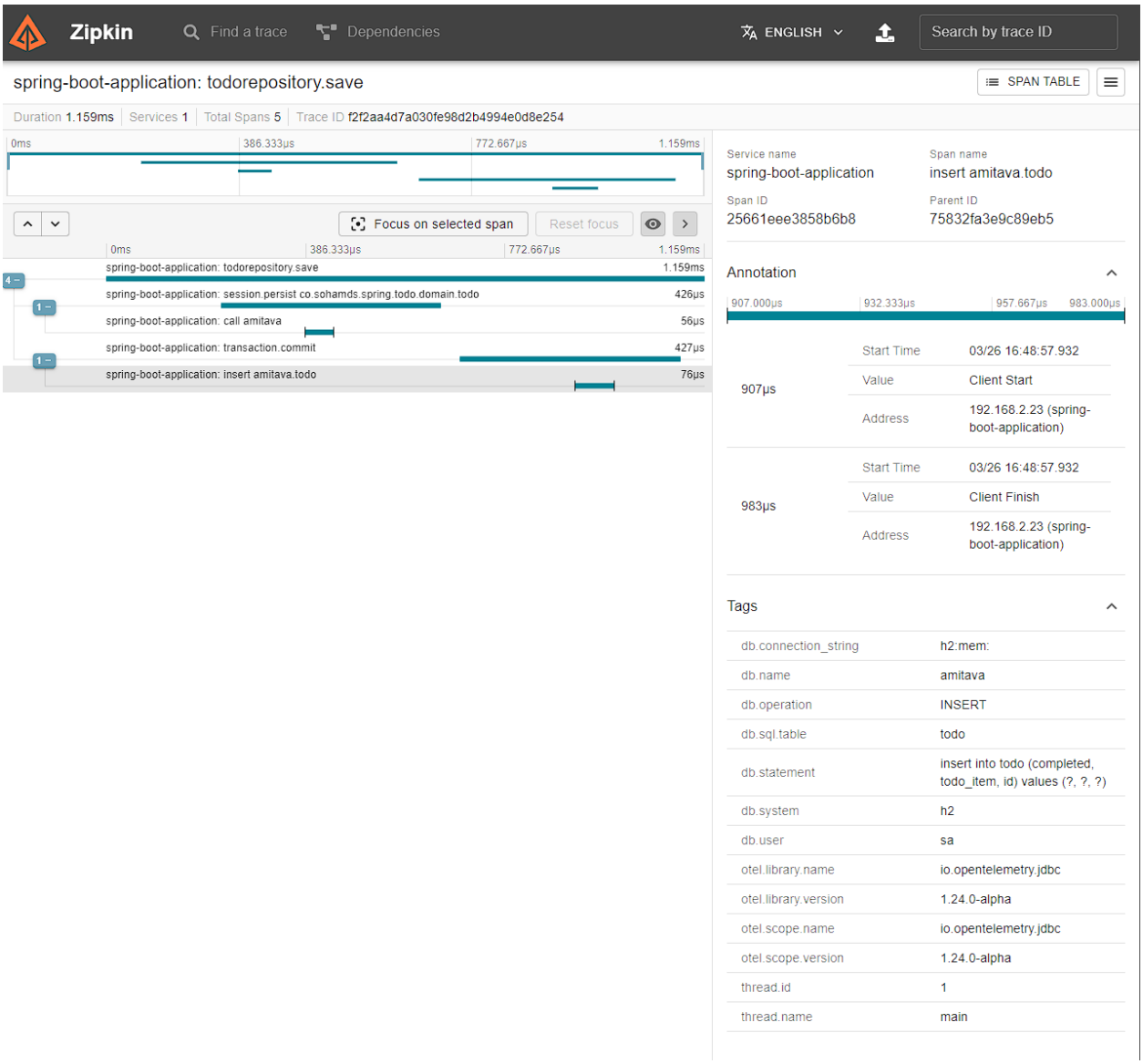
Span 3:


Zipkin
Find a trace
Dependencies
ENGLISH
Search by trace ID
spring-boot-application: todorepository.save
SPAN TABLE
Duration 1.159ms | Services 1 | Total Spans 5 | Trace ID f2f2aa4d7a030fe98d2b4994e0d8e254
0ms
386.333µs
772.667µs
1.159ms
Focus on selected span
Reset focus
spring-boot-application: todorepository.save 1.159ms
spring-boot-application: session.persist co.sohamds.spring.todo.domain.todo 426µs
spring-boot-application: call amitava 56µs
spring-boot-application: transaction.commit 427µs
spring-boot-application: insert amitava.todo 76µs
Service name
spring-boot-application
Span name
call amitava
Span ID
c1f231e225f06e9c
Parent ID
ed26d3bf79c5c4b0
Annotation
384.000µs
402.667µs
421.333µs
440.000µs
384µs
Start Time 03/26 16:48:57.932
Value Client Start
Address 192.168.2.23 (spring-boot-application)
440µs
Start Time 03/26 16:48:57.932
Value Client Finish
Address 192.168.2.23 (spring-boot-application)
Tags
db.connection_string h2:mem:
db.name amitava
db.operation CALL
db.statement call next value for hibernate_sequence
db.system h2
db.user sa
otel.library.name io.opentelemetry.jdbc
otel.library.version 1.24.0-alpha
otel.scope.name io.opentelemetry.jdbc
otel.scope.version 1.24.0-alpha
thread.id 1
thread.name main

Span 4:

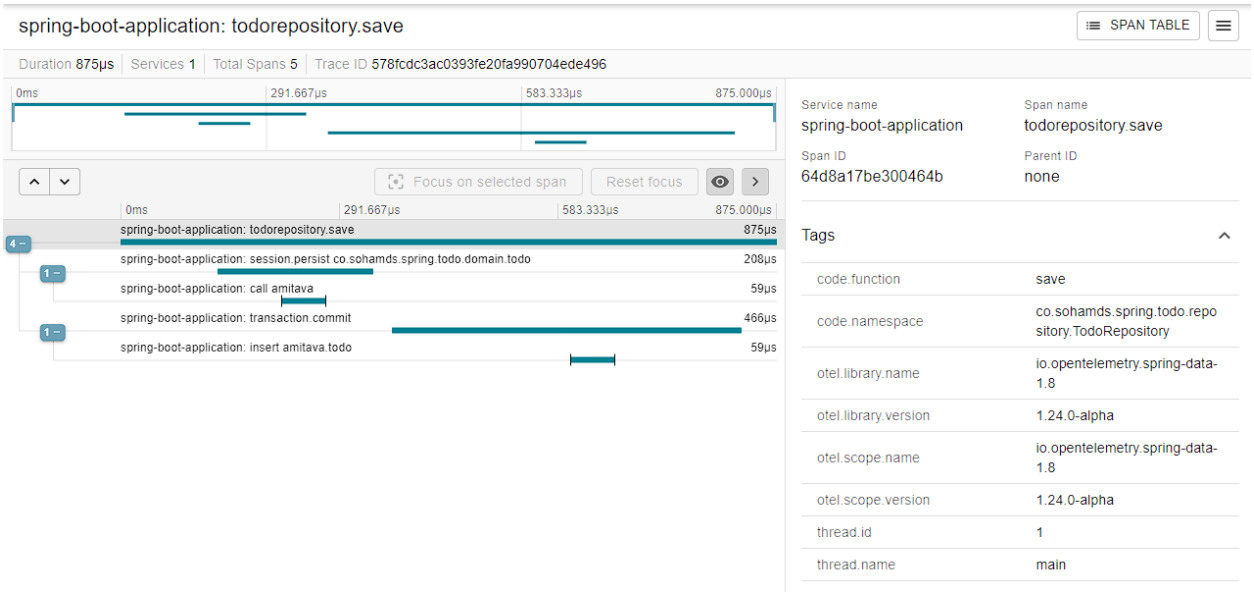

Zipkin
Find a trace
Dependencies
ENGLISH
Search by trace ID
spring-boot-application: todorepository.save
SPAN TABLE
Duration 1.159ms | Services 1 | Total Spans 5 | Trace ID f2f2aa4d7a030fe98d2b4994e0d8e254
0ms
386.333µs
772.667µs
1.159ms
Focus on selected span
Reset focus
spring-boot-application: todorepository.save 1.159ms
spring-boot-application: session.persist co.sohamds.spring.todo.domain.todo 426µs
spring-boot-application: call amitava 56µs
spring-boot-application: transaction.commit 427µs
spring-boot-application: insert amitava.todo 76µs
Service name
spring-boot-application
Span name
transaction.commit
Span ID
75832fa3e9c89eb5
Parent ID
a76c90a75f2d58a9
Tags
otel.library.name
io.opentelemetry.hibernate-4.0
otel.library.version
1.24.0-alpha
otel.scope.name
io.opentelemetry.hibernate-4.0
otel.scope.version
1.24.0-alpha
thread.id
1
thread.name
main

Span 5:

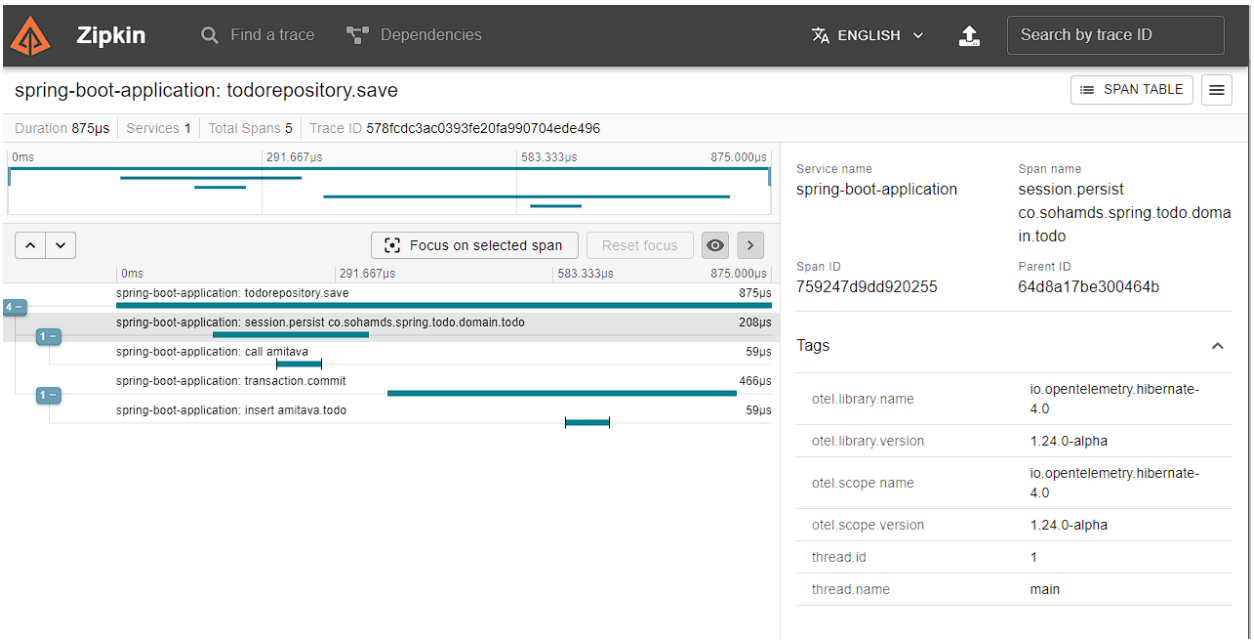


Result 7:

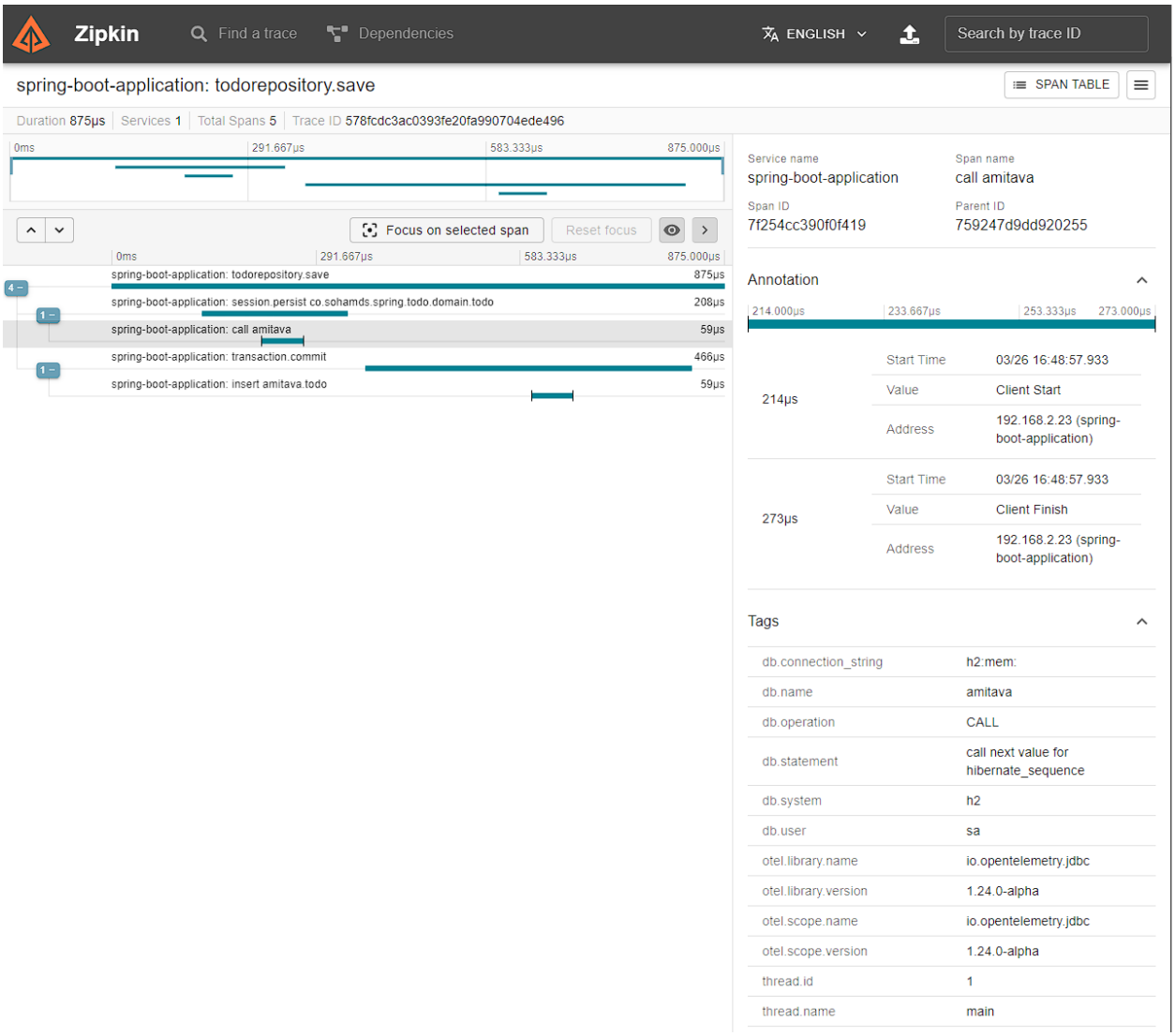
Span 1:


spring-boot-application: todorepository.save
SPAN TABLE
Duration 875µs | Services 1 | Total Spans 5 | Trace ID 578fcdc3ac0393fe20fa990704ede496
0ms
291.667µs
583.333µs
875.000µs
Focus on selected span
Reset focus
spring-boot-application: todorepository.save 875µs
spring-boot-application: session.persist co.sohamds.spring.todo.domain.todo 208µs
spring-boot-application: call amitava 59µs
spring-boot-application: transaction.commit 466µs
spring-boot-application: insert amitava.todo 59µs
Service name
spring-boot-application
Span name
todorepository.save
Span ID
64d8a17be300464b
Parent ID
none
Tags
code.function save
code.namespace co.sohamds.spring.todo.repository.TodoRepository
otel.library.name io.opentelemetry.spring-data-1.8
otel.library.version 1.24.0-alpha
otel.scope.name io.opentelemetry.spring-data-1.8
otel.scope.version 1.24.0-alpha
thread.id 1
thread.name main

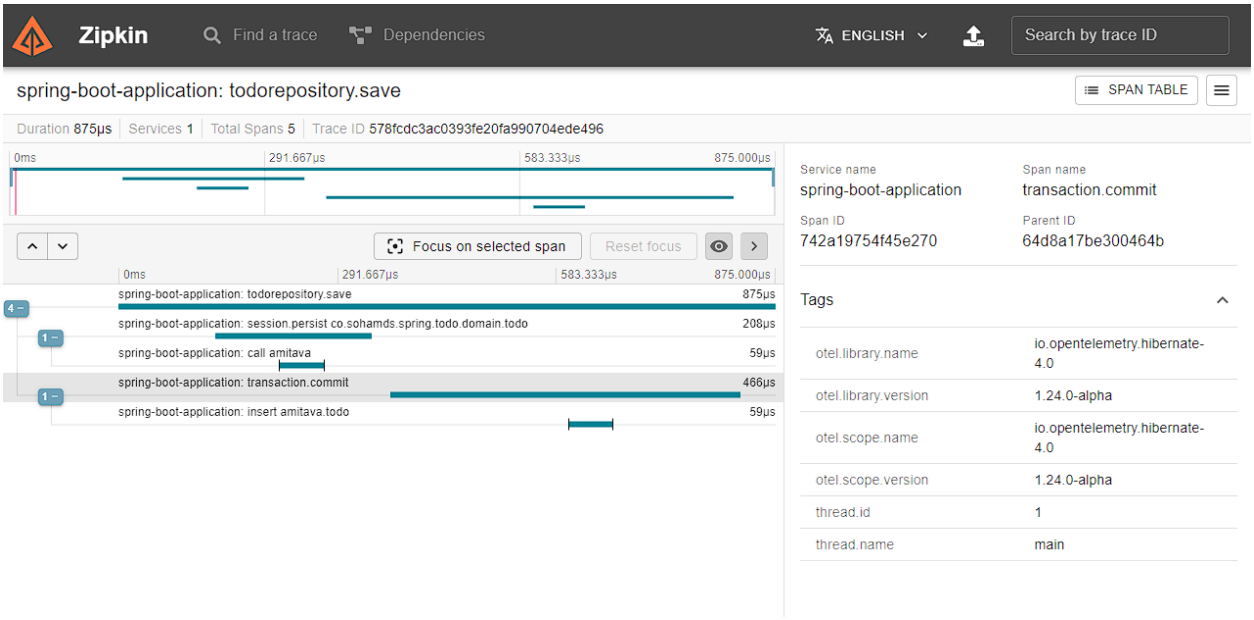
Span 2:


Zipkin
Find a trace
Dependencies
ENGLISH
Search by trace ID
spring-boot-application: todorepository.save
SPAN TABLE
Duration 875µs | Services 1 | Total Spans 5 | Trace ID 578fcdc3ac0393fe20fa990704ede496
0ms
291.667µs
583.333µs
875.000µs
Focus on selected span
Reset focus
spring-boot-application: todorepository.save 875µs
spring-boot-application: session.persist co.sohamds.spring.todo.domain.todo 208µs
spring-boot-application: call amitava 59µs
spring-boot-application: transaction.commit 466µs
spring-boot-application: insert amitava.todo 59µs
Service name
spring-boot-application
Span name
session.persist co.sohamds.spring.todo.domain.todo
Span ID
759247d9dd920255
Parent ID
64d8a17be300464b
Tags
otel.library.name io.opentelemetry.hibernate-4.0
otel.library.version 1.24.0-alpha
otel.scope.name io.opentelemetry.hibernate-4.0
otel.scope.version 1.24.0-alpha
thread.id 1
thread.name main

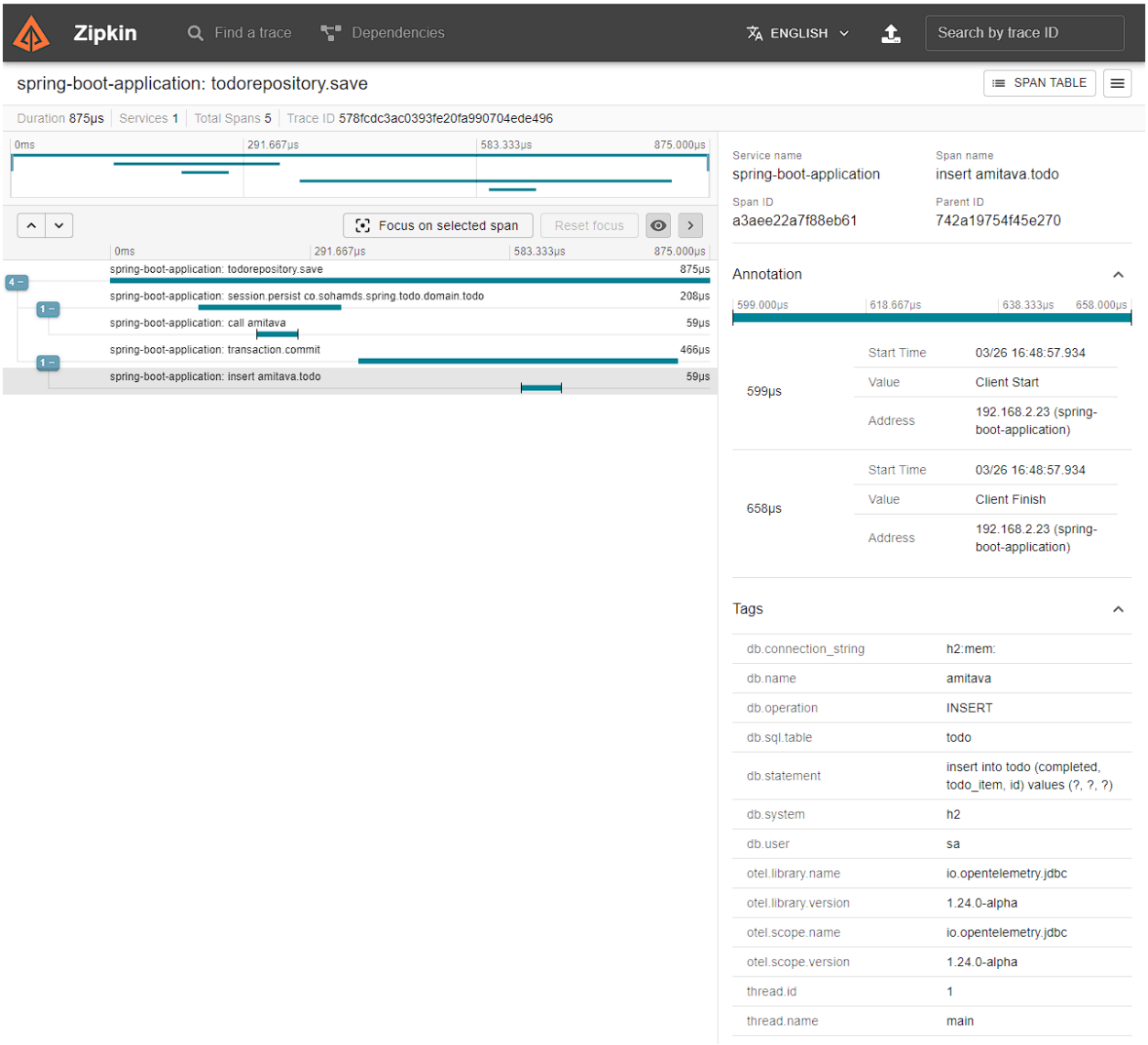
Span 3:


Zipkin
Find a trace
Dependencies
ENGLISH
Search by trace ID
spring-boot-application: todorepository.save
SPAN TABLE
Duration 875µs | Services 1 | Total Spans 5 | Trace ID 578fcdc3ac0393fe20fa990704ede496
0ms
291.667µs
583.333µs
875.000µs
Focus on selected span
Reset focus
spring-boot-application: todorepository.save 875µs
spring-boot-application: session.persist co.sohamds.spring.todo.domain.todo 208µs
spring-boot-application: call amitava 59µs
spring-boot-application: transaction.commit 466µs
spring-boot-application: insert amitava.todo 59µs
Service name
spring-boot-application
Span name
call amitava
Span ID
7f254cc390f0f419
Parent ID
759247d9dd920255
Annotation
214.000µs
233.667µs
253.333µs
273.000µs
214µs
Start Time 03/26 16:48:57.933
Value Client Start
Address 192.168.2.23 (spring-boot-application)
273µs
Start Time 03/26 16:48:57.933
Value Client Finish
Address 192.168.2.23 (spring-boot-application)
Tags
db.connection_string h2:mem:
db.name amitava
db.operation CALL
db.statement call next value for hibernate_sequence
db.system h2
db.user sa
otel.library.name io.opentelemetry.jdbc
otel.library.version 1.24.0-alpha
otel.scope.name io.opentelemetry.jdbc
otel.scope.version 1.24.0-alpha
thread.id 1
thread.name main

Span 4:

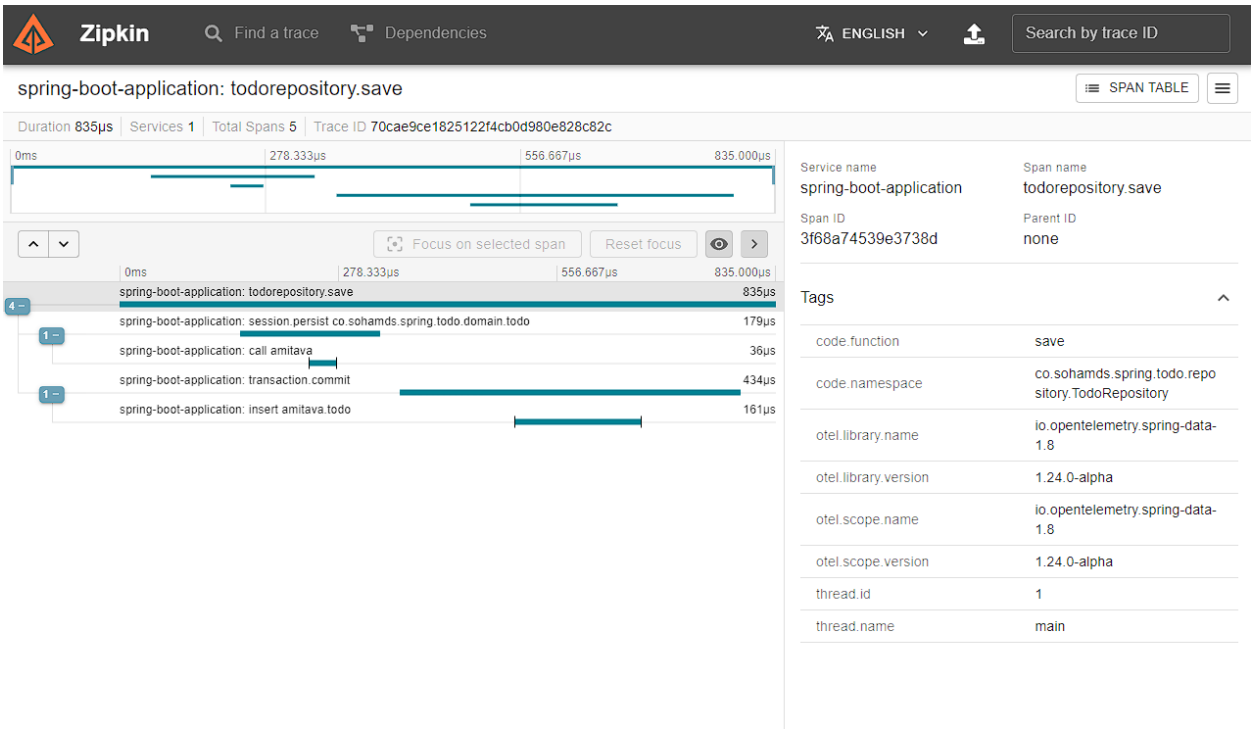

Zipkin
Find a trace
Dependencies
ENGLISH
Search by trace ID
spring-boot-application: todorepository.save
SPAN TABLE
Duration 875µs | Services 1 | Total Spans 5 | Trace ID 578fcdc3ac0393fe20fa990704ede496
0ms
291.667µs
583.333µs
875.000µs
Focus on selected span
Reset focus
spring-boot-application: todorepository.save 875µs
spring-boot-application: session.persist co.sohamds.spring.todo.domain.todo 208µs
spring-boot-application: call amitava 59µs
spring-boot-application: transaction.commit 466µs
spring-boot-application: insert amitava.todo 59µs
Service name
spring-boot-application
Span name
transaction.commit
Span ID
742a19754f45e270
Parent ID
64d8a17be300464b
Tags
otel.library.name
io.opentelemetry.hibernate-4.0
otel.library.version
1.24.0-alpha
otel.scope.name
io.opentelemetry.hibernate-4.0
otel.scope.version
1.24.0-alpha
thread.id
1
thread.name
main

Span 5:

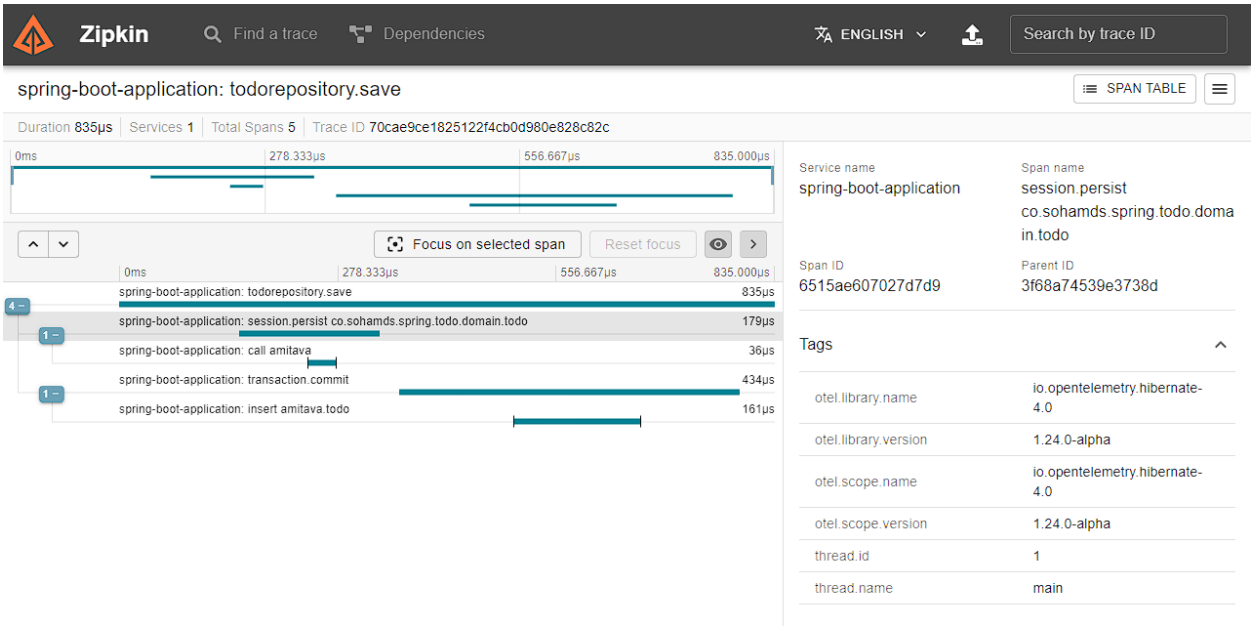


Result 8:

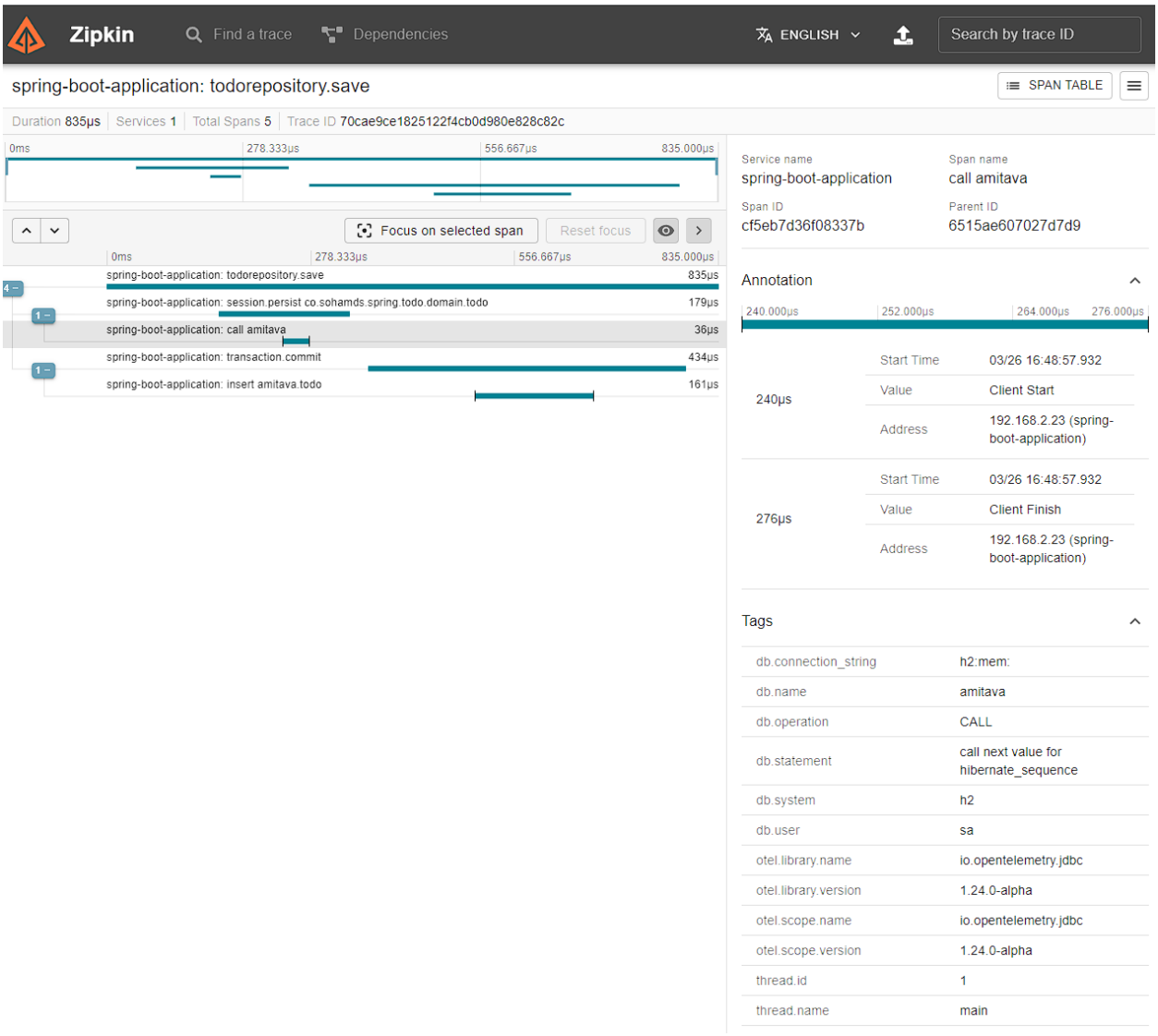
Span 1:


Zipkin
Find a trace
Dependencies
ENGLISH
Search by trace ID
spring-boot-application: todorepository.save
SPAN TABLE
Duration 835µs | Services 1 | Total Spans 5 | Trace ID 70cae9ce1825122f4cb0d980e828c82c
0ms
278.333µs
556.667µs
835.000µs
Focus on selected span
Reset focus
spring-boot-application: todorepository.save 835µs
spring-boot-application: session.persist co.sohamds.spring.todo.domain.todo 179µs
spring-boot-application: call amitava 36µs
spring-boot-application: transaction.commit 434µs
spring-boot-application: insert amitava.todo 161µs
Service name
spring-boot-application
Span name
todorepository.save
Span ID
3f68a74539e3738d
Parent ID
none
Tags
code.function save
code.namespace co.sohamds.spring.todo.repository.TodoRepository
otel.library.name io.opentelemetry.spring-data-1.8
otel.library.version 1.24.0-alpha
otel.scope.name io.opentelemetry.spring-data-1.8
otel.scope.version 1.24.0-alpha
thread.id 1
thread.name main

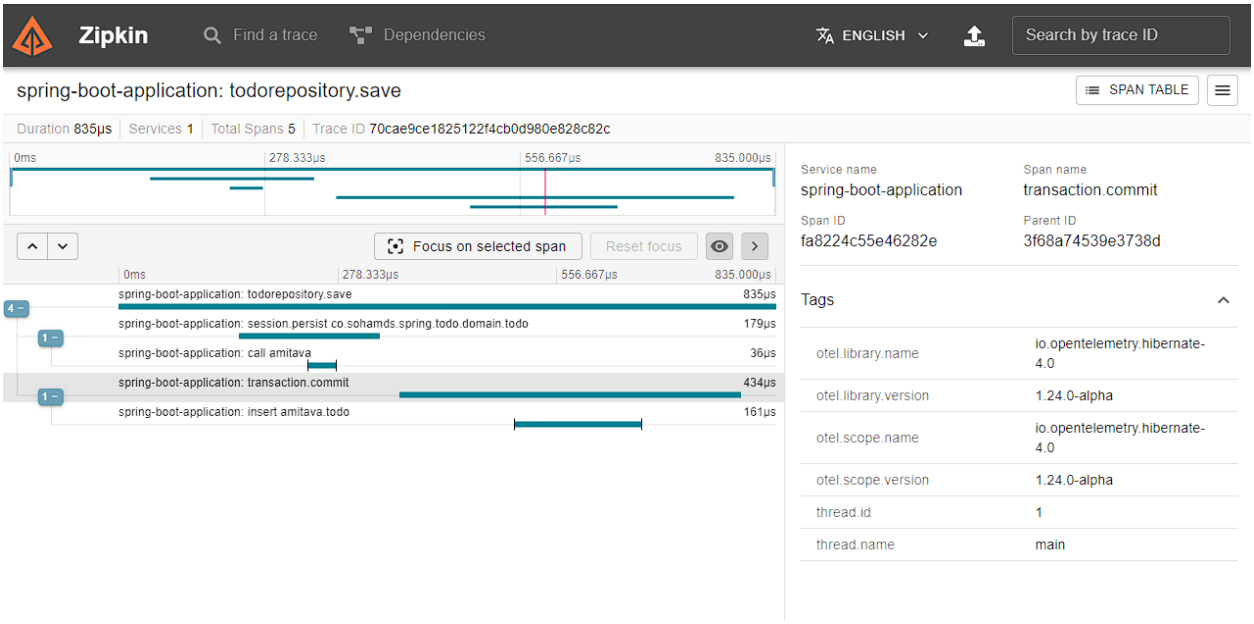
Span 2:


Zipkin
Find a trace
Dependencies
ENGLISH
Search by trace ID
spring-boot-application: todorepository.save
SPAN TABLE
Duration 835µs | Services 1 | Total Spans 5 | Trace ID 70cae9ce1825122f4cb0d980e828c82c
0ms
278.333µs
556.667µs
835.000µs
Focus on selected span
Reset focus
spring-boot-application: todorepository.save 835µs
spring-boot-application: session.persist co.sohamds.spring.todo.domain.todo 179µs
spring-boot-application: call amitava 36µs
spring-boot-application: transaction.commit 434µs
spring-boot-application: insert amitava.todo 161µs
Service name
spring-boot-application
Span name
session.persist co.sohamds.spring.todo.domain.todo
Span ID
6515ae607027d7d9
Parent ID
3f68a74539e3738d
Tags
otel.library.name io.opentelemetry.hibernate-4.0
otel.library.version 1.24.0-alpha
otel.scope.name io.opentelemetry.hibernate-4.0
otel.scope.version 1.24.0-alpha
thread.id 1
thread.name main

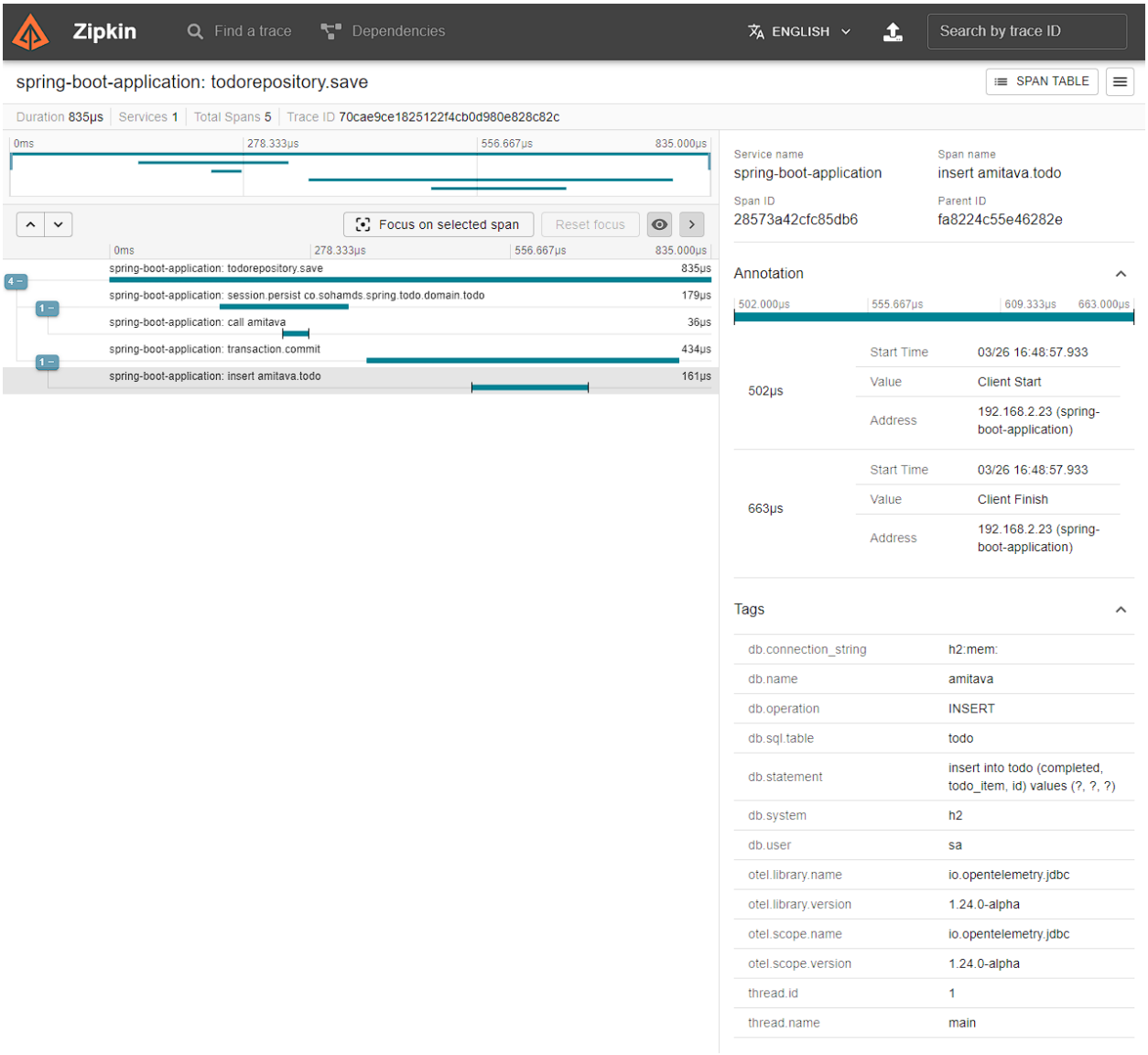
Span 3:


Zipkin
Find a trace
Dependencies
ENGLISH
Search by trace ID
spring-boot-application: todorepository.save
SPAN TABLE
Duration 835µs | Services 1 | Total Spans 5 | Trace ID 70cae9ce1825122f4cb0d980e828c82c
0ms
278.333µs
556.667µs
835.000µs
Focus on selected span
Reset focus
spring-boot-application: todorepository.save 835µs
spring-boot-application: session.persist co.sohamds.spring.todo.domain.todo 179µs
spring-boot-application: call amitava 36µs
spring-boot-application: transaction.commit 434µs
spring-boot-application: insert amitava.todo 161µs
Service name
spring-boot-application
Span name
call amitava
Span ID
cf5eb7d36f08337b
Parent ID
6515ae607027d7d9
Annotation
240.000µs
252.000µs
264.000µs
276.000µs
240µs
Start Time 03/26 16:48:57.932
Value Client Start
Address 192.168.2.23 (spring-boot-application)
276µs
Start Time 03/26 16:48:57.932
Value Client Finish
Address 192.168.2.23 (spring-boot-application)
Tags
db.connection_string h2:mem:
db.name amitava
db.operation CALL
db.statement call next value for hibernate_sequence
db.system h2
db.user sa
otel.library.name io.opentelemetry.jdbc
otel.library.version 1.24.0-alpha
otel.scope.name io.opentelemetry.jdbc
otel.scope.version 1.24.0-alpha
thread.id 1
thread.name main

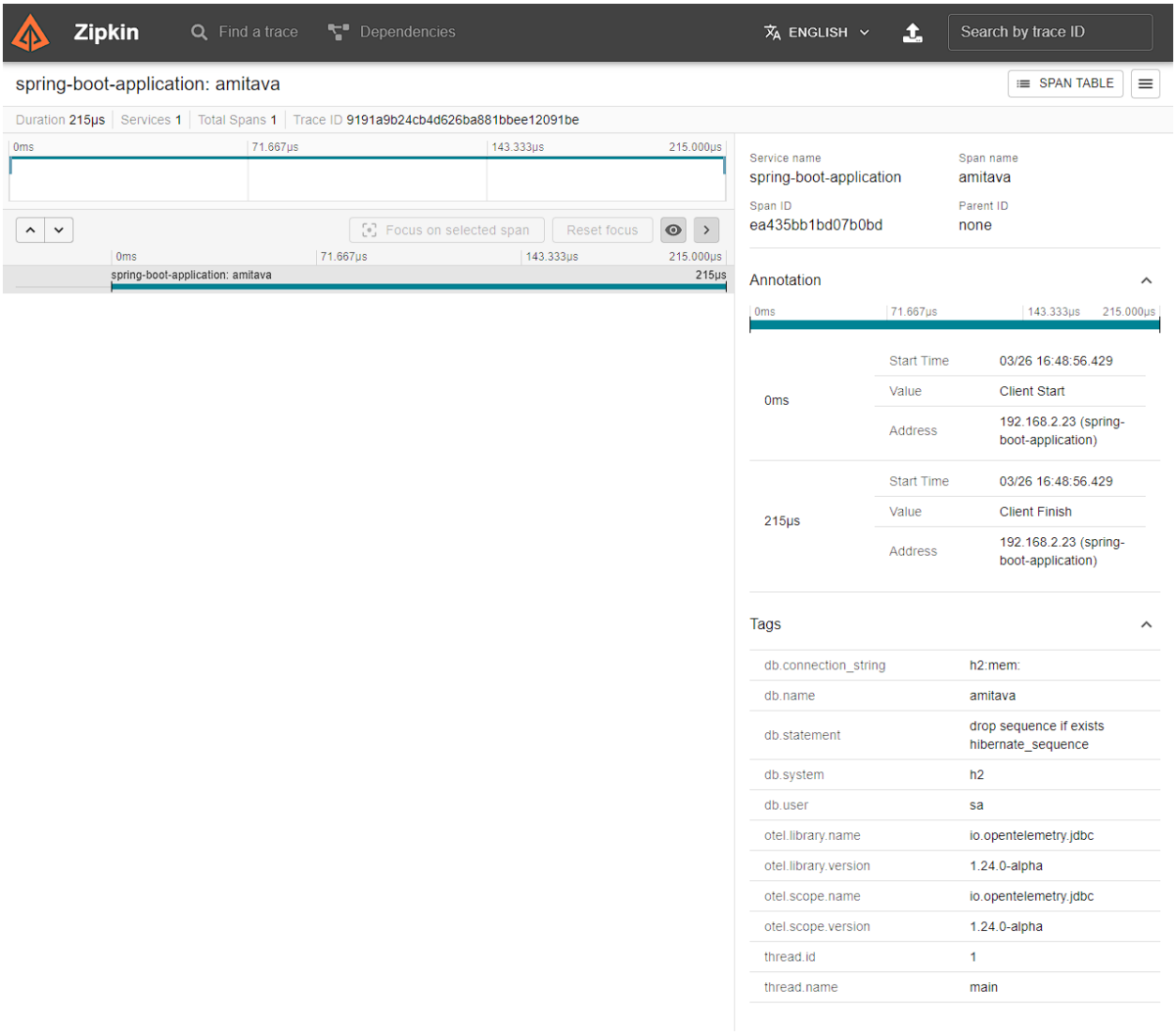
Span 4:


Zipkin
Find a trace
Dependencies
ENGLISH
Search by trace ID
spring-boot-application: todorepository.save
SPAN TABLE
Duration 835µs | Services 1 | Total Spans 5 | Trace ID 70cae9ce1825122f4cb0d980e828c82c
0ms
278.333µs
556.667µs
835.000µs
Focus on selected span
Reset focus
spring-boot-application: todorepository.save 835µs
spring-boot-application: session.persist co.sohamds.spring.todo.domain.todo 179µs
spring-boot-application: call amitava 36µs
spring-boot-application: transaction.commit 434µs
spring-boot-application: insert amitava.todo 161µs
Service name
spring-boot-application
Span name
transaction.commit
Span ID
fa8224c55e46282e
Parent ID
3f68a74539e3738d
Tags
otel.library.name
io.opentelemetry.hibernate-4.0
otel.library.version
1.24.0-alpha
otel.scope.name
io.opentelemetry.hibernate-4.0
otel.scope.version
1.24.0-alpha
thread.id
1
thread.name
main

Span 5:


Zipkin
Find a trace
Dependencies
ENGLISH
Search by trace ID
spring-boot-application: todorepository.save
SPAN TABLE
Duration 835µs | Services 1 | Total Spans 5 | Trace ID 70cae9ce1825122f4cb0d980e828c82c
0ms
278.333µs
556.667µs
835.000µs
Focus on selected span
Reset focus
spring-boot-application: todorepository.save 835µs
spring-boot-application: session.persist co.sohamds.spring.todo.domain.todo 179µs
spring-boot-application: call amitava 36µs
spring-boot-application: transaction.commit 434µs
spring-boot-application: insert amitava.todo 161µs
Service name
spring-boot-application
Span name
insert amitava.todo
Span ID
28573a42cfc85db6
Parent ID
fa8224c55e46282e
Annotation
502.000µs
555.667µs
609.333µs
663.000µs
502µs
Start Time 03/26 16:48:57.933
Value Client Start
Address 192.168.2.23 (spring-boot-application)
663µs
Start Time 03/26 16:48:57.933
Value Client Finish
Address 192.168.2.23 (spring-boot-application)
Tags
db.connection_string h2:mem:
db.name amitava
db.operation INSERT
db.sql.table todo
db.statement insert into todo (completed, todo_item, id) values (?, ?, ?)
db.system h2
db.user sa
otel.library.name io.opentelemetry.jdbc
otel.library.version 1.24.0-alpha
otel.scope.name io.opentelemetry.jdbc
otel.scope.version 1.24.0-alpha
thread.id 1
thread.name main

Result 9:


Zipkin
Find a trace
Dependencies
ENGLISH
Search by trace ID
spring-boot-application: amitava
SPAN TABLE
Duration 215µs | Services 1 | Total Spans 1 | Trace ID 9191a9b24cb4d626ba881bbee12091be
0ms
71.667µs
143.333µs
215.000µs
Focus on selected span
Reset focus
spring-boot-application: amitava
215µs
Service name
spring-boot-application
Span name
amitava
Span ID
ea435bb1bd07b0bd
Parent ID
none
Annotation
0ms
Start Time
03/26 16:48:56.429
Value
Client Start
Address
192.168.2.23 (spring-boot-application)
215µs
Start Time
03/26 16:48:56.429
Value
Client Finish
Address
192.168.2.23 (spring-boot-application)
Tags
db.connection_string
h2:mem:
db.name
amitava
db.statement
drop sequence if exists hibernate_sequence
db.system
h2
db.user
sa
otel.library.name
io.opentelemetry.jdbc
otel.library.version
1.24.0-alpha
otel.scope.name
io.opentelemetry.jdbc
otel.scope.version
1.24.0-alpha
thread.id
1
thread.name
main