



It's a kind of magic?

Custom Spring Boot Starter

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MICHAEL SIMONS

- ▶ Doing Java for 14 years at enerko-informatik.de
- ▶ Mainly database centric applications in utilities (electricity and gas)
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SPRING BOOT: GOALS

- ▶ A faster 'getting started' experience for all Spring development
- ▶ Opinionated out of the box with sensible defaults
- ▶ Get out of the way quickly as your requirements start to grow
- ▶ Provide a range of non-functional features
- ▶ Externalized configuration

**SPRING BOOT DOESN'T
CONSIST OF ONE BIG
ARTIFACT**

ALL KINDS OF SPRING BOOT STARTERS

- ▶ Integration (Databases, Caches)
- ▶ Template Engines
- ▶ Validation
- ▶ Social
- ▶ many more...

<https://github.com/spring-projects/spring-boot/tree/master/spring-boot-starters>

Name

demo

Description

Demo project for Spring Boot

Package Name

com.example

Packaging

Jar

Java Version

1.8

Language

Java

[HTTP://START.SPRING.IO](http://start.spring.io)

Generate Project

Core

- Security
Secure your application via spring-security
- AOP
Aspect-oriented programming including spring-aop and AspectJ
- Atomikos (JTA)
JTA distributed transactions via Atomikos
- Bitronix (JTA)
JTA distributed transactions via Bitronix
- Cache
Spring's Cache abstraction
- DevTools
Spring Boot Development Tools
- Validation

Web

- ✓ Web
Full-stack web development with Tomcat and Spring MVC
- Websocket
Websocket development with SockJS and STOMP
- WS
Contract-first SOAP service development with Spring Web Services
- Jersey (JAX-RS)
the Jersey RESTful Web Services framework
- Ratpack
Spring Boot integration for the Ratpack framework
- Vaadin
Vaadin
- Rest Repositories

- 1 Os frontis.
- 2 Os trigonatis. Parietal bone.
- 3 Os temporis.
- 4 Os occipitis.
- 5 Os male.
- 6 Os nati.
- 7 Dentes.
- 8 Proccus condyloides.
- 9 Proccus coracoidei.
- 10 The transverse processes of the vertebrae.
- 11 Clavicula.
- 12 The proccus acromion of the Scapula.
- 13 Sternum.
- 14 The Ribs.
- 15 Os humeri.
- 16 Radius.
- 17 The ulna.
- 18 Ulna.
- 19 The clavicula.
- 20 Proccus styloidei.
- 21 The 8 bones of the carpus.
- 22 The 4 bones of the Metacarpus.
- 23 The transverse processes of the vertebrae of the lumbi.
- 24 Os ileum.
- 25 Os sacrum.
- 26 Os ischium.
- 27 Os pubis.
- 28 Os femoris.
- 29 The great trochanter.
- 30 The lesser trochanter.
- 31 Patella.
- 32 Tibia.
- 33 Malleolus internus.
- 34 Astragalus.
- 35 Os calcis.
- 36 Os naviculare.
- 37 Os cuneiforme.
- 38 Os cuboideum.
- 39 The five bones of the Metatarsus.



- 40 Os parietale.
- 41 Os sphenoidale.
- 42 Os temporale.
- 43 Os occipitale.
- 44 Os maxillare superius.
- 45 Os maxillare inferius.
- 46 Os mandibulare.
- 47 Os hyoideum.
- 48 Os thyroideum.
- 49 Os scapulae.
- 50 Os coracoclaviculare.
- 51 Os coracoacromiale.
- 52 Os coracohumeral.
- 53 Os coracospinal.
- 54 Os coracosternal.
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- 99 Os coracovertebralis.
- 100 Os coracovertebralis.

ANATOMY OF A STARTER

- ▶ AUTOCONFIGURE MODULE
- ▶ SPRING.FACTORIES
- ▶ STARTER MODULE

AUTO CONFIGURATION

- ▶ Configuration through (Java) Code combined with @Conditional
 - ▶ OnClassCondition / OnMissingClassCondition
 - ▶ OnBeanCondition / OnMissingBeanCondition
 - ▶ OnPropertyCondition
 - ▶ OnResourceCondition
 - ▶ OnExpressionCondition
 - ▶ OnJavaCondition
 - ▶ OnIndiCondition
 - ▶ OnWebApplicationCondition

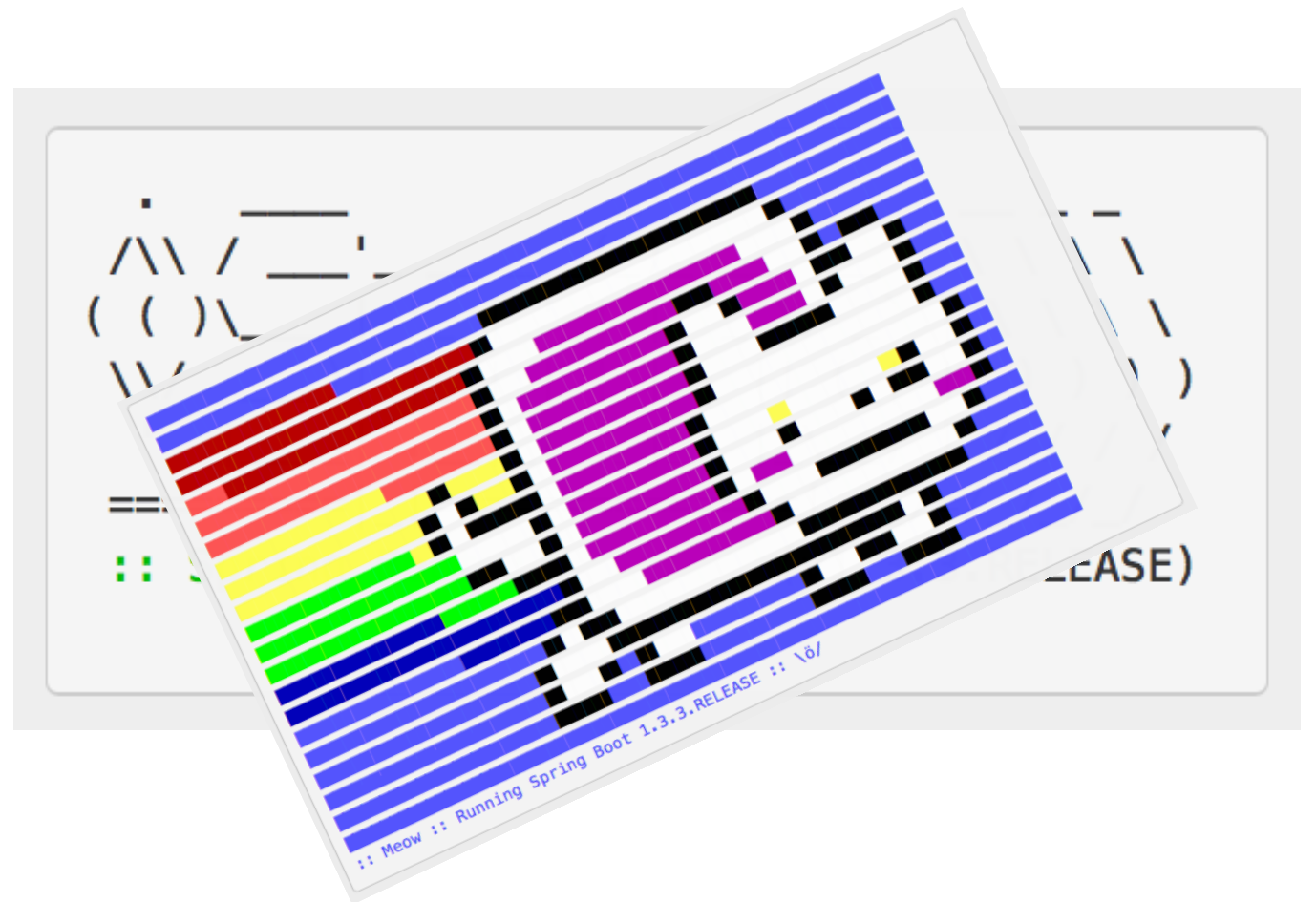


THYMELEAF-BANNER-SPRING-BOOT-STARTER

We will turn this:

```
<banner:show />
```

into



BASIC AUTO CONFIGURATION

- ▶ `@SpringBootApplication` enables auto configuration
 - ▶ `spring.factories`
- ▶ `@ConditionalOnClass`
- ▶ `@AutoConfigureAfter` and `@AutoConfigureBefore`
- ▶ `@Bean`

MORE CONDITIONS AND ORDERING

- ▶ `@ConditionalOnProperty`
- ▶ `@ConditionalOnMissingBean`
- ▶ `@Order`

AUTO CONFIGURATION REPORT

- ▶ Either through `—debug` parameter
- ▶ Adding
`spring-boot-starter-actuator`
provides the REST endpoint
`/autoconfig`

CREATING CUSTOM CONDITIONS

- ▶ Implement `o.s.c.annotation.Condition`
- ▶ Extend `o.s.boot.autoconfigure.SpringBootApplicationCondition`
- ▶ Use one of
 - ▶ `AllNestedConditions`
 - ▶ `AnyNestedCondition`
 - ▶ `NoneNestedCondition`

CONCLUSION

- ▶ Provide features in a resilient way
- ▶ Custom modules can easily benefit from the starter mechanism
- ▶ No magic: Every automatically configuration can be explained
- ▶ `@EnableAutoConfiguration` w `SpringFactoriesLoader` provides the heavy lifting, there's no full class path scanning or similar involved
- ▶ You can use it yourself!

THANK YOU FOR LISTENING!

- ▶ This talk: github.com/michael-simons/springio2016
- ▶ A more useful starter of mine: wro4j-spring-boot-starter
- ▶ Contact: michael-simons.eu
- ▶ Twitter: [@rotnroll666](https://twitter.com/rotnroll666)