

Anonymizer GUI

User's Guide

Version 2.x.x



ADVANCED COMPUTER VISION SOLUTIONS

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1 Product description

Anonymizer GUI is a Windows application for easy anonymization of photos using AnonymizerSDK by Eyedea recognition. It can detect faces and cars license plates and blurs them to make people unidentifiable and license plates unreadable. Anonymization parameters can be quickly set and multiple images or whole directories of images can be processed at once. Preview of current anonymization settings can be generated for selected image for free (without using image count license). Anonymizer GUI can process JPG, PNG and TIF images, and save their anonymized versions to JPEG files.

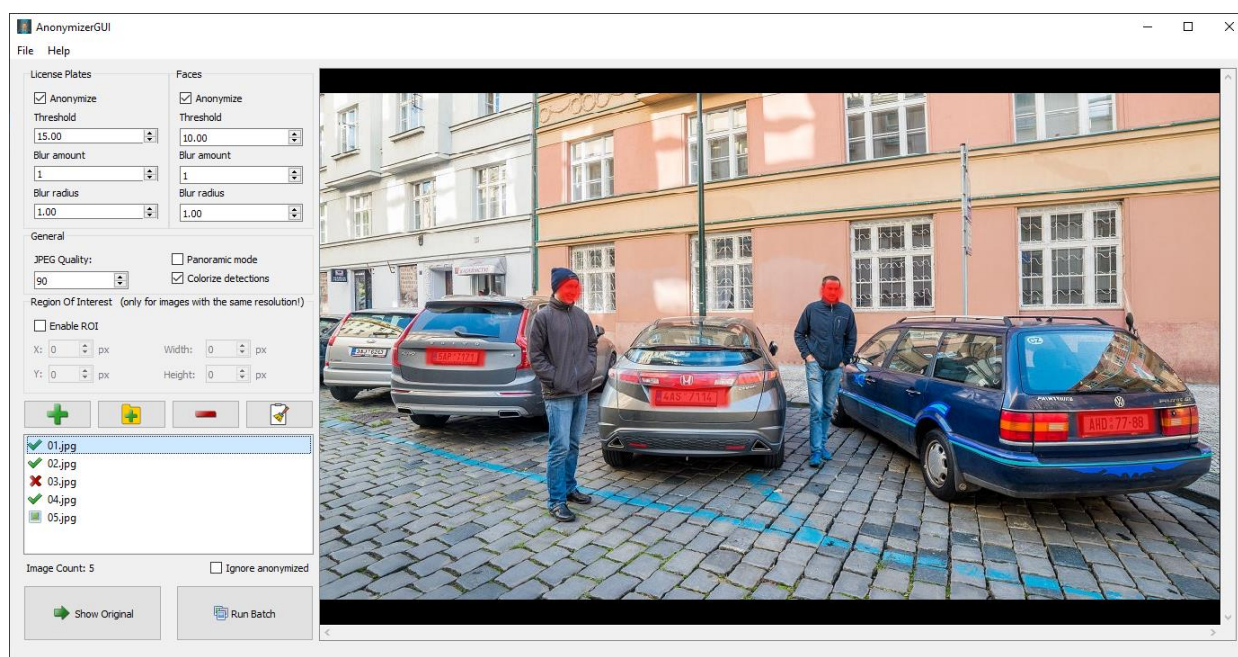


Image 1: Main window of Anonymizer GUI application with preview of anonymized image with colored detections.

2 Hardware Requirements

2.1 Minimal Requirements

Processor:	1.0 GHz, single core, x86 platform
RAM:	2 GB (depends on size of processed images)
Hard disk:	1 GB free space

2.2 Recommended Requirements

Processor:	2.0 GHz, dual core, x86 platform (i.e. Intel i5)
RAM:	4 GB (depends on size of processed images)
Hard disk:	2 GB free space

2.3 Supported Operating Systems

Windows

- Microsoft Windows 7/8/8.1/10
- x64 platform



3 Version History

2.0.3

Released: 28/1/2021 – few GUI bug fixes, increased size of max detectable plate/face

2.0.2

Released: 27/1/2021 – New SDK 6.0.1, new option to keep EXIF in JPG files, minor bug fixes

1.1.1

Released: 15/4/2020 – minor bug fixes

1.1.0

Released: 10/3/2020 – Added support of keyboard shortcut for file management

1.0.4

Released: 13/12/2019 - Fixed memory issues

1.0.3

Released: 14/06/2019 - ROI outline color change

1.0.2

Released: 12/04/2019 – minor bug fixes

1.0.1

Released: 27/09/2018 – Added drag and drop for adding images to processing

1.0.0

Released: 24/09/2018 – Initial version of AnonymizerGUI

4 Installation

The application comes equipped with a standard third-party software licensing solution, *Sentinel LDK by Gemalto*. Anonymizer GUI setup will install a daemon service, Sentinel License Manager, that will automatically start upon system startup. The application enables encrypted binaries of Anonymizer GUI to run, and to manage licenses using a web browser.

4.1 Installation guide

Anonymizer GUI comes in form of installation binary which contains Anonymizer GUI and all needed prerequisites. During installation, hasp protection system and all other needed parts are installed. If there were any errors during installation process, make sure all hasp USB license keys are disconnected from PC and try to run installation again. For more information on installation errors see part *Installation Failures*.

4.2 Verification of Installation

The software licensing daemon contains a web based interface, which also allows the client to check the available licenses. To verify that the installation of Sentinel License Manager was successfully completed, the user can open a web browser at http://localhost:1947/int_/devices.html. The web page will be displayed, as seen in *Image 2*. The client should check that the trial licenses were installed properly, and Anonymizer GUI works on the machine before ordering a full license. If not, a problem

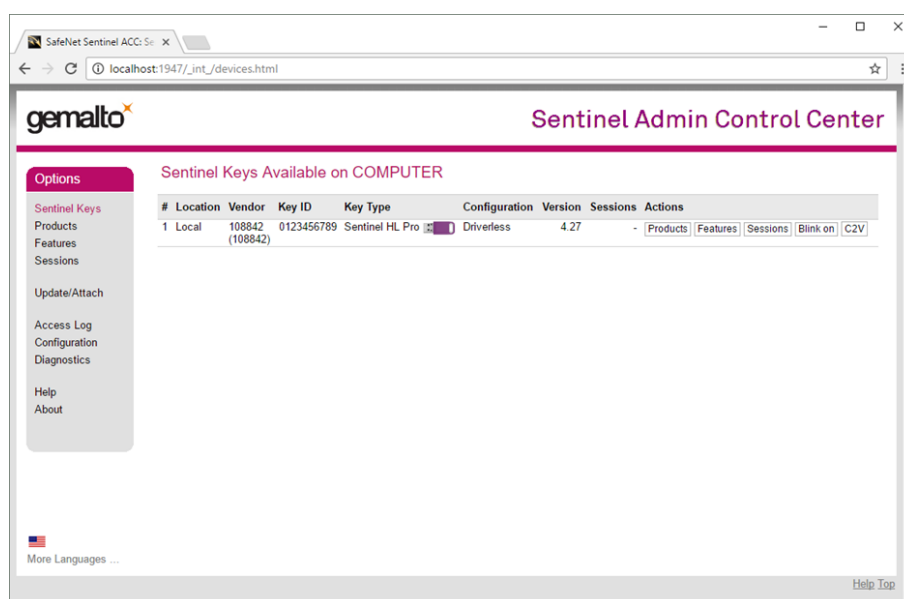


Image 2: Sentinel License Manager screenshot.

may arise in the future when connecting the full license. The web page lists all the available license keys. Under the "*Products*" link in the left pane all available products are listed.

4.3 Installation Failures

On Windows, antivirus application might break the installation of Sentinel License Manager. If the installation failed, the client should disable the antivirus application and rerun the installation of Anonymizer GUI. Even after successful installation, the Sentinel License Manager might fail to show up in the web browser. This can be solved by adding **C:\Windows\system32\hasplms.exe** to the exception list of the antivirus. Port number 1947 must be also added to the exception list in the Windows firewall and in the antivirus in case it uses its own firewall.

4.4 Managing Licenses

It is of the most importance that the client understands the licensing schemes used in Gemalto Sentinel LDK software protection framework. Otherwise, unrepairable damage might be caused leading to additional costs to recover the already purchased licensing keys. The topic of license management is fully covered in the Chapter ***Anonymizer GUI Licensing***.

4.5 License Error Codes

The error codes are printed to message boxes by the application. The following error codes and messages are the most common ones:

- H0007 – Sentinel HASP key not found. (No license for the Anonymizer GUI on the PC.)
- H0033 – Unable to access Sentinel HASP Runtime Environment. (No License Manager found.)
- H0041 – Feature has expired. (The license on the PC has expired, consider renewal.)
- H0051 – Virtual machine detected. (Trial license can not be used on virtual machine.)

The executable of Anonymizer GUI is encrypted for enhanced software protection.

5 Anonymization process

This chapter describes the interface of the Anonymizer GUI, all the controls to configure anonymization, file list with files to anonymize and running the process of anonymization.

5.1 Anonymization controls

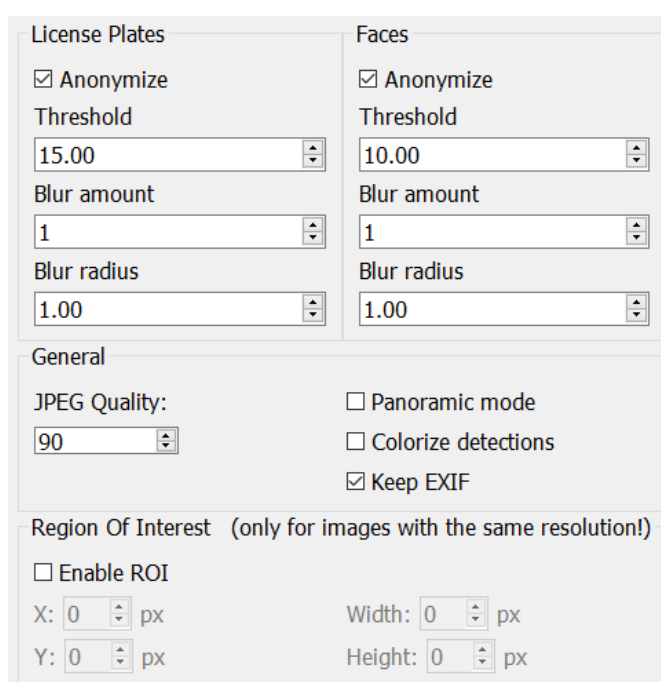


Image 3: Panel with anonymization controls

Controls for setting anonymization parameters are located on the left panel in Anonymizer GUI main window. Anonymization of both license plates and faces has its own set of following attributes:

Anonymize – Sets whether or not to anonymize faces/license plates.

- **Threshold** – Minimal detection confidence of anonymized faces/license plates.

- **Blur amount** – Strength of blurring applied to detected faces and license plates.

- **Blur radius** – Parameter to shrink or enlarge blurred area of faces or license plates. Values lower than 1.0 mean that blurred region will be smaller than original detection, values higher than 1.0 mean that anonymized area will be larger than original detection size.

For every image there are following general options:

- **JPEG quality** – Output JPG image quality.
- **Panoramic mode** – Enables anonymization on edges of spherical images. In this mode, even faces or license plates which are split by image border into two pieces will be detected.

IMPORTANT: Panoramic mode is designed only for full spherical images. Using it on other images may cause unwanted detections and will slow down processing.

- **Colorize detections** – Detections will be highlighted instead of blurred.

- **Keep EXIF** – EXIF metadata in JPG images will be preserved. Please note that it may not preserve some nonstandard EXIF types. Always check if this option is working with your type of metadata.

IMPORTANT: EXIF thumbnails are not anonymized, so they may contain unblurred faces and plates. Image metadata may also contain other unwanted sensitive information.

- **Region of interest** – Only part of images can be anonymized by selecting Region of interest. Anonymization area is specified by X and Y position of the top left corner and by its width and

IMPORTANT: The region of interest is designed for use on batches of images with the same resolution. Position of region of interest and its size is absolute in pixels and will not scale on images with different resolution and Anonymizer GUI will skip these images.

height. Setting the region of interest can be useful for example when anonymizing images from webcams where faces and license plates can be seen only in some part of image. Region of interest can be set numerically or by clicking and dragging in preview image.

5.2 Anonymization file list

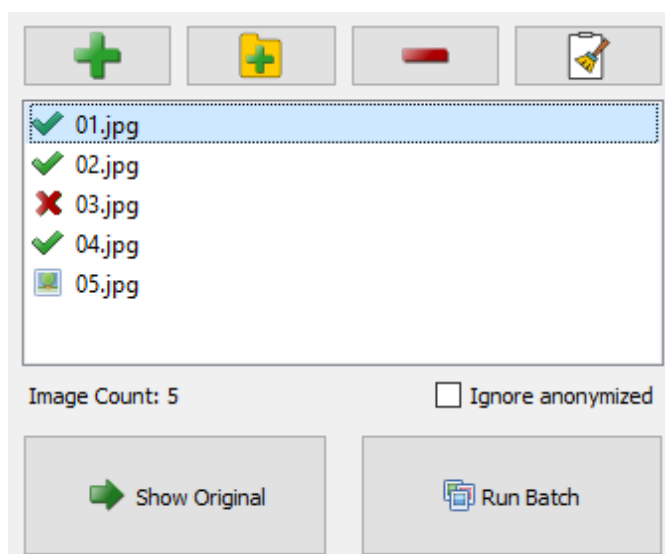


Image 4: Panel with file list and its controls

Anonymization file list is a list which shows files selected to be processed. On top of the list of images there are four buttons:




+ Add files – Displays dialog to add one or multiple files to the list.



+ Add folder – Displays dialog to add all images from selected directory to the list. All files with extensions JPG, JPEG, PNG and TIF will be added. Images from any existing subdirectories are also added.

- Remove file – Removes selected file from the list.

Clear list – Removes all files from the list.

Note that images and directories can be also added using drag & drop operation by dragging files / directories from another application and dropping them on area of list of images.

In the list you can see the names of the files and its state of processing. Image icon  means that file was not processed yet, green checkmark  signifies that the file was successfully anonymized and red cross  means that there was some error and file was not anonymized.

- **Ignore anonymized** – Specifies whether to hide already finished files from the list and skip them when running batch.
-  **Show preview** – Shows preview of how the selected image will look like using current settings (does not subtract image count license). Note that depending on the image resolution and the anonymization settings, preview generation can take a while.
-  **Run batch** - Processes files in the list and puts their anonymized version into the user specified folder.

5.3 Running anonymization

After setting proper configuration of anonymization and selecting files to process, anonymization can be started by clicking on **Run Batch** button. Popup window with progress bar, elapsed time and the name of file being currently processed will appear.

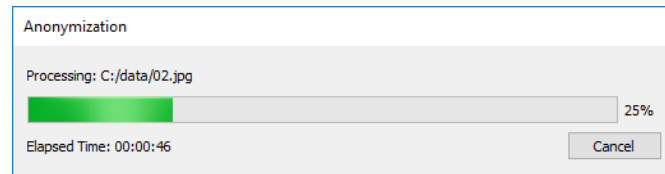


Image 5: Window with anonymization progress

Anonymization can be cancelled by **Cancel** button, note that cancelling can take a while.

When anonymization completes, window with information about completed batch will appear. If there were any errors during files processing, these files along with error messages will be listed in this window.

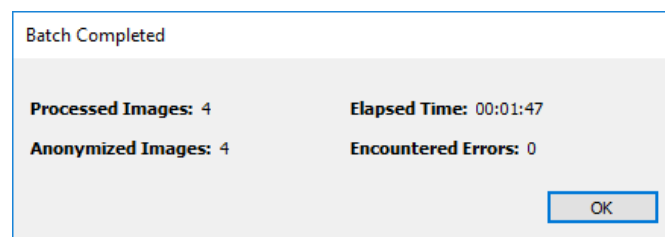


Image 6: Window with statistics about completed batch

6 Example results

This section shows effects of different blur radius, blur amount and colorize detections settings.

6.1 Blur radius and colorize detection

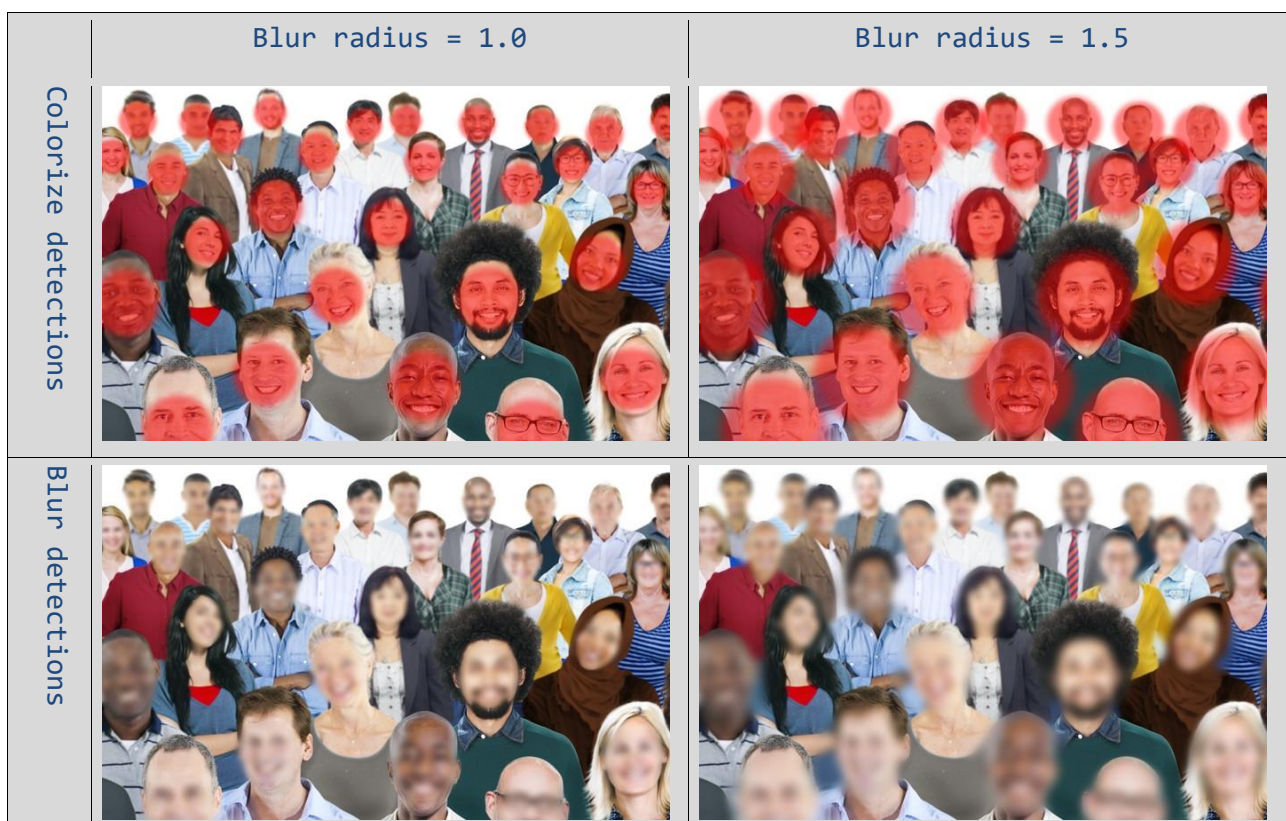


Table 1: Comparison of normal blurring vs. showing detections in red and comparison of different blur radius

6.2 Blur amount

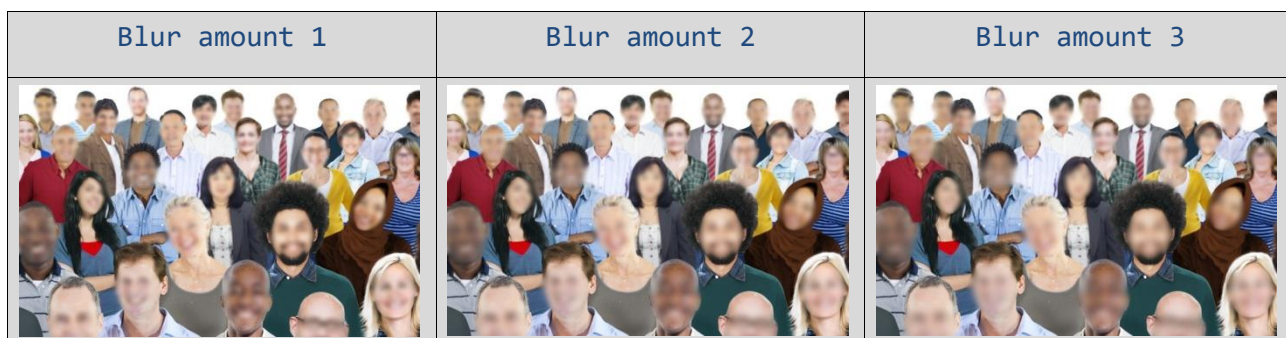










Table 2: Comparison of different blur amount

7 Anonymizer GUI Licensing

Anonymizer GUI uses the 3rd party framework developed by Gemalto for software protection and licensing. The application is protected against reverse engineering and unlicensed execution using the hardware USB keys or the software keys for evaluation purposes. The application cannot be used without the license key with the valid license.

7.1 License Key Types

The Anonymizer GUI allows to load the license from several hardware keys types, which are listed in the following table. The keys differ in number of licenses which can be contained (Pro and Max versions), by physical dimensions, ability to contain timed licenses (Time versions) and ability to distribute the licenses over the network (Net versions).

SKU	Product	SKU	Product
SH-PRO	Sentinel HL Pro 	SH-BRD	Sentinel HL Max (Board form factor) 
SH-MAX	Sentinel HL Max 	SH-TIM	Sentinel HL Time 
SH-MIC	Sentinel HL Max (Micro form factor) 	SH-NET	Sentinel HL Net 
SH-CHP	Sentinel HL Max (Chip form factor) 	SH-NTT	Sentinel HL NetTime 

7.2 Licenses Overview

Several licenses are available for the Anonymizer GUI. The licenses differ in the type of the binary models which can be loaded, the time when the license is valid and the number of allowed recognition function executions.

Execution counting

The execution counting license allows to count how many times was the license logged in. The Anonymizer GUI is designed in the way it logs in the license every time image anonymization is executed. It allows to limit the number of processed images with the license. This is standard type of license for Anonymizer.

Time limited license

The time limited license allows to add the restriction on time when the license is valid. The date of the end of the license validity or the number of the days for which the license is valid after the first usage can be set. This license can be set on Time keys only (see *License Key Types*). This type of license is used for anonymization of large image quantities.

Perpetual license

The perpetual license is the least restricted license available. It allows the user to use the license in one instance for unlimited time and unlimited number of executions. This license type is used for anonymization of very large image quantities.

7.3 License Management

The license protection software provides the web interface for license management. The web interface can be found on the address <http://localhost:1947> opened in the common web browser. It allows the user to list the connected license keys, see the details of the arbitrary license key, update the license and several other functions.

Connected license keys

On the address <http://localhost:1947/int/devices.html> the list of license keys currently plugged in the computer is available. The list contains basic information about each key which includes: location of the key (Local or IP/name of the remote machine), Vendor ID, Key ID, Key Type, Configuration, Version and the number of connected Sessions. Each key also allows to list the contained license products, features and sessions using the buttons Products, Features and Sessions. The USB key LED can be blinked to easy identification using the button Blink on. The unique key identification file can be downloaded using the button C2V.

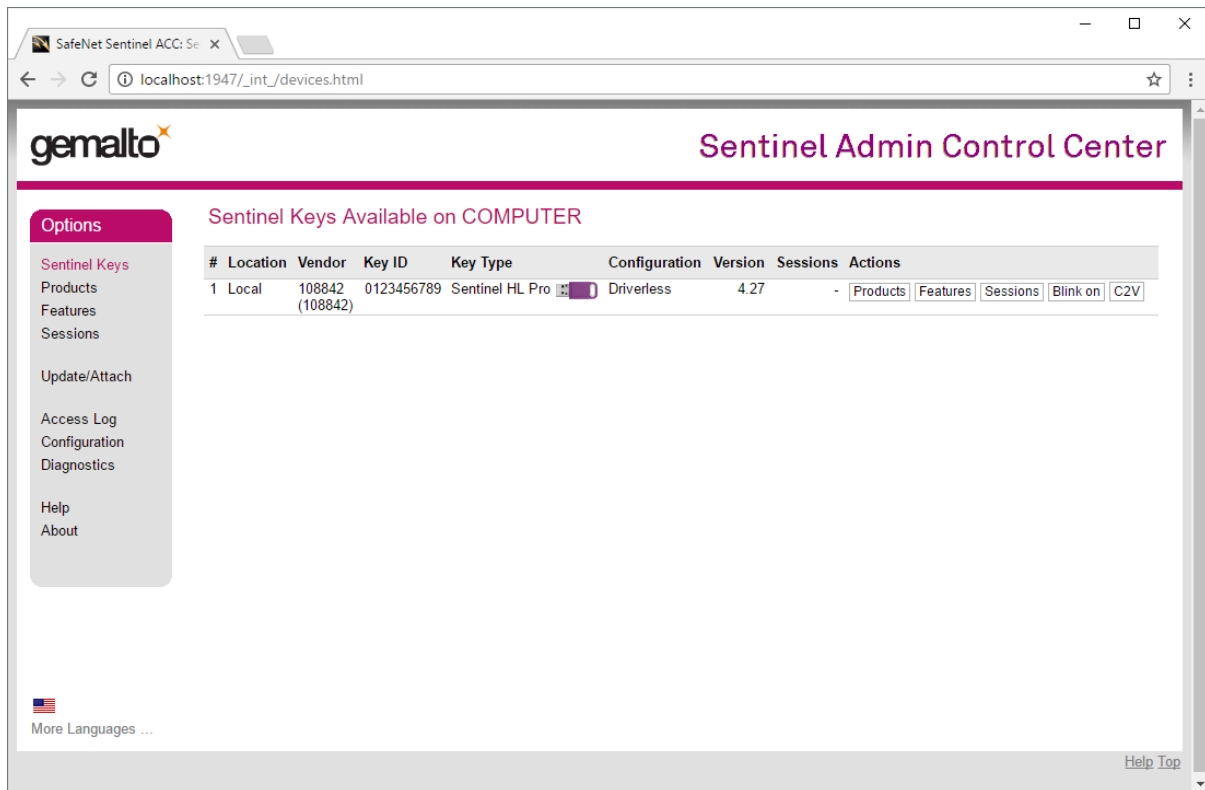
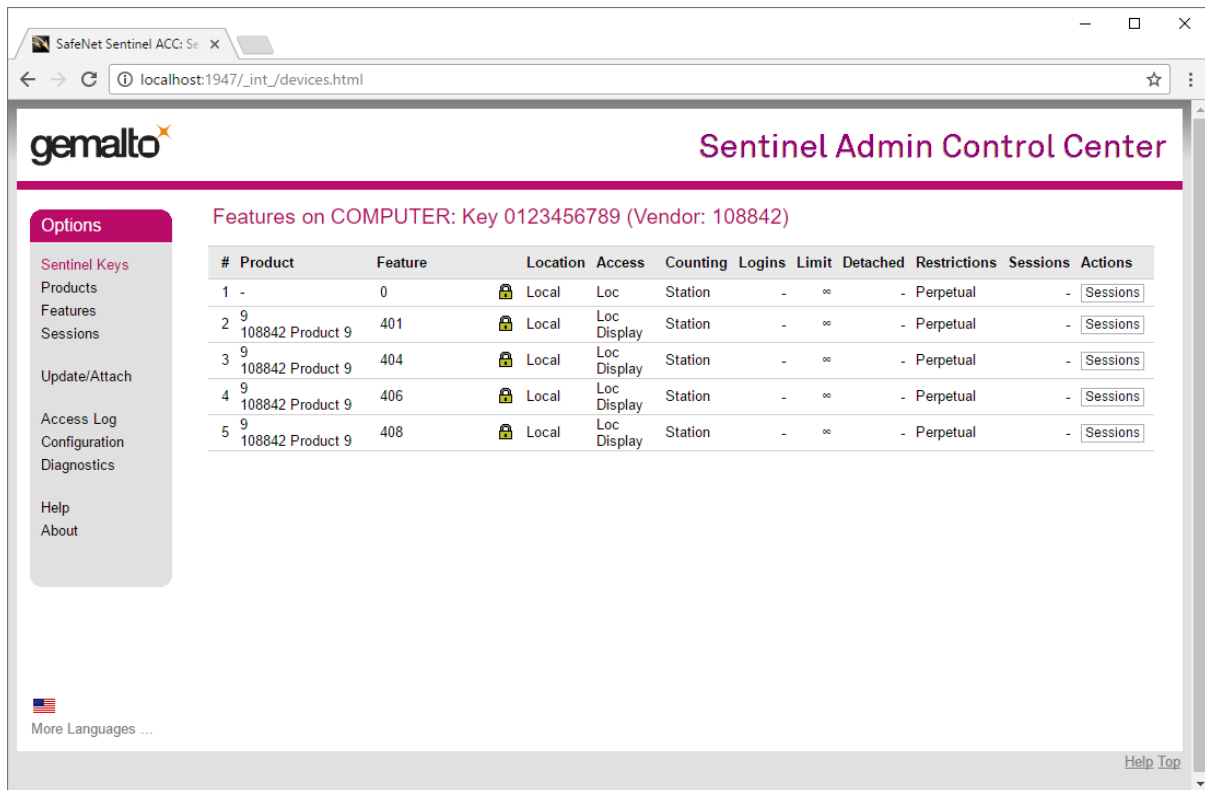


Image 7: Web interface with list of plugged keys on http://localhost:1947/_int_/devices.html

License key details

The detailed info about the plugged key can be get by clicking on the button Features in the *Connected license keys* list or on the address http://localhost:1947/_int_/features.html?haspid=KEYID, where the KEYID is the ID of the key. The web page contains information about the licenses contained on the key. The set of the Features represents the license. Each Feature can control different part of the application workflow (initialization, anonymization, ...).



The screenshot shows the Gemalto Sentinel Admin Control Center web interface. The browser address bar displays 'localhost:1947/_int_/devices.html'. The page title is 'Sentinel Admin Control Center'. A sidebar on the left contains navigation options: Sentinel Keys, Products, Features, Sessions, Update/Attach, Access Log, Configuration, Diagnostics, Help, and About. The main content area is titled 'Features on COMPUTER: Key 0123456789 (Vendor: 108842)'. It contains a table with the following data:

#	Product	Feature	Location	Access	Counting	Logins	Limit	Detached	Restrictions	Sessions	Actions
1	-	0	Local	Loc	Station	-	∞	-	Perpetual	-	Sessions
2	⁹ 108842 Product 9	401	Local	Loc Display	Station	-	∞	-	Perpetual	-	Sessions
3	⁹ 108842 Product 9	404	Local	Loc Display	Station	-	∞	-	Perpetual	-	Sessions
4	⁹ 108842 Product 9	406	Local	Loc Display	Station	-	∞	-	Perpetual	-	Sessions
5	⁹ 108842 Product 9	408	Local	Loc Display	Station	-	∞	-	Perpetual	-	Sessions

At the bottom left, there is a language selection option: 'More Languages ...'. At the bottom right, there is a 'Help Top' link.

Image 8: Web interface with key 0123456789
details on http://localhost:1947/_int_/features.html?haspid=0123456789

7.4 License Update

The license is updated using the special *.v2c file which is emitted by the licensor of the software. The license update file is generated for specific license key ID and only that key can be updated using the file. There are two ways of updating the license: *Web interface* and *Command line*.

The license update must be done on the computer, where the protection software supplied with the application is installed.

IMPORTANT: Hardware protection key dongle with license to update needs to be connected to the machine where the license update file is applied.

Web interface

First option allows user to update the license using the web interface of the license management software *Sentinel Admin Control Center*. The web interface which can be opened in all modern browsers is located at http://localhost:1947/_int_/checkin.html.

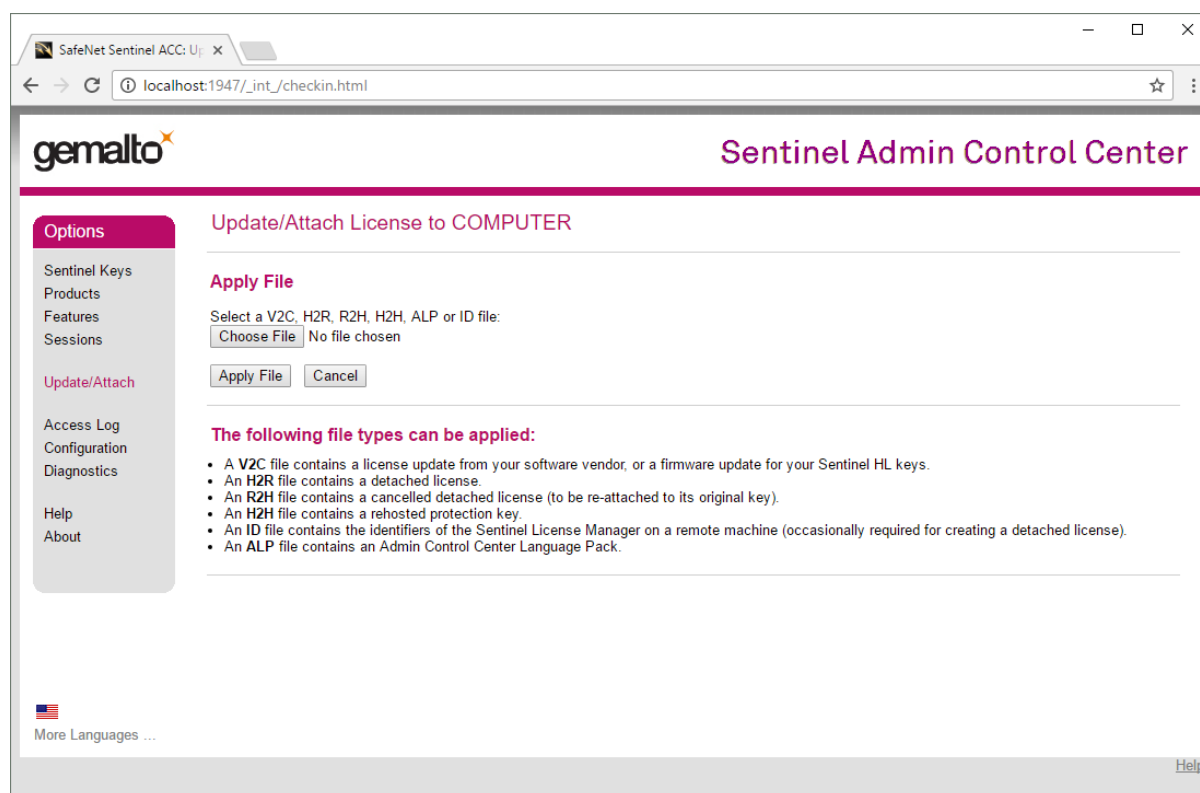


Image 9: Web interface for license update on http://localhost:1947/_int_/checkin.html

How to update the license:

1. Open the link http://localhost:1947/_int_/checkin.html in the web browser.
2. Click on **Choose File** button and select *.v2c file which you want to use for update.
3. Click on **Apply File** button.
4. Webpage with the result of the license update is shown.

Command line

Second option to update the license is using Windows command line. This approach can be very useful when applying update remotely or on many devices. It is also suitable for automating the license update procedure. This option requires basic knowledge of Windows command line. The license update file *.v2c is applied using the **hasp_update** utility from the folder **[Anonymizer_GUI_installation_dir]/hasp/**.

Windows command line

Run the **hasp_update** utility with following parameter and *.v2c file on the selected machine:

```
C:\product\hasp> ./hasp_update u /path/to/v2c/License.v2c
```

When command runs with no error, the license is updated.

7.5 Third Party Software

The Anonymizer GUI uses third party software libraries/resources, in accordance with their licenses. The licenses can be found under **[Anonymizer_GUI_installation_dir]/docs/3rdparty-licenses**.

Here is a complete list of all libraries/resources used, in alphabetical order:

- Qt
- Silk icons (<http://www.famfamfam.com/lab/icons/silk/>)