A bom is a so called **bill of materials** - it bundles several dependencies to assure that the versions will work together.

You include the bom into your pom like this:

<dependencyManagement>

<dependencies>

<dependency>

<groupId>org.jboss.bom</groupId>

<artifactId>jboss-javaee-6.0-with-tools</artifactId>

<version>${javaee6.with.tools.version}</version>

<type>pom</type>

<scope>import</scope>

</dependency>

</dependencies>

</dependencyManagement>

Then you do not have to specify the version attribute of a dependency, if it is defined in the bom like this:

<dependency>

<groupId>javax.enterprise</groupId>

<artifactId>cdi-api</artifactId>

<scope>provided</scope>

</dependency>

-

What is the purpose of bom object?

Maven parent-child relationship is very handy for managing dependencies of multiple projects in a single place. However, Maven projects can have only one (direct) parent. So imports were introduced for dependency management to allow using several projects for managing your dependencies. With an import you can define a single dependency like this and get multiple dependencies managed - handy! Although you could import any project, BOM is a special project designed to be used for imports like this. Usually a BOM project will have very little defined besides dependencyManagementsection, and will not have any unrelated dependencies, to avoid affecting your main project too much.

Which bom dependency I need to use?

BOM is not a requirement, you don't need to use either. Instead, you could define all managed dependencies in dependencyManagement section yourself. These can include Spring, JBoss and any other dependencies. BOM, however, simplifies this for you significantly. You can add as many BOMs as you want, so add both! But as @Jesper mentions, don't forget to use correct versions. When using multiple BOMs their order will matter if they both reference a common dependency.

Does the jar file gets downloaded into my Maven Dependencies?

Notice BOM is <type>pom</type>, not the default jar. So there's no jar to be downloaded. A single pom.xml file will be downloaded and read by Maven

To solve version mismatch issue, you can use the concept of a **“bill of materials” (BOM)** dependency. A BOM dependency keep track of version numbers and ensure that all dependencies (both direct and transitive) are at the same version.

**How to add BOM [Bill Of Materials] dependency**

Maven provides a tag dependencyManagement for this purpose. You need to add the bom information in this tag as follows. I am taking the example of Spring bom file.

|  |
| --- |
| <dependencyManagement>      <dependencies>          <dependency>              <groupId>org.springframework</groupId>              <artifactId>spring-framework-bom</artifactId>              <version>4.0.1.RELEASE</version>              <type>pom</type>              <scope>import</scope>          </dependency>      </dependencies>  </dependencyManagement> |

An added benefit of using the BOM is that you no longer need to specify the version attribute when depending on Spring Framework artifacts. So it will work perfectly fine.

|  |
| --- |
| <dependencies>      <dependency>          <groupId>org.springframework</groupId>          <artifactId>spring-context</artifactId>      </dependency>      <dependency>          <groupId>org.springframework</groupId>          <artifactId>spring-web</artifactId>      </dependency>  <dependencies> |

Please note that there is no common or universal bom file. Each project (if support this feature) provides its own bom file and manages versions of it’s related dependencies.

Few example of various bom files are below:

**1) RESTEasy BOM dependency**

|  |
| --- |
| <dependencyManagement>      <dependencies>          <dependency>              <groupId>org.jboss.resteasy</groupId>              <artifactId>resteasy-bom</artifactId>              <version>3.0.6.Final</version>              <type>pom</type>              <scope>import</scope>          </dependency>      </dependencies>  </dependencyManagement> |

**2) JBOSS BOM dependency**

|  |
| --- |
| <dependencyManagement>      <dependencies>          <dependency>              <groupId>org.jboss.bom</groupId>              <artifactId>jboss-javaee-6.0-with-tools</artifactId>              <version>${some.version}</version>              <type>pom</type>              <scope>import</scope>          </dependency>      </dependencies>  </dependencyManagement> |

**3) Spring BOM dependency**

|  |
| --- |
| <dependencyManagement>      <dependencies>          <dependency>              <groupId>org.springframework</groupId>              <artifactId>spring-framework-bom</artifactId>              <version>4.0.1.RELEASE</version>              <type>pom</type>              <scope>import</scope>          </dependency>      </dependencies>  </dependencyManagement> |

**4) Jersey BOM dependency**

|  |
| --- |
| <dependencyManagement>      <dependencies>          <dependency>              <groupId>org.glassfish.jersey</groupId>              <artifactId>jersey-bom</artifactId>              <version>${jersey.version}</version>              <type>pom</type>              <scope>import</scope>          </dependency>      </dependencies>  </dependencyManagement> |