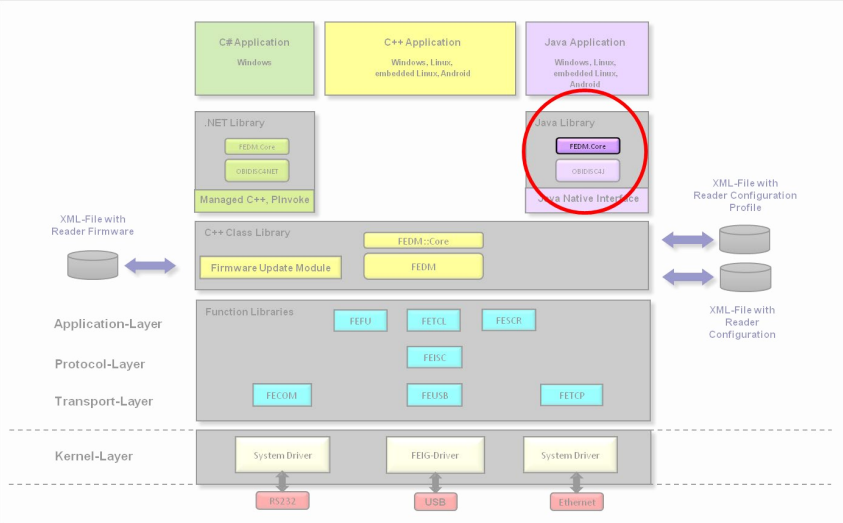
IDENTIFICATION

MANUAL

ID ISC.SDK.xxx for Java

Installation Manual



Operating System with installed JRE5 or higher	Target 32-Bit	 64-Bit	SDK Name	Notes
Windows Vista / 7 / 8 / 10	X	X	ID ISC.SDK.Java	
Linux	X	X	ID ISC.SDK.Java	Other than Intel CPU on request
Raspberry Pi 3 and 4	X	-	ID ISC.SDK.Raspi	Raspbian OS (Stretch and Buster)
Android	X	X	ID ISC.SDK.Android	Android 6.0 (API level 23) or higher

Note

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This manual supercedes all previous editions.
The information contained in this manual is subject to change without notice.

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Please refer any questions concerning these Agreements to:

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E-Mail: identification-support@feig.de
Internet: http://www.feig.de

Third-Party Licensing agreements

Licensing Agreement of OpenSSL Organization

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The word 'cryptographic' can be left out if the rouines from the library being used are not cryptographic related :-).

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Content

Remarks Concerning the Documentation

FEIG ELECTRONIC GmbH does not duplicate information about FEIG readers in different manuals or include cross-references to certain page numbers of another document. This is because the manuals are constantly updated, and helps to eliminate mistakes resulting from information obtained from out-of-date documents. We therefore encourage the user of this library to always verify that he is using the current manuals. The newest versions can always be obtained from FEIG ELECTRONIC GmbH.

Important notes:

You may use this library only if you have first agreed to the licensing terms found on the reverse side.

The class library is being constantly adapted. We make effort to maintain the documented status. Nevertheless, changes cannot be precluded.

1. Revision History

Revision	Date	Changes
4	2020-07-10	• Support for Raspberry Pi Buster added for Raspberry Pi 3 and 4 • Support for Raspberry Pi 2 removed • Support for Raspberry Jessie operating system removed
3	2020-02-04	• Support for Raspberry Pi limited to Raspbian Stretch
2	2018-07-09	• Support for Raspberry Pi and Android added
1	2018-03-09	• libFedmIscService.so.x.y.z added in table of 3.4.2. Linux
0	2017-09-25	• Initial version

2. Introduction

FEIG ELECTRONIC GmbH has developed different, hierarchical structured software libraries to simplify the integration of FEIG RFID readers into customer's applications.

A common attribute of all components is the support of all FEIG reader families with a uniform Application Programming Interface (API).

The class library for Java represents the highest level in the software stack and supports all FEIG reader families.

This class library is split into an implementation layer (**OBIDISC4J**) and an API layer (**OBIDISC4J_API**). The first one is established since the year 2002 and can also be used as an API layer, but since 2017 it is wrapped by a new and modern API layer above the implementation layer and it is recommended to use this API for new projects.

After installation, you should start with the Tutorial (H60810-0e-ID-B) and with the Java samples of the SDK.

Further information can also be found in the System Manual of your preferred FEIG RFID reader.

3.Installation

Normally, this package is shipped together with other libraries in a Software Development Kit (SDK). Copy the SDK into a directory of your choice.

3.1. Supported Operating Systems

Operating System with installed JRE5 or higher	Target 32-Bit	Target 64-Bit	SDK Name	Notes
Windows Vista / 7 / 8 / 10	X	X	ID ISC.SDK.Java	
Linux	X	X	ID ISC.SDK.Java	Other than Intel CPU on request
Raspberry Pi 3 and 4	X	-	ID ISC.SDK.Raspi	Raspbian OS (Stretch and Buster)
Android	X	X	ID ISC.SDK.Android	Android 6.0 (API level 23) or higher

3.2. System Requirements

- 32 or 64-Bit Java Runtime Environment (JRE) 5 or higher

3.3. Installation on Development Computer

3.3.1. Windows Vista / 7 / 8 / 10

The following settings for the Netbeans sample projects must be done:

- The "Working Directory" (Project Properties ➔ Run) must point to the path of the native libraries (`sw-run\windows\...`).
- Use the proper "Java Platform" (Project Properties ➔ Libraries) for the native libraries (i.e. x86 or x64).

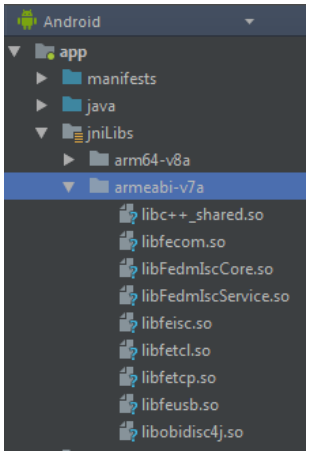
If an alternative IDE is preferred, the installation is the same as for a target computer and described in 3.4.1. Windows Vista / 7 / 8 / 10.

3.3.2. Linux and Raspberry Pi

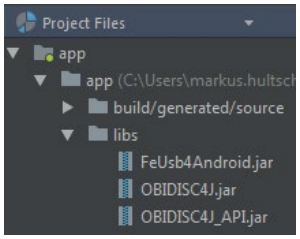
The installation is the same as for a target computer and described in 3.4.2. Linux and Raspberry Pi.

3.3.3. Android

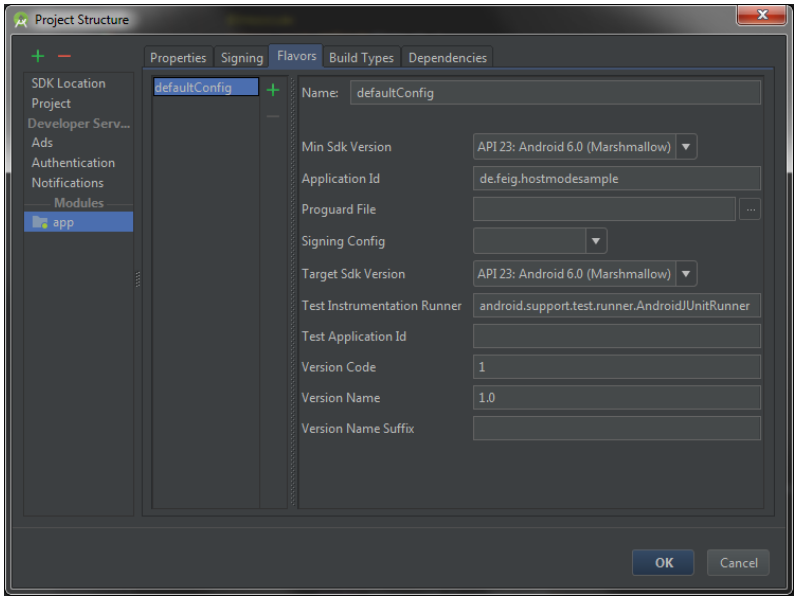
Add the `<platform>` directory matching your Android platform with all *.so library files to your Android Studio. Alternatively, you can add all `<platform>` directories. The platform selects automatically the proper platform files, but it extends the size of the generated apk file.



Add the *.jar library files from `sw-run` to your Android Studio.



Set the Min Sdk Version in Project Structure at least to API23: Android 6.0 (Marshmallow).



3.3.3.1. Current Limitations

The USB communication stack for Android is redesigned with Java code and currently not finalized and less tested. Current limitations have to be considered:

- Utility.UsbManager.scan supports only the parameter SCAN_ALL.

3.3.3.2. Recommended Steps for USB Communication

Before any USB communication with a RFID Reader, some necessary steps must be implemented in each app. Please follow the notes in *Getting_started_for_USB_communication.txt*.

3.4.Installation on Target Computer

3.4.1. Windows Vista / 7 / 8 / 10

The following Java library files are located under `sw-run:`

File	Description
OBIDISC4J.jar	Java library with implementation layer for all FEIG readers
OBIDISC4J_API.jar	Java library with API layer for all FEIG readers

The following native library files are located under `sw-run\windows\<platform>:`

File	Description
FECOM.DLL	Native library for serial interface
FETCP.DLL	Native library for TCP/IP
FEUSB.DLL	Native library for USB
FEISC.DLL	Native library for all FEIG readers
FEFU.DLL	Native library for FEIG external Function Units
FETCL.DLL	Native library for FEIG readers with ISO 14443 support
OBIDISC4J.DLL	Native library with JNI wrapper for all FEIG readers

Installation is quite simple:

Copy all DLL files to the directory: `<Java-directory>\jre\bin`

Copy the files OBIDISC4J.jar and OBIDISC4J_API.jar to the directory: `<Java-directory>\jre\lib\ext`

Alternately you can select any other directory, as long as you tell this to the Java environment: java –classpath *Directory*.

3.4.2. Linux and Raspberry Pi

The following Java library files are located under `sw-run:`

File	Description
OBIDISC4J.jar	Java library with implementation layer for all FEIG readers
OBIDISC4J_API.jar	Java library with API layer for all FEIG readers

Linux: The following native library files are located under `sw-run\linux\<platform>:`

Raspi: The following native library files are located under `sw-run\<platform>:`

File[1]	Description
libfecom.so.x.y.z	Native library for serial interface
libfeusb.so.x.y.z	Native library for USB
libfetcp.so.x.y.z	Native library for TCP/IP
libfeisc.so.x.y.z	Native library for all FEIG readers
libfefu.so.x.y.z	Native library for FEIG external Function Units
libfetcl.so.x.y.z	Native library for FEIG readers with ISO 14443 support
libFedmIscCore.so.x.y.z	Native library for all FEIG readers
libFedmIscService.so.x.y.z	Native library for all FEIG readers
libobidisc4j.so.x.y.z	Native library with JNI wrapper for all FEIG readers

Installation is quite simple:

Change to the SDK library path (`sw-run\...\<platform>`) and call the script `install-libs.sh` with the destination install path for the libraries as parameter (e.g. `/usr/lib`).

This will copy all library files to the destination path and generate the necessary links:

```
ln –sf lib*.so.x.y.z lib*.so.x
ln –sf lib*.so.x lib*.so
```

Finaly `ldconfig` is called.

Copy the files OBIDISC4J.jar and OBIDISC4J_API.jar to the directory: `<Java-directory>\jre\lib\ext`

Alternately you can select any other directory, as long as you tell this to the Java environment: java –classpath *Directory*.

In the case that the JVM cannot find the native library libobidisc4j.so, set a symbolic link to the library in the same directory where OBIDISC4J.jar and OBIDISC4J_API.jar are located.

[1] x.y.z represents the version number of the library file

If USB is intended to be used, then additional installation steps are necessary.

For usage without administration rights:
Requirements:

The udev daemon is running and handles the hotplugging of the usb devices.

The application chmod must be located in the directory /bin.

- copy the file **41-feig.rules** from `sw-run\<platform>\config\unix\etc\udev\rules.d` to the directory `/etc/udev/rules.d`.

3.4.3. Android

The following Java library files are located under `sw-run:`

File	Description
FeUsb4Android.jar	Java library with implementation layer for USB
OBIDISC4J.jar	Java library with implementation layer for all FEIG readers
OBIDISC4J_API.jar	Java library with API layer for all FEIG readers

The following native library files are located under `sw-run\<platform>:`

File	Description
libc++_shared.so	Native library
libfecom.so	Native library for serial interface
libfeusb.so	Native library for USB
libfetcp.so	Native library for TCP/IP
libfeisc.so	Native library for all FEiG readers
libfetcl.so	Native library for FEIG readers with ISO 14443 support
libFedmIscCore.so	Native library for all FEIG readers
libFedmIscService.so	Native library for all FEIG readers
libobidisc4j.so	Native library with JNI wrapper for all FEIG readers

Installation is quite simple: the deployment to the Android target will be together with the app in the apk file.