

C | Commissioning of the test bench

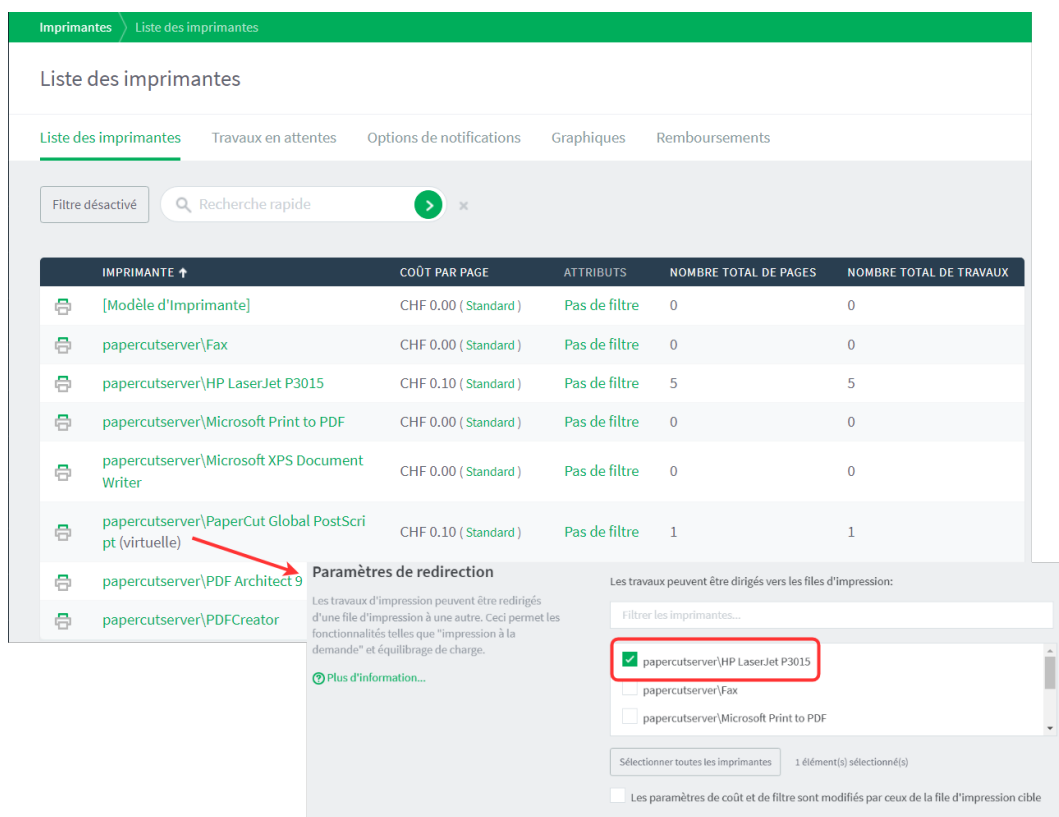
This appendix describes the procedure for setting up the test bench. This procedure starts the test bench using the codes provided in the Git repository (https://github.com/HEI-TB-Rey/NetPrinting_Identification_Prog). It is not a procedure for starting the test bench from scratch.

1. **The virtual machine (VM) containing the Print Manager server can be opened using VMware Workstation Player.**

The server will start automatically. Use `http://papercutserver:9191/admin` to access the server's web service (username: `admin`, password: `admin1`)

2. **If the printer is not connected, it must be added to the VM and linked to the Null Port.**

It can be controlled in the Print Manager web service. Once the printer has been added to the virtual machine, it will appear under the Print Manager printers in the web service. The new printer can be added to the Null Port printer's linked printers list. An HP LaserJet P3015 printer has been provided for this thesis. See the [Print queue section](#) to add this particular printer.



The screenshot displays the 'Liste des imprimantes' (Printers List) page in the Print Manager web service. The page has a green header with 'Imprimantes' and 'Liste des imprimantes'. Below the header, there are tabs: 'Liste des imprimantes', 'Travaux en attentes', 'Options de notifications', 'Graphiques', and 'Remboursements'. The 'Liste des imprimantes' tab is active. A search bar with 'Recherche rapide' and a 'Filtre désactivé' button is present. A table lists the printers with columns: 'IMPRIMANTE', 'COÛT PAR PAGE', 'ATTRIBUTS', 'NOMBRE TOTAL DE PAGES', and 'NOMBRE TOTAL DE TRAVAUX'. The table contains several entries, including 'papercutserver\Fax', 'papercutserver\HP LaserJet P3015', 'papercutserver\Microsoft Print to PDF', 'papercutserver\Microsoft XPS Document Writer', 'papercutserver\PaperCut Global PostScript (virtuelle)', and 'papercutserver\PDF Architect 9'. A red arrow points to the 'papercutserver\HP LaserJet P3015' entry. Below the table, a 'Paramètres de redirection' (Redirection Settings) dialog is open. It contains a text area with instructions and a list of printers to select. The 'papercutserver\HP LaserJet P3015' printer is selected with a checked checkbox. Other printers in the list include 'papercutserver\Fax' and 'papercutserver\Microsoft Print to PDF'. At the bottom of the dialog, it shows '1 élément(s) sélectionné(s)' and a checkbox for 'Les paramètres de coût et de filtre sont modifiés par ceux de la file d'impression cible'.

IMPRIMANTE ↑	COÛT PAR PAGE	ATTRIBUTS	NOMBRE TOTAL DE PAGES	NOMBRE TOTAL DE TRAVAUX
[Modèle d'imprimante]	CHF 0.00 (Standard)	Pas de filtre	0	0
papercutserver\Fax	CHF 0.00 (Standard)	Pas de filtre	0	0
papercutserver\HP LaserJet P3015	CHF 0.10 (Standard)	Pas de filtre	5	5
papercutserver\Microsoft Print to PDF	CHF 0.00 (Standard)	Pas de filtre	0	0
papercutserver\Microsoft XPS Document Writer	CHF 0.00 (Standard)	Pas de filtre	0	0
papercutserver\PaperCut Global PostScript (virtuelle)	CHF 0.10 (Standard)	Pas de filtre	1	1
papercutserver\PDF Architect 9				
papercutserver\PDFCreator				

Figure C.1: Link printer in the web service

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3. The Print Release Station must be started to allow the print job to be released.

The *connection.properties*, on the VM (*C:/Program Files/PaperCut MF/release*), must be modified with the IP address of the server. This can be obtained by running *ping -4 papercutserver* at a command prompt.

```
1 #Bootstrap configuration information
2 server-name=papercutserver
3 server-ip=192.168.100.140
4 server-port=9191
```

Listing C.1: Code - Example configuration server information

The application can then be found on the shared network in the *PaperCut MF/release* folder. It opens in full screen and cannot be closed. The only way to close it is to log on with the administrator account.

4. The PC Client application can be launched on the host computer.

It allows the *print as* function. It can be started under the shared network *//PAPER-CUTSERVER/PCClient/win*. The *config.properties*, on the VM (*C:/Program Files/PaperCut MF/client/win/*), must be modified with the same IP address as in the point 3. The admin account can be used to log in.

5. The card reader can be connected to the host computer.

The image must be created from the *card_reader_ble_rfid.c* file using the *AppBlaster* application.

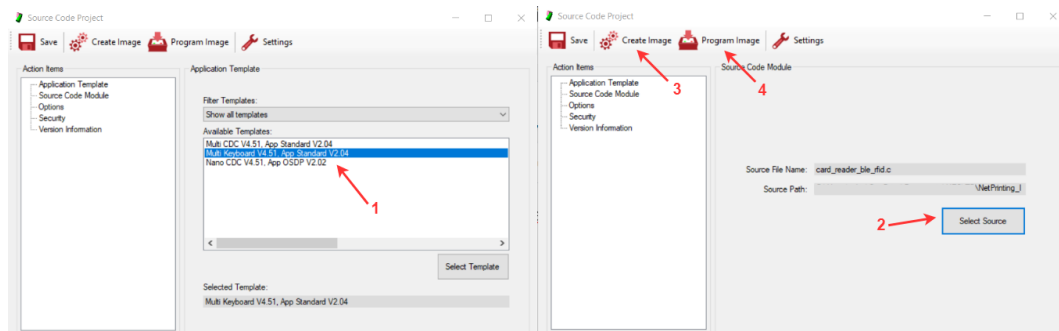


Figure C.2: Load firmware into the card reader

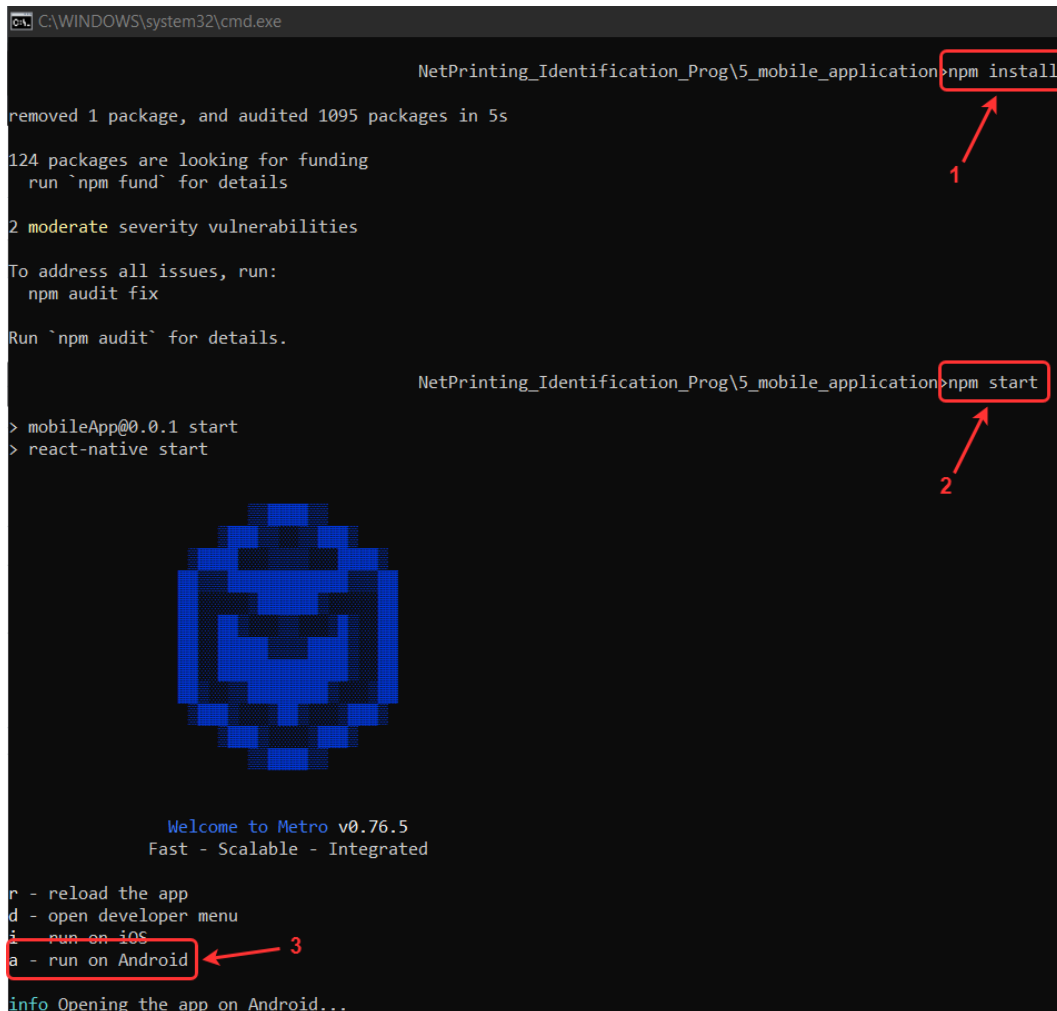
6. The Middleware component can be launched from the IDE or from the generated .jar file.

7. A mobile wireless access point must be started on the host computer.

The phone needs to connect to it.

8. **The mobile application can be loaded onto the development phone.**

After opening a prompt in the mobile application folder, the following procedure can be followed with the phone connected to the computer.



```
C:\WINDOWS\system32\cmd.exe

NetPrinting_Identification_Prog\5_mobile_application>npm install

removed 1 package, and audited 1095 packages in 5s

124 packages are looking for funding
  run `npm fund` for details

2 moderate severity vulnerabilities

To address all issues, run:
  npm audit fix

Run `npm audit` for details.

NetPrinting_Identification_Prog\5_mobile_application>npm start

> mobileApp@0.0.1 start
> react-native start

Welcome to Metro v0.76.5
Fast - Scalable - Integrated

r - reload the app
d - open developer menu
i - run on iOS
a - run on Android

info Opening the app on Android...
```

Figure C.3: Open mobile application on development smartphone

9. **The PaperCut manager .jar can be opened.**

Modifications should then be made on the Print Manager server. Users can be added or deleted. The balance can also be changed.

The test bench is set up. When a user sends a print job from the host computer, the PC Client asks for the user's name. It is then sent to the print queue. Once identified with a card or the mobile application at the Print Release Station, the job is released and the document is printed.