Chapter 1.

Introduction

In the context of application development, Maven allows you to extend your applications by referencing and utilizing resources from local and remote repositories.

Covered in this reference guide is how to create Maven projects and modules, and how to add Maven functionality to an existing project or application.

This guide does not cover how to setup a Maven repository. For information on how to setup a Maven repository consult the documentation associated with your application server or framework kit.
Creating a Maven Project

To create a new **Maven Project**, from your workspace navigate to **File → New → Other** and from the wizard selection screen select **Maven → Maven Project**.

**Figure 2.1. Selecting the Maven Project wizard**

The first screen of the wizard will ask you if you wish to create a simple project (selecting this will skip the ability to select an archetype), to select a location for the project and if any projects should be added to the working set.
Figure 2.2. Maven project location and basic settings

You can also select Advanced options concerning existing workspace projects and the naming convention to use.
New Maven project

Select project name and location

- Create a simple project (skip archetype selection)
- Use default Workspace location

Location: [Box]

- Add project(s) to working set

Working set: [Box]

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- Resolve Workspace projects

Profiles: [Box]

Name template: [Box]

[artifactId]
[artifactId]-TRUNK
[artifactId]-[version]
[groupId].[artifactId]
[groupId].[artifactId]-[version]

< Back  Next >  Cancel  Finish

Figure 2.3. Maven project location and advanced settings

The following screen is the Archetype selection screen, and will only appear when you have not selected to create a simple project on the previous screen.

Select an archetype based on the purpose of the project you are creating.
**Chapter 2. Creating a Maven Project**

**New Maven project**

Select an Archetype

<table>
<thead>
<tr>
<th>Group Id</th>
<th>Artifact Id</th>
<th>Version</th>
</tr>
</thead>
<tbody>
<tr>
<td>org.apache.maven.archetypes</td>
<td>maven-archetype-marmalade-mojo</td>
<td></td>
</tr>
<tr>
<td>org.apache.maven.archetypes</td>
<td>maven-archetype-mojo</td>
<td></td>
</tr>
<tr>
<td>org.apache.maven.archetypes</td>
<td>maven-archetype-plugin</td>
<td></td>
</tr>
<tr>
<td>org.apache.maven.archetypes</td>
<td>maven-archetype-plugin-site</td>
<td></td>
</tr>
<tr>
<td>org.apache.maven.archetypes</td>
<td>maven-archetype-portlet</td>
<td></td>
</tr>
<tr>
<td>org.apache.maven.archetypes</td>
<td>maven-archetype-profiles</td>
<td></td>
</tr>
<tr>
<td>org.apache.maven.archetypes</td>
<td>maven-archetype-quickstart</td>
<td></td>
</tr>
</tbody>
</table>

An archetype which contains a sample Maven project.

- **Show the last version of Archetype only**
- **Include snapshot archetypes**

**Figure 2.4. Archetype selection**

The final screen of the wizard is where you will set the **Group Id**, **Artifact Id** and project **Version**. The **Package** name will be created based on the **Group Id** and **Artifact Id** values.

You can also add specific properties associated with the chosen archetype, to the project.
New Maven project

Specify Archetype parameters

Group Id: group_id
Artifact Id: artifact_id
Version: 0.1-SNAPSHOT
Package: group_id.artifact_id

Properties available from archetype:

<table>
<thead>
<tr>
<th>Name</th>
<th>Value</th>
</tr>
</thead>
</table>

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Figure 2.5. Final project naming

Clicking Finish will bring you back to the workbench and your Maven project will appear in the Project Explorer.
Figure 2.6. Project in the Project Explorer
Creating a Maven Module

A Maven module is a sub-project. To create a Maven module you will need to already have a Maven project available.

The parent project must have its **Packaging** option be pre-configured to **pom**, for a module to be created and associated with it. To ensure your parent project has this option set correctly before proceeding, double-click on the **pom.xml** file of your parent project in the **Project Explorer**.

In the **Overview** settings page that is now displayed in your workbench, confirm that the option **Packaging** is set to **pom**. If it is not, select **pom** from the list menu and save the changes to your **pom.xml** file.

![Figure 3.1. Parent project pom.xml file settings](image)

From your workspace navigate to **File → New → Other** and from the wizard selection screen select **Maven → Maven Module**.
Select a wizard

Create a Maven module

Wizards:

- JBoss Tools Web
- JPA
- Maven
  - Checkout Maven Projects from SCM
  - Maven Module
  - Maven Project
- OpenShift

Figure 3.2. Selecting the Maven Module wizard

Type a name for the module in the Module Name field.
**Figure 3.3. Naming the module**

Click the **Browse** button beside the **Parent Project** field. This will launch a project selection box.

Select the project to be used as the parent project of the module you are creating, and click **OK**.
Figure 3.4. Selecting the parent project

You will be returned to the Select a parent project screen and the Parent Project field will contain the name of the project you selected.
**New Maven Module**

Select the module name and parent

- Create a simple project (skip archetype selection)

  - Module Name: module_id
  - Parent Project: artifact_id

- Add project(s) to working set

  - Working set: [More...]

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**Figure 3.5. Parent Project field populated with project name**

Click the Next button.

Select an archetype available in the list displayed. For the purposes of this example the maven-archetype-quickstart is selected.
New Maven Module

Select an Archetype

Figure 3.6. Archetype selection screen

Click the Next button.

Specify archetype parameters Group Id and Version. Ensure that the values you specify for these fields are unique from those set in the parent project.

In this example, the Group Id and Version settings of the parent project used are set to group_id and 0.0.1-SNAPSHOT respectively. For the module, Group Id and Version settings are being specified as sub_group_id and 0.1.1-SNAPSHOT respectively, to avoid conflict.
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**New Maven Module**

Specify Archetype parameters

<table>
<thead>
<tr>
<th>Group Id:</th>
<th>sub_group.id</th>
</tr>
</thead>
<tbody>
<tr>
<td>Artifact Id:</td>
<td>module_id</td>
</tr>
<tr>
<td>Version:</td>
<td>0.1.1-SNAPSHOT</td>
</tr>
<tr>
<td>Package:</td>
<td>org.module_id</td>
</tr>
</tbody>
</table>

Properties available from archetype:

<table>
<thead>
<tr>
<th>Name</th>
<th>Value</th>
</tr>
</thead>
</table>

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**Figure 3.7. Archetype parameter settings**

Click the **Finish** button.

The module will now be created and appear in your **Project Explorer**.
Figure 3.8. Created module in the Project Explorer

You can view and change settings associated with the module by selecting the module's pom.xml file from the Project Explorer and double-clicking on it. This will launch an Overview screen containing the module settings.
Figure 3.9. Module Overview screen
Adding Maven support to an existing project

Select the project that Maven support will be added to from the **Project Explorer**.

![Project Explorer](image)

**Figure 4.1. Selecting Maven project conversion**

Right-click on the project to bring up the context menu.

From the context menu navigate to **Configure → Convert to Maven Project**.
Figure 4.2. Selecting Maven project conversion
Click on the **Convert to Maven Project** menu option.

A **Maven POM** wizard will launch. The wizard will create a `pom.xml` file for your project. This file will contain the project's Maven settings. All necessary fields of the wizard will be automatically filled.

**Maven POM**

This wizard creates a new POM (`pom.xml`) descriptor for Maven.

![Maven POM Wizard](image)

**Figure 4.3. Maven POM wizard**

It is recommended that you change the **Packaging** option to `pom` to avoid any issues in expansion of the project with Maven modules in the future.
Maven POM

This wizard creates a new POM (pom.xml) descriptor for Maven.

![Maven POM Wizard](image)

**Figure 4.4. Changing Packaging setting to pom**

Click **Finish**.

Once Maven support has been added to the project, a new pom.xml file will appear in the list of files for the project. This can be viewed in the **Project Explorer**.
Figure 4.5. New pom.xml file

Double-click on the pom.xml file to view the settings associated with it. The settings here were set in the Maven POM wizard and can be edited from this Overview screen.
Figure 4.6. Overview screen for pom.xml