

Spring Boot is an open-source framework developed by Pivotal Software for building stand-alone, production-ready applications. It is based on the Spring Framework and offers many features to make it easier to build and distribute Spring-based apps. We will go more deeply into Spring Boot's significant features and advantages in this tech report. We will also find out how to add dependencies using Spring Boot.

### Key Features of Spring Boot:

1. **Auto-configuration:** Spring Boot's ability to perform auto-configuration is one of its important features. Using the dependencies present in the project, Spring Boot configures the program immediately. Developers no longer have to spend the time and effort separately configuring the program. Since most of the setup is handled for them by the auto-configuration process, Spring Boot is simple for developers to start using.
2. **Production-ready:** Spring Boot is made to be suitable for use in a production environment right out of the package. For creating reliable, scalable apps, it has features like health checks, analytics, and externalised configurations. Application deployment and management in a production setting are made simple by Spring Boot's production-ready features.
3. **Easy database integration:** Spring Boot makes it simple to integrate with well-known databases like MySQL, PostgreSQL, and MongoDB. Additionally, it has JPA and Hibernate support, which minimises database entry and cuts down on repetitive code. The database integration capabilities of Spring Boot make it simple to create apps that store and access data.

### Spring Boot Advantages:

1. By providing auto-configuration and integrated support for embedded servers, the framework enhances the development process and decreases the time needed for creating and launching apps. This speeds up the introduction of innovative products and services, allowing companies to reduce their time to market.
2. A wide variety of capabilities and resources offered by Spring Boot reduce the number of hours of programming work. As a result, fewer hours and resources are wasted on non-business-critical tasks like configuring servers and handling dependencies. That allows coders to concentrate on more crucial tasks.
3. It is possible to create highly scalable apps with Spring Boot that can handle high traffic and loads, which is essential for modern online applications. These features include health checks and metrics.
4. Applications can be updated and maintained much more easily thanks to externalised configuration and simple database interaction, which lowers the chance of errors and disruptions while allowing companies to do so with little work.

### Spring Boot Usage:

The extensive list of dependencies that come with Spring Boot includes web frameworks, security libraries, and database drivers. By making changes to the pom.xml file, you can include the necessary dependencies in your project.

1. Open the `pom.xml` file in your project directory.
2. Locate the `<dependencies>` section.
3. Add the dependency that you want to include in your project by adding a new `<dependency>` tag within the `<dependencies>` section. For example, to add the Spring Web dependency, you would add the following code:

```
<dependency>
<groupId>org.springframework.boot</groupId>
<artifactId>spring-boot-starter-web</artifactId>
</dependency>
```

You can find many dependencies in sites like these:

1. **Maven Central Repository** (<https://search.maven.org/>)
2. **Spring Boot documentation** (<https://docs.spring.io/spring-boot/docs/current/reference/htmlsingle/#using.build-systems>)
3. **MVN Repository** (<https://mvnrepository.com/artifact/org.springframework.boot/spring-boot-dependencies>)

In conclusion, Spring Boot is a fantastic open-source platform that features auto-configuration, integrated servers, is prepared for production, and has an integrated data base. The framework's flexibility enables users to create web apps more quickly and with less effort. The framework is extensively applied in business and still holds true in the modern day.