

Chapter 1: Quick Start with Java

SPRING INITIALIZR bootstrap your application now

Generate a Gradle Project with Java and Spring Boot 2.0.0 M3

Project Metadata

Artifact coordinates

Group

com.gregturnquist.learningspringboot

Artifact

learning-spring-boot

Dependencies

Add Spring Boot Starters and dependencies to your application

Search for dependencies

Web, Security, JPA, Actuator, Devtools...

Selected Dependencies

Reactive Web

Reactive MongoDB

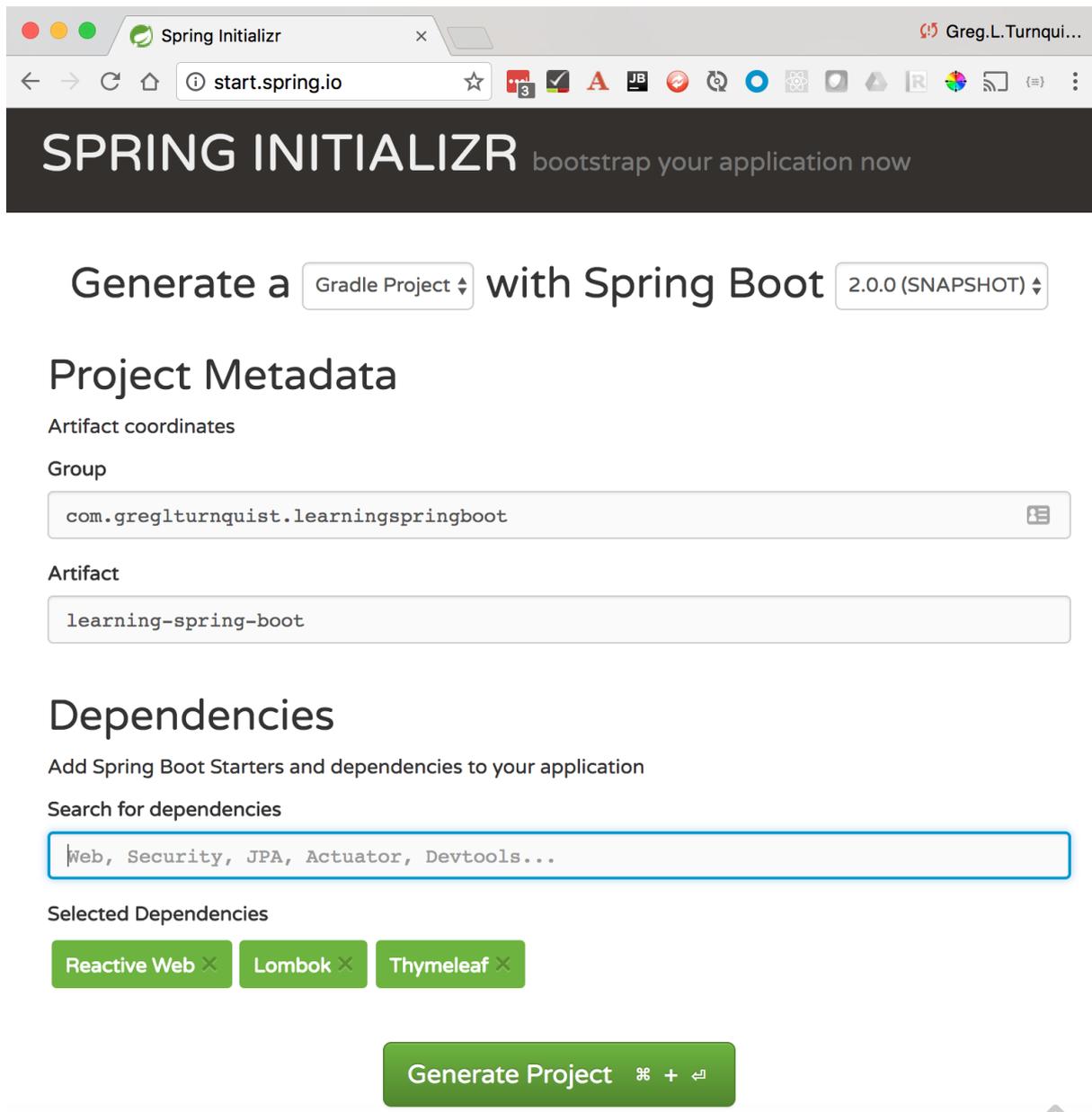
Thymeleaf

Lombok

Generate Project

```
[
- {
  id: 1,
  name: "Quick start with Java"
},
- {
  id: 2,
  name: "Reactive Web with Spring Boot"
},
- {
  id: 3,
  name: "...and more!"
}
]
```

Chapter 2: Reactive Web with Spring Boot



The screenshot shows the Spring Initializr web application in a browser window. The browser's address bar shows the URL `start.spring.io`. The page header features the text "SPRING INITIALIZR bootstrap your application now". Below the header, there is a form to generate a project. The form includes a dropdown menu for the build system, currently set to "Gradle Project", and another dropdown for the Spring Boot version, currently set to "2.0.0 (SNAPSHOT)".

Generate a **with Spring Boot**

Project Metadata

Artifact coordinates

Group

Artifact

Dependencies

Add Spring Boot Starters and dependencies to your application

Search for dependencies

Selected Dependencies

-
-
-

Chapter 3: Reactive Data Access with Spring Boot

```
org.mongodb.driver.cluster ..... : Cluster created with settings {hosts=[localhost:27017], mode=SINGLE, requiredCluste
org.mongodb.driver.connection ..... : Opened connection [connectionId{localValue:1, serverValue:202}] to localhost:27017
org.mongodb.driver.cluster ..... : Monitor thread successfully connected to server with description ServerDescription{
org.mongodb.driver.cluster ..... : Cluster created with settings {hosts=[localhost:27017], mode=SINGLE, requiredCluste
org.mongodb.driver.connection ..... : Opened connection [connectionId{localValue:2, serverValue:203}] to localhost:27017
org.mongodb.driver.cluster ..... : Monitor thread successfully connected to server with description ServerDescription{
o.s.j.e.a.AnnotationMBeanExporter ..... : Registering beans for JMX exposure on startup
r.ipc.netty.tcp.BlockingNettyContext ..... : Started HttpServer on /0:0:0:0:0:0:0:8080
o.s.b.web.embedded.netty.NettyWebServer ..... : Netty started on port(s): 8080
org.mongodb.driver.connection ..... : Opened connection [connectionId{localValue:3, serverValue:204}] to localhost:27017
```

```
org.mongodb.driver.cluster ..... : Cluster created with settings {hosts=[localhost:27017], mode=SINGLE, requiredCluste
org.mongodb.driver.connection ..... : Opened connection [connectionId{localValue:1, serverValue:205}] to localhost:27017
org.mongodb.driver.cluster ..... : Monitor thread successfully connected to server with description ServerDescription{
org.mongodb.driver.cluster ..... : Cluster created with settings {hosts=[localhost:27017], mode=SINGLE, requiredCluste
org.mongodb.driver.connection ..... : Opened connection [connectionId{localValue:2, serverValue:206}] to localhost:27017
org.mongodb.driver.cluster ..... : Monitor thread successfully connected to server with description ServerDescription{
.m.c.i.MongoPersistentEntityIndexCreator ..... : Analyzing class class com.gregturnquist.learningspringboot.Image for index inform
.m.c.i.MongoPersistentEntityIndexCreator ..... : Analyzing class class com.gregturnquist.learningspringboot.Image for index inform
o.s.j.e.a.AnnotationMBeanExporter ..... : Registering beans for JMX exposure on startup
r.ipc.netty.tcp.BlockingNettyContext ..... : Started HttpServer on /0:0:0:0:0:0:0:8080
o.s.b.web.embedded.netty.NettyWebServer ..... : Netty started on port(s): 8080
org.mongodb.driver.connection ..... : Opened connection [connectionId{localValue:3, serverValue:207}] to localhost:27017
o.s.data.mongodb.core.MongoTemplate ..... : Dropped collection [image]
o.s.data.mongodb.core.MongoTemplate ..... : Inserting Document containing fields: [_id, name, _class] in collection: image
o.s.data.mongodb.core.MongoTemplate ..... : Inserting Document containing fields: [_id, name, _class] in collection: image
o.s.data.mongodb.core.MongoTemplate ..... : Inserting Document containing fields: [_id, name, _class] in collection: image
```

```

createImage-files ..... : | onSubscribe([Synchronous Fuseable] FluxArray.ArraySubscription)
createImage-flatMap ..... : onSubscribe(FluxFlatMap.FlatMapMain)
createImage-done ..... : onSubscribe(MonoIgnoreElements.IgnoreElementsSubscriber)
createImage-done ..... : request(unbounded)
createImage-flatMap ..... : request(unbounded)
createImage-files ..... : | request(256)
createImage-files ..... : | onNext(Mock for FilePart, hashCode: 154449199)
createImage-when ..... : onSubscribe([Fuseable] MonoWhen.WhenCoordinator)
createImage-when ..... : request(32)
o.s.d.m.core.ReactiveMongoTemplate ..... : Saving Document containing fields: [_id, name, _class]
createImage-save ..... : onSubscribe(FluxOnErrorResume.ResumeSubscriber)
createImage-save ..... : request(unbounded)
createImage-copy ..... : | onSubscribe([Fuseable] MonoFlatMap.FlatMapMain)
createImage-copy ..... : | request(unbounded)
createImage-picktarget ..... : | onSubscribe([Synchronous Fuseable] Operators.ScalarSubscription)
createImage-newfile ..... : | onSubscribe([Fuseable] FluxMapFuseable.MapFuseableSubscriber)
createImage-newfile ..... : | request(unbounded)
createImage-picktarget ..... : | request(unbounded)
createImage-picktarget ..... : | onNext(upload-dir/alpha.jpg)
createImage-newfile ..... : | onNext(upload-dir/alpha.jpg)
createImage-copy ..... : | onComplete()
createImage-picktarget ..... : | onComplete()
createImage-newfile ..... : | onComplete()
createImage-files ..... : | onNext(Mock for FilePart, hashCode: 430329518)
createImage-when ..... : onSubscribe([Fuseable] MonoWhen.WhenCoordinator)
createImage-when ..... : request(32)
o.s.d.m.core.ReactiveMongoTemplate ..... : Saving Document containing fields: [_id, name, _class]
createImage-save ..... : onSubscribe(FluxOnErrorResume.ResumeSubscriber)
createImage-save ..... : request(unbounded)
createImage-copy ..... : | onSubscribe([Fuseable] MonoFlatMap.FlatMapMain)
createImage-copy ..... : | request(unbounded)
createImage-picktarget ..... : | onSubscribe([Synchronous Fuseable] Operators.ScalarSubscription)
createImage-newfile ..... : | onSubscribe([Fuseable] FluxMapFuseable.MapFuseableSubscriber)
createImage-newfile ..... : | request(unbounded)
createImage-picktarget ..... : | request(unbounded)
createImage-picktarget ..... : | onNext(upload-dir/bravo.jpg)
org.mongodb.driver.connection ..... : Opened connection [connectionId{localValue:4, serverValue:220}] to lo
createImage-newfile ..... : | onNext(upload-dir/bravo.jpg)
createImage-copy ..... : | onComplete()
createImage-picktarget ..... : | onComplete()
createImage-newfile ..... : | onComplete()
createImage-files ..... : | onComplete()
org.mongodb.driver.connection ..... : Opened connection [connectionId{localValue:5, serverValue:221}] to lo
createImage-save ..... : onNext(Image{id=85c62c00-c315-4a6b-914b-059e1020ee6b, name=bravo.jpg)
createImage-save ..... : onNext(Image{id=7f4fb639-8b0d-4791-b88a-366b2cce0b55, name=alpha.jpg)
createImage-when ..... : onComplete()
createImage-when ..... : onComplete()
createImage-save ..... : onComplete()
createImage-flatMap ..... : onComplete()
createImage-done ..... : onComplete()

```

Learning Spring Boot - 2nd Edition

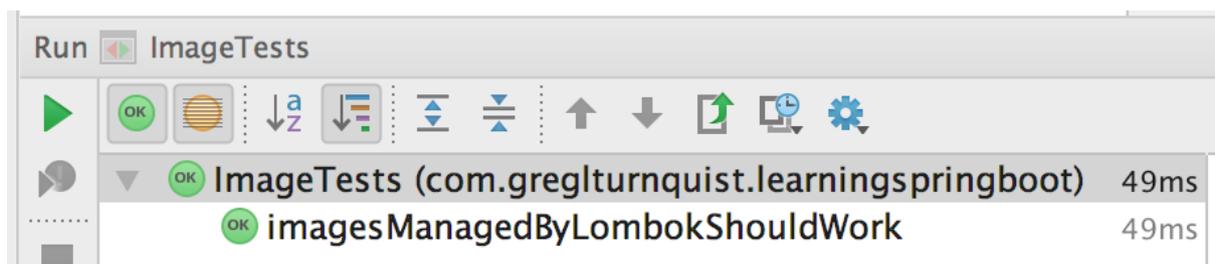
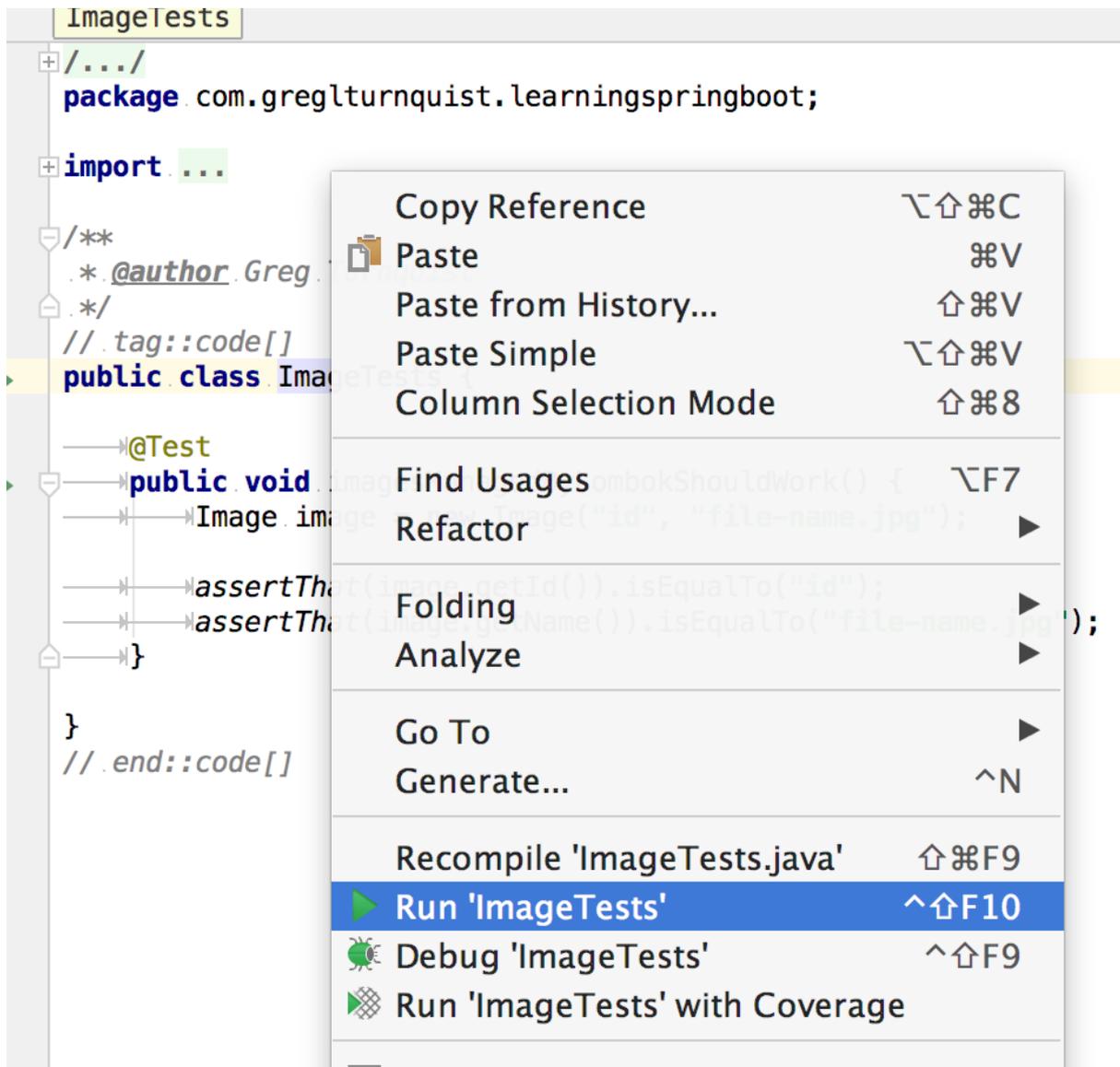
Id	Name	Image	
1	learning-spring-boot-cover.jpg		<input type="button" value="Delete"/>
3	bazinga.png		<input type="button" value="Delete"/>
2	learning-spring-boot-2nd-edition-cover.jpg		<input type="button" value="Delete"/>

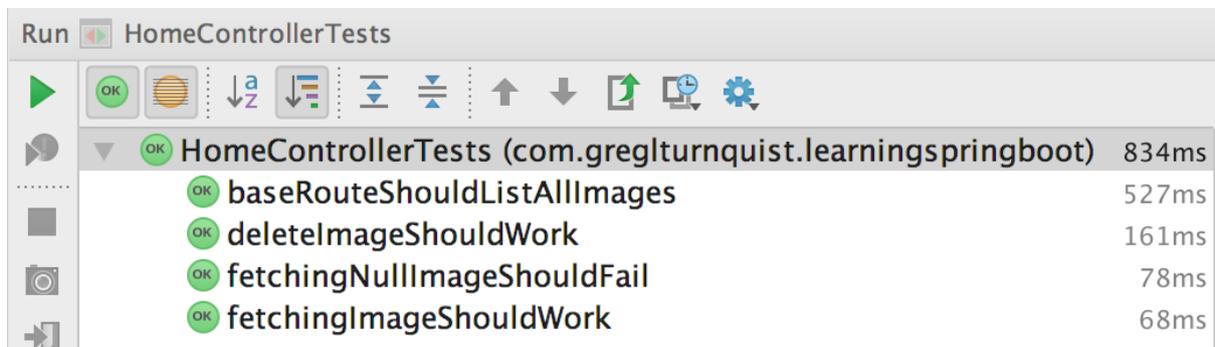
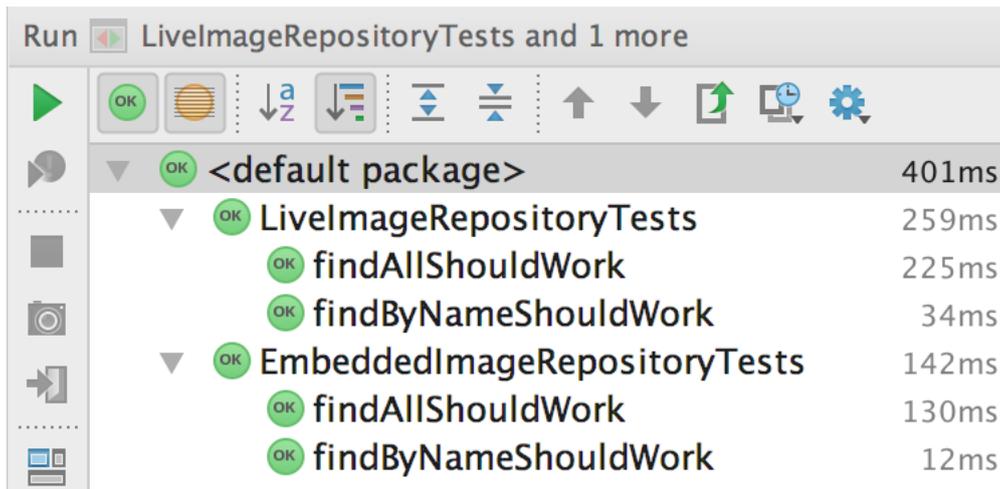
No file chosen

Id	Name	Image	
3	bazinga.png		<input type="button" value="Delete"/>
2	learning-spring-boot-2nd-edition-cover.jpg		<input type="button" value="Delete"/>

```
o.s.d.m.r.query.MongoQueryCreator.....: Created query Query: { "name" : "learning-spring-boot-cover.jpg"}, Fields:
o.s.d.m.core.ReactiveMongoTemplate.....: findOne using query: { "name" : "learning-spring-boot-cover.jpg"} fields:
deleteImage-when.....: onSubscribe([Fuseable] MonoWhen.WhenCoordinator)
deleteImage-done.....: onSubscribe(MonoIgnoreElements.IgnoreElementsSubscriber)
deleteImage-done.....: request(unbounded)
deleteImage-when.....: request(unbounded)
deleteImage-record.....: | onSubscribe([Fuseable] MonoFlatMap.FlatMapMain)
deleteImage-record.....: | request(unbounded)
o.s.d.m.core.ReactiveMongoTemplate.....: findOne using query: { "name" : "learning-spring-boot-cover.jpg"} fields:
deleteImage-find.....: onSubscribe(FluxOnErrorResume.ResumeSubscriber)
deleteImage-find.....: request(unbounded)
deleteImage-file.....: onSubscribe([Fuseable] Operators.EmptySubscription)
deleteImage-file.....: request(unbounded)
deleteImage-file.....: onComplete()
deleteImage-find.....: onNext(Image(id=1, name=learning-spring-boot-cover.jpg))
o.s.d.m.core.ReactiveMongoTemplate.....: Remove using query: { "_id" : "1"} in collection: image.
deleteImage-find.....: onComplete()
deleteImage-record.....: | onComplete()
deleteImage-when.....: onComplete()
deleteImage-done.....: onComplete()
```

Chapter 4: Testing with Spring Boot

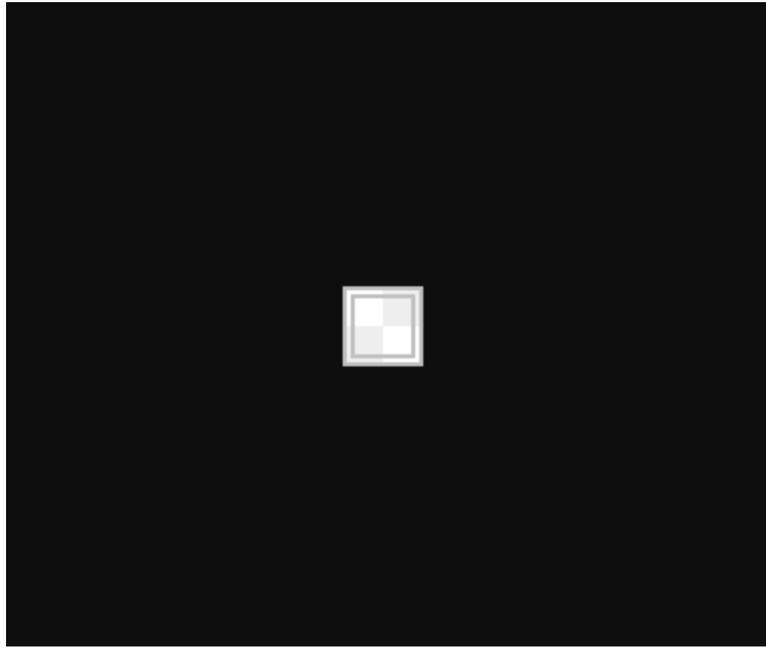




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Id	Name	Image
1	learning-spring-boot-cover.jpg	 <input type="button" value="Delete"/>
2	learning-spring-boot-2nd-edition-cover.jpg	 <input type="button" value="Delete"/>
3	bazinga.png	 <input type="button" value="Delete"/>

No file chosen



Run All in 4_part1_test

- <default package> 2s 428ms
 - EndToEndTests 1s 657ms
 - homePageShouldWork 1s 657ms
 - EmbeddedImageRepositoryTests 433ms
 - findAllShouldWork 400ms
 - findByNameShouldWork 33ms
 - HomeControllerTests 251ms
 - fetchingNullImageShouldFail 84ms
 - deleteImageShouldWork 79ms
 - fetchingImageShouldWork 45ms
 - baseRouteShouldListAllImages 43ms
 - LiveImageRepositoryTests 51ms
 - findAllShouldWork 40ms
 - findByNameShouldWork 11ms
 - ImageServiceTests 35ms
 - createImageShouldWork 13ms
 - deleteImageShouldWork 8ms
 - findOneShouldReturnNotYetFetchedUrl 8ms
 - findAllShouldJustReturnTheFlux 6ms
 - ImageTests 1ms
 - imagesManagedByLombokShouldWork 1ms

4_part1_test

Run 'All in 4_part1_test' with Coverage

- ▼ src
 - ▼ main
 - ▼ java 85% classes, 88% lines covered
 - ▼ com.gregturnquist.learningspringboot 85% classes, 88% lines covered
 - ⊙ ApiController 25% methods, 25% lines covered
 - ⊙ HomeController 83% methods, 90% lines covered
 - ⊙ Image 100% methods, 100% lines covered
 - ⊙ ImageRepository
 - ⊙ ImageService 100% methods, 92% lines covered
 - ⊙ InitDatabase 100% methods, 100% lines covered
 - ⊙ LearningSpringBootApplication 0% methods, 33% lines covered
 - ⊙ ReactiveThymeleafConfig 100% methods, 100% lines covered

Run WebDriverAutoConfigurationTests		
▶	OK	WebDriverAutoConfigurationTests (com.gregturnqui 5s 274ms
▶	OK	testWithMockedFirefox 2s 544ms
▶	OK	testWithMockedChrome 1s 454ms
▶	OK	fallbackToNonGuiModeWhenAllBrowsersDisabled 1s 18ms
▶	OK	testWithMockedSafari 258ms

Chapter 5: Developer Tools for Spring Boot Apps



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Id	Name	Image	
57f16c0883a5d2446f27602e	test		Delete
57f16c0883a5d2446f27602f	test2		Delete
57f16c0883a5d2446f276030	test3		Delete

Choose File No file chosen

Upload



```
<body>
... <h1>Learning Spring Boot - 2nd Edition</h1>
... <h3>Using the LiveReload plugin in your browser will speed up efforts.</h3>
```

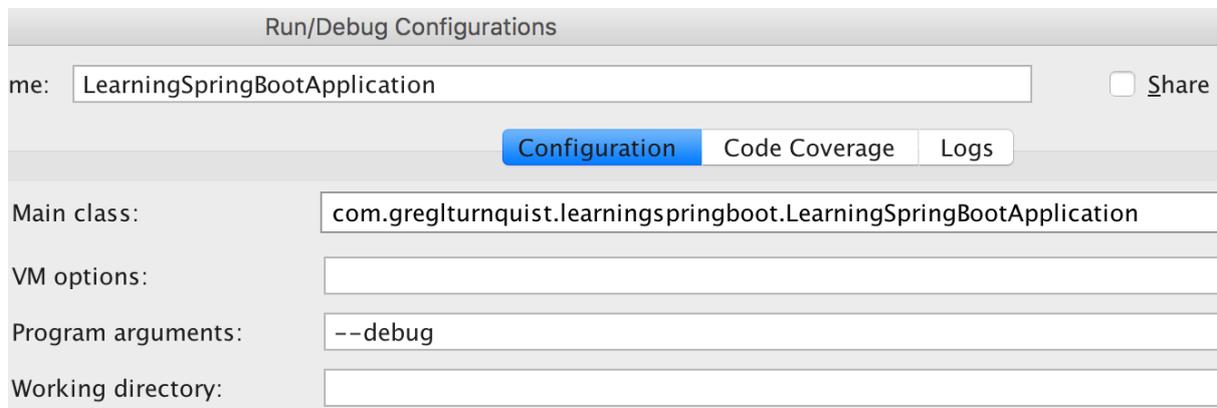
Learning Spring Boot - 2nd Edition

Using the LiveReload plugin in your browser will speed up efforts.

Learning Spring Boot - 2nd Edition

Using the LiveReload plugin in your browser will speed up efforts.

DevTools can also detect code changes too



Run/Debug Configurations

Name: Share

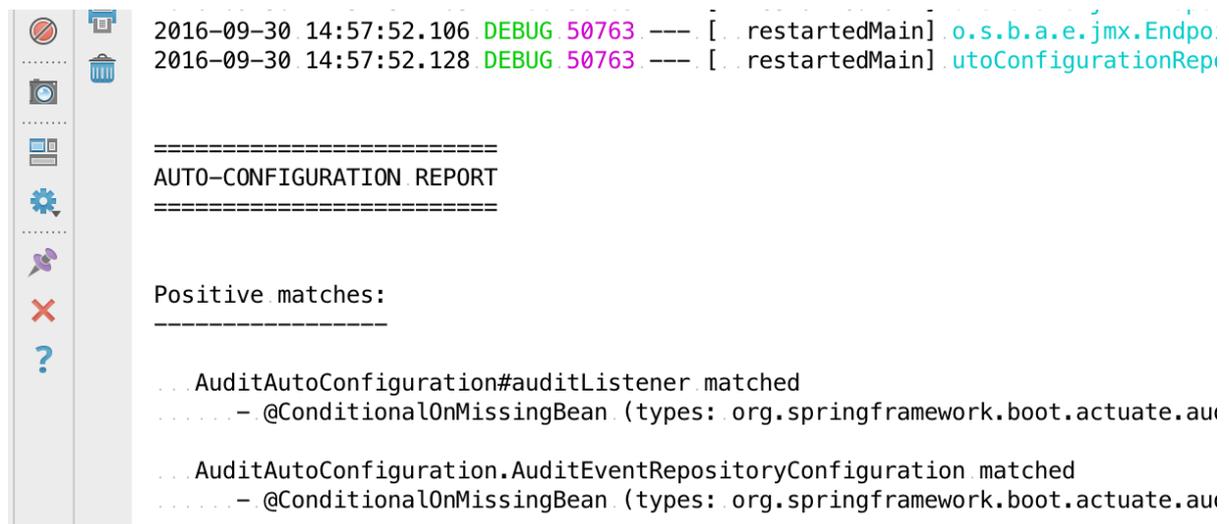
Configuration Code Coverage Logs

Main class:

VM options:

Program arguments:

Working directory:



```
2016-09-30 14:57:52.106 DEBUG 50763 --- [ restartedMain ] o.s.b.a.e.jmx.Endpo
2016-09-30 14:57:52.128 DEBUG 50763 --- [ restartedMain ] utoConfigurationRep

=====
AUTO-CONFIGURATION REPORT
=====

Positive matches:
-----

... AuditAutoConfiguration#auditListener matched
... - @ConditionalOnMissingBean (types: org.springframework.boot.actuate.au

... AuditAutoConfiguration.AuditEventRepositoryConfiguration matched
... - @ConditionalOnMissingBean (types: org.springframework.boot.actuate.au
```

```
localhost:8080/application
localhost:8080/application
1 // 20170912231024
2 // http://localhost:8080/application
3
4 {
5   "_links": {
6     "self": {
7       "href": "http://localhost:8080/application",
8       "templated": false
9     },
10    "auditevents": {
11      "href": "http://localhost:8080/application/auditevents",
12      "templated": false
13    },
14    "beans": {
15      "href": "http://localhost:8080/application/beans",
16      "templated": false
17    },
18    "autoconfig": {
19      "href": "http://localhost:8080/application/autoconfig",
20      "templated": false
21    },
22    "configprops": {
23      "href": "http://localhost:8080/application/configprops",
24      "templated": false
25    },
26    "env": {
27      "href": "http://localhost:8080/application/env",
28      "templated": false
29    },
30    "env-toMatch": {
31      "href": "http://localhost:8080/application/env/{toMatch}",
32      "templated": true
33    },
34    "health": {
35      "href": "http://localhost:8080/application/health",
36      "templated": false
37    },
38    "status": {
39      "href": "http://localhost:8080/application/status",
40      "templated": false
41  }
```

```
localhost:8080/application/autoconfig | jation/aut X
Greg.L.Turnqui...
localhost:8080/application/autoconfig
Apps VMware Intranet VMware [Jenkins] JSON Pretty Print JSON Editor Online... Other Bookmarks
1 // 20170912220059
2 // http://localhost:8080/application/autoconfig
3
4 {
5   "positiveMatches": {
6     "AuditAutoConfiguration#auditListener": [
7       {
8         "condition": "OnBeanCondition",
9         "message": "@ConditionalOnMissingBean (types: org.springframework.boot.actuate.audit.listener.AbstractAuditListener;
SearchStrategy: all) did not find any beans"
10      }
11     ],
12     "AuditAutoConfiguration.AuditEventRepositoryConfiguration": [
13       {
14         "condition": "OnBeanCondition",
15         "message": "@ConditionalOnMissingBean (types: org.springframework.boot.actuate.audit.AuditEventRepository;
SearchStrategy: all) did not find any beans"
16      }
17     ],
18     "AuditEventsEndpointAutoConfiguration#auditEventsEndpoint": [
19       {
20         "condition": "OnBeanCondition",
21         "message": "@ConditionalOnBean (types: org.springframework.boot.actuate.audit.AuditEventRepository; SearchStrategy:
all) found bean 'auditEventRepository'; @ConditionalOnMissingBean (types:
org.springframework.boot.actuate.audit.AuditEventsEndpoint; SearchStrategy: all) did not find any beans"
22      }
23     ],
24   }
25 }
```

Run/Debug Configurations

Name: Share Single instance only

Configuration Code Coverage Logs

Main class: ...

VM options: ...

Program arguments: ...

Working directory: ...

Environment variables: ...

Use classpath of module: ...

JRE: ...

```
Run Learning Spring Boot - Remote
/Library/Java/JavaVirtualMachines/jdk1.8.0_51.jdk/Contents/Home/bin/java ...

  ____  _
 / ___|| | | |
| |___| | | |
 \___ \| | | |
  ___) | | | |
 / ___|| | | |
| |___| | | |
 \___) | | | |
      |_| |_|

:: Spring Boot Remote :: (v2.0.0.BUILD-SNAPSHOT)

2016-10-02 12:56:57.030 INFO 80824 --- [           main] o.s.b.devtools.RemoteSpringApplicati
2016-10-02 12:56:57.035 INFO 80824 --- [           main] o.s.b.devtools.RemoteSpringApplicati
2016-10-02 12:56:57.308 INFO 80824 --- [           main] s.c.a.AnnotationConfigApplicationCon
2016-10-02 12:56:57.824 INFO 80824 --- [           main] o.s.b.d.a.OptionalLiveReloadServer
2016-10-02 12:56:57.868 INFO 80824 --- [           main] o.s.b.devtools.RemoteSpringApplicati
```

← → ↻ 🏠 ⓘ learning-spring-boot.cfapps.io

Learning Spring Boot - 2nd Edition

It's really handy to make local edits and watch them go out to the cloud automatically.



```
1 // 20170912234318
2 // http://localhost:8080/application/health
3
4 {
5   "status": "DOWN",
6   "details": {
7     "mongo": {
8       "status": "UP",
9       "details": {
10        "version": "3.4.6"
11      }
12    },
13    "diskSpace": {
14      "status": "UP",
15      "details": {
16        "total": 498937626624,
17        "free": 43624402944,
18        "threshold": 10485760
19      }
20    },
21    "learningSpringBoot": {
22      "status": "DOWN",
23      "details": {
24        "HTTP Status Code": 404
25      }
26    }
27  }
28 }
```

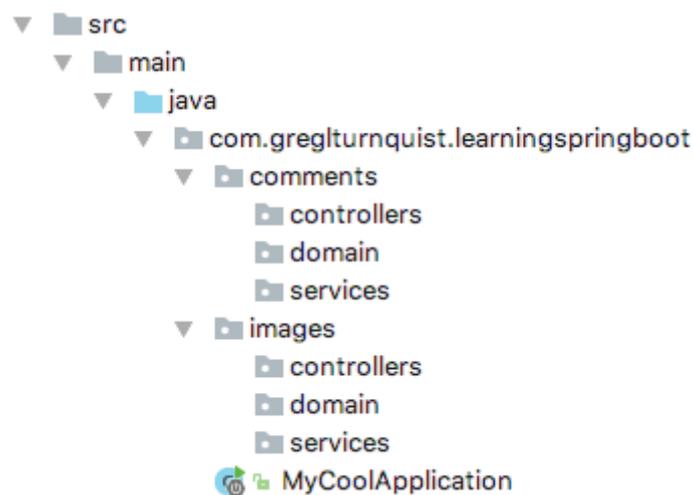
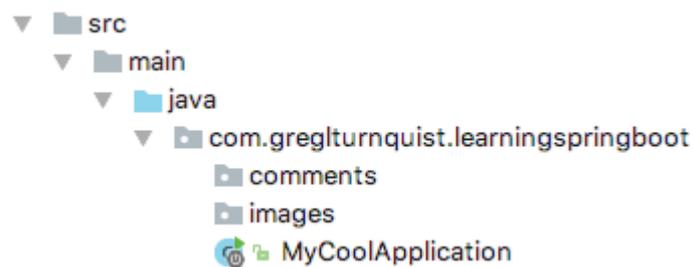
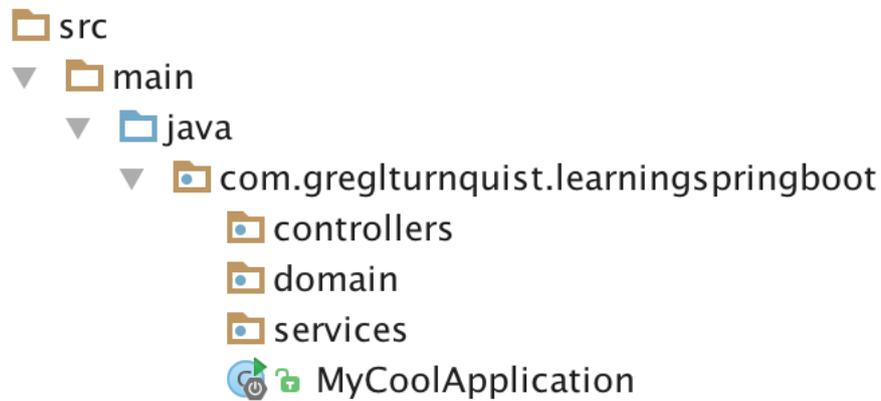
Learning Spring Boot - 2nd Edition

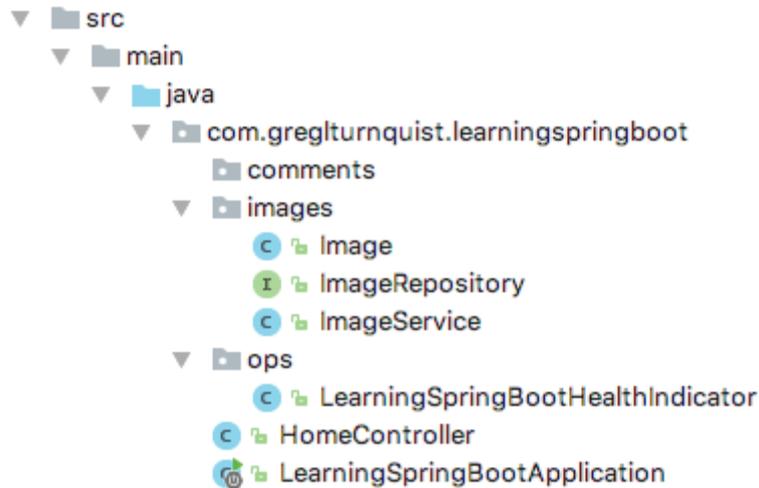
Id	Name	Image	
57f07b6c8dd1b00a1c3cee4a	B05771_MockupCover_Normal.jpg		Delete
57f07b788dd1b00a1c3cee4b	spring-boot-project-logo.png		Delete
57f07ba48dd1b00a1c3cee4d	bazinga.png		Delete

[Choose File](#) No file chosen

[Upload](#)

Chapter 6: AMQP Messaging with Spring Boot





```

] o.s.b.d.a.OptionalLiveReloadServer.....: LiveReload server is running on port 35729
] o.s.j.e.a.AnnotationMBeanExporter.....: Registering beans for JMX exposure on startup
] o.s.j.e.a.AnnotationMBeanExporter.....: Bean with name 'rabbitConnectionFactory' has been a
] o.s.j.e.a.AnnotationMBeanExporter.....: Located managed bean 'rabbitConnectionFactory': reg
] o.s.c.support.DefaultLifecycleProcessor.: Starting beans in phase -2147482648
] o.s.c.support.DefaultLifecycleProcessor.: Starting beans in phase 0
] o.s.c.support.DefaultLifecycleProcessor.: Starting beans in phase 2147483647
] o.s.a.r.c.CachingConnectionFactory.....: Created new connection: rabbitConnectionFactory#168
] o.s.amqp.rabbit.core.RabbitAdmin.....: Auto-declaring a non-durable, auto-delete, or exclu
] r.ipc.netty.tcp.BlockingNettyContext....: Started HttpServer on /0:0:0:0:0:0:0:8080
] o.s.b.web.embedded.netty.NettyWebServer.: Netty started on port(s): 8080
] org.mongodb.driver.connection.....: Opened connection [connectionId{localValue:3, serve
boot-cover.jpg)
boot-2nd-edition-cover.jpg)

] c.g.l.LearningSpringBootApplication.....: Started LearningSpringBootApplication in 6.655 seco

```

Learning Spring Boot - 2nd Edition

1 of 1

20 item(s) per page

Id	Name	Image			
57f8641e83a5d272b18d4ce1	B05771_MockupCover_Normal.jpg		<input type="button" value="Delete"/>	<ul style="list-style-type: none">• I love the cover!• Can I order a copy yet?	<input type="text"/> <input type="button" value="Submit"/>
57f8643b83a5d272b18d4ce3	bazinga.png		<input type="button" value="Delete"/>		<input type="text"/> <input type="button" value="Submit"/>
57f8645883a5d272b18d4ce5	spring-boot-project-logo.png		<input type="button" value="Delete"/>		<input type="text" value="Spring Boot is awesome!"/> <input type="button" value="Submit"/>

No file chosen

Name:

Main class:

VM options:

Program arguments:

Working directory:

Environment variables:

Use classpath of module:

JRE:

Spring Boot Settings

Enable debug output Hide Banner

Active Profiles:

integration.channel.output.errorRate.mean: 0,
integration.channel.output.errorRate.max: 0,
integration.channel.output.errorRate.min: 0,
integration.channel.output.errorRate.stdev: 0,
integration.channel.output.errorRate.count: 0,
integration.channel.output.sendCount: 1080,
integration.channel.output.sendRate.mean: 33.2953175275134,
integration.channel.output.sendRate.max: 0.10356745398044587,
integration.channel.output.sendRate.min: 0.00007268595695495606,
integration.channel.output.sendRate.stdev: 127.44592804513556,
integration.channel.output.sendRate.count: 1080,
integration.channel.output.receiveCount: -1,
integration.channel.input.errorRate.mean: 0,
integration.channel.input.errorRate.max: 0,
integration.channel.input.errorRate.min: 0,
integration.channel.input.errorRate.stdev: 0,
integration.channel.input.errorRate.count: 0,
integration.channel.input.sendCount: 1080,
integration.channel.input.sendRate.mean: 30.60592083415993,
integration.channel.input.sendRate.max: 0.10221006900072098,
integration.channel.input.sendRate.min: 0.000672169029712677,
integration.channel.input.sendRate.stdev: 20.733646866079425,
integration.channel.input.sendRate.count: 1080,
integration.channel.input.receiveCount: -1,

```

{
  status: "UP",
  - learningSpringBoot: {
    status: "UP"
  },
  - diskSpace: {
    status: "UP",
    total: 498937626624,
    free: 89344151552,
    threshold: 10485760
  },
  - rabbit: {
    status: "UP",
    version: "3.6.4"
  },
  - mongo: {
    status: "UP",
    version: "3.2.6"
  },
  - binders: {
    status: "UP",
    - rabbit: {
      status: "UP",
      - binderHealthIndicator: {
        status: "UP",
        version: "3.6.4"
      }
    }
  }
}

```

```

o.s.a.r.c.CachingConnectionFactory : Created new connection: rabbitConnectionFactory#1470a7b3:0/SimpleConnection@31792a
o.s.integration.channel.DirectChannel : Channel 'unknown.channel.name' has 1 subscriber(s).
o.s.c.s.binding.BindableProxyFactory : Binding outputs for :interface org.springframework.cloud.stream.messaging.Processor
o.s.c.s.binding.BindableProxyFactory : Binding :interface org.springframework.cloud.stream.messaging.Processor:output
o.s.integration.channel.DirectChannel : Channel 'application.output' has 1 subscriber(s).
o.s.c.support.DefaultLifecycleProcessor : Starting beans in phase 0
o.s.i.endpoint.EventDrivenConsumer : Adding {logging-channel-adapter:_org.springframework.integration.errorLogger} as a
o.s.i.channel.PublishSubscribeChannel : Channel 'application.errorChannel' has 1 subscriber(s).
o.s.i.endpoint.EventDrivenConsumer : started _org.springframework.integration.errorLogger
o.s.c.support.DefaultLifecycleProcessor : Starting beans in phase 2147482647
o.s.c.s.binding.BindableProxyFactory : Binding inputs for :interface org.springframework.cloud.stream.messaging.Source
o.s.c.s.binding.BindableProxyFactory : Binding inputs for :interface org.springframework.cloud.stream.messaging.Processor
o.s.c.s.binding.BindableProxyFactory : Binding :interface org.springframework.cloud.stream.messaging.Processor:input
c.s.b.r.p.RabbitExchangeQueueProvisioner : declaring queue for inbound: learning-spring-boot-comments.learning-spring-boot, bc
c.s.b.r.p.RabbitExchangeQueueProvisioner : autoBindDLQ=false for: learning-spring-boot-comments.learning-spring-boot
o.s.i.a.i.AmqpInboundChannelAdapter : started inbound.learning-spring-boot
o.s.i.endpoint.EventDrivenConsumer : Adding {message-handler:inbound.learning-spring-boot-comments.learning-spring-boot}
o.s.i.endpoint.EventDrivenConsumer : started inbound.learning-spring-boot-comments.learning-spring-boot

```

```
o.s.integration.channel.DirectChannel : preSend on channel 'output', message: GenericMessage [payload=Comment(id=null, ima
tractMessageChannelBinder$SendingHandler : org.springframework.cloud.stream.binder.AbstractMessageChannelBinder$SendingHandle
o.s.i.codec.kryo.CompositeKryoRegistrar : registering [40, java.io.File] with serializer org.springframework.integration.cod
o.s.i.a.outbound.AmqpOutboundEndpoint : org.springframework.integration.amqp.outbound.AmqpOutboundEndpoint@52038bac receiv
s.i.m.AbstractHeaderMapper$HeaderMatcher : headerName=[contentType] WILL be mapped, matched pattern=*
o.s.i.a.outbound.AmqpOutboundEndpoint : handler 'org.springframework.integration.amqp.outbound.AmqpOutboundEndpoint@52038b
o.s.integration.channel.DirectChannel : postSend (sent=true) on channel 'output', message: GenericMessage [payload=Comment
s.i.m.AbstractHeaderMapper$HeaderMatcher : headerName=[amqp_receivedDeliveryMode] WILL be mapped, matched pattern=*
s.i.m.AbstractHeaderMapper$HeaderMatcher : headerName=[amqp_receivedRoutingKey] WILL be mapped, matched pattern=*
s.i.m.AbstractHeaderMapper$HeaderMatcher : headerName=[amqp_receivedExchange] WILL be mapped, matched pattern=*
s.i.m.AbstractHeaderMapper$HeaderMatcher : headerName=[amqp_deliveryTag] WILL be mapped, matched pattern=*
s.i.m.AbstractHeaderMapper$HeaderMatcher : headerName=[amqp_correlationId] WILL be mapped, matched pattern=*
s.i.m.AbstractHeaderMapper$HeaderMatcher : headerName=[amqp_redelivered] WILL be mapped, matched pattern=*
s.i.m.AbstractHeaderMapper$HeaderMatcher : headerName=[contentType] WILL be mapped, matched pattern=*
s.i.m.AbstractHeaderMapper$HeaderMatcher : headerName=[contentType] WILL be mapped, matched pattern=*
actMessageChannelBinder$ReceivingHandler : org.springframework.cloud.stream.binder.AbstractMessageChannelBinder$ReceivingHand
findAll : | onSubscribe([Fuseable] FluxOnAssembly.OnAssemblySubscriber)
findAll : | request(256)
o.s.integration.channel.DirectChannel : preSend on channel 'input', message: GenericMessage [payload=Comment(id=null, imag
findAll : | onNext(Image(id=59894898c4d956e34025dacc, name=learning-spring-boot-cover.jpg))
findAll : | request(1)
findAll : | onNext(Image(id=59894898c4d956e34025dacd, name=learning-spring-boot-2nd-edition-
findAll : | request(1)
findAll : | onNext(Image(id=59894899c4d956e34025dace, name=bazinga.png))
findAll : | onComplete()
o.s.integration.channel.DirectChannel : postSend (sent=true) on channel 'input', message: GenericMessage [payload=Comment(
```

Chapter 7: Microservices with Spring Boot

Generate a with
and Spring Boot

Project Metadata

Artifact coordinates

Group

Artifact

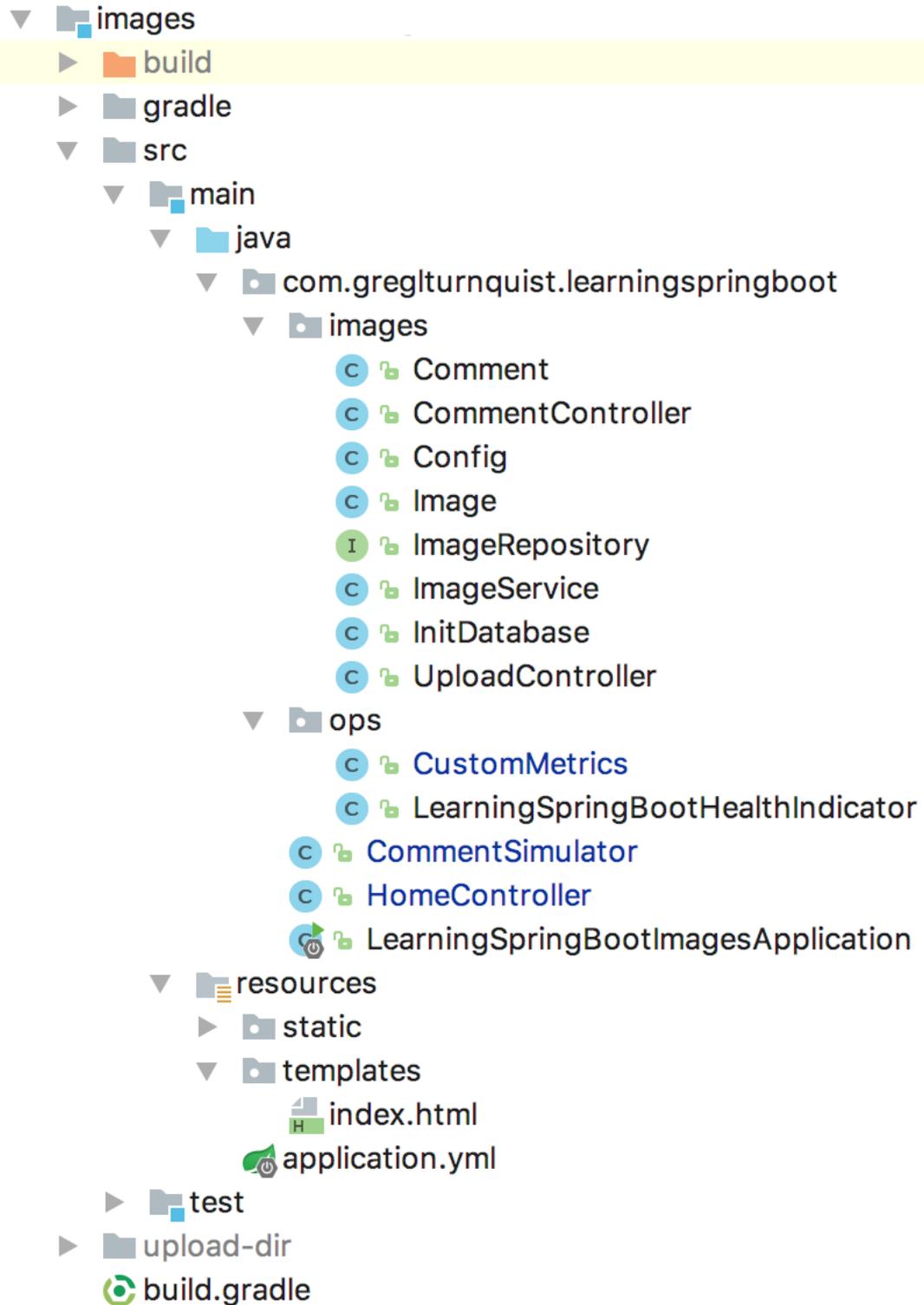
Dependencies

Add Spring Boot Starters and dependencies to your application

Search for dependencies

Selected Dependencies

- ▼  comments
 - ▶  build
 - ▶  gradle
 - ▼  src
 - ▼  main
 - ▼  java
 - ▼  com.gregturnquist.learningspringboot.comments
 -  Comment
 -  CommentController
 -  CommentRepository
 -  CommentService
 -  LearningSpringBootApplication
 - ▼  resources
 -  application.yml
 -  build.gradle



System Status

Environment	test
Data center	default
Current time	2016-10-20T22:42:53 -0500
Uptime	00:19
Lease expiration enabled	false
Renews threshold	5
Renews (last min)	4

DS Replicas

Instances currently registered with Eureka

Application	AMIs	Availability Zones	Status
COMMENTS	n/a (1)	(1)	UP (1) - retina:comments:9000
IMAGES	n/a (1)	(1)	UP (1) - retina:images

retina:9000/info

{ }

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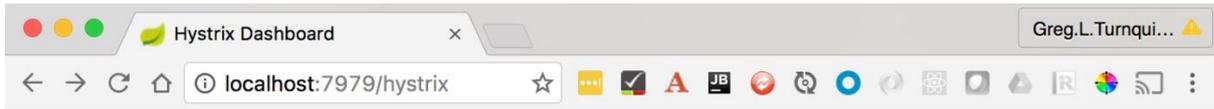
Id	Name	Image		
5809914283a5d2ac3e0ea0f6	platform-spring-boot.png		<input type="button" value="Delete"/>	<input type="text"/> <input type="button" value="Submit"/>
5809916283a5d2ac3e0ea0f7	B05771_MockupCover_Normal.jpg		<input type="button" value="Delete"/>	<ul style="list-style-type: none">• Cool cover!• Can't wait to get my copy <input type="text"/> <input type="button" value="Submit"/>

No file chosen

DS Replicas

Instances currently registered with Eureka

Application	AMIs	Availability Zones	Status
COMMENTS	n/a (2)	(2)	UP (2) - retina:comments:9001 , retina:comments:9000
IMAGES	n/a (1)	(1)	UP (1) - retina:images

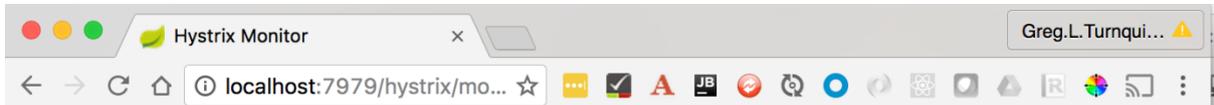


Hystrix Dashboard

<http://localhost:8080/hystrix.stream>

Cluster via Turbine (default cluster): <http://turbine-hostname:port/turbine.stream>
Cluster via Turbine (custom cluster): [http://turbine-hostname:port/turbine.stream?cluster=\[clusterName\]](http://turbine-hostname:port/turbine.stream?cluster=[clusterName])
Single Hystrix App: <http://hystrix-app:port/hystrix.stream>

Delay: ms Title:



Hystrix Stream: <http://localhost:8080/hystrix.stream>



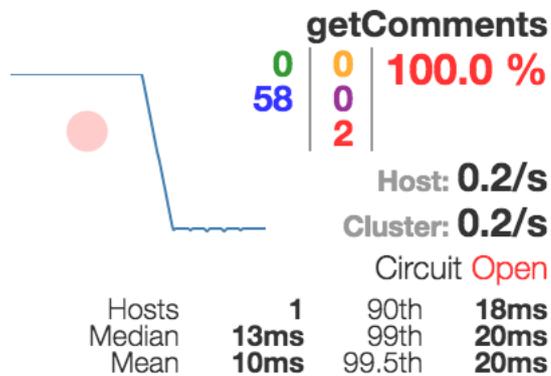
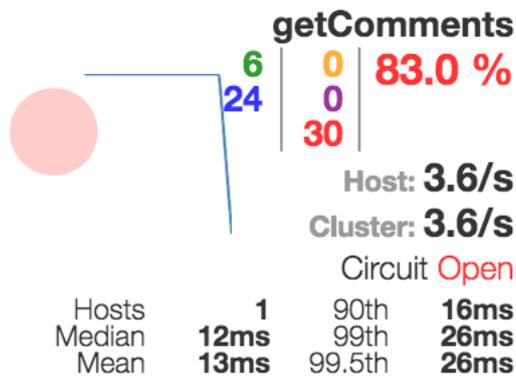
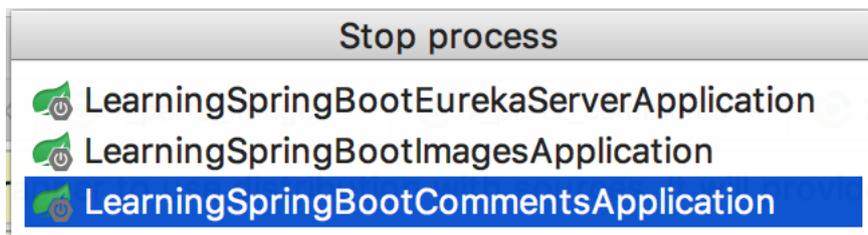
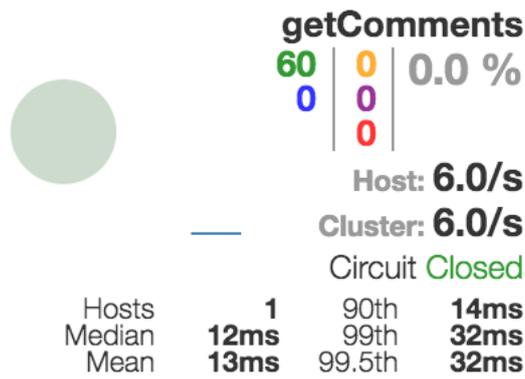
HYSTRIX
DEFEND YOUR APP

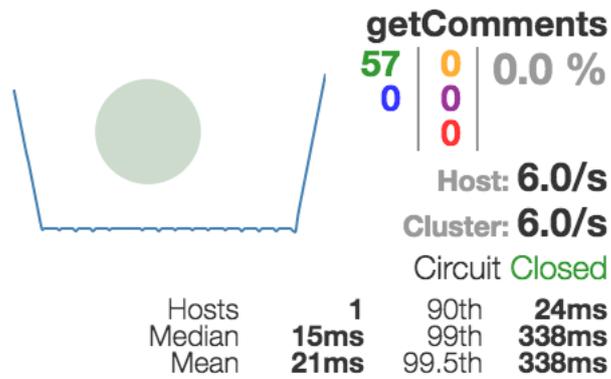
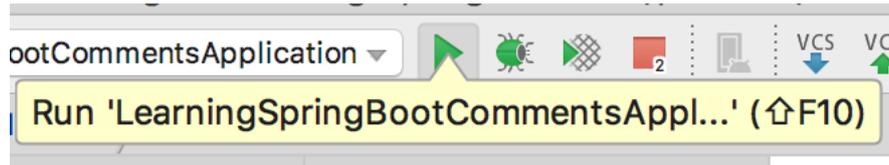
Circuit Sort: [Error then Volume](#) | [Alphabetical](#) | [Volume](#) | [Error](#) | [Mean](#) | [Median](#) | [90](#) | [99](#) | [99.5](#)
[Success](#) | [Short-Circuited](#) | [Timeout](#) | [Rejected](#) | [Failure](#) | [Error %](#)

getComments
0 | 0 | 0.0 %
0 | 0 |
0 | 0 |
Host: 0.0/s
Cluster: 0.0/s
Circuit Closed
Hosts: 1 90th: 0ms
Median: 0ms 99th: 0ms
Mean: 0ms 99.5th: 0ms

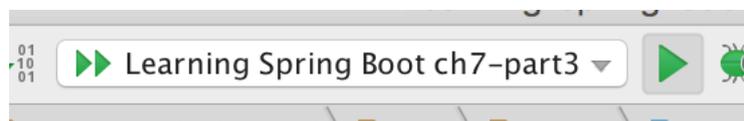
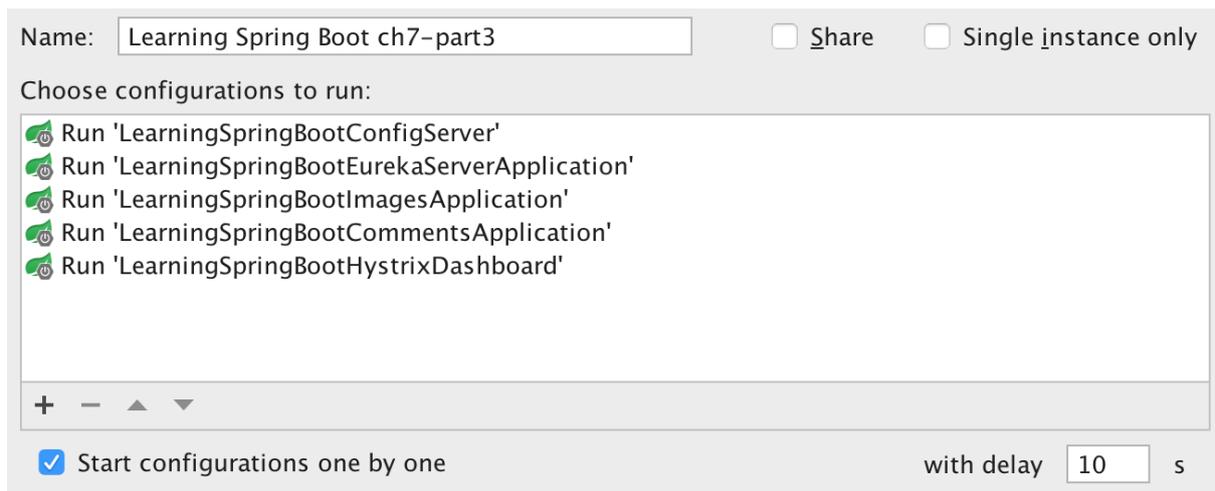
Thread Pools Sort: [Alphabetical](#) | [Volume](#) |

CommentHelper
Host: 0.0/s
Cluster: 0.0/s
Active: 0 Max Active: 0
Queued: 0 Executions: 0
Pool Size: 3 Queue Size: 5





```
localhost:8888/eureka/default x
localhost:8888/eureka/default
Apps VMware Intranet VMware [Jenkins] JSON Pretty Print JSON Editor Online... Program
1 // 20170813194344
2 // http://localhost:8888/eureka/default
3
4 {
5   "name": "eureka",
6   "profiles": [
7     "default"
8   ],
9   "label": null,
10  "version": "a69475c00e47bc91949e76c79d2df39720967a21",
11  "state": null,
12  "propertySources": [
13    {
14      "name": "https://github.com/gregturn/learning-spring-boot-config-repo/eureka.yml",
15      "source": {
16        "server.port": 8761,
17        "eureka.instance.hostname": "localhost",
18        "eureka.client.registerWithEureka": false,
19        "eureka.client.fetchRegistry": false,
20        "eureka.client.serviceUrl.defaultZone": "http://${eureka.instance.hostname}:${server.port}/eureka/"
21      }
22    }
23  ]
24 }
```



```
or : Fetching config from server at: http://localhost:8888
or : Located environment: name=comments, profiles=[default], label=master, v
ion : Located property source: CompositePropertySource [name='configService',
ion : No active profile set, falling back to default profiles: default
```

Chapter 8: WebSockets with Spring Boot

	<input type="button" value="Delete"/>		<input type="text" value="When can I get my t-shirt?"/> <input type="button" value="Submit"/>
-----------------------------------------------------------------------------------	---------------------------------------	--	-----------------------------------------------------------------------------------------------

Name	Image		
B05771_MockupCover_Normal_.jpg		<input type="button" value="Delete"/>	<input type="text" value="Nice cover!"/> <input type="button" value="Submit"/>
bazinga.png		<input type="button" value="Delete"/>	<input type="text"/> <input type="button" value="Submit"/>

Name	Image			
B05771_MockupCover_Normal_.jpg		<input type="button" value="Delete"/>	<ul style="list-style-type: none"> Nice cover! 	<input type="text"/> <input type="button" value="Submit"/>
bazinga.png		<input type="button" value="Delete"/>		<input type="text"/> <input type="button" value="Submit"/>

Received {"id":"599b90cec4d95697c2bea08b","imageId":"0a84bee9-f441-48bf-9c6a-558dab29c9d2","comment":"Nice cover!"}!

Choose File No file chosen

Upload

Greetings!

2f05fa8e: Do you like the new cover?
298b3bcf: You bet! Wish I could get it in a t-shirt
2f05fa8e: Me too. Did you get e-book, or print?
298b3bcf: Both
298b3bcf: I always get both

Send

Publishing "Do you like the new cover?"

Received 2f05fa8e: Do you like the new cover?

Received 298b3bcf: You bet! Wish I could get it in a t-shirt

Publishing "Me too. Did you get e-book, or print?"

Received 2f05fa8e: Me too. Did you get e-book, or print?

Received 298b3bcf: Both

Received 298b3bcf: I always get both

> |

Received 2f05fa8e: Do you like the new cover?

Publishing "You bet! Wish I could get it in a t-shirt"

Received 298b3bcf: You bet! Wish I could get it in a t-shirt

Received 2f05fa8e: Me too. Did you get e-book, or print?

Publishing "Both"

Received 298b3bcf: Both

Publishing "I always get both"

Received 298b3bcf: I always get both

>

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greg  Connect

Greetings!

(greg)(all): Do you like the cover?

|

Send

Greetings!

(greg)(all): Do you like the cover?
(oliver)(all): I sure do

|

Send

Greetings!

(greg)(all): Do you like the cover?
(oliver)(all): I sure do

@greg Are you going to offer it in a t-shirt?

Send

Greetings!

(greg)(all): Do you like the cover?
(oliver)(all): I sure do
(phil): @greg Are you going to offer it in a t-shirt?

Send

Greetings!

(greg)(all): Do you like the cover?
(oliver)(all): I sure do

Send

Publishing "Do you like the new cover?"

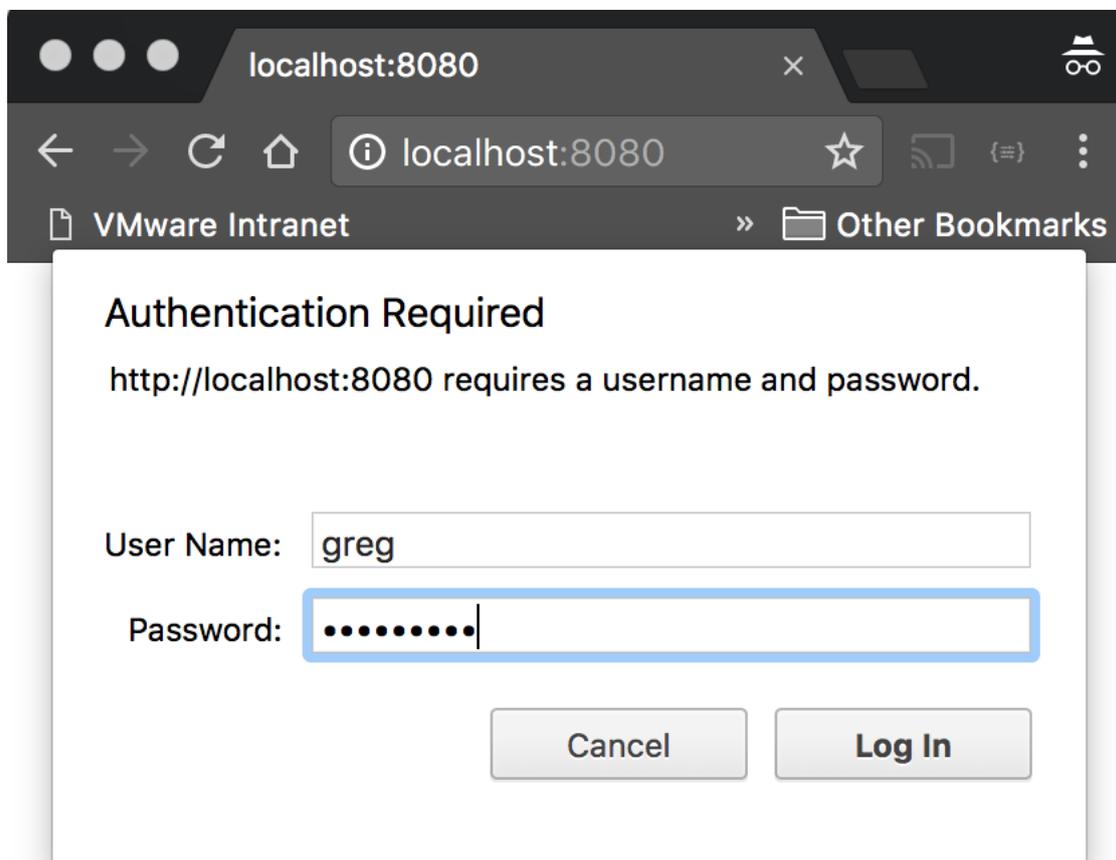
Received (greg)(all): Do you like the new cover?

Received (oliver)(all): I sure do.

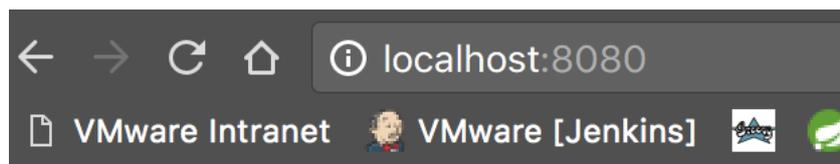
Received (phil): @greg Are you going to offer it in a t-shirt?

> |

Chapter 9: Securing Your App with Spring Boot



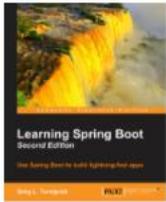
Name	Image		Owner	C
bazinga.png		Delete	greg	
B05771_MockupCover_Normal.png		Delete	phil	



greg has [ROLE_ADMIN, ROLE_USER]

Learning Spring Boot

	Image		Owner	(
		Delete	greg	
ng		Delete	phil	

	Image		Owner	(
			greg	
5		Delete	phil	

× Headers Preview Response Cookies Timing

▼ General

Request URL: http://localhost:8080/images/bazinga.png/raw

Request Method: GET

Status Code: ● 200

Remote Address: [::1]:8080

▼ Response Headers [view source](#)

Content-Type: image/jpeg

Date: Thu, 24 Nov 2016 06:18:44 GMT

Transfer-Encoding: chunked

X-Application-Context: chat:8080

▼ Request Headers [view source](#)

Accept: image/webp,image/*,*/*;q=0.8

Accept-Encoding: gzip, deflate, sdch, br

Accept-Language: en-US,en;q=0.8

Authorization: Basic Z3JlZzp0dXJucXVpc3Q=

Cache-Control: no-cache

Connection: keep-alive

Cookie: SESSION=8ab12c94-dd78-438e-a483-b75e8f37629f

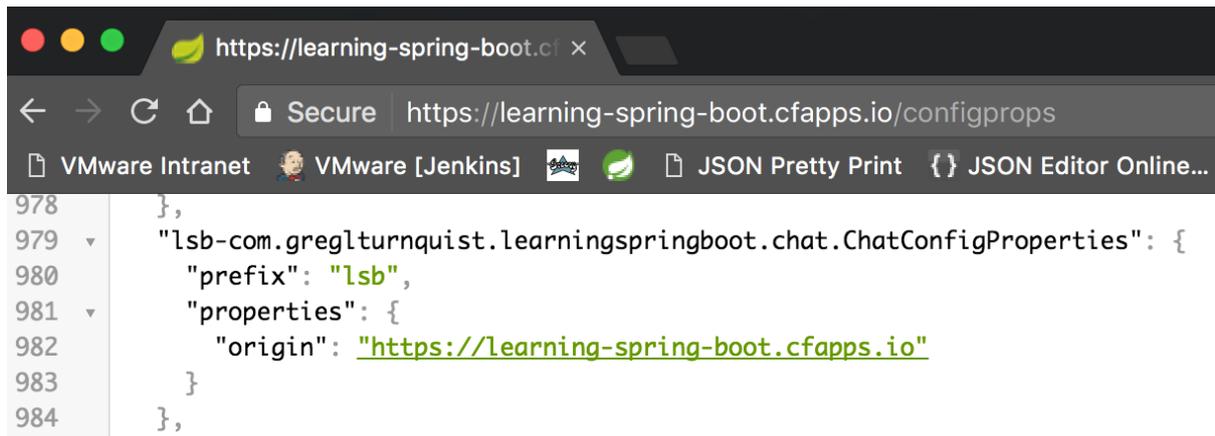
Host: localhost:8080

Pragma: no-cache

Referer: http://localhost:8080/

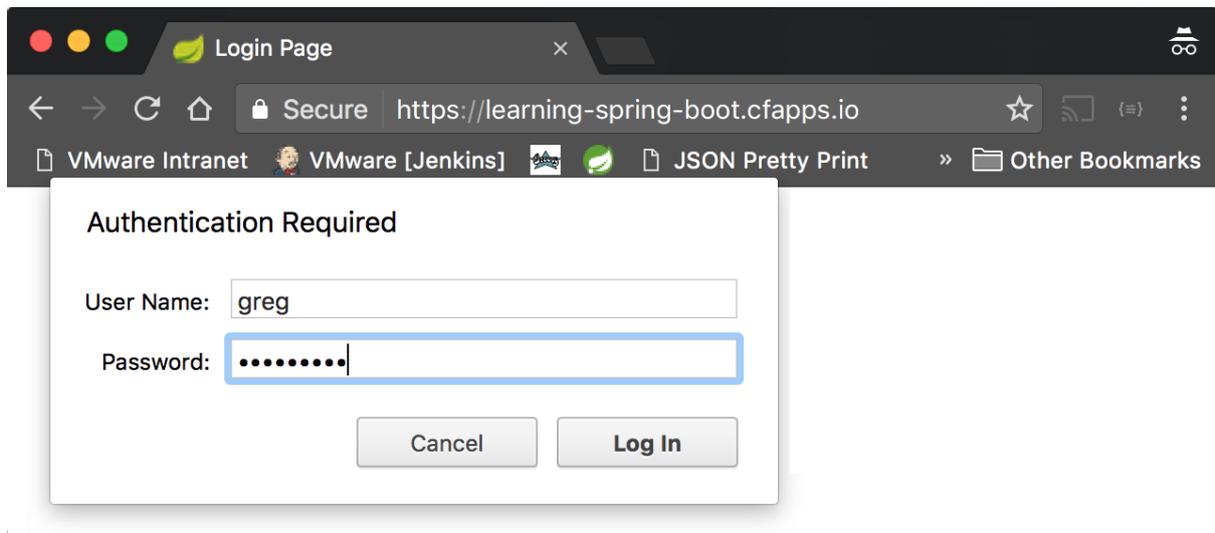
User-Agent: Mozilla/5.0 (Macintosh; Intel Mac OS X 10_11_5) Ap

Chapter 10: Taking Your App to Production with Spring Boot



A screenshot of a web browser window displaying a JSON configuration file. The address bar shows the URL `https://learning-spring-boot.cfapps.io/configprops`. The browser's bookmark bar includes "VMware Intranet", "VMware [Jenkins]", "JSON Pretty Print", and "JSON Editor Online...". The main content area shows a JSON object with the following structure:

```
978 },
979   "lsb-com.greglturnquist.learningspringboot.chat.ChatConfigProperties": {
980     "prefix": "lsb",
981     "properties": {
982       "origin": "https://learning-spring-boot.cfapps.io"
983     }
984   },
```



Learning Spring Boot: Spring-a x

Secure https://learning-spring-boot.cfapps.io

VMware Intranet VMware [Jenkins] Other Bookmarks

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Id	Name	Image		
8d22f555-f830-4d38-aff0-4d11562013eb	B05771_MockupCover_Normal.png		Delete	
37f6c64e-7be3-4bbb-9e6d-82271822d4b4	bazinga.png		Delete	
d1459c17-e0f6-4a2a-82f9-b7243e47bab4	platform-spring-boot.png		Delete	

Choose File No file chosen

Upload

Learning Spring Boot: Spring-a x

Secure https://learning-spring-boot.cfapps.io

VMware Intranet VMware [Jenkins] JSON Pretty Print JSON

Greetings!

greg(channel): Wow! Are we really in production?
phil(channel): We sure are.

Cool. Can't wait to work on the next feature

Send