

# Spring Ecosystem



**Spring Boot**



**Spring Framework**



**Spring Data**



**Spring Cloud**



**Spring Security**



**Spring Batch**



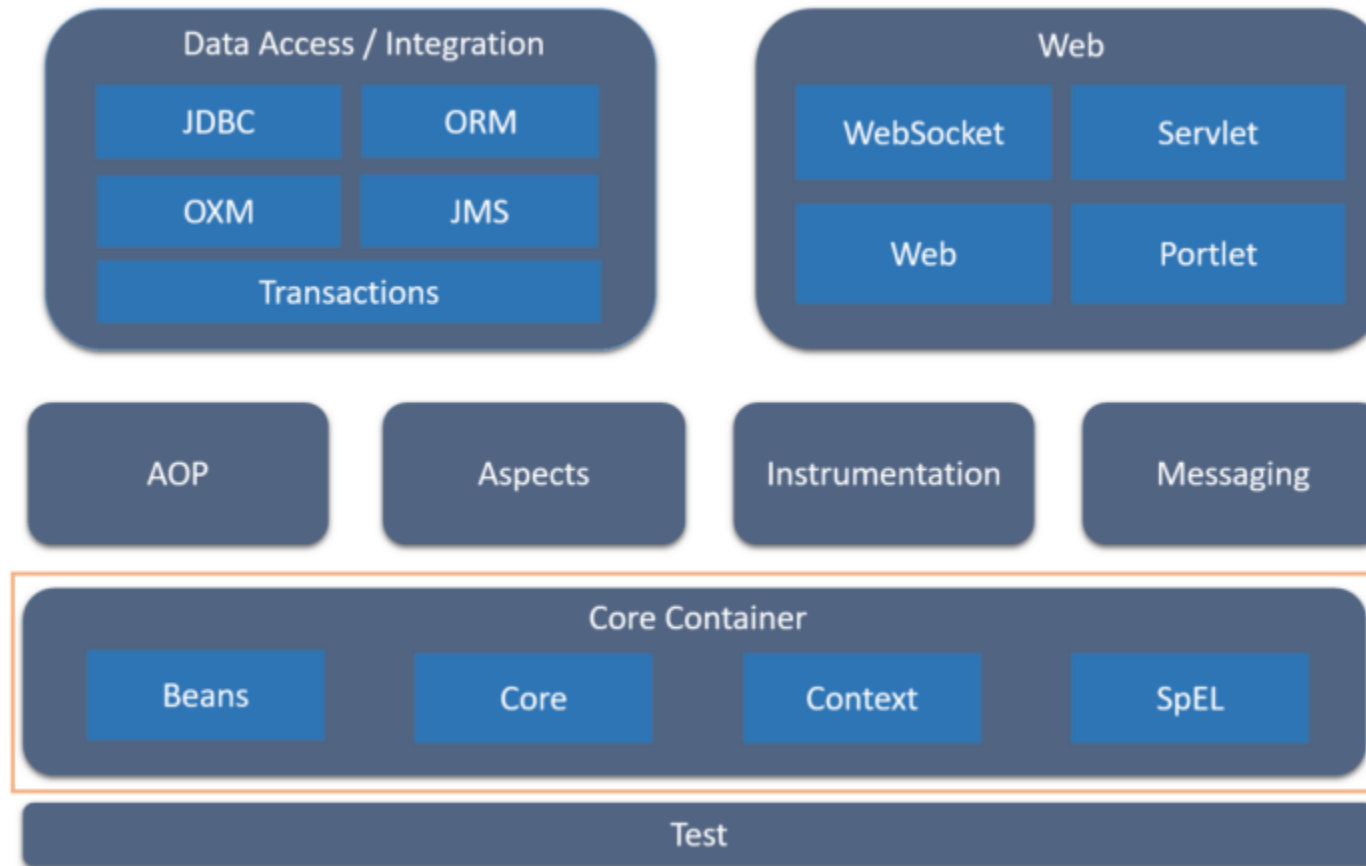
**Spring AMQP**



**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

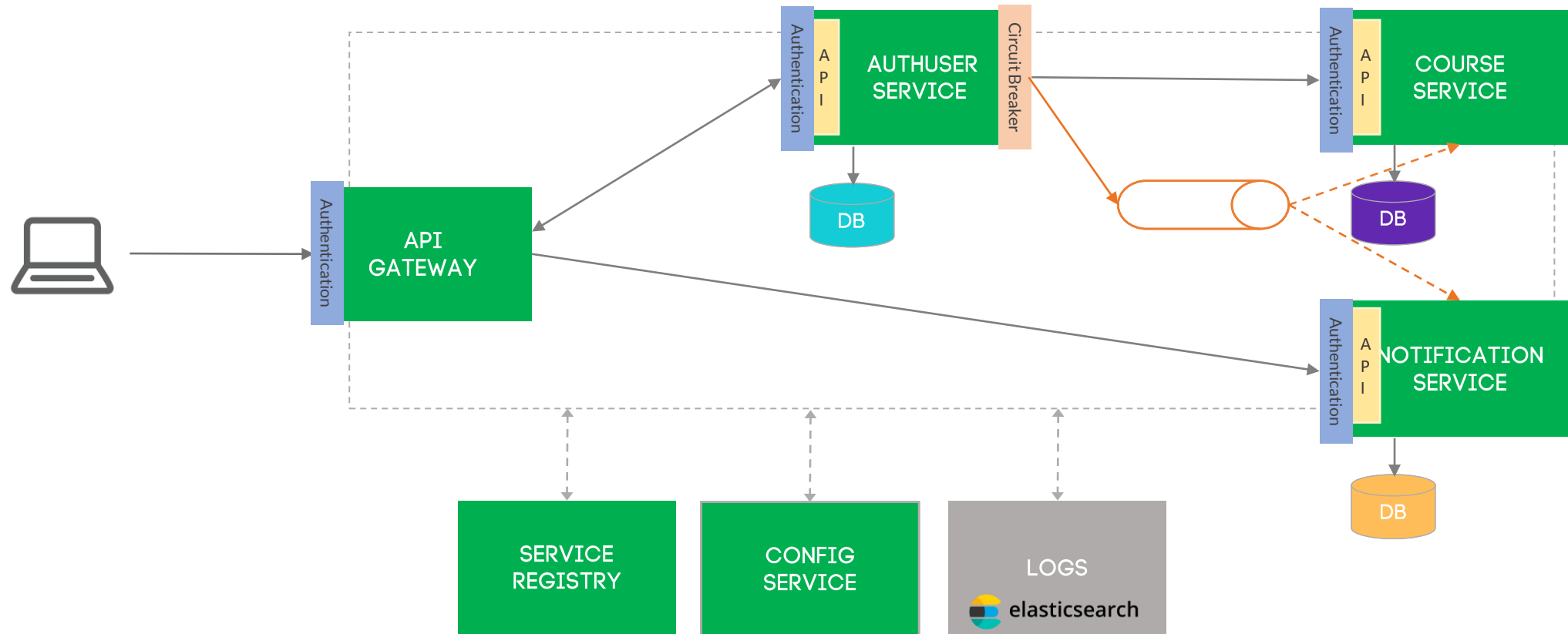


# Spring Boot

```
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 --- [
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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>
```