

# How to Dockerize Java Application

## Prerequisites

- Docker installed in your system.
- Java application
- Maven or Gradle

## Step 1 install Maven on Ubuntu

Apache Maven is an open-source project management tool primarily used to develop Java applications. It incorporates a POM (Project Object Model) approach, which stores information about projects, configurations, and dependencies in an XML file.

1. Update the local package repository index:

```
sudo apt update
```

2. Install Maven from the official Ubuntu repository:

```
sudo apt install maven -y
```

3. Check the current Maven version to verify the installation:

```
mvn -version
```

```
marko@phoenixnap:~$ mvn -version
Apache Maven 3.6.3
Maven home: /usr/share/maven
Java version: 11.0.22, vendor: Ubuntu, runtime: /usr/lib/jvm/java-11-openjdk-amd64
Default locale: en_US, platform encoding: UTF-8
OS name: "linux", version: "6.5.0-28-generic", arch: "amd64", family: "unix"
marko@phoenixnap:~$
```

## Step 2 Install OpenJDK

OpenJDK is an open-source Java implementation that is a Maven dependency on Ubuntu. Proceed with the following steps to install OpenJDK on the system:

1. Update the system's package repository index:


```
sudo apt update
```

2. Install the latest OpenJDK version by running:

```
sudo apt install default-jdk -y
```

3. Verify the installation by checking the current OpenJDK version:

```
java -version
```

```
marko@phoenixnap:~$ java -version
openjdk version "11.0.22" 2024-01-16 
OpenJDK Runtime Environment (build 11.0.22+7-post-Ubuntu-0ubuntu222.04.1)
OpenJDK 64-Bit Server VM (build 11.0.22+7-post-Ubuntu-0ubuntu222.04.1, mixed mode, sharing)
marko@phoenixnap:~$
```

## Step 3: Build the Java Jar

```
git clone https://github.com/techiescamp/java-spring-petclinic
cd java-spring-petclinic
mvn clean install -Dmaven.test.skip=true
```

## Step 4: Create Java Application Docker Image

create a Dockerfile in your application folder with the following content.

Dockerfile

```
FROM techiescamp/jre-17:1.0.0
WORKDIR /app

# Copy the JAR file (/app)
COPY /target/*.jar ./java.jar

# Expose the port the app runs on
EXPOSE 8080

# Run the jar file
```

```
CMD ["java", "-jar", "java.jar"]
```

```
docker build -t java-application:1.0 .
```

```
docker run -d -p 8080:8080 java-application:1.0
```

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