Kofax FraudOne
ASV Blackbox

Version: 4.6.0

Date: 2022-10-17

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/4.6.0-e4jy6kf7pr/FO.htm

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

Release notes
- *Kofax FraudOne Release Notes*

Technical specifications
- *Kofax FraudOne Technical Specifications*

Guides
- *Kofax FraudOne Administrator's Guide*
- *Kofax FraudOne Archive Interface Server*
- *Kofax FraudOne Common API Specifications for GIA Engines*
- *Kofax FraudOne Data Warehouse Installation and Operation Guide*
- *Kofax FraudOne Extended Reporting Features and Statistics*
- *Kofax FraudOne Feature Codes*
- *Kofax FraudOne Global Fraud Signature Web Service Developer's Guide*
- *Kofax FraudOne Installation and Migration Guide*
- *Kofax FraudOne Java Client Customization Guide*
- *Kofax FraudOne Java Client Customization Layer*
- *Kofax FraudOne Report Component Installation Guide*
- *Kofax FraudOne Service Program Configuration*
- *Kofax FraudOne Service Program Interfaces*

- *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 Variant Cleanup Utility*

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

Training

Kofax offers both classroom and online training to help you make the most of your product. To learn more about training courses and schedules, visit the Kofax Education Portal on the Kofax website.

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:

1. Go to the Kofax website home page and select **Support**.

2. When the Support page appears, select **Customer Support** > **Knowledge Base**.

> ⓘ 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.

From the Knowledge Base home page, you can:
- Access the Kofax Community (for all customers).

Click the **Community** link at the top of the page.

- Access the Kofax Customer Portal (for eligible customers).

  Click the **Support** link at the top of the page. When the Customer & Partner Portals Overview appears, click **Log in to the Customer Portal**.

- Access the Kofax Partner Portal (for eligible partners).

  Click the **Support** link at the top of the page. When the Customer & Partner Portals Overview appears, click **Log in to the Partner Portal**.

- Access Kofax support commitments, lifecycle policies, electronic fulfillment details, and self-service tools.

  Go to the **General Support** section, click **Support Details**, and then select the appropriate tab.

Chapter 1

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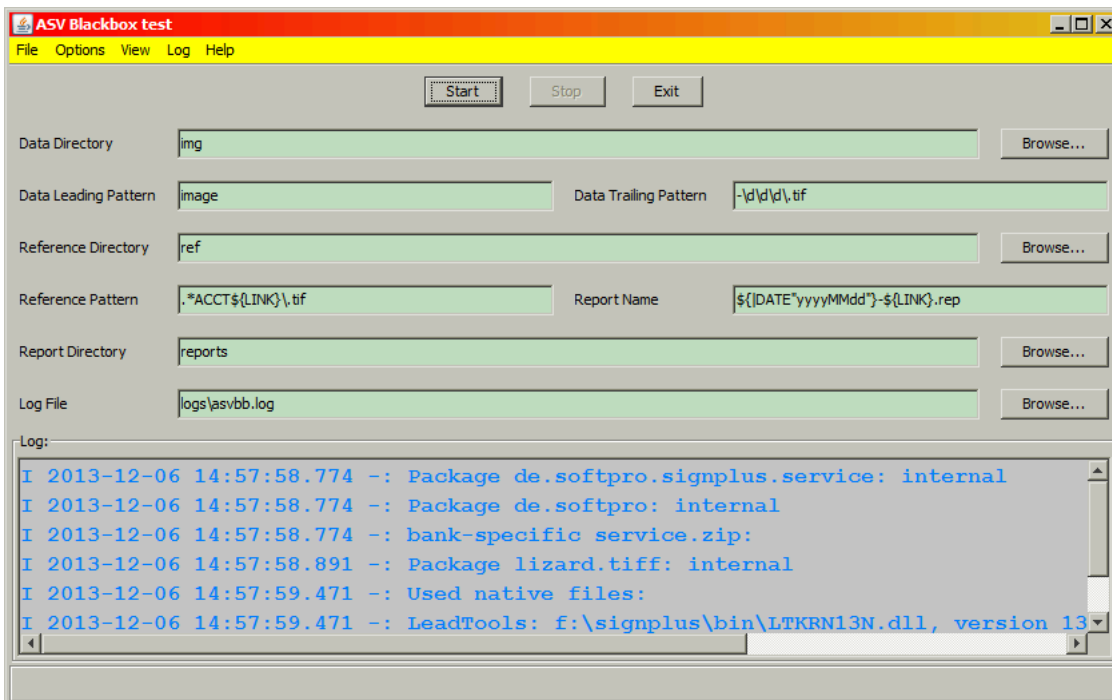
Additional to the settings below the following settings can be changed on the GUI:

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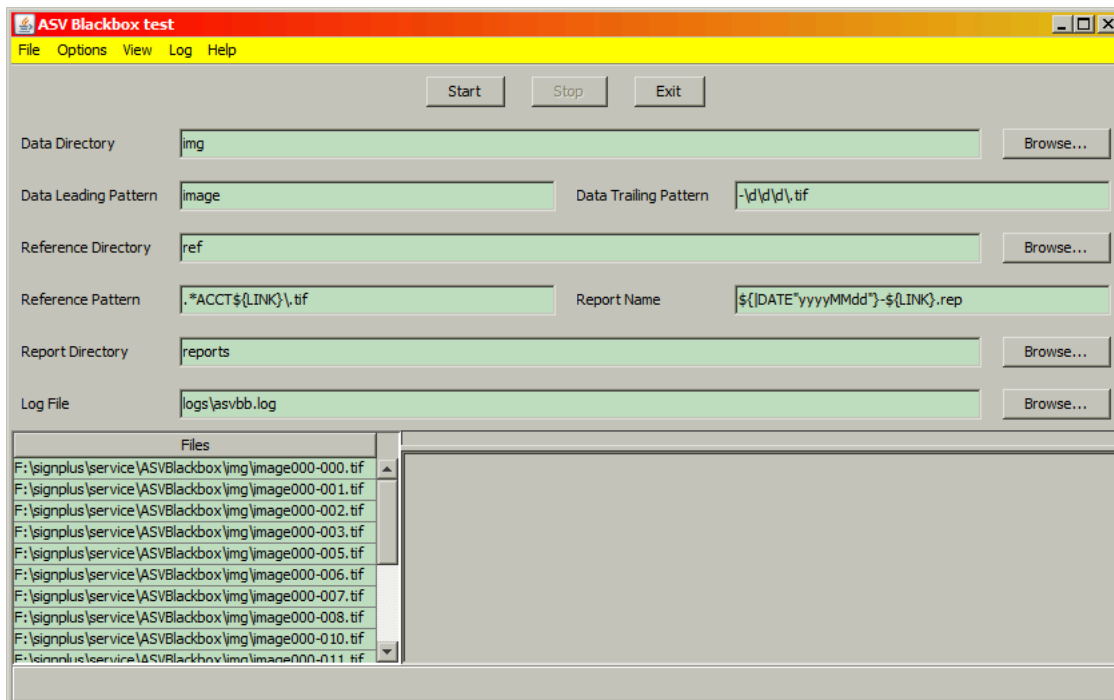- Search Subdirectories (in Menubar > Options)

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 comparision 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. Additional 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 setting 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
dataDir	Directory containing images
searchSubDirs	[yes|no] process subdirectories of dataDir
dataLeadingPattern	Pattern of the leading part of the image filename
dataTrailingPattern	Pattern of the trailing part of the image filename

 🛈 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
referenceDir	Directory containing reference signatures
referencePattern	Filename pattern of the reference signatures

> ℹ 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
dataDir	C:\\asvbb\\image
searchSubDirs	no
dataLeadingPattern	Img
dataTrailingPattern	\\.tif
referenceDir	
referencePattern	Ref${LINK}.*\\.tif

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

ⓘ 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.

Key	Default	Description
autodetect	yes	[yes|no] performed signature search
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 setting have to be specified in file ASVBlackbox.properties, or in service.properties, in this case every key has to be preceded by "ASVBB.".