

jpackage in Java 14

jpackage is a command-line tool to create native installers and packages for Java applications.

Install OpenJDK 14

On Ubuntu 20.04/18.04

```
curl -O
https://download.java.net/java/GA/jdk14/076bab302c7b4508975440c56f6cc26a/36/GPL/openjdk-
14_linux-x64_bin.tar.gz
tar xvf openjdk-14_linux-x64_bin.tar.gz
mv jdk-14 $HOME/opt/
```

On Mac

Download: <https://jdk.java.net/14/>

```
cd ~/Downloads
tar xf openjdk-14_osx-x64_bin.tar.gz

sudo mv jdk-14.jdk /Library/Java/JavaVirtualMachines/
java -version
```

Packing JAR as .deb/.dmg

???????????? jar ????? Debin-based ?????

```
mkdir {icons,input,output,temp}

tree -L 3 --dirsfirst --filelimit 10 --sort=name
.
├── icons
│   └── CloudCoin_Wallet-Dark.png
├── input
│   └── CloudCoin.D.3.0.15.jar
└── output
```

```

|   └─ CloudCoin_Wallet-Dark
|   |   └─ bin
|   |   └─ lib
|   └─ cloudcoin-wallet-dark_3.0.15-1_amd64.deb
└─ temp
└─ build.sh
└─ license.txt

```

7 directories, 5 files

???????

- icons: App ?????(*.png), size 256x256
- input: ??? jar ?
- output: ????.deb ??
- temp: ??????????????
- build.sh: ??????
- license.txt: App ????????

build.sh for deb?

```

export PATH="$PATH:~/opt/jdk-14/bin"

[ -d temp ] && rm -rf temp/*
jpackage \
--type deb \
--name CloudCoin_Wallet-Dark \
--description "CloudCoin Wallet - Dark Edition. Homepage: https://cloudcoin.global." \
--vendor "CloudCoin Consortium" \
--app-version 3.0.15 \
--input input --dest output --temp temp \
--icon icons/CloudCoin_Wallet-Dark.png \
--license-file license.txt \
--copyright "CloudCoin™ Global Consortium © 2020 The Future of Currency" \
--main-jar CloudCoin.D.3.0.15.jar \
--linux-deb-maintainer alang.hsu@gmail.com \
--linux-app-category misc \
--linux-shortcut

```

- PATH?JDK 14 ?????????? jpackage ???????
- ? 3 ?????????????????? temp?
- --type???????????

- --name?????????
- --description??????????
- --vendor?????????
- --input?input ??????
- --dest?output ??????
- --temp?temp ??????
- --icon?App ??????
- --license-file??????????
- --main-jar??? jar ???
- --linux-deb-maintainer?????????
- --linux-app-category??????????
- --linux-shortcut??????????????

build.sh for dmg?

```
export PATH="$PATH:/Library/Java/JavaVirtualMachines/jdk-14.0.1.jdk/Contents/Home/bin"

[ -d temp ] && rm -rf temp/*
jpackage \
--type dmg \
--name CloudCoin_Wallet-Dark \
--main-jar CloudCoin.D.3.0.22.jar \
--input input --dest output --temp temp \
--app-version 3.0.22 \
--icon icons/CloudCoin_Wallet-Dark.icns \
--vendor "CloudCoin Consortium"
```

????

```
bash build.sh
```

- ??????????.deb?.dmg????????? output?
- ????? DMG ?????? Mac ??????????????????????

????????? DMG

```
sudo spctl --master-disable

# Install the DMG app

sudo spctl --master-enable
```

?? .dmg ??????

```
codesign -dvv CloudCoin_Wallet-$VERSION.dmg
# or
spctl -a -v CloudCoin_Wallet-$VERSION.dmg
```

???? DMG

- [Distribute outside the Mac App Store \(macOS\)](#)
- [Sign a Mac Installer Package with a Developer ID certificate](#)
- [Create, export, and delete signing certificates](#)
- Sample: <https://github.com/rokstrnisa/.../package.sh>

Packing jar as AppImage

?????????? jar ???? AppImage ???

1. ?? jpackage??? jar ??? `--type app-image`?
2. ?? appimagetool????? image ?????? AppImage ???

With jpackage)

```
mkdir {icons,input,output,temp}

tree -L 3 --dirsfirst --filelimit 10 --sort=name
.
├─ icons
│   └─ CloudCoin_Wallet-Dark.png
├─ input
│   └─ CloudCoin.D.3.0.15.jar
├─ output
│   └─ CloudCoin_Wallet-Dark
│       ├── bin
│       └─ lib
│   └─ cloudcoin-wallet-dark_3.0.15-1_amd64.deb
├─ temp
├─ build.sh
└─ license.txt

7 directories, 5 files
```

build.sh?

- ?????
 - CloudCoin_Wallet-Dark.AppDir/usr/share/icons/hicolor/256x256/CloudCoin_Wallet-Dark.png
 - CloudCoin_Wallet-Dark.AppDir/usr/share/icons/hicolor/256x256/apps/CloudCoin_Wallet-Dark.png
- ?? size?256 x 256

5. ?? App ??????.desktop?

CloudCoin_Wallet-Dark.desktop?

```
[Desktop Entry]
Name=CloudCoin Wallet(Dark-3.0.15)
Icon=CloudCoin_Wallet-Dark
Exec=CloudCoin_Wallet-Dark %F
Type=Application
Categories=Finance;
Comment=CloudCoin Wallet - Dark Edition
Terminal=false
StartupNotify=true
NoDisplay=false
Name[zh_TW]=CloudCoin Wallet(Dark-3.0.15)
```

- Icon - ??????
- Exec - ????????
- ?????? - CloudCoin_Wallet-Dark.AppDir/usr/share/applications/CloudCoin_Wallet-Dark.desktop

6. ????????

```
cd CloudCoin_Wallet-Dark.AppDir
ln -s usr/bin/CloudCoin_Wallet-Dark AppRun
ln -s usr/share/applications/CloudCoin_Wallet-Dark.desktop ./
ln -s usr/share/icons/hicolor/256x256/CloudCoin_Wallet-Dark.png ./
cd ../
```

???????????????

usr/bin ? usr/lib ???? jpackage ???? ?

```
tree --dirsfirst --filelimit 10 --sort=name
```

```
.
├─ CloudCoin_Wallet-Dark.AppDir
│   ├── usr
│   │   ├── bin
│   │   │   └─ CloudCoin_Wallet-Dark
│   │   ├── lib
│   │   │   ├── app
│   │   │   │   ├── CloudCoin.D.3.0.15.jar
│   │   │   │   └─ CloudCoin_Wallet-Dark.cfg
│   │   │   ├── runtime
│   │   │   │   ├── conf
│   │   │   │   │   ├── management
│   │   │   │   │   │   ├── jmxremote.access
│   │   │   │   │   │   ├── jmxremote.password.template
│   │   │   │   │   │   └─ management.properties
│   │   │   │   │   ├── sdp
│   │   │   │   │   │   └─ sdp.conf.template
│   │   │   │   │   ├── security
│   │   │   │   │   │   ├── policy
│   │   │   │   │   │   │   ├── limited
│   │   │   │   │   │   │   │   ├── default_local.policy
│   │   │   │   │   │   │   │   ├── default_US_export.policy
│   │   │   │   │   │   │   │   └─ exempt_local.policy
│   │   │   │   │   │   │   ├── unlimited
│   │   │   │   │   │   │   │   ├── default_local.policy
│   │   │   │   │   │   │   │   └─ default_US_export.policy
│   │   │   │   │   │   │   └─ README.txt
│   │   │   │   │   │   ├── java.policy
│   │   │   │   │   │   └─ java.security
│   │   │   │   │   ├── logging.properties
│   │   │   │   │   ├── net.properties
│   │   │   │   │   └─ sound.properties
│   │   │   │   ├── legal [63 entries exceeds filelimit, not opening dir]
│   │   │   │   ├── lib [47 entries exceeds filelimit, not opening dir]
│   │   │   │   └─ release
│   │   │   ├── CloudCoin_Wallet-Dark.png
│   │   │   └─ libapplauncher.so
│   └─ share
│       └─ applications
```

```
| | | └─ CloudCoin_Wallet-Dark.desktop
| | └─ icons
| |   └─ hicolor
| |     └─ 256x256
| |       └─ apps
| |         └─ CloudCoin_Wallet-Dark.png
| |           └─ CloudCoin_Wallet-Dark.png
| └─ AppRun -> usr/bin/CloudCoin_Wallet-Dark
| └─ CloudCoin_Wallet-Dark.desktop -> usr/share/applications/CloudCoin_Wallet-Dark.desktop
| └─ CloudCoin_Wallet-Dark.png -> usr/share/icons/hicolor/256x256/CloudCoin_Wallet-Dark.png
└─ appimagetool-x86_64.AppImage
└─ CloudCoin_Wallet-Dark.3.0.22-x86_64.AppImage
```

7. ????

```
chmod u+x appimagetool-x86_64.AppImage
./appimagetool-x86_64.AppImage CloudCoin_Wallet-Dark.AppDir CloudCoin_Wallet-Dark-
x86_64.AppImage
```

Build with Maven

Download Maven

<https://maven.apache.org/install.html>

```
wget https://dlcdn.apache.org/maven/maven-3/3.8.6/binaries/apache-maven-3.8.6-bin.tar.gz
tar xzf apache-maven-3.8.6-bin.tar.gz
cd apache-maven-3.8.6/bin
mvn -v
```

Install JDK (not JRE)

RedHat 8:

```
dnf install java-1.8.0-openjdk java-1.8.0-openjdk-devel
```

Get/Build the JAVA project

```
git clone https://github.com/kevinboone/amqutil.git
cd amqutil
<path-to-mvn> package
```