

Spring Ecosystem



Spring Boot



Spring Framework



Spring Data



Spring Cloud



Spring Security



Spring Batch



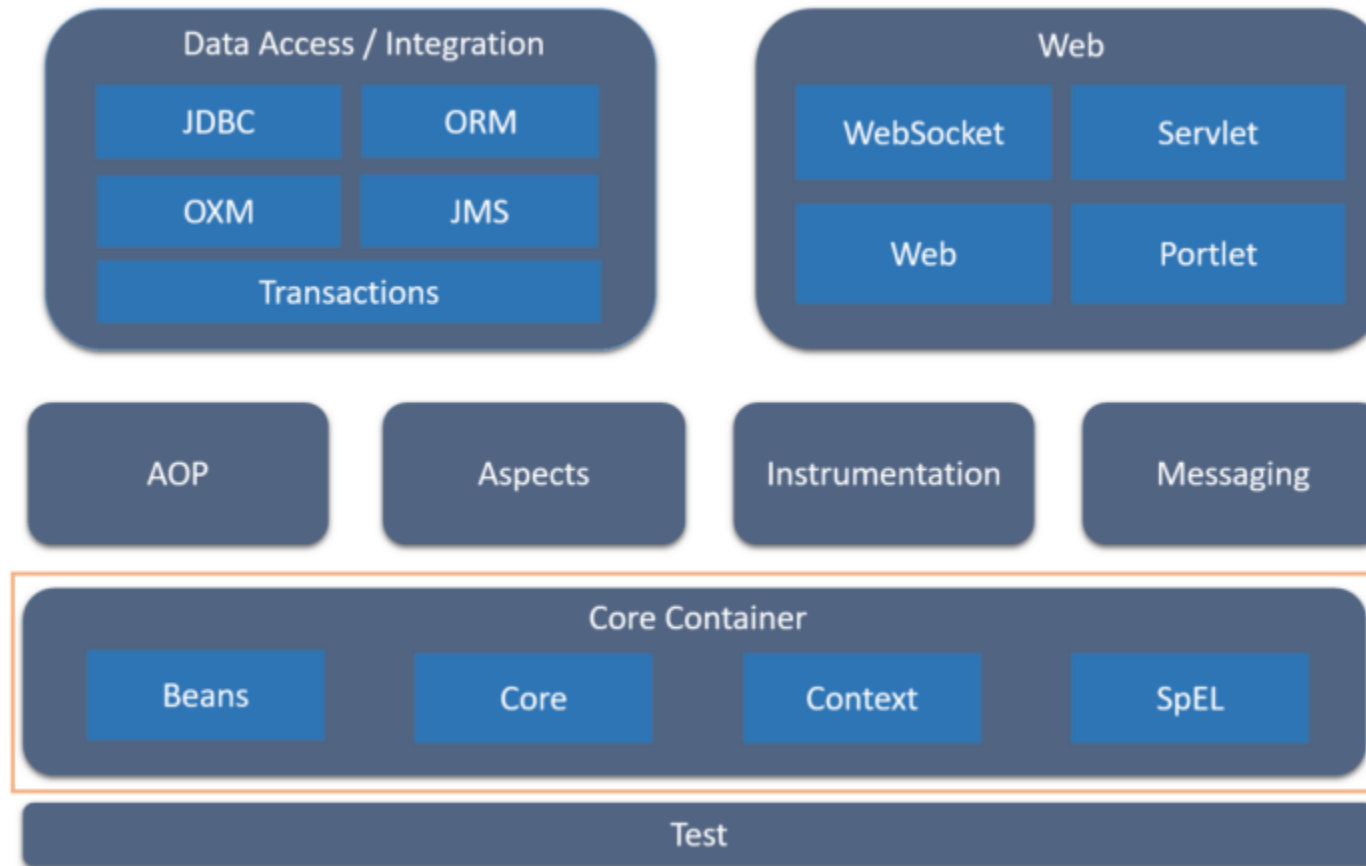
Spring AMQP



Spring HATEOAS

Spring Framework

Spring Framework and Core Container



Inversion of Control and Dependency Injection

Inversão de Controle (IoC) é um padrão de projeto, em que um objeto apenas declara suas dependências sem criá-las e delega a tarefa de construir tais dependências a um Container IoC (Core Container).

Injeção de Dependência é a implementação utilizada pelo Spring Framework de aplicar a Inversão de Controle quando necessário.

What are Spring Beans?

Beans

Um bean consiste em um objeto que é instanciado, montado e gerenciado por um container do Spring através da Inversão de Controle (IoC) e Injeção de Dependências.

@Component

@Controller

@Service

@Repository

@Bean – Producer Methods

```
@Configuration
public class RestTemplateConfig {

    @Bean
    RestTemplate restTemplate(RestTemplateBuilder restTemplateBuilder) {
        return restTemplateBuilder
            .errorHandler(new RestTemplateResponseErrorHandler())
            .build();
    }
}
```

```
@Component
public class RestClient {

    @Autowired
    private RestTemplate restTemplate;
```


Spring Boot

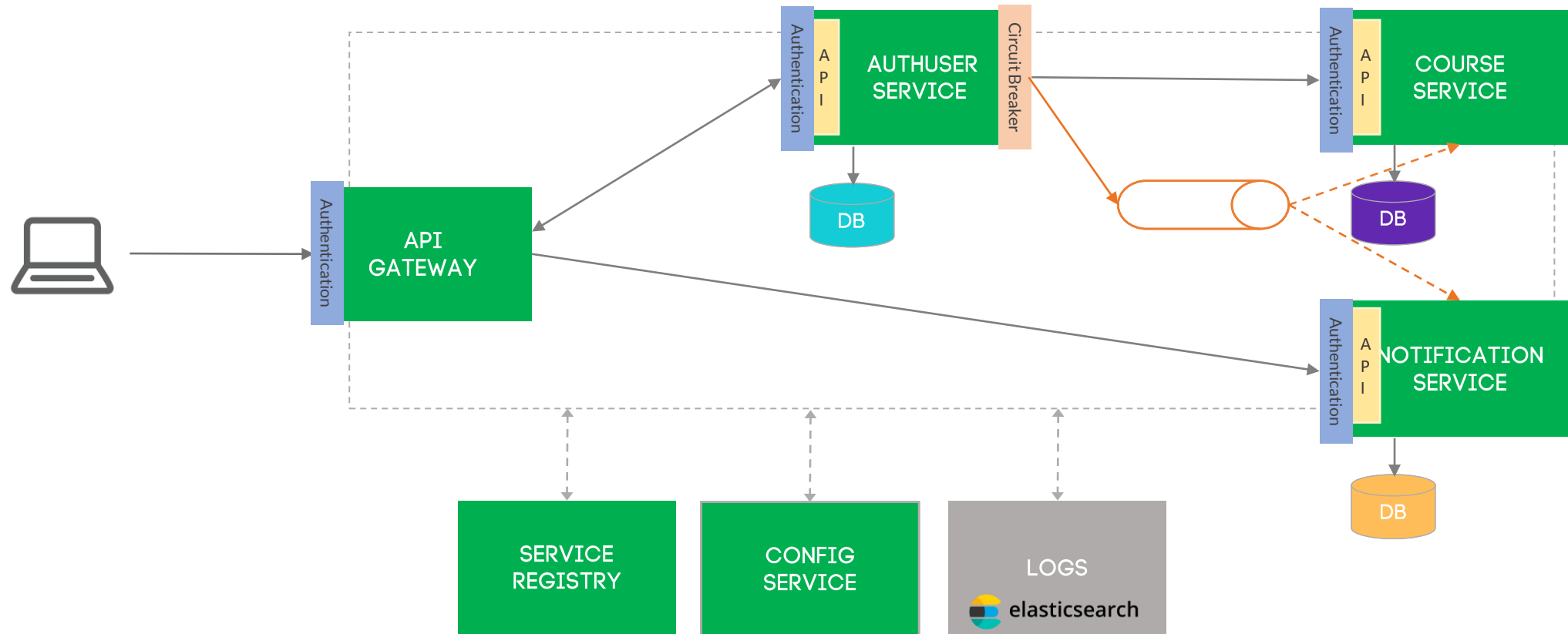


Spring Boot

```
2021-09-29 14:38:45.173 INFO 14808 --- [
2021-09-29 14:38:45.173 INFO 14808 --- [
2021-09-29 14:38:45.923 INFO 14808 --- [
2021-09-29 14:38:45.923 INFO 14808 --- [
2021-09-29 14:38:45.923 INFO 14808 --- [
2021-09-29 14:38:45.985 INFO 14808 --- [
2021-09-29 14:38:45.985 INFO 14808 --- [
2021-09-29 14:38:46.251 INFO 14808 --- [
2021-09-29 14:38:46.251 INFO 14808 --- [
```

```
main] com.ead.course.CourseApplication : Starting CourseApplication using Java 11.0.12 on DESKTOP-7F5C03Q with
main] com.ead.course.CourseApplication : No active profile set, falling back to default profiles: default
main] o.s.b.w.embedded.tomcat.TomcatWebServer : Tomcat initialized with port(s): 8080 (http)
main] o.apache.catalina.core.StandardService : Starting service [Tomcat]
main] org.apache.catalina.core.StandardEngine : Starting Servlet engine: [Apache Tomcat/9.0.52]
main] o.a.c.c.C.[Tomcat].[localhost].[/] : Initializing Spring embedded WebApplicationContext
main] w.s.c.ServletWebServerApplicationContext : Root WebApplicationContext: initialization completed in 750 ms
main] o.s.b.w.embedded.tomcat.TomcatWebServer : Tomcat started on port(s): 8080 (http) with context path ''
main] com.ead.course.CourseApplication : Started CourseApplication in 1.445 seconds (JVM running for 2.206)
```

Spring Boot



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