

# Creating Java and JavaScript Adapters

## Overview

This tutorial demonstrates how to create either Java or JavaScript adapter using the Maven Archetype "adapter-maven-archetype". The "adapter-maven-archetype" is based on the Maven archetype toolkit (<https://maven.apache.org/guides/introduction/introduction-to-archetypes.html>) in order to create the adapter as a Maven project.

**Prerequisite:** Make sure that you read the Adapters Overview (../adapters-overview) tutorial first.

## Install Maven

In order to create an adapter, you first need to download and install Maven. Go to the [Apache Maven website](https://maven.apache.org/) (<https://maven.apache.org/>) and follow the instructions how to download and install Maven.

## Creating an Adapter

To create an adapter Maven project, use the `archetype:generate` command. You can choose to run the command interactively or directly.

### In Interactive Mode

1. Run:

```
$ mvn archetype:generate -DarchetypeGroupId=com.ibm.mfp -DarchetypeArtifactId=<adapter type artifact ID> -DarchetypeVersion=8.0.0
```

- The Archetype Group Id and Archetype Version are required parameters to identify the archetype.
- The Archetype Artifact Id is a required parameter to identify the adapter type:
  - Use `adapter-maven-archetype-java` to create a Java adapter
  - Use `adapter-maven-archetype-http` to create a JavaScript HTTP adapter
  - Use `adapter-maven-archetype-sql` to create a JavaScript SQL adapter
  - `adapter-maven-archetype-jms` - JavaScript JMS adapter
  - `adapter-maven-archetype-sap` - JavaScript SAP adapter
  - `adapter-maven-archetype-cast-iron` - JavaScript Cast Iron adapter

2. You will be asked to enter the Group Id of the Maven project to be build:

```
Define value for property 'groupId': : sample.group.id
```

3. You will be asked to enter the Artifact Id of the Maven project **which will later be used also as the adapter name**:

```
Define value for property 'artifactId': : SampleAdapter
```

4. You will be asked to enter the Maven project version (the default is `1.0-SNAPSHOT`):

```
Define value for property 'version': 1.0-SNAPSHOT: : 1.0
```

5. You will be asked to enter the Java adapter package name (the default is the groupId):

```
Define value for property 'package': sample.group.id: : com.sample.adapter
```

6. Enter y to confirm:

```
[INFO] Using property: archetypeVersion = 7.2.0.0
Confirm properties configuration:
groupId: sample.group.id
artifactId: Sample
version: 1.0
package: com.sample.adapter
adapter-name: TestAdapter
archetypeVersion: 7.2.0.0
Y: : y
```

## In Direct Mode

Replace the placeholders with the actual values and run:

```
$ mvn archetype:generate -DarchetypeGroupId=com.ibm.mfp -DarchetypeArtifactId=<
adapter type artifact ID> -DarchetypeVersion=8.0.0 -DgroupId=<maven_project_groupid> -DartifactId=<maven_project_artifactid> -Dversion=<maven_project_version>
-Dpackage=<java_adapter_package_name>
```

For more information about the archetype:generate command see the Maven documentation.

## File Structure

The result will be a Maven project containing a `src` folder and a `pom.xml` file:



## Building and Deploying Java Adapter

### Build

The adapter will be built every time you run the `mvn install` command to build your Maven project. The end result is the `.adapter` file in the project `target` folder:



### Deploy

**NOTE:** The deploy command is available only during development.

1. Edit the `pom.xml` file with the following configuration parameters:

```
...
<configuration>
  <!-- parameters for deploy adapter -->
  <serverUrl>http://<IP>:<PORT>/mfadmin</serverUrl>
  <user>ADMIN_USER</user>
  <password>ADMIN_PASSWORD</password>
</configuration>
```

- Replace the IP and PORT with the MobileFirst Server IP and port.
- Replace the ADMIN\_USER and ADMIN\_PASSWORD with the MobileFirst admin user and password.

2. Open the project's root folder in terminal and run the `mvn:adapter` command:

```
$ mvn adapter:deploy
```

\*\*\* You can also deploy the Java adapter using Ant tasks. For more information see the topic about Deploying applications and adapters in the user documentation.

## Grouping adapters in a single maven project

### Dependencies

Unlike using the Studio or the CLI `lib` folder to put your dependencies, in the Java adapter Maven project you'll put them under the `dependencies` element in the Maven project `pom.xml` file.

For more information about dependencies see the Maven documentation.

## Migrating an Existing Java Adapter

In order to migrate an existing Java adapter to Java adapter Maven project you need to:

- Create a new Maven project using the existing adapter name and adapter package name.
- Overwrite the adapter `.xml` file (under `src/main/resources`) with the existing Java adapter `.xml` file.
- Overwrite the adapter application and resource Java files (under `src/main/java/adapterpackagename`) with the existing Java adapter application and resource Java files.
- To add dependencies from the existing Java adapter `lib` folder see the Dependencies section.