

Spring Boot Fundamentals

INTRODUCING SPRING BOOT AND ITS BENEFITS



Kesha Williams

SOFTWARE ENGINEERING MANAGER & PROFESSOR

@KeshaWillz www.kesha.tech



Overview



Features of Spring Boot

- Spring Boot starters
- Auto configuration

Bootstrapping an application

- Spring Initializr

Data access

Spring MVC

REST API development

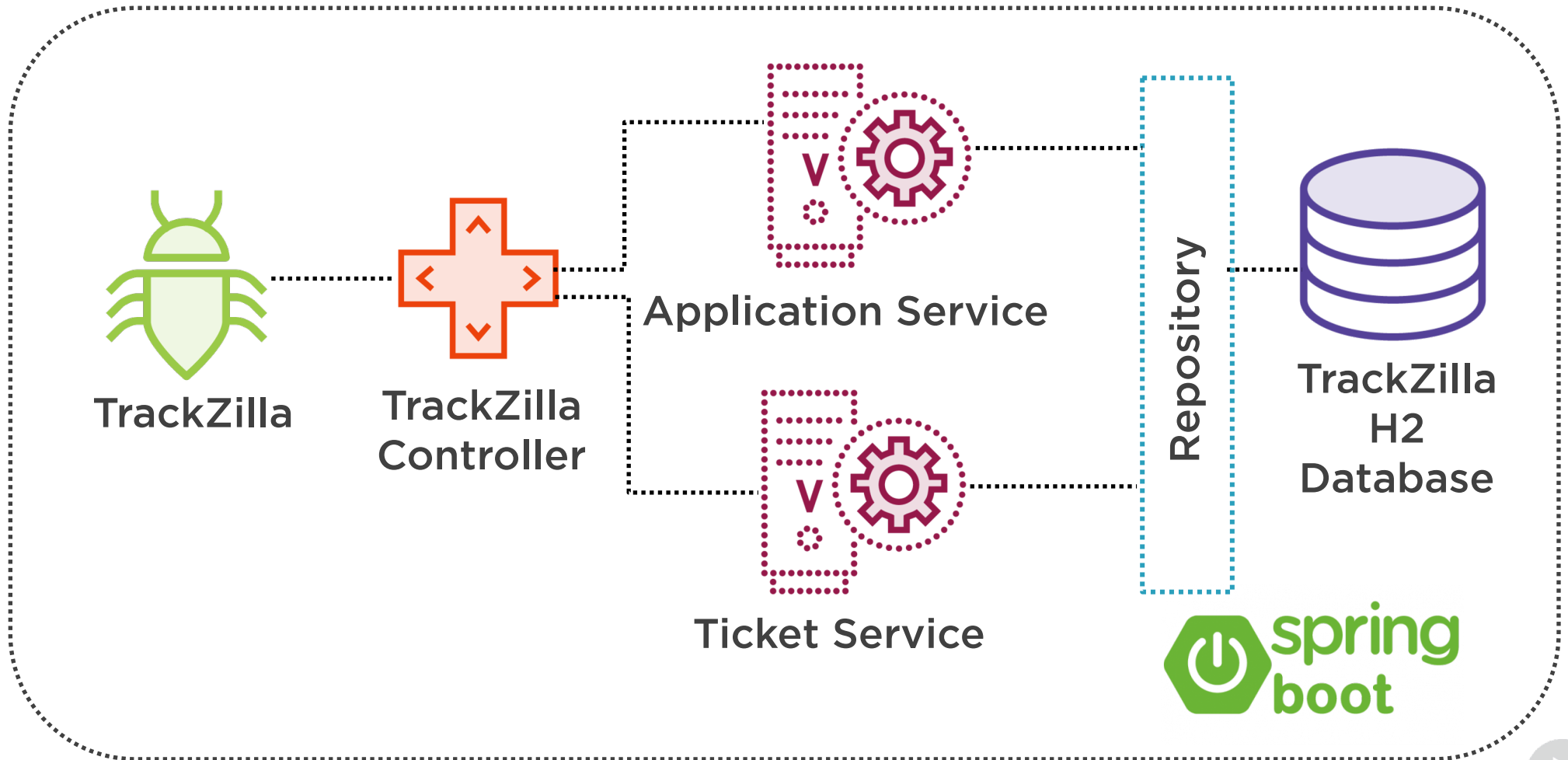
GraphQL servers

Spring Boot Actuator

Testing



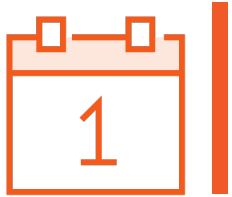
TrackZilla Case Study



Learning Path



Starting Point



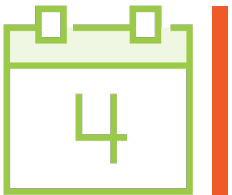
Spring Boot



IntelliJ, Java 8+



Maven 3.0+



Spring Framework



Pluralsight Library

Spring Fundamentals

Spring: The Big Picture

**Creating Your First Spring
Boot Application**

**Getting Started with Spring
Data JPA**



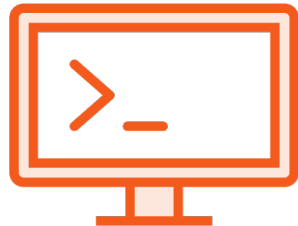
Prerequisites



JDK 1.8 +



Text Editor



Maven 3.0 +



Git



Spring Boot Overview



Spring

Spring Boot

Spring MVC

Spring Data

Spring Security

Spring Session

Spring AMQP

Spring Batch

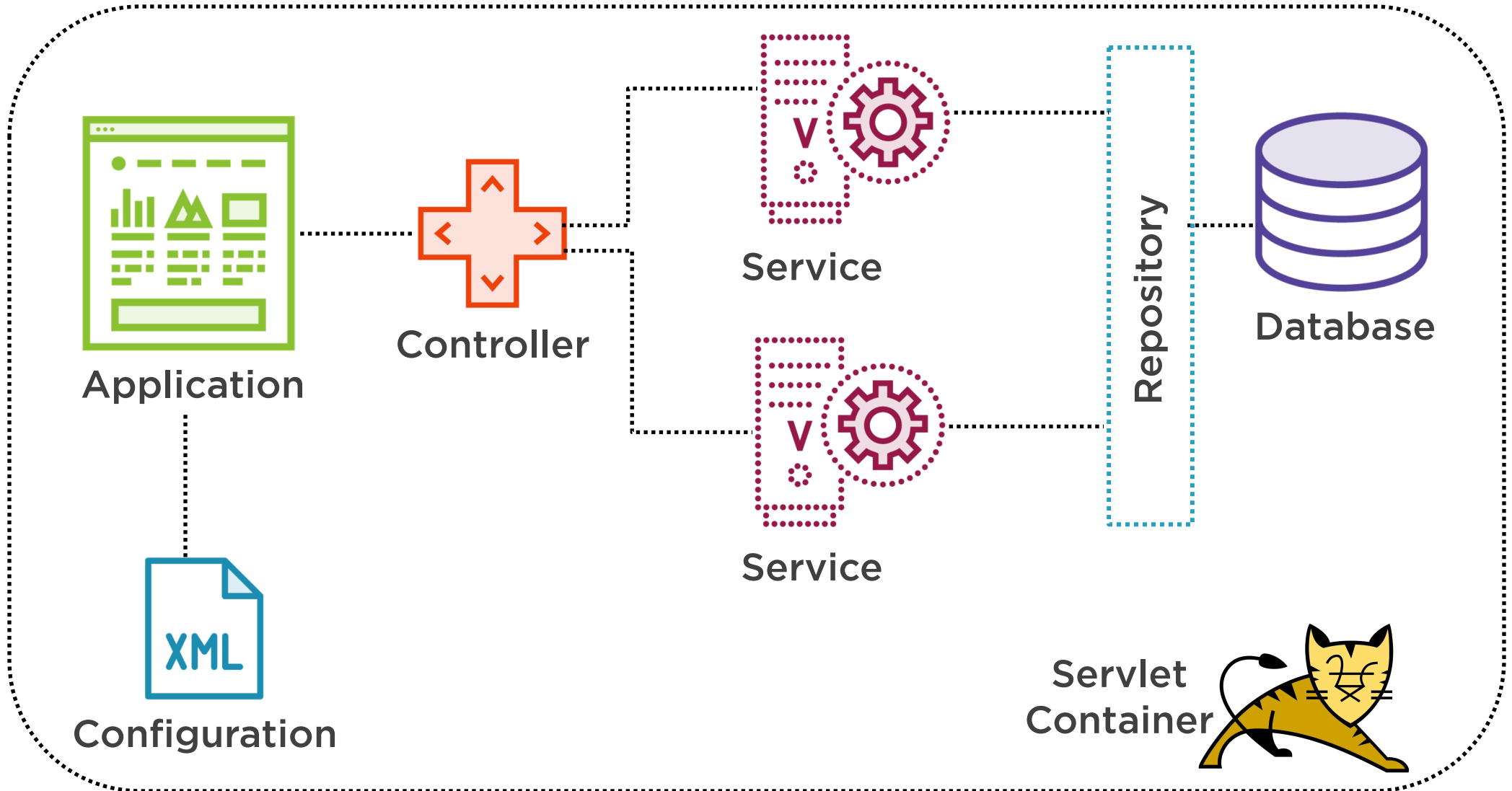


XML config files
Configuration needed
Annotation based

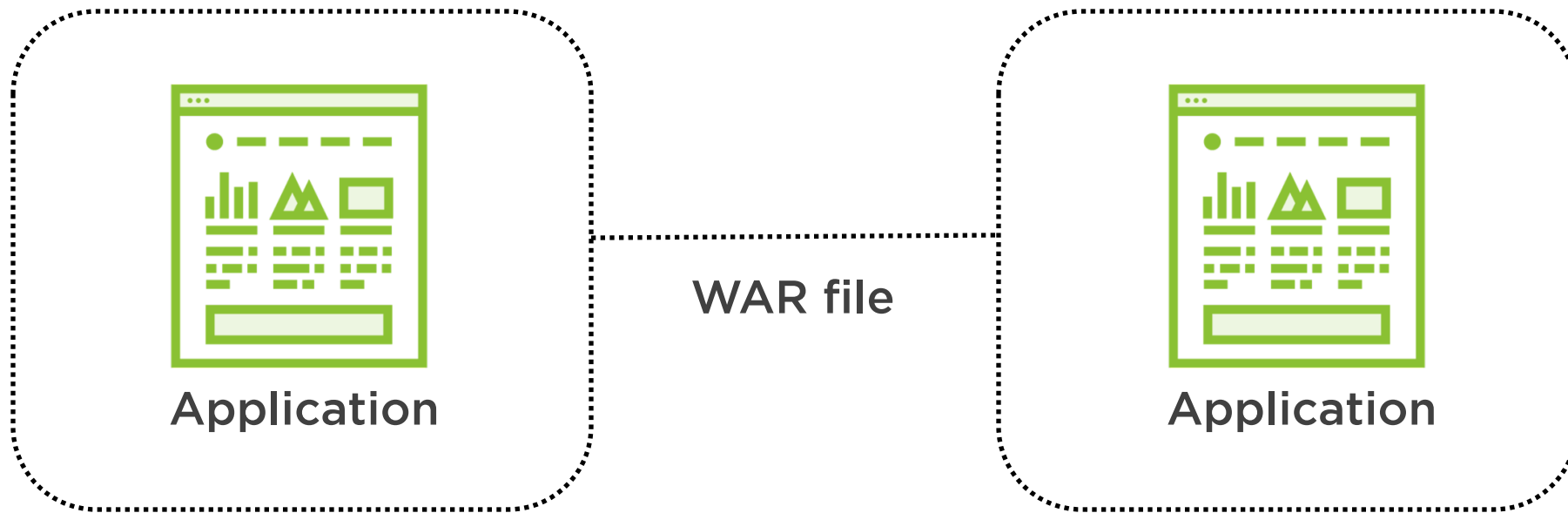
Configuration Challenges



Structure



Simple Deployment



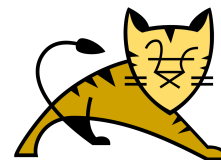
Application

WAR file

Application

WAR file

Servlet Container



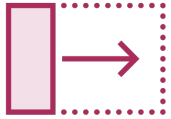
jetty://



Features of Spring Boot



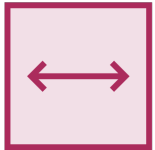
Features



Automatic configuration



Starter dependencies



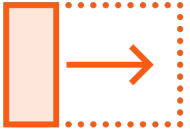
Command line interface



Actuator



Automatic Configuration



Time saving feature



Configures application based on libraries



Maven dependencies configured automatically

Starter Dependency

spring-boot-starter-web

spring-boot-starter-test

spring-boot-starter-data-jpa

spring-boot-starter-thymeleaf



Spring

<dependency>

```
<groupId>org.springframework</groupId>  
<artifactId>spring-web</artifactId>  
<version>5.1.8.RELEASE</version>
```

</dependency>

<dependency>

```
<groupId>org.springframework</groupId>  
<artifactId>spring-webmvc</artifactId>  
<version>5.1.8.RELEASE</version>
```

</dependency>



Spring Boot

```
<dependency>
```

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

```
    <artifactId>spring-boot-starter-web</artifactId>
```

```
    <version>2.1.5.RELEASE</version>
```

```
</dependency>
```



```
<dependency>
  <groupId>
    org.springframework.boot
  </groupId>
  <artifactId>
    spring-boot-starter-test
  </artifactId>
  <scope>
    test
  </scope>
</dependency>
```

- ◀ Includes testing libraries
- ◀ JUnit
- ◀ Mockito
- ◀ Hamcrest
- ◀ Spring core
- ◀ Spring test



```
<dependency>
  <groupId>
    org.springframework.boot
  </groupId>
  <artifactId>
    spring-boot-starter-data-jpa
  </artifactId>
</dependency>
```

- ◀ Spring Data JPA with Hibernate
- ◀ JDBC
- ◀ Entity manager
- ◀ Transaction API
- ◀ Spring DATA JPA
- ◀ Aspects

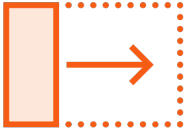


```
<dependency>  
<groupId>  
    org.springframework.boot  
</groupId>  
<artifactId>  
    spring-boot-starter-web  
</artifactId>  
</dependency>
```

- ◀ Web application development
- ◀ Spring MVC
- ◀ REST
- ◀ Tomcat
- ◀ Jackson



Spring Boot CLI



Command line interface

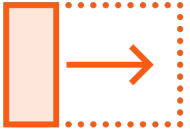


Application written using Groovy scripts



Rapid prototyping

Actuator



Monitor running application



Manage via HTTP endpoints or JMX



Health status, metrics, loggers, audit events, HTTP trace

<https://gitlab.com/videolearning/spring-fundamentals>

GitHub Repository

Use the link to clone code locally



Summary



What we covered:

- Spring Boot
- Extension of Spring Framework

Automatic configuration

Starter dependencies

CLI

Actuator

