

Introduction to Maven





Agenda

- Apache Maven
- Objectives
- Repository
- How to Maven
- Project Object Model
- Command Line
- Maven Central

Maven

- What is Apache Maven?
 - Apache Maven is a software management and comprehension tool for java development

Maven

- Objectives
 - Dependency Management
 - Compile Source Code
 - Run Unit Test
 - Build Project
 - Deploy Code

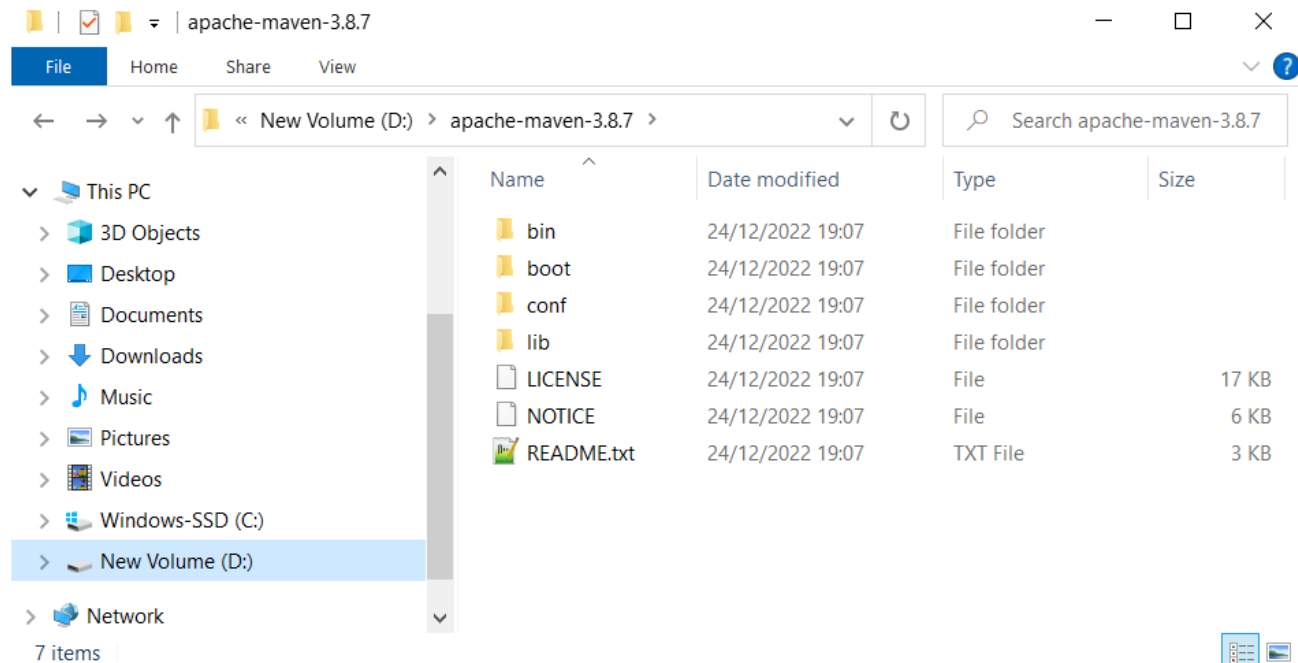


Maven

- Repository
 - Central Repository
 - maven repository or internet repository
 - Remote Repository
 - organization repository
 - Local Repository
 - client repository (cache into .m2 folder under user home directory)

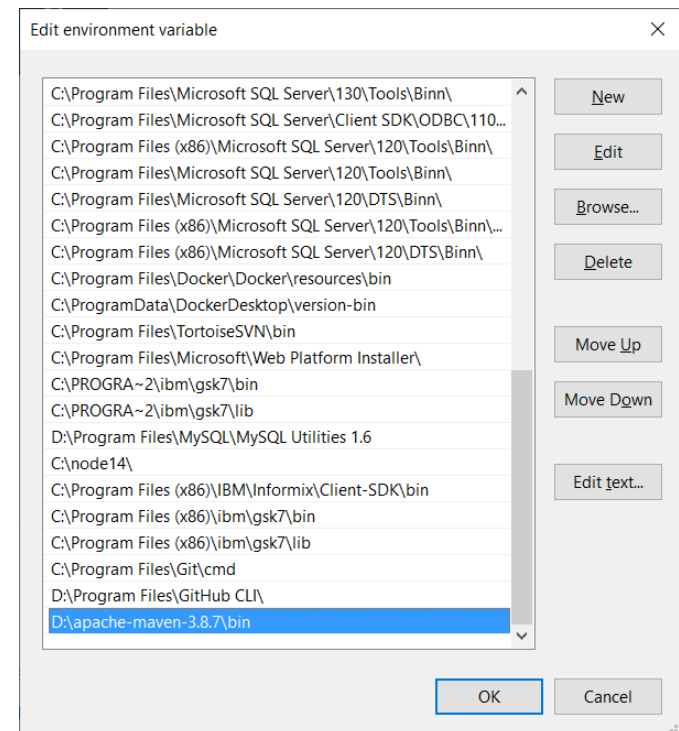
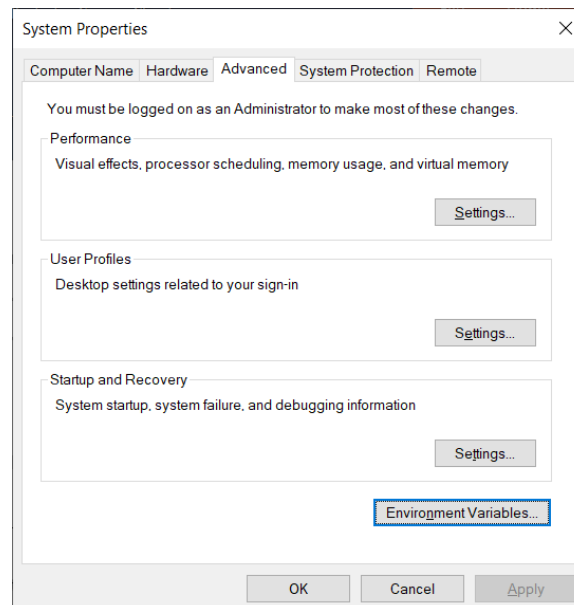
Maven

- How To Maven
 - Go to <https://maven.apache.org>
 - Download & Install
 - ex. apache-maven-3.8.7-bin.zip



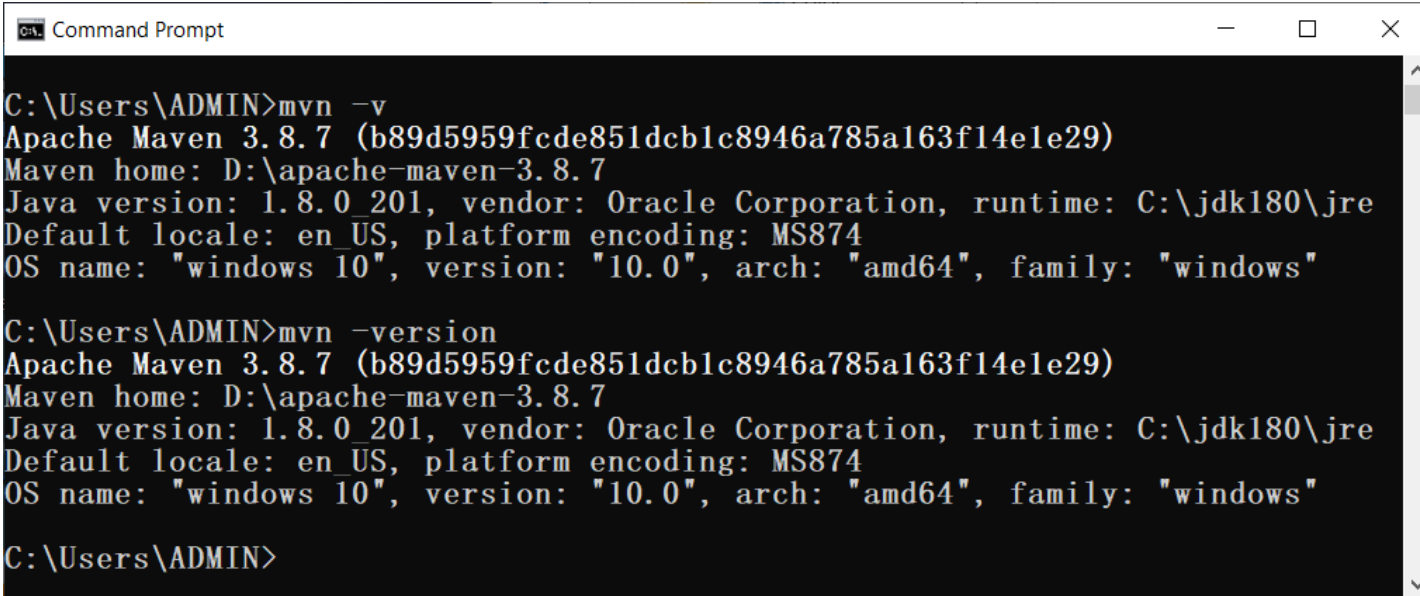
Maven

- How To Maven
 - Setting Environment
 - Settings -> System -> About -> Advanced System Setting -> Advanced -> Environment Variables



Maven

- How To Maven
 - Examine
 - mvn -v or mvn --version



```
Command Prompt

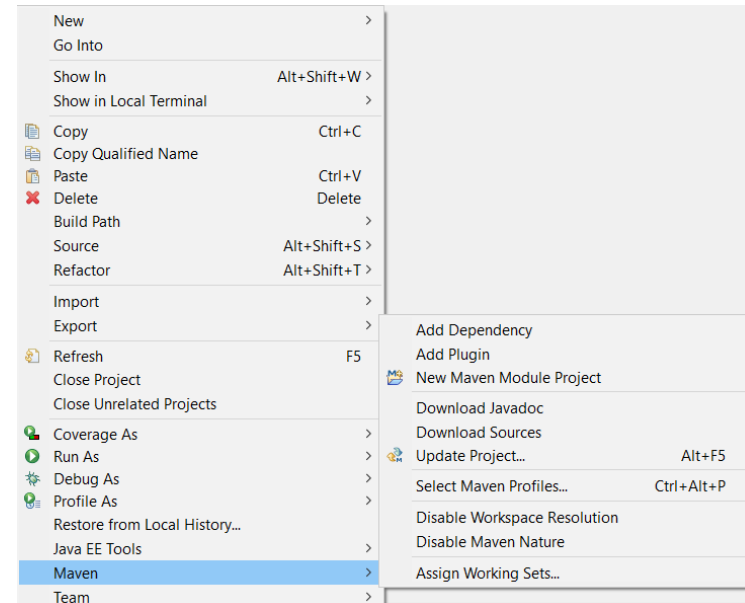
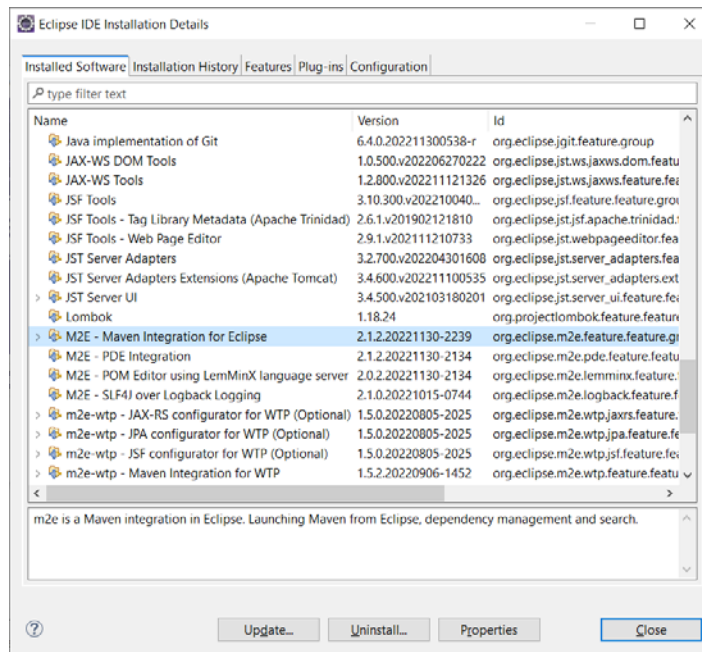
C:\Users\ADMIN>mvn -v
Apache Maven 3.8.7 (b89d5959fcde851dcb1c8946a785a163f14ele29)
Maven home: D:\apache-maven-3.8.7
Java version: 1.8.0_201, vendor: Oracle Corporation, runtime: C:\jdk180\jre
Default locale: en_US, platform encoding: MS874
OS name: "windows 10", version: "10.0", arch: "amd64", family: "windows"

C:\Users\ADMIN>mvn --version
Apache Maven 3.8.7 (b89d5959fcde851dcb1c8946a785a163f14ele29)
Maven home: D:\apache-maven-3.8.7
Java version: 1.8.0_201, vendor: Oracle Corporation, runtime: C:\jdk180\jre
Default locale: en_US, platform encoding: MS874
OS name: "windows 10", version: "10.0", arch: "amd64", family: "windows"

C:\Users\ADMIN>
```

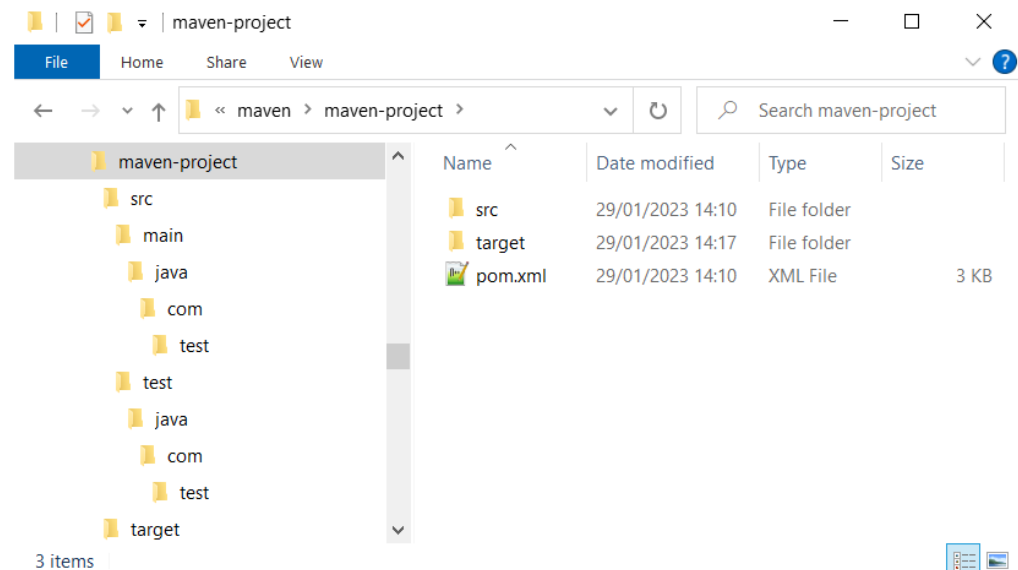

Maven

- How To Maven
 - IDE Plugin



Maven

- Project Structure
 - src folder – keep java file
 - target folder – keep class file
 - pom.xml – configuration file



Maven

- Project Object Model
 - pom.xml configuration file - I

```
<?xml version="1.0" encoding="UTF-8"?>
<project xmlns="http://maven.apache.org/POM/4.0.0" xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
xsi:schemaLocation="http://maven.apache.org/POM/4.0.0 http://maven.apache.org/xsd/maven-4.0.0.xsd"
<modelVersion>4.0.0</modelVersion>

<groupId>com.test</groupId>
<artifactId>maven-project</artifactId>
<version>1.0-SNAPSHOT</version>

<packaging>jar</packaging>

<name>maven-project</name>
<url>http://www.example.com</url>

<properties>
<project.build.sourceEncoding>UTF-8</project.build.sourceEncoding>
<maven.compiler.source>1.8</maven.compiler.source>
<maven.compiler.target>1.8</maven.compiler.target>
</properties>

<dependencies>
<dependency>
<groupId>junit</groupId>
<artifactId>junit</artifactId>
<version>4.11</version>
<scope>test</scope>
</dependency>
</dependencies>
```

Project Information

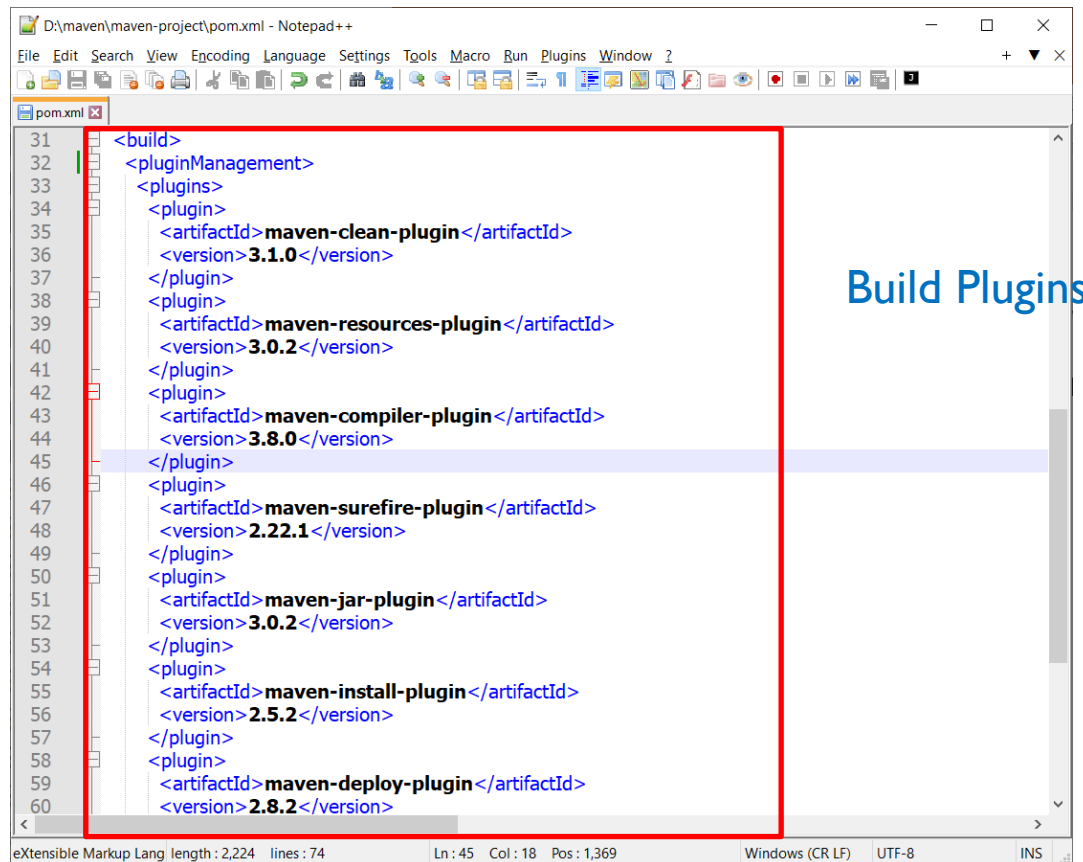
Output Result

Properties

Dependencies

Maven

- Project Object Model
 - pom.xml configuration file - II



```
31 <build>
32   <pluginManagement>
33     <plugins>
34       <plugin>
35         <artifactId>maven-clean-plugin</artifactId>
36         <version>3.1.0</version>
37       </plugin>
38       <plugin>
39         <artifactId>maven-resources-plugin</artifactId>
40         <version>3.0.2</version>
41       </plugin>
42       <plugin>
43         <artifactId>maven-compiler-plugin</artifactId>
44         <version>3.8.0</version>
45       </plugin>
46       <plugin>
47         <artifactId>maven-surefire-plugin</artifactId>
48         <version>2.22.1</version>
49       </plugin>
50       <plugin>
51         <artifactId>maven-jar-plugin</artifactId>
52         <version>3.0.2</version>
53       </plugin>
54       <plugin>
55         <artifactId>maven-install-plugin</artifactId>
56         <version>2.5.2</version>
57       </plugin>
58       <plugin>
59         <artifactId>maven-deploy-plugin</artifactId>
60         <version>2.8.2</version>
```

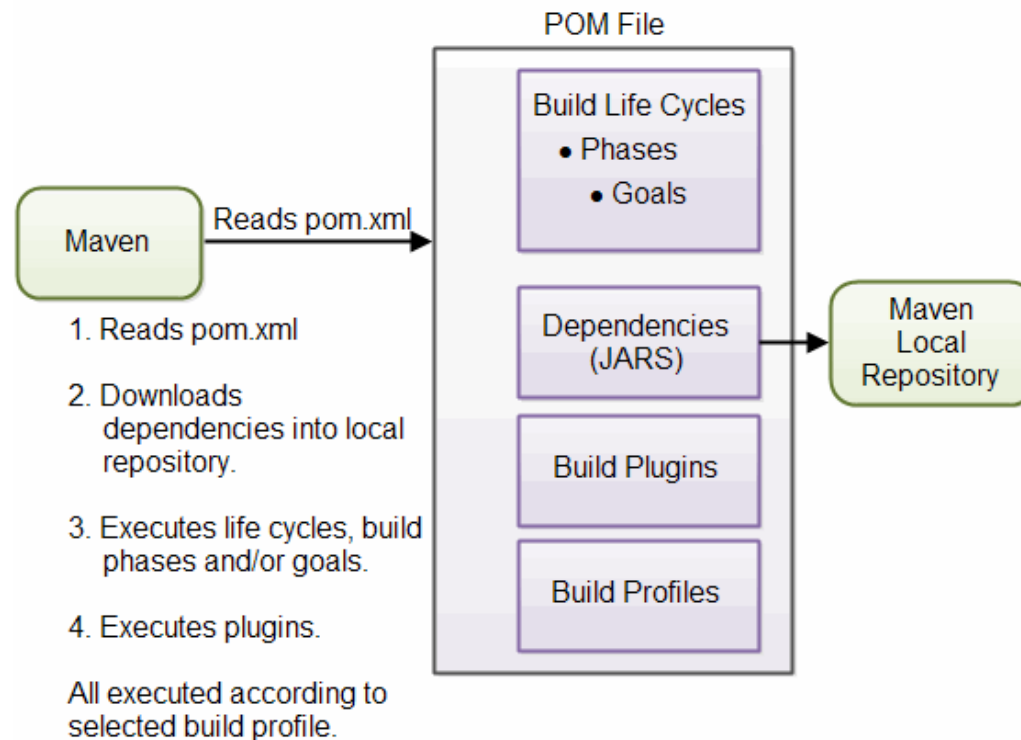
Build Plugins

Maven

- Project Object Model
 - Project Information
 - groupId – name space or project package
 - artifactId – unique application name
 - version – current version of artifact
 - Output Result – jar/war/ear
 - Properties – project configurations
 - Dependencies – project libraries
 - Build
 - plugins – requirement plugins

Maven

- Project Object Model
 - Life Cycle



Maven

- Command Line

Command	Description
<code>mvn archetype:generate</code>	Create new maven project
<code>mvn compile</code>	Compile java source code files
<code>mvn test</code>	Run test classes
<code>mvn clean</code>	Delete all class files
<code>mvn package</code>	Build jar/war file
<code>mvn install</code>	Build jar file and register to local repository (.m2 folder)
<code>mvn exec:java</code>	Run main class

Maven

- Command Line
 - mvn archetype:generate
 - jar package

```
Command Prompt - mvn archetype:generate

D:\maven>mvn archetype:generate
[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:3.2.0:generate (default-cli) > generate-sources @ standalone-pom >>>
[INFO]
[INFO] <<< maven-archetype-plugin:3.2.0:generate (default-cli) < generate-sources @ standalone-pom <<<
[INFO]
[INFO] --- maven-archetype-plugin:3.2.0:generate (default-cli) @ standalone-pom ---
[INFO] Generating project in Interactive mode
[INFO] No archetype defined. Using maven-archetype-quickstart (org.apache.maven.archetypes:maven-archetype-quickstart:1.0)
Choose archetype:
1: remote -> am.ik.archetype:elm-spring-boot-blank-archetype (Blank multi project for Spring Boot + Elm)
2: remote -> am.ik.archetype:graalvm-blank-archetype (Blank project for GraalVM)
3: remote -> am.ik.archetype:graalvm-springmvc-blank-archetype (Blank project for GraalVM + Spring MVC)
4: remote -> am.ik.archetype:graalvm-springwebflux-blank-archetype (Blank project for GraalVM + Spring MVC)
5: remote -> am.ik.archetype:maven-reactjs-blank-archetype (Blank Project for React.js)
6: remote -> am.ik.archetype:msgpack-rpc-jersey-blank-archetype (Blank Project for Spring Boot + Jersey)
7: remote -> am.ik.archetype:mvc-1.0-blank-archetype (MVC 1.0 Blank Project)
8: remote -> am.ik.archetype:spring-boot-blank-archetype (Blank Project for Spring Boot)
9: remote -> am.ik.archetype:spring-boot-docker-blank-archetype (Docker Blank Project for Spring Boot)
10: remote -> am.ik.archetype:spring-boot-gae-blank-archetype (GAE Blank Project for Spring Boot)
11: remote -> am.ik.archetype:spring-boot-jersey-blank-archetype (Blank Project for Spring Boot + Jersey)
12: remote -> am.ik.archetype:spring-fu-jafu-blank-archetype (Blank project for Vanilla Spring WebFlux.fn)
13: remote -> am.ik.archetype:vanilla-spring-webflux-fn-blank-archetype (Blank project for Vanilla Spring WebFlu
```


Maven

- Command Line
 - mvn archetype:generate
 - war package

```
Command Prompt - mvn archetype:generate
3215: remote -> us.fatehi:schemacrawler-archetype-maven-project (-)
3216: remote -> us.fatehi:schemacrawler-archetype-plugin-command (-)
3217: remote -> us.fatehi:schemacrawler-archetype-plugin-dbconnector (-)
3218: remote -> us.fatehi:schemacrawler-archetype-plugin-lint (-)
3219: remote -> ws.osiris:osiris-archetype (Maven Archetype for Osiris)
3220: remote -> xyz.luan.generator:xyz-gae-generator (-)
3221: remote -> xyz.luan.generator:xyz-generator (-)
3222: remote -> za.co.absa.hyperdrive:component-archetype (-)
3223: remote -> za.co.absa.hyperdrive:component-archetype_2.11 (-)
3224: remote -> za.co.absa.hyperdrive:component-archetype_2.12 (-)
Choose a number or apply filter (format: [groupId:]artifactId, case sensitive contains): 2005: 2010
Choose org.apache.maven.archetypes:maven-archetype-webapp version:
1: 1.0-alpha-1
2: 1.0-alpha-2
3: 1.0-alpha-3
4: 1.0-alpha-4
5: 1.0
6: 1.3
7: 1.4
Choose a number: 7:
Define value for property 'groupId': com.web
Define value for property 'artifactId': web1
Define value for property 'version' 1.0-SNAPSHOT: :
Define value for property 'package' com.web: :
Confirm properties configuration:
groupId: com.web
artifactId: web1
version: 1.0-SNAPSHOT
package: com.web
Y: : Y_
```

Maven

- Command Line
 - mvn archetype:generate
 - jar package

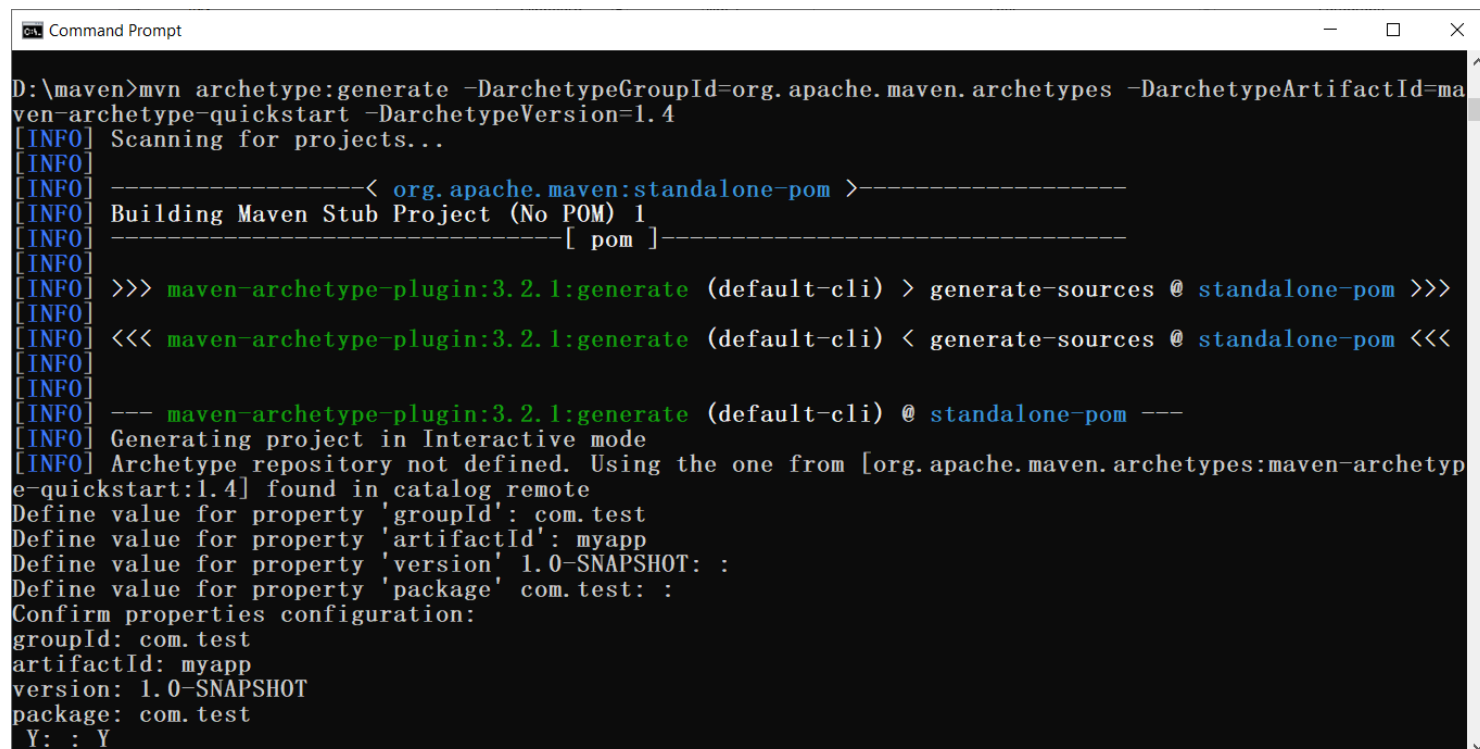
```
mvn archetype:generate -DarchetypeGroupId=org.apache.maven.archetypes \
-DarchetypeArtifactId=maven-archetype-quickstart -DarchetypeVersion=1.4
```

- war package

```
mvn archetype:generate -DarchetypeGroupId=org.apache.maven.archetypes \
-DarchetypeArtifactId=maven-archetype-webapp -DarchetypeVersion=1.4
```

Maven

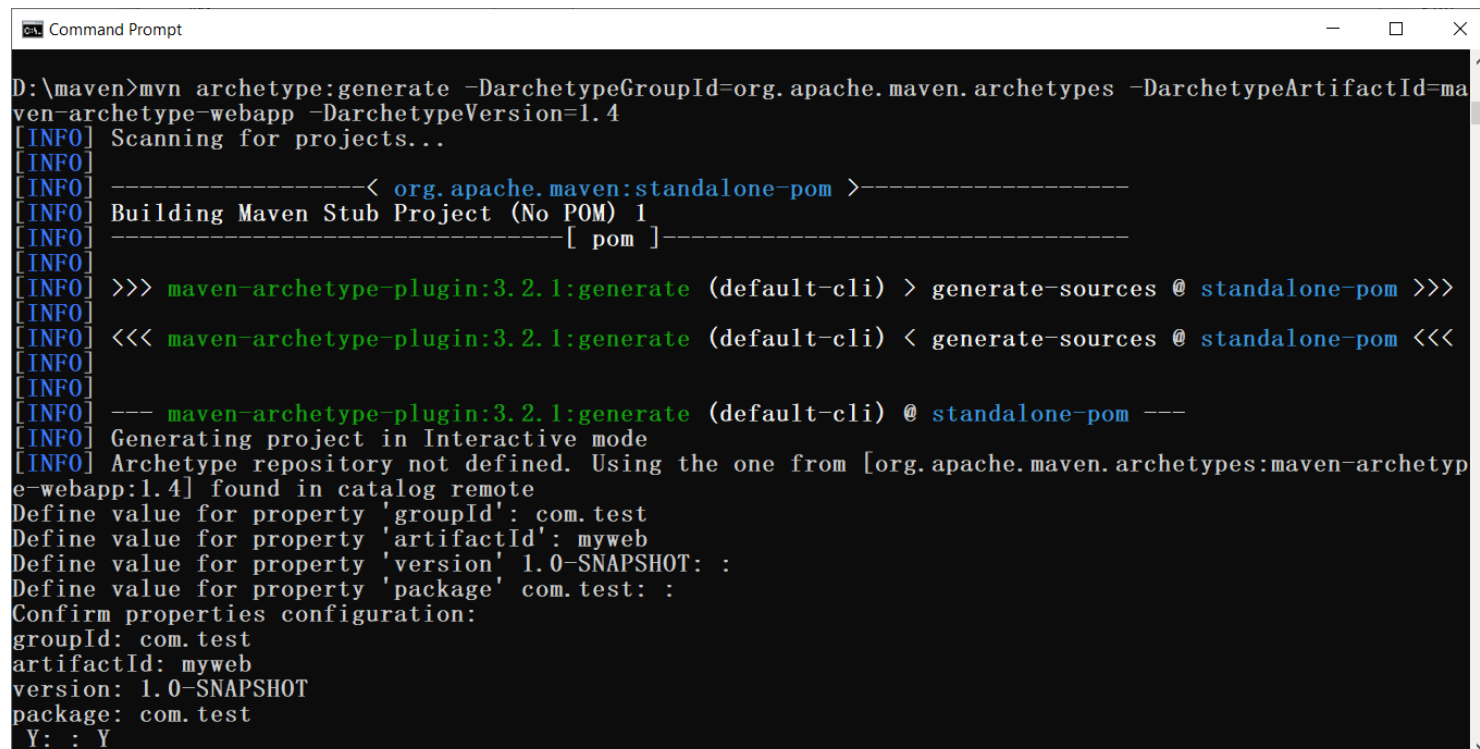
- Command Line
 - mvn archetype:generate
 - jar package



```
Command Prompt
D:\maven>mvn archetype:generate -DarchetypeGroupId=org.apache.maven.archetypes -DarchetypeArtifactId=maven-archetype-quickstart -DarchetypeVersion=1.4
[INFO] Scanning for projects...
[INFO] -----< org.apache.maven:standalone-pom >-----
[INFO] Building Maven Stub Project (No POM) 1
[INFO] -----[ pom ]-----
[INFO] >>> maven-archetype-plugin:3.2.1:generate (default-cli) > generate-sources @ standalone-pom >>>
[INFO] <<< maven-archetype-plugin:3.2.1:generate (default-cli) < generate-sources @ standalone-pom <<<
[INFO] --- maven-archetype-plugin:3.2.1:generate (default-cli) @ standalone-pom ---
[INFO] Generating project in Interactive mode
[INFO] Archetype repository not defined. Using the one from [org.apache.maven.archetypes:maven-archetype-quickstart:1.4] found in catalog remote
Define value for property 'groupId': com.test
Define value for property 'artifactId': myapp
Define value for property 'version' 1.0-SNAPSHOT: :
Define value for property 'package' com.test: :
Confirm properties configuration:
groupId: com.test
artifactId: myapp
version: 1.0-SNAPSHOT
package: com.test
Y: : Y
```

Maven

- Command Line
 - mvn archetype:generate
 - war package



```
Command Prompt
D:\maven>mvn archetype:generate -DarchetypeGroupId=org.apache.maven.archetypes -DarchetypeArtifactId=ma
ven-archetype-webapp -DarchetypeVersion=1.4
[INFO] Scanning for projects...
[INFO] -----< org.apache.maven:standalone-pom >-----
[INFO] Building Maven Stub Project (No POM) 1
[INFO] -----[ pom ]-----
[INFO] >>> maven-archetype-plugin:3.2.1:generate (default-cli) > generate-sources @ standalone-pom >>>
[INFO] <<< maven-archetype-plugin:3.2.1:generate (default-cli) < generate-sources @ standalone-pom <<<
[INFO] --- maven-archetype-plugin:3.2.1:generate (default-cli) @ standalone-pom ---
[INFO] Generating project in Interactive mode
[INFO] Archetype repository not defined. Using the one from [org.apache.maven.archetypes:maven-archetyp
e-webapp:1.4] found in catalog remote
Define value for property 'groupId': com.test
Define value for property 'artifactId': myweb
Define value for property 'version' 1.0-SNAPSHOT: :
Define value for property 'package' com.test: :
Confirm properties configuration:
groupId: com.test
artifactId: myweb
version: 1.0-SNAPSHOT
package: com.test
Y: : Y
```

Maven

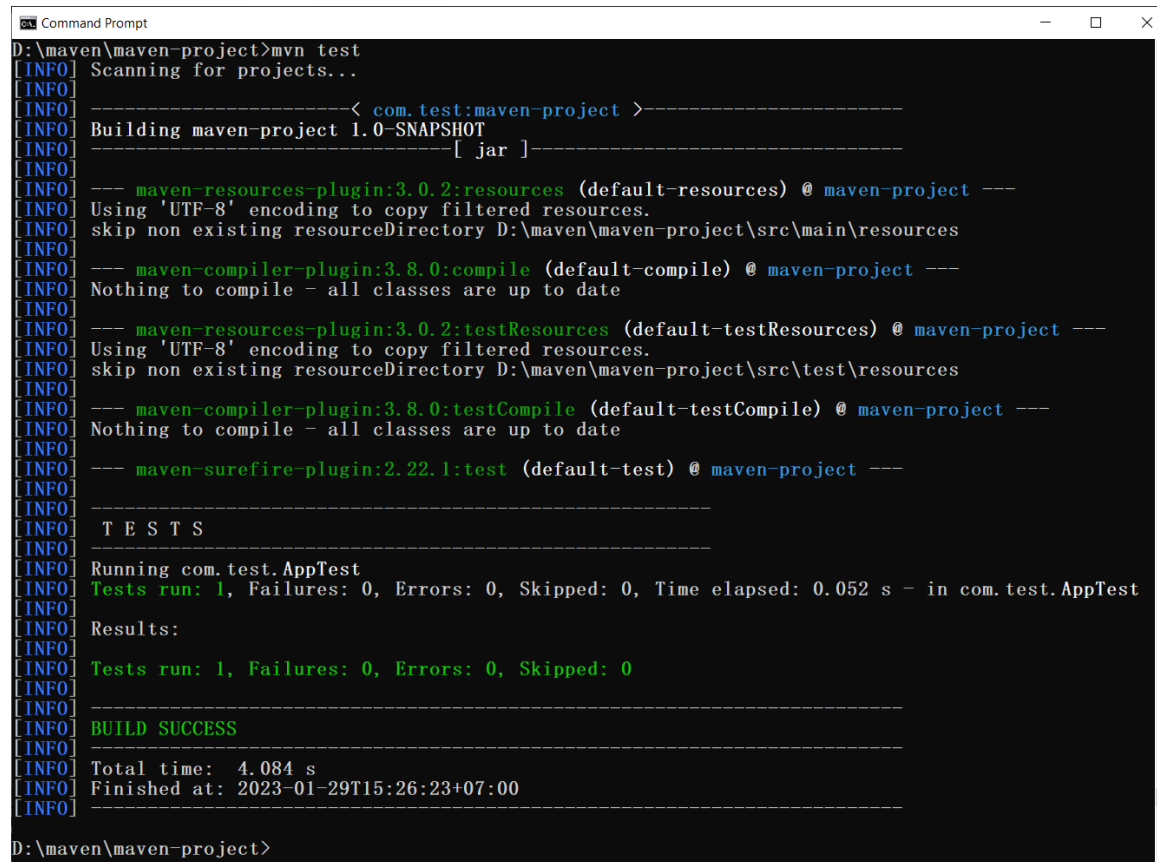
- Command Line
 - mvn compile

```
Command Prompt

D:\maven\maven-project>mvn compile
[INFO] Scanning for projects...
[INFO]
[INFO] -----< com.test:maven-project >-----
[INFO] Building maven-project 1.0-SNAPSHOT
[INFO] -----[ jar ]-----
[INFO]
[INFO] --- maven-resources-plugin:3.0.2:resources (default-resources) @ maven-project ---
[INFO] Using 'UTF-8' encoding to copy filtered resources.
[INFO] skip non existing resourceDirectory D:\maven\maven-project\src\main\resources
[INFO]
[INFO] --- maven-compiler-plugin:3.8.0:compile (default-compile) @ maven-project ---
[INFO] Changes detected - recompiling the module!
[INFO] Compiling 1 source file to D:\maven\maven-project\target\classes
[INFO]
[INFO] BUILD SUCCESS
[INFO]
[INFO] Total time: 1.966 s
[INFO] Finished at: 2023-01-29T14:17:09+07:00
[INFO]
D:\maven\maven-project>
```

Maven

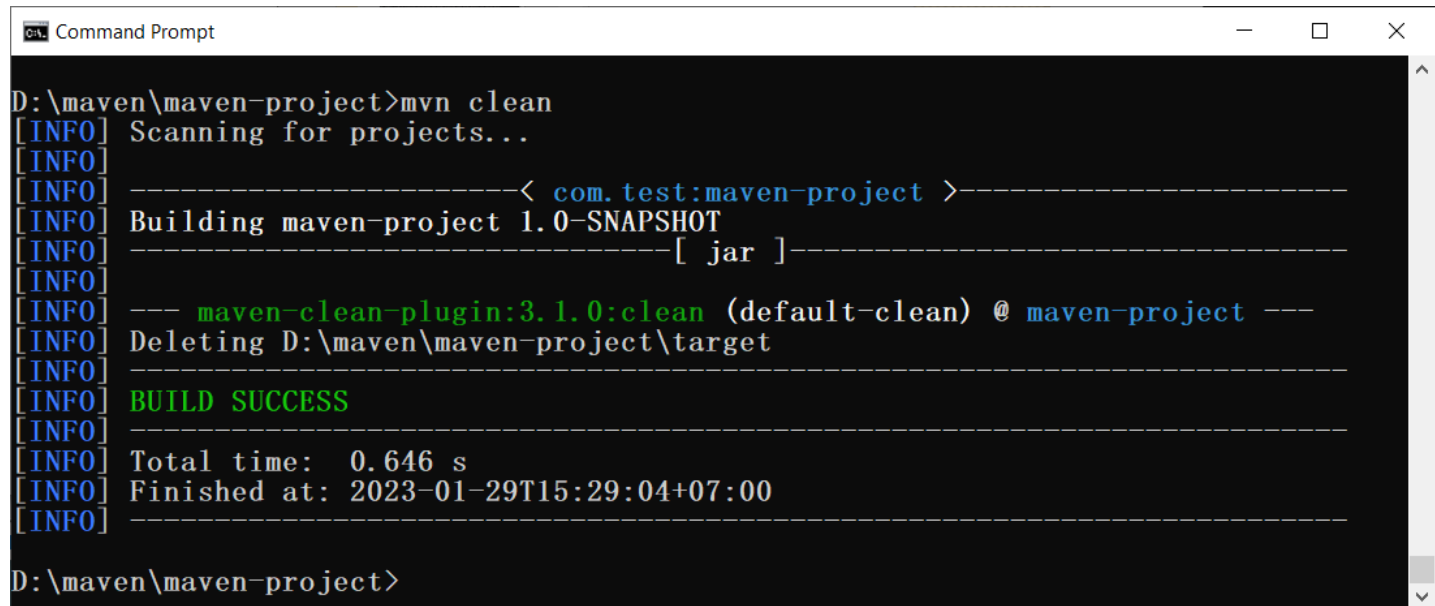
- Command Line
 - mvn test



```
D:\maven\maven-project>mvn test
[INFO] Scanning for projects...
[INFO]
[INFO] -----< com.test:maven-project >-----
[INFO] Building maven-project 1.0-SNAPSHOT
[INFO] -----[ jar ]-----
[INFO]
[INFO] --- maven-resources-plugin:3.0.2:resources (default-resources) @ maven-project ---
[INFO] Using 'UTF-8' encoding to copy filtered resources.
[INFO] skip non existing resourceDirectory D:\maven\maven-project\src\main\resources
[INFO]
[INFO] --- maven-compiler-plugin:3.8.0:compile (default-compile) @ maven-project ---
[INFO] Nothing to compile - all classes are up to date
[INFO]
[INFO] --- maven-resources-plugin:3.0.2:testResources (default-testResources) @ maven-project ---
[INFO] Using 'UTF-8' encoding to copy filtered resources.
[INFO] skip non existing resourceDirectory D:\maven\maven-project\src\test\resources
[INFO]
[INFO] --- maven-compiler-plugin:3.8.0:testCompile (default-testCompile) @ maven-project ---
[INFO] Nothing to compile - all classes are up to date
[INFO]
[INFO] --- maven-surefire-plugin:2.22.1:test (default-test) @ maven-project ---
[INFO]
[INFO] T E S T S
[INFO]
[INFO] Running com.test.AppTest
[INFO] Tests run: 1, Failures: 0, Errors: 0, Skipped: 0, Time elapsed: 0.052 s - in com.test.AppTest
[INFO]
[INFO] Results:
[INFO]
[INFO] Tests run: 1, Failures: 0, Errors: 0, Skipped: 0
[INFO]
[INFO]
[INFO] BUILD SUCCESS
[INFO]
[INFO] Total time: 4.084 s
[INFO] Finished at: 2023-01-29T15:26:23+07:00
[INFO]
D:\maven\maven-project>
```

Maven

- Command Line
 - mvn clean



```
Command Prompt
D:\maven\maven-project>mvn clean
[INFO] Scanning for projects...
[INFO]
[INFO] -----< com.test:maven-project >-----
[INFO] Building maven-project 1.0-SNAPSHOT
[INFO] -----[ jar ]-----
[INFO]
[INFO] --- maven-clean-plugin:3.1.0:clean (default-clean) @ maven-project ---
[INFO] Deleting D:\maven\maven-project\target
[INFO]
[INFO] BUILD SUCCESS
[INFO]
[INFO] Total time: 0.646 s
[INFO] Finished at: 2023-01-29T15:29:04+07:00
[INFO]
D:\maven\maven-project>
```

Maven

- Command Line
 - mvn package

```
Command Prompt
D:\maven\maven-project>mvn package
[INFO] Scanning for projects...
[INFO]
[INFO] < com.test:maven-project >
[INFO] Building maven-project 1.0-SNAPSHOT
[INFO] [ jar ]
[INFO]
[INFO] --- maven-resources-plugin:3.0.2:resources (default-resources) @ maven-project ---
[INFO] Using 'UTF-8' encoding to copy filtered resources.
[INFO] skip non existing resourceDirectory D:\maven\maven-project\src\main\resources
[INFO]
[INFO] --- maven-compiler-plugin:3.8.0:compile (default-compile) @ maven-project ---
[INFO] Changes detected - recompiling the module!
[INFO] Compiling 1 source file to D:\maven\maven-project\target\classes
[INFO]
[INFO] --- maven-resources-plugin:3.0.2:testResources (default-testResources) @ maven-project ---
[INFO] Using 'UTF-8' encoding to copy filtered resources.
[INFO] skip non existing resourceDirectory D:\maven\maven-project\src\test\resources
[INFO]
[INFO] --- maven-compiler-plugin:3.8.0:testCompile (default-testCompile) @ maven-project ---
[INFO] Changes detected - recompiling the module!
[INFO] Compiling 1 source file to D:\maven\maven-project\target\test-classes
[INFO]
[INFO] --- maven-surefire-plugin:2.22.1:test (default-test) @ maven-project ---
[INFO]
[INFO] T E S T S
[INFO]
[INFO] Running com.test.AppTest
[INFO] Tests run: 1, Failures: 0, Errors: 0, Skipped: 0, Time elapsed: 0.041 s - in com.test.AppTest
[INFO]
[INFO] Results:
[INFO]
[INFO] Tests run: 1, Failures: 0, Errors: 0, Skipped: 0
[INFO]
[INFO] --- maven-jar-plugin:3.0.2:jar (default-jar) @ maven-project ---
[INFO] Building jar: D:\maven\maven-project\target\maven-project-1.0-SNAPSHOT.jar
[INFO]
[INFO] BUILD SUCCESS
[INFO]
[INFO] Total time: 5.219 s
```

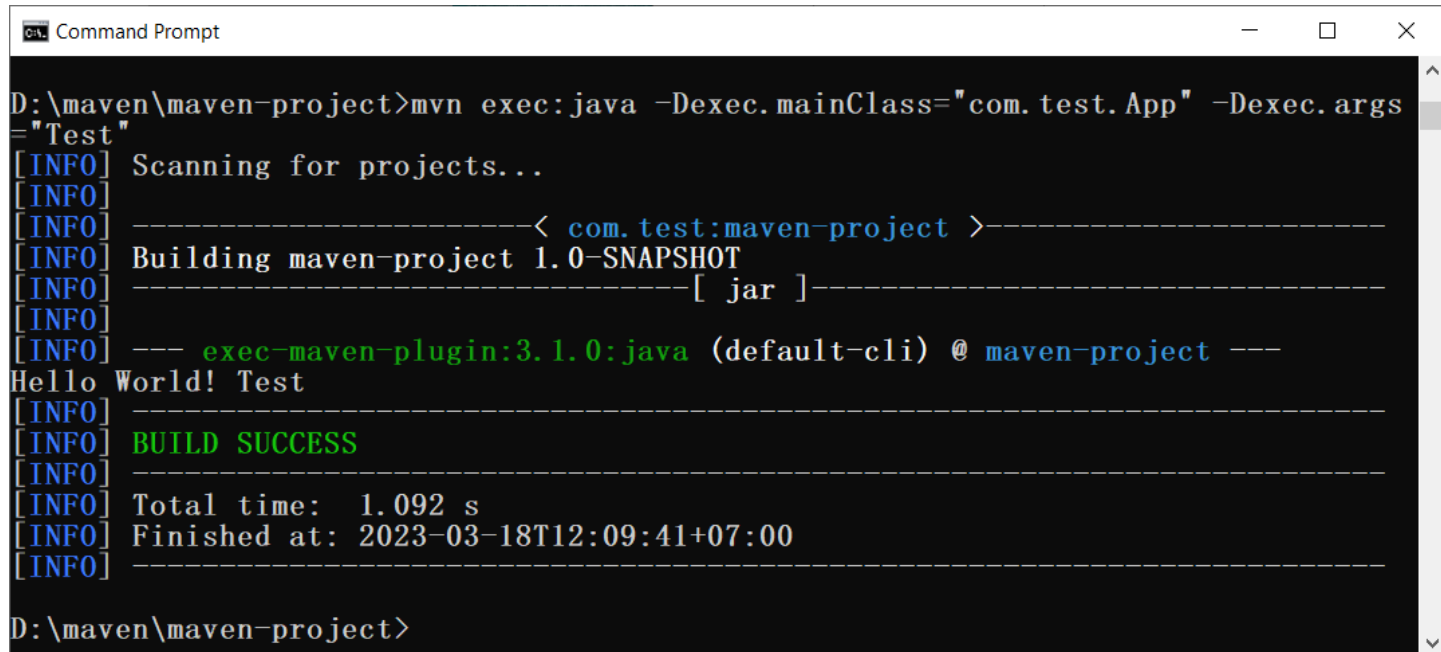

Maven

- Command Line
 - mvn install

```
Command Prompt
D:\maven\maven-project>mvn install
[INFO] Scanning for projects...
[INFO]
[INFO] -----< com.test:maven-project >-----
[INFO] Building maven-project 1.0-SNAPSHOT
[INFO] -----[ jar ]-----
[INFO]
[INFO] --- maven-resources-plugin:3.0.2:resources (default-resources) @ maven-project ---
[INFO] Using 'UTF-8' encoding to copy filtered resources.
[INFO] skip non existing resourceDirectory D:\maven\maven-project\src\main\resources
[INFO]
[INFO] --- maven-compiler-plugin:3.8.0:compile (default-compile) @ maven-project ---
[INFO] Nothing to compile - all classes are up to date
[INFO]
[INFO] --- maven-resources-plugin:3.0.2:testResources (default-testResources) @ maven-project ---
[INFO] Using 'UTF-8' encoding to copy filtered resources.
[INFO] skip non existing resourceDirectory D:\maven\maven-project\src\test\resources
[INFO]
[INFO] --- maven-compiler-plugin:3.8.0:testCompile (default-testCompile) @ maven-project ---
[INFO] Nothing to compile - all classes are up to date
[INFO]
[INFO] --- maven-surefire-plugin:2.22.1:test (default-test) @ maven-project ---
[INFO]
[INFO] T E S T S
[INFO]
[INFO] Running com.test.AppTest
[INFO] Tests run: 1, Failures: 0, Errors: 0, Skipped: 0, Time elapsed: 0.044 s - in com.test.AppTest
[INFO]
[INFO] Results:
[INFO]
[INFO] Tests run: 1, Failures: 0, Errors: 0, Skipped: 0
[INFO]
[INFO] --- maven-jar-plugin:3.0.2:jar (default-jar) @ maven-project ---
[INFO]
[INFO] --- maven-install-plugin:2.5.2:install (default-install) @ maven-project ---
[INFO] Installing D:\maven\maven-project\target\maven-project-1.0-SNAPSHOT.jar to C:\Users\ADMIN\.m2\repository\com\test\maven-project\1.0-SNAPSHOT\maven-project-1.0-SNAPSHOT.jar
[INFO] Installing D:\maven\maven-project\pom.xml to C:\Users\ADMIN\.m2\repository\com\test\maven-project\1.0-SNAPSHOT\maven-project-1.0-SNAPSHOT.pom
[INFO]
```

Maven

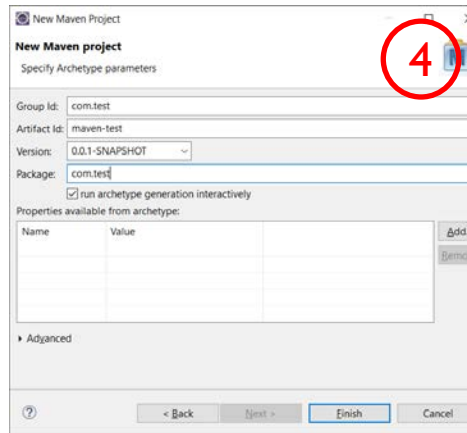
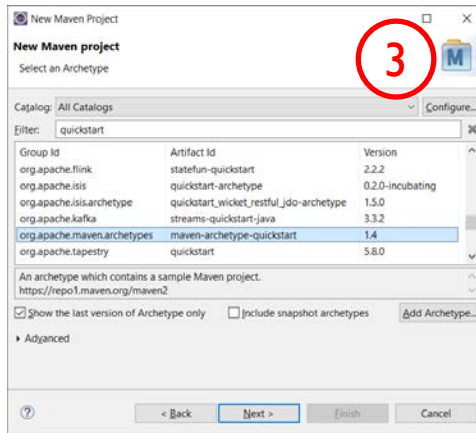
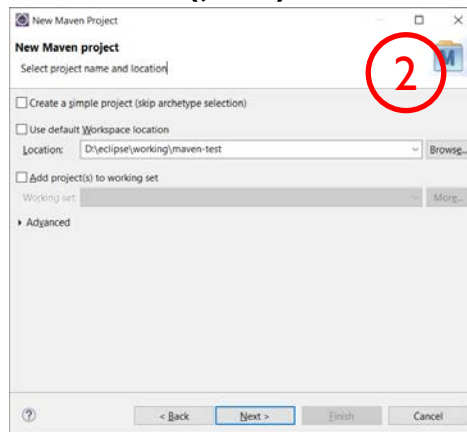
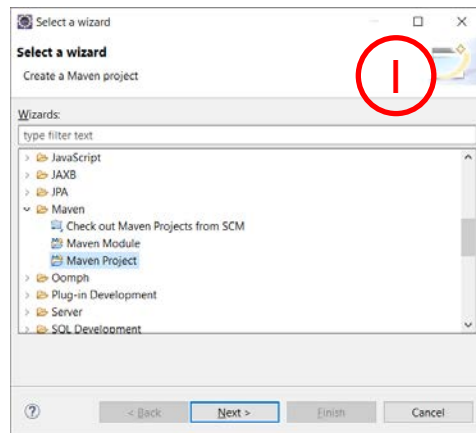
- Command Line
 - `mvn exec:java -Dexec.mainClass="main.Class" -Dexec.args="pr1 pr2 pr3 prN"`



```
Command Prompt
D:\maven\maven-project>mvn exec:java -Dexec.mainClass="com.test.App" -Dexec.args="Test"
[INFO] Scanning for projects...
[INFO] -----< com.test:maven-project >-----
[INFO] Building maven-project 1.0-SNAPSHOT
[INFO] -----[ jar ]-----
[INFO] --- exec-maven-plugin:3.1.0:java (default-cli) @ maven-project ---
Hello World! Test
[INFO] -----
[INFO] BUILD SUCCESS
[INFO] -----
[INFO] Total time: 1.092 s
[INFO] Finished at: 2023-03-18T12:09:41+07:00
[INFO] -----
D:\maven\maven-project>
```

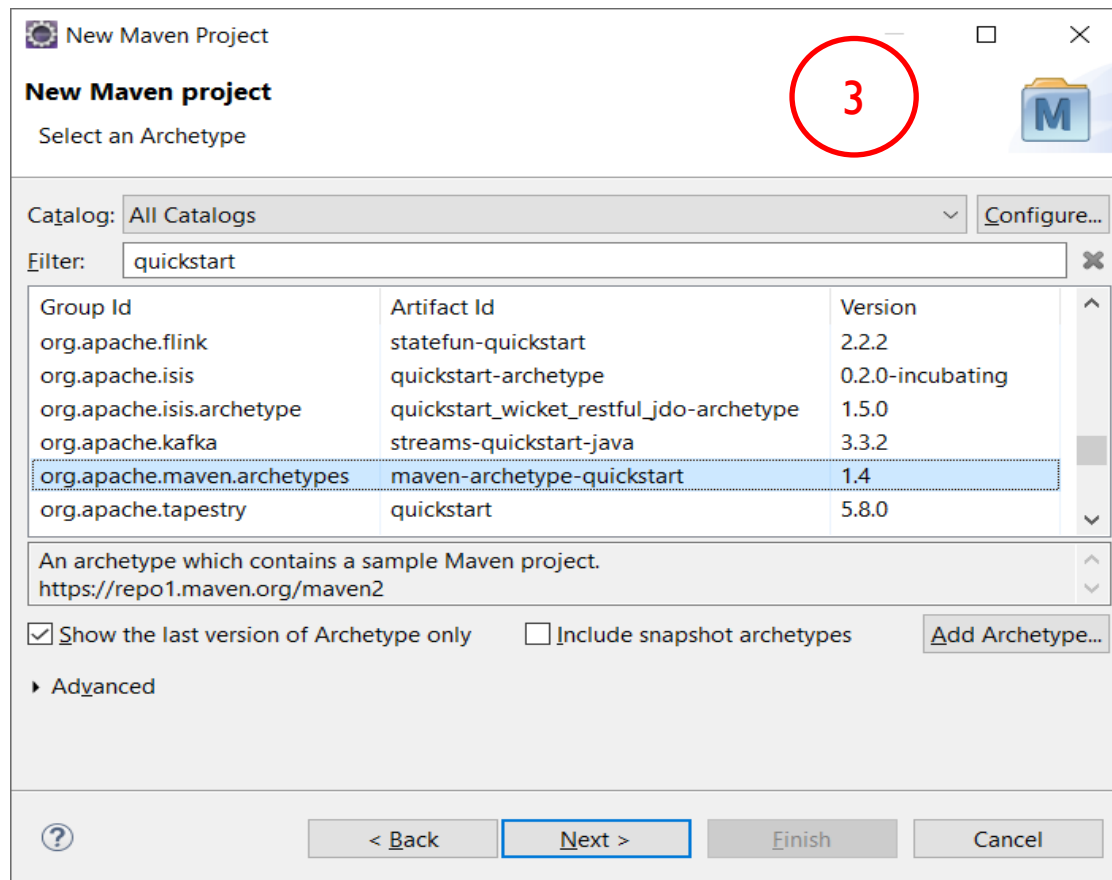
Maven

- Eclipse IDE Plugin
 - File -> New -> Other (jar)



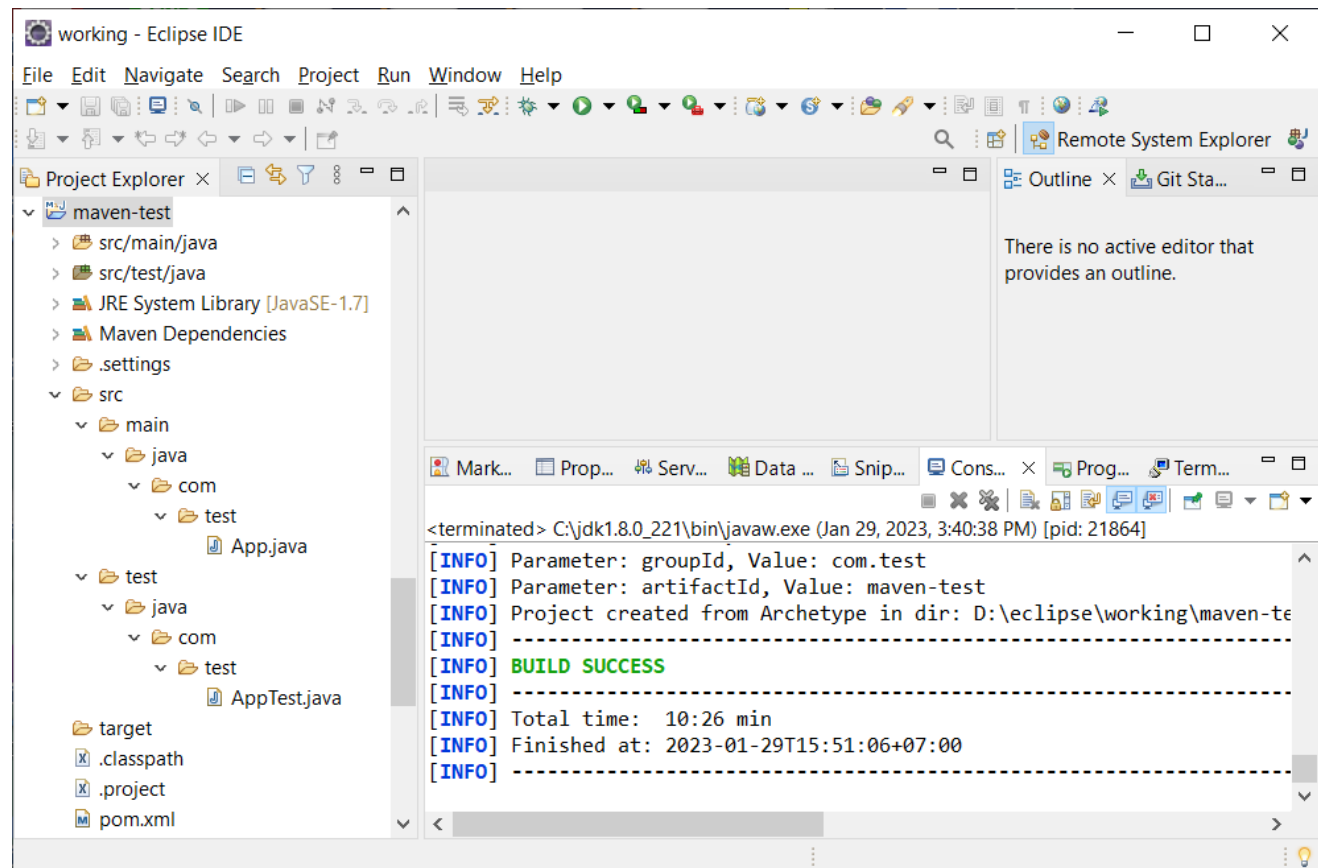
Maven

- Eclipse IDE Plugin
 - File -> New -> Other (jar)



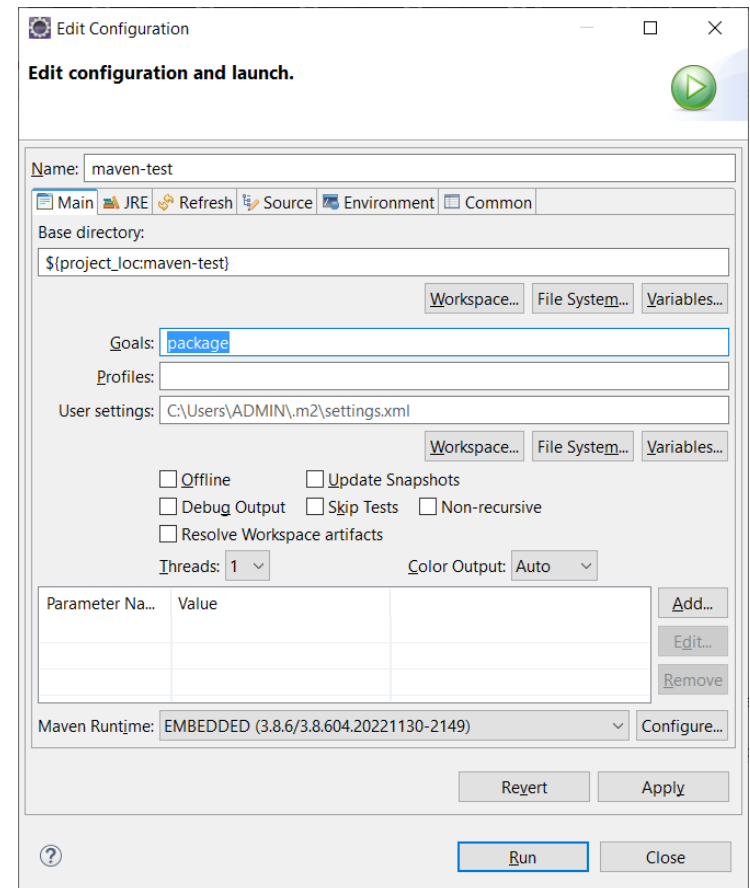
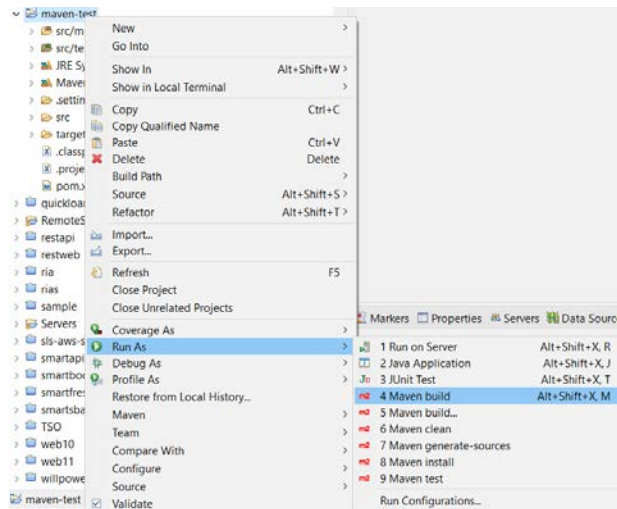
Maven

- Eclipse IDE Plugin
 - java project



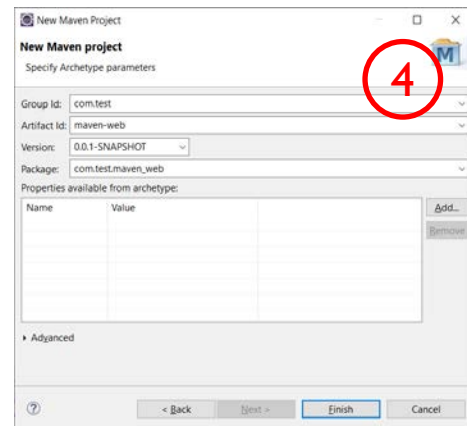
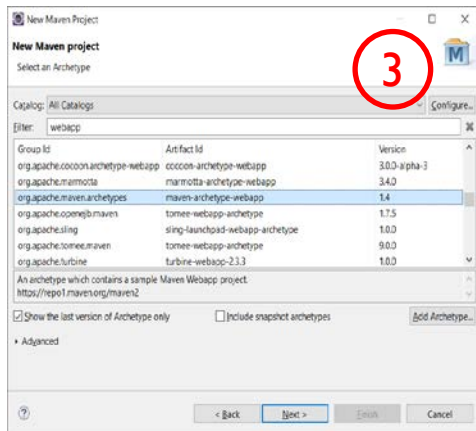
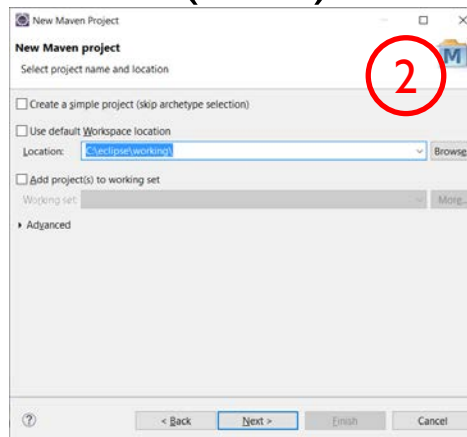
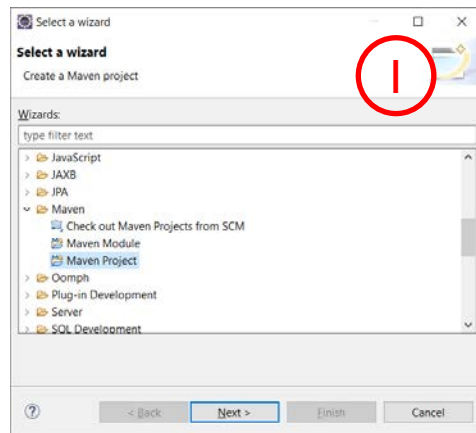
Maven

- Eclipse IDE Plugin
 - build



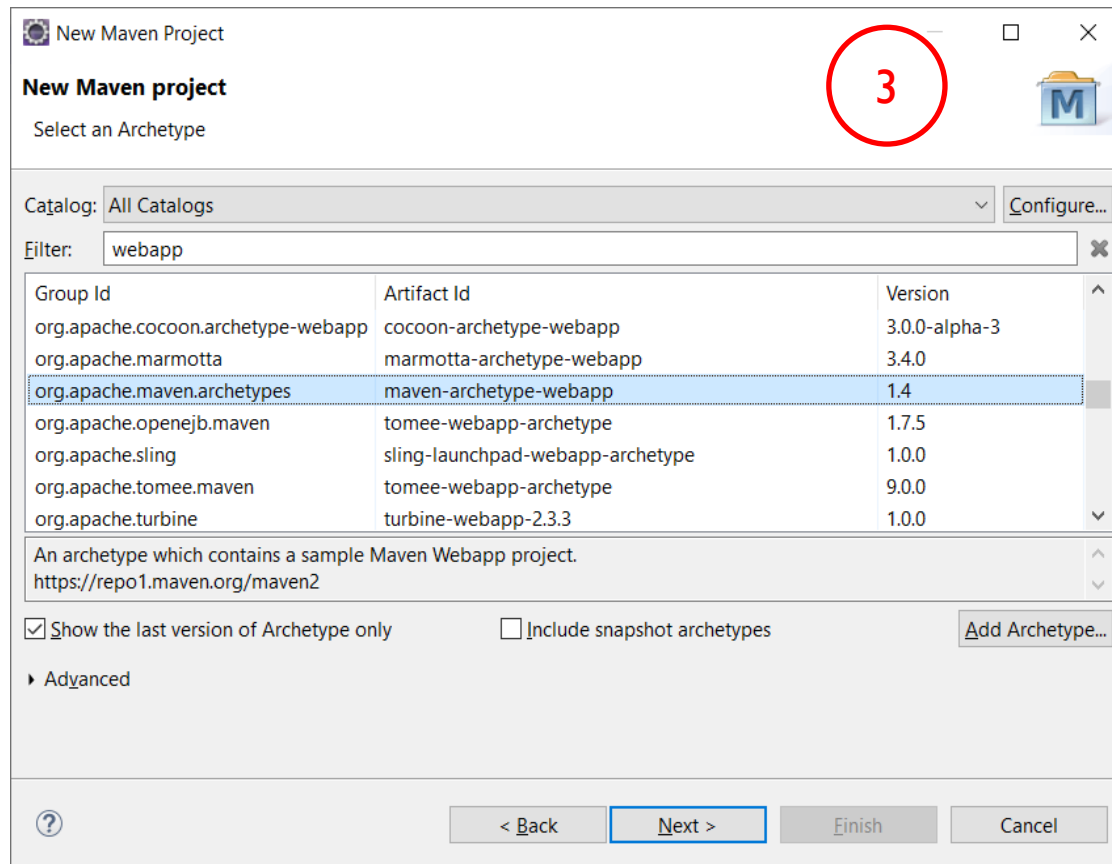
Maven

- Eclipse IDE Plugin
 - File -> New -> Other (war)



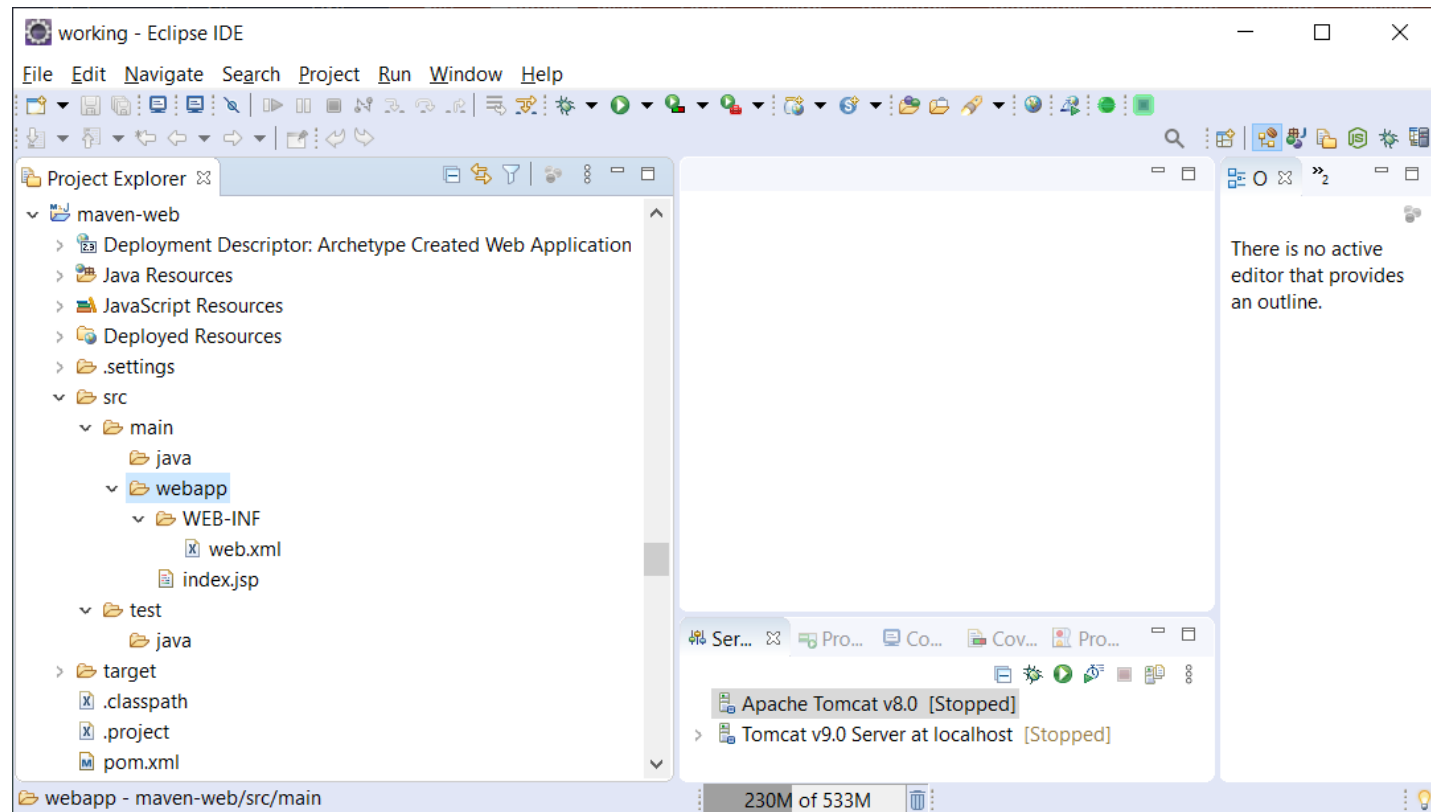
Maven

- Eclipse IDE Plugin
 - File -> New -> Other (war)



Maven

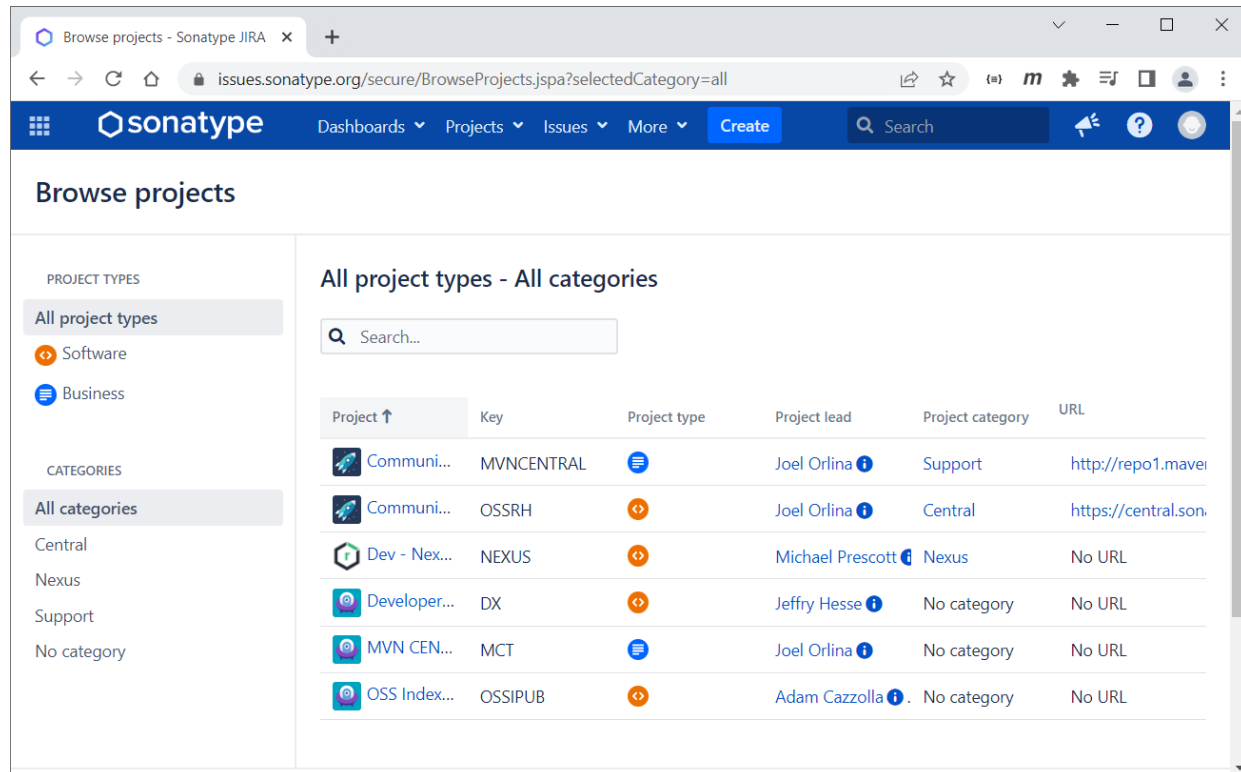
- Eclipse IDE Plugin
 - web project



Maven

- Maven Central

- Go to <https://issues.sonatype.org> try to register



Browse projects - Sonatype JIRA

issues.sonatype.org/secure/BrowseProjects.jspa?selectedCategory=all

sonatype Dashboards Projects Issues More Create Search

Browse projects

PROJECT TYPES

- All project types
- Software
- Business

CATEGORIES

- All categories
- Central
- Nexus
- Support
- No category

All project types - All categories

Search...

Project ↑	Key	Project type	Project lead	Project category	URL
Communi...	MVNCENTRAL		Joel Orlina	Support	http://repo1.maven.org/maven2/
Communi...	OSSRH		Joel Orlina	Central	https://central.sonatype.org/
Dev - Nex...	NEXUS		Michael Prescott	Nexus	No URL
Developer...	DX		Jeffry Hesse	No category	No URL
MVN CEN...	MCT		Joel Orlina	No category	No URL
OSS Index...	OSSIPUB		Adam Cazzolla	No category	No URL

Maven

- Maven Central
 - Create issue to request

The screenshot shows a web browser window with the URL `issues.sonatype.org/secure/BrowseProjects.jspa?selectedCategory=all`. The page title is "Create Issue - Sonatype JIRA". The Sonatype logo and navigation menu are visible at the top. The main heading is "Browse projects". On the left, there are sections for "PROJECT TYPES" (All project types, Software, Business) and "CATEGORIES" (All categories, Central, Nexus, Support, No category). A "Create Issue" modal dialog is open in the center. It has a "Configure Fields" button in the top right. The dialog contains the text "All fields marked with an asterisk (*) are required". It has two dropdown menus: "Project*" with the value "Community Support - Open ..." and "Issue Type*" with the value "New Project" and a help icon. Below these is a text box with the message: "This Jira project is for issues related to *publishing* to Maven Central. Selecting the correct **Issue Type** will help us process your ticket faster:". Below the text box is a bullet point: "• **New Project:** For registering a new Group ID on OSSRH for publishing to Central". At the bottom of the dialog are the options "Create another" (unchecked), "Create" (button), and "Cancel" (button).

Create Issue Configure Fields

All fields marked with an asterisk (*) are required

Project* Community Support - Open ...

Issue Type* New Project ?

This Jira project is for issues related to *publishing* to Maven Central. Selecting the correct **Issue Type** will help us process your ticket faster:

- **New Project:** For registering a new Group ID on OSSRH for publishing to Central

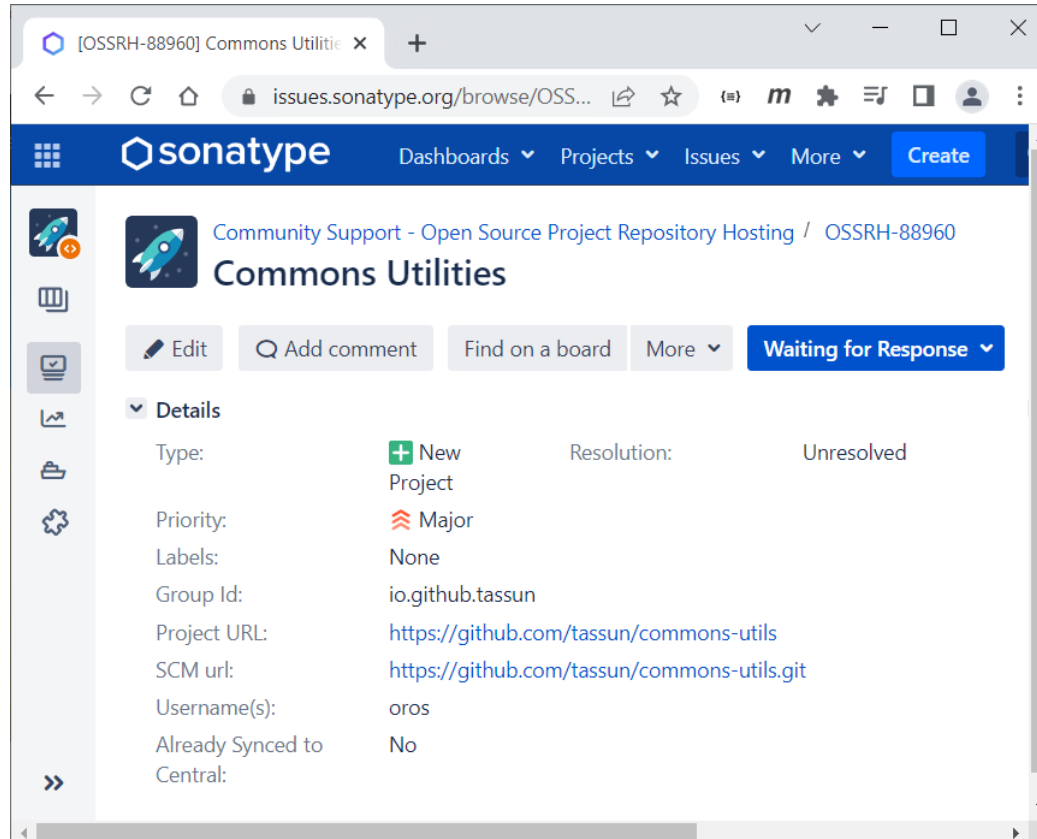
☐ Create another Create Cancel

Maven

- Maven Central
 - Create issue to request
 - Project: Community Support - Open Source Project Repository Hosting
 - Issue Type: New Project
 - Summary: Description of your library
 - Group Id: Your GROUP_ID
 - Project URL: URL of your library
 - SCM URL: URL of your Source Control

Maven

- Maven Central
 - Create issue to request



The screenshot shows a web browser window displaying a Sonatype Commons Utilities issue page. The browser's address bar shows the URL `issues.sonatype.org/browse/OSS...`. The Sonatype logo and navigation menu are at the top. The issue title is "Community Support - Open Source Project Repository Hosting / OSSRH-88960 Commons Utilities". Below the title, there are buttons for "Edit", "Add comment", "Find on a board", and "More", along with a status button "Waiting for Response". The "Details" section is expanded, showing the following information:

Type:	New Project	Resolution:	Unresolved
Priority:	Major		
Labels:	None		
Group Id:	io.github.tassun		
Project URL:	https://github.com/tassun/commons-utils		
SCM url:	https://github.com/tassun/commons-utils.git		
Username(s):	oros		
Already Synced to Central:	No		

Maven

- Maven Central
 - Create issue to request
 - About Group ID

Service	Example groupId
GitHub	io.github.myusername
GitLab	io.gitlab.myusername
Gitee	io.gitee.myusername
Bitbucket	io.bitbucket.myusername
SourceForge	io.sourceforge.myusername

Maven

- Maven Central
 - Edit pom.xml - license, developer and SCM

```
<licenses>
    <license>
        <name>The Apache License,Version 2.0</name>
        <url>http://www.apache.org/licenses/LICENSE-2.0.txt</url>
    </license>
</licenses>
<developers>
    <developer>
        <id>tassun</id>
        <name>Tassun Oros</name>
        <email>tassun_oro@hotmail.com</email>
    </developer>
</developers>
<scm>
    <connection>scm:git:git@github.com:tassun/commons-utils.git</connection>
    <developerConnection>scm:git:ssh://github.com:tassun/commons-utils.git</developerConnection>
    <url>https://github.com/tassun/commons-utils/tree/master</url>
</scm>
```

Maven

- Maven Central
 - Edit pom.xml - repository setup

```
<distributionManagement>
  <snapshotRepository>
    <id>ossrh</id>
    <url>https://s01.oss.sonatype.org/content/repositories/snapshots</url>
  </snapshotRepository>
  <repository>
    <id>ossrh</id>
    <url>https://s01.oss.sonatype.org/service/local/staging/deploy/maven2/</url>
  </repository>
</distributionManagement>
```


Maven

- Maven Central
 - Edit pom.xml - plugin

```
<plugin>
  <groupId>org.apache.maven.plugins</groupId>
  <artifactId>maven-source-plugin</artifactId>
  <version>3.2.1</version>
  <executions>
    <execution>
      <id>attach-sources</id>
      <goals>
        <goal>jar-no-fork</goal>
      </goals>
    </execution>
  </executions>
</plugin>
```

```
<plugin>
  <groupId>org.apache.maven.plugins</groupId>
  <artifactId>maven-javadoc-plugin</artifactId>
  <version>3.2.0</version>
  <executions>
    <execution>
      <id>attach-javadocs</id>
      <goals>
        <goal>jar</goal>
      </goals>
    </execution>
  </executions>
</plugin>
<plugin>
  <groupId>org.apache.maven.plugins</groupId>
  <artifactId>maven-surefire-plugin</artifactId>
  <version>2.22.2</version>
</plugin>
```

Maven

- Maven Central
 - Edit pom.xml - profile

```
<profiles>
  <profile>
    <id>ci-cd</id>
    <build>
      <plugins>
        <plugin>
          <groupId>org.apache.maven.plugins</groupId>
          <artifactId>maven-gpg-plugin</artifactId>
          <version>1.6</version>
          <executions>
            <execution>
              <id>sign-artifacts</id>
              <phase>verify</phase>
              <goals>
                <goal>sign</goal>
              </goals>
              <configuration>
                <gpgArguments>
                  <arg>--pinentry-mode</arg>
                  <arg>loopback</arg>
                </gpgArguments>
              </configuration>
            </execution>
          </executions>
        </plugin>
      </plugins>
    </build>
  </profile>
</profiles>
```

Maven

- Maven Central
 - repository config
 - `~/.m2/settings.xml`

```
<settings>
  <servers>
    <server>
      <id>ossrh</id>
      <username>sonartypeUser</username>
      <password>secretPassword</password>
    </server>
  </servers>
</settings>
```



Maven

- Maven Central
 - GPG Setup
 - Deploy

```
mvn clean deploy -Dgpg.passphrase="myPassphrase" -Pci-cd
```

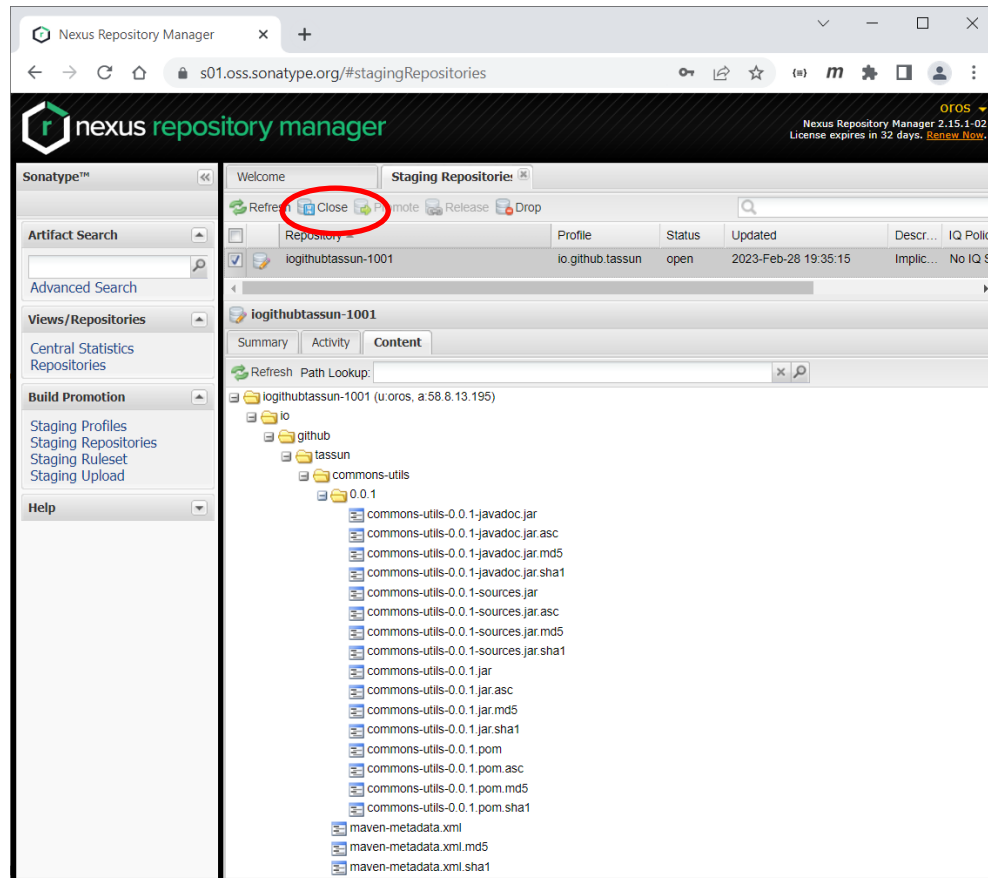
Maven

- Maven Central
 - Deploy

```
Command Prompt
-metadata.xml (309 B at 107 B/s)
Uploading to ossrh: https://s01.oss.sonatype.org/service/local/staging/deploy/maven2/io/github/tassun/commons-utils/0.0.1/commons-utils-0.0.1-sources.jar
Uploading to ossrh: https://s01.oss.sonatype.org/service/local/staging/deploy/maven2/io/github/tassun/commons-utils/0.0.1/commons-utils-0.0.1-sources.jar (8.2 kB at 4.2 kB/s)
Uploading to ossrh: https://s01.oss.sonatype.org/service/local/staging/deploy/maven2/io/github/tassun/commons-utils/0.0.1/commons-utils-0.0.1-javadoc.jar
Uploading to ossrh: https://s01.oss.sonatype.org/service/local/staging/deploy/maven2/io/github/tassun/commons-utils/0.0.1/commons-utils-0.0.1-javadoc.jar (29 kB at 15 kB/s)
Uploading to ossrh: https://s01.oss.sonatype.org/service/local/staging/deploy/maven2/io/github/tassun/commons-utils/0.0.1/commons-utils-0.0.1.jar.asc
Uploading to ossrh: https://s01.oss.sonatype.org/service/local/staging/deploy/maven2/io/github/tassun/commons-utils/0.0.1/commons-utils-0.0.1.jar.asc (499 B at 356 B/s)
Uploading to ossrh: https://s01.oss.sonatype.org/service/local/staging/deploy/maven2/io/github/tassun/commons-utils/0.0.1/commons-utils-0.0.1.pom.asc
Uploading to ossrh: https://s01.oss.sonatype.org/service/local/staging/deploy/maven2/io/github/tassun/commons-utils/0.0.1/commons-utils-0.0.1.pom.asc (499 B at 889 B/s)
Uploading to ossrh: https://s01.oss.sonatype.org/service/local/staging/deploy/maven2/io/github/tassun/commons-utils/0.0.1/commons-utils-0.0.1-sources.jar.asc
Uploading to ossrh: https://s01.oss.sonatype.org/service/local/staging/deploy/maven2/io/github/tassun/commons-utils/0.0.1/commons-utils-0.0.1-sources.jar.asc (499 B at 889 B/s)
Uploading to ossrh: https://s01.oss.sonatype.org/service/local/staging/deploy/maven2/io/github/tassun/commons-utils/0.0.1/commons-utils-0.0.1-javadoc.jar.asc
Uploading to ossrh: https://s01.oss.sonatype.org/service/local/staging/deploy/maven2/io/github/tassun/commons-utils/0.0.1/commons-utils-0.0.1-javadoc.jar.asc (499 B at 889 B/s)
[INFO] -----
[INFO] BUILD SUCCESS
[INFO] -----
[INFO] Total time: 31.601 s
[INFO] Finished at: 2023-02-28T19:35:29+07:00
[INFO] -----
D:\TrainingMaven\commons-utils>
```

Maven

- Maven Central
 - Release – close -> release



Maven

- Maven Central
 - Release - close -> release

The screenshot displays the Nexus Repository Manager web interface. The browser address bar shows the URL `s01.oss.sonatype.org/#stagingRepositories`. The interface includes a sidebar with navigation links such as "Artifact Search", "Views/Repositories", "Build Promotion", and "Help". The main content area is titled "Staging Repository: io.github.tassun-1001" and shows a table of repository details. Below the table, the "Activity" tab is selected, displaying a list of activities. The "Event: Failed: Signature Validation" is highlighted, showing a failure message: "No public key: Key with id: (26eb7607ba10e5d8) was not able to be located on http://keyserver.ubuntu.com:11371/. Upload your public key and try the operation again."

Nexus Repository Manager 2.15.1-02
License expires in 32 days. [Renew Now](#)

Staging Repository: io.github.tassun-1001

Repository	Profile	Status	Updated	Descr...	IQ Policy Violations
io.github.tassun-1001	io.github.tassun	open	2023-Feb-28 19:35:15	Implic...	No IQ Server data recorded

io.github.tassun-1001

Summary Activity Content

Activities

- open
- close
- Evaluating rules: Central Sync Requirements
- Passed: Profile target matcher
- Evaluating rule: SBOM Report
- Passed: SBOM Report
- Evaluating rule: Sources Validation
- Passed: Sources Validation
- Evaluating rule: Checksum Validation
- Passed: Checksum Validation
- Evaluating rule: POM Validation
- Passed: POM Validation
- Evaluating rule: Signature Validation
- Failed: Signature Validation
- Evaluating rule: Javadoc Validation
- Passed: Javadoc Validation
- Evaluating rule: Archives must not contain insecure
- Passed: Archives must not contain insecure paths
- 1 rule failed: Central Sync Requirements
- Close failed

Event: Failed: Signature Validation
Tuesday, February 28, 2023 19:39:05 IT (GMT+0700)

typeld signature-staging

failureMessage No public key: Key with id: (26eb7607ba10e5d8) was not able to be located on http://keyserver.ubuntu.com:11371/. Upload your public key and try the operation again.

failureMessage No public key: Key with id: (26eb7607ba10e5d8) was not able to be located on https://keys.openpgp.org/. Upload your public key and try the operation again.

failureMessage No public key: Key with id: (26eb7607ba10e5d8) was not able to be located on http://pgp.mit.edu:11371/. Upload your public key and try the operation again.

failureMessage No public key: Key with id: (26eb7607ba10e5d8) was not able to be located on http://keyserver.ubuntu.com:11371/. Upload your public key and try the operation again.

failureMessage No public key: Key with id: (26eb7607ba10e5d8) was not able to be located on https://keys.openpgp.org/. Upload your public key and try the operation again.

failureMessage No public key: Key with id: (26eb7607ba10e5d8) was not able to be located on http://pgp.mit.edu:11371/. Upload your public key and try the operation again.

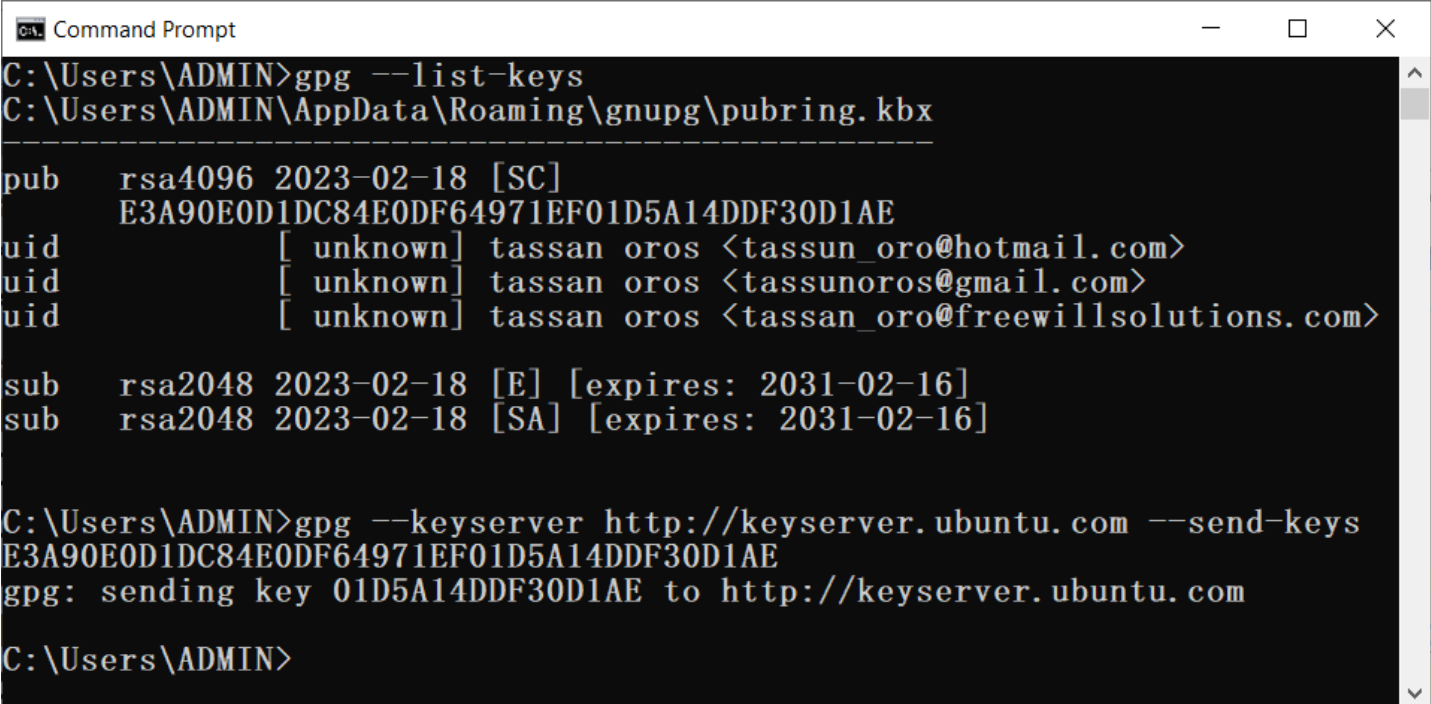
failureMessage No public key: Key with id: (26eb7607ba10e5d8) was not able to be located on http://keyserver.ubuntu.com:11371/. Upload your public key and try the operation again.

failureMessage No public key: Key with id: (26eb7607ba10e5d8) was not able to be located on https://keys.openpgp.org/. Upload your public key and try the operation again.

Maven

- Maven Central
 - Release - send key

```
gpg --keyserver http://keyserver.ubuntu.com --send-keys xxxx
```



```
Command Prompt
C:\Users\ADMIN>gpg --list-keys
C:\Users\ADMIN\AppData\Roaming\gnupg\pubring.kbx
-----
pub   rsa4096 2023-02-18 [SC]
      E3A90E0D1DC84E0DF64971EF01D5A14DDF30D1AE
uid           [ unknown] tassan oros <tassun_oro@hotmail.com>
uid           [ unknown] tassan oros <tassunoros@gmail.com>
uid           [ unknown] tassan oros <tassan_oro@freewillsolutions.com>

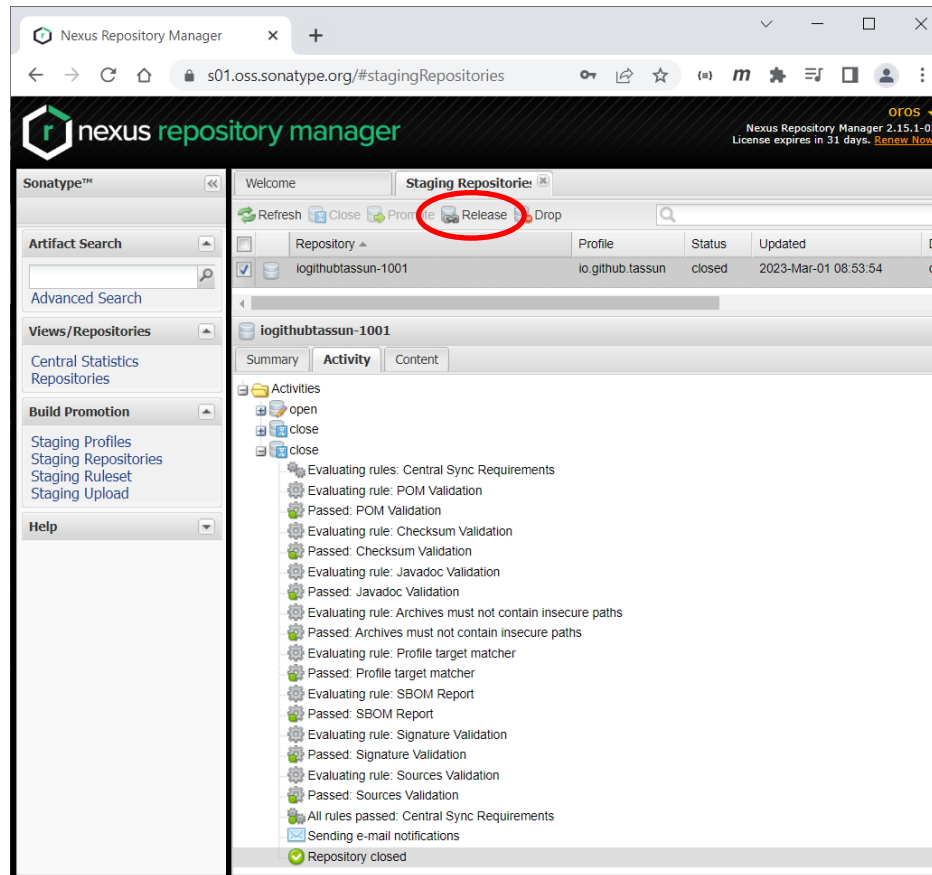
sub   rsa2048 2023-02-18 [E] [expires: 2031-02-16]
sub   rsa2048 2023-02-18 [SA] [expires: 2031-02-16]

C:\Users\ADMIN>gpg --keyserver http://keyserver.ubuntu.com --send-keys
E3A90E0D1DC84E0DF64971EF01D5A14DDF30D1AE
gpg: sending key 01D5A14DDF30D1AE to http://keyserver.ubuntu.com

C:\Users\ADMIN>
```


Maven

- Maven Central
 - Release - close -> release



Maven

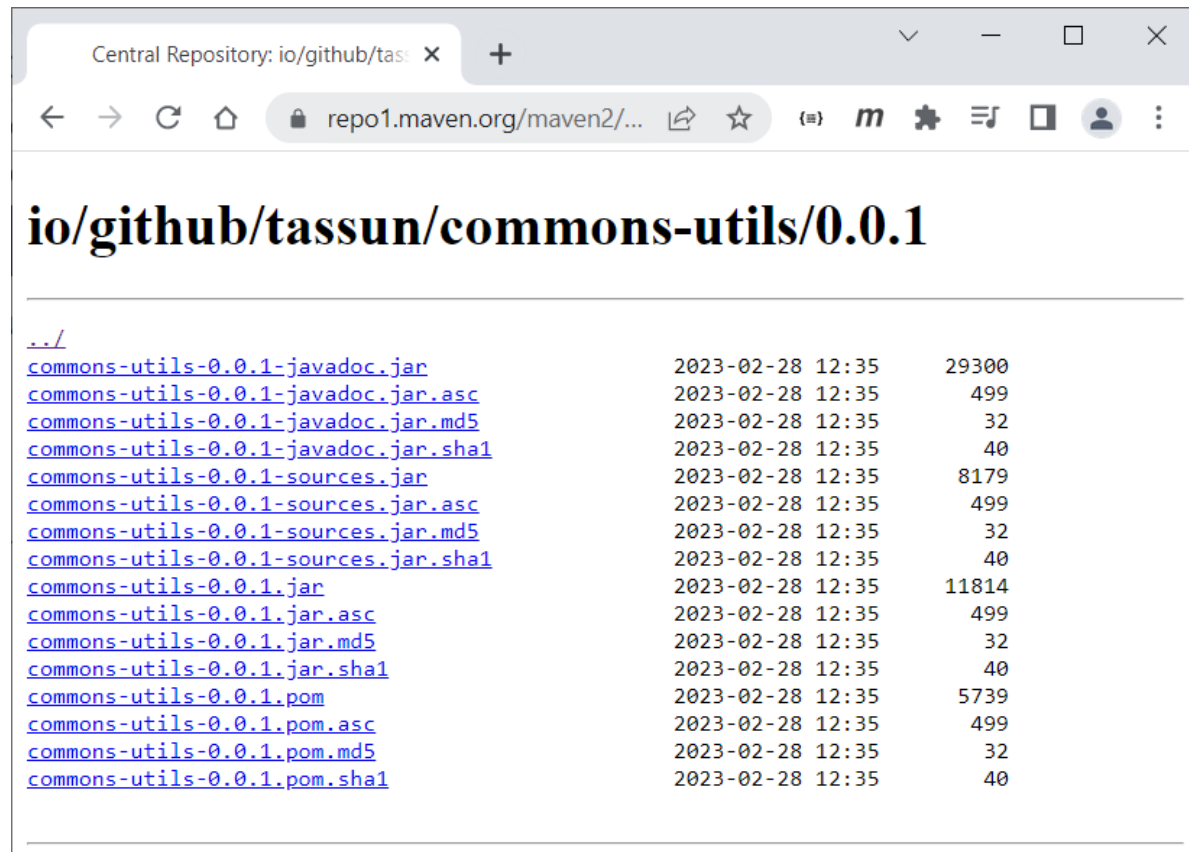
- Maven Central

- Release

- wait for Maven Central to synchronize (take up to 30 minutes)
 - whereas <https://search.maven.org/> can take up to 4 hours to show your newly deployed artifact

Maven

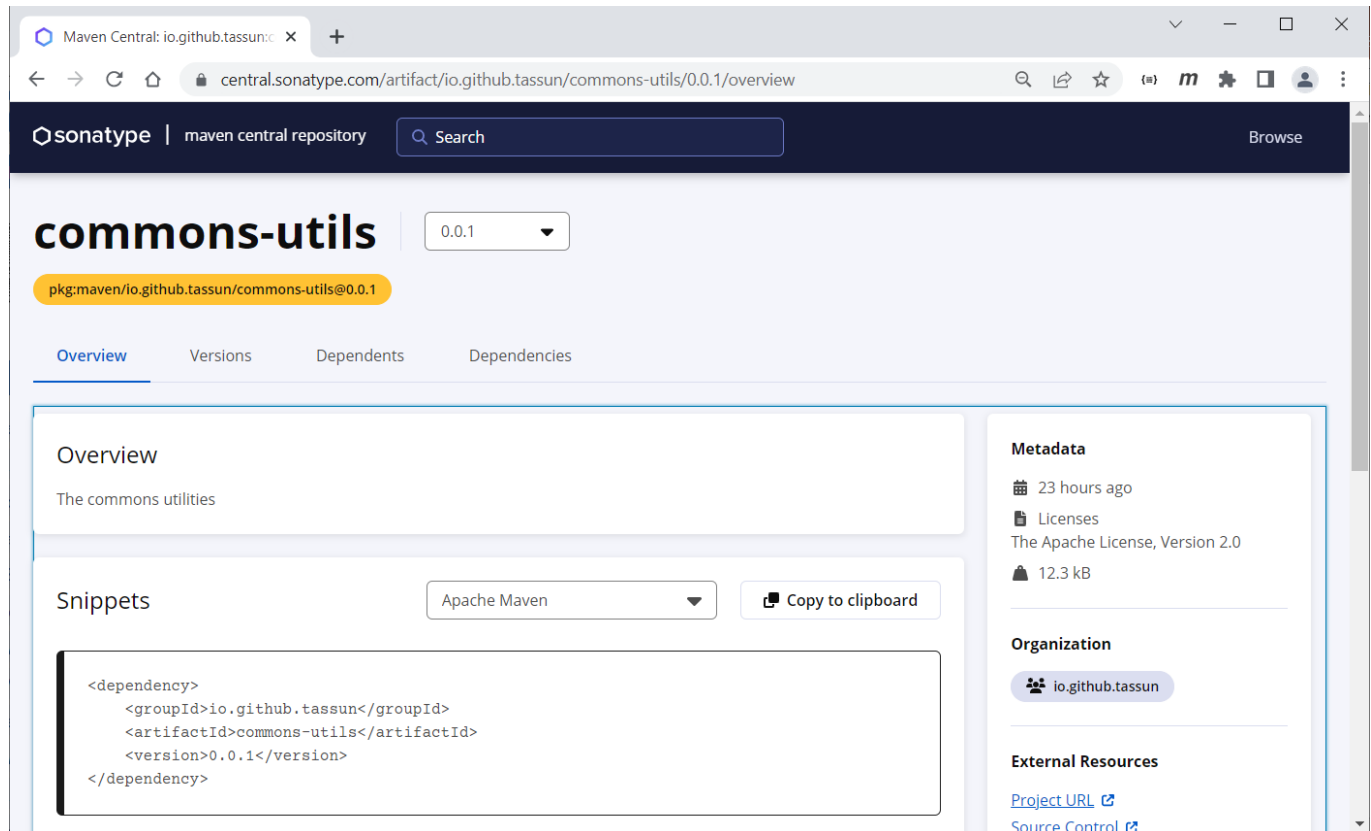
- Maven Central
 - Release



io/github/tassun/commons-utils/0.0.1		
../		
commons-utils-0.0.1-javadoc.jar	2023-02-28 12:35	29300
commons-utils-0.0.1-javadoc.jar.asc	2023-02-28 12:35	499
commons-utils-0.0.1-javadoc.jar.md5	2023-02-28 12:35	32
commons-utils-0.0.1-javadoc.jar.sha1	2023-02-28 12:35	40
commons-utils-0.0.1-sources.jar	2023-02-28 12:35	8179
commons-utils-0.0.1-sources.jar.asc	2023-02-28 12:35	499
commons-utils-0.0.1-sources.jar.md5	2023-02-28 12:35	32
commons-utils-0.0.1-sources.jar.sha1	2023-02-28 12:35	40
commons-utils-0.0.1.jar	2023-02-28 12:35	11814
commons-utils-0.0.1.jar.asc	2023-02-28 12:35	499
commons-utils-0.0.1.jar.md5	2023-02-28 12:35	32
commons-utils-0.0.1.jar.sha1	2023-02-28 12:35	40
commons-utils-0.0.1.pom	2023-02-28 12:35	5739
commons-utils-0.0.1.pom.asc	2023-02-28 12:35	499
commons-utils-0.0.1.pom.md5	2023-02-28 12:35	32
commons-utils-0.0.1.pom.sha1	2023-02-28 12:35	40

Maven

- Maven Central
 - Release



The screenshot shows the Maven Central artifact page for **commons-utils** version **0.0.1**. The page is viewed in a web browser with the URL `central.sonatype.com/artifact/io.github.tassun/commons-utils/0.0.1/overview`. The Sonatype logo and "maven central repository" text are in the top navigation bar. A search bar and a "Browse" link are also present. The main content area features the artifact name **commons-utils** and a dropdown menu showing the selected version **0.0.1**. Below this, a yellow badge displays the package identifier `pkg:maven/io.github.tassun/commons-utils@0.0.1`. Navigation tabs include **Overview** (selected), **Versions**, **Dependents**, and **Dependencies**. The **Overview** section contains the text "The commons utilities". A **Snippets** section shows a Maven dependency XML snippet for Apache Maven, with a "Copy to clipboard" button. On the right, the **Metadata** section lists "23 hours ago", "Licenses" (The Apache License, Version 2.0), and "12.3 kB". The **Organization** section shows "io.github.tassun". The **External Resources** section includes links for "Project URL" and "Source Control".

Maven Central: io.github.tassun: x +

central.sonatype.com/artifact/io.github.tassun/commons-utils/0.0.1/overview

Sonatype | maven central repository Search Browse

commons-utils 0.0.1

pkg:maven/io.github.tassun/commons-utils@0.0.1

Overview Versions Dependents Dependencies

Overview
The commons utilities

Snippets Apache Maven Copy to clipboard

```
<dependency>
  <groupId>io.github.tassun</groupId>
  <artifactId>commons-utils</artifactId>
  <version>0.0.1</version>
</dependency>
```

Metadata
23 hours ago
Licenses
The Apache License, Version 2.0
12.3 kB

Organization
io.github.tassun

External Resources
Project URL
Source Control

Reference

- <https://maven.apache.org>
- <https://www.jittagornp.me/blog/what-is-apache-maven/>
- <https://www.jittagornp.me/blog/basic-maven-command-line/>
- <https://www.baeldung.com/maven-archetype>
- <https://dzone.com/articles/how-to-publish-artifacts-to-maven-central>
- <https://inthecheesefactory.com/blog/how-to-upload-library-to-jcenter-maven-central-as-dependency/th>
- <https://central.sonatype.org/publish/requirements/coordinates/#supported-code-hosting-services-for-personal-groupid>
- <https://central.sonatype.org/publish/publish-guide/>
- <https://central.sonatype.org/publish/publish-maven/>



Q & A