
SecuGen® SDK Collection 11.0 Product Overview

SG1-0009A-013 (07/08)



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Software products included:

- **SDK Pro Series**
 - FDx SDK Pro (1:1)
 - SecuBSP® SDK Pro (1:1)
 - SecuGen BioAPI BSP SDK Pro (1:1)
 - SecuSearch® SDK Pro (1:N)
- **SDK Series**
 - FDx SDK (1:1)
 - SecuBSP® SDK (1:1)
 - SecuGen BioAPI BSP SDK (1:1)
 - SecuMatchingEngine™ MT SDK (multi-thread)
- **Device Drivers**



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Device Drivers



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USB Fingerprint Device Drivers

- Device drivers for all SecuGen USB fingerprint readers

- System Requirements

- Pentium
- 1 USB port (USB 2.0 for FDU04/Hamster IV)
- 20MB Hard disk space
- Windows Vista/2003/XP/2000/Me/98SE
- Microsoft WHQL approved
 - ✓ Designed for Windows XP
 - ✓ Designed for Windows Server 2003



- Software

- Device Driver for FDU02-based readers
- Device Driver for FDU03-based readers
- Device Driver for FDU04-based readers
- Device Diagnostic Tool: Sgdx.exe to test hardware
- Firmware Update/Serial Number Writing Tool



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Software Developer Kits



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Introduction



- **The SDK Collection provides 2 SDK Series :**
 - “SDK” Series
 - ✓ Original algorithms based on SecuGen’s proprietary template, with extensive platform support
 - “SDK *Pro*” Series
 - ✓ Next-generation algorithms that support 3 types of templates
 - ✓ SecuGen’s proprietary template
 - ✓ Standard ANSI-INCITS 378-2004 format (MINEX Tested & Compliant)
 - ✓ Standard ISO/IEC 19794-2:2005 format (FDx SDK *Pro* only)
- **The SDK Collection includes:**
 - FDx SDK and FDx SDK *Pro* series
 - ✓ Low-level APIs; simple and small library size; easy to customize
 - SecuBSP SDK and SecuBSP SDK *Pro* series
 - ✓ High-level APIs with Fingerprint Enrollment and Verification Wizards (UI)
 - SecuGen BioAPI BSP
 - ✓ High-level APIs for BioAPI (ANSI-INCITS 358-2002) compliant applications
 - SecuGen BioAPI BSP *Pro*
 - ✓ High-level APIs for BioAPI (ANSI-INCITS 358-2002) and FIPS 201/PIV (ANSI-INCITS 378-2004) compliant applications
 - Evaluation Version of SecuSearch® SDK *Pro*
 - ✓ 1:N matching engine for identification applications
 - SecuMatchingEngine™ MT
 - ✓ Matching engine for multi-threaded programs



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- Comparison between "FDx" and "SecuBSP" SDKs

	FDx SDK	SecuBSP SDK
Supported Operating Systems	Windows Windows CE .NET Java Linux Solaris	Windows Windows CE .NET Linux (matching server only)
Data Format	400 bytes template (proprietary)	Variable-length Fingerprint Identification Record (FIR)
Encryption Algorithm	56 Bit	128 Bit
Graphical User Interface	No	Yes
Flexibility	High	Medium
Ease of Developing Applications	Stand alone, C/S Apps: Medium Web Apps: Medium	Stand alone, Web Apps: Medium Web Apps: Easy



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The FDx SDK/SDK *Pro* Series



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- **Features**
 - Low-level APIs; Simple and small library size
 - Easy to make applications (especially those compatible with your own UI); Maximum Flexibility
- **Biometric functions provided**
 - Image Capture, Feature Extraction and Matching
- **Products included in SDK *Pro* series**
 - FDx SDK *Pro* for Windows
- **Products included in SDK series**
 - FDx SDK for Windows
 - FDx SDK for Windows CE .NET
 - FDx SDK for Java
 - FDU03 SDK for Linux
 - FDU03 SDK for X86 Solaris 10
 - FDU03 SDK for SPARC Solaris 10
 - FDU02 SDK for Fedora Linux
 - FDU02 SDK for SPARC Solaris9



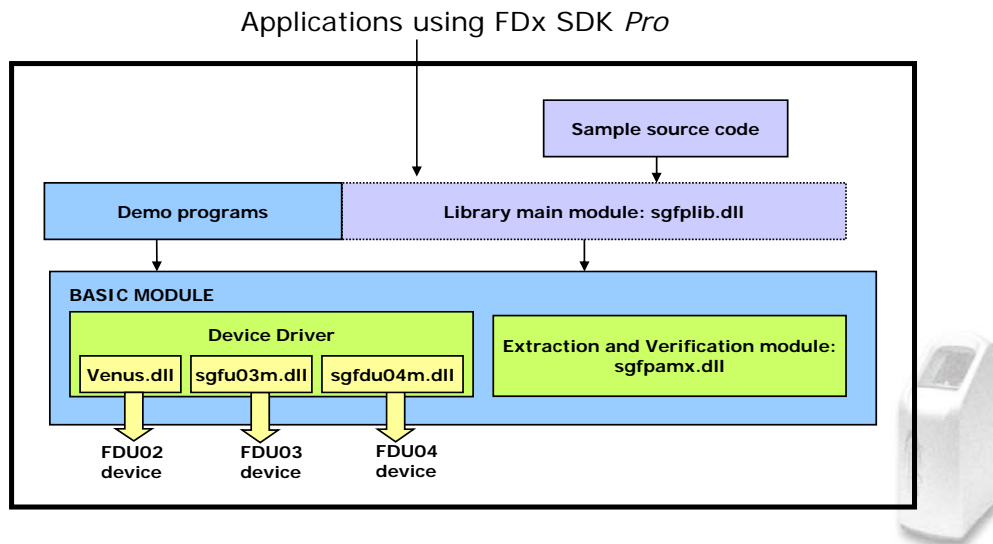
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- **Abstract**
 - Tools for developing fingerprint authentication solution for Windows
 - "Next-Generation" algorithm technologies
 - ✓ Highly Adaptive Filtering
 - ✓ Advanced Image Enhancement and Restoration
 - Supports fingerprint minutiae standards
 - ✓ ANSI-INCITS 378-2004
 - ✓ ISO/IEC 19794-2:2005
 - MINEX Tested and FIPS 201/PIV Compliant
- **System requirements**
 - Windows Vista/2003/XP/2000/Me/95
 - Any SecuGen fingerprint reader (except FDU01-based readers)
- **Contents**
 - Programming Manual
 - Software:
 - ✓ Extraction and Matching Modules
 - ✓ .NET Library
 - ✓ Sample source code in Visual C++
 - ✓ Sample source code in C# and Visual Basic .NET



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- Development model



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Updated for 11.0!

- Abstract

- Tools for developing fingerprint authentication solution for Windows

- System requirements

- Windows Vista/2003/XP/2000/Me/98/95
- Any SecuGen fingerprint reader (except Hamster IV)
- .NET Framework & SDK v1.1 or higher (for .NET applications)

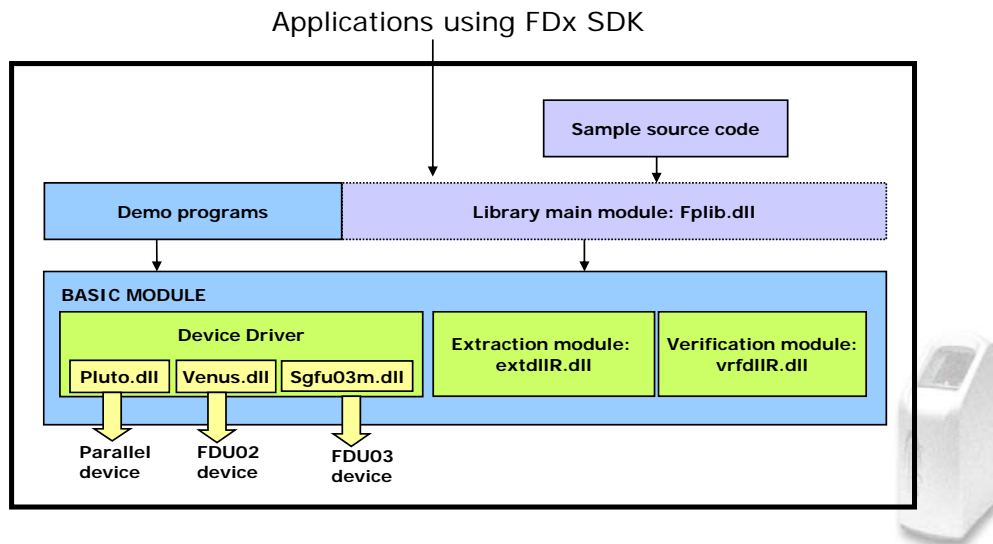
- Contents

- Installation, Programming & .NET Programming Manuals
- Software:
 - ✓ Extraction Module, Matching Module
 - ✓ Sample source code: C#, Delphi, Visual Basic, Visual Basic .NET, Visual C++
 - ✓ Sample programs:
 - Fingerprint Matching Program
 - Fingerprint Identification Program
 - Fingerprint Text Editor



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- Development model



Updated for 11.0!

- Abstract

- Tools for developing fingerprint authentication solution for Thin Client machines/PDA based on Windows CE .NET

- Contents

- Installation, Programming & .NET Programming Manuals and Demo Guide
- Software
 - ✓ Device Driver for FDU02 and FDU03-based readers
 - ✓ Runtime modules:
 - Main module: Fplib.dll
 - Extraction module: ExtIIR.dll
 - Matching module: VrfIIR.dll
 - ✓ Test program
 - Fingerprint Device Test
 - Fingerprint Matching Demo
 - .NET Demo
 - ✓ Sample source code: Embedded VC++, C#, Visual Basic .NET



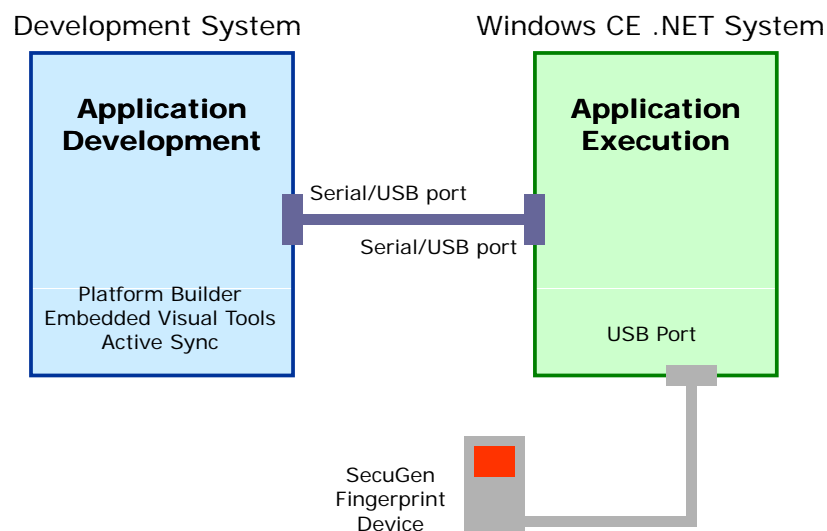
- **Target system requirements**
 - x86 compatible CEPC, GeodeGX
 - Intel XScale PXA255, PXA250, ARMV4, ARMV4T processors
 - Windows CE .NET 4.2, Windows CE.NET 5.0, Pocket PC 2003
 - USB port (RATOC USB Compact Flash Adapter supported)
 - Memory: 600K RAM, 300K ROM
- **Supported SecuGen Devices**
 - FDU02-based Hamster III and FDU03-based Hamster Plus
- **Development system requirements**
 - Windows Vista/2003/XP/2000/NT
 - Development Tools
 - ✓ Embedded Visual C++ 4.0
 - ✓ Visual Studio .NET 2003 for .NET developers
 - ✓ ActiveSync 3.0 or above
- **Supported Handheld PCs/PDAs**
 - Casio DT-X10, Compaq IPAQ, Psion Teklogix 7535 and more



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- **Development system structure**



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- **Abstract**
 - Tools for developing fingerprint authentication solutions using Java
- **System requirements**
 - IBM-compatible, PII, 350 MHz, 128 MB RAM, 20MB HDD, USB port
 - Windows
 - Java 2 SDK v1.4.x
 - SecuGen FDx SDK for Windows v3.0 or later
 - Any SecuGen fingerprint reader (except Hamster IV)
 - Internet Explorer, Netscape or FireFox browser
- **Contents**
 - Developer's Guide
 - JavaDoc
 - Software:
 - ✓ JNI wrapper for SecuGen FDx SDK for Windows
 - ✓ Sample source code & demo programs in Java: JSGD – SecuGen diagnostic utility, JSGDApplet – SecuGen diagnostic signed applet for Internet Explorer, Netscape or FireFox browsers



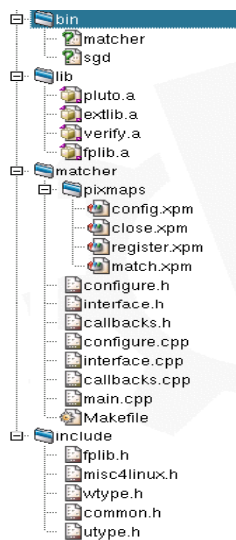
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- **Abstract**
 - Tools for developing fingerprint authentication solution for Linux
- **System requirements**
 - IBM-compatible, PII, 350 MHz, 128 MB RAM, 20MB HDD, USB port
 - OS: Linux kernel 2.4 or later (RedHat Linux 9, SuSE 9.1, Debian 3.1, Fedora Linux Core 3 or Core 4)
 - FDU03™-based Hamster Plus only
 - Required Linux libUSB USB runtime and development libraries
 - ✓ libusb-0.1.7-3 or later
 - ✓ libusb-0.1.8-3 or later (for Fedora Core 3)
 - ✓ libusb-0.1.10-39 or later (for Fedora Core 4)
 - GIMP Graphical development libraries
 - ✓ glib-devel-1.2.10-10 or later
 - ✓ gtk-devel-1.2.10-25 or later (for RedHat 9)
 - ✓ gtk-devel-1.2.10-877 or later (for SuSE 9.1)
 - ✓ glib-devel-1.2.10-15 or later (Fedora Core 3)
 - ✓ glib-devel-1.2.10-16 or later (Fedora Core 4)
 - ✓ gtk2-devel-2.2.1-4 or later
 - ✓ gtk2-devel-2.4.13-9 or later (Fedora Core 3)
 - ✓ gtk2-devel-2.6.7-4 or later (Fedora Core 4)
- **Contents**
 - Developer's Manual
 - Software:
 - ✓ USB device driver, Extraction Module, Matching Module
 - ✓ Sample source code & header files in C++:
Fingerprint Device Test, Fingerprint Matching Demo, Multiple Device Demo



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- **Directory structure & Sample programs**



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New for 11.0!

- **Abstract**

- Tools for developing fingerprint authentication solution for X86 and SUN SPARC Solaris

- **System requirements**

- SUNBlade 150 or later SPARCStation with USB support
- OS: Solaris 10
- FDU03™-based Hamster Plus only

- **Contents**

- Developer's Manual
- Software:
 - ✓ USB device driver, Extraction Module, Matching Module
 - ✓ Sample source code & header files in C++:
 - Fingerprint Device Test, Fingerprint Matching Demo, Multiple Device Demo



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- **For FDx SDK**
 - Matching library for Unix machine, used in conjunction with applications developed with FDx SDK on client machine
 - Does not provide support for SecuGen devices
- **Supported OS**
 - Sun Solaris 2.6 and 2.7 and others

Note! Unix Matching Library is provided upon request



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Secure Biometric Service Provider (SecuBSP®) SDK/SDK *Pro* Series



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- **Features**

- Implements SecuGen's SecuAPI specification
- Very similar to BioAPI specification, but with additional functions
- Optimized fingerprint Enrollment and Verification Wizards (UI)
- Device-independent structure
- Device enumeration & auto detection
- Secure & flexible template format
- Customizable UI skin
- Payload function
- Self protection via dll signing

- **Functions**

- Biometric
 - ✓ Low-level APIs: Capture, Process, CreateTemplate, VerifyMatch
 - ✓ High-level APIs: Enroll, Verify
- Utility Functions
 - ✓ Set new skin resource to BSP module
 - ✓ Convert Fdx template to FIR format
- Device Functions
 - ✓ Open, Close, Enumerate, Adjust, Get Info, Set Info



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- **Products included in SecuBSP SDK Pro series**

- SecuBSP SDK Pro for Windows

- **Products included in SecuBSP SDK series**

- SecuBSP SDK for Windows
- SecuBSP Matching SDK for Linux
- SecuBSP Unix Matching Library



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- **System requirements**

- OS: Windows Vista/2003/XP/2000/NT/Me/98/95
- Any SecuGen fingerprint reader (except Hamster IV)
- For Web apps: Web server: IIS 4.0+, Web browser: IE 5.0+
- For .NET applications: .NET Framework & SDK v1.1+

- **Features**

- Fingerprint Enrollment and Verification Wizards
- Device-independent structure
- Device enumeration & auto detection
- Secure & flexible template format
- Customizable UI skin
- Payload function
- Self protection via dll signing
- Functions for data (fingerprint template) conversion
- SecuBSP COM for web and RAD tool developers
- SecuBSP .NET class library for .NET developers

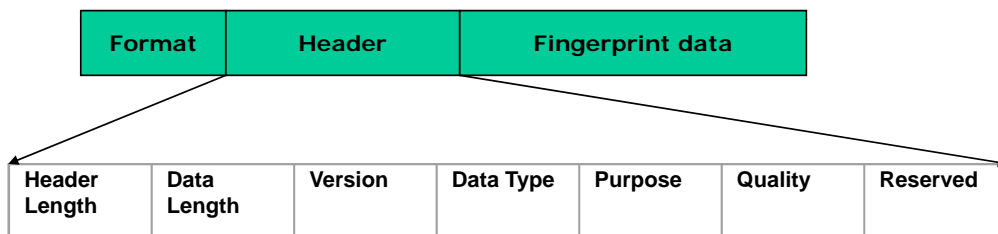


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SecuBSP® SDK for Windows (continued)

- **SecuBSP® data format: FIR**



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• Contents

- Developer's Manuals:
 - ✓ SecuAPI® Reference Manual
 - ✓ SecuBSP® Programmer's Manual
- Software
 - ✓ Library:
 - SecuBSP.dll
 - SecuBSPCOM.dll (SecuBSP COM module)
 - SecuBSP.NET.dll (SecuBSP .NET class)
 - Resource files
 - ✓ Sample source code
 - Visual C++
 - Visual Basic (SecuBSP COM)
 - Delphi (SecuBSP COM)
 - IIS (SecuBSP COM)
 - C# (SecuBSP .NET class)
 - VB.NET (SecuBSP .NET class)



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• Functions

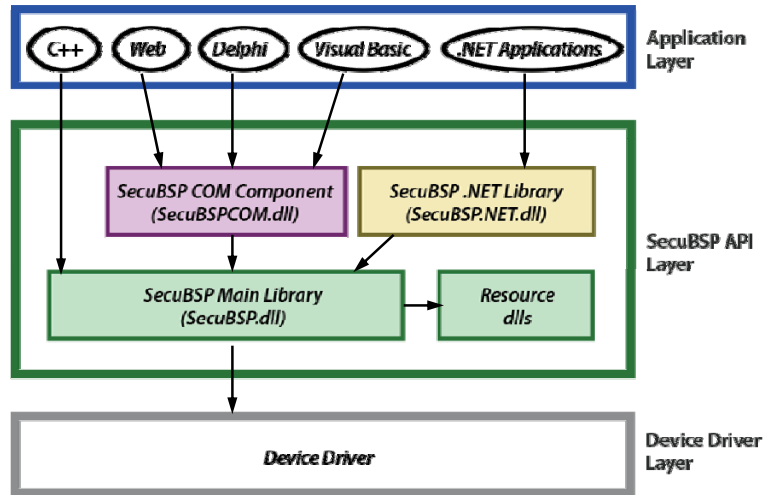
- **Biometric functions**
 - ✓ Capture
 - ✓ Process
 - ✓ CreateTemplate
 - ✓ VerifyMatch
 - ✓ Enroll
 - ✓ Verify
- **Device functions**
 - ✓ EnumerateDevice
 - ✓ OpenDevice
 - ✓ CloseDevice
 - ✓ GetDeviceInfo
 - ✓ SetDeviceInfo
 - ✓ AdjustDevice
- **Utility functions**
 - ✓ SetSkinResource
 - ✓ FDxToSecuBSP
 - ✓ CheckModuleValidity
- **Basic functions**
 - ✓ Init
 - ✓ Terminate
 - ✓ GetVersion
 - ✓ GetInitInfo
 - ✓ SetInitInfo
- **Memory functions**
 - ✓ FreeFIRHandle
 - ✓ GetFIRFromHandle
 - ✓ GetHeaderFromHandle
 - ✓ GetExtendedFIRFromHandle
 - ✓ GetExtendedHeaderFromHandle
 - ✓ FreeFIR
 - ✓ GetTextFIRFromHandle
 - ✓ GetExtendedTextFIRFromHandle
 - ✓ FreeTextFIR
 - ✓ FreePayload



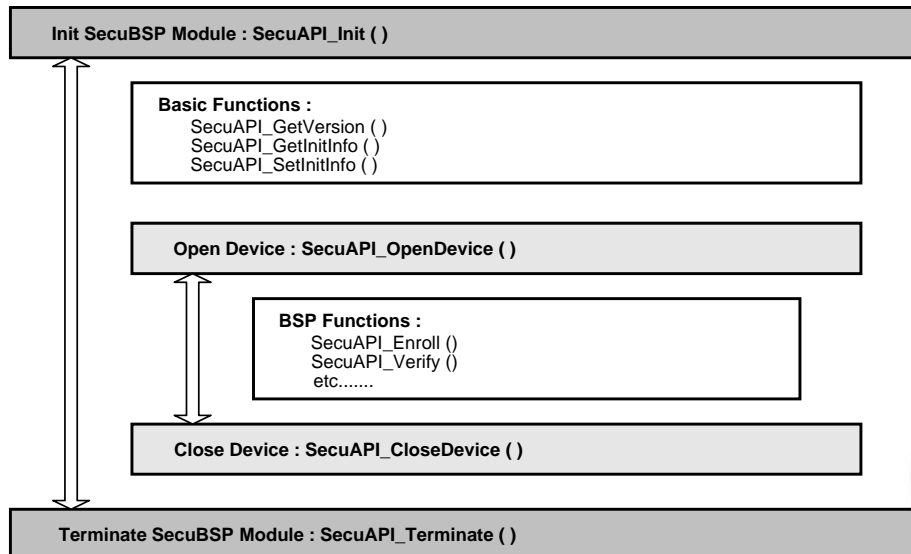
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- Development Model



- Function usage structure



Enrollment Wizard

Verification Wizard



Image Quality Adjustment Wizard



- Same as SecuBSP SDK for Windows except for:
 - Supports ANSI-INCITS 378-2004 standard fingerprint minutiae format (template)
 - Supports all SecuGen readers including Hamster IV
 - Library name is different
 - ✓ Software
 - Library:
 - » SecuBSPMx.dll (Main module)
 - » SecuBSPMx.COM.dll (SecuBSP Pro COM module)
 - » SecuBSPMx.NET.dll (SecuBSP Pro .NET class)
 - » Resource files
 - Sample source code
 - Visual C++
 - » Visual Basic (SecuBSP COM)
 - » Delphi (SecuBSP COM)
 - » IIS (SecuBSP COM)
 - » C# (SecuBSP .NET class)
 - » VB.NET (SecuBSP .NET class)



- **Provides matching functions to be carried out on a Linux server Verification function (1-to-1 matching)**
 - Enrollment template creation
 - Does not provide support for SecuGen devices
 - ✓ Capture functions carried out separately on client machine
- **System Requirements**
 - IBM-compatible, PII, 350 MHz, 128 MB RAM, 20MB HDD
 - OS: Linux kernel 2.4 or later (RedHat Linux 9)
- **Includes**
 - SecuBSP Matching library (libSecuBSPsvr.so)
 - Header files
 - Sample source code written in C
 - Test data (captured using SecuBSP client function)



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- **For SecuBSP SDK**
 - Matching library for Unix machine, used in conjunction with applications developed with SecuBSP SDK on client machine
 - Does not provide support for SecuGen devices
- **Supported OS**
 - Sun Solaris 2.6 and 2.7 and others

Note! Unix Matching Library is provided upon request



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- Biometric Service Provider module for developing BioAPI-compliant applications that work with SecuGen peripherals in Windows environments
 - Complies with BioAPI Specification version 1.1 (ANSI-INCITS 358-2002)
 - Complies with NISTIR 6529-A-2003 Common Biometric Exchange Framework Format (CBEFF) structure
 - Tested with BioAPI Reference Implementation version 1.1
 - Implements BioAPI Specification version 1.1 SPI interface for use with all SecuGen devices
 - Includes
 - ✓ Well-designed enrollment and verification user interfaces
 - ✓ Runtime modules
 - ✓ INI file
 - ✓ Skin modules
 - ✓ BioAPI sample application
 - ✓ User Manual
- What is BioAPI?
 - BioAPI is the application interface standard for biometric devices, developed by the BioAPI Consortium (www.bioapi.org)



• Supported API List

API Name	Supported
BioSPI_ModuleLoad	Framework
BioSPI_ModuleUnload	Framework
BioSPI_ModuleAttach	Yes
BioSPI_ModuleDetach	Yes
BioSPI_FreeBIRHandle	Yes
BioSPI_GetBIRFromHandle	Yes
BioSPI_GetHeaderFromHandle	Yes
BioSPI_EnableEvents	No
BioSPI_SetGUICallbacks	No
BioSPI_SetStreamCallback	No
BioSPI_StreamInputOutput	No

API Name	Supported
BioSPI_Capture	Yes
BioSPI_CreateTemplate	Yes
BioSPI_Process	Yes
BioSPI_VerifyMatch	Yes
BioSPI_IdentifyMatch	No
BioSPI_Enroll	Yes
BioSPI_Verify	Yes
BioSPI_Identify	No
BioSPI_Import	No
BioSPI_SetPowerMode	No
BioSPI_DbOpen	No
BioSPI_DbClose	No
BioSPI_DbCreate	No
BioSPI_DbDelete	No



Enrollment Wizard



Verification Wizard



Image Quality Adjustment Wizard



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SecuGen BioAPI BSP Pro

New for 11.0!

- Same as SecuGen BioAPI BSP except for:
 - Supports ANSI-INCITS 378-2004 fingerprint minutiae format (template)
 - Supports all SecuGen readers including Hamster IV



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Evaluation of SecuSearch® SDK Pro



New for 11.0!

- **One-to-many (1:N) fingerprint matching engine for identification**
 - Stand-alone or client/server configurations
- **Features**
 - Optimized APIs
 - Innovative high-speed matching method
 - Wide compatibility with many platforms
- **Works with applications made using**
 - FDx SDK or FDx SDK Pro
 - SecuBSP SDK or SecuBSP SDK Pro
 - FDA0x DK (embedded)
- **Included sample programs**
 - C++ Builder sample
 - VC_ODBC sample
 - FDx sample
 - SecuBSP sample
- **License file required**
 - Free 30-day evaluation license available upon request
 - Permanent licenses sold separately



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SecuMatchingEngine™ MT (Multi-thread)



- **Abstract**
 - Verification library (DLL) for multithreaded programs
 - Used for matching in server side
 - Data format is compatible with FDx SDK series
- **System requirements**
 - Windows
- **APIs**
 - SME_Initialize()
 - SME_Terminate()
 - SME_MatchForRegister()
 - SME_MatchForVerify()
 - SME_MatchForVerifyEx()



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- **First year included with Purchase of SDK Collection**
 - Free software upgrades for the first year
 - Free technical support for the first year via:
 - ✓ SecuGen Developer's Network (SGDN) <http://sgdn.secugen.com>
 - ✓ SecuGen Website <http://www.secugen.com>
 - ✓ E-mail techsupport@secugen.com
- **Contact SecuGen Sales Representative for more information**
 - E-mail sales@secugen.com
 - Call 408-834-7712
 - Fax 408-608-6363

