

Kofax FraudOne

ASV Blackbox

Version: 4.5.0

Date: 2020-11-04

KOFAX

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Preface

This document describes in detail the function and configuration of an ASV Blackbox. This is an application with the intention to compare signatures using the Sival-Engine. All images have to be stored as TIFF images, faxgroup 4 coded. The program works completely file-based.

Goal is a standalone Java program with GUI, where 3 types of folders can be specified:

- A folder containing images to be compared with reference signatures
- A folder containing reference signatures, account related
- A folder for storing the result (a report file) and the log

Related documentation

The full documentation set for Kofax FraudOne is available at the following location:

<https://docshield.kofax.com/Portal/Products/FO/4.5.0-th2k87ey6r/FO.htm>

In addition to this guide, the documentation set includes the following items:

Guides

- *Kofax FraudOne Administrator's Guide*
- *Kofax FraudOne Data Warehouse Installation and Operation Guide*
- *Kofax FraudOne Extended Reporting Features and Statistics*
- *Kofax FraudOne Feature Codes*
- *Kofax FraudOne Installation and Migration Guide*
- *Kofax FraudOne Java Client Customization Guide*
- *Kofax FraudOne Java Client Customization Layer*
- *Kofax FraudOne License Management*
- *Kofax FraudOne Report Component Installation Guide*
- *Kofax FraudOne SignCheck Result Codes*
- *Kofax FraudOne Standard Reporting Features and Statistics*
- *Kofax FraudOne The Book on CRS*
- *Kofax FraudOne Thin Client Customization Guide*
- *Kofax FraudOne Thin Client Customization Layer*

Interfaces

- *Kofax FraudOne Archive Interface Server*
- *Kofax FraudOne Global Fraud Signature Web Service Developer's Guide*
- *Kofax FraudOne Common API Specifications for GIA Engines*

- *Kofax FraudOne Service Program Interfaces*
- *Kofax FraudOne User Login Procedure*
- *Kofax FraudOne Standard Teller Interface*
- *Kofax FraudOne Variant Cleanup Utility*

Online Help

- *Kofax FraudOne Administration Client Help*
- *Kofax FraudOne Java Client Help*
- *Kofax FraudOne Server Monitor Help*
- *Kofax FraudOne Thin Client Help*

Training

Kofax offers both classroom and computer-based training that will help you make the most of your Kofax FraudOne solution. Visit the Kofax website at www.kofax.com for complete details about the available training options and schedules.

Getting help with Kofax products

The [Kofax Knowledge Base](#) repository contains articles that are updated on a regular basis to keep you informed about Kofax products. We encourage you to use the Knowledge Base to obtain answers to your product questions.

To access the Kofax Knowledge Base, go to the [Kofax website](#) and select **Support** on the home page.

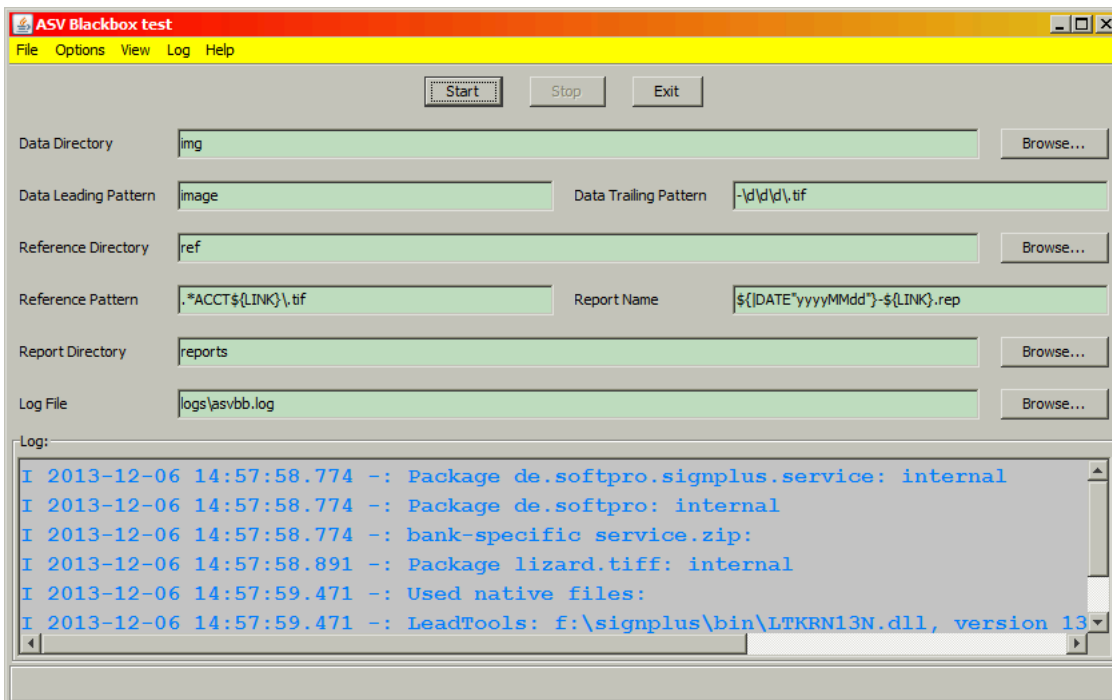
Note The Kofax Knowledge Base is optimized for use with Google Chrome, Mozilla Firefox or Microsoft Edge.

The Kofax Knowledge Base provides:

- Powerful search capabilities to help you quickly locate the information you need.
Type your search terms or phrase into the **Search** box, and then click the search icon.
- Product information, configuration details and documentation, including release news.
Scroll through the Kofax Knowledge Base home page to locate a product family. Then click a product family name to view a list of related articles. Please note that some product families require a valid Kofax Portal login to view related articles.
- Access to the Kofax Customer Portal (for eligible customers).
Click the **Customer Support** link at the top of the page, and then click **Log in to the Customer Portal**.
- Access to the Kofax Partner Portal (for eligible partners).
Click the **Partner Support** link at the top of the page, and then click **Log in to the Partner Portal**.
- Access to Kofax support commitments, lifecycle policies, electronic fulfillment details, and self-service tools.
Scroll to the **General Support** section, click **Support Details**, and then select the appropriate tab.

Chapter 1

Graphical user interface



Additional to the settings below the following settings can be changed on the GUI:

- Data Directory
- Data Leading Pattern
- Data Trailing Pattern
- Reference Directory
- Reference Pattern
- Report Name
- Report Directory
- Log File
- Search Subdirectories (in Menubar > Options)

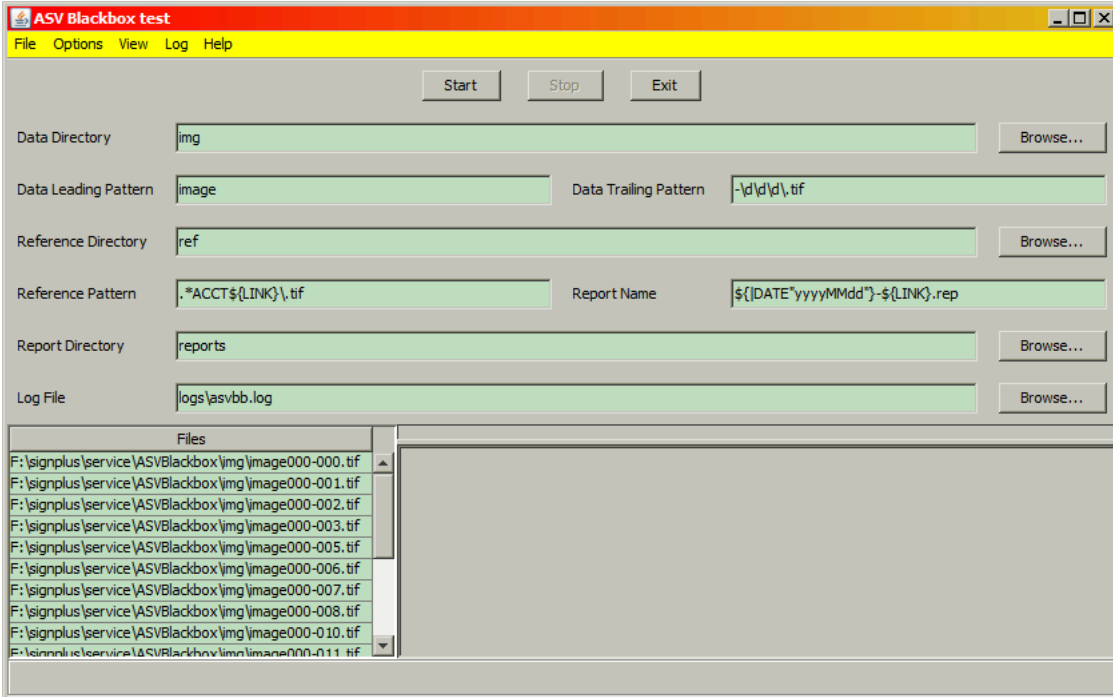
To select directories per file dialog you can use the **Browse** button beside the input field.

The **Start** and **Stop** buttons control the batch process, who uses the settings above.

Image viewer

The Image Viewer can be activated in menubar:

View > Images



By selecting one of the files on the left side its image is displayed on the upper right side. The found handwriting areas are shown as colored rectangles with colors from green over yellow to red, where green indicates the first handwriting and red the last. Gray rectangles indicate a high simplicity, detected by Sival, i.e. they probably do not contain signatures. A blue rectangle shows the area where the search for handwriting took place. One of the rectangles can be selected, in this case the rectangle is filled with the border's color. Initial the green rectangle is selected.

The lower right side shows all references belonging to the image above. Their borders color indicate the matchrate of the comparison with the selected rectangle above. Also this color goes from green over yellow to red, but indicates the matchrate, where 100 is green and 0 is red. Additionally a number in the upper left corner of the reference shows the matchrate. If no rectangle is selected in the upper image, all matchrates are of course 0.



Chapter 2

Configuration

These settings have to be specified in file `ASVBlackbox.properties`, or in `service.properties`, in this case every key has to be preceded by "ASVBB."

File specification for images

The following settings specify the files containing images that are supposed to be compared with reference signatures:

Key	Description
<code>dataDir</code>	Directory containing images
<code>searchSubDirs</code>	[yes no] process subdirectories of <code>dataDir</code>
<code>dataLeadingPattern</code>	Pattern of the leading part of the image filename
<code>dataTrailingPattern</code>	Pattern of the trailing part of the image filename

Note Patterns are considered to be regular expressions.

One of the settings `dataLeadingPattern` and `dataTrailingPattern` can be omitted.

The part of the filename between `dataLeadingPattern` and `dataTrailingPattern` is considered to be the link to the reference signatures, it is stored internally in a variable `${LINK}`.

File specification for reference signatures

The following settings specify the files containing reference signatures:

Key	Description
<code>referenceDir</code>	Directory containing reference signatures
<code>referencePattern</code>	Filename pattern of the reference signatures

Note The key `referencePattern` can contain the variable `${LINK}`. If this is the case, then this variable will be replaced by its value before evaluating the regular expression.

If the `referenceDir` is omitted or empty, then it is assumed that the reference signatures are in the same directory as the image.

Examples

References in the same directory as the image

A Backslash ("`\`") has to be typed as "`\\`".

Key	Description
<code>dataDir</code>	<code>C:\asvbb\image</code>
<code>searchSubDirs</code>	<code>no</code>
<code>dataLeadingPattern</code>	<code>Img</code>
<code>dataTrailingPattern</code>	<code>\\.tif</code>
<code>referenceDir</code>	
<code>referencePattern</code>	<code>Ref\${LINK}.*\\.tif</code>

Files in `C:\asvbb\image`:

- `Img1234567.tif`
- `Img4711.tif`
- `Img4711.jpg`
- `Ref1234567.tif`
- `Ref12345671.tif`
- `Ref1234567000.tif`
- `Ref4711xyz.tif`
- `Ref4711abc.tif`
- `Ref4711abc.jpg`
- `1234567.tif`

The following compares will take place:

- `Img1234567.tif` with `Ref1234567.tif`
- `Img1234567.tif` with `Ref12345671.tif`
- `Img1234567.tif` with `Ref1234567000.tif`
- `Img4711.tif` with `Ref4711xyz.tif`
- `Img4711.tif` with `Ref4711abc.tif`

`Ref4711abc.jpg` and `1234567.tif` do not match at any pattern.

References and images in different directories

Key	Description
dataDir	C:\asvbb\image
searchSubDirs	no
dataLeadingPattern	
dataTrailingPattern	\\.tif
referenceDir	C:\asvbb\reference
referencePattern	\${LINK}.*\\.tif

Files in C:\asvbb\image:

- 1234567.tif
- 4711.tif

Files in C:\asvbb\reference:

- 12345670.tif
- 12345671.tif
- 1234567000.tif
- 4711xyz.tif
- 4711abc.tif
- 4711abc.jpg

The following compares will take place:

- 1234567.tif with 12345670.tif
- 1234567.tif with 12345671.tif
- 1234567.tif with 1234567000.tif
- 4711.tif with 4711xyz.tif
- 4711.tif with 4711abc.tif

4711abc.jpg does not match any pattern.

References in directories per account

Key	Description
dataDir	C:\asvbb\image
searchSubDirs	no
dataLeadingPattern	
dataTrailingPattern	\\.tif
referenceDir	C:\asvbb\reference\\${LINK}
referencePattern	.*\\.tif

Files in C:\asvbb\image:

- 1234567.tif
- 4711.tif

Files in C:\asvbb\reference\1234567:

- whatever.tif
- ref.tif
- ref.jpg

Files in C:\asvbb\reference\4711:

- what.tif
- ever.tif

The following compares will take place:

- 1234567.tif with whatever.tif
- 1234567.tif with ref.tif
- 4711.tif with what.tif
- 4711.tif with ever.tif

ref.jpg does not match the reference pattern criterion.

File specification for the report

The following settings specify the report file:

Key	Description
reportDir	Directory of the report files
reportName	Filename of the report file

Note The key reportName can contain the variable \${LINK}. If this is the case, then this variable will be replaced by its value.

If a report file already exists, new records are appended.

Example

```
"F:\signplus\service\ASVBlackbox\img\image000-010.tif",11,0,20,"F:\signplus\service
\ASVBlackbox\ref\GaryThomasACCT000.tif",
"F:\signplus\service\ASVBlackbox\img\image000-011.tif",11,0,100,"F:\signplus\service
\ASVBlackbox\ref\GaryThomasACCT000.tif",
"F:\signplus\service\ASVBlackbox\img\image000-012.tif",11,0,0,"",
"F:\signplus\service\ASVBlackbox\img\image000-013.tif",11,0,100,"F:\signplus\service
\ASVBlackbox\ref\RobertamcIntoshACCT000.tif",
"F:\signplus\service\ASVBlackbox\img\image0815-002.tif",11,2,0,"",image file empty
"F:\signplus\service\ASVBlackbox\img\image1234-001.tif",11,3,0,"",image corrupt
```

Chapter 3

Content of the report file

Every row of the report file contains a comma-separated list with:

1. File name of the image, embedded in double quotes
2. Number of reference signatures
3. Return Code:

0	OK
1	Error during processing of an image
2	Image not found or empty
3	Image corrupt
4	No licence for cleaning
10 ...29	Error from LeadTools
101 ...10000	Error from Sival-Engine

4. Best matchrate
5. File name of best matching reference image, embedded in double quotes
6. Error message (empty for Return Code 0)

Chapter 4

Signature area cropping and cleaning

Images contain usually more than only a signature while reference signatures are expected to contain only signatures. For an optimal result of the Sival-Engine it is necessary to remove all other graphics and background noise from the image. This is achieved by cropping and cleaning the signature area. As the 1st step a rough area in the image has to be selected. In this area a signature search is performed as the 2nd step. The 3rd step is then cropping the found signature snippet and finally as the 4th step the snippet image is cleaned.

Here are the configuration keys:

Key	Default	Description
crop	1,1,-1,-1	Cut a rectangle from an Image Syntax: left,top,right,bottom where left: pixel coordinate of the left edge, counted from the left edge of the image. A negative value counts from the right edge of the image. Default: 1 top: pixel coordinate of the top edge, counted from the top edge of the image. A negative value counts from the bottom edge of the image. Default: 1 right: pixel coordinate of the right edge, counted from the right edge of the image. A negative value counts from the left edge of the image. Default: -1 bottom: pixel coordinate of the bottom edge, counted from the bottom edge of the image. A negative value counts from the top edge of the image. Default: -1
clipResolution	0	The assumed resolution of the image. All coordinates are supposed to be in this resolution. If the real resolution of the image is different, then a conversion takes place. If resolution=0 then no conversion takes place.
autodetect	yes	[yes no] performed signature search

Key	Default	Description
cleanLevel	-1	Cleaning level between 0 and 1000. "-1" means no cleaning.
cleanLines	no	[yes no] remove lines in the signature

Chapter 5

Configuration

These settings have to be specified in file `ASVBlackbox.properties`, or in `service.properties`, in this case every key has to be preceded by "ASVBB."

Chapter 6

Effort estimation

Implementation in Java: 4d

Test: 3d