

SecuGen® SDK Collection 11.0 Product Overview

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Software Products Included

- **SDK Pro Series** – Featuring next-generation algorithms that support SecuGen’s proprietary, ANSI-INCITS 378-2004, and ISO/IEC 19794-2:2005 formats
 - FDx SDK *Pro* (1:1)
 - SecuBSP® SDK *Pro* (1:1)
 - SecuGen BioAPI BSP SDK *Pro* (1:1)
 - SecuSearch® SDK *Pro* (1:N)
- **SDK Series** – Featuring algorithms that support SecuGen’s proprietary template
 - FDx SDK (1:1)
 - SecuBSP® SDK (1:1)
 - SecuGen BioAPI BSP SDK (1:1)
 - SecuMatchingEngine™ MT SDK (multi-thread)
- **Others**
 - SecuGen ISO Image SDK
 - Device Drivers



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The FDx SDK/SDK *Pro* Series



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About the FDx SDK & SDK *Pro* Series

- **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**
 - FDx SDK *Pro* for Windows
 - FDx SDK for Windows
 - FDx SDK for Windows CE .NET
 - FDx SDK for Java
 - FDU03 SDK for Linux
 - FDU03 SDK for SPARC & X86 Solaris 10
 - FDU02 SDK for Linux & 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 & Approved as FIPS 201/PIV Compliant

- **System requirements**

- Windows Vista/2003/XP/2000/Me/95
- Any SecuGen fingerprint reader (except FDU01-based readers)

- **Contents**

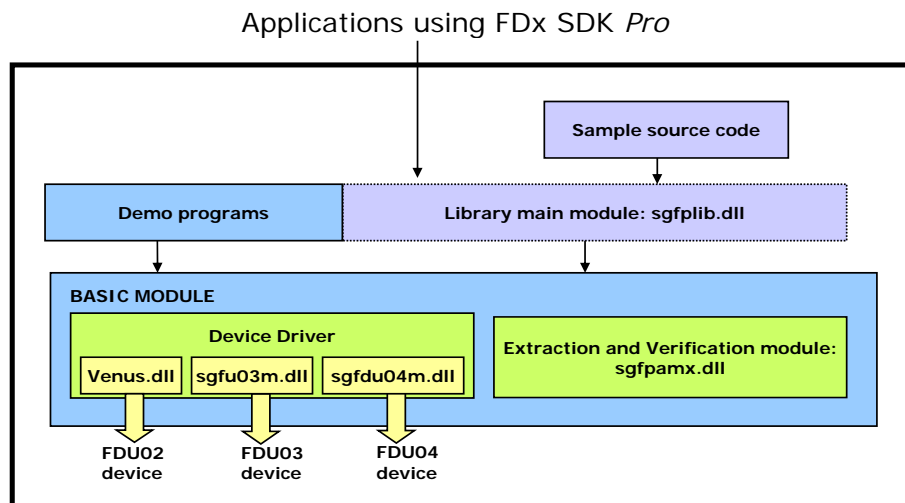
- Programming Manual
- Software:
 - ✓ Extraction and Matching Modules
 - ✓ .NET Library
 - ✓ Sample source code in Visual C++
 - ✓ Sample source code in C# and Visual Basic .NET



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- **Development model**



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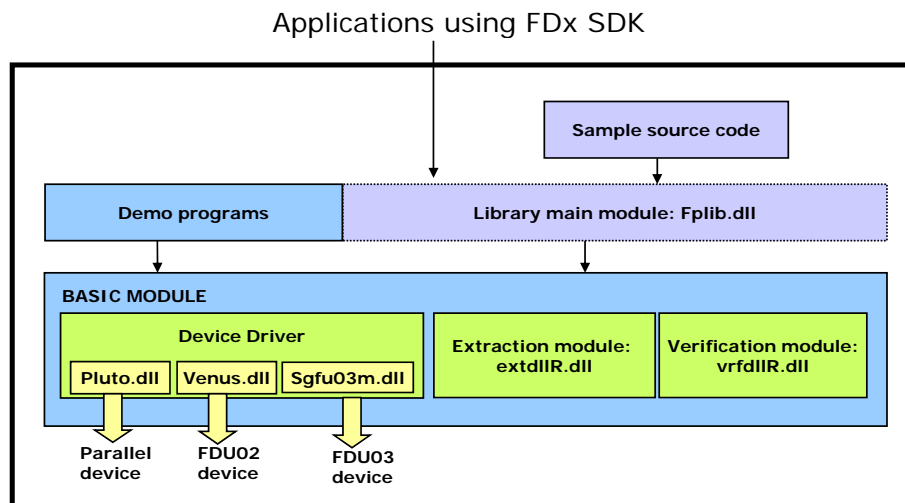
- **Abstract**
 - Tools for developing fingerprint authentication solution for Windows
- **System requirements**
 - Windows Vista/2003/XP/2000/Me/98/95
 - Any SecuGen fingerprint reader (except Hamster IV)
 - .NET Framework & SDK v1.1 or higher (for .NET applications)
- **Contents**
 - Installation, Programming & .NET Programming Manuals
 - Software:
 - ✓ Extraction Module, Matching Module
 - ✓ Sample source code: C#, Delphi, Visual Basic, Visual Basic .NET, Visual C++
 - ✓ Sample programs: Fingerprint Matcher, Identifier, and Text Editor



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- **Development model**



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- **Abstract**

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

- **Contents**

- Installation, Programming & .NET Programming Manuals
- Software
 - ✓ Device Driver for SecuGen Hamster Plus and Hamster III
 - ✓ Extraction Module, Matching Module
 - ✓ Sample source code: C#, Embedded VC++, Visual Basic .NET
 - ✓ Sample programs: Fingerprint Device Test, Matching Demo, .NET Demo

- **Target system requirements**

- x86 compatible CEPC, GeodeGX
- Intel XScale PXA255, PXA250, ARMV4, ARMV4T processors
- Windows CE .NET 4.2 or 5.0, Pocket PC 2003
- Memory: 600K runtime memory, 300K ROM
- OHCI or UHCI type USB port (supports RATO USB Compact Flash Adapter)
- SecuGen Hamster Plus or Hamster III



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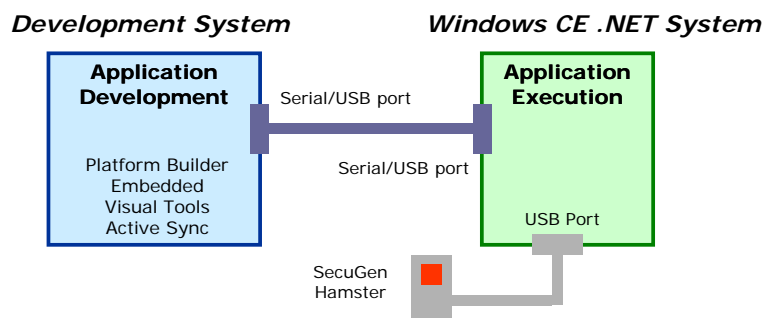
- **Development system requirements**

- Windows Vista/2003/XP/2000/NT
- Development Tools
 - ✓ Platform Builder 4.1 or above
 - ✓ Embedded Visual C++ 4.0 or above for C++ developers
 - ✓ 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

- **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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New for 11.0!

- **Abstract**
 - Tools for developing Hamster Plus fingerprint authentication solution for Linux
- **System requirements**
 - IBM-compatible, Pentium II, 350 MHz, 128 MB RAM, 20MB HDD, USB port
 - Any of the following platforms:
 - ✓ RedHat 9 Linux kernel 2.4.20-8
 - ✓ Debian Linux kernel 2.6.18-6-686
 - Linux libusb USB runtime and development libraries
 - GIMP graphical development libraries
 - SecuGen Hamster Plus only
- **Contents**
 - Developer's Manual
 - Software:
 - ✓ USB device driver, Extraction Module, Matching Module
 - ✓ Sample source code & header files in C++
 - ✓ Sample programs: Fingerprint Device Test, Matching Demo



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FDU03 SDK for X86 and SPARC Solaris 10

New for 11.0!

- **Abstract**
 - Tools for developing Hamster Plus fingerprint authentication solution for X86 and SUN SPARC Solaris
- **System requirements**
 - SUNBlade 150 or later SPARCStation with USB support
 - OS: Solaris 10
 - SecuGen Hamster Plus only
- **Contents**
 - Developer's Manual
 - Software:
 - ✓ USB device driver, Extraction Module, Matching Module
 - ✓ Sample source code & header files in C++
 - ✓ Sample programs: Fingerprint Device Test, Matching Demo



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FDU02 SDK for Linux

- **Abstract**
 - Tools for developing fingerprint authentication solution for Linux
- **System requirements**
 - IBM-compatible, Pentium II, 350 MHz, 128 MB RAM, 20MB HDD, USB port
 - Any of the following platforms:
 - ✓ RedHat 9 Linux kernel 2.4 or later
 - ✓ SuS Linux 9.1 kernel 2.4 or later
 - ✓ Debian Linux 3.2 kernel 2.4 or later
 - ✓ Fedora Linux Core3 kernel 2.4 or later
 - ✓ Fedora Linux Core4 kernel 2.4 or later
 - Linux libusb USB runtime and development libraries
 - GIMP graphical development libraries
 - FDU02™-based SecuGen fingerprint readers
- **Contents**
 - Developer's Manual
 - Software:
 - ✓ USB device driver, Extraction Module, Matching Module
 - ✓ Sample source code & header files in C++
 - ✓ Sample programs: Fingerprint Device Test, Matching Demo, Multiple Device Demo



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- **Abstract**
 - Tools for developing fingerprint authentication solution for SUN SPARC Solaris
- **System requirements**
 - SUNBlade 150 or later SPARCStation with USB support
 - OS: Solaris9
 - FDU02™-based (USB) SecuGen fingerprint readers only
- **Contents**
 - Developer's Manual
 - Software:
 - ✓ USB device driver, Extraction Module, Matching Module
 - ✓ Sample source code & header files in C++
 - ✓ Sample programs: Fingerprint Device Test, 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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About the SecuBSP® SDK/SDK *Pro* series



- **Features**

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

- **Functions**

- Low-level biometric APIs: Capture, Process, CreateTemplate, VerifyMatch
- High-level biometric 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)

- **Products included**

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



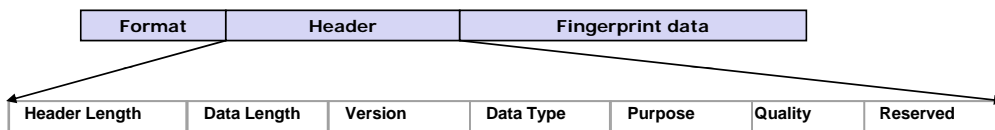
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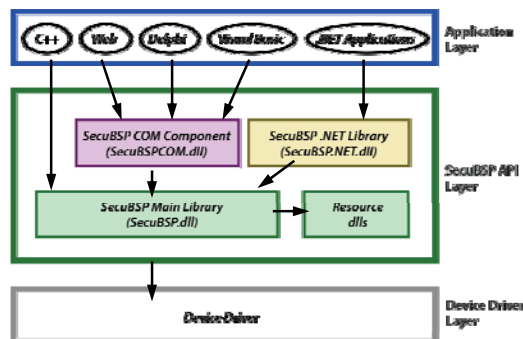
- **System requirements**
 - OS: Windows Vista/2003/XP/2000/NT/Me/98/95
 - Any SecuGen fingerprint reader (except Hamster IV)
 - For Web apps: Web server: IIS 4.0+, Web browser: IE 5.0+
 - For .NET applications: .NET Framework & SDK v1.1+
- **Additional features**
 - SecuBSP COM for web and RAD tool developers
 - SecuBSP .NET class library for .NET developers
- **Contents**
 - Developer's Manuals:
 - ✓ SecuAPI® Reference Manual
 - ✓ SecuBSP® Programmer's Manual
 - Software
 - ✓ Libraries:
 - SecuBSP.dll
 - SecuBSPCOM.dll (SecuBSP COM module)
 - SecuBSP.NET.dll (SecuBSP .NET class)
 - Resource files
 - ✓ Sample source code in Visual C++, Visual Basic, Delphi, IIS, C#, VB.NET



- **SecuBSP data format: FIR**



- **Development model**



- **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

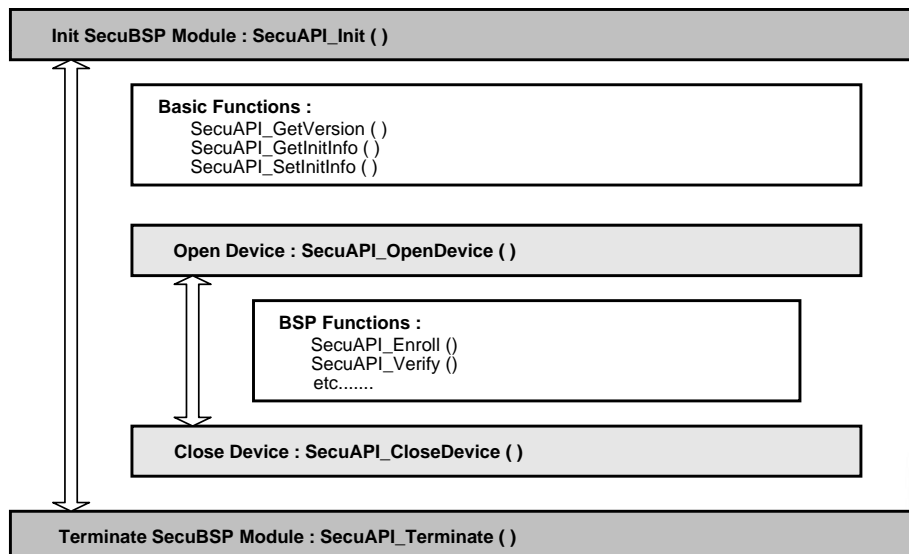
- **Memory functions**

- ✓ FreeFIRHandle
- ✓ GetFIRFromHandle
- ✓ GetHeaderFromHandle
- ✓ GetExtendedFIRFromHandle
- ✓ GetExtendedHeaderFromHandle
- ✓ FreeFIR
- ✓ GetTextFIRFromHandle
- ✓ GetExtendedTextFIRFromHandle
- ✓ FreeTextFIR
- ✓ FreePayload111



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- **Function usage structure**



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Enrollment Wizard



Verification Wizard



Image Quality Adjustment Wizard



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- 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 names are different
 - ✓ SecuBSPMx.dll (Main module)
 - ✓ SecuBSPMxCOM.dll (SecuBSP Pro COM module)
 - ✓ SecuBSPMx.NET.dll (SecuBSP Pro .NET class)



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SecuBSP® Matching SDK for Linux



- **Provides 1-to-1 matching functions to be carried out on a Linux server (verification)**
 - Functions for capturing fingerprints, template creation and enrollment are provided in the other the SecuBSP SDKs and should be installed on the client machine
- **System requirements**
 - IBM-compatible, Pentium II, 350 MHz, 128 MB RAM, 20MB HDD
 - OS: RedHat Linux 9 Linux kernel 2.4 or later
- **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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SecuBSP® Unix Matching Library



- **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
 - Application interface standard for biometric devices, developed by the BioAPI Consortium (www.bioapi.org)
- **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



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• 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



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Enrollment Wizard



Verification Wizard



Image Quality Adjustment Wizard



Microsoft
GOLD CERTIFIED
Partner

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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



Microsoft
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Partner

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- **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**
 - Permanent licenses sold separately
 - Free 30-day evaluation license available upon request



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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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• Comparison between "FDx" and "SecuBSP" SDKs

	FDx SDK	SecuBSP SDK
Supported Operating Systems	Windows Windows CE .NET Java Linux Solaris	Windows 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



Others



- Supports ISO/IEC 19794-4:2005 standard for fingerprint image record management
- Provides the following functions
 - Capture fingerprint image
 - Create fingerprint image record
 - Store and transmit information from image data
 - Obtain fingerprint image quality feedback
- Use FDX SDK for Windows or FDX SDK Pro for Windows together with this SDK
 - For matching functions for identification or verification purposes based on the information from fingerprint image areas
- System requirements
 - IBM compatible PC 486 or later
 - CD ROM drive
 - 1 USB port (USB 2.0 required for Hamster IV)
 - Windows Vista / 2003 / XP / 2000 / ME / 98SE
 - Any SecuGen USB reader (except FDU01-based) including Hamster IV, FBI-Certified PIV Single Finger Capture Device



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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



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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

