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5 ways to add multiple JAR in to Classpath in Java

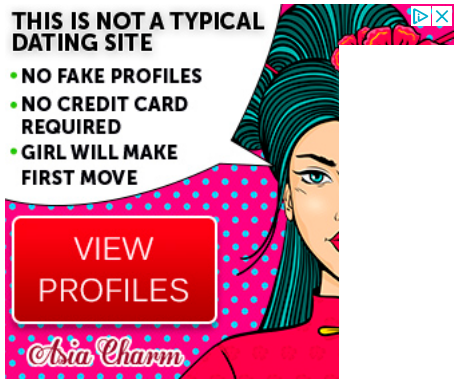
How to add JAR file to Classpath in Java

Adding JAR into classpath is a common task for Java [programmer](#) and different programmer do it on different way. Since Java allows multiple ways to include JAR file in classpath, it becomes important to know pros and cons of each approach and How exactly they work. There are 5 ways to add jars on into classpath in Java some of them we have already seen in [How classpath works in Java](#) and [How to set Path in Java](#). In this post we will revisit some of those techniques and explore Java 1.6 wildcard to add multiple JAR into classpath. By the way here is 5 ways to add JAR file into classpath. In short knowledge of Path, Classpath and Classloaders are must for any Java programmer, not only from knowledge point of view but also to successfully debug and resolve issues related to Classpath e.g. `NoClassDefFoundError` and `java.lang.ClassNotFoundException` in Java.



5 ways to add multiple JARs in Classpath

Here are some of the ways you can add jar files in classpath of a Java [program](#) :



1. Include the JAR name in CLASSPATH environment variable.

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binaries e.g. [javaw](#) and [java command](#).

## 2. Include name of JAR file in -classpath command line option.



This is the preferred option if you are passing `-classpath` option while running your Java program as `java -classpath ${CLASSPATH} Main`. Here `CLASSPATH` shell variable can contain list of Jar file required by your application. Another advantage of using `-classpath` command line option is that, it allows every application to have its own set of JAR in classpath unlike previous option which is available to all Java program running on same host.

## 3. Include the jar name in the Class-Path option in the manifest.

If you are running an [executable JAR file](#), you might have noticed `Class-Path` attribute in manifest file inside `META-INF` folder. `Class-Path` option takes highest priorities and overrides both `CLASSPATH` environment variable and `-classpath` command line option. This is also a good place to include all JAR file required by Java application.

## 4. Use Java 6 wildcard option to include multiple JAR

From Java 1.6+ onwards you can use wildcard to include all jars in a directory into the set classpath or provide it to Java program directly using `-classpath` command line option. Following Java command example shows how to add multiple JAR into classpath using Java 6 wildcard method.

```
java.exe -classpath E:\lib\* Main
```

This is the newest option of adding multiple JAR file into classpath. Above command will include all JAR file inside `E:\lib` [directory](#) into classpath. One thing which is worth noting while using wildcard to *include multiple JAR* is that syntax must be correct. In fact that's a [common mistake many Java programmer make](#). Here are few more important points about using Java 6 wildcard to *include multiple JAR in classpath*:

1) In order to include all JAR from a directory you need to use wildcard `*` and not `*.jar`

2) If you have JAR and class file in same directory then you need to include each of them separately.

Wildcard only match JAR files and not classes. E.g.

```
Java -classpath /classes;/lib/*
```



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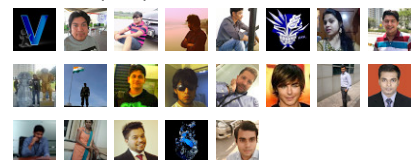
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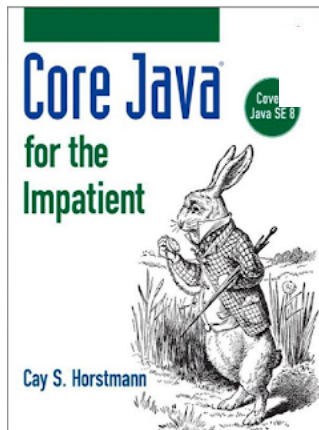
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4) One more important point is that wildcard to include all JAR is not honored in case if you are running Java program with JAR file and that have Class-Path attribute in manifest file. JAR wildcard is honored If you use `-cp` or `-classpath` option. See [Core Java for Impatient](#) for more details:



## 5. Adding JAR in ext directory e.g. C:\Program Files\Java\jdk1.6.0\jre\lib\ext

This is another way you can add multiple JAR in your classpath. JAR from ext directory is loaded by extension Classloader and it has higher priority than application class loader which loads JAR from either CLASSPATH environment variable or directories specified in `-classpath` or `-cp` option. By the way I don't suggest this way of adding JAR into Classpath as its not standard, it just for information purpose.

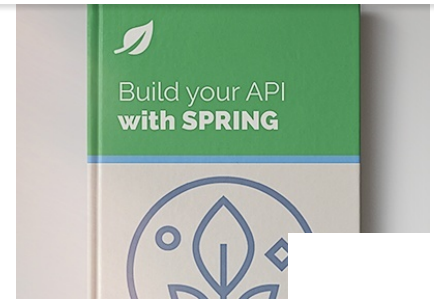
These were **couple of ways you can include JAR files in your Classpath**. Java 6 wildcard is preferred way of adding multiple JAR in class path along with `-cp` and `-classpath` command line option. If you are working in multiple operating system than its also good to remember that two directories in classpath are separated using semi colon(;) in windows and with colon : in UNIX based system.

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Usul said...

The opposite of this problem is quite a bigger one: Given classpath, for instance inside an application server like jboss, or inside an IDE like eclipse, how can I determine, from which part of this given classpath a certain class comes from?

[October 21, 2012 at 4:03 AM](#)

Anonymous said...

To add JAR in eclipse classpath, if we are using Maven, the command "mvn eclipse:eclipse" will populate classpath and if we are using Gradle, command "gradle eclipse" will populate classpath

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3. [Microsoft SQL Server Documentation](#)
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