

The Java™ Tutorials

Trail: Deployment

Lesson: Packaging Programs in JAR Files

Section: Using JAR Files: The Basics

The Java Tutorials have been written for JDK 8. Examples and practices described in this page don't take advantage of improvements introduced in later releases.

Viewing the Contents of a JAR File

The basic format of the command for viewing the contents of a JAR file is:

```
jar tf jar-file
```

Let's look at the options and argument used in this command:

- The `t` option indicates that you want to view the *table* of contents of the JAR file.
- The `f` option indicates that the JAR file whose contents are to be viewed is specified on the command line.
- The `jar-file` argument is the path and name of the JAR file whose contents you want to view.

The `t` and `f` options can appear in either order, but there must not be any space between them.

This command will display the JAR file's table of contents to `stdout`.

You can optionally add the verbose option, `v`, to produce additional information about file sizes and last-modified dates in the output.

An Example

Let's use the Jar tool to list the contents of the `TicTacToe.jar` file we created in the previous section:

```
jar tf TicTacToe.jar
```

This command displays the contents of the JAR file to `stdout`:

```
META-INF/MANIFEST.MF
TicTacToe.class
audio/
audio/beep.au
audio/ding.au
audio/return.au
audio/yahoo1.au
audio/yahoo2.au
images/
images/cross.gif
images/not.gif
```

The JAR file contains the `TicTacToe` class file and the audio and images directory, as expected. The output also shows that the JAR file contains a default manifest file, `META-INF/MANIFEST.MF`, which was automatically placed in the archive by the JAR tool. For more information, see the [Understanding the Default Manifest](#) section.

All pathnames are displayed with forward slashes, regardless of the platform or operating system you're using. Paths in JAR files are always relative; you'll never see a path beginning with `c:`, for example.

The JAR tool will display additional information if you use the `v` option:

```
jar tvf TicTacToe.jar
```

For example, the verbose output for the `TicTacToe` JAR file would look similar to this:

```
68 Thu Nov 01 20:00:40 PDT 2012 META-INF/MANIFEST.MF
553 Mon Sep 24 21:57:48 PDT 2012 TicTacToe.class
3708 Mon Sep 24 21:57:48 PDT 2012 TicTacToe.class
9584 Mon Sep 24 21:57:48 PDT 2012 TicTacToe.java
0 Mon Sep 24 21:57:48 PDT 2012 audio/
4032 Mon Sep 24 21:57:48 PDT 2012 audio/beep.au
2566 Mon Sep 24 21:57:48 PDT 2012 audio/ding.au
```

6558 Mon Sep 24 21:57:48 PDT 2012 audio/return.au
7834 Mon Sep 24 21:57:48 PDT 2012 audio/yahoo1.au
7463 Mon Sep 24 21:57:48 PDT 2012 audio/yahoo2.au
424 Mon Sep 24 21:57:48 PDT 2012 example1.html
0 Mon Sep 24 21:57:48 PDT 2012 images/
157 Mon Sep 24 21:57:48 PDT 2012 images/cross.gif
158 Mon Sep 24 21:57:48 PDT 2012 images/not.gif

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