



Apache Maven

Beginner to Guru

Maven Dependencies



Maven Dependencies

- **Dependency** - A dependency is an artifact which your Maven project depends upon.
 - Typically a jar or pom
- **Transitive Dependency** - A dependency of an artifact which your project depends on.
 - Can go many MANY layers deep.
 - Cyclic dependencies are not supported (A depends on B, B depends on A)
- **Dependency Management** - allows project authors to specify the versions of artifacts to be used.





Maven Dependencies

- **Dependency Mediation** - Determines what version to use when multiple versions of the same dependency are encountered.
 - 'Nearest Definition' in dependency tree is used
 - **Example:** A -> B; A -> D 2.0; B -> D 1.5
 - D version 2.0 would be included
- **Excluded Dependencies** - Ability to exclude specific dependencies
- **Optional Dependencies** - Ability to make dependencies optional. (excluded by default for downstream projects)





Dependency Scope

- **Compile** - Default. Available on all classpaths of project. Also, propagated to downstream projects.
- **Provided** - Like Compile, but expected to be provided by JDK or container at runtime.
- **Runtime** - Not required for compile, but needed for runtime. On runtime and test classpaths, not compile.
- **Test** - Only available on test classpath, not transitive.
- **System** - similar to provided, but JAR is added to system explicitly. (via file path)
- **Import** - Imports dependency of POM.





Dependency Plugin

- Dependencies are managed by the Maven Dependency Plugin
- Important Goals:
 - `dependency:tree` - shows the dependency tree. Useful for resolving conflicts
 - `dependency:go-offline` - Resolve all all, prepare to go offline
 - `dependency:purge-local-repository` - Clear artifacts from local repository
 - `dependency:sources` - get sources for all dependencies.



