

# Lab Exercise 03: Installing and Verifying Apache Maven

In this lab exercise, you will learn how to install and verify Apache Maven on your system. Apache Maven is a powerful build automation tool widely used in the Java ecosystem. Follow these steps to complete the installation and verification process:

## Prerequisites:

- Make sure you have Java Development Kit (JDK) installed on your system.
- Ensure that your system environment variables are set up correctly.

## Step 1: Navigate to the Maven Download Page

1. Open your web browser.
2. Go to the official Apache Maven download page by navigating to <https://maven.apache.org/download.cgi>.

## Step 2: Download the Latest Maven Binary

3. Locate the "Files" section on the download page.
4. Under "Current Release," find the link to the latest Maven binary zip archive (e.g., `apache-maven-3.x.x-bin.zip`). Click on it to start the download.

## Step 3: Unpack the Archive

5. Once the download is complete, navigate to the directory where the zip archive was saved.
6. Extract the contents of the zip archive to your desired location. You can use a tool like 7-Zip or simply use your operating system's built-in archive extractor. This will create a directory called "apache-maven-3.x.x."

## Step 4: Add Maven to Your System's PATH

7. Open your system's environment variables settings. This process may vary depending on your operating system (e.g., System Properties on Windows, `~/.bashrc` or `~/.bash_profile` on Linux/macOS).
8. Add the "bin" directory within the Maven installation directory to your system's PATH variable. Make sure to replace 3.x.x with the actual version number.

Example (on Windows):

```
C:\Program Files\apache-maven-3.x.x\bin
```

Example (on Linux/macOS):

```
export PATH=$PATH:/path/to/apache-maven-3.x.x/bin
```

Don't forget to run `source ~/.bashrc` or `source ~/.bash_profile` after making changes on Linux/macOS to apply the changes.

## Step 5: Verify JAVA\_HOME Environment Variable

9. Ensure that the `JAVA_HOME` environment variable is set correctly and points to the location of your JDK installation. This step is crucial as Maven relies on Java.

## Step 6: Verify Maven Installation

10. Open a command prompt or terminal window.
11. Run the following command to verify that Maven is correctly installed and configured:

```
mvn --version
```

You should see output similar to the following, indicating the Maven version and other information:

```
Apache Maven 3.x.y
```

```
Maven home: /path/to/apache-maven-3.x.y
```

```
Java version: 1.x.x_xxx, vendor: Oracle Corporation, runtime: /path/to/jdk
```

```
...
```

Congratulations! You have successfully installed and verified Apache Maven on your system. You are now ready to use Maven for building and managing Java projects.