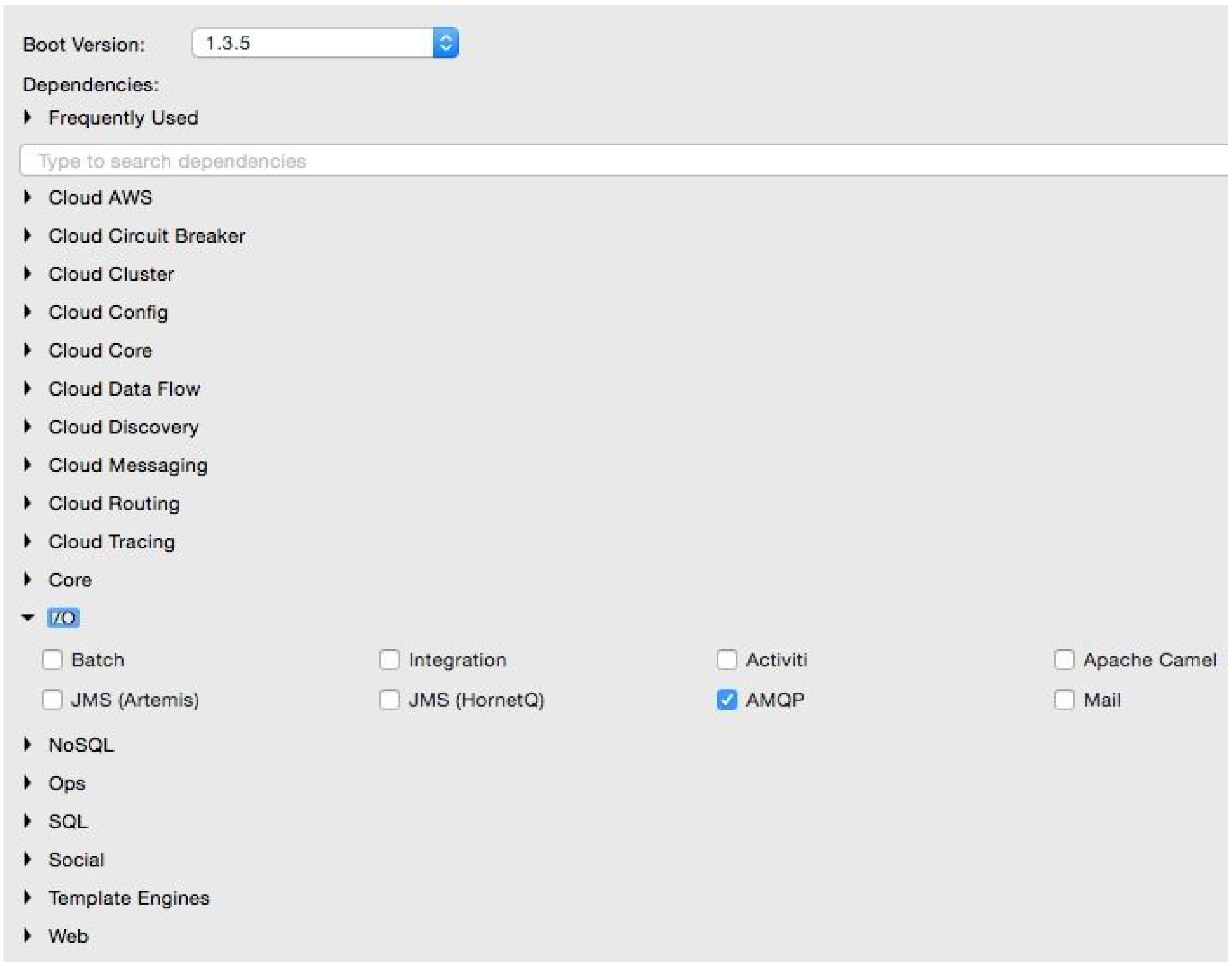
Lab 8: Implementing Spring Boot Messaging

Create a new project using STS to demonstrate this capability. In this example, instead of selecting **Web**, select **AMQP** under **I/O**:



Boot Version: 1.3.5

Dependencies:

- Frequently Used

Type to search dependencies

- Cloud AWS
- Cloud Circuit Breaker
- Cloud Cluster
- Cloud Config
- Cloud Core
- Cloud Data Flow
- Cloud Discovery
- Cloud Messaging
- Cloud Routing
- Cloud Tracing
- Core
- I/O

Batch	Integration	Activiti	Apache Camel
JMS (Artemis)	JMS (HornetQ)	[✓ AMQP]	Mail

- NoSQL
- Ops
- SQL
- Social
- Template Engines
- Web

Rabbit MQ will also be needed for this example. Download and install the latest version of Rabbit MQ from https://www.rabbitmq.com/download.html.

Rabbit MQ 3.5.6 is used in this book.

Follow the installation steps documented on the site. Once ready, start the RabbitMQ server via the following command:

```
$./rabbitmq-server
```

Make the configuration changes to the `application.properties` file to reflect the RabbitMQ configuration. The following configuration uses the default port, username, and password of RabbitMQ:

```
spring.rabbitmq.host=localhost
spring.rabbitmq.port=5672
spring.rabbitmq.username=guest
spring.rabbitmq.password=guest
```

Add a message sender component and a queue named `TestQ` of the `org.springframework.amqp.core.Queue` type to the `Application.java` file under `src/main/java`. `RabbitMessagingTemplate` is a convenient way to send messages, which will abstract all the messaging semantics. Spring Boot provides all boilerplate configurations to send messages:

```
@Component
class Sender {
  @Autowired
  RabbitMessagingTemplate template;
  @Bean
  Queue queue() {
    return new Queue("TestQ", false);
  }
  public void send(String message){
    template.convertAndSend("TestQ", message);
  }
}
```

To receive the message, all that needs to be used is a `@RabbitListener` annotation. Spring Boot autoconfigures all the required boilerplate configurations:

```
@Component
class Receiver {
    @RabbitListener(queues = "TestQ")
    public void processMessage(String content) {
       System.out.println(content);
    }
}
```

The last piece of this exercise is to wire the sender to our main application and implement the `run`method of `CommandLineRunner` to initiate the message sending. When the application is initialized, it invokes the `run` method of `CommandLineRunner`, as follows:

```
@SpringBootApplication
public class Application implements CommandLineRunner{

  @Autowired
  Sender sender;

    public static void main(String[] args) {
        SpringApplication.run(Application.class, args);
    }

    @Override
    public void run(String... args) throws Exception {
      sender.send("Hello Messaging..!!!");
    }
}
```

Run the application as a Spring Boot application and verify the output. The following message will be printed in the console:

```
Hello Messaging..!!!
```