## Run HelloWorld using JavaFX 12（使用JavaFX12运行HelloWorld）

Download an appropriate [JavaFX runtime](https://gluonhq.com/products/javafx/" \t "https://openjfx.io/openjfx-docs/_blank) for your operating system and unzip it to a desired location.

Add an environment variable pointing to the lib directory of the runtime:

* [Linux/Mac](https://openjfx.io/openjfx-docs/" \l "nix-env)

export PATH\_TO\_FX=path/to/javafx-sdk-12.0.1/lib

* [Windows](https://openjfx.io/openjfx-docs/" \l "win-env)

set PATH\_TO\_FX="path\to\javafx-sdk-12.0.1\lib"

You can now compile and run JavaFX 12 applications from the command line using the JavaFX runtime.

Compile the application (e.g. use [HelloFX.java](https://github.com/openjfx/samples/blob/master/HelloFX/CLI/hellofx/HelloFX.java" \t "https://openjfx.io/openjfx-docs/_blank) from this [sample](https://github.com/openjfx/samples/blob/master/HelloFX/CLI" \t "https://openjfx.io/openjfx-docs/_blank)) using:

* [Linux/Mac](https://openjfx.io/openjfx-docs/" \l "nix-env)

javac --module-path $PATH\_TO\_FX --add-modules javafx.controls HelloFX.java

* [Windows](https://openjfx.io/openjfx-docs/" \l "win-env)

javac --module-path %PATH\_TO\_FX% --add-modules javafx.controls HelloFX.java

**Note:** Additional modules are required for extended functionality. For example, if your application is using FXML, you will need to add the javafx.fxml module, as shown below:

* [Linux/Mac](https://openjfx.io/openjfx-docs/" \l "nix-env)

javac --module-path $PATH\_TO\_FX --add-modules javafx.controls,javafx.fxml HelloFX.java

* [Windows](https://openjfx.io/openjfx-docs/" \l "win-env)

javac --module-path %PATH\_TO\_FX% --add-modules javafx.controls,javafx.fxml HelloFX.java

Make sure to add the required modules, keeping into account transitive dependencies are automatically resolved (for instance, there is no need to add javafx.graphics module, since it is [transitively](https://openjfx.io/javadoc/12/javafx.controls/module-summary.html" \t "https://openjfx.io/openjfx-docs/_blank) required by the javafx.controlsmodule).

Next, run the application using:

* [Linux/Mac](https://openjfx.io/openjfx-docs/" \l "nix-env)

java --module-path $PATH\_TO\_FX --add-modules javafx.controls HelloFX

* [Windows](https://openjfx.io/openjfx-docs/" \l "win-env)

java --module-path %PATH\_TO\_FX% --add-modules javafx.controls HelloFX

根据你的操作系统下载合适的[JavaFX运行时](https://gluonhq.com/products/javafx/)，然后解压到所需目录。

新增一个环境变量PATH\_TO\_FX指向“JavaFX运行时”的库目录：

* [Linux/Mac](https://openjfx.io/openjfx-docs/" \l "nix-env)

export PATH\_TO\_FX=path/to/javafx-sdk-12.0.1/lib

* [Windows](https://openjfx.io/openjfx-docs/" \l "win-env)

set PATH\_TO\_FX="path\to\javafx-sdk-12.0.1\lib"

现在你就可以在命令行上使用“JavaFX运行时”来编译和运行JavaFX12应用程序：

编译(例如：使用 这个[例子](https://github.com/openjfx/samples/blob/master/HelloFX/CLI" \t "https://openjfx.io/openjfx-docs/_blank)中的[HelloFX.java](https://github.com/openjfx/samples/blob/master/HelloFX/CLI/hellofx/HelloFX.java" \t "https://openjfx.io/openjfx-docs/_blank)) ：

* [Linux/Mac](https://openjfx.io/openjfx-docs/" \l "nix-env)

javac --module-path $PATH\_TO\_FX --add-modules javafx.controls HelloFX.java

* [Windows](https://openjfx.io/openjfx-docs/" \l "win-env)

javac --module-path %PATH\_TO\_FX% --add-modules javafx.controls HelloFX.java

**注意：** 对于扩展的功能需要添加相应的模块。例如，如果你的应用程序用了FXML，编译时你需要添加javafx.fxml模块，命令如下：

* [Linux/Mac](https://openjfx.io/openjfx-docs/" \l "nix-env)

javac --module-path $PATH\_TO\_FX --add-modules javafx.controls,javafx.fxml HelloFX.java

* [Windows](https://openjfx.io/openjfx-docs/" \l "win-env)

javac --module-path %PATH\_TO\_FX% --add-modules javafx.controls,javafx.fxml HelloFX.java

只要添加所需的模块即可，添加的模块还依赖其它模块时会自动解析添加（例如：本例中不需手动添加javafx.graphics模块，因为javafx.controls模块依赖于javafx.graphics模块，会自动添加）。

接下来，执行下面命令来运行程序：

* [Linux/Mac](https://openjfx.io/openjfx-docs/" \l "nix-env)

java --module-path $PATH\_TO\_FX --add-modules javafx.controls HelloFX

* [Windows](https://openjfx.io/openjfx-docs/" \l "win-env)

java --module-path %PATH\_TO\_FX% --add-modules javafx.controls HelloFX