



Spring Boot

CLI

tutorialspoint

SIMPLY EASY LEARNING

www.tutorialspoint.com



<https://www.facebook.com/tutorialspointindia>



<https://twitter.com/tutorialspoint>

About the Tutorial

Spring Boot CLI is a command line tool, which is used for a quick start with Spring. It allows running Groovy scripts. Groovy scripts are similar to Java code without any boilerplate code. Spring CLI helps to bootstrap a new project or write custom command for it.

Audience

This tutorial will be useful for most Java developers, starting from beginners to experts. After completing this tutorial, you will find yourself at a moderate level of expertise in Spring Boot CLI, from where you can take yourself to next levels.

Prerequisites

Knowledge of basic Java programming language and Spring is the only prerequisite for learning the concepts explained in this tutorial.

Copyright & Disclaimer

© Copyright 2018 by Tutorials Point (I) Pvt. Ltd.

All the content and graphics published in this e-book are the property of Tutorials Point (I) Pvt. Ltd. The user of this e-book is prohibited to reuse, retain, copy, distribute or republish any contents or a part of contents of this e-book in any manner without written consent of the publisher.

We strive to update the contents of our website and tutorials as timely and as precisely as possible, however, the contents may contain inaccuracies or errors. Tutorials Point (I) Pvt. Ltd. provides no guarantee regarding the accuracy, timeliness or completeness of our website or its contents including this tutorial. If you discover any errors on our website or in this tutorial, please notify us at contact@tutorialspoint.com

Table of Contents

About the Tutorial	i
Audience.....	i
Prerequisites.....	i
Copyright & Disclaimer	i
Table of Contents	ii
1. Spring Boot CLI — Overview	1
Features.....	1
2. Spring Boot CLI — Environment Setup	2
Step 1 - Setup Java Development Kit (JDK).....	2
Step 2 - Install Spring Boot CLI.....	2
Step 3 - Verify installation	3
3. Spring Boot CLI — Hello World Example	4
Step 1: Create source Folder	4
Step 2: Create Source File.....	4
Step 3: Run the application	4
Step 4: Browse the application in Browser.....	7
4. Spring Boot CLI — "grab" Dependency Deduction.....	8
Grab Hints.....	8
5. Spring Boot CLI — "grab" Co-ordinates Deduction	10
6. Spring Boot CLI — Default Statements	55
Default Imports	55
Automatic Main Method	56
7. Spring Boot CLI — Starter Thymeleaf Project	57
Run the application	58
Browse the application in Browser.....	59
Important points	59

8. Spring Boot CLI — Testing Application	60
Run the application	60
Important points	61
9. Spring Boot CLI — Packaging Application	62
Package the application.....	62
Include/Exclude	62
Running the Executable Jar	63
Browse the application in Browser.....	63
10. Spring Boot CLI — Creating Project	64
Create Gradle project	64
11. Spring Boot CLI — Using Shell	65
Running Commands in Shell	65
Testing the application in shell.....	65

1. Spring Boot CLI — Overview

The Spring Boot CLI is a Command Line Interface for Spring Boot. It can be used for a quick start with Spring. It can run Groovy scripts which means that a developer need not write boilerplate code; all that is needed is focus on business logic. Spring Boot CLI is the fastest way to create a Spring-based application.

Features

In this section, we will look at the different features of Spring Boot CLI –

- It provides an interface to run and test Spring Boot Application from the Command Prompt.
- It internally uses Spring Boot Starter and Spring Boot AutoConfigure components in order to resolve all dependencies and execute the application.
- It contains Groovy compiler and Grape Dependency Manager.
- It supports Groovy Scripts without external Groovy installation.
- It adds Spring Boot defaults and resolve all dependencies automatically.

2. Spring Boot CLI — Environment Setup

Spring is a Java-based framework; hence, we need to set up JDK first. Following are the steps needed to setup Spring Boot CLI along with JDK installation.

Step 1 - Setup Java Development Kit (JDK)

You can download the latest version of SDK from Oracle's Java site – [Java SE Downloads](#). You will find instructions for installing JDK in downloaded files. Follow the given instructions to install and configure the setup. Finally set PATH and JAVA_HOME environment variables to refer to the directory that contains Java and Javac, typically **java_install_dir/bin** and **java_install_dir** respectively.

If you are running Windows and have installed the JDK in **C:\jdk1.6.0_15**, you would have to put the following line in your **C:\autoexec.bat** file –

```
set PATH=C:\jdk1.6.0_15\bin;%PATH%
set JAVA_HOME=C:\jdk1.6.0_15
```

Alternatively, on **Windows NT/2000/XP**, you will have to right-click on My Computer, select Properties → Advanced → Environment Variables. Then, you will have to update the PATH value and click the OK button.

On Unix (Solaris, Linux, etc.), if the SDK is installed in **/usr/local/jdk1.6.0_15** and you use the C shell, you will have to put the following into your **.cshrc** file –

```
setenv PATH /usr/local/jdk1.6.0_15/bin:$PATH
setenv JAVA_HOME /usr/local/jdk1.6.0_15
```

Step 2 - Install Spring Boot CLI

You can download the latest version of Spring Boot CLI API as ZIP archive from <https://repo.spring.io/release/org/springframework/boot/spring-boot-cli/>. Once you download the installation, unpack the zip distribution into a convenient location. For example, in **E:\Test\spring-1.5.8.RELEASE** on Windows, or **/usr/local/spring-1.5.8.RELEASE** on Linux/Unix.

Make sure you set your CLASSPATH variable on this directory properly otherwise, you will face a problem while running your application.

Or set the path in Command Prompt temporarily to run the Spring Boot application as shown below –

```
E:/Test/> set path=E:\Test\spring-1.5.8.RELEASE\bin;%PATH%
```

Step 3 - Verify installation

Run the following command on the Command Prompt to verify the installation –

```
E:/Test/> spring --version
```

It should print the following output confirming the successful installation –

```
Spring CLI v1.5.8.RELEASE
```

3. Spring Boot CLI — Hello World Example

In this example, we will create a Spring Boot + MVC + Rest-based Web application.

Step 1: Create source Folder

Create a folder FirstApplication in **E:\Test folder**.

Step 2: Create Source File

Create FirstApplication.groovy file in **E:\Test folder** with the following source code –

```
@RestController
class FirstApplication {
    @RequestMapping("/")
    String welcome() {
        "Welcome to TutorialsPoint.Com"
    }
}
```

Step 3: Run the application

Type the following command –

```
E:/Test/> spring run FirstApplication.groovy
```

Now Spring Boot CLI will come into action, download the required dependencies, run the embedded tomcat, deploy the application and start it. You can see the following output on console –

```
Resolving
dependencies.....
.....
.
.....

.  _ _ _ _ _
/\ /  _' _ _ _ _ _ ( ) _ _ _ _ _ \ \ \ \
( ( ) \ _ | ' _ | ' _ | ' _ \ > | \ \ \ \
\ \ _ _ ) | | | | | | | | | ( | | ) ) ) )
```




```

' |___| ._|_| |_|_| |_\__, | / / / /
=====|_|=====|___/=/_/_/_/
:: Spring Boot ::          (v1.5.8.RELEASE)

2017-11-07 17:36:55.703 INFO 5528 --- [runner-0]
o.s.boot.SpringApplication:
Starting application on ...

2017-11-07 17:36:55.707 INFO 5528 --- [runner-0]
o.s.boot.SpringApplication:
No active profile set, falling back to default profiles: default

2017-11-07 17:36:56.067 INFO 5528 --- [runner-0]
ationConfigEmbeddedWebApplicationContext : Refreshing
org.springframework.boot.context.embedded.AnnotationConfigEmbeddedWebApplicatio
nContext@4c108392: startup date [Tue Nov 07 17:36:
56 IST 2017]; root of context hierarchy

2017-11-07 17:36:57.327 INFO 5528 --- [runner-0]
s.b.c.e.t.TomcatEmbeddedServletContainer : Tomcat initialized with port(s):
8080 (http)

2017-11-07 17:36:57.346 INFO 5528 --- [runner-0]
o.apache.catalina.core.StandardService : Starting service [Tomcat]

2017-11-07 17:36:57.354 INFO 5528 --- [runner-0]
org.apache.catalina.core.StandardEngine : Starting Servlet Engine: Apache
Tomcat/8.5.23

2017-11-07 17:36:57.537 INFO 5528 --- [ost-startStop-1]
org.apache.catalina.loader.WebappLoader : Unknown loader
org.springframework.boot.cli.compiler.ExtendedGroovyClassLoader$DefaultScopePar
entClassLoader@41bfad4f class org.springframew
ork.boot.cli.compiler.ExtendedGroovyClassLoader$DefaultScopeParentClassLoader

2017-11-07 17:36:57.567 INFO 5528 --- [ost-startStop-1]
o.a.c.c.C.[Tomcat].[localhost].[/] : Initializing Spring embedded
WebApplicationContext

2017-11-07 17:36:57.567 INFO 5528 --- [ost-startStop-1]
o.s.web.context.ContextLoader : Root WebApplicationContext:
initialization completed in 1500 ms

2017-11-07 17:36:57.725 INFO 5528 --- [ost-startStop-1]
o.s.b.w.servlet.ServletRegistrationBean : Mapping servlet: 'dispatcherServlet'
to [/]

2017-11-07 17:36:57.730 INFO 5528 --- [ost-startStop-1]
o.s.b.w.servlet.FilterRegistrationBean : Mapping filter:
'characterEncodingFilter' to: [/]

2017-11-07 17:36:57.730 INFO 5528 --- [ost-startStop-1]
o.s.b.w.servlet.FilterRegistrationBean : Mapping filter:
'hiddenHttpMethodFilter' to: [/]

```

```

2017-11-07 17:36:57.730 INFO 5528 --- [ost-startStop-1]
o.s.b.w.servlet.FilterRegistrationBean : Mapping filter:
'httpPutFormContentFilter' to: [/*]

2017-11-07 17:36:57.730 INFO 5528 --- [ost-startStop-1]
o.s.b.w.servlet.FilterRegistrationBean : Mapping filter:
'requestContextFilter' to: [/*]

2017-11-07 17:36:58.012 INFO 5528 --- [ runner-0]
s.w.s.m.m.a.RequestMappingHandlerAdapter : Looking for @ControllerAdvice:
org.springframework.boot.context.embedded.AnnotationConfigEmbeddedWebApplicatio
nContext@4c108392: startup date [Tue Nov 07 17:36:56 IST 2017]; root of context
hierarchy

2017-11-07 17:36:58.066 INFO 5528 --- [ runner-0]
s.w.s.m.m.a.RequestMappingHandlerMapping : Mapped "{[/]}" onto public
java.lang.String FirstApplication.home()

2017-11-07 17:36:58.070 INFO 5528 --- [ runner-0]
s.w.s.m.m.a.RequestMappingHandlerMapping : Mapped "{[/error]}" onto public
org.springframework.http.ResponseEntity<java.util.map>
org.springframework.boot.autoconfigure.web.BasicErrorController.error(javax.ser
vlet.http.HttpServletRequest)

2017-11-07 17:36:58.071 INFO 5528 --- [ runner-0]
s.w.s.m.m.a.RequestMappingHandlerMapping : Mapped
"{[/error],produces=[text/html]}" onto public
org.springframework.web.servlet.ModelAndView
org.springframework.boot.autoconfigure.web
.BasicErrorController.errorHtml(javax.servlet.http.HttpServletRequest,javax.ser
vlet.http.HttpServletResponse)

2017-11-07 17:36:58.096 INFO 5528 --- [ runner-0]
o.s.w.s.handler.SimpleUrlHandlerMapping : Mapped URL path [/webjars/**] onto
handler of type [class
org.springframework.web.servlet.resource.ResourceHttpRequestHandler]

2017-11-07 17:36:58.096 INFO 5528 --- [ runner-0]
o.s.w.s.handler.SimpleUrlHandlerMapping : Mapped URL path [/**] onto handler
of type [class
org.springframework.web.servlet.resource.ResourceHttpRequestHandler]

2017-11-07 17:36:58.129 INFO 5528 --- [ runner-0]
o.s.w.s.handler.SimpleUrlHandlerMapping : Mapped URL path [/**/favicon.ico]
onto handler of type [class
org.springframework.web.servlet.resource.ResourceHttpRequestHandler]

2017-11-07 17:36:58.626 INFO 5528 --- [ runner-0]
o.s.j.e.a.AnnotationMBeanExporter : Registering beans for JMX exposure
on startup

2017-11-07 17:36:58.696 INFO 5528 --- [ runner-0]
s.b.c.e.t.TomcatEmbeddedServletContainer : Tomcat started on port(s): 8080
(http)

2017-11-07 17:36:58.699 INFO 5528 --- [ runner-0]
o.s.boot.SpringApplication : Started application in 3.529 seconds
(JVM running for 190.196)

```

```
2017-11-07 17:37:20.217 INFO 5528 --- [nio-8080-exec-1]
o.a.c.c.C.[Tomcat].[localhost].[/]       : Initializing Spring FrameworkServlet
'dispatcherServlet'

2017-11-07 17:37:20.218 INFO 5528 --- [nio-8080-exec-1]
o.s.web.servlet.DispatcherServlet       : FrameworkServlet
'dispatcherServlet': initialization started

2017-11-07 17:37:20.238 INFO 5528 --- [nio-8080-exec-1]
o.s.web.servlet.DispatcherServlet       : FrameworkServlet
'dispatcherServlet': initialization completed in 20 ms</java.util.map
```

Step 4: Browse the application in Browser

Our Spring-based rest application is now ready. Open URL "**http://localhost:8080/**" and you will see the following output –

```
Hello World
```

Important points

Consider the following points to understand how Spring CLI works.

- All dependency JARs are downloaded for the first time only.
- Spring CLI automatically detects the dependency JARs to be downloaded based on the classes and annotations used in code.
- Finally after the compilation of the code, deploy the war file on an embedded tomcat and start embedded tomcat server on the default port 8080.

4. Spring Boot CLI — "grab" Dependency Deduction

Standard Groovy codebase contains a **@Grab** annotation so that dependencies on third-party libraries can be declared. Using the @Grab annotation, the Grape Dependency Manager downloads jar in similar fashion as that of Maven/Gradle without any build tool. Spring Boot attempts to deduce the required libraries based on code. For example, use of @RestController tells that "Tomcat" and "Spring MVC" libraries are to be grabbed.

Grab Hints

The following table lists down the hints that Spring Boot uses to download third party libraries –

Sr.No.	Hint & Dependency to Ddownload/Link
1	JdbcTemplate, NamedParameterJdbcTemplate, DataSource JDBC Application
2	@EnableJms JMS Application
3	@EnableCaching Caching abstraction
4	@Test JUnit
5	@EnableRabbit RabbitMQ
6	@EnableReactor Project Reactor
7	extends Specification Spock test
8	@EnableBatchProcessing

	Spring Batch
9	@MessageEndpoint, @EnableIntegrationPatterns Spring Integration
10	@EnableDeviceResolver Spring Mobile
11	@Controller, @RestController, @EnableWebMvc Spring MVC + Embedded Tomcat
12	@EnableWebSecurity Spring Security
13	@EnableTransactionManagement Spring Transaction Management

5. Spring Boot CLI — "grab" Co-ordinates Deduction

We can specify a dependency using the @Grab annotation even without specifying group or version. For example,

```
@Grab('antlr')
```

Now Spring Boot CLI will download 2.7.7 version of **antlr** as it is present in Spring Boot's default dependency metadata for 1.5.8 version. Spring Boot maintains all dependency versions by default, which are provided in its CLI, Maven dependency management and Gradle plugin. Whenever we declare a dependency of any of those artifacts present in default dependency metadata without declaring a version, the version listed in its table will be used.

The following table shows all the dependencies and their versions included in the default metadata for Spring Boot CLI 1.5.8 version.

Group Id	Artifact Id	Version
antlr	antlr	2.7.7
ch.qos.logback	logback-access	1.1.11
ch.qos.logback	logback-classic	1.1.11
ch.qos.logback	logback-core	1.1.11
com.atomikos	transactions-jdbc	3.9.3
com.atomikos	transactions-jms	3.9.3
com.atomikos	transactions-jta	3.9.3
com.couchbase.client	couchbase-spring-cache	2.1.0

com.couchbase.client	java-client	2.3.7
com.datastax.cassandra	cassandra-driver-core	3.1.4
com.datastax.cassandra	cassandra-driver-mapping	3.1.4
com.fasterxml	classmate	1.3.4
com.fasterxml.jackson.core	jackson-annotations	2.8.0
com.fasterxml.jackson.core	jackson-core	2.8.10
com.fasterxml.jackson.core	jackson-databind	2.8.10
com.fasterxml.jackson.dataformat	jackson-dataformat-avro	2.8.10
com.fasterxml.jackson.dataformat	jackson-dataformat-cbor	2.8.10
com.fasterxml.jackson.dataformat	jackson-dataformat-csv	2.8.10
com.fasterxml.jackson.dataformat	jackson-dataformat-ion	2.8.10
com.fasterxml.jackson.dataformat	jackson-dataformat-properties	2.8.10
com.fasterxml.jackson.dataformat	jackson-dataformat-protobuf	2.8.10

com.fasterxml.jackson.dataformat	jackson-dataformat-smile	2.8.10
com.fasterxml.jackson.dataformat	jackson-dataformat-xml	2.8.10
com.fasterxml.jackson.dataformat	jackson-dataformat-yaml	2.8.10
com.fasterxml.jackson.datatype	jackson-datatype-guava	2.8.10
com.fasterxml.jackson.datatype	jackson-datatype-hibernate3	2.8.10
com.fasterxml.jackson.datatype	jackson-datatype-hibernate4	2.8.10
com.fasterxml.jackson.datatype	jackson-datatype-hibernate5	2.8.10
com.fasterxml.jackson.datatype	jackson-datatype-hppc	2.8.10
com.fasterxml.jackson.datatype	jackson-datatype-jaxrs	2.8.10
com.fasterxml.jackson.datatype	jackson-datatype-jdk8	2.8.10
com.fasterxml.jackson.datatype	jackson-datatype-joda	2.8.10
com.fasterxml.jackson.datatype	jackson-datatype-json-org	2.8.10

com.fasterxml.jackson.datatype	jackson-datatype-jsr310	2.8.10
com.fasterxml.jackson.datatype	jackson-datatype-jsr353	2.8.10
com.fasterxml.jackson.datatype	jackson-datatype-pcollections	2.8.10
com.fasterxml.jackson.jaxrs	jackson-jaxrs-base	2.8.10
com.fasterxml.jackson.jaxrs	jackson-jaxrs-cbor-provider	2.8.10
com.fasterxml.jackson.jaxrs	jackson-jaxrs-json-provider	2.8.10
com.fasterxml.jackson.jaxrs	jackson-jaxrs-smile-provider	2.8.10
com.fasterxml.jackson.jaxrs	jackson-jaxrs-xml-provider	2.8.10
com.fasterxml.jackson.jaxrs	jackson-jaxrs-yaml-provider	2.8.10
com.fasterxml.jackson.jr	jackson-jr-all	2.8.10
com.fasterxml.jackson.jr	jackson-jr-objects	2.8.10
com.fasterxml.jackson.jr	jackson-jr-retrofit2	2.8.10

com.fasterxml.jackson.jr	jackson-jr-stree	2.8.10
com.fasterxml.jackson.module	jackson-module-afterburner	2.8.10
com.fasterxml.jackson.module	jackson-module-guice	2.8.10
com.fasterxml.jackson.module	jackson-module-jaxb-annotations	2.8.10
com.fasterxml.jackson.module	jackson-module-jsonSchema	2.8.10
com.fasterxml.jackson.module	jackson-module-kotlin	2.8.10
com.fasterxml.jackson.module	jackson-module-mrbean	2.8.10
com.fasterxml.jackson.module	jackson-module-osgi	2.8.10
com.fasterxml.jackson.module	jackson-module-parameter-names	2.8.10
com.fasterxml.jackson.module	jackson-module-paranamer	2.8.10
com.fasterxml.jackson.module	jackson-module-scala_2.10	2.8.10
com.fasterxml.jackson.module	jackson-module-scala_2.11	2.8.10

com.fasterxml.jackson.module	jackson-module-scala_2.12	2.8.10
com.gemstone.gemfire	gemfire	8.2.7
com.github.ben-manes.caffeine	caffeine	2.3.5
com.github.mxab.thymeleaf.extras	thymeleaf-extras-data-attribute	1.3
com.google.appengine	appengine-api-1.0-sdk	1.9.58
com.google.code.gson	gson	2.8.2
com.googlecode.json-simple	json-simple	1.1.1
com.h2database	h2	1.4.196
com.hazelcast	hazelcast	3.7.8
com.hazelcast	hazelcast-client	3.7.8
com.hazelcast	hazelcast-hibernate4	3.7.1
com.hazelcast	hazelcast-hibernate5	1.1.3
com.hazelcast	hazelcast-spring	3.7.8
com.jayway.jsonpath	json-path	2.2.0

com.jayway.jsonpath	json-path-assert	2.2.0
com.microsoft.sqlserver	mssql-jdbc	6.1.0.jre7
com.querydsl	querydsl-apt	4.1.4
com.querydsl	querydsl-collections	4.1.4
com.querydsl	querydsl-core	4.1.4
com.querydsl	querydsl-jpa	4.1.4
com.querydsl	querydsl-mongodb	4.1.4
com.samskivert	jmustache	1.13
com.sendgrid	sendgrid-java	2.2.2
com.sun.mail	javax.mail	1.5.6
com.timgroup	java-statsd-client	3.1.0
com.unboundid	unboundid-ldapsdk	3.2.1
com.zaxxer	HikariCP	2.5.1
com.zaxxer	HikariCP-java6	2.3.13
com.zaxxer	HikariCP-java7	2.4.13

commons-beanutils	commons-beanutils	1.9.3
commons-codec	commons-codec	1.10
commons-collections	commons-collections	3.2.2
commons-dbcp	commons-dbcp	1.4
commons-digester	commons-digester	2.1
commons-pool	commons-pool	1.6
de.flapdoodle.embed	de.flapdoodle.embed.mongo	1.50.5
dom4j	dom4j	1.6.1
io.dropwizard.metrics	metrics-annotation	3.1.5
io.dropwizard.metrics	metrics-core	3.1.5
io.dropwizard.metrics	metrics-ehcache	3.1.5
io.dropwizard.metrics	metrics-ganglia	3.1.5
io.dropwizard.metrics	metrics-graphite	3.1.5
io.dropwizard.metrics	metrics-healthchecks	3.1.5

io.dropwizard.metrics	metrics-httpasyncclient	3.1.5
io.dropwizard.metrics	metrics-jdbi	3.1.5
io.dropwizard.metrics	metrics-jersey	3.1.5
io.dropwizard.metrics	metrics-jersey2	3.1.5
io.dropwizard.metrics	metrics-jetty8	3.1.5
io.dropwizard.metrics	metrics-jetty9	3.1.5
io.dropwizard.metrics	metrics-jetty9-legacy	3.1.5
io.dropwizard.metrics	metrics-json	3.1.5
io.dropwizard.metrics	metrics-jvm	3.1.5
io.dropwizard.metrics	metrics-log4j	3.1.5
io.dropwizard.metrics	metrics-log4j2	3.1.5
io.dropwizard.metrics	metrics-logback	3.1.5
io.dropwizard.metrics	metrics-servlet	3.1.5
io.dropwizard.metrics	metrics-servlets	3.1.5
io.projectreactor	reactor-bus	2.0.8.RELEASE

io.projectreactor	reactor-core	2.0.8.RELEASE
io.projectreactor	reactor-groovy	2.0.8.RELEASE
io.projectreactor	reactor-groovy-extensions	2.0.8.RELEASE
io.projectreactor	reactor-logback	2.0.8.RELEASE
io.projectreactor	reactor-net	2.0.8.RELEASE
io.projectreactor	reactor-stream	2.0.8.RELEASE
io.projectreactor.spring	reactor-spring-context	2.0.7.RELEASE
io.projectreactor.spring	reactor-spring-core	2.0.7.RELEASE
io.projectreactor.spring	reactor-spring-messaging	2.0.7.RELEASE
io.projectreactor.spring	reactor-spring-webmvc	2.0.7.RELEASE
io.searchbox	jest	2.0.4
io.undertow	undertow-core	1.4.20.Final
io.undertow	undertow-servlet	1.4.20.Final
io.undertow	undertow-websockets-jsr	1.4.20.Final

javax.cache	cache-api	1.0.0
javax.jms	jms-api	1.1-rev-1
javax.mail	javax.mail-api	1.5.6
javax.servlet	javax.servlet-api	3.1.0
javax.servlet	jstl	1.2
javax.transaction	javax.transaction-api	1.2
javax.validation	validation-api	1.1.0.Final
jaxen	jaxen	1.1.6
joda-time	joda-time	2.9.9
junit	junit	4.12
mysql	mysql-connector-java	5.1.44
net.java.dev.jna	jna	4.2.2
net.java.dev.jna	jna-platform	4.2.2
net.sf.ehcache	ehcache	2.10.4
net.sourceforge.htmlunit	htmlunit	2.21

net.sourceforge.jtlds	jtlds	1.3.1
net.sourceforge.nekohtml	nekohtml	1.9.22
nz.net.ultraq.thymeleaf	thymeleaf-layout-dialect	1.4.0
org.apache.activemq	activemq-amqp	5.14.5
org.apache.activemq	activemq-blueprint	5.14.5
org.apache.activemq	activemq-broker	5.14.5
org.apache.activemq	activemq-camel	5.14.5
org.apache.activemq	activemq-client	5.14.5
org.apache.activemq	activemq-console	5.14.5
org.apache.activemq	activemq-http	5.14.5
org.apache.activemq	activemq-jaas	5.14.5
org.apache.activemq	activemq-jdbc-store	5.14.5
org.apache.activemq	activemq-jms-pool	5.14.5
org.apache.activemq	activemq-kahadb-store	5.14.5

org.apache.activemq	activemq-karaf	5.14.5
org.apache.activemq	activemq-leveldb-store	5.14.5
org.apache.activemq	activemq-log4j-appender	5.14.5
org.apache.activemq	activemq-mqtt	5.14.5
org.apache.activemq	activemq-openwire-generator	5.14.5
org.apache.activemq	activemq-openwire-legacy	5.14.5
org.apache.activemq	activemq-osgi	5.14.5
org.apache.activemq	activemq-partition	5.14.5
org.apache.activemq	activemq-pool	5.14.5
org.apache.activemq	activemq-ra	5.14.5
org.apache.activemq	activemq-run	5.14.5
org.apache.activemq	activemq-runtime-config	5.14.5
org.apache.activemq	activemq-shiro	5.14.5
org.apache.activemq	activemq-spring	5.14.5

org.apache.activemq	activemq-stomp	5.14.5
org.apache.activemq	activemq-web	5.14.5
org.apache.activemq	artemis-amqp-protocol	1.5.5
org.apache.activemq	artemis-commons	1.5.5
org.apache.activemq	artemis-core-client	1.5.5
org.apache.activemq	artemis-jms-client	1.5.5
org.apache.activemq	artemis-jms-server	1.5.5
org.apache.activemq	artemis-journal	1.5.5
org.apache.activemq	artemis-native	1.5.5
org.apache.activemq	artemis-selector	1.5.5
org.apache.activemq	artemis-server	1.5.5
org.apache.activemq	artemis-service-extensions	1.5.5
org.apache.commons	commons-dbcp2	2.1.1
org.apache.commons	commons-pool2	2.4.2

org.apache.derby	derby	10.13.1.1
org.apache.httpcomponents	httpasyncclient	4.1.3
org.apache.httpcomponents	httpclient	4.5.3
org.apache.httpcomponents	httpcore	4.4.8
org.apache.httpcomponents	httpmime	4.5.3
org.apache.logging.log4j	log4j-1.2-api	2.7
org.apache.logging.log4j	log4j-api	2.7
org.apache.logging.log4j	log4j-api-scala_2.10	2.7
org.apache.logging.log4j	log4j-api-scala_2.11	2.7
org.apache.logging.log4j	log4j-core	2.7
org.apache.logging.log4j	log4j-flume-ng	2.7
org.apache.logging.log4j	log4j-iostreams	2.7
org.apache.logging.log4j	log4j-jcl	2.7
org.apache.logging.log4j	log4j-jmx-gui	2.7
org.apache.logging.log4j	log4j-jul	2.7

org.apache.logging.log4j	log4j-liquibase	2.7
org.apache.logging.log4j	log4j-nosql	2.7
org.apache.logging.log4j	log4j-slf4j-impl	2.7
org.apache.logging.log4j	log4j-taglib	2.7
org.apache.logging.log4j	log4j-web	2.7
org.apache.solr	solr-analysis-extras	5.5.4
org.apache.solr	solr-analytics	5.5.4
org.apache.solr	solr-cell	5.5.4
org.apache.solr	solr-clustering	5.5.4
org.apache.solr	solr-core	5.5.4
org.apache.solr	solr-dataimporthandler	5.5.4
org.apache.solr	solr-dataimporthandler-extras	5.5.4
org.apache.solr	solr-langid	5.5.4
org.apache.solr	solr-map-reduce	5.5.4

org.apache.solr	solr-morphlines-cell	5.5.4
org.apache.solr	solr-morphlines-core	5.5.4
org.apache.solr	solr-solrj	5.5.4
org.apache.solr	solr-test-framework	5.5.4
org.apache.solr	solr-uima	5.5.4
org.apache.solr	solr-velocity	5.5.4
org.apache.tomcat	tomcat-annotations-api	8.5.23
org.apache.tomcat	tomcat-jdbc	8.5.23
org.apache.tomcat	tomcat-jsp-api	8.5.23
org.apache.tomcat.embed	tomcat-embed-core	8.5.23
org.apache.tomcat.embed	tomcat-embed-el	8.5.23
org.apache.tomcat.embed	tomcat-embed-jasper	8.5.23
org.apache.tomcat.embed	tomcat-embed-websocket	8.5.23
org.aspectj	aspectjrt	1.8.11

org.aspectj	aspectjtools	1.8.11
org.aspectj	aspectjweaver	1.8.11
org.assertj	assertj-core	2.6.0
org.codehaus.btm	btm	2.1.4
org.codehaus.groovy	groovy	2.4.12
org.codehaus.groovy	groovy-all	2.4.12
org.codehaus.groovy	groovy-ant	2.4.12
org.codehaus.groovy	groovy-bsf	2.4.12
org.codehaus.groovy	groovy-console	2.4.12
org.codehaus.groovy	groovy-docgenerator	2.4.12
org.codehaus.groovy	groovy-groovydoc	2.4.12
org.codehaus.groovy	groovy-groovysh	2.4.12
org.codehaus.groovy	groovy-jmx	2.4.12
org.codehaus.groovy	groovy-json	2.4.12
org.codehaus.groovy	groovy-jsr223	2.4.12

org.codehaus.groovy	groovy-nio	2.4.12
org.codehaus.groovy	groovy-servlet	2.4.12
org.codehaus.groovy	groovy-sql	2.4.12
org.codehaus.groovy	groovy-swing	2.4.12
org.codehaus.groovy	groovy-templates	2.4.12
org.codehaus.groovy	groovy-test	2.4.12
org.codehaus.groovy	groovy-testng	2.4.12
org.codehaus.groovy	groovy-xml	2.4.12
org.codehaus.janino	janino	2.7.8
org.crashub	crash.cli	1.3.2
org.crashub	crash.connectors.ssh	1.3.2
org.crashub	crash.connectors.telnet	1.3.2
org.crashub	crash.embed.spring	1.3.2
org.crashub	crash.plugins.cron	1.3.2
org.crashub	crash.plugins.mail	1.3.2

org.crashub	crash.shell	1.3.2
org.eclipse.jetty	apache-jsp	9.4.7.v20170914
org.eclipse.jetty	apache-jstl	9.4.7.v20170914
org.eclipse.jetty	jetty-alpn-client	9.4.7.v20170914
org.eclipse.jetty	jetty-alpn-java-client	9.4.7.v20170914
org.eclipse.jetty	jetty-alpn-java-server	9.4.7.v20170914
org.eclipse.jetty	jetty-alpn-server	9.4.7.v20170914
org.eclipse.jetty	jetty-annotations	9.4.7.v20170914
org.eclipse.jetty	jetty-ant	9.4.7.v20170914
org.eclipse.jetty	jetty-client	9.4.7.v20170914
org.eclipse.jetty	jetty-continuation	9.4.7.v20170914
org.eclipse.jetty	jetty-deploy	9.4.7.v20170914
org.eclipse.jetty	jetty-hazelcast	9.4.7.v20170914
org.eclipse.jetty	jetty-http	9.4.7.v20170914
org.eclipse.jetty	jetty-http-spi	9.4.7.v20170914

org.eclipse.jetty	jetty-infinispan	9.4.7.v20170914
org.eclipse.jetty	jetty-io	9.4.7.v20170914
org.eclipse.jetty	jetty-jaas	9.4.7.v20170914
org.eclipse.jetty	jetty-jaspi	9.4.7.v20170914
org.eclipse.jetty	jetty-jmx	9.4.7.v20170914
org.eclipse.jetty	jetty-jndi	9.4.7.v20170914
org.eclipse.jetty	jetty-nosql	9.4.7.v20170914
org.eclipse.jetty	jetty-plus	9.4.7.v20170914
org.eclipse.jetty	jetty-proxy	9.4.7.v20170914
org.eclipse.jetty	jetty-quickstart	9.4.7.v20170914
org.eclipse.jetty	jetty-rewrite	9.4.7.v20170914
org.eclipse.jetty	jetty-runner	9.4.7.v20170914
org.eclipse.jetty	jetty-security	9.4.7.v20170914
org.eclipse.jetty	jetty-server	9.4.7.v20170914
org.eclipse.jetty	jetty-servlet	9.4.7.v20170914

org.eclipse.jetty	jetty-servlets	9.4.7.v20170914
org.eclipse.jetty	jetty-spring	9.4.7.v20170914
org.eclipse.jetty	jetty-start	9.4.7.v20170914
org.eclipse.jetty	jetty-unixsocket	9.4.7.v20170914
org.eclipse.jetty	jetty-util	9.4.7.v20170914
org.eclipse.jetty	jetty-util-ajax	9.4.7.v20170914
org.eclipse.jetty	jetty-webapp	9.4.7.v20170914
org.eclipse.jetty	jetty-xml	9.4.7.v20170914
org.eclipse.jetty.cdi	cdi-core	9.4.7.v20170914
org.eclipse.jetty.cdi	cdi-servlet	9.4.7.v20170914
org.eclipse.jetty.fcgi	fcgi-client	9.4.7.v20170914
org.eclipse.jetty.fcgi	fcgi-server	9.4.7.v20170914
org.eclipse.jetty.gcloud	jetty-gcloud-session-manager	9.4.7.v20170914
org.eclipse.jetty.http2	http2-client	9.4.7.v20170914

org.eclipse.jetty.http2	http2-common	9.4.7.v20170914
org.eclipse.jetty.http2	http2-hpack	9.4.7.v20170914
org.eclipse.jetty.http2	http2-http-client-transport	9.4.7.v20170914
org.eclipse.jetty.http2	http2-server	9.4.7.v20170914
org.eclipse.jetty.memcached	jetty-memcached-sessions	9.4.7.v20170914
org.eclipse.jetty.orbit	javax.servlet.jsp	2.2.0.v201112011158
org.eclipse.jetty.osgi	jetty-httpservice	9.4.7.v20170914
org.eclipse.jetty.osgi	jetty-osgi-boot	9.4.7.v20170914
org.eclipse.jetty.osgi	jetty-osgi-boot-jsp	9.4.7.v20170914
org.eclipse.jetty.osgi	jetty-osgi-boot-warurl	9.4.7.v20170914
org.eclipse.jetty.websocket	javax-websocket-client-impl	9.4.7.v20170914
org.eclipse.jetty.websocket	javax-websocket-server-impl	9.4.7.v20170914
org.eclipse.jetty.websocket	websocket-api	9.4.7.v20170914
org.eclipse.jetty.websocket	websocket-client	9.4.7.v20170914

org.eclipse.jetty.websocket	websocket-common	9.4.7.v20170914
org.eclipse.jetty.websocket	websocket-server	9.4.7.v20170914
org.eclipse.jetty.websocket	websocket-servlet	9.4.7.v20170914
org.ehcache	ehcache	3.2.3
org.ehcache	ehcache-clustered	3.2.3
org.ehcache	ehcache-transactions	3.2.3
org.elasticsearch	elasticsearch	2.4.6
org.firebirdsql.jdbc	jaybird-jdk16	2.2.13
org.firebirdsql.jdbc	jaybird-jdk17	2.2.13
org.firebirdsql.jdbc	jaybird-jdk18	2.2.13
org.flywaydb	flyway-core	3.2.1
org.freemarker	freemarker	2.3.26-incubating
org.glassfish	javax.el	3.0.0
org.glassfish.jersey.bundles.repackaged	jersey-guava	2.25.1

org.glassfish.jersey.containers	jersey-container-servlet	2.25.1
org.glassfish.jersey.containers	jersey-container-servlet-core	2.25.1
org.glassfish.jersey.core	jersey-client	2.25.1
org.glassfish.jersey.core	jersey-common	2.25.1
org.glassfish.jersey.core	jersey-server	2.25.1
org.glassfish.jersey.ext	jersey-bean-validation	2.25.1
org.glassfish.jersey.ext	jersey-entity-filtering	2.25.1
org.glassfish.jersey.ext	jersey-spring3	2.25.1
org.glassfish.jersey.media	jersey-media-jaxb	2.25.1
org.glassfish.jersey.media	jersey-media-json-jackson	2.25.1
org.glassfish.jersey.media	jersey-media-multipart	2.25.1
org.hamcrest	hamcrest-core	1.3
org.hamcrest	hamcrest-library	1.3
org.hibernate	hibernate-core	5.0.12.Final

org.hibernate	hibernate-ehcache	5.0.12.Final
org.hibernate	hibernate-entitymanager	5.0.12.Final
org.hibernate	hibernate-envers	5.0.12.Final
org.hibernate	hibernate-java8	5.0.12.Final
org.hibernate	hibernate-jpamodelgen	5.0.12.Final
org.hibernate	hibernate-validator	5.3.5.Final
org.hibernate	hibernate-validator-annotation-processor	5.3.5.Final
org.hsqldb	hsqldb	2.3.5
org.infinispan	infinispan-jcache	8.2.8.Final
org.infinispan	infinispan-spring4-common	8.2.8.Final
org.infinispan	infinispan-spring4-embedded	8.2.8.Final
org.javassist	javassist	3.21.0-GA
org.jboss	jboss-transaction-spi	7.6.0.Final
org.jboss.logging	jboss-logging	3.3.1.Final

org.jboss.narayana.jta	jdbc	5.5.30.Final
org.jboss.narayana.jta	jms	5.5.30.Final
org.jboss.narayana.jta	jta	5.5.30.Final
org.jboss.narayana.jts	narayana-jts-integration	5.5.30.Final
org.jdom	jdom2	2.0.6
org.jolokia	jolokia-core	1.3.7
org.jooq	jooq	3.9.6
org.jooq	jooq-codegen	3.9.6
org.jooq	jooq-meta	3.9.6
org.json	json	20140107
org.liquibase	liquibase-core	3.5.3
org.mariadb.jdbc	mariadb-java-client	1.5.9
org.mockito	mockito-core	1.10.19
org.mongodb	mongodb-driver	3.4.3

org.mongodb	mongo-java-driver	3.4.3
org.mortbay.jasper	apache-el	8.0.33
org.neo4j	neo4j-ogm-api	2.1.5
org.neo4j	neo4j-ogm-compiler	2.1.5
org.neo4j	neo4j-ogm-core	2.1.5
org.neo4j	neo4j-ogm-http-driver	2.1.5
org.postgresql	postgresql	9.4.1212.jre7
org.projectlombok	lombok	1.16.18
org.seleniumhq.selenium	htmlunit-driver	2.21
org.seleniumhq.selenium	selenium-api	2.53.1
org.seleniumhq.selenium	selenium-chrome-driver	2.53.1
org.seleniumhq.selenium	selenium-firefox-driver	2.53.1
org.seleniumhq.selenium	selenium-ie-driver	2.53.1
org.seleniumhq.selenium	selenium-java	2.53.1
org.seleniumhq.selenium	selenium-remote-driver	2.53.1

org.seleniumhq.selenium	selenium-safari-driver	2.53.1
org.seleniumhq.selenium	selenium-support	2.53.1
org.skyscreamer	jsonassert	1.4.0
org.slf4j	jcl-over-slf4j	1.7.25
org.slf4j	jul-to-slf4j	1.7.25
org.slf4j	log4j-over-slf4j	1.7.25
org.slf4j	slf4j-api	1.7.25
org.slf4j	slf4j-ext	1.7.25
org.slf4j	slf4j-jcl	1.7.25
org.slf4j	slf4j-jdk14	1.7.25
org.slf4j	slf4j-log4j12	1.7.25
org.slf4j	slf4j-nop	1.7.25
org.slf4j	slf4j-simple	1.7.25
org.spockframework	spock-core	1.0-groovy-2.4
org.spockframework	spock-spring	1.0-groovy-2.4

org.springframework	spring-aop	4.3.12.RELEASE
org.springframework	spring-aspects	4.3.12.RELEASE
org.springframework	spring-beans	4.3.12.RELEASE
org.springframework	spring-context	4.3.12.RELEASE
org.springframework	spring-context-support	4.3.12.RELEASE
org.springframework	spring-core	4.3.12.RELEASE
org.springframework	spring-expression	4.3.12.RELEASE
org.springframework	spring-instrument	4.3.12.RELEASE
org.springframework	spring-instrument-tomcat	4.3.12.RELEASE
org.springframework	spring-jdbc	4.3.12.RELEASE
org.springframework	spring-jms	4.3.12.RELEASE
org.springframework	springloaded	1.2.8.RELEASE
org.springframework	spring-messaging	4.3.12.RELEASE
org.springframework	spring-orm	4.3.12.RELEASE

org.springframework	spring-oxm	4.3.12.RELEASE
org.springframework	spring-test	4.3.12.RELEASE
org.springframework	spring-tx	4.3.12.RELEASE
org.springframework	spring-web	4.3.12.RELEASE
org.springframework	spring-webmvc	4.3.12.RELEASE
org.springframework	spring-webmvc-portlet	4.3.12.RELEASE
org.springframework	spring-websocket	4.3.12.RELEASE
org.springframework.amqp	spring-amqp	1.7.4.RELEASE
org.springframework.amqp	spring-rabbit	1.7.4.RELEASE
org.springframework.batch	spring-batch-core	3.0.8.RELEASE
org.springframework.batch	spring-batch-infrastructure	3.0.8.RELEASE
org.springframework.batch	spring-batch-integration	3.0.8.RELEASE
org.springframework.batch	spring-batch-test	3.0.8.RELEASE
org.springframework.boot	spring-boot	1.5.8.RELEASE

org.springframework.boot	spring-boot-actuator	1.5.8.RELEASE
org.springframework.boot	spring-boot-actuator-docs	1.5.8.RELEASE
org.springframework.boot	spring-boot-autoconfigure	1.5.8.RELEASE
org.springframework.boot	spring-boot-autoconfigure-processor	1.5.8.RELEASE
org.springframework.boot	spring-boot-configuration-metadata	1.5.8.RELEASE
org.springframework.boot	spring-boot-configuration-processor	1.5.8.RELEASE
org.springframework.boot	spring-boot-devtools	1.5.8.RELEASE
org.springframework.boot	spring-boot-loader	1.5.8.RELEASE
org.springframework.boot	spring-boot-loader-tools	1.5.8.RELEASE
org.springframework.boot	spring-boot-starter	1.5.8.RELEASE
org.springframework.boot	spring-boot-starter-activemq	1.5.8.RELEASE
org.springframework.boot	spring-boot-starter-actuator	1.5.8.RELEASE

org.springframework.boot	spring-boot-starter-amqp	1.5.8.RELEASE
org.springframework.boot	spring-boot-starter-aop	1.5.8.RELEASE
org.springframework.boot	spring-boot-starter-artemis	1.5.8.RELEASE
org.springframework.boot	spring-boot-starter-batch	1.5.8.RELEASE
org.springframework.boot	spring-boot-starter-cache	1.5.8.RELEASE
org.springframework.boot	spring-boot-starter-cloud-connectors	1.5.8.RELEASE
org.springframework.boot	spring-boot-starter-data-cassandra	1.5.8.RELEASE
org.springframework.boot	spring-boot-starter-data-couchbase	1.5.8.RELEASE
org.springframework.boot	spring-boot-starter-data-elasticsearch	1.5.8.RELEASE
org.springframework.boot	spring-boot-starter-data-gemfire	1.5.8.RELEASE
org.springframework.boot	spring-boot-starter-data-jpa	1.5.8.RELEASE
org.springframework.boot	spring-boot-starter-data-ldap	1.5.8.RELEASE

org.springframework.boot	spring-boot-starter-data-mongodb	1.5.8.RELEASE
org.springframework.boot	spring-boot-starter-data-neo4j	1.5.8.RELEASE
org.springframework.boot	spring-boot-starter-data-redis	1.5.8.RELEASE
org.springframework.boot	spring-boot-starter-data-rest	1.5.8.RELEASE
org.springframework.boot	spring-boot-starter-data-solr	1.5.8.RELEASE
org.springframework.boot	spring-boot-starter-freemarker	1.5.8.RELEASE
org.springframework.boot	spring-boot-starter-groovy-templates	1.5.8.RELEASE
org.springframework.boot	spring-boot-starter-hateoas	1.5.8.RELEASE
org.springframework.boot	spring-boot-starter-integration	1.5.8.RELEASE
org.springframework.boot	spring-boot-starter-jdbc	1.5.8.RELEASE
org.springframework.boot	spring-boot-starter-jersey	1.5.8.RELEASE
org.springframework.boot	spring-boot-starter-jetty	1.5.8.RELEASE

org.springframework.boot	spring-boot-starter-jooq	1.5.8.RELEASE
org.springframework.boot	spring-boot-starter-jta-atomikos	1.5.8.RELEASE
org.springframework.boot	spring-boot-starter-jta-bitronix	1.5.8.RELEASE
org.springframework.boot	spring-boot-starter-jta-narayana	1.5.8.RELEASE
org.springframework.boot	spring-boot-starter-log4j2	1.5.8.RELEASE
org.springframework.boot	spring-boot-starter-logging	1.5.8.RELEASE
org.springframework.boot	spring-boot-starter-mail	1.5.8.RELEASE
org.springframework.boot	spring-boot-starter-mobile	1.5.8.RELEASE
org.springframework.boot	spring-boot-starter-mustache	1.5.8.RELEASE
org.springframework.boot	spring-boot-starter-remote-shell	1.5.8.RELEASE
org.springframework.boot	spring-boot-starter-security	1.5.8.RELEASE
org.springframework.boot	spring-boot-starter-social-facebook	1.5.8.RELEASE

org.springframework.boot	spring-boot-starter-social-linkedin	1.5.8.RELEASE
org.springframework.boot	spring-boot-starter-social-twitter	1.5.8.RELEASE
org.springframework.boot	spring-boot-starter-test	1.5.8.RELEASE
org.springframework.boot	spring-boot-starter-thymeleaf	1.5.8.RELEASE
org.springframework.boot	spring-boot-starter-tomcat	1.5.8.RELEASE
org.springframework.boot	spring-boot-starter-undertow	1.5.8.RELEASE
org.springframework.boot	spring-boot-starter-validation	1.5.8.RELEASE
org.springframework.boot	spring-boot-starter-web	1.5.8.RELEASE
org.springframework.boot	spring-boot-starter-web-services	1.5.8.RELEASE
org.springframework.boot	spring-boot-starter-websocket	1.5.8.RELEASE
org.springframework.boot	spring-boot-test	1.5.8.RELEASE
org.springframework.boot	spring-boot-test-autoconfigure	1.5.8.RELEASE

org.springframework.cloud	spring-cloud-cloudfoundry-connector	1.2.4.RELEASE
org.springframework.cloud	spring-cloud-core	1.2.4.RELEASE
org.springframework.cloud	spring-cloud-heroku-connector	1.2.4.RELEASE
org.springframework.cloud	spring-cloud-localconfig-connector	1.2.4.RELEASE
org.springframework.cloud	spring-cloud-spring-service-connector	1.2.4.RELEASE
org.springframework.data	spring-cql	1.5.8.RELEASE
org.springframework.data	spring-data-cassandra	1.5.8.RELEASE
org.springframework.data	spring-data-commons	1.13.8.RELEASE
org.springframework.data	spring-data-couchbase	2.2.8.RELEASE
org.springframework.data	spring-data-elasticsearch	2.1.8.RELEASE
org.springframework.data	spring-data-envers	1.1.8.RELEASE
org.springframework.data	spring-data-gemfire	1.9.8.RELEASE
org.springframework.data	spring-data-jpa	1.11.8.RELEASE

org.springframework.data	spring-data-keyvalue	1.2.8.RELEASE
org.springframework.data	spring-data-ldap	1.0.8.RELEASE
org.springframework.data	spring-data-mongodb	1.10.8.RELEASE
org.springframework.data	spring-data-mongodb-cross-store	1.10.8.RELEASE
org.springframework.data	spring-data-mongodb-log4j	1.10.8.RELEASE
org.springframework.data	spring-data-neo4j	4.2.8.RELEASE
org.springframework.data	spring-data-redis	1.8.8.RELEASE
org.springframework.data	spring-data-rest-core	2.6.8.RELEASE
org.springframework.data	spring-data-rest-hal-browser	2.6.8.RELEASE
org.springframework.data	spring-data-rest-webmvc	2.6.8.RELEASE
org.springframework.data	spring-data-solr	2.1.8.RELEASE
org.springframework.hateoas	spring-hateoas	0.23.0.RELEASE
org.springframework.integration	spring-integration-amqp	4.3.12.RELEASE
org.springframework.integration	spring-integration-core	4.3.12.RELEASE

org.springframework.integration	spring-integration-event	4.3.12.RELEASE
org.springframework.integration	spring-integration-feed	4.3.12.RELEASE
org.springframework.integration	spring-integration-file	4.3.12.RELEASE
org.springframework.integration	spring-integration-ftp	4.3.12.RELEASE
org.springframework.integration	spring-integration-gemfire	4.3.12.RELEASE
org.springframework.integration	spring-integration-groovy	4.3.12.RELEASE
org.springframework.integration	spring-integration-http	4.3.12.RELEASE
org.springframework.integration	spring-integration-ip	4.3.12.RELEASE
org.springframework.integration	spring-integration-java-dsl	1.2.3.RELEASE
org.springframework.integration	spring-integration-jdbc	4.3.12.RELEASE
org.springframework.integration	spring-integration-jms	4.3.12.RELEASE
org.springframework.integration	spring-integration-jmx	4.3.12.RELEASE
org.springframework.integration	spring-integration-jpa	4.3.12.RELEASE
org.springframework.integration	spring-integration-mail	4.3.12.RELEASE

org.springframework.integration	spring-integration-mongodb	4.3.12.RELEASE
org.springframework.integration	spring-integration-mqtt	4.3.12.RELEASE
org.springframework.integration	spring-integration-redis	4.3.12.RELEASE
org.springframework.integration	spring-integration-rmi	4.3.12.RELEASE
org.springframework.integration	spring-integration-scripting	4.3.12.RELEASE
org.springframework.integration	spring-integration-security	4.3.12.RELEASE
org.springframework.integration	spring-integration-sftp	4.3.12.RELEASE
org.springframework.integration	spring-integration-stomp	4.3.12.RELEASE
org.springframework.integration	spring-integration-stream	4.3.12.RELEASE
org.springframework.integration	spring-integration-syslog	4.3.12.RELEASE
org.springframework.integration	spring-integration-test	4.3.12.RELEASE
org.springframework.integration	spring-integration-twitter	4.3.12.RELEASE

org.springframework.integration	spring-integration-websocket	4.3.12.RELEASE
org.springframework.integration	spring-integration-ws	4.3.12.RELEASE
org.springframework.integration	spring-integration-xml	4.3.12.RELEASE
org.springframework.integration	spring-integration-xmpp	4.3.12.RELEASE
org.springframework.integration	spring-integration-zookeeper	4.3.12.RELEASE
org.springframework.kafka	spring-kafka	1.1.7.RELEASE
org.springframework.kafka	spring-kafka-test	1.1.7.RELEASE
org.springframework.ldap	spring-ldap-core	2.3.2.RELEASE
org.springframework.ldap	spring-ldap-core-tiger	2.3.2.RELEASE
org.springframework.ldap	spring-ldap-ldif-batch	2.3.2.RELEASE
org.springframework.ldap	spring-ldap-ldif-core	2.3.2.RELEASE
org.springframework.ldap	spring-ldap-odm	2.3.2.RELEASE
org.springframework.ldap	spring-ldap-test	2.3.2.RELEASE
org.springframework.mobile	spring-mobile-device	1.1.5.RELEASE

org.springframework.plugin	spring-plugin-core	1.2.0.RELEASE
org.springframework.plugin	spring-plugin-metadata	1.2.0.RELEASE
org.springframework.restdocs	spring-restdocs-core	1.1.3.RELEASE
org.springframework.restdocs	spring-restdocs-mockmvc	1.1.3.RELEASE
org.springframework.restdocs	spring-restdocs-restassured	1.1.3.RELEASE
org.springframework.retry	spring-retry	1.2.1.RELEASE
org.springframework.security	spring-security-acl	4.2.3.RELEASE
org.springframework.security	spring-security-aspects	4.2.3.RELEASE
org.springframework.security	spring-security-cas	4.2.3.RELEASE
org.springframework.security	spring-security-config	4.2.3.RELEASE
org.springframework.security	spring-security-core	4.2.3.RELEASE
org.springframework.security	spring-security-crypto	4.2.3.RELEASE
org.springframework.security	spring-security-data	4.2.3.RELEASE
org.springframework.security	spring-security-jwt	1.0.8.RELEASE

org.springframework.security	spring-security-ldap	4.2.3.RELEASE
org.springframework.security	spring-security-messaging	4.2.3.RELEASE
org.springframework.security	spring-security-openid	4.2.3.RELEASE
org.springframework.security	spring-security-remoting	4.2.3.RELEASE
org.springframework.security	spring-security-taglibs	4.2.3.RELEASE
org.springframework.security	spring-security-test	4.2.3.RELEASE
org.springframework.security	spring-security-web	4.2.3.RELEASE
org.springframework.security.oauth	spring-security-oauth	2.0.14.RELEASE
org.springframework.security.oauth	spring-security-oauth2	2.0.14.RELEASE
org.springframework.session	spring-session	1.3.1.RELEASE
org.springframework.session	spring-session-data-gemfire	1.3.1.RELEASE
org.springframework.session	spring-session-data-mongo	1.3.1.RELEASE
org.springframework.session	spring-session-data-redis	1.3.1.RELEASE

org.springframework.session	spring-session-hazelcast	1.3.1.RELEASE
org.springframework.session	spring-session-jdbc	1.3.1.RELEASE
org.springframework.social	spring-social-config	1.1.4.RELEASE
org.springframework.social	spring-social-core	1.1.4.RELEASE
org.springframework.social	spring-social-facebook	2.0.3.RELEASE
org.springframework.social	spring-social-facebook-web	2.0.3.RELEASE
org.springframework.social	spring-social-linkedin	1.0.2.RELEASE
org.springframework.social	spring-social-security	1.1.4.RELEASE
org.springframework.social	spring-social-twitter	1.1.2.RELEASE
org.springframework.social	spring-social-web	1.1.4.RELEASE
org.springframework.ws	spring-ws-core	2.4.0.RELEASE
org.springframework.ws	spring-ws-security	2.4.0.RELEASE
org.springframework.ws	spring-ws-support	2.4.0.RELEASE
org.springframework.ws	spring-ws-test	2.4.0.RELEASE

org.thymeleaf	thymeleaf	2.1.5.RELEASE
org.thymeleaf	thymeleaf-spring4	2.1.5.RELEASE
org.thymeleaf.extras	thymeleaf-extras-conditionalcomments	2.1.2.RELEASE
org.thymeleaf.extras	thymeleaf-extras-java8time	2.1.0.RELEASE
org.thymeleaf.extras	thymeleaf-extras-springsecurity4	2.1.3.RELEASE
org.webjars	hal-browser	9f96c74
org.webjars	webjars-locator	0.32-1
org.xerial	sqlite-jdbc	3.15.1
org.yaml	snakeyaml	1.17
redis.clients	jedis	2.9.0
wSDL4J	wSDL4J	1.6.3
xml-apis	xml-apis	1.4.01

6. Spring Boot CLI — Default Statements

In this chapter, we will learn about the Default Statements in Spring Boot CLI. To begin with, we will learn about the Default Imports.

Default Imports

Spring CLI automatically imports many libraries by default so that explicit imports are not required. Let us now consider the following groovy script to understand Default Imports.

```
@RestController
class FirstApplication {
    @RequestMapping("/")
    String welcome() {
        "Welcome to Tutorialspoint.Com"
    }
}
```

Here, Spring Boot includes import for @RestController, @RequestMapping annotations by default. There is no requirement for us to use fully-qualified names. You can check by running the application.

Type the following command –

```
E:/Test/> spring run FirstApplication.groovy
```

The above command will generate the following output on console –

```

  .  ____          _            ) _    ___
  /\ /  ' /  ___(-)  ___  )  \ / \ /
  ( ( )\___| '_ | '_| | '_ \ V > | \ \ \
  \ \  __)| | | | | | | | | ( _ | ) ) )
  '  |___| .__| | | | | | \__, / / / /
  =====|_|=====|__/=/_/_/_/
  :: Spring Boot ::      (v1.5.8.RELEASE)

...

2017-11-07 19:22:17.310 INFO 4824 --- [          runner-0]
o.s.boot.SpringApplication
: Started application in 3.405 seconds (JVM running for 7.021)
```

Automatic Main Method

We are not required to create standard main method for groovy script to initialize a spring application. It is automatically created for Spring Boot application.

7. Spring Boot CLI — Starter Thymeleaf Project

In this chapter, we will learn how to create a sample Thymeleaf-based project to demonstrate the capabilities of Spring CLI. Follow the below mentioned step to create a sample project –

Step	Description
1	Create a Folder with a name <i>TestApplication</i> with subfolders <i>templates</i> and <i>static</i> .
2	Create <i>message.groovy</i> in <i>TestApplication</i> folder, <i>message.html</i> in <i>templates</i> folder, <i>index.html</i> in <i>static</i> folder as explained below.
3	Compile and run the application to verify the result of the implemented logic.

TestApplication/message.groovy

```
@Controller
@Grab('spring-boot-starter-thymeleaf')
class MessageController {
    @RequestMapping("/message")
    String getMessage(Model model) {
        String message = "Welcome to Tutorialspoint.Com!";
        model.addAttribute("message", message);
        return "message";
    }
}
```

TestApplication/templates/message.html

```
<!DOCTYPE HTML>
<html xmlns:th = "http://www.thymeleaf.org">
    <head>
        <title>Spring Boot CLI Example</title>
```

```

    <meta http-equiv = "Content-Type" content = "text/html; charset = UTF-8"
  />
</head>

<body>
  <p th:text = "'Message: ' + ${message}" />
</body>
</html>

```

TestApplication/static/index.html

```

<!DOCTYPE HTML>
<html>
  <head>
    <title>Spring Boot CLI Example</title>
    <meta http-equiv = "Content-Type" content = "text/html; charset = UTF-8"
  />
</head>

<body>
  <p>Go to <a href = "/msg">Message</a></p>
</body>
</html>

```

Run the application

To run the application, type the following command –

```
E:/Test/TestApplication/> spring run *.groovy
```

Now Spring Boot CLI will come into action, download the required dependencies, run the embedded tomcat, deploy the application and start it. You can see the following output on console –

```
Resolving dependencies.....
```

```

.  _ _ _ _ _
/\ /  _ ' _ _ _ _ ( ) _ _ _ _ \ \ \ \
( ( ) \ _ | ' _ | ' _ | ' _ \ / _ > | \ \ \ \
\ \ / _ ) | | | | | | | | | ( _ | ) ) )
'  | _ _ | . _ | | _ | | _ \ , | / / / /

```

```

=====|_|=====|__/_/_/_/_/
:: Spring Boot ::      (v1.5.8.RELEASE)

...
2017-11-08 16:27:28.300 INFO 8360 --- [ runner-0]
s.b.c.e.t.TomcatEmbeddedServletContainer : Tomcat started on port(s): 8080
(http)
2017-11-08 16:27:28.305 INFO 8360 --- [ runner-0]
o.s.boot.SpringApplication : Started application in 4.203 seconds
(JVM running for 38.792)

```

Browse the application in Browser

Our Spring-based REST application is now ready. Open URL "**http://localhost:8080/**" and you will see the following output –

Go to Message

Click on the Message link and you will see the following output –

Message: Welcome to TutorialsPoint.Com!

Important points

Consider the following points to understand the actions taken by Spring CLI –

- The `@Grab('spring-boot-starter-thymeleaf')` annotation directs CLI to download spring-boot-starter-thymeleaf 1.5.8.RELEASE version.
- Spring CLI automatically detects the version using its metadata, as we have not specified any group id or version id here.
- Finally after code compilation, deploy the war on a embedded tomcat, start embedded tomcat server on the default port 8080.

8. Spring Boot CLI — Testing Application

In this chapter, we will test the sample project created in [Hello World Example](#) Chapter to demonstrate the testing capabilities of Spring CLI. Follow the steps listed in the table below to test the sample project –

Steps	Description
1	Create <i>FirstApplication.groovy</i> and <i>TestFirstApplication.groovy</i> in <i>Testfolder</i> as explained below.
2	Compile and run the application to verify the result of the implemented logic.

FirstApplication/FirstApplication.groovy

```
@RestController
class FirstApplication {
    @RequestMapping("/")
    String welcome() {
        "Welcome to TutorialsPoint.Com"
    }
}
```

FirstApplication/TestFirstApplication.groovy

```
class TestFirstApplication {
    @Test
    void welcomeTest() {
        assertEquals("Welcome to TutorialsPoint.Com", new
        FirstApplication().welcome())
    }
}
```

Run the application

To run the application, type the following command –


```
E:/Test/FirstApplication/> spring test FirstApplication.groovy
TestFirstApplication.groovy
```

Now Spring Boot CLI will come into action, download the required dependencies, compile the source and test file and unit test the code. The following output will be generated on console –

```
Resolving dependencies.....
.
Time: 0.457

OK (1 test)
```

Important points

Consider the following points to understand the actions taken by Spring CLI –

- The @Test annotation directs CLI to download JUnit 4.12 version.
- Spring CLI automatically detects the version using its metadata, as we have not specified any dependency.
- Finally, after code compilation, test the application.

9. Spring Boot CLI — Packaging Application

Spring Boot CLI provides jar command in order to package an application as jar file. Let us test the sample project created in [Starter Thymeleaf Project](#) chapter to demonstrate the packaging capabilities of Spring CLI.

Follow the steps describe below to package the sample project –

Package the application

To package the application, begin by typing the following command –

```
E:/Test/TestApplication/> spring jar TestApplication.jar *.groovy
```

Output

The command will print the following output –

```
E:/Test/TestApplication/> spring jar TestApplication.jar *.groovy
```

Output

Now you can see two new files created in the TestApplication folder.

- **TestApplication.jar** – An executable jar file.
- **TestApplication.jar.original** – Original jar file.

Include/Exclude

By default, following directories are included along with their contents –

- public
- resources
- static
- templates
- META-INF

By default, following directories are excluded along with their contents –

- repository
- build
- target
- *.jar files

- *.groovy files

Using **--include**, we can include directories excluded otherwise. Using **--exclude**, we can exclude directories included otherwise.

Running the Executable Jar

To run the executable Jar, type the following command –

```
E:/Test/TestApplication/> java -jar TestApplication.jar
```

The above command will generate the following output on console –

```
. ____ _ _ _ _
/\ / __' _ _ _ _ _(_)_ _ _ _ _ \ \ \ \
( ( )\__ | '_ | '_ | | '_ \_> | \ \ \ \
\ \ / __) | | | | | | | | ( | | ) ) )
' |__| ._| | | | | | | \ , | / / / /
=====|_|=====|__/_/_/_/_/
:: Spring Boot ::          (v1.5.8.RELEASE)

...

2017-11-08 16:27:28.300 INFO 8360 --- [runner-0]
s.b.c.e.t.TomcatEmbeddedServletContainer : Tomcat started on port(s): 8080
(http)

2017-11-08 16:27:28.305 INFO 8360 --- [runner-0]
o.s.boot.SpringApplication              : Started application in 4.203 seconds
(JVM running for 38.792)
```

Browse the application in Browser

Our Spring-based REST application is now ready. Open URL as "**http://localhost:8080/**" and you will see the following output –

```
Go to Message
```

Click on Message link and you will see the following output –

```
Message: Welcome to TutorialsPoint.Com!
```

10. Spring Boot CLI — Creating Project

Spring Boot CLI can be used to create a new project with maven as default build tool using init command. Maven will use <https://start.spring.io> service. In the following example, we will create a web application using thymeleaf. Go to **E:\Test** folder and type the following command –

```
E:/Test> spring init --dependencies = web,thymeleaf MavenApplication.zip
```

The above command will generate the following output –

```
Using service at https://start.spring.io  
Content saved to MavenApplication.zip
```

Create Gradle project

We can create a Gradle based project as well by setting **--build** as gradle. To understand this in a better way, consider the example given below. Go to **E:\Test** folder and type the following command –

```
E:/Test> spring init --build = gradle --java-version = 1.8 --dependencies =  
web,thymeleaf --packaging = war GradleApplication.zip
```

The above command will generate the following output –

```
Using service at https://start.spring.io  
Content saved to GradleApplication.zip
```

11. Spring Boot CLI — Using Shell

Spring Boot CLI provides a Shell interface to run the commands in which we can directly run the commands as shown below. Go to **E:\Test** folder and type the following command –

```
E:/Test> spring shell
```

The above command will generate the following output –

```
?[1mSpring Boot?[m?[2m (v1.5.8.RELEASE)?[m
Hit TAB to complete. Type 'help' and hit RETURN for help, and 'exit' to quit.
```

Running Commands in Shell

In this section, we will learn how to run commands in Shell. Type the following and see the output –

```
version
Spring CLI v1.5.8.RELEASE
```

You can press Tab to auto complete the commands and type Exit to finish the shell console.

Testing the application in shell

Let us now learn how to test the application in shell. Type the following line of code and see the output –

```
E:\Test\FirstApplication>spring shell
?[1mSpring Boot?[m?[2m (v1.5.8.RELEASE)?[m
Hit TAB to complete. Type 'help' and hit RETURN for help, and 'exit' to quit.
$ test FirstApplication.groovy TestFirstApplication.groovy
.
Time: 0.347

OK (1 test)

$ exit
E:\Test\FirstApplication>
```