



ADITYA COLLEGE OF ENGINEERING & TECHNOLOGY

CI/CD Using DevOps

Maven

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Surampalem

Maven Installation

Step 1: Download Maven Zip File and Extract

1. Visit the <https://maven.apache.org/download.cgi> and download the version of Maven you want to install. The *Files* section contains the archives of the latest version. Access earlier versions using the archives link in the *Previous Releases* section.
2. Click on the appropriate link to download the binary zip archive of the latest version of Maven that is version 3.8.4.

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-3.8.4-bin.tar.gz	apache-maven-3.8.4-bin.tar.gz.sha512	apache-maven-3.8.4-bin.tar.gz.asc
Binary zip archive	apache-maven-3.8.4-bin.zip	apache-maven-3.8.4-bin.zip.sha512	apache-maven-3.8.4-bin.zip.asc
Source tar.gz archive	apache-maven-3.8.4-src.tar.gz	apache-maven-3.8.4-src.tar.gz.sha512	apache-maven-3.8.4-src.tar.gz.asc
Source zip archive	apache-maven-3.8.4-src.zip	apache-maven-3.8.4-src.zip.sha512	apache-maven-3.8.4-src.zip.asc



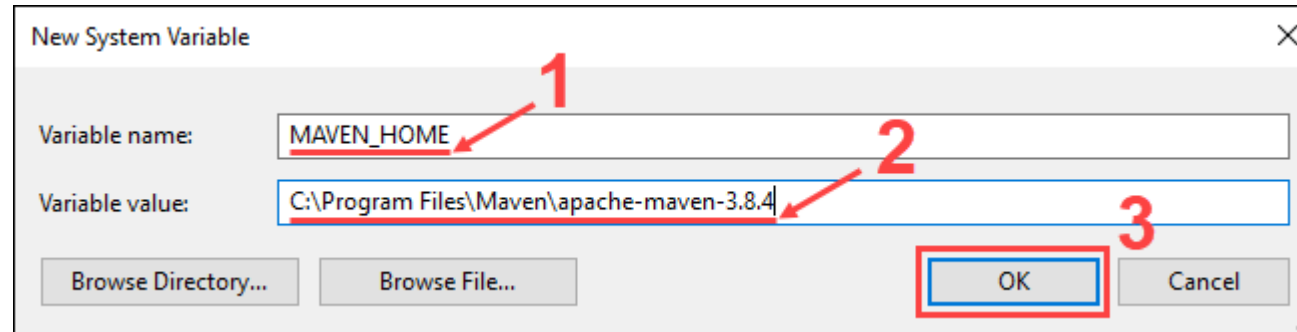
Maven Installation

3. Since there is no installation process, extract the Maven archive to a directory of your choice once the download is complete. For this tutorial, we are using *C:\Program Files\Maven\apache-maven-3.8.4*.

Step 2: Add MAVEN_HOME System Variable

1. Open the Start menu and search for [environment variables](#).
2. Click the **Edit the system environment variables** result.
3. Under the *Advanced tab* in the *System Properties* window, click **Environment Variables**.
4. Click the **New** button under the *System variables* section to add a new system environment variable.
5. Enter **MAVEN_HOME** as the variable name and the path to the Maven directory as the variable value. Click **OK** to save the new system variable.

Maven Installation





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Step 3: Add MAVEN_HOME Directory in PATH Variable

1. Select the **Path** variable under the *System variables* section in the *Environment Variables* window. Click the **Edit** button to edit the variable.
2. Click the **New** button in the *Edit environment variable* window.
3. Enter **%MAVEN_HOME%\bin** in the new field. Click **OK** to save changes to the **Path** variable.
4. Click **OK** in the *Environment Variables* window to save the changes to the system variables.

Step 4: Verify Maven Installation

use the following command to verify the installation by checking the current version of Maven:

- `mvn -version`



Creating Web Application using Maven Template

The easiest way to create a web project in maven is by using the maven archetype **maven-archetype-webapp**.

- Just open the command prompt and navigate to the folder where the project needs to be created.(Create folder and navigate to it)
- Run the below mentioned command, Maven will start executing the command and will create a complete project structure for a web based application.

mvn archetype:generate -DgroupId=com.sample.webproject -DartifactId=SampleWebApp -DarchetypeArtifactId=maven-archetype-webapp -DinteractiveMode=false

- groupId – a unique base name of the company or group that created the project.
- artifactId – a unique name of the project.



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```
C:\>cd mvn

C:\mvn>mvn archetype:generate -DgroupId=com.sample.webproject -DartifactId=SampleWebApp -DarchetypeArtifactId=maven-archetype-webapp -DinteractiveMode=false
[INFO] Scanning for projects...
[INFO]
[INFO] -----< org.apache.maven:standalone-pom >-----
[INFO] Building Maven Stub Project (No POM) 1
[INFO] -----[ pom ]-----
[INFO]
[INFO] >>> maven-archetype-plugin:3.2.1:generate (default-cli) > generate-sources @ standalone-pom >>>
[INFO]
[INFO] <<< maven-archetype-plugin:3.2.1:generate (default-cli) < generate-sources @ standalone-pom <<<
[INFO]
[INFO] --- maven-archetype-plugin:3.2.1:generate (default-cli) @ standalone-pom ---
[INFO] Generating project in Batch mode
[INFO]
[INFO] Using following parameters for creating project from Old (1.x) Archetype: maven-archetype-webapp:1.0
[INFO]
[INFO] Parameter: basedir, Value: C:\mvn
[INFO] Parameter: package, Value: com.sample.webproject
[INFO] Parameter: groupId, Value: com.sample.webproject
[INFO] Parameter: artifactId, Value: SampleWebApp
[INFO] Parameter: packageName, Value: com.sample.webproject
[INFO] Parameter: version, Value: 1.0-SNAPSHOT
[INFO] project created from Old (1.x) Archetype in dir: C:\mvn\SampleWebApp
[INFO]
[INFO] BUILD SUCCESS
[INFO]
[INFO] Total time: 19.251 s
[INFO] Finished at: 2022-10-10T15:16:45+05:30
[INFO]
```



Maven

Below is the project structure for a web application generated by the maven by using the **maven-archetype-webapp** plugin.

Folder Structure	Description
SampleWebApp	Contains source folder and pom.xml file.
src/main/webapp	Contains default index.jsp
src/main/webapp/WEB-INF	Contains web.xml file.
src/main/resources	Contains resource files used. (images or properties files).



Default Files Generated by using maven-archetype-webapp plugin

- **pom.xml** generated by the maven for the web application
- maven generates a sample JSP file called **index.jsp** with the contents as shown below:

```
<html>
```

```
<body>
```

```
<h2>Hello World!</h2>
```

```
</body>
```

```
</html>
```

Building and Deploying the Web App

- Just open the command prompt and navigate to the root folder of the web app and issue the command **mvn clean package**. This command will compile, test and generates a war file of the project.

```
WARNING: Please consider reporting this to the maintainers of com.thoughtworks.xstream.core.util.Fields
WARNING: Use --illegal-access=warn to enable warnings of further illegal reflective access operations
WARNING: All illegal access operations will be denied in a future release
[INFO] Packaging webapp
[INFO] Assembling webapp [SampleWebApp] in [C:\mvn\SampleWebApp\target\SampleWebApp]
[INFO] Processing war project
[INFO] Copying webapp resources [C:\mvn\SampleWebApp\src\main\webapp]
[INFO] Webapp assembled in [33 msecs]
[INFO] Building war: C:\mvn\SampleWebApp\target\SampleWebApp.war
[INFO] WEB-INF\web.xml already added, skipping
[INFO] -----
[INFO] BUILD SUCCESS
[INFO] -----
[INFO] Total time: 1.744 s
[INFO] Finished at: 2022-10-10T15:24:49+05:30
[INFO] -----
```



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```
C:\Windows\system32\cmd.exe

Downloading from central: https://repo.maven.apache.org/maven2/org/apache/maven/maven-archiver/3.1.1/maven-archiver-3.1.1.jar
Downloading from central: https://repo.maven.apache.org/maven2/org/codehaus/plexus/plexus-archiver/3.4/plexus-archiver-3.4.jar
Downloading from central: https://repo.maven.apache.org/maven2/org/codehaus/plexus/plexus-io/2.7.1/plexus-io-2.7.1.jar
Downloading from central: https://repo.maven.apache.org/maven2/org/apache/maven/shared/maven-shared-utils/3.0.1/maven-shared-utils-3.0.1.jar
Downloading from central: https://repo.maven.apache.org/maven2/org/apache/commons/commons-compress/1.11/commons-compress-1.11.jar
Downloaded from central: https://repo.maven.apache.org/maven2/org/codehaus/plexus/plexus-io/2.7.1/plexus-io-2.7.1.jar (86 kB at 141 kB/s)
Downloading from central: https://repo.maven.apache.org/maven2/org/tukaani/xz/1.5/xz-1.5.jar
Downloaded from central: https://repo.maven.apache.org/maven2/org/codehaus/plexus/plexus-archiver/3.4/plexus-archiver-3.4.jar (187 kB at 161 kB/s)
Downloaded from central: https://repo.maven.apache.org/maven2/org/apache/maven/maven-archiver/3.1.1/maven-archiver-3.1.1.jar (24 kB at 20 kB/s)
Downloaded from central: https://repo.maven.apache.org/maven2/org/apache/maven/shared/maven-shared-utils/3.0.1/maven-shared-utils-3.0.1.jar (154 kB at 124 kB/s)
Downloaded from central: https://repo.maven.apache.org/maven2/org/tukaani/xz/1.5/xz-1.5.jar (100 kB at 79 kB/s)
Downloaded from central: https://repo.maven.apache.org/maven2/org/apache/commons/commons-compress/1.11/commons-compress-1.11.jar (426 kB at 131 kB/s)
[INFO] Building jar: C:\mvn\trucks\target\trucks-1.0-SNAPSHOT.jar
[INFO] -----
[INFO] BUILD SUCCESS
[INFO] -----
[INFO] Total time: 43.414 s
[INFO] Finished at: 2022-09-30T15:31:22+05:30
[INFO] -----

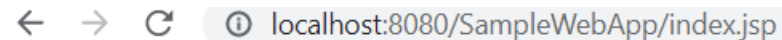
C:\mvn\trucks>
```

Maven

- Once the war file is generated, copy the war file into the target folder of the Web Server(Any web server that you use) and start the server. You can test the application by invoking the web project's URL:

`http://localhost:8080/<projectname>/index.jsp`

- Before that run the Tomcat services.



Hello World!

ANY QUERIES

