SDK1 Deployment Plan

Tech Note 5918

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Eclipse Identity Recognition Corporation

Premise

1. We want to protect our intellectual property by using CrypKey. CrypKey will be our solution for SDK1 deployment on Windows. For INDIface[2], we will develop a solution that works on 'BSD/'nix systems as well.

2. We will need an installer for the SDK1 Console so that we can install the CrypKey drivers. As time passes we will enhance the installation process. We will use the open source Nullsoft Scriptable Install System (NSIS v2.46) to start.

Step 1

Forget everything I wrote a two weeks ago. See below.

Installer

1. We could not take time to learn a new programming language for the install system. Let's look for more “wizzardy” open source installer.

Licensing

Crypkey Instant is parallel to SDK not a subset of SDK. When calling initCryptkey() in the INDIFace SDK1 console application it throws an uncaught exception.

Step Two A

[Released Thursday May 2, 2013]

We skipped the installer and obtained an evaluation license for Cryptkey Instant.

Licensing

1. We had to turn off stealth encryption of the executable to prevent runtime problems. But, we were able to deploy with Cryptkey Instant licensing.

2. INDIface SDK1 v1.78(Final0) is the executable that is wrapped by CKI. While we are in evaluation period with Crypkey, the resulting file is Example.exe; after we have our own licensing from Crypkey, the wrapped file name will be SDK1console.exe (and the default registry hive will change to match).

3. These binaries are deployed with a three day trial license that doesn't not require any interaction from the user while they tune and debug the overall system. I believe that they allow for five simultaneous instances of Example.exe on a single PC.

4. When we license a system (single PC) it is for a fixed number of runs or days of operation. Typically we would license 15, 30, 60, 90, 360 days--though Crypkey says their customers typically add 10% to the number so a customer doesn't get surprised on a holiday or weekend when support personnel might not be available.

Deployment

1. Everything except the unwrapped IfSearch.exe is copied from its bin-w32 directory to a bin-w32i direcotry and the Crypkey autocopy files are added to that directory.

2. Typically the base INDIface directory can be almost anywhere on the user's PC directory structure. In the base directory: 1) bin-w32 (and its imageformats subdirectory) for all the binaries. 2) data for INDIface1 face layer data. 3) detectors for Object Detection data. 4) Optionally an existing INDIbase FaceBase/BaseDir.

3. In the <base>\bin-w32i directory, run SetupEx.exe and ***wait*** for the dialog box to declare that Crypkey drivers have been installed.

4. Run Example.exe and you will see a yellow Crypkey splash will inform you that you have three days remaining to license the INDIface SDK1. This allows the user time to tune the installation and surrounding applications.

5. Before the end of the three day trial period, press <Enter> while the splash is visible to enter licensing mode. Collect the site code, transmit that to prerelease_matchpoint@eclipseir.com with your licensing needs, and wait for a site key in reply. Enter the corresponding site key, and Example.exe will work as expected for the duration of the license.

Testing

1. Making sure that the 30 to 360 day licenses will likely work by testing with 2 or 3 days licenses.
2. Making sure we can have five instances running on five different registry hives.

Step Two B

[Anticipated Friday, May 17, 2013]

We would like to have hacking and reverse engineering protection built into the licensing mechanism early next week.

Licensing

We are working closely with Cryptkey sales and technical support to find the ability include their "stealth" technology with out Crypkey Instant wrapper. Given their track record of near round-the-clock support, I expect to solve the issue early next week.

Deployment

Example.exe would then be an encrypted version of IfSearch.exe, not just a wrapped copy of it.

Testing

1. Making sure that the stealth encryption technology does not noticeably degrade our CPU performance.

Step Two C

"Beyond Beta"

Licensing

Purchase and install Crypkey Instant license, then install our private keys and codes.

Deployment

We can now deploy our binary as SDK1console.exe.

Step Three

Installer

We will investigate an installer that doesn't take years to master and could apply to our Java applications as well as future network deployments.

Licensing

With Cryptkey Instant we are able to program 32 bits of license specific information. That may be enough that we don't need the Cryptkey SDK.

Issues To Resolve With Cryptkey And Within Eclipse

how do I retrieve the 32-bit license specific information?
We really do want still encryption so need to resolve that issue with Cryptkey support.
Need to test the ability to have limited instances running on a licensed computer.
Can marketing live with these Cryptkey instant splash and user interface?
Need to talk to Cryptkey support regarding virtual boxes and virtual machines.
Need to understand how distributor license as work with Cryptkey instant.
Need to understand when to increment the Cryptkey instead revision number.

Using The 32 Bits

live input
restricted stored
stored input
scale
pre-process (rotate, crop, etc.)
face detect
multi-detect
(feature location and) template generation
casual match (infers enroll and retrieve)
clothes color
skin tone
height estimation
Resolver
formal search (infers enroll and retrieve)
authentication (infers enroll and retrieve)
familial similarity

eight modes (normal, demo, diagnostic/installer, SDK, research, 5 TBD)
four max dimensions (512, 768, 2048, unlimited -- actually 16 megapixels)
eight maximum vector load levels
no enrollment, 60, 250, 1000, 4000, 16000, 64000, unlimited
(actually limited by hardware and performance)

Original Step 1

The first deployment will have a minimal installer and basic protections of CrypKey to deploy as quickly as possible.

Installer

Installer Name:	SDK1setup.exe
Installed Executable:	SDK1console.exe (Example.exe until we pay for CrypKey)
Default Base Install Directory:	$BOOT\INDIface
Installation Mode:	user (not admin)

A minimal install will consist of:

Component	Relative Directory	Notes
Binaries (ours & CrypKey)	.\bin-w32	(required)
Qt Redistributable	.\bin-w32	
OpenCV Redistributable	.\bin-w32	
MinGW2 Redistributable	.\bin-w32	
Image Codecs	.\bin-w32\imageformats	
INDIface Vector Data	.\data	
Object Detector Data	.\detectors	
Empty INDIbase	.\FaceBase	

1. Out binary directory added to user PATH environment variable.
2. Run CrypKey driver installation.
3. Set a Default desktop shortcut.
4. Set a Default menu entry.
5. Uninstall data in registry for Control Panel--Add/Remove Programs

CrypKey

1. We will use CrypKey's stealth mechanism to encrypt our executable to prevent reverse engineering.
2. We will use CrypKey's default trial installation mode to enable new installs for 30 days.
3. We will have the ability to issue a specific node-specific date-limited license to extend beyond the trial period using CrypKey's license generation mechanism.

Original Step 2

The second deployment will add typical (with test data) and full (with sample videos) installers as well as integration of the CrypKey SDK into our console to limit FaceBase/MaxLoad.

Original Step 3

The third deployment will allow for custom installers and full integration of CrypKey to control enabling of each component of INDIface[1]