Spring Boot on a Diet

A LEANER SPRING TESTING COOKBOOK

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Spring TestContext

Test Slices

Recipes!

Method Validation, Method Security, Caching, Aspects

Spring TestContext

- Starts an ApplicationContext for each test class
- Contexts are cached
- To reuse a context:
  - @SpringBootTest, @WebMvcTest, @DataJpaTest, @MockBean, @SpyBean, @ContextConfiguration, @Import, @ImportAutoConfiguration, @TestPropertySource, @ActiveProfiles, @EnableXXX...

Test Slices

- @WebMvcTest, @DataJpaTest, @DataJdbcTest, @JsonTest, @RestClientTest...
- Control
  - Component scan
  - AutoConfiguration

Rolling your own

▶ @SpringBootTest can be costly

▶ Start just what you need

▶ More flexibility

▶ Less coupling with unrelated concerns

Recipe Template

1. Import relevant parts of the application
   - @SpringBootTest(classes = XXX.class)
   - @Configuration
   - @ComponentScan (gray box)
2. Import relevant AutoConfigurations
   - @ImportAutoConfiguration

Diet Recipes

Method Security

- @PreAuthorize, @PostAuthorize, @PreFilter, @PostFilter, @Secured, @RolesAllowed
- Ingredients
  - @SpringBootTest
  - @Configuration
  - @ComponentScan

Method Validation

- JSR 303
- @Valid, @NotNull, @Pattern, @NotEmpty, @Size, @Email
- @UUID, @URL, @LuhnCheck, @UniqueElements

Ingredients
- @SpringBootTest(classes = XXX.class)
- @ImportAutoConfiguration(ValidationAutoConfiguration.class)
- Validation helper

Aspects

- @Before, @After, @Around, @AfterThrowing, @AfterReturning
- AspectJ language
- Ingredients
  - SpringBootTest(classes = XXX)
  - @ImportAutoConfiguration(AopAutoConfiguration.class)
  - Helper class with annotations
  - @MockitoBean

Caching

- ▶ @Cacheable
- ▶ Ingredients
  - ▶ @SpringBootTest
  - ▶ @Configuration
  - ▶ @ImportAutoConfiguration(CacheAutoConfiguration.class)
  - ▶ Mock!

Other Considerations

- Have at least one full @SpringBootTest
- Code smell: @EnableXXX directly on a test
- Use SRP-y configuration classes

Conclusion

- Smaller tests are faster
- Smaller tests are more flexible
- Smaller tests are easier to troubleshoot

Questions