

Lab: Install and Configure Maven

In this lab, we are going to highlight **how to install Maven on windows**.

[Maven](#) is a build automation and dependency management tool for Java based applications. To build a project, Maven uses its [project object model \(POM\)](#), and a set of plugins.

For this lab, we will be using:

- JDK 8
- Maven 3.8.3
- Windows 10

Install JDK and Set up *JAVA_HOME*

The installation process of Apache Maven is quite simple, we just need to extract the Maven's zip file and set up maven environment variables.

However, Maven requires JDK to perform some important operations such as code compilation.

So, before installing Maven on Windows 10, we need to make sure that Java JDK is installed and the *JAVA_HOME* environment variable is configured on our machine.

We can type the following commands to check which JDK version is installed on our machine:

```
C:\Users\fenago>echo %JAVA_HOME%
C:\Program Files\Java\jdk1.8.0_261

C:\Users\fenago>java -version
java version "1.8.0_261"
Java(TM) SE Runtime Environment (build 1.8.0_261-b12)
Java HotSpot(TM) 64-Bit Server VM (build 25.261-b12, mixed mode)

C:\Users\fenago>
```

As we can see, the installed version of JDK is *1.8.0_261*.

Download Apache Maven for Windows

We can download Maven directly from the official website: <https://maven.apache.org/download.cgi>. Make sure to download the latest stable release which now 3.8.3

Files

Maven is distributed in several formats for your convenience. Simply pick a ready-made binary distribution archive and follow the [installation instructions](#). Use a source archive if you intend to build Maven yourself.

In order to guard against corrupted downloads/installations, it is highly recommended to [verify the signature](#) of the release bundles against the public [KEYS](#) used by the Apache Maven developers.

	Link	Checksums	Signature
Binary tar.gz archive	apache-maven-3.8.1-bin.tar.gz	apache-maven-3.8.1-bin.tar.gz.sha512	apache-maven-3.8.1-bin.tar.gz.asc
Binary zip archive	apache-maven-3.8.1-bin.zip	apache-maven-3.8.1-bin.zip.sha512	apache-maven-3.8.1-bin.zip.asc
Source tar.gz archive	apache-maven-3.8.1-src.tar.gz	apache-maven-3.8.1-src.tar.gz.sha512	apache-maven-3.8.1-src.tar.gz.asc
Source zip archive	apache-maven-3.8.1-src.zip	apache-maven-3.8.1-src.zip.sha512	apache-maven-3.8.1-src.zip.asc

- [Release Notes](#)
- [Reference Documentation](#)
- [Apache Maven Website As Documentation Archive](#)
- [All current release sources \(plugins, shared libraries,...\)](#) available at <https://downloads.apache.org/maven/>
- [latest source code from source repository](#)
- Distributed under the [Apache License, version 2.0](#)

Install Apache Maven on Windows 10

Now, let's download *apache-maven-3.8.3-bin.zip* and unzip it to a specific folder of our choice, for example:

C:\Users\fenago\Downloads\apache-maven-3.8.3

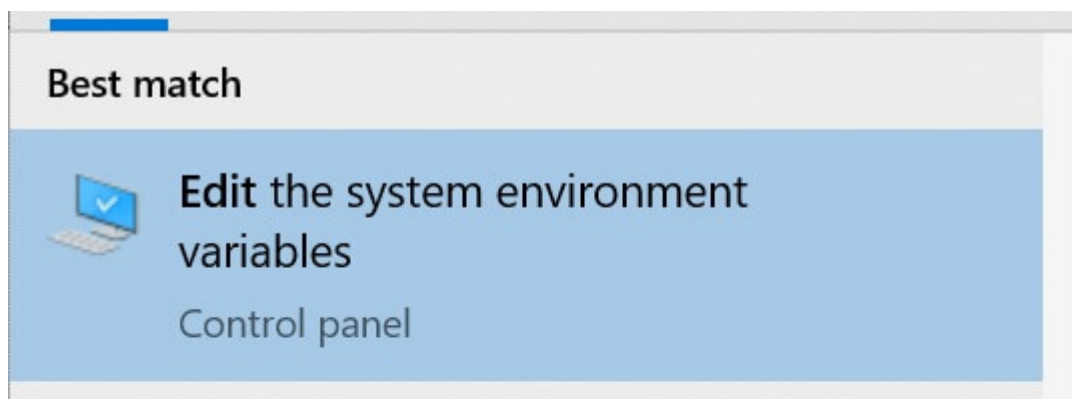
is PC > Local Disk (C:) > Users > Asus > soft > apache-maven-3.8.1					▼	↺
Name	Date modified	Type	Size			
bin	11/7/2019 11:32 AM	File folder				
boot	11/7/2019 11:32 AM	File folder				
conf	11/7/2019 11:32 AM	File folder				
lib	11/7/2019 11:32 AM	File folder				
LICENSE	11/7/2019 11:32 AM	File	18 KB			
NOTICE	11/7/2019 11:32 AM	File	6 KB			
README	11/7/2019 11:32 AM	Text Document	3 KB			

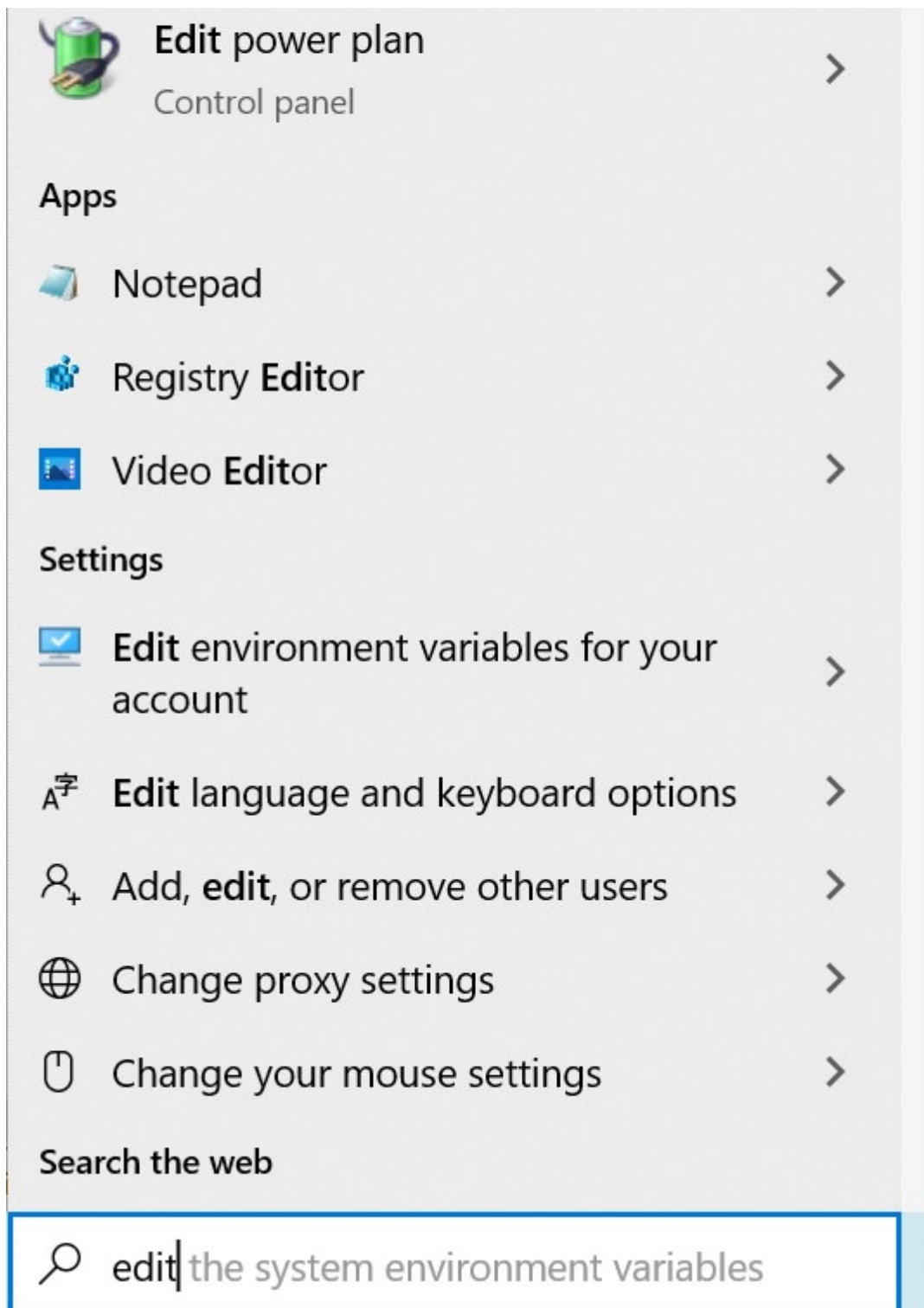
Add *MAVEN_HOME* Environment Variable

The next step is to configure the *MAVEN_HOME* variable on Windows 10.

MAVEN_HOME should point to the folder where we extracted Maven which is *C:\Users\fenago\Downloads\apache-maven-3.8.3* in our case. Follow these steps to add the *MAVEN_HOME* environment variable:

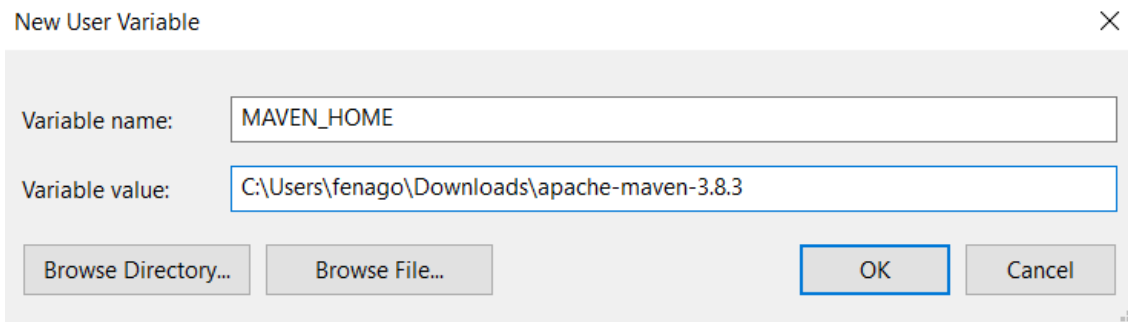
1- Type "**edit**" in the Window search box, then click on the "**Edit the system environment variables**"





2- Next, select the "**Environment Variables...**" button

3- Click on the "**New...**" button and put *MAVEN_HOME* as variable name and *C:\Users\fenago\Downloads\apache-maven-3.8.3* as variable value

A screenshot of the 'New User Variable' dialog box. It has a title bar with a close button (X). Inside, there are two text input fields. The first is labeled 'Variable name:' and contains the text 'MAVEN_HOME'. The second is labeled 'Variable value:' and contains the path 'C:\Users\fenago\Downloads\apache-maven-3.8.3'. Below these fields are four buttons: 'Browse Directory...', 'Browse File...', 'OK', and 'Cancel'. The 'OK' button is highlighted with a blue border.

New User Variable

Variable name: MAVEN_HOME

Variable value: C:\Users\fenago\Downloads\apache-maven-3.8.3

Browse Directory... Browse File... OK Cancel

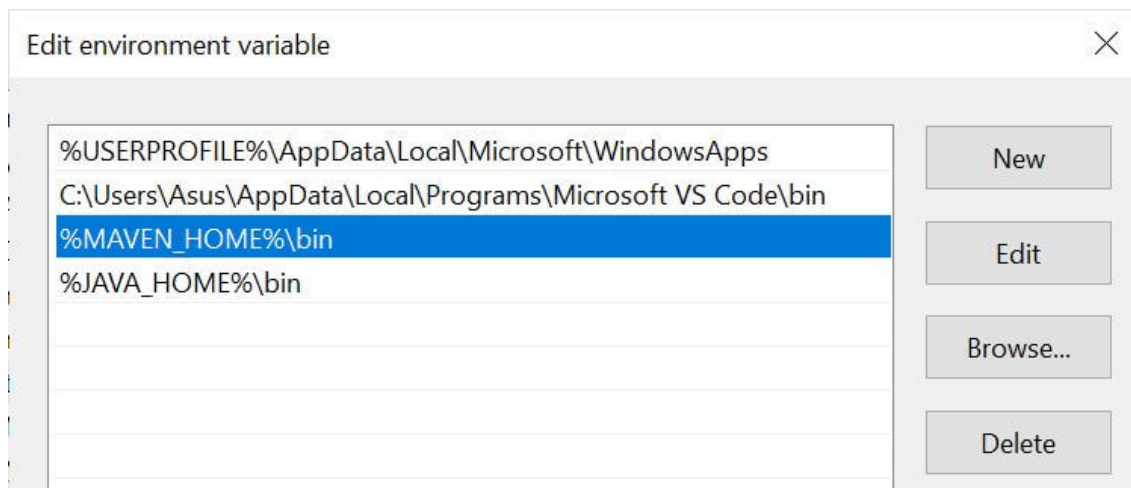
another way to set up *MAVEN_HOME* is to use command lines. To do so, open a new command prompt as administrator and type the following command:

```
C:\Windows\system32>setx /M MAVEN_HOME "C:\Users\fenago\Downloads\apache-maven-3.8.3"
SUCCESS: Specified value was saved.
```

Add %MAVEN_HOME%\bin to PATH

Now let's add the last missing piece of the puzzle. This step is very important to run the Mvn command everywhere directly from the command prompt.

To do so conveniently, we need to edit the *PATH* variable by appending the Maven bin folder %MAVEN_HOME%\bin.

A screenshot of the 'Edit environment variable' dialog box. It has a title bar with a close button (X). Inside, there is a list box containing four entries: '%USERPROFILE%\AppData\Local\Microsoft\WindowsApps', 'C:\Users\Asus\AppData\Local\Programs\Microsoft VS Code\bin', '%MAVEN_HOME%\bin' (which is highlighted in blue), and '%JAVA_HOME%\bin'. To the right of the list box are four buttons: 'New', 'Edit', 'Browse...', and 'Delete'.

Edit environment variable

%USERPROFILE%\AppData\Local\Microsoft\WindowsApps
C:\Users\Asus\AppData\Local\Programs\Microsoft VS Code\bin
%MAVEN_HOME%\bin
%JAVA_HOME%\bin

New Edit Browse... Delete

Please bear in mind that we can accomplish the same thing using this command line:

```
C:\Windows\system32>setx /M PATH "%MAVEN_HOME%\bin;%PATH%"
```

Verify Mvn Installation

Now that we put all the pieces together, let's test if Apache Maven is successfully installed on Windows 10.

To verify the installation, we run:

```
C:\Users\fenago>mvn --version
Apache Maven 3.8.3 (05c21c65bdfed0f71a2f2ada8b84da59348c4c5d)
Maven home: C:\Users\fenago\Downloads\apache-maven-3.8.3\bin\..
Java version: 1.8.0_261, vendor: Oracle Corporation, runtime: C:\Program
Files\Java\jdk1.8.0_261\jre
Default locale: en_US, platform encoding: Cp1252
OS name: "windows 10", version: "10.0", arch: "amd64", family: "windows"

C:\Users\fenago>echo %MAVEN_HOME%
C:\Users\fenago\Downloads\apache-maven-3.8.3

C:\Users\fenago>
```

As shown above, the command indeed displays the Maven version, Maven bin folder, Java version, and operating system information.

Common Issues

1) *mvn is not recognized as an internal or external command*

```
C:\Users\fenago>mvn --version
'mvn' is not recognized as an internal or external command,
operable program or batch file.
```

This means that the installation is not done properly, make sure `%MAVEN_HOME%\bin` is prepended to the `PATH` variable the right way.

2) *JAVA_HOME environment variable is not defined correctly*

```
C:\Users\fenago>mvn --version
The JAVA_HOME environment variable is not defined correctly
This environment variable is needed to run this program
NB: JAVA_HOME should point to a JDK not a JRE
```

This simply means that JDK is not installed and the `JAVA_HOME` variable is not properly configured.

3) *Error: Could not find or load main class org.codehaus.plexus.classworlds.launcher.Launcher*

In this case, you need to download the binary zip archive file, instead of the source zip archive.

Conclusion

In this lab, we walked you through the steps of how to install Maven on Windows 10.