

Topaz Systems, Inc. SigID Roadmap

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SigID: A Developer's Road Map



This document is a guide to provide developers with a basic understanding of the available functions and commands for successful use and integration of the SigID software tool. SigID is an ActiveX control that allows the developer to capture fingerprint images (bmp, tif and jpg) at high resolution for fingerprint imaging, and also provides computer scored fingerprint verification.

How do SigID Databases and Data Retrieval work?

You can save the data from the fingerprint scanner in two ways, as an image file (tif, jpeg, or bmp) or biometrically. However, if you save the fingerprint as an image your later use of the data is limited. With images you cannot do later searches or computer based verifications. That is why Topaz recommends you save the data biometrically if you intend to use SigID for searches or accurate computer based biometric verifications.

There are two different ways to store the data biometrically. The first we call "Portable." This method of biometric data storage extracts the data to file or an ASCII hex string, and stores the data in your own file system or database. Bear in mind however, that one-to-many searches cannot be performed using this method. Extracted fingerprint files and fingerprint strings can only be used to compare on a one-to-one basis. That is to say, you can input a fingerprint and compare it against an individual in the database and see if they match, but cannot input a fingerprint and compare it against the entire database at once.

The other way to save biometric fingerprint data is to do so within a proprietary built-in database. Because the data is stored all in one place it is possible to implement one to many searches. One-to-many searches compare a fingerprint against the entire database, and if that person is in the database the fingerprint will be matched and the user verified. These searches can only be performed using the built-in database system. The downside to using this system is that the data cannot be added to a custom database, but can only be used within the built-in database.

How to store the Fingerprint Data as an Image

It is possible to create standard image format fingerprint files such as BMP, JPEG, TIF. There is no biometric verification available through SigID when creating an image.

To Create a Bitmap use the function call “.WriteBmp(strFilePath) As Integer”

To Create a Jpeg use the function call “.WriteJpg(strFilePath)”

To Create a Tif use the function call “.WriteTif(strFilePath)”

To change the resolution of the Bitmap use “.BmpResolution(int resolutionsetting)”

To change the resolution of the JPG use “.JpgResolution(int resolutionsetting)”

To change the resolution of the TIF use “.TifResolution(int resolutionsetting)”

Int resolutionsetting options:

0 = 96x96 px (DEFAULT) 1 = 144x144 px 2 = 192x192 px

How to store the Fingerprint Data as an Extracted File (Portable)

One of the options for creating biometric fingerprint templates for verification would be to create fingerprint templates that are stored separately from one another. For example you might create a folder on your computer and store all the templates there.

To enroll a new user use the function call “.prExportTempFile(strPath, intVal)”

To do a one-to-one search use the function call “.prValidateTemplateFile(strPath)”

How to store the Fingerprint Data as an ASCII HEX String (Portable)

Another option for creating biometric fingerprint templates for verification would be to create a fingerprint string composed of alphanumeric characters. The major use of such a system would be for customized database storage. For instance if you already have a database system in place and simply want to add biometric fingerprint verification, you might consider this option.

To enroll a new user use the function call “.prGetFingerprintString()”

To do a one-to-one search use the function call “.prValidateFingerprintString(strFingerprint)”

How to store the data in a Built-in Database (One-to-Many Searches)

The major benefit the built-in database offers is the ability to one-to-many searches which is not possible using the two portable methods above. One-to-many searches compare a fingerprint against the entire database, and if that person is in the database the fingerprint will be matched and the user verified. In order to use the built-in-database you must first initialize the fingerprint device. To do so use the function call “.dbInit(string dbfilepath)”. Now you can begin to enroll users with the function call “.dbEnroll(string user)”. You pass in the name of the user and can use any name you wish. You can also delete users with the function call “.dbDeleteUser(string username)”, or all the users with “.dbDeleteAllUsers()”. Please note you should match the name used originally to enroll the user. Once you have a few users, you can calculate the number of users there are with the “.dbGetNumberOfUsers()” function call, or view all the users at once with “.dbListAllUsers()”.

Once you have enrolled users you can use some of our biometric verification tools. If you want to do a one-to-one search use the function call “.dbValidateID()”.

One-to-Many searches use a two part system. Firstly “.dbIdentify() As Integer” is used to check the new fingerprint against the database. If it returns a 0 then a match was found and “.dbGetIdentifiedUser() As String” is used to retrieve the information.

Using SigID you can also export and import users from an existing database to add to another. You can use “.dbExportUserString(strusername)” to export the data as a string or “.dbExportUserFile(strusername, strfilepath)” as a file. Once the data is exported in can be imported using “.dbImportUserString(strusername, strasciitemplate, blnoverwrite)” if it is a string and “.dbImportUserFile(strusername, strfilepath, blnoverwrite)” if it is a file.

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