**Maven Basics**

## **Maven Coordinates**

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## **Maven Versions**

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## **Maven Repository**

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<https://repo1.maven.org/maven2/>

* After local repo By default it look for Central repo. We can modify it.  
    
  Now for .m2 local repo, If it is a RELEASE version or non snapshot version its going to stays forever && Maven is never going to look for it again because it consider its stable artifact && it doesn’t have to get that. So its gonna effectively cached in your local directory.
* Now for SNAPSHOT version, Maven will go out and even if it finds in your local repo, it will go look for newer copy of it so and by default it goes out and check the newer version once in a day.

Diagram

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## **Maven Wagon**

Maven Wagon is a transport abstraction that is used in Maven's artifact and repository handling code.

Wagon defines a [unified API](http://maven.apache.org/wagon/wagon-provider-api/), and it currently has the following providers:

* [File](http://maven.apache.org/wagon/wagon-providers/wagon-file/)
* [HTTP](http://maven.apache.org/wagon/wagon-providers/wagon-http/)
* [HTTP lightweight](http://maven.apache.org/wagon/wagon-providers/wagon-http-lightweight/)
* [FTP](http://maven.apache.org/wagon/wagon-providers/wagon-ftp/)
* [SSH/SCP](http://maven.apache.org/wagon/wagon-providers/wagon-ssh/)
* [WebDAV](http://maven.apache.org/wagon/wagon-providers/wagon-webdav-jackrabbit/)
* [SCM](http://maven.apache.org/wagon/wagon-providers/wagon-scm/) (in progress)

Text

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## **Maven POM**

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Effective POM

This is also the best way to see the default values that Maven uses.

## **Maven Dependencies**

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* Cyclic Dependency are not supported. A depends on B then B depends on A. Not supported.
* But A can depend on B and B can depend on C & C can depend on D. Perfectly Happy.

**Transitive Dependency**  
  
Transitive dependencies are one of the features that make maven[S](http://maven.apache.org/)[W](http://en.wikipedia.org/wiki/Apache_Maven) extremely powerful. As an example of a transitive dependency, suppose one project, called "mytest", was dependent on a jar[W](http://en.wikipedia.org/wiki/JAR_%28file_format%29) file, such as the popular commons-lang jar file. Now, suppose a second project, "mytest2", was dependent on "mytest". This means that "mytest2" is also dependent on the commons-lang jar file. Maven can help us handle this situation automatically, eliminating much of the work that is needed to manage jar files across projects.

<http://www.avajava.com/tutorials/lessons/how-do-i-add-a-transitive-dependency-to-my-projects-classpath.html>

Graphical user interface, text, application, email

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An optional dependency is whats gona happen is there , effectively that’s gonna be excluded for anything Downstream of your project so if you r build jar A and B has a dependency on you, that would be effectively excluded if you make it optional.

**Dependency Scope**

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Runtime :: You might be using data access to talk to database. Obviously the JDBC is be part of the default JAVA API. But if you are connecting to an Oracle DB or Postgress DB , you are gonna need to provide that at runtime for that component to come up.

**Dependency Plugin**

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## **Maven Standard Directory Layout**

A picture containing shape

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Description automatically generated

## **Maven Build LifeCycle**

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**Pre-Defined LifeCycle**  
  
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Description automatically generated

Clean LifeCycle

Diagram, arrow

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**Default LifeCycle**

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Validate :: Verify make sure that has project , our POM can be parsed that’s proper XML , standard directory and sanity check etc.

Graphical user interface, text

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Text

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Site LifeCycle

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Graphical user interface, text

Description automatically generated

## **Maven Wrapper**

This is basically a script wrapperaround maven that you can distribute with your projects. The purpose of wrapper is to make your build portable so that you can check out the source code and have everything that you need to run from the script and that’s exactly what the wrapper is. It’s a wrapper around Maven which allows you to work with Maven without having Maven Installed on that specific Machine.

Hello world project with system maven with version 3.8.3

Text

Description automatically generated

Invoking/Genrating Maven wrapper

$ mvn -N io.takari:maven:wrapper

A screenshot of a computer

Description automatically generated with medium confidence

It calls wrapper plugin with version 0.5.6 & installs maven 3.6.3

Graphical user interface, text

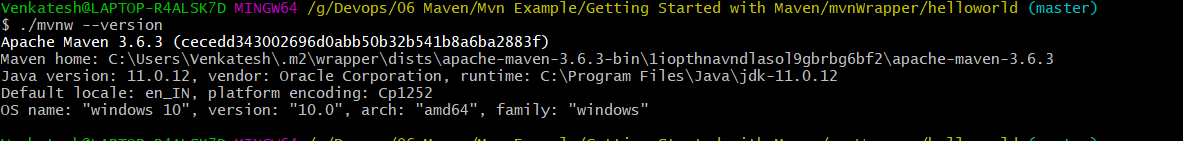
Description automatically generated with medium confidence

After Wrapper

Text

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$ ./mvnw –version shows the maven version 3.6.3



**Updating Maven Version using wrapper**

$ mvn -N io.takari:maven:wrapper -Dmaven=3.6.0

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Alternatevly you can update the maven version using maven wrapper properties file

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Description automatically generated with medium confidence

$ vim maven-wrapper.properties

Text

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## **Maven Architypes**

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