ZySCAN Manual

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New

As of 6.7: Create searchable pdf
When checked (Template Wizard – ZyEXPORT), this option will export scanned documents to searchable pdf/A.

Contents

About ZySCAN

ZySCAN is a powerful tool that easily processes paper documents and existing image formats into searchable information.

Input

ZySCAN can drive both high-end and low-end scanners so that all your paper documents can be scanned in any size, whether it is A0, A4, A5, letter or legal. If you already have your documents in an image format such as TIFF, JPEG or Fax, ZySCAN can import and process these files as well.

Automatic indexing

ZySCAN recognizes all the text in documents, regardless of the size, and uses this recognized text to index all of a document's information automatically. You can be sure that all of this information is processed because ZySCAN's different OCR (Optical Character Recognition) engines provide the most accurate and thorough results possible. The OCR process also supports multiple languages, such as Arabic and English, on the same page. Even rotated text is recognized.

Manual indexing

If required, ZySCAN enables you to add manual index fields to the scanned or imported documents. A variety of different field types is possible, such as Plain Text, Date, List, Barcode and many others. These manual indexes can be filled automatically with a date, the number of pages, the language of the document and so on. Whatever information you need indexed, and depending on whether you want to have that information manually or automatically indexed, ZySCAN gives you the flexibility to manage the information in your documents in any way you see fit. The ZyLAB search programs enable you to search for all the words that are indexed, which ensures that you are able to retrieve your documents again.

Information storage

ZySCAN uses an open file format to store all information. This format is XML or ASCII text for the manual and automatic index information and open-source TIFF for the original scanned or imported documents. The TIFF image guarantees a 100% copy of the original file, retaining all information such as signatures and written remarks. XML is a non-proprietary format for information storage and exchange. On average, 1 GB can store about 15,000 A4 pages (B/W).

Production Environment

ZySCAN is a very scalable solution and is therefore suited for high volume scanning and processing. Multiple ZySCAN clients can be set up and the whole process of scanning and manual and automatic indexing can be divided over different PCs to create a reliable high-volume scanning environment.

Create a job template

After you have created or reused an index in ZyINDEX, you can use ZySCAN to scan or import then process your files, and export them to your index. Each document has to go through a sequence of steps, some optional depending on the step configuration, to prepare the file for export. The steps are saved as a *Job Template*, and multiple templates can be created to process different types of source files. Job Templates are created using the ZySCAN template wizard.

Note

- The job template allows you to automate some stages of the job (workflow).
- You can create an entirely new template, create one based on an existing template, or change an existing template. In all cases, you have to use the Template Wizard.
- Electronic documents (for example, Word documents) can be saved immediately in the Index data folder "Electronic".

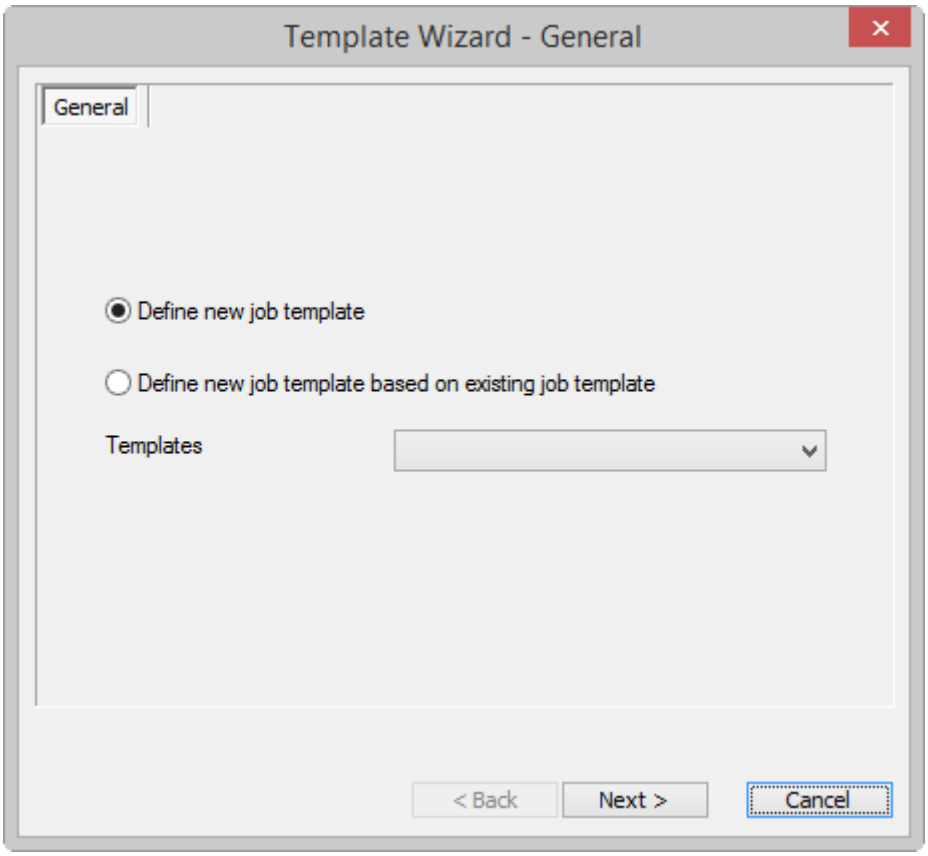
Template Wizard - General

Conditions

You want to create a job template.

Instructions

1. Start ZySCAN. Go to Template > New template.
   The Template Wizard - General screen appears.



2. To create a completely new template, select "Define new job template".

   or

   To change an existing template, or create a new template based on an existing template, select "Define new job template based on an existing job template".

3. Click Next.

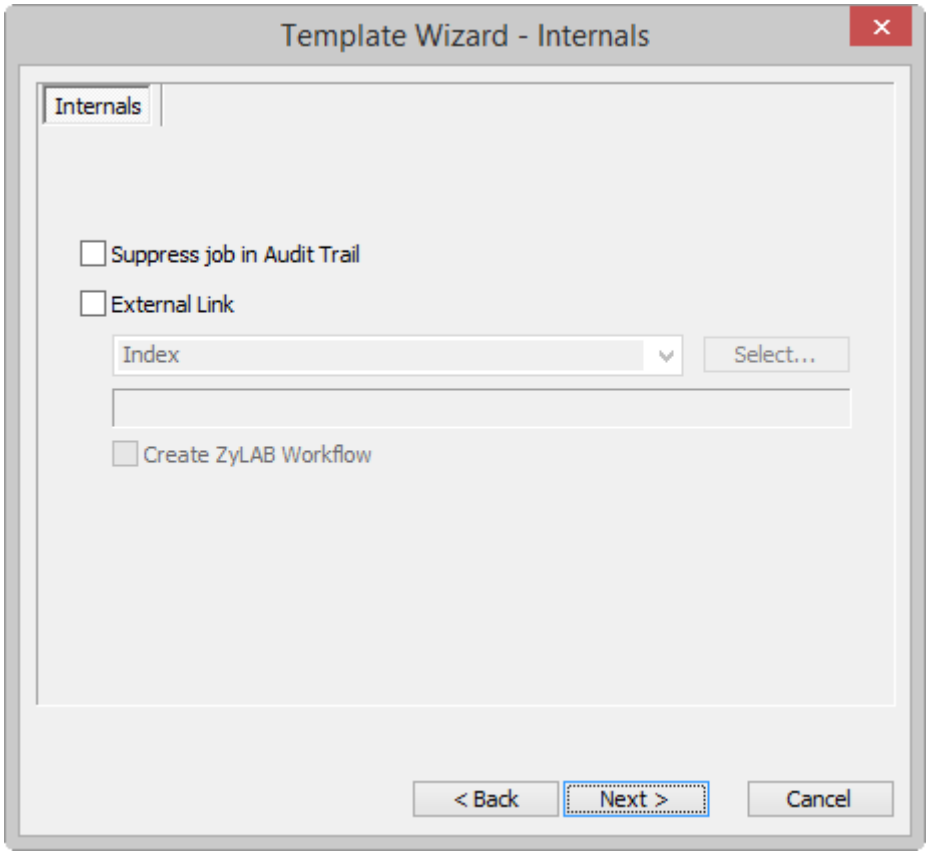
Result

The Template Wizard - Internals screen appears.

Template Wizard - Internals

Conditions

You are creating a job template. The Template Wizard - Internals screen is open.



Instructions

1. When ZySCAN processes a job, an Audit Trail is automatically created logging all the steps made and the computer they were made from. If you want to prevent Audit Trail information being created, select 'Suppress job in Audit Trail' (see Note 1).
2. If you want to create a link to an index, a RMA (Record Management Application) or an index over HTTP, check the *External Link* checkbox (see Note 2).
   - If you want to use the field definitions and data locations of an index:
     - select *Index* from the drop-down list.
     - click *Select* and select an index.
     All field definitions of this index will be reused. In addition, the location of the data folders will be reused.
     Any changes made to the field definitions will be synchronized.
     - Click *OK*. The name of your selected index appears in the text box.

- If you want to export to a record of a Record Management Application, select *RMA* from the drop-down list.
  - Click *Select*.
  - Enter the RMA URL and the User.
  - Enter and confirm the Password.
  Use a User name and Password of the RMA.
  - Click *OK*.
  Note: To be able to export your documents to RMA, a barcode for each record must already be created in the RMA.
  For more information, see *Export scanned documents to RMA* (page 13).
- If you want to export to an Index over HTTP, select *Index over HTTP* from the drop-down list.
  - Click *Select*.
  - Enter the Base URL.
  - Enter the Client Name and the Index Name.
  - Enter the User name.
  - Enter and confirm the Password.
  - Click *Test connection* to test that the settings are correct.
  - Click *OK*.
  If required, check the *Create ZyLAB Workflow* checkbox.
  Note: For more information on Creating a ZyLAB Workflow, refer to the ZyLAB Workflow Manual.

3. Click Next.

Result

The Template Wizard - Workflow screen appears.

Note

1. When ZySCAN processes a job using a job template with an associated Audit Trail index, the required audit trail information is generated and logged in an XML file ready for inclusion in the Audit Trail index. For large jobs, this process can create a large amount of audit trail data, which in certain configurations can cause performance to decrease. If you think performance will decrease when audit trail information is being generated, check the *Suppress job in Audit Trail* checkbox to stop the audit trail data being created.

   Note: Audit trail information includes the following: job open, job closed, job deleted, create a new job, create a new job template, create a new text (TXT/XML) file, create a new image (TIFF) file, export an image (TIFF) file and fields edited.

2. External Link (to index) is an important option and it is recommended to use it for each job template you create. With an External Link to an index, it is not necessary to define the fields again, as they are already defined in the index you linked to. In addition, the location to where your documents will be exported (the data folders) is the same. Any changes to the indexes field definitions will be synchronized with the job template, ensuring the same settings are used.

Another advantage of the External Link to an index option is that it is possible for the index to detect exactly which documents are added, making it possible to use Quick Build to build the index.

HTTP Export

Use HTTP Export to export ZySCAN processed data over https to a secured environment. ZySCAN users do not need any access to the file store index data location.
When exporting via HTTP, ZySCAN Export will zip up the scanned and ocr-ed images, and upload the zip file to a web client using a ZyLAB user account. The web client upload functionality will unzip the zip file and add the images and ocr-ed text to the index data folders.

Configure HTTP Export

Conditions

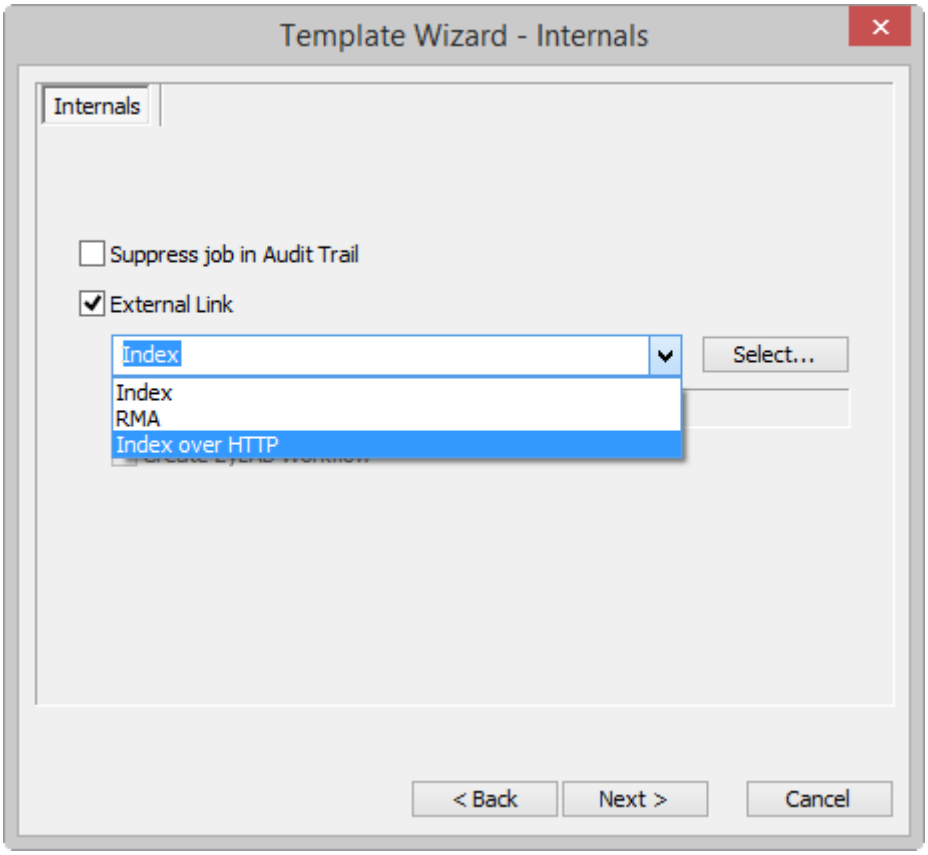
You want to export ZySCAN processed data over https to a secured environment.

- ZySCAN has been installed
- ZyINDEX (incl. web client) has been installed
- Windows IIS has been installed
- An index has been created (index longname: httpexport)
- A web client has been created (http alias and long name: httpexport, web client template style: ZyFIND Enterprise)
- The httpexport index has been added to the httpexport web client
- The anonymous user is member of the Administrators group to allow uploading of documents to a web client.

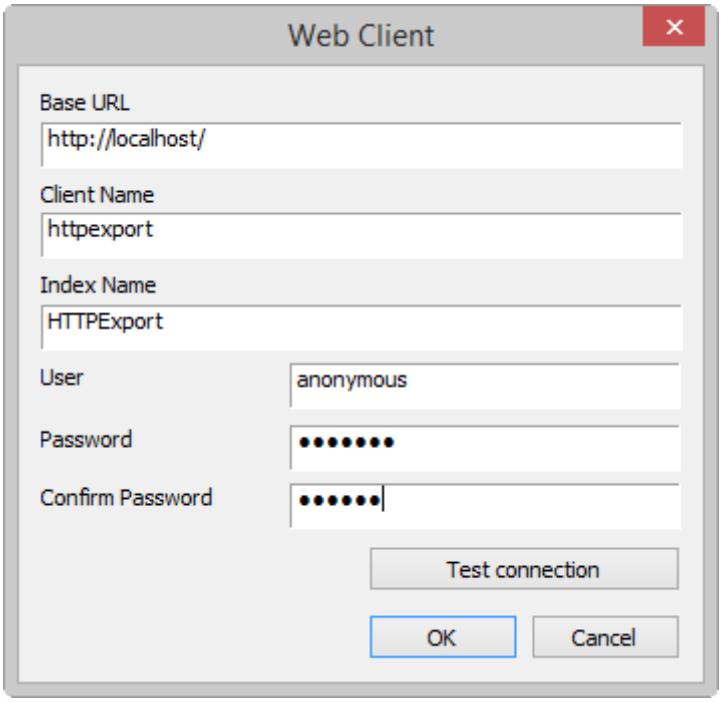
Instructions

1. Start ZySCAN and create a new job template: Go to Template > New Template.
2. Click Next.
3. Select External link.

4. Select Index over HTTP.



5. Click Select.
6. Define your web client (http alias), index long name and user.



7. Click Test connection to test the settings.

8. Change settings if not OK.
9. If OK, click OK.
10. Click Next.
11. Select ZyIMPORT, ZyFIELD, ZyOCR and ZyEXPORT.
12. Click Next.
13. Browse for files you want to import. You may want to try with our example files first, located on \\Program Files\ZyLAB\Information Management Platform\Examples\Import\Single page Tiff.
14. Select the correct import filter. When using the example files, the Single Page Tiff import filter.
15. Click Next.
16. Click Next.
17. Keep the default ZyOCR settings and click Next.
18. Click Next.
19. Enter a name for your job template and click OK.

Result

You are now ready to start using your job template in the production environment.

Note

- Each document is transferred in a ZIP file. For example, 10 documents in one scanning job will be 10 ZIP files that are transferred.
- Use HTTP export carefully. For example, using http export with documents over 100 pages will result in >8MB files that are transferred over HTTP.

Use HTTP Export

Conditions

You have created a job template for exporting ZySCAN documents via http. Now you want to start processing.

Instructions

1. Start ZySCAN and click New Job.
2. Select the job template you created.
3. Click OK.
4. Click Import to import your files.
5. Click Yes to continue to the next stage.
6. If your linked index contains fields, enter the field values and click OK.
7. Click Yes to continue to the next stage.
8. Click Start OCR to OCR the image.
9. Click Yes to continue to the next stage.
10. Click Start Export and click Yes when finished exporting to close the job.

Result

You have scanned your documents and exported them via http.

Note

- Each document is transferred in a ZIP file. For example, 10 documents in one scanning job will be 10 ZIP files that are transferred.
- Use HTTP export carefully. For example, using http export with documents over 100 pages will result in >8MB files that are transferred over HTTP.

Export scanned documents to RMA

You can create an external link between ZySCAN and the RMA (Record Management Application). This will allow you to store (scanned) documents directly in the RMA. First, you have to create a record in the RMA and declare it. Then, select 'View barcode' and print the page. This page with barcode is placed on top of the document you are about to scan. The scanned document is exported/stored as a component of the record you just created.

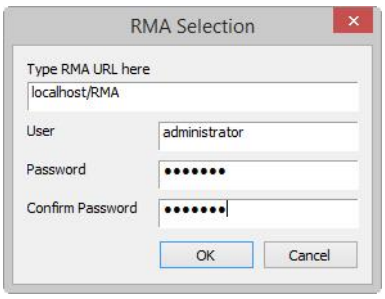
In order to make this possible, you have to create a new job template in ZySCAN:

Conditions

ZySCAN is open.
The ZyLAB Global Professional OCR is installed, the license key added.

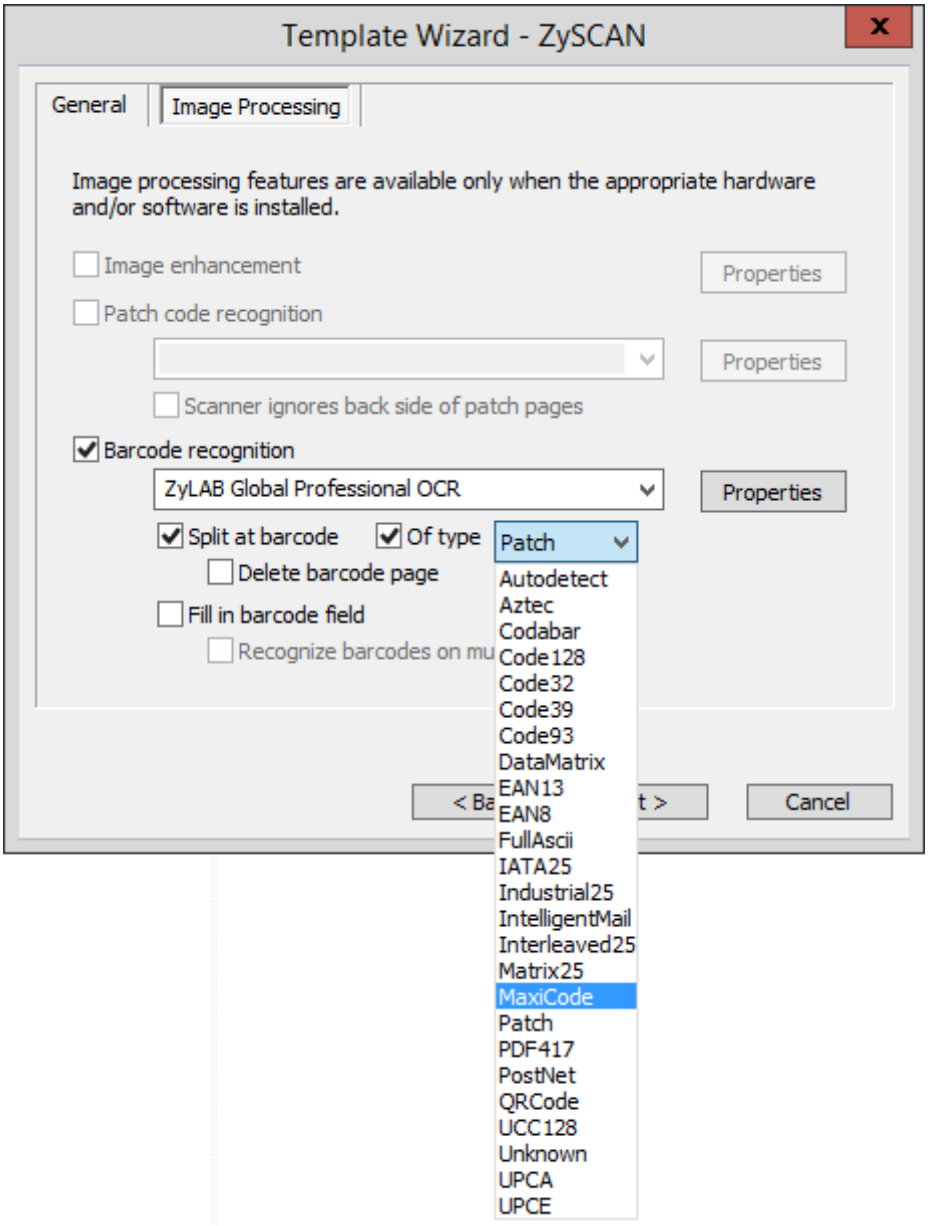
Instructions

1. Go to Template > New Template.
2. Select 'Define new job template'.
3. Click Next.
4. Select 'External Link'.
5. Select 'RMA'.
6. Click 'Select URL'.
7. Define the RMA URL and User name and Password.



8. Click OK.
9. Click Next.
10. Select ZySCAN, ZyFIELD and ZyEXPORT.
11. Click Next.
12. Select the correct Scan interface.
13. Select the Image Processing tab.
14. Select Barcode Recognition.
    - Click Properties and select Code39.
    - Click OK.

- If you do **not** want to store the barcode page in RMA, select 'Split at barcode' (with the option to split at barcode of a specific type) and 'Delete barcode page'.
- To store the bar code value in an index barcode field select 'Fill in barcode field'. This will store the barcode that is scanned last in the barcode field. When you want each scanned barcode value stored in scan order in barcode fields select 'Recognize barcodes on multiple pages'. Note that you must have an adequate quantity of barcode fields in your index.



15. Select Next.
16. Select Field Definitions.
17. Click Add definition.

18. Enter a Name (Barcode), and select a Type (barcode field).
19. Click OK twice.
20. Click Next.
21. Click Next.
22. Fill out a Template name (for example, 'Link to RMA').
23. Click Finish.

Result

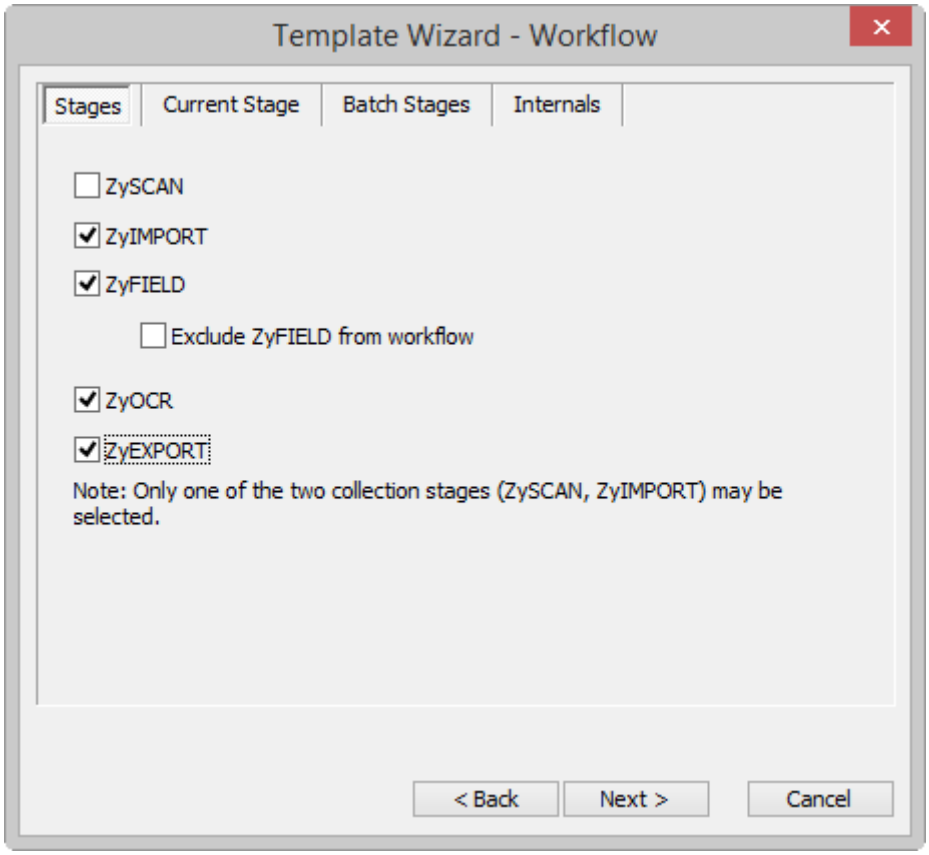
You have created a new job template, which allows you to scan documents and export/store them in the RMA.

Place the document with the barcode page on top in the scanner and go to File > New. Select the correct template and click OK to start processing. When the job is finished, the document is exported/stored as a component of a record in the RMA.

Template Wizard - Workflow

Conditions

You are creating a job template. The Template Wizard - Workflow screen is open.



Instructions

1. Make sure the Stages tab is selected.
2. Select the stages (the workflow) you want to include in the job.

ZySCAN: to import files from a scanner that has a direct connection to the workstation.
ZyIMPORT: to import files (scanned or from other sources) from disk. Typically used with copiers that use FTP to copy scanned documents to a folder located on your computer or a network server.
ZyFIELD: to add key fields to your documents. With key fields, you can search on information not present in the document itself. The fields are fully customizable, and you can add as many fields as you want.
Exclude ZyFIELD from workflow: used when you add fields automatically with automatic field options, barcodes, or if you use the electronic import filter. This turns off the field screen pop-up so you can work without interruption. Fields can also be added later using ZyFIND.
ZyOCR: to convert text on images into actual text that can be searched. This is done using the inbuilt

Optical Character Recognition programs.
ZyEXPORT: to export files from a job to a predefined export folder from where ZyINDEX is used to build the index.

3. Click Next.

Result

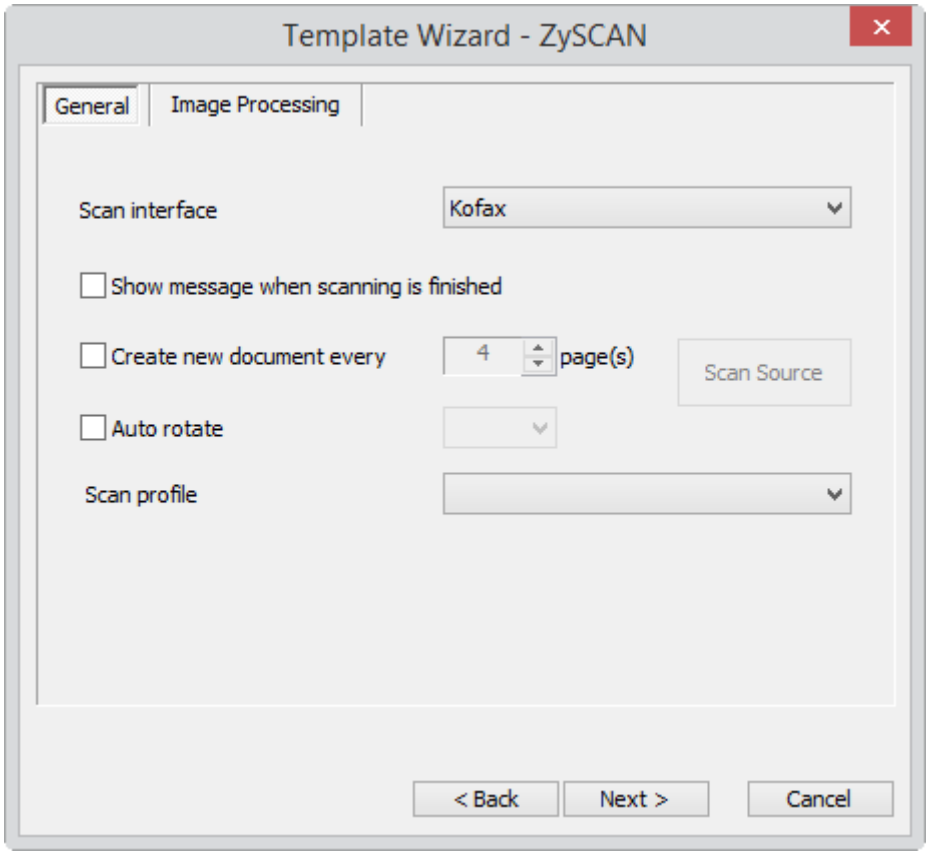
The Template Wizard - ZySCAN screen appears (if selected for the workflow).

- The *Current Stages* tab cannot be edited. During the processing of a job, it shows which stage you are in.
- In the *Batch Stages* tab, you can choose whether you want ZyFIELD, ZyOCR and/or ZyEXPORT to process in a separate session. This can be convenient when you work with large batches and multiple users.
- The Internals tab gives an overview of the options selected in the Template Wizard - Internals screen.

Template Wizard - ZySCAN

Conditions

You are creating a job template. The Template Wizard - ZySCAN screen is open.



Instructions

1. Select a *Scan interface*.

   Kofax: Preferred for low-, medium- and high-end scanning solutions. Supports image enhancement. In addition, an automatic document separator can be added every *n* pages. This eliminates the use of manual document separation when scanning large sets of forms or documents of equal length.

   Twain: Supported for backward compatibility.

2. If required, select *Show message when scanning is finished*.
3. If necessary, select *Create new document every* n *page(s)*.
4. If necessary, select *Auto rotate*, and choose from 90, 180 or 270 degrees.
5. Click Scan Source and select the source with the correct driver settings.
6. If you selected the Kofax scan interface, select a Scan profile to adjust scanner settings like page size, resolution, and color depth. These settings will be stored in the template.

A Scan profile represents a complete set of Kofax scanner properties and is identified by a unique user-defined name. The advantage of scan profiles is the ability to switch quickly between settings (without browsing through various scanner menus), and the ability to save popular settings with a descriptive name. For more information on creating Scan profiles, see *Work with Scan Profiles* (page 106).

7. Click Next.

Result

The Template Wizard - ZyIMPORT screen appears (if added to the workflow).

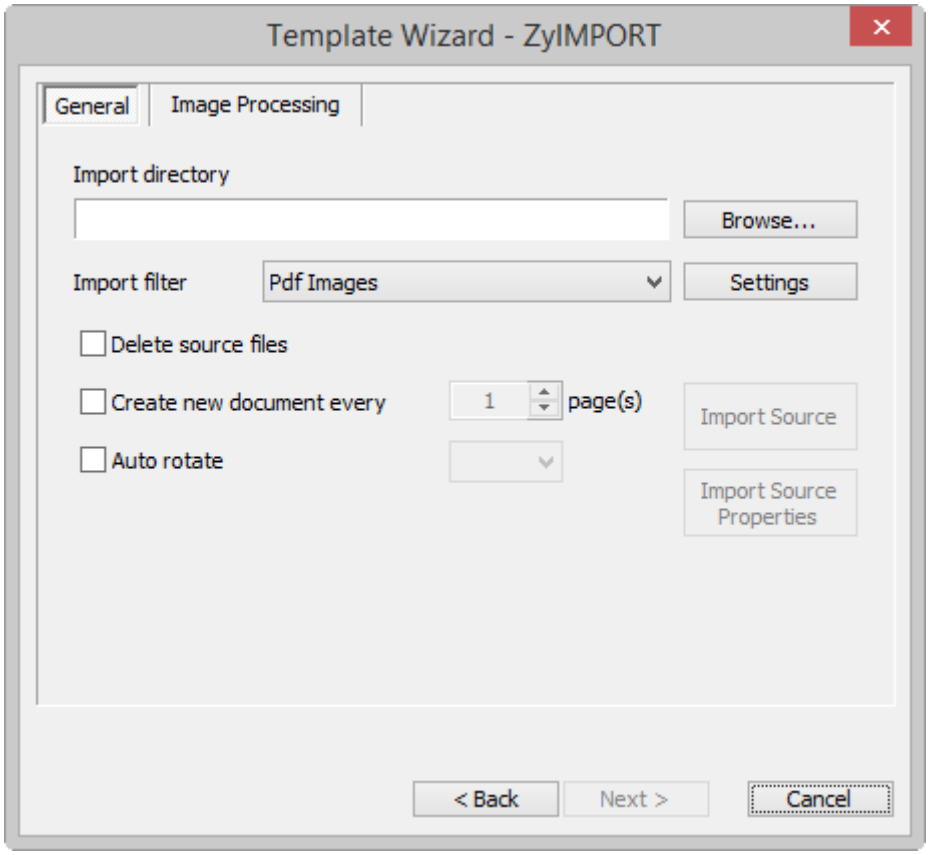
Note

If you **linked to RMA** in the Template Wizard - Internals screen, select the *Image Processing* (page 80) tab to define *Barcode Recognition* (page 82). Select *ZyLAB Global Professional OCR*, then click *Properties* and select EAN 13 and/or 8. Click *OK*. Select the option *Fill in barcode field*.
Return to the General tab, or click Next.

Template Wizard - ZyIMPORT

Conditions

You are creating a job template. Template Wizard - ZyIMPORT is open.



Instructions

1. Click *Browse* to select the Import directory.
2. Select an import filter. Where applicable, click Settings and adjust the settings as necessary.

   ZyIMPORT can import files from various sources, such as directories, fax-servers, or other scanning solutions. Please refer to the ZyINDEX manual > Appendix B: Import filters information on the different import filters available.

   ZyIMPORT imports the files into the TIFF directory of the job and renames the files with a new unique name.

3. Select *Delete source files*. This prevents you from repeatedly importing the same files.
4. If necessary, select *Create new document every* n *page(s)*.
5. If necessary, select *Auto rotate* and choose from 90, 180 or 270 degrees.

   This can be an important feature when the system is linked to digital copiers.

6. Click Import Source and select the source with the correct driver settings.
7. Click Scan Source Properties to adjust scanner settings like page size, resolution, and color depth. These settings will be stored in the template.
8. Click Next.

Result

The Template Wizard - ZyFIELD screen appears (if added to the workflow).

Note

If you **linked to RMA** in the Template Wizard - Internals screen, select the *Image Processing* (page 80) tab to define *Barcode Recognition* (page 82). Select ZyLAB Global Professional OCR, then click *Properties* and select EAN 13 and/or 8. Click *OK*. Select the option *Fill in barcode field*.
Return to the General tab, or click Next.

Template Wizard - ZyFIELD

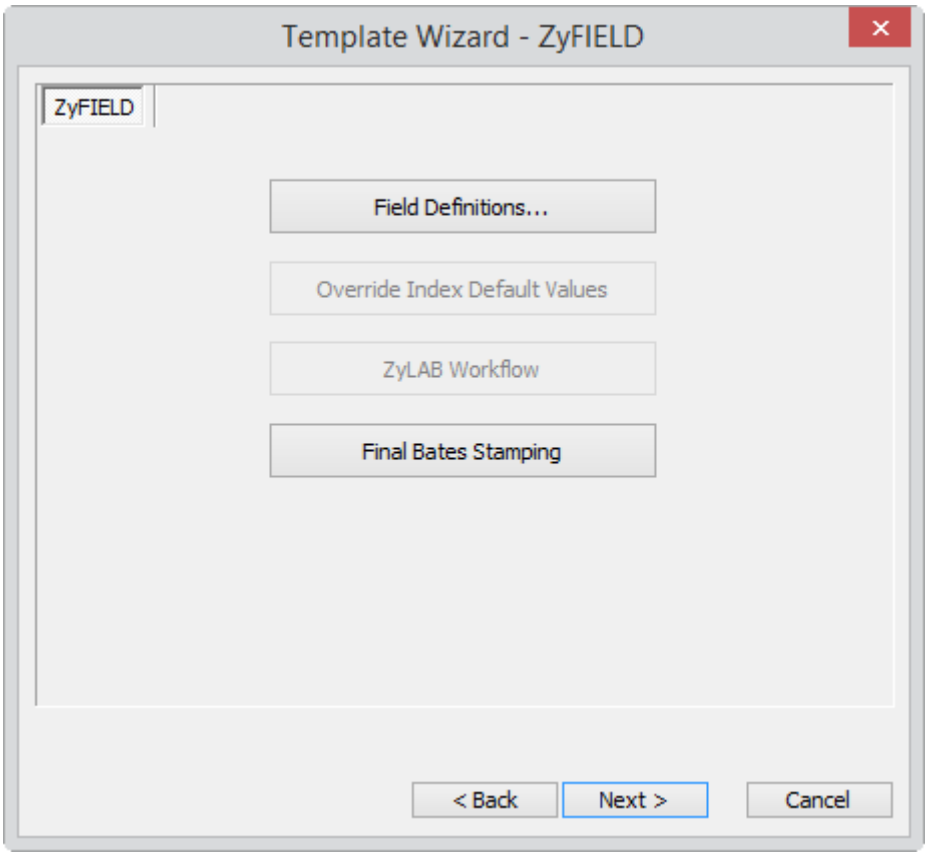
Conditions

You are creating a job template. The Template Wizard - ZyFIELD screen is open. This screen allows you to add and/or change fields.

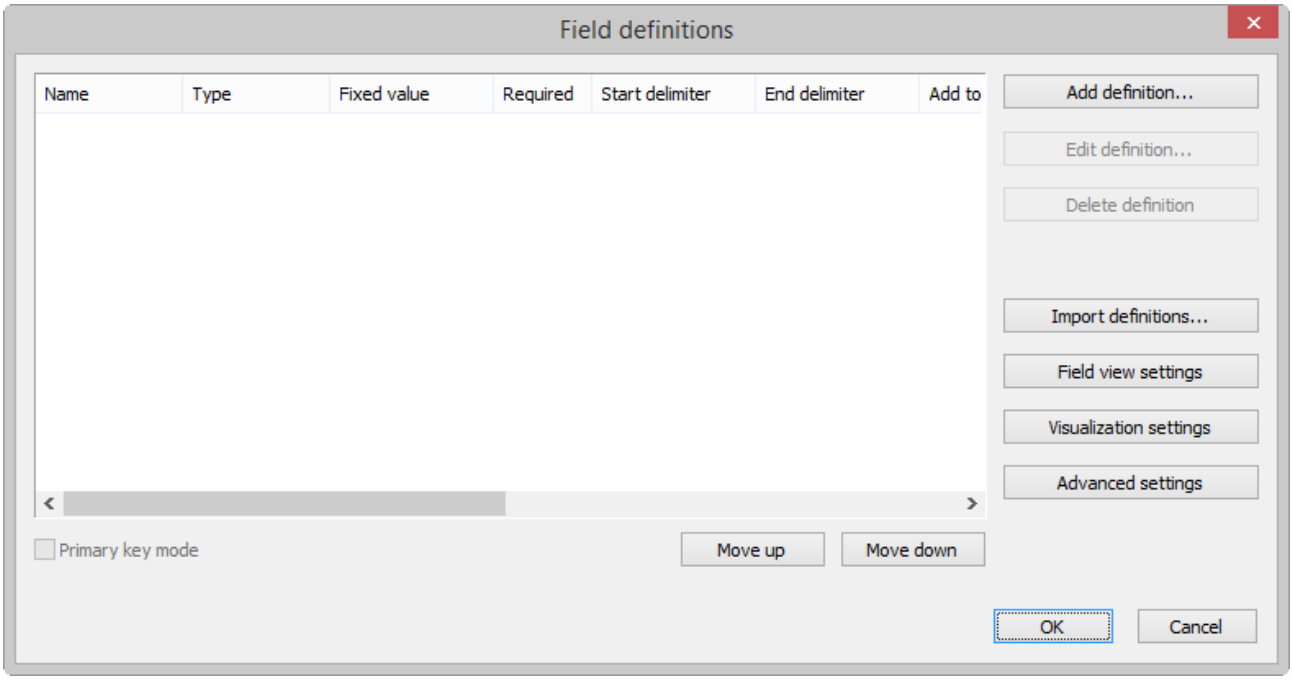
Instructions

1. If you have linked this job template to an index and you want to use the field definitions of that index without making changes, or if you have not linked to an index and do not want to add fields, click *Next* and continue with the Template Wizard - ZyOCR screen.

   To add or change fields, continue with the next step.

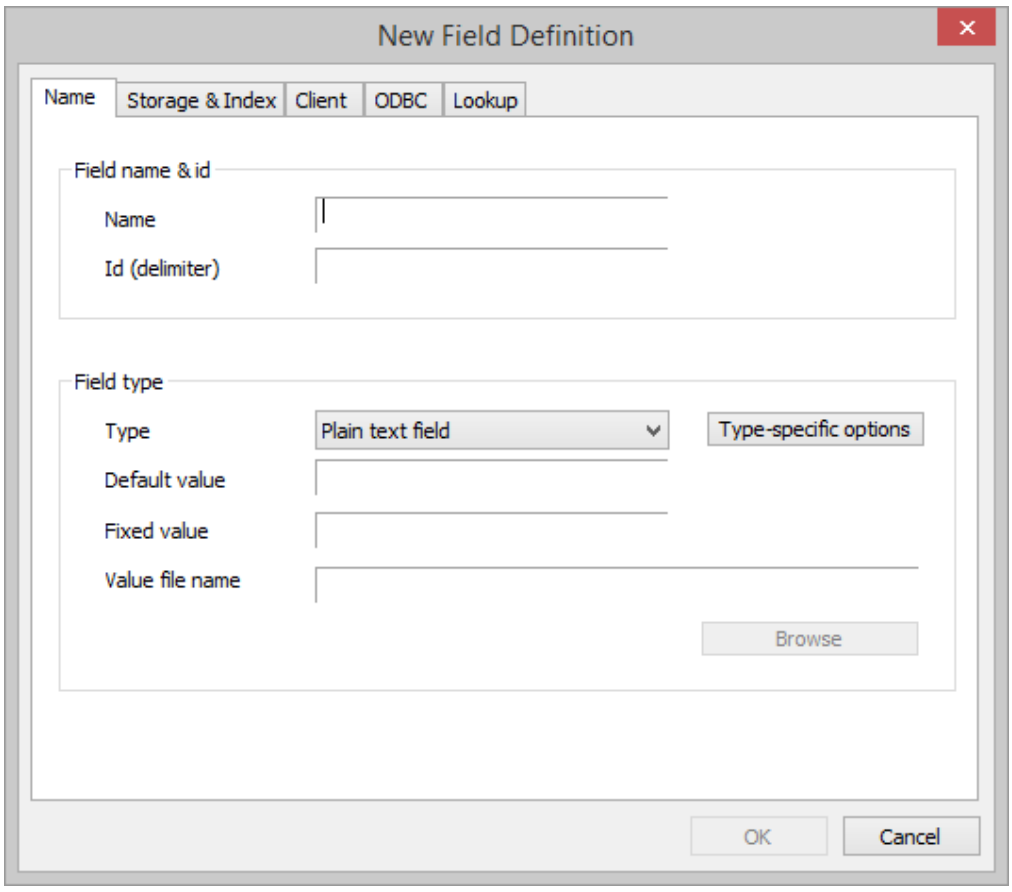


2. If you want to add, edit or delete field definitions, click *Field Definitions* to display the Field Definitions screen. If you linked to an index, the index's fields will appear in the list, and all changes made to fields will also appear in your index (when the Template Wizard is finished).



a) If you want to import a set of field definitions, click *Import definitions* and select a "fields.txt" file from an index's "FIELDS" folder.

b) If you want to add new fields, click *Add definition* to display the New Field Definition window:



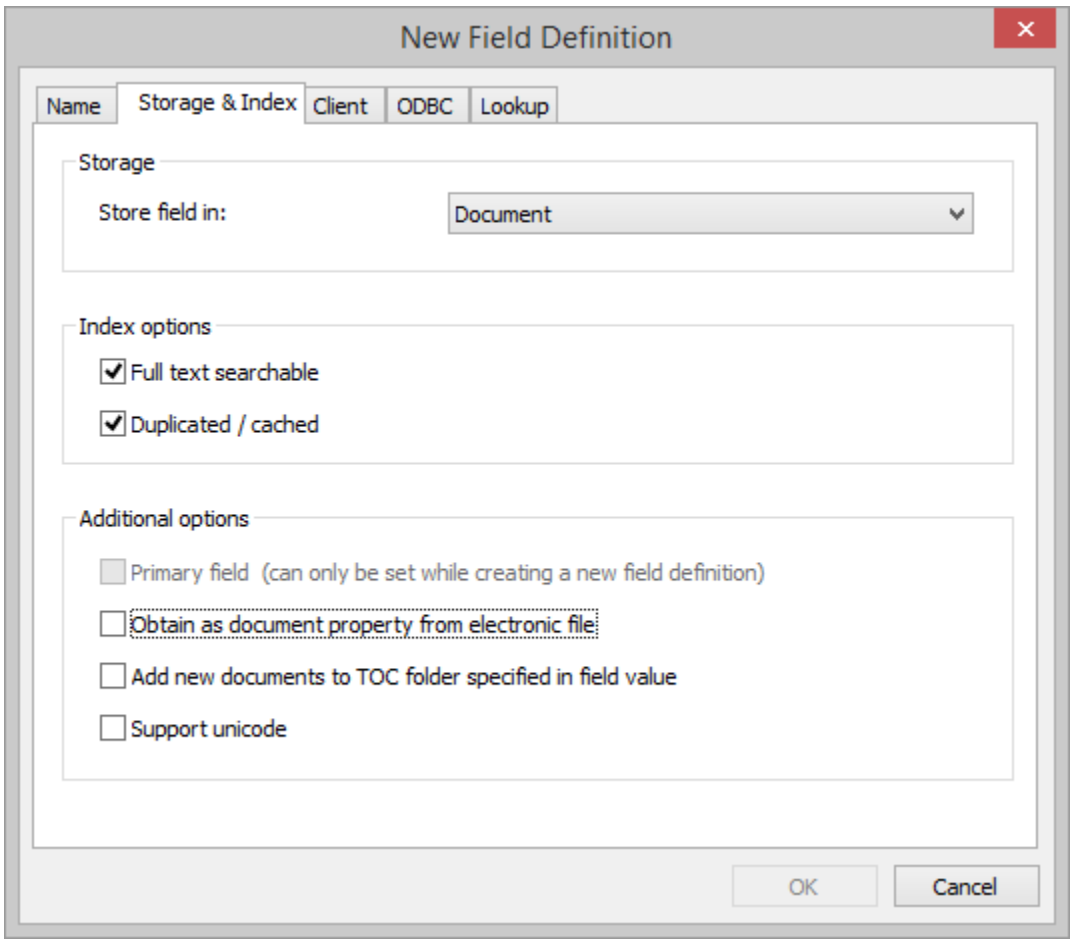
c) Enter the *Name* of the new field definition.

> For example, Author, Name or Contract_number. Note that a field name may not contain spaces, so all spaces entered are automatically replaced by underscores (_).

d) Select a *Type* from the dropdown list, and where applicable add Default and Fixed values, and the value file name.
For more information about the different types, see Field types.

> If you have selected the Plain text field or Logical field, you can select the *Type-specific options* button and specify a region of the TIFF file that will be OCRed separately from the normal OCR process.

e) Select the Storage & Index tab. The following options are available (refer to the notes in Step 5: Define fields for more information):

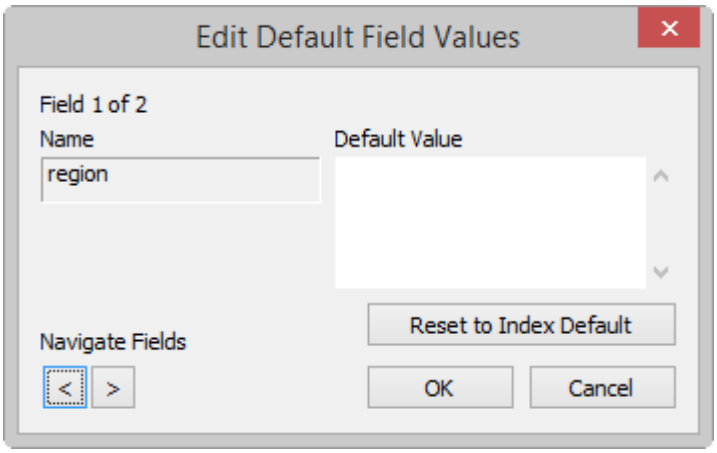


If you are using XML in job, or have linked to an index with XML Wrapper (see *Template Wizard - Workflow* (page 16)), select *Store field in* > *XML Wrapper*.

f) Click *OK*.

3. *Override Index Default Values* allows you to make changes to the values of an index's fields while using ZySCAN, but without changing the fields' default values in ZyINDEX. These changes will not be

synchronized with the index's fields, but the fields' values will appear in ZyFIND. This is especially useful with fixed values, for example, to add the name of the person who is scanning.



a) In the Edit Default Field Values screen, use the *Navigate Fields* buttons to select the field you want to override.

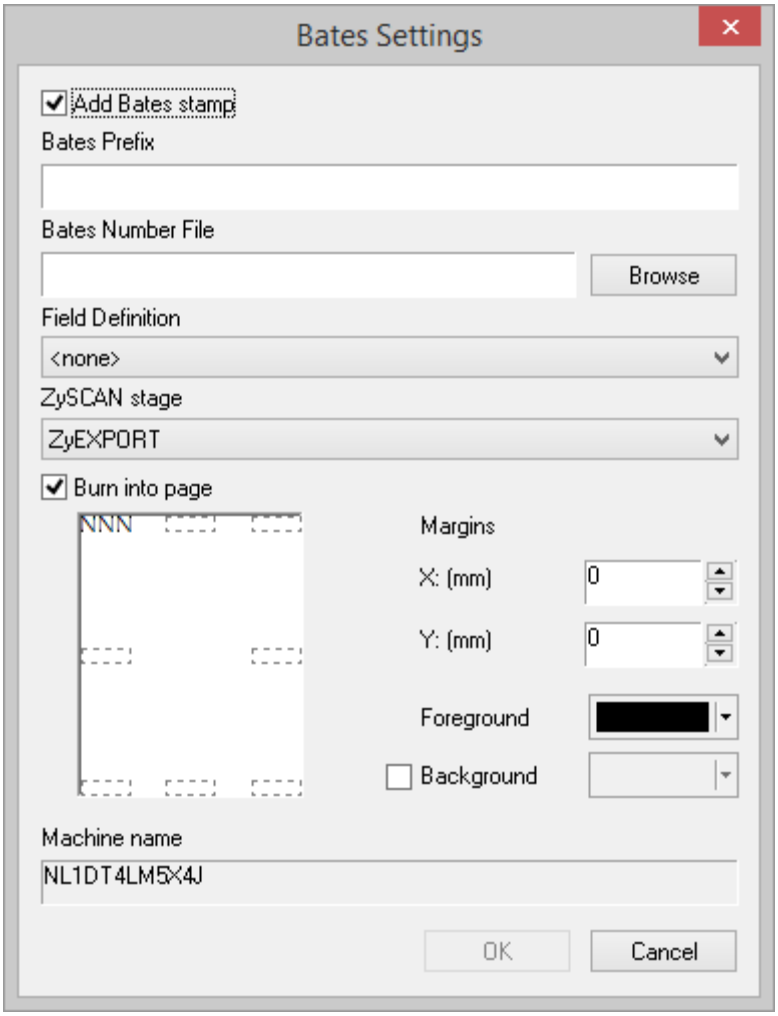
b) Enter the new *Default Value*.

c) If you want to return to the index's value, click *Reset to Index Default*.

d) Click *OK*.

4. If you have selected *Create ZyLAB Workflow* on the Template Wizard - Internals screen, select ZyLAB Workflow. Select a template and a user. For more information about workflow, refer to the ZyLAB Workflow manual.

5. If required, click *Final Bates Stamping* to apply a Bates numbering system to your files. The Bates number will appear in a field (if selected), in the xml file as text, and burned onto each page (if selected).



a) Check the *Add Bates stamp* checkbox.

b) Enter the Bates Prefix. This can be any text. A sequential Bates number is added to the prefix.

c) Give a name to the Bates Number File, or browse to the location of the file you want to use.

d) If you want the Bates number to appear in a field, select a field definition from the drop-down list.

e) Select the ZySCAN stage you want the Bates stamping to occur.

f) If you want the Bates numbers to be permanently added to the pages check the *Burn into page* checkbox. The X and Y measurements are the distances from the bottom left corner of the page. Or select the location where the Bates stamp should be placed.

g) Select the Foreground (Bates number) color.

h) If you want to specify a background color, select the checkbox Background and select a color. Please make sure that the colors do not conflict with each other. It is advised to test the readability of exported documents.

Note: The foreground and background colors will be exported. However, if the original document is B&W or grayscale, the bates stamp will also be B&W (so not in color).

To prevent multiple instances of ZySCAN using the same Bates numbering range at the same time, the job template will only work on the computer where it is installed.

6. Click Next.

Result

The Template Wizard - ZyOCR screen appears (if added to the workflow).

Note

If you **linked to RMA** in Template Wizard - Internals, create a Barcode field (select 'Barcode field' as the type in the Name/Type tab). When the job is being processed, the barcode (printed out, on top of the job, corresponding with the correct Record in the RMA) is added as a field to the document(s) being scanned. This barcode establishes the link between ZySCAN and the RMA.

Database Lookup Field

The ZySCAN Database Lookup Field makes it possible to insert information from a database into the key fields in ZySCAN/ZyINDEX. The Lookup Field is used to search for information in a database, and inserts this information in the appropriate fields. Already ZySCAN/ZyINDEX offers several functions for including database information, such as ODBC synchronization and database fields. However, with the Lookup Field users can confirm and add information visually in real-time. The Database Lookup Field function should work with all common databases using standard interfaces. The Database Lookup Field should work with ODBC and ADO interfaces.

Configure Database Lookup Field

Conditions

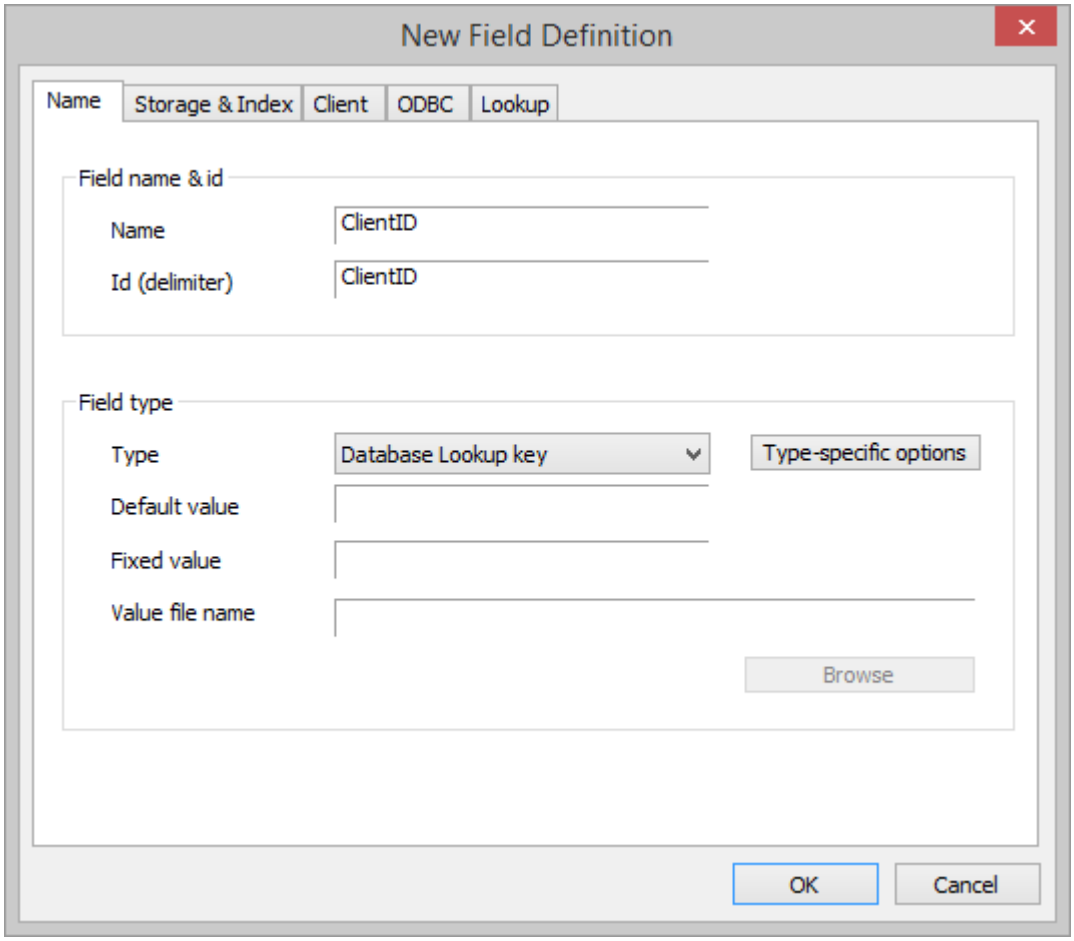
ZySCAN is installed. You want to insert information from a database into the key fields in ZySCAN/ZyINDEX.

Instructions

1. Start ZySCAN.
2. Go to Template > New Template.
3. Click Next.

   Or, link the job template to an index first. This will give you all the index settings.
4. Click Next.
5. Select ZyIMPORT, ZyFIELD, ZyOCR and ZyEXPORT.
6. Click Next.
7. Browse for the files you want to add information to. For example, single page tiff import files.
8. Select the Single Page Tiff import filter, or another suitable filter.
9. Click Next.
10. Click Field Definitions.
11. Click Add definition.
12. Enter a field name. For example, ClientID.

13. Select the field Type: Database Lookup key.
14. Click the Type-specific options button.



15. Enter the Connection string. The database connection string is the string to connect to your data source and the referring database. For example:

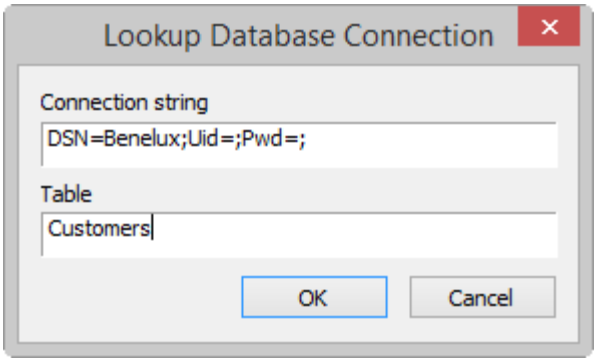
Provider=Microsoft.Jet.OLEDB.4.0;Data Source="E:\ZyLAB Data\Database\Database.mdb"

Driver={Microsoft dBASE Driver (*.dbf)};DriverID=277;Dbq=c:\\ZyLAB Data\\Databases;

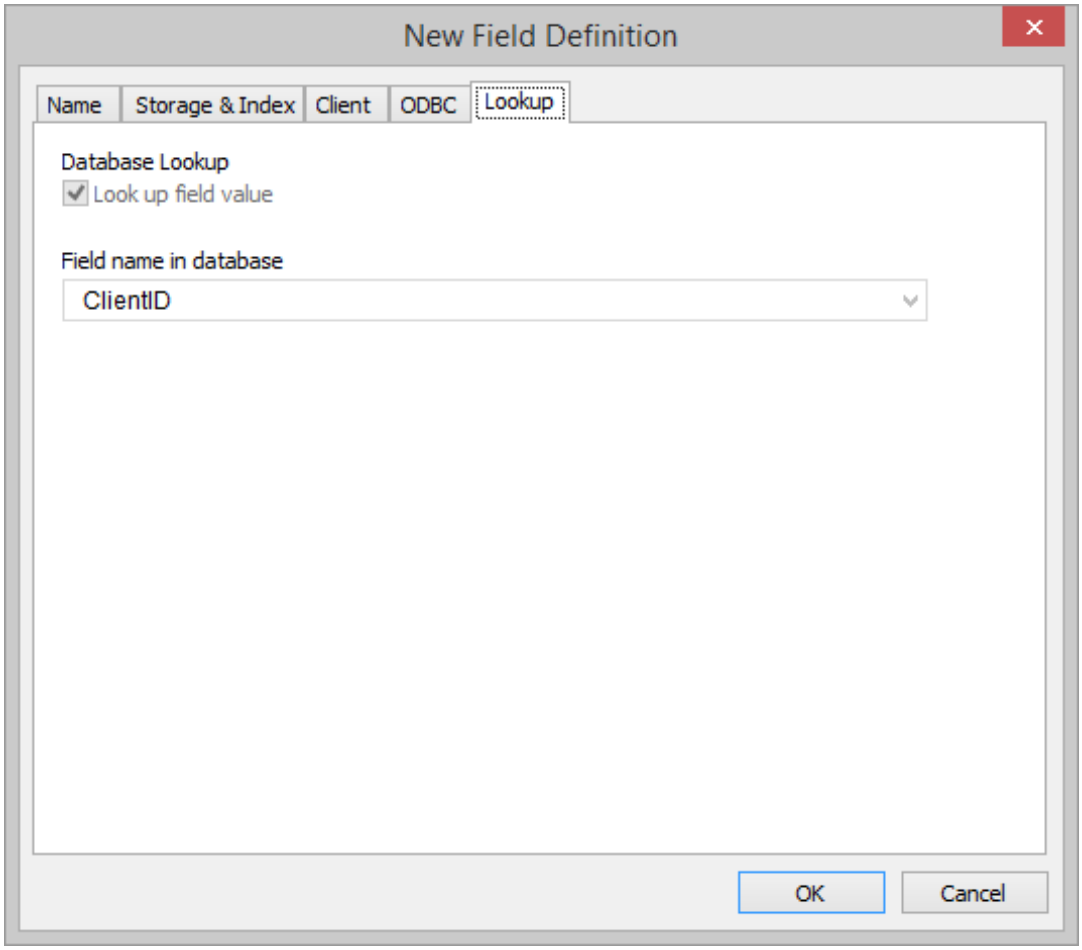
DSN=Benelux;Uid=;Pwd=;

> For more connection strings, check http://www.codeproject.com/database/connectionstrings.asp
>
> To get it working with an ODBC connection: Go to Control Panel > Administrative Tools. Select Data Sources (ODBC), select the System DSN tab and click Add to create a system DSN. For example, Benelux. The valid connection string would be DSN=Benelux;Uid=;Pwd=;

16. Enter the Table name. For example, Customers.
17. Click OK.



18. Select the Lookup tab.
19. Select the primary key field, from the dropdown listbox "Field name in database", which you would like to use as a reference primary key from your database table.
20. Click OK.



21. Add as many fields as you want to add to your ZySCAN fields definitions. Do not use field type Database Lookup again. Per index, you can only have one Lookup key field.

22. For each field click the Lookup tab to select the referring database field. Also, select the option "Look up field value" to retrieve the value from the database.
23. Click OK when all fields are added.
24. Click Next.
25. Keep the default ZyOCR settings and click Next.
26. If you did not link your job template to an index, select the folders to export your txt/XML, XMLfields and TIFF files to, and click Next.
27. If you linked your job template to an existing index, select “Export to default data directory and modules of the index”, and click Next.
28. Enter a name for your job template.
29. Click Finish.

Result

You have created a job template, and added a lookup field and related fields. You are now ready to start using your job template in the production environment.

Note

If you get an Unknown error during database lookup, this might be because one or more database key fields contain spaces. To avoid this problem, create a Database View in which each field name (with spaces) is replaced by an alias (without spaces). For more information, see the Using ZyLAB Programs and Databases manual > Database View.

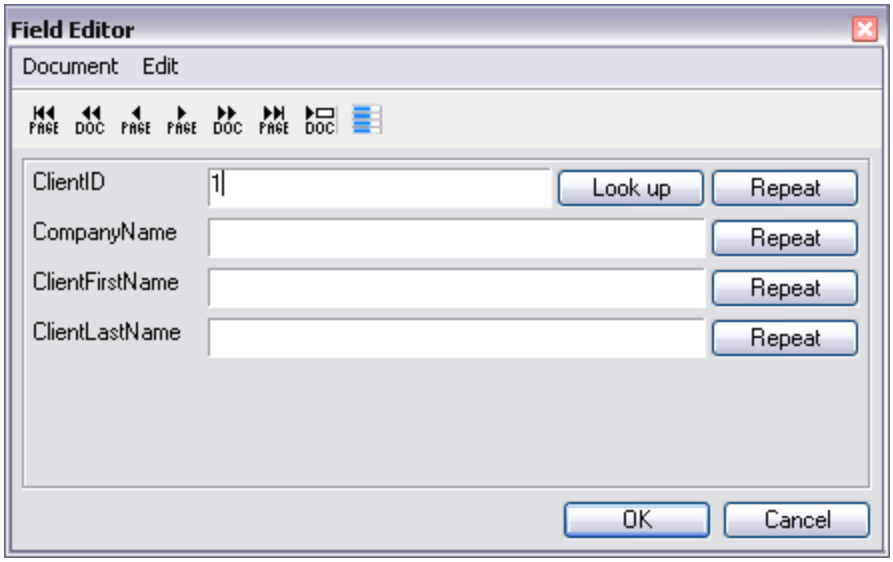
Use Database Lookup Field

Conditions

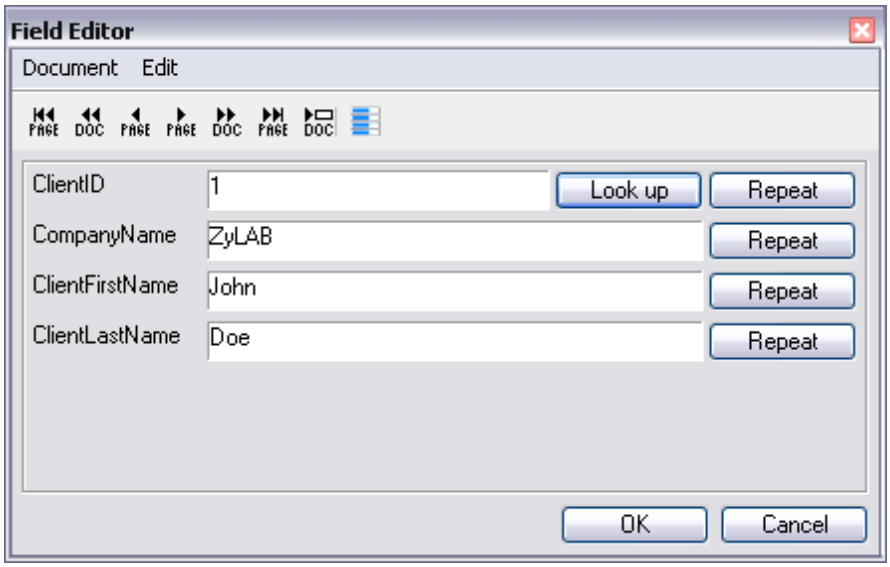
You have created a job template, and configured the Database Lookup Field. Now you are ready to start using your job template in the production environment. You want to have a visual view of the field values that are being added while processing.

Instructions

1. Start ZySCAN.
2. Click New Job.
3. Select the job template you created for ZySCAN Database Lookup.
4. Click OK.
5. Click Import to import the files you want to add information to.
6. Click Yes to continue to the next stage.
7. Enter a value for the Database Lookup Field.
8. Click Look up.



9. The additional fields will be added when the field value for the Database Lookup Field is available in the database.



10. Click OK.
11. Click Yes to continue to the next stage.
12. Click Start OCR to OCR the image.
13. Click Yes to continue to the next stage.
14. Click Start Export.
15. Click Yes when finished exporting to close the job.

Result

You have processed a job and added field values to your files.

Unicode Fields

With Unicode fields it is possible to get good field values (including *Zonal OCR* (page 97)) with the Arabian, Russian, Hebrew and Asian OCR engines.

Note: Make sure the option 'Use XML internally' is selected when creating a job template (Template Wizard - Internals).

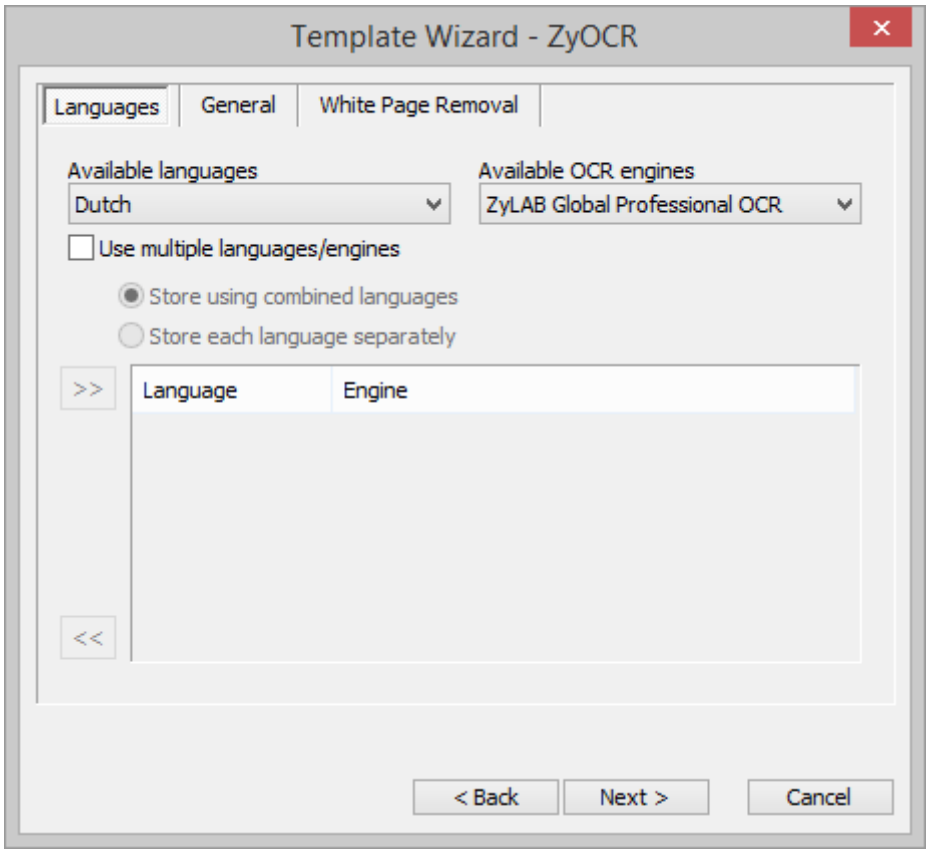
Template Wizard - ZyOCR

Conditions

You are creating a job template. The Template Wizard - ZyOCR screen is open.

Instructions

Languages tab



Select one language

1. Select a language from the *Available Languages* drop down list.
2. Select an Available OCR engine.

> If you are processing large batches with varying image quality, choose ZyLAB Global Professional OCR. The Global Standard OCR engine is provided as the low-end OCR engine for ZySCAN.

Select multiple languages

1. Select one language and OCR engine.

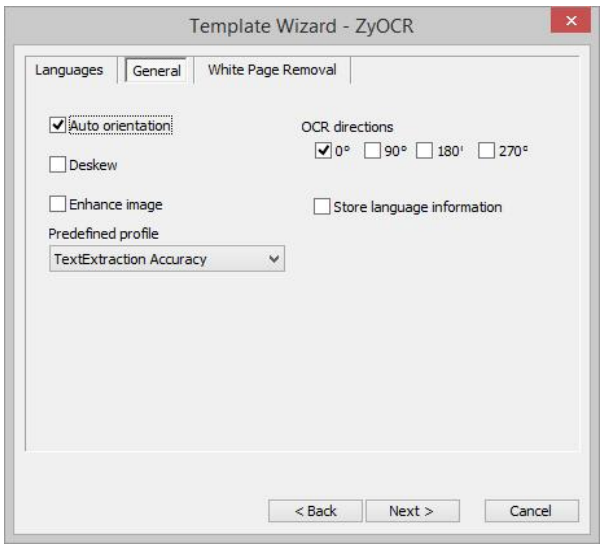
Multiple languages are not supported for OCR engine ZyLAB Global Standard OCR. You will need the ZyLAB Global Professional OCR engine. This engine supports language detection.

2. Check the *Use multiple language/engines* check box. Click the right-arrows button >> to add the language to the list.
3. Select more languages as required and add them to the list.
4. Choose between:

Store using combined languages (stores the OCRed text of only the recognized languages, which means that a text with German sections will be OCRed in German and the English sections will be OCRed in English)

Store each language separately (stores the OCRed text of all languages, which means that the whole text will be OCRed for each selected language)

General tab



Select one or more of the following options.

Auto-orientation. This automatically rotates the image until the page is readable (portrait or landscape). For example, if the page was fed in the scanner upside down, the OCR engine will rotate the image 180 degrees before OCR is performed. This is especially important when you use image files stored on disk

because you may have had no control over their orientation (rotation) when they were scanned. Please note that auto-rotation is OCR-engine dependent and will never be 100% accurate.

Deskew. Only available for ZyLAB Global Professional OCR engine. The OCR process recognizes words on a straight line from left to right, if an image is slanted words in different lines in the image will be recognized as belonging to the same line of text. Deskew corrects such slanted images.

Enhance image. Only available for ZyLAB Global Professional OCR engine. The image quality of TIFF files will be improved with techniques like line straightening, black dots removal and motion blur restoration.

OCR directions. If you expect text to be displayed in more than one direction, select the appropriate directions: 0, 90, 180 and/or 270 degrees. You can select all directions, if you do not want to miss anything. However, please be aware that this may slow down the OCR process.

For *Store language information*, see *Store Language Information* (page 40).

For *Predefined Profile*, choose from:

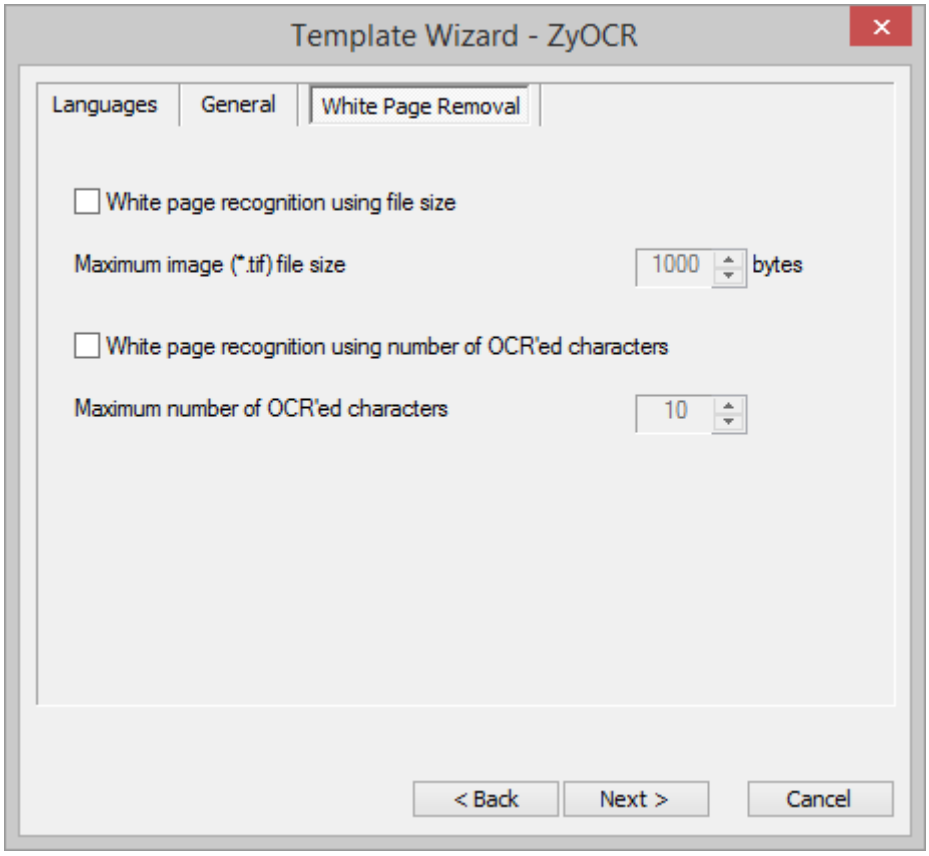
- TextExtraction Accuracy / TextExtraction Speed
  Extracts all texts in a document for indexing, search or classification
- DocumentArchiving Accuracy / DocumentArchiving Speed / BookArchiving Accuracy / BookArchiving Speed
  Converts documents to archive them digitally. Fast processing and a good visual quality combined with a small size of the resulting PDF or PDF/A file are crucial when converting paper documents for electronic archiving purposes.
- DocumentConversion Accuracy / DocumentConversion Speed
  Converts documents to re-use their content. Exact recognition accuracy and reconstrution of the document's structure, layout and formatting are very important when its content needs to be re-used. The high quality of OCR results reduces the need for text corrections.
- EngineeringDrawings Processing
  Recognizes technical drawings, with text arranged in different directions.

Accuracy versus Speed mode

The Accuracy mode uses all of the available character recognition tools. The speed of the recognition depends on the image quality. The better the image quality, the faster it can be processed.

The Speed mode provides a 2-2,5 times faster recognition speed at the cost of a moderately increased error rate (1,5-2 times more errors). On good print quality texts such a moderate increased error rate can be tolerated, using for example fuzzy searches.

White Page Removal tab



If you want to detect and remove white (blank) pages based on file size, select *White page recognition using file size*. A TIFF file smaller then 1,000 bytes (1 Kb) will be recognized as being blank. The pages before and after this page will then belong to two different documents. If you want to separate your pages it is better to use patch pages or bar codes, and these methods are described in Separating documents.

> Typically, a blank A4 300 dpi image compressed using TIFF Group IV will have a file size of approximately 1.5 Kb on disk. Shadow lines in the paper may create small groups of black pixels, which can easily lead to a 3 Kb file size, so white page detection limit of 3 – 4 Kb should be considered. To estimate file size, check the file size of a blank page that has already been scanned.

If you want to detect and remove blank pages based on number of OCRed characters, select *White page recognition using number of OCRed characters*.

Result

The Template Wizard - ZyEXPORT screen appears (if added to the workflow).

Note

In the Languages tab, if you select the option Store all output then the option Deskew in the General tab is disabled.

Store Language Information

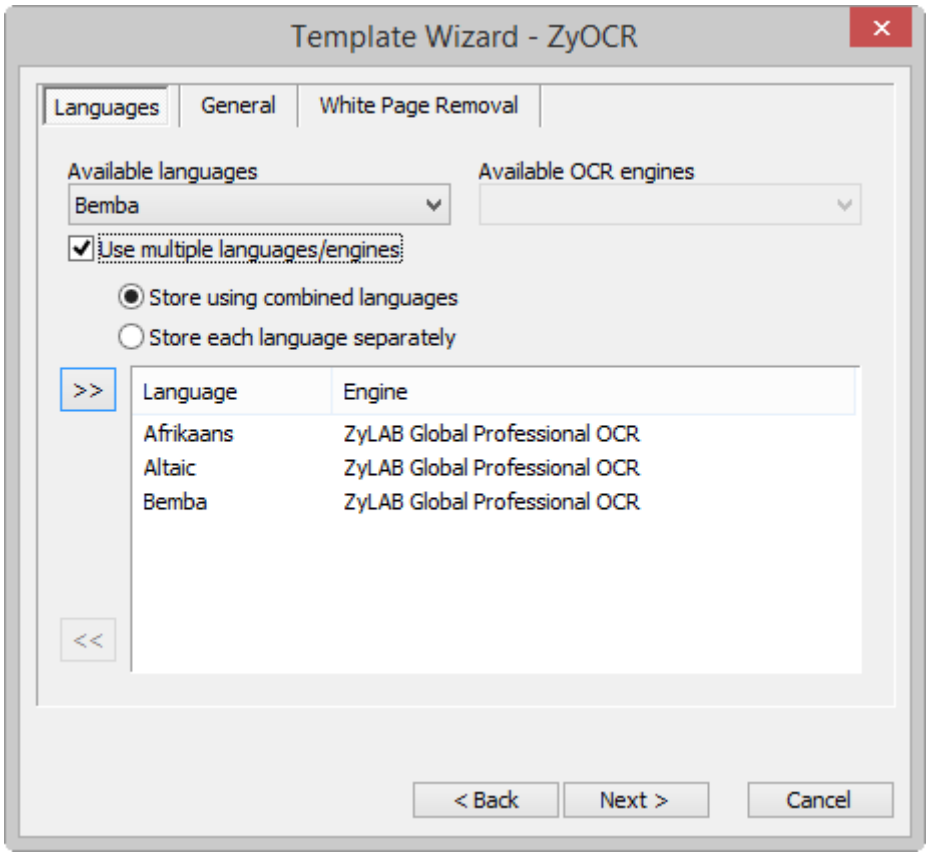
The option *Store language information* uses the ZyLAB language recognition tools to recognize the text language, and to store the language code and language name in two dedicated fields in the document's XML wrapper. The language code and name are derived from the ISO-639 standard and comprise a three-letter code, and a language name that appears in the language set in the ZySCAN Interface Language (Options > Interface languages).

> Note that if the Language_Code and Language_Name fields already exist in the index specified as an external link then the *Store language information* option is already selected and cannot be de-selected.

Setup the Store Language Information Option

When you create a job template, you choose the languages you want to use to OCR your documents (Template Wizard - ZyOCR: Languages). When you know a single language is used in the job this can be one specific language, or a selection of languages when documents or pages contain different languages. When a single page contains multiple languages, the first detected language is stored. When a language cannot be detected, the Default language is used.

The speed of the detection process becomes slower when you select more languages.



When you want to detect multiple languages in a job, select *Use multiple languages/engines* and *Store using combined languages*.

> **Note**: Do not Select *Store each language separately* as this causes all languages listed to be stored in the language fields.

When you click *Next,* two fields are created in your specified index; these are Language_Code and Language_Name.

> Changing the Stage settings when a job is being processed will not create the language code or name fields, and will not detect the languages used in the documents. You must create or change a job template to use Store language information.

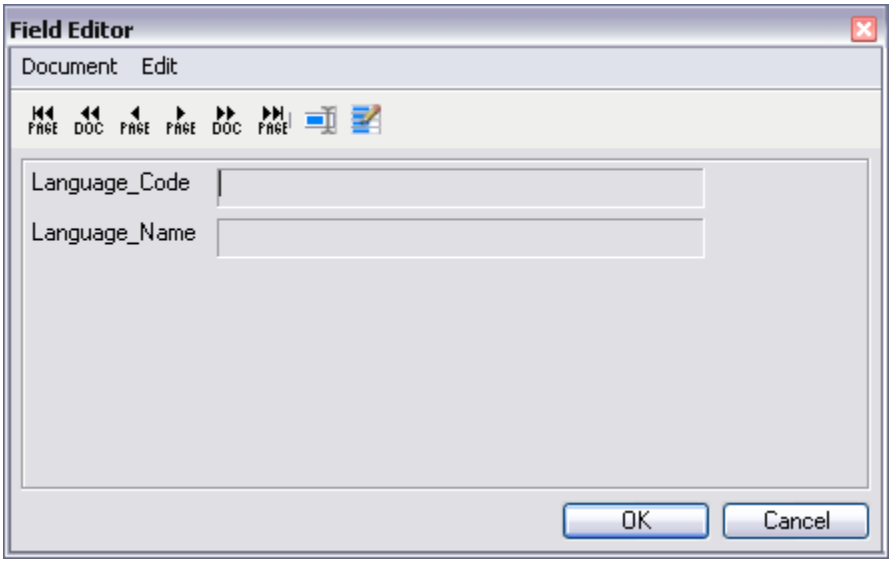
Using Store Language Information

Conditions

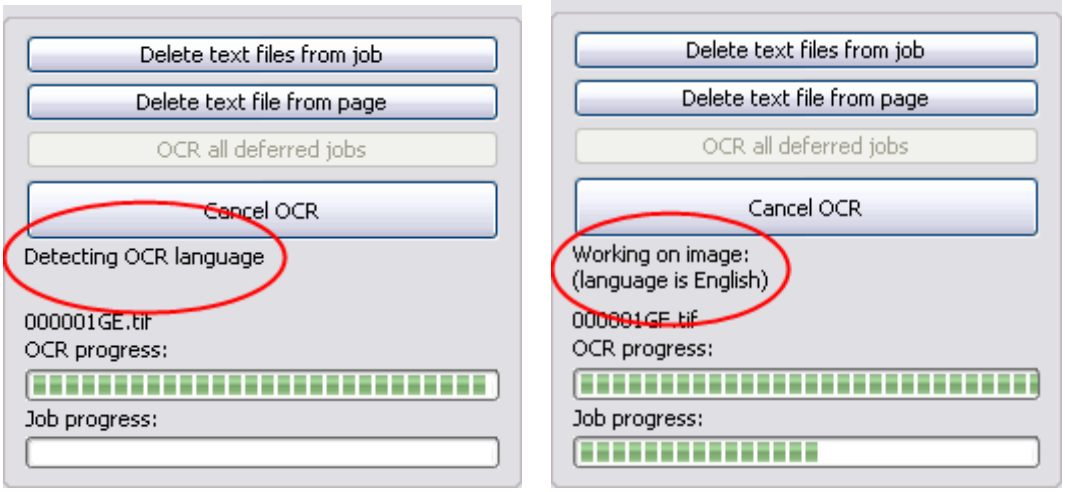
You have setup the *Store Language Information* option in the Template Wizard - ZyOCR Languages and General pages.

Instructions

1. ZySCAN is open.
2. Start a job.
3. In ZyFIELD make sure that the Language_Code and Language_Name fields are present.



4. In ZyOCR monitor the language detection; the detected language is stored in the Language_Code and Language_Name fields:



5. When the job has finished, build the index in ZyINDEX.

6. Open the index in ZyVIEW and view a document from the job. The two language fields will show the ISO-639 language code and name.

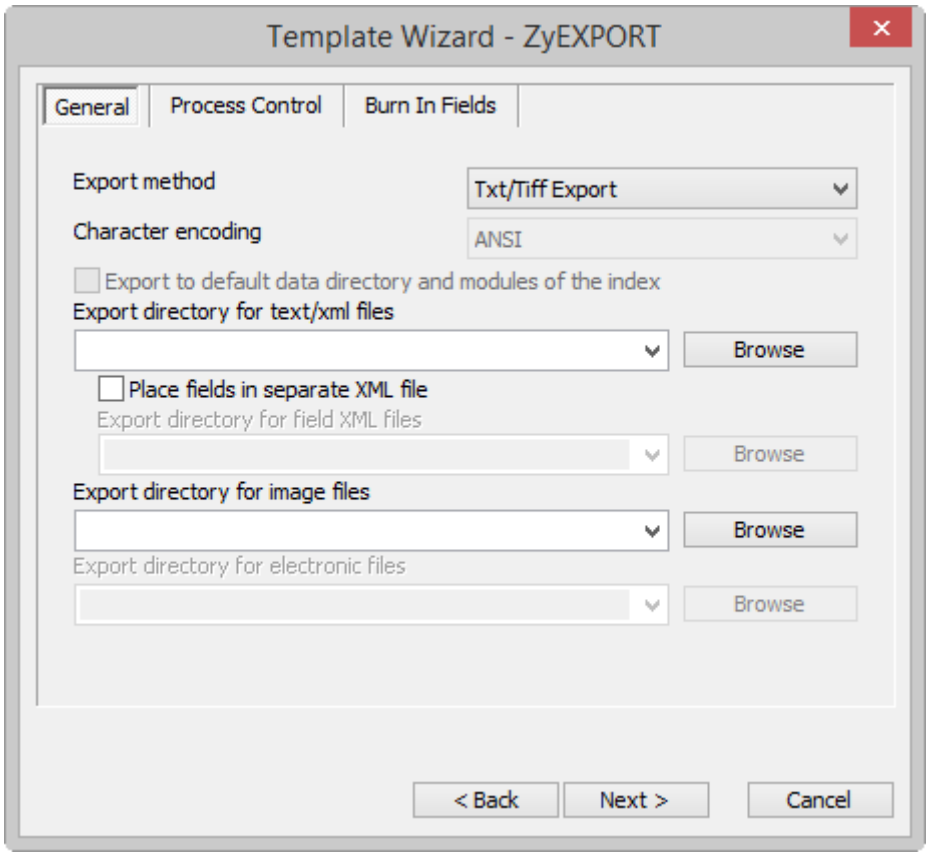
Template Wizard - ZyEXPORT

Conditions

You are creating a job template. The Template Wizard - ZyEXPORT screen is open.

Instructions

General tab



Defines where the data from a job is exported to. This will typically be a file server location, which is also accessible to ZyINDEX for indexing and to ZyFIND for displaying the documents. Make sure that there is a backup policy for this location since it will contain all your valuable documents.

New as of 6.7: Create searchable pdf

When checked, this option will export scanned documents to searchable pdf/A.

Select an *Export method* from the dropdown list.

> If you have chosen *Use XML internally* (Template Wizard - Internals), or linked to an index with XML Wrapper, choose XML/Tiff Export, otherwise the XML files will be stored as .txt files after export.
>
> If you have linked this job template to an index (Template Wizard - Internals), you can select *Export to default data directory and modules of the index*. Do this if you want to use the selected index's data locations and if you are using the TIMER automatic mode in ZyINDEX.

If you selected 'Xml/Tiff Export', you are able to choose from 'UTF-8' (for small character sets) and 'UTF-16' (for large character sets such as Chinese or a combination of world languages) as the type of Character Encoding.

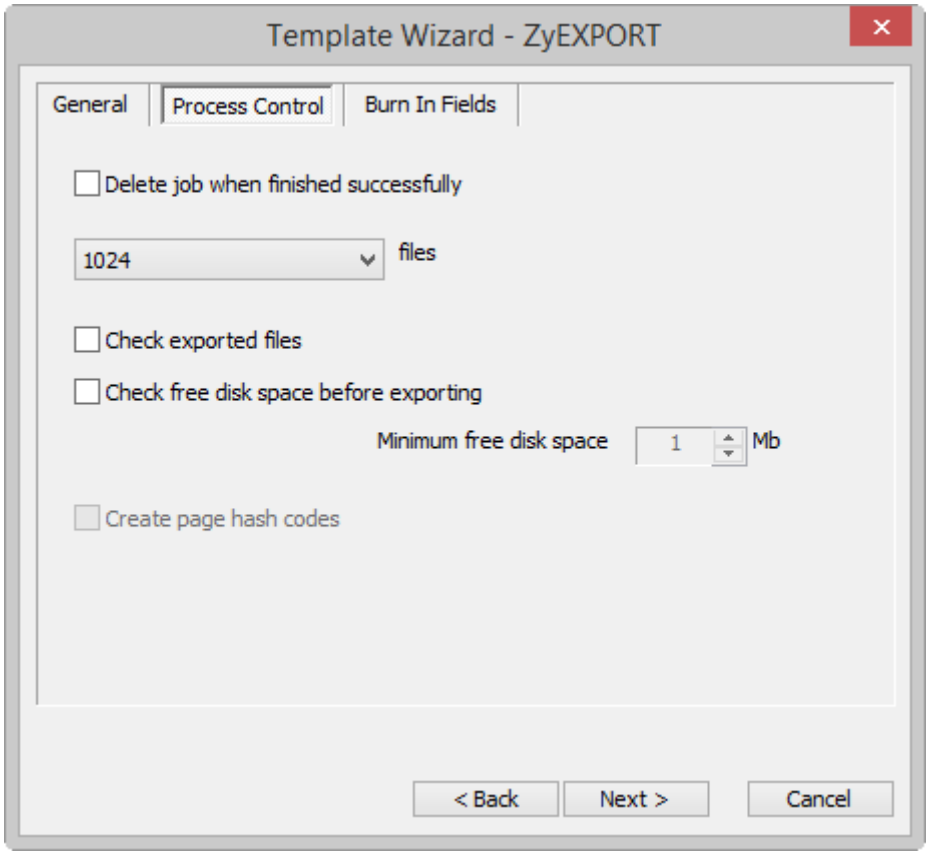
Browse to select the *Export directory for txt/xml files*.

If you linked to an index with XML Wrapper, select *Place fields in separate XML file*. Click Browse to select the Export directory for field XML files.

Click Browse to select the *Export directory for image files* (TIFF).

Click Browse to select the *Export directory for electronic files*, if the electronic import filter is selected (Template Wizard - ZyIMPORT).

Process Control tab



To create a standard job template keep the default settings.

To restore disk space after exporting jobs in batches, select the checkbox *Delete job when finished successfully*.

> Your documents are stored as images (the scanned/imported files) and text (the OCRed files). Therefore, each document has a TIFF and a TXT version. These versions are stored in the corresponding export directories (destination folders), and they are still located in the jobroot, taking a lot of space. The *Delete job* function ensures that the finished jobs in the jobroot will be deleted.

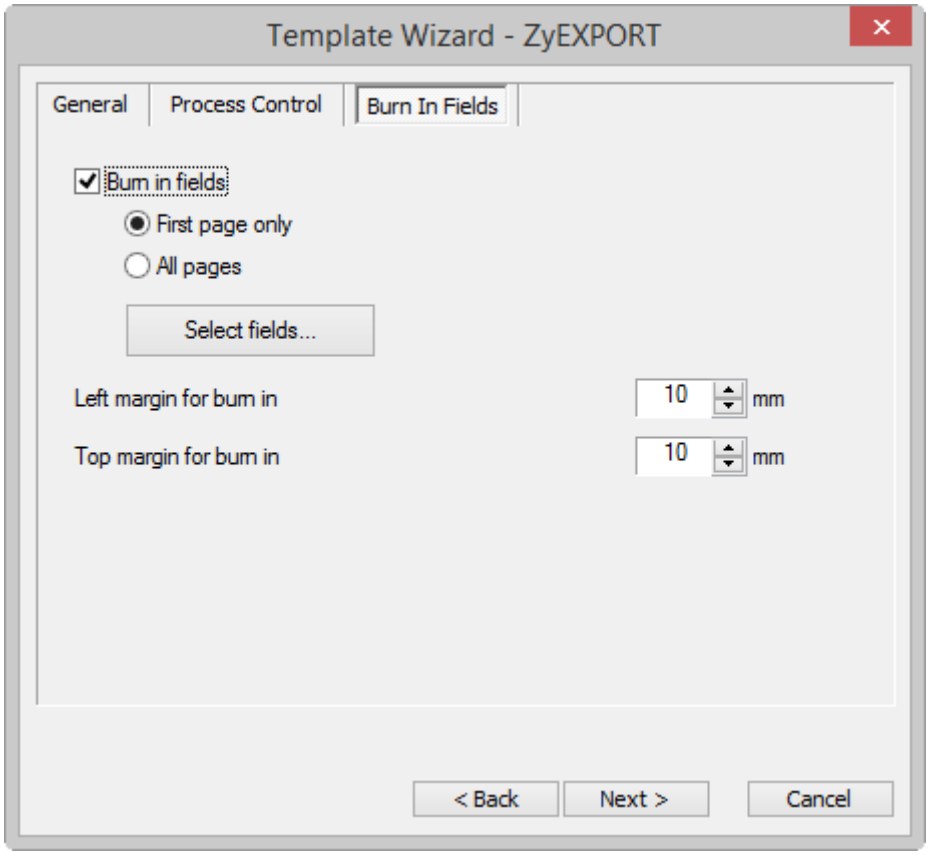
To optimize the performance and enhance search speed, set the maximum file count for output directories by selecting a value from the dropdown listbox. The default value is 1024.

To check if all TIFF and XML/TXT export files are created, select the checkbox *Check exported files*.

To optimize the performance and enhance search speed, select the checkbox *Check free disk space before exporting*, and define the *Minimum free disk space*.

To enhance security, select the checkbox *Create page hash codes*.

Burn In Fields tab



Select *Burn in fields* if you want to 'stamp' the value of a selected key field on the images of the exported document. Choose between burning on the *First page only* or *All pages*.

Click *Select fields* to determine which fields you want to have burned in and if you want to change their sequence.

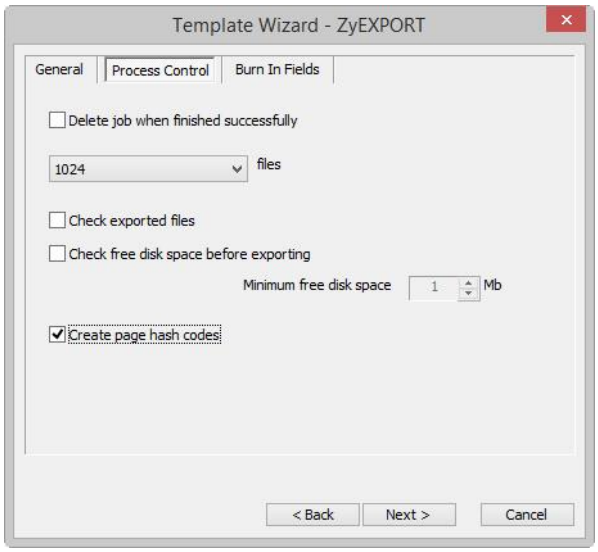
Define the left and top margin to determine the exact location.

Click *Next* to move to the next screen.

Result

The Template Wizard - Summary screen appears.

Template Wizard - ZyEXPORT: Create page hash codes (based on TIFF files)



It is now possible to create hash codes, based on image (TIFF) files. This hash code is stored with the image link in the XML file that is created during export. In order to create these hash codes, the 'XML/Tiff Export' method has to be selected in the General tab. Then you select the Process Control tab and select the option 'Create page hash codes'. Now, for each image (tiff) file that is processed during a job a hash code is created and saved within the XML file (with the image link) that is created during export.

If you use this option in combination with an hash code field, the calculation of the hash code field is based on the xml-file **with** hash codes of the images. The hash code field is stored in a separate file (in order not to change the contents of the XML file).

What is a hash code anyway?

Hash codes are used to prove the authenticity of files. A hash code is a string, presented as 40 hex characters:

<field id="hashcode">1004046B52575F85AF065E24594271B63B0E92D2</field>

This hash code is calculated based on the contents of a text (TXT/XML/PDF/etc.) or an image (TIFF) file.

The hash code is based on the Secure Hash Standard. In this standard, the SHA-1 (Secure Hash Algorithm-1) is specified. This Secure Hash Algorithm-1 is designed to ensure that it is impossible to find two different files which produce the same hash code. This means that you can use this code to prove the authenticity of your files.

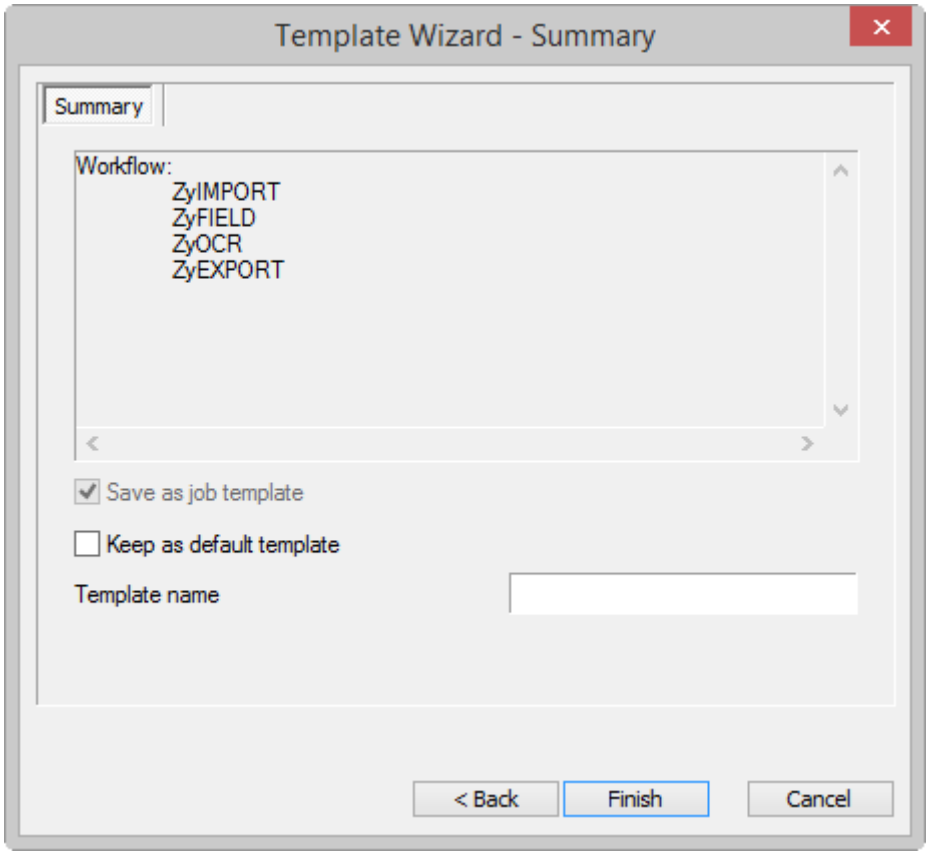
Therefore, if you want to share your files and want to have the possibility to prove that everyone is using the same file and no changes are made, you are advised to add hash codes to your files.

Template Wizard - Summary

Conditions

You are creating a job template. The Template Wizard - Summary screen is open.

Instructions



1. View the summary of the workflow of the job.
2. If you want to save your settings, select *Save as job template*.
3. If you want this template preselected in future, select *Keep as default template*.
4. Enter a *Template name*.
5. Click *Finish*.

Result

You have created a job template. You can start scanning and/or importing your documents.

Processing a job

After an index and a job template have been created, you can start a job (the pages you are working with in one batch). A job consists of the stages defined in a job template. The first stage is scanning or importing. The first stage can be followed by adding fields, OCRing and exporting, depending on the job template you chose. After the job has been finished, you can build the index. Finally, you can search your documents.

Each job can be ended with the Close Job button. When a job is closed, all settings are saved on disk. Select Open job to continue.

Each job can be deleted with the Delete Job button.

Scan

Conditions

You want to process a job. ZySCAN is open. You are in the ZySCAN stage.

Instructions

Start a new job

1. Click New job.
2. Keep the automatically defined Job name.
3. Select a (job) template.
4. If you want the selected template to appear in the template box, click Keep as default job template. That way, you do not have to select it the next time.
5. Click OK.
6. Place the correct documents in the scanner/copier.
7. Click Scan.

Restart an existing job

1. Click Open job.
2. If you have more than one job, select a Jobroot.

   The Jobroot is the location where all jobs are stored.
3. Select a job.
4. Click OK.
5. Place the correct documents in the scanner/copier.
6. Click Scan.

Result

ZySCAN will notify you when the scanning of the job is completed. Press *Yes* to go to the next stage or *No* if you want to continue scanning until all documents have been scanned. In case you continue scanning, each document will be appended to the Job as a new document. We advise to restrict the number of pages in a single job to 700 pages. More pages can be handled at the expense of slowing down your functions.

Enhance the quality of your scanning

To enhance your scanning, you can do one or more of the following:

- Adjust the Stage Settings (select a Scan interface, and choose either "Show message when scanning is finished", "Create new document every n page(s)" or "Auto rotate")
- Enable Backside pages (disabled by default). First, scan all frontpages of one batch, then all back

pages.

- If you want to create new documents during scanning, click Start new document. For example, scan the pages of chapter one, click Start new document, scan the pages of chapter two, click Start new document, etc.
- If you scanned one page wrong, click Re-Scan. With Re-Scan, you delete the old (wrong) page, and save the new one.
- Adjust the Scan Source Properties (select paper size, contrast and resolution; note that these settings depend on your scanner capabilities).
- If you scan color images, make sure they are scanned at a minimum of 150 dpi (max. 256 colors).

Add fields

If ZyFIELD is excluded from the workflow (see *Template Wizard - Workflow* (page 16)), you can ignore this stage: the defined fields are automatically added to the scanned/imported documents.

Conditions

You are processing a job. ZySCAN is open. You are in the ZyFIELD stage, with the Field Editor open.

Assign fields manually per document (group)

1. Fill out a field value for each field definition.
2. Click Repeat for each field definition/value you want to assign to **all** documents in the job.
3. Use the navigation buttons to scroll through the pages/documents in your job and assign fields to them. You can go directly to the 'Next document with Empty Fields' with the corresponding button. Also, you can Edit Field Definitions.
4. Click OK.
   The fields are added to your document(s).
5. If you want to go to the next stage, click Yes.

   or

   If you want to complete this stage for all jobs present in the jobroot, click No. Completing all jobs present in a jobroot may be useful in a run-unattended mode (i.e. batch processing). For more information, see *(Semi-)automatic job processing* (page 68).

   a) Click Next available job.

   b) Use the 'Edit field values', and 'Edit field definitions' buttons to change and add fields.

   > With the Multi-split button, you can assign the field values of the first document to all the following ones.

Note

If you want to add fields to a single document, it is recommended to do that in ZyFIND. For more information, see the ZyFIND manual > Fields: Label your documents.

Import

Conditions

You want to process a job. ZySCAN is open. You are in the ZyIMPORT stage.

Instructions

1. Click New job.
2. Keep the automatically defined Job name.
3. Select a (job) template.
4. If you want the selected template to appear in the template box, click Keep as default job template. That way, you do not have to select it the next time.
5. Click OK.
6. Click Import.

Result

TIFF files (and other electronic documents/formats) are imported.

For more information about the different image formats that can be imported, see the ZyINDEX manual > Appendix B: Import filters.

Note

Use  to cancel import.

Add fields and field values to electronic documents

The XML Wrapper allows you to add fields (and field values) to electronic documents of any format (Word, Excel, PDF, WAV, MPG, etc.). Also, you will be able to import documents with already defined fields.

In both instances, the field information is stored in an XML file that is linked to the document. In order to be able to store field information in an XML file in ZyINDEX, an index has to be created using the XML Wrapper.

Create an index with XML Wrapper

Conditions

ZyINDEX is open.

Instructions

1. Follow step 1 to 6, explained in the ZyINDEX manual > Create an advanced index, with the following variations:
   - In the ZyINDEX manual > Step 2: Modules, make sure you select the XML Wrapper.
   - In the ZyINDEX manual > Step 5: Define fields, make sure you add Field definitions while Module field: XML Wrapper is selected.
   - Complete all steps and click Finish.

Result

You have created an index with XML Wrapper.

Documents with already defined fields

Conditions

You have created an index with XML Wrapper. ZySCAN is open.

Instructions

1. Follow the steps, explained in *Create a job template* (page 2), with the following variations:
   - In Template Wizard - Internals, create an external link to an index with XML Wrapper. Do **not** select Suppress job in Audit Trail, and do **not** select Use XML internally.
   - In *Template Wizard -Workflow* (page 16), select ZyIMPORT, ZyFIELD, Exclude ZyFIELD from workflow and ZyEXPORT. Do **not** select ZyOCR.
   - In *Template Wizard - ZyIMPORT* (page 20), select Electronic Import as Import filter.
   - Complete the Template Wizard and click Finish.
2. Click New Job.
3. Select the template you just made.
4. Click OK.
5. Click Import.
6. Continue with Export.
7. Close the job.

Result

You have created a job template, tailored to importing electronic documents with already defined fields.

Also, you have imported and exported electronic documents with already defined fields. Now, you can Build the index and search on Fields.

See *(Semi)-automatic job processing* (page 68), if you want to process a complete directory in one go.

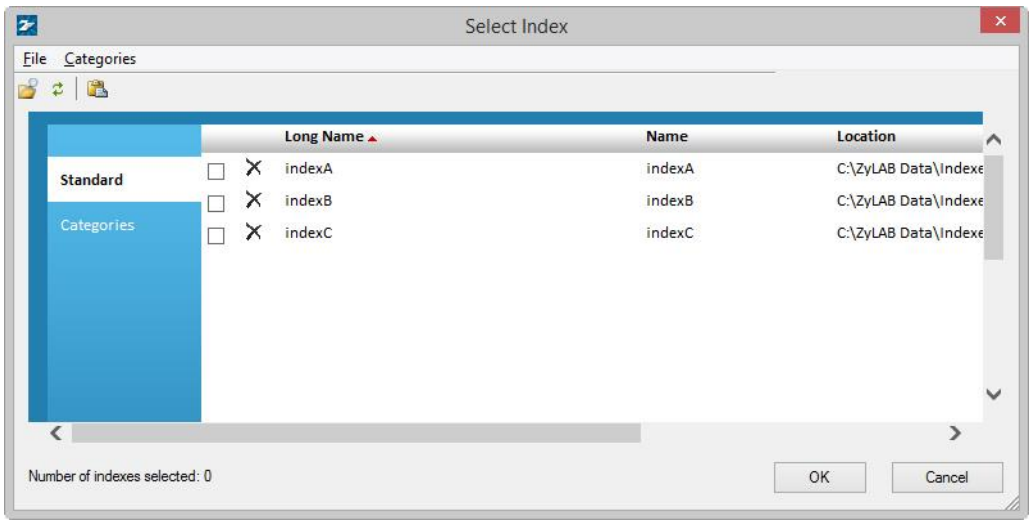
Office documents

Conditions

You have created an index with XML Wrapper, and one or more fields. An Office application (for example, Microsoft Word) is open.

Instructions

1. Open a document.
2. Go to ZyLAB > Archive Active Document.
3. Select an index with XML Wrapper.



4. Click OK.
   The Documents Properties dialog appears.
5. Select the Field names you want to add values to.
6. Add the Field values.
7. Click OK.

Result

You added a document to the selected index. Also, you added fields.

E-mails

Conditions

You have created an index based on the Email Archive template. For more information, see the ZyINDEX manual > Create an index based on a template.

An e-mail application (for example, Outlook) is open.

Instructions

1. Select one or more e-mails.
2. Click the Archive Messages button.

   If you receive a warning, allow access for a few minutes and click Yes.
3. Select an index, based on the Email Archive template.
4. Click OK.
   The Document Properties dialog appears.
   The Field values are automatically added.

   If you selected two or more e-mails, the added Field values are not visible.
5. Click OK.

Result

You added email(s) to the selected index. Also, you added fields.

Other electronic documents

If you want to add field values to electronic documents other than Office documents and emails, you have two options:

1. Save electronic documents in the correct data folder of an index with XML Wrapper (with one or more defined fields). Build the index and add field values with ZyFIND. This option is recommended for large numbers of documents.
2. Upload electronic documents to your Web Client (where you selected an index with XML Wrapper (with one or more defined fields)), and add field values while doing so. You can upload one document at a time.

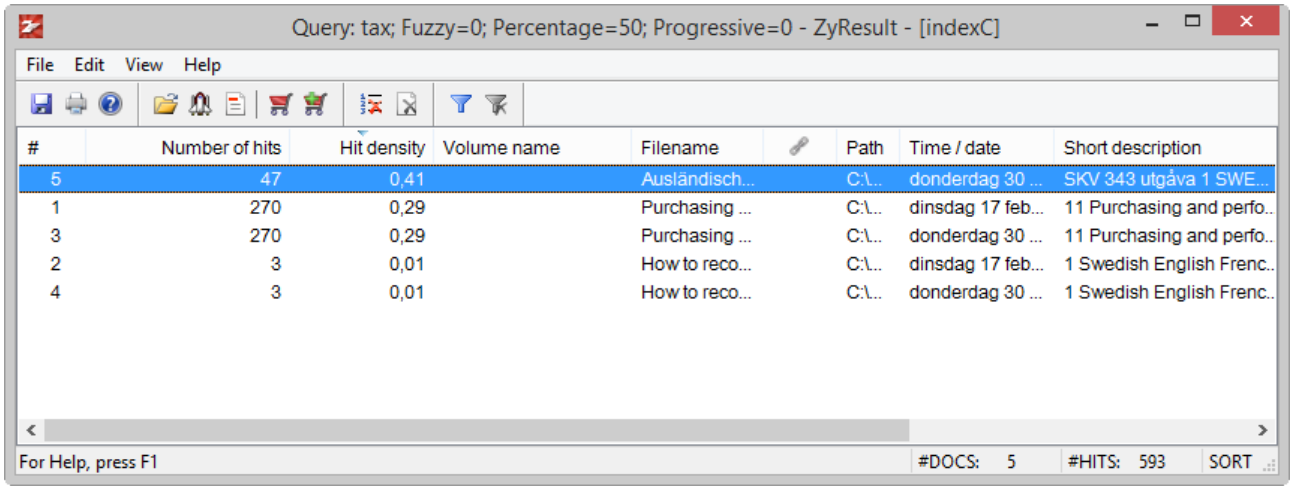
Add field values using ZyFIND

Conditions

You have created an index with XML Wrapper and added fields. You have a large number of electronic documents you want to add field values to.

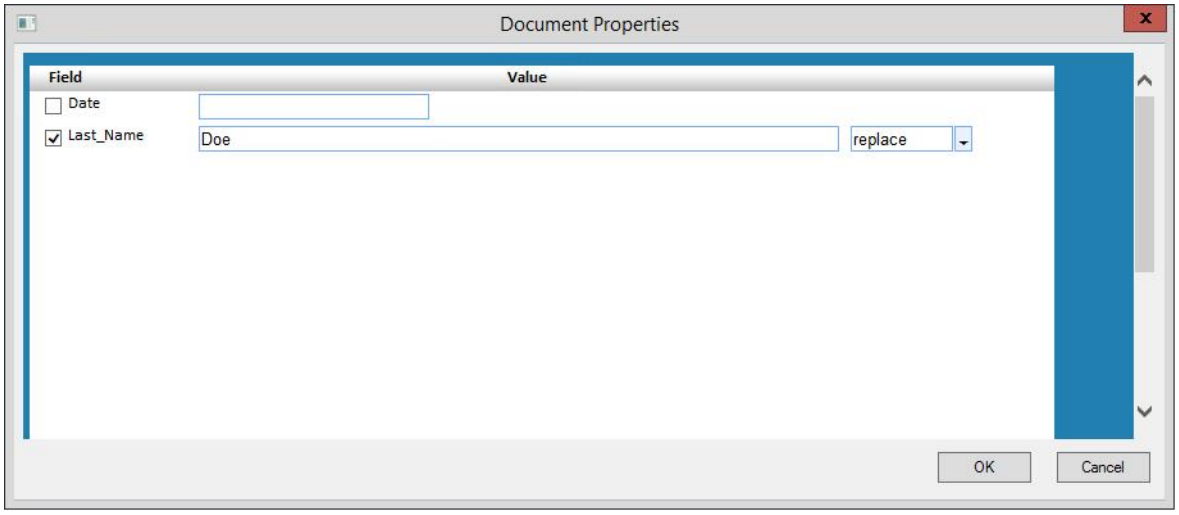
Instructions

1. Save your electronic documents in the correct data folder (Electronic).
2. Open ZyINDEX.
3. Open an index with XML Wrapper.
4. Build the index.
5. Open ZyFIND.
6. Go to File > Select index(es).
7. Select the index you just build.
8. Click OK.
9. Search for the documents you want to add field values to.
   The documents appear in ZyResult.



10. Select the documents you want to add field values to.
11. Press Ctrl + F.

12. Double click the correct Field and add a Field value.
13. Select the Field you added a value to.



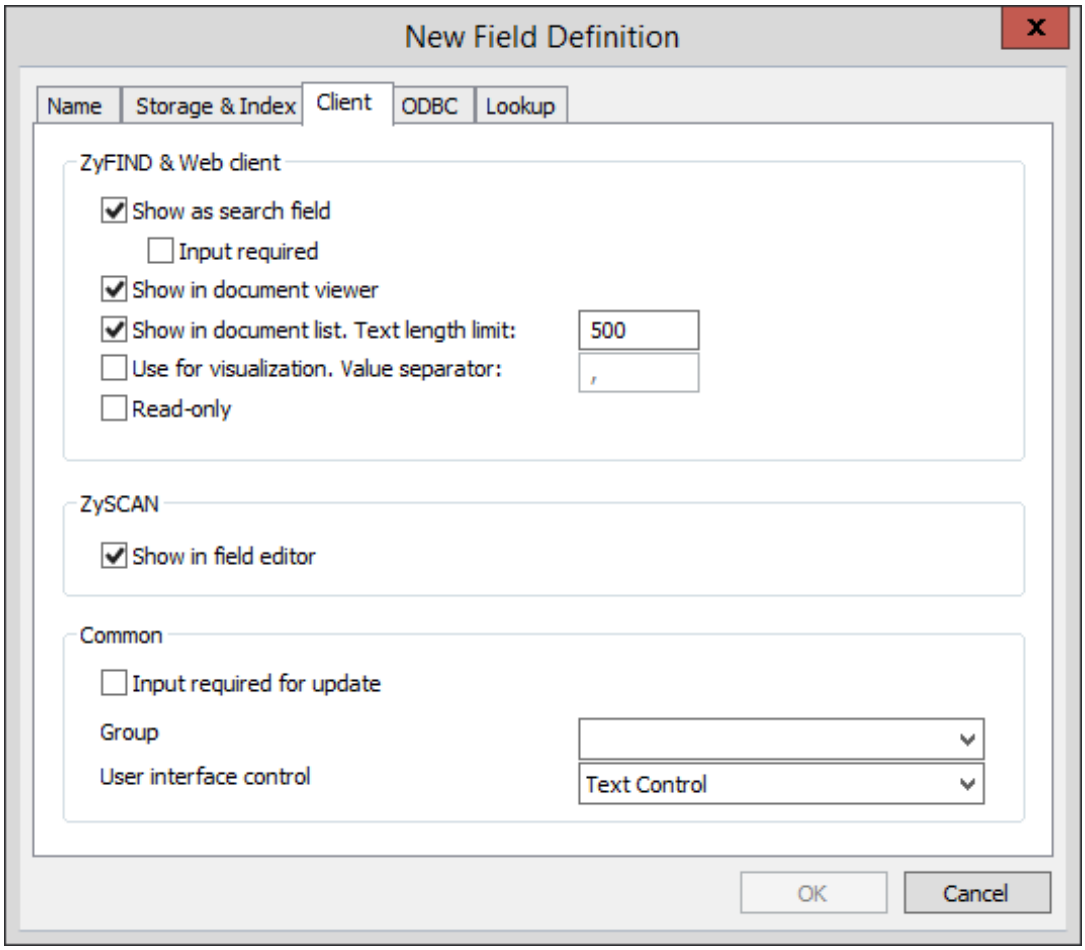
14. Click OK.
15. Go to ZyINDEX.
16. Rebuild the index.
17. Go to ZyFIND and search.

Result

You have added documents to an index with XML Wrapper. You build the index and added field values with ZyFIND. You searched on the added field values, after you rebuild the index.

Note

If you cannot add field values in ZyFIND, check whether you selected 'Read-only' in ZyINDEX when you created the index:



Add field values using Web Client

Conditions

You have one or a few electronic documents you want to add field values to. You have access to a Web Portal that contains an index with XML Wrapper, and one or more fields.

Instructions

1. Select the Contents tab.
2. Select in the Table of Contents the correct index (with XML Wrapper).
3. Click Upload.
   The Upload File - Web page dialog appears.
4. Browse for the file you want to upload.
5. Select the folder (index) you want to add the file to.
6. Fill out the Field values.
7. Click Upload.
8. Click Refresh to check whether the file is added to the Table of Contents.
9. Open ZyINDEX.
10. Select the index you just uploaded a file to.
11. Rebuild by clicking the blue arrow:  .

Result

You uploaded a file to an index with XML Wrapper. Also, you added field values. After you have rebuild the index, you can search the index (and your uploaded files).

OCR

During this stage, the pixels of the images (the scanned documents) are recognized as text (OCR: Optical Character recognition).

Conditions

You are processing a job. ZySCAN is open. You are in the ZyOCR stage.

Instructions

Click "Start OCR" to OCR the current job.

Result

The job is OCRed. You can toggle between text and image with the text and image tabs.

Keep resource usage low

The OCR process takes quite some time. To keep resource usage at an acceptable level, OCR your jobs at a later point in time (at night).

1. Select 'Close Job' (instead of 'Start OCR'). All settings are saved on disk.
2. At the end of the day, click 'OCR all deferred jobs'.

> All feedback from the OCR engine (fatal and non-fatal errors and warnings), will be written in the OCR error log file in the ZyLAB/Information Management Platform/Bin directory.

OCR color files

Make sure 'OCR color images' is checked by clicking the Stage Settings button.

Make sure color images are scanned at 150 dpi, with a maximum of 256 colors.

> Color images will be over 300 kb per page. Deskew and Auto-orientation cannot be used in combination with color scanning.

Export

During this stage, all documents from a job are exported to an export directory. This directory is predefined in the job template.

Conditions

You are processing a job. ZySCAN is open. You are in the ZyEXPORT stage.

Instructions

Click Start Export.

Result

The documents are exported. Now you can build the index to make them searchable.

View and manipulate documents during job

Conditions

ZySCAN is open. You are in one of the stages during a job.

View

Use these buttons to select an image region, zoom in, zoom out, drag, rotate, zoom to height, zoom to width, and fit in window.

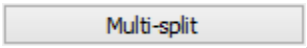
Use these arrows to scroll through the pages and documents.

If you want to select these and other options, you can also click with your right mouse button on the image and choose an option.

Manipulate

Toggle between Image and Text (the tabs), to see on which page you are and in which document.

Click New Document, to indicate that a page is the beginning of a new document. Use this option after scanning.

Click 

, to automatically split large documents. This can be useful with big microfilm conversions or when processing forms or clippings where a document always has a fixed number of pages.

(Semi-)automatic job processing

Jobs can be processed semi-automatically, which means that no explicit action is required. The images in the Image Viewer are not updated. This is done for performance reasons.

You can process ZySCAN automatically. In the digital copier scenario (where ZySCANService monitors one or more directories), this is very useful.
The main advantage is that no person has to be logged on. After rebooting the computer, the service is automatically started. However, if no one is logged on, no drive mappings are available. You can resolve this by using UNC paths to directly reference non-local disk locations.

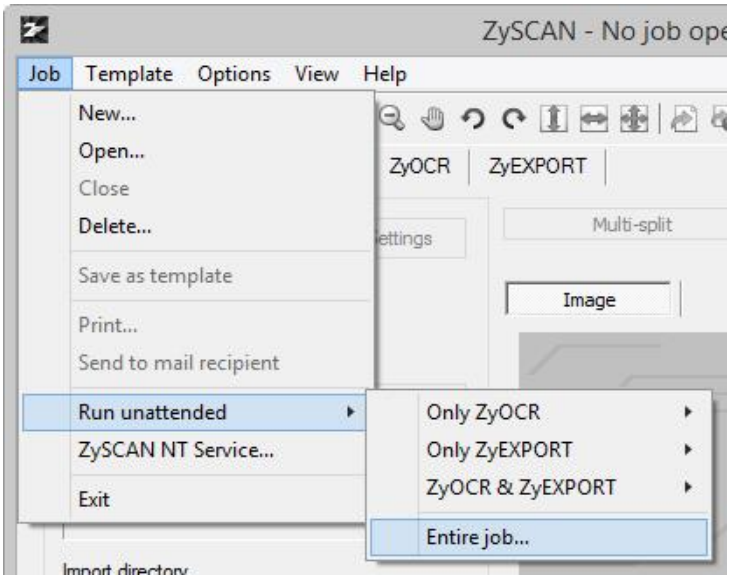
Semi-automatic processing (entire job)

Conditions

ZySCAN is open.

Instructions

1. Go to Job > Run unattended > Entire job.



   The Template Selection dialog appears.
2. Select a job template.
3. Click on the Arrows to the right button:  .
4. Repeat step 2 and 3 until finished.
5. Click OK.

Result

The selected job template(s) are processed.

> A job template may consist of one or more stage(s) of the job process. For example, adding fields with ZyFIELD. Or, importing with ZyIMPORT *and* adding fields with ZyFIELD.

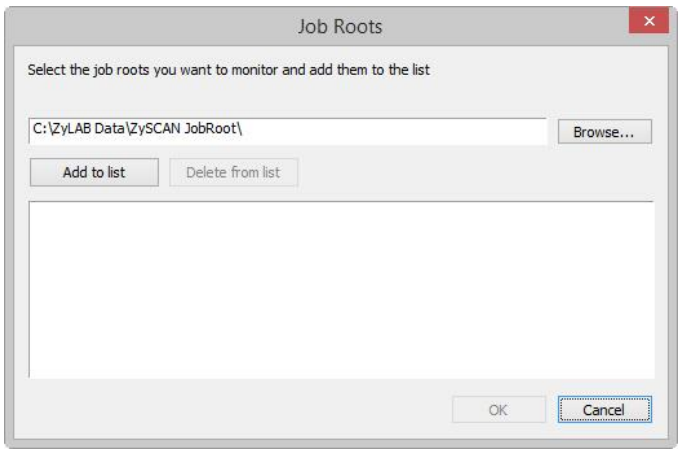
Semi-automatic processing (parts of the job)

Conditions

ZySCAN is open.

Instructions

1. Go to Job > Run unattended > Only ZyOCR, Only ZyEXPORT or ZyOCR&ZyEXPORT >
   a) Current jobroot
   b) Several jobroots
2. If you have chosen Several Jobroots, the Job Roots dialog appears.



3. Browse for the jobroots you want to process.
4. Click the button Add to list.
5. Click OK.

Result

The jobs of the selected jobroots are opened, processed, moved to the next stage and, when finished, closed automatically.

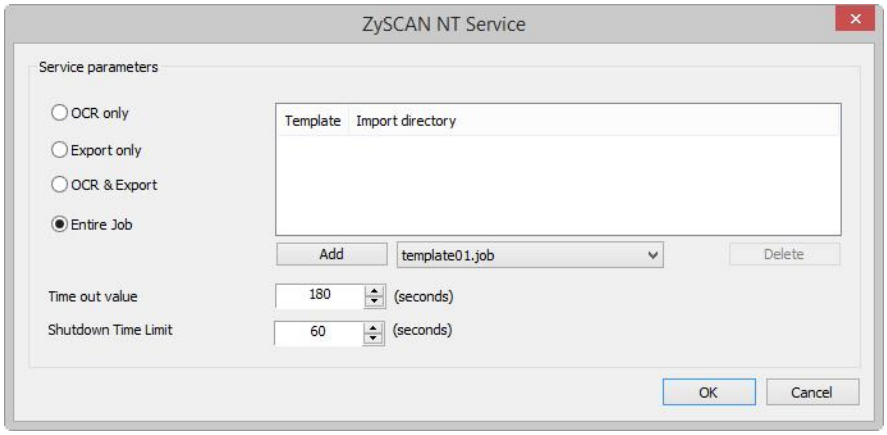
Automatic processing

Conditions

You want to process ZySCAN automatically. ZySCAN is open.

Instructions

1. Go to Job > ZySCAN NT Service.
   The ZySCAN NT Service dialog appears.



2. Select one of the four processes (OCR only, Export only, OCR & Export, Entire job).
   - If you selected "Entire Job", select a job template from the drop down list and click Add.
   - If you selected one of the other options, click Add and browse to add more Job roots.
3. Select and click Delete to delete Templates/Job roots.
4. Define the Time out value.
5. Click OK.
6. Reboot the computer to automatically start the service.

   or

   Go to Start > Settings > Control Panel > Services > ZySCANService and click Start.

Result

All the indexes you included to ZySCAN NT Service are automatically processed.

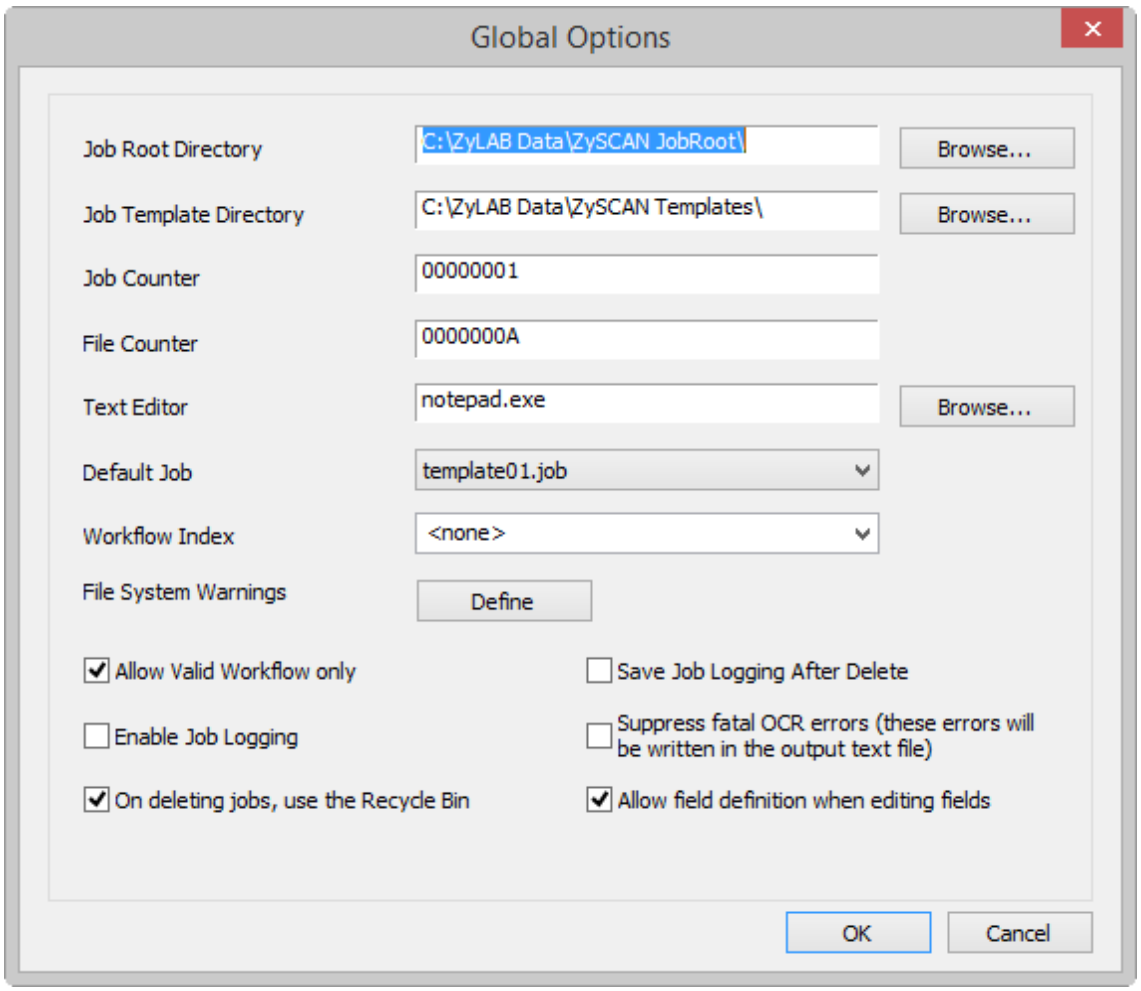
User privileges

Difficulties with starting the service, may be due to a lack of user privileges.

1. Go to the ZySCANService Properties dialog.

2. Select the Log On tab.
3. Select a user (Local System account or another selected account).
4. Click OK.
5. If the user has not enough rights, the operating system will ask to give these rights to the user.
6. Confirm.
   The service is started. If you are working with templates that contain paths over your intranet, it is not possible to use the local system account. It is wise to use the account of the domain administrator.

Global Options



Job Root Directory

Define the location where the content of ZySCAN jobs are stored.

Job Template Directory

Define the location where the ZySCAN templates are saved. The templates are convenient for creating more than one job with the same settings, and necessary for automatic processing of large amounts of data. For information on creating a template, see *Create a job template* (page 2).

Job Counter

The Job Counter is the folder name of the job. With each job the counter will be raised with 1. The counter is linked to the machine on which ZySCAN runs during creation of the job. If the job root is located on a

network, the job name can be used to determine the origin of the job. The job name can be saved in an automatic job name field.

File Counter

You may want to define the File Counter if you have more than one workstation, on separate locations. During research, this will help you determine the origin of documents. For example, the File Counter may start with AA for Aruba, or NL for the Netherlands.

Text Editor

Obsolete.

Default Job

Define the Job template which will be shown when creating a new job template. The new job template can be based on the default Job template, but it is possible to choose another template.

Workflow Index

If you want to start a workflow whenever a document is exported to an index/database, select a workflow index from the dropdown listbox.

File System Warnings

If you want to assist users with dealing with the file system limits when processing jobs, define File System Warnings. Depending on the settings defined in the new File System Warnings dialog, messages will appear. With File System Warnings defined, you can create a limit on the number of finished jobs in a job root that can be processed, the number of pages per job, and the number of pages per document. The user gets a message each time one of these three limits is reached, and react on it. This will prevent instability within ZySCAN due to hardware issues, memory issues, data loss caused by server crashes, etc.

For more information on how to define File System Warnings, see *File System Warnings* (page 76).

Allow Valid Workflow only

With this option selected, users cannot move freely between ZySCAN stages. This allows you to separate responsibilities during the scanning process (for example: automatic scanning/importing, after which a user defines field values, followed by automatic OCR and export), or to force users to follow the preferred scanning scenario (import/scan, fields, OCR, export).

Enable Job Logging

If you select Enable Job Logging, a statlog.txt file will be created in the job directory. This file will contain information like "ZySCAN added to workflow", "ZySCAN removed from workflow", "ZyOCR no longer batch stage", "ZyFIELD stage done", "Page added".

On deleting jobs, use the Recycle Bin

If you want to move the job directory to the Recycle Bin after completion of the job, select this option **and** define in the job template the option "Delete job when finished successfully" (Template Wizard - ZyExport > Process Control tab).

If you want to remove the job directory from the hard disk immediately after completion of the job, do **not** select this option **and** define in the job template the option "Delete job when finished successfully" (Template Wizard - ZyExport > Process Control tab).

Save Job Logging After Delete

Select this option if you want to save the statlog.txt file (which is created with the Enable Job Logging option selected above) when the job directory is deleted.

Suppress fatal OCR errors (these errors will be written in the output text file)

Select this option if you want to prevent that an error dialog will abort the job or stop ZySCANService (and restarted). With this option selected the job will continue with the next page. However, though the job may continue, it is possible that these following pages are not OCRed.

Allow field definition when editing fields

This option is selected by default. If you deselect it, the "Edit field definitions" button in the Field Editor dialog will be disabled.

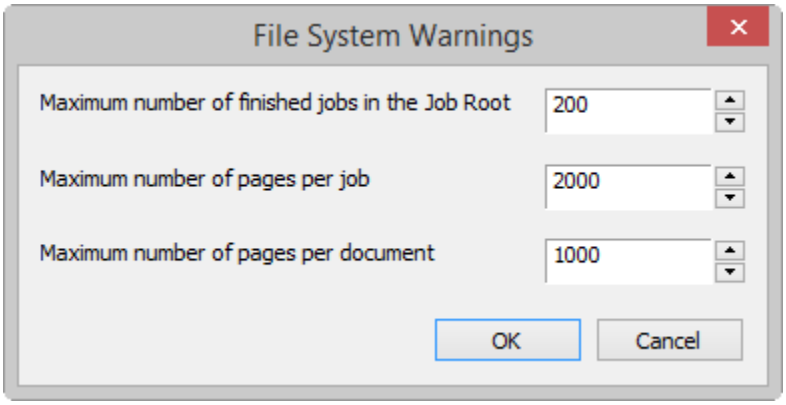
File System Warnings

Conditions

You want to assist users with understanding the file system limits when processing jobs. Depending on the settings defined in the File System Warnings dialog, messages will appear. With File System Warnings defined, you can create a limit on the number of finished jobs in a job root that can be processed, the number of pages per job, and the number of pages per document. The user gets a message each time one of these three limits is reached, and react on it. This will prevent instability within ZySCAN due to hardware issues, memory issues, data loss caused by server crashes, etc.

Instructions

1. Go to ZySCAN > Options > Global Options.
2. Click, next to the option File System Warnings, the Define button.
   The File System Warnings dialog appears.

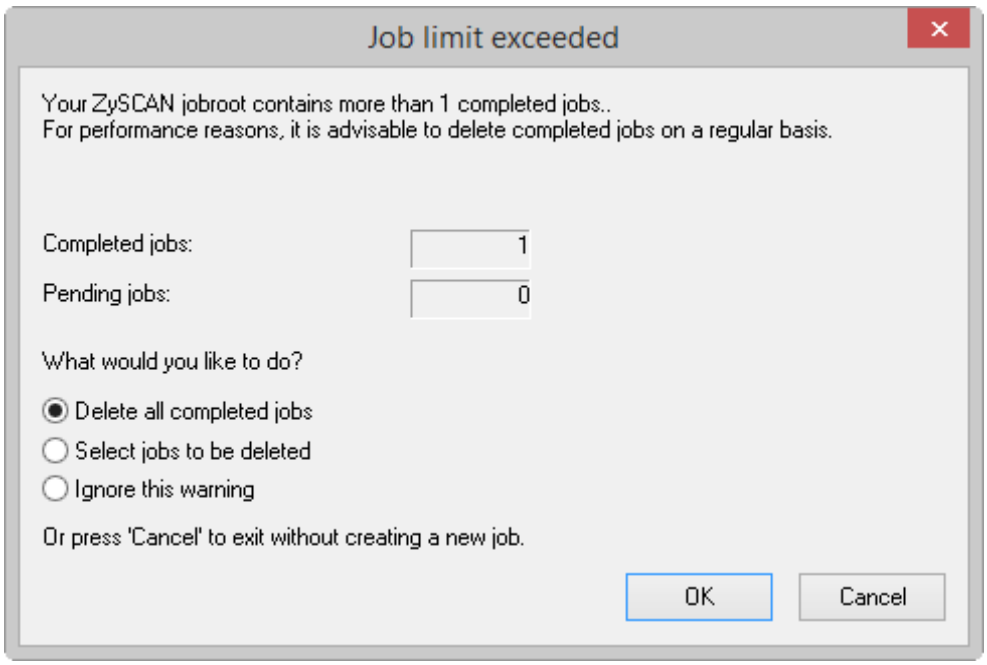


3. Define the maximum number of finished jobs in the Job Root (1-999999).
   In some cases users do not empty their jobroot and/or do not delete completed jobs. This can result in an enormous amount of completed jobs in the jobroot, which will affect performance.
4. Define the maximum number of pages per job (1-999999).
   Some users scan very large batches in one job. Users will be advised to start a new job after a certain amount of pages.
5. Define the maximum number of pages per document (1-999999).
   Some documents can be very long because users scan large batches as one document.
6. Click OK twice.

Result

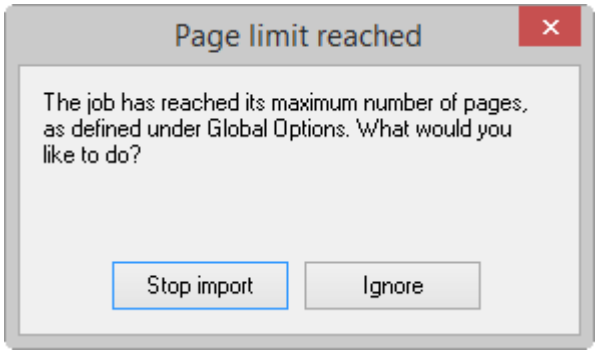
You have defined the limits based on which warning messages appear. Limits can be reached during import or scanning.

When the maximum number of finished jobs in the Job Root is reached, the following message appears:



The user can select one of the three options, and click OK. Or the user can stop processing by clicking Cancel.

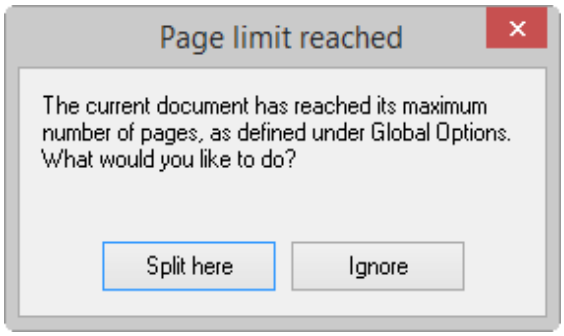
When the maximum number of pages per job is reached, the following message appears:



The user can stop importing/scanning, or ignore the message. If the user chooses to ignore this message, no other warnings will appear and the whole job will be imported/scanned. If scanning is

stopped, pages that are already processed by the scanner (and exceed the limit defined), are not lost, but included.

When the maximum number of pages per document is reached, the following message appears:



The user can split the document, by selecting the Split here button. Once the defined maximum of pages in a document is reached again, the message will appear again. If the user chooses to Ignore this message, no other warnings will appear and the whole document will be imported/scanned.

Note

In unattended mode, via ZySCAN > Job > Run Unattended (entire job), no job or document page warnings are given. However, if a job root limit is reached, a message will appear.

In unattended mode, via ZySCANShellUtility, all messages are repressed.

In unattended mode, via ZySCANService, there is no user interaction.

Advanced Scanning

The ZySCAN module contains additional settings that can enhance image quality and recognize patch pages and barcodes (in combination with image enhancement software or hardware of Kofax). This, together with some other advanced features and functionalities, for example different import filters, zonal OCR and the jobroot internals, will be explained in the following sections.

Kofax is an accelerator board vendor. Major scanner vendors are qualified but mainly towards the high end. Kofax offers image processing for both video and SCSI scanners. Kofax uses ISIS drivers for most low to mid-range scanners. *Adrenaline* is a complete family of scanner controllers, image-processing accelerators, and software engines designed to offer support for professional document scanning. From workgroup to high-volume, SCSI to video, black and white to color, *Adrenaline* makes your scanning easier, better, faster, and more reliable.

Certified compatibility. Kofax tests and certifies Adrenaline products to work with document scanners from Bell & Howell, Canon, Fujitsu, Hewlett-Packard, Kodak, Panasonic, and Ricoh.

Dependable installation and operation. Adrenaline is designed for document scanners, so installation and operation are consistent and reliable.

Sophisticated image processing, including black border removal, deskew, line removal, deshade, destreak, despeckle, and character repair. (650i, 850. 1700 models)

Unsurpassed bar code recognition plus advanced recognition features such as patch code recognition, page registration, and form recognition. (650i, 850, 1700 models)

The image enhancement properties, patch code recognition properties and bar code recognition properties can be found in the Template Wizard - ZySCAN/ZyIMPORT, Image Processing tab. In case you want to use these options during scanning, you have to select them in the scan template.

Image Processing

When Kofax hardware or software is installed it is possible to enhance the quality of your TIFF files. This can help you to achieve a better OCR result.

Instructions

1. When creating a job template, in Template Wizard - ZySCAN/ZyIMPORT, select the Image Processing tab.
2. Select Image Enhancement and select the Properties button.
   Select one of the following options:

Deskew properties...
: Compensates for image skew during scanning, resulting in straight images. The deskew feature does not require lines or leading edge borders.

Black border properties...
: Eliminates the black edges generated by scanners with black backgrounds, reducing the image file size while improving legibility.

Deshade properties...
: Adjusts for shaded backgrounds and eliminate random noise (speckles and streaks) whether present on the original document or generated during the scan.

Despeckle properties...
: Adjusts for shaded backgrounds and eliminate random noise (speckles and streaks) whether present on the original document or generated during the scan.

Image filter properties...
: Makes documents more legible and recognizable by performing a variety of image enhancements. Lines and characters can be smoothed, thickened, thinned, filled, or outlined.

Line removal properties...
: Eliminates all unwanted horizontal and vertical lines.

Streak properties...
: Adjusts for shaded backgrounds and eliminate random noise (speckles and streaks) whether present on the original document or generated during the scan.

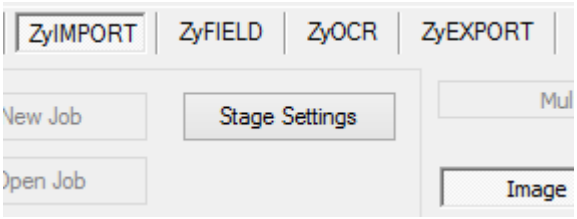
3. Select Patch code recognition if you want to separate documents. For more information, see *Patch pages* (page **88**).
4. Select Barcode Recognition if you want to store recognized barcode values as field values. For more information, see *Barcode Recognition* (page **82**).

Result

You set one or more image processing properties, and thus enhanced the quality of your TIFF files.

Note

If you want to modify the Image Processing settings while running a job (you are in the ZySCAN or ZyIMPORT stage), click the Stage Settings button. This will trigger the ZySCAN/ZyIMPORT General page, plus the Image Processing tab.



Barcode Recognition

Conditions

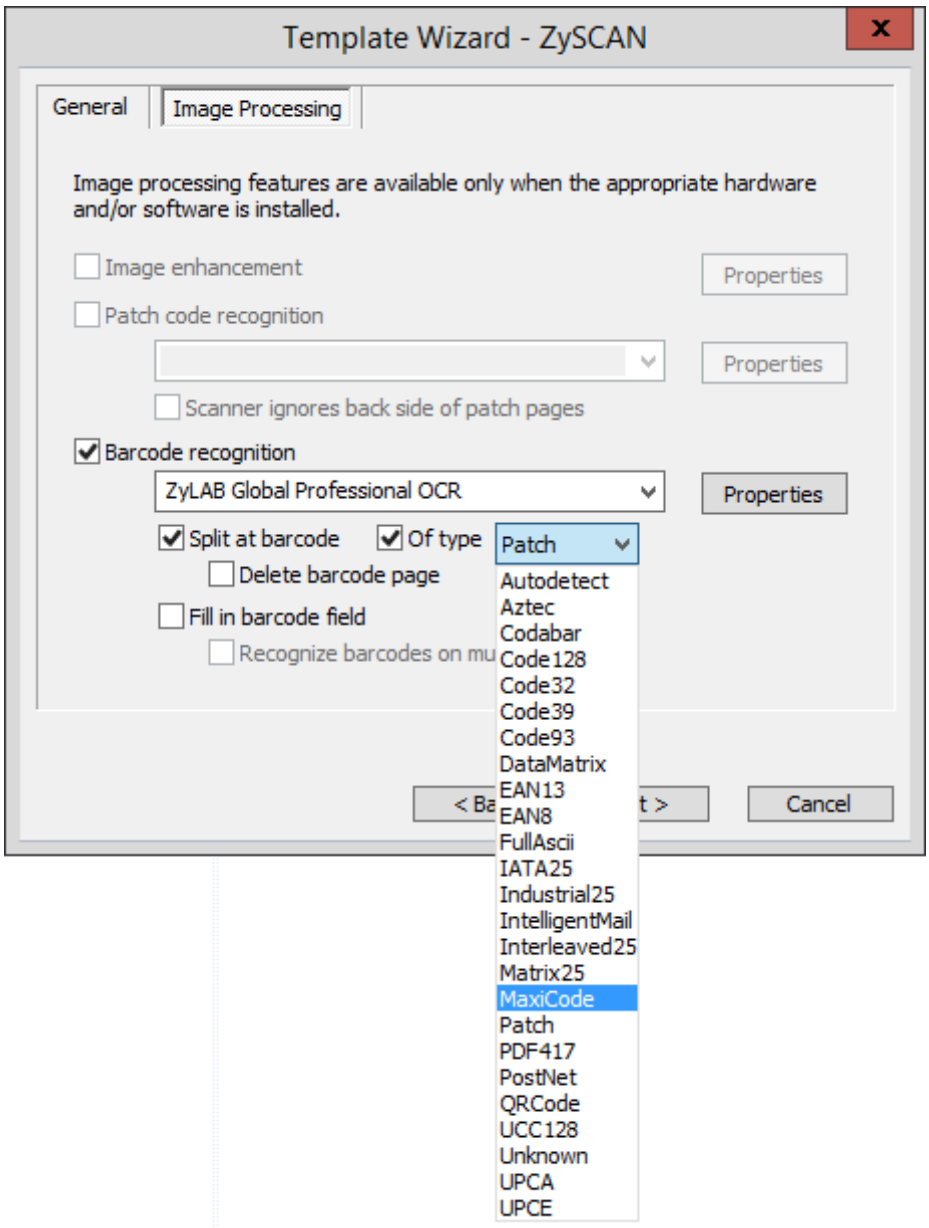
You want to automatically store recognized barcode values as field values and/or you want to separate documents.

Instructions

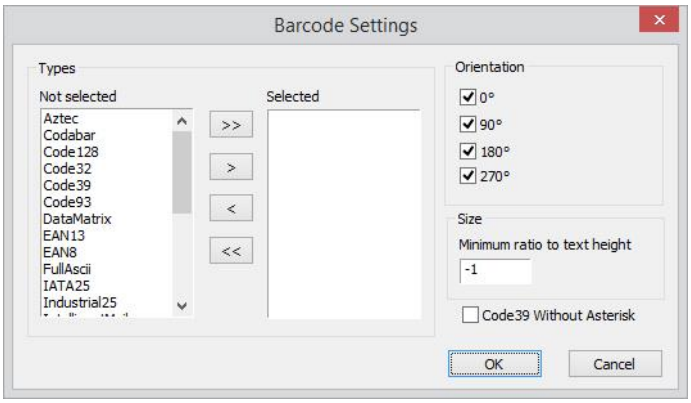
1. Open ZySCAN.
2. Go to Template > New Template.
3. Select Define new job template (or base it on an existing template).
4. Click Next.
5. Define Internals, and click Next.

   It is advised to link this job to an index (with barcode fields).
6. Define Stages (select ZySCAN or ZyIMPORT).
7. Click Next.

8. Click the Image Processing tab.
9. Select Barcode recognition.



10. Select a Barcode reader from the dropdown listbox.
11. Click the Properties button.
    If you selected ZyLAB Global Professional OCR, the following Barcode Settings can be defined:



Types: Select the appropriate barcode Types.

- Codabar
- Code 128:

- Code 39 (3 of 9):

- Code 39 Extended
- Code 39 HIBC
- Code 93
- D 2 of 5
- EAN 128
- EAN 13
- EAN 2
- EAN 5
- EAN 8
- Interleaved 2 of 5
- MSI Pharma
- MSI Plessey
- Postnet:

- Postnet 32
- Postnet 52
- Postnet 62
- UPC-A:

- UPC-E

ZyLAB backfile services uses the barcode 128 type, as this type has proven very reliable in combination with Kofax barcode recognition. Barcode 128 is also the barcode type that is printed by the ZyLAB Document Registration Module.

Orientation: The application searches for bar codes in a linear fashion, examining the search area for potential bar codes. For horizontal bar codes with an orientation of 0, for example, it works down the image starting on the left and searching toward the right edge; for vertical bar codes, it works across the image starting on the top edge and searches top to bottom. Bar codes can be oriented on an image in four general directions. You can select the check box for 0, 90, 180, and/or 270 for the direction you would like to search.

If you are scanning pages containing barcodes that are put on in a random direction, specify the directions in which they have to be recognized:
- 0 Horizontal, rotated 0 degrees, read left to right
- 90 Vertical, rotated 90 degrees to the right, read top to bottom
- 180 Horizontal, rotated 180 degrees to the right, read right to left
- 270 Vertical, rotated 270 degrees to the right, read bottom to top

To detect barcodes placed at an angle, select the checkbox 'Detect skewed barcodes'.
Note**:** The more checkboxes are selected, the more performance will slow down.

Size: Define the minimum ratio to text height of the barcode (distance between the lines and numbers of a barcode) to enhance reliability and performance. Default is -1 which means the size is adjusted automatically.

In order to recognize the Code39 barcode type without the start/stop asterisk, select the checkbox 'Code39 Without Asterisk'. With this option selected the asterisks will be added to the barcode (again).

Click OK.

12. Optionally, you can specify that barcodes should be treated as patch pages (with the option to split at barcode of a specific type), and (if necessary) deleted afterwards. In contrast with a patch page, a barcode page (that is used to indicate the start of a new document) is not deleted from the document.

    You can also store the barcode value in an index barcode field by selecting 'Fill in barcode field'. This will store the barcode that is scanned last in the barcode field. When you want each scanned barcode value stored in scan order in barcode fields select 'Recognize barcodes on multiple pages'. Note that you must have an adequate quantity of barcode fields in your index.

13. Click Next.
14. In Template Wizard - ZyFIELD, click Field Definitions.

15. Make sure that the field(s) you are linking to, are defined as barcode fields. If necessary, add or edit fields.
16. Click OK.
17. Click Next until Finish, and complete the Template Wizard.
18. Start a New Job with the newly created Job template.
19. Go through all stages, and close the job.

Result

You have completed a job (scanned your documents), and stored recognized barcodes as field values.

Note

For more information on defining a new Job template, see *Create a job template* (page 2).

If bar codes are too large, they won't be recognized as bar codes.

See also the ZyINDEX manual > Synchronize fields and database records with ODBC.

Separating documents

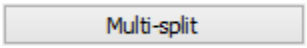
You can automatically separate documents within jobs using Patch pages, White pages or Barcode pages.

A **Patch page** is a page with a defined logo functioning as document separator.

White page separation speaks for itself: a white page functions as a document separator. However, this is not a very reliable method, because often a white page is not recognized due to image noise. The advantage of white page separation is that no additional Kofax Adrenaline hardware or software engine is required.

A **Barcode page** is a page with a bar code, often used to add database records in the ZyLAB keyfields, but also to separate documents. (see *Barcode Recognition* (page 82)),

Separation based on bar codes or patch pages are highly reliable methods to split documents automatically. Whenever the documents in a job have a fixed number of pages, the Multi-split button



allows you to split the job in batch. This can be useful with microfilm conversions or when processing forms or clippings where a document always has a fixed number of pages.

Patch pages

There are two different patch pages:

a *document separation page*, which indicates the start of a new document, and

a *stop scanning page*, which will show the Kofax settings dialog to enable the user to change scanner settings like paper size or switch to duplex scanning.

A Kofax Adrenaline board or software driver with image enhancement is required. The patch pages can be found in the ~\ZyLAB\Information Management Platform\AddOn\Patch pages folder, and are called:

NewDocumentPatchPage.tif

Patchcode.tif

BLANK.tif

In case you want to use them, print them out and put them in between the documents that need to be separated, or in between documents where different scanner settings are needed.
A big advantage is that you can keep on scanning without manually separating documents. This is very helpful with high volume scanning. With the stop page the scanner can be stopped to do some manual adjustments.
Recognized patch pages will be deleted, once their job is done. They are not included in the index.

Recognize Patch pages

1. Create a template in ZySCAN
2. In Template Wizard - ZySCAN/ZyIMPORT, select the Image Processing tab.
3. Select Patchcode recognition.
4. Depending on the tif-file you are using, select Kofax or Twain from the dropdown listbox.

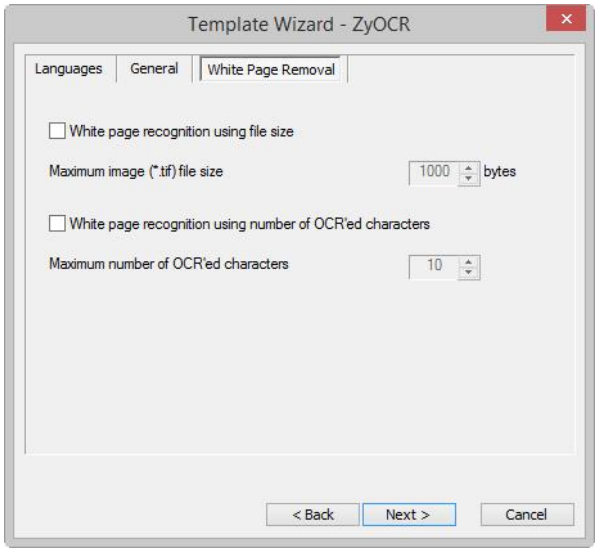
White pages

Separating documents based on the contents (or rather, the lack of contents), can be done in the following way:

White Page Recognition using File Size, or

White Page Recognition using Number of OCR'ed Characters.

Additionally, you can set Maximum image file size and Maximum number of OCR'ed Characters. Maximum image file size and Maximum number Of OCR'ed Characters is unlimited.



The size of an average white page depends on the source and compression. Using either ZyLAB Professional OCR or ZyLAB Basic OCR, our test lab suggests the following values as a minimum image file size:

Source	Compression	Size
Wanglmg.exe	Group 3	6 Kb
Wanglmg.exe	Uncompressed	459 Kb
SP600 150dpi	Group 4	1 - 2 Kb
SP10 150dpi	Group 4	1 - 2 Kb

Note

We don't recommend White page removal, as it is very difficult to determine what the amount of bytes on a white page will be (when is a page completely white?), and what the number of OCR'ed characters will be (what if a character is not recognized?).

Automatic image enhancements

KOFAX supports automatic enhancement of images based on a new image enhancement method called Virtual ReScan (Kofax VRS). This software enables you to scan your documents faster and with a better quality. It corrects, if needed, the images so the text on the image has a better quality and so can be recognized better by the OCR engine(s). The idea is that you never have to do a rescan and adjust the scanner settings manually.

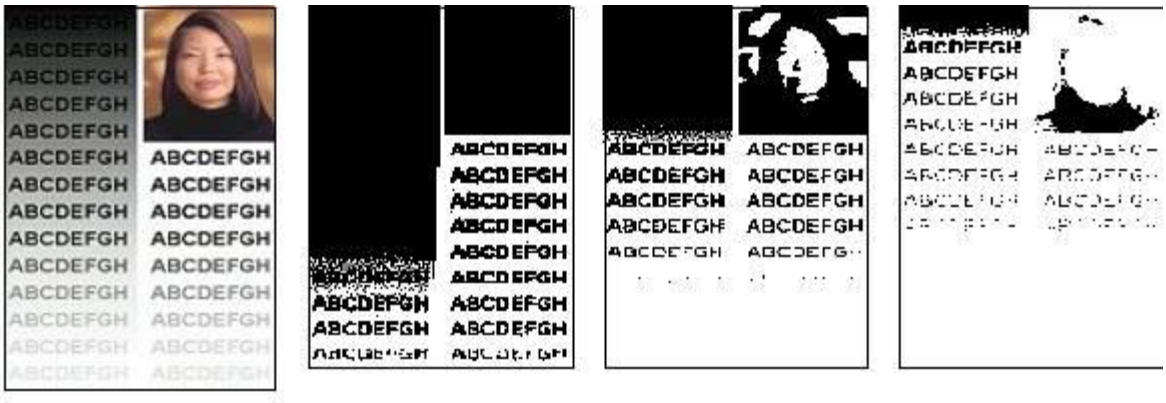
The purpose of document scanning is to electronically create accurate black-and-white images of original source documents. The originals may also be in black-and-white, but often they will feature colors, shaded backgrounds, reversed text or other elements difficult for a bitonal scanner to translate into crisp, clean, black-and-white images.
Without VirtualReScan, even the most skilled scanner operator must go through a series of scans and rescans to obtain an acceptable image from a complex document. Even this process yields less than perfect results. And the more documents you have to scan, the longer and more costly this process is.
An alternative is to capture the document images as color or grayscale files. While this results in cleaner, more readable images, it also results in excessively large files - too large for rapid transport and storage over most conventional networks.

VRS uses the 256 shades of a grayscale image to analyze and determine the optimum settings for each document. It then converts this image into a small, perfectly readable black-and-white image. Thus VRS gives you the highest quality black-and-white images with small file sizes.
VRS is image enhancement technology providing: good quality images to your system with minimum effort (you don't have to do the fine tuning of your scanner manually) and represents all the content of the original with the smallest file size possible.
VRS also watches the status of the scanner (out of paper, paper jam, connection, etc.) and guides the end user to resolve any hardware issues.

Conversion of the document with thresholding

The quality of the made scans depends also on the thresholding of the VRS module. Thresholding is the conversion of a multi-bit grayscale image into a black and white image.

When a certain area contains more pixels then a certain level (threshold) given in will the area become completely black. This concept of simple thresholding results in a compromise. Whatever threshold level, there is always something sacrificed.



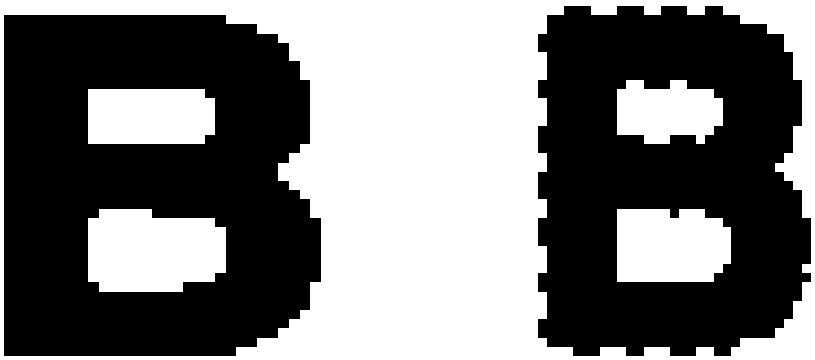
Look at the black & white image with different threshold levels. Whatever setting we choose, we always lose some text. The threshold value of 55 (third picture) represents the picture rather ok. But all the faint text is gone. The dark value (threshold 15 (second picture)) shows more text, but the picture is completely gone and the dark backgrounds turn completely black, hiding the text. The light setting (threshold 95 (last picture)) reveals the text superimposed with the dark background, but all the normal text and faint text are completely gone.

VRS eliminates the compromise of thresholding by using a dynamic way of thresholding so the most left picture will be the result.

Suppressing shaded and dark backgrounds and deskew properties

VRS also suppresses shaded and dark backgrounds. This makes the text more readable and results in small file sizes.

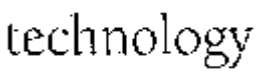
Traditional deskew corrects the black & white image directly, resulting in jagged edges and artifacts (figure below, right side). VRS deskews the gray image first and then converts it into a black & white image (picture below, left side). VRS grayscale deskew produces crisper text.

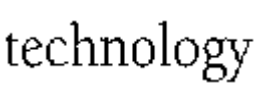


Combined with VRS' automatic text enhancement, OCR forms processing systems produce up to 20% less questionable characters!

Another thing that VRS does is fusing the edges of broken characters. This helps the OCR engine to recognize the text on the images better and can read these characters much more accurately.

Below examples of the recognition on characters that are scanned with and without VRS are given. In first figure the broken characters that are made due to scanning without VRS can be seen. A lot of characters will not be recognized correct, this makes it harder to find the documents you are looking for.
The second figures shows the broken characters repaired by the edge fusion of VRS. The result of the OCR engine recognizing these characters. All characters will be recognized correct. Searching on the word "technology" will give a result now.





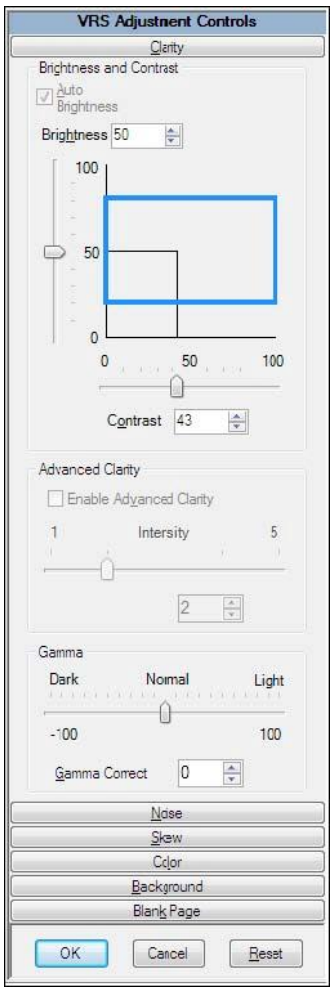
VRS corrects 99% of the images automatically and warns the user if an image is out of range. Adjustments of images can be done without a physical rescan of the original.

VRS and ZySCAN

The installation of the VRS module is practically the same as other Kofax products.
In this section will be explained how VRS works together with ZySCAN, and what to do if a scanned image does not match the requirements you gave in. The most important requirements you can give in are the brightness and the contrast of the documents.
As stated before VRS not only allows you to scan your images faster and with a better quality but also supports you during scanning.

The Auto Resolve Manager pops up when something has happened during scanning. Examples of these errors are: scanner out of paper; no connection with scanner; paper jam; bent corners, etc.
In high-volume situations where scanning speed is critical, VRS can be set to perform fast scanning at a lower dots-per-inch (dpi) resolution. After analyzing the image, VRS will then convert the final bitonal image (black and white) into a higher resolution dpi for better on screen viewing.

When you configure the VRS module the most important thing is the clarity. You only have to draw a rectangle that gives the settings for the contrast and the brightness ranging from 0-100.



The brightness and contrast levels of each document will be analyzed, comparing them to the user-defined acceptable range. Exceptions are automatically corrected or can be displayed to the operator for manual adjustment. In manual mode, the operator uses the on-screen view of the image to read just clarity settings until the desired result is obtained.
VRS lets the scanner operator further enhance the image by thinning or thickening lines and characters and removing excessive speckling. With noise reduction, you obtain crisp, clean images every time.
VRS will display optimum settings for each scanned image to allow users to create new default settings for common documents. Thus, a form printed on difficult-to-read color paper can be scanned and analyzed so that the optimum settings for that type of document can be created and saved for future use. VRS lets you save multiple document profiles to accelerate the scanning process.

In the figures below you can see the difference of the same document in the viewer scanned with and without VRS. The first picture is the original document. The second one is scanned without VRS. The third one is scanned with the VRS module. Evident differences can be seen in parts that have a low contrast, look for instance at the word 'airway' in the upper left corner. Also the difference can be seen in the right part of the page that is fading. The lower right part in the image that is recognized with VRS can still be read.


AIRWAY USA Airbill 8070309722286

0210 Form I.D. No. **Billing Copy**

1 From
Date 07-05-00 Sender's Account Number
Sender's Name J.D. Moons Phone 949 727 1733
Company Kofax
Address 16245 Laguna Canyon Road Dept./Floor/Suite/Room
City IRVINE State CA ZIP 92618-3603

2 Your Internal Billing Reference Information

3 To
Recipient's Name Phone
Company
Check here if residence
Address (To "HOLD" at location, print address here) Dept./Floor/Suite/Room
City State ZIP

For HOLD at Location check here
1 Hold Weekday 31 Hold Saturday

For WEEKEND Delivery check here
3 Saturday Delivery 33 NEW Sunday Delivery

1 2 3 4 5 6 7

VRS

4a Express Package Service Packages under 150 lbs.
1 Priority Overnight 5 Standard Overnight
6 First Overnight
3 2Day 20 Express Saver

4b Express Freight Service Packages over 150 lbs.
7 Overnight Freight 8 2Day Freight 83 Express Saver Freight
(Call for delivery schedule. See back for detailed descriptions of freight services.)

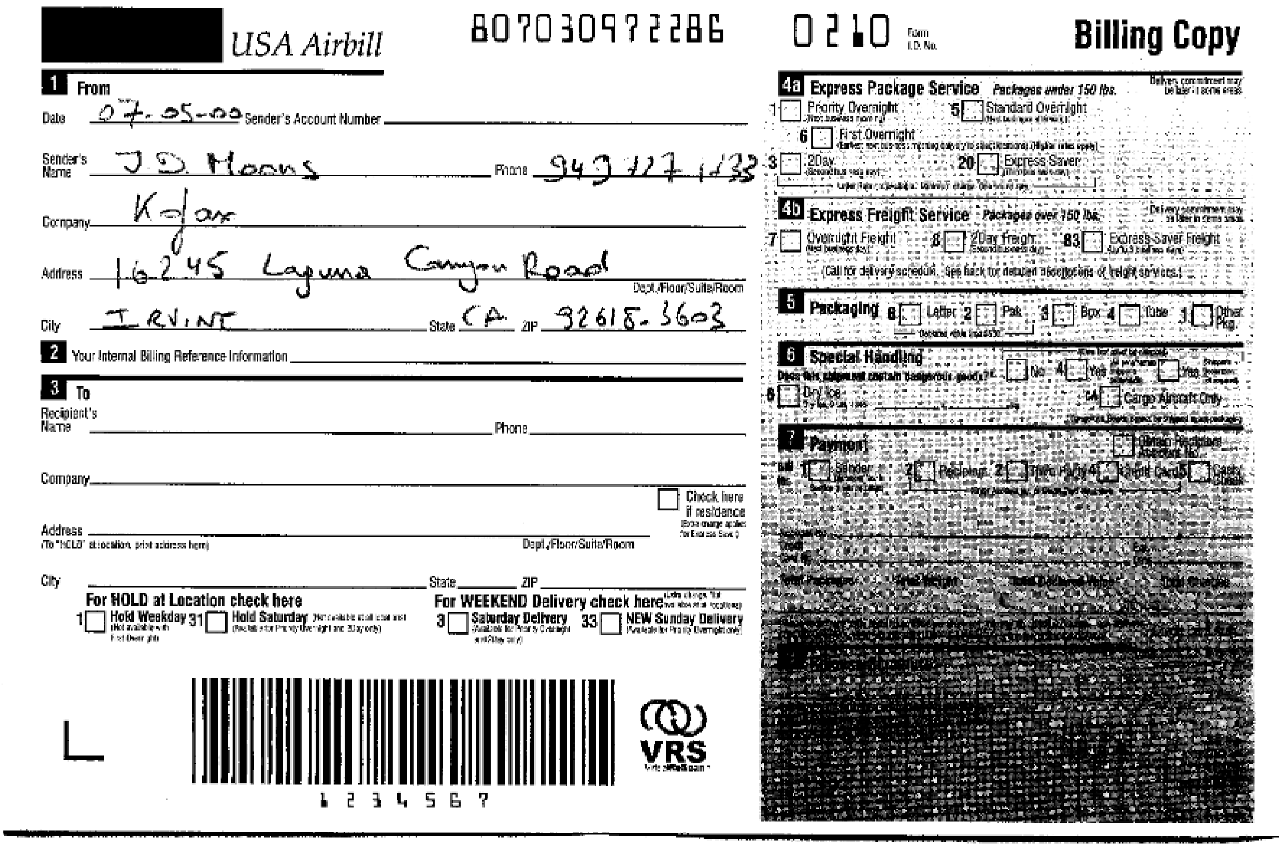
5 Packaging 6 Letter 2 Pak 3 Box 4 Tube 1 Other Pkg.

6 Special Handling
Does this shipment contain dangerous goods? No 4 Yes Yes
6 Dry Ice CA Cargo Aircraft Only

7 Payment
Bill to: 1 Sender 2 Recipient 2 Third Party 4 Credit Card 5 Cash/Check
Obtain Recipient Account No.
Account No.
Credit Card No. Exp. Date
Total Packages Total Weight Total Declared Value* Total Charges
.00
Credit Card Auth.

8 Release Signature

321


[redacted] USA Airbill 8070309722286

0210 Form I.D. No. Billing Copy

1 From
Date 07-05-00 Sender's Account Number
Sender's Name J.D. Moons Phone 949 727 1733
Company Kofax
Address 16245 Laguna Canyon Road Dept./Floor/Suite/Room
City IRVINE State CA ZIP 92618-3603

2 Your Internal Billing Reference Information

3 To
Recipient's Name Phone
Company
Check here if residence
Address Dept./Floor/Suite/Room
City State ZIP

For HOLD at Location check here
1 Hold Weekday 31 Hold Saturday

For WEEKEND Delivery check here
3 Saturday Delivery 33 NEW Sunday Delivery

1 2 3 4 5 6 7

VRS

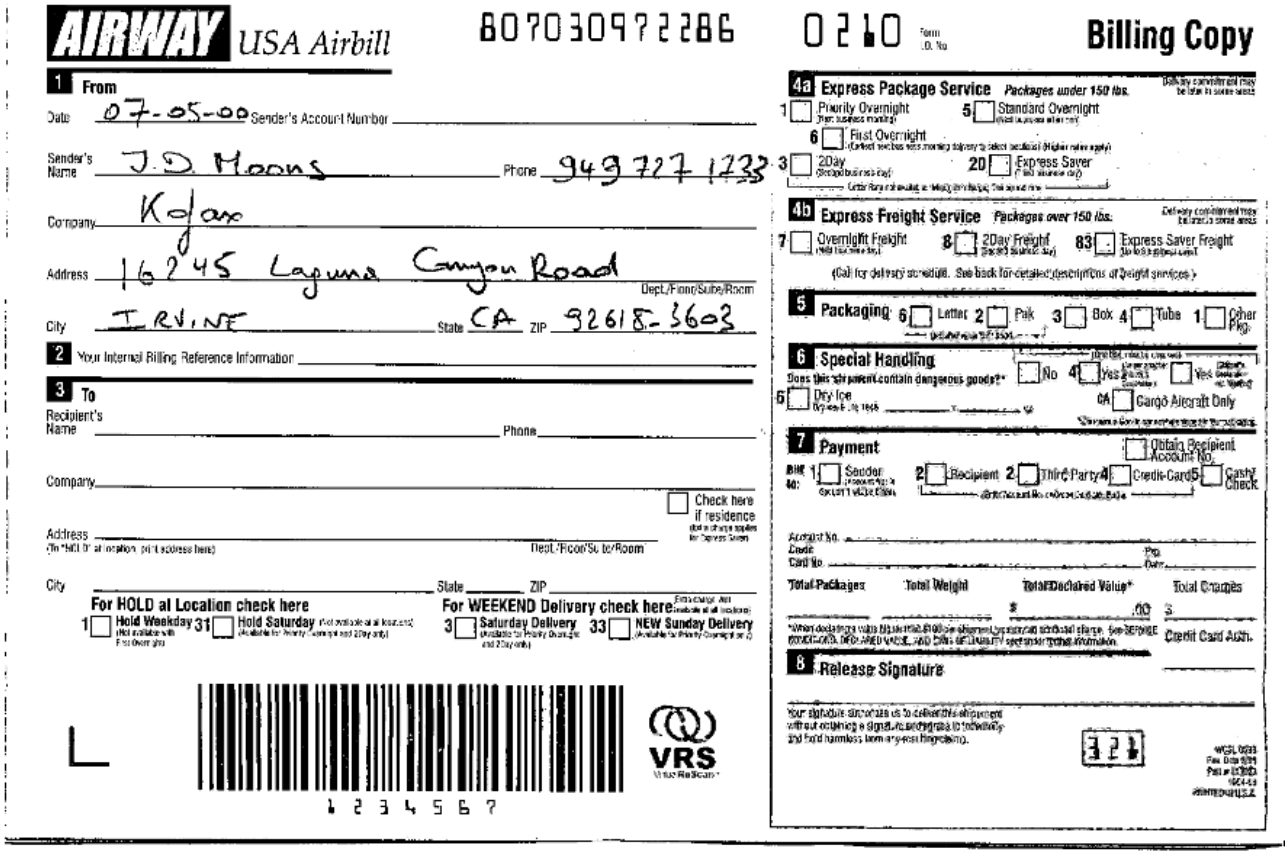
4a Express Package Service Packages under 150 lbs.
1 Priority Overnight 5 Standard Overnight
6 First Overnight
3 2Day 20 Express Saver

4b Express Freight Service Packages over 150 lbs.
7 Overnight Freight 8 2Day Freight 83 Express Saver Freight

5 Packaging 6 Letter 2 Pak 3 Box 4 Tube 1 Other Pkg.

6 Special Handling

7 Payment



AIRWAY USA Airbill

8070309722B6

0210

Billing Copy

1 From

Date 07-05-00 Sender's Account Number

Sender's Name J.D. Moons Phone 949 727 1733

Company Kolon

Address 16245 Laguna Canyon Road

Dept./Floor/Suite/Room

City IRVINE State CA ZIP 92618-3603

2 Your Internal Billing Reference Information

3 To

Recipient's Name Phone

Company

Check here if residence

Address

Dept./Floor/Suite/Room

City State ZIP

For HOLD at Location check here

1 Hold Weekday 31 Hold Saturday

For WEEKEND Delivery check here

3 Saturday Delivery 33 NEW Sunday Delivery

4a Express Package Service Packages under 150 lbs.

1 Priority Overnight 5 Standard Overnight

6 First Overnight

3 2Day 20 Express Saver

4b Express Freight Service Packages over 150 lbs.

7 Overnight Freight 8 2Day Freight 83 Express Saver Freight

(Call for delivery schedule. See back for detailed descriptions of freight services.)

5 Packaging 6 Letter 2 Pak 3 Box 4 Tube 1 Other Pkg.

6 Special Handling

Does this shipment contain dangerous goods?* No 4 Yes Yes

5 Dry Ice 9A Cargo Aircraft Only

7 Payment

Obtain Recipient Account No.

Bill to: 1 Sender 2 Recipient 2 Third Party 4 Credit Card 5 Cash/Check

Acct/Inst No.

Credit Card No. Exp. Date

Total Packages Total Weight Total Declared Value* Total Charges

$ .00 $

Credit Card Auth.

8 Release Signature

Your signature authorizes us to deliver this shipment without obtaining a signature and agrees to indemnify and hold harmless Airway from any resulting claims.

321

1 2 3 4 5 6 7

VRS

Zonal OCR

Zonal OCR is used in case you want to OCR a certain rectangular part of a tiff. Usually this is done if you want to recognize numbers or words that are always on the same region of an image. This information will be automatically entered as a field value.

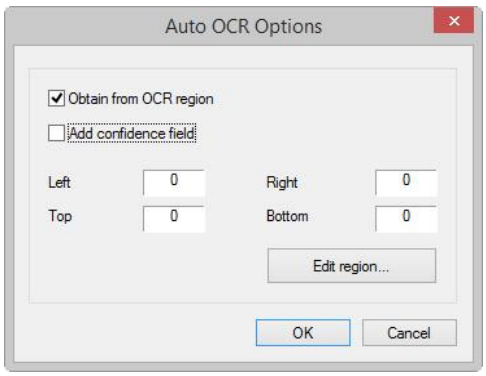
Instructions

1. Open ZyINDEX > Build 

.
2. Open an index via File > Open, or create one via File > New.
3. Select Define Fields  .
4. Click Add Definition.
5. Define a name.
6. Make sure the Plain text or the Logical field is selected as the type.

> A logical field can have two different values: true or false. When you use a logical field you have to give in what the percentage of threshold is in order to get the logical field filled. For example, a threshold percentage of 30 means that if the surface of black pixels in the selected area is larger than 30% of the total surface, the value of this field will be filled with a true value (checked=1 or yes). In case the amount of black pixels is smaller than 30% of the selected area the value of this field will be false (unchecked=0 or no).
> This could come in handy in case you have to detect tick boxes and you have to assign a yes or a no to a certain field. This would be a very nice option in case you would want to select people from out of questionnaire results.

7. Click Type specific options.
   The Auto OCR Options dialog appears:



8. Select the option 'Obtain from OCR region'.
9. Specify a region (zone) by defining the left, right, top and bottom values.

Alternatively, select the 'Edit region' button, and draw a selection rectangle. For a better view, zoom in on the tiff by pulling a rectangle with your right mouse button. Zoom out by double clicking on the image. Click OK.

> This zone will be OCRed separate from the normal OCR process. The result of this OCR is called zonal OCR, and may be assigned to the plain text or logical field.

10. Click OK.

Result

You defined the field for zonal OCR. Link this index to the correct job template (Template Wizard - Internals), and process the job. The fields will be filled with the appropriate values.

Note

It is also possible to add an automatic confidence keyfield, containing the OCR engine's confidence value for the OCR of the given region. This can be used as a measure to indicate which images should be re-examined by a user based on those with lower confidence ratings.

Process a locked job after a system failure

ZySCAN or ZySCANService will automatically lock a job that is being processed. In case the computer crashes, for example due to a power failure, another process that corrupts the operating system or a hardware malfunction, the job will remain locked after the program has stopped. Consequently, after restarting the computer ZySCANservice will automatically start, but the locked job will not be processed and ZySCAN will import the next file in 'entire job' mode or process the next available job in 'current jobroot' mode. Note that in case the computer crashed during OCR the job has no 'locked' status but an 'error' status. In that case the job will be processed automatically by the automatic recovery mechanism. This procedure will explain how to recover a locked job manually.

Instructions

1. Shut ZySCANService down:
   a) Go to Start > Settings > Control Panel > (Administrative Tools >) Services.
   b) Select ZySCANService at the bottom of the list.
   c) Click your right mouse button, or select the Stop Service icon  .
2. If the Service is stopped successfully, start the Service again via the Windows program menu, and check if the job is processed.

If the job is not processed, restart the computer, and check if it is working again. If it doesn't, stop the Service, and continue with point 4 of the procedure.

3. If the Service cannot be stopped successfully, switch the "Startup Type" to manual, and restart the computer. After the computer has rebooted, start ZySCAN and continue with this procedure.
4. In ZySCAN, click the Open Job button.
   The Open Job dialog appears.

> When ZySSCANservice processes a job with 'delete job after export' delete job after export it is likely that there are no complete green jobs present. In the Open Job dialog illustration above the last entry in the table indicates a locked job (lock status displays locked). Before we can open the job to process it manually we have to unlock it.

5. Click Unlock all, or open the job that is not finished.
6. If you followed the last option, you get the following message: "The job you are trying to open is locked: do you wish to unlock it?"
7. Click Yes.
   The documents will be shown in the viewer.
8. Proceed to the next section to finish the job either manually or automatically.

Result

You processed a locked job after a system failure.

Note

If it is not possible to unlock the job, the following message box is displayed: "Unable to open job."

If you receive this message please continue with *What to do if a locked job cannot be unlocked?* (page **102**).

Recovery from ZySCAN jobs with multiple documents with invalid primary keys has been made easy.

ZySCAN remembers which documents have been exported successfully and which have not been exported.

Processing the job manually or automatically

Once the job is no longer locked, processing can continue. In case ZySCANService was running in 'current jobroot' mode you can simply shut down ZySCAN, go to the services panel and start ZySCANService. However, in case ZySCANService was running in 'entire job' mode it may be necessary to process the job manually. Or, if for some reason, ZySCANService has failed repeatedly and there were multiple locked jobs that have been unlocked, it is better to process the jobs automatically in run-unattended mode.

Processing the job manually

Go through the remaining of the pending stages by following the program manually.

> The stages that have to be completed depend on the stage the job was in during failure of the system. Possibly not all processes are pending anymore. If the job is opened it will automatically go to the first pending job.

1. Open the job that has to be processed by selecting it.
2. Click OK.

Result

The job will be processed, and the next stage will appear if you click Yes. For more information on processing a job, see *Processing a job* (page **50**).

To begin ZySCAN the ZySCANService has to be started. The service can be started by selecting from the services dialog and clicking the start button, or using the right mouse button. The subsequent jobs will run automatically.

Processing the job automatically

The unfinished job can also be processed automatically. There are two options. First option is to temporarily reconfigure ZySCANService to run in 'current jobroot' mode so it will finish all current pending jobs in the jobroot. The automatic recovery mechanism of ZySCANService will automatically process bad images even if OCR is not possible. The disadvantage is that ZySCANservice has to be reconfigured and later on has to be restored to the original 'entire job' processing mode. Second option is to use ZySCAN run-unattended (i.e. in batch) mode which enables ZySCAN to process jobs automatically similar to ZySCANService but as a windows application. Note that if you are running ZySCAN on Windows98 or Windows ME running ZySCAN run-unattended is your only option since services are not supported on these operating systems.

Processing the job(s) automatically using run unattended ZySCAN mode

This has to be done by unlocking the job with "Unlock all" and pressing Cancel so no job is open. Go to job in the menu and select > run unattended > ZyOCR & ZyEXPORT >> current jobroot.

If this works close ZySCAN after processing and start the services again.

What to do if the locked job cannot be unlocked?

Depending on the cause that locked the job, it may not be possible to unlock a locked job. A few of these reasons are described below.

Note: In case you are not an experienced Windows user it is not a good idea to solve these problems yourself. If you don't feel confident about what you are doing, contact your system administrator.

The sequence.txt file in the job directory is corrupted, i.e. its contents do no longer match the sequence of the tiff files in the tiff folder. If you arrange the content of the sequence.txt file, e.g. with notepad, in the same order as the sequence of the tiffs as they appear in you document and save the txt file it will work again. Open the job and try to process it manually or otherwise use the ZySCANService.

It is also possible that the paths (fields, import, export) in the settings.txt are not correct anymore. Change the paths into the correct ones, save the txt file and open and process the job again.

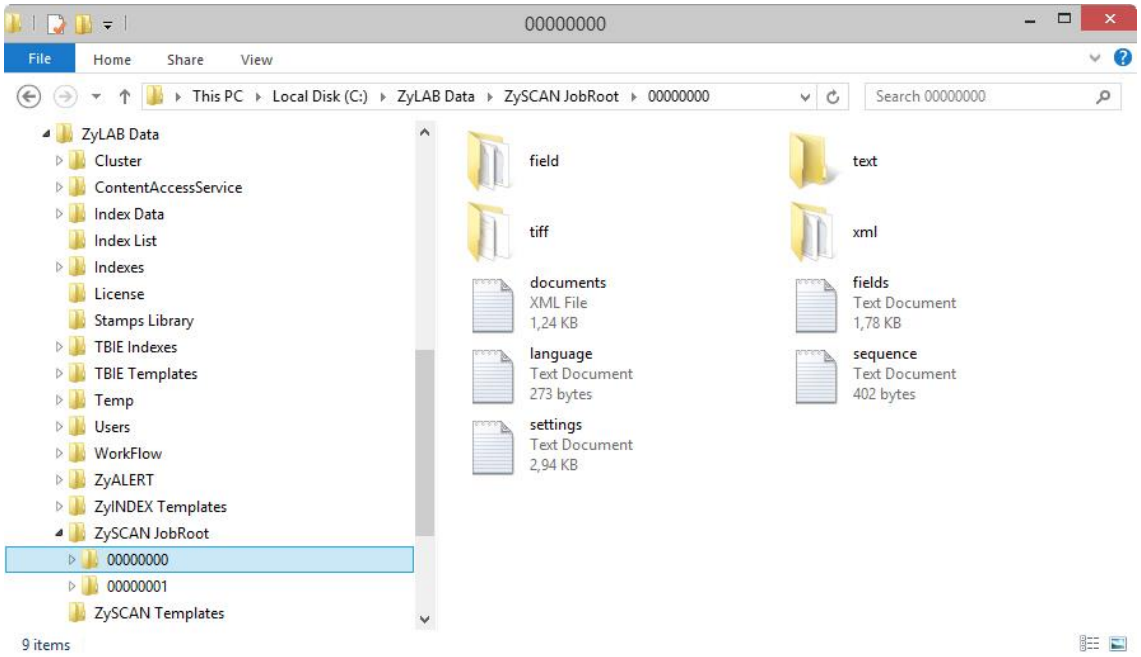
A very efficient solution in case it won't work is closing the job, deleting it and scanning the documents again. After this, start the service again and continue with scanning.

Internals

In this section we try to give you more insight on how ZySCAN works. If scanning is causing problems you know where your documents are stored during the ZySCAN process. Also the contents of the standard files will be explained.

Structure

Jobs are stored in the JobRoot directory. For each job a job directory is created in the JobRoot directory with a name identical to the job name you assigned.



The JobRoot directory can be installed either on a network or local. Each job has its own directory storing three text files and three folders. The three folders are:

field: field folder containing files that record key field information per document. A job can consist of more documents. It is possible to add a set of key fields for each document.

text: text folder with files containing the OCR'ed text of the images

tiff: TIFF folder containing the original TIFF images

xml: XML folder containing the OCR'ed text in XML format

> This folder will only be filled, if the option 'Use XML internally' is selected in the job template (*Template Wizard - Internals* (page 5)).

The jobroot will grow if the "delete job when finished successfully" option is disabled. This means that you have all your data two times on your system. (Once in the jobroot and once in the archive you exported to.) Jobs that are not finished yet will be kept in this jobroot.

Tip: A job consists of a transparent directory structure accompanied by a number of parameter files that are, in all cases, ASCII files. So when you have a lot of TIFF's coming from other programs, you are able to create your own jobs without importing the files in ZySCAN. This can save you lots of disk space and import-time.

Naming Conventions

When TIFF images are imported or paper documents are scanned they are stored in the tiff folder with a unique name. ZySCAN and ZyIMPORT (re)name the TIFF files and assign successive names to multiple TIFF's in a job's tiff folder. For example, the first .tiff file in the tiff folder is renamed 000001.TIF, the next image file will then be (re)named as 000002.TIF. The matching text files, stored in the text folder of the job, have corresponding names. Thus, the text file belonging to 000001.TIF is called 000001.TXT. If you create your own file name convention, be sure these are ALWAYS uppercase and limited to 8 characters plus the extension .TIF. Other formats may eventually work, but are not supported by ZyLAB in the long run.

On every first .tiff file that you create in your job ZySCAN creates in the field folder a field file (.fld) for holding possible key field information. The name of this field file corresponds to the name of the first.tiff file in your job. So if your first .tif file is named 000001.TIF, the corresponding .fld file is named 000001.FLD. If use is made of document separators for assigning different field values to different (groups of) documents, the .fld file names are identical to the name of the first .tif file in the group of documents that the key field information belongs to. To illustrate this, imagine having the following sequentially named .tif files in the tiff folder of your job:

000001.TIF

000002.TIF

.

.

.

000009.TIF

000010.TIF

Now you assign key fields to those .tif files per group of two files, the corresponding .fld filenames in the fields' directory of your job are:

000001.FLD

000003.FLD

000005.FLD

000007.FLD

000009.FLD

Note that field values can be assigned per job, per document or per group of documents in a job. Text and image files are related one-to-one, but this doesn't hold for field files. For instance, it is possible to have only one .fld file in a job with multiple image and text files.

Job functions

If you create a job the container application creates the corresponding job functions. The four files that are created to register job functions are:

fields.txt

language.txt

sequence.txt

settings.txt

The fields text file records the fields in a document, which are created during the Fields stage of a job. If a job is linked to an index, no fields text file is created since the field definitions are then read from the index. The language file records the language that is chosen to OCR a page. The sequence text file records the sequence of the .tif files in a job. The settings text file registers the properties per tab. For example, it stores which import filter and import directory to use for ZyIMPORT, what language to use in ZyOCR, the output directory for ZyEXPORT, and so on. The changes you make to the job settings by pressing the Settings button that is provided with each stage are recorded in the settings text file. The container application activates the stages and passes the job settings from one stage to the other.

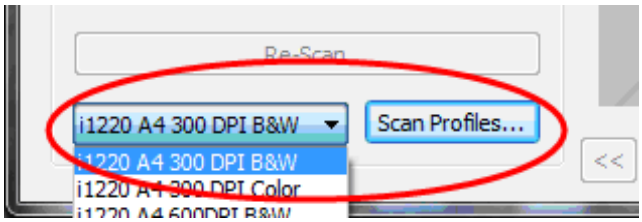
Work with Scan Profiles

Conditions

You want to create, edit or delete a scan profile. Scan profiles define Kofax scanner settings like page size, resolution, color depth.

Instructions

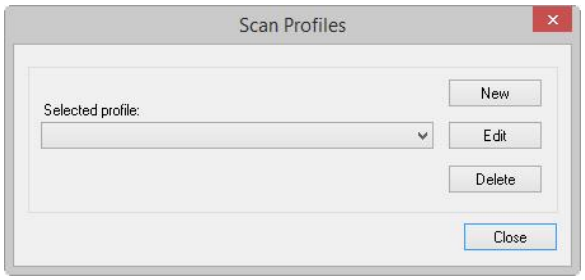
1. Select the ZySCAN tab and select a job template with the ZySCAN stage and the Kofax scan interface selected.



2. Select the Scan Profiles button.

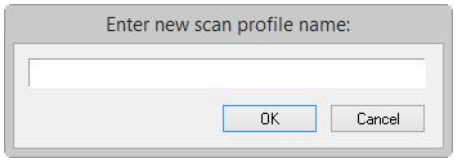
If there are already Scan Profiles defined, you can select one.

3. To create a new Scan Profile, select the New button.



To delete a Scan Profile, make sure the correct profile is selected and click the Delete button.

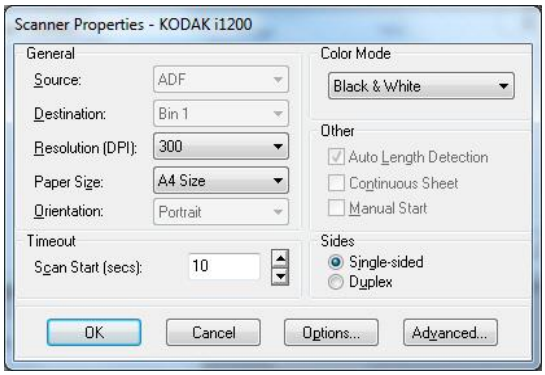
4. Enter a new scan profile name.



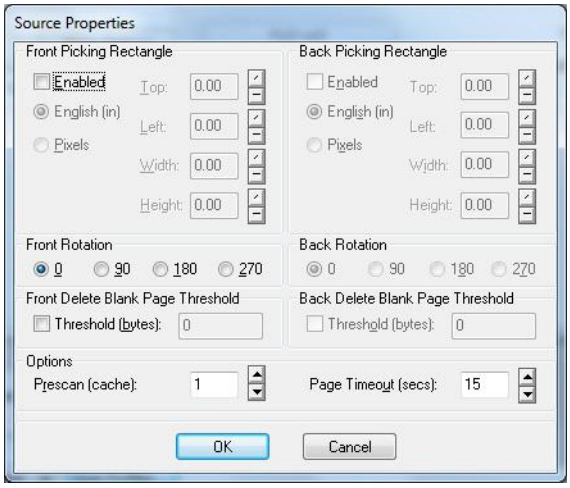
5. Click OK.

If the new profile does not appear in the listbox, check if you are connected to the scanner.

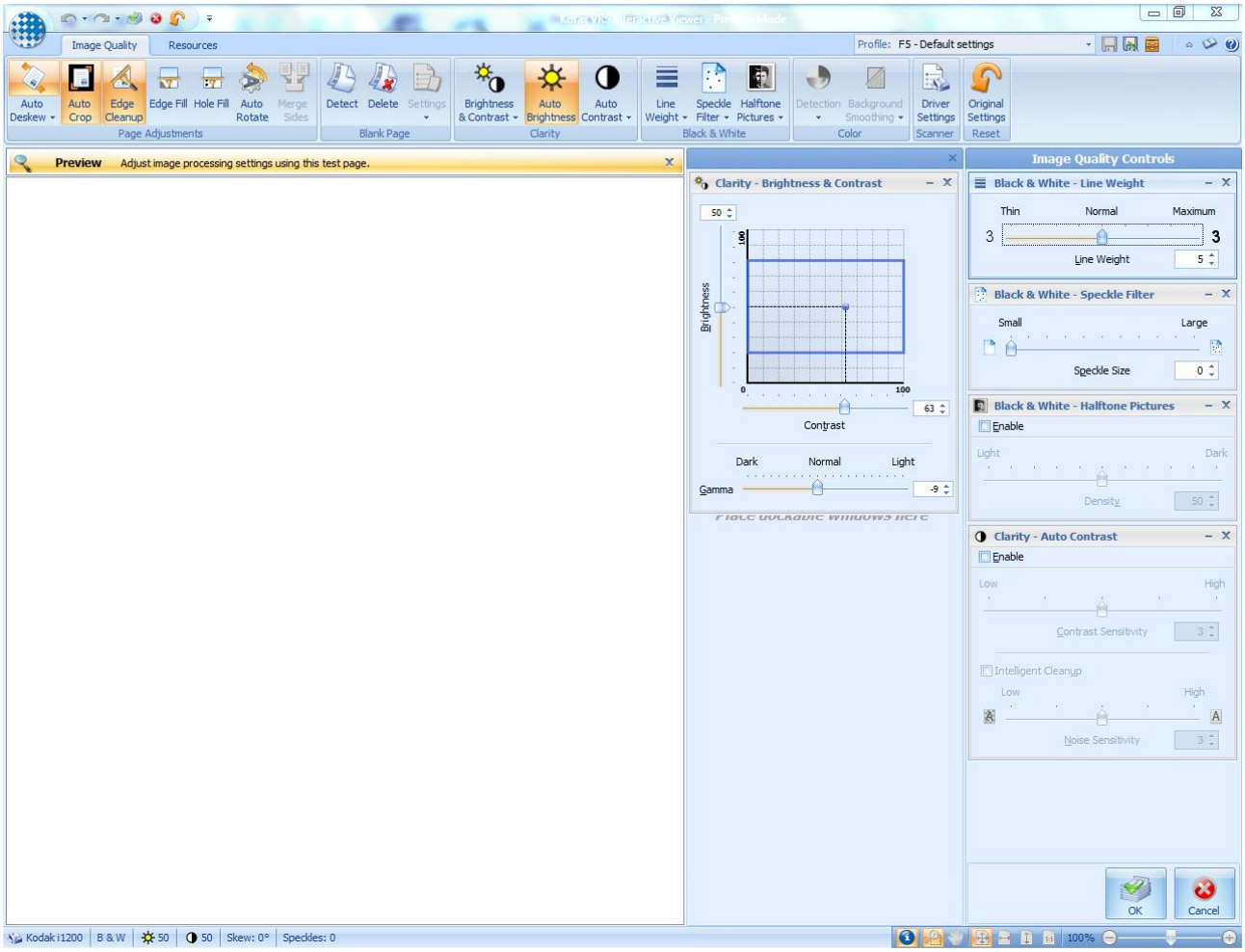
6. Define the Scanner Properties. The Scanner Properties that can be defined depend on the type of scanner you have. Usually the Paper Size and Resolution (DPI) can be defined.



7. Click the Options button.
   The Source Properties will appear.



8. Click OK.
9. Click the Advanced button.



10. Click OK twice.

Result

You have created, edited or deleted a scan profile. A new profile can be selected for a job template via the Template Wizard - ZySCAN dialog.

Using the Command line

ZySCAN has a command line option **-j** that can be used to create a job template (without starting up ZySCAN) and optionally to add this job template to the command line parameters that are stored in the registry and which are used by the ZySCAN NT Service. Because job template creation requires a lot of parameters, here's what the command line should conform to.

Start with -j, -J, /j or /J

Rest must be within square brackets

Within the square brackets the following "sections" may appear (not every section has to be defined)

- Image Processing
- ZySCAN
- ZyIMPORT
- ZyFIELD
- ZyOCR
- ZyEXPORT
- Field Definitions File
- Destiny (obligatory)
- Registry

Each section consists of a section header (which must be exactly one of the names mentioned above), followed by a colon, followed by a comma-separated list of values, and ended by a semicolon.

There are four types of values:

- Boolean: "0" or "1"
- Number: an unsigned number, sometimes restricted to certain values
- String: a valid string for the value involved. If any white space appears in the string, the entire string must be enclosed in quotes.
- List: list of one of the other types, enclosed by square brackets and comma-separated

Image Processing section

Image enhancement	Boolean
Patch code recognition	Boolean
Bar code recognition	Boolean
Split at bar code	Boolean
Fill in bar code field	Boolean

Example: "ImageProcessing:0,0,0,0,0;"

ZySCAN section

Show done	Boolean
Split	Boolean
Split size	Boolean
Auto rotate	Boolean
Auto rotate angle	Number (must be 90 or 180 or 270)

Example: “ZySCAN:0,1,3,1,180;”

ZyIMPORT section

Import directory	String
Import filter	String (must be a valid import filter name)
Delete source files	Boolean
Split	Boolean
Split size	Number
Auto rotate	Boolean
Auto rotate angle	Number (must be 90 or 180 or 270)

Example: “ZyIMPORT:"C:\Testing\Import",SinglePageTiff,1,1,3,1,180;”

ZyFIELD section

ZyFIELD in batch	Boolean

Example: “ZyFIELD:0;”

“ZyOCR” section

ZyOCR in batch	Boolean
Engine	String (must be a valid engine name)
Language analyst	Boolean
Dot matrix	Boolean

Small text	Boolean
Auto-orientation	Boolean
Deskew	Boolean
WYHIWYG	Boolean
Check TIFF integrity	Boolean
Prevent punctuation	Boolean
OCR color	Boolean
Output XML	Boolean
Fixed language	Number (must be a valid language number)
Auto language detection	Boolean
Language list for detection	List of numbers (must all be valid language numbers)
Detection mode	Number (must be 0, 1 or 2)
Detection test size	Number
White page recognition using file size	Boolean
Maximum file size	Number
White page recognition using char count	Boolean
Maximum char count	Number

Example:

“ZyOCR:0,"ZyLAB Professional OCR",1,1,1,1,1,1,1,1,1,1,23,1,[17,19,23,24,29,30,34,43,54,,59,71,73],0,1,1,1024,1,10;”

ZyEXPORT section

ZyEXPORT in batch	Boolean
Export method	String

Text export directory	String
Image export directory	String
Recursive export	Boolean
Check export	Boolean
Delete job after export	Boolean
Check disk space before export	Boolean
Minimum free disk space	Number
Start indexing after export	Boolean
Burn in fields	Boolean
Burn in fields in all pages	Boolean
Left margin for burn in	Number
Top margin for burn in	Number

Example: “ZyEXPORT:0,"ZyLAB Standard","C:\Text","C:\Tiff",1,1,1,1,1,0,1,0,10,10;”

Field Definitions File section

Location of field definitions file	String

Example: “FieldDefinitionsFile:"C:\Program Files\ZyLAB\Information Management Platform\JobRoot\Templates\Example.fd";”

Destiny section

Location of new template	String

Example: “Destiny:"C:\Program Files\ZyLAB\Information Management Platform\JobRoot\Templates\Example.job";”

Registry section

Add to registry command line	Boolean

Example: “Registry:1;”

Complete example

"-
j[ImageProcessing:0,0,0,0,0;ZySCAN:0,1,3,1,180;ZyIMPORT:"C:\Testing\Import",SinglePageTiff,1,1,3,1,180;
ZyFIELD:0; ZyOCR:0," ZyLAB Professional
OCR",1,1,1,1,1,1,1,1,1,1,23,1,[17,19,23,24,29,30,34,43,54,,59,71,73],0,1,1,1024,1,10; ZyEXPORT:0,"ZyLAB
Standard","C:\Text","C:\Tiff",1,1,1,1,1,0,1,0,10,10;FieldDefinitionsFile:"C:\Program Files\ZyLAB\Information
Management Platform\JobRoot\Templates\Example.fd";Destiny:"C:\Program Files\ZyLAB\Information
Management Platform\JobRoot\Templates\Example.job";Registry:1;]"

Registry startup parameters

- HKEY_LOCAL_MACHINE\Software\ZyLAB\ZySCAN\RunUnattended: can optionally contain a DWORD value "TimeOut" (default is 300 seconds)
- EntireJob: DWORD value "Run" (if > 0: Run Unattended Entire Job)
- Templates: Contains string values for each template to run
- OCR: DWORD value "Run" (if > 0: Run ZyOCR)
- JobRoots: Contains string values for each job root to monitor. If empty: current job root.
- Export: DWORD value "Run" (if > 0: Run ZyEXPORT)
- JobRoots: Contains string values for each job root to monitor. If empty: current job root.
- OCRAndExport: DWORD value "Run" (if > 0: Run ZyOCR & ZyEXPORT)
- JobRoots: Contains string values for each job root to monitor. If empty: current job root.
- Registry is checked in the order as above. So if you want to run OCR & Export, you have to make sure the DWORD value "Run" is 0 in all the other subkeys.

ZySCANService Commandline Options

ZySCANService obtains its startup parameters either from the command line or from the registry. This is because command line parameters can only be entered when the service is started manually from the "Services" dialog (that can be invoked from the Control Panel). Command line parameters cannot be entered when the service is started automatically when the system boots. ZySCANService first checks if valid command line parameters have been entered and, if this is not the case, then checks the registry for valid startup parameters.

Put the command line parameters in the string value "commandline" under HKEY_LOCAL_MACHINE\Software\ZyLAB\ZYSCAN\RunUnattended, "-u[ru.job,ALD.job] -t300". If you create a template with the ZySCAN -j option and use the option 'Registry:1', this will be done automatically.

With the command line option -d a template can be removed from the RunUnattended commandline registry entry. Example given:

C:\Program files\ZyLAB\Information Management Platform\bin\zyscan -d[templatename]

Removes the template "templatename" from the registry entry. Just -d empties the entire RunUnattended\

commandline registry entry.

Registry startup parameters

Organized like this:

- HKEY_LOCAL_MACHINE\Software\ZyLAB\ZySCAN\RunUnattended: can optionally contain a DWORD value “TimeOut” (default is 300 seconds)
- EntireJob: DWORD value “Run” (if > 0: Run Unattended Entire Job)
- Templates: Contains string values for each template to run
- OCR: DWORD value “Run” (if > 0: Run ZyOCR)
- JobRoots: Contains string values for each job root to monitor. If empty: current job root.
- Export: DWORD value “Run” (if > 0: Run ZyEXPORT)
- JobRoots: Contains string values for each job root to monitor. If empty: current job root.
- OCRAndExport: DWORD value “Run” (if > 0: Run ZyOCR & ZyEXPORT)
- JobRoots: Contains string values for each job root to monitor. If empty: current job root.
- Registry is checked in the order as above. So if you want to run OCR & Export, you have to make sure the DWORD value “Run” is 0 in all the other subkeys.

About Final Bates Stamping

Final Bates Stamping: Bates numbers are finalized in a form that is always present (in viewing, printing, exporting etc) and that is also searchable. With Final Bates Stamping it is possible to:

Search for Bates numbers (meta-data and full-text). When a user searches for a specific bates number, the exact page with this number will be shown.

View Bates numbers in the meta-data and in the resultlist. The Bates number (including prefix) of the first and last page in a document will be shown in the result list.

View documents using tiff2png, view as TIFF or view as PDF with the Bates number (including prefix) of the page burned in the image.

View the Bates numbers on printed documents.

Use a maximum length of 20 characters for the prefix string.

It is **not possible** to change Bates numbers after they have been burned into the image.

Create Final Bates Stamping Job Template

Conditions

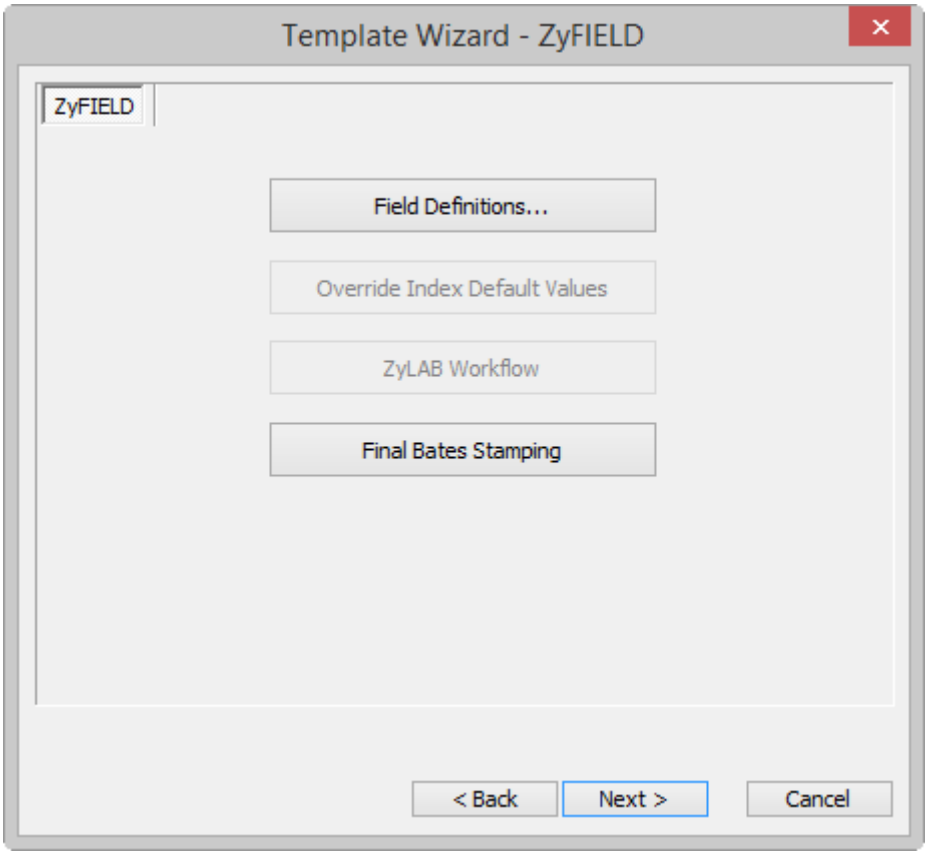
Full understanding of creating job templates in ZySCAN (refer to *Create a job template* (page 2)).

Instructions

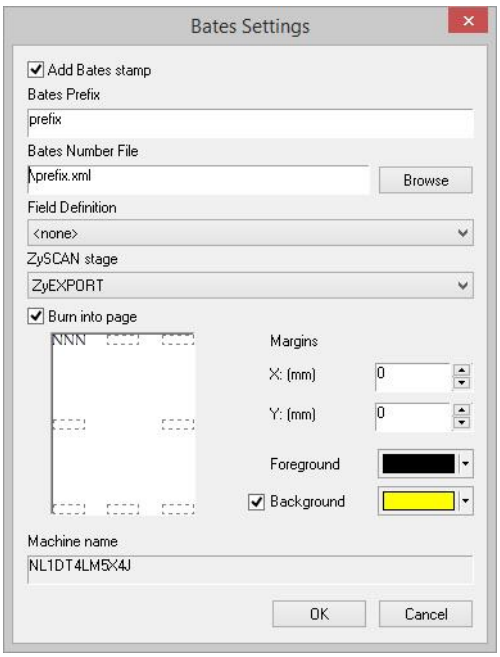
1. Open ZySCAN.
2. Go to Template > New Template.
3. Select Define new job template.
4. Click Next.
5. If you want to store the processed files in an index (and use already defined fields), select External Link.
6. Click the Select button, to select an index.
7. Click Next.
8. Select ZyIMPORT (or ZySCAN), ZyFIELD, ZyOCR and ZyEXPORT.
9. Click Next.
10. Define the import directory, and the import filter.
11. Click Next.
12. In the Template Wizard - ZyFIELD dialog, select the Field Definitions button.
    - Click Add Definition.
    - Define a Name. For example, Bates number.
    - Make sure the Type is a Plain text field.

- Click OK twice.

Select the Final Bates Stamping button.



The button is active only if a Bates Stamping Module License is present.



a) Select the option Add Bates stamp.

b) Define the Bates Prefix. This prefix will be followed by a Bates number.

c) Define the location of the Bates Prefix File. This XML file is used to store the prefix and associated offset (Bates number).

d) Select a Field Definition (the Bates_Number field you just created) from the dropdown listbox. This plain text field will be used to store the Bates range for a document. When this job template is saved, automatically a Bates counter file is created in the job template folder containing offset zero. See Note below.

e) Select a ZySCAN stage from the dropdown listbox. During this stage, the Bates numbers are added. For now, only ZyEXPORT can be selected.

f) Define the (X and Y) location where the Bates number should be burned in the image.

g) Select the Foreground (Bates number) color.

h) If you want to specify a background color, select the checkbox Background and select a color. Please make sure that the colors do not conflict with each other. It is advised to test the readability of exported documents.

Note: The foreground and background colors will be exported. However, if the original document is B&W or grayscale, the bates stamp will also be B&W (so not in color).

i) Click OK.

j) Please read the Attention dialog: "To prevent multiple instances of ZySCAN from concurrently using the same Bates range, this job (template) will only work on this computer!".

k) Click OK.

Note: You can also choose NOT to define a Field Definition, but keep it set on <none>. The prefix and bates numbers will in that case only be stored on the pages, making field search impossible. Also, you cannot view the Bates number range via the Bates number field (displayed in the result list). Of course, full text search will still work.

13. Click Next.
14. Define the Available languages.
15. Click Next.
16. Choose an Export method. Both Txt/TIFF and XML/TIFF can be used.
17. Make sure the option "Export to default data directory and modules of the index" is selected (if you linked to an index. If not, choose your export directories).
18. Click Next.
19. Define a template name.
20. Click Finish.

Result

You have created a job template for Final Bates Stamping. During processing, bates numbers (including prefix) will be added to the OCRed text and image. The numbers are exported in txt/TIFF or XML/TIFF format, the start and end bates numbers are exported in plain text fields.

Processing Final Bates Stamping Job

Conditions

You have create a Final Bates Stamping Job Template. Now you want to process the job. When a job is created based on a Final Bates Stamping template, the prefix is copied in the job as well as a link to the Bates counter file.

Instructions

1. Open ZySCAN.
2. Select New Job.
3. Select the Final Bates Stamping template.
4. Click OK.
5. Click Import (or Scan).
6. Click Yes.
   The Bates number field is not yet filled. Bates numbers are added in the ZyEXPORT stage.
7. If there are any other fields, you can define them.
8. Click OK.
9. Click Yes.
10. Click Start OCR.
11. Click Yes.
    In the Export stage the Bates numbers are added.
12. Click Start Export.
13. Click Yes.

Result

You have processed a Final Bates Stamping job.

Searching for Bates Stamping Numbers

Instructions

1. Open ZyFIND.
2. Define a Bates Stamping Number.
3. Click Search.

The prefix and number are searchable via full-text (and with hit highlighting). However, searching in the field that has been assigned as bates field is not possible (except with the numbers used for the first and last page, because these numbers are used to specify the bates range in the Bates_Number field (for txt: <bates_number>prefix 00000018-00000020</bates_number>, for XML: <field id="bates_number">prefix 00000018-00000020</bates_number>).