

Overview

This document is designed to help you get your Little Printer up and running again. Let's rewind to 2014 - Berg Cloud servers were turned off along with the Little Printers out there in the world. [@genmon](#) then released an open-source server called [Sirius](#) which provided a foundation for getting Little Printers back online with primitive messaging. [@pipt](#) made a handy technical tutorial for how to get the Bergcloud bridges pointing to Sirius.

Now, we've taken all of the above, made some adjustments and built it into a friendly new platform for you to start using your Little Printer's again. As an overview here's the main parts:

- We've set up a cloud server for managing your printer at littleprinter.nordprojects.co. You can see the code over [here](#)
- We built a [friendly app](#) with some simple templates to message your printer [feel free to contribute your own templates but they must be beautiful and work well]
- Each printer has a key that you can share with others so they can message your printer
- Finally, to try bring those good ol' publications back we've also set up webhooks via IFTTT so when something happens on the internet like a new Viz comic, it gets printed straight away

Instructions

There are 8 stages for getting your old little printer online:

Part 1: Sourcing and setting up the hardware

Part 2: Installing the drivers

Part 3: Re-setting the root password

Part 4: Enabling SSH

Part 5: Updating the bridge firmware

Part 6: Pairing the bridge with the server

Part 7: Pairing the Little Printer with the bridge

Part 8: Little Printers app

Disclaimer: This process has worked for us so far. We've flashed 5 bridges successfully but there is always a risk you might brick your bridge by doing this. Proceed at your own risk!

Alternatively you might try get in touch with [@tom-hat](#) who is offering to do this process as a service for Little Printer owners.

It's going to be really helpful if you have a bit of electronics, Linux command line and SSH and experience to pull this off.

STEP 1: HARDWARE

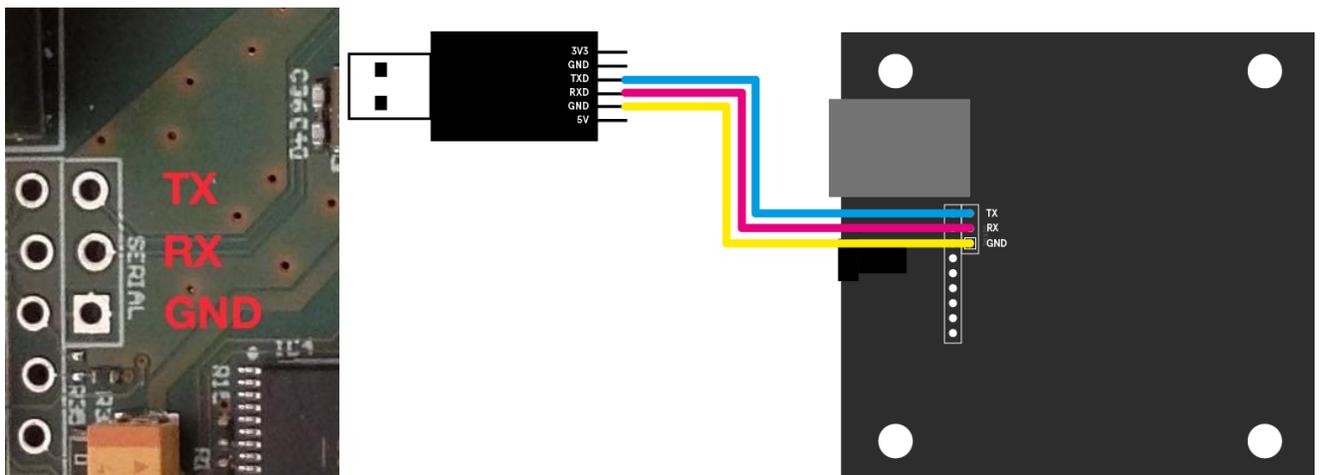
1.1 Here's the additional hardware for hacking the bridge:

- A USB - TTL Serial adaptor [[link](#)] or with the necessary wires [[link](#)]
- A few wires for connecting to the bridge [[see second link above](#)]
- Philips screwdriver

1.2 Unscrew the back of the bridge



1.3 Connect the USB/serial adapter. GND wire into square pin on bridge board, the others as shown below.



(thanks @nickehsmith and @pipt for the above photos/diagrams)

STEP 2: DRIVERS

2.1 Download serial to usb drivers [here](#) and install

2.2 Once the bridge is hooked up via serial usb, open terminal and run the following command
`ls /dev/cu.*`

(shows the serial ports available)

2.3 Type `screen /yourdevicepath 115200 8N1`

(substituting in the correct device path for your computer):

E.g. `screen /dev/cu.SLAB_USBtoUART 115200 8N1`

STEP 3: RE-SETTING ROOT PASSWORD

3.1 Plug in the power

3.2 When you see 'Hit any key to stop autoboot' hit any key quickly! If you miss it, pull the power and try again from step 3.1

3.3 This takes us to the U-Boot prompt. Type 'editenv bootargs' <return>

3.4 Add ' single' to the end, <return>

3.5 Type 'boot' <return>

3.6 Type `mount -a`

3.7 Type `mount -o remount,rw /`

3.8 Type `passwd`

3.9 Type a new password e.g. 'mothership9d'

3.10 Type `reboot`

STEP 4: ENABLING SSH

4.1 Plug in ethernet cable to bridge and to your router

4.1 Hit return

4.2 login = 'root'

4.3 Enter password e.g. mothership9d

4.4 Type `mount -o remount,rw /`

4.4.1 Type `echo "PermitRootLogin yes" >> /etc/sshd_config`

4.5 Type `cat > /etc/init.d/S48sshd <<'EOF'`

4.6 Then paste this in:

```
#!/bin/sh
#
```

```

# System-V init script for the SSH daemon
#

PATH=/usr/local/sbin:/usr/local/bin:/sbin:/bin:/usr/sbin:/usr/bin
DESC="SSH Daemon"
NAME=dropbear
DAEMON=/usr/sbin/$NAME

if [ ! -e $DAEMON ]; then
    NAME=sshd
    DAEMON=/usr/sbin/$NAME
fi

case "$1" in
    start)
        echo -n "Starting $DESC: $NAME"
        start-stop-daemon -S -q -x $DAEMON
        echo "."
        ;;
    stop) echo -n "Stopping $DESC: $NAME"
        start-stop-daemon -K -q -n $NAME
        echo "."
        ;;
    reload|force-reload) echo -n "Reloading $DESC configuration..."
        start-stop-daemon -K -q -n $NAME -s 1
        echo "done."
        ;;
    restart) echo "Restarting $DESC: $NAME"
        $0 stop
        sleep 1
        $0 start
        ;;
    *) echo "Usage: $SCRIPTNAME
{start|stop|restart|reload|force-reload}" >&2
        exit 1
        ;;
esac

exit 0

EOF

```

4.8 Type: `chmod 775 /etc/init.d/S48sshd`

4.8.2 Type `reboot` to restart the bridge.

4.8.3 After reboot completes, log in again and type `mount -o remount,rw /`
(if this commands responds with an error, try again in a couple seconds)

4.9 Type: `/etc/init.d/S48sshd start`

4.10 Type `ifconfig`

4.11 In eth0 look for your IP address after 'inet addr' and copy it. E.g. 192.168.2.16

4.12 Open a new terminal window

4.13 Type `ssh root@youripaddress` then hit enter

4.13.1 2023 note- on modern macOS, I had to do `ssh -oKexAlgorithms=+diffie-hellman-group1-sha1 -oHostKeyAlgorithms=+ssh-dss root@youripaddress`

4.14 Type 'yes'

4.15 Enter password e.g. 'mothership9d'

STEP 5: UPDATING BRIDGE FIRMWARE

Note: if you reboot the bridge for any reason you'll have to type `mount -o remount,rw /` to keep working.

5.1 Download [berg-bridge-dump](#)

5.2 Expand the zip file.

5.3 Drag the folder containing berg-bridge-dump onto terminal to open a window in that location.

5.4 Type the following three commands, substituting your ip address, one by one, and typing your password after each one.

```
scp usr/bin/oneshot_bergcloud_bridge.sh root@192.168.2.16:/usr/bin/oneshot_bergcloud_bridge.sh
```

```
ssh root@192.168.2.16 "mv /usr/local/bergcloud-bridge /usr/local/bergcloud-bridge-backup"
```

```
scp -rp usr/local/bergcloud-bridge root@192.168.2.16:/usr/local/bergcloud-bridge
```

5.4.1 2023 note- You might have to include the following options in the above commands: `-O -oKexAlgorithms=+diffie-hellman-group1-sha1 -oHostKeyAlgorithms=+ssh-dss`

So that's

```
scp -O -oKexAlgorithms=+diffie-hellman-group1-sha1 -oHostKeyAlgorithms=+ssh-dss  
usr/bin/oneshot_bergcloud_bridge.sh root@192.168.1.51:/usr/bin/oneshot_bergcloud_bridge.sh
```

```
ssh -oKexAlgorithms=+diffie-hellman-group1-sha1 -oHostKeyAlgorithms=+ssh-dss  
root@192.168.1.51 "mv /usr/local/bergcloud-bridge /usr/local/bergcloud-bridge-backup"
```

```
scp -O -oKexAlgorithms=+diffie-hellman-group1-sha1 -oHostKeyAlgorithms=+ssh-dss -rp  
usr/local/bergcloud-bridge root@192.168.1.51:/usr/local/bergcloud-bridge
```

5.5 In the terminal window for the bridge, type `reboot`.
Now we find out if it has worked!

STEP 6: PAIRING THE BRIDGE WITH THE SERVER

6.1 Open a web browser and go to the URL `http://<bridge-ip>:81/`

6.2 Use the username 'berg' and the password 'hereandthere' to log in

6.3 Paste this URL into the configuration box: <http://littleprinter.nordprojects.co:80/>

6.4 Press the button, wait, and see what happens! Wait for the bridge to reboot [it can take a while] After a minute or so, the Bridge will have booted and most of its lights will be on. Refresh the configuration page, and make sure that the URL still says `http://littleprinter.nordprojects.co:80/`. It might be that the configuration didn't take if it couldn't find the control server.

--TOM'S PROCESS ENDS --

STEP 7: PAIRING THE LITTLE PRINTER WITH THE BRIDGE

7.1 Reset your Little Printer, it needs to be plugged in and powered on to do this. Reset Little Printer by pulling off the metal front, taking out the paper, and using a paperclip to press the reset button through the tiny hole inside, right at the back. The reset button will click.

7.2 Now turn your Little Printer off, re-assemble it, and plug it in. The light will come on. Press the black button, and you'll get a claim code.

7.3 Now go to <http://littleprinter.nordprojects.co/>, sign in with Twitter, and attempt to claim your printer with the new claim code. Give it a name [remember people will see this if you give them access to send you messages]

7.4 Gulp.

7.5 If that all worked, all four lights on the Bridge will be solid and light, and there will be no light on Little Printer. You can then use the site to send your printer messages. Give this a test to check its all working

7.6 Click 'overview' on your printer

7.7 On the following screen you will see Key with a code underneath. You'll need this shortly

STEP 8: LITTLE PRINTERS APP

8.1 Install [our app](#) from the iOS App Store

8.2 Type a username that people see when your little printer prints messages you send it

8.3 Tap on 'Add a printer' then type or paste in the Key from step 6.11 into the box then tap 'Add printer'. Your printer should now appear in the printer list. Send it a message!

8.4 To allow others to message your little printer, tap the key icon on the printer card. Tap share now and send to friends.