



SW3 Biometrics How2

Revision 006

07 December 2023

Revision History

Version	Date	Person	Reason For Changes
001	2022-05-11	EB	New Document
002	2022-06-22	EB	Add Content and Idemia database license update
003	2023-06-02	MM	Add USB (moved to SCS_sw3_SIGMA.how2)
004	2023-06-21	EB	General changes
005	2023-07-28	ML	Reformat
006	2023-12-07	ML	Add to requirements

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1 GENERAL

This document describes how to install and setup the Softwin3 (SW3) for fingerprint Bio readers from Idemia and ZK only. Installation and setup of facial biometric readers are described in the SCS_sw3_Face.how2 (for ZK) and SCS_sw3_Hikvision.how2 (for Hikvision) documents.

This table is a list of biometric devices from various manufacturers integrated with SW3:

Manufacturer	Model	Description
Idemia	MA100 MA200 MA300 MA500 MA520 MAJ	These fingerprint reader models were discontinued by manufacturer but is still supported by SW3
Idemia	SIGMA Range	The complete Sigma range of readers is integrated with SW3
Idemia	Morpho Wave	The complete Morpho Wave range of readers is integrated with SW3
Idemia	SIGMA Xtreme	The complete Sigma Xtreme range of readers is integrated with SW3
Idemia	MSO300	This enrolment reader was discontinued by manufacturer but is still supported by SW3
Idemia	MSO351	Current fingerprint enrolment reader compatible with SW3.
ZK Teco	F17 F18 F19 F22 SF100 SF300	ZK Teco fingerprint readers integrated with SW3
ZK Teco	ZK9500	Fingerprint enrolment reader for ZK Teco fingerprint readers.
HikVision		See SCS_sw3_Hikvision

2 WARNINGS AND CAUTIONS

Incorrect use of this program may cause the loss of facial biometric data.

3 APPLICABLE DOCUMENTS

All documents are available on WWW.softconserv.com.

4 REQUIREMENTS

Token (card) number

Bio readers use Token num1 or num2 (this number is used to identify the person and is the Wiegand passed to the controller).

This requires that Random database (Type 10 must be used).

Note: Controller dB size for random is limited to:

CR345 3,000
CR355 15,000
CR391+ 130,000

Wiegand

Wiegand output by Bio readers and read by the controller, must be set to match.

Should the reader Wiegand type include Facility code, this must match the required settings in the controller.

Readers that generate zero facility code Wiegand, require controller with zero Facility setting.

CR391 (or later) controller version 01W (or later) can decode zero facility (from reader), with controller settings of non-zero facility and decode type no facility.

Read supply, earth

Readers are powered by the controller or via POE (not both).

If the required supply is insufficient, an external supply must be provided.

Ground of reader, controller and additional supply must be connected together.

Reader cable and mounting (if metal) must be connected to earth (can be connected to controller earth).

Softwin3 Version

FP Bio readers require Softwin3 1.4.32 or later.

Wave readers require Softwin3 1.4.55 or later.

ZK and HIKvision Face readers require Softwin3 1.4.62 or later.

HIKvision Face currently only MS Access (SQL to be implemented).

Softwin3 1.4.07 or later require CR355 with Eprom version 2.60 (both versions 2015-NOV-12).

Softwin3 License

Bio readers require Bio license keys for Bio readers (number of readers).

Keys are allocated to a site.

Softwin3 1.4.55 or later require Serial number license keys per reader (serial numbers required).

Serial Keys are allocated to a bio reader.

Software Installation requirement

All associated software for biometric devices **must** be installed before connecting the biometric units in the field.

Idemia Biometric

- Morpho License Manager 4.7.4 (to verify product licenses). Download from ftconserv.com.
- MBTB Morpho Toolbox 4.4.1 (configure Morpho devices in the field).
- Sagem MorphoSmart USB Driver (to enable Idemia enrolment reader).

ZK Biometrics

- SCS_Bio_1_04_62 installs most drivers required.
- ZK9500 enrolment driver must be installed separately.

Above software is available for download from the Softcon website: www.softconserv.com.

Ensure that all Anti-Virus and/or Anti-Malware programs are disabled while loading the above drivers and software as these might interfere with the installation process.

There are various Anti-Virus and/ or Anti-Malware programs on the market.

See the manufacturer's documentation on how to configure exclusions or contact an IT expert.

5 SOFTWARE INSTALLATION

SW3 must be installed.

Install the **SCS-Bio** program (downloaded from www.softconserv.com) - must be installed on all computers where the enrolment process will take place.

Install the required software for the different types of Bio readers:

Idemia:

Download Morpho License Manager 4.7.4 from www.softconserv.com.

Unzip the zip file and run the installation file to install the License Manager.

Download Morpho Drivers from www.softconserv.com.

Unzip the Morphozip file and run the installation file to install the MSO3xx driver.

ZK:

The SCS-Bio program installs the necessary drivers required except for the ZK9500 enrolment reader driver.

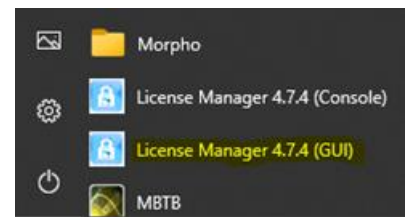
Download [ZK_Enrollment_SDK.zip](#) from www.softconserv.com.

Unzip the file and run the setup file to install the driver for the enrolment reader.

For Idemia enrolment readers, the installation can be verified by checking if the enrolment reader is recognized by the computer.

Connect the MorphoSmart MSO3XX Enrolment reader to the USB port of the computer.

Open the Morpho License Manager program located in Windows Programs under Morpho.



The information displayed is the type of licenses that are installed on the enrolment reader.

All Idemia devices require the VERIF license.

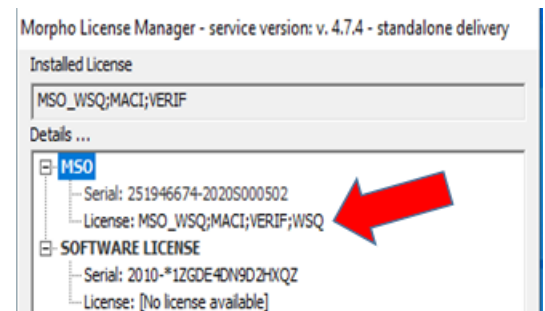
All Models older than the Sigma range require the VERIF and MACI license.

E.g., MA100, MA200, MA500, MA520 etc.

These licenses must be ordered with the enrolment reader and are pre-installed on the enrolment reader.

If required licenses are not installed, SW3 displays:

Enrolment Unsuccessful.



ZK does not have any installation verification for their devices.

6 ENROLMENT READER CONFIGURATION

Before configuring the Enrolment (or any Bio) reader in the **Setup / Setup Editor / Bio-Reader Setup** menu, set the access reader the Bio reader is linked to.

For access control purposes, all biometric devices must be linked to a reader that is defined in the **Reader setup**. This is required to send the templet to the biometric reader.

The Enrolment reader can be linked to a virtual reader (a reader that is not physically installed). This virtual reader must be in the reader range that is allowed by the software. E.g., if the Softwin3 software license allows 12 readers the virtual reader must be in this range.

ACCESS READER SETUP

Select **Setup/Setup Editor/Reader** setup and add an entry for this virtual reader.

It is only for reference and no further detail is required for the Enrolment reader in the reader setup.

A physical controller is not required for this reader.

Area In and **Area To** are not required.

Ref	Description	Area In	Area To	Controller	Port
10	ZK9500 Enrolment	Outside	Inside	zController 5	2
9	Morpho Smart Enrolment	Outside	Inside	zController 5	1

GENERAL SETUP

The latest Softwin3 version (Version 1.04.63) can accommodate both enrolment reader types (ZK and Idemia) on the same computer.

In the Setup/General Setup menu, specify the 1st and 2nd Templet types.

Auto Add Biometric Data

1st Bio Templates Type Sagem

2nd Bio Templates Type ZK

To automatically add user's biometric template to biometric devices, check the **Auto Add Biometric Data** check box. This option will automatically send the users templet to all biometric devices where the user has access according to the **Area Group** set for the user.

BIO READER SETUP

In menu **Setup / Setup Editor / Bio-Reader**, add an entry for the Enrolment.

The reference number of this new enrolment reader in the *Ref* column of the *Bio Reader* setup must be in the range of the allowed biometric devices for the software.

The SW3 license allows the quantity of **SCS-SSBio** licenses that was purchased.

E.g., If the software allows 10 x Biometric readers, the enrolment reader must be configured in **Ref** 1 to 10.

Ref	Name	Reader	Type	PC
10	Enrolment ZK	ZK9500 Enrolment	ZK Enroll	PC for ZK Enrolment
9	Enrolment Idemia	Morpho Smart Enrolment	Sagem Morphosmart	PC for Idemia Enrolment

The *Bio-Reader Setup* menu consist of several columns that must be completed.

Below is list of the required columns for enrolment readers.

Tooltips on column headers will display information about the columns.

Column Name	Description
Name	Descriptive name for the Enrolment Reader
Reader	Drop-Down Menu: Select enrolment Reader created in the <i>Reader Setup</i> from the list.
Type	Drop-Down Menu: Select enrolment reader type.
PC	Drop-Down Menu: Select enrolment pc name – Computer name (from PC Setup) where enrolment device is plugged in.
FP Protocol	Default
CD Fingers	2 – always 2 fingers
CD Min	1 – Starting reference number in database for users
CD Max	User Database size of device – this setting is device dependent.
Using Token No	Check to use token number as reference number for templet on device
Consolidation	Check to consolidate template 3 times for better quality biometric data.
2FP Acquisition	Check to verify enrolment operation for a second time. This ensures a high-quality templet.
Enrol Save	Check to save templet in database

BIO-APP SETUP

The enrolment device must be linked to a software application in SW3 where enrolment process will take place:

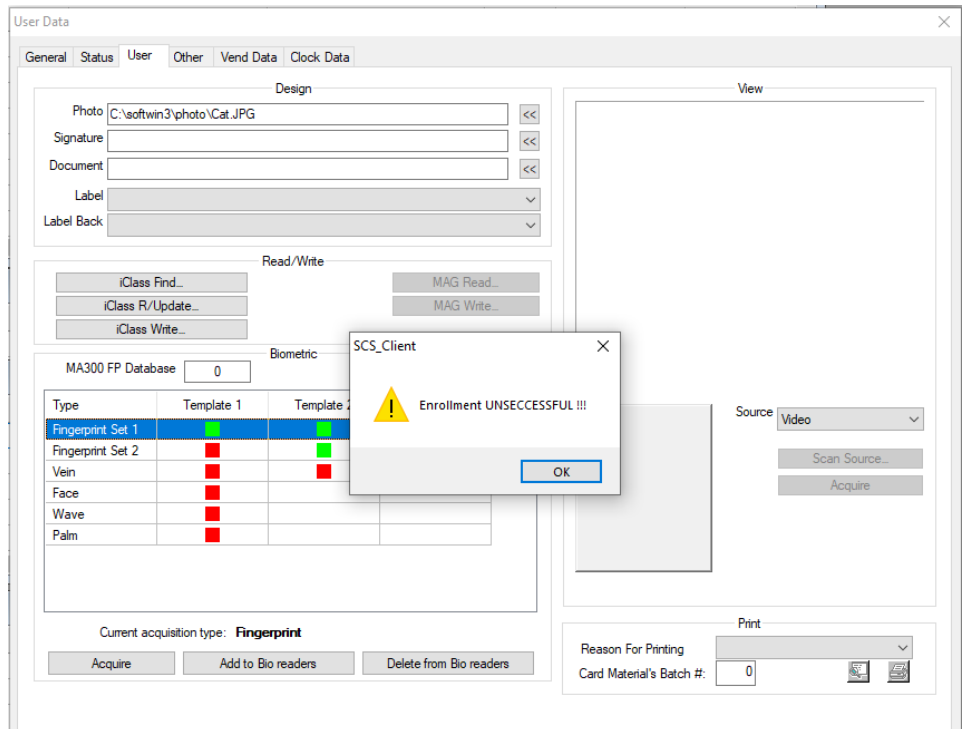
SCS_Visitor (enrolment for visitors) or SCS_Client (enrolment for users)

Ref	App	FP Reader
1	SCS_Client	Enrolment Idemia
2	SCS_Visitor	Enrolment Idemia
3	SCS_Client	Enrolment ZK
4	SCS_Visitor	Enrolment ZK

If enrolment for visitors and normal users is required, both applications must be selected. This option is set in the Setup / Setup Editor / Bio-App menu.

7 ENROLMENT READER ERRORS

If configuration of enrolment reader is incorrect or driver installation was blocked by Anti-Virus program, the enrolment process will fail and display the error message.



To rectify these errors, the following (in order):

SW Licenses

Ensure the installed enrolment reader is configured in the range of the biometric readers allowed for the SW3 license in menu *Setup / Main Comms Interface Setup*.

Biometric Access	Yes
Biometric Capture	Yes
Biometric Readers	100

Device SW Drivers

Re-register the required reader drivers.

Morpho devices:

Open Windows Explorer and select C:\softwin3\exe\Morpho folder.
Run the registration.bat file with administrator rights.

ZK Teco devices:

Open Windows Explorer and select C:\softwin3\exe\ZK folder.
Run the registration.bat file with administrator rights.

BIO Re-Install

Un-install all drivers for the different type of devices.
Un-Install SCS-Bio software.
Disable all virus protection software on computer.
Re-install all required drivers and the SCS-Bio program.

8 BIOMETRIC READER CONFIGURATION

The biometric readers must be installed, and the necessary configuration done on the readers. Different types and models require different settings. Below are the most important settings to make devices communicate with SW3 and the controller. These must be completed in the order below:

BIO READER DEVICE SETUP

IP ADDRESS. All biometric devices communicate through TCP/IP communication with the computer to get the required information and templates.

Each device needs to have an IP address.

WIEGAND. When the Biometric is read and found, a reference number is sent to the Softcon controller via a Wiegand interface. This via a mylar screen cable connected between the device and the controller.

The communication format must be configured on the device as well as the controller, e.g.

Wiegand 26 bit or Wiegand 34 bit etc.

DEVICE TOOLS

The configuration of this IP address and Wiegand setting, differ between device manufacturers.



To configure **Morpho / Idemia** readers, the Idemia MBTB tool from Idemia can be used.

The default IP address is 134.1.32.214

See SCS_sw3_SIGMA.how2 for details about MBTB.

If no communication with reader, USB in the how2 document.



IP addresses and Wiegand settings for any **ZK Teco** device is normally configured by an administrator user on the device itself.

Biometric templates of Softwin3 administrators can also unlock devices for configuration purposes.

See documentation on how to configure Softwin3 system passwords.

See SCS_sw3_ZK.how2

The Softcon **SCS_Ping** tool or the Windows CMD ping can be used to check the communication between the computer and device.

ACCESS READER SETUP

All biometric devices must be linked to an access control reader in the reader setup.

Before setting Bio readers, select **Setup/Setup Editor/Reader** setup and add an access reader for each Bio reader to be added.

All standard configuration settings in Reader Setup are required.

BIO READER SETUP

In **Setup / Setup Editor / Bio-Reader Setup**, add a new entry for the new biometric reader.

User: Administrator - [Bio - Reader Setup]

File Edit Status Users Setup Vending Programs Tools View Window Help

Ref	Name	Reader	Serial No	Type
1	ZK SF100 BIO FP	zRD 13	AHQ3214960230	ZK
2	ZK Enrollment Reader	zEnrollment Reader ZK		None
9	WAVE READER	zC1 Rd 1 - WAVE reader	2202SMP0001908	None
8	Sigma Lite Bio Reader	Controller5 Reader Port1	2202SMP0001908	Sagem Sigma

Various columns must be complete for a functional biometric reader.
Not all columns are required, and certain columns are only relevant to certain products.

Below is a list of all the columns that's required with a description of the functionality.

Tooltips on the description header bar also give information about the column.

Column Name	Description
Name	Descriptive name for the Enrolment Reader
Reader	Drop-Down Menu: Select enrolment Reader created in the <i>Reader Setup</i> from the list.
Serial No	Request Serial Number by Right-Click See License requirement explanation below.
Type	Drop-Down Menu: Select enrolment reader type.
PC	Drop-Down Menu: Select the computer name that will transfer the biometric templet to the reader. This will be computer where enrolment reader is plugged in..
IP Port	11010 for all Idemia biometric devices. 4370 for all ZK Teco biometric devices
IP Addr	IP Address of the biometric device
CD Fingers	2 – always 2 fingers
CD Min	1 – Starting reference number in database for users
CD Max	User Database size of device – this setting is device dependant. The templet specification from ZK Teco devices must be divided by 2. E.g., a device that can accommodate 3000 templets will be 1500 user with 2 templets for SW3
Vis Fingers	1 – Always 1
Vis Min	If SCS-Visitors Auto Add is used, starting reference number where a visitor templet will automatically be inserted.
Vis Max	Last reference number for SCS-Visitor Auto Add
FP Protocol	Default for all biometric devices except Sigma readers from Idemia. (MA5G must be selected for Sigma readers)
Using Token No	Only relevant to enrolment readers
Consolidation	Only relevant to enrolment readers
2FP Acquisition	Only relevant to enrolment readers
Bio Required	Must be selected for all biometric devices except ZK Facial readers. No check for ZK Facial readers.
Push Server	Only required for ZK Facial readers
No Controller	This setting is only valid for ZK Facial readers. - Limited functionality.

Device Types:

The following is a list of the type devices that can be selected. Select correct device type.

Type	Description	Manufacturer
Sagem Morphosmart	Enrolment reader for Idemia devices	Idemia (Morpho Sagem)
Sagem MA200	Device discontinued. Functionality still available on SW3	Idemia (Morpho Sagem)
Sagem MA300	Device discontinued. Functionality still available on SW3	Idemia (Morpho Sagem)
Sagem MA100	Device discontinued. Functionality still available on SW3	Idemia (Morpho Sagem)
Sagem MA500	Device discontinued. Functionality still available on SW3	Idemia (Morpho Sagem)
Sagem MAJ	Device discontinued. Functionality still available on SW3	Idemia (Morpho Sagem)
Sagem Morphosmart	Enrolment reader for Idemia devices	Idemia (Morpho Sagem)
Sagem MA200	Device discontinued. Functionality still available on SW3	Idemia (Morpho Sagem)
Sagem Sigma	Current range of Idemia fingerprint readers	Idemia (Morpho Sagem)
Morpho FVP Enroll	Enrolment reader for fingerprint and vein reader	Idemia (Morpho Sagem)
Morpho FVP	Current range of Idemia fingerprint and vein readers	Idemia (Morpho Sagem)
Morpho Wave	Current range of Morpho Wave readers	Idemia (Morpho Sagem)
Morpho Wave Enrol	Enrolment reader for Morpho Wave reader	Idemia (Morpho Sagem)
ZK Enrol	ZK fingerprint enrolment reader	ZKTeco
ZK	ZK fingerprint readers. F17, F18, F19 and F22	ZKTeco
ZK Face	Discontinued, Functionality still available on SW3	ZKTeco
ZK FP & Face	Discontinued, Functionality still available on SW3	ZKTeco
ZK Speed Face	All ZK Speedface readers (Face only)	ZKTeco
ZK Speed Face & FP	Not operational – Future option	ZKTeco
ZK Palm Enrol	Not operational – Future option	ZKTeco
ZK Palm	Not operational – Future option	ZKTeco
ZK Speed Face & Palm	Not operational – Future option	ZKTeco
Hikvision	Hikvision Face and Mifare Card reader	Hikvision

Bio reader - Right Click Options:

Right Click on a device displays a menu with options related to the selected device. See list with explanations below:

Biometric Set Date/Time

This option will send the current date and time to the selected biometric device.

Request DB Count

Request the number of biometric templets on the selected device.

Request Serial No

Request the serial number of the selected device (See License requirement section).

Delete

Remove the selected record from the database.

FP Add Record

Send a user's templet to the selected biometric device.
Requests the user's database reference number.

FP Remove Record

Remove a user's templet from the selected biometric device.
Requests user's database reference number.

FP Clean DB

Clear all templets from the selected device.

Device reference number is required in the case of Hikvision readers or Database number requested for Idemia readers with more than 10 000 users.

Idemia readers store templets in banks of 10 000 templets.

For ZK readers and Idemia readers less than 10 000 user database the default "0" option must be used.

FP Download DB

Download all allowed templets to the selected device.

Device reference number is required in the case of Hikvision readers or Database number requested for Idemia readers with more than 10 000 users (Idemia readers store templets in banks of 10 000 templets).

For ZK readers and Idemia readers less than 10 000 user database the default "0" option must be used.

ZK Export

Export user data and templets for importing by USB memory stick on ZK fingerprint readers.
This option is only available for ZK stand-alone devices. (F17, F18, F19, and F22)

Biometric Set Date/Time
Request DB Counts
Request Serial No
Delete
FP Add Record
FP Remove Record
FP Clean DB
FP Download DB
ZK Export

9 LICENSE REQUIREMENTS

An activation code is required for each Biometric Device (Enrolment, Fingerprint, Wave or Face Reader) for SW3 Ver1.04.62 or later.

An activation code is required when replacing an old device with a new device.

Activation codes are linked with devices.

These activation codes are obtained from Softcon.

Contact the local sales representative for more information.

Before activation code can be entered for any device, the serial number of the device must be requested from the device.

Request Serial Number

To request serial number from a device, right click on row with the required device settings and select:

Request Serial No from the menu.

If the software can communicate with the device, it will request the serial number from the device.

If the result was successful, the system will populate the **Serial No** column with the device serial number.

The access control **Activity Menu** displays the result on screen.

Ref	Name	Reader	Type	Serial No
1	Name 1	C1 Rd 1	Sagem MA300	
2	Name 2	C1 Rd 2	Sagem MA300	
3	Name 3	zC2 Rd 1	Sagem MA300	
4	Name 4	zC2 Rd 2	Sagem MA300	
5	Name 5	zC3 Rd 1	Sagem MA300	
6	Name 6	zC3 Rd 2	Sagem MA300	
7	Name 7	zC4 Rd 1	Sagem MA300	
8	Name 8	zC4 Rd 2	Sagem MA300	
9	Enrolment Idemia	Morpho Smart Enrolment	Sagem MA300	
10	Enrolment ZK	ZK9500 Enrolment	ZK Enroll	

Enter Serial Number

After serial number was requested successfully, the Softcon provided activation key can be entered.

Activation keys are entered in the *Setup / Setup Editor / Serial Numbers* - enter the key in *Activation Key* column corresponding to the device serial number.

If an activation file was supplied, right click select **Import** from the menu.

Select the file and click OK to complete the process.

User: Administrator - [Serial Numbers]

File Edit Status Users Setup Vending Programs Tools View Window Help

Ref	Type	Serial No	Activation key
6	IDECO	2202SMP0001908	YRPS-T886-993I-R9S3
5	ZK	AHQ3214960230	0GCX-71DY-Y0AY-FTVL

10 ADD OR REMOVE TEMPLETS

Templets can be sent to biometric readers directly from the Bio-Reader Setup menu or from the properties screen of a user's profile in the **User Editor** menu.

USER EDITOR

Add to Bio Readers sends the user's templet to all biometric readers according to user's Area Group settings where access is allowed to.

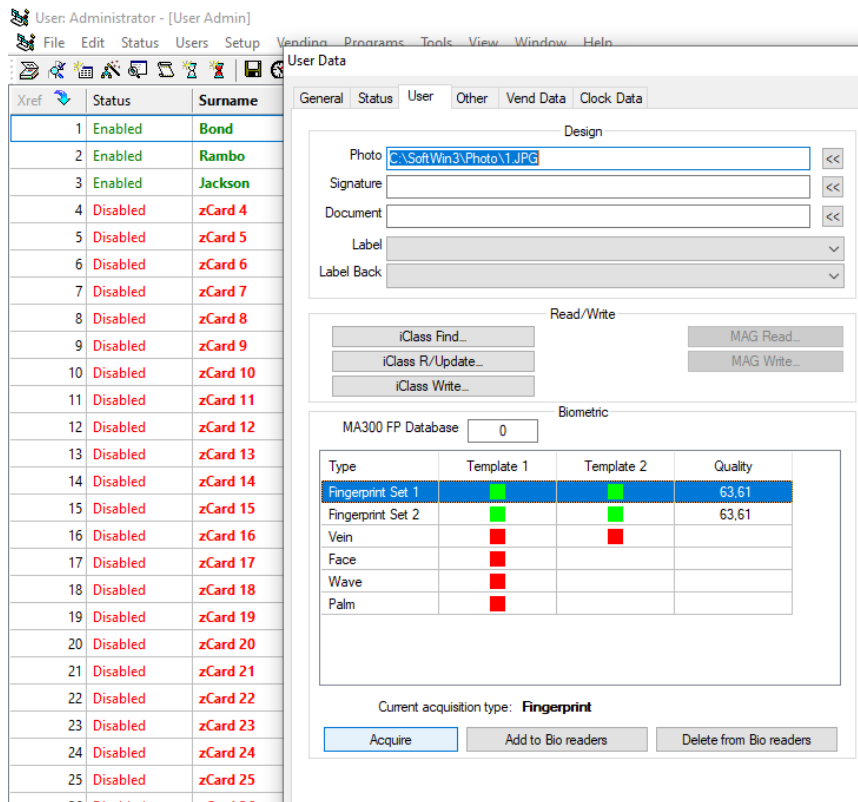
Activity menu displays:

Successful - templet downloaded.

Invalid Access – access denied.

Delete from Bio reader removes the selected templet from all devices and the database.

Templet will have to be re-captured.



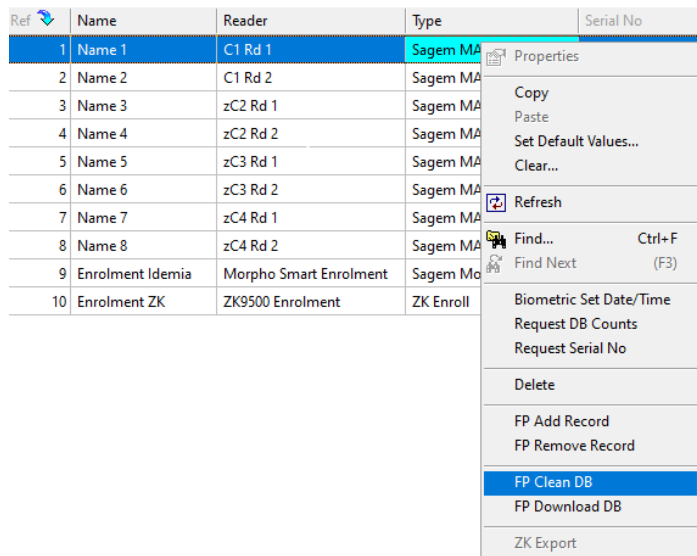
BIO READER SETUP

FP Add Record adds a specified record to the selected device. The user reference number is required.

FP Remove Record removes a specified record from the selected device. The user reference number is required.

FP Download DB downloads all allowed templets to the selected device.

FP Clean DB clears all data and templets from the selected device.



11 ERROR MESSAGES

When biometric templets are downloaded to biometric devices, SW3 Activity Menu displays the result of the download on the screen. Below is a list with most common errors that clients experience:

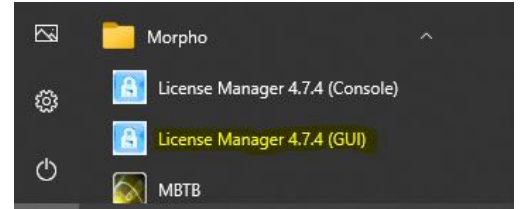
Error	Description	Possible solution
Invalid license	No or incorrect activation key supplied (activation key is linked to device serial number).	Enter the correct activation key.
Invalid access	The user is not allowed to enter at this reader, or the user profile is still Disabled.	User must be enabled, and the Area Group allow access to the specified area of the reader.
Database not found	Database on device is faulty or corrupt. Return device for repair.	
Invalid minutiae	MACI License for MA500 and older versions of IDEMIA readers are missing.	Enrolment or dongle with MACI license must be plugged in computer that will download the templets.
Invalid user data	Information on user profile is incomplete.	Name and First name fields cannot be blank.
Connection/Protection Error	Software cannot communicate with the IP address of the device.	Must be able to ping device and TTL level on reply = 64 to verify that pinged device is a biometric device.

12 ADD DATABASE LICENSE

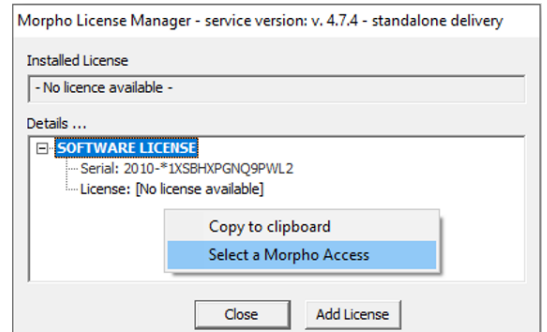
Only valid for Idemia devices - increase the user database with a provided license file.

A License file is supplied with purchase of database increase.

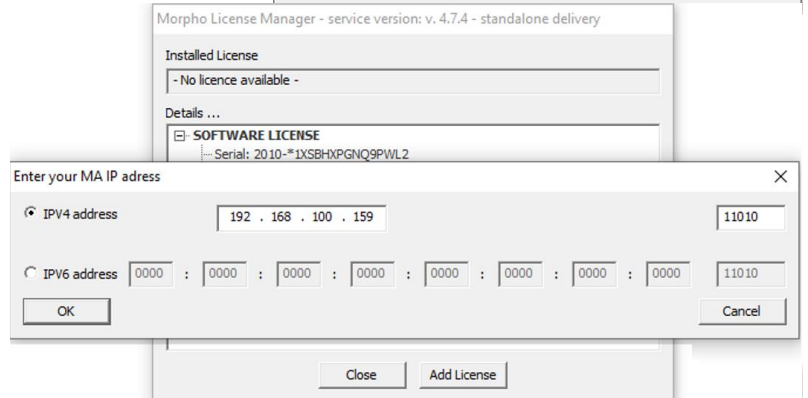
1. Open the Morpho License Manager application.



2. Right click on the screen of the application and Select a Morpho Access.



3. Enter IP address of reader requiring license upgrade.



4. Select the serial number of the device and click on Browse Button to select the license file provided for the user database upgrade.
5. After the license file is selected, click on the Add button to update the user license of the reader.

