# Standard SDK
## for Linux & Andriod

## Introduction

Futronic Linux Fingerprint Recognition Software Development Kit(SDK) is an excellent tool for users to develop Linux based fingerprint recognition application software. It works seamlessly with the FS80, FS82, FS88and FS25. With the SDK, you can make use of Futronic proprietary fingerprint recognition algorithm without knowing the details of a purely mathematical process. So fingerprint recognition can be integrated into any application program to REPLACE the users' Logon password by a touch of finger to make your system more secure and user administration easier.

## Linux USB Driver

The Linux SDK doesn't use a kernel mode driver, but works with a well-known multi-platform library libusb.so. "libusb" is a library to allow userspace application access to USB devices. We recommend using the latest version 0.1.12 with FS80 USB fingerprint scanner. Please check the "libusb" official site http://libusb.sourceforge.net.

## Major SDK features

The Linux SDK has exactly the same function as the Futronic Windows SDK. It includes header file that define API, libraries, and sample code for GNU C/C++ on x86 based hardware platform. For ARM based hardware platform, we can recompile the libraries if arm-linux cross compile toolchain is provided.

There are two libraries, libScanAPI.so and ftrapi.so.
1. libScanAPI.so is responsible for the fingerprint image capturing, it works with the libusb.so.
2. ftrapi.so is responsible for the fingerprint processing and recognition.

**The Linux SDK has the following major features:**

- Capturing fingerprint image
  from FS80, FS82, FS88 and FS25
- Extracting fingerprint characteristics(minutiae) from real time captured image and creating a template which can be used:
  - For registration, the template will be stored in the database
  - For authentication, the template will be matched to pre-registered template
- Matching fingerprint templates(one of the matching templates must be generated from real time captured image) can be done in 1-to-1 or 1-to-many manner
- Recognition accuracy, FAR & FRR, can be adjusted to suit security requirement of different application.
- Support Live Finger Detection(LFD) when using together with FS80, FS82, FS88 and FS25

## Tested Linux platforms

Futronic Linux SDK should work on all Linux platforms with kernel 2.4 or higher. And it has been tested on the following on x86 based hardware:

- Redhat
- OpenSuse
- Debian
- Fedora Core
- Knoppix
- Ubuntu

## Android Support

Futronic Android SDK supports Android version 3.1 and higher which has USB Host Mode, it also supports Android version 2.x if it has usbfs.

- **System Requirement**
  - Android version 3.1 and higher
    - Has an USB Host port
    - Has external sdcard and mount as "/mnt/sdcard", need to make directory "Android" under it, looks as: "/mnt/sdcard/Android".
  - Android version 2.x
    - The OS kernel must support "usbfs", and mount it as: mount -t usbfs -o devmode=666 none /proc/bus/usb
- **Tested Android Devices**
  - Acer Iconia Tab A200
  - Samsung Galaxy Tab 2 7.0
  - Samsung Galaxy Tab 7.7
  - Samsung Galaxy S2/S3
  - FriendlyARM mini 6410


SAMSUNG
15:59
FtrScanDemoUsbHost
14:FS88H,ScanAPI: 13.2.2457.1028
Firmware: 8.33.29, Hardware: 6.3.2
Frame
LFD
Invert
Scan
Stop
Save
OK. GetFrame time is 412(ms)
USB Host Mode
FUTRONIC FS88H
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