AllMyPapers

All My Checks™

System for extracting check images from documents and creating ICL Files

User Manual

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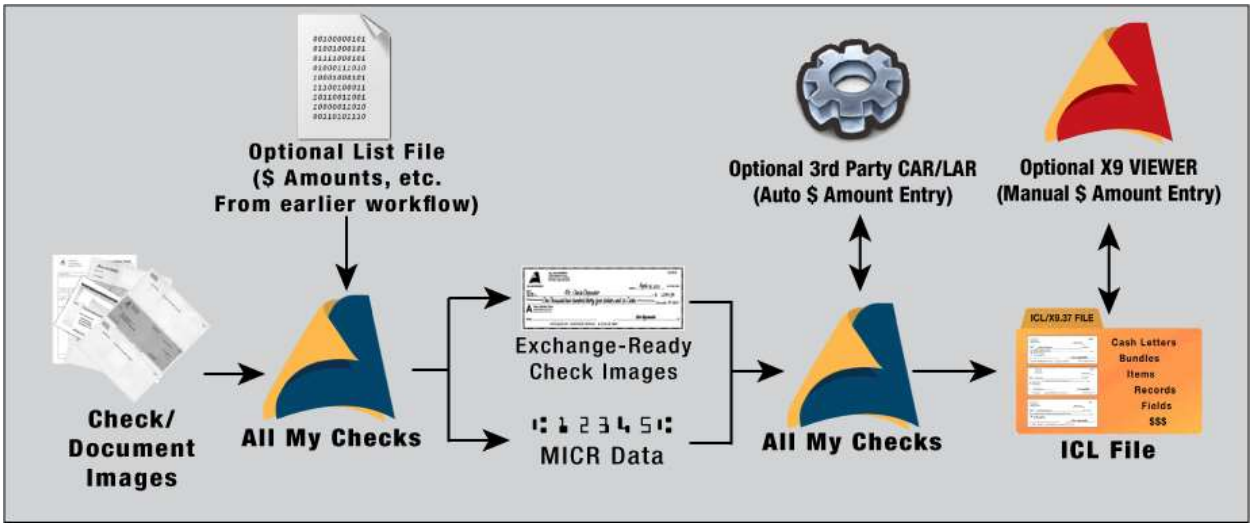
1 INTRODUCTION

1.1 All My Checks Overview

All My Checks is a Windows based software application that finds and extracts check images and MICR information from a variety of scanned and photographed document images and outputs exchange-ready check images along with associated formatted MICR data. Optionally All My Checks can format and output this data as ICL files in a variety bank specified RDC formats.

The figure below shows the architecture of All My Checks that is built upon AMP's Software Development Kits (SDK). This is an automated solution that will read document images from a variety of sources, extract check images from within those document images, process the check images to exchange standards optically read the MICR lines, accept associated data from a CSV file and then produce an X9.37 Image Cash Letter (ICL) that conforms to the requirements for clearing through the Federal Reserve Bank's (FRB) clearing system. Additionally ICL files can be formatted for deposit into commercial banks. AMP technology supports deposit ICL formats for the majority of the large banks.



Features of this system include:

- Automatically processes document images from a designated folder or from a list of images
- Accepts images from any scanner
    - Page scanner
    - ADF scanner
    - Mobile camera capture

    - Remittance vouchers
- Finds checks on a page or in a mixed stream of scanned documents
- Finds checks anywhere on the document
- Extracts check images from background
- Preps and processes check images for exchange standards
- Extracts MICR information from check image
- Parses MICR information into routing number and ONUS fields
- Command line callable for “lights out” functionality
- Can add electronic endorsement to back of check image
- Outputs check images and MICR data
- Converts check images and MICR data to image cash letter (ICL) files for electronic Check 21 remote deposit in any of 25+ banks-specific RDC formats

1.2 Setup Files

To produce ICL files, the All My Checks imports an XML Configuration file, an optional list file which can contain dollar amount and other data if available and an initialization file that tracks last used settings.

The Configuration File is in an XML format and defines:

- Check endorsement image zone definitions:
    - content
    - font
    - Format
    - location
    - orientation
- Output ICL format
- Format of generated ICL files
    - More than 25 bank-specific RDC formats are supported

The List File is used to specify image file locations and for the import of supporting data for check items such as dollar amount and MICR line data is these have been entered or extracted in a previous workflow step. The lists supports:

- Check amount
- MICR line
- Reference Number
- Payee Name

- Payee account
- Deposit Branch ID

The initialization File captures a snapshot of user settings and is used to set up various operating scenarios with All My Checks. You may load or save initializations files manually to capture different sets of option settings. All My Checks will automatically load the last saved Initialization file on start-up.

The **Configuration** and **List** files are described in detail in the next 2 sections of this manual

2 CONFIGURATION FILE

The configuration file defines the format and contents of the resultant RCC check images and the format of the output ICL file. It is an XML format that can be edited with a text editor or an XML editor. It contains element sections as follows:

Element	RCC_PAY_CFG
Description	Defines the document type
Attribute	**Description**
documenttype	Defines the set of rules that the application will use to create and endorse the Check Images. Currently only a value of “CHECK” is supported

Example:

```
<RCC_PAY_CFG documenttype="CHECK">
```

Element	param_definitions
Description	This section defines the parameters that will used to create the Payee Endorsement on the rear of the check image. 2 parameter variables must be defined here as follows: • payee_name - Payee's account name as it will appear on the endorsement • payee_account_nbr - Payee's account number as it will appear on the endorsement
Attribute	**Description**
param	Name of the parameter - ***Do not change these***
value	Sets the value of the parameter. - ***to define Payee Endorsement***

Example:

```
<REQUIRED>
  <define param="payee_name"        value="PAYEE NAME"/>
  <define param="payee_account_nbr" value="999999999"/>
</REQUIRED>
```

Element	zone_definitions
Description	Defines the zones on the RCC images where information will be printed. Defines the location, content and format of each zone

Sub Element	Front
Description	Contains the zones definitions for the front image
Sub Element	Rear
Description	Contains the zones definitions for the rear image

Attribute	Description
name	Name of the zone
view	"front" – for zone on front image "back" – for zone on back image - ***Endorsements go on back of check image***
x	Horizontal distance from the left side of the document image to the left side of the zone. Measured in inches. (E.g. 2.25 = 2.25 inches). Accuracy is 0.01 inch.
y	Vertical distance from the top side of the document image to the top side of the zone. Measured in inches. (E.g. 2.25 = 2.25 inches). Accuracy is 0.01 inch.
width	Horizontal width of the zone. Measured in inches.
height	Vertical Height of the zone. Measured in inches.
textlines	Number of text lines that will be printed in the zone
font	Name of the font to be used for the zone or text line.
size	Size of the font in points.
justification	Justification of the text in the zone or line. Values are "left", "right" or "center".
orientation	Orientation of the zone. Values are "vertical" or "horizontal".
bold	Text will be printed in bold or normal. Values are "True" or "false".

Sub Element	Line
Description	Each zone will have 1 or more lines of text. Each line will have a line defintion.

Attribute	Description
string	This is the string contents of the line. The line can contain from 0 to 9 variables whose values come from the parameters. To add a variable use "%n" where n is the index number of the variable. The first variable will be %1, 2nd will be %2, etc. Examples: `<line string="%1" var1="payee_name"/>` will print the string value of the payee_name. `<line string="Void after 180 days" size="8"/>` will print "Void after 180 days" in 8 point font.

var1	Defines the parameter to use for variable 1. Use var2, var3, … for multiple variables.
Line format options	Additionally for each line you may redefine: • font • size • justification • orientation • bold

Example:

```
<!--Payee Endorsement Field-->
      <zone name="payee_endorsement" view="back" x="0.25" y="0.5" width="2.0" height="0.6" textlines="4"
            font="MS Reference Sans Serif" size="10"
            justification="center" orientation="vertical" bold="false">
        <line string="For deposit to the account of"/>      <-- Fixed String
        <line string="%1" var1="payee_name"/>               <-- Previously Defined Variable
        <line string="Account Number"/>                     <-- Fixed String
        <line string="%1" var1="payee_account_nbr"/>        <-- Previously Defined Variable
      </zone>
```

Element	ICL_definitions
Description	Defines the contents and format of the output ICL file.
Sub Element	x937
Description	Defines origin and destination header record contents

Attribute	Description
Destination_routing_number	9 digit destination institution routing number
Destination_name	Destination institution name (18 digits maximum)
Origin_routing_number	9 digit origin institution routing number
Origin_name	Origin institution name (18 digits maximum)
Test_File	“True” for test file, “False” for production file
Destination_Format	A two digit number that defines the commercial bank deposit format that will be produced. Contact AMP for more information.
Delete_Records	Removes records form the output ICL file. Some deposit formats require some records to not be present.

`CreditFrontImage`	Defines the filename and path of the front image that will be used for a credit item.
`CreditBackImage`	Defines the filename and path of the back image that will be used for a credit item.
Update_Credit_Image	"True" – Annotate the credit image with deposit information "False" – Do not annotate the credit image (default)
Delete_Records	Record numbers to delete (usually Records 54, 28, 26) Comma separated
Summary_Item_Include_Credit_Item	ICL Control Item Totals to include Credit Items (True/False) Default is "True"
Summary_Amount_Include_Credit_Item	ICL Control Amount Totals to include Credit Items (True/False) Default is "True"
`Credit_Routing`	Routing number for the deposit ticket records
`CreditCustomer`	Customer account name to for the deposit ticket records. Also can be annotated onto the virtual deposit image
CreditAccount	Customer account number for the deposit ticket records. . Also can be annotated onto the virtual deposit image
Credit_Serial	MICR serial number for the deposit ticket records. Not annotated onto virtual deposit ticket images
Credit_Sequence	Sequence number to assign to the deposit ticket records. AMC will auto assign in not set.

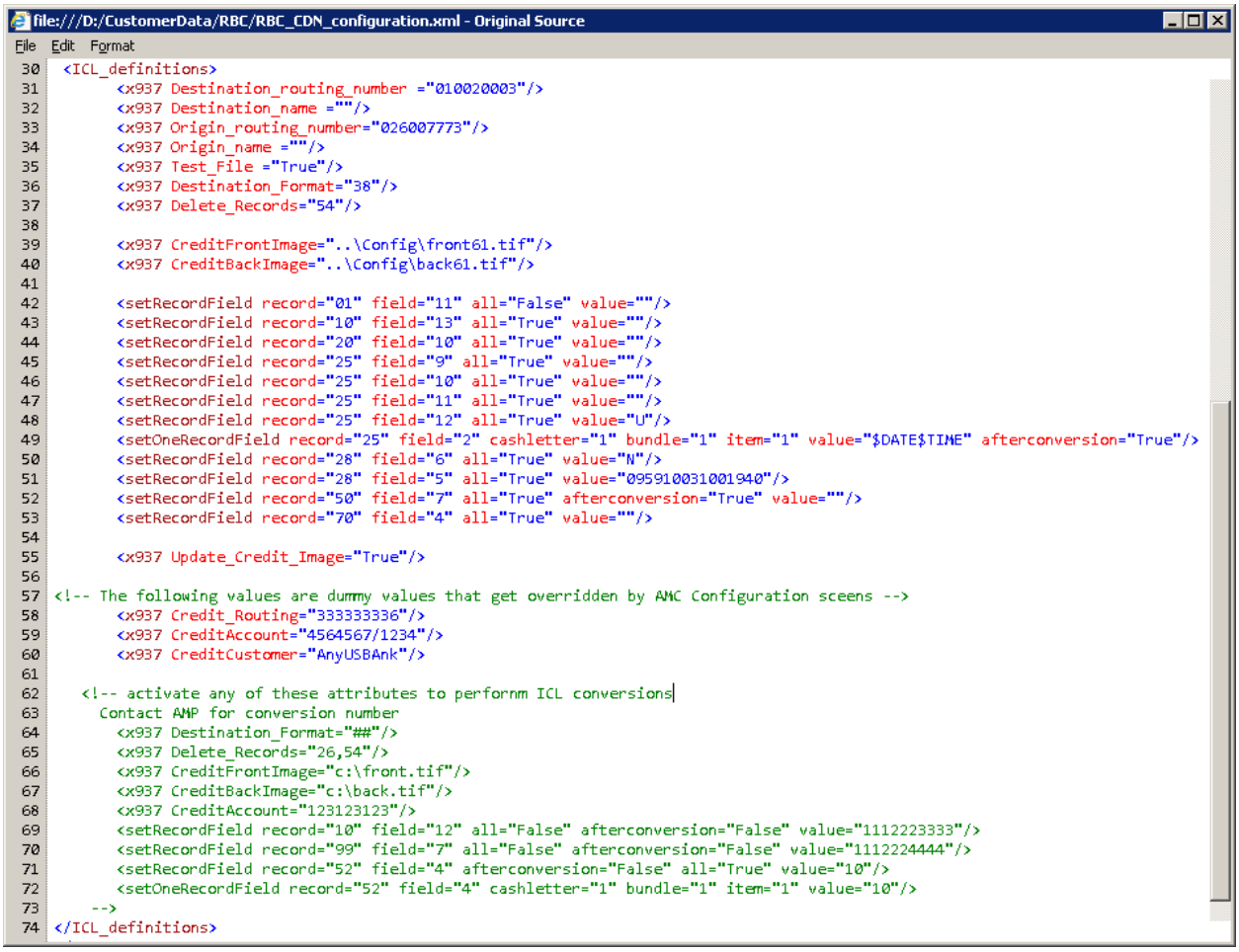
Element	`setRecordField`
Description	Sets the value of any text field in any record in an ICL file.

Attribute	Description
`record`	Record number
`field`	Field number
`all`	"True" – Set the field in all Records of this type. "False" – Set field in only the first Record of this type.
`value`	The value to set.
`afterconversion`	"True" – Set the value after conversion to Deposit format. "False" – Set the value before conversion to Deposit format. This is optional. Default is "False"

Element	`setOneRecordField`
Description	Sets the value of any text field in any record in an ICL file. Allows for selecting specifc items/recors in specific locations

Attribute	Description
`record`	Record number
`field`	Field number
`cashletter`	Cash letter position in file
`bundle`	Bundle location within the cash letter
`item`	Item location within the bundle
`value`	The value to set. The esc sequences of: $DATE – replaces with the date in format YYMMDD $TIME – replaces with the time in HHMMSS format
`afterconversion`	“True” – Set the value after conversion to Deposit format. “False” – Set the value before conversion to Deposit format. This is optional. Default is “False”

Example:



file:///D:/CustomerData/RBC/RBC_CDN_configuration.xml - Original Source

File Edit Format

```
<ICL_definitions>
      <x937 Destination_routing_number ="010020003"/>
      <x937 Destination_name =""/>
      <x937 Origin_routing_number="026007773"/>
      <x937 Origin_name =""/>
      <x937 Test_File ="True"/>
      <x937 Destination_Format="38"/>
      <x937 Delete_Records="54"/>

      <x937 CreditFrontImage="..\Config\front61.tif"/>
      <x937 CreditBackImage="..\Config\back61.tif"/>

      <setRecordField record="01" field="11" all="False" value=""/>
      <setRecordField record="10" field="13" all="True" value=""/>
      <setRecordField record="20" field="10" all="True" value=""/>
      <setRecordField record="25" field="9" all="True" value=""/>
      <setRecordField record="25" field="10" all="True" value=""/>
      <setRecordField record="25" field="11" all="True" value=""/>
      <setRecordField record="25" field="12" all="True" value="U"/>
      <setOneRecordField record="25" field="2" cashletter="1" bundle="1" item="1" value="$DATE$TIME" afterconversion="True"/>
      <setRecordField record="28" field="6" all="True" value="N"/>
      <setRecordField record="28" field="5" all="True" value="095910031001940"/>
      <setRecordField record="50" field="7" all="True" afterconversion="True" value=""/>
      <setRecordField record="70" field="4" all="True" value=""/>

      <x937 Update_Credit_Image="True"/>

<!-- The following values are dummy values that get overridden by AMC Configuration sceens -->
      <x937 Credit_Routing="333333336"/>
      <x937 CreditAccount="4564567/1234"/>
      <x937 CreditCustomer="AnyUSBAnk"/>

  <!-- activate any of these attributes to performm ICL conversions
    Contact AMP for conversion number
      <x937 Destination_Format="##"/>
      <x937 Delete_Records="26,54"/>
      <x937 CreditFrontImage="c:\front.tif"/>
      <x937 CreditBackImage="c:\back.tif"/>
      <x937 CreditAccount="123123123"/>
      <setRecordField record="10" field="12" all="False" afterconversion="False" value="1112223333"/>
      <setRecordField record="99" field="7" all="False" afterconversion="False" value="1112224444"/>
      <setRecordField record="52" field="4" afterconversion="False" all="True" value="10"/>
      <setOneRecordField record="52" field="4" cashletter="1" bundle="1" item="1" value="10"/>
  -->
</ICL_definitions>
```

Please note that the above settings may or may not be used depending on the details of your bank's RDC ICL file format.

3 LIST FILE

List files are Comma Separated Value (CSV) files used to provide additional data not supplied through the GUI to All My Checks prior to execution. A list file may contain front and back check image file locations and names, dollar amount, MICR line data and assignable sequence or reference numbers. Below is some typical list file data:

```
C:\AllMyChecksDemo\Image0001.tif,C:\AllMyChecksDemo\Image0002.tif,0,,1001,John B. Goode,1234567812345678,12345
C:\AllMyChecksDemo\Image0003.jpg,C:\AllMyChecksDemo\Image0004.jpg,100,,1002,John B. Goode,1234567812345678,12345
C:\AllMyChecksDemo\Image0005.jpg,C:\AllMyChecksDemo\Image0006.jpg,13,,1003,John B. Goode,1234567812345678,12345
C:\AllMyChecksDemo\Image0007.jpg,C:\AllMyChecksDemo\Image0008.jpg,150.65,,1004,John B. Goode,1234567812345678,12345
```

Uses for List Files

List files are useful when any of the following conditions exist:

- When check image files have arbitrary locations or names
- When you have access to item dollar amount and/or MICR line data which can be customer entered or extracted using OCR/CAR/LAR in a front-end process.
- When you need to append a sequence or reference number to each item.
- When you will use a single ICL file to deposit items into multiple Payee accounts.

File Layout

Data for each item are separated by commas and items are separated by carriage returns.

Field/Column	1st	2nd	3rd	4th	5th	6th	7th	8th
Contents	Path and file name for front of check image	Optional Path and file name for back of check image	Optional Dollar amount	Optional MICR line data	Optional sequence or reference number	Optional Payee Name	Optional Payee account number	Optional Deposit Branch ID
Formatting requirements			Digits only, decimal point optional, no more than 2 digits to the right of DP	Digits and MICR Symbols: A – Transcode symbol B – amount symbol C – ONUS symbol D – Dash symbol				
Max character length			99999999.99		15	15	18	5
Comment	Can be Multipage TIFF file containing front and back pair or multiple items.		If not entered, then you will need to obtain using CAR/LAR or hand enter using AMP X9 VIEWER at a later workflow step	If not entered, All My Checks will supply using it internal OCR engines	If entered, will populate (record and field ID) in output ICL file.	If entered will populate this information into the BOFD record (Record 26). Will also use this information for the Payee Endorsement (if used)		If entered will populate this information into the BOFD record (Record 26).

4 PLATFORM REQUIREMENTS

4.1 Hardware Requirements

This section describes the minimum required hardware platform to operate the All My Checks Application while achieving the performance objectives. The customer is responsible for providing this hardware platform. This is based on a typical volume of 500 items per day, with a peak volume of 2000 items per day.

Windows PC/Server

- Single Processor, 2 GHz
- 1 GB RAM
- 60 GB Hard drive for Operating System and Application

4.2 Software Requirements

This section describes the software platform requirements. The customer is responsible for providing the platform environment.

Operating System: Windows (XP, Server 2003-8, Vista, Windows 7)

CPU – Pentium 4 – 2 GHZ

.NET 2.0 Installed

5 INSTALLATION

5.1 All My Checks Runtime License

AMP will provide a set of license codes that will need to be installed on the operating platform. This requires the AMP License Manager to be downloaded and installed from:

http://www.allmypapers.com/license_manager.htm.

Required licenses are:

```
LICENSE TYPE : AX937LIB
FEATURES:
     Class 1-5
     X9RCC
     Click Mode
     X937
     X9180 (optional)

LICENSE TYPE : AMPLIB
FEATURES:
     E13B
     Image Repair
     MICR Verify
     Speed 1-5
     Field Parse
     AMPLIB
     Camera (optional)
     Sobel (optional)
```

5.2 All My Checks Installation

All My Checks is provided as a self installing executable

5.2.1 Files and Directories

The All My Checks program files will be installed in either

`C:\Program Files\AllMyPapers\AllMyChecks` in 32-bit systems, or;

`C:\Program Files (x86)\AllMyPapers\AllMyChecks` in 64-bit systems.

One subdirectory named: `\Configuration File` will be installed beneath the main directory. This structure is illustrated below:

Figure 1 All My Papers Installation Directories

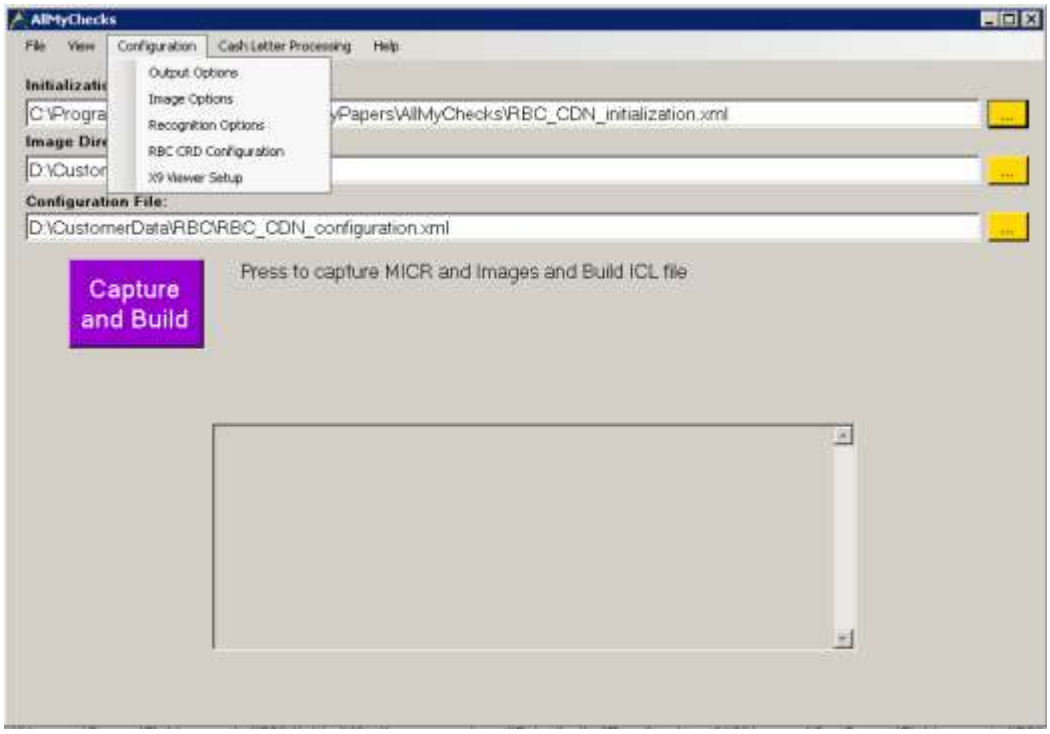
The main program directory contains the executable as well as .DLL and other supporting files. The Configuration File directory contains the XML configuration file.

6 SETUP

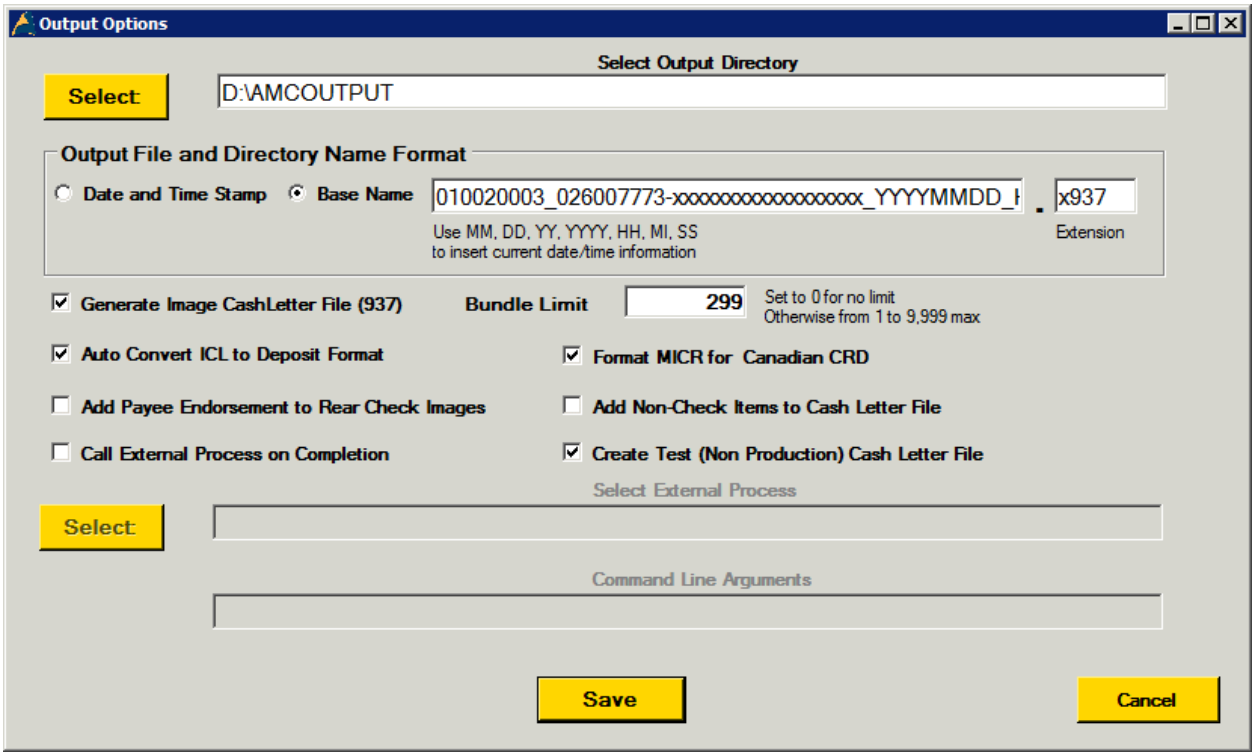
This section describes the additional setup procedures to be performed after installation to configure All My Checks for desired operation

6.1 Output Options

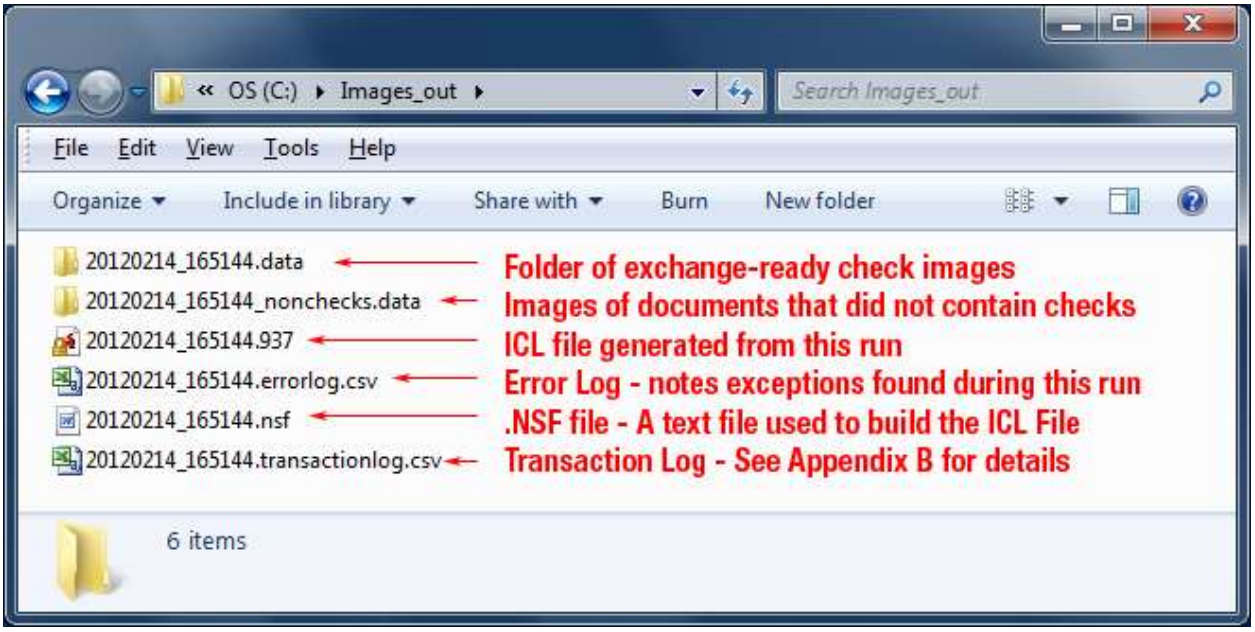
With the application started select Output Options from the Configuration Menu



The Output Options screen will be displayed



Set Output Directory – This is the directory location where All My Checks will send all output arranged as shown in the illustration below - files and folder names are encoded with the date and time of the run:



In addition a summary file is created in this same directory. It will have the filename structure of:

<ICL basename>.sum (E.g. 20120214_155144.sum).

It will contain a summary (items, $) of the ICL file generated.

Output File and Directory Name Format - Set how you want to name the files generated. Choose from timestamp or your own format. You can add date and time stamp information. Also enter your desired file extension to use.

Bundle Limit – Sets a limit to the number of items that any single bundle within the output ICL file may contain. The value in this field must be from 1 to 9999. Leave blank if you do not want to limit bundles.

Generate Image Cash Letter File (ICL) – Select this if you want the application to automatically generate and image cash letter file in addition to other output files.

Add Payee Endorsement to Rear Image - Select this option to add a payee endorsement to the back of each check image. See the earlier section describing the Configuration File for details of how to set up this endorsement. Payee endorsement data can also be listed on the input CSV file if used.

Format MICR for Canadian CRD - Select this option to capture checks drawn on Canadian Banks. Allows the 5-3 routing number format

Add Non Check items to Cash Letter File – Items not identified as checks will still be added to the output ICL file. Useful for processing with remittance coupons

Create Test (Non Production) Cash Letter Files – Image Cash Letters generated are marked as test files (Record 01, Field 3

Call External Process on Completion – Select this if you want to invoke another process upon completion of image processing or generation of the ICL file if the latter is selected.

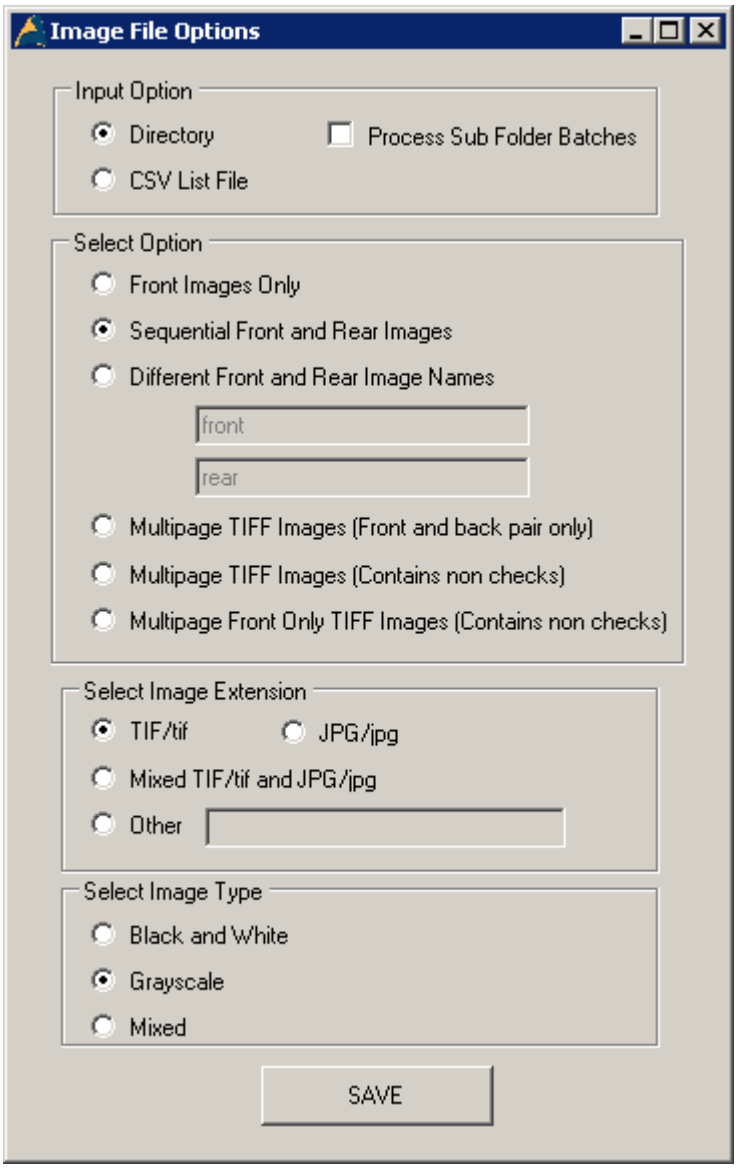
Select External Process – Use this to select the external process to be invoked. This process will be called with the ICL pathname as the first argument

Command Line Arguments – You can add additional arguments if required for the external process call.

Select “Save Initialization File” from the File menu to store the new settings. Please note that settings are saved in memory but are not saved to disk until program exit.

6.2 Image Options

With the application started select Image Options from the Configuration Menu. The Image Options screen as shown below will display.



Input Option - This tells All My Check where to get source images

Directory - Lets you to enter a directory path on the main screen where All My Checks will look for input images.

Process Sub Folder Batches – Will process a directory of subfolders creating a batch ICL file per folder. The individual files can be merged together later.

CSV List File - Lets you to enter the path and name of a list file that contains a list of input images to be processed

Front Images Only - Specifies that only front of check images will be encountered in the input image stream

Separate Front and Rear Images - Specifies that only front of check and back of check images will be interleaved in the input image stream

Different Front and Rear Image Names - Specifies that the front of check and back of check images will follow a naming convention which includes the two strings specified in the front and rear fields, respectively.

Multipage TIFF Images

Front and Back Pair - All input images are multipage TIFF and each file will contain only check front and check back images.

Contains Non-Checks - All input images are multipage TIFF and each file will contain check front and check back images as well a non-check document images.

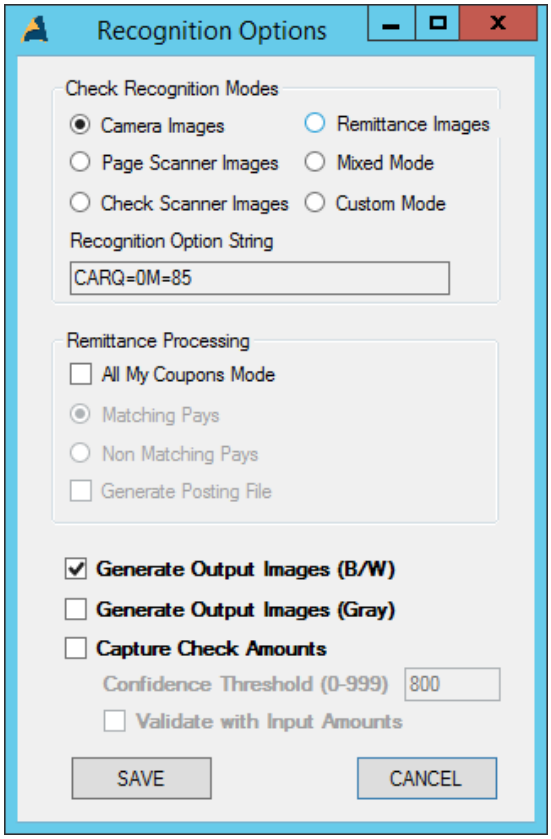
Front Only, Contains Non-Checks - All input images are multipage TIFF and each file will contain a check front image as well a non-check document images.

Select Image Extension - If known, select or specify appropriate type, otherwise, choose Mixed.

Select Image Type - If known, select type, otherwise, choose Mixed.

6.3 Recognition Options

With the application started select Recognition Options from the Configuration Menu. The Recognition Options screen as shown below will display.



Recognition Modes - If you know that your input image stream will be exclusively one of the kinds described above, then you may optimize All My Check's document recognition performance by choosing that type of document. If the document stream is mixed, choose Mixed Mode. Choosing a document

type will insert a text string into the Recognition Option String field. See Appendix C for more information on Recognition Option Strings.

Generate Output Images - Selects whether output images will be generated. Generally, this option should be checked as output images are a central requirement for the generation of ICL files. However, if you are using All My Checks solely to extract MICR lines from check images, you may un-check this box.

Generate Output Images(Gray) - Selects whether grayscale output images will be generated.

Capture Check Amounts – Requires installation of AMP's CAR/LAR solution. Will automatically capture the check amounts using CAR/LAR technology.

Confidence Threshold – Sets the CAR confidence threshold to accept results. Values are 0 – 999. 800 is default value. Increase to reduce substitutions (Increase rejected items)

Validate with Input Amounts – Unsupported feature.

Remittance Processing – Will process folders or lists of items that contain both checks and remittance coupons. Account and amount information can be captured automatically from the remittance coupon.

Matching Pays – The batch of checks and coupons are matching pays. Coupon $ = Check $.

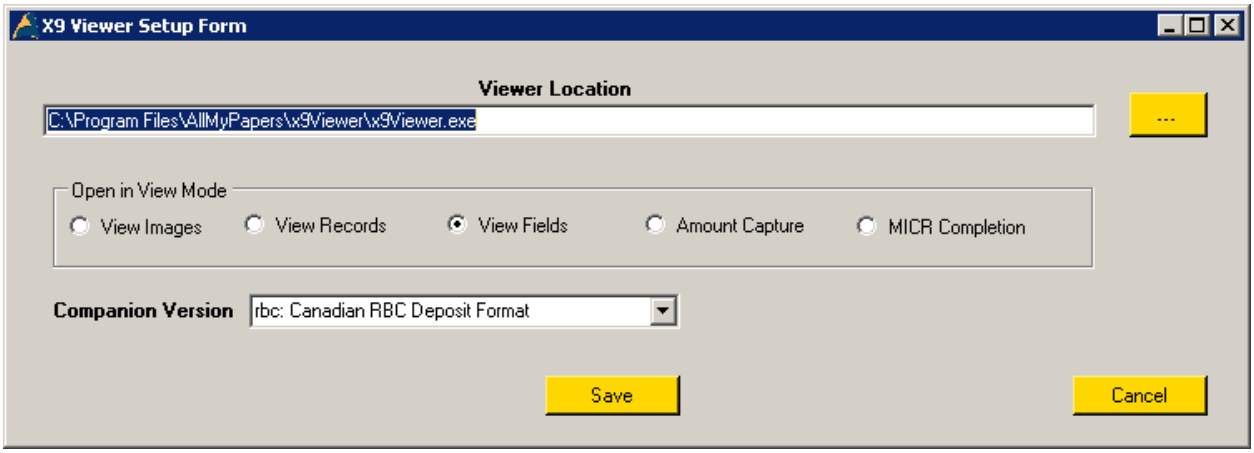
Non Matching Pays - The batch of checks and coupons are non matching pays. Coupon $ <> Check $.

Generate a posting file – A posting file listing the coupons account number and payment information is created with the final cash letter.

6.4 X9 Viewer Setup

With the application started select X9 Viewer Setup from the Configuration Menu

All My Checks can invoke the All My Papers X9 VIEWER application to view and edit ICL files after processing a batch of images. The use this function requires the installation of the X9 VIEWER Application. If the X9 VIEWER is installed in its default location, you need specify only the desired view mode. Otherwise, type in the path to the X9 VIEWER executable.



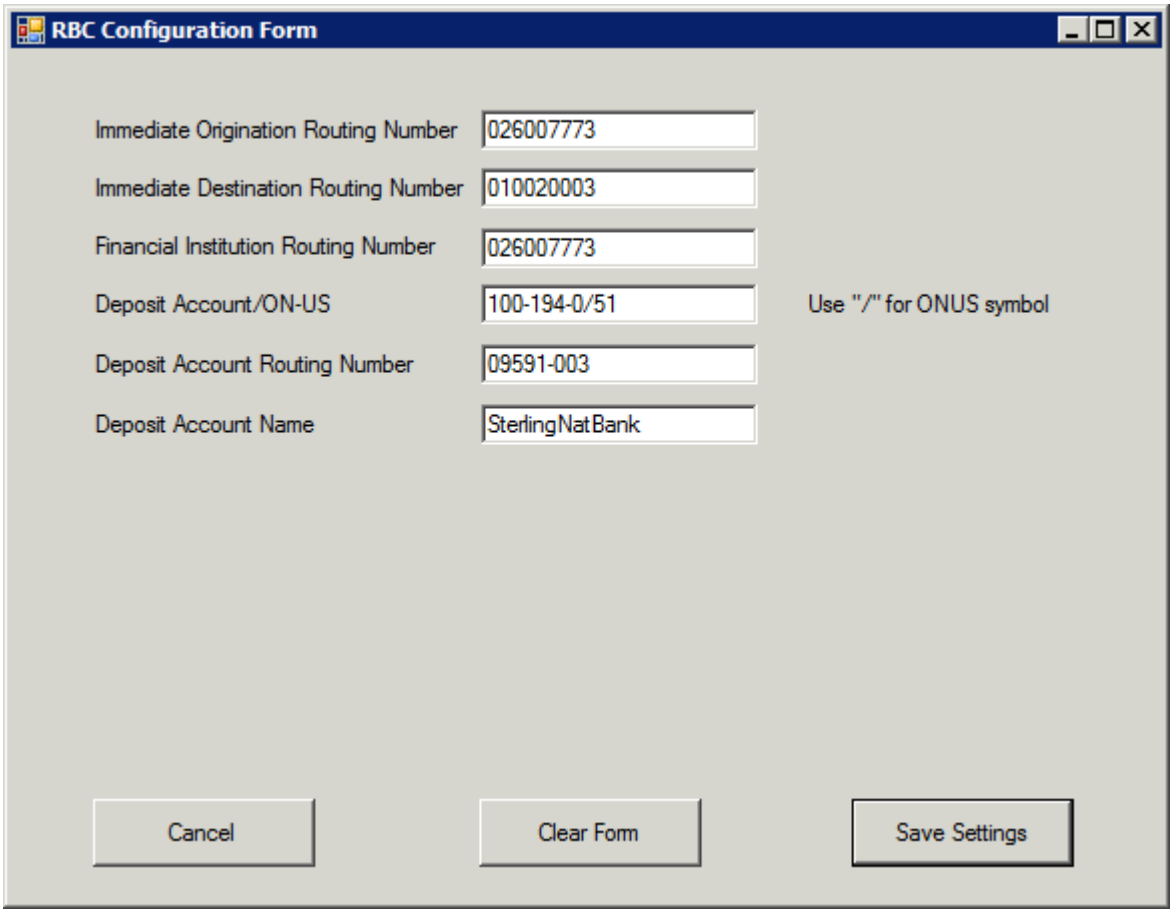
Open in View Mode - Here you can specify which viewing/editing panel will be active when you invoke the X9 VIEWER. This can be useful when for example, you use the X9 VIEWER to fill-in or edit dollar amounts after image processing. Selecting Amount Capture will cause the ICL file to open at the first item that does not contain a valid dollar amount for easy entry or editing.

Companion Version – Select which companion document version you want the Viewer to display and validate the ICL file.

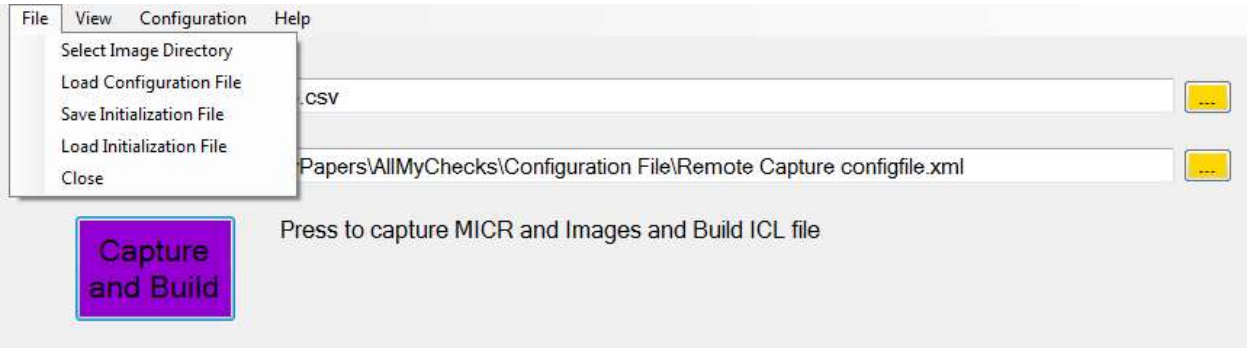
6.5 RBC CRD Configuration

With the application started select RBC CRD Configuration from the Configuration Menu

This is used by a Canadian or US institution that will use this application to electronically deposit US or CDN value checks drawn on Canadian Financial Institutions. Use this to set your institutions specific values as specified by RBC.



6.6 File Menu Options



Select Image Directory - Selects path to source (input) images.

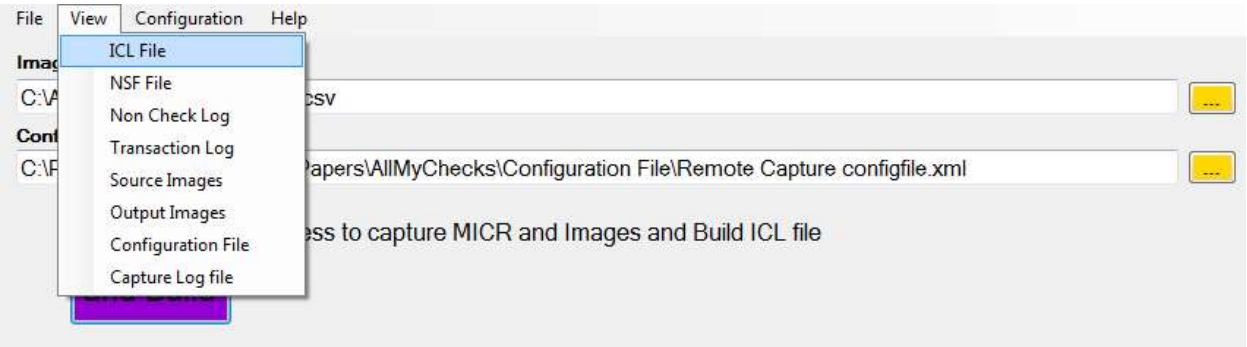
Load Configuration File - Loads a configuration file. See Section 2 and Appendix A of the manual for details,

Save Initialization File - Loads an initialization file containing a group of All My Papers option settings - see Appendix C for more details

Load Initialization File - Loads an initialization file containing a group of All My Papers option settings - see Appendix C for more details

Close - Closes the All My Checks application

6.7 VIEW Menu Options



ICL File - Opens the most recently created ICL file in the All My Papers X9 VIEWER application if installed.

NSF File - Opens the most recently created NSF file in the default text editor - usually Notepad. An NSF file is a text file used by All My Checks when building ICL files and contains all of the textual data for the ICL file.

Non Check Log – Views the non check data. Also items could contain check items that failed to process.

Transaction Log - Views the most recently created Transaction Log file in the default spreadsheet program. See Appendix D for details of this file.

Source Images - Opens a Windows folder containing the input images

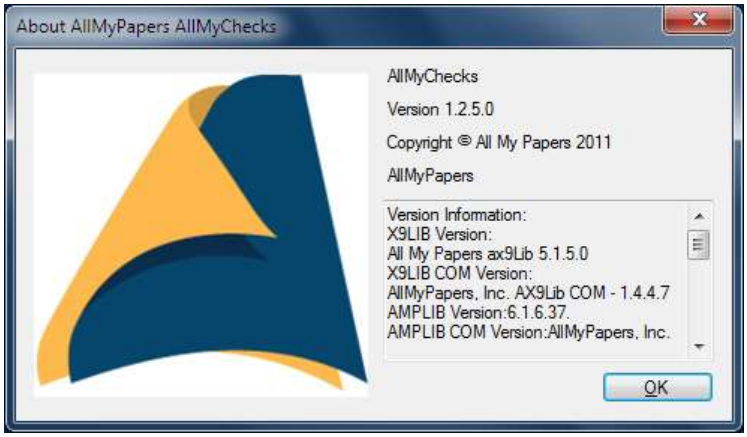
Output Images - Opens a Windows folder containing the output images

Configuration File – Opens the current configuration file in the default editor for XML files.

Capture Log File - Opens a file with overview information about file locations and actions taken by All My Checks during the most recent processing run.

6.8 Help Menu Options

The help menu has one option - About. The About box displays version and licensing information for your installation of All My Checks.



7 OPERATIONS

7.1 User Interface Operations

This is the All My Checks main screen which is the starting point for operations.

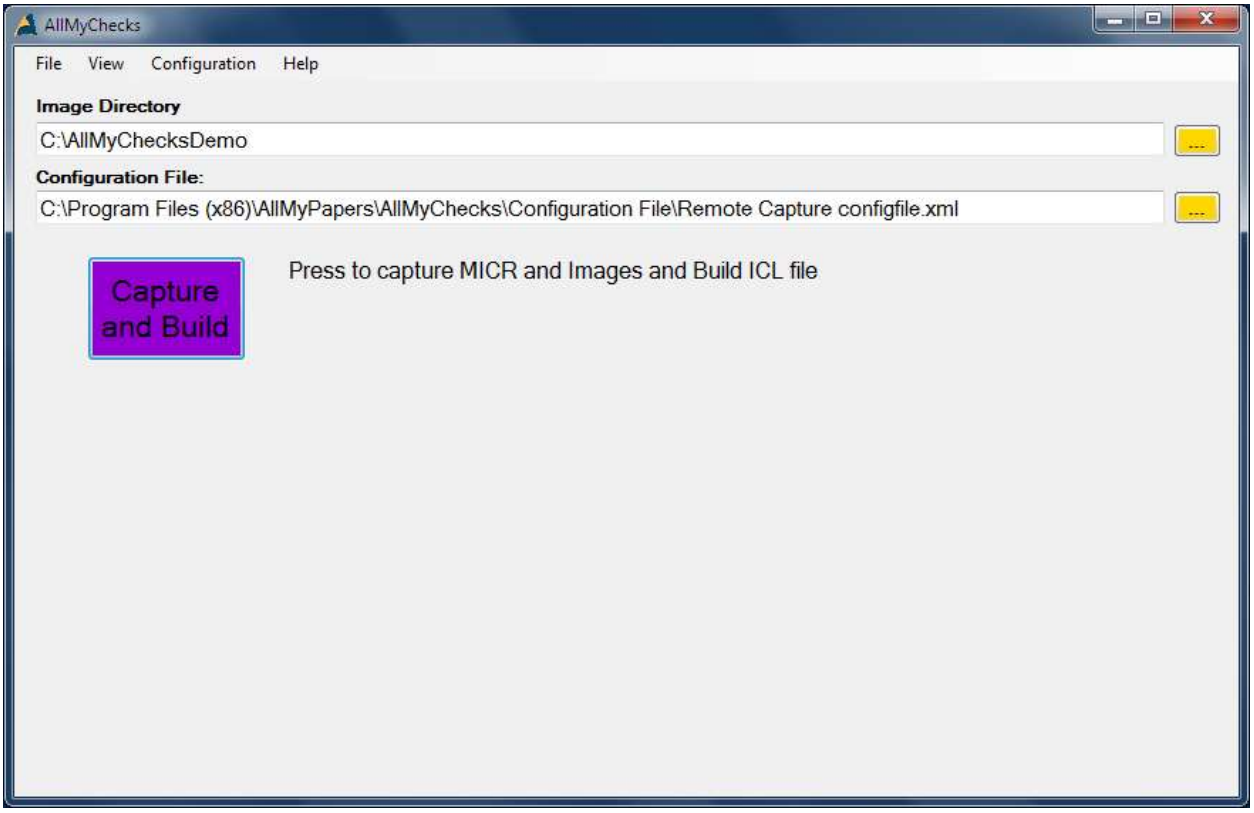


Image Directory/CSV Input List – Depending on the setting of the Input Option in the Image File Options dialog, this field will be titled Image Directory (as shown) or CSV Input List

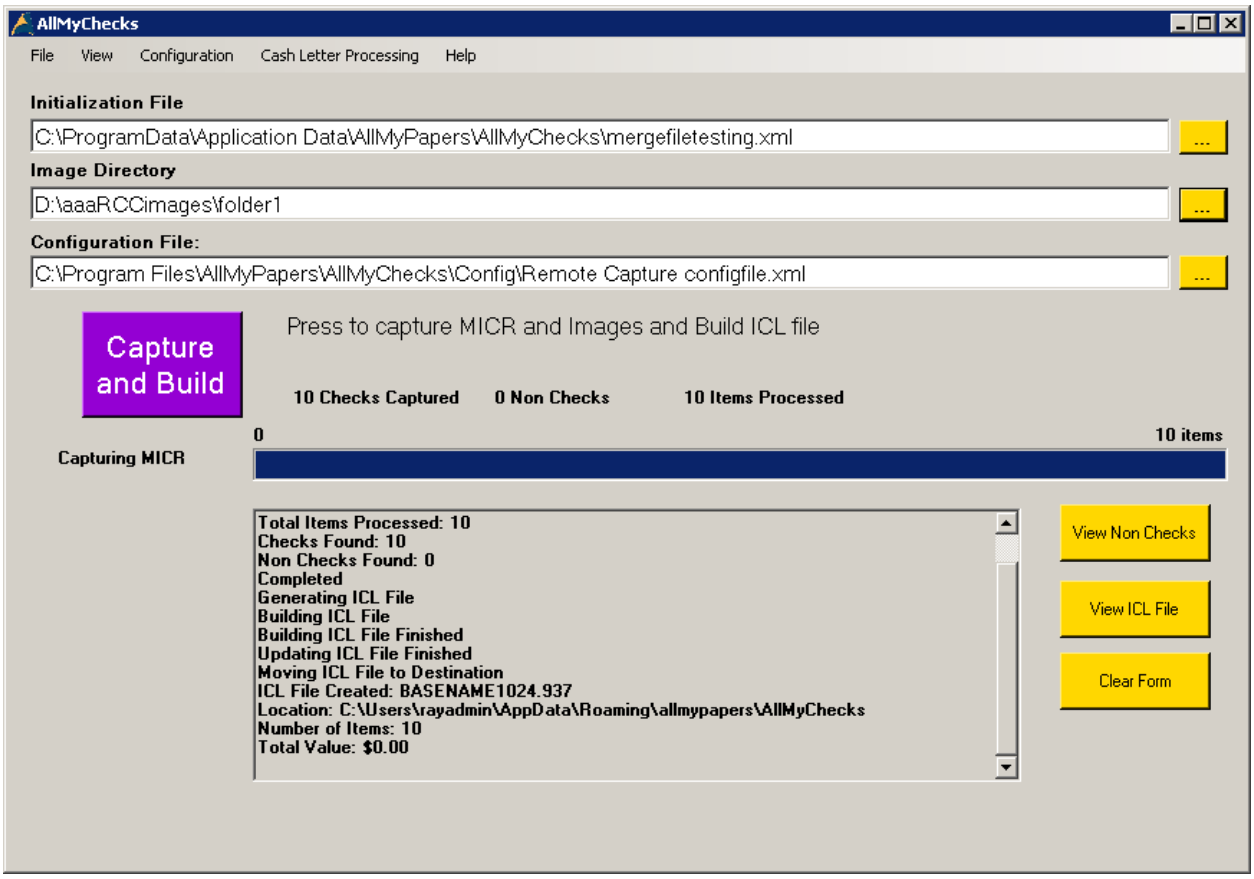
Image Directory - Click the yellow button to the right of this field to browse to and select the directory where All My Checks will look for input images to process

CSV Input List - Click the yellow button to the right of this field to browse to and select the List File to process

Configuration File – Select the configuration file that contains the definitions for the RCC images and ICL output file formats.

Capture and Build Button – Select to start the processing of input images and the creation of the ICL output file.

During processing, progress will be shown with a progress bar. After processing is complete the screen will appear as shown below and will list a summary actions taken during processing as well as the name and location of the output ICL file.



View NSF File - Click to view the most recently created NSF file in the default text editor - usually Notepad. An NSF file is a text file used by All My Checks when building ICL files and contains all of the textual data for the ICL file.

View ICL File – Select to invoke the X9 Viewer to view the output ICL file.

Clear Form – Select to clear this form.

7.2 Automatic Operations

All My Checks can be invoked as a command line function. Additionally command line functions have been added to merge a list of ICL files into a single cash letter file.

Command line syntax:

AllMyChecks <list file path or image directory> <configuration file path> <ini file path>

For merging ICL files:

AllMyChecks –M <merge list pathname> <output ICL pathname>

The command will return <0> if the operation was successful. If the process fails it will return <-1>. Refer to the capture log to see details of the failure.

It is recommended to delimit the arguments with double quotes to prevent problems with space characters in the pathnames.

An example command line is shown below:

```
"C:\Program Files\AllMyPapers\AllMyChecks\AllMyPapers AllMyChecks.exe"
"C:\AllMyChecksDemo\demo.csv" "C:\Program Files
(x86)\AllMyPapers\AllMyChecks\Configuration File\Remote Capture
configfile.xml" "C:\inidirectory\pagescanner.ini.xml"

For merging ICL files:

AllMyChecks –M " C:\AllMyChecksDemo\ICLlist.lst C:\AllMyChecksDemo\MergedICL.937
```

7.3 Creating Deposit files for Royal Bank of Canada (RBC)

This is the setup instructions for both US and Canadian institutions that will use this application to create deposit ICL files for deposit to RBC. These deposits will consist of US or Canadian value checks drawn on a Canadian institution. A separate deposit file is required for Canadian and US dollar value checks.

Configuration Screen	Settings

Output Options	• Select Output Directory for desired location of output files
	  • Select Basename (refer to RBC companion document). Example: 010020003_026007773-xxxxxxxxxxxxxxxxx_YYYYMMDD_HHMI
	  • There will be different filenames used for USD and CDN$ deposits
	• Enter extension of “x937”
	• Select “Generate Image Cash Letter File”
	• Select “Auto Convert ICL to Deposit Format”
	• Select “Format MICR for Canadian CRD”
	• Select Bundle Limit to 299 items (credit Item is added later to make 300

	items)
Image Options	• Option to use a list of items (CSV List File) or process all images in a folder (Directory) • Front and Rear images are required. Multiple input and format options available • Always select Grayscale
Recognition Options	• Select Image Capture platform: o Check Scanner o Page Scanner(ADF) o Camera • Select “Generate Output Images” if using AllMyChecks to generate final images. Deselect if source images are already image exchange ready. • Select “Capture Check Amounts” if licensed to use CAR/LAR to capture check amounts.
RBC Configuration	• Enter values as specified for your account by RBC. • Save Settings at completion on entries. • “Clear Form” will remove settings. For US Institutions the Immediate Origin and Financial Institution Routing Numbers are the same. For CDN institution the Immediate Origin Routing Number is in the CP00RSNNN format where NNN is your FI number. There will be different settings for USD or CDN$ deposits.
X9 Viewer	• Select desired View mode when “Viewing” the generated ICL file. • Select “rbc: Canadian RBC Deposit Format”

All My Checks Main Screen	• If US Sender, select “RBC_USA Sender configuration.xml” file for the configuration file. This is located in “Program Files/AllMyPapers/AllMyChecks/config”. • If CDN Sender, select “RBC_CDN Sender configuration.xml” file for the configuration file. This is located in “Program Files/AllMyPapers/AllMyChecks/config”. • Select the directory location or CSV list file containing the images to process. You can save this location or file in the initialization file or select every time you run if the location/name changes for each batch. • Save your settings into an initialization file. • You will want to create two different initialization files for USD and CDN$ deposits. You only then need to select the initialization file to be used to

	create the deposit ICL files. You are ready to go!

Notes: If you are planning to use the X9 Viewer to capture the check amounts change the process to not auto convert to the deposit format (Output Option). AMC will generate a 937 formatted file. Use the X9 Viewer to capture the amounts, and then use the “Cash Letter Processing->Merge and Convert Cash Letters” option to convert the file to the RBC deposit format. This creates a deposit ticket with the correct dollar value. The “Merge and Convert” can work from 1 to multiple ICL files.

APPENDIX A - SAMPLE CONFIGURATION FILE

```
<?xml version="1.0" encoding="utf-8" ?>
<RCC_PAY_CFG documenttype="CHECK">
  <param_definitions>
    <!--
        Coordinates of Payee Endorsement is from the top left corner of the check image
        when rotated counterclockwise 90 degrees
    -->
    <REQUIRED>
      <define param="payee_name"        value="PAYEE NAME"/>
      <define param="payee_account_nbr" value="999999999"/>
    </REQUIRED>
  </param_definitions>
  <zone_definitions>
    <back>
<!--Payee Endorsement Field-->
      <zone name="payee_endorsement" view="back" x="0.25" y="0.5" width="2.0" height="0.6"
textlines="4"
            font="MS Reference Sans Serif" size="10"
            justification="center" orientation="vertical" bold="false">
        <line string="For deposit to the account of"/>
        <line string="%1" var1="payee_name"/>
        <line string="Account Number"/>
        <line string="%1" var1="payee_account_nbr"/>
      </zone>
    </back>
  </zone_definitions>
  <ICL_definitions>
    <x937 Destination_routing_number ="123456780"/>
    <x937 Destination_name ="FRBanydistrict"/>
    <x937 Origin_routing_number="012345672"/>
    <x937 Origin_name ="RCCCreator"/>
    <x937 Test_File ="True"/>
     <!-- activate any of these attributes to perform ICL conversions
     Contact AMP for conversion number
    <x937 Destination_Format="##"/>
    <x937 Delete_Records="26,54"/>
    <x937 CreditFrontImage="c:\front.tif"/>
    <x937 CreditBackImage="c:\back.tif"/>
    <setRecordField record="10" field="12" all="False" value="1112223333"/>
    <setRecordField record="99" field="7" all="False" value="1112224444"/>
    <setRecordField record="52" field="4" all="True" value="10"/>
    -->
  </ICL_definitions>
</RCC_PAY_CFG>
```

APPENDIX B - TYPICAL LIST FILE

List files are formatted as CSV files. Here are the contents of a typical list file as they might be viewed in a spreadsheet program. The red text is annotation describing the contents of each column and is not part of the list file data.

	A	B	C	D	E	F	G	H	I	J
1	C:\AllMyChecksDemo\Image0001.tif	C:\AllMyChecksDemo\Image0002.tif	0		1001	John B. Goode	1234567812345678	12345		
2	C:\AllMyChecksDemo\Image0003.jpg	C:\AllMyChecksDemo\Image0004.jpg	100		1002	John B. Goode	1234567812345678	12345		
3	C:\AllMyChecksDemo\Image0005.jpg	C:\AllMyChecksDemo\Image0006.jpg	13		1003	John B. Goode	1234567812345678	12345		
4	C:\AllMyChecksDemo\Image0007.jpg	C:\AllMyChecksDemo\Image0008.jpg	150.65		1004	John B. Goode	1234567812345678	12345		
5	C:\AllMyChecksDemo\Image0103.tif	C:\AllMyChecksDemo\Image0104.tif	0		1005	John B. Goode	1234567812345678	12345		
6	C:\AllMyChecksDemo\Image0105.tif	C:\AllMyChecksDemo\Image0106.tif	0		1006	John B. Goode	1234567812345678	12345		
7	C:\AllMyChecksDemo\Image0107.tif	C:\AllMyChecksDemo\Image0108.tif	1215		1007	John B. Goode	1234567812345678	12345		
8	C:\AllMyChecksDemo\Image0109.tif	C:\AllMyChecksDemo\Image0110.tif	1044		1008	John B. Goode	1234567812345678	12345		
9	C:\AllMyChecksDemo\Image0111.tif	C:\AllMyChecksDemo\Image0112.tif	0		1009	John B. Goode	1234567812345678	12345		
10	C:\AllMyChecksDemo\Image0113.tif	C:\AllMyChecksDemo\Image0114.tif	294		1010	Susan B. Anthony	8765432187654321	54321		
11	C:\AllMyChecksDemo\Image0115.tif	C:\AllMyChecksDemo\Image0116.tif	3591		1011	Susan B. Anthony	8765432187654321	54321		
12	C:\AllMyChecksDemo\Image0121.tif	C:\AllMyChecksDemo\Image0122.tif	500		1012	Susan B. Anthony	8765432187654321	54321		
13	C:\AllMyChecksDemo\Image0123.tif	C:\AllMyChecksDemo\Image0124.tif	822		1013	Susan B. Anthony	8765432187654321	54321		
14	C:\AllMyChecksDemo\Image0125.tif	C:\AllMyChecksDemo\Image0126.tif	1878		1014	Susan B. Anthony	8765432187654321	54321		
15	C:\AllMyChecksDemo\Image0127.tif	C:\AllMyChecksDemo\Image0128.tif	73.5		1015	Susan B. Anthony	8765432187654321	54321		
16	C:\AllMyChecksDemo\Image0129.tif	C:\AllMyChecksDemo\Image0130.tif	267		1016	Susan B. Anthony	8765432187654321	54321		
17	C:\AllMyChecksDemo\Image0131.tif	C:\AllMyChecksDemo\Image0132.tif	294		1017	Susan B. Anthony	8765432187654321	54321		
18	C:\AllMyChecksDemo\Image0133.tif	C:\AllMyChecksDemo\Image0134.tif	0		1018	Susan B. Anthony	8765432187654321	54321		
19	Front of Check Image	Back of Check Image	$		REF	Payee	Deposit	Deposit		
20			Amount		#		Account Number	Branch #		
21										

Note: When formatting a list file, you do not need to add commas after last element used. So if only providing amount, the file can just have:

<front image path name>, <rear image path name>, amount

With no following commas.

APPENDIX C - INITIALIZATION FILE

The initialization file preserves the state of All My Checks options between processing runs. Once your workflow is setup, you normally do not need to load or save initialization files. However, if you have multiple processing scenarios, then the load and save initialization file options may be used to save recall processing scenarios without having to change multiple individual setting each time you switch between scenarios.

```
<?xml version="1.0" encoding="utf-8"?>
<AllMyChecksInitializationFile>
  <var configfile="C:\Program Files (x86)\AllMyPapers\AllMyChecks\Configuration
File\Remote Capture configfile.xml" />
  <var ImageDir="C:\AllMyChecksDemo\demo.csv" />
  <var outputDir="C:\Images_out" />
  <var UseExternProcess="False" />
  <var ViewerLocation="C:\Program Files (x86)\AllMyPapers\x9Viewer\x9Viewer.exe" />
  <var ViewerOptionString="5" />
  <var BundleLimit="300" />
  <var FRONTIMAGESONLY="False" />
  <var SEQIMAGES="True" />
  <var DIFFIMAGENAMES="False" />
  <var MULTIPAGETIFF="False" />
  <var MULTIPAGENONCHECKS="False" />
  <var FRONTTEXTSTRING="front" />
  <var REARTEXTSTRING="rear" />
  <var RECOOPTIONSTRING="" />
  <var IMAGEEXT="MIXEDEXTENSION" />
  <var IMAGETYPE="MIXEDIMAGETYPE" />
  <var GENERATEVIEWS="True" />
  <var GENERATEICL="True" />
  <var PAYEE_ENDORSEMENT="True" />
  <var PAGESCANNERMODE="False" />
  <var CAMERAMODE="False" />
  <var REMITTANCEMODE="False" />
  <var MIXEDMODE="True" />
  <var CUSTOMSTRING="False" />
  <var CAPTUREAMOUNTS="False" />
  <var CHECKSCANNER="False" />
  <var DIRECTORYINPUT="True" />
  <var CSVLISTINPUT="False" />
  <var MULTIPAGEFRONTNONCHECKS="False" />
</AllMyChecksInitializationFile>
```

APPENDIX D - THE TRANSACTION LOG

A CSV formatted Transaction Log file generated by All My Checks for each processing run and is placed in the output directory. It may be opened and viewed in a spreadsheet program and contains the following information for each document or check item processed. The file is arranged with each document or check item occupying one row.

Column	Title	Comment
1	Transaction Item	Sequential transaction number. Restarts at 0 for each processing run.
2	Input Front	Paths and file names for input and output check images
3	Input Rear	
4	Output Front	
5	Output Rear	
6	Check	
7	MICR	MICR Line Data Extracted
8	MICR Confidence	MICR data confidence level expressed as an integer between 0 and 100
9	Amount	Dollar amount if captured. Set to 0 if not captured.
10	Amount Confidence	MICR data confidence level expressed as an integer between 0 and 100
11	Image OK	Flags: 0=No, 1=Yes
12	ImagesTooDark	
13	ImagesTooLight	
14	ImgNotSize	
15	Rear Missing	
16	FrontMissing	
17	AMC Error Processing code	Lists an error number if processing failed for an item

APPENDIX E - BUILDING A CUSTOM RECOGNITION STRING

- "C" instructs the function to crop the check images from the captured image
- "A" uses a more advanced cropping approach for mobile captured items
- "T" instructs the function to test and correct for trapezoidal shape errors in the check images (Do not use with the "A" option
- "M=nn" Sets the MICR OCR character confidence level to "nn". "nn" is a value set from 01-99. Characters with a read confidence level below this value will be output as a reject symbol ("*"). The recommended value is "85".
- "R" instructs the function to rotate 180 and reread the check if a MICR codeline is not found on the first attempt.
- "B" instructs the function to leave blanks in data.
- "Q=#" Sets the Resolution detection method.
  "#=0" detects the resolution
  "#=nnn" uses resolution value of nnn.
  "#=-n" uses resolution value in image header
- "I" instructs the function to apply image repair filters to output images if used during recognition
- "O=nnn" sets the minimum resolution that AMC will accept an item for processing