

## Raspberry Pi Cloud3DPrint Application V. 1.4.0 Setup Guide

The following instructions will outline the steps for configuring and running the application. The steps are the same on Windows, Mac OSX and Linux.

- **If you are a first-time user:**

1. For new Raspberry Pi, please follow this installation guide to set it up:  
<https://projects.raspberrypi.org/en/projects/raspberry-pi-setting-up>
2. Please prepare your Raspberry Pi credentials:
  - Raspberry Pi IP address: [raspberryPi\_IP\_address]
  - Raspberry Pi username: [username]
  - Raspberry Pi password: [password]
3. SSH into your Raspberry Pi
  - Use the command `ssh [username]@[raspberryPi_IP_address]`
  - Then follow the screen to input your Raspberry Pi password, which will be hidden for security purpose.

```
Last login: Fri Aug 6 09:18:15 on ttys004
[REDACTED] MacBook-Pro ~ % ssh pi@192.168.5.123
```

- After SSH into your Raspberry Pi, you will see the welcome screen as displayed.

```
Linux awesomePi.local 5.10.17-v7l+ #1403 SMP Mon Feb 22 11:33:35 GMT 2021 armv7l
The programs included with the Debian GNU/Linux system are free software;
the exact distribution terms for each program are described in the
individual files in /usr/share/doc/*/*copyright.

Debian GNU/Linux comes with ABSOLUTELY NO WARRANTY, to the extent
permitted by applicable law.
Last login: Fri Aug 6 13:55:08 2021 from 192.168.5.170

SSH is enabled and the default password for the 'pi' user has not been changed.
This is a security risk - please login as the 'pi' user and type 'passwd' to set a new password.

Wi-Fi is currently blocked by rfkill.
Use raspi-config to set the country before use.

pi@awesomePi:~ $
```

- Download the dependencies
  - After SSH into Raspberry Pi system, execute the following two commands to get the latest dependencies for running the application. You will see success messages once they are done. The messages may be different on your machine.

```
sudo apt update and sudo apt install openjdk-11-jre
```

```
pi@awesomePi:~ $ sudo apt update
Get:1 http://archive.raspberrypi.org/debian buster InRelease [32.6 kB]
Get:2 http://raspbian.raspberrypi.org/raspbian buster InRelease [15.0 kB]
Get:3 http://archive.raspberrypi.org/debian buster/main armhf Packages [378 kB]
Get:4 http://raspbian.raspberrypi.org/raspbian buster/main armhf Packages [13.0 MB]
Get:5 http://raspbian.raspberrypi.org/raspbian buster/contrib armhf Packages [58.7 kB]
Fetched 13.5 MB in 11s (1,275 kB/s)
Reading package lists... Done
Building dependency tree
Reading state information... Done
81 packages can be upgraded. Run 'apt list --upgradable' to see them.
pi@awesomePi:~ $ sudo apt install openjdk-11-jre
Reading package lists... Done
Building dependency tree
Reading state information... Done
The following additional packages will be installed:
  openjdk-11-jre-headless
Suggested packages:
  fonts-ipafont-gothic fonts-ipafont-mincho fonts-wqy-microhei | fonts-wqy-zenhei fonts-indic
The following packages will be upgraded:
  openjdk-11-jre openjdk-11-jre-headless
2 upgraded, 0 newly installed, 0 to remove and 79 not upgraded.
Need to get 32.9 MB of archives.
After this operation, 822 kB disk space will be freed.
Do you want to continue? [Y/n] y
Get:1 http://raspbian.freemirror.org/raspbian buster/main armhf openjdk-11-jre-headless armhf 11.0.12+7-2~deb10u1 [32.7 MB]
Get:2 http://raspbian.freemirror.org/raspbian buster/main armhf openjdk-11-jre armhf 11.0.12+7-2~deb10u1 [148 kB]
Fetched 32.9 MB in 3s (12.1 MB/s)
Reading changelogs... Done
(Reading database ... 48711 files and directories currently installed.)
Preparing to unpack .../openjdk-11-jre-headless_11.0.12+7-2~deb10u1_armhf.deb ...
Unpacking openjdk-11-jre-headless:armhf (11.0.12+7-2~deb10u1) over (11.0.9.1+1-1~deb10u2) ...
Preparing to unpack .../openjdk-11-jre_11.0.12+7-2~deb10u1_armhf.deb ...
Unpacking openjdk-11-jre:armhf (11.0.12+7-2~deb10u1) over (11.0.9.1+1-1~deb10u2) ...
Setting up openjdk-11-jre-headless:armhf (11.0.12+7-2~deb10u1) ...
Installing new version of config file /etc/java-11-openjdk/jfr/default.jfc ...
Installing new version of config file /etc/java-11-openjdk/jfr/profile.jfc ...
Installing new version of config file /etc/java-11-openjdk/security/default.policy ...
Installing new version of config file /etc/java-11-openjdk/security/java.security ...
update-alternatives: warning: alternative /usr/lib/jvm/java-11-openjdk-armhf/bin/jfr (part of link group jfr) doesn't exist; removing from list of alternatives
update-alternatives: warning: /etc/alternatives/jfr is dangling; it will be updated with best choice
Setting up openjdk-11-jre:armhf (11.0.12+7-2~deb10u1) ...
Processing triggers for hicolor-icon-theme (0.17-2) ...
Processing triggers for mime-support (3.62) ...
```

- Configure your credentials
  - Download the application package and unzip it in your PC
  - Go to the extracted ‘control’ directory and find config.json
  - Open config.json with your favourite text editor such as MS Word, Sublime Text, VS Code, replace keyword ‘pi’ with [username].

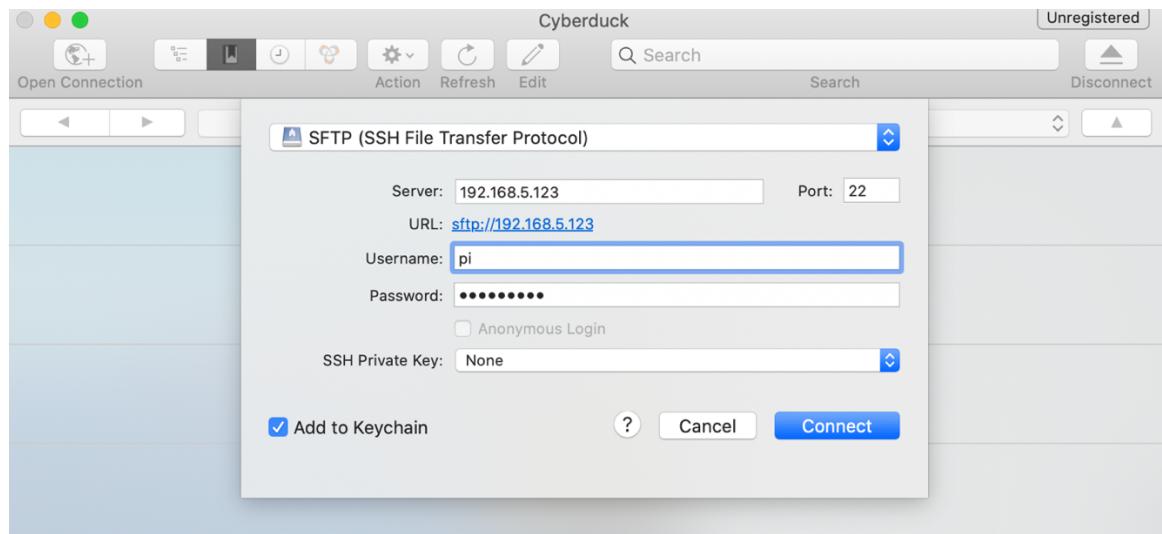
A screenshot of a code editor window titled "config.json". The code content is as follows:

```
1 {  
2     "logFilePath": "/home/pi/control/logs/control.log",  
3     "distFolderPath": "/home/pi/control/dist/",  
4     "downloadedGcodePath": "/home/pi/control/gcode/",  
5     "streamFolderSavePath": "/home/pi/control/media/",  
6     "dbFolderPath": "/home/pi/control/h2db"  
7 }  
8
```

The search bar at the bottom has "pi" selected. The replace bar has "awesomePi" entered. Below the search bar, it says "ASCII, 5 matches". At the bottom right, it says "Tab Size: 4" and "JSON".

## 6. Transfer the application package to your Raspberry Pi

- You can use SFTP applications, such as Cyberduck and PuTTY to transfer the unzip package. You will need
  - [raspberryPi IP address] as the server address
  - [username]
  - [password]



- Drag and drop the unzipped folder to /home/[username]

7. Run the application by the following command

```
java -cp ~/control/SerialCommunicator-C3P-v0.1-jar-with-dependencies.jar com.cloud3dprint.Main ~/control/config.json
```

```
pi@awesomePi:~ $ java -cp ~/control/SerialCommunicator-C3P-v0.1-jar-with-dependencies.jar com.cloud3dprint.Main ~/control/config.json
2021-08-06 16:27:59 INFO Main:40 - Logger configured - Initializing device application (v1.4.3)
SLF4J: Failed to load class "org.slf4j.impl.StaticLoggerBinder".
SLF4J: Defaulting to no-operation (NOP) logger implementation
SLF4J: See http://www.slf4j.org/codes.html#StaticLoggerBinder for further details.
before pushing to TCP, device = com.cloud3dprint.tcp.commands.Device@dae540
2021-08-06 16:28:19 INFO LoadModules:33 - TCP module is running now!
Warning: Could not load Loader: java.lang.UnsatisfiedLinkError: no jnijavacpp in java.library.path: [/usr/java/packages/lib, /usr/lib/arm-linux-gnueabihf/jni, /lib/arm-linux-gnueabihf, /usr/lib/arm-linux-gnueabihf, /usr/lib/jni, /lib, /usr/lib]
```

- **If you have already configured the application and would like to run it directly:**

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  - Raspberry Pi username: [username]
  - Raspberry Pi password: [password]
2. SSH into your Raspberry Pi
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java/packages/lib, /usr/lib/arm-linux-gnueabihf/jni, /lib/arm-linux-gnueabihf, /usr/lib/arm-linux-gnueabih
f, /usr/lib/jni, /lib, /usr/lib]
```