Maven Tools Reference Guide

Version: 3.3.0.GA

Introduction

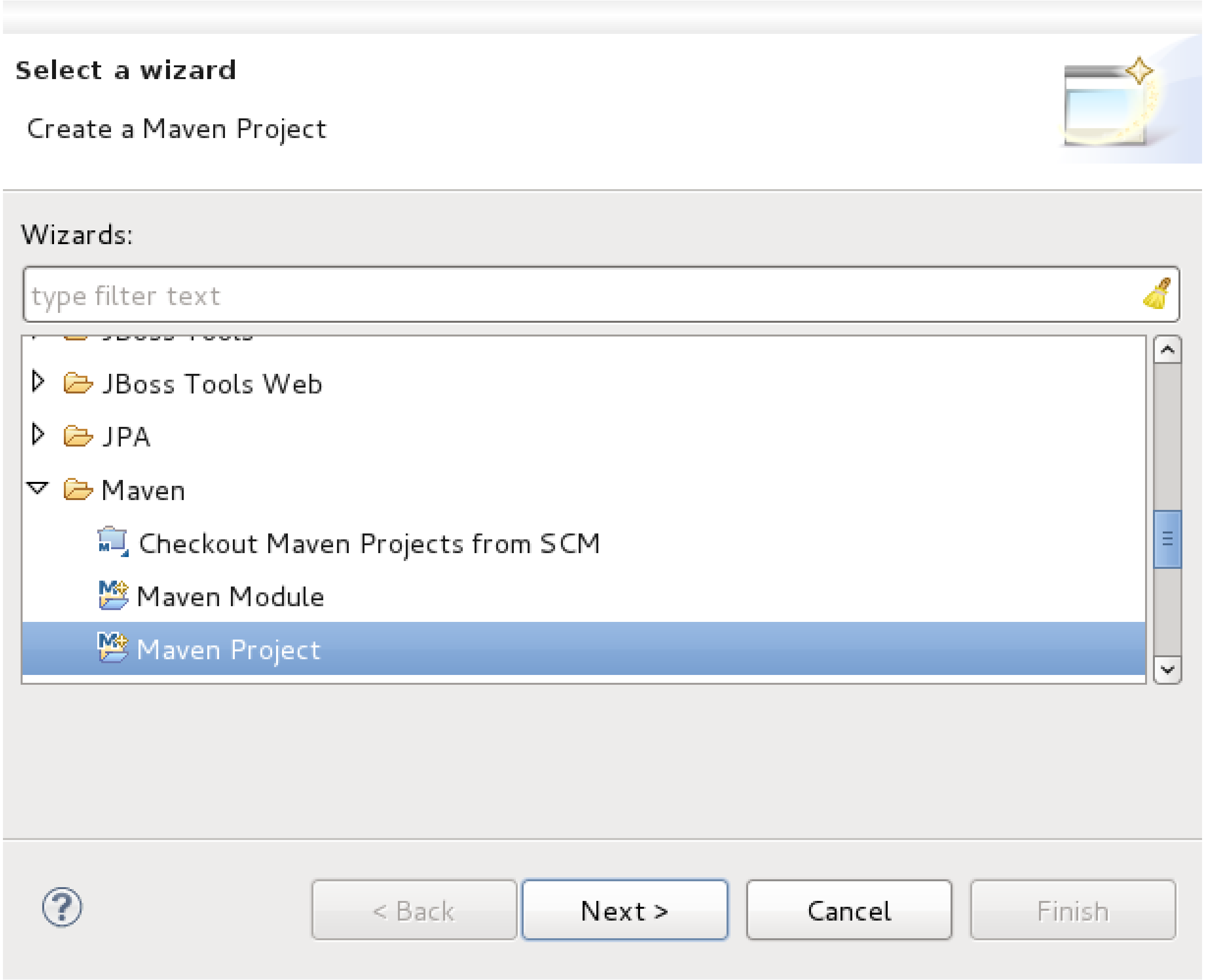
In the context of application development, Maven allows you to extend your applicaitons by referencing and utilizing resources from local and remote repositories.

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**.

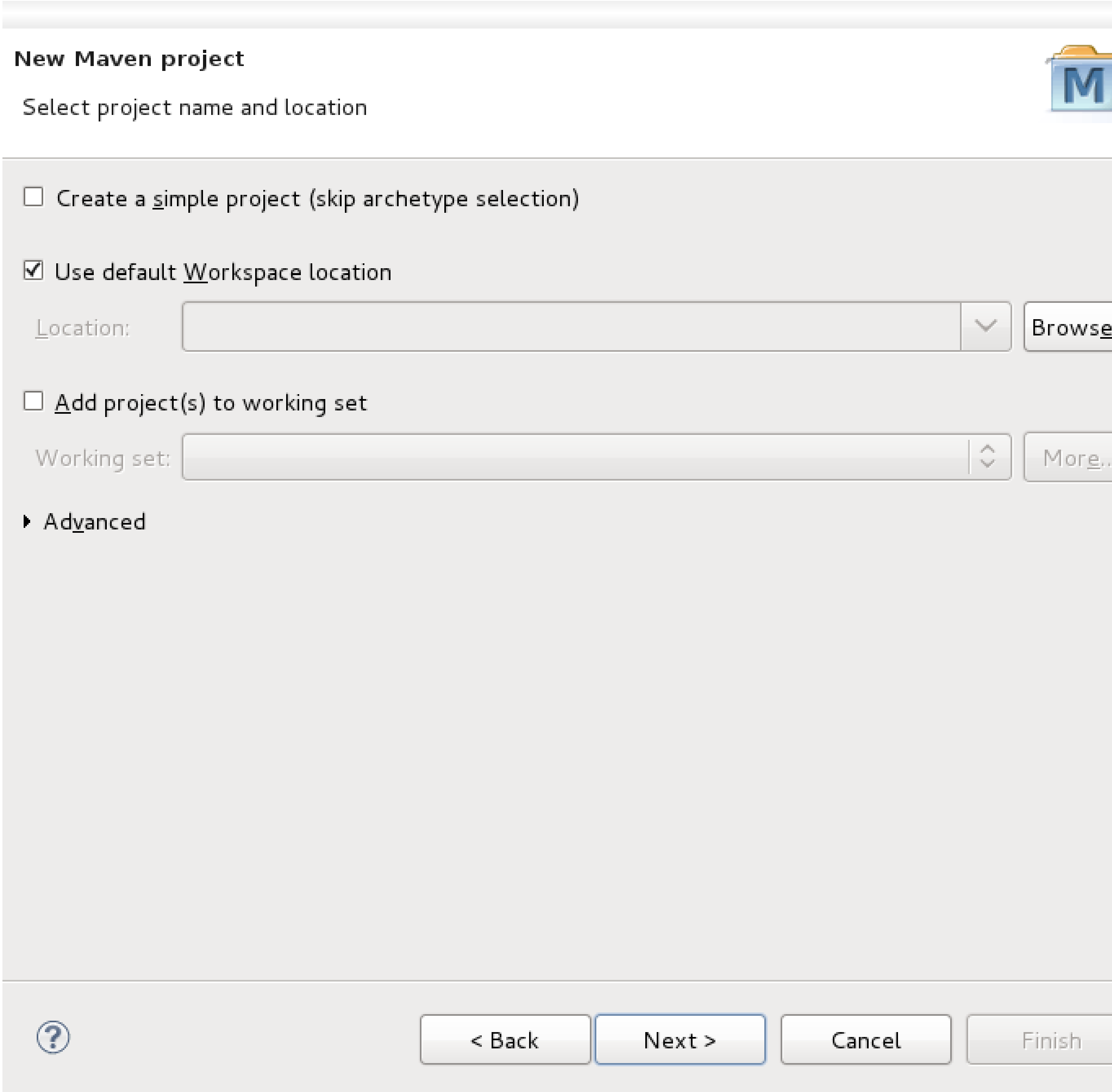


Select a wizard

Create a 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 arhetype), to select a location for the project and if any projects should be added to the working set.



New Maven project

Select project name and location

□ Create a simple project (skip archetype selection)

☑ Use default Workspace location

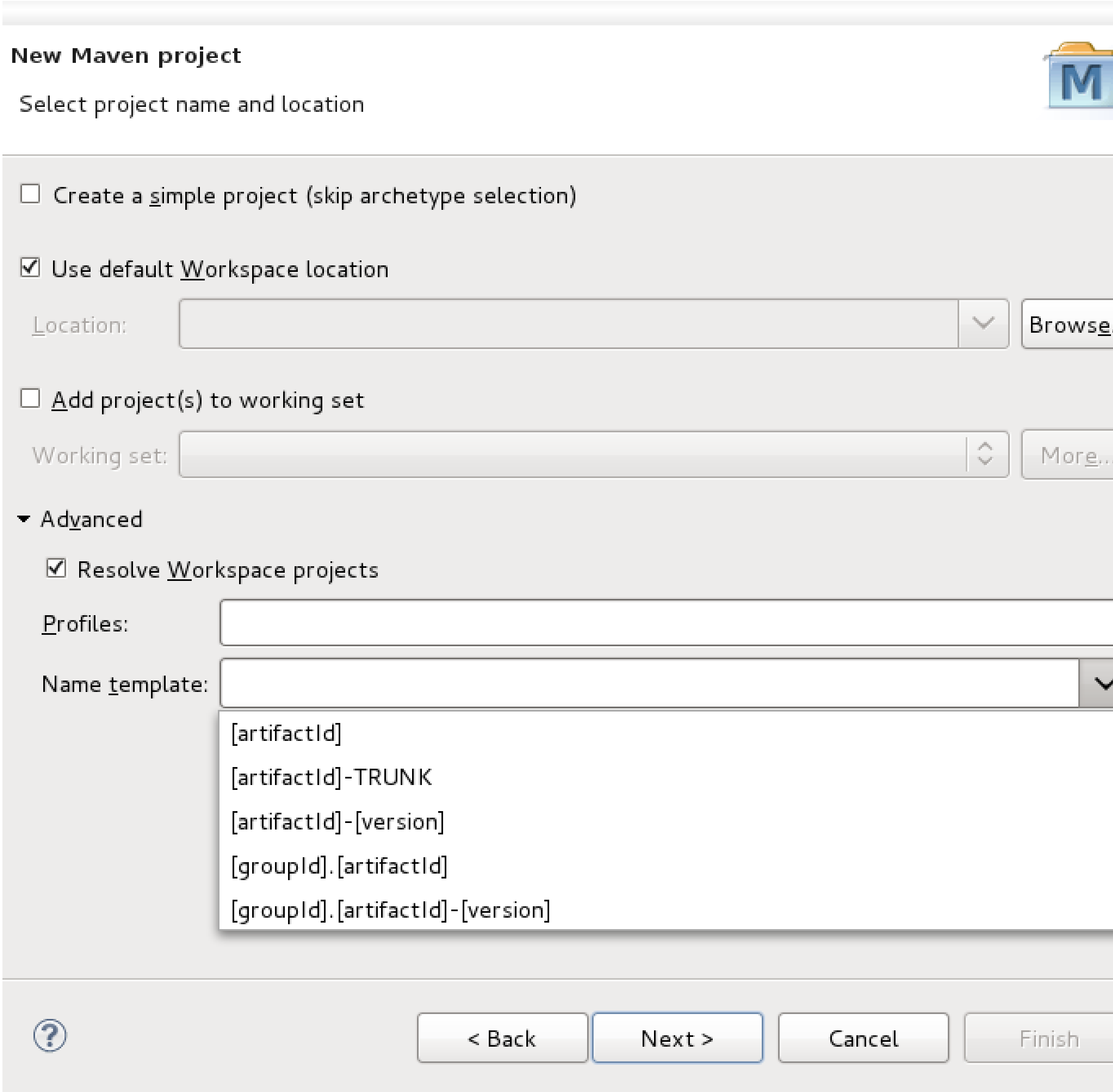
Location:

□ Add project(s) to working set

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:

☐ Add project(s) to working set

Working set:

Advanced

☑ Resolve Workspace projects

Profiles:

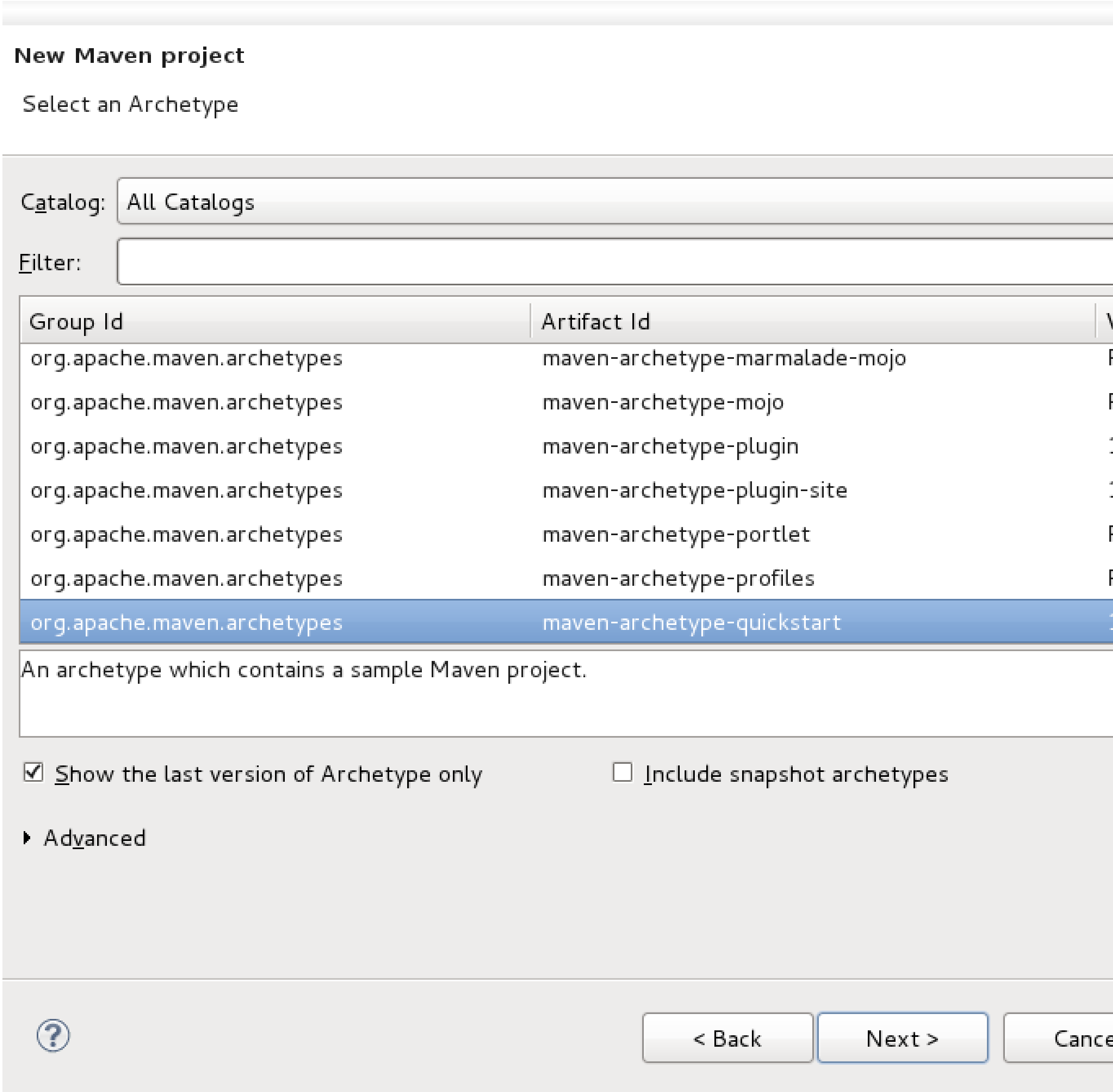
Name template:

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

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.



New Maven project

Select an Archetype

Catalog: All Catalogs

Filter:

Group Id	Artifact Id
org.apache.maven.archetypes	maven-archetype-marmalade-mojo
org.apache.maven.archetypes	maven-archetype-mojo
org.apache.maven.archetypes	maven-archetype-plugin
org.apache.maven.archetypes	maven-archetype-plugin-site
org.apache.maven.archetypes	maven-archetype-portlet
org.apache.maven.archetypes	maven-archetype-profiles
org.apache.maven.archetypes	maven-archetype-quickstart

An archetype which contains a sample Maven project.

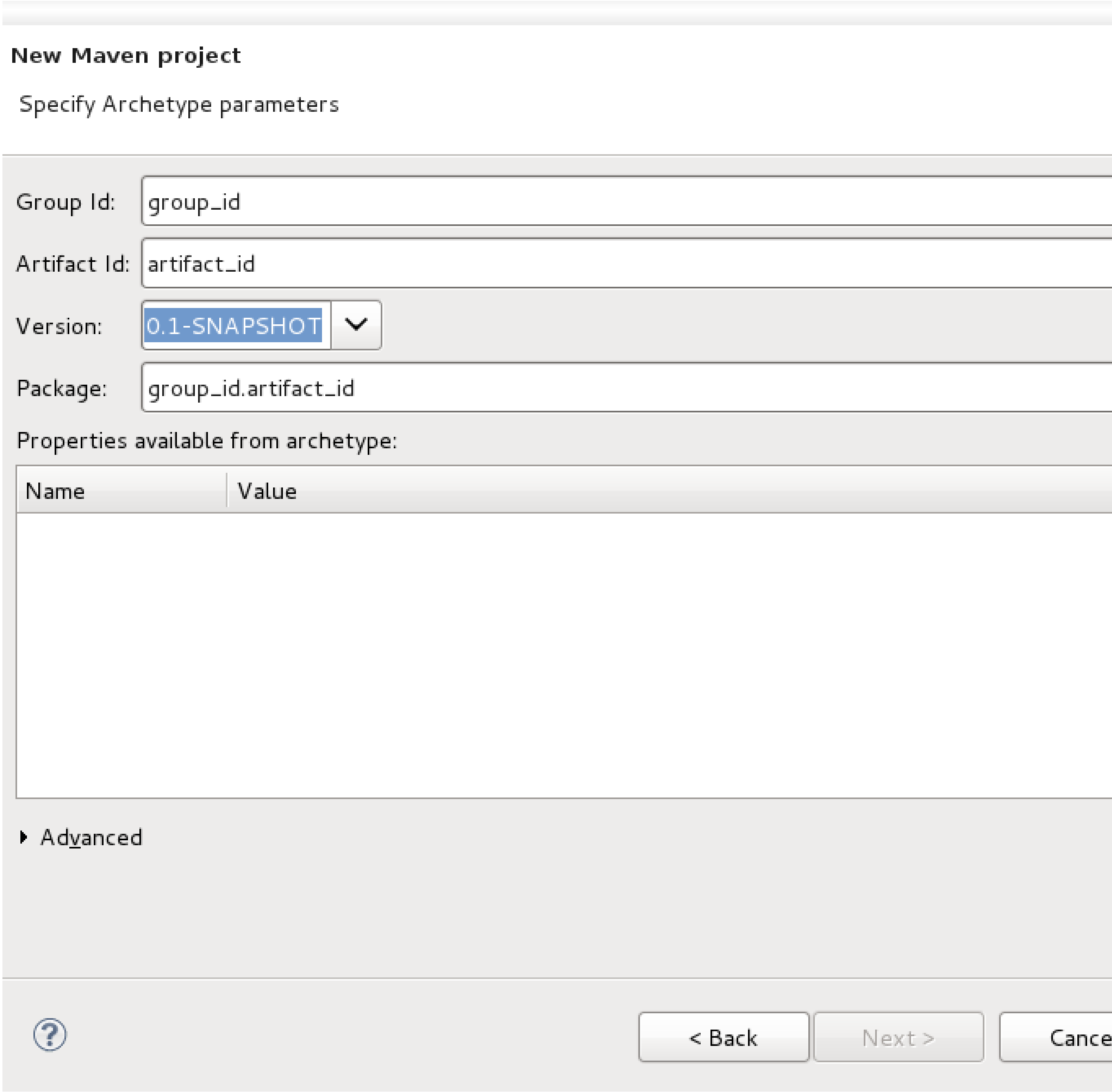
☑ Show the last version of Archetype only

□ 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:

Name	Value

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**.

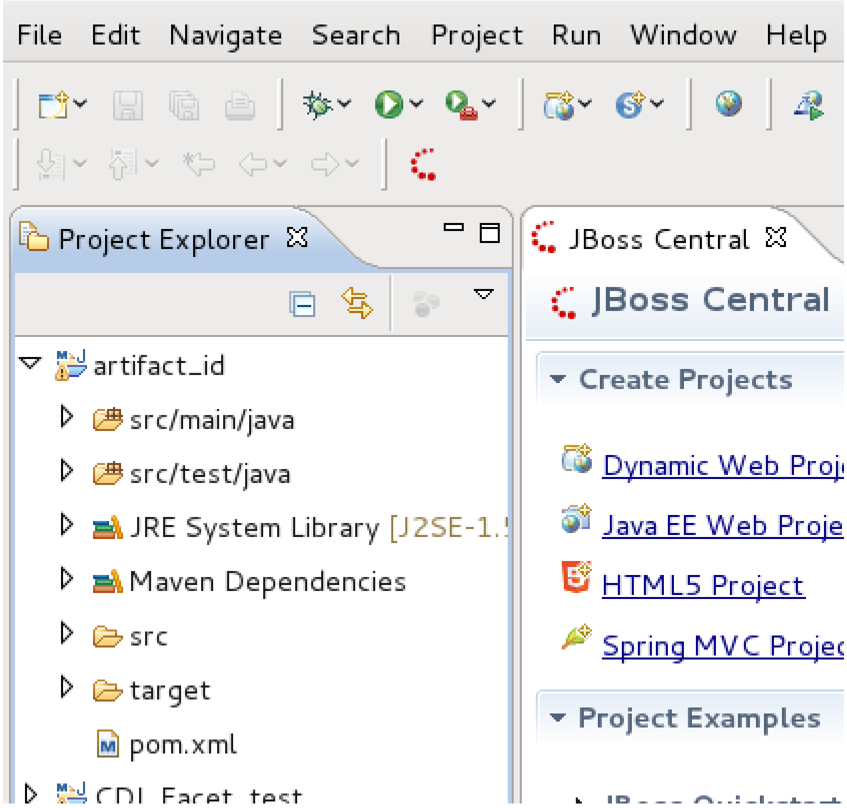


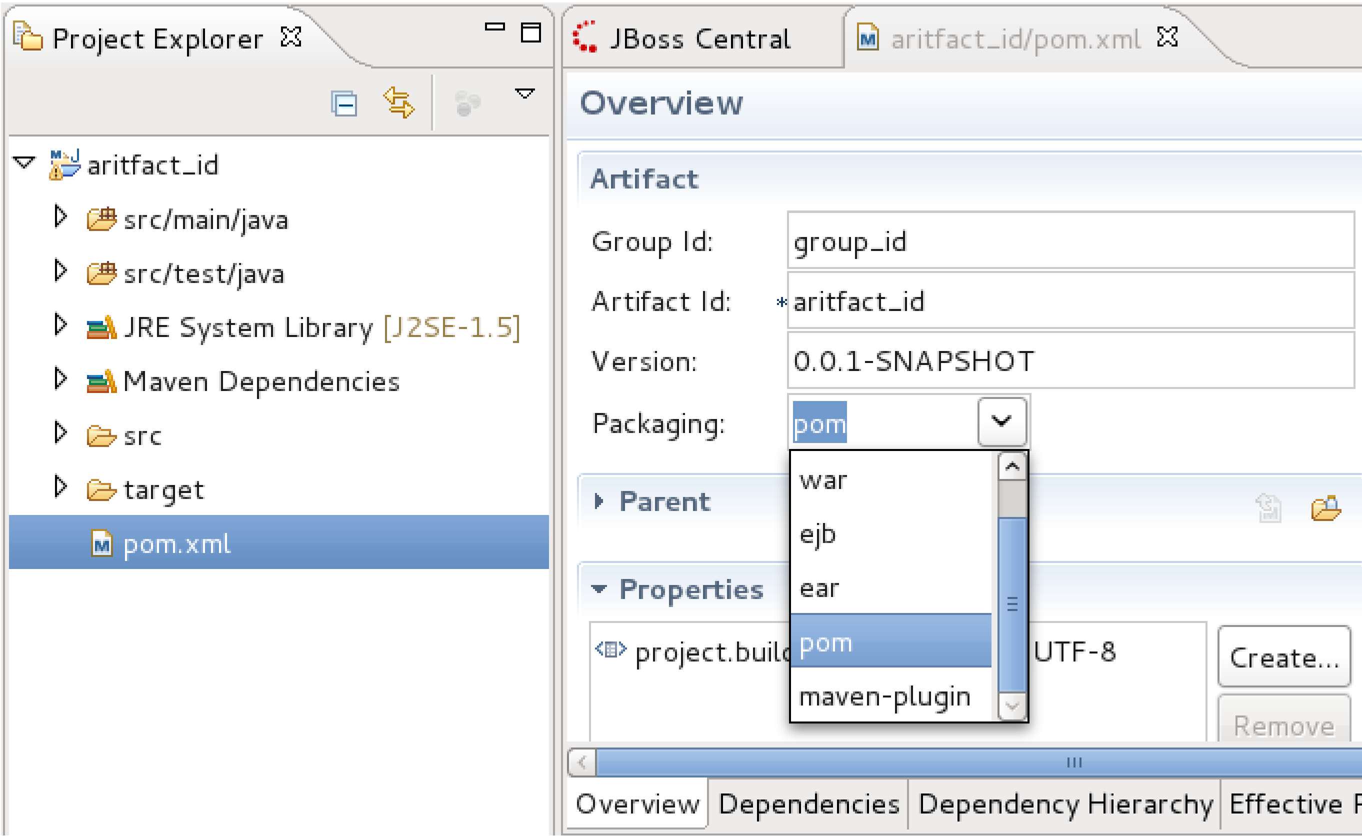
Figure 2.6. Project in the Project Explorer

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.



Group Id: group_id

Artifact Id: aritfact_id

Version: 0.0.1-SNAPSHOT

Packaging: pom

project.build UTF-8

Figure 3.1. Parent project pom.xml file settings

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

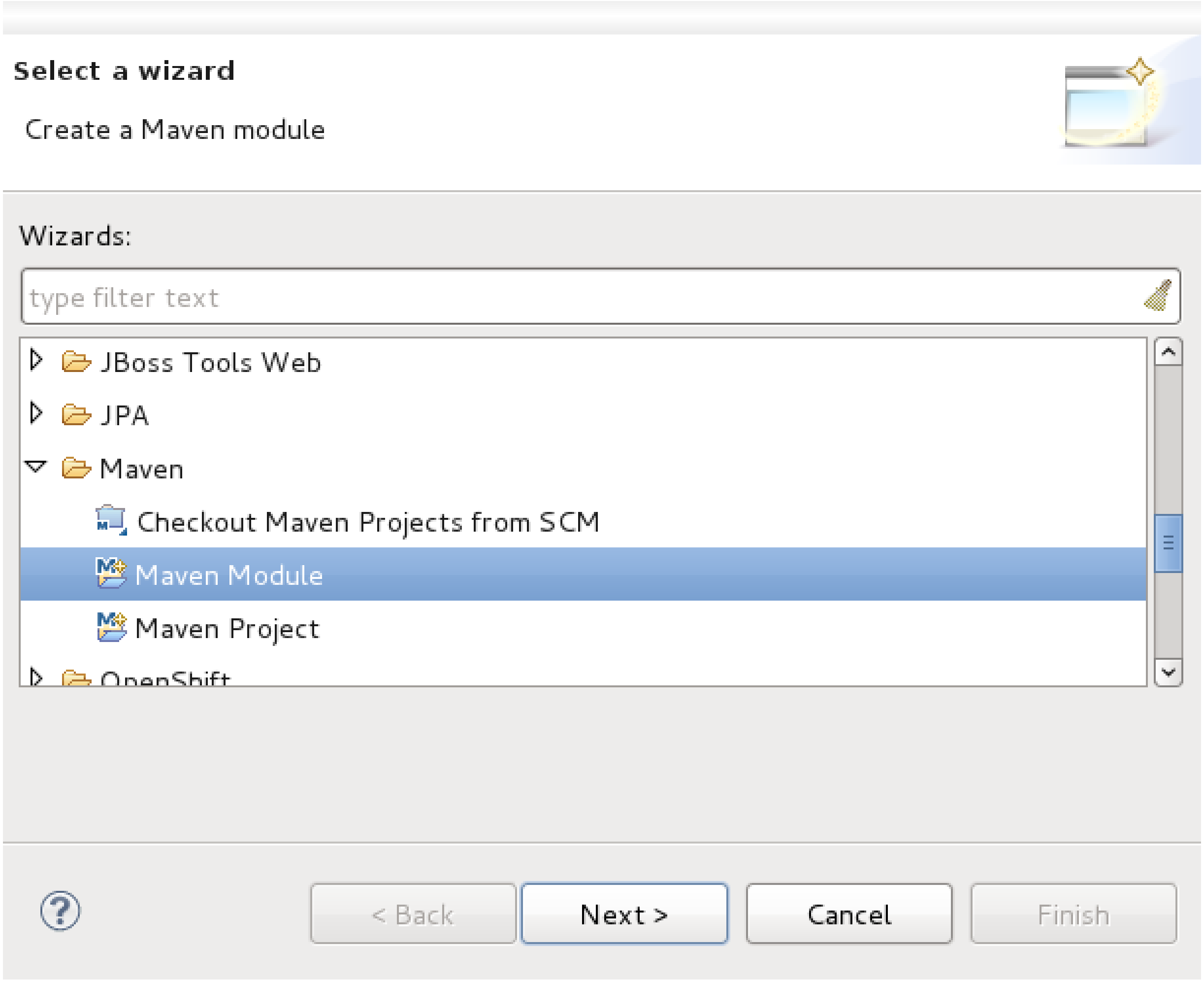
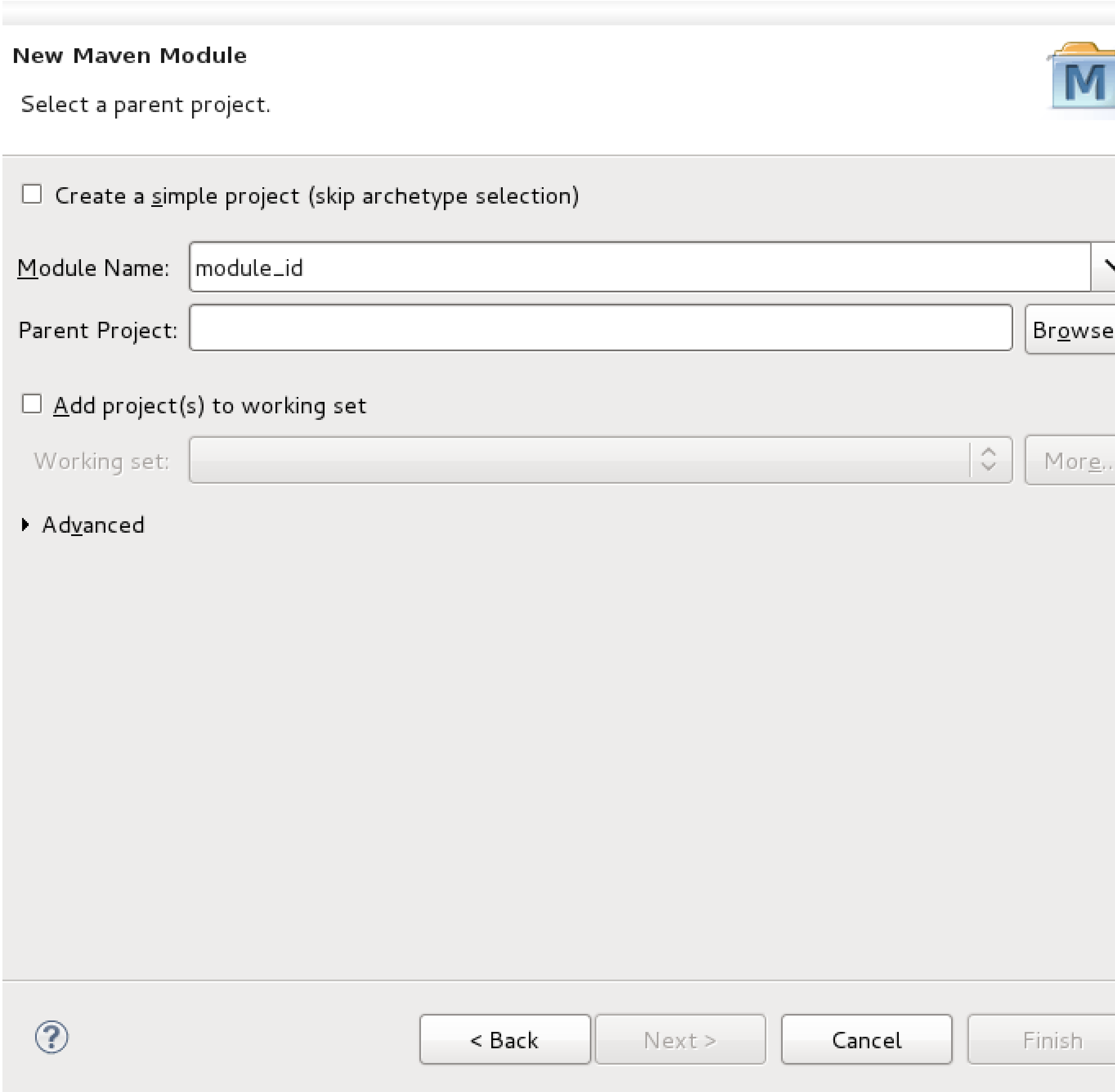


Figure 3.2. Selecting the Maven Module wizard

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



New Maven Module

Select a parent project.

☐ Create a simple project (skip archetype selection)

Module Name: module_id

Parent Project:

☐ Add project(s) to working set

Working set:

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**.

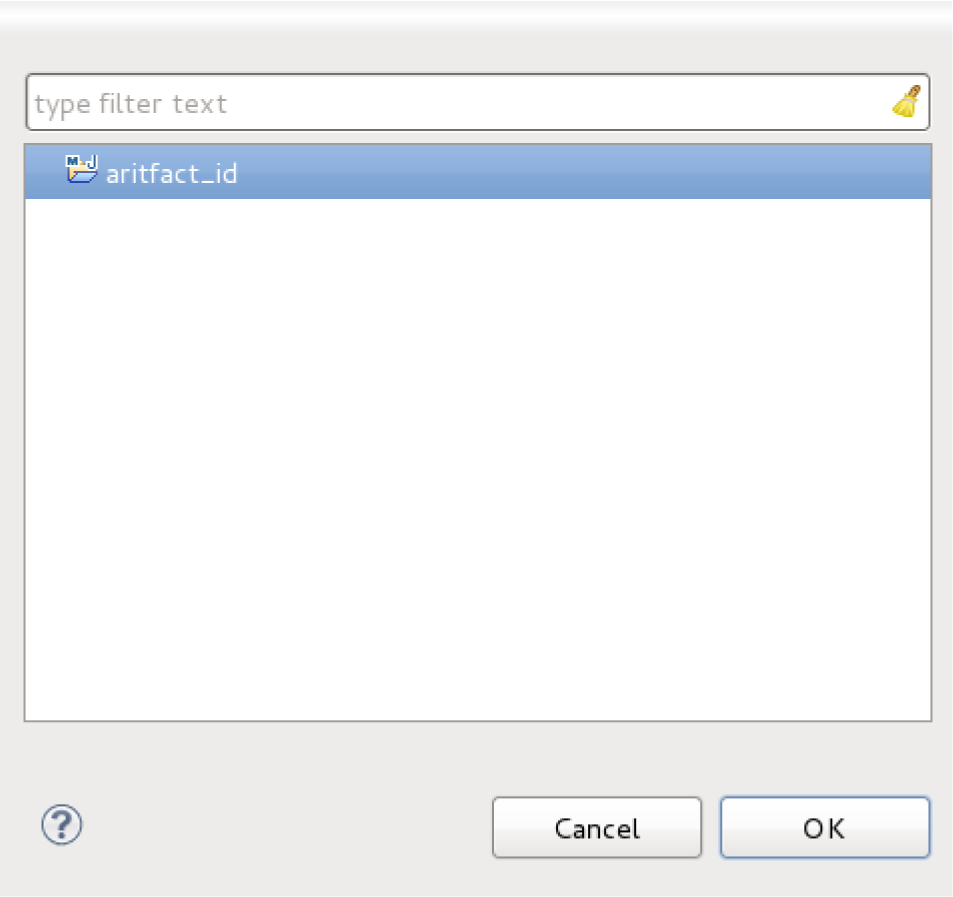
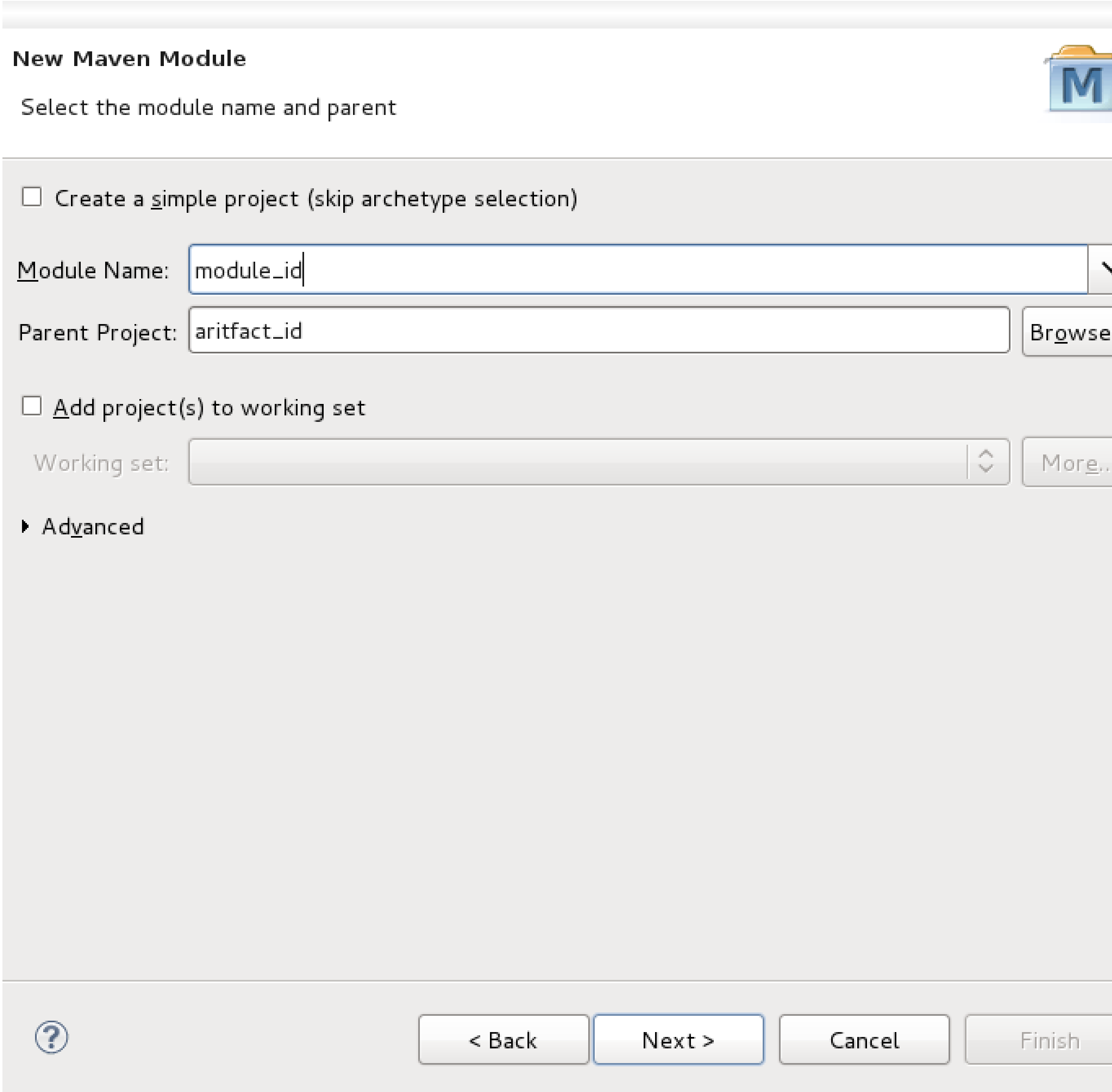


Figure 3.4. Selecting the parent project

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: aritfact_id

□ Add project(s) to working set

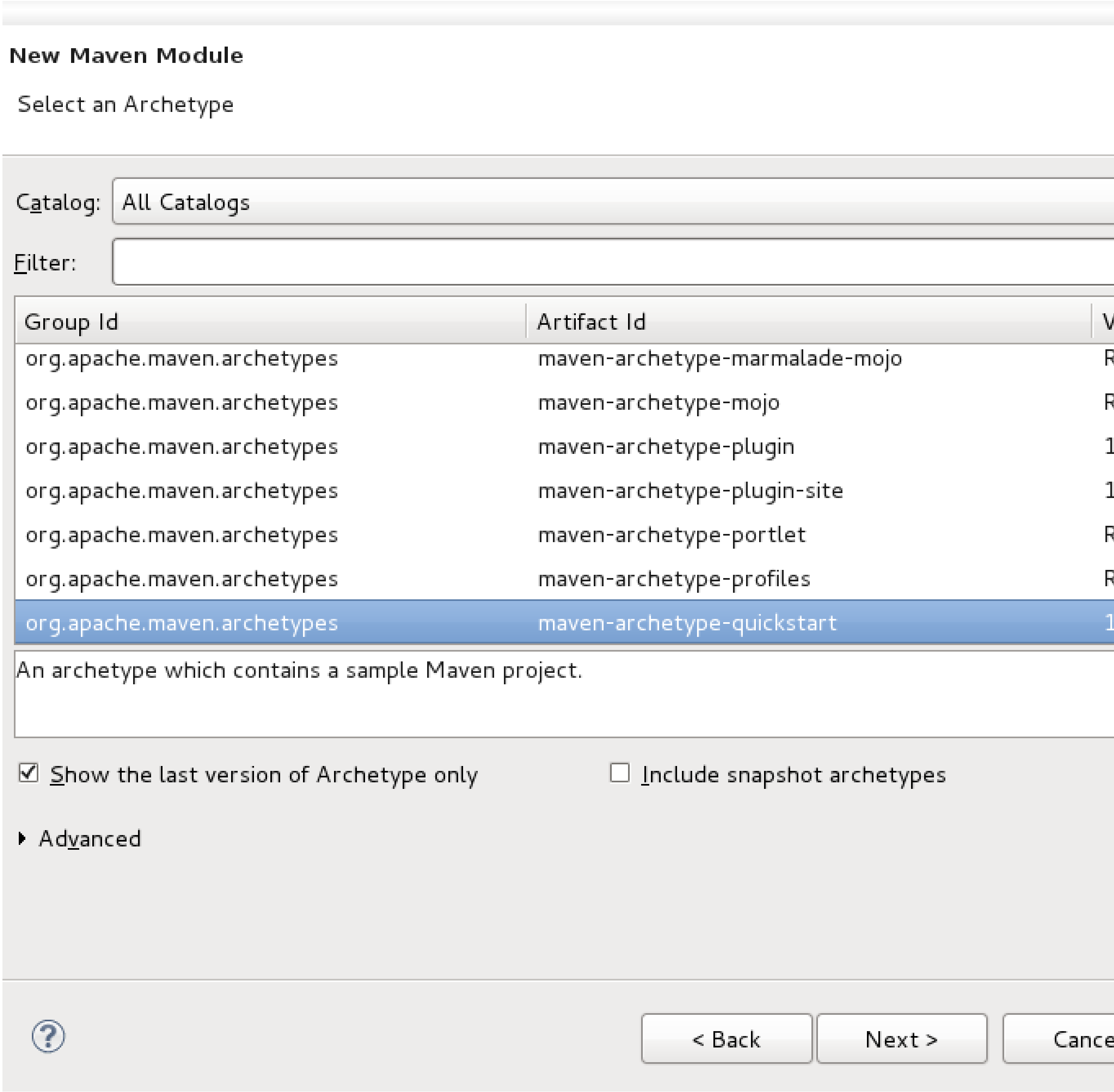
Working set:

Advanced

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

Catalog: All Catalogs

Filter:

Group Id	Artifact Id	V
org.apache.maven.archetypes	maven-archetype-marmalade-mojo	R
org.apache.maven.archetypes	maven-archetype-mojo	R
org.apache.maven.archetypes	maven-archetype-plugin	1
org.apache.maven.archetypes	maven-archetype-plugin-site	1
org.apache.maven.archetypes	maven-archetype-portlet	R
org.apache.maven.archetypes	maven-archetype-profiles	R
org.apache.maven.archetypes	maven-archetype-quickstart	1

An archetype which contains a sample Maven project.

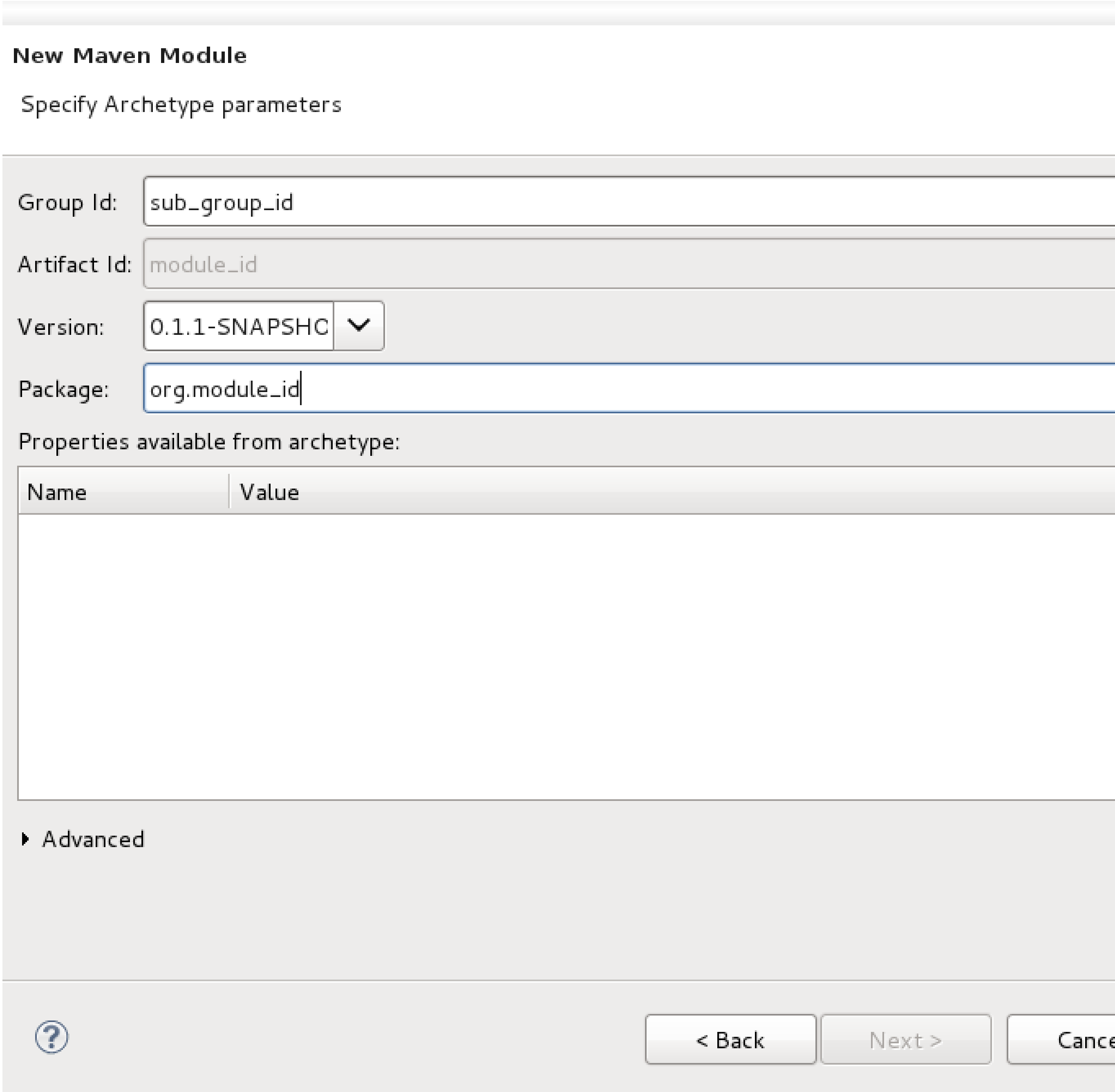
☑ Show the last version of Archetype only ☐ Include snapshot archetypes

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.



New Maven Module

Specify Archetype parameters

Group Id: sub_group_id

Artifact Id: module_id

Version: 0.1.1-SNAPSHC

Package: org.module_id

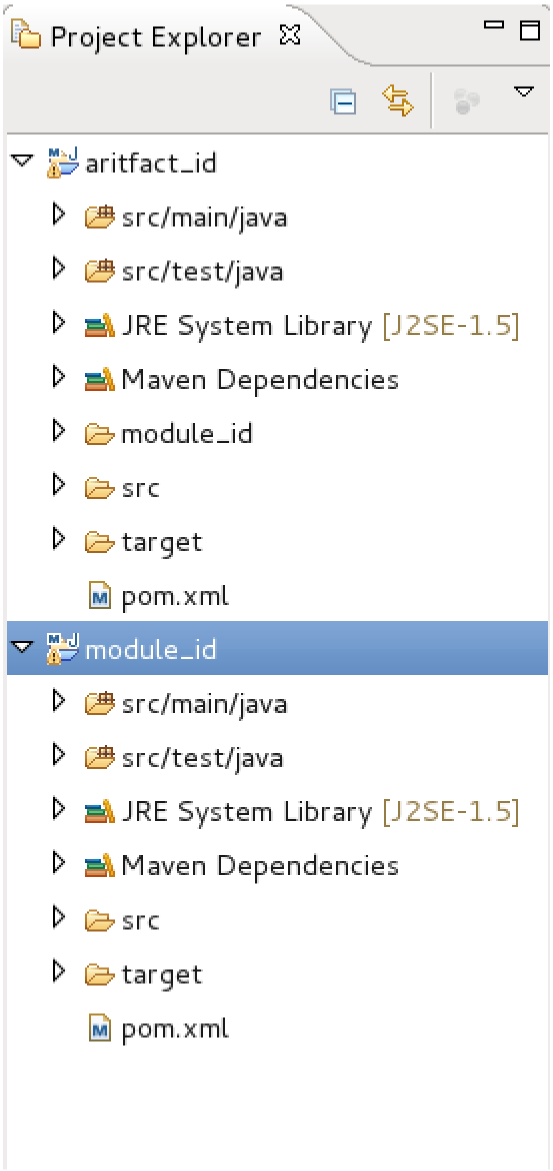
Properties available from archetype:

Name	Value

Figure 3.7. Archetype parameter settings

Click the **Finish** button.

The module will now be created and appear in your **Project Explorer**.

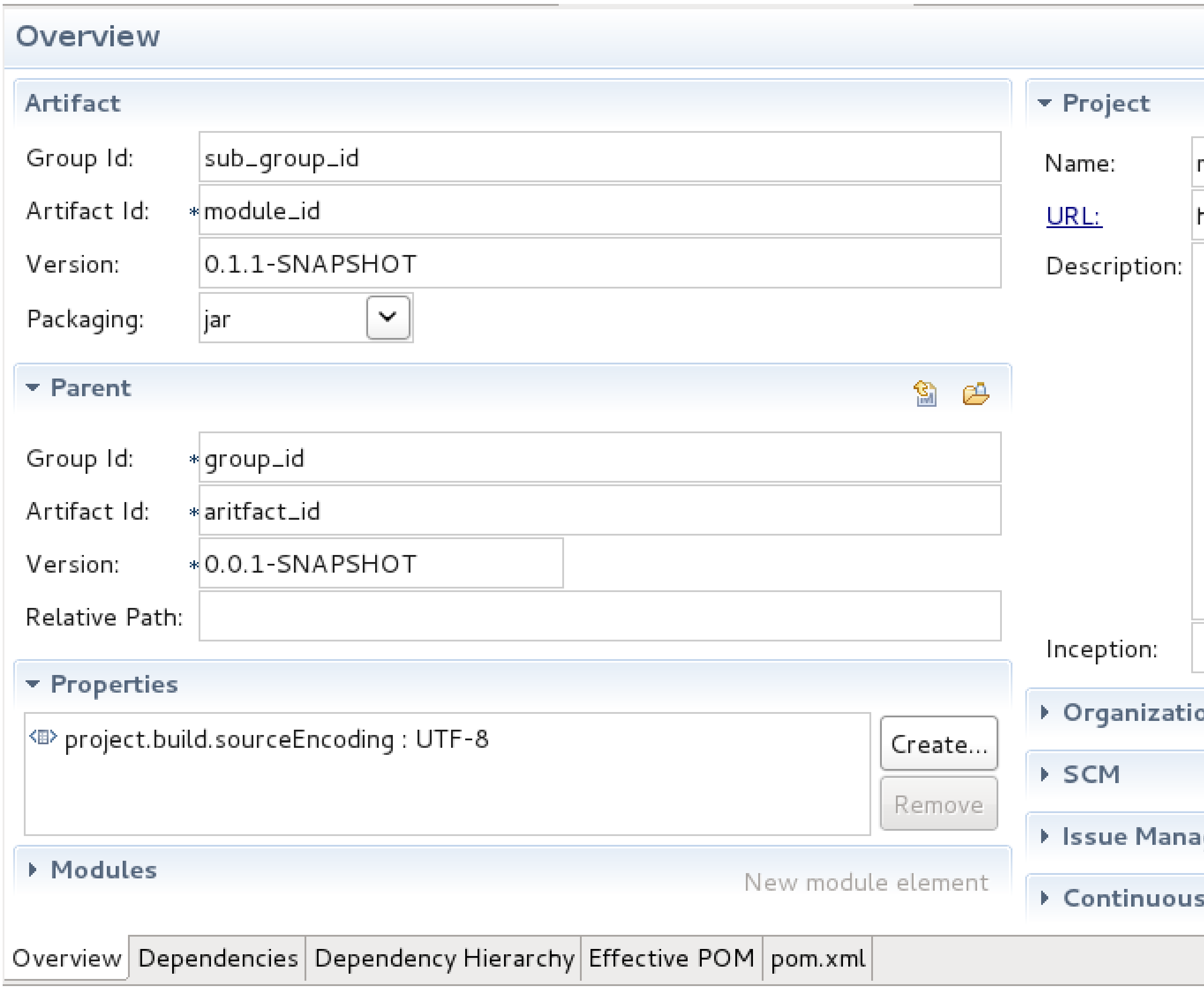


Project Explorer

- aritfact_id
  - src/main/java
  - src/test/java
  - JRE System Library [J2SE-1.5]
  - Maven Dependencies
  - module_id
  - src
  - target
  - pom.xml
- module_id
  - src/main/java
  - src/test/java
  - JRE System Library [J2SE-1.5]
  - Maven Dependencies
  - src
  - target
  - pom.xml

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.



Overview

Artifact

Group Id: sub_group_id

Artifact Id: * module_id

Version: 0.1.1-SNAPSHOT

Packaging: jar

Parent

Group Id: * group_id

Artifact Id: * aritfact_id

Version: * 0.0.1-SNAPSHOT

Relative Path:

Properties

project.build.sourceEncoding : UTF-8

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**.

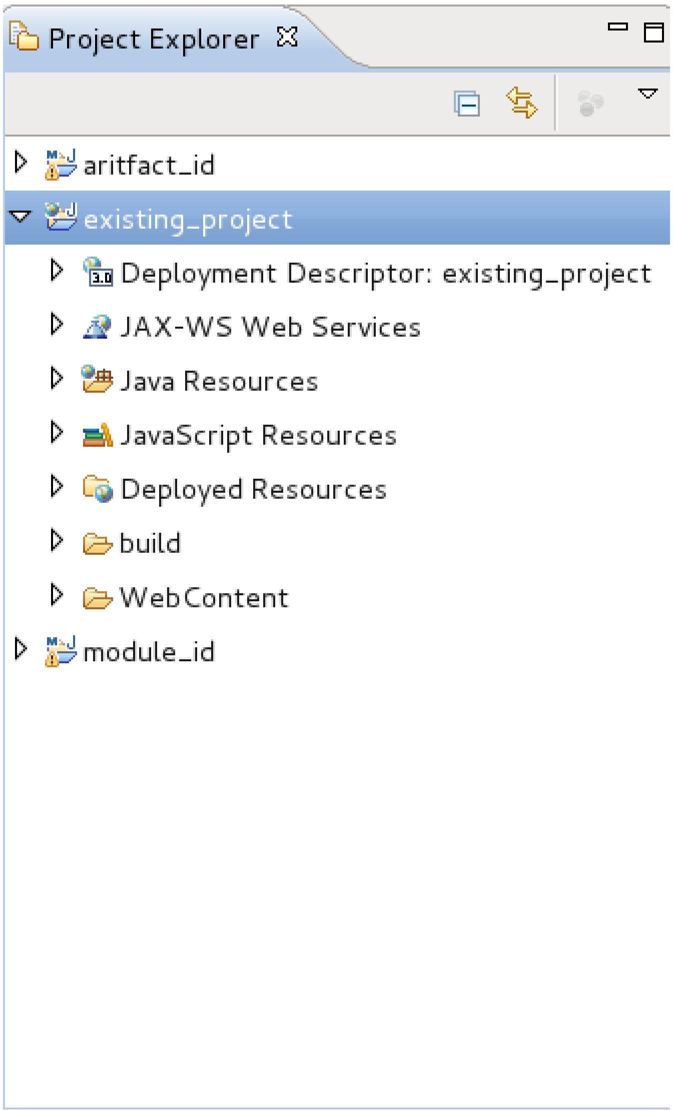


Figure 4.1. Selecting Maven project conversion

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

From the context menu navigate to **Configure** → **Convert to Maven Project**.

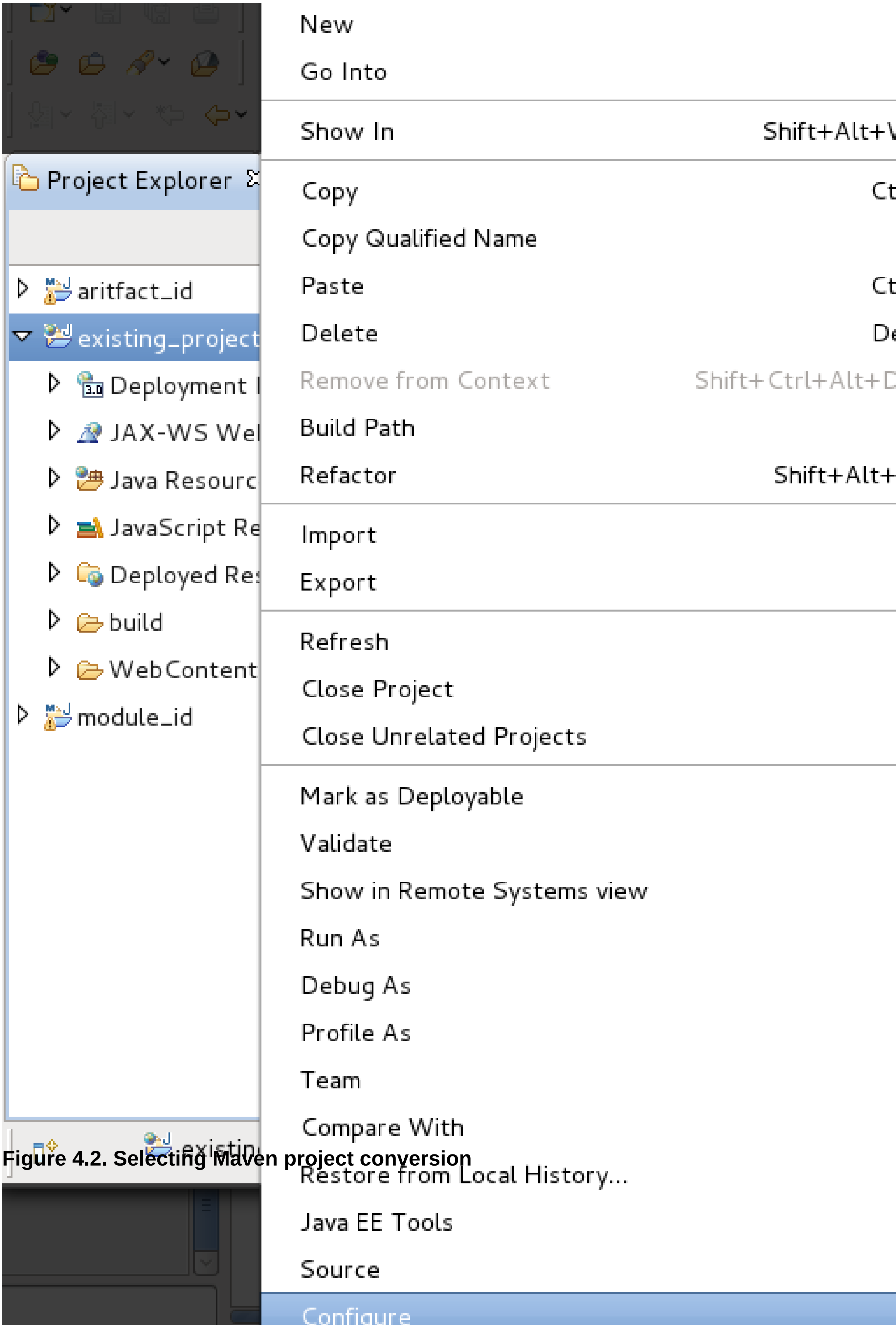
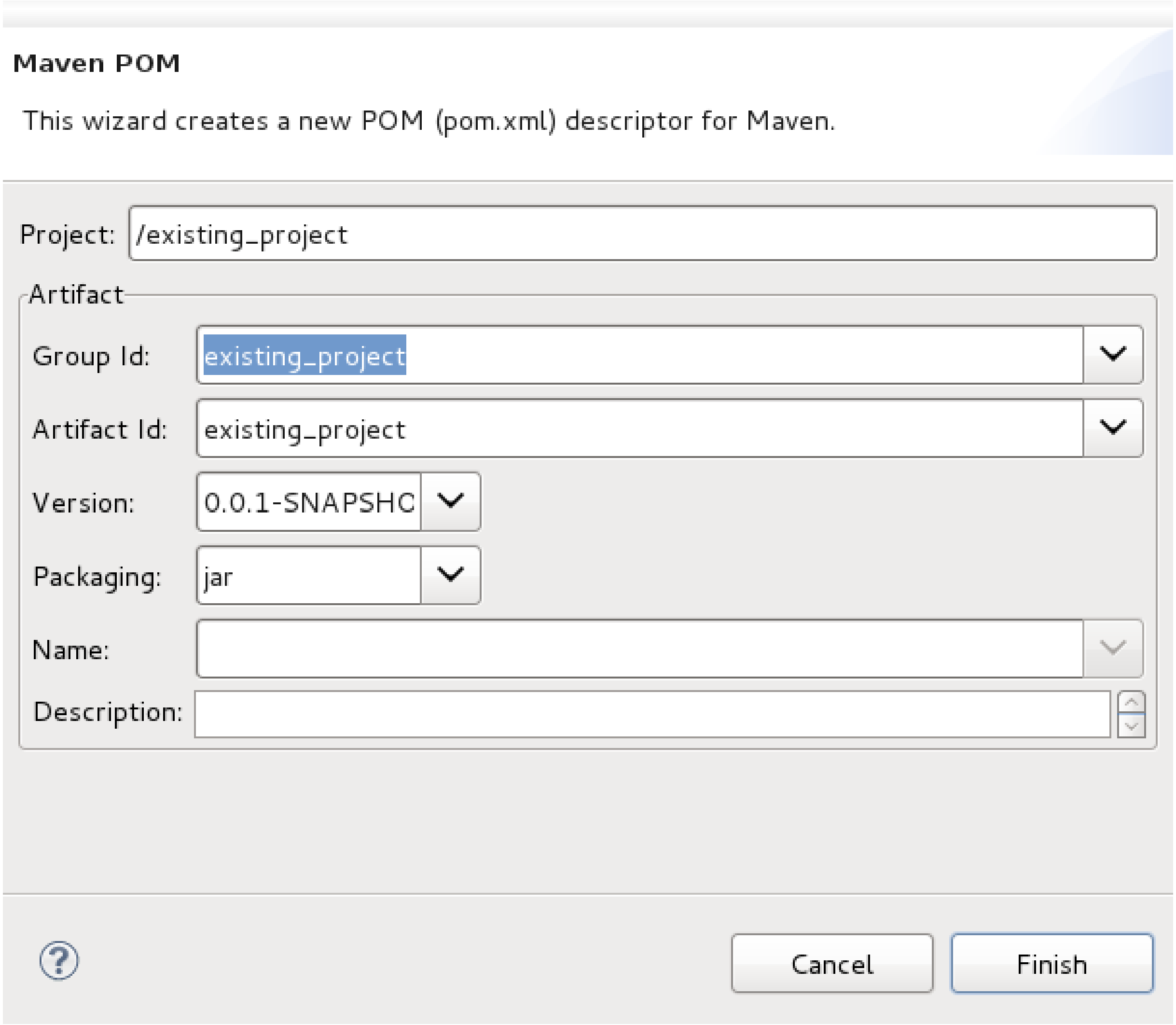


Figure 4.2. Selecting Maven project conversion

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 projects 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.

Project: /existing_project

Artifact

Group Id: existing_project

Artifact Id: existing_project

Version: 0.0.1-SNAPSHO

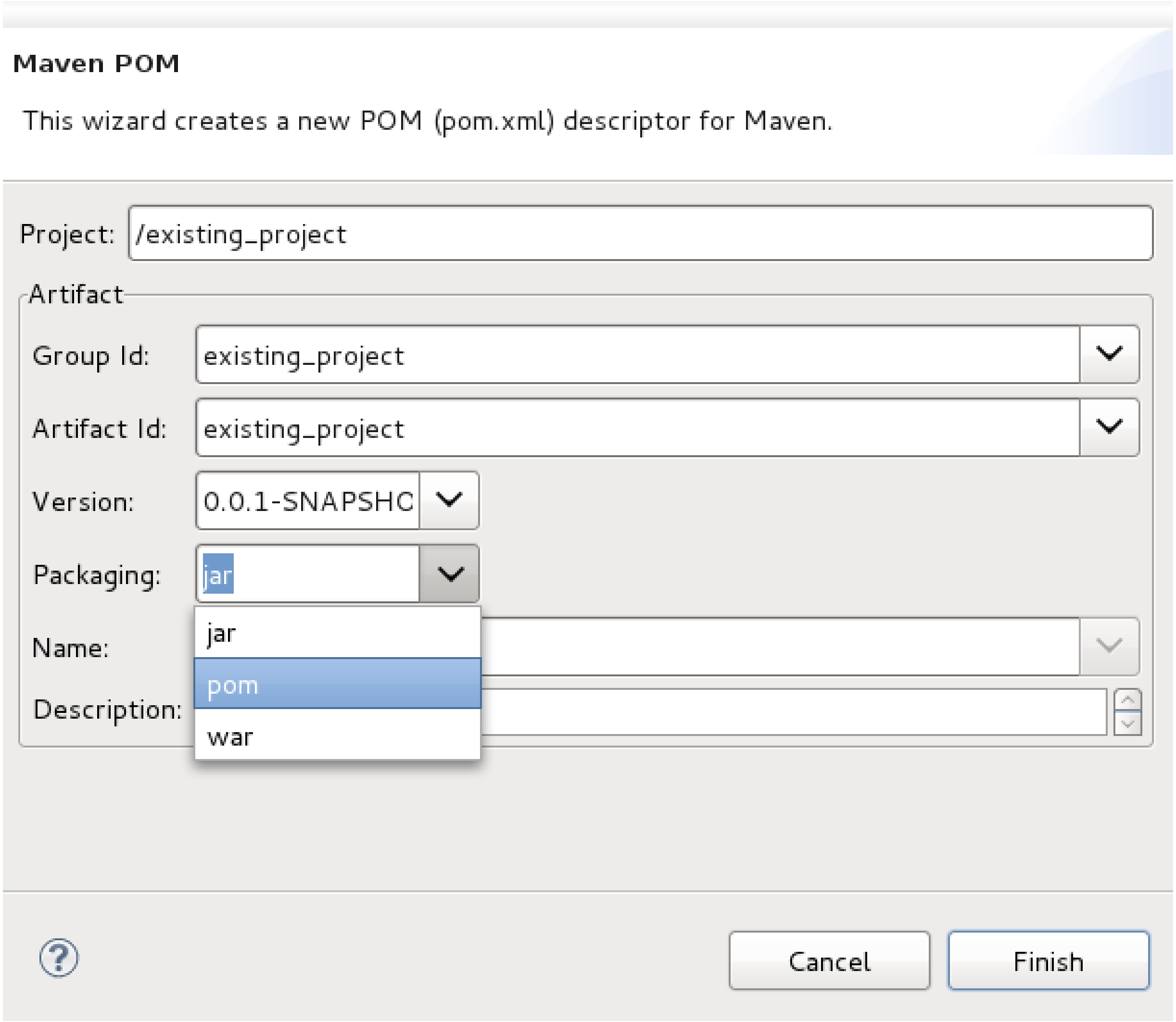
Packaging: jar

Name:

Description:

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.

Project: /existing_project

Artifact

Group Id: existing_project

Artifact Id: existing_project

Version: 0.0.1-SNAPSHC

Packaging: jar

Name:

Description:

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**.

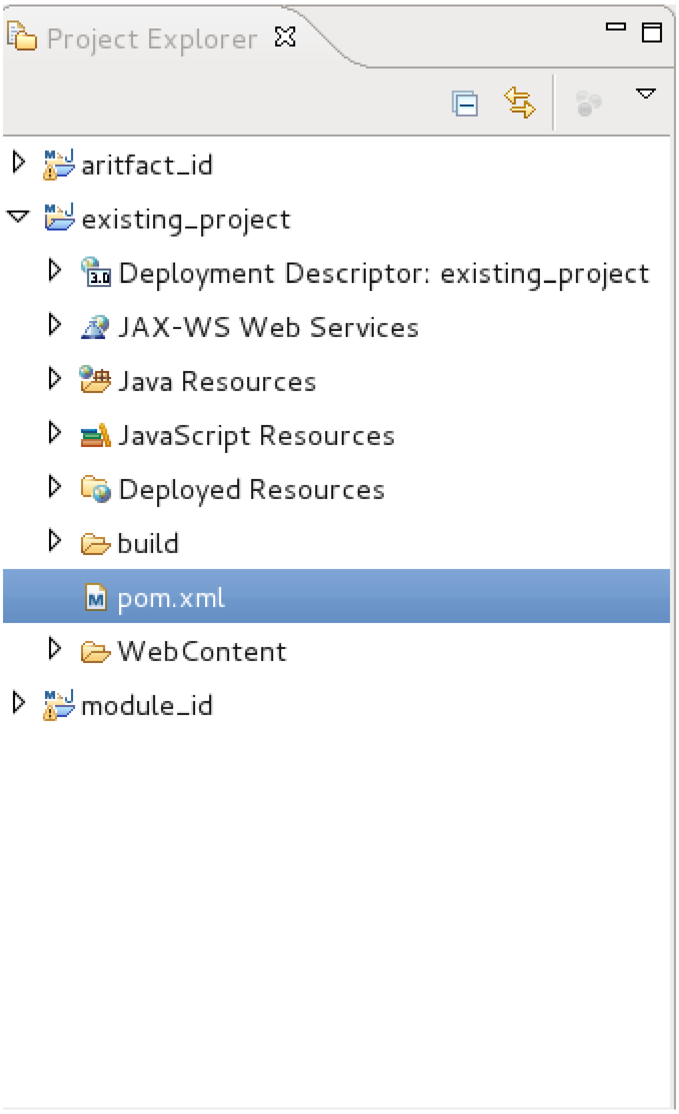
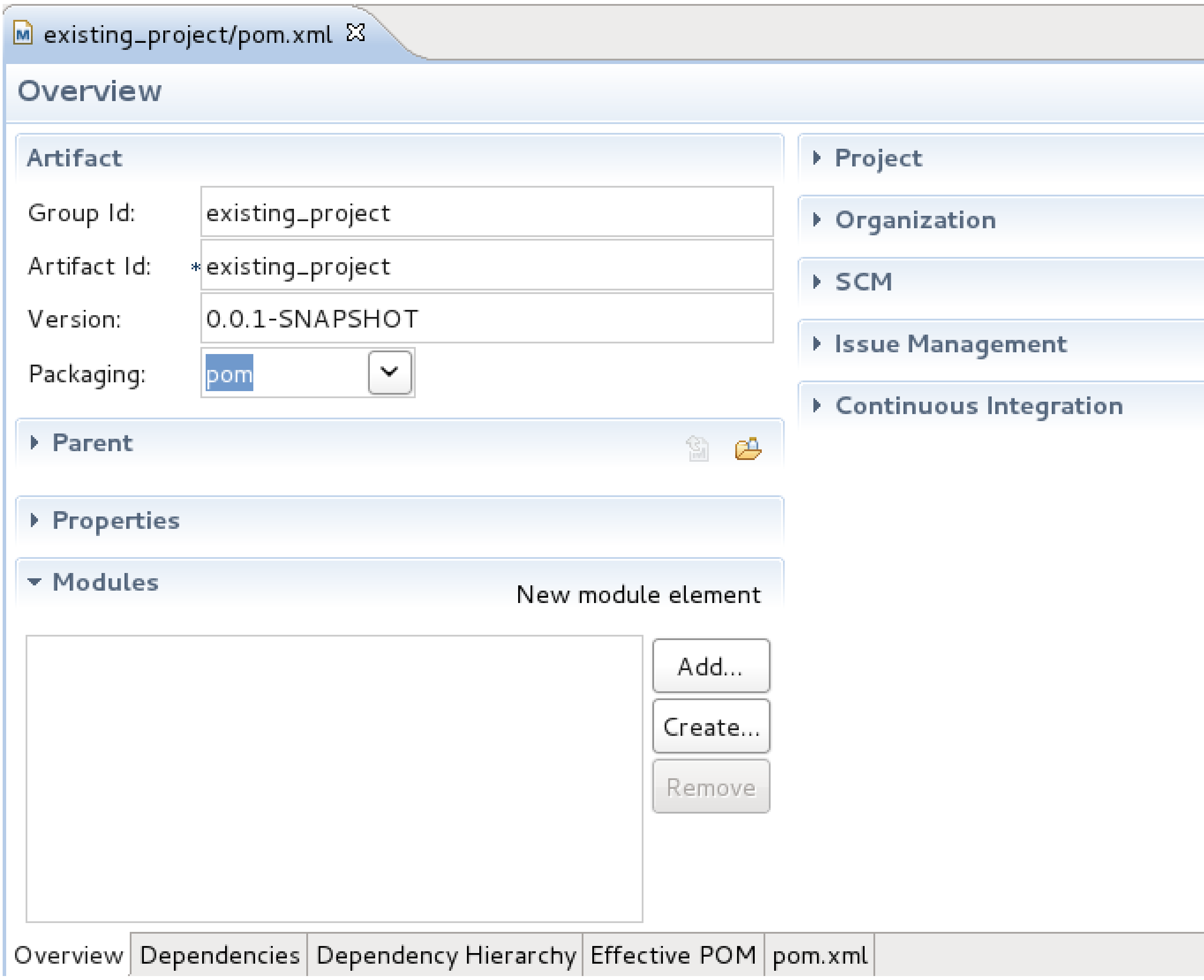


Figure 4.5. New pom.xml file

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.



Group Id: existing_project

Artifact Id: existing_project

Version: 0.0.1-SNAPSHOT

Packaging: pom

Figure 4.6. Overview screen for pom.xml