

UNIT 5

Deployment and monitoring

Spring Boot Quick Start



```
~/Documents/springboot/course-api-data $ ls
derby.log mvnw      mvnw.cmd  pom.xml  src      target
~/Documents/springboot/course-api-data $ mvn clean install
```



```
2016-12-20 16:52:24.543 INFO 64624 --- [ Thread-3] org.hibernate.tool.hbm2ddl.SchemaExport : HHH000227: Running hbm2ddl
rt
2016-12-20 16:52:24.582 INFO 64624 --- [ Thread-3] org.hibernate.tool.hbm2ddl.SchemaExport : HHH000230: Schema export complete
```

Results :

Tests run: 1, Failures: 0, Errors: 0, Skipped: 0

```
[INFO]
[INFO] --- maven-jar-plugin:2.6:jar (default-jar) @ course-api-data ---
[INFO] Building jar: /Users/kkothagal/Documents/springboot/course-api-data/target/course-api-data-0.0.1-SNAPSHOT.jar
[INFO]
[INFO] --- spring-boot-maven-plugin:1.4.2.RELEASE:repackage (default) @ course-api-data ---
[INFO]
[INFO] --- maven-install-plugin:2.5.2:install (default-install) @ course-api-data ---
[INFO] Installing /Users/kkothagal/Documents/springboot/course-api-data/target/course-api-data-0.0.1-SNAPSHOT.jar to /Users/kkothagal/.m2/repository/io/javabrain/course-api-data/0.0.1-SNAPSHOT/course-api-data-0.0.1-SNAPSHOT.jar
[INFO] Installing /Users/kkothagal/Documents/springboot/course-api-data/pom.xml to /Users/kkothagal/.m2/repository/io/javabrain/course-api-data/0.0.1-SNAPSHOT/course-api-data-0.0.1-SNAPSHOT.pom
[INFO] -----
[INFO] BUILD SUCCESS
[INFO] -----
[INFO] Total time: 9.280 s
[INFO] Finished at: 2016-12-20T16:52:25-08:00
[INFO] Final Memory: 32M/316M
[INFO] -----
~/Documents/springboot/course-api-data $
```


2016-12-20 16:52:24.543 INFO 64624 --- [Thread-3] org.hibernate.tool.hbm2ddl.SchemaExport : HHH000227: Running hbm2ddl
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[INFO] -----
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[INFO] --- maven-jar-plugin:2.6:jar (default-jar) @ course-api-data ---

[INFO] Building jar: /Users/kkothagal/Documents/springboot/course-api-data/target/course-api-data-0.0.1-SNAPSHOT.jar

[INFO]

[INFO] --- spring-boot-maven-plugin:1.4.2.RELEASE:repackage (default) @ course-api-data ---

[INFO]

[INFO] --- maven-install-plugin:2.5.2:install (default-install) @ course-api-data ---

[INFO] Installing /Users/kkothagal/Documents/springboot/course-api-data/target/course-api-data-0.0.1-SNAPSHOT.jar to /Users/kkothagal/.m2/repository/io/javabrain/course-api-data/0.0.1-SNAPSHOT/course-api-data-0.0.1-SNAPSHOT.jar

[INFO] Installing /Users/kkothagal/Documents/springboot/course-api-data/pom.xml to /Users/kkothagal/.m2/repository/io/javabrain/course-api-data/0.0.1-SNAPSHOT/course-api-data-0.0.1-SNAPSHOT.pom

[INFO] -----

[INFO] BUILD SUCCESS

[INFO] -----

[INFO] Total time: 9.280 s

[INFO] Finished at: 2016-12-20T16:52:25-08:00

[INFO] Final Memory: 32M/316M

[INFO] -----

~/Documents/springboot/course-api-data \$ java -jar target/cour

course-api-data-0.0.1-SNAPSHOT.jar course-api-data-0.0.1-SNAPSHOT.jar.original

~/Documents/springboot/course-api-data \$ java -jar target/course-api-data-0.0.1-SNAPSHOT.jar


```
~/Documents/springboot/course-api-data $ java -jar target/cour
course-api-data-0.0.1-SNAPSHOT.jar          course-api-data-0.0.1-SNAPSHOT.jar.original
~/Documents/springboot/course-api-data $ java -jar target/course-api-data-0.0.1-SNAPSHOT.jar
```

[illegible]

```
2016-12-20 16:53:21.482 INFO 64629 --- [main] io.javabrains.CourseApiDataApplication : Starting CourseApiDataApplication v0.0.1-SNAPSHOT on kkothagal-mbp with PID 64629 (/Users/kkothagal/Documents/springboot/course-api-data/target/course-api-data-0.0.1-SNAPSHOT.jar started by kkothagal in /Users/kkothagal/Documents/springboot/course-api-data)
2016-12-20 16:53:21.484 INFO 64629 --- [main] io.javabrains.CourseApiDataApplication : No active profile set, falling back to default profiles: default
2016-12-20 16:53:21.543 INFO 64629 --- [main] ationConfigEmbeddedWebApplicationContext : Refreshing org.springframework.boot.context.embedded.AnnotationConfigEmbeddedWebApplicationContext@5a2e4553: startup date [Tue Dec 20 16:53:21 PST 2016]; root of context hierarchy
2016-12-20 16:53:22.864 INFO 64629 --- [main] trationDelegate$BeanPostProcessorChecker : Bean 'org.springframework.transaction.annotation.ProxyTransactionManagementConfiguration' of type [class org.springframework.transaction.annotation.ProxyTransactionManagementConfiguration$$EnhancerBySpringCGLIB$$fab1bd1] is not eligible for getting processed by all BeanPostProcessors (for example: not eligible for auto-proxying)
```


Package Explorer

- course-api [boot]
- course-api-data [boot]
 - src/main/java
 - io.javabrain
 - io.javabrain.springbootstarter.course
 - Course.java
 - CourseController.java
 - CourseRepository.java
 - CourseService.java
 - io.javabrain.springbootstarter.topic
 - Topic.java
 - TopicController.java
 - TopicRepository.java
 - TopicService.java
 - src/main/resources
 - src/test/java
 - JRE System Library [JavaSE-1.8]
 - Maven Dependencies
 - src
 - target
 - mvnw
 - mvnw.cmd
 - pom.xml
- Servers

Servers

Boot Dashboard

Type tags to match

- local

project/packaging/#text

Course.java CourseRepository.java CourseService.java CourseController.java Topic.java course-api-data/pom.xml

```
<?xml version="1.0" encoding="UTF-8"?>
<project xmlns="http://maven.apache.org/POM/4.0.0" xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
  xsi:schemaLocation="http://maven.apache.org/POM/4.0.0 http://maven.apache.org/xsd/maven-4.0.0.xsd">
  <modelVersion>4.0.0</modelVersion>

  <groupId>io.javabrain</groupId>
  <artifactId>course-api-data</artifactId>
  <version>0.0.1-SNAPSHOT</version>
  <packaging>jar</packaging>

  <name>course-api-data</name>
  <description>Course API with data for Spring Boot QuickStart Java Brains course</description>

  <parent>
    <groupId>org.springframework.boot</groupId>
    <artifactId>spring-boot-starter-parent</artifactId>
    <version>1.4.2.RELEASE</version>
    <relativePath/> <!-- lookup parent from repository -->
  </parent>

  <properties>
    <project.build.sourceEncoding>UTF-8</project.build.sourceEncoding>
    <project.reporting.outputEncoding>UTF-8</project.reporting.outputEncoding>
    <java.version>1.8</java.version>
  </properties>

  <dependencies>
    <dependency>
      <groupId>org.springframework.boot</groupId>
      <artifactId>spring-boot-starter-data-jpa</artifactId>
    </dependency>
    <dependency>
      <groupId>org.springframework.boot</groupId>
      <artifactId>spring-boot-starter-web</artifactId>
    </dependency>
    <dependency>
      <groupId>org.apache.derby</groupId>
      <artifactId>derby</artifactId>
      <scope>runtime</scope>
    </dependency>
    <dependency>
      <groupId>org.apache.derby</groupId>
```

Overview Dependencies Dependency Hierarchy Effective POM pom.xml

Writable Smart Insert 9 : 19

Package Explorer

- course-api [boot]
- course-api-data [boot]
 - src/main/java
 - io.javabrain
 - io.javabrain.springbootstarter.course
 - Course.java
 - CourseController.java
 - CourseRepository.java
 - CourseService.java
 - io.javabrain.springbootstarter.topic
 - Topic.java
 - TopicController.java
 - TopicRepository.java
 - TopicService.java
 - src/main/resources
 - src/test/java
 - JRE System Library [JavaSE-1.8]
 - Maven Dependencies
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Servers

Boot Dashboard

Type tags to match

- local

project/packaging

Course.java CourseRepository.java CourseService.java CourseController.java Topic.java *course-api-data/

```
<?xml version="1.0" encoding="UTF-8"?>
<project xmlns="http://maven.apache.org/POM/4.0.0" xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
  xsi:schemaLocation="http://maven.apache.org/POM/4.0.0 http://maven.apache.org/xsd/maven-4.0.0.xsd">
  <modelVersion>4.0.0</modelVersion>

  <groupId>io.javabrain</groupId>
  <artifactId>course-api-data</artifactId>
  <version>0.0.1-SNAPSHOT</version>
  <packaging>war</packaging>

  <name>course-api-data</name>
  <description>Course API with data for Spring Boot QuickStart Java Brains course</description>

  <parent>
    <groupId>org.springframework.boot</groupId>
    <artifactId>spring-boot-starter-parent</artifactId>
    <version>1.4.2.RELEASE</version>
    <relativePath/> <!-- lookup parent from repository -->
  </parent>

  <properties>
    <project.build.sourceEncoding>UTF-8</project.build.sourceEncoding>
    <project.reporting.outputEncoding>UTF-8</project.reporting.outputEncoding>
    <java.version>1.8</java.version>
  </properties>

  <dependencies>
    <dependency>
      <groupId>org.springframework.boot</groupId>
      <artifactId>spring-boot-starter-data-jpa</artifactId>
    </dependency>
    <dependency>
      <groupId>org.springframework.boot</groupId>
      <artifactId>spring-boot-starter-web</artifactId>
    </dependency>
    <dependency>
      <groupId>org.apache.derby</groupId>
      <artifactId>derby</artifactId>
      <scope>runtime</scope>
    </dependency>
    <dependency>
      <groupId>org.apache.derby</groupId>
```

Overview Dependencies Dependency Hierarchy Effective POM pom.xml

Writable Smart Insert 9 : 19


```
controller.error(javax.servlet.http.HttpServletRequest)
2016-12-20 16:53:26.374 INFO 64629 --- [main] s.w.s.m.m.a.RequestMappingHandlerMapping : Mapped "{[/error],produces=[text/html]}" onto public org.springframework.web.servlet.ModelAndView org.springframework.boot.autoconfigure.web.BasicErrorController.errorHtml(javax.servlet.http.HttpServletRequest,javax.servlet.http.HttpServletResponse)
2016-12-20 16:53:26.410 INFO 64629 --- [main] o.s.w.s.handler.SimpleUrlHandlerMapping : Mapped URL path [/webjars/**] onto handler of type [class org.springframework.web.servlet.resource.ResourceHttpRequestHandler]
2016-12-20 16:53:26.411 INFO 64629 --- [main] o.s.w.s.handler.SimpleUrlHandlerMapping : Mapped URL path [/**] onto handler of type [class org.springframework.web.servlet.resource.ResourceHttpRequestHandler]
2016-12-20 16:53:26.461 INFO 64629 --- [main] o.s.w.s.handler.SimpleUrlHandlerMapping : Mapped URL path [/**/favicon.ico] onto handler of type [class org.springframework.web.servlet.resource.ResourceHttpRequestHandler]
2016-12-20 16:53:26.672 INFO 64629 --- [main] o.s.j.e.a.AnnotationMBeanExporter : Registering beans for JMX exposure on startup
2016-12-20 16:53:26.737 INFO 64629 --- [main] s.b.c.e.t.TomcatEmbeddedServletContainer : Tomcat started on port(s): 8080 (http)
2016-12-20 16:53:26.742 INFO 64629 --- [main] io.javabrain.CourseApiDataApplication : Started CourseApiDataApplication in 5.775 seconds (JVM running for 6.219)
^C2016-12-20 16:54:50.660 INFO 64629 --- [Thread-4] ationConfigEmbeddedWebApplicationContext : Closing org.springframework.boot.context.embedded.AnnotationConfigEmbeddedWebApplicationContext@5a2e4553: startup date [Tue Dec 20 16:53:21 PST 2016]; root of context hierarchy
2016-12-20 16:54:50.662 INFO 64629 --- [Thread-4] o.s.j.e.a.AnnotationMBeanExporter : Unregistering JMX-exposed beans on shutdown
2016-12-20 16:54:50.664 INFO 64629 --- [Thread-4] j.LocalContainerEntityManagerFactoryBean : Closing JPA EntityManagerFactory for persistence unit 'default'
2016-12-20 16:54:50.664 INFO 64629 --- [Thread-4] org.hibernate.tool.hbm2ddl.SchemaExport : HHH000227: Running hbm2ddl schema export
2016-12-20 16:54:50.700 INFO 64629 --- [Thread-4] org.hibernate.tool.hbm2ddl.SchemaExport : HHH000230: Schema export complete
~/Documents/springboot/course-api-data $ mvn clean install
```


Tests run: 1, Failures: 0, Errors: 0, Skipped: 0

```
[INFO]
[INFO] --- maven-war-plugin:2.6:war (default-war) @ course-api-data ---
[INFO] Packaging webapp
[INFO] Assembling webapp [course-api-data] in [/Users/kkothagal/Documents/springboot/course-api-data/target/course-api-data-0.0.1-SNAPSHOT]
[INFO] Processing war project
[INFO] Webapp assembled in [474 msecs]
[INFO] Building war: /Users/kkothagal/Documents/springboot/course-api-data/target/course-api-data-0.0.1-SNAPSHOT.war
[INFO]
[INFO] --- spring-boot-maven-plugin:1.4.2.RELEASE:repackage (default) @ course-api-data ---
[INFO]
[INFO] --- maven-install-plugin:2.5.2:install (default-install) @ course-api-data ---
[INFO] Installing /Users/kkothagal/Documents/springboot/course-api-data/target/course-api-data-0.0.1-SNAPSHOT.war to /Users/kkothagal/.m2/repository/io/javabrain/course-api-data/0.0.1-SNAPSHOT/course-api-data-0.0.1-SNAPSHOT.war
[INFO] Installing /Users/kkothagal/Documents/springboot/course-api-data/pom.xml to /Users/kkothagal/.m2/repository/io/javabrain/course-api-data/0.0.1-SNAPSHOT/course-api-data-0.0.1-SNAPSHOT.pom
[INFO] -----
[INFO] BUILD SUCCESS
[INFO] -----
[INFO] Total time: 10.538 s
[INFO] Finished at: 2016-12-20T16:55:42-08:00
[INFO] Final Memory: 36M/309M
[INFO] -----
~/Documents/springboot/course-api-data $
```


SPRING INITIALIZR

bootstrap your application now

Generate a Maven Project with Spring Boot 1.4.2

Project Metadata

Artifact coordinates

Group

com.example

Artifact

demo

Dependencies

Add Spring Boot Starters and dependencies to your application

Search for dependencies

Web, Security, JPA, Actuator, Devtools...

Selected Dependencies

Generate Project

Don't know what to look for? Want more options? [Switch to the full version.](#)

start.spring.io is powered by [Spring Initializr](#) and [Pivotal Web Services](#)

```
<dependency>
  <groupId>org.apache.derby</groupId>
```

Overview Dependencies Dependency Hierarchy Effective POM pom.xml

Writable

Smart Insert

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project/dependencies/#text

Spring Initializr

Aspect-oriented programming including spring-aop and AspectJ

☐ Atomikos (JTA)

JTA distributed transactions via Atomikos

☐ Bitronix (JTA)

JTA distributed transactions via Bitronix

☐ Narayana (JTA)

JTA distributed transactions via Narayana

☐ Cache

Spring's Cache abstraction

☐ DevTools

Spring Boot Development Tools

☐ Configuration Processor

Generate metadata for your custom configuration keys

☐ Validation

JSR-303 validation infrastructure (already included with web)

☐ Session

API and implementations for managing a user's session information

☐ Retry

Provide declarative retry support via spring-retry

Getting Started · Building a RESTful Web Service with Spring Boot Actuator

Websocket development with SockJS and STOMP

☐ Web Services

Contract-first SOAP service development with Spring Web Services

☐ Jersey (JAX-RS)

RESTful Web Services framework

☐ Ratpack

Spring Boot integration for the Ratpack framework

☐ Vaadin

Vaadin java web application framework

☐ Rest Repositories

Exposing Spring Data repositories over REST via spring-data-rest-webmvc

☐ HATEOAS

HATEOAS-based RESTful services

☐ Rest Repositories HAL Browser

Browsing Spring Data REST repositories in your browser

☐ Mobile

Simplify the development of mobile web applications with spring-mobile

☐ REST Docs

```
<dependency>
  <groupId>org.apache.derby</groupId>
```

Overview | Dependencies | Dependency Hierarchy | Effective POM | pom.xml

Writable

Smart Insert

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requires Spring Boot $\geq 1.1.0.RELEASE$ and $< 1.4.0.RC1$

☐ AMQP

Advanced Message Queuing Protocol via spring-rabbit

☐ Mail

javax.mail

Ops

☐ Actuator

Production ready features to help you monitor and manage your application

☐ Actuator Docs

API documentation for the Actuator endpoints

☐ Remote Shell

CRaSH shell integration

Experimental

☐ Reactive Web

Reactive web development with Apache Tomcat and Spring Reactive (experimental)

requires Spring Boot $\geq 2.0.0.BUILD-SNAPSHOT$

Generate Project

start.spring.io is powered by [Spring Initializr](#) and [Pivotal Web Services](#)

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<dependency>
  <groupId>org.apache.derby</groupId>
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Overview | Dependencies | Dependency Hierarchy | Effective POM | pom.xml

Writable

Smart Insert

27 : 19

Ops

- ☒ **Actuator**
Production ready features to help you monitor and manage your application
- ☐ **Actuator Docs**
API documentation for the Actuator endpoints
- ☐ **Remote Shell**
CRaSH shell integration

requires Spring Boot $\geq 1.1.0.RELEASE$ and $< 1.4.0.RC1$

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Advanced Message Queuing Protocol via spring-rabbit
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javax.mail

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- ☐ **Reactive Web**
Reactive web development with Apache Tomcat and Spring Reactive (experimental)
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Generate Project ⌘ + ↵

start.spring.io is powered by **Spring Initializr** and **Pivotal Web Services**

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<dependency>  
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```

Overview | Dependencies | Dependency Hierarchy | Effective POM | pom.xml

Writable

Smart Insert

27 : 19

project/dependencies/#text

Package Explorer

course-api [boot]

course-api-data [boot]

src/main/java

io.javabrain

io.javabrain.springbootstarter.course

Course.java

CourseController.java

CourseRepository.java

CourseService.java

io.javabrain.springbootstarter.topic

Topic.java

TopicController.java

TopicRepository.java

TopicService.java

src/main/resources

src/test/java

JRE System Library [JavaSE-1.8]

Maven Dependencies

src

target

mvnw

mvnw.cmd

pom.xml

Servers

Servers

Boot Dashboard

Type tags to match

local

Course.java

CourseRepository.java

CourseService.java

CourseController.java

Topic.java

*course-api-data/p

```
<?xml version="1.0" encoding="UTF-8"?>
<project xmlns="http://maven.apache.org/POM/4.0.0"
  xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
  xsi:schemaLocation="http://maven.apache.org/POM/4.0.0 http://maven.apache.org/xsd/maven-4.0.0.xsd">
  <modelVersion>4.0.0</modelVersion>
  <groupId>io.javabrain.springbootstarter</groupId>
  <artifactId>course-api-data</artifactId>
  <version>1.0.0</version>
  <packaging>jar</packaging>
  <name>course-api-data</name>
  <description>course-api-data</description>
  <parent>io.javabrain.springbootstarter</parent>
  <properties>
    <java.version>1.8</java.version>
  </properties>
  <dependencies>
    <dependency>
      <groupId>org.springframework.boot</groupId>
      <artifactId>spring-boot-starter-data-jpa</artifactId>
    </dependency>
    <dependency>
      <groupId>org.springframework.boot</groupId>
      <artifactId>spring-boot-starter-web</artifactId>
    </dependency>
    <dependency>
      <groupId>org.apache.derby</groupId>
      <artifactId>derby</artifactId>
      <scope>runtime</scope>
    </dependency>
    <dependency>
      <groupId>org.apache.derby</groupId>
      <artifactId>derbyclient</artifactId>
      <version>10.13.1.1</version>
    </dependency>
    <dependency>
      <groupId>org.springframework.boot</groupId>
      <artifactId>spring-boot-starter-test</artifactId>
      <scope>test</scope>
    </dependency>
    <dependency>
      <groupId>org.springframework.boot</groupId>
      <artifactId>spring-boot-starter-actuator</artifactId>
    </dependency>
  </dependencies>
  <build>
    <plugins>
      <plugin>
        <groupId>org.springframework.boot</groupId>
        <artifactId>spring-boot-maven-plugin</artifactId>
      </plugin>
    </plugins>
  </build>
</project>
```

Overview

Dependencies

Dependency Hierarchy

Effective POM

pom.xml

project/dependencies/dependency/artifactId/#text

Writable

Smart Insert

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javabrain.io

RunnerImport

Filter

HistoryCollections

Save to collection

Today

GET

http://localhost:8080/topics/java/courses

PUT

http://localhost:8080/topics/java/courses/java-streams

GET

http://localhost:8080/topics/java/courses/java-streams

POST

http://localhost:8080/topics/java/courses

GET

http://localhost:8080/topics

POST

http://localhost:8080/topics

POST

http://localhost:8080/topics

December 17

POST

http://localhost:8080/topics

POST

http://localhost:8080/topics

POST

http://localhost:8080/topics

Type tags to match

local

BuilderTeam Library

http://localhost:8080/

No Environment

GET

http://localhost:8080/topics/java/courses/java-streams/lessons

Params

Send

Save

AuthorizationHeaders (1)BodyPre-request ScriptTestsCode

TypeNo Auth

BodyCookiesHeaders (3)TestsStatus: 200 OKTime: 17 ms

PrettyRawPreviewJSON

```
1 [
2   {
3     "id": "java-streams",
4     "name": "Java 8 Streams",
5     "description": "Java 8 Streams Description",
6     "topic": {
7       "id": "java",
8       "name": "Java",
9       "description": "Java Description"
10    }
11  }
12 ]
```

<groupId>org.springframework.boot</groupId>

<artifactId>spring-boot-maven-plugin</artifactId>

</plugin>

</plugins>

OverviewDependenciesDependency HierarchyEffective POMpom.xml

RunnerImport

Filter

HistoryCollections

Save to collection

Today

GET

http://localhost:8080/health

GET

http://localhost:8080/topics

GET

http://localhost:8080/topics/java/courses

PUT

http://localhost:8080/topics/java/courses/java-streams

GET

http://localhost:8080/topics/java/courses/java-streams

POST

http://localhost:8080/topics/java/courses

POST

http://localhost:8080/topics

POST

http://localhost:8080/topics

December 17

POST

http://localhost:8080/topics

POST

http://localhost:8080/topics

Type tags to match

local

BuilderTeam Library

http://localhost:8080/

No Environment

GET

http://localhost:8080/health

Params

Send

Save

AuthorizationHeaders (1)BodyPre-request ScriptTestsCode

TypeNo Auth

BodyCookiesHeaders (4)Tests

Status: 200 OKTime: 58 ms

PrettyRawPreviewJSON

```
1 {
2   "status": "UP",
3   "diskSpace": {
4     "status": "UP",
5     "total": 249779191808,
6     "free": 16257245184,
7     "threshold": 10485760
8   },
9   "db": {
10    "status": "UP",
11    "database": "Apache Derby",
12    "hello": 1
13  }
14 }
```

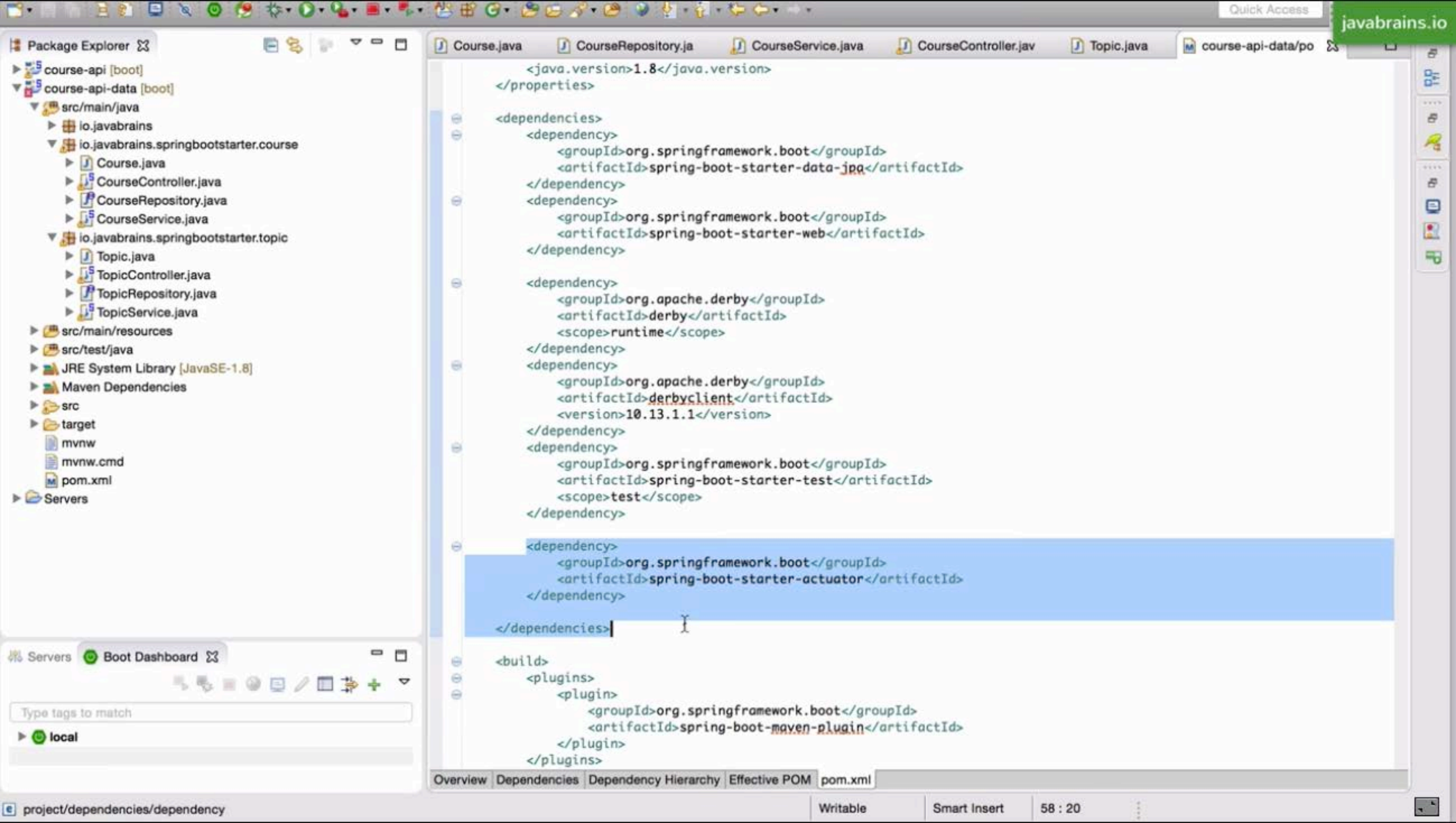
<groupId>org.springframework.boot</groupId>

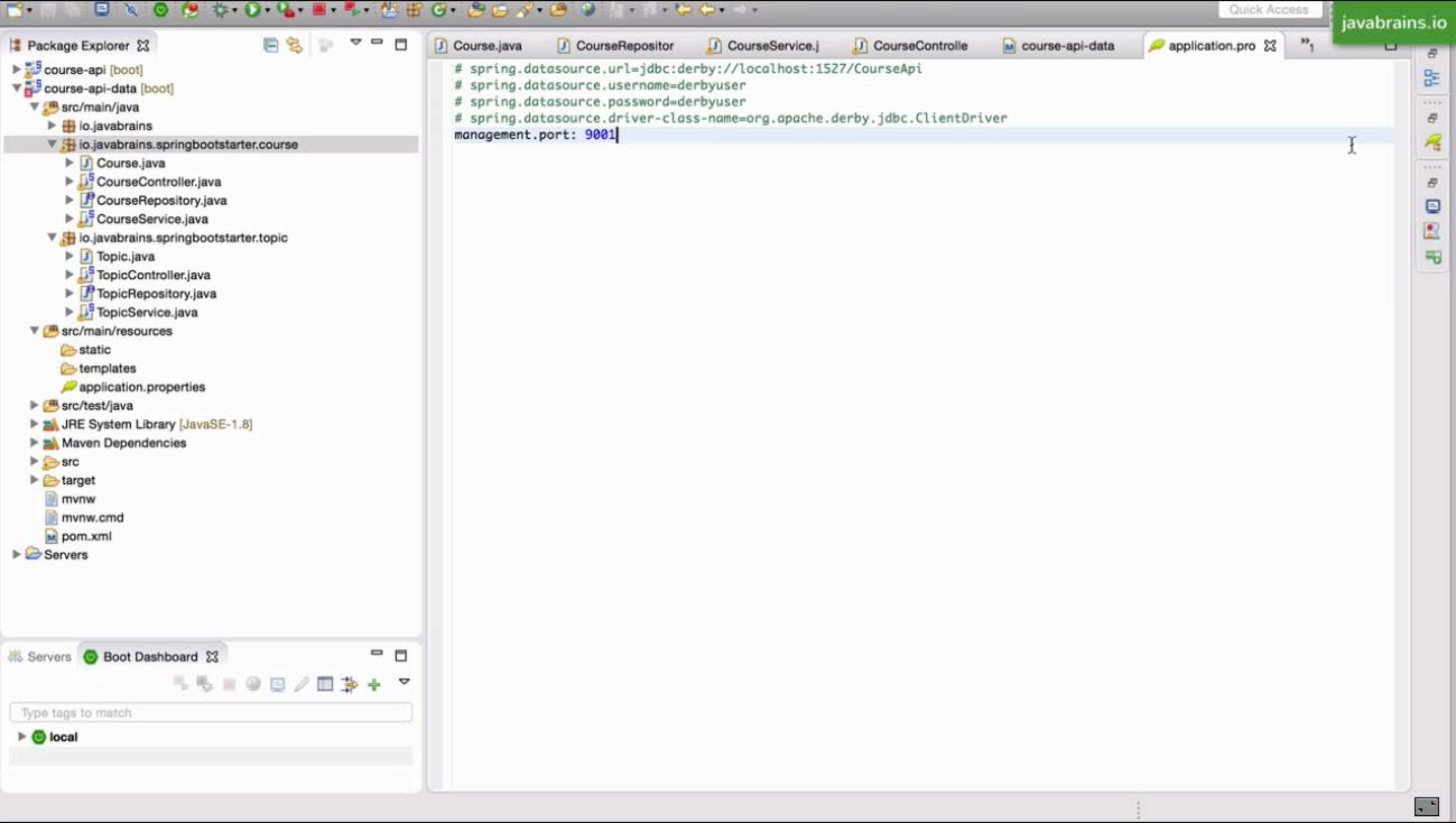
<artifactId>spring-boot-maven-plugin</artifactId>

</plugin>

</plugins>

OverviewDependenciesDependency HierarchyEffective POMpom.xml





Package Explorer

- course-api [boot]
- course-api-data [boot]
 - src/main/java
 - io.javabrain
 - io.javabrain.springbootstarter.course
 - Course.java
 - CourseController.java
 - CourseRepository.java
 - CourseService.java
 - io.javabrain.springbootstarter.topic
 - Topic.java
 - TopicController.java
 - TopicRepository.java
 - TopicService.java
 - src/main/resources
 - static
 - templates
 - application.properties
 - src/test/java
 - JRE System Library [JavaSE-1.8]
 - Maven Dependencies
 - src
 - target
 - mvnw
 - mvnw.cmd
 - pom.xml
 - Servers

Servers

Boot Dashboard

Type tags to match

- local

Course.java

```
# spring.datasource.url=jdbc:derby://lo
# spring.datasource.username=derbyuser
# spring.datasource.password=derbyuser
# spring.datasource.driver-class-name=
management.port: 9001
```

Console

Markers

Progress

<terminated> CourseApiDataApplication [Java Application] /Library/Java/JavaVirtualMachines/jdk1.8.0_66.jdk/Cor

2016-12-20	17:01:54.916	INFO	64811	---	[main]	o.s.w.s.handler.SimpleUrlH
2016-12-20	17:01:55.247	INFO	64811	---	[main]	o.s.b.a.e.mvc.EndpointHand
2016-12-20	17:01:55.249	INFO	64811	---	[main]	o.s.b.a.e.mvc.EndpointHand
2016-12-20	17:01:55.249	INFO	64811	---	[main]	o.s.b.a.e.mvc.EndpointHand
2016-12-20	17:01:55.250	INFO	64811	---	[main]	o.s.b.a.e.mvc.EndpointHand
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2016-12-20	17:01:55.251	INFO	64811	---	[main]	o.s.b.a.e.mvc.EndpointHand
2016-12-20	17:01:55.251	INFO	64811	---	[main]	o.s.b.a.e.mvc.EndpointHand
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2016-12-20	17:01:55.252	INFO	64811	---	[main]	o.s.b.a.e.mvc.EndpointHand
2016-12-20	17:01:55.256	INFO	64811	---	[main]	o.s.b.a.e.mvc.EndpointHand
2016-12-20	17:01:55.256	INFO	64811	---	[main]	o.s.b.a.e.mvc.EndpointHand
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2016-12-20	17:01:55.257	INFO	64811	---	[main]	o.s.b.a.e.mvc.EndpointHand
2016-12-20	17:01:55.443	INFO	64811	---	[main]	o.s.j.e.a.AnnotationMBeanE
2016-12-20	17:01:55.453	INFO	64811	---	[main]	o.s.c.support.DefaultLifec
2016-12-20	17:01:55.572	INFO	64811	---	[main]	s.b.c.e.t.TomcatEmbeddedSe
2016-12-20	17:01:55.576	INFO	64811	---	[main]	io.javabrain.CourseApiDat
2016-12-20	17:02:03.819	INFO	64811	---	[nio-8080-exec-1]	o.a.c.c.C.[Tomcat].[localh	
2016-12-20	17:02:03.819	INFO	64811	---	[nio-8080-exec-1]	o.s.web.servlet.Dispatcher	
2016-12-20	17:02:03.837	INFO	64811	---	[nio-8080-exec-1]	o.s.web.servlet.Dispatcher	
2016-12-20	17:02:03.898	INFO	64811	---	[nio-8080-exec-1]	o.h.h.i.QueryTranslatorFac	

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RunnerImport

BuilderTeam Library

OFFLINESign In

Filter

HistoryCollections

Save to collection

Today

GET

http://localhost:9001/health

GET

http://localhost:9000/health

GET

http://localhost:8080/topics

GET

http://localhost:8080/health

GET

http://localhost:8080/topics/java/courses

PUT

http://localhost:8080/topics/java/courses/java-streams

GET

http://localhost:8080/topics/java/courses/java-streams

POST

http://localhost:8080/topics/java/courses

POST

http://localhost:8080/topics

POST

http://localhost:8080/topics

December 17

Type tags to match

local

http://localhost:9001/

+

No Environment

GET

http://localhost:9001/health

Params

Send

Save

Authorization

Headers (1)

Body

Pre-request Script

Tests

Code

Type

No Auth

Body

Cookies

Headers (3)

Tests

Status: 200 OK

Time: 66 ms

PrettyRawPreview

JSON

```
1 {
2   "status": "UP",
3   "diskSpace": {
4     "status": "UP",
5     "total": 249779191808,
6     "free": 16208334848,
7     "threshold": 10485760
8   },
9   "db": {
10    "status": "UP",
11    "database": "Apache Derby",
12    "hello": 1
13  }
14 }
```

<https://spring.io/guides/gs/actuator-service/>



Part V. Spring Boot Actuator: Production-ready features

Spring Boot includes a number of additional features to help you monitor and manage your application when it's pushed to production. You can choose to manage and monitor your application using HTTP endpoints, with JMX or even by remote shell (SSH or Telnet). Auditing, health and metrics gathering can be automatically applied to your application.

Actuator HTTP endpoints are only available with a Spring MVC-based application. In particular, it will not work with Jersey [unless you enable Spring MVC as well](#).

45. Enabling production-ready features

The `spring-boot-actuator` module provides all of Spring Boot's production-ready features. The simplest way to enable the features is to add a dependency to the `spring-boot-starter-actuator` 'Starter'.

Definition of Actuator

An actuator is a manufacturing term, referring to a mechanical device for moving or controlling something. Actuators can generate a large amount of motion from a small change.

To add the actuator to a Maven based project, add the following 'Starter' dependency:

<https://spring.io/guides/gs/actuator-service/>

Runner Import Builder Team Library

Filter

History Collections

Save to collection

Today

- GET http://localhost:9001/beans
- GET http://localhost:9001/info
- GET http://localhost:9001/health
- GET http://localhost:9000/health
- GET http://localhost:8080/topics
- GET http://localhost:8080/health
- GET http://localhost:8080/topics/java/courses
- PUT http://localhost:8080/topics/java/courses/java-streams
- GET http://localhost:8080/topics/java/courses/java-streams
- POST http://localhost:8080/topics/java/courses
- POST http://localhost:8080/topics
- POST http://localhost:8080/topics

Type tags to match

local

http://localhost:9001/

GET http://localhost:9001/beans

Params Send Save

Authorization Headers (1) Body Pre-request Script Tests Code

Type No Auth

Body Cookies Headers (3) Tests Status: 200 OK Time: 40 ms

Pretty Raw Preview JSON

```
13 },
14 {
15   "bean": "org.springframework.boot.autoconfigure.internalCachingMetadataReaderFactory",
16   "aliases": [],
17   "scope": "singleton",
18   "type": "org.springframework.core.type.classreading.CachingMetadataReaderFactory",
19   "resource": "null",
20   "dependencies": [],
21 },
22 {
23   "bean": "courseController",
24   "aliases": [],
25   "scope": "singleton",
26   "type": "io.javabrain.springbootstarter.course.CourseController",
27   "resource": "file [/Users/kkothagal/Documents/springboot/course-api-data/target/classes/io
```


Spring Boot Quick Start

Spring Framework



Summary

Unit 1	Starting a Spring Boot App
Unit 2	Spring MVC
Unit 3	Booting Spring Boot
Unit 4	Spring Data JPA
Unit 5	App Execution and Actuator

Spring Boot Quick Start

Spring Framework



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