

# 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?

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

```
[ -d temp ] && rm -rf temp/*
```

```
jpackage \
```

```
--type "app-image" \
```

```
--name CloudCoin_Wallet-Dark \
```

```
--description "CloudCoin Wallet - Dark Edition. For more information please visit https://cloudcoin.global." \
```

```
--vendor "CloudCoin Consortium" \
```

```
--app-version 3.0.15 \
```

```
--input input --dest output --temp temp \
```

```
--icon icons/CloudCoin_Wallet-Dark.png \
```

```
--copyright "CloudCoin™ Global Consortium © 2020 The Future of Currency" \
```

```
--main-jar CloudCoin.D.3.0.15.jar
```

????

?? output ????

```
bash build.sh
```

## With appimagetool)

### 1. ?? appimagetool

Download: <https://appimage.github.io/appimagetool/>

### 2. ??????????

```
mkdir CloudCoin_Wallet-Dark.AppDir
```

```
mkdir -p CloudCoin_Wallet-Dark.AppDir/usr/share/applications
```

```
mkdir -p CloudCoin_Wallet-Dark.AppDir/usr/share/icons/hicolor/256x256/apps
```

### 3. ?? jpackage ?????????????? usr/ ??

### 4. ?? App ?????.png?

??? distributions ??? App Icon ?????????????????????????????? App ?????????? icon ????

- ?????

- 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
```

Revision #30

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