

AN1110 - Using the Morpho fingerprint reader with Net2

How does it work?

This innovative system stores fingerprint information on the user's own Mifare card. The data is encoded by means of a Morpho fingerprint reader and card encoder using Net2 software connected to the PC via USB ports.

Morpho reader/verifier units are used at each door to confirm that the fingerprint data matches the user before passing the card number to the Net2 ACU.

The advantages of this system are:

- No dedicated data line is required to update the fingerprint data in each reader.
- No dedicated application program is required to register each user.
- No large database of fingerprint data is required at the PC.
- No data protection issues arise as the user carries his own fingerprint data, it is not stored by the company.

Setting up the PC hardware

Connect the Morpho fingerprint reader and the card encoder into USB ports at the PC.

Run the Net2 software installation. (v4.18 or later). The PC will now detect the hardware and the units will self configure.

Programming a 4k Mifare user card

With the Net2 application program running, place a 4K Mifare card on the encoder. The LED will flash amber and the 'Add user' screen will open. The card number will display and the token type will show 'Fingerprint verification'.

The screenshot shows a software window with the following fields and controls:

- Personnel number: [Empty text box]
- PIN: [Empty text box]
- Token number: 59821580
- Token type: Fingerprint verification... (dropdown menu, circled in red)
- Buttons: Auto PIN, Close, Next >

Enter the basic user details as required - Click 'Next'.

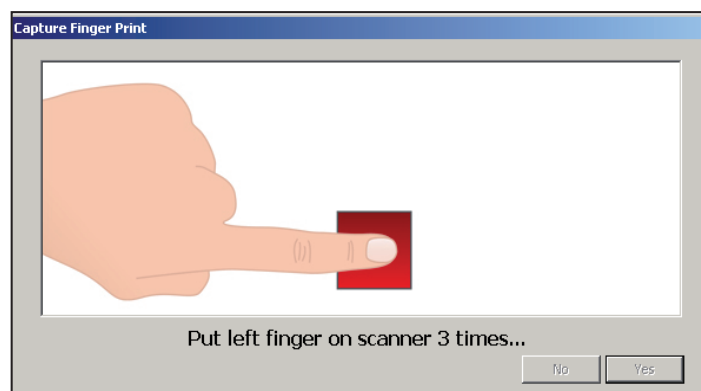


The system now enters the scanning routine. - Click 'Yes'
You can abort the process and return to the 'Add user' screen by clicking 'No'.

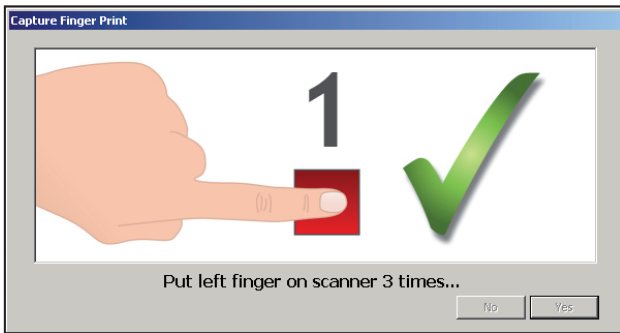
Cards may be encoded for users that do not require fingerprint information. When setting up the 'Add User' data, set the token type to 'Visitor' before clicking 'Next'. The program will now go straight to the 'Writing card' process.

The system requires three scans to build up a profile of the fingerprint information. Leave the card on the encoder throughout the process. The LED will show amber while a card remains in range.

The scanner window will illuminate during the scanning process.

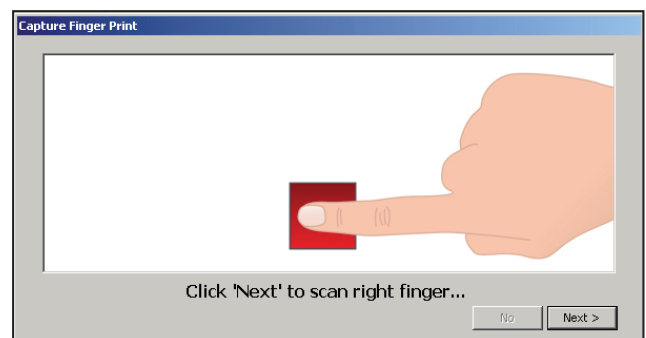
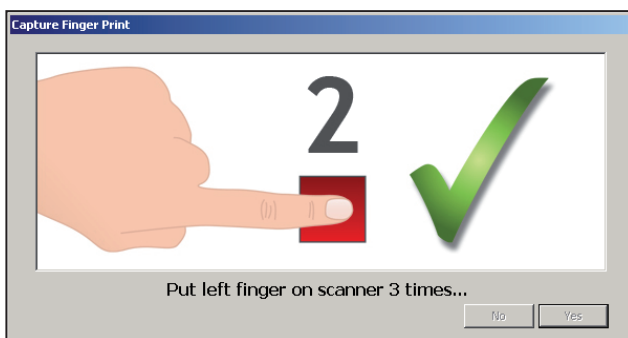


Place a left finger on the scanner. Once the finger has been scanned the window LED will go out. Remove your finger from the scanner.



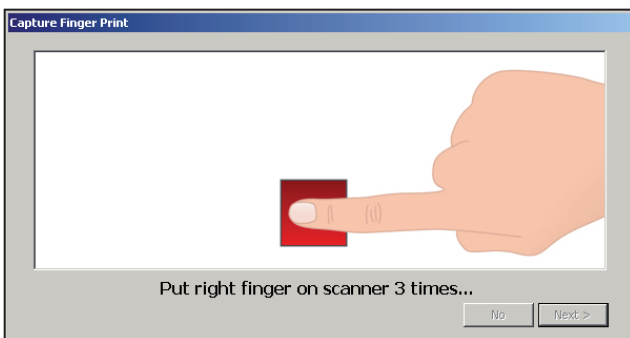
The system will check the fingerprint data and will confirm the entry with a tick.

Repeat this process for the second and third scans of the same finger of the left hand.



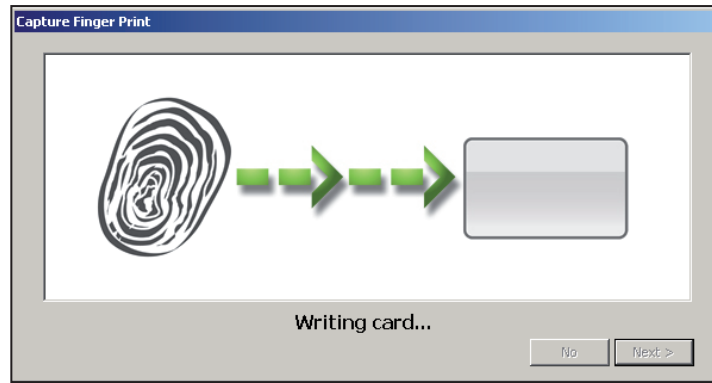
Once the data for the left finger has been captured and verified, the program will request a finger from the right hand. Click 'Next' to continue.

Three scans are now required of a finger from the right hand.

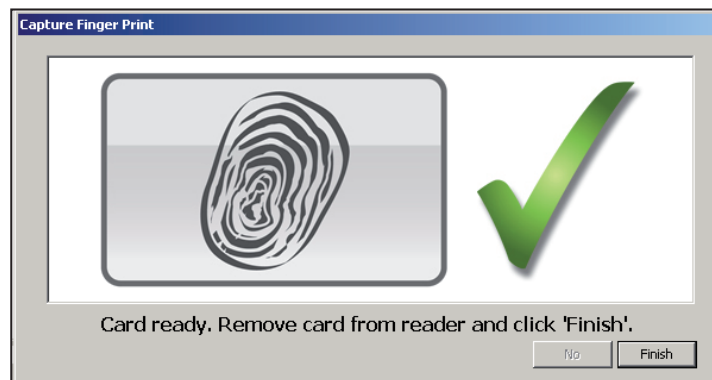


Once the fingerprint data for the right hand has been captured, it is again checked for quality.

The system will then write this data to the card.




Leave the card on the encoder until the final screen displays and then remove the card. Click 'Finish'.



Removing the card should return the encoder LED to green.

If the LED flashes red, the encoder should be allowed to reset itself to a green LED before continuing. This may take several minutes.

Scott, Mike	
First name	Mike
Surname	Scott
Department	Managers
Telephone	
Personnel number	
Valid from	23/11/2009
Expires end	Never expires
Access rights	Tokens
Other details	Memo
Events	Current validity
Anti-passback	
PIN	
Card template	Card1
	
59821580	

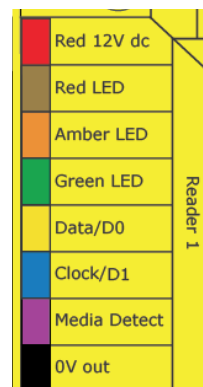
A user record is created that will display the card details under a fingerprint icon.

If a user record is already displayed when a card is placed on the reader, you will be invited to add this card to that same record. If you click 'yes' the scanning process will begin as before.

Morpho Door reader/verifier

Wiring the reader

Cable Pinout	ACU terminal
Pwr +12	+12V
-	Red LED
-	Amber LED
LED 1	Green LED
TR+ / D0	Data
TR - / D1	Clock
-	NOT USED
Pwr Gnd + COM Gnd	0V



Ensure any unused wires are safely terminated.

Software settings

Hardware configuration information is loaded on a USB stick supplied with the reader. With the unit powered off, remove the outer case and plug the USB stick into its socket. Power up the unit and it will load the configuration file. When completed, the unit will beep. Power down the reader and remove the USB stick. Replace the cover and power up the unit.

An administration card is also supplied which contains the user card configuration. Present this card once to the reader and it will beep. The reader has now been activated for Net2 cards.

The reader LEDs must be set in Net2 to default OFF. Open the Net2 server configuration utility and on the 'General' tab, check 'Hide reader LED's'.

This is a global setting and so the LEDs on all other Paxton readers wired to the system will default to off.

LED indications for valid and invalid access will remain unchanged.

The reader is configured to provide a Clock and Data output. Set the reader type in Net2 accordingly.

Using the reader

1. The LED flashes while waiting for a user card.
2. Present a user card to the reader.
3. The reader reads the Mifare card and then illuminates the scanner window. Once the users fingerprint has been scanned, the reader compares this data with that stored on the card and if a good match is made, the card number is sent to Net2.
4. The reader waits for confirmation from the ACU that this access request is valid. This is done by the ACU activating the green LED line. The reader responds by flashing its own green LED for a few seconds.

If the fingerprint does not match the card data or the ACU does not respond via the green LED wire, the reader will then flash the red LED for a few seconds.